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Studies of the Ices and Chiral Molecules of the Interstellar Medium

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Studies of the Ices and Chiral Molecules of the Interstellar Medium

By

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Advisor: Susanna Widicus Weaver, Ph.D

An abstract of A thesis submitted to the Faculty of the James T. Laney School of Graduate Studies of Emory University in partial fulfillment of the requirements for the degree of Master of Science in Chemistry 2016

Abstract

Studies of the Ices and Chiral Molecules of the Interstellar Medium

By Alexander John Mesko

Our understanding of the chemical diversity of the interstellar medium is ever increasing. With better observational technology and experimentation, the detection of ices, ions, radicals, and chiral molecules have all been confirmed. Millimeter/submillimeter spectroscopy is one tool which has driven advances in observational astronomy and laboratory spectroscopy. The work presented here focuses on two experiments: the study of interstellar ices and the study of propylene oxide, the first chiral molecule detected in the interstellar medium. Millimeter/submillimeter spectroscopy is the primary technique employed in both experiments. The premise of the interstellar ice analogue experiment is to understand the chemical mechanisms which can lead to the formation and desorption of key molecules in the interstellar medium. Millimeter/submillimeter spectroscopy allows us to study the gas-phase over the surface of the ice at high sensitivity and excellent resolution. To this point we have studied thermal and photodesorption of water from pure water ices, and the evolution of CO as a result of photo-processing of pure methanol ices. The motivation of the propylene oxide experiment is to provide new laboratory spectra so that it can be a target for further astronomical searches. The spectrum from 70 GHz to 1 THz is presented, the molecular constants are determined, and the internal rotation of the methyl group is analyzed and discussed.

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Chapter 1 A Brief Overview of The Interstellar Environment

The scope of chemistry encompasses 118 different unique elements capable of bonding together to form innumerable distinct chemical species; and yet just over 190 different molecules, ions, and radicals have been detected in the incomprehensible immensity of the interstellar medium (ISM) [1]. It is by knowing which molecules exist in an astronomical environment, their densities, and their energy distributions that we gain an idea of what kind of chemistry occurs there. A crucial tool in the detection of molecules in the interstellar medium is mm/submm astronomy. In this wavelength regime, every molecule has a distinct set of rotational lines which can allow for unambiguous determination of what molecules are present and their temperatures and densities. As observational studies have progressed, chemical models have adapted accordingly. With the backing of laboratory spectroscopy, further astronomical searches can be conducted and the models can be examined.

In the vast expanse of interstellar space, gas-phase collisions between neutral species are extremely unlikely with time scales on the order of $10^5 - 10^6$ years [2]. As a result, in early models of astrochemistry, ion-molecule gas-phase reactions had been considered to be the primary method of formation of most complex organic molecules (COMs), defined to be carbon containing molecules of six or more atoms [2]. The electrostatic attraction of an ion to a permanent molecular dipole considerably enhances the reaction rate over neutral-neutral molecular reactions. Ion-molecule pathways are still a major part of interstellar chemical models, but these reactions are not sufficient to explain the observed concentrations of many interstellar species such as the high concentrations of methyl formate in cold cores [3–5] and glycolaldehyde [6] in hot cores. As a result, icy-grain chemistry has become a critical model by which much

interstellar COM chemistry is thought to occur. Silicate and carbonaceous grains in cold regions of the interstellar medium adsorb almost any species that comes into contact with them, due to the high sticking probabilities resulting from the very low thermal energies. Thus these grains act as a meeting ground for simple molecular and atomic species. The low thermal energies in these regions have a second effect: species, with the exception of hydrogen, that have stuck to the grain are unable to move across the surface of it. As a result, the icy grain remains relatively inert, with the exception of hydrogenation reactions, until a source of energy is found. The molecular clouds in which icy grains exist in can begin to gravitationally collapse, and over thousands of years, as the cloud falls inward, the core of the cloud begins to heat up, becoming a prestellar core. If the cloud is massive enough a star can be born. The star bathes everything in the surrounding areas with radiation. Ultraviolet radiation, produced either directly by the star or from cosmic-ray induced VUV emission within clouds, coupled with the increasing temperature of the environment, mobilizes and photylizes the species composing the icy grains. These icy grains become a breeding ground for complex organic molecules.

Over extensive time, the processing of ices and gasses produce a high diversity of molecules which have been detected in the ISM [1]. Nitrogen containing species [7, 8], organic molecules up to 12 atoms in size [9], the C_{60} [10–14] and C_{70} [10] fullerenes, and recently the first chiral molecule, propylene oxide [15], have been discovered in interstellar space. The detection of chiral molecules is a prime area of interest in the astrochemistry and astrobiology communities because of the implications it has to the origin of homochirality on Earth. If a particular enantiomer of a given chiral molecule can be preferentially selected in interstellar clouds, the decedents of those clouds can then inherent and further amplify an enantiomeric excess, eventually producing homochirality, a necessity for the evolution of life.

The overarching motivation for the work of this thesis is to further understand the

chemical makeup and resulting chemistry of astrophysical environments, with a focus on interstellar ices and propylene oxide. Here I present two distinct experiments: One, a prototype ice experiment designed to study the gas-phase chemistry above the ice during photo and thermal processing; and the other a gas-phase spectroscopy study of propylene oxide. Understanding the pathways which can take place as a result of UV irradiation and heating of icy grains is the goal of the ice experiment. The motivation for our work on propylene oxide is to provide new mm/submm laboratory spectra to bolster observational efforts in the identification of propylene oxide in the interstellar medium. I present the details of both of these experiments in the following chapters.

Chapter 2 Rotational Spectroscopy of Gases Above Interstellar Ice Analogues

2.1 Introduction

Cold interstellar cores are composed primarily of hydrogen, with approximately 1% of the mass of the cloud existing in carbonaceous and silicate dust grains. Over a long enough time scale in the cold temperatures of interstellar clouds, adsorption of atomic species and simple molecules onto interstellar dust grains leads to hydrogenation reactions to form the molecules that will become the bulk of an interstellar ice [16], i.e.:

$$O + H \to OH + H \to H_2O$$
 (2.1)

$$N + H \to NH + H \to NH_2 + H \to NH_3$$
(2.2)

$$CO + H \rightarrow HCO + H \rightarrow CH_2CO + H \rightarrow CH_3O + H \rightarrow CH_3OH$$
 (2.3)

Most of the information on the composition and structural features of interstellar ices have been collected by analyzing vibrational features characterized by infrared absorption observations. Water is the primary component of interstellar ices with varying concentrations of methanol, ammonia, and carbon monoxide ranging from 5-50% of the amount of water present [2].

The majority of radiative processing of interstellar ices as they rest in cold cores occurs as the result of Lyman- α and cosmic-ray induced vacuum ultra-violet (VUV) emission. Photons of this character can result in photolysis and photodesorption of the molecules which compose interstellar ices. Methanol photodissociation is given

$$CH_3OH + h\nu \rightarrow CH_3 + OH$$
 (2.4a)

$$\rightarrow CH_3O + H$$
 (2.4b)

$$\rightarrow CH_2OH + H$$
 (2.4c)

$$\rightarrow CH_2 + H_2O$$
 (2.4d)

$$\rightarrow$$
 HCOH + H₂ (2.4e)

$$\rightarrow$$
 H₂CO + H₂ (2.4f)

$$\rightarrow CO + 2H_2$$
 (2.4g)

Products of these types of photodissociation reactions can then react on the grain surface to form more complex species, or desorb into the gas-phase. Recent experiments done on methanol ices show that methanol does not photodesorb from icy grains intact in detectable quantities, but rather will fragment to many different species, the most abundant of which being CO [20]. Results from these experiments have large consequences on the astronomical models. Relatively large abundances of methanol have been detected in cold regions of space, abundances which do not agree with the result from these new laboratory studies. The production of gas-phase methanol from an icy grain, whether it be from primary photodesorption or a recombination of other desorbed species, is an excellent prospect of study for our experiment.

A complex organic molecule (COM) that is thought to be formed by a radical combination mechanism on the surface of an ice is glycine. The detection of glycine in the interstellar medium is controversial; however, it has been definitively detected in numerous carbonaceous chondrite meteorites [21–25] and comets [26], thus it is likely formed by some mechanism related to condensed-phase chemistry. Computational studies done in the past have shown a number of mechanisms from which glycine could form by icy grain chemistry, none of which have been experimentally confirmed [27]. The experiment presented in this report will offer a method for studying the icy grain formation mechanism of glycine and a number of other important interstellar and cometary chemical processes.

To enable studies of prebiotic COMs, simple molecules have been focused on in the development of this experimental method: water, methanol, formaldehyde, and carbon monoxide. Most laboratory studies done on interstellar ices implement IR spectroscopy and mass spectrometry to analyze the chemistry occurring directly in or on the icy bulk [28, 29]. The new method presented here focuses on the significant amount of chemistry that can occur in the gas-phase over the surface of the ice as the bulk is thermally processed or photo-processed. This offers the added benefit of being able to detect desorbed products of surface reactions. The combination of these two techniques – ice chemical studies and rotational spectroscopy – brings a new approach to this field of study. Temperature information on the products of icy grain reactions can be analyzed to give insight into the reactions which produce them, and the data collected can be directly compared to radioastronomical observations of interstellar clouds and comets.

Herein I report on a novel experimental design and initial results from this experiment. Water and methanol have been used for the interstellar ice analogues in these initial studies. Formaldehyde has been detected as a room-temperature gas-phase photoproduct of methanol photolysis. Water has been observed in the gas-phase over an ice as a thermal desorption product as well as a photodesorption product. Likewise, carbon monoxide has been detected as a photolysis product from UV irradiation of a methanol ice.

2.2 Experimental

2.2.1 General Methods

The experiments set forth in this paper are carried out in a new experimental setup that is conceptually based on the CRYOPAD experiments conducted at the University of Leiden [28], combined with a millimeter and submillimeter spectrometer based on the designs previously implemented in our lab [30]. A schematic of this experiment is shown in Figure 2.1. A closed circuit compressed helium cryostat (APD Cryogenics Expander DE-202B assembly with a APD Cryogenics HC-2 compressor) is used to chill an inert gold plated stage which acts as a substrate for ice formation. Vapor is introduced to the substrate in a controlled manner through a sample line situated 3 cm above the chilled stage. Small doses are introduced into the vacuum chamber which is pumped with a CErlikon Leybold TW 690 MS turbomolecular pump to a baseline pressure of 1×10^{-7} Torr, via a Matheson Model 4170 Series 316, needle valve to allow for controlled ice formation. By use of the needle valve a chamber pressure of 1×10^{-6} Torr was maintained during dosing. Less than a minute after closing the needle valve, the pressure in the chamber decreased back down to baseline as all of the sample vapor deposited onto the stage and cold head of the cryostat.

Ultra-pure water samples were produced from a Nanopure water filtration system. All experiments conducted on organic ices were performed with CH_3OH of purity 99.8% from Sigma-Aldrich. Both the water and methanol samples have been put through a freeze-pump-thaw process to remove excess gases.

All experiments are monitored by use of pure rotational direct absorption spectroscopy in the 150-750 GHz range. Microwave radiation is produced by an Agilent Technologies E8257D analog signal generator at frequencies of 22 to 46 GHz and passed through a Virginia Diodes S270 multiplier chain to generate harmonics and reach the desired mm/submm frequencies. The output radiation beam passes over



Figure 2.1: Experimental Schematic

the ice surface and is detected by one of two detectors. A Virginia Diodes zero bias detector (ZBD) is used for detection in experiments below 210 GHz, whereas a QMC QFI/XBI InSb hot electron bolometer is used as a detector in experiments with higher frequencies. The signal from the detector is passed into a lock-in amplifier that is referenced to the input radiation with a modulation frequency of 15 kHz. Second harmonic detection is utilized and the resulting 2f lineshapes can be modeled with a second derivative Gaussian function as seen in the results presented below. The spectral resolution is 100 kHz for all experiments.

For ice studies, two primary types of experiments have been conducted: Temperature Programmed Desorption (TPD) experiments and photo-processing experiments, both of which will be described in the sections below. These experiments are not mutually-exclusive, meaning that they can, if the situation requires, be conducted in tandem. A significant part of the experimental method is also shared by both techniques; those parts of the experiment were outlined above.

2.2.2 Temperature Programmed Desorption of Ices

They key to TPD experiments is strict control of the temperature of the ice by an autotuning temperature controller. The temperature is controlled by the joule heating of small resistors (Advanced Research Systems: HTR-TF-36-2) epoxied (Omega: OB-200-2) to the bottom of the sample stage (Advanced Research Systems: SHNO-1B flat plate sample holder). Voltages applied to the heaters are controlled by a Lakeshore Model 330 Autotuning Temperature Controller interfaced with a thermo-couple (Omega engineering: WTE-6-24 Washer T/C Assembly striped ends) also mounted on the sample stage. Measurements in TPD experiments are taken after the system is equilibrated at the desired temperature. A slow heating rate of 2 K/min is used in experiments so as to not affect the structure of the ice with sudden powerful heating.

2.2.3 Photo-Processing of Ices

The photochemistry experiments performed utilize the 121 nm line of an Opthos Lyman- α microwave discharge lamp. The lamp is positioned 10 cm above the sample stage at an inclination of 15° from the normal. The UV flux density of the lamp at the 121nm line is approximately 2×10^{12} photons s⁻¹cm⁻² [31].

Photo-processing experiments have been done on gas-phase methanol as well as pure methanol and water ices. Gas-phase experiments were conducted in static cell conditions (i.e., without active vacuum pumping) with the mercury lamp lit at a forward power of 60 W and a reflected power of 2 W for 10 minutes. The mercury lamp emits at 184 nm and was used in this experiment because the Lyman- α was broken at the time of these experiments. Spectra were collected after the lamp was turned off. The ice experiments were conducted in both static and dynamic cells (i.e., without and with the pump, respectively) with the Lyman- α lamp continuously on at a similar power.

2.3 Results

2.3.1 Temperature Programmed Desorption

Initial experiments focused on proof-of-concept TPD experiments that could be compared to previously-reported literature results. A pure water ice was deposited on the sample stage at a temperature of 15 K. At these temperatures, vapor deposition leads to amorphous ices because the molecules freeze out without being able to reorganize themselves into a crystalline lattice. In this experiment, the thickness of the ice was not a controlled parameter. The TPD experiments, as shown in Figure 2.2, enabled the detection of the desorption of water beginning at 152 K, in good agreement with the literature [32].



Figure 2.2: TPD experiment of pure water ice

The fits can be seen in the Appendix Figures A.1–A.7.

2.3.2 Room Temperature gas-phase photolysis of Methanol

In preparation for photolysis studies of pure methanol ices, room temperature photolysis experiments were conducted with gaseous methanol. Formaldehyde was detected as the primary product of the methanol photolysis at room temperature, as is shown in Figures 2.3 and 2.4.



2.3.3 Photodesorption of Water from an Ice Surface

Moving beyond the gas-phase studies, initial ice processing studies focused on pure water ice. A pure water ice was grown on the sample stage at 30 K by dosing gaseous water into a static chamber to a pressure of 10^{-5} Torr for one minute. Following the collection of a background spectrum, the Lyman- α lamp was lit at a forward power of 50 W and a reverse power of 3 W. The first scan took 17 minutes to collect due to a 6 s integration time, 2 s wait time, and a time constant of 1 s. The first scan revealed detection of the 557 GHz water signal. The lamp was then turned off and over a period of 45 minutes the signal returned to baseline. This is seen in Figure 2.5. The chamber pressure followed the same trend: as the lamp was on, the pressure increased to 10^{-5} Torr and dropped back to baseline after the lamp was powered down.



Figure 2.5: Water Photodesorption Signal

2.3.4 The Search for Methanol Photodesorption from an Ice Surface

The next logical step in the experiment was to observe photodesorption of a COM from an ice surface. Methanol was chosen as the obvious candidate since it is a large component of interstellar ices and it is readily available. After many months of testing, no lines were observed.



Figure 2.6: The irradiation of the sample in a dynamically pumping experiment caused an increase in the pressure but no molecular lines of methanol was observed: 157270.832 MHz, or 157272.338 MHz

Meanwhile, a paper published by Bertin et. al. demonstrated that methanol does not photodesorb from ice surfaces intact in detectable quantities. Rather, it photofragments into a number of small molecules, the most abundant being CO. [20] This was a surprising result given the high number densities of methanol observed in the gas-phase throughout the ISM. More work will need to be done to discover new



Figure 2.7: The irradiation of the sample in a static pumped cell experiment caused an increase in the pressure but no molecular lines of methanol was observed here either.

chemical mechanisms or find a better balance of the ones currently known to account for these observational results. However, this does explain the lack of methanol photodesorption we observed in our experiments.

2.3.5 Detection of Carbon Monoxide as the Result of Irradiation of Methanol Ice

Shifting focus based on the new information regarding methanol photolysis, a pure methanol ice was grown on the sample stage at 30 K with a chamber pressure of 3×10^{-7} Torr. Irradiation of the ice over multiple hours in a static cell did not produce detectable gas-phase CO. The first detection of CO was made after the cryostat was turned off. The temperature of the stage was unknown at the time of CO detection. Nonetheless, this result indicated that warming of the ice was necessary for CO desorption.

To quantify this, a TPD experiment was run on an irradiated pure methanol ice grown at 30 K. The ice was held at 30 K while it was irradiated for 1 hour with the Lyman- α lamp, after which the lamp was turned off and a traditional TPD experiment was performed. No CO signal was observed until the ice reached a temperature of 230 K. This is a much higher temperature than expected. Methanol was detectable



Figure 2.8: CO Molecular signal upon heating of the chamber after ice irradiation

first around 160 K and was still detectable at the point that CO was observed at 230 K.



Figure 2.9: Temperature Programmed Desorption experiment of CO from a Methanol Ice

To study this system further, an experiment was conducted in which the TPD was run simultaneously with the UV irradiation. The ice was grown at replicate conditions to the previous experiment and the Lyman- α lamp was again used for irradiation. In contrast to the previous experiment in which CO was not detected until 230 K, the first CO signal was seen at 130 K with the simultaneous heating and irradiation of the ice (as seen in Figure 2.10). More interesting yet was that no CH₃OH signal was observed until 160 K (Figure 2.11). The evolution of CO gas at a lower temperature than methanol is a particularly intriguing result and has large implications for the interstellar icy grain models, if it can be confirmed by further experimentation.



Figure 2.10: Evolution of gaseous carbon monoxide from an ice surface under simultaneous heating and irradiation



Figure 2.11: Evolution of gaseous methanol from an ice surface under simultaneous heating and irradiation

2.4 Proposed Future Work

A number of additions can be made to the experiment to help further understand the precise conditions to which the ices are being exposed.

To understand the chemistry of the ice and the gas above it, a good physical

understanding of the ice is desirable. The precise thickness of the ice can be measured by observing diffraction fringes produced as a visible laser passes through the ice or by use of IR spectroscopy. It is desirable to have ice thickness as a controlled property because it can have effects on the chemistry occuring in the icy bulk [33]. Two visible lasers of the same wavelength passing through the ice at different angles, or two lasers of different wavelengths passing through ice at the same angle can be used. In either of these techniques, the number of monolayers the beams pass through can be determined by observing the diffraction fringes produced. Alternately, IR spectroscopy is a well-established technique for measuring not only the physical properties of the ice, but also the chemical properties of the icy bulk [28, 29]. This makes addition of an IR spectrometer into the experimental setup the best option because it can be used to simultaneously measure the icy bulk chemical and physical properties in conjunction with what is happening in the gas above the surface of the ice. The conversion of a traditional FTIR instrument into an open-beam Reflection Absorption Infrared (RAIRS) spectrometer that can be utilized on our experiment is possible. In brief, a RAIRS setup passes an IR beam into the vacuum chamber at an angle so that the beam passes down through the ice, reflects off the gold-plated sample stage, passes up through the ice, and then out of the chamber where the absorbance can be detected. This setup could be implemented with the current vacuum chamber by using flanges that have multiple ports for windows that could be the entry point for the IR beam, but it is an in-depth setup that will take time to implement. In lieu of the addition of an FTIR and due to the constraints of the chamber, using the two-wavelength laser method would be a practical way of determining the physical characteristics of the ice.

Real time analysis of the UV flux produced by our Lyman- α discharge lamp via the photoelectric effect would also be an excellent addition to the experiment. The photoelectric effect is a phenomenon that is used in multiple types of common spectroscopic detectors including photomultiplier tubes. Incoming radiation, if energetic enough, is capable of ejecting electrons from an anode. The number of photoelectrons ejected is directly related to the number of incident photons. By using a thin gold wire as an anode, it would be possible to observe the photoelectric effect by measuring the resulting current as electrons are ejected from the gold wire and collected on a surrounding collector plate. The current would be directly proportional to the flux of the UV lamp. This would help quantify the efficiency of photodesorption and photolysis in these experiments.

One final addition to the experiment would be the purchase of additional multipliers to extend the working frequency range of the spectrometer to 1.4 THz. This would allow for the observation of the OH radical. The OH radical may play a large part in the chemistry of interstellar ices. Water is the primary component of interstellar ices and OH is produced as water ice is exposed to UV radiation. Observing and quantifying the amount of OH being produced and reacting with other species from mixed water/organic ices would be an interesting area of study for future experiments and would greatly contribute to the interstellar models.

2.5 Conclusion

The results collected from the experiment thus far have been promising, but there is much room for improvement. The temperature programmed desorption data from pure H_2O ice has been found to be in good agreement with the literature. The detection of photodesorbed water from a water ice surface provided proof of concept for this new technique. A significant amount of time and resources were put into the detection of methanol photodesorption, something that the literature has now shown to be an exceptionally difficult detection to make, but it has lead us to our study of CO desorption. The temperatures at which CO have been detected in TPD/irradiation experiments need further study, but have the potential to be significant in understanding the composition on interstellar ices in the ISM.

Chapter 3 The Millimeter/Submillimeter Spectrum of Propylene Oxide

3.1 Introduction

One of the most curious and elegant phenomena of molecular biology is nature's selection of specific enantiomers of chiral molecules, molecules that are nonsuperimposable mirror images of one another. For life on Earth to exist as it does today, it was a necessity for the biochemical makeup of organisms to develop homochirality, or chiral homogeniety [34]. One example is amino acids, the building blocks of proteins. The amino acids we know to exist in living organisms are of the L-type enantiomer, though the R-type enantiomer is of equal physical properties [35]. Several mechanisms have been proposed to elucidate the propagation and amplification of homochirality, usually by assuming a low initial enantiomeric excess (e.e.) [36, 37]. The particularly quizzical problem is how an e.e. comes to exist out of nature when chiral enantiomers share all the same chemical properties. Biochemists believe this process to have occurred from a racemic mixture of chiral molecules in a system of such complexity as an early Earth [36]; however, studies of chiral molecules in meteorites have shown an e.e. to exist in the Murchison meteorite [38]. A number of laboratory studies have shown that it is possible to amplify an e.e. in solution by exposure to circularly polarized light [39, 40]. While it is possible that chemistry occurring on these meteorites could have potentially created an e.e., it is also possible that the excess was created in the birth place of both meteorites and Earth: interstellar molecular clouds. If an e.e. could be formed in a molecular cloud, it could be inherited and amplified by its descendants, meteorites, comets, and planets alike. Studying chiral molecules in molecular clouds can give great insight into the origin of homochirality.

In 2016, propylene oxide (CH_3CHCH_2O) became the first chiral molecule detected in the interstellar medium by McGuire and Carroll et al. [15]. Three lines matching with previous laboratory spectroscopy [41] were detected at 12.1 GHz, 12.8 GHz, and 14.0 GHz towards Sagittarius B2(N) [15]. Propylene oxide consists of an oxygencontaining three membered ring with a methyl group extending from one of the carbons, thus making it chiral and subject to an internal rotation under a threefold barrier arising from the C_3 symmetry of the methyl group [41]. The tunneling through this barrier produces splitting of each rotational state into an A state and doubly-degenerate E states. The magnitude of this splitting is dependent on the energy of the rotational state, the torsional state of the molecule, and the barrier height [42]. The first microwave work on propylene oxide was conducted by Swalen and Herschbach [41]. They measured the spectrum up to 38 GHz. The barrier height was determined to be 895 cm^{-1} for the ground torsional state. Isotopic substitution studies were done with ¹³C [43] and deuterium [44] to further understand the structure of the molecule in the ground torsional state; these analyses did not consider the internal rotation. Infrared absorption [45-48] and Raman studies [49] have been done to further study the structure and internal barrier. A large area of focus in the previous studies of propylene oxide revolve around enantiomeric distinction by circular dichroism. Electronic circular dichroism has been investigated via experiment [50–53] and theory [54], and vibrational circular dichroism has also been investigated by experiment [55-57] and theory [58].

Extrapolated spectral predictions extending into the mm/submm frequency range are available for propylene oxide based on microwave spectra measured up to 110 GHz [59]. However, in the context of observational astronomy, confirmed line centers with an accuracy better than 1 MHz are crucial. Thus the major goal of the work presented here is to assist in the search for propylene oxide in the interstellar medium in order to untangle the mystery of the origin of homochirality. Another major goal is to improve upon the molecular constants and better understand the high barrier to internal rotation that the methyl rotor experiences.

Here I present the room temperature mm/submm spectrum of propylene oxide taken from 70 GHz to 1 THz. The SPFIT program of the CALPGM package [60] was used for the analysis of the A state transitions using an asymmetric top Hamiltonian with centrifugal distortion. The internal rotation of the methyl group was then treated using the XIAM program [61]. The combination of these two analyses has resulted in a fit with improved precision of the molecular constants over those in previous studies. Here we report the results of the laboratory work and associated spectral analysis, and provide a spectral line catalog for propylene oxide that extends to 1 THz. This extended catalog will enable more observational studies of propylene oxide in a variety of astronomical sources.

3.2 Experimental

All spectroscopy presented in this section was conducted in a 2.1 m single-pass direct-absorption flow cell at room temperature. Additional details of this spectrometer can be found in a previous study [62]. The propylene oxide was purchased from Acros Organics at a purity of 99%, and used without further purification. The ends of the flow cell were sealed by teflon lenses (f = 100 mm). The cell was evacuated by an Edwards 30 Two Stage rotary vane pump. Ultra high purity Ar from Nexair was bubbled through a liquid sample of propylene oxide, and the resultant vapor was directed into the cell. The pressure in the cell was maintained at 50 mTorr throughout the experiments by controlling the flow with the entry valve.

Propylene oxide spectra were collected from 70 GHz to 1 THz. The input microwave signal was generated by an Agilent Technologies E8257D analog signal generator with an internal frequency modulation at 75 kHz. The microwave signal was multiplied up to the desired frequency range by a Virginia Diodes S270 multiplier chain. A number of detectors were also used in these experiments depending on the specific frequency window. Virginia Diodes Zero Bias detectors (WR10, WR8, WR5.1, WR3.4) were used for the 70 GHz – 110 GHz, 110 GHz – 140 GHz, 140 GHz – 225 GHz, and 225 GHz – 325 GHz frequency windows, respectively. For all frequencies above 325 GHz, a QMC QFI/XBI InSb hot electron bolometer was used for detection. Regardless of the specific detector, the output signal was passed to a Stanford Research Systems model SR830 lock-in amplifier for 2f detection. The intensity output at each frequency point was collected via a digitizer card using a custom computer scanning routine.

Unique scan settings were used for each band. Due to the nature of the lock-in detection scheme, scans must be conducted point-by-point, thus the step size limits the acquisition time. A trade-off comes in the form of spectral resolution versus scanning time. A step size of 50 kHz was used in Band 3 (70 GHz – 110 GHz), 40 kHz in Band 4 (110 GHz – 140 GHz), 60 kHz in Band 5 (140 GHz – 225 GHz), 100 kHz in Band 6 (225 GHz – 325 GHz), 120 kHz in Band 7 (325 GHz – 445 GHz), and 135 kHz for Band 8a (445 GHz – 700 GHz) and Band 9 (700 GHz – 1 THz). For the shorter frequency windows, multiple averages were possible, but for larger windows it was impractical to take more than one average. The spectrum in Band 3 was averaged 4 times, Band 4 had only a single scan, Band 5 and Band 9.

3.3 Results and Discussion

Spectra collected from 70 GHz to 1 THz can be seen in Figures 3.1 - 3.7. The line density is large; for example, there is one line per 8 MHz observed in the Band 6 spectrum. Based on the average line densities for different bands, a conservative estimate of about 15,000 lines were observed between 70 GHz and 1 THz. In the



spectra, the strongest lines arise from R branches. A number of Q branches can also be seen buried in the forest of lines.

The average linewidth of the Band 6 (230 GHz – 320 GHz) lines is about 700 kHz. The Doppler linewidth increases moving up in frequency, ranging from 300 kHz in Band 3 (70 GHz – 110 GHz) up to 2.3 MHz near 1 THz. The signal-to-noise-ratio (SNR) also changed significantly band to band. A SNR of 500 was calculated for the strongest line around 100 GHz after 4 averages, whereas a SNR of about 5,000 was calculated for the strongest line around 900 GHz at a single average. This difference is primarily attributed to the use of the hot electron bolometer detector for higher frequency scans. The SNR was greatest at about 10,000 for the line at 336.027 GHz after a single average.

The assignment of the spectra was done using predictions generated by the SP-FIT/SPCAT program suite [60] using an asymmetric top Hamiltonian with a Watson A reduction. Visualization of the prediction overlaid on the experimental spectrum was done with the Sub-Millimeter Analysis Program (SMAP) (available at [63]). An A state fit generated from the work of Enye [59] in the microwave region provided an













insightful starting point for our assignment. The full A state assignment was achieved by iterative regeneration of SPFIT/SPCAT predictions using new assignments from incremental frequency bands. The final fit included 1152 A state lines in the ground torsional state yielding an RMS of 94 kHz; however, at higher $\tau = (K_a - K_c)$ values the fit began to diverge because of the greater effect of the internal motion splitting. The A state fit generated in SPFIT was invaluable in assigning the E states for the subsequent internal motion analysis in XIAM.

The A/E splitting was observed up to 300 GHz, at which point the A/E lines became blended together due to Doppler broadening. The magnitude of the splitting is on the order of hundreds of kHz to just over 1 MHz, depending on the specific transitions observed. One of the most revealing features of the splitting is shown in Figure 3.8. The resolved A/E splitting exhibited trends over a series of transitions of a given K_a as a function of J. These trends were useful in the assignment of A/E splittings in dense regions of the spectra. Additionally, similar trends were seen in the spectra analyzed by Swalen and Herschbach in which they demonstrated that propylene oxide ought be treated as a high barrier case [64]. Though some splittings of significantly greater magnitude were observed, which is indicative of higher torsional states, only the ground torsional state is analyzed here due to the line confusion of these higher energy vibrational states.

To fit the E states and quantify the barrier to internal rotation, the program XIAM [61] was used for the remainder of the analysis. XIAM uses a modified internal axes method [65] in which the Hamiltonian matrix is set up in the principal axis system, while the internal rotation operator is set up in an internal axis system. The resulting eigenvalues from the internal rotation operator are then transformed into the principal axis system and combined with the rest of the Hamiltonian matrix for the final result. The final fit includes the 17 parameters listed in Table 1. Given that the assignments went up to J = 70, sextic distortion constants were included. The internal rotational



observed for each of two separate branches within each K_a level.



Figure 3.9: A/E Splitting in Band 5. Upper Left: $37_{8,30} \leftarrow 37_{7,31}$, Lower Left 2 sets of A/E Splits: lower frequency: $38_{8,31} \leftarrow 38_{7,32}$ and higher frequency $40_{8,33} \leftarrow 40_{7,34}$, Upper Right 2 sets of A/E splits: lower frequency: $35_{8,28} \leftarrow 35_{7,29}$ and higher frequency: $32_{8,24} \leftarrow 32_{7,25}$, Lower Right: $36_{8,29} \leftarrow 36_{7,30}$.

part of the Hamiltonian is defined as

$$V(\alpha) = F(p_{\alpha} - \rho P_r)^2 + \frac{1}{2}V_3(1 - \cos 3\alpha) + \frac{1}{2}V_6(1 - \cos 6\alpha)$$
(3.1)

where P_r is the angular momentum vector along the ρ axis (defined to be the axis of greatest symmetry for the internal rotor) and F is the rotational constant of the torsional motion. The value of F_o for the final fit was held constant at 157.7631, a reasonable value for a methyl top. Propylene oxide appears to be in the limit where the V_6 term does not contribute significantly to the internal rotation barrier, an assumption which was used in previous studies as well [41]. Analysis including the V_6 term was done, but this did not improve the quality of the fit and was therefore ultimately not included in the final analysis. The final term used in the fit, δ , is the angle between the internal motion axis and the principle axis of the molecule. The fits generated for the A state by SPFIT and the barrier published by Herschbach and Swalen [64] were used as a starting point for this analysis.

The ground torsional state fit, under the $V_6 = 0$ assumption, included 1252 line

Parameter	Swalen and Herschbach[64]	This Work	Unit
A	18023.72 (10)	18027.271(51)	MHz
B	6682.12(10)	6678.736(50)	MHz
C	5951.48 (10)	5951.3816 (13)	MHz
D_J	2.97(50)	14.7073(19)	kHz
D_{JK}	4.2 (2.0)	-31.9081(53)	kHz
D_K	19.50 (50)	19.7306(35)	kHz
d_{j}		5.70622(89)	kHz
d_k		-10.3404(18)	kHz
H_J		0.0355(16)	Hz
H_{JK}		-0.1644(82)	Hz
H_{KJ}		0.216(11)	Hz
H_K		-0.0851(48)	Hz
h_j		0.01672(79)	Hz
h_{jk}		-0.0677(34)	Hz
h_k		0.0430(25)	Hz
F_o		157.7631(00)	GHz
V_T	895(5)	881(5)	cm^{-1}
δ		1.076(18)	radians

Table 3.1: Comparison of key constants from our study and previous work

assignments from 100 GHz to 1 THz and converged with a RMS of 110 kHz. This RMS is a reasonable value, as it is below the spectral resolution, and hence the frequency uncertainty, for the lines measured in the higher frequency bands. All of the lines included in this fit are lines that have not been measured in any previous studies. The A/E splitting included assignments up to J = 52 and to a frequency of 300 GHz, after which point separate A and E state assignments became difficult due to broadened lineshapes and line confusion. For the blended transitions at higher frequencies, where the A and E state lines could not be distinguished, the full set of A and E state components for a given set of lines were assigned to the same frequency.

The results of the analysis can be found in Table 3.1. The inclusion of additional centrifugal distortion constants changed the A and B rotational constants from the values reported by Herschbach and Swalen [64]. The quartic centrifugal distortion constants from the current work are 2-3 orders of magnitude higher precision than those previously reported. We are the first to determine the sextic centrifugal distor-

tion constants for this molecule. The barrier to internal rotation was determined to be 881 cm⁻¹, 14 cm⁻¹ lower than the original value calculated by Swalen and Herschbach, and within their published uncertainty. Overall, this fit is in good agreement with the results reported by Swalen and Herschbach, and offers an improvement in determination of the centrifugal distortion parameters.

In relation to astronomical observations, a plethora of lines have been detected in this study that can be used as targets for interstellar searches for propylene oxide, specifically searches that target star-forming regions. With the extension of the assignment up to 1 THz we open up a large spectral range that can now be probed with far-infrared telescopes. These powerful observational tools have the potential to give us much insight into the formation of chiral molecules in the interstellar medium.

3.4 Conclusion

We have presented the spectrum of propylene oxide from 70 GHz to 1 THz. The resultant spectral fit defines the ground torsional state of the molecule well, producing accurate line centers up to 1 THz and J < 70, and has improved on previous values of molecular constants. With our analysis of the A/E splitting we have calculated that the methyl group experiences a barrier to internal rotation of 881 cm⁻¹. It is our hope that with the spectra presented in this paper astronomical studies can progress in the search for propylene oxide in key regions of the interstellar medium.

Appendix A Ice Experiment

This appendix contains additional information pertaining to the results obtained in the experiments outlined in Chapters 2 and 3.

A.1 Temperature Programmed Desorption of Pure H_2O Ices

The following spectra (Figures A.1–A.7) show the scans taken at each temperature that were used to construct the plot shown in Figure 2.2.







Figure A.7: H_2O TPD 172 K

Fits generated by taking the second derivative of a Gaussian lineshape:

$$f(x) = \frac{ae^{-\frac{(b-x)^2}{2c^2}}(b^2 - 2bx - c^2 + x^2)}{c^4}$$
(A.1)

where f(x) models the intensity at a frequency x, a and c are fitting parameters relating to the peak height and width respectively, and b is the parameter for the peak center. The table below provides the fitting parameters for the above data where b = 556936 MHz.

		-
Temperature (K)	a (95% Conf. bounds)	c (95% Conf. bounds)
150	-5.27(-13.36, 2.822)	$0.7583 \ (0.3984, \ 1.118)$
152	-241.6 (-335.4, -147.7)	$0.8616 \ (0.75757, \ 0.9657)$
154	-307.4 (-412.3, -202.5)	$0.9815 \ (0.8766, \ 1.086)$
156	-432.9(-628.9, -237)	$0.9769\ (0.8384,\ 1.115)$
160	-541.5 (-710.1, -372.9)	0.9436(0.8517, 1.035)
166	-1929(-2139, -1720)	0.9548(0.9224, 0.9872)
172	-5066(-5281,-4852)	0.9309(0.9186, 0.9432)

Table A.1: Fit Data for H_2O TPD

The integrated intensity is given by:

$$\int_{-\infty}^{\infty} a e^{-\frac{(x-b)^2}{2c^2}} \, dx = a c \sqrt{2\pi} \tag{A.2}$$

where the parameters a, b, and c are the same parameters used in the fits. The fitting parameters can thereby be directly used to calculate an integrated intensity. The results for this analysis are given in Table A.2.

	2
Temperature (K)	Integrated Intensity (95% Conf. Interval)
150	$10.019 \ (16.0995)$
152	521.69(212.22)
154	756.20(270.42)
156	1060.1 (502.82)
160	1280.8(417.85)
166	4617.5 (525.38)
172	11823(524.39)

Table A.2: Integrated Intensities for H₂O TPD

A.2 Methanol Photolysis

The individual spectra taken for each $\rm H_2CO$ and $\rm CH_3OH$ line is shown in Figures A.8 and A.9.



As in the previous section the data is fit with the second derivative of a Gaussian lineshape. The fitting parameters are outlined in the tables below where b will be the frequency.

Table A.3: Fit Data for H_2CO produced from CH_3OH photolysis

	<u> </u>	5 1 7
Frequency (MHz)	a (95% Conf. bounds)	c (95% Conf. bounds)
509306	-188.5 (-206.9, -170.2)	$0.9683 \ (0.9383, \ 0.9982)$
509830	-410.3 (-443.9, -376.7)	$1.122 \ (1.093, \ 1.152)$
510155.7	-860.5 (-930.1, -791)	1.25 (1.217, 1.282)
510237.9	-965.3(-1041, -889.5))	1.26 (1.228, 1.292)

Table A.4: Fit Data for $\rm CH_3OH$ during $\rm CH_3OH$ photolysis

Frequency (MHz)	a (95% Conf. bounds)	c (95% Conf. bounds)
506153.3	-3590 (-3895, -3285)	$1.093 \ (1.063, \ 1.122)$
509564.6	-9110 (-10020, -8202)	$0.9796\ (0.9486,\ 1.011)$

Appendix B Propylene Oxide Experiment

B.1 Propylene Oxide Spectral Fitting using only V_3 barrier

This output files from the XIAM fitting program for propylene oxide presents the fitting setting, the fit parameters, the correlation matrix, the cofreedom matix, and the eigenvalue/eigenvector matix.

Rotational, Centrifugal Distortion, Internal Rotation Calculation (V2.5e) Holger Hartwig 08-Nov-96 (hartwig@phc.uni-kiel.de)

Please cite: H.Hartwig and H.Dreizler, Z.Naturforsch, 51a (1996) 923.

Calculation date and time: Type help now for the list of parameters : -Propylene Oxide: AJ Mesko; Prediction Attempt 1

nz	vk	100	print		4	eval	0	dfreq	0
or	ger	0	ints		0	maxm	8	woods	33
nda	ata	0	nfold		3	spin	0	ntop	1
ad	jf	0	maxvm		0	aprint	75	xprint	20
nc	vcl	100	svderr		0	fitscl	0	reduct	0
ro	, fit .	000000	00D+00	eps		.100000D-11	d	efer	.100000D-04
we	igf .	000000	00D+00	convg		.9990000D+00	1	ambda	.100000D-04
fre	eq_1 .	700000	00D+02	freq_h		.300000D+03	1:	imit	.1000000D+00
ter	mp.	298000	00D+03	1-					
Using	g Watson	A Rec	duction						
assur	ned size	b	. 1						
\\ se	et (adj	or 16	5)						
\\ se	et (adj	or 8	3)						
\\ se	et (adj	or 1	L)						
\\ a	dj 1: a	djust	F accor	ding to	rl	ho, beta and g	gamma	a	
\\ a	dj 8:a	djust	rho acc	ording	to	$F0 = 1/(2 I_a$	lph	a)	
\\ a	dj 16: a	djust	beta an	d gamma	. 8	according delt	:a +	epsil	
new a	adj: 2	5							
BJ		12.35	53023550						
BK		-6.40	01626440						
B-		5.67	70877120						
DJ		2.93	L0760E-6						
DJK		3.46	69500E-6						
DK		19.87	74200E-6						
dj		0.19	91890E-6						
dk		2.58	35700E-6						
H_J		0.00	01840E-9						
HJK		0.00	01000E-9						
HKJ		0.00	01000E-9						
H_K		0.00	01000E-9						
h_j		0.00	01000E-9						
hjk		-0.02	20550E-9						
h_k		0.00	01000E-9						
mu_x		0.98	50000000						
mu_y		1.67	70000000						
mu_z		0.56	50000000						
\F		166.1	16064534						
V1n		5000	0.000000						
\rho		0.05	57722269						
\beta		0.93	30417129						
FO		157.76	53100000						
delta	a	0.43	17130400						
fit	0.1D+00	0.1D+	+01 B.I			1.00			
fit	0.1D+00	0.1D-	+01 BK			1.00			
fit	0.1D+00	0.1D-	+01 B-			1.00			
fit	0.1D+00	0.1D-	+01 D.J			1.00			
fit	0.1D+00	0.1D+	+01 DJ	к		1.00			
fit	0.1D+00	0.1D-	+01 DK			1.00			
fit	0.1D+00	0.1D-	+01 di			1.00			
fit	0.1D+00	0.1D-	+01 dk			1.00			
fit	0.1D+00	0.1D-	+01 H	J		1.00			
fit	0.1D+00	0.1D-	+01 H.I	ĸ		1.00			
fit	0.1D+00	0.1D-	+01 HK	J		1.00			
						-			

dqx 0.1D+00 0.1D+01 1.00 delta_1 /Δ S 0 . /E s 1 V O ndata 1252 Data Points1252 Splittings 0 Effective Data Points 12.5 \\Lines and Iterations Omitted For Space Lines fitted = 1252 = [(sum(o-c)^2)/n]^(1/2) = [(sum((o-c)/err)^2)/n]^(1/2) MICROWAVE RMS = 0.109325 MHz RMS ERROR = 1.093247 RMS deviations (MHz). B and V sorted V n splittings MHz V n abs. freq. MHz В В 1 11252 0.109325 0.110809 Parameters and Errors 12.353003124 { 0.000000738} -6.401621508 { 0.000000616} BJ BK B-5.674267619 { 0.000050411} 14.707253E-6 { 0.001891E-6} -31.908106E-6 { 0.005291E-6} DJ DJK 19.730649E-6 { 0.003535E-6} 5.706226E-6 { 0.000896E-6} DK dj dk -10.340473E-6 { 0.001821E-6} Vss 0.000000E-9 { 0.000000E-9 { fixed } fixed } Vcc H_J 0.035494E-9 { 0.001594E-9} -0.164406E-9 { 0.008165E-9} 35.49351714E-12 1.59379493E-12 -164.40566514E-12 8.16486773E-12 HJK 0.215596E-9 { 0.011329E-9} 215.59601296E-12 11.32947019E-12 HKJ -0.085150E-9 { 0.004756E-9} 0.016721E-9 { 0.000790E-9} H_K -85.15013785E-12 4.75603116E-12 16.72146576E-12 790.34987433E-15 hi -0.067696E-9 { 0.003404E-9} -67.69575346E-12 3.40441226E-12 hjk 0.042987E-9 { 0.002469E-9} h_k 42.98709394E-12 2.46880532E-12 0.950000000 { fixed } mu_x 1.670000000 { mu_y fixed mu_z 0.560000000 { fixed 3 0.00000E-9 { fixed P_x P_y 0.00000E-9 { fixed P_z 0.00000E-9 { fixed } 174.700494695 { ١F derived} V1n 26414.559060 { 145.808100} 0.00000E-9 { V2n fixed } 0.102103591 { \rho derived} \beta 1.394147354 { derived} 0.00000E-9 { \gamma derived} FO 157.763100000 { fixed } epsil 0.00000E-9 { fixed 1.075104421 { 0.017726682} delta 0.110119 MHz Standard Deviation ----- B = 1 Rotational Constants and Errors (in GHz) 18.027270744 B_x 0.000050634 В_у 6.678735505 0.000050197 5.951381616 B_z 0.000001298 Ray's kappa -0.87954 157,763100000 F0(calc) 0.000000000 I_alpha 3.203404789 <(i,x) <(i,y) <(i,z) 0.00000000 28.4011 90.0000 61.5989 d<(i,x) d<(i,y) d<(i,z) 1.0157 0.0000 1.0157 10.540236 kj +/- 0.058182 kj 881.094726 cm +/- 4.8636 cm Vln_1 2.517430 kcal +/- 0.013896 kcal s= 67.199604 Errors of fitted linear combinations 0.00000738 0.00000616 0.000050411 0.00000002 0.00000005 0.00000004 0.00000001 0.00000002 0.000000000 0.000000000 0.00000000 0.00000000 0.000000000 0.00000000 0.00000000 0.017726682 145.808100232 Correlation Matrix of fitted linear combinations BJ 1.000 -0.838 1.000 BK 0.296 -0.016 1.000 B-0.788 -0.830 -0.231 1.000 -0.627 0.757 0.374 -0.962 1.000 DJ DJK

fit 0.1D+00 0.1D+01

fit 0.1D+00 0.1D+01

fit 0.1D+00 0.1D+01

dqx 0.1D+00 0.1D+01

0.1D+00 0.1D+01

fit

H_K

h_j

h_k

______ hjk

Vin 1

1.00

1.00

1.00

1.00

1.00

39

0.545 -0.674 -0.422 0.921 -0.989 DK 1.000 0.738 -0.799 -0.170 0 963 -0 961 0.937 1.000 dj dk -0.615 0.716 0.350 -0.949 0.984 -0.973 -0.964 1.000 0.515 -0.642 -0.523 0.927 0.969 0.963 0.898 -0.961 1.000 Н_С HIK -0.409 0.565 0.601 -0.873 0.946 -0.955 -0.854 0.938 -0.991 1.000 HKJ 0.938 0.978 -0.997 0.348 -0.510 -0.645 0.835 -0.921 0.815 -0.914 1.000 -0.799 0.988 -0.997 H_F -0.295 0.465 0.683 0.892 -0.913 -0.776 0.886 -0.962 1.000 0.489 -0.624 -0.523 0.914 -0.970 0.970 0.907 -0.967 0.996 -0.992 0.981 -0.965 1.000 h_j 0.301 -0.471 0.781 -0.679 0.803 -0.894 0.913 -0.893 0.965 -0.988 0.995 -0.996 0.968 1.000 h_k hjk -0.397 0.551 0.608 -0.865 0.939 -0.949 -0.849 0.939 -0.989 0.999 -0.996 0.988 -0.991 -0.992 1.000 V1n 1 0.546 -0.331 0.857 0.083 0.046 -0.098 0.165 0.029 -0.246 0.334 -0.391 0.441 -0.240 -0.436 0.345 1.000 0.337 -0.062 0.997 -0.191 0.334 -0.383 -0.125 0.310 -0.493 0.574 -0.621 0.661 -0.492 -0.657 0.582 0.896 1.000 delta strongest correlation between 15 and 10 (0.9986) Freedom Cofreedom Matrix of linear comb 0.093 BJ ΒK 0.641 0.109 B-0.969 0.994 0.001 DJ DJK 0.977 0.485 0.649 0 010 0.563 0.694 0.371 0.004 DK 0.735 0.626 0.952 0.459 0.154 0.008 dj dk 0.802 0.775 0.693 0.505 0.524 0.589 0.015 0.855 0.775 0.943 0.534 0.386 0.440 0.479 0.030 H_J 0.643 0.771 0.916 0.224 0.357 0.386 0.645 0.502 0.004 HJK 0.752 0.708 0.894 0.474 0.235 0.245 0.719 0.538 0.245 0.001 0.783 HKJ 0.741 0.873 0.536 0.312 0.241 0.756 0.585 0.328 0.112 0.001 0.584 0.807 0 769 0.854 0.381 0.292 0.788 0.628 0.392 0.193 0.083 0 002 H_K h_j 0.910 0.884 0.777 0.617 0.492 0.488 0.362 0.451 0.281 0.347 0.435 0.504 0.006 0.880 0.932 0.846 0.725 0.598 0.564 0.744 0.456 0.482 0.345 0.272 0.264 0.446 h_k 0.014 hjk 0.925 0.862 0.872 0.676 0.538 0.517 0.672 0.312 0.369 0.211 0.273 0.358 0.312 0.190 0.005 0.936 V1n 1 0.907 0.966 0.110 0.989 0.999 0.998 0.692 0.974 0.976 0.971 0.959 0.947 0.828 0.947 0.005 0.962 0.993 0.018 delta_ 0.982 0.971 0.961 0.695 0.950 0.925 0.905 0.885 0.866 0.785 0.857 0.882 0.097 0.001 minimum cofreedom between 17 and 3 (0.0177) Eigenvalues and Eigenvector Matrix of SVD-FIT 0.236343D-06 -0.001 0.002 0.392-0.033 0.087-0.052-0.020 0.012-0.114 0.470-0.577 0.222-0.068-0.033 0.085 0.058 0.449 0.100198D-05 $-0.009 \hspace{0.1cm} 0.006 - 0.494 - 0.067 \hspace{0.1cm} 0.133 - 0.071 - 0.048 \hspace{0.1cm} 0.020 - 0.118 \hspace{0.1cm} 0.382 - 0.390 \hspace{0.1cm} 0.123 - 0.072 - 0.019 \hspace{0.1cm} 0.067 - 0.127 - 0.610 \hspace{0.1cm} 0.610 \hspace{0.1cm} 0.067 - 0.127 - 0.610 \hspace{0.1cm} 0.067 \hspace{0.1cm} \hspace{0.057} 0.$ 0.776595D-04 0.033-0.037-0.424 0.197-0.386 0.182 0.138-0.044 0.134-0.123-0.242 0.227 0.079-0.026-0.012 0.632 0.159 0.235074D-03 -0.041 0.040-0.252-0.278 0.248 0.006-0.074 0.016-0.360 0.357 0.348-0.359-0.130 0.026 0.063 0.461 0.218 0.945032D-03 -0.074 0.011 0.118-0.345-0.476 0.621 0.030-0.015-0.401 0.045 0.078 0.144-0.073-0.039 0.101-0.182-0.091 0.221019D-02 0.137-0.105 0.055 0.548-0.364 0.054-0.099 0.062 0.138 0.351 0.104-0.391-0.287-0.101 0.329-0.090-0.044 0.508526D-02 -0.051 0.011-0.127-0.139-0.020-0.088-0.697 0.181 0.041-0.339-0.075 0.177-0.473-0.016 0.204 0.003 0.127 0.927874D-02 -0.073-0.259 0.031-0.245-0.482-0.568 0.079-0.120-0.279-0.160-0.234-0.345-0.024 0.032-0.106 0.000-0.024 0.071-0.004-0.019 0.164-0.086 0.117-0.262-0.328-0.007 0.179 0.027 0.021-0.234 0.475-0.673-0.051 0.024 0.129164D-01 0.490536D-01 0.223 0.279-0.092-0.139-0.014 0.126-0.198-0.528 0.263 0.029-0.140-0.280 0.075-0.555-0.115-0.089 0.091 0.127599D+00 0.657-0.047-0.020 0.206 0.115-0.079-0.070-0.311-0.462-0.152 0.062 0.179 0.006-0.359-0.009-0.021 0.018 0.190914D+00 -0.310 0.427 0.109 0.172 0.021-0.202 0.355-0.351-0.146-0.098 0.105 0.218-0.479 0.088 0.203 0.097-0.111 0.359015D+00 0.331 0.714-0.032-0.007-0.060 0.074 0.024 0.258-0.096-0.168-0.288-0.358 0.063 0.219-0.014-0.041 0.032 0.519877D+00 0.341-0.212 0.280-0.315 0.167 0.207 0.217-0.056 0.315-0.115-0.169-0.195-0.441-0.050-0.050 0.286-0.282 0.165411D+01 -0.288 0.053 0.202 0.274 0.043 0.039-0.034 0.445-0.261-0.062-0.046-0.041-0.123-0.441-0.480 0.200-0.201 0.462189D+01 0.053 0.198 0.418-0.059-0.167-0.151-0.402-0.124 0.059 0.145 0.130 0.122 0.352 0.083 0.127 0.417-0.418

B.2 Propylene Oxide Spectral Assignments

0.267 0.245-0.092-0.290-0.300-0.301 0.144 0.235 0.288 0.304 0.303 0.299-0.164-0.250-0.237-0.094 0.092

The file below presents the assigned spectral lines used in the above fit. In the layout of the file the first set of quantum numbers correspond the J, K_a , and K_c of the upper state and the second set correspond to the lower state. The values that follow the lower quantum state describe the state of internal motion of the line. S 1 tags the line as an A state and S 2 tags the line as E states. The spectral line center follows that, and the error is last.

Propylene Oxide Spectral Line Assignments (J Ka Kc)u (J Ka Kc)l IntMot Frea Unc. MHz 170333.0835 MHz 28 7 21 S 2 = 28 8 20 Err .1 8 20 S 1 170333.8651 MHz 28 28 7 21 -S 1 = 29 8 21 29 7 22 169428,4514 MHz Err .1

0.944680D+01

29	8 21	29 7 22	S 2 =	169427.6210 MHz	Err .1
30	8 22	30 7 23	S 2 =	168360 2004 MHz	Err 1
20	0 22	20 7 20	01 -	160060.2004 MHz	Eng 1
30	0 22	30 7 23	51 =	100301.05/0 MHZ	Err .1
31	8 23	31 7 24	S 1 =	167095.1823 MHz	Err .1
31	8 23	31 7 24	S 2 =	167094.3012 MHz	Err .1
32	8 24	32 7 25	S 1 =	165586.0651 MHz	Err .1
32	8 24	32 7 25	S 2 =	165585 1756 MHz	Err 1
22	0 05	22 7 20	<u> </u>	162770 4671 MIL	Eng 1
33	0 25	33 / 20	52 =	163//9.46/1 MHZ	Err .1
33	8 25	33 7 26	S 1 =	163780.3902 MHz	Err .1
34	8 26	34 7 27	S 2 =	161617.2736 MHz	Err .1
34	8 26	34 7 27	S 1 =	161618 2228 MHz	Err 1
25	0 07	25 7 00	S 1 -	150026 0074 MHm	Emm 1
35	0 21	33 7 20	31 -	159030.9274 HHz	EII .I
35	8 27	35 7 28	S 2 =	159035.9338 MHz	Err .1
38	8 30	38 7 31	S 1 =	148300.3773 MHz	Err .1
38	8 30	38 7 31	S 2 =	148299.2164 MHz	Err .1
33	9 24	33 8 25	S 1 =	192226 6861 MHz	Err 1
33	0 21	33 8 25	s 2 =	1022220100001 MHz	Err 1
00	0 24	00 0 20	32 -	192220.9291 MHZ	
36	9 27	36 8 28	S 1 =	188861.5759 MHZ	Err .1
36	9 27	36 8 28	S 2 =	188860.7380 MHz	Err .1
37	9 28	37 8 29	S 1 =	187364.2904 MHz	Err .1
37	9 28	37 8 29	S 2 =	187363.4294 MHz	Err .1
38	9 29	38 8 30	52 =	185609 5824 MHz	Frr 1
00	0 00	00 0 00	52 -	105003.5024 MIL	EII .1
38	9 29	38 8 30	S 1 =	185610.4827 MHZ	Err .1
40	9 31	40 8 32	S 2 =	181111.3263 MHz	Err .1
40	9 31	40 8 32	S 1 =	181112.2536 MHz	Err .1
41	9 32	41 8 33	S 1 =	178243.7554 MHz	Err .1
41	9 32	41 8 33	S 2 =	178242.7899 MHz	Err .1
40	0 22	10 0 24	e o -	174990 1716 MUm	Emm 1
42	9 33	42 0 34	32 -	174000.1710 MHZ	EII .1
42	9 33	42 8 34	S 1 =	1/4881.1/16 MHz	Err .1
43	9 34	43 8 35	S 1 =	170979.2516 MHz	Err .1
43	9 34	43 8 35	S 2 =	170978.2066 MHz	Err .1
44	9 35	44 8 36	S 1 =	166522.0085 MHz	Err .1
11	0.25	11 0 00	80 -	166500 0100 MUm	Enn 1
44	9 35	44 0 30	52 =	100520.9109 MHZ	Err .1
45	9 36	45 8 37	S 2 =	161537.3606 MHz	Err .1
45	9 36	45 8 37	S 1 =	161538.5063 MHz	Err .1
47	9 38	47 8 39	S 2 =	150407.5990 MHz	Err .1
47	9 38	47 8 39	S 1 =	150408 7282 MHz	Err 1
50	10 10	E0 0 41	01 -	104602 0002 MIL-	Eng 1
50	10 40	50 9 41	51 =	164695.0605 MHZ	Err .1
50	10 40	50 9 41	S 2 =	184692.0380 MHz	Err .1
51	10 41	51 9 42	S 1 =	179362.6734 MHz	Err .1
51	10 41	51 9 42	S 2 =	179361.6232 MHz	Err .1
52	10 42	52 9 43	S 2 =	173544 3751 MHz	Err 1
50	10 10	FO 0 43	01 -	173545 4006 MIL-	Eng 1
52	10 42	52 9 43	31 -	173545.4800 MHZ	EII .I
49	10 39	49 9 40	S 1 =	189461.2385 MHz	Err .1
49	10 39	49 9 40	S 2 =	189460.2353 MHz	Err .1
47	10 37	47 9 38	S 2 =	197277.1871 MHz	Err .1
47	10 37	47 9 38	S 1 =	197278 1046 MHz	Err 1
10	10 25	45 0 26	C 1 -	202076 2167 MU	Enn 1
40	10 35	45 9 30	51 -	203070.2107 MHZ	EII .1
45	10 35	45 9 36	S 2 =	203075.3504 MHz	Err .1
44	10 34	44 9 35	S 1 =	205371.7004 MHz	Err .1
44	10 34	44 9 35	S 2 =	205370.8591 MHz	Err .1
43	10 33	43 9 34	S 2 =	207346 3044 MHz	Err 1
40	10 22	10 0 01	01 -	207247 1200 MIL	Eng 1
43	10 33	43 9 34	51 =	207347.1302 MHZ	Err .1
42	10 32	42 9 33	S 2 =	209055.3664 MHz	Err .1
42	10 32	42 9 33	S 1 =	209056.1710 MHz	Err .1
40	10 30	40 9 31	S 2 =	211847.7598 MHz	Err .1
40	10 30	40 9 31	S 1 =	211848 5302 MHz	Err 1
00	0 10	06 7 00	01 -	171017 4010 MIL-	Eng 1
20	0 19	20 7 20	31 -	1/191/.4912 MHZ	EII .I
26	8 19	26 7 20	S 2 =	171916.2273 MHz	Err .1
28	8 21	28 7 22	S 1 =	170731.2016 MHz	Err .1
28	8 21	28 7 22	S 2 =	170730.2279 MHz	Err .1
29	8 22	29 7 23	S 1 =	170057.8952 MHz	Err .1
20	8 22	20 7 23	s 2 =	170056 9780 MHz	Err 1
20	0 22	20 7 04	0 1 -	160227 ACEO MU	Enn 4
30	0 23	30 7 24	51 =	103001.4008 MHZ	L. 113
30	в 23	30 7 24	s 2 =	109330.5/53 MHz	Err .1
31	8 24	31 7 25	S 2 =	168578.4261 MHz	Err .1
31	8 24	31 7 25	S 1 =	168579.2948 MHz	Err .1
32	8 25	32 7 26	S 1 =	167797.1844 MHz	Err .1
32	8 25	32 7 26	S 2 =	167796 3249 MH-	Err 1
22	0 20	02 1 20	5 <u>2</u> -	167000 2400 MT	Ener (
33	8 26	33 (27	s 2 =	10/009.3436 MHz	Err .1
33	8 26	33 7 27	S 1 =	167010.1846 MHz	Err .1
34	8 27	34 7 28	S 1 =	166242.6838 MHz	Err .1
34	8 27	34 7 28	S 2 =	166241.8521 MHz	Err .1
35	8 28	35 7 20	S 1 -	165525 0947 MP~	Err 1
00	0 20	00 1 20	51 -	100020.094/ FINZ	En i
35	8 28	35 7 29	s 2 =	165524.2748 MHz	Err .1
36	8 29	36 7 30	S 1 =	164893.1373 MHz	Err .1
36	8 29	36 7 30	S 2 =	164892.3337 MHz	Err .1
37	8 30	37 7 31	S 2 =	164386.7558 MHz	Err .1
37	8 30	37 7 31	S 1 =	164387 5500 MU~	Frr 1
31	0 30	00 7 00	5 I =	101007.0002 MHZ	
38	8 31 8	JU (32	s 2 =	104U51.9611 MHz	Err .1
38	8 31	38 7 32	S 1 =	164052.6825 MHz	Err .1
40	8 33	40 7 34	S 2 =	164082.4752 MHz	Err .1
40	8 33	40 7 34	S 1 =	164083 1760 MH-	Err 1
22	9.25	33 8 26	S 1 =	192548 8010 MU~	Frr 1
20	0 05		5 I -	100547 0700 M	Ener (
33	9 25	JJ 8 26	52 =	132341.8/06 MHz	Err .1
34	9 26	34 8 27	S 1 =	191762.6970 MHz	Err .1
34	9 26	34 8 27	S 2 =	191761.8179 MHz	Err .1
35	9 27	35 8 28	S 1 =	190920.3607 MHz	Err .1
35	9 27	35 8 28	S 2 =	190919.5098 MH-	Err 1
50		55 0 20	~ ~ -	100007 7000 MU	
20	0 00	26 0 00			L/30300
36	9 28	36 8 29	S 1 =	190027.7969 MHZ	Err .1
36 36	9 28 9 28	36 8 29 36 8 29	S 1 = S 2 =	190027.7969 MHZ 190026.9490 MHz	Err .1 Err .1

37	9	29	3	7	8	30	S	2	2	=	189093.6	650	MHz	Err	.1
38	9	30	3	3	8	31	S	2	2	=	188133.6	6841	MHz	Err	.1
38	9	30	3	3	8	31	S	1	L	=	188134.5	5061	MHz	Err	.1
39	9	31	3	Э	8	32	S	1	L	=	187166.6	6083	MHz	Err	.1
39	9	31	3	Э	8	32	S	2	2	=	187165.7	972	MHz	Err	.1
40	9	32	4	С	8	33	S	1	L	=	186215.0	057	MHz	Err	.1
40	9	32	4	С	8	33	S	2	2	=	186214.2	2038	MHz	Err	.1
41	9	33	4	1	8	34	S	1	L	=	185309.7	469	MHz	Err	.1
41	9	33	4	1	8	34	S	2	2	=	185308.9	9571	MHz	Err	.1
42	9	34	4	2	8	35	S	1	L	=	184485.9	9481	MHz	Err	.1
42	9	34	4	2	8	35	S	2	2	=	184485.1	730	MHz	Err	.1
43	9	35	4	3	8	36	s	2	2	=	183783.2	2673	MHz	Err	.1
43	9	35	4	3	8	36	s	1		=	183784 (1222	MHz	Err	1
10	å	36	1	1	8	37	g		5	-	183247 3	2070	MH-7	Err	1
11	å	36	1	1	8	37	g	1	1	-	183248 (1426	MHZ	Err	1
45	å	37	1	5	8	38	g		5	-	1820240.0	170	MHZ	Err	1
45	9	37		5	8	38	2	1		_	182024.1	2670	MH	Err	.1
40	9	20	4	, ,	0	20	د م	4			100060 0	2220	MIL-	EII	• •
40	9	30	4	2	0	39	2			-	102002.2	2339	MIL	Err	• 1
40	9	38	4	2	8	39	5	2	2	=	182861.5	010	MHZ	Err	.1
47	9	39	4	-	8	40	5	1		=	183106.9	939	MHZ	Err	.1
47	9	39	4	(8	40	5	4	2	=	183106.3	5904	MHZ	Err	.1
49	10	40	4	9	9	41	5	Ż	2	=	202893.5	5742	MHZ	Err	• 1
49	10	40	4	9	9	41	S	1	L	=	202894.2	2936	MHz	Err	.1
48	10	39	4	3	9	40	S	1	L	=	203787.3	3994	MHz	Err	.1
48	10	39	4	3	9	40	S	2	2	=	203786.6	5581	MHz	Err	.1
47	10	38	4	7	9	39	S	2	2	=	204796.3	3017	MHz	Err	.1
47	10	38	4	7	9	39	S	1	L	=	204797.0)427	MHz	Err	.1
46	10	37	4	6	9	38	S	1	L	=	205883.7	7525	MHz	Err	.1
46	10	37	4	6	9	38	S	2	2	=	205882.9	9870	MHz	Err	.1
45	10	36	4	5	9	37	S	2	2	=	207011.7	7516	MHz	Err	.1
45	10	36	4	5	9	37	S	1	L	=	207012.5	5149	MHz	Err	.1
44	10	35	4	1	9	36	S	2	2	=	208153.4	1005	MHz	Err	.1
44	10	35	4	1	9	36	S	1	L	=	208154.1	520	MHz	Err	.1
42	10	33	4	2	9	34	S	1	L	=	210385.7	7003	MHz	Err	.1
42	10	33	4	2	9	34	S	2	2	=	210384.9	9164	MHz	Err	.1
41	10	32	4	1	9	33	S	1	L	=	211443.1	580	MHz	Err	.1
41	10	32	4	1	9	33	S	2	2	=	211442.3	3689	MHz	Err	.1
40	10	31	4	0	9	32	S	1		=	212447.5	5308	MHz	Err	.1
40	10	31	4	2	9	32	s	-	5	=	212446.7	2227	MHz	Err	1
36	10	27	3	3	9	28	s	ŝ	5	=	215848.8	3275	MHz	Err	1
36	10	27	3	3	à	28	s	1		=	215849 8	2488	MHZ	Frr	1
37	10	28	3	7	à	20	s	5	5	=	215093 1	508	MHZ	Frr	1
37	10	20	3.	7	0	20	g	1		-	215000.1	1786	MHZ	Err	1
20	10	20	2	5	0	20	0				210004.0	076	MUG	Enn	. 1
20	10	29	2	5	9	20	0	4	s 1	-	2142/4.3	012	MUG	EII	.1
20	10	29	2	5	9	21	0				2142/0.1	740	MIL-	EII	• •
39	17	30	3	9 	10	31	د م	4		-	213391.7	01	MU	Err	.1
40	17	23	3		10	21	2	4	2	-	90341.51	21	MIL	Err	• 1
40	17	23	3	9 1	18	21	5	1	1	=	98342.14	11	MHZ	Err	.1
40	17	24	3	9 1	18	21	5	1	1	=	98342.14		MHZ	Err	.1
40	17	23	3	9 1	18	22	S	1	1	=	98342.14	11	MHz	Err	.1
40	17	24	3	9 1	18	22	S	1		=	98342.14	11	MHz	Err	.1
40	17	24	3	9 1	18	22	S	2	2	=	98342.14	11	MHz	Err	.1
29	11	19	2	3 1	12	17	S	2	2	=	99684.75	61	MHz	Err	.1
29	11	19	2	3 1	12	17	S	1	L	=	99684.75	561	MHz	Err	.1
29	11	19	2	3 1	12	16	S	1	L	=	99684.75	561	MHz	Err	.1
29	11	18	2	3 1	12	17	S	1	L	=	99684.75	561	MHz	Err	.1
29	11	18	2	3 1	12	16	S	1	L	=	99684.75	561	MHz	Err	.1
29	11	18	2	3 1	12	16	S	2	2	=	99685.67	18	MHz	Err	.1
31	12	20	3	0 1	13	18	S	2	2	=	101589.3	3785	MHz	Err	.1
31	12	20	3	0 1	13	17	S	1	L	=	101589.3	3785	MHz	Err	.1
31	12	19	3	0 1	13	18	S	1	L	=	101589.3	3785	MHz	Err	.1
31	12	19	3	0 1	13	17	S	1	L	=	101589.3	3785	MHz	Err	.1
31	12	20	3	0 1	13	18	S	1	L	=	101590.1	785	MHz	Err	.1
31	12	19	3	0 1	13	17	S	2	2	=	101590.1	785	MHz	Err	.1
31	12	20	3	0 1	13	18	S	2	2	=	101589.3	3785	MHz	Err	.1
31	12	20	3	0 1	13	18	S	1	L	=	101589.3	3785	MHz	Err	.1
31	12	20	3	0 1	13	17	S	1	L	=	101589.3	3785	MHz	Err	.1
31	12	19	3) :	13	18	S	1	L	=	101589.3	3785	MHz	Err	. 1
31	12	19	3	0 1	13	17	S	1	L	=	101589.3	3785	MHz	Err	.1
31	12	19	3	0 1	13	17	S	2	2	=	101590.1	785	MHz	Err	.1
39	10	30	3	Э	9	31	S	1	L	=	213392.6	5022	MHz	Err	.1
17	4	14	1	6	5	11	S	1	L	=	112134.9	9298	MHz	Err	.1
30	11	20	2	9 :	12	18	S	1	L	=	112612.7	394	MHz	Err	.1
30	11	20	2	э :	12	17	S	1	L	=	112612.7	394	MHz	Err	.1
30	11	19	2	9 1	12	17	s	1	L	=	112612.7	394	MHz	Err	.1
30	11	19	2	9 1	12	18	.5	1	L	=	112612	394	MHz	Err	.1
21	1	20	2	1	0	21	s	1	L	=	113041 8	3455	MHz	Err	.1
9	2	8		3	2	7	.5	1	L	=	113085	3391	MHz	Err	.1
24	2	22	2	1	ĩ	23	2	1	I	=	113149	2753	MHZ	Err	.1
<u>_</u>	1	_~~	2	3	ō	8	2	1	1	=	113153 1	065	MH-7	Err	1
0	7	3		2	7	2 2	0	4	-	-	113828 0	385	MH-7	Frr	. 1
a	7	2		R	7	1	2	1	Ì	=	113828 1	385	MH-7	Err	. 1
<i>3</i>	י ס	27		2	' 2	1 C	د ۲	4		-	11/055	1000	MU~	Err	• 1
3	2	6		2	с С	5	د ہ	4		-	114/00.2	5//	MH-2	Err	. 1
9 10	10	0 4		ر ۱۰	د 10	о О	5	1		-	115220 (170	nnz MU-	LL F	• 1
10	10	T	1	± 1	10	2	5	1		_	115220 (170	nnz Mu-	Eff	• 1
13	13	0	14	± 1	12	3 7	S	1	L	-	115339.0	11/6	nnZ MU	Err E	.1
9	1	8		5	1	1	S	1	L	=	115/63.9	1025	rinz	Err	.1
19	5	14	1	5	6	13	S	1	L	=	115813.4	1099	MI	Err	.1
9	-2	(5	2	6	S	1	L	=	110227.1	329	rinz	Err	.1
			1	n i	6	12	S	- 1		=	116479.1	066	- 1 L I	lain no	1
1/	4	13	-		2	~~		1					PIEZ NE	511	• •
17 24	4 3	13	2	4	2	23	S	1	1	=	116999.8	3411	MHz	Err	.1

6	2	4	5	1	5	S	1	=	118659.7268	MHz	Err	.1
22	1	21	22	0	22	S	1	=	119193.4365	MHz	Err	.1
10	0	10	9	1	9	S	1	=	119747.6982	MHz	Err	.1
5	3		-	2	2	9	1	-	101/10 /880	MH7	Err	1
10	1	10		- 1	0		1	_	101640 6050	MUG	Enn	. 1
10	1	10	9	1	9	2	1	-	121040.0050	MAZ	Err	• 1
10	1	10	9	0	9	S	1	=	124268.8223	MHZ	Err	.1
18	4	15	17	5	12	S	1	=	124834.8227	MHz	Err	.1
23	1	22	23	0	23	S	1	=	125297.3759	MHz	Err	.1
10	4	7	9	4	6	S	1	=	126742.6109	MHz	Err	.1
10	3	8	9	3	7	S	1	=	126746 8818	MHz	Err	. 1
17	6	11	17	5	10		Î.	_	106740 2642	MUG	Enn	
11	0	11	17	5	12	2	1	-	120/40.3543	MINZ	Err	• 1
17	6	12	17	5	13	S	1	=	127054.8020	MHZ	Err	.1
16	6	10	16	5	11	S	1	=	127206.7876	MHz	Err	.1
16	6	11	16	5	12	S	1	=	127377.5839	MHz	Err	.1
10	3	7	9	3	6	S	1	=	127474.2997	MHz	Err	.1
17	3	15	16	4	12	S	1	=	127518 7136	MH7	Frr	1
20	6	25	20		26		1	_	107567 0000	MUG	Enn	. 1
30	0	20	30	5	20	5	1	-	127507.0080	PIEZ	EII	• 1
15	6	9	15	5	10	S	1	=	12/56/.9332	MHZ	Err	.1
15	6	10	15	5	11	S	1	=	127659.0079	MHz	Err	.1
14	6	8	14	5	9	S	1	=	127852.2198	MHz	Err	.1
14	6	9	14	5	10	S	1	=	127898.4565	MHz	Err	.1
13	6	7	13	5	8	S	1	=	128075.4552	MHz	Err	.1
13	6	8	13	5	a	S	1	=	128097 5476	MH7	Frr	1
10	5	10	10	0		2	1	_	120037.3470	MIL	DI I	• •
20	5	10	19	6	14	5	1	=	128098.8015	MHZ	Err	• 1
10	1	9	9	1	8	S	1	=	128226.0831	MHz	Err	.1
22	6	16	21	7	15	S	1	=	130218.6194	MHz	Err	.1
30	3	27	30	2	28	S	1	=	130807.1226	MHz	Err	.1
24	1	23	24	0	24	S	1	=	131365.0983	MHz	Err	.1
18	4	14	17	5	13	q	1	=	131394 6420	MH-7	Err	1
24	7	10	22		10		1	_	121540 0062	MUG	Enn	. 1
24	_	10	23	0	10	5	1	-	101049.9203	rinz	ELL.	• 1
24	7	17	23	8	16	S	1	=	131603.6343	MHz	Err	.1
11	0	11	10	1	10	S	1	=	132290.8582	MHz	Err	.1
26	8	18	25	9	17	S	1	=	133233.1833	MHz	Err	.1
11	1	11	10	1	10	S	1	=	133643 2673	MHz	Err	. 1
6	3	3	5	2	3	S	1	=	133703 3084	MHz	Frr	1
11	0	11	10	2	10	5	-		124101 0520	MIL-	Enn	• •
11	0	11	10	0	10	5	1	=	134191.8538	MHZ	Err	.1
6	3	3	5	2	4	S	1	=	134872.9785	MHz	Err	.1
11	1	11	10	0	10	S	1	=	135544.2610	MHz	Err	.1
9	2	8	8	1	7	S	1	=	135998.1461	MHz	Err	.1
30	10	21	29	11	18	S	1	=	136741.0223	MHz	Err	.1
30	10	21	29	11	19	s	1	=	136741 0223	MHz	Frr	1
20	7	21	20	2	24	0	1		126006 0100	MUG	Enn	.1
30		23	30	0	24	5	1	-	130090.0120	MAZ	Err	• 1
18	3	16	17	4	13	S	1	=	137044.0029	MHz	Err	.1
16	3	13	15	4	12	S	1	=	137207.8101	MHz	Err	.1
19	4	16	18	5	13	S	1	=	137310.3548	MHz	Err	.1
11	2	10	10	2	9	S	1	=	137816.5282	MHz	Err	.1
11	10	1	10	10	0	S	1	=	139084.9429	MHz	Err	.1
11	10	2	10	10	1	q	1	-	13008/ 0/20	MH7	Err	1
	10	2	10	10	-	2	1	_	100404.0425	MIL	DI I	• •
11	9	2	10	9	1	5	1	=	139104.6855	MHZ	Err	• 1
11	9	3	10	9	2	S	1	=	139104.6855	MHz	Err	.1
11	8	4	10	8	3	S	1	=	139131.6930	MHz	Err	.1
11	8	3	10	8	2	S	1	=	139131.6930	MHz	Err	.1
11	7	5	10	7	4	S	1	=	139170.5748	MHz	Err	.1
11	7	4	10	7	З	S	1	=	139170 5748	MH7	Frr	1
11	ç	6	10	6	5		1	_	120020 E407	MUG	Enn	. 1
11	0	0	10	0	5	2	1	-	139230.3427	PIEZ	EII	• 1
11	6	5	10	6	4	S	1	=	139230.5427	MHZ	Err	.1
11	5	7	10	5	6	S	1	=	139330.3520	MHz	Err	.1
11	5	6	10	5	5	S	1	=	139332.8988	MHz	Err	.1
11	3	9	10	3	8	S	1	=	139422.2974	MHz	Err	.1
11	4	8	10	4	7	S	1	=	139487 0307	MHz	Err	. 1
11	1	7	10	1	c	0	Î.	_	120567 2001	MUG	Enn	
	4 7	20	10	4	22	د ۲	4	-	120600 0045	MU-	Errer	•
29	(22	29	6	23	5	T	=	139608.0845	MHZ	Err	.1
12	0	12	11	1	11	S	1	=	144667.5809	MHz	Err	.1
30	7	24	30	6	25	S	1	=	144944.5860	MHz	Err	.1
26	7	19	26	6	20	S	1	=	145237.3600	MHz	Err	.1
12	1	12	11	1	11	S	1	=	145614.3148	MHz	Err	.1
28	7	22	28	6	23	S	1	=	145902.5849	MHz	Err	.1
12	0	12	11	0	11	s	1	=	146020 0009	MHZ	Err	.1
25	7	1 8	25	é	10	د م	1	-	146476 6767	MH-2	Frr	. 1
20	-	10	25	0	13	2	4	-	146470 0401	MU	DII DII	• •
21	(21	27	6	22	S	1	=	1464/9.3401	MHZ	Err	.1
12	1	12	11	0	11	S	1	=	146966.6898	MHz	Err	.1
26	7	20	26	6	21	S	1	=	147078.7593	MHz	Err	.1
24	7	17	24	6	18	S	1	=	147490.3495	MHz	Err	.1
25	7	19	25	6	20	s	1	=	147675.9714	MH7	Err	.1
22	-	16	20	e	17	0	÷	-	148300 4464	MU~	Frm	1
20	_	10	23	0	11	5	1	-	140704 000	nnZ MU	CI I	. 1
23	7	17	23	6	18	S	1	=	148/94.2267	MHZ	Err	.1
22	7	15	22	6	16	S	1	=	149008.8444	MHz	Err	.1
21	7	15	21	6	16	S	1	=	149743.8688	MHz	Err	.1
20	7	13	20	6	14	S	1	=	150050.5582	MHz	Err	.1
12	2	11	11	2	10	s	1	=	150104 9552	MHZ	Err	.1
10	11		14	11	~~	0	1	-	151700 4700	MH~	Err	
12	11	1	11	11	2	5	1	-	151122.4122	rinZ MU	Eff E	• 1
12	11	2	11	11	1	S	1	=	151/22.4/22	MHZ	Err	.1
12	10	3	11	10	2	S	1	=	151741.7004	MHz	Err	.1
12	10	2	11	10	1	S	1	=	151741.7004	MHz	Err	.1
12	9	3	11	9	2	S	1	=	151767.1382	MHz	Err	.1
12	9	4	11	9	3	S	1	=	151767.1382	MHz	Err	.1
12	Ŕ	5	11	Ř	4	2	1	=	151801 7762	MH-7	Err	1
10	0	1	11	0	т о	5	1	-	151801 7700		Err	• •
12	0 7	4	11	ö	3	5	1	=	101001.//02	nnZ MU	err E	• 1
12	7	6	12	6	7	S	1	=	151838.8155	MHz	Err	.1
12	7	5	12	6	7	S	1	=	151838.8155	MHz	Err	.1
12	7	6	11	7	5	S	1	=	151852.1178	MHz	Err	.1
	-		4.4	7		c	4	_	161060 1170	MIT-	Pere	

11	7	5	11	6	5	S	1	=	151916.5227 MHz Err	.1
12	3	9	11	3	8	S	1	=	153735.5840 MHz Err	.1
17	3	14	16	4	13	S	1	=	154156.0586 MHz Err	.1
11	2	10	10	1	9	S	1	=	155300.7409 MHz Err	.1
28	1	27	28	0	28	S	1	=	155424.2333 MHz Err	.1
28	2	27	28	1	28	S	1	=	155479.3406 MHz Err	.1
12	2	10	11	2	9	S	1	=	155518.8411 MHz Err	.1
13	0	13	12	1	12	S	1	=	156912.0285 MHz Err	.1
13	1	13	12	1	12	S	1	=	157565.9280 MHz Err	.1
6	4	3	5	3	2	S	1	=	157740.6141 MHz Err	.1
15	0	13	12	2	12	5	1	-	157858.6941 MHZ Err	.1
15	2	10	14	3	12	د ہ	1	-	150964.7754 MHz Err	.1
10	3	19	20	4	10	0	1		159045.0905 MHz EII	.1
28	2	20	9 27	Q	19	د ۲	1	_	159641 4311 MHz Err	1
13	4	9	13	1	12	S	1	=	161023 0722 MHz Err	.1
14	4	10	14	1	13	S	1	=	162593.2086 MHz Err	.1
20	4	16	19	5	15	S	1	=	163018.5246 MHz Err	.1
16	3	14	16	0	16	S	1	=	163280.5078 MHz Err	.1
13	12	2	12	12	1	S	1	=	164358.7221 MHz Err	.1
13	12	1	12	12	0	S	1	=	164358.7221 MHz Err	.1
13	11	3	12	11	2	S	1	=	164377.7145 MHz Err	.1
13	11	2	12	11	1	S	1	=	164377.7145 MHz Err	.1
13	10	4	12	10	3	S	1	=	164401.8635 MHz Err	.1
13	10	3	12	10	2	S	1	=	164401.8635 MHz Err	.1
13	9	5	12	9	4	S	1	=	164433.7431 MHz Err	.1
13	9	4	12	9	3	S	1	=	164433.7431 MHz Err	.1
13	8	6	12	8	5	S	1	=	1644/7.6843 MHz Err	.1
13	8	5	12	8	4	5	1	-	1644477.6843 MHZ Err	.1
13	7	6	12	7	5	د ۲	1	_	164541.4570 MHz Err	.1
13	3	11	12	3	10	s S	1	_	164691 3143 MHz Frr	1
13	1	12	12	1	11	S	1	=	164736 1891 MHz Err	.1
13	5	8	12	5	7	s	1	=	164814.5006 MHz Err	.1
13	4	10	12	4	9	s	1	=	165010.6621 MHz Err	.1
13	4	9	12	4	8	S	1	=	165268.8942 MHz Err	.1
13	3	10	12	3	9	S	1	=	167004.7462 MHz Err	.1
23	5	19	22	6	16	S	1	=	167432.0936 MHz Err	.1
27	3	25	26	4	22	S	1	=	168249.6639 MHz Err	.1
13	2	11	12	2	10	S	1	=	168434.3057 MHz Err	.1
5	5	1	4	4	0	S	1	=	168527.1013 MHz Err	.1
5	5	0	4	4	0	S	1	=	168527.1013 MHz Err	.1
5	5	1	4	4	1	S	1	=	168527.1013 MHz Err	.1
5	5	0	4	4	1	S	1	=	168527.1013 MHz Err	.1
14	0	14	13	1	13	S	1	=	169055.4148 MHz Err	.1
25	3	23	24	4	20	S	1	=	170025.4558 MHz Err	.1
14	1	14	13	0	13	5	1	-	170155.9214 MHZ Err	.1
7	4	4	6	3	3	د ہ	1	-	170408 1526 MHz Err	.1
28	8	20	28	7	22	S	1	_	170758 4826 MHz Err	.1
24	8	16	20	7	17	S	1	=	172833 6085 MHz Err	.1
29	8	21	28	9	20	S	1	=	172947.3907 MHz Err	.1
23	8	15	23	7	16	S	1	=	173260.1217 MHz Err	.1
23	8	15	23	7	17	S	1	=	173289.2880 MHz Err	.1
21	8	13	21	7	14	S	1	=	173947.3846 MHz Err	.1
19	8	12	19	7	12	S	1	=	174456.5098 MHz Err	.1
19	8	11	19	7	12	S	1	=	174456.5098 MHz Err	.1
14	2	13	13	2	12	S	1	=	174526.2348 MHz Err	.1
26	1	26	25	2	24	S	1	=	174680.8670 MHz Err	.1
26	0	26	25	1	24	S	1	=	1/4862.8832 MHz Err	.1
10	8	9	16	7	9	5	1	-	174969.0038 MHZ Err	.1
16	2	1/	15	2	13	د ۲	1	_	175542 2310 MHz Err	.1
14	∠ 1	13	13	1	12	а 5	1	=	176638.7716 MHz Err	.1
14	13	2	13	13	1	s	1	=	176993.5903 MHz Err	.1
14	13	1	13	13	0	S	1	=	176993.5903 MHz Err	. 1
14	12	2	13	12	1	S	1	=	177012.3997 MHz Err	.1
14	12	3	13	12	2	S	1	=	177012.3997 MHz Err	.1
14	11	3	13	11	2	S	1	=	177035.7285 MHz Err	.1
14	11	4	13	11	3	S	1	=	177035.7285 MHz Err	.1
21	4	17	20	5	16	S	1	=	179800.3076 MHz Err	.1
10	3	7	9	2	7	S	1	=	180143.4790 MHz Err	.1
14	3	11	13	3	10	S	1	=	180333.7283 MHz Err	.1
15	1	14	14	2	13	S	1	=	100011.//24 MHz Err	.1
22	3	20	21	4	10	5	1	-	100901.4228 MHZ Err	.1
ь ТТ	L F	τU	10	1	л т0	2 9	1	-	181168.5598 MHz Frr	.1
6	5	1	5	4	2	2	1	_	181168.5598 MHz Err	.1
14	2	12	13	2	11	S	1	=	181226.5762 MHz Err	.1
15	1	15	14	1	14	s	1	=	181426.1087 MHz Err	.1
15	0	15	14	0	14	s	1	=	181570.5032 MHz Err	.1
16	3	13	16	0	16	S	1	=	181677.0295 MHz Err	.1
15	1	15	14	0	14	S	1	=	181872.7687 MHz Err	.1
18	4	14	18	1	17	S	1	=	182202.0156 MHz Err	.1
23	4	20	22	5	17	S	1	=	182751.1485 MHz Err	.1
8	4	5	7	3	4	S	1	=	182844.4427 MHz Err	.1
8	4	4	7	3	4	S	1	=	182856.2571 MHz Err	.1
8	4	5	7	3	5	S	1	=	183051.5465 MHz Err	.1
о 24	4	4 22	1	ა ა	5 21	50	1	-	183077 6377 MU- E	.⊥ 1
∠4 1 9	2	20 16	∠3 17	2	∠⊥ 1/	2 9	1	-	184190 2113 MHz Err	.⊥ 1
15	2	14	14	2	13	S	1	=	186662.7173 MHz Err	.1
-	_	-		_	-	2	-			

12	2	10	11	1	10	S	1	=	188402 4113	MH7	Frr	1
10	1	11	1/	-	12		1	_	100402.4110	MUG	Enn	. 1
10	1	14	14	1	13	2	1	-	100455.4009	MINZ	Err	• 1
19	3	16	18	4	15	S	1	=	189181.1119	MHz	Err	.1
15	13	3	14	13	2	S	1	=	189645.6934	MHz	Err	.1
15	13	2	14	13	1	S	1	=	189645.6934	MHz	Err	.1
15	12	3	14	12	2	S	1	=	189668 4929	MHz	Err	. 1
10	10	1	1/	10	2		÷.	_	100660 1020	MUG	Enn	4
10	12	-	14	12	5	5	1	-	103000.4323	MIL	DI I	• •
10	3	(9	2	8	5	T	=	1896/4.0656	MHZ	Err	.1
15	11	5	14	11	4	S	1	=	189696.7656	MHz	Err	.1
15	11	4	14	11	3	S	1	=	189696.7656	MHz	Err	.1
23	3	21	22	4	19	S	1	=	189699.2224	MHz	Err	.1
15	10	6	14	10	5	S	1	=	189733 1700	MHz	Err	. 1
10	10	5	1/	10	4		Î.	_	100722 1700	MUG	Enn	
10	10	5	14	10	1	2	1	-	109733.1700	PIEZ	EII	• •
15	9	6	14	9	5	S	1	=	189/81.4556	MHZ	Err	.1
15	9	7	14	9	6	S	1	=	189781.4556	MHz	Err	.1
15	3	13	14	3	12	S	1	=	189800.3197	MHz	Err	.1
15	8	8	14	8	7	S	1	=	189848.4469	MHz	Err	.1
15	8	7	14	8	6	S	1	=	189848 4469	MHz	Err	. 1
10	7		1/	7	ő	0	Î.	_	100046 1042	MUG	Enn	
15	7	0	14	7	7	5	-		100046 1042	MIL	Enr	•
10			14			5	1	-	109940.1243	PIEZ	EII	• 1
15	5	11	14	5	10	S	1	=	190337.1312	MHZ	Err	.1
15	5	10	14	5	9	S	1	=	190383.6940	MHz	Err	.1
15	4	12	14	4	11	S	1	=	190551.4533	MHz	Err	.1
10	2	8	9	1	9	S	1	=	191147,4421	MHz	Err	.1
20	2	18	20	1	20	S	1	=	191147 4421	MHz	Err	. 1
10	~	11	1/	1	10		Î.	_	101006 2000	MUG	Enn	
10	-	11	14	-	10	2	1	-	191220.3009	MIL	EII	• •
11	3	8	10	2	8	S	1	=	191900.1318	rifiZ	Err	• 1
24	4	21	23	5	18	S	1	=	192287.0461	MHz	Err	.1
16	0	16	15	1	15	S	1	=	193137.9086	MHz	Err	.1
16	1	16	15	1	15	S	1	=	193340.8818	MHz	Err	.1
16	0	16	15	0	15	s	1	=	193440 1477	MHZ	Err	.1
16	1	16	16	ň	15	د د	1	-	193643 1560	MH-2	Frr	. 1
10	-	10	10		10	5	1	-	100050 2047	MIL	DI I	• •
19	2	17	18	3	15	5	T	=	193650.7047	MHZ	Err	.1
15	3	12	14	3	11	S	1	=	193682.1582	MHz	Err	.1
11	2	10	10	1	10	S	1	=	193869.1820	MHz	Err	.1
15	2	13	14	2	12	S	1	=	193879.3206	MHz	Err	.1
16	1	15	15	2	14	S	1	=	194366.0446	MHz	Err	.1
20	à	20	20	õ	22	g	1	-	105103 3770	MH-7	Err	1
29	9	20	29	0	22	2	1	-	195103.3770	PIEZ	EII	• •
28	9	19	28	8	20	S	1	=	195571.3817	MHz	Err	.1
26	9	17	26	8	18	S	1	=	196432.2417	MHz	Err	.1
25	9	16	25	8	17	S	1	=	196789.7513	MHz	Err	.1
21	9	13	21	8	13	S	1	=	197836.6454	MHz	Err	.1
21	9	12	21	8	13	S	1	=	197836 6454	MHz	Err	. 1
20	0	10	20		10		Î.	_	100000 1000	MUG	Enn	
20	9	12	20	0	12	2	1	-	198020.1809	MIL	EII	• •
20	3	17	19	4	15	5	T	=	198020.1809	MHZ	Err	.1
20	9	11	20	8	12	S	1	=	198020.1809	MHz	Err	.1
24	3	22	23	4	20	S	1	=	198055.5409	MHz	Err	.1
12	3	10	11	2	9	S	1	=	198133.8562	MHz	Err	.1
19	9	11	19	8	11	S	1	=	198178 4980	MHz	Err	. 1
10	å	10	10	8	11	g	1	-	108178 /080	MHT	Err	1
10	0	10	10	0	11	5	1	-	100170.4000	MIL	DI I	• •
19	9	11	19	8	12	5	1	=	1981/8.4980	MHZ	Err	• 1
19	9	10	19	8	12	S	1	=	198178.4980	MHz	Err	.1
18	9	10	18	8	10	S	1	=	198314.0917	MHz	Err	.1
18	9	9	18	8	10	S	1	=	198314.0917	MHz	Err	.1
18	9	10	18	8	11	S	1	=	198314.0917	MHz	Err	.1
18	à	9	18	8	11	s	1	=	198314 0917	MHz	Frr	1
17	0	0	17	0		2	1		100/00 2600	MUG	Enn	. 1
11	9	9	17	0	9	2	1	-	196429.3626	MINZ	Err	• 1
17	9	8	17	8	9	S	1	=	198429.3628	MHz	Err	.1
17	9	9	17	8	10	S	1	=	198429.3628	MHz	Err	.1
17	9	8	17	8	10	S	1	=	198429.3628	MHz	Err	.1
16	9	7	16	8	8	S	1	=	198526.4744	MHz	Err	.1
16	9	8	16	8	8	.5	1	=	198526 4744	MHZ	Err	.1
10	0		10		0		-	_	100506 4744	MIL	Enn	•
10	9	2	10	0	9	2	1	-	196526.4744	MINZ	Err	• 1
тņ	9	(16	8	9	S	1	=	190020.4/44	rifiZ	Err	• 1
15	9	6	15	8	7	S	1	=	198607.6187	MHz	Err	.1
15	9	7	15	8	7	S	1	=	198607.6187	MHz	Err	.1
15	9	7	15	8	8	S	1	=	198607.6187	MHz	Err	.1
15	9	6	15	8	8	S	1	=	198607.6187	MHz	Err	.1
14	9	6	14	8	6	.5	1	=	198674 6069	MHZ	Err	.1
1/	ő	5	1/1		2	0	1	-	10867/ 6060	MH~	Err	
14	9	5	14	0	0	5	1	-	100074.0009	rinz	ELL.	• 1
14	9	5	14	8	7	S	1	=	1986/4.6069	MHz	Err	.1
14	9	6	14	8	7	S	1	=	198674.6069	MHz	Err	.1
13	9	5	13	8	5	S	1	=	198729.2285	MHz	Err	.1
13	9	4	13	8	5	S	1	=	198729.2285	MHz	Err	.1
13	9	4	1.3	8	6	5	1	=	198729 2285	MHZ	Err	.1
12	ő		10		2	0	1	-	108720 2005	MH~	Err	
10	9	15	13	0	14	5	1	-	100754 00750	rinZ MU	Eff E	• 1
16	2	12	15	2	14	S	1	=	198/54.2079	MHZ	Err	.1
12	9	4	12	8	4	S	1	=	198773.1379	MHz	Err	.1
12	9	4	12	8	5	S	1	=	198773.1379	MHz	Err	.1
12	9	3	12	8	4	S	1	=	198773.1379	MHz	Err	.1
12	à	3	12	8	5	q	1	=	198773 1370	MH-7	Err	.1
11	0	0	11	0	2	0	1	-	198807 050	 МЦ~	Er~	. 1
11	3	2	11	0	3	5	1	-	100007 000	nnZ MU	CI I	• •
11	9	3	11	8	4	S	1	=	198801.9585	MHZ	Err	.1
11	9	3	11	8	3	S	1	=	198807.9585	MHz	Err	.1
11	9	2	11	8	4	S	1	=	198807.9585	MHz	Err	.1
10	9	2	10	8	2	S	1	=	198834.8931	MHz	Err	.1
10	9	1	10	8	2	S	1	=	198834.8931	MHz	Err	.1
10	9	2	10	8	3	5	1	=	198834 8931	MHZ	Err	.1
10	0	4	10	Q	2	5	1	-	19883/ 9021	 МН-7	Frr	1
10	3	Ţ	10	0	3	5	+	-	100055 0001	nnZ MU	GLT E.	• •
9	9	0	9	8	1	S	1	=	198855.3934	MHZ	Err	.1
9	9	1	9	8	2	S	1	=	198855.3934	MHz	Err	.1
9	9	1	9	8	1	S	1	=	198855.3934	MHz	Err	.1

9	9	0	9	8	2	S	1	=	198855.3934	MHz	Err	.1
16	1	15	15	1	14	S	1	=	200217.0147	MHz	Err	.1
25	-	22	24	5	10	q	1	-	200770 1269	MHrz	Frr	- 1
20	4	22	24	5	19	2	-	-	200770.1209	FIEZ	EII	• 1
16	3	14	15	3	13	S	1	=	202279.2182	MHz	Err	.1
16	13	3	15	13	2	S	1	=	202299.8334	MHz	Err	.1
16	13	4	15	13	3	S	1	=	202299.8334	MHz	Err	.1
16	12	4	15	12	3	S	1	=	202327.0639	MHz	Err	.1
16	12	5	15	12	4	S	1	=	202327 0639	MHz	Err	.1
10	11	6	10	11			÷	_	202021.0000	MIL-	Enn	
10	11	6	15	11	5	5	1	=	202361.0840	MHZ	Err	• 1
16	11	5	15	11	4	S	1	=	202361.0840	MHz	Err	.1
16	10	6	15	10	5	S	1	=	202404.8686	MHz	Err	.1
16	10	7	15	10	6	S	1	=	202404.8686	MHz	Err	.1
16	a	8	15	a	7	S	1	=	202463 2493	MH7	Frr	1
16	0	7	10	0	c	0	Î	_	202100.2100	MUG	Enn	4
10	9		15	9	0	2	1	-	202463.2493	MAZ	Err	• 1
10	8	9	15	8	8	S	T	=	202544.3681	MHZ	Err	.1
16	8	8	15	8	7	S	1	=	202544.3681	MHz	Err	.1
16	7	10	15	7	9	S	1	=	202662.9710	MHz	Err	.1
16	7	9	15	7	8	S	1	=	202662.9710	MHz	Err	.1
16	5	12	15	5	11	9	1	-	203128 0693	MHrz	Frr	- 1
10	5	11	10	5	10		÷	_	200120.0000	MIL	Enn	• •
10	5	11	15	5	10	5	1	-	203211.5062	PIEZ .	-	• 1
16	4	13	15	4	12	S	1	=	203312.5338	MHz	Err	.1
13	2	11	12	1	11	S	1	=	204124.6536	MHz	Err	.1
16	4	12	15	4	11	S	1	=	204334.1127	MHz	Err	.1
17	1	17	16	1	16	S	1	=	205248.4651	MHz	Err	.1
17	0	17	16	0	16	S	1	=	205316 0996	MH7	Frr	1
17	1	17	16	ő	16		Î	_	200010100000	MUG	Enn	4
11	1	11	10	0	10	2	1	-	200401.4070	MIL	EII	• 1
16	2	14	15	2	13	S	1	=	2063//./5/5	MHz	Err	.1
16	3	13	15	3	12	S	1	=	207005.1271	MHz	Err	.1
20	3	17	19	4	16	S	1	=	207042.6380	MHz	Err	.1
13	3	11	12	2	10	S	1	=	207306.2935	MHz	Err	.1
17	1	16	16	2	15	ç	1	-	207573 3440	 MH-7	Frr	-
11	Ť	10	10	2	10	2	1	_	201010.0449	MU	LL I To	• •
10	4	ь	9	3	(S	T	=	208467.5846	MHZ	Err	.1
17	2	16	16	2	15	S	1	=	210805.2261	MHz	Err	.1
17	1	16	16	1	15	S	1	=	211961.4680	MHz	Err	.1
11	2	9	10	1	10	S	1	=	211996,4609	MHz	Err	.1
17	2	1 0	16	2	14		-	_	014700 0221	MUm	Emm	
11	5	10	10	3	14	2	1	-	214/02.0331	MIL	EII	• 1
10	5	12	16	2	14	5	T	=	214982.2550	MHZ	Err	.1
17	12	6	16	12	5	S	1	=	214988.3874	MHz	Err	.1
17	12	5	16	12	4	S	1	=	214988.3874	MHz	Err	.1
17	11	7	16	11	6	S	1	=	215028.8406	MHz	Err	.1
17	11	6	16	11	5	q	1	-	215028 8406	MHrz	Frr	- 1
17	10	0	10	10	7	5	-		215020.0400	MIL_	Enn	• •
11	10	°	10	10		5	1	-	215061.0436	MAZ	Err	• 1
17	10	7	16	10	6	S	1	=	215081.0436	MHz	Err	.1
17	9	9	16	9	8	S	1	=	215150.8312	MHz	Err	.1
17	9	8	16	9	7	S	1	=	215150.8312	MHz	Err	.1
17	8	10	16	8	9	S	1	=	215247.9760	MHz	Err	.1
17	8	- Q	16	8	8	S	1	-	215247 9760	MHZ	Frr	1
17	6	10	10	6	11		÷	_	015610 4000	MIL-	Enn	
11	0	12	10	0	11	5	1	-	215610.4603	MAZ	Err	• 1
17	5	13	16	5	12	S	1	=	215933.1463	MHz	Err	.1
17	4	14	16	4	13	S	1	=	216056.8910	MHz	Err	.1
17	5	12	16	5	11	S	1	=	216076.2294	MHz	Err	.1
14	3	12	13	2	11	S	1	=	216141 1894	MHz	Err	.1
10	0	10	17	-	17		Î	_	017061 0150	MUG	Enn	4
10		10	11	1	11	5	-	-	217001.0152	FIEZ	EII	• 1
18	1	18	17	1	17	S	1	=	21/150.6996	MHz	Err	.1
18	0	18	17	0	17	S	1	=	217196.3241	MHz	Err	.1
7	6	2	6	5	1	S	1	=	217208.4089	MHz	Err	.1
7	6	1	6	5	1	S	1	=	217208.4089	MHz	Err	.1
7	6	2	6	5	2	S	1	=	217208 4089	MH7	Frr	1
- 7	6	ĩ	6	5	~		÷.	_	017000 4000	MIT-	Enn	
	0	1		5	. 2	2	-	-	217200.4009	PIEZ .	EII	• 1
18	1	18	17	0	17	5	T	=	21/286.02/0	MHZ	Err	.1
17	4	13	16	4	12	S	1	=	217541.2428	MHz	Err	.1
17	2	15	16	2	14	S	1	=	218710.4647	MHz	Err	.1
9	5	5	8	4	4	S	1	=	219040.8557	MHz	Err	.1
30	10	21	30	ā	21	s	1	-	219193 5053	MHZ	Frr	1
17		1/	10	5	12	0	ĩ	-	220260 0025	MH	Frr	1
10	2	47	10	0	10	2	÷	-	220200.0035	MIZ	DLI E-	• •
τQ	1	11	17	2	10	5	1	=	2204/1.6184	rifiZ	Err	• 1
26	10	17	26	9	17	S	1	=	220532.0641	MHz	Err	.1
26	10	16	26	9	17	S	1	=	220532.0641	MHz	Err	.1
14	2	12	13	1	12	S	1	=	220615.1229	MHz	Err	.1
12	3	9	11	2	10	S	1	=	220671.5927	MHz	Err	.1
16	10	6	16	õ		د د	ĩ	-	222014 2552	MH-2	Frr	1
10	10	0	10	9	4	5	Ţ	-	222014.2002	MU	Eff E-	• 1
10	10	(16	9	(S	1	=	222014.2552	MHZ	Err	.1
16	10	6	16	9	8	S	1	=	222014.2552	MHz	Err	.1
16	10	7	16	9	8	S	1	=	222014.2552	MHz	Err	.1
15	10	6	15	9	7	S	1	=	222072.6382	MHz	Err	.1
15	10	6	15	a	6	q	1	=	222072 6382	MH-7	Err	.1
15	10	5	10	0	7	0	4	_	222012.0002		Err	. 1
12	10	5	15	9	(5	1	-	222012.0382	ririZ	Err	• 1
15	10	5	15	9	6	S	1	=	222072.6382	MHz	Err	.1
14	10	5	14	9	6	S	1	=	222120.9407	MHz	Err	.1
14	10	5	14	9	5	S	1	=	222120.9407	MHz	Err	.1
14	10	4	14	9	5	s	1	=	222120 9407	MHz	Err	. 1
1/	10	7	1.4	0	2	0	4	_	222120.0407		Err	. 1
14	TO	4	14	9	0	5	Ţ	-	222120.9407	rinz	ELL E	• 1
13	10	4	13	9	5	S	1	=	222160.4828	MHz	Err	.1
13	10	4	13	9	4	S	1	=	222160.4828	MHz	Err	.1
13	10	3	13	9	5	S	1	=	222160.4828	MHz	Err	.1
13	10	3	13	9	4	S	1	=	222160.4828	MHz	Err	.1
18	2	17	17	2	16	s	1	=	222820.9582	MH7	Err	.1
19	4	17	17	4	16	0	1	-	223700 4040	MU~	Frr	1
10	1	10	11	Ţ	17	5	1	-	223103.4342	MT.	Eff E	• 1
21	3	18	20	4	11	S	1	=	2249/1.5102	MHZ	Err	.1
40	0	40	39	1	39	S	1	=	478430.6857	MHz	Err	.1
40	1	40	39	1	39	S	1	=	478430.6857	MHz	Err	.1
40	0	40	39	0	39	S	1	=	478430.6857	MHz	Err	.1

	1	40	3	9	0	39	S	1	=	478430.6857	MHz	Err	.1
41	0	41	4	0	1	40	S	1	=	490283.3688	MHz	Err	.1
/1	1	/1	-	0	1	10	9	1	-	100283 3688	MHrz	Err	1
44	-		-	~	-	40	2	-	-	400200.0000	MIL	511	• •
41	0	41	4	0	0	40	S	1	=	490283.3688	MHz	Err	.1
41	1	41	4	0	0	40	S	1	=	490283.3688	MHz	Err	.1
41	1	40	4	0	2	39	S	1	=	496226.0912	MHz	Err	.1
41	2	40	4	0	2	39	S	1	=	496226.0912	MHz	Err	.1
/11	1	10	1	0	1	30	q	1	-	196226 0912	MH-7	Frr	1
-11	-	10		~	-	00		÷		400000 0012	11112		• •
41	2	40	4	0	1	39	5	1	=	496226.0912	MHZ	Err	• 1
42	1	41	4	1	2	40	S	1	=	508074.5860	MHz	Err	.1
42	2	41	4	1	2	40	S	1	=	508074.5860	MHz	Err	.1
42	1	41	4	1	1	40	S	1	=	508074.5860	MHz	Err	.1
42	2	41	4	1	1	40	S	1	=	508074 5860	MH7	Frr	1
12	2	-11		1	-	10		÷		500074.5000	11112		• •
42	1	41	4	1	2	40	2	1	=	506074.5660	MHZ	Err	• 1
42	2	41	4	1	2	40	S	1	=	508074.5860	MHz	Err	.1
42	1	41	4	1	1	40	S	1	=	508074.5860	MHz	Err	.1
42	2	41	4	1	1	40	S	1	=	508074.5860	MHz	Err	.1
43	1	42	4	2	2	41	S	1	=	519920 5746	MHz	Err	. 1
13	2	12	-	2	2	/1	9	1	-	510020 57/6	MHrz	Err	1
40	4	42		~	4	41	2	1	-	519920.5740	MIL	EII	• •
43	1	42	4	-2	1	41	2	1	-	519920.5746	MHZ	Err	• 1
43	2	42	4	2	1	41	S	1	=	519920.5746	MHz	Err	.1
44	0	44	4	3	1	43	S	1	=	525826.2775	MHz	Err	.1
44	1	44	4	3	1	43	S	1	=	525826.2775	MHz	Err	.1
44	0	44	4	3	0	43	S	1	=	525826.2775	MHz	Err	.1
44	1	44	4	3	0	43	s	1	=	525826 2775	MHT	Frr	1
11	-	44		2	4	40		÷	_	505006 0775	MIL-	Enn	• •
44	0	44	4	3	1	43	2	1	-	525626.2775	MHZ	Err	• 1
44	1	44	4	3	1	43	S	1	=	525826.2775	MHz	Err	.1
44	0	44	4	3	0	43	S	1	=	525826.2775	MHz	Err	.1
44	1	44	4	3	0	43	S	1	=	525826.2775	MHz	Err	.1
15	15	0	1	4	14	0	s	1	=	528689.3975	MHz	Err	.1
15	15	0	4	4	1/	- 1	q	1	=	528689 3075	мн~	Frr	1
15	15	4	1	1	1/	÷	د ۲	4	-	520003.0370		Emr	• •
15	15	1	1	4	14	0	2	1	-	526669.3975	MHZ	Err	• 1
15	15	1	1	4	14	1	S	1	=	528689.3975	MHz	Err	.1
44	1	43	4	3	2	42	S	1	=	531764.0195	MHz	Err	.1
44	2	43	4	3	2	42	S	1	=	531764.0195	MHz	Err	.1
44	1	43	4	3	1	42	S	1	=	531764 0195	MH7	Frr	1
11	5	10		2	-	10		1	_	E21764 010E	MUG	Enn	. 1
44	. 2	43		0	1	42	5	1	-	531704.0195	PIEZ	E11	• 1
19	13	7	1	8	12	7	S	1	=	532487.9085	MHz	Err	.1
19	13	7	1	8	12	6	S	1	=	532487.9085	MHz	Err	.1
19	13	6	1	8	12	6	S	1	=	532487.9085	MHz	Err	.1
19	13	6	1	8	12	7	S	1	=	532487.9085	MHz	Err	.1
23	11	13	2	2	10	12	s	1	=	536102 5444	MHT	Frr	1
20	44	10		2	10	10		÷	_	526100 F444	MIL-	Enn	• •
23	11	12	2	2	10	12	2	1	-	536102.5444	MHZ	Err	• 1
23	11	13	2	2	10	13	S	1	=	536102.5444	MHz	Err	.1
23	11	12	2	2	10	13	S	1	=	536102.5444	MHz	Err	.1
25	10	16	2	4	9	15	S	1	=	537688.4900	MHz	Err	.1
25	10	15	2	4	9	15	S	1	=	537688,4900	MHz	Err	.1
25	10	16			- 0	16	9	1	-	537688 4000	MHrz	Err	1
20	10	10		7	0	10	2	-	-	537000.4300	MIL	511	• •
25	10	15	2	4	9	16	5	1	=	53/688.4900	MHZ	Err	.1
43	0	1.5		2		10	S	1	_		MHT		
	· ·	40	4	~	1	72			-	513981.1910	rinz	Err	.1
43	1	43 43	4	2	1	42	S	1	=	513981.1910 513981.1910	MHz	Err Err	.1 .1
43 43	1 0	43 43 43	4 4 4	2	1 0	42 42 42	S	1 1	=	513981.1910 513981.1910 513981.1910	MHz MHz	Err Err Err	.1 .1 .1
43 43 43	1 0 1	43 43 43 43	4 4 4 4	2	1 0 0	42 42 42 42	S	1 1 1	=	513981.1910 513981.1910 513981.1910 513981.1910	MHz MHz MHz	Err Err Err Err	.1 .1 .1
43 43 43	1 0 1	43 43 43 43	4 4 4 4	22	1 0 0	42 42 42 42	S S S	1 1 1	-	513981.1910 513981.1910 513981.1910 513981.1910 513981.1910	MHz MHz MHz MHz	Err Err Err Err	.1 .1 .1 .1
43 43 43 45	1 0 1 0	43 43 43 43 45	4 4 4 4 4	222	1 0 0 1	42 42 42 42 44	5 5 5 5 5 5	1 1 1	= = =	513981.1910 513981.1910 513981.1910 513981.1910 537668.7190	MHz MHz MHz MHz MHz	Err Err Err Err Err	.1 .1 .1 .1
43 43 43 45 45	1 0 1 0 1	43 43 43 43 45 45	4 4 4 4 4	2224	1 0 0 1	42 42 42 42 44 44	5 5 5 5 5 5	1 1 1 1	= = = =	513981.1910 513981.1910 513981.1910 513981.1910 537668.7190 537668.7190	MHz MHz MHz MHz MHz MHz	Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1
43 43 43 45 45 45	1 0 1 0 1 0	43 43 43 45 45 45 45	4 4 4 4 4 4	22244	1 0 0 1 1 0	42 42 42 42 44 44 44	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	1 1 1 1 1	= = = =	513981.1910 513981.1910 513981.1910 513981.1910 537668.7190 537668.7190 537668.7190	MHz MHz MHz MHz MHz MHz MHz	Err Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1 .1
43 43 45 45 45 45 45	1 0 1 0 1 0 1 0	43 43 43 45 45 45 45 45	4 4 4 4 4 4 4	2 2 2 4 4 4	1 0 0 1 1 0 0	42 42 42 42 44 44 44 44 44	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	1 1 1 1 1 1		513981.1910 513981.1910 513981.1910 513981.1910 537668.7190 537668.7190 537668.7190	MHZ MHZ MHZ MHZ MHZ MHZ MHZ	Err Err Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1 .1 .1
43 43 45 45 45 45 45 44	1 0 1 0 1 0 1 2	43 43 43 45 45 45 45 45 45 45 45	4 4 4 4 4 4 4 4 4	2 2 2 4 4 4 3	1 0 1 1 0 3	42 42 42 44 44 44 44 44 41	5 S S S S S S S S S S S S S S S S S S S	1 1 1 1 1 1 1		513981.1910 513981.1910 513981.1910 513981.1910 537668.7190 537668.7190 537668.7190 537740.7136	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	Err Err Err Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1 .1 .1 .1
43 43 45 45 45 45 45 44 44	1 0 1 0 1 0 1 2 3	43 43 43 45 45 45 45 45 45 42 42	4 4 4 4 4 4 4 4 4 4	22244433	1 0 0 1 1 0 3 3	42 42 42 44 44 44 44 41 41	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	1 1 1 1 1 1 1 1		513981.1910 513981.1910 513981.1910 513981.1910 537668.7190 537668.7190 537668.7190 537768.7190 537740.7136	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	Err Err Err Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1 .1 .1 .1
43 43 45 45 45 45 45 44 44	1 0 1 0 1 2 3 2	43 43 43 45 45 45 45 45 45 42 42 42	4 4 4 4 4 4 4 4 4 4	2224443333	1 0 1 1 0 3 3 2	42 42 42 44 44 44 44 41 41	5 S S S S S S S S S S S S S S S S S S S	1 1 1 1 1 1 1 1 1		513981.1910 513981.1910 513981.1910 537668.7190 537668.7190 537668.7190 537768.7190 537740.7136 537744.0218	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	Err Err Err Err Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1
43 43 45 45 45 45 44 44 44	1 0 1 0 1 0 1 2 3 2	43 43 43 45 45 45 45 45 42 42 42 42	4 4 4 4 4 4 4 4 4 4	2224443333	1 0 1 1 0 3 3 2	42 42 42 44 44 44 44 41 41 41	5 S S S S S S S S S S S S S S S S S S S	1 1 1 1 1 1 1 1 1 1		513981.1910 513981.1910 513981.1910 513981.1910 537668.7190 537668.7190 537668.7190 537768.7190 537740.7136 537744.0218 537744.0218	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	Err Err Err Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1
43 43 45 45 45 45 44 44 44 44	1 0 1 0 1 2 3 2 3	43 43 43 45 45 45 45 45 42 42 42 42 42	4 4 4 4 4 4 4 4 4 4 4	2224443333	1 0 0 1 1 0 0 3 3 2 2	42 42 42 44 44 44 44 41 41 41 41	3 S S S S S S S S S S S S S S S S S S S	1 1 1 1 1 1 1 1 1 1 1		513981.1910 513981.1910 513981.1910 537668.7190 537668.7190 537668.7190 537668.7190 537740.7136 537744.0218 537744.0218	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	Err Err Err Err Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1
43 43 45 45 45 45 44 44 44 44 16	1 0 1 0 1 0 1 2 3 2 3 15	43 43 43 45 45 45 45 45 45 42 42 42 42 42 42 1	4 4 4 4 4 4 4 4 4 4 4 1	2224443335	1 0 0 1 1 0 0 3 3 2 2 14	42 42 42 44 44 44 41 41 41 41 41 41 1	3 S S S S S S S S S S S S S S S S S S S	1 1 1 1 1 1 1 1 1 1 1 1 1		513981.1910 513981.1910 513981.1910 537668.7190 537668.7190 537668.7190 537668.7190 537768.7190 537740.0136 537744.0218 537744.0218 537744.0218	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	Err Err Err Err Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1
43 43 45 45 45 45 44 44 44 44 16 16	1 0 1 0 1 0 1 2 3 2 3 15 15	43 43 43 45 45 45 45 45 42 42 42 42 42 1 1	4 4 4 4 4 4 4 4 4 4 1 1	222444333355	1 0 0 1 1 0 0 3 3 2 2 14 14	42 42 42 44 44 44 41 41 41 41 41 2		1 1 1 1 1 1 1 1 1 1 1 1 1 1		513981.1910 513981.1910 513981.1910 537668.7190 537668.7190 537668.7190 537764.0218 537744.0218 537744.0218 537744.0218 537744.0218 537744.0218	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	Err Err Err Err Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1
43 43 45 45 45 45 44 44 44 44 16 16	1 0 1 0 1 2 3 2 3 15 15 15	43 43 43 45 45 45 45 45 42 42 42 42 42 1 2	4 4 4 4 4 4 4 4 4 1 1 1	2224443335555	1 0 0 1 1 0 0 3 3 2 2 14 14 14	42 42 42 44 44 44 44 41 41 41 41 41 1 2 1		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		513981.1910 513981.1910 513981.1910 537668.7190 537668.7190 537668.7190 537668.7190 537668.7190 537764.7136 537744.0218 537744.0218 537744.0218 537744.0218 537747.3584 541321.0475 541321.0475	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	Err Err Err Err Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1
43 43 45 45 45 45 45 44 44 44 16 16 16 16	1 0 1 0 1 0 1 2 3 2 3 15 15 15 15	43 43 43 45 45 45 45 42 42 42 42 42 1 2 2	4 4 4 4 4 4 4 4 4 4 1 1 1 1	2224444333355555	1 0 0 1 1 0 0 3 2 2 14 14 14 14 14	42 42 42 44 44 44 44 41 41 41 1 2 1 2		1 1		513981.1910 513981.1910 513981.1910 537668.7190 537668.7190 537668.7190 537668.7190 537764.0218 537744.0218 537744.0218 537744.0218 537744.0218 537744.0218 537744.0218 541321.0475 541321.0475	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	Err Err Err Err Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1
43 43 45 45 45 45 45 44 44 44 16 16 16 16 45	1 0 1 0 1 0 1 2 3 2 3 15 15 15 15 15	43 43 43 45 45 45 45 42 42 42 42 42 1 2 2 44	4 4 4 4 4 4 4 4 4 4 1 1 1 1	2224444333355554	1 0 0 1 1 0 0 3 2 14 14 14 14 2	42 42 42 44 44 44 44 41 41 41 1 2 1 2 43		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		513981.1910 513981.1910 513981.1910 537668.7190 537668.7190 537668.7190 537648.7190 537740.7136 537744.0218 537744.0218 537744.0218 537744.0218 537744.0218 537744.0218 537745.0418 541321.0475 541321.0475 541321.0475	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	Err Err Err Err Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1
43 43 45 45 45 45 44 44 44 16 16 16 45	1 0 1 0 1 0 1 2 3 2 3 15 15 15 15 1 2	43 43 43 45 45 45 45 45 45 42 42 42 42 42 2 44 44		2224444333355554	1 0 0 1 1 0 0 3 2 2 14 14 14 14 14 2 2	42 42 42 44 44 44 44 41 41 41 1 2 43 43		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		513981.1910 513981.1910 513981.1910 537668.7190 537668.7190 537668.7190 537668.7190 537764.719 537744.0218 537744.0218 537744.0218 537744.0218 537744.0218 537747.358 541321.0475 541321.0475 541321.0475 541321.0475	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	Err Err Err Err Err Err Err Err Err Err	$ \begin{array}{c} .1\\ .1\\ .1\\ .1\\ .1\\ .1\\ .1\\ .1\\ .1\\ .1\\$
$\begin{array}{r} 43\\ 43\\ 45\\ 45\\ 45\\ 45\\ 44\\ 44\\ 44\\ 16\\ 16\\ 16\\ 16\\ 45\\ 45\\ 7\end{array}$	1 0 1 0 1 0 1 2 3 2 3 15 15 15 15 15 15	43 43 43 45 45 45 45 45 42 42 42 42 42 2 44 44	$4 \\ 4 \\ 4 \\ 4 \\ 4 \\ 4 \\ 4 \\ 4 \\ 4 \\ 4 \\$	22244443333555544	$ \begin{array}{c} 1 \\ 0 \\ 0 \\ 1 \\ 0 \\ 0 \\ 3 \\ 2 \\ 14 \\ 14 \\ 14 \\ 2 \\ 2 \\ 14 \\ 14 \\ 2 \\ 2 \\ 14 \\ 14 \\ 2 \\ 2 \\ 14 \\ 14 \\ 2 \\ 2 \\ 14 \\ 14 \\ 2 \\ 2 \\ 14 \\ 14 \\ 2 \\ 2 \\ 14 \\ 14 \\ 14 \\ 2 \\ 2 \\ 14 \\ 14 \\ 2 \\ 2 \\ 14 \\ 14 \\ 2 \\ 2 \\ 14 \\ 14 \\ 14 \\ 2 \\ 2 \\ 14 \\ 14 \\ 14 \\ 2 \\ 2 \\ 14 \\ 14 \\ 14 \\ 2 \\ 2 \\ 14 \\ 14 \\ 14 \\ 2 \\ 2 \\ 14 \\ 14 \\ 14 \\ 2 \\ 2 \\ 14 \\ 14 \\ 14 \\ 2 \\ 2 \\ 14 \\ 14 \\ 14 \\ 14 \\ 2 \\ 2 \\ 14 \\ 14 \\ 14 \\ 14 \\ 2 \\ 2 \\ 14 \\ 14 \\ 14 \\ 14 \\ 2 \\ 2 \\ 14 \\ 14 \\ 14 \\ 14 \\ 2 \\ 2 \\ 14 \\ 14 \\ 14 \\ 14 \\ 2 \\ 2 \\ 14 \\ 14 \\ 14 \\ 14 \\ 2 \\ 2 \\ 14 \\ 14 \\ 14 \\ 2 \\ 2 \\ 14 \\ 14 \\ 14 \\ 2 \\ 2 \\ 14 \\ 14 \\ 14 \\ 14 \\ 2 \\ 2 \\ 14 \\ 14 \\ 14 \\ 14 \\ 2 \\ 2 \\ 14 \\ 14 \\ 14 \\ 14 \\ 14 \\ 14 \\ 14 \\ 14$	42 42 42 44 44 44 44 41 41 1 2 1 2 43 43		$1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\$		513981.1910 513981.1910 513981.1910 537668.7190 537668.7190 537668.7190 537668.7190 537740.7136 537744.0218 537744.0218 537744.0218 537744.0218 537747.3584 541321.0475 541321.0475 541321.0475 541321.0475	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	Err Err Err Err Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1
$\begin{array}{r} 43\\ 43\\ 45\\ 45\\ 45\\ 44\\ 44\\ 44\\ 44\\ 16\\ 16\\ 16\\ 16\\ 45\\ 45\\ 45\\ 45\\ \end{array}$	1 0 1 0 1 2 3 2 3 15 15 15 15 15 1 2 1	43 43 43 45 45 45 42 42 42 42 1 2 2 44 44 44	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	222444433335555444	$ \begin{array}{c} 1 \\ 1 \\ 0 \\ 0 \\ 1 \\ 1 \\ 0 \\ 0 \\ 3 \\ 2 \\ 14 \\ 14 \\ 14 \\ 14 \\ 2 \\ 1 \\ 1 \end{array} $	42 42 42 44 44 44 44 41 41 1 2 1 2 43 43 43 43	. ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	$1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\$		513981.1910 513981.1910 513981.1910 537668.7190 537668.7190 537668.7190 537668.7190 537764.0218 537744.0218 537744.0218 537744.0218 537744.0218 541321.0475 541321.0475 541321.0475 541321.0475 541321.0475	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	Err Err Err Err Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1
$\begin{array}{r} 43\\ 43\\ 45\\ 45\\ 45\\ 45\\ 44\\ 44\\ 44\\ 44\\ 16\\ 16\\ 16\\ 16\\ 45\\ 45\\ 45\\ 45\\ 45\end{array}$	1 0 1 0 1 2 3 2 3 15 15 15 15 15 15 15 12 1 2 1 2	43 43 43 45 45 45 42 42 42 42 1 2 2 44 44 44 44	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	22244443333555544444	$ \begin{array}{c} 1 \\ 1 \\ 0 \\ 0 \\ 1 \\ 1 \\ 0 \\ 0 \\ 3 \\ 2 \\ 14 \\ 14 \\ 14 \\ 2 \\ 1 \\ 1 \\ 1 \end{array} $	$\begin{array}{c} 42\\ 42\\ 42\\ 44\\ 44\\ 44\\ 44\\ 41\\ 41\\ 1\\ 2\\ 1\\ 2\\ 43\\ 43\\ 43\\ 43\\ 43\end{array}$	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	$1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\$		513981.1910 513981.1910 513981.1910 537668.7190 537668.7190 537668.7190 537668.7190 537764.0218 537744.0218 537744.0218 537744.0218 537744.0218 537744.0218 541321.0475 541321.0475 541321.0475 541321.0475 541321.0475 541321.0475 541321.0475 541321.0475 541321.0475 541321.0475 541321.0475 541321.0475 541321.0475 541321.0475	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	Err Err Err Err Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1
$\begin{array}{r} 43\\ 43\\ 45\\ 45\\ 45\\ 45\\ 44\\ 44\\ 44\\ 16\\ 16\\ 16\\ 16\\ 45\\ 45\\ 45\\ 18\\ \end{array}$	$ \begin{array}{c} 1 \\ 0 \\ 1 \\ 0 \\ 1 \\ 2 \\ 3 \\ 2 \\ 3 \\ 15 \\ 15 \\ 15 \\ 15 \\ 1 \\ 2 \\ 1 \\ 2 \\ 14 \end{array} $	43 43 43 45 45 45 42 42 42 42 42 42 2 44 44 44 44 5	$4 \\ 4 \\ 4 \\ 4 \\ 4 \\ 4 \\ 4 \\ 4 \\ 4 \\ 4 \\$	22244443333555544447	$ \begin{array}{c} 1 \\ 1 \\ 0 \\ 0 \\ 1 \\ 1 \\ 0 \\ 0 \\ 3 \\ 2 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1$	42 42 42 44 44 44 44 41 41 41 1 2 43 43 43 43 5	5	$1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\$		513981.1910 513981.1910 513981.1910 537668.7190 537668.7190 537668.7190 537668.7190 537740.7136 537744.0218 537744.0218 537744.0218 537744.0218 537744.0218 537744.0218 537744.0218 537744.0218 54321.0475 541321.0475 541321.0475 541321.0475 543604.8788 543604.8788 543604.8788 543226.4302	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	Err Err Err Err Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1
$\begin{array}{r} 43\\ 43\\ 45\\ 45\\ 45\\ 45\\ 44\\ 44\\ 44\\ 16\\ 16\\ 16\\ 45\\ 45\\ 45\\ 45\\ 18\\ 18\end{array}$	$\begin{array}{c}1\\0\\1\\0\\1\\2\\3\\2\\3\\15\\15\\15\\1\\2\\1\\2\\14\\14\end{array}$	43 43 43 45 45 45 42 42 42 42 42 2 44 44 44 5 5	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	2224444333355554444477	$\begin{array}{c}1\\1\\0\\0\\1\\1\\0\\3\\2\\2\\14\\14\\14\\2\\1\\1\\3\\13\end{array}$	42 42 42 44 44 44 41 41 1 2 43 43 43 43 5 4		$1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\$		513981.1910 513981.1910 513981.1910 537668.7190 537668.7190 537668.7190 537668.7190 537768.7190 537747.136 537747.0218 537747.0218 537747.0218 541321.0475 541321.0475 541321.0475 541321.0475 543604.8788 543604.8788 543604.8788 543604.8788	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	Err Err Err Err Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1
$\begin{array}{r} 43\\ 43\\ 45\\ 45\\ 45\\ 45\\ 44\\ 44\\ 44\\ 16\\ 16\\ 16\\ 45\\ 45\\ 45\\ 18\\ 18\\ 18\\ 18\end{array}$	1 0 1 0 1 2 3 2 3 15 15 1 2 1 2 14 14 14	43 43 43 45 45 45 42 42 42 42 1 2 2 44 44 44 5 5	4 4 4 4 4 4 4 4 4 4	2224444333355554444777	$\begin{array}{c}1\\1\\0\\0\\1\\1\\0\\0\\3\\2\\2\\1\\4\\1\\4\\2\\1\\1\\3\\1\\3\\1\\3\end{array}$	$\begin{array}{c} 42\\ 42\\ 42\\ 44\\ 44\\ 44\\ 41\\ 41\\ 1\\ 2\\ 43\\ 43\\ 43\\ 43\\ 5\\ 4\\ 5\\ 4\end{array}$	2 S S S S S S S S S S S S S S S S S S S	1 1 1 1 1 1 1 1 1 1		513981.1910 513981.1910 513981.1910 537668.7190 537668.7190 537668.7190 537648.7190 537740.7136 537744.0218 537744.0218 537744.0218 537744.0218 537744.0218 537744.0218 537744.0218 537745.541321.0475 541321.0475 541321.0475 541321.0475 543604.8788 543604.8788 543604.8788 543604.8788	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	Err Err Err Err Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1
$\begin{array}{r} 43\\ 43\\ 45\\ 45\\ 45\\ 45\\ 44\\ 44\\ 44\\ 16\\ 16\\ 16\\ 45\\ 45\\ 45\\ 18\\ 18\\ 18\\ 18\\ 18\\ 18\\ 18\\ 18\\ 18\\ 18$	$1 \\ 0 \\ 1 \\ 0 \\ 1 \\ 0 \\ 1 \\ 2 \\ 3 \\ 2 \\ 3 \\ 15 \\ 15 \\ 1 \\ 2 \\ 1 \\ 2 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1$	43 43 43 45 45 45 42 42 42 42 1 2 2 44 44 44 5 5 4	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	22244443333555544447777	$\begin{array}{c}1\\1\\0\\0\\1\\1\\0\\0\\3\\2\\2\\1\\4\\1\\4\\2\\1\\1\\3\\1\\3\\1\\3\\1\\3\\1\\3\\1\\3\\1\\3\\1\\3\\1\\3$	$\begin{array}{c} 42\\ 42\\ 42\\ 44\\ 44\\ 44\\ 41\\ 41\\ 1\\ 2\\ 1\\ 2\\ 43\\ 43\\ 43\\ 5\\ 4\\ 5\\ 5\\ 5\end{array}$		$1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\$		513981.1910 513981.1910 513981.1910 537668.7190 537668.7190 537668.7190 537668.7190 537760.7136 537744.0218 537744.0218 537744.0218 537744.0218 541321.0475 541321.0475 541321.0475 541321.0475 543604.8788 543604.8788 543604.8788 543604.8788 543604.8788	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	Err Err Err Err Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1
$\begin{array}{c} 43\\ 43\\ 45\\ 45\\ 45\\ 44\\ 44\\ 44\\ 44\\ 16\\ 16\\ 16\\ 45\\ 45\\ 18\\ 18\\ 18\\ 18\\ 18\\ 18\\ 18\\ 18\\ 18\\ 18$	$1 \\ 0 \\ 1 \\ 0 \\ 1 \\ 0 \\ 1 \\ 2 \\ 3 \\ 2 \\ 3 \\ 15 \\ 15 \\ 15 \\ 1 \\ 2 \\ 1 \\ 2 \\ 1 \\ 4 \\ 14 \\ 14 \\ 14 $	43 43 43 45 45 45 42 42 42 42 1 1 2 2 44 44 44 5 5 4 4 5 4 4 4 4 4 4 4 4 4 4	4 4 4 4 4 4 4 4 4 4	22244443333555544447777	$\begin{array}{c}1\\1\\0\\0\\1\\1\\0\\0\\3\\2\\2\\1\\4\\1\\4\\1\\2\\1\\1\\3\\1\\3\\1\\3\\1\\3\\1\\3\\1\\3\\1\\3\\1\\3\\1$	42 42 42 44 44 44 44 41 41 12 12 43 43 43 54 54 54		1 1 1 1 1 1 1 1 1 1		513981.1910 513981.1910 513981.1910 537668.7190 537668.7190 537668.7190 537668.7190 537740.7136 537744.0218 537744.0218 537744.0218 537747.3584 541321.0475 541321.0475 541321.0475 541321.0475 541321.0475 543604.8788 543604.8788 543604.8788 543604.8788 543604.8788 543604.8788	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	Err Err Err Err Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1
$\begin{array}{r} 43\\ 43\\ 45\\ 45\\ 45\\ 44\\ 44\\ 44\\ 44\\ 16\\ 16\\ 16\\ 16\\ 45\\ 45\\ 18\\ 18\\ 18\\ 18\\ 17\\ \end{array}$		$\begin{array}{c} 43\\ 43\\ 43\\ 45\\ 45\\ 45\\ 45\\ 42\\ 42\\ 42\\ 42\\ 1\\ 2\\ 2\\ 44\\ 44\\ 45\\ 5\\ 4\\ 42\\ 2\\ 44\\ 44\\ 45\\ 5\\ 4\\ 42\\ 2\end{array}$	4 4 4 4 4 4 4 4 4 4	222444433335555444477776	$\begin{array}{c}1\\1\\0\\0\\1\\1\\0\\0\\3\\2\\2\\14\\14\\14\\14\\13\\13\\13\\13\\14\end{array}$	$\begin{array}{c} 42\\ 42\\ 42\\ 44\\ 44\\ 44\\ 41\\ 41\\ 1\\ 2\\ 1\\ 2\\ 43\\ 43\\ 43\\ 43\\ 5\\ 4\\ 5\\ 4\\ 3\end{array}$		$1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\$		513981.1910 513981.1910 513981.1910 537668.7190 537668.7190 537668.7190 537668.7190 537668.7190 537740.7136 537744.0218 537744.0218 537744.0218 537747.3584 541321.0475 541321.0475 541321.0475 541321.0475 543604.8788 543604.8788 543604.8788 543604.8788 543604.8788 543264.4302 543226.4302 543226.4302	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	Err Err Err Err Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1
$\begin{array}{r} 43\\ 43\\ 45\\ 45\\ 45\\ 44\\ 44\\ 44\\ 16\\ 16\\ 16\\ 16\\ 45\\ 45\\ 45\\ 18\\ 18\\ 18\\ 18\\ 18\\ 17\\ 17\end{array}$	$\begin{smallmatrix} 1 & 0 & 1 \\ 0 & 1 & 0 \\ 1 & 2 & 3 & 2 \\ 3 & 15 & 15 & 12 \\ 1 & 2 & 14 \\ 14 & 14 \\ 15 & 15 \\ 15 & 15 \\ 15 & 12 \\ 12 & 12 \\ 14 & 14 \\ 15 & 15 \\ 15 & 12 \\ $	43 43 43 45 45 45 42 42 42 42 42 42 42 44 44	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	2224444333355554444777766	$\begin{array}{c}1\\1\\0\\0\\1\\1\\0\\0\\3\\2\\2\\1\\4\\1\\4\\1\\3\\1\\3\\1\\3\\1\\3\\1\\4\\1\\4\end{array}$	$\begin{array}{c} 42\\ 42\\ 42\\ 44\\ 44\\ 44\\ 41\\ 1\\ 2\\ 1\\ 2\\ 43\\ 43\\ 5\\ 4\\ 5\\ 4\\ 5\\ 4\\ 3\\ 2\end{array}$		$1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\$		513981.1910 513981.1910 513981.1910 537668.7190 537668.7190 537668.7190 537668.7190 537768.7190 537747.136 537747.0218 537747.0218 537747.0218 537747.0218 541321.0475 541321.0475 541321.0475 541321.0475 543604.8788 543604.8788 543604.8788 543604.8788 543604.8788 543226.4302 543226.4302 543226.4302 553951.0856	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	Err Err Err Err Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1
$\begin{array}{r} 43\\ 43\\ 45\\ 45\\ 45\\ 45\\ 44\\ 44\\ 44\\ 44\\ 16\\ 16\\ 16\\ 45\\ 45\\ 18\\ 18\\ 18\\ 18\\ 18\\ 17\\ 17\\ 17\end{array}$	$\begin{array}{c} 1 \\ 0 \\ 1 \\ 0 \\ 1 \\ 0 \\ 1 \\ 2 \\ 3 \\ 2 \\ 3 \\ 15 \\ 15 \\ 15 \\ 12 \\ 1 \\ 2 \\ 14 \\ 14 \\ 14 \\ 15 \\ 15 \\ 15 \\ 15 \\ 15$	43 43 43 45 45 42 42 42 42 42 42 44 44 44 5 5 4 42 3 2	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	222444433335555444477776666	$\begin{array}{c}1\\1\\0\\0\\1\\1\\0\\0\\3\\2\\2\\1\\4\\1\\4\\1\\1\\3\\1\\3\\1\\3\\1\\4\\1\\4\\1\\4\\1\\4\end{array}$	$\begin{array}{c} 42\\ 42\\ 42\\ 44\\ 44\\ 44\\ 41\\ 1\\ 2\\ 1\\ 2\\ 43\\ 43\\ 5\\ 4\\ 5\\ 4\\ 5\\ 4\\ 3\\ 2\\ 2\end{array}$		$1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\$		513981.1910 513981.1910 513981.1910 537668.7190 537668.7190 537668.7190 537668.7190 537764.0218 537744.0218 537744.0218 537744.0218 537744.0218 537744.0218 537744.0218 537744.0218 54321.0475 541321.0475 541321.0475 543604.8788 543604.8788 543604.8788 543604.8788 543604.8788 543604.8788 543604.8788 543604.8788 543264.4302 543226.4302 543226.4302 553951.0856 553951.0856	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	ETT ETT ETT ETT ETT ETT ETT ETT ETT ETT	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1
$\begin{array}{r} 43\\ 43\\ 45\\ 45\\ 45\\ 45\\ 44\\ 44\\ 44\\ 44\\ 16\\ 16\\ 16\\ 45\\ 45\\ 18\\ 18\\ 18\\ 18\\ 17\\ 17\\ 17\\ 17\\ 17\\ 17\\ 17\\ 17\\ 17\\ 17$	$\begin{array}{c} 1 \\ 0 \\ 1 \\ 0 \\ 1 \\ 0 \\ 1 \\ 2 \\ 3 \\ 2 \\ 3 \\ 2 \\ 3 \\ 5 \\ 15 \\ 15 \\ 1 \\ 2 \\ 1 \\ 2 \\ 1 \\ 2 \\ 1 \\ 4 \\ 1 \\ 4 \\ 1 \\ 5 \\ 15 \\ 1 \\ 1$	43344554422211224444455442323	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	2224444333355554444777766666	$\begin{array}{c}1\\1\\0\\0\\1\\1\\0\\0\\3\\2\\2\\1\\4\\1\\4\\1\\1\\3\\1\\3\\1\\3\\1\\4\\1\\4\\1\\4\\1\\4\\1$	$\begin{array}{c} 42\\ 42\\ 44\\ 44\\ 44\\ 41\\ 41\\ 1\\ 2\\ 1\\ 2\\ 43\\ 43\\ 43\\ 5\\ 4\\ 5\\ 4\\ 5\\ 4\\ 3\\ 2\\ 2\\ 3\end{array}$		$1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\$		513981.1910 513981.1910 513981.1910 537668.7190 537668.7190 537668.7190 537668.7190 537760.7136 537744.0218 537744.0218 537744.0218 537744.0218 537744.0218 54321.0475 541321.0475 541321.0475 541321.0475 543604.87885 544604.878855665665656566566566656566666666666	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	Err Err Err Err Err Err Err Err Err Err	.1 .1
$\begin{array}{r} 43\\ 43\\ 45\\ 45\\ 45\\ 44\\ 44\\ 44\\ 44\\ 46\\ 16\\ 16\\ 16\\ 45\\ 45\\ 18\\ 18\\ 18\\ 17\\ 17\\ 17\\ 17\\ 7\end{array}$	$1 \\ 0 \\ 1 \\ 0 \\ 1 \\ 0 \\ 1 \\ 2 \\ 3 \\ 2 \\ 3 \\ 15 \\ 15 \\ 15 \\ 1 \\ 2 \\ 1 \\ 2 \\ 1 \\ 2 \\ 1 \\ 4 \\ 14 \\ 1$	43344544544221122444444554423235	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	22244444333355555444447777666666	$\begin{array}{c}1\\1\\0\\0\\1\\1\\0\\0\\3\\2\\2\\1\\4\\1\\4\\1\\1\\3\\1\\3\\1\\3\\1\\3\\1\\4\\1\\4\\1\\4\\1$	42 42 44 44 44 44 41 41 2 1 2 3 43 43 5 4 5 4 3 2 2 3 4		$1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\$		513981.1910 513981.1910 513981.1910 537668.7190 537668.7190 537668.7190 537668.7190 537740.7136 537744.0218 537744.0218 537744.0218 537744.0218 537744.0218 537744.0218 537744.0218 541321.0475 541321.0475 541321.0475 541321.0475 543604.8788 543604.8788 543604.8788 543604.8788 543604.8788 543264.4302 543226.4302 543226.4302 553951.0856 553951.0856 553951.0856	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	Err Err Err Err Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1
$\begin{array}{c} 43\\ 43\\ 45\\ 45\\ 45\\ 44\\ 44\\ 44\\ 46\\ 16\\ 16\\ 16\\ 45\\ 45\\ 18\\ 18\\ 18\\ 17\\ 17\\ 17\\ 17\\ 46\\ 2\end{array}$	1 0 1 0 1 2 3 2 3 15 15 1 2 1 2 4 4 4 4 15 15 15 1 2 1 2 4 4 4 4 15 15 15 1 1 2 1 2 4 4 4 4 4 5 15 15 1 1 2 1 2 4 4 4 4 5 1 5 1 5 1 5 1 5 1 5 1 5 1 5 1	43 43 43 44 45 44 42 42 42 42 44 44 44 5 5 4 42 3 2 3 45 5 4 42 3 2 3 45	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	22224444333355555444477776666655	1 0 0 1 1 0 0 3 2 2 1 4 1 1 0 0 3 2 2 1 4 1 1 1 1 0 0 3 2 2 1 4 1 1 1 1 1 1 1 1 1 1 1 1 1	$\begin{array}{c} 42\\ 42\\ 42\\ 44\\ 44\\ 44\\ 41\\ 41\\ 1\\ 2\\ 1\\ 2\\ 3\\ 43\\ 3\\ 5\\ 4\\ 5\\ 4\\ 3\\ 2\\ 2\\ 3\\ 44\\ 3\\ 43\\ 5\\ 4\\ 5\\ 4\\ 3\\ 2\\ 2\\ 3\\ 44\\ 3\\ 43\\ 5\\ 4\\ 5\\ 4\\ 3\\ 2\\ 2\\ 3\\ 44\\ 3\\ 4\\ 3\\ 5\\ 4\\ 5\\ 4\\ 3\\ 2\\ 2\\ 3\\ 4\\ 4\\ 3\\ 4\\ 3\\ 5\\ 4\\ 5\\ 4\\ 3\\ 2\\ 2\\ 3\\ 4\\ 4\\ 4\\ 4\\ 4\\ 4\\ 4\\ 4\\ 4\\ 4\\ 4\\ 4\\ 4\\$		$1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\$		513981.1910 513981.1910 513981.1910 537668.7190 537668.7190 537668.7190 537668.7190 537760.7136 537744.0218 537744.0218 537744.0218 537744.0218 541321.0475 541321.0475 541321.0475 541321.0475 541321.0475 543604.8788 544804.8788 545804.8788 545804.8788 545904.8788 545904.8788 545904.8788 545904.8788 545904.8788 545904.8788 545904.8788 545904.8788 545904.8788 545904.8788 545904.878855459056555555555555555555555555555555555	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	Err Err Err Err Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1
$\begin{array}{c} 43\\ 43\\ 45\\ 45\\ 45\\ 44\\ 44\\ 44\\ 46\\ 16\\ 16\\ 16\\ 45\\ 45\\ 18\\ 18\\ 18\\ 17\\ 17\\ 17\\ 46\\ 46\\ 46\\ 16\\ 16\\ 16\\ 16\\ 16\\ 16\\ 16\\ 16\\ 16\\ 1$	1 0 1 0 1 2 3 2 3 15 15 1 2 1 2 4 4 4 4 15 15 1 2 1 2	433 4434 4454222 442421122444445544232345544232345544232345544232345544232345544554	4 4 4 4 4 4 4 4 4 4	2222444433335555544444777766666555	$\begin{array}{c} 1 \\ 1 \\ 0 \\ 0 \\ 1 \\ 1 \\ 0 \\ 0 \\ 3 \\ 3 \\ 2 \\ 2 \\ 14 \\ 14 \\ 14 \\ 2 \\ 1 \\ 13 \\ 13 \\ 14 \\ 14 \\ 14 \\ 2 \\ 2 \\ 2 \\ 1 \\ 13 \\ 13 \\ 14 \\ 14 \\ 14 \\ 2 \\ 2 \\ 2 \\ 2 \\ 2 \\ 2 \\ 2 \\ 2 \\ 2 \\ $	$\begin{array}{c} 42\\ 422\\ 44\\ 44\\ 44\\ 44\\ 41\\ 1\\ 2\\ 1\\ 2\\ 43\\ 43\\ 5\\ 4\\ 5\\ 4\\ 5\\ 4\\ 3\\ 2\\ 2\\ 3\\ 44\\ 44\\ 44\\ 41\\ 1\\ 2\\ 1\\ 2\\ 3\\ 44\\ 43\\ 5\\ 4\\ 5\\ 4\\ 5\\ 4\\ 3\\ 2\\ 2\\ 3\\ 44\\ 44\\ 44\\ 44\\ 41\\ 1\\ 2\\ 1\\ 2\\ 3\\ 44\\ 43\\ 5\\ 4\\ 4\\ 4\\ 4\\ 4\\ 4\\ 4\\ 4\\ 4\\ 4\\ 4\\ 4\\ 4\\$		$1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\$		513981.1910 513981.1910 513981.1910 537668.7190 537668.7190 537668.7190 537668.7190 537648.7190 537740.7136 537744.0218 537744.0218 537744.0218 537744.0218 537747.3584 541321.0475 541321.0475 541321.0475 541321.0475 543604.8788 543604.8788 543604.8788 543604.8788 543604.8788 543604.8788 543604.8788 543604.8788 543604.8788 543604.8788 543505.0856 553951.0856 553951.0856 555443.0443	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	ETT ETT ETT ETT ETT ETT ETT ETT ETT ETT	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1
$\begin{array}{c} 43\\ 43\\ 45\\ 45\\ 45\\ 44\\ 44\\ 44\\ 46\\ 16\\ 16\\ 16\\ 45\\ 45\\ 18\\ 18\\ 18\\ 17\\ 17\\ 17\\ 46\\ 46\\ 46\end{array}$	$egin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{c} 43\\ 433\\ 445\\ 45\\ 45\\ 422\\ 42\\ 42\\ 1\\ 2\\ 244\\ 444\\ 5\\ 5\\ 4\\ 42\\ 3\\ 2\\ 3\\ 45\\ 45\\ 45\\ 45\\ 45\\ 45\\ 45\\ 45\\ 45\\ 45$	4 4 4 4 4 4 4 4 4 4	22224444333355555444447777666665555	$\begin{array}{c}1\\1\\0\\0\\1\\1\\0\\0\\3\\3\\2\\2\\1\\4\\1\\4\\1\\4\\1\\2\\1\\1\\3\\1\\3\\1\\4\\1\\4\\1\\4\\1\\4\\2\\2\\1\end{array}$	$\begin{array}{c} 42\\ 422\\ 44\\ 44\\ 44\\ 41\\ 1\\ 2\\ 1\\ 2\\ 43\\ 43\\ 43\\ 5\\ 4\\ 5\\ 4\\ 5\\ 4\\ 3\\ 2\\ 2\\ 3\\ 44\\ 44\\ 44\\ 44\\ 44\\ 44\\ 44\\ 44\\ 44\\$		$1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\$		513981.1910 513981.1910 513981.1910 537668.7190 537668.7190 537668.7190 537668.7190 537668.7190 537744.0218 537744.0218 537744.0218 537744.0218 537744.0218 537744.0218 537744.0218 54321.0475 541321.0475 541321.0475 543604.8788 543604.8788 543604.8788 543604.8788 543604.8788 543604.8788 543604.8788 543604.8788 543604.8788 543504.8780 553951.0856 553951.0856 555443.0443	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	Err Err Err Err Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1
$\begin{array}{c} 43\\ 43\\ 45\\ 45\\ 45\\ 44\\ 44\\ 44\\ 46\\ 16\\ 16\\ 16\\ 45\\ 45\\ 18\\ 18\\ 18\\ 17\\ 17\\ 17\\ 16\\ 46\\ 46\\ 46\\ 46\end{array}$	$egin{array}{c} 1 & 0 & 1 & 0 & 1 & 2 & 3 & 2 & 3 & 15 & 15 & 15 & 1 & 1 & 2 & 1 & 2 & 4 & 14 & 14 & 15 & 15 & 15 & 1 & 2 & $	433 4434 445 445 422 422 112 2444 445 5442 323 455 4	4 4 4 4 4 4 4 4 4 4	222444433335555444447777666665555	$\begin{smallmatrix} 1 \\ 1 \\ 0 \\ 0 \\ 1 \\ 1 \\ 0 \\ 0 \\ 3 \\ 2 \\ 2 \\ 14 \\ 14 \\ 14 \\ 2 \\ 2 \\ 1 \\ 1 \\ 3 \\ 13 \\ 13 \\ 14 \\ 14 \\ 14 \\ $	$\begin{array}{c} 42\\ 422\\ 44\\ 44\\ 44\\ 41\\ 1\\ 1\\ 2\\ 1\\ 2\\ 3\\ 43\\ 3\\ 5\\ 4\\ 5\\ 4\\ 5\\ 4\\ 3\\ 2\\ 2\\ 3\\ 44\\ 44\\ 44\\ 44\\ 44\\ 44\\ 44\\ 44\\ 44\\$		$1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\$		513981.1910 513981.1910 513981.1910 537668.7190 537668.7190 537668.7190 537668.7190 537768.7190 537768.7190 537744.0218 537744.0218 537744.0218 537744.0218 537747.3584 541321.0475 541321.0475 541321.0475 541321.0475 543604.8788 543604.8788 543604.8788 543604.8788 543604.8788 543604.8788 543624.4302 543226.4302 553951.0856 553951.0856 553951.0856 553951.0856 553951.0856 553951.0856 555443.0443 555443.0443	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	ETT ETT ETT ETT ETT ETT ETT ETT ETT ETT	.1 .1
$\begin{array}{c} 43\\ 43\\ 45\\ 45\\ 45\\ 44\\ 44\\ 44\\ 46\\ 16\\ 16\\ 16\\ 45\\ 45\\ 18\\ 18\\ 17\\ 17\\ 17\\ 16\\ 6\\ 46\\ 6\\ 21\\ \end{array}$	$1 \\ 0 \\ 1 \\ 0 \\ 1 \\ 2 \\ 3 \\ 2 \\ 3 \\ 15 \\ 15 \\ 15 \\ 1 \\ 2 \\ 1 \\ 2 \\ 14 \\ 14 \\ 14 \\ 15 \\ 15 \\ 1 \\ 2 \\ $	4334445442221122444445544232345544232345544232345544232345544232345544232345544232345544558445554455844555445584455544558445554455845584558645586455866666666	44 44 44 44 44 44 44 44	22244443333555554444477776666655550	$\begin{array}{c}1\\1\\0\\0\\1\\1\\0\\0\\3\\3\\2\\2\\1\\4\\1\\4\\1\\4\\1\\2\\1\\1\\3\\1\\3\\1\\4\\1\\4\\1\\4\\1\\2\\2\\1\\1\\2\end{array}$	$\begin{array}{c} 42\\ 42\\ 42\\ 44\\ 44\\ 44\\ 41\\ 1\\ 2\\ 1\\ 2\\ 3\\ 43\\ 43\\ 5\\ 4\\ 5\\ 4\\ 5\\ 4\\ 3\\ 2\\ 2\\ 3\\ 44\\ 44\\ 4\\ 4\\ 9\end{array}$		$1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\$		b13981.1910 513981.1910 513981.1910 537668.7190 537668.7190 537668.7190 537668.7190 537740.7136 537744.0218 537744.0218 537744.0218 537744.0218 537744.0218 537744.0218 537744.0218 543204.0475 541321.0475 541321.0475 541321.0475 543604.8788 553951.0856 553951.0856 553951.0856 553951.0856 555443.0443 555443.0443 555443.0443	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	ETT ETT ETT ETT ETT ETT ETT ETT ETT ETT	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1
$\begin{array}{c} 43\\ 43\\ 45\\ 45\\ 45\\ 44\\ 44\\ 44\\ 46\\ 16\\ 16\\ 16\\ 45\\ 45\\ 18\\ 8\\ 18\\ 17\\ 17\\ 17\\ 16\\ 6\\ 46\\ 46\\ 46\\ 21\\ \end{array}$	$1 \\ 0 \\ 1 \\ 0 \\ 1 \\ 0 \\ 1 \\ 2 \\ 3 \\ 2 \\ 3 \\ 5 \\ 15 \\ 15 \\ 1 \\ 2 \\ 1 \\ 2 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1$	4 3 3 4 4 5 5 4 4 5 5 4 4 2 3 2 3 4 5 5 4 4 5 5 4 4 2 3 2 3 4 5 5 5 4 4 5 5 5 4 4 5 5 4 5 5 4 5 5 4 5 5 4 5 5 4 5 5 4 5 5 5 4 5 5 5 4 5 5 5 4 5 5 5 4 5 5 5 4 5 5 5 4 5	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	2224444333355555444447777666665555500	$\begin{array}{c}1\\1\\0\\0\\1\\1\\0\\0\\3\\2\\2\\1\\4\\1\\4\\1\\2\\2\\1\\1\\3\\1\\3\\1\\4\\1\\4\\1\\4\\1\\4\\2\\2\\1\\1\\2\\2\\1\\1\\2\\2\\1\\1\\2\\2\\1\\1\\2\\2\\1\\1\\2\\2\\1\\1\\2\\2\\1\\1\\2\\2\\1\\2\\2\\1\\2\\2\\1\\2\\2\\1\\2\\2\\1\\2\\2\\1\\2\\2\\1\\2\\2\\1\\2\\2\\2\\1\\2\\2\\2\\1\\2\\2\\2\\1\\2\\2\\2\\1\\2$	422 422 424 444 44 41 41 1 2 1 2 3 43 3 3 5 4 5 4 3 2 2 3 44 44 44 4 4 4 4 4 4 4 4 4 4	, , , , , , , , , , , , , , , , , , ,	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		513981.1910 513981.1910 513981.1910 537668.7190 537668.7190 537668.7190 537668.7190 537768.7190 537764.0218 537744.0218 537744.0218 537744.0218 537744.0218 541321.0475 541321.0475 541321.0475 541321.0475 543604.8788 543604.8788 543604.8788 543604.8788 543604.8788 543604.8788 543604.8788 543264.4302 553951.0856 553951.0856 553951.0856 553951.0856 553951.0856 555443.0443 555443.0443 555443.0443	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	Err Err Err Err Err Err Err Err Err Err	.1 .1
$\begin{array}{c} 43\\ 43\\ 45\\ 45\\ 45\\ 44\\ 44\\ 44\\ 44\\ 16\\ 16\\ 16\\ 16\\ 45\\ 54\\ 18\\ 18\\ 18\\ 17\\ 17\\ 17\\ 16\\ 46\\ 46\\ 421\\ 221\\ \end{array}$	$1 \\ 0 \\ 1 \\ 0 \\ 1 \\ 2 \\ 3 \\ 2 \\ 3 \\ 5 \\ 15 \\ 15 \\ 1 \\ 2 \\ 1 \\ 2 \\ 14 \\ 14 \\ 14 \\ 15 \\ 15 \\ 1 \\ 2 \\ 1 \\ 2 \\ 1 \\ 3 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1$	4 3 3 4 4 5 5 4 4 2 3 2 3 5 5 4 4 2 3 2 3 5 5 5 4 4 5 5 4 5 5 4 5 5 4 5 5 4 5 5 4 5 5 4 5 5 4 5 5 4 5 5 5 4 5 5 5 4 5 5 5 4 5 5 5 4 5	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	22244443333555554444477776666655555000	$\begin{array}{c} 1 \\ 1 \\ 0 \\ 0 \\ 1 \\ 1 \\ 0 \\ 0 \\ 3 \\ 3 \\ 2 \\ 2 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 3 \\ 1 \\ 3 \\ 1 \\ 1$	422 424 444 444 441 411 212 433 435 454 322 3444 44 44 98°		$1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\$		513981.1910 513981.1910 513981.1910 537668.7190 537668.7190 537668.7190 537668.7190 537740.7136 53774.0218 53774.0218 53774.0218 53774.0218 53774.0218 53774.0218 53774.0218 541321.0475 541321.0475 541321.0475 543604.8788 543604.8788 543604.8788 543604.8788 543604.8788 543264.4302 553951.0856 553951.0856 553951.0856 553951.0856 553951.0856 553951.0856 553951.0856 553951.0856 553951.0856 553951.0856 553951.0856 553943.0433 555443.0443 55443.0443 55443.0443	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	ETT ETT ETT ETT ETT ETT ETT ETT ETT ETT	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1
$\begin{array}{c} 43\\ 43\\ 45\\ 45\\ 45\\ 44\\ 44\\ 44\\ 44\\ 44\\ 44\\ 46\\ 16\\ 16\\ 16\\ 45\\ 45\\ 18\\ 18\\ 17\\ 17\\ 17\\ 16\\ 6\\ 46\\ 21\\ 21\\ 21\\ 22\\ 12\\ 21\\ 22\\ 22\\ 22\\ 22$	$1 \\ 0 \\ 1 \\ 0 \\ 1 \\ 2 \\ 3 \\ 2 \\ 3 \\ 15 \\ 15 \\ 1 \\ 2 \\ 1 \\ 2 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1$	4334345544222112244444554423234554458890	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	22244443333555554444477776666655550000	$\begin{array}{c} 1 \\ 1 \\ 0 \\ 0 \\ 1 \\ 1 \\ 0 \\ 0 \\ 3 \\ 3 \\ 2 \\ 2 \\ 14 \\ 14 \\ 1 \\ 2 \\ 2 \\ 1 \\ 13 \\ 13 \\ 13 \\ 14 \\ 14 \\ 14 \\ 2 \\ 2 \\ 1 \\ 12 \\ 12 \\ $	422 424 444 441 1 2 1 2 3 3 444 444 44 44 44 44 44 44 44 44 44		$\begin{array}{c}1\\1\\1\\1\\1\\1\\1\\1\\1\\1\\1\\1\\1\\1\\1\\1\\1\\1\\1\\$		513981.1910 513981.1910 513981.1910 513981.1910 537668.7190 537668.7190 537668.7190 537668.7190 537764.0218 537744.0218 537744.0218 537744.0218 537744.0218 537744.0218 541321.0475 541321.0475 541321.0475 541321.0475 541321.0475 543604.8788 543604.8788 543604.8788 543604.8788 543604.8788 543604.8788 543264.4302 543226.4302 543226.4302 553951.0856 553951.0856 553951.0856 553951.0856 553951.0856 553951.0856 553943.0433 555443.0443 555443.0443 555443.0443	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	Err Err Err Err Err Err Err Err Err Err	.1 .1
$\begin{array}{c} 43\\ 43\\ 45\\ 45\\ 45\\ 44\\ 44\\ 44\\ 44\\ 46\\ 16\\ 16\\ 16\\ 54\\ 55\\ 45\\ 18\\ 18\\ 18\\ 17\\ 17\\ 17\\ 46\\ 64\\ 64\\ 22\\ 12\\ 21\\ 21\\ \end{array}$	$egin{array}{c} 1 & 0 & 1 & 0 & 1 & 2 & 3 & 2 & 3 & 15 & 15 & 15 & 1 & 2 & 1 & 2 & 1 & 2 & 1 & 2 & 1 & 1$	43343455442221122444445544223234558899	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	222444433335555544444777766666555500000	$\begin{smallmatrix} 1 \\ 1 \\ 0 \\ 0 \\ 1 \\ 1 \\ 0 \\ 0 \\ 3 \\ 3 \\ 2 \\ 2 \\ 1 \\ 1 \\ 1 \\ 4 \\ 1 \\ 4 \\ 2 \\ 2 \\ 1 \\ 1 \\ 3 \\ 1 \\ 3 \\ 1 \\ 3 \\ 1 \\ 1 \\ 1$	$\begin{array}{c} 422\\ 442\\ 444\\ 444\\ 441\\ 12\\ 1\\ 243\\ 43\\ 3\\ 54\\ 5\\ 4\\ 3\\ 2\\ 2\\ 3\\ 444\\ 44\\ 4\\ 9\\ 8\\ 8\\ 9\end{array}$		$\begin{smallmatrix} 1 & 1 \\ 1 $		513981.1910 513981.1910 513981.1910 537668.7190 537668.7190 537668.7190 537668.7190 537740.7136 537744.0218 537744.0218 537744.0218 537744.0218 537744.0218 537744.0218 541321.0475 541321.0475 541321.0475 543604.8788 543604.8788 543604.8788 543604.8788 543604.8788 543604.8788 543604.8788 54326.4302 553951.0856 553951.0856 553951.0856 553951.0856 555943.0433 555443.0443 555443.0443 555443.0443 555443.0443	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	Err Err Err Err Err Err Err Err Err Err	.1 .1
$\begin{array}{c} 43\\ 43\\ 45\\ 45\\ 45\\ 44\\ 44\\ 44\\ 44\\ 44\\ 46\\ 16\\ 16\\ 16\\ 45\\ 45\\ 18\\ 18\\ 17\\ 17\\ 17\\ 16\\ 46\\ 46\\ 21\\ 221\\ 221\\ 23\end{array}$	$egin{array}{c} 1 & 0 & 1 & 0 & 1 & 2 & 3 & 2 & 3 & 15 & 15 & 1 & 1 & 2 & 1 & 2 & 1 & 2 & 1 & 2 & 1 & 3 & 1 & 3 & 1 & 1 & 1 & 1 & 1 & 1$	4 4 3 3 4 4 4 4 4 4 4 2 1 1 2 2 4 4 4 4 4 5 5 4 4 2 3 2 3 4 4 5 5 4 4 2 5 4 4 2 5 1 4 5 5 4 4 2 5 1 4 5 5 4 4 5 5 4 4 5 5 4 4 5 5 4 4 5 5 4 5 5 4 5	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	222444443333555554444477776666655555000002	$\begin{smallmatrix} 1 \\ 1 \\ 0 \\ 0 \\ 1 \\ 1 \\ 0 \\ 0 \\ 3 \\ 2 \\ 2 \\ 14 \\ 14 \\ 14 \\ 2 \\ 2 \\ 1 \\ 13 \\ 13 \\ 13 \\ 14 \\ 14 \\ 14 \\ 2 \\ 2 \\ 1 \\ 12 \\ 12 \\ $	$\begin{array}{c} 422\\ 442\\ 444\\ 444\\ 41\\ 1\\ 2\\ 1\\ 2\\ 3\\ 43\\ 3\\ 43\\ 5\\ 4\\ 5\\ 4\\ 5\\ 4\\ 3\\ 2\\ 2\\ 3\\ 444\\ 44\\ 9\\ 8\\ 8\\ 9\\ 11 \end{array}$		$\begin{smallmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \\ 1 & 1 & 1 \\ 1 & 1 &$		513981.1910 513981.1910 513981.1910 537668.7190 537668.7190 537668.7190 537668.7190 537668.7190 53774.0218 53774.0218 53774.0218 53774.0218 53774.0218 53774.0218 53774.0218 54742.0475 541321.0475 541321.0475 541321.0475 543604.8788 543226.4302 553951.0856 553951.0856 55543.0433 555443.0443 555443.0443 557422.2977 557722.2977 557722.2977	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	ETT ETT ETT ETT ETT ETT ETT ETT ETT ETT	
$\begin{array}{c} 43\\ 43\\ 45\\ 45\\ 44\\ 44\\ 44\\ 44\\ 46\\ 16\\ 16\\ 16\\ 45\\ 45\\ 18\\ 18\\ 17\\ 17\\ 16\\ 6\\ 46\\ 6\\ 21\\ 21\\ 22\\ 22\\ 3\end{array}$	$egin{array}{c} 1 & 0 & 1 & 0 & 1 & 2 & 3 & 2 & 3 & 15 & 15 & 15 & 15 & 1 & 2 & 1 & 2 & 4 & 4 & 14 & 14 & 15 & 15 & 1 & 2 & 1 & 2 & 3 & 13 & 13 & 13 & 13$	4 3 3 4 3 4 5 5 4 4 2 2 4 4 4 4 4 4 5 5 4 4 2 3 2 3 5 4 5 5 9 9 1 1 2 1 2 2 4 4 4 4 4 5 5 4 4 2 3 2 3 5 4 5 5 8 9 9 1 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1	4 4 $4 4$ 4 $4 4$ 4 $4 4$ $4 4$ $4 4$ 4 4 4 4 4 4 4 4 4	2224444433335555544444777766666555550000022	$1 \\ 1 \\ 0 \\ 0 \\ 1 \\ 1 \\ 0 \\ 0 \\ 3 \\ 2 \\ 2 \\ 1 \\ 1 \\ 1 \\ 4 \\ 1 \\ 2 \\ 2 \\ 1 \\ 1 \\ 1 \\ 3 \\ 1 \\ 3 \\ 1 \\ 3 \\ 1 \\ 1$	$\begin{array}{c} 422\\ 442\\ 444\\ 444\\ 411\\ 1\\ 2\\ 1\\ 2\\ 3\\ 43\\ 3\\ 5\\ 4\\ 5\\ 4\\ 5\\ 4\\ 3\\ 2\\ 2\\ 3\\ 444\\ 44\\ 9\\ 8\\ 8\\ 9\\ 112 \end{array}$		$\begin{smallmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \\ 1 & 1 & 1 \\ 1 & 1 &$		b13981.1910 513981.1910 513981.1910 537668.7190 537668.7190 537668.7190 537668.7190 537668.7190 537740.7136 537744.0218 537744.0218 537747.3584 541321.0475 541321.0475 541321.0475 541321.0475 541321.0475 543204.8788 543604.8788 543604.8788 543604.8788 543604.8788 543604.8788 543604.8788 543264.4302 553951.0856 553951.0856 553951.0856 553951.0856 555443.0443 555443.0443 555443.0443 555443.0443 555443.0443 555443.0443 555443.0443 555443.0443 555443.0443 555443.0443 555443.0443 555443.0443 555443.0443 555443.0443 555443.0443 555443.0443 555443.0443 555453.8488 559553.8488 54365.8388 54365.8388 54365.8388 55485.8388 55485.8388 55485.8388 55485.8388 55485.8388 55485.8388 55485.8388 55485.8388 55485.8388 55485.8388 55485.8388 55485.8388 55485.8388 555585.8388 555585.8388 555585.8388 555585.8388 555585.8388 555585.8388 555585.8388 555585.8388 555585.8388 555585.8388 5555585.8388 5555585.8588 5555585.8588 55555585.8588 55555585.8588 5555585.8588 5555555.8588 55555555.8588 5555555.8588 5555555555	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	ETT ETT ETT ETT ETT ETT ETT ETT ETT ETT	$\begin{array}{c} .1\\ .1\\ .1\\ .1\\ .1\\ .1\\ .1\\ .1\\ .1\\ .1\\$
$\begin{array}{c} 43\\ 43\\ 45\\ 45\\ 44\\ 44\\ 44\\ 44\\ 44\\ 44\\ 44\\ 44$	$\begin{array}{c} 1 \\ 0 \\ 1 \\ 0 \\ 1 \\ 0 \\ 1 \\ 2 \\ 3 \\ 2 \\ 3 \\ 1 \\ 5 \\ 1 \\ 5 \\ 1 \\ 1 \\ 2 \\ 1 \\ 2 \\ 1 \\ 2 \\ 1 \\ 1 \\ 1$	4 3 3 4 4 5 4 4 4 4 2 1 1 2 2 4 4 4 4 4 5 5 4 4 2 3 2 3 4 5 5 4 4 2 5 4 4 2 5 4 4 2 3 2 3 4 5 5 4 4 2 5 4 4 2 5 4 4 5 5 4 4 2 5 4 4 5 5 5 4 4 5 5 5 4 4 5 5 5 4 4 5 5 5 4 4 5 5 5 4 4 5 5 5 4 5 5 5 4 5 5 5 4 5	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	2224444333355555444447777666665555500000222	$\begin{smallmatrix} 1 \\ 1 \\ 0 \\ 0 \\ 1 \\ 1 \\ 0 \\ 0 \\ 3 \\ 3 \\ 2 \\ 2 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 3 \\ 1 \\ 3 \\ 1 \\ 1$	42244444441121234335454322344444988911211		$1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\$		513981.1910 513981.1910 513981.1910 537668.7190 537668.7190 537668.7190 537668.7190 537740.7136 537744.0218 537744.0218 537744.0218 537744.0218 537744.0218 537744.0218 54742.0475 541321.0475 541321.0475 541321.0475 541321.0475 543604.8788 543604.8788 543604.8788 543604.8788 543604.8788 543604.8788 543604.8788 543604.8788 543604.8788 543604.8788 543604.8788 543604.8788 543604.8788 543604.8788 543604.8788 543604.8788 543604.8788 543604.8788 543624.4302 553951.0856 553951.0856 553951.0856 553951.0856 553951.0856 553951.0856 553951.0856 553951.0856 553951.0856 553951.0856 553951.0856 553951.0856 55343.0443 555443.0443 555443.0443 555443.0443 555443.0443 557722.2977 557722.2977 557722.2977 557722.2977	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	ETT ETT ETT ETT ETT ETT ETT ETT ETT ETT	
$\begin{array}{c} 43\\ 43\\ 45\\ 45\\ 45\\ 44\\ 44\\ 44\\ 44\\ 46\\ 16\\ 16\\ 16\\ 54\\ 55\\ 45\\ 18\\ 18\\ 17\\ 17\\ 17\\ 16\\ 46\\ 46\\ 21\\ 22\\ 12\\ 23\\ 22\\ 23\\ 22\\ 32\\ 23\\ 22\\ 32\\ 23\\ 22\\ 32\\ 23\\ 22\\ 32\\ 23\\ 22\\ 32\\ 23\\ 23$	$1 \\ 0 \\ 1 \\ 0 \\ 1 \\ 0 \\ 1 \\ 2 \\ 3 \\ 2 \\ 3 \\ 1 \\ 5 \\ 5 \\ 1 \\ 5 \\ 1 \\ 2 \\ 1 \\ 2 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1$	4 4 3 3 4 5 5 4 4 5 5 4 4 2 3 2 3 5 4 5 5 4 4 5 5 5 4 4 5 5 4 4 5 5 4 4 5 5 5 4 4 5 5 4 4 5 5 5 4 4 5 5 5 4 4 5 5 5 4 4 5 5 5 4 4 5 5 5 4 4 5 5 5 4 5 5 4 5 5 5 4 5 5 5 4 5 5 5 4 5 5 5 4 5 5 5 4 5 5 5 4 5 5 5 4 5 5 5 4 5 5 5 4 5 5 5 4 5 5 5 4 5 5 5 5 4 5	4 4 $4 4$ 4 $4 4$ 4 $4 4$ $4 4$ 4 $4 4$ 4 4 4 4 4 4 4 4 4	22224444333355555444447777766666555550000022222	$\begin{smallmatrix} 1 \\ 1 \\ 0 \\ 0 \\ 1 \\ 1 \\ 0 \\ 0 \\ 3 \\ 3 \\ 2 \\ 2 \\ 1 \\ 1 \\ 4 \\ 1 \\ 4 \\ 2 \\ 2 \\ 1 \\ 1 \\ 3 \\ 1 \\ 3 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1$	$\begin{array}{c} 12\\ 24\\ 24\\ 44\\ 44\\ 44\\ 44\\ 11\\ 21\\ 23\\ 43\\ 35\\ 45\\ 43\\ 22\\ 34\\ 44\\ 44\\ 98\\ 89\\ 112\\ 112\\ 112\\ 112\\ 122\\ 34\\ 44\\ 44\\ 44\\ 98\\ 89\\ 112\\ 112\\ 122\\ 122\\ 34\\ 44\\ 44\\ 44\\ 98\\ 89\\ 112\\ 112\\ 122\\ 122\\ 34\\ 44\\ 44\\ 44\\ 98\\ 89\\ 112\\ 112\\ 122\\ 122\\ 34\\ 44\\ 44\\ 44\\ 98\\ 89\\ 112\\ 112\\ 122\\ 122\\ 34\\ 44\\ 44\\ 44\\ 98\\ 89\\ 112\\ 112\\ 122\\ 122\\ 34\\ 44\\ 44\\ 44\\ 98\\ 89\\ 112\\ 112\\ 122\\ 122\\ 34\\ 44\\ 44\\ 44\\ 98\\ 89\\ 112\\ 112\\ 122\\ 122\\ 34\\ 44\\ 44\\ 44\\ 98\\ 89\\ 112\\ 112\\ 122\\ 122\\ 34\\ 44\\ 44\\ 44\\ 98\\ 89\\ 112\\ 112\\ 122\\ 122\\ 34\\ 44\\ 44\\ 44\\ 98\\ 89\\ 112\\ 112\\ 122\\ 122\\ 34\\ 44\\ 44\\ 44\\ 98\\ 89\\ 112\\ 112\\ 122\\ 122\\ 34\\ 44\\ 44\\ 44\\ 98\\ 89\\ 112\\ 112\\ 122\\ 122\\ 122\\ 122\\ 122\\ 12$		$1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\$		513981.1910 513981.1910 513981.1910 513981.1910 537668.7190 537668.7190 537668.7190 537668.7190 537764.0218 537744.0218 537744.0218 537744.0218 537744.0218 541321.0475 541321.0475 541321.0475 541321.0475 541321.0475 543604.8788 5443.0443 555443.0443 555443.0443 55742.2977 557722.2977 557722.2977 557722.2977 557722.2977 557722.2977 557722.2977 557722.2977 557535.8348 559555.8348 559555.8348 559555.8	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	Err Err Err Err Err Err Err Err Err Err	
$\begin{array}{c} 43\\ 43\\ 45\\ 45\\ 45\\ 44\\ 44\\ 44\\ 44\\ 16\\ 16\\ 16\\ 16\\ 45\\ 45\\ 18\\ 18\\ 17\\ 17\\ 17\\ 16\\ 66\\ 64\\ 62\\ 12\\ 12\\ 23\\ 23\\ 23\\ 23\\ 23\\ 23\\ 23\\ 23\\ 23\\ 2$	1 0 1 0 1 0 1 2 3 2 3 1 1 5 1 5 1 2 1 2 4 4 4 4 1 5 1 5 1 2 1 2 1 3 1 3 1 3 1 2 1 2 1 2 1 2 1 2	4 4 3 4 4 4 4 4 4 2 2 4 4 4 4 4 4 5 5 4 4 2 3 2 3 4 5 5 4 4 5 5 4 4 5 5 4 4 5 5 4 4 5 5 4 4 5 5 4 4 5 5 4 4 5 5 4 4 5 5 4 4 5 5 4 4 5 5 4 4 5 5 4 4 5 5 4 4 5 5 4 4 5 5 4 4 5 5 4 4 5 5 4 5 5 4 5 5 4 5 5 4 5 5 4 5 5 5 4 5	4 4 $4 4$	2224444433335555544444777766666555550000022222	$1 \\ 1 \\ 0 \\ 0 \\ 1 \\ 1 \\ 0 \\ 0 \\ 3 \\ 3 \\ 2 \\ 2 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 3 \\ 1 \\ 3 \\ 1 \\ 3 \\ 1 \\ 1$	$\begin{array}{c} 42\\ 442\\ 444\\ 444\\ 441\\ 1\\ 1\\ 2\\ 1\\ 2\\ 3\\ 43\\ 3\\ 5\\ 4\\ 5\\ 4\\ 5\\ 4\\ 3\\ 2\\ 2\\ 3\\ 444\\ 44\\ 4\\ 9\\ 8\\ 8\\ 9\\ 112\\ 112\\ 2\\ 3\\ 112\\ 112\\ 2\\ 3\\ 112\\ 112$		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		b13981.1910 513981.1910 513981.1910 537668.7190 537668.7190 537668.7190 537668.7190 537740.7136 53774.0218 53774.0218 53774.0218 53774.0218 53774.0218 53774.0218 53774.0218 541321.0475 541321.0475 541321.0475 541321.0475 543604.8788 543604.8788 543604.8788 543604.8788 543206.4302 543226.4302 553951.0856 553951.0856 553951.0856 553951.0856 553951.0856 553951.0856 553951.0856 553951.0856 553941.0433 55443.0443 55443.0443 55443.0443 55443.0443 55443.0443 55443.0443 55443.0443 55443.0443 55443.0443 55443.0443 55443.0443 55453.8348 559535.8348 559535.8348	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	ETT ETT ETT ETT ETT ETT ETT ETT ETT ETT	
$\begin{array}{c} 43\\ 43\\ 45\\ 45\\ 45\\ 44\\ 44\\ 44\\ 44\\ 46\\ 16\\ 16\\ 16\\ 45\\ 45\\ 18\\ 18\\ 17\\ 17\\ 17\\ 16\\ 46\\ 66\\ 22\\ 12\\ 23\\ 23\\ 23\\ 7\end{array}$	$1 \\ 0 \\ 1 \\ 0 \\ 1 \\ 0 \\ 1 \\ 2 \\ 3 \\ 2 \\ 3 \\ 1 \\ 5 \\ 1 \\ 5 \\ 1 \\ 2 \\ 1 \\ 2 \\ 1 \\ 2 \\ 1 \\ 2 \\ 1 \\ 1$	4 4 3 3 4 5 5 4 4 4 5 5 4 4 2 3 2 3 4 5 5 4 4 4 5 5 4 4 2 3 2 3 5 5 5 4 4 5 5 5 4 4 5 5 4 4 5 5 4 4 5 5 4 4 5 5 4 4 5 5 4 4 5 5 4 4 5 5 4 4 5 5 4 4 5 5 4 4 5 5 4 4 5 5 4 4 5 5 4 4 5 5 4 4 5 5 4 4 5 5 4 4 5 5 5 5 4 4 5 5 5 5 4 4 5	4 4	222444443333555554444477776666655555000002222266	$1 \\ 1 \\ 0 \\ 0 \\ 1 \\ 1 \\ 0 \\ 0 \\ 3 \\ 2 \\ 2 \\ 1 \\ 4 \\ 1 \\ 4 \\ 2 \\ 2 \\ 1 \\ 1 \\ 1 \\ 3 \\ 1 \\ 3 \\ 1 \\ 3 \\ 1 \\ 1$	$\begin{array}{c} 12\\ 4\\ 4\\ 4\\ 4\\ 4\\ 4\\ 4\\ 4\\ 4\\ 4\\ 4\\ 1\\ 1\\ 2\\ 1\\ 2\\ 3\\ 4\\ 4\\ 3\\ 5\\ 4\\ 5\\ 4\\ 5\\ 4\\ 3\\ 2\\ 2\\ 3\\ 4\\ 4\\ 4\\ 4\\ 4\\ 9\\ 8\\ 8\\ 9\\ 11\\ 2\\ 1\\ 1\\ 2\\ 6\\ 6\\ 6\\ 7\\ 1\\ 1\\ 1\\ 1\\ 2\\ 6\\ 6\\ 7\\ 1\\ 1\\ 1\\ 1\\ 2\\ 1\\ 2\\ 1\\ 2\\ 3\\ 4\\ 4\\ 4\\ 4\\ 4\\ 4\\ 4\\ 4\\ 4\\ 4\\ 9\\ 8\\ 8\\ 9\\ 1\\ 1\\ 1\\ 1\\ 1\\ 2\\ 6\\ 7\\ 1\\ 1\\ 1\\ 1\\ 2\\ 1\\ 2\\ 3\\ 4\\ 4\\ 4\\ 4\\ 4\\ 4\\ 4\\ 4\\ 4\\ 4\\ 4\\ 4\\ 4\\$		$1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\$		513981.1910 513981.1910 513981.1910 537668.7190 537668.7190 537668.7190 537668.7190 537668.7190 53774.0218 53774.0218 53774.0218 53774.0218 53774.0218 53774.0218 54742.0475 541321.0475 541321.0475 541321.0475 543604.8788 543604.8788 543604.8788 543604.8788 543604.8788 543604.8788 543604.8788 543604.8788 543604.8788 543226.4302 553951.0856 553951.0856 55543.0433 55543.0433 555443.0443 555443.0443 555443.0443 555443.0443 55542.2977 557722.2977 557722.2977 557722.2977 559535.8348 559535.8348 559535.8348 559535.8348	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	ETT ETT ETT ETT ETT ETT ETT ETT ETT ETT	
$\begin{array}{c} 43\\ 43\\ 45\\ 45\\ 44\\ 44\\ 44\\ 44\\ 46\\ 16\\ 16\\ 16\\ 45\\ 54\\ 54\\ 18\\ 18\\ 18\\ 17\\ 17\\ 17\\ 46\\ 64\\ 64\\ 21\\ 22\\ 12\\ 23\\ 23\\ 23\\ 23\\ 47\\ 7\end{array}$	$egin{array}{c} 1 & 0 & 1 & 0 & 1 & 2 & 3 & 2 & 3 \\ 1 & 5 & 1 & 5 & 5 & 1 & 2 & 1 & 2 & 1 & 2 & 1 & 2 & 1 & 2 & 1 & 2 & 3 & 3 & 1 & 1 & 3 & 1 & 2 & 1 & 2 & 1 & 2 & 1 & 2 & 1 & 3 & 1 & 3 & 1 & 2 & 1 & 2 & 1 & 2 & 0 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1$	4 4 3 3 4 5 5 4 4 4 5 5 4 4 2 3 2 3 4 5 5 4 4 5 5 4 4 2 3 2 3 4 5 5 8 9 9 1 1 2 1 1 4 7 7 1 1 4 7 1 1 1 4 7 1 1 1 4 7 1 1 1 4 7 1 1 1 4 7 1 1 1 4 7 1 1 1 4 7 1 1 1 1	4 4 4 4 4 4 4 4 4 4	22244444333355555444447777766666555550000022222666	$\begin{smallmatrix} 1 & 1 & 0 & 0 \\ 1 & 1 & 0 & 0 & 3 \\ 3 & 2 & 2 & 1 & 1 \\ 1 & 1 & 1 & 1 \\ 1 & 1 & 3 & 1 & 3 \\ 1 & 1 & 1 & 1 & 1 \\ 1 & 1 & 2 & 1 & 1 \\ 1 & 1 & 2 & 1 \\ 1 & 1 & 2 & 1 \\ 1 & 1 & 2 & 1 \\ 1 & 1 & 1 & 1 \\ 1 & 1 & 1 \\ 1 $	$\begin{array}{c} 12\\ 2\\ 4\\ 4\\ 4\\ 4\\ 4\\ 4\\ 4\\ 4\\ 4\\ 4\\ 1\\ 1\\ 2\\ 1\\ 2\\ 3\\ 4\\ 3\\ 4\\ 3\\ 5\\ 4\\ 5\\ 4\\ 5\\ 4\\ 3\\ 2\\ 2\\ 3\\ 4\\ 4\\ 4\\ 4\\ 4\\ 4\\ 9\\ 8\\ 8\\ 9\\ 11\\ 2\\ 1\\ 1\\ 2\\ 6\\ 6\\ 6\\ 6\\ 6\\ 6\\ 6\\ 6\\ 6\\ 6\\ 6\\ 6\\ 6\\$		$1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\$		b13981.1910 513981.1910 513981.1910 537668.7190 537668.7190 537668.7190 537668.7190 537740.7136 537744.0218 537744.0218 537744.0218 537744.0218 537744.0218 537742.0475 541321.0475 541321.0475 541321.0475 541321.0475 543604.8788 543604.8788 543604.8788 543604.8788 543604.8788 543604.8788 543604.8788 543626.4302 553951.0856 553951.0856 553951.0856 553951.0856 553951.0856 555443.0443 555443.0443 555443.0443 555443.0443 555443.0443 555443.0443 55543.0433 55543.0433 55543.0433 55543.0433 55543.0433 55543.0433 55543.0433 55543.0433 55543.0433 55543.0433 55543.0433 55545.0434 55535.8348 559535.8348 559535.8348	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	ETT ETT ETT ETT ETT ETT ETT ETT ETT ETT	

47	1	47	4	6	0	46	S	1	=	561345.2611	MHz	Err	.1
16	16	0	1	5	15	0	S	1	=	564665.7111	MHz	Err	.1
16	16	1	1	5	15	1	S	1	=	564665.7111	MHz	Err	.1
16	16	1	1	5	15	0	S	1	=	564665.7111	MHz	Err	.1
16	16	0	1	5	15	1	S	1	=	564665.7111	MHz	Err	.1
18	15	4	1	7	14	3	S	1	=	566579.3045	MHz	Err	.1
18	15	3	1	7	14	4	S	1	=	566579.3045	MHz	Err	.1
18	15	3	1	7	14	3	S	1	=	566579.3045	MHz	Err	.1
18	15	4	1	7	14	4	S	1	=	566579.3045	MHz	Err	.1
47	1	46	4	6	2	45	S	1	=	567278.4590	MHZ	Err	.1
47	2	46	4	0	2	45	5	1	-	567278.4590	MIL	Err	.1
41	2	40	4	6	1	45	د ہ	1	-	567278 4590	MUG	Err	• 1
20	1/	40	1	0	13	40	د ہ	1		568473 4048	MH-7	Err	.1
20	14	6	1	a	13	6	S	1	_	568473 4048	MHZ	Err	1
20	14	7	1	9	13	6	s	1	=	568473,4048	MHz	Err	1
20	14	7	1	9	13	7	s	1	=	568473.4048	MHz	Err	.1
40	0	40	3	9	1	39	S	1	=	478430.6857	MHz	Err	.1
40	1	40	3	9	1	39	S	1	=	478430.6857	MHz	Err	.1
40	0	40	3	9	0	39	S	1	=	478430.6857	MHz	Err	.1
40	1	40	3	9	0	39	S	1	=	478430.6857	MHz	Err	.1
41	0	41	4	0	1	40	S	1	=	490283.3688	MHz	Err	.1
41	1	41	4	0	1	40	S	1	=	490283.3688	MHz	Err	.1
41	0	41	4	0	0	40	S	1	=	490283.3688	MHz	Err	.1
41	1	41	4	0	0	40	S	1	=	490283.3688	MHz	Err	.1
41	1	40	4	0	2	39	S	1	=	496226.0912	MHz	Err	.1
41	2	40	4	0	2	39	S	1	=	496226.0912	MHz	Err	.1
41	1	40	4	0	1	39	S	1	=	496226.0912	MHz	Err	.1
41	2	40	4	0	1	39	S	1	=	496226.0912	MHZ	Err	.1
42	1	41 //1	4	1	2	40	5 7	1	_	508074 5060	ririZ MV~	Err Err	.1
42 ∆2	∠ 1	±⊥ ∆1	4	1	∠ 1	40 4∩	2 7	1	-	508074 5860	nnz MH→	Err	.1
12	2	11		1	1	40	2	1	_	508074 5860	MH-	Err	1
42	1	41	4	1	2	40	s	1	=	508074.5860	MHz	Err	.1
42	2	41	4	1	2	40	s	1	=	508074.5860	MHz	Err	.1
42	1	41	4	1	1	40	s	1	=	508074.5860	MHz	Err	.1
42	2	41	4	1	1	40	s	1	=	508074.5860	MHz	Err	.1
43	1	42	4	2	2	41	S	1	=	519920.5746	MHz	Err	.1
43	2	42	4	2	2	41	S	1	=	519920.5746	MHz	Err	.1
43	1	42	4	2	1	41	S	1	=	519920.5746	MHz	Err	.1
43	2	42	4	2	1	41	S	1	=	519920.5746	MHz	Err	.1
44	0	44	4	3	1	43	S	1	=	525826.2775	MHz	Err	.1
44	1	44	4	3	1	43	S	1	=	525826.2775	MHz	Err	.1
44	0	44	4	3	0	43	S	1	=	525826.2775	MHz	Err	.1
44	1	44	4	3	0	43	S	1	=	525826.2775	MHz	Err	.1
44	0	44	4	3	1	43	S	1	=	525826.2775	MHz	Err	.1
44	1	44	4	3	1	43	S	1	=	525826.2775	MHZ	Err	.1
44	1	44	4	3	0	43	5	1	-	525826.2775	MU	Err	.1
44	10	44	4	ۍ ۸	14	43	5	1	-	525826.2775	MUG	Err	.1
15	15	0	1	4	14	1	د ہ	1	-	520009.39/5	MUG	Err	.1
15	15	1	1	4	14	0	S	1	_	528689 3975	MHz	Err	.1
15	15	1	1	4	14	1	s	1	=	528689.3975	MHz	Err	.1
44	1	43	4	3	2	42	s	1	=	531764.0195	MHz	Err	.1
44	2	43	4	3	2	42	s	1	=	531764.0195	MHz	Err	.1
44	1	43	4	3	1	42	S	1	=	531764.0195	MHz	Err	.1
44	2	43	4	3	1	42	S	1	=	531764.0195	MHz	Err	.1
19	13	7	1	8	12	7	S	1	=	532487.9085	MHz	Err	.1
19	13	7	1	8	12	6	S	1	=	532487.9085	MHz	Err	.1
19	13	6	1	8	12	6	S	1	=	532487.9085	MHz	Err	.1
19	13	6	1	8	12	7	S	1	=	532487.9085	MHz	Err	.1
23	11	13	2	2	10	12	S	1	=	536102.5444	MHz	Err	.1
23	11	12	2	2	10	12	5	1	-	536102 5444	MHZ MHZ	Err	.1
23 23	11	10 10	2	2	10	12	5 0	1	-	536102 5444	nnz MH-	Err	.⊥ 1
20 25	10	16	2	4	-0	15	2 2	1	_	537688 4900	∠ МН-7	Err	.1
25	10	15	2	4	9	15	S	1	=	537688.4900	MHz	Err	.1
25	10	16	2	4	9	16	s	1	=	537688.4900	MHz	Err	.1
25	10	15	2	4	9	16	s	1	=	537688.4900	MHz	Err	.1
43	0	43	4	2	1	42	S	1	=	513981.1910	MHz	Err	.1
43	1	43	4	2	1	42	S	1	=	513981.1910	MHz	Err	.1
43	0	43	4	2	0	42	S	1	=	513981.1910	MHz	Err	.1
43	1	43	4	2	0	42	S	1	=	513981.1910	MHz	Err	.1
45	0	45	4	4	1	44	S	1	=	537668.7190	MHz	Err	.1
45	1	45	4	4	1	44	S	1	=	537668.7190	MHz	Err	.1
45	0	45	4	4	0	44	S	1	=	537668.7190	MHz	Err	.1
45	1	45	4	4	0	44	S	1	=	53/668.7190	MHZ	Err	.1
16	15	1	1	5	14	1	5	1	-	541321.0475	MHZ MHZ	Err	.1
16	15	л Т	1	5	1/1	∠ 1	5 0	1	-	541321.04/5	rinz MH-	Err	.⊥ 1
10 16	15	∠ າ	1	5	1/1	1 2	5 0	1	-	541321.04/5	nnz MH-	Err	.⊥ 1
45	1	44	4	4	2	43	2 2	1	_	543604.8788	MHz	Err	.1
45	2	44	4	4	2	43	S	1	-	543604.8788	MHz	Err	.1
45	1	44	4	4	1	43	S	1	=	543604.8788	MHz	Err	.1
45	2	44	4	4	1	43	S	1	=	543604.8788	MHz	Err	.1
18	14	5	1	7	13	5	S	1	=	543226.4302	MHz	Err	.1
18	14	5	1	7	13	4	S	1	=	543226.4302	MHz	Err	.1
18	14	4	1	7	13	5	S	1	=	543226.4302	MHz	Err	.1
18	14	4	1	7	13	4	S	1	=	543226.4302	MHz	Err	.1
17	15	2	1	6	14	3	S	1	=	553951.0856	MHz	Err	.1
17	15	3	1	6	14	2	S	1	=	553951.0856	MHz	Err	.1
17	15	2	1	6	14	2	S	- 1	=	553951.0856	MHZ	Err	. 1

17 15	3	16	14	3	S	1	=	553951 0856	MHz	Err	. 1
46 1	45	45	2	44	s	1	=	555443 0443	MHz	Frr	1
46 0	45	40	2	44	2	-	_	555442 0442	MIL-	Enn	
40 2	45	45	2	44	2	1	-	555443.0443	MHZ	Err	• 1
46 1	45	45	1	44	s	1	=	555443.0443	MHz	Err	.1
46 2	45	45	1	44	S	1	=	555443.0443	MHz	Err	.1
21 13	8	20	12	9	S	1	=	557722.2977	MHz	Err	.1
21 13	8	20	12	8	s	1	=	557722 2977	MHz	Frr	1
01 10	0	20	10	0	2	-	_	EE7700 0077	MIL-	Enn	
21 13	9	20	12	8	S	1	=	55//22.29//	MHZ	Err	• 1
21 13	9	20	12	9	s	1	=	557722.2977	MHz	Err	.1
23 12	11	22	11	11	S	1	=	559535.8348	MHz	Err	.1
23 12	12	22	11	12	S	1	=	559535 8348	MHz	Err	.1
02 10	10	22	11	11	0	÷.	_	EE0E2E 0240	MUm	Enn	1
23 12	12	22	11	11	5	1	-	009000.0040	rinz.	-	• 1
23 12	11	22	11	12	s	1	=	559535.8348	MHz	Err	.1
47 0	47	46	1	46	S	1	=	561345.2611	MHz	Err	.1
47 1	47	46	1	46	S	1	=	561345.2611	MHz	Err	.1
47 0	47	16	0	46	g	1	-	5613/15 2611	MH7	Err	1
47 0	47	40	0	40	3	1	-	501345.2011	MIL	EII D	• •
4/ 1	47	46	0	46	S	1	=	561345.2611	MHZ	Err	.1
16 16	0	15	15	0	s	1	=	564665.7111	MHz	Err	.1
16 16	1	15	15	1	S	1	=	564665.7111	MHz	Err	.1
16 16	1	15	15	0	S	1	=	564665.7111	MHz	Err	.1
16 16	0	10	10	-		-	_	EGAGGE 7111	MUm	Enn	4
10 10	~	17	10	-	2	-	-	504005.7111	MIL	511	• •
18 15	4	17	14	3	S	1	=	566579.3045	MHZ	Err	.1
18 15	3	17	14	4	s	1	=	566579.3045	MHz	Err	.1
18 15	3	17	14	3	S	1	=	566579.3045	MHz	Err	.1
18 15	4	17	14	4	S	1	=	566579 3045	MHz	Err	.1
47 1	16	16		10		-	_	E67070 4E00	MUm	Enn	4
4/ 1	40	40	2	40	3	1	-	507276.4590	rinz.	E11	• 1
4/ 2	46	46	2	45	S	1	=	567278.4590	MHz	Err	.1
47 1	46	46	1	45	S	1	=	567278.4590	MHz	Err	.1
47 2	46	46	1	45	S	1	=	567278,4590	MHz	Err	.1
20 14	6	10	13	7	s	1	=	568473 4049	MHz	Err	.1
20 14	6	10	10		2	-	_	500170.4040	MIL-	Enn	• •
20 14	6	19	13	6	S	1	=	568473.4048	MHz	Err	.1
20 14	7	19	13	6	S	1	=	568473.4048	MHz	Err	.1
20 14	7	19	13	7	S	1	=	568473.4048	MHz	Err	.1
22 13	٩	21	12	0	g	1	-	570332 4776	MH-7	Frr	1
22 10	~	21	12	10	2	-	-	570552.4770	MIL	511	• •
22 13	9	21	12	10	S	1	=	5/0332.4//6	MHZ	Err	• 1
22 13	10	21	12	9	S	1	=	570332.4776	MHz	Err	.1
22 13	10	21	12	10	S	1	=	570332.4776	MHz	Err	.1
37 25	12	37	24	13	S	1	=	571653 0264	MHz	Err	.1
27 05	10	27	~	14	2	÷	_	571652 0064	MIT-	E	
3/ 25	12	31	24	14	2	1	-	5/1653.0264	FIFIZ	Err	• 1
37 25	13	37	24	13	s	1	=	571653.0264	MHz	Err	.1
37 25	13	37	24	14	S	1	=	571653.0264	MHz	Err	.1
38 25	14	38	24	14	S	1	=	571596.8148	MHz	Err	.1
38 25	13	38	24	15	S	1	=	571596 8148	MHz	Frr	1
00 20	10	00	24	10	2	-		571530.0140	MIL	D11	• •
38 25	13	38	24	14	S	1	=	5/1596.8148	MHZ	Err	.1
38 25	14	38	24	15	s	1	=	571596.8148	MHz	Err	.1
39 25	14	39	24	15	S	1	=	571536.7694	MHz	Err	.1
39 25	15	39	24	16	S	1	=	571536.7694	MHz	Err	.1
20 25	10	20	24	10	0	÷.	_	E71E26 7604	MUm	Enn	1
39 20	15	39	24	15	3	1	-	571550.7094	PIEZ NE	E11	• •
39 25	14	39	24	16	s	1	=	571536.7694	MHz	Err	.1
24 12	12	23	11	12	S	1	=	572123.8580	MHz	Err	.1
24 12	12	23	11	13	S	1	=	572123.8580	MHz	Err	.1
24 12	13	23	11	12	s	1	=	572123 8580	MHz	Frr	1
24 12	10	20		10	2	÷		570400.0500	MIL		• •
24 12	13	23	11	13	S	1	=	572123.8580	MHZ	Err	• 1
38 25	14	38	24	14	s	1	=	571596.8148	MHz	Err	.1
38 25	13	38	24	15	S	1	=	571596.8148	MHz	Err	.1
38 25	13	38	24	14	S	1	=	571596.8148	MHz	Err	.1
38 25	1/	38	24	15	g	î	-	571506 81/8	MH-	Err	1
00 20	11	50	27	10	5	-	-	571550.0140	rinz.	511	• •
37 25	12	37	24	13	S	1	=	5/1653.0264	MHz	Err	.1
37 25	12	37	24	14	s	1	=	571653.0264	MHz	Err	.1
37 25	13	37	24	13	S	1	=	571653.0264	MHz	Err	.1
37 25	13	37	24	1/	g	1	-	571653 0264	MH-7	Frr	1
00 05	10	00	27	11	2	-	-	571055.0204	MIL	511	• •
36 25	11	36	24	12	S	1	=	5/1/05.5522	MHZ	Err	.1
36 25	11	36	24	13	S	1	=	571705.5522	MHz	Err	.1
36 25	12	36	24	12	S	1	=	571705.5522	MHz	Err	.1
36 25	12	36	24	13	S	1	=	571705.5522	MHz	Err	.1
35 25	10	35	24	11	g	1	=	571754 9095	MH-7	Err	.1
20 20	10	55	24	10	2	4	_	E717E4 0000	1111Z MU-	Emer	• •
30 25	10	35	24	12	5	Ţ	=	011104.8085	rinz	ELL,	.1
35 25	11	35	24	11	S	1	=	571754.8085	MHz	Err	.1
35 25	11	35	24	12	S	1	=	571754.8085	MHz	Err	.1
34 25	10	34	24	10	s	1	=	571800.5669	MHz	Err	.1
34 05	<u> </u>	21	21	11	0	Î	_	571800 5600	MH~	Err	1
34 25	3	34	24	11	5	Ţ	-	571000.5009	rinz	CT L	. 1
34 25	9	34	24	10	S	1	=	5/1800.5669	MHz	Err	.1
34 25	10	34	24	11	S	1	=	571800.5669	MHz	Err	.1
33 25	8		04	9	S	1	=	571843.2434	MHz	Err	.1
33 05		33	24		_					Frr	1
00 20	a	33	24	10	g	1	=	571843 0424	MH ₇		· +
33 25	9	33	24	10	S	1	=	571843.2434	MHz	DII D	
33 25	9 9	33 33 33	24 24 24	10 9	s s	1 1	-	571843.2434 571843.2434	MHz MHz	Err	.1
	9 9 8	33 33 33 33	24 24 24 24	10 9 10	s s s	1 1 1	=	571843.2434 571843.2434 571843.2434	MHz MHz MHz	Err Err	.1 .1
32 25	9 9 8 7	33 33 33 33 33 32	24 24 24 24 24 24	10 9 10 8	s s s s	1 1 1 1	= = =	571843.2434 571843.2434 571843.2434 571882.9952	MHz MHz MHz MHz	Err Err Err	.1 .1 .1
32 25	9 9 8 7 8	33 33 33 33 32 32	24 24 24 24 24 24 24 24	10 9 10 8	5 5 5 5 5 5 5	1 1 1 1		571843.2434 571843.2434 571843.2434 571882.9952 571882.9952	MHz MHz MHz MHz MHz	Err Err Err Err	.1 .1 .1
32 25 32 25	9 9 8 7 8	33 33 33 33 32 32 32	24 24 24 24 24 24 24	10 9 10 8 8	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	1 1 1 1	= = =	571843.2434 571843.2434 571843.2434 571882.9952 571882.9952	MHz MHz MHz MHz MHz	Err Err Err Err	.1 .1 .1 .1
32 25 32 25 32 25	9 9 8 7 8 8	33 33 33 33 32 32 32 32	24 24 24 24 24 24 24 24	10 9 10 8 8 9	5 5 5 5 5 5 5 5 5 5 5	1 1 1 1 1		571843.2434 571843.2434 571843.2434 571882.9952 571882.9952 571882.9952	MHz MHz MHz MHz MHz MHz	Err Err Err Err Err Err	.1 .1 .1 .1 .1
32 25 32 25 32 25 32 25 32 25	9 9 8 7 8 8 7	33 33 33 32 32 32 32 32 32	24 24 24 24 24 24 24 24 24 24	10 9 10 8 8 9 9	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	1 1 1 1 1 1 1	= = = =	571843.2434 571843.2434 571843.2434 571882.9952 571882.9952 571882.9952 571882.9952	MHz MHz MHz MHz MHz MHz MHz MHz	Err Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1
32 25 32 25 32 25 32 25 32 25 31 25	9 9 7 8 8 7 6	33 33 33 32 32 32 32 32 32 32 31	24 24 24 24 24 24 24 24 24 24 24	10 9 10 8 8 9 9 9 7	~~~~~~	1 1 1 1 1 1 1 1		571843.2434 571843.2434 571843.2434 571882.9952 571882.9952 571882.9952 571882.9952 571882.9952 571919.7075	MHz MHz MHz MHz MHz MHz MHz MHz MHz	Err Err Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1
32 25 32 25 32 25 32 25 31 25 31 25 31 25	9 9 7 8 7 8 7 6 6	33 33 33 32 32 32 32 32 31 31	24 24 24 24 24 24 24 24 24 24 24 24 24 2	10 9 10 8 9 9 7 8		1 1 1 1 1 1 1 1		571843.2434 571843.2434 571843.2434 571882.9952 571882.9952 571882.9952 571882.9952 571882.9952 571919.7075 571919.7075	MHz MHz MHz MHz MHz MHz MHz MHz MHz MHz	Err Err Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1 .1
32 25 32 25 32 25 32 25 31 25 31 25 31 25 31 25	9 9 8 7 8 7 6 6 7	33 33 33 32 32 32 32 32 31 31 21	24 24 24 24 24 24 24 24 24 24 24 24 24	10 9 10 8 9 9 7 8 7		1 1 1 1 1 1 1 1 1		571843.2434 571843.2434 571843.2434 571882.9952 571882.9952 571882.9952 571882.9952 571882.9952 571919.7075 571919.7075	MHz MHz MHz MHz MHz MHz MHz MHz MHz MHz	Err Err Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1 .1 .1
32 25 32 25 32 25 32 25 31 25 31 25 31 25 31 25 31 25	9 9 8 7 8 8 7 6 7 6 7 7	33 33 33 32 32 32 32 32 31 31 31	24 24 24 24 24 24 24 24 24 24 24 24 24	10 9 10 8 9 9 7 8 7 8 7	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	1 1 1 1 1 1 1 1 1		571843.2434 571843.2434 571843.2434 571862.9952 571882.9952 571882.9952 571882.9952 571882.9952 57182.9952 571919.7075 571919.7075	MHz MHz MHz MHz MHz MHz MHz MHz MHz MHz	Err Err Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1 .1 .1
32 25 32 25 32 25 32 25 31 25 31 25 31 25 31 25 31 25 31 25	9 9 7 8 7 6 6 7 7	33 33 33 32 32 32 32 32 31 31 31 31	24 24 24 24 24 24 24 24 24 24 24 24 24 2	10 9 10 8 9 9 7 8 7 8 7 8	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	1 1 1 1 1 1 1 1 1 1		571843.2434 571843.2434 571843.2434 571882.9952 571882.9952 571882.9952 571882.9952 571919.7075 571919.7075 571919.7075	MHz MHz MHz MHz MHz MHz MHz MHz MHz MHz	Err Err Err Err Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1
32 25 32 25 32 25 31 25 31 25 31 25 31 25 31 25 31 25 31 25 30 25	9 9 8 7 8 8 7 6 6 7 7 6	33 33 33 32 32 32 32 32 31 31 31 31 31 30	24 24 24 24 24 24 24 24 24 24 24 24 24 2	10 9 10 8 9 9 7 8 7 8 7 8 6	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	1 1 1 1 1 1 1 1 1 1 1 1 1		571843.2434 571843.2434 571843.2434 571882.9952 571882.9952 571882.9952 571919.7075 571919.7075 571919.7075 571919.7075 571953.9904	MHz MHz MHz MHz MHz MHz MHz MHz MHz MHz	Err Err Err Err Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1
32 25 32 25 32 25 32 25 31 25 31 25 31 25 31 25 31 25 31 25 30 25 30 25	9 9 8 7 8 8 7 6 7 6 7 6 5	33 33 33 32 32 32 32 32 31 31 31 31 30 30	24 24 24 24 24 24 24 24 24 24 24 24 24 2	10 9 10 8 9 9 7 8 7 8 7 8 7 8 7		1 1 1 1 1 1 1 1 1 1 1 1		571843.2434 571843.2434 571843.2434 571842.9952 571882.9952 571882.9952 571882.9952 571919.7075 571919.7075 571919.7075 571919.7075 571953.9904	MHz MHz MHz MHz MHz MHz MHz MHz MHz MHz	Err Err Err Err Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1
32 25 32 25 32 25 31 25 31 25 31 25 31 25 31 25 31 25 31 25 30 25 30 25 30 25	9 9 8 7 8 8 7 6 6 7 6 5 5	33 33 33 32 32 32 32 32 31 31 31 31 30 30	24 24 24 24 24 24 24 24 24 24 24 24 24 2	10 9 10 8 9 9 7 8 7 8 6 7 6		1 1		571843.2434 571843.2434 571843.2434 571882.9952 571882.9952 571882.9952 571882.9952 571919.7075 571919.7075 571919.7075 571919.7075 571953.9904 571953.9904	MHz MHz MHz MHz MHz MHz MHz MHz MHz MHz	Err Err Err Err Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1
32 25 32 25 32 25 31 25 31 25 31 25 31 25 31 25 31 25 30 25 30 25 30 25	9 9 8 7 8 8 7 6 6 7 6 5 5 6	33 33 33 32 32 32 32 32 31 31 31 31 30 30 30	24 24 24 24 24 24 24 24 24 24 24 24 24 2	10 9 10 8 9 9 7 8 7 8 7 8 7 8 6 7 6		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		571843.2434 571843.2434 571843.2434 571843.2434 571882.9952 571882.9952 57182.9952 571919.7075 571919.7075 571919.7075 571919.7075 571919.7075 571953.9904 571953.9904	MHz MHz MHz MHz MHz MHz MHz MHz MHz MHz	Err Err Err Err Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1
32 25 32 25 32 25 31 25 31 25 30 25 30 25 30 25 30 25 30 25 30 25 30 25 30 25 30 25 30 25 30 25	9 9 8 7 8 8 7 6 6 7 6 5 5 6	33 33 33 32 32 32 32 31 31 31 31 30 30 30 30	24 24 24 24 24 24 24 24 24 24 24 24 24 2	10 9 10 8 9 9 7 8 7 8 7 8 6 7 6 7	~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	1 1		571843.2434 571843.2434 571843.2434 571842.9952 571882.9952 571882.9952 571882.9952 571882.9952 571919.7075 571919.7075 571919.7075 571919.7075 571953.9904 571953.9904	MHz MHz MHz MHz MHz MHz MHz MHz MHz MHz	Err Err Err Err Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1
32 25 32 25 32 25 31 25 31 25 31 25 30 25 30 25 30 25 30 25 30 25 30 25 30 25 30 25 30 25 30 25 30 25 30 25 30 25 30 25 30 25	9 9 8 7 8 8 7 6 6 7 6 5 5 6 14	33 33 33 32 32 32 32 32 32 31 31 31 31 30 30 30 30 39	24 24 24 24 24 24 24 24 24 24 24 24 24 2	10 9 10 8 9 9 7 8 7 8 7 8 7 8 7 8 7 8 7 15	~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	$ \begin{array}{c} 1 \\ $		571843.2434 571843.2434 571843.2434 571843.2434 571882.9952 571882.9952 571882.9952 571919.7075 571919.7075 571919.7075 571919.7075 571953.9904 571953.9904 571953.9904 571953.9904	MHz MHz MHz MHz MHz MHz MHz MHz MHz MHz	Err Err Err Err Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1
32 25 32 25 32 25 31 25 31 25 31 25 30 25 30 25 30 25 30 25 30 25 30 25 30 25 30 25 30 25 30 25 39 25	$9 \\ 9 \\ 7 \\ 8 \\ 7 \\ 6 \\ 7 \\ 6 \\ 5 \\ 5 \\ 6 \\ 14 \\ 15$	33 33 33 32 32 32 32 32 32 31 31 31 31 30 30 30 30 39 39	24 24 24 24 24 24 24 24 24 24 24 24 24 2	10 9 10 8 9 9 7 8 7 8 7 8 7 8 7 8 6 7 6 7 15 16		$ \begin{array}{c} 1 \\ $		571843.2434 571843.2434 571843.2434 571843.2434 571882.9952 571882.9952 571882.9952 571919.7075 571919.7075 571919.7075 571919.7075 571919.7075 571953.9904 571953.9904 571953.7904 571953.7694	MHz MHz MHz MHz MHz MHz MHz MHz MHz MHz	Err Err Err Err Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1
32 25 32 25 32 25 31 25 31 25 31 25 30 25 30 25 30 25 30 25 30 25 30 25 30 25 30 25 30 25 30 25 30 25 30 25 30 25 30 25 30 25 30 25 39 25 39 25 39 25	9 9 8 7 8 7 6 6 7 6 5 5 6 14 15 15	33 33 33 32 32 32 32 31 31 31 31 30 30 30 30 39 39 39	24 24 24 24 24 24 24 24 24 24 24 24 24 2	10 9 10 8 9 9 7 8 7 8 7 8 7 8 7 8 7 8 7 15 16 15		1 1		571843.2434 571843.2434 571843.2434 571843.2434 571842.9952 571882.9952 571882.9952 571919.7075 571919.7075 571919.7075 571919.7075 571953.9904 571953.9904 571953.9904 571953.9904 571536.7694 571536.7694	MHz MHz MHz MHz MHz MHz MHz MHz MHz MHz	Err Err Err Err Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1

39	25	14	30	24	16	S	1	=	571536 7694	MH7	Frr	1
40	20	10		21	10		1		571470 7160	MUg	Enn	. 1
40	20	15	40	24	: 10	0	1	-	5/14/2./102	PIEZ	E11	• 1
40	25	15	40	24	: 17	S	1	=	571472.7162	MHz	Err	.1
40	25	16	40	24	16	S	1	=	571472.7162	MHz	Err	.1
40	25	16	40	24	17	S	1	=	571472.7162	MHz	Err	.1
11	25	16	41	24	17	9	1	-	571/0/ /8/5	MH	Err	1
41	20	10	41	. 24	: 11	2	1	-	571404.4045	MIL	EII	.1
41	25	16	41	. 24	: 18	S	1	=	571404.4845	MHz	Err	.1
41	25	17	41	. 24	17	S	1	=	571404.4845	MHz	Err	.1
41	25	17	41	24	18	S	1	=	571404,4845	MHz	Err	.1
12	25	17	1	20	18	q	1	-	571331 7836	MH	Err	1
72	20	11		27	: 10	5	1	-	571551.7650	FIIIZ	511	• 1
42	25	17	42	24	: 19	S	1	=	571331.7836	MHz	Err	.1
42	25	18	42	24	18	S	1	=	571331.7836	MHz	Err	.1
12	25	18	10	2/	10	q	1	-	571331 7836	MH-7	Frr	1
72	20	10		27	: 13	5	1	-	571551.7650	FIIIZ	511	• 1
43	25	18	43	3 24	: 19	S	1	=	571254.7061	MHz	Err	.1
43	25	18	43	3 24	20	S	1	=	571254.7061	MHz	Err	.1
43	25	19	43	24	19	S	1	=	571254 7061	MHz	Err	. 1
12	20	10	45	0.04	20		÷.	_	E710E4 7061	MUm	Enn	1
40	20	19	40	24	20	5	Ŧ	-	5/1254./001	PIEZ	ELL	• 1
44	25	19	44	24	: 20	S	1	=	571172.6217	MHz	Err	.1
44	25	20	44	24	21	S	1	=	571172.6217	MHz	Err	.1
44	25	20	44	24	. 20	S	1	=	571172 6217	MHz	Frr	1
44	20	10	-1	21	20		÷		574470 6047	11112	511	• •
44	25	19	44	24	21	5	T	=	5/11/2.621/	MHZ	Err	.1
45	25	20	45	5 24	21	S	1	=	571085.6158	MHz	Err	.1
45	25	20	45	24	22	S	1	=	571085.6158	MHz	Err	.1
45	25	01	40	: 04	01	0	4	_	E7100E 61E0	MUm	Emm	- 1
40	20	21	40	24	: 21	2	-	-	571065.0156	PIEZ	EII	• 1
45	25	21	45	24	22	S	1	=	5/1085.6158	MHz	Err	.1
46	25	21	46	5 24	22	S	1	=	570993.4292	MHz	Err	.1
46	25	21	46	5 24	23	S	1	=	570993.4292	MHz	Err	.1
A.F	0E	22					1	_	570003 4000	мu~	Fr.~	-
-±0	∠0 0-	22	40	, 24	. 22	5	1	-	010000.4202	nпZ	ы.г Б	• 1
46	25	22	46	5 24	23	S	1	=	570993.4292	MHz	Err	.1
47	25	23	47	24	23	S	1	=	570895.7880	MHz	Err	.1
47	25	22	47	24	24	8	1	=	570895 7880	MHz	Err	.1
17	20	22	-21		00	2	÷	-	57080E 7000	MU-	 F	. 1
41	25	22	41	24	23	5	T	=	5/0895./880	MHZ	Err	.1
47	25	23	47	24	24	S	1	=	570895.7880	MHz	Err	.1
48	25	24	48	24	24	S	1	=	570792,4941	MHz	Err	.1
18	25	23	19	2 24	25	q	1	-	570702 /0/1	MH	Err	1
40	20	20		27	20	5	-	-	570752.4341	FIIIZ	DI I	• •
48	25	23	48	3 24	24	S	1	=	570792.4941	MHz	Err	.1
48	25	24	48	3 24	25	S	1	=	570792.4941	MHz	Err	.1
49	25	24	49	24	25	S	1	=	570683 3177	MHz	Err	. 1
40	05	05			00		÷	_	570602 2177	MII-	Enn	
49	25	25	49	24	26	5	T	=	5/0683.31//	MHZ	Err	.1
49	25	25	49	24	25	S	1	=	570683.3177	MHz	Err	.1
49	25	24	49	24	26	S	1	=	570683.3177	MHz	Err	.1
50	25	25	50	24	26	S	1	=	570568 0376	MH7	Frr	1
50	20	20		21	. 20		÷		570500.0070	11112	511	• •
50	25	25	50	24	27	S	1	=	570568.0376	MHz	Err	.1
50	25	26	50	24	26	S	1	=	570568.0376	MHz	Err	.1
50	25	26	50	24	27	S	1	=	570568.0376	MHz	Err	.1
E 1	25	26	E 1	1	00		-	_	E70446 2796	MUm	Enn	
51	25	20	51	. 24	: 20	2	1	=	5/0440.3/60	MHZ	Err	• 1
51	25	26	51	. 24	27	S	1	=	570446.3786	MHz	Err	.1
51	25	27	51	. 24	27	S	1	=	570446.3786	MHz	Err	.1
51	25	27	51	24	. 28	S	1	=	570446 3786	MH7	Frr	1
501	20	21			20		÷		570040 4045	MIL	511	• •
52	25	20	5⊿	24	: 29	5	T	=	5/0316.1215	MHZ	Err	• 1
52	25	28	52	24	28	S	1	=	570318.1215	MHz	Err	.1
52	25	27	52	24	28	S	1	=	570318.1215	MHz	Err	.1
52	25	27	5	0.04	20	q	1	-	570318 1215	MH-7	Frr	1
502	20	21			20		÷		570010.1210		511	• •
53	25	29	53	24	29	5	T	=	570183.0195	MHZ	Err	.1
53	25	28	53	3 24	: 30	S	1	=	570183.0195	MHz	Err	.1
53	25	28	53	24	29	S	1	=	570183.0195	MHz	Err	.1
53	25	20	53	20/	30	q	1	-	570183 0195	MH	Err	1
	20	23		27	: 50	5	1	-	570105.0135	FIIIZ	511	• 1
54	25	29	54	24	: 30	S	1	=	570040.8041	MHz	Err	.1
54	25	29	54	24	31	S	1	=	570040.8041	MHz	Err	.1
54	25	30	54	24	30	S	1	=	570040.8041	MHz	Err	.1
E.4	0E	30	=		21		1	_	570040 9044	мu~	Fr.~	-
54	20	30	04	24	: 31	5	1	-	570040.8041	PIEZ	- EII	• 1
55	25	30	55	24	31	S	1	=	569891.1556	MHz	Err	.1
55	25	30	55	5 24	32	S	1	=	569891.1556	MHz	Err	.1
55	25	31	55	24	31	S	1	=	569891,1556	MHz	Err	.1
55	25	21	50	: 04	20		-	-	560801 1550	MU~	Err	-
00	20	01		24	. 32	د -	1	-	000001.1000	ruiZ		• 1
56	25	32	56	24	32	S	1	=	569/33.9663	MHz	Err	.1
56	25	31	56	5 24	33	S	1	=	569733.9663	MHz	Err	.1
56	25	31	56	5 24	32	S	1	=	569733.9663	MHz	Err	.1
56	25	30	F4	: 0/	22	0	ĩ	-	569733 0662	MH-7	Frr	1
50	∠0 0-	J2	- 20	, 24		5	1	-	000100.9000	nпZ	ы.г Б	• 1
57	25	33	57	24	33	S	1	=	569568.7264	MHz	Err	.1
57	25	32	57	24	34	S	1	=	569568.7264	MHz	Err	.1
57	25	32	57	24	33	8	1	=	569568 7264	MHz	Err	.1
57	20	22		21		2	÷		500500.7204	MIT	Di l	•••
57	25	33	57	24	34	S	1	=	209568.7264	MHZ	Err	.1
58		-	E C			S	1	=	569395 3808	MHZ	Err	.1
58	25	33	50	3 24	: 34				00000000000	11112		
58	25 25	33 33	58	324 324	: 34 : 35	S	1	=	569395.3808	MHz	Err	.1
50	25 25 25	33 33 34	58	3 24 3 24 3 24	: 34 : 35 : 37	S	1	=	569395.3808	MHz MH7	Err	.1
58	25 25 25 25	33 33 34	58	3 24 3 24 3 24 3 24	34 35 34	S S	1	=	569395.3808 569395.3808	MHz MHz	Err Err	.1 .1
	25 25 25 25 25	33 33 34 34	58 58 58	3 24 3 24 3 24 3 24 3 24	34 35 34 34 35	S S S	1 1 1	= = =	569395.3808 569395.3808 569395.3808	MHz MHz MHz	Err Err Err	.1 .1 .1
59	25 25 25 25 25 25	33 33 34 34 34	58 58 58 59	24 24 24 24 24 24 24 24 24	34 35 34 35 35 36	S S S	1 1 1 1	= = =	569395.3808 569395.3808 569395.3808 569213.2202	MHz MHz MHz MHz MHz	Err Err Err Err	.1 .1 .1 .1
59 59	25 25 25 25 25 25 25 25	33 33 34 34 34 34 34	58 58 58 59 59	24 24 24 24 24 24 24 24 24 24	34 35 34 35 36 35	ទ ទ ទ ទ ទ	1 1 1 1		569395.3808 569395.3808 569395.3808 569395.3808 569213.2202 569213.2202	MHz MHz MHz MHz MHz MHz	Err Err Err Err Err	.1 .1 .1 .1
59 59	25 25 25 25 25 25 25 25 25	33 33 34 34 34 34 34	58 58 58 59 59	24 24 24 24 24 24 24 24 24	34 35 34 35 36 36 35	ន ន ន ន ន ន	1 1 1 1		569395.3808 569395.3808 569395.3808 569213.2202 569213.2202 569213.2202	MHz MHz MHz MHz MHz MHz	Err Err Err Err Err	.1 .1 .1 .1 .1
59 59 59	25 25 25 25 25 25 25 25 25 25	33 33 34 34 34 34 35	58 58 58 59 59 59	24 24 24 24 24 24 24 24 24 24 24	34 35 34 35 36 35 35	ទ ទ ទ ទ ទ ទ ទ	1 1 1 1 1	=	569395.3808 569395.3808 569395.3808 569213.2202 569213.2202 569213.2202	MHz MHz MHz MHz MHz MHz	Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1
59 59 59 59	25 25 25 25 25 25 25 25 25 25 25	33 34 34 34 34 35 35	58 58 58 59 59 59	3 24 3 24 3 24 3 24 9 24 9 24 9 24 9 24 9 24	34 35 34 35 36 35 35 35 36	ន ន ន ន ន ន ន	1 1 1 1 1 1	= = = =	569395.3808 569395.3808 569395.3808 569395.3808 569213.2202 569213.2202 569213.2202 569213.2202	MHz MHz MHz MHz MHz MHz MHz MHz	Err Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1 .1
59 59 59 59 60	25 25 25 25 25 25 25 25 25 25 25 25	33 34 34 34 34 34 35 35 35	58 58 58 59 59 59 59 59 60	 24 	34 35 34 35 36 35 35 35 35 36 36	ន ន ន ន ន ន ន ន ន ន	1 1 1 1 1 1 1 1	-	569395.3808 569395.3808 569395.3808 569395.3808 569213.2202 569213.2202 569213.2202 569213.2202 569213.2202	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	Err Err Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1 .1 .1
59 59 59 59 60 60	25 25 25 25 25 25 25 25 25 25 25 25 25 2	33 34 34 34 34 35 35 35 35 36	50 58 58 59 59 59 59 60 60	 24 	34 35 34 35 36 35 35 35 36 36 36 36	ន ន ន ន ន ន ន s	1 1 1 1 1 1 1 1 1		569395.3808 569395.3808 569395.3808 569213.2202 569213.2202 569213.2202 569213.2202 56922.9605 569022.9605	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	Err Err Err Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1 .1 .1
59 59 59 60 60 60	25 25 25 25 25 25 25 25 25 25 25 25 25 2	 33 34 34 34 34 35 35 35 36 36 	56 58 58 59 59 59 60 60	3 24 3 24 3 24 3 24 3 24 3 24 9 24 9 24 9 24 9 24 9 24 9 24 9 24 9 24	34 35 34 35 36 35 35 35 36 36 36 36 37	S S S S S S S S S S S S S S S S S S S	1 1 1 1 1 1 1 1 1		569395.3808 569395.3808 569395.3808 569213.2202 569213.2202 569213.2202 569213.2202 569213.2202 569022.9605 569022.9605	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	Err Err Err Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1 .1 .1 .1
59 59 59 60 60 60	25 25 25 25 25 25 25 25 25 25 25 25 25 2	33 34 34 34 34 35 35 35 36 36	58 58 58 59 59 59 60 60 60	 24 	34 35 34 35 36 35 35 36 36 36 36 37 36	S S S S S S S S S S S S S S S S S S S	1 1 1 1 1 1 1 1 1 1 1		569395.3808 569395.3808 569395.3808 569213.2202 569213.2202 569213.2202 569213.2202 569213.2202 569022.9605 569022.9605	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	Err Err Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1
59 59 59 60 60 60 60	25 25 25 25 25 25 25 25 25 25 25 25 25 2	33 34 34 34 34 35 35 35 36 36 35	58 58 58 59 59 59 60 60 60 60	 24 	34 35 34 36 35 35 35 36 36 36 36 37 36 37 36	ទ ទ ទ ទ ទ ទ ទ ទ ទ ទ ទ ទ ទ ទ ទ ទ ទ ទ ទ	1 1 1 1 1 1 1 1 1 1 1		569395.3808 569395.3808 569213.2202 569213.2202 569213.2202 569213.2202 569022.9605 569022.9605 569022.9605	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	Err Err Err Err Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1
59 59 59 60 60 60 60 60 61	25 25 25 25 25 25 25 25 25 25 25 25 25 2	 33 34 34 34 34 35 35 36 36 35 36 35 36 35 36 	56 58 58 59 59 59 59 60 60 60 60 60 60	24 24 24 24 24 24 24 24 24 24 24 24 24 2	34 35 34 35 36 35 36 36 36 36 37 36 37 38	ន	1 1 1 1 1 1 1 1 1 1 1 1 1 1		569395.3808 569395.3808 569395.3808 569213.2202 569213.2202 569213.2202 569022.9605 569022.9605 569022.9605 569022.9605 569022.9605	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	Err Err Err Err Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1
59 59 59 60 60 60 60 61 61	25 25 25 25 25 25 25 25 25 25 25 25 25 2	 33 34 34 34 34 35 35 36 36 36 36 36 	56 58 59 59 59 59 60 60 60 60 60 61 61	24 24 24 24 24 24 24 24 24 24	34 35 36 35 36 35 36 36 36 37 36 37 38 37	ន ន ន ន ន ន ន ន ន ន ន ន ន ន ន ន ន ន ន	1 1		569395.3808 569395.3808 569395.3808 569213.2202 569213.2202 569213.2202 569022.9605 569022.9605 569022.9605 569022.9605 56823.0660	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	Err Err Err Err Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1
59 59 59 60 60 60 61 61	25 25 25 25 25 25 25 25 25 25 25 25 25 2	 33 34 34 34 34 35 35 36 	56 58 58 59 59 59 60 60 60 60 61	24 24 24 24 24 24 24 24 24 24	34 35 34 35 36 35 35 36 36 36 36 37 36 37 38 37 38 37	<u> </u>	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		563395.3808 563395.3808 563395.3808 569213.2202 569213.2202 569213.2202 569223.9605 569022.9605 569022.9605 569022.9605 568223.0660 568823.0660	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	Err Err Err Err Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1
59 59 59 60 60 60 61 61 61	25 25 25 25 25 25 25 25 25 25 25 25 25 2	33 34 34 34 34 35 35 35 36 36 36 36 36 37	50 58 58 59 59 59 60 60 60 61 61 61	<pre>3 24 3 24 3 24 3 24 3 24 3 24 3 24 9 24 9 24 9 24 9 24 9 24 9 24 9 24 9</pre>	34 35 34 35 36 35 36 35 36 36 36 37 36 37 38 37 38 37 38 37	ភ ភ ភ ភ ភ ភ ភ ភ ភ ភ ភ ភ ភ ភ ភ ភ ភ ភ ភ	1 1		569395.3808 569395.3808 569395.3808 569213.2202 569213.2202 569213.2202 569022.9605 569022.9605 569022.9605 569022.9605 568923.0660 568823.0660	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	Err Err Err Err Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1
59 59 59 60 60 60 61 61 61 61	25 25 25 25 25 25 25 25 25 25 25 25 25 2	 33 34 34 34 34 35 35 36 36 36 36 36 36 37 37 	50 58 58 59 59 59 60 60 60 61 61 61 61	24 24 24 24 24 24 24 24 24 24 24 24 24 2	 34 35 34 35 36 35 36 35 36 35 36 37 36 37 38 37 38 37 38 37 38 	ភ ភ ភ ភ ភ ភ ភ ភ ភ ភ ភ ភ ភ ភ ភ ភ ភ ភ ភ	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		563395.3808 563395.3808 569395.3808 569213.2202 569213.2202 569213.2202 569022.9605 569022.9605 569022.9605 569022.9605 56823.0660 568823.0660	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	Err Err Err Err Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1
59 59 59 60 60 60 60 61 61 61 61 61 62	25 25 25 25 25 25 25 25 25 25 25 25 25 2	 33 34 34 34 35 35 36 36 36 36 36 37 37 37 	56 58 58 59 59 59 60 60 60 60 61 61 61 61 61	24 24	 34 35 34 35 36 35 36 35 36 37 38 37 38 37 38 37 38 38 38 	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	$1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\$		569395.3808 569395.3808 569395.3808 569213.2202 569213.2202 569213.2202 569022.9605 569022.9605 569022.9605 568022.9605 568823.0660 568823.0660 568823.0660 568823.0660	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	Err Err Err Err Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1
59 59 59 60 60 60 61 61 61 61 62 62	25 25 25 25 25 25 25 25 25 25 25 25 25 2	33 34 34 34 35 35 35 36 36 36 36 37 37 37 37	56 58 58 59 59 59 60 60 60 60 61 61 61 61 61 61	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	 34 35 34 35 36 35 36 35 36 37 36 37 38 39 	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	$1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\$		569395.3808 569395.3808 569395.3808 569213.2202 569213.2202 569213.2202 569022.9605 569022.9605 569022.9605 56823.0660 568823.0660 568823.0660 568823.0660 568823.0660	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	Err Err Err Err Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1
59 59 59 59 60 60 60 60 61 61 61 61 62 62 62	25 25 25 25 25 25 25 25 25 25 25 25 25 2	33 34 34 34 35 35 35 36 36 36 36 37 37 37 37 38	56 58 58 59 59 59 59 60 60 60 61 61 61 61 61 61 62 62 62	24 24 24 24 24 24 24 24	 34 35 34 35 36 35 36 37 36 37 38 39 38 39 38 	ਲ਼ਲ਼ਲ਼ਲ਼ਲ਼ਲ਼ਲ਼ ਲ਼ਲ਼ਲ਼ਲ਼ਲ਼ਲ਼ਲ਼ਲ਼	$1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\$		569395.3808 569395.3808 569395.3808 569213.2202 569213.2202 569213.2202 569022.9605 569022.9605 569022.9605 569022.9605 56823.0660 568823.0660 568823.0660 568823.0660 568823.0660	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	Err Err Err Err Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1

62	25	38	62	24	39	S	1	=	568613.9349	MHz	Err	.1
63	25	38	63	24	40	S	1	=	568395.0372	MHz	Err	.1
63	25	38	63	24	39	S	1	=	568395.0372	MHz	Err	.1
63	25	39	63	24	39	s	1	=	568395 0372	MHz	Err	.1
63	25	39	63	24	40	S	1	=	568395 0372	MHz	Err	.1
64	25	30	64	24	10	g	1	-	568166 1922	MH-	Err	1
64	25	30	64	24	11	2	1	_	568166 1022	MH-	Err	.1
64	20	39	64	24	41	2	1		500100.1922	MIL-	EII	.1
04	20	40	04	24	40	2	1	-	500100.1922	MIL	EII	.1
04	25	40	04	24	41	2	1	-	506100.1922	MI	Err	• 1
38	25	14	38	24	14	5	1	=	5/1596.8148	MHZ	Err	• 1
38	25	13	38	24	15	S	1	=	5/1596.8148	MHz	Err	.1
38	25	13	38	24	14	S	1	=	571596.8148	MHz	Err	.1
38	25	14	38	24	15	S	1	=	571596.8148	MHz	Err	.1
37	25	12	37	24	13	S	1	=	571653.0264	MHz	Err	.1
37	25	12	37	24	14	S	1	=	571653.0264	MHz	Err	.1
37	25	13	37	24	13	S	1	=	571653.0264	MHz	Err	.1
37	25	13	37	24	14	S	1	=	571653.0264	MHz	Err	.1
36	25	11	36	24	12	S	1	=	571705.5522	MHz	Err	.1
36	25	11	36	24	13	S	1	=	571705.5522	MHz	Err	.1
36	25	12	36	24	12	S	1	=	571705.5522	MHz	Err	.1
36	25	12	36	24	13	S	1	=	571705.5522	MHz	Err	.1
35	25	10	35	24	11	S	1	=	571754.8085	MHz	Err	.1
35	25	10	35	24	12	S	1	=	571754.8085	MHz	Err	.1
35	25	11	35	24	11	s	1	=	571754 8085	MHz	Err	.1
35	25	11	35	24	12	s	1	=	571754 8085	MHz	Frr	1
3/	25	10	3/	24	10	g	1	-	571800 5669	MH-	Err	1
3/	25	10	3/	24	11	2	1	_	571800 5669	MH-	Err	.1
24	20	9	34	24	10	2	1		571800.5009	MIL-	EII	.1
34	25	9	34	24	10	2	1	-	571600.5669	MI	Err	.1
34	25	10	34	24	11	5	1	=	5/1800.5669	MHZ	Err	.1
33	25	8	33	24	9	5	1	=	5/1843.2434	MHZ	Err	• 1
33	25	9	33	24	10	S	1	=	571843.2434	MHz	Err	.1
33	25	9	33	24	9	S	1	=	571843.2434	MHz	Err	.1
33	25	8	33	24	10	S	1	=	571843.2434	MHz	Err	.1
32	25	7	32	24	8	S	1	=	571882.9952	MHz	Err	.1
32	25	8	32	24	8	S	1	=	571882.9952	MHz	Err	.1
32	25	8	32	24	9	S	1	=	571882.9952	MHz	Err	.1
32	25	7	32	24	9	S	1	=	571882.9952	MHz	Err	.1
31	25	6	31	24	7	S	1	=	571919.7075	MHz	Err	.1
31	25	7	31	24	8	S	1	=	571919.7075	MHz	Err	.1
31	25	7	31	24	7	S	1	=	571919.7075	MHz	Err	.1
31	25	6	31	24	8	S	1	=	571919.7075	MHz	Err	.1
30	25	6	30	24	7	S	1	=	571953,9904	MHz	Err	.1
30	25	6	30	24	6	g	î	-	571053 0004	MH-7	Err	1
20	20	5	20	21	6		-	_	E710E2 0004	MUG	Enn	.1
20	20	5	30	24	7	0	1	-	571955.9904	MUG	EII	.1
30	20	0	30	24		2	1		571955.9904	MIL-	EII	.1
29	25	4	29	24	5	5	1	=	5/1985./391	MHZ	Err	.1
29	25	4	29	24	6	S	1	=	5/1985./391	MHz	Err	.1
29	25	5	29	24	5	S	1	=	571985.7391	MHz	Err	.1
29	25	5	29	24	6	S	1	=	571985.7391	MHz	Err	.1
28	25	4	28	24	4	S	1	=	572014.9992	MHz	Err	.1
28	25	3	28	24	5	S	1	=	572014.9992	MHz	Err	.1
28	25	3	28	24	4	S	1	=	572014.9992	MHz	Err	.1
28	25	4	28	24	5	S	1	=	572014.9992	MHz	Err	.1
27	25	2	27	24	3	S	1	=	572042.0342	MHz	Err	.1
27	25	3	27	24	4	S	1	=	572042.0342	MHz	Err	.1
27	25	3	27	24	3	S	1	=	572042.0342	MHz	Err	.1
27	25	2	27	24	4	S	1	=	572042.0342	MHz	Err	.1
26	25	2	26	24	2	S	1	=	572066 9476	MH-7	Err	.1
26	25	1	26	24	3	S	1	_		rinz		
26	25	1	26	04	-	-	-	=	572066.9476	MHz	Err	.1
26	25	-		24	2	S	1	-	572066.9476 572066.9476	MHz MHz	Err Err	.1
25		2	26	24	2	S	1	=	572066.9476 572066.9476 572066.9476	MHz MHz MHz	Err Err Frr	.1 .1 1
25	25	2	26 25	24 24 24	2 3 1	S S S	1 1 1	=	572066.9476 572066.9476 572066.9476 572066.9476	MHz MHz MHz MHz MHz	Err Err Err Err	.1 .1 .1
20	25	2 0	26 25	24 24 24 24	2 3 1 2	S S S	1 1 1	-	572066.9476 572066.9476 572066.9476 572089.8344 572089.8344	MHz MHz MHz MHz MHz	Err Err Err Err Err	.1 .1 .1 .1
	25 25 25	2 0 0	26 25 25	24 24 24 24 24	2 3 1 2	S S S S	1 1 1 1		572066.9476 572066.9476 572066.9476 572089.8344 572089.8344	MHz MHz MHz MHz MHz MHz MHz	Err Err Err Err Err	.1 .1 .1 .1 .1
25	25 25 25 25	2 0 1	26 25 25 25	24 24 24 24 24 24	2 3 1 2 1 2	S S S S S S S	1 1 1 1 1		572066.9476 572066.9476 572066.9476 572089.8344 572089.8344 572089.8344	MHz MHz MHz MHz MHz MHz MHz MHz MHz	Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1 .1
25	25 25 25 25 25	2 0 1 1	26 25 25 25 25 25	24 24 24 24 24 24 24	2 3 1 2 1 2	S S S S S S S S	1 1 1 1 1		572066.9476 572066.9476 572066.9476 572089.8344 572089.8344 572089.8344 572089.8344	MHz MHz MHz MHz MHz MHz MHz MHz MHz	Err Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1 .1 .1
25 25 48	25 25 25 25 25 0	2 0 1 1 48	26 25 25 25 25 47	24 24 24 24 24 24 24 1	2 3 1 2 1 2 47 47	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	1 1 1 1 1 1		572066.9476 572066.9476 572066.9476 572089.8344 572089.8344 572089.8344 572089.8344	MHz MHz MHz MHz MHz MHz MHz MHz MHz MHz	Err Err Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1 .1 .1 .1
25 25 48 48	25 25 25 25 25 0 1	2 0 1 1 48 48	26 25 25 25 25 47 47	24 24 24 24 24 24 24 1 1	2 3 1 2 1 2 47 47	ន ន ន ន ន ន ន ន ន ន ន ន ន	1 1 1 1 1 1	= = = = =	572066.9476 572066.9476 572089.8344 572089.8344 572089.8344 572089.8344 572089.8344 572089.8344	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	Err Err Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1 .1 .1 .1
25 25 48 48 48 48	25 25 25 25 25 0 1 0	2 0 1 1 48 48 48	26 25 25 25 25 47 47 47	24 24 24 24 24 24 1 1 0	2 3 1 2 47 47 47	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	1 1 1 1 1 1 1 1 1		572066.9476 572066.9476 572089.8344 572089.8344 572089.8344 572089.8344 573179.3192 573179.3192 573179.3192	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	Err Err Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1
25 48 48 48 48 48	25 25 25 25 25 0 1 0 1	2 0 1 48 48 48 48 48	26 25 25 25 47 47 47 47 47	24 24 24 24 24 24 1 1 0 0	2 3 1 2 1 2 47 47 47 47 47	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	1 1 1 1 1 1 1 1 1		572066.9476 572066.9476 572089.8344 572089.8344 572089.8344 572089.8344 572089.8344 573179.3192 573179.3192 573179.3192	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	Err Err Err Err Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1
25 25 48 48 48 48 48 48 47	25 25 25 25 25 0 1 0 1 2	2 0 1 48 48 48 48 48 45	26 25 25 25 25 47 47 47 47 47 47	24 24 24 24 24 24 1 1 0 3	2 3 1 2 47 47 47 47 47 47	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		572066.9476 572066.9476 572089.8344 572089.8344 572089.8344 572089.8344 572089.8344 573179.3192 573179.3192 573179.3192 573179.3192	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	Err Err Err Err Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1
25 25 48 48 48 48 48 48 47 47	25 25 25 25 25 0 1 0 1 2 3	2 0 1 48 48 48 48 45 45	26 25 25 25 25 47 47 47 47 47 46 46	24 24 24 24 24 1 1 0 3 3	2 3 1 2 47 47 47 47 47 47 44 44	ន ន ន ន ន ន ន ន ន ន ន ន ន ន ន ន ន ន ន ន	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		572066.9476 572066.9476 572086.9476 572089.8344 572089.8344 572089.8344 572089.8344 573179.3192 573179.3192 573179.3192 573246.8041 573246.8041	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	Err Err Err Err Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1
25 25 48 48 48 48 48 47 47 47	25 25 25 25 25 0 1 0 1 2 3 2	2 0 1 48 48 48 48 45 45 45 45	26 25 25 25 25 47 47 47 47 46 46 46	24 24 24 24 24 1 1 0 0 3 3 2	2 3 1 2 47 47 47 47 47 44 44 44	හ හ හ හ හ හ හ හ හ හ හ හ	$ \begin{array}{c} 1 \\ $		572066.9476 572066.9476 572086.9476 572089.8344 572089.8344 572089.8344 572089.8344 573179.3192 573179.3192 573179.3192 573179.3192 573246.8041	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	Err Err Err Err Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1
25 25 48 48 48 48 47 47 47 47 47	25 25 25 25 25 25 1 0 1 2 3 2 3	2 0 1 48 48 48 48 45 45 45 45	26 25 25 25 47 47 47 47 46 46 46 46	24 24 24 24 24 24 1 1 0 0 3 3 2 2	2 3 1 2 47 47 47 47 47 47 44 44 44	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	$ \begin{array}{c} 1 \\ $		572066.9476 572066.9476 572086.9476 572089.8344 572089.8344 572089.8344 572089.8344 572089.8344 573179.3192 573179.3192 573179.3192 573246.8041 573246.8041	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	Err Err Err Err Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1
25 25 48 48 48 48 47 47 47 47 47 46	25 25 25 25 25 25 0 1 0 1 2 3 2 3 4	2 0 1 1 48 48 48 48 45 45 45 45 45 42	26 25 25 25 47 47 47 46 46 46 46 46	24 24 24 24 24 24 1 1 0 0 3 3 2 2 5	2 3 1 2 47 47 47 47 47 44 44 44 44 44	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	$ \begin{array}{c} 1 \\ $		572066.9476 572066.9476 572068.9476 572089.8344 572089.8344 572089.8344 572089.8344 573179.3192 573179.3192 573179.3192 573179.3192 573246.8041 573246.8041 573246.8041 573246.8041	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	Err Err Err Err Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1
25 25 48 48 48 48 47 47 47 47 47 47 46 45	25 25 25 25 25 25 25 0 1 0 1 2 3 2 3 4 10	2 0 1 1 48 48 48 48 45 45 45 45 45 42 35	26 25 25 25 47 47 47 46 46 46 46 46 45 44	24 24 24 24 24 1 1 1 0 0 3 3 2 2 5 10	2 3 1 2 47 47 47 47 47 47 44 44 44 44 41 34	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	$ \begin{array}{c} 1 \\ $		572066.9476 572066.9476 572086.9476 572089.8344 572089.8344 572089.8344 572089.8344 573179.3192 573179.3192 573179.3192 573179.3192 573246.8041 573246.8041 573246.8041 573246.8041 573279.4045 573372.9191	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	Err Err Err Err Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1
25 25 48 48 48 48 47 47 47 47 47 47 46 45 46	25 25 25 25 25 0 1 0 1 2 3 2 3 4 10 5	2 0 1 1 48 48 48 48 45 45 45 45 45 42 35 42	26 25 25 25 25 47 47 47 47 46 46 46 46 46 45 44	24 24 24 24 24 1 1 1 0 0 3 3 2 2 5 10 5	$2 \\ 3 \\ 1 \\ 2 \\ 47 \\ 47 \\ 47 \\ 44 \\ 44 \\ 44 \\ 44 $	8888888888888888888888	1 1		572066.9476 572066.9476 572086.9476 572089.8344 572089.8344 572089.8344 572089.8344 573179.3192 573179.3192 573179.3192 573179.3192 573246.8041 573246.8041 573246.8041 573246.8041 573246.8041 573279.4045 573372.9191	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	Err Err Err Err Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1
25 25 48 48 48 47 47 47 47 47 47 46 45 46 46	25 25 25 25 25 25 0 1 2 3 2 3 4 10 5 4	2 0 1 1 48 48 48 48 45 45 45 45 45 42 35 42 42	26 25 25 25 25 47 47 47 47 46 46 46 46 46 45 44 45	24 24 24 24 24 1 1 1 0 0 3 3 2 2 5 10 5 4	$\begin{array}{c} 2\\ 3\\ 1\\ 2\\ 47\\ 47\\ 47\\ 44\\ 44\\ 44\\ 44\\ 44\\ 41\\ 34\\ 41\\ 41\end{array}$	888888888888888888888888888888888888888	$1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\$		572066.9476 572066.9476 572068.9476 572089.8344 572089.8344 572089.8344 572089.8344 573179.3192 573179.3192 573179.3192 573246.8041 573246.8041 573246.8041 573246.8041 573279.4045 573372.9191 573647.8909 57380.66337	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	Err Err Err Err Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1
25 25 48 48 48 48 48 47 47 47 47 47 47 46 45 46 26	25 25 25 25 25 25 0 1 0 1 2 3 2 3 4 10 5 4 11	$\begin{array}{c} 2\\ 0\\ 0\\ 1\\ 1\\ 48\\ 48\\ 48\\ 45\\ 45\\ 45\\ 45\\ 45\\ 42\\ 35\\ 42\\ 42\\ 16\end{array}$	26 25 25 25 47 47 47 46 46 46 46 46 45 44 525	24 24 24 24 24 1 1 1 0 0 3 3 2 2 5 10 5 4 10	$\begin{array}{c} 2 \\ 3 \\ 1 \\ 2 \\ 1 \\ 2 \\ 47 \\ 47 \\ 47 \\ 44 \\ 44 \\ 44 \\ 41 \\ 34 \\ 41 \\ 15 \end{array}$	888888888888888888888888888888888888888	$1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\$		572066.9476 572066.9476 572086.9476 572089.8344 572089.8344 572089.8344 572089.8344 573179.3192 573179.3192 573179.3192 573246.8041 573246.8041 573246.8041 573246.8041 573274.6045 573372.9191 573647.8090 573800.6337 573778.7320	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	Err Err Err Err Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1
25 25 48 48 48 48 48 47 47 47 47 46 45 46 46 26 26	25 25 25 25 25 25 25 0 1 0 1 2 3 2 3 4 10 5 4 11 11	$\begin{array}{c} 2\\ 0\\ 0\\ 1\\ 1\\ 48\\ 48\\ 48\\ 45\\ 45\\ 45\\ 45\\ 45\\ 42\\ 35\\ 42\\ 42\\ 16\\ 15\\ \end{array}$	26 25 25 25 47 47 47 46 46 46 46 46 45 45 45 25 25	24 24 24 24 24 24 1 1 0 0 3 3 2 2 5 10 5 4 10 10	$\begin{array}{c} 2 \\ 3 \\ 1 \\ 2 \\ 1 \\ 2 \\ 47 \\ 47 \\ 47 \\ 44 \\ 44 \\ 44 \\ 41 \\ 34 \\ 41 \\ 15 \\ 15 \end{array}$	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	$1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\$		572066.9476 572066.9476 572089.8344 572089.8344 572089.8344 572089.8344 572089.8344 573179.3192 573179.3192 573179.3192 573246.8041 573246.8041 573246.8041 573246.8041 573246.8041 573246.8041 573279.4045 573372.9191 573647.8909 573800.6337 573778.7320	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	Err Err Err Err Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1
25 25 48 48 48 48 47 47 47 47 47 46 45 46 26 26 26	25 25 25 25 25 25 25 25 25 25 25 25 25 2	$\begin{array}{c} 2\\ 0\\ 1\\ 1\\ 48\\ 48\\ 48\\ 45\\ 45\\ 45\\ 45\\ 42\\ 35\\ 42\\ 42\\ 16\\ 15\\ 16\end{array}$	26 25 25 25 47 47 47 46 46 46 46 46 45 45 25 25 25	24 24 24 24 24 24 1 1 0 0 3 3 2 2 5 10 5 4 10 10 10	$\begin{array}{c} 2 \\ 3 \\ 1 \\ 2 \\ 1 \\ 2 \\ 47 \\ 47 \\ 47 \\ 44 \\ 44 \\ 44 \\ 41 \\ 34 \\ 41 \\ 15 \\ 15 \\ 16 \end{array}$	。 。 。 。 。 。 。	$1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\$		572066.9476 572066.9476 572089.8344 572089.8344 572089.8344 572089.8344 572089.8344 573179.3192 573179.3192 573179.3192 573246.8041 573246.8041 573246.8041 573246.8041 573274.64804 573377.9191 573647.8909 573807.6537 573778.7320 573778.7320	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	Err Err Err Err Err Err Err Err Err Err	.1 .1
25 25 48 48 48 48 47 47 47 47 47 46 45 46 46 26 26 26 26	25 25 25 25 25 25 25 25 25 25 25 25 25 2	$\begin{array}{c} 2\\ 0\\ 1\\ 1\\ 48\\ 48\\ 48\\ 45\\ 45\\ 45\\ 45\\ 42\\ 35\\ 42\\ 42\\ 16\\ 15\\ 16\\ 15\end{array}$	26 25 25 25 47 47 47 46 46 46 46 46 45 25 25 25 25 25 25	24 24 24 24 24 24 1 1 0 0 3 3 2 2 5 10 5 4 10 10 10 10	$\begin{array}{c} 2 \\ 3 \\ 1 \\ 2 \\ 1 \\ 2 \\ 47 \\ 47 \\ 44 \\ 44 \\ 44 \\ 41 \\ 34 \\ 41 \\ 15 \\ 16 \\ 16 \end{array}$	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	1 1 1 1 1 1 1 1 1 1		572066.9476 572066.9476 572089.8344 572089.8344 572089.8344 572089.8344 572089.8344 573179.3192 573179.3192 573179.3192 573246.8041 573246.8041 573246.8041 573246.8041 573246.8041 573246.8041 573246.8041 573274.9191 573647.8099 573778.7320 573778.7320 573778.7320	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	Err Err Err Err Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1
25 25 48 48 48 48 48 47 47 47 47 47 46 46 26 26 26 26 46	25 25 25 25 25 25 25 25 25 25 25 25 25 2	$\begin{array}{c} 2\\ 0\\ 1\\ 1\\ 48\\ 48\\ 48\\ 45\\ 45\\ 45\\ 42\\ 35\\ 42\\ 16\\ 15\\ 16\\ 15\\ 42\end{array}$	266 255 255 255 255 255 255 255 255 255	24 24 24 24 24 24 1 1 0 0 3 3 2 2 5 10 5 4 10 10 10 10 10 4	$\begin{array}{c} 2 \\ 3 \\ 1 \\ 2 \\ 47 \\ 47 \\ 47 \\ 44 \\ 44 \\ 44 \\ 41 \\ 34 \\ 41 \\ 15 \\ 16 \\ 16 \\ 41 \end{array}$	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	1 1 1 1 1 1 1 1 1 1		572066.9476 572066.9476 572089.8344 572089.8344 572089.8344 572089.8344 572089.8344 572089.8344 573179.3192 573179.3192 573179.3192 573246.8041 573246.8041 573246.8041 573246.8041 573246.8041 573246.8041 573279.4045 573372.9191 573647.8090 573787.7320 573778.7320 573778.7320	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	Err Err Err Err Err Err Err Err Err Err	$\begin{array}{c} .1\\ .1\\ .1\\ .1\\ .1\\ .1\\ .1\\ .1\\ .1\\ .1\\$
25 25 48 48 48 48 48 47 47 47 47 47 46 46 26 26 26 26 46 45	25 25 25 25 25 25 25 25 25 25 25 25 25 2	$\begin{array}{c} 2\\ 0\\ 1\\ 1\\ 48\\ 48\\ 48\\ 45\\ 45\\ 45\\ 42\\ 35\\ 42\\ 16\\ 15\\ 16\\ 15\\ 42\\ 37\end{array}$	266 255 255 255 255 255 255 255 255 47 477 477 477 477 477 477 477 477 47	24 24 24 24 24 24 1 1 0 0 3 3 2 2 5 10 5 4 10 10 10 10 10 10 9	$\begin{array}{c} 2 \\ 3 \\ 1 \\ 2 \\ 1 \\ 2 \\ 47 \\ 47 \\ 47 \\ 44 \\ 44 \\ 44 \\ 44 $	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	1 1 1 1 1 1 1 1 1 1		572066.9476 572066.9476 572086.844 572089.8344 572089.8344 572089.8344 572089.8344 573179.3192 573179.3192 573179.3192 573246.8041 573246.8041 573246.8041 573246.8041 573246.8041 573274.648047 573372.9191 573647.8300 573778.7320 573778.7320 573778.7320 573778.7320 573778.7320	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	Err Err Err Err Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1
25 25 48 48 48 48 47 47 47 47 47 47 47 47 46 26 26 26 26 46 45 28	25 25 25 25 25 25 25 25 25 25 25 25 25 2	$\begin{array}{c} 2\\ 0\\ 1\\ 1\\ 48\\ 48\\ 48\\ 45\\ 45\\ 45\\ 42\\ 35\\ 42\\ 16\\ 15\\ 16\\ 15\\ 42\\ 37\\ 19 \end{array}$	266 255 255 255 255 255 255 255 255 477 477 477 477 477 477 477 477 477 4	24 24 24 24 24 24 24 1 1 0 0 3 3 2 2 5 10 5 4 10 10 10 10 10 9 9	$\begin{array}{c} 2 \\ 3 \\ 1 \\ 2 \\ 1 \\ 2 \\ 47 \\ 47 \\ 47 \\ 44 \\ 44 \\ 44 \\ 41 \\ 34 \\ 15 \\ 15 \\ 16 \\ 16 \\ 18 \\ 18 \end{array}$	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		572066.9476 572066.9476 572089.8344 572089.8344 572089.8344 572089.8344 572089.8344 572089.8344 573179.3192 573179.3192 573179.3192 573246.8041 573246.8041 573246.8041 573246.8041 573246.8041 573246.8041 573246.8041 573274.9191 573647.8099 573778.7320 573778.7320 573778.7320 573778.7320 573778.7320 573778.7320	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	Err Err Err Err Err Err Err Err Err Err	.1 .1
25 25 48 48 48 48 47 47 47 47 47 47 47 47 46 26 26 26 46 26 26 46 45 28 28		$\begin{array}{c} 2\\ 0\\ 1\\ 1\\ 48\\ 48\\ 48\\ 45\\ 45\\ 45\\ 42\\ 35\\ 42\\ 16\\ 15\\ 16\\ 15\\ 42\\ 37\\ 19\\ 18\end{array}$	266 255 255 255 255 255 255 255 255 255	24 24 24 24 24 24 24 24 1 1 0 0 3 3 2 2 5 10 5 4 10 0 10 10 10 10 9 9 9	$\begin{array}{c} 2 \\ 3 \\ 1 \\ 2 \\ 1 \\ 2 \\ 47 \\ 47 \\ 47 \\ 44 \\ 44 \\ 44 \\ 44 $	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	1 1 1 1 1 1 1 1 1 1		572066.9476 572066.9476 572089.8344 572089.8344 572089.8344 572089.8344 572089.8344 573179.3192 573179.3192 573179.3192 573246.8041 573246.8041 573246.8041 573246.8041 573246.8041 573246.8041 573247.8090 573778.7320 573778.7320 573778.7320 573778.7320 573778.7320 573778.7320 573778.7320 573778.7320	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	Err Err Err Err Err Err Err Err Err Err	$\begin{array}{c} .1 \\ .1 \\ .1 \\ .1 \\ .1 \\ .1 \\ .1 \\ .1 $
25 25 48 48 48 48 47 47 47 47 47 47 47 46 45 46 26 26 26 26 46 45 28 28 28	$25 \\ 25 \\ 25 \\ 25 \\ 25 \\ 25 \\ 0 \\ 1 \\ 0 \\ 1 \\ 2 \\ 3 \\ 2 \\ 3 \\ 4 \\ 10 \\ 5 \\ 4 \\ 11 \\ 11 \\ 11 \\ 11 \\ 5 \\ 9 \\ 10 \\ 10 \\ 10 \\ 10 \\ 10 \\ 10 \\ 10 $	$\begin{array}{c} 2\\ 0\\ 1\\ 1\\ 48\\ 48\\ 48\\ 45\\ 45\\ 45\\ 42\\ 35\\ 42\\ 16\\ 15\\ 16\\ 5\\ 12\\ 37\\ 19\\ 19\end{array}$	266 255 255 255 255 255 255 255 255 477 477 477 477 477 476 466 466 466 455 255 255 255 255 255 255 255 255 255	24 24 24 24 24 24 24 24 1 1 0 0 3 3 2 2 5 0 10 5 4 10 10 10 10 10 9 9 9 9 9	$\begin{array}{c} 2 \\ 3 \\ 1 \\ 2 \\ 1 \\ 2 \\ 47 \\ 47 \\ 47 \\ 44 \\ 44 \\ 44 \\ 41 \\ 15 \\ 16 \\ 16 \\ 18 \\ 19 \end{array}$	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	1 1 1 1 1 1 1 1 1 1		572066.9476 572066.9476 572086.9476 572089.8344 572089.8344 572089.8344 572089.8344 572089.8344 573179.3192 573179.3192 573179.3192 573276.8041 573246.8041 573246.8041 573274.68041 573274.68041 573279.4045 573372.9191 573647.8309 573778.7320 57378.7320 573778.7320 573778.7320 573778.7320 573778.7320 57378.73	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	Err Err Err Err Err Err Err Err Err Err	.1 .1
25 25 48 48 48 48 47 47 47 47 47 47 47 46 45 46 26 26 26 26 46 45 28 28 28 28	25 25 25 25 25 25 0 1 2 3 2 3 4 10 5 4 111 111 5 9 10 1	$\begin{array}{c} 2\\ 0\\ 1\\ 1\\ 48\\ 48\\ 48\\ 45\\ 45\\ 45\\ 42\\ 35\\ 42\\ 16\\ 15\\ 16\\ 5\\ 27\\ 19\\ 18\\ 19\\ 18\end{array}$	266 255 255 255 255 255 255 255 477 477 477 477 477 476 466 466 466 455 255 255 255 255 255 255 255 255 255	24 24 24 24 24 24 24 1 1 0 0 3 3 2 2 5 10 5 4 10 10 10 10 10 10 9 9 9 9 9 9 9	$\begin{array}{c} 2 \\ 3 \\ 1 \\ 2 \\ 1 \\ 2 \\ 47 \\ 47 \\ 47 \\ 44 \\ 44 \\ 44 \\ 41 \\ 34 \\ 41 \\ 15 \\ 16 \\ 16 \\ 18 \\ 19 \\ 19 \end{array}$	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	1 1 1 1 1 1 1 1 1 1		572066.9476 572086.9476 572089.8344 572089.8344 572089.8344 572089.8344 572089.8344 572089.8344 573179.3192 573179.3192 573179.3192 573246.8041 573246.8041 573246.8041 573246.8041 573246.8041 573274.809 573778.7320 573778.7320 573778.7320 573778.7320 573778.7320 573778.7320 573778.7320 573778.7320 573778.7320 573778.7320 573778.7320 573778.7320 573778.7320 573778.7320 573748.3093 575148.3093 575148.3093	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	Err Err Err Err Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1
25 25 48 48 48 48 48 47 47 47 47 46 5 46 6 26 26 45 28 28 28 28 28 28 28 28 28 28 28 28 28	25 25 25 25 25 25 0 1 2 3 2 3 4 10 5 4 111 111 5 9 10 1	$\begin{array}{c} 2 \\ 0 \\ 1 \\ 1 \\ 48 \\ 48 \\ 48 \\ 45 \\ 45 \\ 45 \\ 42 \\ 35 \\ 42 \\ 16 \\ 15 \\ 16 \\ 15 \\ 237 \\ 19 \\ 18 \\ 198 \\ 36 \end{array}$	26 25 25 25 25 25 25 25 25 25 25 25 25 25	24 24 24 24 24 24 24 24 24 1 1 0 0 3 3 2 2 5 0 10 5 4 10 10 10 10 9 9 9 9 9 9 9 9	$\begin{array}{c} 2 \\ 3 \\ 1 \\ 2 \\ 1 \\ 2 \\ 47 \\ 47 \\ 44 \\ 44 \\ 44 \\ 44 \\ 44 $	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		572066.9476 572066.9476 572089.8344 572089.8344 572089.8344 572089.8344 572089.8344 573179.3192 573179.3192 573179.3192 573246.8041 573246.8041 573246.8041 573246.8041 573246.8041 573246.8041 573247.4045 573377.7377 573778.7320 573778.7320 573778.7320 573778.7320 573778.7320 573778.7320 573778.7320 573778.7320 573778.7320 573778.7320 573778.7320 573778.7320 573778.7320 573778.7320 573748.3093 575148.3093 575148.3093 575148.3093	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	Err Err Err Err Err Err Err Err Err Err	$\begin{array}{c} .1\\ .1\\ .1\\ .1\\ .1\\ .1\\ .1\\ .1\\ .1\\ .1\\$
25 25 48 48 48 48 48 47 47 47 47 47 46 5 46 46 26 26 46 5 28 28 28 28 28 28 28 28 5 46 46 46 5 26 46 45 26 45 26 45 26 46 45 46 46 46 46 46 46 46 46 46 46 46 46 46	25252501012325010123234054111111590010095	$\begin{array}{c} 2 \\ 0 \\ 1 \\ 1 \\ 48 \\ 48 \\ 48 \\ 48 \\ 45 \\ 45 \\ 45 \\ 45$	26 25 25 25 25 25 25 25 25 25 25 25 25 25	24 24 24 24 24 24 24 24 24 1 1 0 0 3 3 2 2 5 10 0 5 4 10 10 10 10 10 10 9 9 9 9 9 9 9 9 9 9 9	$\begin{array}{c} 2 \\ 3 \\ 1 \\ 2 \\ 1 \\ 2 \\ 47 \\ 47 \\ 44 \\ 44 \\ 44 \\ 44 \\ 44 $	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	1 1 1 1 1 1 1 1 1 1		572066.9476 572066.9476 572086.9476 572089.8344 572089.8344 572089.8344 572089.8344 572089.8344 573179.3192 573179.3192 573179.3192 573276.8041 573246.8041 573246.8041 573274.8041 573274.8041 573274.63041 573279.4045 573372.9191 573647.8309 573778.7320 57577.7320 575777.7320 575777.7320 575777.7320 575777.7320 575777.7320 57577	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	Err Err Err Err Err Err Err Err Err Err	$\begin{array}{c} .1\\ .1\\ .1\\ .1\\ .1\\ .1\\ .1\\ .1\\ .1\\ .1\\$
25 25 48 48 48 48 47 47 47 47 47 46 45 46 46 26 26 46 45 28 28 28 28 28 28 28 45 45 45	25252501012325010123234054111111591001095	$\begin{array}{c} 2 \\ 0 \\ 1 \\ 1 \\ 48 \\ 48 \\ 48 \\ 45 \\ 45 \\ 45 \\ 42 \\ 35 \\ 42 \\ 16 \\ 15 \\ 16 \\ 15 \\ 37 \\ 19 \\ 18 \\ 36 \\ 1 \\ \end{array}$	266 255 255 255 255 255 255 255 255 255	24 24 24 24 24 24 1 1 0 0 3 3 2 2 5 10 10 10 10 10 10 10 9 9 9 9 9 9 9 9 9	$\begin{array}{c} 2 \\ 3 \\ 1 \\ 2 \\ 1 \\ 2 \\ 7 \\ 47 \\ 47 \\ 47 \\ 44 \\ 44 \\ 44 \\$	***************************************	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		572066.9476 572066.9476 572089.8344 572089.8344 572089.8344 572089.8344 572089.8344 572089.8344 573179.3192 573179.3192 573179.3192 573246.8041 573246.8041 573246.8041 573246.8041 573246.8041 573246.8041 573274.809 573778.7320 573778.7320 573778.7320 573778.7320 573778.7320 573778.7320 573778.7320 573778.7320 573778.7320 573778.7320 573748.3093 575148.3093 575148.3093 575148.3093	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	Err Err Err Err Err Err Err Err Err Err	$\begin{array}{c} .1\\ .1\\ .1\\ .1\\ .1\\ .1\\ .1\\ .1\\ .1\\ .1\\$
25 25 48 48 48 47 47 47 47 47 46 45 46 26 26 26 45 28 28 28 28 28 28 46 17 7	2525250010012325001001001000000000000000	$\begin{array}{c} 2 \\ 0 \\ 0 \\ 1 \\ 1 \\ 48 \\ 48 \\ 48 \\ 45 \\ 45 \\ 45 \\ 42 \\ 36 \\ 42 \\ 16 \\ 15 \\ 42 \\ 37 \\ 19 \\ 18 \\ 36 \\ 41 \\ 1 \\ \end{array}$	262 255 255 255 255 255 255 255 255 255	24 24 24 24 24 24 24 1 1 0 0 3 3 2 2 5 10 5 4 10 10 10 10 10 10 10 9 9 9 9 9 9 9 9 9	$\begin{array}{c} 2 \\ 3 \\ 1 \\ 2 \\ 1 \\ 2 \\ 47 \\ 47 \\ 47 \\ 44 \\ 44 \\ 44 \\ 41 \\ 34 \\ 11 \\ 51 \\ 51 \\ 6 \\ 16 \\ 16 \\ 18 \\ 8 \\ 19 \\ 35 \\ 40 \\ 1 \\ 2 \\ 1 \\ 1$	***************************************	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		572066.9476 572066.9476 572089.8344 572089.8344 572089.8344 572089.8344 572089.8344 573179.3192 573179.3192 573179.3192 573246.8041 573246.8041 573246.8041 573246.8041 573274.68041 573274.68041 573274.68041 573277.47320 573778.7320 573778.7320 573778.7320 573778.7320 573778.7320 573778.7320 573778.7320 573778.7320 573778.7320 573778.7320 573778.7320 573778.7320 573778.7320 573778.7320 573778.7320 573778.7320 573748.3093 575148.3093 575148.3093 575148.3093	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	Err Err Err Err Err Err Err Err Err Err	$\begin{array}{c} .1\\ .1\\ .1\\ .1\\ .1\\ .1\\ .1\\ .1\\ .1\\ .1\\$
25 48 48 47 47 46 46 26 26 45 28 28 28 28 46 17 17	252525010123250101232341054111111591001095166162	$\begin{smallmatrix} 2 & 0 & 0 \\ 1 & 1 \\ 488 & 488 \\ 445 & 455 \\ 445 & 452 \\ 352 & 422 \\ 161 & 155 \\ 422 & 379 \\ 183 & 641 \\ 1 & 1 \\ 161 & 152 \\ 191 & 183 \\ 111 & 162 $	2625225225225225225225225225225225225225	24 24 24 24 24 24 1 1 1 0 0 3 3 2 2 5 10 5 4 10 10 10 10 10 10 9 9 9 9 9 9 9 9 9 9 6 15 15	$\begin{array}{c} 2 \\ 3 \\ 1 \\ 2 \\ 1 \\ 2 \\ 47 \\ 47 \\ 47 \\ 44 \\ 44 \\ 44 \\ 44 $	***************************************	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		572066.9476 572066.9476 572086.9476 572089.8344 572089.8344 572089.8344 572089.8344 572089.8344 573179.3192 573179.3192 573179.3192 573276.8041 573246.8041 573246.8041 573246.8041 573274.68041 573274.68041 573279.4045 573372.9191 573647.800 573778.7320 57548.3035 57548.3035 57548.3035 57548.3035 57548.3035 57549.5056.3067 57557.5057675757575757575757575757575757575757	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	Err Err Err Err Err Err Err Err Err Err	$\begin{array}{c} .1\\ .1\\ .1\\ .1\\ .1\\ .1\\ .1\\ .1\\ .1\\ .1\\$

48	16	2	16	15	2	S	1	=	577295.6119	MHz	Err	.1
10	1	47	47	2	46	S	1	=	579111.1458	MHz	Err	.1
48	2	47	47	2	46	S	1	=	579111.1458	MHz	Err	.1
48	1	47	47	1	46	S	1	=	579111.1458	MHz	Err	.1
48	2	47	47	1	46	S	1	=	579111.1458	MHz	Err	.1
19	15	4	18	14	4	S	1	=	579205.2243	MHz	Err	.1
19	15	4	18	14	5	S	1	=	579205.2243	MHz	Err	.1
19	15	5	18	14	4	S	1	=	579205.2243	MHz	Err	.1
19	15	5	18	14	5	S	1	=	579205.2243	MHz	Err	.1
47	3	44	46	4	43	S	1	=	579276.4248	MHz	Err	.1
47	4	44	46	3	43	S	1	=	579316.8224	MHz	Err	.1
47	4	44	46	4	43	s	1	=	579292.8476	MHz	Err	.1
47	3	44	46	3	43	s	1	=	579300 3477	MHz	Err	1
16	6	/1	45	6	10	g	1	_	570768 6708	MH-7	Err	1
40	8	37	40	8	36	2	1	_	580651 9203	MH-	Err	.1
-10	14	7		10		5	÷		500051.5205	MIL-	Enn	.1
21	14	-	20	10	6	2	-		501091.9277	MIL-	EII	.1
21	14		20	13	°	2	1	-	561091.9277	MHZ	Err	• 1
21	14	8	20	13	(S	1	=	581091.9277	MHz	Err	.1
21	14	8	20	13	8	S	1	=	581091.9277	MHz	Err	.1
46	5	41	45	5	40	S	1	=	581077.3087	MHz	Err	.1
46	22	24	45	22	23	S	1	=	581264.2168	MHz	Err	.1
46	22	25	45	22	24	S	1	=	581264.2168	MHz	Err	.1
46	21	25	45	21	24	S	1	=	581391.2717	MHz	Err	.1
46	21	26	45	21	25	S	1	=	581391.2717	MHz	Err	.1
46	20	26	45	20	25	S	1	=	581535.2652	MHz	Err	.1
46	20	27	45	20	26	S	1	=	581535.2652	MHz	Err	.1
46	19	27	45	19	26	S	1	=	581700.1170	MHz	Err	.1
46	19	28	45	19	27	S	1	=	581700.1170	MHz	Err	.1
46	18	28	45	18	27	S	1	=	581890 9217	MHz	Err	.1
46	18	29	45	18	28	S	1	=	581890 9217	MHZ	Frr	1
10	17	20	10	17	20		÷	_	E00111 400E	MUG	Enn	.1
40	17	29	40	17	20	0	1	-	502114.4095 E0011/ 400E	MUG	EII	.1
+0	10	20	45	10	29 00	5	1	_	E00270 0077	mu-	Erre	• 1
40	10	30	45	10	29	2	1	-	562379.9677	MHZ	Err	• 1
46	16	31	45	16	30	S	1	=	582379.9677	MHz	Err	.1
46	15	32	45	15	31	S	1	=	582700.0991	MHz	Err	.1
46	15	31	45	15	30	S	1	=	582700.0991	MHz	Err	.1
23	13	10	22	12	10	S	1	=	582937.1677	MHz	Err	.1
23	13	10	22	12	11	S	1	=	582937.1677	MHz	Err	.1
23	13	11	22	12	10	S	1	=	582937.1677	MHz	Err	.1
23	13	11	22	12	11	S	1	=	582937.1677	MHz	Err	.1
46	14	33	45	14	32	S	1	=	583093.1237	MHz	Err	.1
46	14	32	45	14	31	S	1	=	583093.1237	MHz	Err	.1
46	13	34	45	13	33	S	1	=	583586.1558	MHz	Err	.1
46	13	33	45	13	32	S	1	=	583586 1558	MHz	Err	.1
45	7	38	44	7	37	s	1	=	584257 0560	MHz	Err	1
25	12	13	24	11	13	s	1	=	584702 8542	MHZ	Frr	1
25	12	13	24	11	14	s	1	=	584702 8542	MHZ	Frr	1
25	12	1/	24	11	13	g	1	-	584702 8542	MH-7	Err	1
20	12	14	24	11	13	5	Ŧ	-	104/1/2 004/	rinz	LII	• 1
	10	4 /	0.4	4.4	1 /	0	-	_	E04700 0E40	MIT-	Pere	-
25	12	14	24	11	14	S	1	=	584702.8542	MHz	Err	.1
25 46	12 7	14 40	24 45	11	14 39	S	1	= =	584702.8542 584832.3471	MHz MHz	Err Err	.1 .1
25 46 46	12 7 6	14 40 41	24 45 45	11 7 5	14 39 40	S S	1 1 1	= = =	584702.8542 584832.3471 584871.2287	MHz MHz MHz	Err Err Err	.1 .1 .1
25 46 46 49	12 7 6 0	14 40 41 49	24 45 45 48	11 7 5 1	14 39 40 48	s s s	1 1 1 1	= = =	584702.8542 584832.3471 584871.2287 585010.4820	MHz MHz MHz MHz	Err Err Err Err	.1 .1 .1 .1
25 46 46 49 49	12 7 6 0 1	14 40 41 49 49	24 45 45 48 48	11 7 5 1	14 39 40 48 48	ន ន ន ន	1 1 1 1	= = = =	584702.8542 584832.3471 584871.2287 585010.4820 585010.4820	MHz MHz MHz MHz MHz	Err Err Err Err Err	.1 .1 .1 .1 .1
25 46 49 49 49	12 7 6 0 1 0	14 40 41 49 49 49	24 45 45 48 48 48	11 7 5 1 1 0	14 39 40 48 48 48	ន ន ន ន ន	1 1 1 1 1		584702.8542 584832.3471 584871.2287 585010.4820 585010.4820 585010.4820	MHz MHz MHz MHz MHz MHz	Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1
25 46 49 49 49 49 49	12 7 6 0 1 0 1	14 40 41 49 49 49 49	24 45 48 48 48 48 48	11 7 5 1 1 0 0	14 39 40 48 48 48 48	ន ន ន ន ន ន ន	1 1 1 1 1 1	= = = =	584702.8542 584832.3471 584871.2287 585010.4820 585010.4820 585010.4820 585010.4820	MHz MHz MHz MHz MHz MHz MHz	Err Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1 .1
25 46 49 49 49 49 49 49	12 7 6 1 1 1 11	14 40 41 49 49 49 49 36	24 45 45 48 48 48 48 48 48 45	11 7 5 1 1 0 0 11	14 39 40 48 48 48 35	ន ន ន ន ន ន ន ន ន ន ន	1 1 1 1 1 1 1	= = = = =	584702.8542 584832.3471 584871.2287 585010.4820 585010.4820 585010.4820 585010.4820 585010.4820	MHz MHz MHz MHz MHz MHz MHz MHz	Err Err Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1 .1 .1
25 46 49 49 49 49 49 49 49 49 49 49	12 7 6 0 1 0 1 11 2	14 40 41 49 49 49 49 36 46	24 45 48 48 48 48 48 48 45 47	11 7 5 1 1 0 0 11 3	14 39 40 48 48 48 48 35 45	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	1 1 1 1 1 1 1 1 1		584702.8542 584832.3471 584871.2287 585010.4820 585010.4820 585010.4820 585010.4820 585010.4820 585010.4820 585015.9864	MHz MHz MHz MHz MHz MHz MHz MHz MHz	Err Err Err Err Err Err Err Err Err	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1
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$\begin{array}{c} 25\\ 46\\ 49\\ 49\\ 49\\ 49\\ 49\\ 49\\ 49\\ 48\\ 48\\ 48\\ 48\\ 48\\ 48\\ 46\\ 47\\ 33\\ 47\\ 47\\ 46\\ 27\\ 27\\ 27\\ 27\\ 46\\ 46\\ 46\\ 46\\ 46\\ 46\\ 46\\ 46\\ 46\\ 46$	$\begin{array}{c} 12 \\ 7 \\ 6 \\ 0 \\ 1 \\ 11 \\ 2 \\ 3 \\ 2 \\ 3 \\ 11 \\ 4 \\ 8 \\ 5 \\ 4 \\ 5 \\ 10 \\ 11 \\ 11 \\ 11 \\ 11 \\ 10 \\ 9 \end{array}$	14 40 41 49 49 49 49 36 46 46 46 46 43 5 43 43 37 17 16 17 16 36 8 3	24445 455 488 488 488 488 488 488 488 488	$11 \\ 7 \\ 5 \\ 1 \\ 1 \\ 0 \\ 0 \\ 11 \\ 3 \\ 2 \\ 2 \\ 11 \\ 5 \\ 7 \\ 5 \\ 4 \\ 4 \\ 10 \\ 10 \\ 10 \\ 10 \\ 10 \\ 10 \\$	$\begin{array}{c} 14\\ 39\\ 40\\ 48\\ 48\\ 48\\ 45\\ 45\\ 45\\ 45\\ 42\\ 25\\ 42\\ 42\\ 36\\ 16\\ 16\\ 17\\ 17\\ 35\\ 37\\ \end{array}$	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	1 1 1 1 1 1 1 1 1 1		584702.8542 584702.8542 584871.2287 585010.4820 585010.4820 585010.4820 585010.4820 585075.9864 585075.9864 585075.9864 585075.9864 585075.9864 585075.9864 585075.9864 585075.9864 585075.9864 585379.3013 585466.2010 585575.3675 585309.9545 586309.9545 586309.9545 586309.9545 586408.8765 586408.8765	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	Err Err Err Err Err Err Err Err Err Err	$\begin{array}{c} .1 \\ .1 \\ .1 \\ .1 \\ .1 \\ .1 \\ .1 \\ .1 $
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$\begin{array}{c} 25\\ 46\\ 49\\ 49\\ 49\\ 49\\ 49\\ 49\\ 46\\ 48\\ 48\\ 48\\ 48\\ 48\\ 48\\ 48\\ 46\\ 47\\ 33\\ 47\\ 47\\ 47\\ 46\\ 27\\ 27\\ 27\\ 46\\ 46\\ 46\\ 29\\ \end{array}$	$\begin{array}{c} 12 \\ 7 \\ 6 \\ 0 \\ 1 \\ 11 \\ 2 \\ 3 \\ 2 \\ 3 \\ 11 \\ 4 \\ 8 \\ 5 \\ 4 \\ 5 \\ 10 \\ 11 \\ 11 \\ 11 \\ 10 \\ 9 \\ 8 \\ 10 \end{array}$	$\begin{array}{c} 14\\ 40\\ 41\\ 49\\ 49\\ 49\\ 49\\ 36\\ 46\\ 46\\ 46\\ 43\\ 26\\ 43\\ 37\\ 17\\ 16\\ 37\\ 17\\ 16\\ 38\\ 39\\ 20\\ \end{array}$	24445 455 454 484 484 484 484 484 484 484	11 7 5 1 1 0 0 11 3 3 2 2 11 5 7 7 5 4 4 10 10 10 10 10 9 8 9	$\begin{array}{c} 14\\ 39\\ 40\\ 48\\ 48\\ 48\\ 35\\ 45\\ 45\\ 45\\ 42\\ 25\\ 42\\ 25\\ 42\\ 25\\ 42\\ 25\\ 16\\ 16\\ 17\\ 35\\ 37\\ 38\\ 19 \end{array}$		1 1 1 1 1 1 1 1 1 1		584702.8542 584702.8542 584702.8542 585010.4820 585010.4820 585010.4820 585010.4820 585010.4820 585075.9864 585075.9864 585075.9864 585075.9864 585075.9864 585075.9864 585075.9864 585206.8930 585575.3675 585834.6648 586309.9545 586309.9545 586309.9545 586309.9545 586309.9545 586309.9545 586309.9545 586309.9545 586309.9545 586309.9545 586309.9545 586309.9545 587287.0899 587349.6957 587587.2785	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	Err Err Err Err Err Err Err Err Err Err	$\begin{array}{c} .1\\ .1\\ .1\\ .1\\ .1\\ .1\\ .1\\ .1\\ .1\\ .1\\$
$\begin{array}{c} 25 \\ 46 \\ 49 \\ 49 \\ 49 \\ 49 \\ 49 \\ 46 \\ 48 \\ 48 \\ 48 \\ 48 \\ 48 \\ 48 \\ 48$	$\begin{array}{c} 12 \\ 7 \\ 6 \\ 0 \\ 1 \\ 11 \\ 2 \\ 3 \\ 2 \\ 3 \\ 11 \\ 4 \\ 8 \\ 5 \\ 4 \\ 5 \\ 10 \\ 11 \\ 11 \\ 11 \\ 10 \\ 9 \\ 8 \\ 10 \\ 10 \end{array}$	$\begin{array}{c} 14\\ 40\\ 41\\ 49\\ 49\\ 49\\ 49\\ 36\\ 46\\ 46\\ 46\\ 45\\ 43\\ 26\\ 43\\ 37\\ 17\\ 16\\ 38\\ 39\\ 20\\ 19\\ \end{array}$	244455 455 488 488 488 488 488 488 488 48	$\begin{array}{c} 11\\ 7\\ 5\\ 1\\ 0\\ 0\\ 11\\ 3\\ 3\\ 2\\ 2\\ 11\\ 5\\ 7\\ 5\\ 4\\ 4\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 0\\ 9\\ 8\\ 9\\ 9\\ 9\\ 9\end{array}$	$\begin{array}{c} 14\\ 39\\ 40\\ 48\\ 48\\ 48\\ 45\\ 45\\ 45\\ 45\\ 42\\ 25\\ 42\\ 25\\ 42\\ 25\\ 42\\ 25\\ 42\\ 25\\ 16\\ 16\\ 17\\ 17\\ 35\\ 37\\ 38\\ 19\\ 19 \end{array}$	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	1 1 1 1 1 1 1 1 1 1		584702.8542 584823.3471 584871.228 585010.4820 585010.4820 585010.4820 585010.4820 585075.9864 585075.9864 585075.9864 585075.9864 585075.9864 585085.8467 585206.8300 585379.3013 585466.2010 585575.3675 585834.6648 586309.9545 586309.9545 586309.9545 586309.9545 586309.9545 586309.9545 586309.9545 586309.9545 586309.9545 587287.0399	MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ MHZ	Err Err Err Err Err Err Err Err Err Err	$\begin{array}{c} .1\\ .1\\ .1\\ .1\\ .1\\ .1\\ .1\\ .1\\ .1\\ .1\\$
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$\begin{array}{c} 25\\ 46\\ 49\\ 49\\ 49\\ 49\\ 49\\ 48\\ 48\\ 48\\ 48\\ 46\\ 47\\ 337\\ 47\\ 46\\ 27\\ 27\\ 26\\ 46\\ 66\\ 29\\ 29\\ 231\\ 337\\ 46\end{array}$	$\begin{array}{c} 12\\ 7\\ 6\\ 0\\ 1\\ 0\\ 1\\ 1\\ 1\\ 2\\ 3\\ 2\\ 3\\ 1\\ 1\\ 4\\ 8\\ 5\\ 4\\ 5\\ 10\\ 111\\ 11\\ 1\\ 1\\ 1\\ 0\\ 9\\ 8\\ 10\\ 10\\ 0\\ 9\\ 8\\ 5\\ 9\end{array}$	$\begin{array}{c} 14\\ 40\\ 419\\ 499\\ 49\\ 49\\ 46\\ 46\\ 46\\ 435\\ 26\\ 43\\ 26\\ 43\\ 37\\ 16\\ 17\\ 16\\ 38\\ 39\\ 20\\ 19\\ 23\\ 25\\ 24\\ 27\\ \end{array}$	2444 455 455 455 455 455 455 455 455 455	$\begin{array}{c} 11\\ 7\\ 5\\ 1\\ 0\\ 0\\ 11\\ 3\\ 3\\ 2\\ 2\\ 11\\ 5\\ 7\\ 5\\ 4\\ 4\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 9\\ 8\\ 9\\ 9\\ 9\\ 9\\ 8\\ 7\\ 6\\ 9\\ 9\\ 9\\ 9\\ 8\\ 7\\ 6\\ 9\\ 9\\ 9\\ 9\\ 9\\ 8\\ 7\\ 6\\ 9\\ 9\\ 9\\ 9\\ 9\\ 9\\ 8\\ 7\\ 6\\ 9\\ 9\\ 9\\ 9\\ 9\\ 9\\ 9\\ 9\\ 9\\ 9\\ 8\\ 7\\ 6\\ 9\\ 9\\ 9\\ 9\\ 9\\ 9\\ 9\\ 9\\ 9\\ 8\\ 7\\ 6\\ 9\\ 9\\ 9\\ 9\\ 9\\ 9\\ 9\\ 9\\ 9\\ 9\\ 9\\ 9\\ 9\\$	$\begin{array}{c} 14\\ 39\\ 40\\ 48\\ 48\\ 35\\ 45\\ 45\\ 45\\ 42\\ 25\\ 42\\ 25\\ 42\\ 25\\ 42\\ 26\\ 16\\ 17\\ 17\\ 35\\ 37\\ 8\\ 19\\ 20\\ 22\\ 26\\ 136\\ \end{array}$		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		584702.8542 584702.8542 584702.85421 585010.4820 585010.4820 585010.4820 585010.4820 585015.9864 585075.9864 585075.9864 585075.9864 585075.9864 585075.9864 585075.9864 585085.8467 585266.8300 585379.3013 585466.2010 585575.3675 585834.6648 586309.9545 586309.9545 586309.9545 586309.9545 586309.9545 586309.9545 587587.2785 5875	MHz MHz MHz MHz MHz MHz MHz MHz MHz MHz	Err Err Err Err Err Err Err Err Err Err	$\begin{array}{c} .1\\ .1\\ .1\\ .1\\ .1\\ .1\\ .1\\ .1\\ .1\\ .1\\$
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25 46 49 49 49 49 49 49 49 49 49 49 49 49 49	$\begin{array}{c} 12\\ 7\\ 6\\ 0\\ 1\\ 0\\ 1\\ 1\\ 1\\ 2\\ 3\\ 2\\ 3\\ 1\\ 1\\ 4\\ 8\\ 5\\ 4\\ 5\\ 10\\ 11\\ 11\\ 11\\ 10\\ 9\\ 8\\ 10\\ 10\\ 9\\ 8\\ 5\\ 9\\ 16\\ 16\\ 16\\ 16\\ 16\\ 16\\ 16\\ 16\\ 16\\ 16$	14 40 49 49 49 49 49 46 46 46 46 46 43 43 43 71 16 71 63 83 90 120 92 22 42 72 23 3 60 40 40 40 40 40 40 40 40 40 40 40 40 40	2444 455 455 455 455 455 455 455 466 455 466 455 266 266 266 266 266 266 266 266 266 2	$\begin{array}{c} 11\\ 7\\ 5\\ 1\\ 0\\ 0\\ 11\\ 3\\ 3\\ 2\\ 2\\ 2\\ 2\\ 11\\ 1\\ 5\\ 7\\ 7\\ 5\\ 4\\ 4\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10$	$\begin{array}{c} 14\\ 39\\ 40\\ 48\\ 48\\ 48\\ 35\\ 5\\ 45\\ 45\\ 45\\ 42\\ 5\\ 42\\ 22\\ 42\\ 42\\ 61\\ 61\\ 17\\ 7\\ 53\\ 7\\ 8\\ 19\\ 10\\ 20\\ 22\\ 26\\ 41\\ 3\\ 2\\ 3\\ 3\\ 3\\ 3\\ 3\\ 3\\ 3\\ 3\\ 3\\ 3\\ 3\\ 3\\ 3\\$	***************************************	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		584702.8542 584702.8542 584871.2287 585010.4820 585010.4820 585010.4820 585010.4820 585075.9864 585075.9864 585075.9864 585075.9864 585075.9864 585075.9864 585075.9864 585075.9864 585075.9864 585085.8467 585286.8309.9545 586308.1545 58757.2785 587587.2785 5	MHz MHz MHz MHz MHz MHz MHz MHz MHz MHz	Err Err Err Err Err Err Err Err Err Err	$\begin{array}{c} .1\\ .1\\ .1\\ .1\\ .1\\ .1\\ .1\\ .1\\ .1\\ .1\\$
$\begin{array}{c} 25 \\ 46 \\ 49 \\ 49 \\ 49 \\ 49 \\ 46 \\ 48 \\ 48 \\ 48 \\ 48 \\ 46 \\ 47 \\ 33 \\ 47 \\ 47 \\ 46 \\ 27 \\ 27 \\ 26 \\ 46 \\ 46 \\ 29 \\ 29 \\ 29 \\ 31 \\ 347 \\ 46 \\ 18 \\ 18 \\ 18 \\ 46 \\ 28 \\ 29 \\ 29 \\ 29 \\ 31 \\ 347 \\ 46 \\ 18 \\ 18 \\ 18 \\ 46 \\ 28 \\ 29 \\ 29 \\ 29 \\ 29 \\ 31 \\ 347 \\ 46 \\ 18 \\ 18 \\ 18 \\ 46 \\ 28 \\ 29 \\ 29 \\ 29 \\ 29 \\ 31 \\ 347 \\ 46 \\ 18 \\ 18 \\ 18 \\ 46 \\ 28 \\ 29 \\ 29 \\ 29 \\ 29 \\ 31 \\ 347 \\ 46 \\ 18 \\ 18 \\ 18 \\ 46 \\ 28 \\ 29 \\ 29 \\ 29 \\ 29 \\ 31 \\ 347 \\ 46 \\ 18 \\ 18 \\ 18 \\ 46 \\ 28 \\ 29 \\ 29 \\ 29 \\ 29 \\ 31 \\ 347 \\ 46 \\ 18 \\ 18 \\ 18 \\ 46 \\ 28 \\ 29 \\ 29 \\ 29 \\ 29 \\ 31 \\ 347 \\ 46 \\ 18 \\ 18 \\ 18 \\ 46 \\ 28 \\ 29 \\ 29 \\ 29 \\ 29 \\ 31 \\ 347 \\ 46 \\ 18 \\ 18 \\ 18 \\ 46 \\ 28 \\ 29 \\ 29 \\ 29 \\ 29 \\ 29 \\ 31 \\ 347 \\ 46 \\ 18 \\ 18 \\ 18 \\ 46 \\ 28 \\ 29 \\ 29 \\ 29 \\ 29 \\ 31 \\ 347 \\ 46 \\ 18 \\ 18 \\ 18 \\ 46 \\ 28 \\ 29 \\ 29 \\ 29 \\ 29 \\ 29 \\ 31 \\ 347 \\ 46 \\ 18 \\ 18 \\ 18 \\ 46 \\ 28 \\ 29 \\ 29 \\ 29 \\ 29 \\ 29 \\ 29 \\ 29$	$\begin{array}{c} 12\\ 7\\ 6\\ 0\\ 1\\ 0\\ 1\\ 11\\ 2\\ 3\\ 2\\ 3\\ 11\\ 4\\ 8\\ 5\\ 4\\ 5\\ 10\\ 11\\ 1\\ 11\\ 1\\ 10\\ 9\\ 8\\ 10\\ 10\\ 10\\ 9\\ 8\\ 5\\ 9\\ 16\\ 16\\ 16\\ 6\\ 2\end{array}$	$\begin{array}{c} 14\\ 40\\ 49\\ 49\\ 49\\ 49\\ 49\\ 49\\ 46\\ 46\\ 46\\ 53\\ 42\\ 63\\ 43\\ 37\\ 71\\ 16\\ 17\\ 16\\ 38\\ 20\\ 19\\ 20\\ 12\\ 25\\ 42\\ 7\\ 2\\ 3\\ 3\\ 40\\ 7\end{array}$	2444 455 455 455 455 455 455 455 455 455	$\begin{array}{c} 11 \\ 7 \\ 5 \\ 1 \\ 1 \\ 0 \\ 0 \\ 11 \\ 3 \\ 2 \\ 2 \\ 2 \\ 11 \\ 5 \\ 7 \\ 5 \\ 4 \\ 4 \\ 10 \\ 10 \\ 10 \\ 10 \\ 10 \\ 10 \\$	$\begin{array}{c} 14\\ 39\\ 448\\ 488\\ 345\\ 45\\ 45\\ 45\\ 42\\ 25\\ 42\\ 25\\ 42\\ 23\\ 22\\ 24\\ 16\\ 16\\ 17\\ 35\\ 73\\ 89\\ 19\\ 20\\ 22\\ 24\\ 13\\ 2\\ 3\\ 2\\ 3\\ 2\\ 3\\ 3\\ 3\\ 3\\ 3\\ 3\\ 3\\ 3\\ 3\\ 3\\ 3\\ 3\\ 3\\$	***************************************	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		584702.8542 584702.8542 584702.8542 585010.4820 585010.4820 585010.4820 585010.4820 585015.9864 585075.9864 585075.9864 585075.9864 585075.9864 585075.9864 585075.9864 585075.9864 585085.8467 585206.8309.9545 586309.9545 586309.9545 586309.9545 586309.9545 586309.9545 586309.9545 586309.9545 587287.2785 58759.27875 58759.27875	MHz MHz MHz MHz MHz MHz MHz MHz MHz MHz	Err Err Err Err Err Err Err Err Err Err	$\begin{array}{c} .1\\ .1\\ .1\\ .1\\ .1\\ .1\\ .1\\ .1\\ .1\\ .1\\$
$\begin{array}{c} 25 \\ 46 \\ 49 \\ 49 \\ 49 \\ 49 \\ 46 \\ 48 \\ 48 \\ 48 \\ 48 \\ 48 \\ 46 \\ 47 \\ 33 \\ 47 \\ 47 \\ 46 \\ 27 \\ 27 \\ 27 \\ 46 \\ 46 \\ 29 \\ 29 \\ 21 \\ 33 \\ 47 \\ 46 \\ 18 \\ 18 \\ 18 \\ 18 \\ 18 \\ 18 \\ 46 \\ 48 \\ 29 \\ 29 \\ 29 \\ 31 \\ 33 \\ 76 \\ 18 \\ 18 \\ 18 \\ 18 \\ 18 \\ 18 \\ 18 \\ 1$	$\begin{array}{c} 12 \\ 7 \\ 6 \\ 0 \\ 1 \\ 0 \\ 1 \\ 1 \\ 1 \\ 2 \\ 3 \\ 2 \\ 3 \\ 1 \\ 1 \\ 4 \\ 8 \\ 5 \\ 4 \\ 5 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1$	14 44 44 49 49 49 46 46 46 46 45 34 24 33 17 16 716 33 39 219 22 52 23 340 45 44 45 45 45 45 45 45 45 45 45 45 45	2444 455 455 455 455 455 455 455 455 455	$\begin{array}{c} 11\\ 7\\ 5\\ 1\\ 1\\ 0\\ 0\\ 11\\ 3\\ 3\\ 2\\ 2\\ 2\\ 11\\ 1\\ 5\\ 7\\ 5\\ 4\\ 4\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 9\\ 8\\ 9\\ 9\\ 9\\ 9\\ 8\\ 7\\ 6\\ 9\\ 9\\ 15\\ 15\\ 15\\ 15\\ 15\\ 15\\ 6\\ 4\\ .\end{array}$	$\begin{array}{c} 14\\ 39\\ 448\\ 48\\ 48\\ 355\\ 45\\ 45\\ 45\\ 42\\ 22\\ 42\\ 23\\ 24\\ 22\\ 42\\ 23\\ 16\\ 16\\ 17\\ 135\\ 37\\ 38\\ 19\\ 120\\ 22\\ 26\\ 136\\ 2\\ 3\\ 2\\ 39\\ 4\\ 4\\ 39\\ 4\\ 2\\ 39\\ 4\\ 4\\ 39\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10$	***************************************	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		584702.8542 584702.8542 584702.8542 585010.4820 585010.4820 585010.4820 585010.4820 585010.4820 585075.9864 585075.9864 585075.9864 585075.9864 585075.9864 585085.8467 585206.8930 585375.3675 585834.6648 586309.9545 586309.9545 586309.9545 586309.9545 587587.2785 58758	MHz MHz MHz MHz MHz MHz MHz MHz MHz MHz	Err Err Err Err Err Err Err Err Err Err	$\begin{array}{c} . 1 \\$
$\begin{array}{c} 25 \\ 46 \\ 49 \\ 49 \\ 49 \\ 49 \\ 49 \\ 49 \\ 49$	$\begin{array}{c} 12\\ 7\\ 6\\ 0\\ 1\\ 0\\ 1\\ 1\\ 1\\ 2\\ 3\\ 2\\ 3\\ 1\\ 1\\ 4\\ 8\\ 5\\ 4\\ 5\\ 10\\ 1\\ 1\\ 1\\ 1\\ 1\\ 1\\ 1\\ 1\\ 0\\ 9\\ 8\\ 0\\ 10\\ 10\\ 9\\ 8\\ 5\\ 9\\ 16\\ 16\\ 16\\ 6\\ 3\\ 4\\ 1\\ 1\\ 1\\ 1\\ 1\\ 1\\ 1\\ 1\\ 1\\ 1\\ 1\\ 1\\ 1\\$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	2444 455 455 455 455 455 455 455 455 455	$\begin{array}{c} 11\\ 7\\ 5\\ 1\\ 1\\ 0\\ 0\\ 11\\ 3\\ 3\\ 2\\ 2\\ 11\\ 5\\ 7\\ 7\\ 5\\ 4\\ 4\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 9\\ 9\\ 9\\ 9\\ 9\\ 9\\ 9\\ 9\\ 9\\ 9\\ 9\\ 9\\ 9\\$	$\begin{array}{c} 14\\ 39\\ 448\\ 488\\ 345\\ 455\\ 425\\ 422\\ 422\\ 616\\ 11\\ 17\\ 35\\ 78\\ 19\\ 10\\ 20\\ 222\\ 41\\ 3\\ 2\\ 3\\ 2\\ 3\\ 94\\ 44\\ 3\\ 44\\ 3\\ 44\\ 44\\ 3\\ 44\\ 44\\ 3\\ 44\\ 44$	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	111111111111111111111111111111111111		584702.8542 584702.8542 584871.2287 585010.4820 585010.4820 585010.4820 585010.4820 585015.9864 585075.9864 585075.9864 585075.9864 585075.9864 585075.9864 585085.8467 585286.830 585379.3013 585486.2010 585575.3675 585834.6648 586309.9545 586309.9545 586309.9545 586309.9545 586309.9545 586309.9545 586309.9545 586309.9545 586309.9545 586309.9545 586309.9545 587587.2785 587587.2785 587587.2785 587587.2785 587587.2785 587587.2785 587587.2785 587587.2785 587587.2785 587587.2785 587587.2785 587587.2785 587587.2785 587587.2785 587587.2785 587587.2785 587587.2785 587587.2785 587587.285 58757.285 5875787.285 5875787	MHz MHz MHz MHz MHz MHz MHz MHz MHz MHz	Err Err Err Err Err Err Err Err Err Err	$\begin{array}{c} .1\\ .1\\ .1\\ .1\\ .1\\ .1\\ .1\\ .1\\ .1\\ .1\\$
$\begin{array}{c} 25 \\ 46 \\ 49 \\ 49 \\ 49 \\ 49 \\ 46 \\ 48 \\ 48 \\ 48 \\ 46 \\ 47 \\ 33 \\ 47 \\ 47 \\ 47 \\ 42 \\ 72 \\ 77 \\ 27 \\ 27$	$\begin{array}{c}12\\7\\6\\0\\1\\0\\1\\1\\2\\3\\2\\3\\1\\1\\4\\8\\5\\4\\5\\0\\1\\1\\1\\1\\1\\1\\1\\1\\1\\0\\9\\8\\1\\0\\1\\0\\0\\8\\5\\9\\1\\6\\1\\6\\6\\3\\4\\3\end{array}$	$\begin{array}{c} 14\\ 40\\ 49\\ 49\\ 49\\ 49\\ 46\\ 46\\ 46\\ 45\\ 32\\ 43\\ 37\\ 16\\ 16\\ 38\\ 32\\ 19\\ 20\\ 12\\ 3\\ 25\\ 42\\ 3\\ 4\\ 45\\ 45\\ 45\\ \end{array}$	2444 455 455 455 455 455 455 455 466 466	$\begin{array}{c} 11\\ 7\\ 5\\ 1\\ 1\\ 0\\ 0\\ 11\\ 3\\ 3\\ 2\\ 2\\ 11\\ 5\\ 7\\ 7\\ 5\\ 4\\ 4\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10$	$\begin{array}{c} 14\\ 39\\ 448\\ 488\\ 455\\ 455\\ 455\\ 445\\ 342\\ 252\\ 422\\ 422\\ 36\\ 16\\ 17\\ 175\\ 37\\ 89\\ 19\\ 202\\ 22\\ 61\\ 32\\ 3\\ 39\\ 444\\ 44\end{array}$	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		584702.8542 584702.8542 584702.8542 585010.4820 585010.4820 585010.4820 585010.4820 58501.4820 585075.9864 585075.9864 585075.9864 585075.9864 585075.9864 585075.9864 585075.9864 585085.8467 58534.6648 586309.9545 586309.9545 586309.9545 586309.9545 586309.9545 586309.9545 586309.9545 587287.2785 587587.2785 587587.2785 587587.2785 587587.2785 587587.2785 587587.2785 587587.2785 587587.2785 587587.2785 587587.2785 587587.2785 588086.1368 588152.5324 58850.3493 589085.1945 589923.8492 589923.8492 589923.8492 589923.8492 589923.8492 589923.8492 599111.5432 591114.5432 591119.6051	MHz MHz MHz MHz MHz MHz MHz MHz MHz MHz	Err Err Err Err Err Err Err Err Err Err	$\begin{array}{c} .1\\ .1\\ .1\\ .1\\ .1\\ .1\\ .1\\ .1\\ .1\\ .1\\$
$\begin{array}{c} 25 \\ 46 \\ 49 \\ 9 \\ 49 \\ 49 \\ 49 \\ 49 \\ 49 $	$\begin{array}{c} 12 \\ 7 \\ 6 \\ 0 \\ 1 \\ 0 \\ 1 \\ 1 \\ 1 \\ 2 \\ 3 \\ 2 \\ 3 \\ 1 \\ 1 \\ 4 \\ 8 \\ 5 \\ 4 \\ 5 \\ 1 \\ 0 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1$	14 44 49 49 49 46 46 46 46 33 43 26 34 37 16 17 16 33 39 20 92 19 23 22 43 22 3 40 45 54 54 54 54 54 54 54 54 54 54 54 54	2444 455 455 455 455 455 455 455 455 455	$\begin{array}{c} 11\\ 7\\ 5\\ 1\\ 1\\ 0\\ 0\\ 11\\ 3\\ 3\\ 2\\ 2\\ 11\\ 5\\ 7\\ 5\\ 4\\ 4\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10$	$\begin{array}{c} 14\\ 39\\ 448\\ 48\\ 48\\ 345\\ 45\\ 445\\ 445\\ 442\\ 422\\ 42\\ 42\\ 66\\ 16\\ 17\\ 17\\ 537\\ 38\\ 19\\ 120\\ 222\\ 61\\ 436\\ 2\\ 3\\ 2\\ 39\\ 44\\ 44\\ 44\\ 41\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 1$	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		584702.8842 584702.8842 584702.8842 584871.227 585010.4820 585010.4820 585010.4820 585010.4820 585075.9864 585075.9864 585075.9864 585075.9864 585075.9864 585075.9864 585075.9864 585075.9864 585075.9864 58537.3075 585483.4648 586309.9545 58787.2785 58787.2785 58787.2785 58787.2785 58787.2785 587887.2785	MHz MHz MHz MHz MHz MHz MHz MHz MHz MHz	Err Err Err Err Err Err Err Err Err Err	$\begin{array}{c}.1\\.1\\.1\\.1\\.1\\.1\\.1\\.1\\.1\\.1\\.1\\.1\\.1\\.$

20 15 5			591648.6937 M	Hz Err .1
	19 14 5	S 1 =	591828.6805 M	Hz Err .1
20 15 5	19 14 6	S 1 =	591828 6805 M	Hz Frr 1
20 10 0	10 14 6	g 1 -	E01020.0000 M	Ug Enn 1
20 15 0	10 14 0	SI =	E01000 200E M	HZ EII .I
20 15 6	19 14 6	51 =	591020.0005 M	HZ EFF .1
47 5 42	46 5 41	S 1 =	592644.3385 M	Hz Err .1
28 5 24	27 2 25	S 1 =	592781.5901 M	Hz Err .1
22 14 8	21 13 8	S 1 =	593706.5752 M	Hz Err .1
22 14 9	21 13 9	S 1 =	593706.5752 M	Hz Err .1
22 14 9	21 13 8	S 1 =	593706.5752 M	Hz Err .1
22 14 8	21 13 9	S 1 =	593706.5752 M	Hz Err .1
47 33 14	46 33 13	S 1 =	593013.3884 M	Hz Err .1
47 33 15	46 33 14	S 1 =	593013 3884 M	Hz Err 1
47 32 15	46 32 14	S 1 =	503070 2712 M	Ha Frr 1
47 20 16	40 32 14	g 1 -	E02070 0710 M	Uz Err 1
47 32 16	40 32 15	51 =	593070.2712 M	HZ EFF .1
47 31 16	46 31 15	S 1 =	593129.5116 M	Hz Err .1
47 31 17	46 31 16	S 1 =	593129.5116 M	Hz Err .1
47 30 17	46 30 16	S 1 =	593192.0123 M	Hz Err .1
47 30 18	46 30 17	S 1 =	593192.0123 M	Hz Err .1
47 29 18	46 29 17	S 1 =	593258.3020 M	Hz Err .1
47 29 19	46 29 18	S 1 =	593258.3020 M	Hz Err .1
47 27 20	46 27 19	S 1 =	593404.7766 M	Hz Err .1
47 27 21	46 27 20	S 1 =	593404 7766 M	Hz Frr 1
47 06 01	10 21 20	g 1 -	E02406 7000 M	Ug Enn 1
47 20 21	40 20 20	51 -	593400.7200 M	HZ EII .I
47 26 22	40 20 21	51 =	593466.7200 M	HZ EFF .1
47 25 22	46 25 21	S 1 =	593575.8183 M	Hz Err .1
47 25 23	46 25 22	S 1 =	593575.8183 M	Hz Err .1
22 14 8	21 13 8	S 1 =	593706.5752 M	Hz Err .1
22 14 9	21 13 9	S 1 =	593706.5752 M	Hz Err .1
22 14 9	21 13 8	S 1 =	593706.5752 M	Hz Err .1
22 14 8	21 13 9	S 1 =	593706.5752 M	Hz Err .1
47 23 24	46 23 23	S 1 =	593781 3567 M	Hz Err 1
47 02 05	16 20 20	g 1 -	E02701 2667 M	Ug Enn 1
47 23 23	40 23 24	31 -	593761.3307 M	
47 22 25	46 22 24	S I =	593901.3780 M	HZ Err .1
47 22 26	46 22 25	S 1 =	593901.3780 M	Hz Err .1
47 21 26	46 21 25	S 1 =	594036.3585 M	Hz Err .1
47 21 27	46 21 26	S 1 =	594036.3585 M	Hz Err .1
47 20 27	46 20 26	S 1 =	594189.2639 M	Hz Err .1
47 20 28	46 20 27	S 1 =	594189.2639 M	Hz Err .1
47 19 28	46 19 27	S 1 =	594364.8081 M	Hz Err .1
47 19 29	46 19 28	S 1 =	594364 8081 M	Hz Frr 1
47 26 21	47 25 22	S 1 =	594051 5414 M	Hz Err 1
47 06 01	47 05 02	5 I -	504251.5414 M	Hz EII .I
47 26 21	47 25 23	51 =	594251.5414 M	HZ EFF .1
47 26 22	47 25 22	S 1 =	594251.5414 M	Hz Err .1
47 26 22	47 25 23	S 1 =	594251.5414 M	Hz Err .1
46 26 20	46 25 21	S 1 =	594340.6424 M	Hz Err .1
46 26 20	46 25 22	S 1 =	594340.6424 M	Hz Err .1
46 26 21	46 25 21	S 1 =	594340.6424 M	Hz Err .1
	46 05 00	S 1 =	594340.6424 M	Hz Err .1
46 26 21	46 25 22		00101010121	
46 26 21	46 25 22	S 1 =	E01/10/ 030/ M	Ha Frr 1
46 26 21 45 26 19	46 25 22 45 25 20	S 1 =	594424.9324 M	Hz Err .1
46 26 21 45 26 19 45 26 19	46 25 22 45 25 20 45 25 21	S 1 = S 1 =	594424.9324 M 594424.9324 M	Hz Err .1 Hz Err .1
46 26 21 45 26 19 45 26 19 45 26 20	46 25 22 45 25 20 45 25 21 45 25 20	S 1 = S 1 = S 1 =	594424.9324 M 594424.9324 M 594424.9324 M	Hz Err .1 Hz Err .1 Hz Err .1
46 26 21 45 26 19 45 26 19 45 26 20 45 26 20	46 25 22 45 25 20 45 25 21 45 25 20 45 25 21	S 1 = S 1 = S 1 = S 1 = S 1 =	594424.9324 M 594424.9324 M 594424.9324 M 594424.9324 M	Hz Err .1 Hz Err .1 Hz Err .1 Hz Err .1
$\begin{array}{ccccccc} 46 & 26 & 21 \\ 45 & 26 & 19 \\ 45 & 26 & 19 \\ 45 & 26 & 20 \\ 45 & 26 & 20 \\ 32 & 5 & 27 \end{array}$	46 25 22 45 25 20 45 25 21 45 25 20 45 25 20 31 4 28	S 1 = S 1 = S 1 = S 1 = S 1 = S 1 =	594424.9324 M 594424.9324 M 594424.9324 M 594424.9324 M 594424.9324 M 594417.2251 M	Hz Err .1 Hz Err .1 Hz Err .1 Hz Err .1 Hz Err .1 Hz Err .1
$\begin{array}{rrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrr$	46 25 22 45 25 20 45 25 21 45 25 20 45 25 20 45 25 21 31 4 28 44 25 19	S 1 = S 1 =	594424.9324 M 594424.9324 M 594424.9324 M 594424.9324 M 594424.9324 M 594417.2251 M 594504.3486 M	Hz Err .1 Hz Err .1 Hz Err .1 Hz Err .1 Hz Err .1 Hz Err .1 Hz Err .1
$\begin{array}{rrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrr$	46 25 22 45 25 20 45 25 21 45 25 20 45 25 20 45 25 21 31 4 28 44 25 19 44 25 20	S 1 = S 1 =	594424.9324 M 594424.9324 M 594424.9324 M 594424.9324 M 594424.9324 M 594417.2251 M 594504.3486 M 594504.3486 M	Hz Err .1 Hz Err .1 Hz Err .1 Hz Err .1 Hz Err .1 Hz Err .1 Hz Err .1
$\begin{array}{rrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrr$	46 25 22 45 25 20 45 25 21 45 25 20 45 25 21 31 4 28 44 25 19 44 25 19	S 1 = S 1 =	594424.9324 M 594424.9324 M 594424.9324 M 594424.9324 M 594424.9324 M 594504.3486 M 594504.3486 M 594504.3486 M	Hz Err .1 Hz Err .1
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	46 25 22 45 25 20 45 25 21 45 25 21 31 4 28 44 25 19 44 25 19 44 25 19 44 25 19	S 1 = S 1 =	594424.9324 M 594424.9324 M 594424.9324 M 594424.9324 M 594417.2251 M 594504.3486 M 594504.3486 M 594504.3486 M 594504.3486 M	Hz Err .1 Hz Err .1
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	46 25 22 45 25 20 45 25 21 45 25 21 31 4 28 44 25 19 44 25 19 44 25 19 44 25 19 44 25 20 44 25 20 44 25 20 44 25 20 44 25 20 45 8 37	S 1 = S 1 =	594424.9324 M 594424.9324 M 594424.9324 M 594424.9324 M 59447.2251 M 594504.3486 M 594504.3486 M 594504.3486 M 594504.3486 M	Hz Err .1 Hz Err .1
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	46 25 22 45 25 21 45 25 21 31 4 28 44 25 19 44 25 20 44 25 19 44 25 20 45 25 20 45 25 20 45 25 20 44 25 20 45 25 20 46 25 20 45 26 20 45 20 45 46 18 27	S 1 = S 1 =	594424.9324 M 594424.9324 M 594424.9324 M 594424.9324 M 594504.3486 M 594504.3486 M 594504.3486 M 594504.3486 M 594504.3486 M	Hz Err .1 Hz Err .1
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$\begin{array}{cccccccccccccccccccccccccccccccccccc$	46 25 22 45 25 20 45 25 21 45 25 21 45 25 21 31 4 28 44 25 19 44 25 19 44 25 19 44 25 19 44 25 19 44 25 19 44 25 20 45 8 37 46 18 28 46 18 29 42 25 20	S 1 = S	594424.9324 M 594424.9324 M 594424.9324 M 594424.9324 M 594504.3486 M 594504.3486 M 594504.3486 M 594504.3486 M 594507.3654 M 594567.9841 M	Hz Err .1 Hz Err .1
$\begin{array}{ccccc} 46 & 26 & 21 \\ 45 & 26 & 19 \\ 45 & 26 & 20 \\ 45 & 26 & 20 \\ 32 & 5 & 27 \\ 44 & 26 & 18 \\ 44 & 26 & 19 \\ 44 & 26 & 19 \\ 44 & 26 & 18 \\ 46 & 8 & 38 \\ 47 & 18 & 29 \\ 47 & 18 & 30 \\ 43 & 26 & 17 \\ \end{array}$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	S 1 = S 1	594424.9324 M 594424.9324 M 594424.9324 M 594424.9324 M 594504.3486 M 594504.3486 M 594504.3486 M 594504.3486 M 594507.3654 M 594507.3654 M 594567.9841 M 594579.5282 M	Hz Err .1 Hz Err .1
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	S 1 = S 1 =	594424.9324 M 594424.9324 M 594424.9324 M 594424.9324 M 594504.3486 M 594504.3486 M 594504.3486 M 594504.3486 M 594507.3654 M 594567.9841 M 594567.9841 M 594567.9282 M	Hz Err .1 Hz Err .1
$\begin{array}{rrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrr$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	S 1 = S 1 =	594424.9324 M 594424.9324 M 594424.9324 M 594504.3486 M 594504.3486 M 594504.3486 M 594504.3486 M 594504.3486 M 594507.3654 M 594507.3654 M 594567.9841 M 594567.9841 M 594567.9828 M	Hz Err .1 Hz Err .1
$\begin{array}{rrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrr$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	S 1 = S 1 S 1	594424.9324 M 594424.9324 M 594424.9324 M 594424.9324 M 594504.3486 M 594504.3486 M 594504.3486 M 594504.3486 M 594507.3654 M 594507.3654 M 594567.9841 M 594567.95282 M 594579.5282 M	Hz Err .1 Hz Err .1
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36	26	10	36	25	12	S	1	=	594994.5930	MHz	Err	.1	
36	26	11	36	25	11	S	1	=	594994.5930	MHz	Err	.1	
36	26	11	36	25	12	S	1	=	594994.5930	MHz	Err	.1	
35	26	9	35	25	10	s	1	=	595040.1258	MHz	Err	.1	
35	26	9	35	25	11	s	1	=	595040.1258	MHz	Err	.1	
35	26	10	35	25	10	S	1	=	595040 1258	MHz	Err	.1	
35	26	10	35	25	11	s	1	=	595040 1258	MHT	Frr	1	
3/	20	20	3/	25	0	g	1	-	595092 6593	MH-7	Err	1	
24	20	0	24	20	0	2	-		505002.0000	MIL_	En	.1	
34	20	9	34	25	10	د م	1	-	595062.6593	MIL-	Err	.1	
34	20	9	34	25	10	2	1	-	595062.6593	MHZ	Err	• 1	
34	26	8	34	25	10	S	1	=	595082.6593	MHZ	Err	.1	
33	26	(33	25	8	S	1	=	595122.3316	MHz	Err	.1	
33	26	7	33	25	9	S	1	=	595122.3316	MHz	Err	.1	
33	26	8	33	25	8	S	1	=	595122.3316	MHz	Err	.1	
33	26	8	33	25	9	S	1	=	595122.3316	MHz	Err	.1	
32	26	6	32	25	7	S	1	=	595159.3574	MHz	Err	.1	
32	26	6	32	25	8	S	1	=	595159.3574	MHz	Err	.1	
32	26	7	32	25	7	S	1	=	595159.3574	MHz	Err	.1	
32	26	7	32	25	8	S	1	=	595159.3574	MHz	Err	.1	
31	26	5	31	25	6	s	1	=	595193 7827	MHz	Err	1	
31	26	6	31	25	6	g	1	-	505103 7827	MH-7	Err	1	
21	20	6	21	20	7		1		E0E102 7007	MUg	Enn	.1	
21	20	5	31	20		د م	1		595193.7627	MIL-	EII	• •	
31	20	5	31	25		2	1	-	595195.7627	MHZ	Err	• 1	
30	26	4	30	25	5	S	1	=	595225.7688	MHz	Err	.1	
30	26	4	30	25	6	S	1	=	595225.7688	MHz	Err	.1	
30	26	5	30	25	5	S	1	=	595225.7688	MHz	Err	.1	
30	26	5	30	25	6	S	1	=	595225.7688	MHz	Err	.1	
29	26	3	29	25	4	S	1	=	595255.4667	MHz	Err	.1	
29	26	4	29	25	4	S	1	=	595255.4667	MHz	Err	.1	
29	26	4	29	25	5	S	1	=	595255.4667	MHz	Err	.1	
29	26	3	29	25	5	S	1	=	595255.4667	MHz	Err	.1	
28	26	2	28	25	3	S	1	=	595283.0304	MHz	Err	.1	
28	26	2	28	25	4	S	1	=	595283.0304	MHz	Err	.1	
28	26	3	28	25	3	s	1	=	595283 0304	MHT	Frr	1	
20	26	3	20	25	1	g	1	-	595283 0304	MH-7	Err	1	
20	20	1	20	20	-	0	1		E0E200 40E2	MUg	Enn	.1	
21	20	1	21	20	2	2	1		595506.4255	MIL-	EII	.1	
21	20	1	21	25	3	2	1	-	595306.4253	MHZ	Err	• 1	
27	26	2	27	25	2	5	1	=	595308.4253	MHZ	Err	.1	
27	26	2	27	25	3	s	1	=	595308.4253	MHz	Err	.1	
26	26	1	26	25	1	s	1	=	595332.0664	MHz	Err	.1	
26	26	0	26	25	2	S	1	=	595332.0664	MHz	Err	.1	
26	26	0	26	25	1	S	1	=	595332.0664	MHz	Err	.1	
26	26	1	26	25	2	S	1	=	595332.0664	MHz	Err	.1	
47	15	33	46	15	32	S	1	=	595431.6057	MHz	Err	.1	
47	15	32	46	15	31	S	1	=	595431.6057	MHz	Err	.1	
47	6	42	46	5	41	s	1	=	595442.6586	MHz	Err	.1	
24	13	11	23	12	11	S	1	=	595535.7149	MHz	Err	.1	
24	13	11	23	12	12	s	1	=	595535 7149	MHz	Err	1	
24	13	12	20	10	11	2	1	=	595535 71/0	MHZ	Err	1	
24	12	12	20	10	10	0	1	_	505535.7149	MH-7	Err	. 1	
24	13	12	23	12	12	د م	1	_	555555.7149	MIL_	EII	• •	
34	14	20	33	0 1 /	29	5	1	-	000022.0341	rifiZ MU-	Err	• 1	
4/	14	34	46	14	33	S	T	=	595852.0836	rinz	Err	.1	
47	14	33	46	14	32	S	1	=	595852.0836	MHz	Err	.1	
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