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Confirmation # EA776617**

FCC TYPE ACCEPTANCE REPORT

**For the
EMCEE LPU-500 UHF Transmitter**

27 August, 2009

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TABLE OF CONTENTS

1.0 INTRODUCTION.....	3
2.0 CERTIFICATION OF DATA	3
3.0 TEST EQUIPMENT.....	3
4.0 MEASUREMENTS.....	4
4.1 RF POWER MEASUREMENTS	4
4.1.1 Analog RF Power Measurement.....	4
4.1.2 Digital RF Power Measurement	5
4.2 MODULATION CHARACTERISTICS.....	6
4.2.1.1 Analog Modulation Characteristics.....	6
4.2.1.2 Video Envelope Delay	7
4.2.1.3 Video Noise.....	8
4.2.1.4 Differential Gain & Phase	8
4.2.1.5 Audio Modulation	9
4.2.1.6 FM Noise	10
4.2.2 Digital Modulation Characteristics.....	10
4.2.2.2 DEMODULATED DIGITAL PERFORMANCE CHARACTERISTICS	15
4.3 OCCUPIED BANDWIDTH	16
4.3.1 Modulation Channel Occupancy	16
4.3.2 Occupied Bandwidth in Analog Operation	16
4.3.3 Occupied Bandwidth in Digital Operation	17
4.4 SPURIOUS EMISSIONS AT ANTENNA TERMINALS.....	18
4.4.1 Spurious Emissions Tests with Digital Modulation.....	19
4.4.2 Protection to Radio Navigation Satellite Services	87
4.4.3 Spurious Emissions Tests with Analog Modulation.....	88
4.5 FREQUENCY STABILITY	89
4.6 FIELD STRENGTH OF SPURIOUS EMISSIONS	90
5.0 SUMMARY	92

1.0 INTRODUCTION

This test report contains the required information for type acceptance of the EMCEE Model LPU-500 UHF Transmitter. The data presented was taken from laboratory tests performed on a production transmitter system designed to transmit in the frequency range of 470-806 MHz at up to 50.0 Watts average power in digital mode or 150 Watts peak sync power in analog mode and utilized for operation in the UHF bands under FCC Rule Parts 73 and 74. The transmitter system design and test data reflect operation and performance pursuant to the rules as prescribed in Part 73 and Part 74 of the Commission's Rules.

2.0 CERTIFICATION OF DATA

I certify that the testing procedures and the accumulated test data contained in this report have been personally supervised by me, and that the test results are true and correct to the best of my knowledge and belief.



James A. Yard, CEO
EMCEE Communications

3.0 TEST EQUIPMENT

The following is a list of major test equipment which was used in testing the LPU-300 transmitter.

Manufacturer	Model #	Serial Number	Description
HP/Agilent	89431A	US39312280	VSA RF Section
HP/Agilent	89441A	US39313875	Vector Signal Analyzer
HP/Agilent	8753ES	US39171643	Vector Network Analyzer
HP/Agilent	E4433B	US38080113	Signal Generator
HP/Agilent	E4402B	US39010125	Spectrum Analyzer
HP/Agilent	E7405A	US39440172	EMC/Spectrum Analyzer
Tektronix	VM-700A	B030893	Video Measurement Test Set
Tektronix	1450-1	B011060	Precision Demodulator
Tektronix	TSG95	B028349	Video Generator
EMCEE	LPSMF-100	32499	Output Band Pass Filter
Narda	3020A	20dB	Directional Coupler
Narda Microwave	768-10	10dB	Attenuator
HP/Agilent	8903B	3514A15172	Audio Analyzer

4.0 MEASUREMENTS

4.1 RF POWER MEASUREMENTS

4.1.1 Analog RF Power Measurement

Figure 4-1 shows the test equipment setup for the analog RF power measurements.

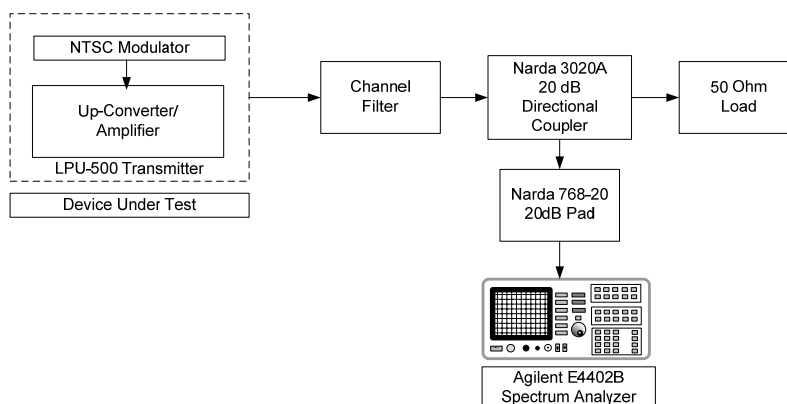


Figure 4-1: Test Setup for Analog Power Measurement

Method of Measurement:

The LPU-500, modulated with color bars at 87.5%, was adjusted to obtain a 150 Watt Peak Visual (52dBm) and 7.5 Watt Aural (-13dB) measurement on the spectrum analyzer. The metering circuit was adjusted to obtain a 100% reading on the forward power meter. With the transmitter properly configured for analog operation and the peak visual power set to 150 Watts, all required tests were performed and the analog operation test data recorded in the following sections of the test report. The peak power measurement is shown in the spectrum analyzer plot in Figure 4-2.

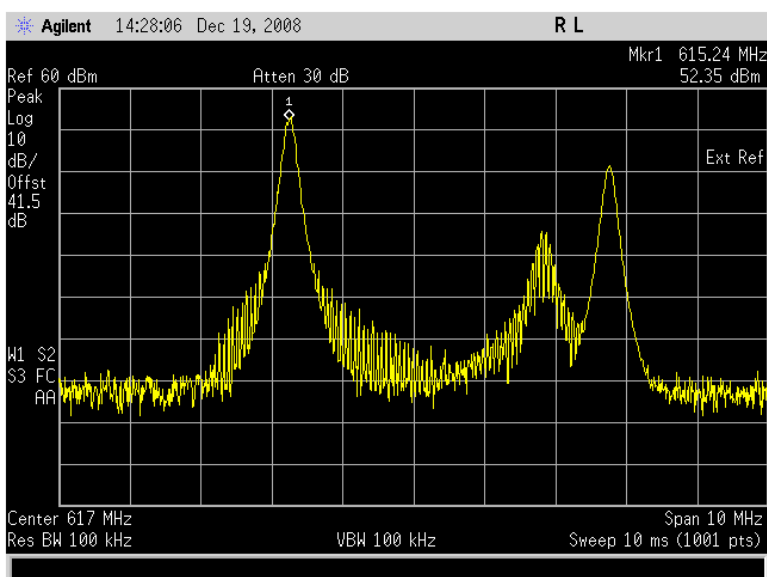


Figure 4-2: Analog Peak Power Measurement Plot

4.1.2 Digital RF Power Measurement

Figure 4-3 shows the test equipment setup for the digital RF power measurements.

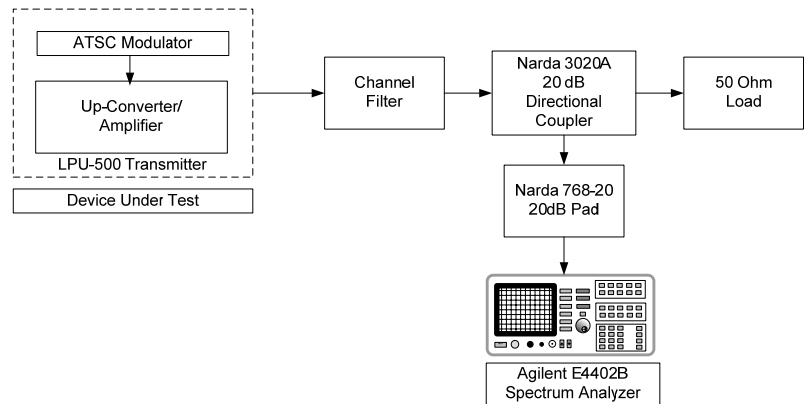


Figure 4-3: Test Setup for Digital Power Measurement

Method of Measurement:

The LPU-500, modulated with a ATSC compliant 8VSB modulator, was adjusted to obtain a 50 Watt average channel power (47dBm) measurement on the spectrum analyzer at the output of the mask filter. The metering circuit was adjusted to obtain a 100% reading on the forward power meter. With the transmitter properly configured for digital operation and the average power set to 50 Watts, all required tests were performed and the digital operation test data recorded in the following sections of the test report. The results of the digital power measurement test are shown in Figure 4-4.

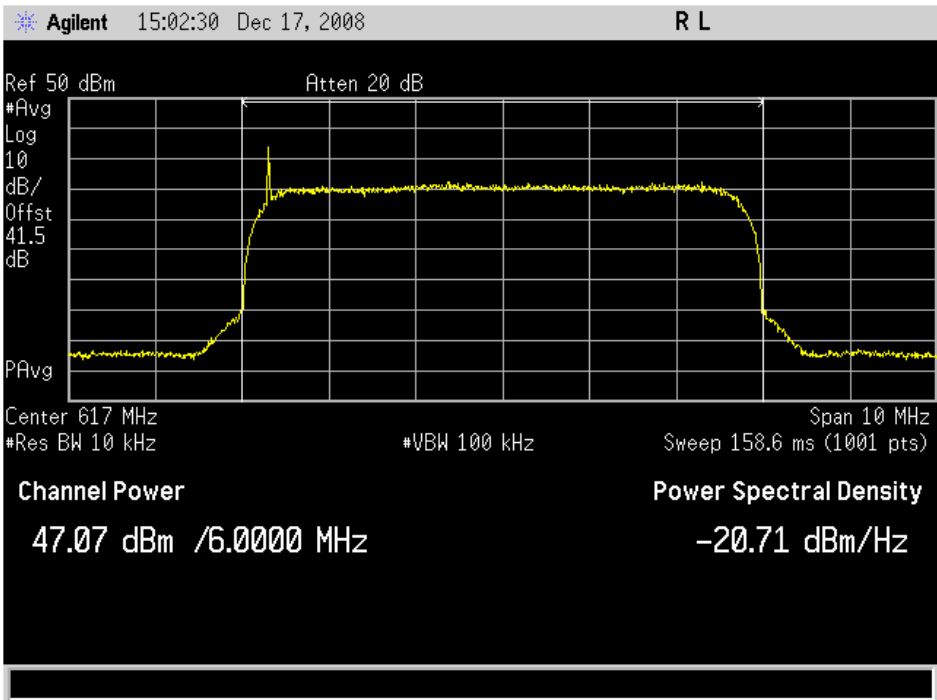


Figure 4-4: Digital Power Measurement Test

4.2 MODULATION CHARACTERISTICS

4.2.1.1 Analog Modulation Characteristics

Figure 4-5 shows the test equipment setup for the analog modulation characteristics measurements.

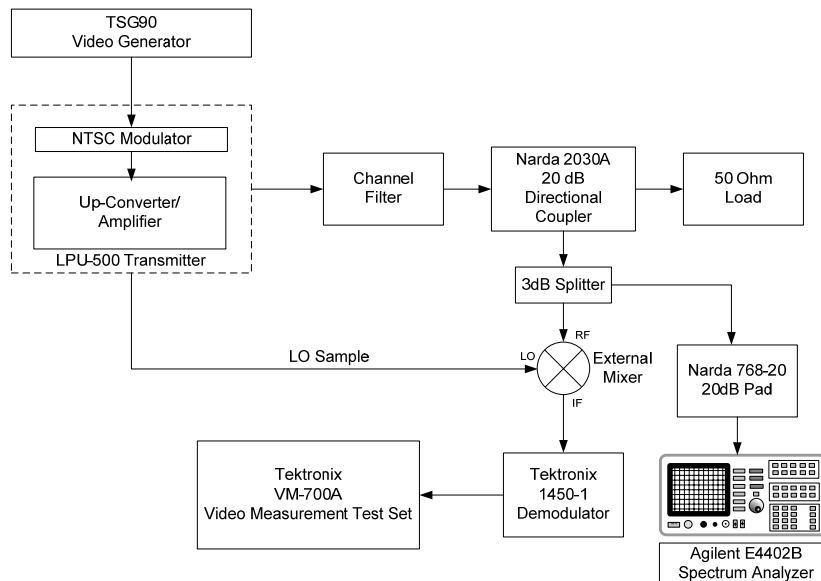


Figure 4-5: Test Setup for Analog Modulation Characteristics

The video signal generator shown in the setup depicted in Figure 4-5 was set to generate NTC color bars at a depth of modulation of 87.5%. Figure 4-6 shows the substantially linear frequency response characteristics of the transmitter in the demodulated video waveform shown on the VM700A measurement plot.

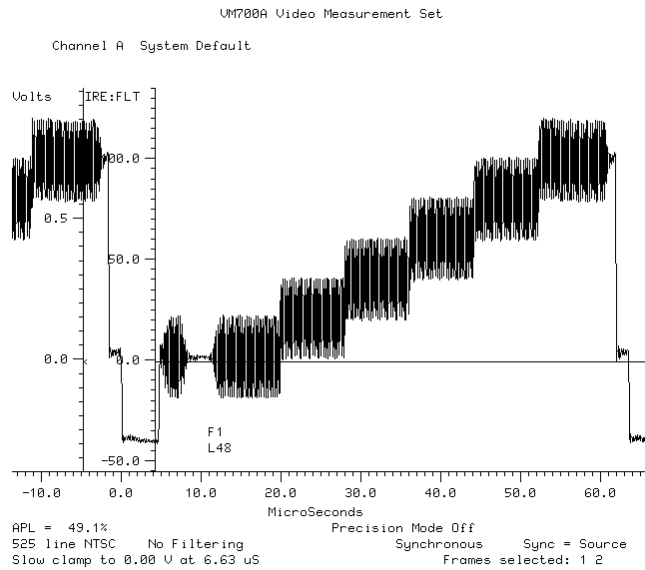


Figure 4-6: Substantially Linear Demodulated Video Waveform Plot

4.2.1.2 Video Envelope Delay

The video signal generator shown in the setup depicted in Figure 4-5 was set to generate a SinX/X test signal so that automated measurements can be made using the VM-700A. Figure 4-7 shows the group delay and gain characteristics of the transmitter in the demodulated video waveform shown on the VM700A measurement plot.

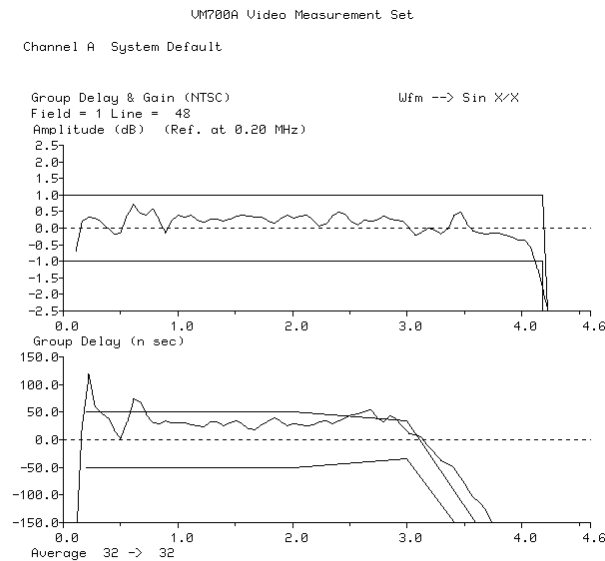


Figure 4-7 Group Delay & Gain Measurement Plot

4.2.1.3 Video Noise

The test setup in Figure 4-5 was used to measure the NTSC video noise spectrum on the VM700A. The noise level was observed to be -58.6 dB RMS as shown in Figure 4-8.

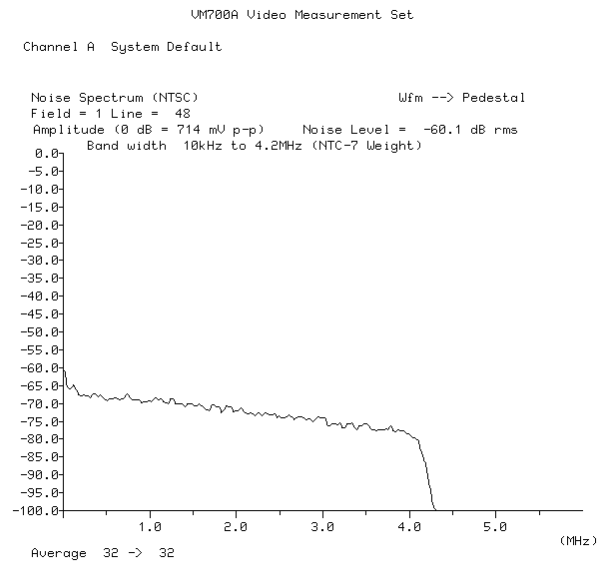


Figure 4-8: NTSC Noise Spectrum Plot

4.2.1.4 Differential Gain & Phase

Using the test setup shown in Figure 4-5 the differential gain and differential phase were measured and recorded. The differential gain was observed to be a maximum of 2.1% peak to peak as shown in Figure 4-9. The differential phase was observed to be a maximum of .98 degrees as shown in Figure 4-9.

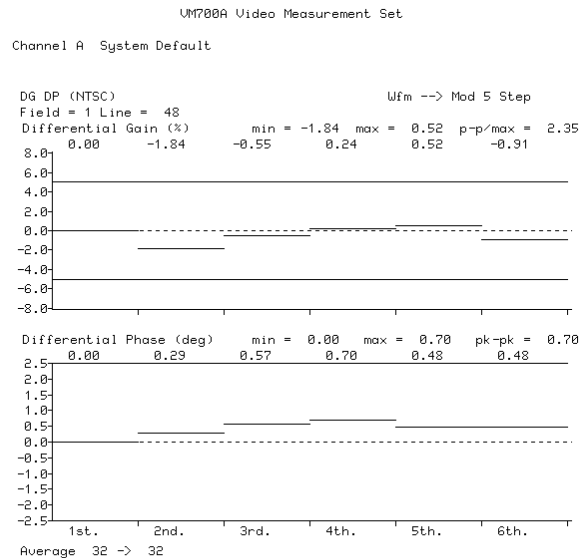


Figure 4-9: Differential Gain & Phase Plot

4.2.1.5 Audio Modulation

The FM audio response and distortion was measured using the test setup shown in Figure 4-10.

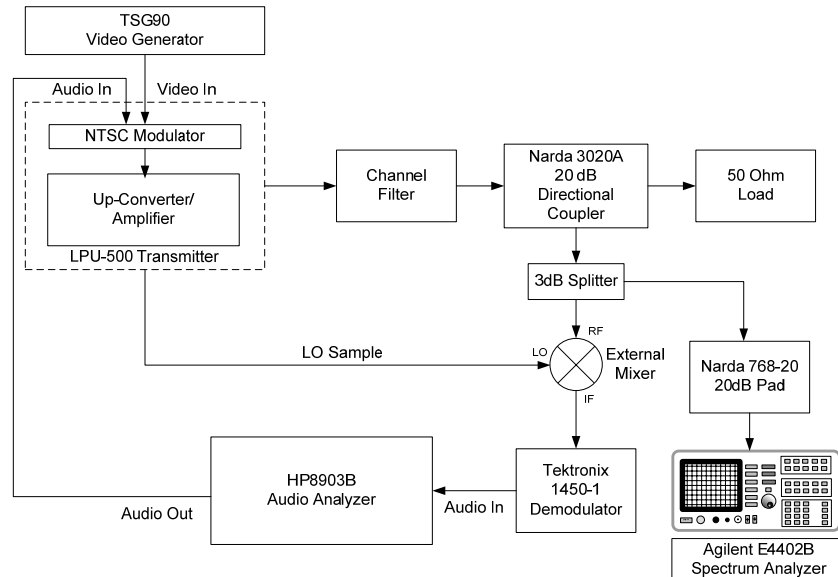


Figure 4-10: Test Setup for Measuring FM Response and Distortion

The transmitter and test equipment was set up to obtain a ± 25 KHz deviation with a 15 KHz tone. The audio frequency of the generator was then varied and the resultant measurements were recorded. The results are shown in Table 4-1.

Table 4-1: Audio Distortion Test Data

<i>Frequency</i>	<i>Distortion</i>
50Hz	.8%
100Hz	.7%
500Hz	.7%
1 KHz	.5%
5 KHz	.6%
10 KHz	.6%
15 KHz (Reference)	.6%

While maintaining a ± 25 KHz deviation, a reference tone of 1 KHz was established, then the audio input frequency and level were varied and the resultant measurements were recorded. The results are shown in Table 4-2.

Table 4-2: Audio Frequency Response Data

<i>Frequency</i>	<i>Response (Relative to 1 KHz)</i>
50Hz	-1.0dB
100Hz	-.7dB

500Hz	-.9dB
1 KHz	0dB (Reference)
2 KHz	+.8dB
3 KHz	+2.4dB
4 KHz	+5.2dB
5 KHz	+6.6dB
7 KHz	+9.5dB
10 KHz	+11.5dB
12 KHz	+13.6dB
15 KHz	+15.5dB

4.2.1.6 FM Noise

Using the test setup in Figure 4-10, the FM Noise was measured and found to be -60dB.

4.2.2 Digital Modulation Characteristics

4.2.2.1 Description of 8-VSB Digital Modulation

8-VSB is the RF modulation format utilized by the ATSC digital television standard to transmit digital bits over the airways to the home consumer. Since any terrestrial TV system must overcome numerous channel impairments such as ghosts, noise bursts, signal fades, and interference in order to reach the home viewer, the selection of the right RF modulation format is critical. Being one of the most crucial aspects of the DTV system, the 8-VSB format has received a great deal of attention and scrutiny recently. There are two fundamental technologies when describing the complete DTV system: 8-VSB and MPEG-2. 8-VSB is the RF modulation format and MPEG-2 is the video compression/packetization format. To convert high definition video into a form suitable for over-the-air broadcast, according to ATSC standards, two stages of processing are needed: MPEG-2 encoding and 8-VSB modulation. Accordingly, two major pieces of equipment are required: an MPEG-2 encoder and an 8-VSB modulator.

The MPEG-2 encoder accepts the baseband digital video and performs bit rate compression using the techniques of discrete cosine transform, run length coding and bi-directional motion prediction. The MPEG-2 encoder then multiplexes this compressed video information together with pre-coded Dolby Digital (AC-3) audio and any ancillary data that will be transmitted. The result is a stream of highly compressed MPEG-2 data packets with a data rate of only 19.39 Mbps. This 19.39 Mbps data stream is known as the DTV Transport Layer. It is output from the MPEG-2 encoder and input to the 8-VSB modulator.

The 8-VSB modulator receives the incoming MPEG-2 data packets and utilizes its own internal circuits to synchronize to the incoming signal. Before any signal processing can occur, the 8-VSB modulator must correctly identify the start and end points of each MPEG-2 data packet. This is accomplished using the MPEG-2 sync byte. MPEG-2 packets are 188 bytes in length with the first byte in each packet always being the sync byte. The MPEG-2 sync byte is then discarded; it will ultimately be replaced by the ATSC segment sync in a later stage of processing.

With the exception of the segment and field syncs, the 8-VSB bit stream must have a completely random, noise-like nature. This is because the transmitted signal frequency

response must have a flat noise-like spectrum in order to use the allotted channel space with maximum efficiency. If the data contained repetitious patterns, the recurring rhythm of these patterns would cause the RF energy content of the output signal to "lump" together at certain discrete points of the frequency spectrum and thereby leaving gaps in other parts. This implies that certain parts of the six MHz channel would be over-used while other parts would be under-used. Also, the large concentrations of RF energy at certain modulating frequencies would be more likely to create discernible beat patterns in an NTSC television set when DTV-to-NTSC interference is experienced.

The modulator also incorporates a data randomizer and Reed-Solomon Encoder. In the data randomizer, each byte value is changed according to known pattern of pseudo-random number generation. This process is reversed in the receiver in order to recover the proper data values. Reed-Solomon encoding is a Forward Error Correction (FEC) scheme applied to the incoming data stream. Forward Error Correction is a general term used to describe a variety of techniques that can be used to correct bit errors that occur during transmission. Atmospheric noise, multipath propagation, signal fades, and transmitter non-linearities may all create received bit errors. Forward Error Correction can detect and correct these errors, up to a reasonable limit. The Reed-Solomon encoder takes all 187 bytes of an incoming MPEG-2 data packet (the packet sync byte has been removed) and mathematically manipulates them as a block to create a sort of "digital sketch" of the block contents. This "sketch" occupies 20 additional bytes which are then tacked onto the end of the original 187 byte packet. These 20 bytes are known as Reed-Solomon parity bytes. The receiver will compare the received 187 byte block to the 20 parity bytes in order to determine the validity of the recovered data. If errors are detected, the receiver can use the parity "digital sketch" to locate the exact location of the errors, modify the disrupted bytes, and reconstruct the original information. Up to 10 byte errors per packet can be corrected this way. If too many byte errors are present in a given packet, the parity "digital sketch" no longer resembles the received data block, the validity of the data can no longer be confirmed, and the entire MPEG-2 packet must be discarded.

The modulator also employs data interleaving and Trellis coding. The data interleaver disturbs the sequential order of the data stream and disperses the data throughout time (over a range of about 4.5 mSec through the use of memory buffers) in order to minimize the transmitted signal's sensitivity to burst-type interference. If a noise burst creates a hole in the signal during propagation and several milliseconds of data are lost, many different segments lose very few bits instead of one data segment losing all of its bits. This is known as time diversity. Data interleaving is done according to a known pattern; the process is reversed in the receiver in order to recover the proper data order.

Trellis coding is another form of Forward Error Correction. Unlike Reed-Solomon coding, which treats the entire MPEG-2 packet simultaneously as a block, trellis coding is an evolving code that tracks the progressing stream of bits as it develops through time. Accordingly, Reed-Solomon coding is known as a form of block code, while trellis coding is a convolutional code. For trellis coding, each 8-bit byte is split up into a stream of four, 2-bit words. In the trellis coder, each 2-bit word that arrives is compared to the past history of previous 2-bit words. A 3-bit binary code is mathematically generated to describe the transition from the previous 2-bit word to the current one. These 3-bit codes are substituted for the original 2-bit words and transmitted over-the-air as the eight level symbols of 8-VSB (3 bits = $2^3 = 8$ combinations or levels). For every two bits that go into the trellis coder, three bits come out. For this reason, the trellis coder in the 8-VSB system is said to be a

2/3 rate coder. The trellis decoder in the receiver uses the received 3-bit transition codes to reconstruct the evolution of the data stream from one 2-bit word to the next. In this way, the trellis coder follows a "trail" as the signal moves from one word to the next through time. The power of trellis coding lies in its ability to track a signal's history through time and discard potentially faulty information (errors) based on a signal's past and future behavior. This is somewhat like following one person's footsteps through the snow on a busy sidewalk. When the trail becomes confused with other tracks (i.e., errors are received), the trellis decoder has the ability to follow several possible "trails" for a few footprints and make a decision as to which prints are the correct ones.

The next step in the signal processing chain is the insertion of the various "helper" signals that aid the 8-VSB receiver in accurately locating and demodulating the transmitted RF signal. These are the ATSC pilot, segment sync, and frame sync. The pilot and sync signals are inserted after the data randomization, Reed-Solomon coding, data interleaving and trellis coding stages so as not to destroy the fixed time and amplitude relationships that these signals must possess in order to be effective. Recovering a clock signal in order to decode a received waveform has always been a tricky proposition in digital RF communications. If we derive the receiver clock from the recovered data, we have a sort of "chicken and egg" dilemma. The data must be sampled by the receiver clock in order to be accurately recovered. The receiver clock itself must be generated from accurately recovered data. The resulting clocking system quickly "crashes" when the noise or interference level rises to a point that significant data errors are received.

8-VSB employs sync pulses and residual carriers that allows the receiver to "lock" onto the incoming signal and begin decoding, even in the presence of heavy ghosting and high noise levels. The first "helper" signal is the ATSC pilot. Just before modulation, a small DC shift is applied to the 8-VSB baseband signal (which was previously centered about zero volts with no DC component). This causes a small residual carrier to appear at the zero frequency point of the resulting modulated spectrum. This is the ATSC pilot. This gives the RF PLL circuits in the 8-VSB receiver something to lock onto that is independent of the data being transmitted. Although similar in nature to the visual carrier in an NTSC signal, the ATSC pilot is much smaller than the NTSC visual carrier, consuming only 0.3 dB or 7 percent of the transmitted power.

The other "helper" signals are the ATSC segment and frame syncs. An ATSC data segment is comprised of the 187 bytes of the original MPEG-2 data packet plus the 20 parity bytes added by the Reed-Solomon encoder. After trellis coding, our 207 byte segment has been stretched out into a stream of 828 8-level symbols. The ATSC segment sync is a repetitive four symbol (one byte) pulse that is added to the front of the data segment and replaces the missing first byte (packet sync byte) of the original MPEG-2 data packet. Correlation circuits in the 8-VSB receiver home in on the repetitive nature of the segment sync, which is easily contrasted against the background of completely random data. The recovered sync signal is used to generate the receiver clock and recover the data. Because of their repetitive nature and extended duration, the segment syncs are easy for the receiver to spot. The result is that accurate clock recovery can be had at noise and interference levels well above those where accurate data recovery is impossible (up to 0 dB SNR: data recovery requires at least 15 dB SNR). This allows for quick data recovery during channel changes and other transient conditions. An ATSC data segment is roughly analogous to an NTSC line; ATSC segment sync is somewhat like NTSC horizontal sync. Their duration and frequencies of repetition are, of course, completely different. Each ATSC

segment sync lasts 0.37 msec.; NTSC sync lasts 4.7 msec. An ATSC data segment lasts 77.3 msec.; an NTSC line 63.6 msec. A careful inspection of the numbers involved reveals that the ATSC segment sync is somewhat more "slender" when compared to its NTSC counterpart. This is done to maximize the active data payload and minimize the time committed to sync "overhead." Three hundred and thirteen consecutive data segments are combined to make a data frame. The ATSC frame sync is an entire data segment that is repeated once per frame (24.2 msec.) and is roughly analogous to the NTSC vertical interval. (FYI: The NTSC vertical interval occurs once every 16.7 msec.). The ATSC frame sync has a known data symbol pattern and is used to "train" the adaptive ghost-canceling equalizer in the receiver. This is done by comparing the received signal with errors against the known reference of the frame sync. The resulting error vectors are used to adjust the taps of the receiver ghost canceling equalizer. Like the segment sync, the repetitive nature of the frame sync, and correlation techniques used in the 8-VSB receiver, allow frame sync recovery at very high noise and interference levels (up to 0 dB SNR). The robustness of the segment and frame sync signals permits accurate clock recovery and ghost-canceling operation in the 8-VSB receiver--even when the active data is completely corrupted by the presence of strong multipath distortion. This allows the adaptive ghost-canceling equalizer "to keep its head" and "hunt around in the mud" in order to recover a useable signal--even during the presence of strong signal echoes.

The eight-level baseband signal, with syncs and DC pilot shift added, is then amplitude modulated on an intermediate frequency (IF) carrier which is then fed to the transmitter up-converter. With traditional amplitude modulation, we generate a double sideband RF spectrum about the carrier frequency, with each RF sideband being the mirror image of the other. This represents redundant information and one sideband can be discarded without any net information loss. This strategy was employed to some degree in creating the vestigial lower sideband in traditional NTSC analog television. In 8-VSB, this concept is taken to greater extremes with the lower RF sideband being almost completely removed. (Note: 8-VSB = 8 level-- Vestigial Side Band.)

(There are several different ways to implement the AM modulation, VSB filtering, and pilot insertion stages of the 8-VSB exciter, some of which are completely digital and involve direct digital synthesis of the required waveforms. All methods aim to achieve the same results at the exciter output. This particular arrangement was chosen in the interest of providing a clear, easily understandable, signal flow diagram.)

As a result of the data overhead added to the signal in the form of forward error correction coding and sync insertion, the data rate has gone from 19.39 Mbps at the exciter input to 32.28 Mbps at the output of the trellis coder. Since 3 bits are transmitted in each symbol of the 8-level 8-VSB constellation, the resulting symbol rate is $32\text{Mb}/3 = 10.76$ Million symbols/sec. By virtue of the Nyquist Theorem, we know that 10.76 Million symbols/sec can be transmitted in a VSB signal with a minimum frequency bandwidth of $1/2 \times 10.76 \text{ MHz} = 5.38 \text{ MHz}$. Since we are allotted a channel bandwidth of 6 MHz, we can relax the steepness of our VSB filter skirts slightly and still fall within the 6 MHz channel. This permissible excess bandwidth is 11.5 percent for the ATSC 8-VSB system. That is, $5.38 \text{ MHz (minimum bandwidth per Nyquist)} + 620 \text{ kHz (11.5 percent excess bandwidth)} = 6.00 \text{ MHz (channel bandwidth used)}$. This virtual elimination of the lower sideband, along with the narrowband filtering of the upper sideband, creates very significant changes in the RF waveform that is ultimately transmitted.

Following is a description of the 8-VSB Signal Constellation. In 8-VSB, the digital information is transmitted exclusively in the amplitude of the RF envelope and not in the phase. This is unlike other digital modulation formats such as 8-VSB, where each point in the signal constellation is a certain vector combination of carrier amplitude and phase. This is not possible in 8-VSB since the carrier phase is no longer an independent variable, as it is lost in suppressing the vestigial lower sideband. The resulting 8-VSB signal constellation is shown in figure 4-11.

The eight modulation levels are recovered by sampling an in-phase (I channel) synchronous detector. Nothing would be gained by sampling a quadrature channel detector since no useful information is contained in this channel. The signal constellation diagram is therefore a series eight vertical lines that correspond to the eight transmitted amplitude levels. By eliminating any dependence on the Q-channel, the 8-VSB receiver need only process the I channel, thereby cutting in half the number of DSP circuits required in certain stages. The result is greater simplicity, and ultimately cost savings, in the receiver design.

After the Nyquist VSB filter, the 8-VSB IF signal is then up-converted in the transmitter up-converter, by traditional PLL oscillator-mixer-filter circuits, to the assigned channel frequency in the UHF band. The on-channel RF output of the up-converter is then supplied to the power amplifiers for amplification to the specified output power. A transmitter output filter (mask filter), filters the transmitter output signal and suppresses any spurious out-of-band signals caused by transmitter nonlinearities.

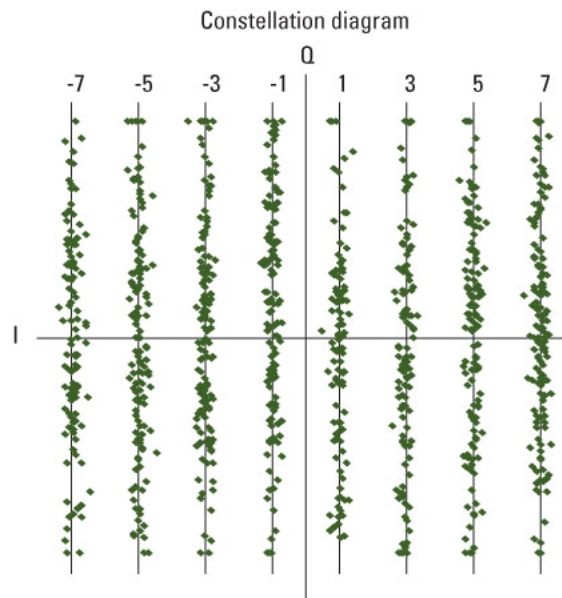


Figure 4-11: 8-VSB Constellation Diagram

4.2.2.2 Demodulated Digital Performance Characteristics

Method of Measurement:

Using the test setup shown in Figure 4-12, tests were performed to measure the performance linearity of the transmitter in digital mode. The results of the test are shown in the vector signal analyzer plot as shown in Figure 4-13. The tests revealed that the transmitter operates with very low distortion (<2% RMS EVM) and with a very high SNR, >35dB.

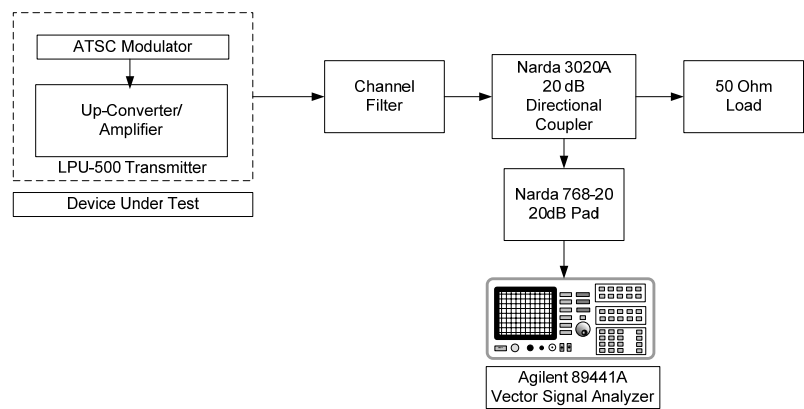


Figure 4-12: Digital Demodulation Test Setup

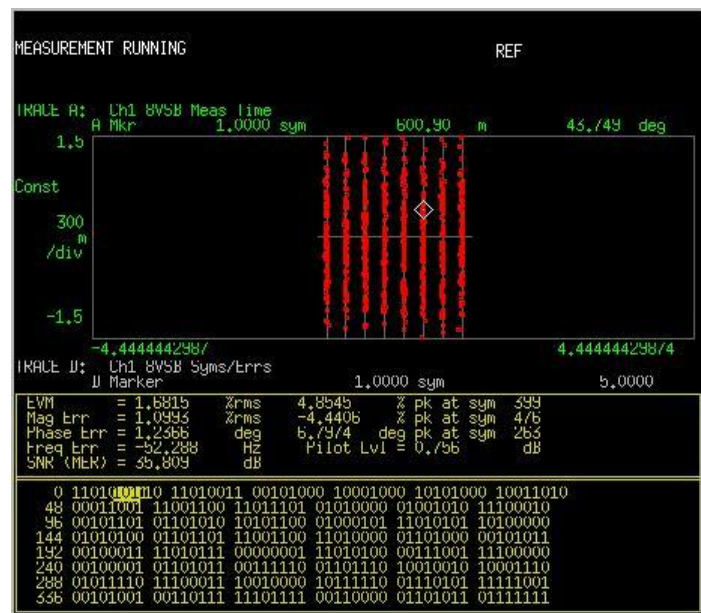


Figure 4-13: Digital Demodulation Test Results

4.3 OCCUPIED BANDWIDTH

4.3.1 Modulation Channel Occupancy

4.3.1.1 Digital Operation vs. Analog (NTSC) Operation:

The digital modulation occupancy of 8-VSB is 5.38 MHz measured at the -3 dB roll-off points. This is shown below as compared to a standard NTSC vestigial sideband signal in a standard 6 MHz channel. The 8-VSB signal employs a suppressed carrier modulation with a uniform power spectral density as opposed to the usual system M/N (NTSC) signal with separate analog visual, chroma, and aural carriers. A comparison between Analog and Digital occupied bandwidth is shown in Figure 4-12.

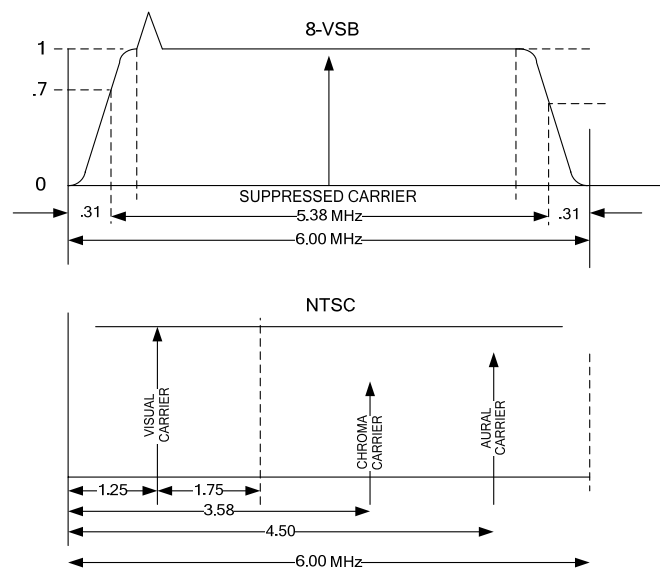


Figure 4-12: Digital & Analog modulation occupancy

4.3.2 Occupied Bandwidth in Analog Operation

Using the test setup in Figure 4-1, the spectrum analyzer was used to capture the occupied bandwidth spectrum of the transmitter in analog operation. The results of the test are shown in Figure 4-13.

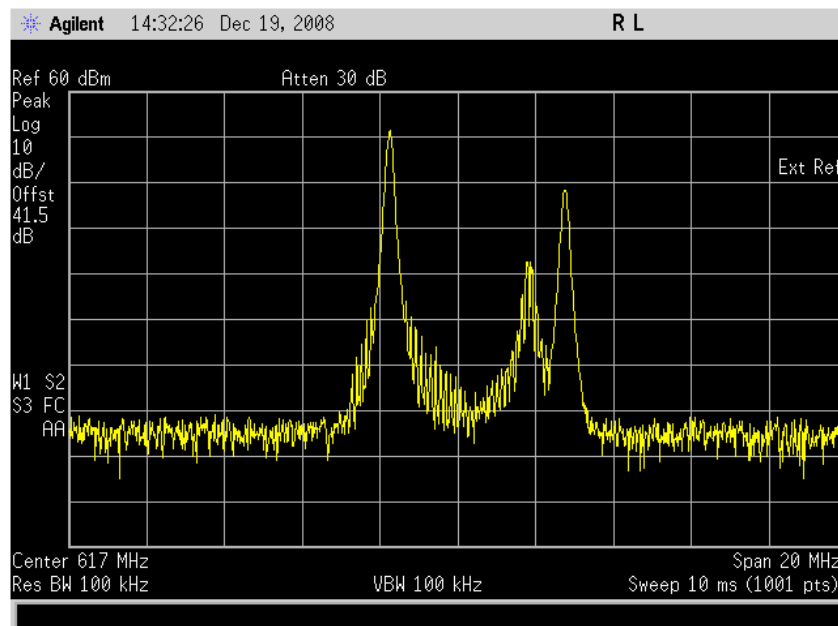


Figure 4-13: Occupied Bandwidth Plot in Analog Operation

4.3.3 Occupied Bandwidth in Digital Operation

Using the test setup in Figure 4-3, the spectrum analyzer was used to capture the occupied bandwidth spectrum of the transmitter in digital operation. The results of the test are shown in Figure 4-14.

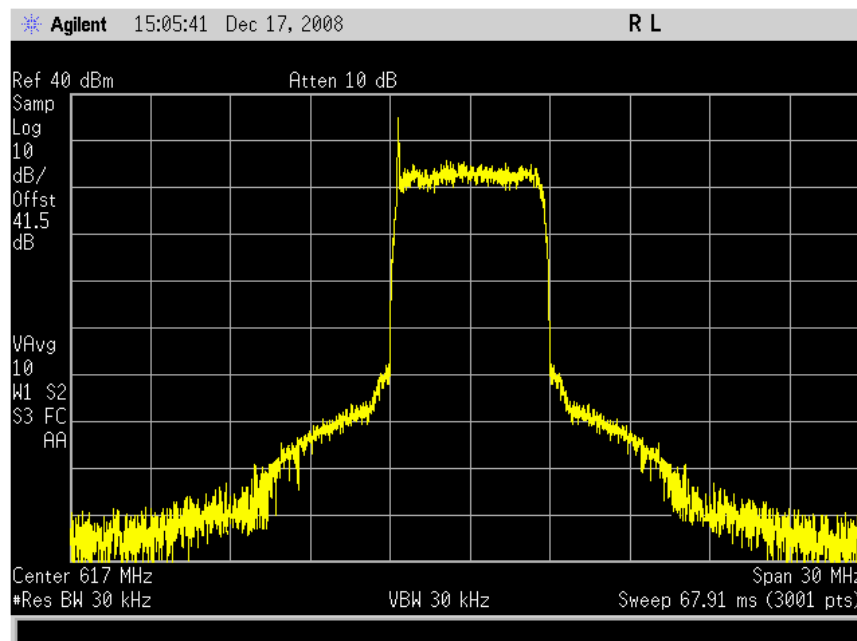


Figure 4-14: Occupied Bandwidth Plot in Digital Operation

4.4 SPURIOUS EMISSIONS AT ANTENNA TERMINALS

Method of Measurement:

Using the test setup in Figure 4-3, the spectrum outside the desired channel was observed and the data was recorded on all spurious above the –60 dB noise floor of the spectrum analyzer as shown in Figure 4-15. The spurious emissions were observed on the analyzer at a span of 2 GHz. With the average in band signal of the desired channel of 617 MHz set as the reference, the spurious emissions were observed. The measured data is shown in the table 4-3 for 50 Watts average output power.

Table 4-3 Products above the -60dB Analyzer Noise Floor

FREQUENCY (MHz)	SOURCE	PEAK LEVEL (dB)
617	Reference Channel	0dB Reference
10	10 MHz Reference	None Observed
44	IF Frequency	None Observed
422	1 st LO	None Observed
466	1 st Conversion Output	None Observed
1688	2 nd LO	None Observed
2154	2 nd Conversion Output	None Observed
2771	3 rd LO	None Observed
1234	2 nd Harmonic	None Observed
1851	3 rd Harmonic	None Observed
2468	4 th Harmonic	None Observed
3085	5 th Harmonic	None Observed
3702	6 th Harmonic	None Observed
4319	7 th Harmonic	None Observed
4936	8 th Harmonic	None Observed
5553	9 th Harmonic	None Observed
6170	10 th Harmonic	None Observed

Using the test setup in Figure 4-3, the spectrum analyzer was used to capture the spurious output spectrum of the transmitter in digital operation. The results of the test are shown in Figure 4-15.

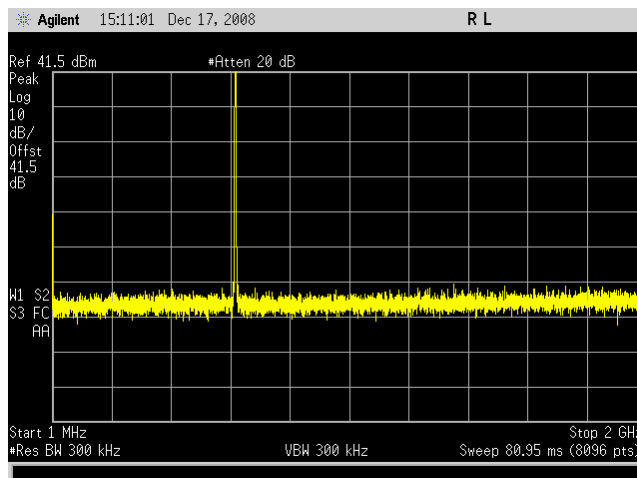


Figure 4-15: Spurious Emissions Spectrum Analyzer Plot

4.4.1 Spurious Emissions Tests with Digital Modulation

Part §74.794 of the Commission's Rules states:

§74.794 (a)(1) An applicant for a digital LPTV or TV translator station construction permit shall specify that the station will be constructed to confine out-of-channel emissions within one of the following emission masks: simple or stringent.

§74.794 (a)(2) The power level of emissions on frequencies outside the authorized channel of operation must be attenuated no less than following amounts below the average transmitted power within the authorized 6 MHz channel. In the mask specifications listed in § 74.794(a)(2) and (a)(3), A is the attenuation in dB and Δf is the frequency difference in MHz from the edge of the channel.

(i) Simple mask. At the channel edges, emissions must be attenuated no less than 46 dB. More than 6 MHz from the channel edges, emissions must be attenuated no less than 71 dB. At any frequency between 0 and 6 MHz from the channel edges, emissions must be attenuated no less than the value determined by the following formula: $A \text{ (dB)} = 46 + (\Delta f^2 / 1.44)$

(ii) Stringent mask. In the first 500 kHz from the channel edges, emissions must be attenuated no less than 47 dB. More than 3 MHz from the channel edges, emissions must be attenuated no less than 76 dB. At any frequency between 0.5 and 3 MHz from the channel edges, emissions must be attenuated no less than the value determined by the following formula: $A(\text{dB}) = 47 + 11.5 (\Delta f - 0.5)$

§74.794(a)(3) The attenuation values for the simple and stringent emission masks are based on a measurement bandwidth of 500 kHz. Other measurement bandwidths may be used and converted to the reference 500 kHz value by the following formula:

$$A(\text{dB}) = A_{\text{alternate}} + 10 \log (BW_{\text{alternate}} / 500)$$

where A(dB) is the measured or calculated attenuation value for the reference 500 kHz bandwidth, and $A_{\text{alternate}}$ is the measured or calculated attenuation for a bandwidth $BW_{\text{alternate}}$. Emissions include sidebands, spurious emissions and radio harmonics. Attenuation is to be measured at the output terminals of the transmitter (including any filters that may be employed). In the event of interference caused to any service by out-of-channel emissions, greater attenuation may be required.

(b) In addition to meeting the emission attenuation requirements of the simple or stringent mask (including attenuation of radio frequency harmonics), digital low power TV and TV translator stations authorized to operate on TV channels 22–24, (518–536 MHz), 32–36 (578–608 MHz), 38 (614–620 MHz), and 65–69 (776–806 MHz) must provide specific “out of band” protection to Radio Navigation Satellite Services in the bands: L5 (1164–1215 MHz); L2 (1215–1240 MHz) and L1 (1559–1610 MHz).

(1) An FCC-certificated transmitter specifically certified for use on one or more of the above channels must include filtering with an attenuation of not less than 85 dB in the GPS bands, which will have the effect of reducing harmonics in the GPS bands from what is produced by the digital transmitter, and this attenuation must be demonstrated as part of the certification application to the Commission.

Method of Measurement:

With regard to measurements specified by FCC §74.794(*et al.*), a 10 KHz resolution measurement bandwidth has been chosen so as to provide for the most accurate measurement of the out of band emissions. Frequencies out to 12 MHz above and below the desired channel were measured. The amount of out-of-band power in 10 KHz increments relative to the transmitter output power can be automatically measured by the channel power function of the 4402B Spectrum Analyzer integrated into a 10 KHz bandwidth. With an 8-VSB digital modulation, the out of band emissions were sampled at 10KHz increments inside and outside of the desired channel, and no emissions above either the simple or stringent emission masks relative to the average carrier power were observed.

The test setup in Figure 4-11 was used to obtain the measurements recorded into Table 4-4, Column 2.

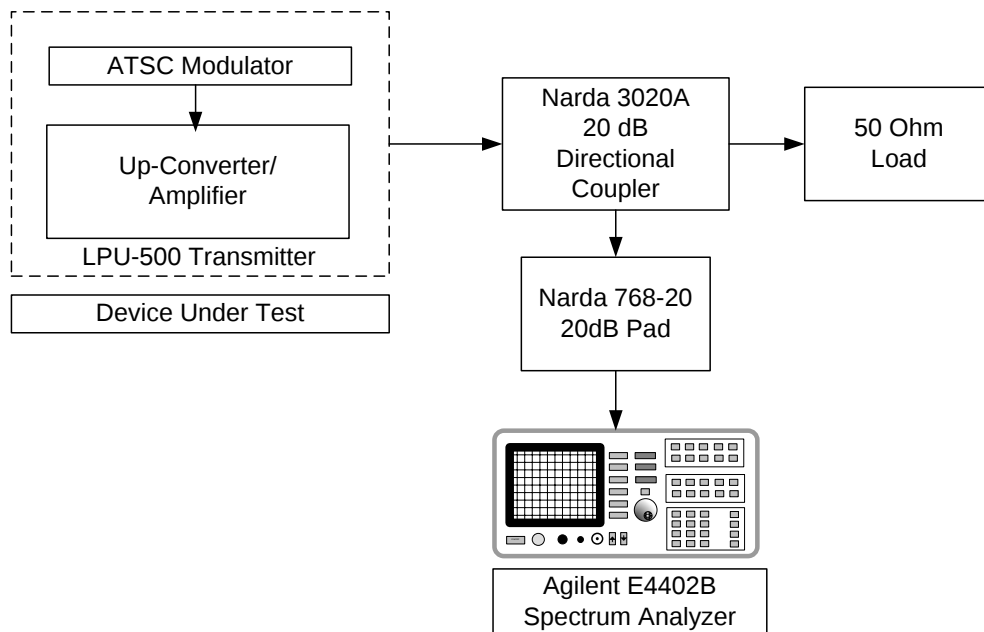


Figure 4-11: Output Filter Measurement Setup

The performance of the mask (output) filter was also measured and the resultant data was recorded into Table 4-4, Column 3, for its attenuation vs. frequency. The test equipment setup for measuring the output filter is shown in Figure 4-12.

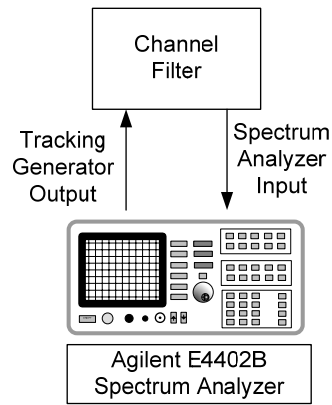


Figure 4-12: Output Filter Measurement Setup

Column 4 of Table 4-4 is the combined spectral power output of the transmitter and mask filter relative to the average in-band power of 50dBm as measured in a 10 KHz RBW. Column 5 is the spectral output of the combination of the transmitter and filter corrected to a 500 KHz resolution bandwidth (per §74.794(a)(3)). Columns 6 and 7 of Table 4-4 are the output simple and stringent mask boundaries as defined by §74.794 (a)(2) (i) and (ii) respectively.

When the data in Columns 5, 6, and 7 are plotted, the transmitter spectral performance may be observed (see Figure 4-13) against the simple mask (green line) and stringent mask (red line). It is apparent that in no case does the transmitter exceed either output mask.

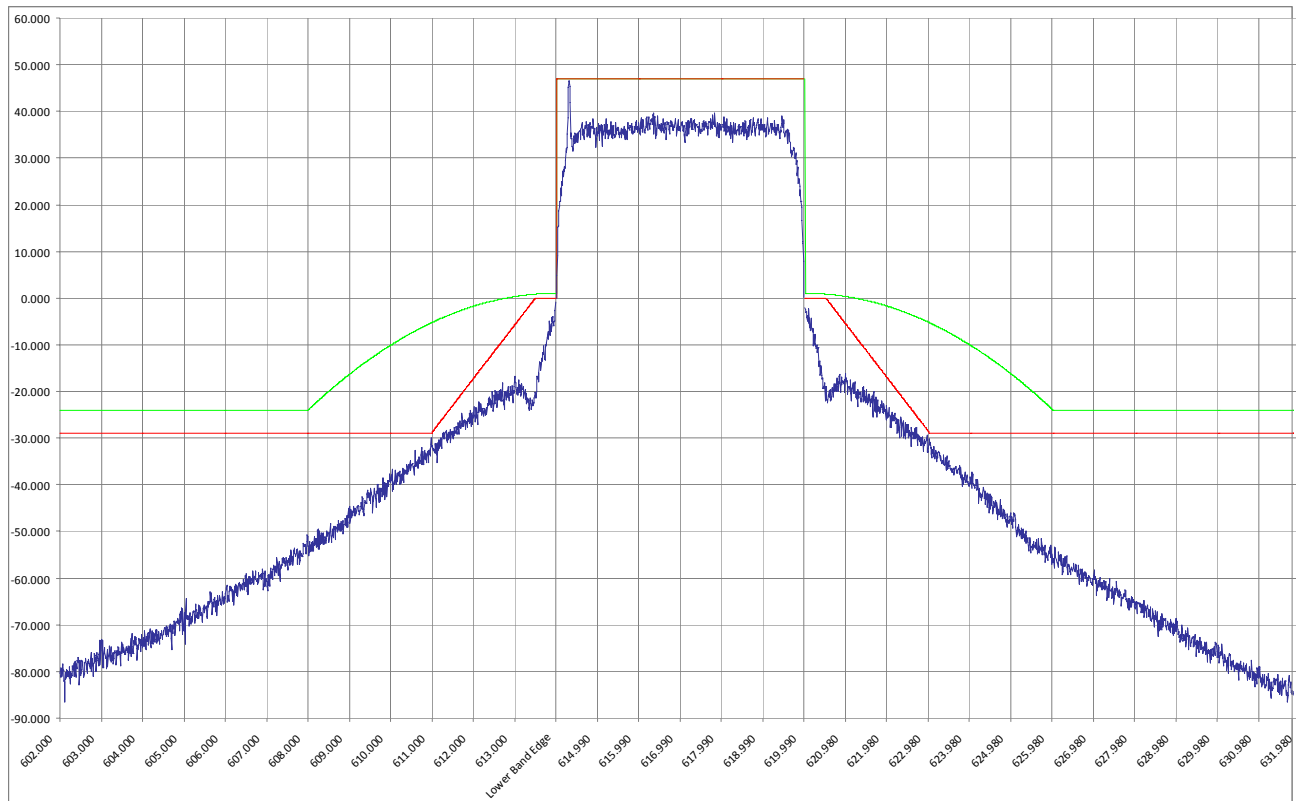


Figure 4-13: Spectral Output Compared To Mask Boundaries

Table 4-4: Spurious Emissions for Digital Operations

Measurement Center Frequency (MHz)	TX Output No Filter	Band-Pass Filter Response	Combined Transmitter + Filter Output	TX Output Corrected to 500KHz Res BW	Simple Mask Boundary	Stringent Mask Boundary
-12 Mhz From Channel Edge						
602.000	-33.710	-58.983	-92.693	-80.483	-23.968	-28.968
602.010	-32.406	-59.004	-91.410	-79.200	-23.968	-28.968
602.020	-34.519	-58.885	-93.404	-81.194	-23.968	-28.968
602.030	-32.572	-59.068	-91.640	-79.430	-23.968	-28.968
602.040	-33.432	-58.749	-92.181	-79.971	-23.968	-28.968
602.050	-34.472	-58.737	-93.209	-80.999	-23.968	-28.968
602.060	-31.781	-58.829	-90.610	-78.400	-23.968	-28.968
602.070	-32.387	-58.998	-91.385	-79.175	-23.968	-28.968
602.080	-33.213	-58.721	-91.934	-79.724	-23.968	-28.968
602.090	-35.409	-58.872	-94.281	-82.071	-23.968	-28.968
602.100	-35.679	-58.828	-94.507	-82.297	-23.968	-28.968
602.110	-39.836	-58.962	-98.798	-86.588	-23.968	-28.968
602.120	-35.565	-58.760	-94.325	-82.115	-23.968	-28.968
602.130	-33.629	-58.904	-92.533	-80.323	-23.968	-28.968
602.140	-35.300	-58.621	-93.921	-81.711	-23.968	-28.968
602.150	-34.806	-58.570	-93.376	-81.166	-23.968	-28.968
602.160	-33.152	-58.675	-91.827	-79.617	-23.968	-28.968
602.170	-33.498	-58.467	-91.965	-79.755	-23.968	-28.968
602.180	-34.662	-58.563	-93.225	-81.015	-23.968	-28.968
602.190	-33.651	-58.388	-92.039	-79.829	-23.968	-28.968
602.200	-34.767	-58.535	-93.302	-81.092	-23.968	-28.968
602.210	-33.847	-58.469	-92.316	-80.106	-23.968	-28.968
602.220	-35.245	-58.384	-93.629	-81.419	-23.968	-28.968
602.230	-32.784	-58.497	-91.281	-79.071	-23.968	-28.968
602.240	-36.473	-58.423	-94.896	-82.686	-23.968	-28.968
602.250	-33.855	-58.474	-92.329	-80.119	-23.968	-28.968
602.260	-34.413	-58.263	-92.676	-80.466	-23.968	-28.968
602.270	-34.729	-58.543	-93.272	-81.062	-23.968	-28.968
602.280	-34.972	-58.405	-93.377	-81.167	-23.968	-28.968
602.290	-34.511	-58.481	-92.992	-80.782	-23.968	-28.968
602.300	-32.540	-58.412	-90.952	-78.742	-23.968	-28.968
602.310	-33.387	-58.450	-91.837	-79.627	-23.968	-28.968
602.320	-33.516	-58.379	-91.895	-79.685	-23.968	-28.968
602.330	-32.117	-58.337	-90.454	-78.244	-23.968	-28.968
602.340	-35.379	-57.966	-93.345	-81.135	-23.968	-28.968
602.350	-33.366	-58.271	-91.637	-79.427	-23.968	-28.968
602.360	-31.865	-58.113	-89.978	-77.768	-23.968	-28.968
602.370	-33.668	-58.180	-91.848	-79.638	-23.968	-28.968

602.380	-35.313	-58.195	-93.508	-81.298	-23.968	-28.968
602.390	-32.436	-58.087	-90.523	-78.313	-23.968	-28.968
602.400	-33.512	-58.120	-91.632	-79.422	-23.968	-28.968
602.410	-32.780	-58.178	-90.958	-78.748	-23.968	-28.968
602.420	-31.803	-57.945	-89.748	-77.538	-23.968	-28.968
602.430	-32.101	-58.094	-90.195	-77.985	-23.968	-28.968
602.440	-31.357	-57.907	-89.264	-77.054	-23.968	-28.968
602.450	-32.405	-58.082	-90.487	-78.277	-23.968	-28.968
602.460	-37.104	-58.056	-95.160	-82.950	-23.968	-28.968
602.470	-34.476	-58.023	-92.499	-80.289	-23.968	-28.968
602.480	-31.655	-58.103	-89.758	-77.548	-23.968	-28.968
602.490	-35.142	-57.912	-93.054	-80.844	-23.968	-28.968
602.500	-34.623	-57.902	-92.525	-80.315	-23.968	-28.968
602.510	-34.693	-57.860	-92.553	-80.343	-23.968	-28.968
602.520	-34.045	-57.769	-91.814	-79.604	-23.968	-28.968
602.530	-32.094	-57.623	-89.717	-77.507	-23.968	-28.968
602.540	-32.340	-57.782	-90.122	-77.912	-23.968	-28.968
602.550	-32.934	-57.793	-90.727	-78.517	-23.968	-28.968
602.560	-34.785	-57.991	-92.776	-80.566	-23.968	-28.968
602.570	-34.896	-57.843	-92.739	-80.529	-23.968	-28.968
602.580	-35.749	-57.707	-93.456	-81.246	-23.968	-28.968
602.590	-34.909	-57.718	-92.627	-80.417	-23.968	-28.968
602.600	-32.797	-57.683	-90.480	-78.270	-23.968	-28.968
602.610	-32.244	-57.755	-89.999	-77.789	-23.968	-28.968
602.620	-31.955	-57.524	-89.479	-77.269	-23.968	-28.968
602.630	-33.529	-57.744	-91.273	-79.063	-23.968	-28.968
602.640	-32.973	-57.566	-90.539	-78.329	-23.968	-28.968
602.650	-34.143	-57.510	-91.653	-79.443	-23.968	-28.968
602.660	-35.057	-57.606	-92.663	-80.453	-23.968	-28.968
602.670	-32.382	-57.590	-89.972	-77.762	-23.968	-28.968
602.680	-32.920	-57.457	-90.377	-78.167	-23.968	-28.968
602.690	-32.195	-57.308	-89.503	-77.293	-23.968	-28.968
602.700	-33.585	-57.409	-90.994	-78.784	-23.968	-28.968
602.710	-33.349	-57.317	-90.666	-78.456	-23.968	-28.968
602.720	-34.438	-57.238	-91.676	-79.466	-23.968	-28.968
602.730	-33.679	-57.376	-91.055	-78.845	-23.968	-28.968
602.740	-32.973	-57.207	-90.180	-77.970	-23.968	-28.968
602.750	-30.785	-57.307	-88.092	-75.882	-23.968	-28.968
602.760	-34.743	-57.463	-92.206	-79.996	-23.968	-28.968
602.770	-32.046	-57.318	-89.364	-77.154	-23.968	-28.968
602.780	-32.493	-57.280	-89.773	-77.563	-23.968	-28.968
602.790	-33.898	-57.237	-91.135	-78.925	-23.968	-28.968
602.800	-36.086	-57.090	-93.176	-80.966	-23.968	-28.968
602.810	-33.375	-57.245	-90.620	-78.410	-23.968	-28.968
602.820	-33.231	-57.148	-90.379	-78.169	-23.968	-28.968
602.830	-31.301	-57.148	-88.449	-76.239	-23.968	-28.968

602.840	-31.783	-57.051	-88.834	-76.624	-23.968	-28.968
602.850	-32.990	-57.086	-90.076	-77.866	-23.968	-28.968
602.860	-31.947	-57.141	-89.088	-76.878	-23.968	-28.968
602.870	-35.315	-56.876	-92.191	-79.981	-23.968	-28.968
602.880	-31.288	-56.888	-88.176	-75.966	-23.968	-28.968
602.890	-32.023	-57.066	-89.089	-76.879	-23.968	-28.968
602.900	-31.956	-57.103	-89.059	-76.849	-23.968	-28.968
602.910	-32.371	-56.972	-89.343	-77.133	-23.968	-28.968
602.920	-32.733	-56.965	-89.698	-77.488	-23.968	-28.968
602.930	-34.293	-56.757	-91.050	-78.840	-23.968	-28.968
602.940	-31.720	-56.843	-88.563	-76.353	-23.968	-28.968
602.950	-30.817	-56.882	-87.699	-75.489	-23.968	-28.968
602.960	-28.508	-56.912	-85.420	-73.210	-23.968	-28.968
602.970	-34.230	-56.632	-90.862	-78.652	-23.968	-28.968
602.980	-31.054	-56.724	-87.778	-75.568	-23.968	-28.968
602.990	-28.913	-56.790	-85.703	-73.493	-23.968	-28.968
603.000	-28.446	-56.823	-85.269	-73.059	-23.968	-28.968
603.010	-29.218	-56.764	-85.982	-73.772	-23.968	-28.968
603.020	-34.759	-56.649	-91.408	-79.198	-23.968	-28.968
603.030	-28.952	-56.501	-85.453	-73.243	-23.968	-28.968
603.040	-32.418	-56.642	-89.060	-76.850	-23.968	-28.968
603.050	-34.858	-56.620	-91.478	-79.268	-23.968	-28.968
603.060	-32.264	-56.607	-88.871	-76.661	-23.968	-28.968
603.070	-30.674	-56.564	-87.238	-75.028	-23.968	-28.968
603.080	-31.693	-56.479	-88.172	-75.962	-23.968	-28.968
603.090	-32.564	-56.501	-89.065	-76.855	-23.968	-28.968
603.100	-33.007	-56.396	-89.403	-77.193	-23.968	-28.968
603.110	-32.873	-56.524	-89.397	-77.187	-23.968	-28.968
603.120	-35.196	-56.350	-91.546	-79.336	-23.968	-28.968
603.130	-32.900	-56.417	-89.317	-77.107	-23.968	-28.968
603.140	-31.203	-56.407	-87.610	-75.400	-23.968	-28.968
603.150	-34.597	-56.535	-91.132	-78.922	-23.968	-28.968
603.160	-32.268	-56.445	-88.713	-76.503	-23.968	-28.968
603.170	-32.605	-56.357	-88.962	-76.752	-23.968	-28.968
603.180	-31.618	-56.302	-87.920	-75.710	-23.968	-28.968
603.190	-30.652	-56.118	-86.770	-74.560	-23.968	-28.968
603.200	-32.301	-56.177	-88.478	-76.268	-23.968	-28.968
603.210	-33.673	-56.087	-89.760	-77.550	-23.968	-28.968
603.220	-32.588	-56.143	-88.731	-76.521	-23.968	-28.968
603.230	-30.749	-56.183	-86.932	-74.722	-23.968	-28.968
603.240	-34.303	-55.873	-90.176	-77.966	-23.968	-28.968
603.250	-32.792	-56.090	-88.882	-76.672	-23.968	-28.968
603.260	-33.741	-56.078	-89.819	-77.609	-23.968	-28.968
603.270	-32.658	-56.031	-88.689	-76.479	-23.968	-28.968
603.280	-32.192	-56.036	-88.228	-76.018	-23.968	-28.968
603.290	-34.532	-55.998	-90.530	-78.320	-23.968	-28.968

603.300	-33.319	-56.042	-89.361	-77.151	-23.968	-28.968
603.310	-32.540	-55.929	-88.469	-76.259	-23.968	-28.968
603.320	-31.751	-55.991	-87.742	-75.532	-23.968	-28.968
603.330	-32.341	-55.908	-88.249	-76.039	-23.968	-28.968
603.340	-32.152	-55.976	-88.128	-75.918	-23.968	-28.968
603.350	-32.818	-55.912	-88.730	-76.520	-23.968	-28.968
603.360	-35.039	-55.760	-90.799	-78.589	-23.968	-28.968
603.370	-32.852	-55.965	-88.817	-76.607	-23.968	-28.968
603.380	-32.024	-55.760	-87.784	-75.574	-23.968	-28.968
603.390	-33.027	-55.682	-88.709	-76.499	-23.968	-28.968
603.400	-31.179	-55.781	-86.960	-74.750	-23.968	-28.968
603.410	-31.391	-55.815	-87.206	-74.996	-23.968	-28.968
603.420	-32.566	-55.774	-88.340	-76.130	-23.968	-28.968
603.430	-32.683	-55.797	-88.480	-76.270	-23.968	-28.968
603.440	-32.753	-55.640	-88.393	-76.183	-23.968	-28.968
603.450	-32.436	-55.596	-88.032	-75.822	-23.968	-28.968
603.460	-35.450	-55.595	-91.045	-78.835	-23.968	-28.968
603.470	-33.215	-55.625	-88.840	-76.630	-23.968	-28.968
603.480	-30.185	-55.711	-85.896	-73.686	-23.968	-28.968
603.490	-32.756	-55.586	-88.342	-76.132	-23.968	-28.968
603.500	-32.745	-55.532	-88.277	-76.067	-23.968	-28.968
603.510	-32.324	-55.507	-87.831	-75.621	-23.968	-28.968
603.520	-30.744	-55.490	-86.234	-74.024	-23.968	-28.968
603.530	-32.610	-55.469	-88.079	-75.869	-23.968	-28.968
603.540	-31.665	-55.480	-87.145	-74.935	-23.968	-28.968
603.550	-32.761	-55.339	-88.100	-75.890	-23.968	-28.968
603.560	-33.251	-55.395	-88.646	-76.436	-23.968	-28.968
603.570	-32.768	-55.389	-88.157	-75.947	-23.968	-28.968
603.580	-33.311	-55.336	-88.647	-76.437	-23.968	-28.968
603.590	-32.551	-55.277	-87.828	-75.618	-23.968	-28.968
603.600	-31.792	-55.213	-87.005	-74.795	-23.968	-28.968
603.610	-32.602	-55.158	-87.760	-75.550	-23.968	-28.968
603.620	-32.281	-55.150	-87.431	-75.221	-23.968	-28.968
603.630	-33.025	-55.227	-88.252	-76.042	-23.968	-28.968
603.640	-31.548	-55.178	-86.726	-74.516	-23.968	-28.968
603.650	-33.088	-55.224	-88.312	-76.102	-23.968	-28.968
603.660	-34.698	-55.149	-89.847	-77.637	-23.968	-28.968
603.670	-32.593	-54.984	-87.577	-75.367	-23.968	-28.968
603.680	-32.059	-55.181	-87.240	-75.030	-23.968	-28.968
603.690	-31.706	-55.022	-86.728	-74.518	-23.968	-28.968
603.700	-33.319	-55.056	-88.375	-76.165	-23.968	-28.968
603.710	-30.180	-55.022	-85.202	-72.992	-23.968	-28.968
603.720	-33.938	-55.009	-88.947	-76.737	-23.968	-28.968
603.730	-32.541	-54.999	-87.540	-75.330	-23.968	-28.968
603.740	-29.316	-54.865	-84.181	-71.971	-23.968	-28.968
603.750	-32.040	-54.911	-86.951	-74.741	-23.968	-28.968

603.760	-33.547	-54.826	-88.373	-76.163	-23.968	-28.968
603.770	-33.520	-54.948	-88.468	-76.258	-23.968	-28.968
603.780	-30.813	-54.685	-85.498	-73.288	-23.968	-28.968
603.790	-31.303	-54.755	-86.058	-73.848	-23.968	-28.968
603.800	-31.731	-54.767	-86.498	-74.288	-23.968	-28.968
603.810	-29.936	-54.683	-84.619	-72.409	-23.968	-28.968
603.820	-31.595	-54.765	-86.360	-74.150	-23.968	-28.968
603.830	-30.146	-54.680	-84.826	-72.616	-23.968	-28.968
603.840	-30.736	-54.522	-85.258	-73.048	-23.968	-28.968
603.850	-32.657	-54.719	-87.376	-75.166	-23.968	-28.968
603.860	-35.101	-54.664	-89.765	-77.555	-23.968	-28.968
603.870	-31.979	-54.605	-86.584	-74.374	-23.968	-28.968
603.880	-32.956	-54.574	-87.530	-75.320	-23.968	-28.968
603.890	-32.426	-54.492	-86.918	-74.708	-23.968	-28.968
603.900	-32.173	-54.423	-86.596	-74.386	-23.968	-28.968
603.910	-30.702	-54.483	-85.185	-72.975	-23.968	-28.968
603.920	-31.765	-54.441	-86.206	-73.996	-23.968	-28.968
603.930	-31.090	-54.466	-85.556	-73.346	-23.968	-28.968
603.940	-30.904	-54.464	-85.368	-73.158	-23.968	-28.968
603.950	-33.697	-54.288	-87.985	-75.775	-23.968	-28.968
603.960	-32.317	-54.301	-86.618	-74.408	-23.968	-28.968
603.970	-32.132	-54.320	-86.452	-74.242	-23.968	-28.968
603.980	-30.095	-54.209	-84.304	-72.094	-23.968	-28.968
603.990	-32.894	-54.270	-87.164	-74.954	-23.968	-28.968
604.000	-32.186	-54.218	-86.404	-74.194	-23.968	-28.968
604.010	-30.746	-54.210	-84.956	-72.746	-23.968	-28.968
604.020	-32.408	-54.257	-86.665	-74.455	-23.968	-28.968
604.030	-32.539	-54.246	-86.785	-74.575	-23.968	-28.968
604.040	-32.371	-54.179	-86.550	-74.340	-23.968	-28.968
604.050	-29.245	-54.249	-83.494	-71.284	-23.968	-28.968
604.060	-31.310	-54.134	-85.444	-73.234	-23.968	-28.968
604.070	-33.347	-53.948	-87.295	-75.085	-23.968	-28.968
604.080	-33.529	-54.065	-87.594	-75.384	-23.968	-28.968
604.090	-30.799	-53.989	-84.788	-72.578	-23.968	-28.968
604.100	-31.132	-53.978	-85.110	-72.900	-23.968	-28.968
604.110	-31.835	-53.888	-85.723	-73.513	-23.968	-28.968
604.120	-30.546	-53.855	-84.401	-72.191	-23.968	-28.968
604.130	-29.954	-53.916	-83.870	-71.660	-23.968	-28.968
604.140	-32.610	-53.833	-86.443	-74.233	-23.968	-28.968
604.150	-31.063	-53.850	-84.913	-72.703	-23.968	-28.968
604.160	-30.843	-53.798	-84.641	-72.431	-23.968	-28.968
604.170	-29.266	-53.832	-83.098	-70.888	-23.968	-28.968
604.180	-32.282	-53.793	-86.075	-73.865	-23.968	-28.968
604.190	-33.321	-53.876	-87.197	-74.987	-23.968	-28.968
604.200	-32.116	-53.788	-85.904	-73.694	-23.968	-28.968
604.210	-32.460	-53.612	-86.072	-73.862	-23.968	-28.968

604.220	-29.920	-53.609	-83.529	-71.319	-23.968	-28.968
604.230	-31.740	-53.706	-85.446	-73.236	-23.968	-28.968
604.240	-32.670	-53.680	-86.350	-74.140	-23.968	-28.968
604.250	-30.306	-53.614	-83.920	-71.710	-23.968	-28.968
604.260	-31.716	-53.417	-85.133	-72.923	-23.968	-28.968
604.270	-32.277	-53.478	-85.755	-73.545	-23.968	-28.968
604.280	-30.456	-53.593	-84.049	-71.839	-23.968	-28.968
604.290	-32.502	-53.500	-86.002	-73.792	-23.968	-28.968
604.300	-31.579	-53.652	-85.231	-73.021	-23.968	-28.968
604.310	-29.808	-53.436	-83.244	-71.034	-23.968	-28.968
604.320	-30.682	-53.451	-84.133	-71.923	-23.968	-28.968
604.330	-31.779	-53.272	-85.051	-72.841	-23.968	-28.968
604.340	-29.854	-53.419	-83.273	-71.063	-23.968	-28.968
604.350	-32.791	-53.273	-86.064	-73.854	-23.968	-28.968
604.360	-31.199	-53.190	-84.389	-72.179	-23.968	-28.968
604.370	-32.503	-53.267	-85.770	-73.560	-23.968	-28.968
604.380	-31.659	-53.379	-85.038	-72.828	-23.968	-28.968
604.390	-30.479	-53.193	-83.672	-71.462	-23.968	-28.968
604.400	-33.104	-53.228	-86.332	-74.122	-23.968	-28.968
604.410	-32.034	-53.124	-85.158	-72.948	-23.968	-28.968
604.420	-32.024	-53.121	-85.145	-72.935	-23.968	-28.968
604.430	-30.975	-53.033	-84.008	-71.798	-23.968	-28.968
604.440	-31.389	-53.089	-84.478	-72.268	-23.968	-28.968
604.450	-31.280	-53.046	-84.326	-72.116	-23.968	-28.968
604.460	-30.405	-53.026	-83.431	-71.221	-23.968	-28.968
604.470	-32.350	-52.948	-85.298	-73.088	-23.968	-28.968
604.480	-31.632	-52.918	-84.550	-72.340	-23.968	-28.968
604.490	-31.444	-52.936	-84.380	-72.170	-23.968	-28.968
604.500	-30.688	-52.850	-83.538	-71.328	-23.968	-28.968
604.510	-31.175	-52.858	-84.033	-71.823	-23.968	-28.968
604.520	-29.980	-52.932	-82.912	-70.702	-23.968	-28.968
604.530	-30.040	-52.860	-82.900	-70.690	-23.968	-28.968
604.540	-30.105	-52.910	-83.015	-70.805	-23.968	-28.968
604.550	-31.503	-52.849	-84.352	-72.142	-23.968	-28.968
604.560	-29.687	-52.747	-82.434	-70.224	-23.968	-28.968
604.570	-32.012	-52.782	-84.794	-72.584	-23.968	-28.968
604.580	-30.424	-52.657	-83.081	-70.871	-23.968	-28.968
604.590	-30.115	-52.598	-82.713	-70.503	-23.968	-28.968
604.600	-31.638	-52.722	-84.360	-72.150	-23.968	-28.968
604.610	-30.486	-52.712	-83.198	-70.988	-23.968	-28.968
604.620	-32.065	-52.576	-84.641	-72.431	-23.968	-28.968
604.630	-30.228	-52.597	-82.825	-70.615	-23.968	-28.968
604.640	-29.946	-52.531	-82.477	-70.267	-23.968	-28.968
604.650	-31.260	-52.461	-83.721	-71.511	-23.968	-28.968
604.660	-30.482	-52.445	-82.927	-70.717	-23.968	-28.968
604.670	-29.695	-52.366	-82.061	-69.851	-23.968	-28.968

604.680	-31.506	-52.473	-83.979	-71.769	-23.968	-28.968
604.690	-32.547	-52.479	-85.026	-72.816	-23.968	-28.968
604.700	-35.236	-52.382	-87.618	-75.408	-23.968	-28.968
604.710	-29.963	-52.272	-82.235	-70.025	-23.968	-28.968
604.720	-31.761	-52.384	-84.145	-71.935	-23.968	-28.968
604.730	-29.981	-52.227	-82.208	-69.998	-23.968	-28.968
604.740	-30.433	-52.265	-82.698	-70.488	-23.968	-28.968
604.750	-30.911	-52.247	-83.158	-70.948	-23.968	-28.968
604.760	-29.273	-52.217	-81.490	-69.280	-23.968	-28.968
604.770	-29.134	-52.238	-81.372	-69.162	-23.968	-28.968
604.780	-32.255	-52.163	-84.418	-72.208	-23.968	-28.968
604.790	-30.122	-52.173	-82.295	-70.085	-23.968	-28.968
604.800	-30.084	-52.041	-82.125	-69.915	-23.968	-28.968
604.810	-29.858	-52.042	-81.900	-69.690	-23.968	-28.968
604.820	-29.441	-52.024	-81.465	-69.255	-23.968	-28.968
604.830	-29.609	-52.079	-81.688	-69.478	-23.968	-28.968
604.840	-29.882	-52.066	-81.948	-69.738	-23.968	-28.968
604.850	-28.796	-51.943	-80.739	-68.529	-23.968	-28.968
604.860	-30.217	-51.901	-82.118	-69.908	-23.968	-28.968
604.870	-29.210	-51.952	-81.162	-68.952	-23.968	-28.968
604.880	-30.117	-51.956	-82.073	-69.863	-23.968	-28.968
604.890	-31.629	-51.870	-83.499	-71.289	-23.968	-28.968
604.900	-28.216	-51.790	-80.006	-67.796	-23.968	-28.968
604.910	-27.660	-51.787	-79.447	-67.237	-23.968	-28.968
604.920	-29.930	-51.768	-81.698	-69.488	-23.968	-28.968
604.930	-27.351	-51.740	-79.091	-66.881	-23.968	-28.968
604.940	-26.984	-51.707	-78.691	-66.481	-23.968	-28.968
604.950	-32.534	-51.665	-84.199	-71.989	-23.968	-28.968
604.960	-28.144	-51.665	-79.809	-67.599	-23.968	-28.968
604.970	-27.128	-51.613	-78.741	-66.531	-23.968	-28.968
604.980	-30.685	-51.652	-82.337	-70.127	-23.968	-28.968
604.990	-31.634	-51.619	-83.253	-71.043	-23.968	-28.968
605.000	-32.121	-51.585	-83.706	-71.496	-23.968	-28.968
605.010	-28.184	-51.479	-79.663	-67.453	-23.968	-28.968
605.020	-34.949	-51.444	-86.393	-74.183	-23.968	-28.968
605.030	-31.821	-51.457	-83.278	-71.068	-23.968	-28.968
605.040	-28.621	-51.327	-79.948	-67.738	-23.968	-28.968
605.050	-25.135	-51.404	-76.539	-64.329	-23.968	-28.968
605.060	-29.272	-51.395	-80.667	-68.457	-23.968	-28.968
605.070	-29.670	-51.377	-81.047	-68.837	-23.968	-28.968
605.080	-28.886	-51.286	-80.172	-67.962	-23.968	-28.968
605.090	-29.325	-51.343	-80.668	-68.458	-23.968	-28.968
605.100	-29.742	-51.263	-81.005	-68.795	-23.968	-28.968
605.110	-29.068	-51.226	-80.294	-68.084	-23.968	-28.968
605.120	-29.438	-51.233	-80.671	-68.461	-23.968	-28.968
605.130	-31.315	-51.133	-82.448	-70.238	-23.968	-28.968

605.140	-28.478	-51.168	-79.646	-67.436	-23.968	-28.968
605.150	-29.573	-51.185	-80.758	-68.548	-23.968	-28.968
605.160	-31.008	-51.120	-82.128	-69.918	-23.968	-28.968
605.170	-30.010	-51.010	-81.020	-68.810	-23.968	-28.968
605.180	-29.312	-51.043	-80.355	-68.145	-23.968	-28.968
605.190	-30.660	-51.013	-81.673	-69.463	-23.968	-28.968
605.200	-30.156	-51.026	-81.182	-68.972	-23.968	-28.968
605.210	-28.559	-50.890	-79.449	-67.239	-23.968	-28.968
605.220	-28.555	-50.885	-79.440	-67.230	-23.968	-28.968
605.230	-28.598	-50.821	-79.419	-67.209	-23.968	-28.968
605.240	-28.483	-50.790	-79.273	-67.063	-23.968	-28.968
605.250	-30.305	-50.843	-81.148	-68.938	-23.968	-28.968
605.260	-29.453	-50.870	-80.323	-68.113	-23.968	-28.968
605.270	-31.146	-50.745	-81.891	-69.681	-23.968	-28.968
605.280	-27.087	-50.666	-77.753	-65.543	-23.968	-28.968
605.290	-28.540	-50.762	-79.302	-67.092	-23.968	-28.968
605.300	-28.424	-50.626	-79.050	-66.840	-23.968	-28.968
605.310	-29.866	-50.677	-80.543	-68.333	-23.968	-28.968
605.320	-28.991	-50.644	-79.635	-67.425	-23.968	-28.968
605.330	-30.182	-50.570	-80.752	-68.542	-23.968	-28.968
605.340	-29.143	-50.521	-79.664	-67.454	-23.968	-28.968
605.350	-27.520	-50.499	-78.019	-65.809	-23.968	-28.968
605.360	-30.278	-50.539	-80.817	-68.607	-23.968	-28.968
605.370	-28.670	-50.413	-79.083	-66.873	-23.968	-28.968
605.380	-27.742	-50.417	-78.159	-65.949	-23.968	-28.968
605.390	-28.374	-50.530	-78.904	-66.694	-23.968	-28.968
605.400	-29.915	-50.367	-80.282	-68.072	-23.968	-28.968
605.410	-29.323	-50.401	-79.724	-67.514	-23.968	-28.968
605.420	-29.283	-50.302	-79.585	-67.375	-23.968	-28.968
605.430	-29.366	-50.267	-79.633	-67.423	-23.968	-28.968
605.440	-31.375	-50.270	-81.645	-69.435	-23.968	-28.968
605.450	-30.764	-50.279	-81.043	-68.833	-23.968	-28.968
605.460	-28.483	-50.176	-78.659	-66.449	-23.968	-28.968
605.470	-28.554	-50.202	-78.756	-66.546	-23.968	-28.968
605.480	-27.801	-50.195	-77.996	-65.786	-23.968	-28.968
605.490	-28.344	-50.169	-78.513	-66.303	-23.968	-28.968
605.500	-29.535	-50.027	-79.562	-67.352	-23.968	-28.968
605.510	-28.365	-50.138	-78.503	-66.293	-23.968	-28.968
605.520	-28.699	-49.997	-78.696	-66.486	-23.968	-28.968
605.530	-28.439	-50.000	-78.439	-66.229	-23.968	-28.968
605.540	-28.163	-49.989	-78.152	-65.942	-23.968	-28.968
605.550	-30.830	-49.974	-80.804	-68.594	-23.968	-28.968
605.560	-30.467	-49.877	-80.344	-68.134	-23.968	-28.968
605.570	-27.807	-49.863	-77.670	-65.460	-23.968	-28.968
605.580	-27.218	-49.891	-77.109	-64.899	-23.968	-28.968
605.590	-28.583	-49.786	-78.369	-66.159	-23.968	-28.968

605.600	-27.298	-49.810	-77.108	-64.898	-23.968	-28.968
605.610	-27.914	-49.791	-77.705	-65.495	-23.968	-28.968
605.620	-27.551	-49.772	-77.323	-65.113	-23.968	-28.968
605.630	-25.501	-49.692	-75.193	-62.983	-23.968	-28.968
605.640	-27.479	-49.670	-77.149	-64.939	-23.968	-28.968
605.650	-27.319	-49.641	-76.960	-64.750	-23.968	-28.968
605.660	-25.674	-49.640	-75.314	-63.104	-23.968	-28.968
605.670	-28.064	-49.544	-77.608	-65.398	-23.968	-28.968
605.680	-30.469	-49.530	-79.999	-67.789	-23.968	-28.968
605.690	-27.810	-49.556	-77.366	-65.156	-23.968	-28.968
605.700	-27.965	-49.549	-77.514	-65.304	-23.968	-28.968
605.710	-28.819	-49.498	-78.317	-66.107	-23.968	-28.968
605.720	-27.366	-49.447	-76.813	-64.603	-23.968	-28.968
605.730	-26.863	-49.424	-76.287	-64.077	-23.968	-28.968
605.740	-27.386	-49.409	-76.795	-64.585	-23.968	-28.968
605.750	-27.876	-49.332	-77.208	-64.998	-23.968	-28.968
605.760	-30.063	-49.375	-79.438	-67.228	-23.968	-28.968
605.770	-27.912	-49.317	-77.229	-65.019	-23.968	-28.968
605.780	-27.690	-49.224	-76.914	-64.704	-23.968	-28.968
605.790	-31.000	-49.264	-80.264	-68.054	-23.968	-28.968
605.800	-27.104	-49.177	-76.281	-64.071	-23.968	-28.968
605.810	-28.839	-49.167	-78.006	-65.796	-23.968	-28.968
605.820	-26.921	-49.076	-75.997	-63.787	-23.968	-28.968
605.830	-28.806	-49.104	-77.910	-65.700	-23.968	-28.968
605.840	-28.269	-49.087	-77.356	-65.146	-23.968	-28.968
605.850	-27.818	-49.063	-76.881	-64.671	-23.968	-28.968
605.860	-26.958	-49.008	-75.966	-63.756	-23.968	-28.968
605.870	-27.740	-48.970	-76.710	-64.500	-23.968	-28.968
605.880	-28.883	-48.994	-77.877	-65.667	-23.968	-28.968
605.890	-28.667	-48.906	-77.573	-65.363	-23.968	-28.968
605.900	-28.833	-48.936	-77.769	-65.559	-23.968	-28.968
605.910	-29.056	-48.852	-77.908	-65.698	-23.968	-28.968
605.920	-26.806	-48.816	-75.622	-63.412	-23.968	-28.968
605.930	-26.212	-48.884	-75.096	-62.886	-23.968	-28.968
605.940	-29.013	-48.714	-77.727	-65.517	-23.968	-28.968
605.950	-28.114	-48.766	-76.880	-64.670	-23.968	-28.968
605.960	-27.552	-48.650	-76.202	-63.992	-23.968	-28.968
605.970	-28.981	-48.643	-77.624	-65.414	-23.968	-28.968
605.980	-28.904	-48.603	-77.507	-65.297	-23.968	-28.968
605.990	-27.955	-48.664	-76.619	-64.409	-23.968	-28.968
606.000	-26.973	-48.599	-75.572	-63.362	-23.968	-28.968
606.010	-26.153	-48.538	-74.691	-62.481	-23.968	-28.968
606.020	-25.789	-48.537	-74.326	-62.116	-23.968	-28.968
606.030	-25.138	-48.488	-73.626	-61.416	-23.968	-28.968
606.040	-27.376	-48.456	-75.832	-63.622	-23.968	-28.968
606.050	-29.054	-48.417	-77.471	-65.261	-23.968	-28.968

606.060	-27.995	-48.376	-76.371	-64.161	-23.968	-28.968
606.070	-27.627	-48.378	-76.005	-63.795	-23.968	-28.968
606.080	-28.916	-48.344	-77.260	-65.050	-23.968	-28.968
606.090	-26.906	-48.238	-75.144	-62.934	-23.968	-28.968
606.100	-25.875	-48.248	-74.123	-61.913	-23.968	-28.968
606.110	-25.811	-48.207	-74.018	-61.808	-23.968	-28.968
606.120	-26.574	-48.220	-74.794	-62.584	-23.968	-28.968
606.130	-26.755	-48.229	-74.984	-62.774	-23.968	-28.968
606.140	-25.963	-48.176	-74.139	-61.929	-23.968	-28.968
606.150	-26.578	-48.146	-74.724	-62.514	-23.968	-28.968
606.160	-26.877	-48.104	-74.981	-62.771	-23.968	-28.968
606.170	-29.099	-48.057	-77.156	-64.946	-23.968	-28.968
606.180	-26.656	-48.041	-74.697	-62.487	-23.968	-28.968
606.190	-27.715	-47.957	-75.672	-63.462	-23.968	-28.968
606.200	-27.316	-47.924	-75.240	-63.030	-23.968	-28.968
606.210	-30.084	-47.912	-77.996	-65.786	-23.968	-28.968
606.220	-26.249	-47.952	-74.201	-61.991	-23.968	-28.968
606.230	-25.962	-47.858	-73.820	-61.610	-23.968	-28.968
606.240	-27.607	-47.801	-75.408	-63.198	-23.968	-28.968
606.250	-25.703	-47.839	-73.542	-61.332	-23.968	-28.968
606.260	-27.311	-47.762	-75.073	-62.863	-23.968	-28.968
606.270	-28.332	-47.652	-75.984	-63.774	-23.968	-28.968
606.280	-25.938	-47.696	-73.634	-61.424	-23.968	-28.968
606.290	-26.730	-47.679	-74.409	-62.199	-23.968	-28.968
606.300	-28.452	-47.634	-76.086	-63.876	-23.968	-28.968
606.310	-25.800	-47.622	-73.422	-61.212	-23.968	-28.968
606.320	-25.700	-47.594	-73.294	-61.084	-23.968	-28.968
606.330	-25.750	-47.564	-73.314	-61.104	-23.968	-28.968
606.340	-25.570	-47.434	-73.004	-60.794	-23.968	-28.968
606.350	-26.219	-47.517	-73.736	-61.526	-23.968	-28.968
606.360	-27.395	-47.448	-74.843	-62.633	-23.968	-28.968
606.370	-26.117	-47.431	-73.548	-61.338	-23.968	-28.968
606.380	-26.292	-47.424	-73.716	-61.506	-23.968	-28.968
606.390	-27.054	-47.329	-74.383	-62.173	-23.968	-28.968
606.400	-27.344	-47.295	-74.639	-62.429	-23.968	-28.968
606.410	-26.005	-47.271	-73.276	-61.066	-23.968	-28.968
606.420	-26.328	-47.218	-73.546	-61.336	-23.968	-28.968
606.430	-26.292	-47.287	-73.579	-61.369	-23.968	-28.968
606.440	-25.251	-47.222	-72.473	-60.263	-23.968	-28.968
606.450	-27.592	-47.134	-74.726	-62.516	-23.968	-28.968
606.460	-25.981	-47.120	-73.101	-60.891	-23.968	-28.968
606.470	-26.728	-47.174	-73.902	-61.692	-23.968	-28.968
606.480	-24.525	-47.072	-71.597	-59.387	-23.968	-28.968
606.490	-26.952	-47.041	-73.993	-61.783	-23.968	-28.968
606.500	-26.324	-47.000	-73.324	-61.114	-23.968	-28.968
606.510	-24.311	-46.977	-71.288	-59.078	-23.968	-28.968

606.520	-27.275	-46.925	-74.200	-61.990	-23.968	-28.968
606.530	-28.221	-46.908	-75.129	-62.919	-23.968	-28.968
606.540	-25.582	-46.888	-72.470	-60.260	-23.968	-28.968
606.550	-28.793	-46.866	-75.659	-63.449	-23.968	-28.968
606.560	-25.177	-46.756	-71.933	-59.723	-23.968	-28.968
606.570	-26.734	-46.714	-73.448	-61.238	-23.968	-28.968
606.580	-26.914	-46.674	-73.588	-61.378	-23.968	-28.968
606.590	-26.035	-46.692	-72.727	-60.517	-23.968	-28.968
606.600	-25.196	-46.650	-71.846	-59.636	-23.968	-28.968
606.610	-26.815	-46.676	-73.491	-61.281	-23.968	-28.968
606.620	-26.492	-46.626	-73.118	-60.908	-23.968	-28.968
606.630	-26.683	-46.547	-73.230	-61.020	-23.968	-28.968
606.640	-25.765	-46.575	-72.340	-60.130	-23.968	-28.968
606.650	-26.617	-46.496	-73.113	-60.903	-23.968	-28.968
606.660	-26.356	-46.485	-72.841	-60.631	-23.968	-28.968
606.670	-24.300	-46.417	-70.717	-58.507	-23.968	-28.968
606.680	-27.018	-46.404	-73.422	-61.212	-23.968	-28.968
606.690	-26.897	-46.394	-73.291	-61.081	-23.968	-28.968
606.700	-25.547	-46.370	-71.917	-59.707	-23.968	-28.968
606.710	-25.815	-46.273	-72.088	-59.878	-23.968	-28.968
606.720	-25.162	-46.310	-71.472	-59.262	-23.968	-28.968
606.730	-24.474	-46.252	-70.726	-58.516	-23.968	-28.968
606.740	-26.283	-46.234	-72.517	-60.307	-23.968	-28.968
606.750	-26.551	-46.191	-72.742	-60.532	-23.968	-28.968
606.760	-26.667	-46.146	-72.813	-60.603	-23.968	-28.968
606.770	-26.144	-46.070	-72.214	-60.004	-23.968	-28.968
606.780	-27.473	-46.028	-73.501	-61.291	-23.968	-28.968
606.790	-27.046	-46.026	-73.072	-60.862	-23.968	-28.968
606.800	-25.085	-46.002	-71.087	-58.877	-23.968	-28.968
606.810	-27.113	-46.003	-73.116	-60.906	-23.968	-28.968
606.820	-25.696	-45.887	-71.583	-59.373	-23.968	-28.968
606.830	-26.002	-45.879	-71.881	-59.671	-23.968	-28.968
606.840	-25.600	-45.862	-71.462	-59.252	-23.968	-28.968
606.850	-25.876	-45.871	-71.747	-59.537	-23.968	-28.968
606.860	-26.769	-45.783	-72.552	-60.342	-23.968	-28.968
606.870	-25.544	-45.766	-71.310	-59.100	-23.968	-28.968
606.880	-25.875	-45.735	-71.610	-59.400	-23.968	-28.968
606.890	-26.681	-45.646	-72.327	-60.117	-23.968	-28.968
606.900	-24.696	-45.601	-70.297	-58.087	-23.968	-28.968
606.910	-25.629	-45.588	-71.217	-59.007	-23.968	-28.968
606.920	-29.244	-45.562	-74.806	-62.596	-23.968	-28.968
606.930	-27.919	-45.578	-73.497	-61.287	-23.968	-28.968
606.940	-28.510	-45.496	-74.006	-61.796	-23.968	-28.968
606.950	-25.186	-45.506	-70.692	-58.482	-23.968	-28.968
606.960	-27.325	-45.459	-72.784	-60.574	-23.968	-28.968
606.970	-28.475	-45.490	-73.965	-61.755	-23.968	-28.968

606.980	-26.898	-45.357	-72.255	-60.045	-23.968	-28.968
606.990	-27.429	-45.349	-72.778	-60.568	-23.968	-28.968
607.000	-27.600	-45.344	-72.944	-60.734	-23.968	-28.968
607.010	-28.601	-45.225	-73.826	-61.616	-23.968	-28.968
607.020	-29.719	-45.236	-74.955	-62.745	-23.968	-28.968
607.030	-26.400	-45.245	-71.645	-59.435	-23.968	-28.968
607.040	-26.239	-45.186	-71.425	-59.215	-23.968	-28.968
607.050	-28.476	-45.139	-73.615	-61.405	-23.968	-28.968
607.060	-27.093	-45.110	-72.203	-59.993	-23.968	-28.968
607.070	-28.828	-45.084	-73.912	-61.702	-23.968	-28.968
607.080	-26.821	-45.042	-71.863	-59.653	-23.968	-28.968
607.090	-25.055	-45.027	-70.082	-57.872	-23.968	-28.968
607.100	-27.414	-44.947	-72.361	-60.151	-23.968	-28.968
607.110	-26.782	-44.932	-71.714	-59.504	-23.968	-28.968
607.120	-26.494	-44.887	-71.381	-59.171	-23.968	-28.968
607.130	-26.103	-44.859	-70.962	-58.752	-23.968	-28.968
607.140	-27.760	-44.834	-72.594	-60.384	-23.968	-28.968
607.150	-25.438	-44.769	-70.207	-57.997	-23.968	-28.968
607.160	-25.429	-44.760	-70.189	-57.979	-23.968	-28.968
607.170	-24.748	-44.692	-69.440	-57.230	-23.968	-28.968
607.180	-27.079	-44.697	-71.776	-59.566	-23.968	-28.968
607.190	-25.081	-44.681	-69.762	-57.552	-23.968	-28.968
607.200	-25.467	-44.617	-70.084	-57.874	-23.968	-28.968
607.210	-25.054	-44.595	-69.649	-57.439	-23.968	-28.968
607.220	-26.343	-44.523	-70.866	-58.656	-23.968	-28.968
607.230	-26.644	-44.511	-71.155	-58.945	-23.968	-28.968
607.240	-23.289	-44.492	-67.781	-55.571	-23.968	-28.968
607.250	-24.519	-44.447	-68.966	-56.756	-23.968	-28.968
607.260	-25.096	-44.381	-69.477	-57.267	-23.968	-28.968
607.270	-27.249	-44.392	-71.641	-59.431	-23.968	-28.968
607.280	-25.629	-44.291	-69.920	-57.710	-23.968	-28.968
607.290	-25.317	-44.300	-69.617	-57.407	-23.968	-28.968
607.300	-24.402	-44.289	-68.691	-56.481	-23.968	-28.968
607.310	-26.153	-44.238	-70.391	-58.181	-23.968	-28.968
607.320	-28.676	-44.225	-72.901	-60.691	-23.968	-28.968
607.330	-26.181	-44.154	-70.335	-58.125	-23.968	-28.968
607.340	-25.248	-44.133	-69.381	-57.171	-23.968	-28.968
607.350	-25.976	-44.120	-70.096	-57.886	-23.968	-28.968
607.360	-25.261	-44.068	-69.329	-57.119	-23.968	-28.968
607.370	-25.378	-44.001	-69.379	-57.169	-23.968	-28.968
607.380	-24.073	-43.965	-68.038	-55.828	-23.968	-28.968
607.390	-24.781	-44.003	-68.784	-56.574	-23.968	-28.968
607.400	-23.973	-43.919	-67.892	-55.682	-23.968	-28.968
607.410	-24.582	-43.862	-68.444	-56.234	-23.968	-28.968
607.420	-25.181	-43.796	-68.977	-56.767	-23.968	-28.968
607.430	-24.346	-43.761	-68.107	-55.897	-23.968	-28.968

607.440	-24.920	-43.789	-68.709	-56.499	-23.968	-28.968
607.450	-25.907	-43.756	-69.663	-57.453	-23.968	-28.968
607.460	-25.683	-43.717	-69.400	-57.190	-23.968	-28.968
607.470	-24.186	-43.636	-67.822	-55.612	-23.968	-28.968
607.480	-25.173	-43.616	-68.789	-56.579	-23.968	-28.968
607.490	-25.311	-43.575	-68.886	-56.676	-23.968	-28.968
607.500	-26.594	-43.532	-70.126	-57.916	-23.968	-28.968
607.510	-27.039	-43.512	-70.551	-58.341	-23.968	-28.968
607.520	-24.947	-43.457	-68.404	-56.194	-23.968	-28.968
607.530	-24.560	-43.422	-67.982	-55.772	-23.968	-28.968
607.540	-25.534	-43.383	-68.917	-56.707	-23.968	-28.968
607.550	-23.954	-43.371	-67.325	-55.115	-23.968	-28.968
607.560	-26.087	-43.354	-69.441	-57.231	-23.968	-28.968
607.570	-23.587	-43.270	-66.857	-54.647	-23.968	-28.968
607.580	-26.069	-43.245	-69.314	-57.104	-23.968	-28.968
607.590	-23.000	-43.228	-66.228	-54.018	-23.968	-28.968
607.600	-24.368	-43.152	-67.520	-55.310	-23.968	-28.968
607.610	-25.446	-43.112	-68.558	-56.348	-23.968	-28.968
607.620	-24.467	-43.111	-67.578	-55.368	-23.968	-28.968
607.630	-26.336	-43.119	-69.455	-57.245	-23.968	-28.968
607.640	-24.641	-43.011	-67.652	-55.442	-23.968	-28.968
607.650	-24.519	-42.974	-67.493	-55.283	-23.968	-28.968
607.660	-23.401	-42.981	-66.382	-54.172	-23.968	-28.968
607.670	-22.920	-42.885	-65.805	-53.595	-23.968	-28.968
607.680	-23.958	-42.879	-66.837	-54.627	-23.968	-28.968
607.690	-24.331	-42.851	-67.182	-54.972	-23.968	-28.968
607.700	-24.798	-42.788	-67.586	-55.376	-23.968	-28.968
607.710	-24.072	-42.748	-66.820	-54.610	-23.968	-28.968
607.720	-23.517	-42.726	-66.243	-54.033	-23.968	-28.968
607.730	-23.204	-42.689	-65.893	-53.683	-23.968	-28.968
607.740	-26.536	-42.693	-69.229	-57.019	-23.968	-28.968
607.750	-25.590	-42.640	-68.230	-56.020	-23.968	-28.968
607.760	-25.295	-42.565	-67.860	-55.650	-23.968	-28.968
607.770	-24.871	-42.528	-67.399	-55.189	-23.968	-28.968
607.780	-23.988	-42.483	-66.471	-54.261	-23.968	-28.968
607.790	-26.725	-42.497	-69.222	-57.012	-23.968	-28.968
607.800	-26.042	-42.401	-68.443	-56.233	-23.968	-28.968
607.810	-25.765	-42.409	-68.174	-55.964	-23.968	-28.968
607.820	-23.972	-42.356	-66.328	-54.118	-23.968	-28.968
607.830	-25.023	-42.323	-67.346	-55.136	-23.968	-28.968
607.840	-24.698	-42.311	-67.009	-54.799	-23.968	-28.968
607.850	-25.419	-42.259	-67.678	-55.468	-23.968	-28.968
607.860	-25.405	-42.207	-67.612	-55.402	-23.968	-28.968
607.870	-24.923	-42.163	-67.086	-54.876	-23.968	-28.968
607.880	-24.296	-42.144	-66.440	-54.230	-23.968	-28.968
607.890	-22.577	-42.097	-64.674	-52.464	-23.968	-28.968

607.900	-23.299	-42.045	-65.344	-53.134	-23.968	-28.968
607.910	-23.112	-42.013	-65.125	-52.915	-23.968	-28.968
607.920	-23.392	-41.997	-65.389	-53.179	-23.968	-28.968
607.930	-23.053	-41.937	-64.990	-52.780	-23.968	-28.968
607.940	-24.946	-41.929	-66.875	-54.665	-23.968	-28.968
607.950	-25.063	-41.867	-66.930	-54.720	-23.968	-28.968
607.960	-22.502	-41.811	-64.313	-52.103	-23.968	-28.968
607.970	-21.202	-41.782	-62.984	-50.774	-23.968	-28.968
607.980	-21.162	-41.748	-62.910	-50.700	-23.968	-28.968
607.990	-21.672	-41.676	-63.348	-51.138	-23.968	-28.968
608.000	-23.726	-41.657	-65.383	-53.173	-23.968	-28.968
608.010	-23.700	-41.650	-65.350	-53.140	-23.885	-28.968
608.020	-25.737	-41.590	-67.327	-55.117	-23.802	-28.968
608.030	-22.795	-41.543	-64.338	-52.128	-23.719	-28.968
608.040	-25.101	-41.530	-66.631	-54.421	-23.636	-28.968
608.050	-23.458	-41.460	-64.918	-52.708	-23.553	-28.968
608.060	-24.350	-41.443	-65.793	-53.583	-23.471	-28.968
608.070	-25.029	-41.382	-66.411	-54.201	-23.388	-28.968
608.080	-23.068	-41.396	-64.464	-52.254	-23.306	-28.968
608.090	-25.160	-41.325	-66.485	-54.275	-23.224	-28.968
608.100	-23.171	-41.280	-64.451	-52.241	-23.142	-28.968
608.110	-25.065	-41.232	-66.297	-54.087	-23.060	-28.968
608.120	-25.111	-41.171	-66.282	-54.072	-22.978	-28.968
608.130	-25.179	-41.151	-66.330	-54.120	-22.897	-28.968
608.140	-23.816	-41.143	-64.959	-52.749	-22.815	-28.968
608.150	-22.210	-41.108	-63.318	-51.108	-22.734	-28.968
608.160	-24.146	-41.070	-65.216	-53.006	-22.653	-28.968
608.170	-23.813	-41.043	-64.856	-52.646	-22.572	-28.968
608.180	-22.795	-40.959	-63.754	-51.544	-22.491	-28.968
608.190	-24.740	-40.936	-65.676	-53.466	-22.410	-28.968
608.200	-22.838	-40.883	-63.721	-51.511	-22.329	-28.968
608.210	-24.499	-40.860	-65.359	-53.149	-22.249	-28.968
608.220	-24.438	-40.832	-65.270	-53.060	-22.169	-28.968
608.230	-21.147	-40.754	-61.901	-49.691	-22.088	-28.968
608.240	-25.283	-40.702	-65.985	-53.775	-22.008	-28.968
608.250	-21.028	-40.681	-61.709	-49.499	-21.928	-28.968
608.260	-24.980	-40.660	-65.640	-53.430	-21.849	-28.968
608.270	-21.565	-40.603	-62.168	-49.958	-21.769	-28.968
608.280	-25.386	-40.570	-65.956	-53.746	-21.689	-28.968
608.290	-22.648	-40.538	-63.186	-50.976	-21.610	-28.968
608.300	-24.471	-40.502	-64.973	-52.763	-21.531	-28.968
608.310	-22.159	-40.446	-62.605	-50.395	-21.452	-28.968
608.320	-24.372	-40.419	-64.791	-52.581	-21.373	-28.968
608.330	-23.691	-40.373	-64.064	-51.854	-21.294	-28.968
608.340	-22.437	-40.320	-62.757	-50.547	-21.215	-28.968
608.350	-22.887	-40.300	-63.187	-50.977	-21.137	-28.968

608.360	-24.635	-40.249	-64.884	-52.674	-21.058	-28.968
608.370	-22.334	-40.184	-62.518	-50.308	-20.980	-28.968
608.380	-24.075	-40.176	-64.251	-52.041	-20.902	-28.968
608.390	-24.925	-40.115	-65.040	-52.830	-20.824	-28.968
608.400	-24.186	-40.072	-64.258	-52.048	-20.746	-28.968
608.410	-23.398	-40.038	-63.436	-51.226	-20.668	-28.968
608.420	-23.669	-39.985	-63.654	-51.444	-20.591	-28.968
608.430	-24.757	-39.968	-64.725	-52.515	-20.513	-28.968
608.440	-24.267	-39.945	-64.212	-52.002	-20.436	-28.968
608.450	-22.232	-39.898	-62.130	-49.920	-20.359	-28.968
608.460	-23.470	-39.850	-63.320	-51.110	-20.282	-28.968
608.470	-22.650	-39.793	-62.443	-50.233	-20.205	-28.968
608.480	-22.867	-39.758	-62.625	-50.415	-20.128	-28.968
608.490	-22.762	-39.731	-62.493	-50.283	-20.052	-28.968
608.500	-23.517	-39.684	-63.201	-50.991	-19.975	-28.968
608.510	-25.042	-39.604	-64.646	-52.436	-19.899	-28.968
608.520	-23.480	-39.598	-63.078	-50.868	-19.823	-28.968
608.530	-22.955	-39.561	-62.516	-50.306	-19.747	-28.968
608.540	-20.979	-39.518	-60.497	-48.287	-19.671	-28.968
608.550	-22.138	-39.497	-61.635	-49.425	-19.595	-28.968
608.560	-25.161	-39.427	-64.588	-52.378	-19.519	-28.968
608.570	-24.411	-39.390	-63.801	-51.591	-19.444	-28.968
608.580	-23.357	-39.364	-62.721	-50.511	-19.369	-28.968
608.590	-22.336	-39.322	-61.658	-49.448	-19.293	-28.968
608.600	-23.133	-39.287	-62.420	-50.210	-19.218	-28.968
608.610	-24.295	-39.235	-63.530	-51.320	-19.143	-28.968
608.620	-21.857	-39.213	-61.070	-48.860	-19.069	-28.968
608.630	-22.518	-39.160	-61.678	-49.468	-18.994	-28.968
608.640	-21.927	-39.093	-61.020	-48.810	-18.919	-28.968
608.650	-24.839	-39.067	-63.906	-51.696	-18.845	-28.968
608.660	-22.092	-39.037	-61.129	-48.919	-18.771	-28.968
608.670	-22.287	-38.975	-61.262	-49.052	-18.697	-28.968
608.680	-22.615	-38.938	-61.553	-49.343	-18.623	-28.968
608.690	-22.416	-38.908	-61.324	-49.114	-18.549	-28.968
608.700	-23.356	-38.866	-62.222	-50.012	-18.475	-28.968
608.710	-21.830	-38.804	-60.634	-48.424	-18.402	-28.968
608.720	-23.093	-38.773	-61.866	-49.656	-18.328	-28.968
608.730	-21.363	-38.759	-60.122	-47.912	-18.255	-28.968
608.740	-21.152	-38.696	-59.848	-47.638	-18.182	-28.968
608.750	-22.588	-38.635	-61.223	-49.013	-18.109	-28.968
608.760	-22.114	-38.597	-60.711	-48.501	-18.036	-28.968
608.770	-23.620	-38.561	-62.181	-49.971	-17.963	-28.968
608.780	-21.957	-38.501	-60.458	-48.248	-17.891	-28.968
608.790	-23.653	-38.466	-62.119	-49.909	-17.818	-28.968
608.800	-21.666	-38.433	-60.099	-47.889	-17.746	-28.968
608.810	-22.957	-38.404	-61.361	-49.151	-17.674	-28.968

608.820	-23.174	-38.320	-61.494	-49.284	-17.602	-28.968
608.830	-23.468	-38.305	-61.773	-49.563	-17.530	-28.968
608.840	-21.570	-38.253	-59.823	-47.613	-17.458	-28.968
608.850	-24.474	-38.226	-62.700	-50.490	-17.387	-28.968
608.860	-22.413	-38.179	-60.592	-48.382	-17.315	-28.968
608.870	-22.451	-38.141	-60.592	-48.382	-17.244	-28.968
608.880	-22.587	-38.122	-60.709	-48.499	-17.173	-28.968
608.890	-22.213	-38.078	-60.291	-48.081	-17.102	-28.968
608.900	-21.552	-38.007	-59.559	-47.349	-17.031	-28.968
608.910	-21.511	-37.990	-59.501	-47.291	-16.960	-28.968
608.920	-23.003	-37.911	-60.914	-48.704	-16.889	-28.968
608.930	-23.493	-37.895	-61.388	-49.178	-16.819	-28.968
608.940	-20.987	-37.825	-58.812	-46.602	-16.749	-28.968
608.950	-22.486	-37.778	-60.264	-48.054	-16.678	-28.968
608.960	-23.569	-37.740	-61.309	-49.099	-16.608	-28.968
608.970	-21.206	-37.705	-58.911	-46.701	-16.538	-28.968
608.980	-19.640	-37.665	-57.305	-45.095	-16.469	-28.968
608.990	-21.708	-37.616	-59.324	-47.114	-16.399	-28.968
609.000	-19.300	-37.602	-56.902	-44.692	-16.329	-28.968
609.010	-22.943	-37.535	-60.478	-48.268	-16.260	-28.968
609.020	-22.029	-37.489	-59.518	-47.308	-16.191	-28.968
609.030	-19.928	-37.453	-57.381	-45.171	-16.122	-28.968
609.040	-20.559	-37.409	-57.968	-45.758	-16.053	-28.968
609.050	-21.871	-37.369	-59.240	-47.030	-15.984	-28.968
609.060	-21.207	-37.315	-58.522	-46.312	-15.915	-28.968
609.070	-21.556	-37.284	-58.840	-46.630	-15.847	-28.968
609.080	-20.686	-37.243	-57.929	-45.719	-15.778	-28.968
609.090	-20.930	-37.187	-58.117	-45.907	-15.710	-28.968
609.100	-19.774	-37.133	-56.907	-44.697	-15.642	-28.968
609.110	-20.450	-37.100	-57.550	-45.340	-15.574	-28.968
609.120	-21.717	-37.043	-58.760	-46.550	-15.506	-28.968
609.130	-20.757	-37.007	-57.764	-45.554	-15.438	-28.968
609.140	-20.257	-36.951	-57.208	-44.998	-15.371	-28.968
609.150	-21.940	-36.910	-58.850	-46.640	-15.303	-28.968
609.160	-21.441	-36.884	-58.325	-46.115	-15.236	-28.968
609.170	-21.210	-36.834	-58.044	-45.834	-15.169	-28.968
609.180	-20.280	-36.770	-57.050	-44.840	-15.102	-28.968
609.190	-20.093	-36.765	-56.858	-44.648	-15.035	-28.968
609.200	-20.411	-36.693	-57.104	-44.894	-14.968	-28.968
609.210	-20.069	-36.639	-56.708	-44.498	-14.902	-28.968
609.220	-21.237	-36.607	-57.844	-45.634	-14.835	-28.968
609.230	-21.321	-36.554	-57.875	-45.665	-14.769	-28.968
609.240	-22.211	-36.522	-58.733	-46.523	-14.703	-28.968
609.250	-21.153	-36.466	-57.619	-45.409	-14.637	-28.968
609.260	-20.436	-36.425	-56.861	-44.651	-14.571	-28.968
609.270	-20.380	-36.375	-56.755	-44.545	-14.505	-28.968

609.280	-19.718	-36.335	-56.053	-43.843	-14.439	-28.968
609.290	-19.684	-36.286	-55.970	-43.760	-14.374	-28.968
609.300	-21.209	-36.237	-57.446	-45.236	-14.309	-28.968
609.310	-18.693	-36.189	-54.882	-42.672	-14.243	-28.968
609.320	-18.978	-36.137	-55.115	-42.905	-14.178	-28.968
609.330	-21.996	-36.097	-58.093	-45.883	-14.113	-28.968
609.340	-22.353	-36.065	-58.418	-46.208	-14.049	-28.968
609.350	-22.810	-36.028	-58.838	-46.628	-13.984	-28.968
609.360	-21.563	-35.962	-57.525	-45.315	-13.919	-28.968
609.370	-20.110	-35.918	-56.028	-43.818	-13.855	-28.968
609.380	-19.701	-35.872	-55.573	-43.363	-13.791	-28.968
609.390	-20.089	-35.835	-55.924	-43.714	-13.727	-28.968
609.400	-20.491	-35.795	-56.286	-44.076	-13.663	-28.968
609.410	-20.516	-35.724	-56.240	-44.030	-13.599	-28.968
609.420	-20.061	-35.706	-55.767	-43.557	-13.535	-28.968
609.430	-18.596	-35.661	-54.257	-42.047	-13.472	-28.968
609.440	-17.733	-35.606	-53.339	-41.129	-13.408	-28.968
609.450	-19.336	-35.571	-54.907	-42.697	-13.345	-28.968
609.460	-18.538	-35.495	-54.033	-41.823	-13.282	-28.968
609.470	-18.568	-35.463	-54.031	-41.821	-13.219	-28.968
609.480	-20.240	-35.412	-55.652	-43.442	-13.156	-28.968
609.490	-18.978	-35.366	-54.344	-42.134	-13.093	-28.968
609.500	-19.727	-35.341	-55.068	-42.858	-13.031	-28.968
609.510	-20.868	-35.286	-56.154	-43.944	-12.968	-28.968
609.520	-17.680	-35.255	-52.935	-40.725	-12.906	-28.968
609.530	-18.761	-35.198	-53.959	-41.749	-12.844	-28.968
609.540	-19.007	-35.131	-54.138	-41.928	-12.782	-28.968
609.550	-19.903	-35.091	-54.994	-42.784	-12.720	-28.968
609.560	-23.120	-35.034	-58.154	-45.944	-12.658	-28.968
609.570	-20.206	-34.983	-55.189	-42.979	-12.597	-28.968
609.580	-19.713	-34.947	-54.660	-42.450	-12.535	-28.968
609.590	-20.949	-34.894	-55.843	-43.633	-12.474	-28.968
609.600	-18.181	-34.839	-53.020	-40.810	-12.413	-28.968
609.610	-18.960	-34.772	-53.732	-41.522	-12.352	-28.968
609.620	-19.659	-34.777	-54.436	-42.226	-12.291	-28.968
609.630	-20.125	-34.731	-54.856	-42.646	-12.230	-28.968
609.640	-20.881	-34.659	-55.540	-43.330	-12.169	-28.968
609.650	-22.515	-34.613	-57.128	-44.918	-12.109	-28.968
609.660	-19.014	-34.582	-53.596	-41.386	-12.049	-28.968
609.670	-19.443	-34.523	-53.966	-41.756	-11.988	-28.968
609.680	-17.744	-34.469	-52.213	-40.003	-11.928	-28.968
609.690	-17.760	-34.418	-52.178	-39.968	-11.868	-28.968
609.700	-19.766	-34.367	-54.133	-41.923	-11.809	-28.968
609.710	-21.611	-34.335	-55.946	-43.736	-11.749	-28.968
609.720	-18.723	-34.281	-53.004	-40.794	-11.689	-28.968
609.730	-18.657	-34.248	-52.905	-40.695	-11.630	-28.968

609.740	-19.411	-34.199	-53.610	-41.400	-11.571	-28.968
609.750	-21.646	-34.165	-55.811	-43.601	-11.512	-28.968
609.760	-18.866	-34.122	-52.988	-40.778	-11.453	-28.968
609.770	-19.539	-34.035	-53.574	-41.364	-11.394	-28.968
609.780	-18.907	-33.989	-52.896	-40.686	-11.335	-28.968
609.790	-20.921	-33.954	-54.875	-42.665	-11.277	-28.968
609.800	-18.983	-33.900	-52.883	-40.673	-11.218	-28.968
609.810	-16.962	-33.832	-50.794	-38.584	-11.160	-28.968
609.820	-19.959	-33.803	-53.762	-41.552	-11.102	-28.968
609.830	-20.643	-33.736	-54.379	-42.169	-11.044	-28.968
609.840	-19.778	-33.685	-53.463	-41.253	-10.986	-28.968
609.850	-18.011	-33.636	-51.647	-39.437	-10.928	-28.968
609.860	-21.770	-33.590	-55.360	-43.150	-10.871	-28.968
609.870	-19.440	-33.558	-52.998	-40.788	-10.813	-28.968
609.880	-18.494	-33.517	-52.011	-39.801	-10.756	-28.968
609.890	-19.138	-33.453	-52.591	-40.381	-10.699	-28.968
609.900	-18.614	-33.403	-52.017	-39.807	-10.642	-28.968
609.910	-21.429	-33.356	-54.785	-42.575	-10.585	-28.968
609.920	-18.230	-33.307	-51.537	-39.327	-10.528	-28.968
609.930	-18.122	-33.236	-51.358	-39.148	-10.472	-28.968
609.940	-19.278	-33.215	-52.493	-40.283	-10.415	-28.968
609.950	-18.277	-33.147	-51.424	-39.214	-10.359	-28.968
609.960	-18.482	-33.114	-51.596	-39.386	-10.303	-28.968
609.970	-17.078	-33.083	-50.161	-37.951	-10.247	-28.968
609.980	-16.863	-33.011	-49.874	-37.664	-10.191	-28.968
609.990	-18.585	-32.954	-51.539	-39.329	-10.135	-28.968
610.000	-18.842	-32.905	-51.747	-39.537	-10.079	-28.968
610.010	-17.171	-32.850	-50.021	-37.811	-10.024	-28.968
610.020	-18.598	-32.794	-51.392	-39.182	-9.969	-28.968
610.030	-16.078	-32.768	-48.846	-36.636	-9.913	-28.968
610.040	-20.758	-32.708	-53.466	-41.256	-9.858	-28.968
610.050	-18.936	-32.648	-51.584	-39.374	-9.803	-28.968
610.060	-20.514	-32.592	-53.106	-40.896	-9.749	-28.968
610.070	-19.511	-32.542	-52.053	-39.843	-9.694	-28.968
610.080	-18.906	-32.496	-51.402	-39.192	-9.639	-28.968
610.090	-19.598	-32.457	-52.055	-39.845	-9.585	-28.968
610.100	-16.698	-32.421	-49.119	-36.909	-9.531	-28.968
610.110	-16.969	-32.356	-49.325	-37.115	-9.477	-28.968
610.120	-19.825	-32.310	-52.135	-39.925	-9.423	-28.968
610.130	-18.268	-32.257	-50.525	-38.315	-9.369	-28.968
610.140	-19.782	-32.203	-51.985	-39.775	-9.315	-28.968
610.150	-17.523	-32.148	-49.671	-37.461	-9.262	-28.968
610.160	-19.505	-32.104	-51.609	-39.399	-9.208	-28.968
610.170	-17.942	-32.046	-49.988	-37.778	-9.155	-28.968
610.180	-17.738	-32.002	-49.740	-37.530	-9.102	-28.968
610.190	-17.559	-31.944	-49.503	-37.293	-9.049	-28.968

610.200	-17.997	-31.892	-49.889	-37.679	-8.996	-28.968
610.210	-18.407	-31.856	-50.263	-38.053	-8.943	-28.968
610.220	-17.501	-31.788	-49.289	-37.079	-8.891	-28.968
610.230	-20.472	-31.750	-52.222	-40.012	-8.838	-28.968
610.240	-18.522	-31.686	-50.208	-37.998	-8.786	-28.968
610.250	-20.243	-31.639	-51.882	-39.672	-8.734	-28.968
610.260	-18.364	-31.568	-49.932	-37.722	-8.682	-28.968
610.270	-18.288	-31.514	-49.802	-37.592	-8.630	-28.968
610.280	-19.896	-31.489	-51.385	-39.175	-8.578	-28.968
610.290	-18.896	-31.440	-50.336	-38.126	-8.527	-28.968
610.300	-17.327	-31.394	-48.721	-36.511	-8.475	-28.968
610.310	-20.361	-31.332	-51.693	-39.483	-8.424	-28.968
610.320	-17.711	-31.270	-48.981	-36.771	-8.373	-28.968
610.330	-18.295	-31.236	-49.531	-37.321	-8.322	-28.968
610.340	-18.790	-31.154	-49.944	-37.734	-8.271	-28.968
610.350	-18.462	-31.124	-49.586	-37.376	-8.220	-28.968
610.360	-18.119	-31.055	-49.174	-36.964	-8.169	-28.968
610.370	-18.243	-31.006	-49.249	-37.039	-8.119	-28.968
610.380	-18.920	-30.960	-49.880	-37.670	-8.069	-28.968
610.390	-16.923	-30.907	-47.830	-35.620	-8.018	-28.968
610.400	-17.923	-30.839	-48.762	-36.552	-7.968	-28.968
610.410	-19.180	-30.799	-49.979	-37.769	-7.918	-28.968
610.420	-17.125	-30.755	-47.880	-35.670	-7.869	-28.968
610.430	-17.445	-30.708	-48.153	-35.943	-7.819	-28.968
610.440	-18.655	-30.652	-49.307	-37.097	-7.769	-28.968
610.450	-17.847	-30.584	-48.431	-36.221	-7.720	-28.968
610.460	-17.329	-30.509	-47.838	-35.628	-7.671	-28.968
610.470	-16.667	-30.485	-47.152	-34.942	-7.622	-28.968
610.480	-18.711	-30.435	-49.146	-36.936	-7.573	-28.968
610.490	-17.577	-30.376	-47.953	-35.743	-7.524	-28.968
610.500	-17.820	-30.323	-48.143	-35.933	-7.475	-28.968
610.510	-17.702	-30.260	-47.962	-35.752	-7.427	-28.968
610.520	-17.392	-30.213	-47.605	-35.395	-7.378	-28.968
610.530	-17.485	-30.134	-47.619	-35.409	-7.330	-28.968
610.540	-18.681	-30.097	-48.778	-36.568	-7.282	-28.968
610.550	-18.304	-30.032	-48.336	-36.126	-7.234	-28.968
610.560	-20.217	-29.986	-50.203	-37.993	-7.186	-28.968
610.570	-18.637	-29.933	-48.570	-36.360	-7.138	-28.968
610.580	-18.138	-29.899	-48.037	-35.827	-7.091	-28.968
610.590	-15.075	-29.839	-44.914	-32.704	-7.043	-28.968
610.600	-18.447	-29.764	-48.211	-36.001	-6.996	-28.968
610.610	-17.793	-29.722	-47.515	-35.305	-6.949	-28.968
610.620	-17.659	-29.681	-47.340	-35.130	-6.902	-28.968
610.630	-18.744	-29.623	-48.367	-36.157	-6.855	-28.968
610.640	-17.977	-29.558	-47.535	-35.325	-6.808	-28.968
610.650	-19.259	-29.486	-48.745	-36.535	-6.762	-28.968

610.660	-17.458	-29.429	-46.887	-34.677	-6.715	-28.968
610.670	-19.112	-29.392	-48.504	-36.294	-6.669	-28.968
610.680	-17.203	-29.329	-46.532	-34.322	-6.623	-28.968
610.690	-16.893	-29.271	-46.164	-33.954	-6.577	-28.968
610.700	-18.500	-29.217	-47.717	-35.507	-6.531	-28.968
610.710	-17.854	-29.179	-47.033	-34.823	-6.485	-28.968
610.720	-18.075	-29.153	-47.228	-35.018	-6.439	-28.968
610.730	-18.227	-29.063	-47.290	-35.080	-6.394	-28.968
610.740	-16.905	-28.998	-45.903	-33.693	-6.349	-28.968
610.750	-15.240	-28.956	-44.196	-31.986	-6.303	-28.968
610.760	-19.046	-28.899	-47.945	-35.735	-6.258	-28.968
610.770	-16.096	-28.842	-44.938	-32.728	-6.213	-28.968
610.780	-19.044	-28.774	-47.818	-35.608	-6.169	-28.968
610.790	-19.238	-28.717	-47.955	-35.745	-6.124	-28.968
610.800	-17.560	-28.666	-46.226	-34.016	-6.079	-28.968
610.810	-16.247	-28.602	-44.849	-32.639	-6.035	-28.968
610.820	-17.336	-28.570	-45.906	-33.696	-5.991	-28.968
610.830	-18.031	-28.546	-46.577	-34.367	-5.947	-28.968
610.840	-18.334	-28.459	-46.793	-34.583	-5.903	-28.968
610.850	-17.102	-28.381	-45.483	-33.273	-5.859	-28.968
610.860	-19.091	-28.324	-47.415	-35.205	-5.815	-28.968
610.870	-18.000	-28.267	-46.267	-34.057	-5.772	-28.968
610.880	-16.706	-28.233	-44.939	-32.729	-5.728	-28.968
610.890	-17.415	-28.188	-45.603	-33.393	-5.685	-28.968
610.900	-16.985	-28.127	-45.112	-32.902	-5.642	-28.968
610.910	-19.462	-28.027	-47.489	-35.279	-5.599	-28.968
610.920	-16.822	-27.983	-44.805	-32.595	-5.556	-28.968
610.930	-16.806	-27.939	-44.745	-32.535	-5.513	-28.968
610.940	-17.779	-27.871	-45.650	-33.440	-5.471	-28.968
610.950	-16.518	-27.842	-44.360	-32.150	-5.428	-28.968
610.960	-18.162	-27.785	-45.947	-33.737	-5.386	-28.968
610.970	-17.240	-27.687	-44.927	-32.717	-5.344	-28.968
610.980	-14.490	-27.658	-42.148	-29.938	-5.302	-28.968
610.990	-16.053	-27.603	-43.656	-31.446	-5.260	-28.968
611.000	-16.698	-27.546	-44.244	-32.034	-5.218	-28.968
611.010	-16.330	-27.469	-43.799	-31.589	-5.177	-28.603
611.020	-17.425	-27.412	-44.837	-32.627	-5.135	-28.488
611.030	-17.016	-27.360	-44.376	-32.166	-5.094	-28.373
611.040	-17.212	-27.338	-44.550	-32.340	-5.053	-28.258
611.050	-17.460	-27.236	-44.696	-32.486	-5.012	-28.143
611.060	-17.726	-27.198	-44.924	-32.714	-4.971	-28.028
611.070	-18.325	-27.149	-45.474	-33.264	-4.930	-27.913
611.080	-16.390	-27.087	-43.477	-31.267	-4.889	-27.798
611.090	-18.318	-27.010	-45.328	-33.118	-4.849	-27.683
611.100	-16.347	-26.954	-43.301	-31.091	-4.809	-27.568
611.110	-18.932	-26.889	-45.821	-33.611	-4.768	-27.453

611.120	-18.595	-26.833	-45.428	-33.218	-4.728	-27.338
611.130	-20.781	-26.762	-47.543	-35.333	-4.688	-27.223
611.140	-16.465	-26.727	-43.192	-30.982	-4.649	-27.108
611.150	-18.055	-26.695	-44.750	-32.540	-4.609	-26.993
611.160	-15.931	-26.592	-42.523	-30.313	-4.569	-26.878
611.170	-17.834	-26.564	-44.398	-32.188	-4.530	-26.763
611.180	-17.561	-26.504	-44.065	-31.855	-4.491	-26.648
611.190	-16.242	-26.464	-42.706	-30.496	-4.452	-26.533
611.200	-17.365	-26.380	-43.745	-31.535	-4.413	-26.418
611.210	-15.781	-26.330	-42.111	-29.901	-4.374	-26.303
611.220	-17.196	-26.264	-43.460	-31.250	-4.335	-26.188
611.230	-18.281	-26.182	-44.463	-32.253	-4.297	-26.073
611.240	-16.384	-26.131	-42.515	-30.305	-4.258	-25.958
611.250	-15.386	-26.074	-41.460	-29.250	-4.220	-25.843
611.260	-15.108	-26.024	-41.132	-28.922	-4.182	-25.728
611.270	-16.366	-25.942	-42.308	-30.098	-4.144	-25.613
611.280	-15.610	-25.902	-41.512	-29.302	-4.106	-25.498
611.290	-15.083	-25.856	-40.939	-28.729	-4.068	-25.383
611.300	-16.646	-25.786	-42.432	-30.222	-4.031	-25.268
611.310	-15.563	-25.727	-41.290	-29.080	-3.993	-25.153
611.320	-15.329	-25.680	-41.009	-28.799	-3.956	-25.038
611.330	-15.326	-25.604	-40.930	-28.720	-3.919	-24.923
611.340	-14.941	-25.547	-40.488	-28.278	-3.882	-24.808
611.350	-16.089	-25.490	-41.579	-29.369	-3.845	-24.693
611.360	-17.093	-25.421	-42.514	-30.304	-3.808	-24.578
611.370	-17.865	-25.355	-43.220	-31.010	-3.772	-24.463
611.380	-16.291	-25.306	-41.597	-29.387	-3.735	-24.348
611.390	-15.641	-25.251	-40.892	-28.682	-3.699	-24.233
611.400	-17.395	-25.161	-42.556	-30.346	-3.663	-24.118
611.410	-15.889	-25.112	-41.001	-28.791	-3.627	-24.003
611.420	-17.200	-25.062	-42.262	-30.052	-3.591	-23.888
611.430	-15.503	-25.005	-40.508	-28.298	-3.555	-23.773
611.440	-15.443	-24.944	-40.387	-28.177	-3.519	-23.658
611.450	-18.241	-24.881	-43.122	-30.912	-3.484	-23.543
611.460	-16.508	-24.806	-41.314	-29.104	-3.449	-23.428
611.470	-16.252	-24.742	-40.994	-28.784	-3.413	-23.313
611.480	-16.078	-24.690	-40.768	-28.558	-3.378	-23.198
611.490	-16.796	-24.630	-41.426	-29.216	-3.343	-23.083
611.500	-17.858	-24.566	-42.424	-30.214	-3.309	-22.968
611.510	-16.242	-24.493	-40.735	-28.525	-3.274	-22.853
611.520	-17.543	-24.456	-41.999	-29.789	-3.239	-22.738
611.530	-17.233	-24.401	-41.634	-29.424	-3.205	-22.623
611.540	-15.484	-24.354	-39.838	-27.628	-3.171	-22.508
611.550	-16.885	-24.268	-41.153	-28.943	-3.137	-22.393
611.560	-16.639	-24.199	-40.838	-28.628	-3.103	-22.278
611.570	-16.699	-24.145	-40.844	-28.634	-3.069	-22.163

611.580	-15.696	-24.100	-39.796	-27.586	-3.035	-22.048
611.590	-15.910	-24.020	-39.930	-27.720	-3.002	-21.933
611.600	-17.343	-23.973	-41.316	-29.106	-2.968	-21.818
611.610	-15.744	-23.887	-39.631	-27.421	-2.935	-21.703
611.620	-16.505	-23.830	-40.335	-28.125	-2.902	-21.588
611.630	-15.260	-23.753	-39.013	-26.803	-2.869	-21.473
611.640	-17.726	-23.709	-41.435	-29.225	-2.836	-21.358
611.650	-15.877	-23.651	-39.528	-27.318	-2.803	-21.243
611.660	-16.267	-23.585	-39.852	-27.642	-2.771	-21.128
611.670	-15.064	-23.523	-38.587	-26.377	-2.738	-21.013
611.680	-16.345	-23.454	-39.799	-27.589	-2.706	-20.898
611.690	-16.029	-23.400	-39.429	-27.219	-2.674	-20.783
611.700	-16.868	-23.351	-40.219	-28.009	-2.642	-20.668
611.710	-15.768	-23.298	-39.066	-26.856	-2.610	-20.553
611.720	-13.746	-23.231	-36.977	-24.767	-2.578	-20.438
611.730	-15.374	-23.146	-38.520	-26.310	-2.547	-20.323
611.740	-15.778	-23.075	-38.853	-26.643	-2.515	-20.208
611.750	-16.593	-23.040	-39.633	-27.423	-2.484	-20.093
611.760	-15.462	-22.980	-38.442	-26.232	-2.453	-19.978
611.770	-16.793	-22.916	-39.709	-27.499	-2.422	-19.863
611.780	-15.396	-22.843	-38.239	-26.029	-2.391	-19.748
611.790	-15.796	-22.776	-38.572	-26.362	-2.360	-19.633
611.800	-16.234	-22.729	-38.963	-26.753	-2.329	-19.518
611.810	-17.580	-22.676	-40.256	-28.046	-2.299	-19.403
611.820	-15.977	-22.564	-38.541	-26.331	-2.269	-19.288
611.830	-16.610	-22.538	-39.148	-26.938	-2.238	-19.173
611.840	-16.179	-22.443	-38.622	-26.412	-2.208	-19.058
611.850	-17.527	-22.412	-39.939	-27.729	-2.178	-18.943
611.860	-15.952	-22.351	-38.303	-26.093	-2.149	-18.828
611.870	-15.596	-22.270	-37.866	-25.656	-2.119	-18.713
611.880	-16.274	-22.198	-38.472	-26.262	-2.089	-18.598
611.890	-16.520	-22.138	-38.658	-26.448	-2.060	-18.483
611.900	-17.110	-22.087	-39.197	-26.987	-2.031	-18.368
611.910	-14.946	-22.030	-36.976	-24.766	-2.002	-18.253
611.920	-16.818	-21.996	-38.814	-26.604	-1.973	-18.138
611.930	-14.351	-21.901	-36.252	-24.042	-1.944	-18.023
611.940	-17.804	-21.839	-39.643	-27.433	-1.915	-17.908
611.950	-15.141	-21.770	-36.911	-24.701	-1.887	-17.793
611.960	-17.556	-21.727	-39.283	-27.073	-1.858	-17.678
611.970	-15.887	-21.662	-37.549	-25.339	-1.830	-17.563
611.980	-16.600	-21.582	-38.182	-25.972	-1.802	-17.448
611.990	-15.062	-21.544	-36.606	-24.396	-1.774	-17.333
612.000	-16.429	-21.456	-37.885	-25.675	-1.746	-17.218
612.010	-13.968	-21.414	-35.382	-23.172	-1.718	-17.103
612.020	-15.916	-21.325	-37.241	-25.031	-1.691	-16.988
612.030	-16.718	-21.273	-37.991	-25.781	-1.663	-16.873

612.040	-17.435	-21.220	-38.655	-26.445	-1.636	-16.758
612.050	-17.624	-21.178	-38.802	-26.592	-1.609	-16.643
612.060	-14.744	-21.073	-35.817	-23.607	-1.582	-16.528
612.070	-14.558	-21.007	-35.565	-23.355	-1.555	-16.413
612.080	-16.992	-20.968	-37.960	-25.750	-1.528	-16.298
612.090	-16.467	-20.890	-37.357	-25.147	-1.502	-16.183
612.100	-18.545	-20.837	-39.382	-27.172	-1.475	-16.068
612.110	-15.927	-20.797	-36.724	-24.514	-1.449	-15.953
612.120	-13.794	-20.738	-34.532	-22.322	-1.423	-15.838
612.130	-15.965	-20.646	-36.611	-24.401	-1.397	-15.723
612.140	-14.125	-20.598	-34.723	-22.513	-1.371	-15.608
612.150	-14.870	-20.546	-35.416	-23.206	-1.345	-15.493
612.160	-15.707	-20.465	-36.172	-23.962	-1.319	-15.378
612.170	-16.028	-20.399	-36.427	-24.217	-1.294	-15.263
612.180	-14.446	-20.354	-34.800	-22.590	-1.269	-15.148
612.190	-16.663	-20.271	-36.934	-24.724	-1.243	-15.033
612.200	-15.910	-20.227	-36.137	-23.927	-1.218	-14.918
612.210	-17.052	-20.171	-37.223	-25.013	-1.193	-14.803
612.220	-15.723	-20.121	-35.844	-23.634	-1.169	-14.688
612.230	-15.753	-20.035	-35.788	-23.578	-1.144	-14.573
612.240	-16.878	-19.988	-36.866	-24.656	-1.119	-14.458
612.250	-17.485	-19.925	-37.410	-25.200	-1.095	-14.343
612.260	-16.006	-19.861	-35.867	-23.657	-1.071	-14.228
612.270	-16.530	-19.799	-36.329	-24.119	-1.047	-14.113
612.280	-16.291	-19.753	-36.044	-23.834	-1.023	-13.998
612.290	-17.617	-19.682	-37.299	-25.089	-0.999	-13.883
612.300	-16.887	-19.614	-36.501	-24.291	-0.975	-13.768
612.310	-16.138	-19.531	-35.669	-23.459	-0.952	-13.653
612.320	-17.514	-19.478	-36.992	-24.782	-0.928	-13.538
612.330	-16.241	-19.441	-35.682	-23.472	-0.905	-13.423
612.340	-15.544	-19.371	-34.915	-22.705	-0.882	-13.308
612.350	-15.846	-19.322	-35.168	-22.958	-0.859	-13.193
612.360	-14.653	-19.257	-33.910	-21.700	-0.836	-13.078
612.370	-14.750	-19.217	-33.967	-21.757	-0.813	-12.963
612.380	-14.229	-19.154	-33.383	-21.173	-0.791	-12.848
612.390	-15.999	-19.084	-35.083	-22.873	-0.768	-12.733
612.400	-14.819	-19.028	-33.847	-21.637	-0.746	-12.618
612.410	-16.149	-18.966	-35.115	-22.905	-0.724	-12.503
612.420	-15.363	-18.915	-34.278	-22.068	-0.702	-12.388
612.430	-16.876	-18.861	-35.737	-23.527	-0.680	-12.273
612.440	-15.827	-18.818	-34.645	-22.435	-0.658	-12.158
612.450	-16.201	-18.730	-34.931	-22.721	-0.637	-12.043
612.460	-13.435	-18.695	-32.130	-19.920	-0.615	-11.928
612.470	-17.672	-18.638	-36.310	-24.100	-0.594	-11.813
612.480	-17.968	-18.572	-36.540	-24.330	-0.573	-11.698
612.490	-16.412	-18.522	-34.934	-22.724	-0.552	-11.583

612.500	-15.099	-18.469	-33.568	-21.358	-0.531	-11.468
612.510	-14.645	-18.400	-33.045	-20.835	-0.510	-11.353
612.520	-16.402	-18.353	-34.755	-22.545	-0.489	-11.238
612.530	-13.768	-18.315	-32.083	-19.873	-0.469	-11.123
612.540	-14.745	-18.240	-32.985	-20.775	-0.449	-11.008
612.550	-15.753	-18.193	-33.946	-21.736	-0.428	-10.893
612.560	-14.129	-18.139	-32.268	-20.058	-0.408	-10.778
612.570	-17.487	-18.079	-35.566	-23.356	-0.388	-10.663
612.580	-15.210	-18.050	-33.260	-21.050	-0.369	-10.548
612.590	-14.847	-17.984	-32.831	-20.621	-0.349	-10.433
612.600	-14.894	-17.954	-32.848	-20.638	-0.329	-10.318
612.610	-16.170	-17.916	-34.086	-21.876	-0.310	-10.203
612.620	-14.288	-17.851	-32.139	-19.929	-0.291	-10.088
612.630	-14.272	-17.807	-32.079	-19.869	-0.272	-9.973
612.640	-16.165	-17.757	-33.922	-21.712	-0.253	-9.858
612.650	-16.548	-17.682	-34.230	-22.020	-0.234	-9.743
612.660	-15.573	-17.654	-33.227	-21.017	-0.215	-9.628
612.670	-14.100	-17.612	-31.712	-19.502	-0.197	-9.513
612.680	-16.643	-17.556	-34.199	-21.989	-0.178	-9.398
612.690	-16.721	-17.511	-34.232	-22.022	-0.160	-9.283
612.700	-12.839	-17.473	-30.312	-18.102	-0.142	-9.168
612.710	-14.724	-17.426	-32.150	-19.940	-0.124	-9.053
612.720	-17.671	-17.379	-35.050	-22.840	-0.106	-8.938
612.730	-16.687	-17.355	-34.042	-21.832	-0.088	-8.823
612.740	-18.735	-17.322	-36.057	-23.847	-0.071	-8.708
612.750	-14.879	-17.279	-32.158	-19.948	-0.053	-8.593
612.760	-16.811	-17.238	-34.049	-21.839	-0.036	-8.478
612.770	-14.945	-17.200	-32.145	-19.935	-0.019	-8.363
612.780	-15.818	-17.159	-32.977	-20.767	-0.002	-8.248
612.790	-15.314	-17.134	-32.448	-20.238	0.015	-8.133
612.800	-16.990	-17.086	-34.076	-21.866	0.032	-8.018
612.810	-14.832	-17.070	-31.902	-19.692	0.048	-7.903
612.820	-15.172	-17.040	-32.212	-20.002	0.065	-7.788
612.830	-16.412	-16.988	-33.400	-21.190	0.081	-7.673
612.840	-14.135	-16.966	-31.101	-18.891	0.097	-7.558
612.850	-15.794	-16.950	-32.744	-20.534	0.113	-7.443
612.860	-17.243	-16.905	-34.148	-21.938	0.129	-7.328
612.870	-15.735	-16.912	-32.647	-20.437	0.145	-7.213
612.880	-16.196	-16.884	-33.080	-20.870	0.161	-7.098
612.890	-15.683	-16.829	-32.512	-20.302	0.176	-6.983
612.900	-14.444	-16.826	-31.270	-19.060	0.191	-6.868
612.910	-15.616	-16.815	-32.431	-20.221	0.207	-6.753
612.920	-16.272	-16.795	-33.067	-20.857	0.222	-6.638
612.930	-15.614	-16.795	-32.409	-20.199	0.237	-6.523
612.940	-14.273	-16.763	-31.036	-18.826	0.251	-6.408
612.950	-17.812	-16.752	-34.564	-22.354	0.266	-6.293

612.960	-15.418	-16.754	-32.172	-19.962	0.281	-6.178
612.970	-15.196	-16.744	-31.940	-19.730	0.295	-6.063
612.980	-15.879	-16.760	-32.639	-20.429	0.309	-5.948
612.990	-14.368	-16.737	-31.105	-18.895	0.323	-5.833
613.000	-12.262	-16.752	-29.014	-16.804	0.337	-5.718
613.010	-13.351	-16.757	-30.108	-17.898	0.351	-5.603
613.020	-13.545	-16.758	-30.303	-18.093	0.365	-5.488
613.030	-14.573	-16.741	-31.314	-19.104	0.378	-5.373
613.040	-16.062	-16.771	-32.833	-20.623	0.392	-5.258
613.050	-14.979	-16.801	-31.780	-19.570	0.405	-5.143
613.060	-14.860	-16.831	-31.691	-19.481	0.418	-5.028
613.070	-14.550	-16.845	-31.395	-19.185	0.431	-4.913
613.080	-16.229	-16.883	-33.112	-20.902	0.444	-4.798
613.090	-12.835	-16.885	-29.720	-17.510	0.457	-4.683
613.100	-15.391	-16.935	-32.326	-20.116	0.469	-4.568
613.110	-14.735	-16.986	-31.721	-19.511	0.482	-4.453
613.120	-15.428	-17.023	-32.451	-20.241	0.494	-4.338
613.130	-13.725	-17.072	-30.797	-18.587	0.506	-4.223
613.140	-13.909	-17.142	-31.051	-18.841	0.518	-4.108
613.150	-15.967	-17.200	-33.167	-20.957	0.530	-3.993
613.160	-15.314	-17.273	-32.587	-20.377	0.542	-3.878
613.170	-13.285	-17.336	-30.621	-18.411	0.553	-3.763
613.180	-14.428	-17.406	-31.834	-19.624	0.565	-3.648
613.190	-14.383	-17.487	-31.870	-19.660	0.576	-3.533
613.200	-14.288	-17.592	-31.880	-19.670	0.587	-3.418
613.210	-13.492	-17.682	-31.174	-18.964	0.598	-3.303
613.220	-15.861	-17.760	-33.621	-21.411	0.609	-3.188
613.230	-14.768	-17.875	-32.643	-20.433	0.620	-3.073
613.240	-14.643	-17.980	-32.623	-20.413	0.631	-2.958
613.250	-13.746	-18.108	-31.854	-19.644	0.641	-2.843
613.260	-15.604	-18.254	-33.858	-21.648	0.651	-2.728
613.270	-15.594	-18.386	-33.980	-21.770	0.662	-2.613
613.280	-14.098	-18.517	-32.615	-20.405	0.672	-2.498
613.290	-16.189	-18.655	-34.844	-22.634	0.682	-2.383
613.300	-15.666	-18.817	-34.483	-22.273	0.691	-2.268
613.310	-14.704	-18.957	-33.661	-21.451	0.701	-2.153
613.320	-15.411	-19.126	-34.537	-22.327	0.711	-2.038
613.330	-14.481	-19.268	-33.749	-21.539	0.720	-1.923
613.340	-16.949	-19.410	-36.359	-24.149	0.729	-1.808
613.350	-16.070	-19.559	-35.629	-23.419	0.738	-1.693
613.360	-16.116	-19.697	-35.813	-23.603	0.747	-1.578
613.370	-13.880	-19.783	-33.663	-21.453	0.756	-1.463
613.380	-14.432	-19.884	-34.316	-22.106	0.765	-1.348
613.390	-15.244	-19.959	-35.203	-22.993	0.773	-1.233
613.400	-16.060	-19.979	-36.039	-23.829	0.782	-1.118
613.410	-14.875	-19.968	-34.843	-22.633	0.790	-1.003

613.420	-14.152	-19.905	-34.057	-21.847	0.798	-0.888
613.430	-14.758	-19.800	-34.558	-22.348	0.806	-0.773
613.440	-15.701	-19.607	-35.308	-23.098	0.814	-0.658
613.450	-15.921	-19.408	-35.329	-23.119	0.822	-0.543
613.460	-15.417	-19.140	-34.557	-22.347	0.829	-0.428
613.470	-14.900	-18.787	-33.687	-21.477	0.837	-0.313
613.480	-14.560	-18.414	-32.974	-20.764	0.844	-0.198
613.490	-14.354	-17.991	-32.345	-20.135	0.851	-0.083
613.500	-15.205	-17.544	-32.749	-20.539	0.858	0.032
613.510	-16.595	-17.098	-33.693	-21.483	0.865	0.032
613.520	-16.800	-16.584	-33.384	-21.174	0.872	0.032
613.530	-16.207	-16.063	-32.270	-20.060	0.878	0.032
613.540	-13.484	-15.552	-29.036	-16.826	0.885	0.032
613.550	-14.044	-15.033	-29.077	-16.867	0.891	0.032
613.560	-15.028	-14.515	-29.543	-17.333	0.897	0.032
613.570	-14.404	-14.000	-28.404	-16.194	0.903	0.032
613.580	-16.637	-13.508	-30.145	-17.935	0.909	0.032
613.590	-15.162	-13.006	-28.168	-15.958	0.915	0.032
613.600	-13.332	-12.515	-25.847	-13.637	0.921	0.032
613.610	-14.029	-12.045	-26.074	-13.864	0.926	0.032
613.620	-14.507	-11.588	-26.095	-13.885	0.931	0.032
613.630	-16.531	-11.151	-27.682	-15.472	0.937	0.032
613.640	-15.480	-10.709	-26.189	-13.979	0.942	0.032
613.650	-14.744	-10.262	-25.006	-12.796	0.947	0.032
613.660	-15.784	-9.870	-25.654	-13.444	0.951	0.032
613.670	-15.712	-9.475	-25.187	-12.977	0.956	0.032
613.680	-14.769	-9.080	-23.849	-11.639	0.961	0.032
613.690	-15.544	-8.736	-24.280	-12.070	0.965	0.032
613.700	-13.975	-8.396	-22.371	-10.161	0.969	0.032
613.710	-16.904	-8.043	-24.947	-12.737	0.973	0.032
613.720	-17.619	-7.713	-25.332	-13.122	0.977	0.032
613.730	-18.075	-7.400	-25.475	-13.265	0.981	0.032
613.740	-15.065	-7.135	-22.200	-9.990	0.985	0.032
613.750	-16.050	-6.857	-22.907	-10.697	0.988	0.032
613.760	-15.732	-6.593	-22.325	-10.115	1.032	0.032
613.770	-15.488	-6.350	-21.838	-9.628	1.032	0.032
613.780	-14.491	-6.112	-20.603	-8.393	1.032	0.032
613.790	-14.674	-5.893	-20.567	-8.357	1.032	0.032
613.800	-13.787	-5.654	-19.441	-7.231	1.032	0.032
613.810	-14.204	-5.459	-19.663	-7.453	1.032	0.032
613.820	-15.698	-5.278	-20.976	-8.766	1.032	0.032
613.830	-14.250	-5.120	-19.370	-7.160	1.032	0.032
613.840	-12.165	-4.933	-17.098	-4.888	1.032	0.032
613.850	-15.388	-4.770	-20.158	-7.948	1.032	0.032
613.860	-15.250	-4.600	-19.850	-7.640	1.032	0.032
613.870	-13.284	-4.463	-17.747	-5.537	1.032	0.032

613.880	-15.107	-4.339	-19.446	-7.236	1.032	0.032
613.890	-13.889	-4.215	-18.104	-5.894	1.032	0.032
613.900	-12.240	-4.100	-16.340	-4.130	1.032	0.032
613.910	-13.226	-3.950	-17.176	-4.966	1.032	0.032
613.920	-12.223	-3.857	-16.080	-3.870	1.032	0.032
613.930	-13.649	-3.771	-17.420	-5.210	1.032	0.032
613.940	-14.506	-3.693	-18.199	-5.989	1.032	0.032
613.950	-13.705	-3.595	-17.300	-5.090	1.032	0.032
613.960	-13.544	-3.498	-17.042	-4.832	1.032	0.032
613.970	-13.763	-3.416	-17.179	-4.969	1.032	0.032
613.980	-11.653	-3.343	-14.996	-2.786	1.032	0.032
613.990	-9.726	-3.277	-13.003	-0.793	1.032	0.032
Lower Band Edge						
614.000	-9.097	-3.218	-12.315	-0.105	1.032	0.032
614.010	-4.304	-3.158	-7.462	4.748	47.032	47.032
614.020	0.063	-3.079	-3.016	9.194	47.032	47.032
614.030	0.873	-3.044	-2.171	10.039	47.032	47.032
614.040	5.922	-2.977	2.945	15.155	47.032	47.032
614.050	6.115	-2.898	3.217	15.427	47.032	47.032
614.060	9.333	-2.849	6.484	18.694	47.032	47.032
614.070	10.235	-2.818	7.417	19.627	47.032	47.032
614.080	11.398	-2.796	8.602	20.812	47.032	47.032
614.090	11.293	-2.732	8.561	20.771	47.032	47.032
614.100	14.103	-2.698	11.405	23.615	47.032	47.032
614.110	12.274	-2.637	9.637	21.847	47.032	47.032
614.120	14.682	-2.611	12.071	24.281	47.032	47.032
614.130	15.264	-2.576	12.688	24.898	47.032	47.032
614.140	14.487	-2.562	11.925	24.135	47.032	47.032
614.150	17.323	-2.527	14.796	27.006	47.032	47.032
614.160	17.636	-2.470	15.166	27.376	47.032	47.032
614.170	16.187	-2.455	13.732	25.942	47.032	47.032
614.180	18.443	-2.428	16.015	28.225	47.032	47.032
614.190	17.516	-2.397	15.119	27.329	47.032	47.032
614.200	18.270	-2.375	15.895	28.105	47.032	47.032
614.210	17.931	-2.341	15.590	27.800	47.032	47.032
614.220	19.652	-2.322	17.330	29.540	47.032	47.032
614.230	22.127	-2.298	19.829	32.039	47.032	47.032
614.240	21.432	-2.259	19.173	31.383	47.032	47.032
614.250	22.246	-2.237	20.009	32.219	47.032	47.032
614.260	25.224	-2.220	23.004	35.214	47.032	47.032
614.270	28.598	-2.198	26.400	38.610	47.032	47.032
614.280	33.442	-2.189	31.253	43.463	47.032	47.032
614.290	35.170	-2.165	33.005	45.215	47.032	47.032
614.300	36.228	-2.155	34.073	46.283	47.032	47.032
614.310	36.562	-2.125	34.437	46.647	47.032	47.032

614.320	35.334	-2.112	33.222	45.432	47.032	47.032
614.330	31.807	-2.108	29.699	41.909	47.032	47.032
614.340	24.392	-2.078	22.314	34.524	47.032	47.032
614.350	25.187	-2.049	23.138	35.348	47.032	47.032
614.360	24.044	-2.034	22.010	34.220	47.032	47.032
614.370	23.863	-2.016	21.847	34.057	47.032	47.032
614.380	22.354	-2.003	20.351	32.561	47.032	47.032
614.390	21.893	-1.986	19.907	32.117	47.032	47.032
614.400	21.331	-1.966	19.365	31.575	47.032	47.032
614.410	23.713	-1.958	21.755	33.965	47.032	47.032
614.420	23.305	-1.952	21.353	33.563	47.032	47.032
614.430	24.418	-1.942	22.476	34.686	47.032	47.032
614.440	22.904	-1.914	20.990	33.200	47.032	47.032
614.450	25.102	-1.908	23.194	35.404	47.032	47.032
614.460	24.581	-1.893	22.688	34.898	47.032	47.032
614.470	22.931	-1.873	21.058	33.268	47.032	47.032
614.480	23.451	-1.884	21.567	33.777	47.032	47.032
614.490	24.894	-1.858	23.036	35.246	47.032	47.032
614.500	25.012	-1.846	23.166	35.376	47.032	47.032
614.510	23.422	-1.843	21.579	33.789	47.032	47.032
614.520	22.971	-1.825	21.146	33.356	47.032	47.032
614.530	25.051	-1.812	23.239	35.449	47.032	47.032
614.540	25.165	-1.812	23.353	35.563	47.032	47.032
614.550	25.443	-1.802	23.641	35.851	47.032	47.032
614.560	25.368	-1.792	23.576	35.786	47.032	47.032
614.570	25.628	-1.775	23.853	36.063	47.032	47.032
614.580	23.528	-1.741	21.787	33.997	47.032	47.032
614.590	25.681	-1.742	23.939	36.149	47.032	47.032
614.600	26.159	-1.715	24.444	36.654	47.032	47.032
614.610	26.492	-1.721	24.771	36.981	47.032	47.032
614.620	27.195	-1.725	25.470	37.680	47.032	47.032
614.630	24.519	-1.698	22.821	35.031	47.032	47.032
614.640	25.645	-1.694	23.951	36.161	47.032	47.032
614.650	25.035	-1.679	23.356	35.566	47.032	47.032
614.660	24.495	-1.674	22.821	35.031	47.032	47.032
614.670	23.454	-1.668	21.786	33.996	47.032	47.032
614.680	24.846	-1.661	23.185	35.395	47.032	47.032
614.690	26.446	-1.640	24.806	37.016	47.032	47.032
614.700	25.868	-1.626	24.242	36.452	47.032	47.032
614.710	26.280	-1.632	24.648	36.858	47.032	47.032
614.720	27.196	-1.623	25.573	37.783	47.032	47.032
614.730	24.487	-1.624	22.863	35.073	47.032	47.032
614.740	23.892	-1.616	22.276	34.486	47.032	47.032
614.750	24.295	-1.598	22.697	34.907	47.032	47.032
614.760	26.347	-1.586	24.761	36.971	47.032	47.032
614.770	26.583	-1.593	24.990	37.200	47.032	47.032

614.780	24.236	-1.593	22.643	34.853	47.032	47.032
614.790	26.509	-1.586	24.923	37.133	47.032	47.032
614.800	26.601	-1.581	25.020	37.230	47.032	47.032
614.810	26.926	-1.562	25.364	37.574	47.032	47.032
614.820	23.687	-1.563	22.124	34.334	47.032	47.032
614.830	25.796	-1.550	24.246	36.456	47.032	47.032
614.840	26.222	-1.536	24.686	36.896	47.032	47.032
614.850	26.067	-1.526	24.541	36.751	47.032	47.032
614.860	25.964	-1.523	24.441	36.651	47.032	47.032
614.870	25.714	-1.515	24.199	36.409	47.032	47.032
614.880	27.204	-1.513	25.691	37.901	47.032	47.032
614.890	27.752	-1.510	26.242	38.452	47.032	47.032
614.900	25.068	-1.492	23.576	35.786	47.032	47.032
614.910	24.517	-1.485	23.032	35.242	47.032	47.032
614.920	25.717	-1.496	24.221	36.431	47.032	47.032
614.930	24.862	-1.496	23.366	35.576	47.032	47.032
614.940	23.483	-1.490	21.993	34.203	47.032	47.032
614.950	21.509	-1.467	20.042	32.252	47.032	47.032
614.960	25.867	-1.450	24.417	36.627	47.032	47.032
614.970	25.208	-1.453	23.755	35.965	47.032	47.032
614.980	25.010	-1.455	23.555	35.765	47.032	47.032
614.990	24.093	-1.439	22.654	34.864	47.032	47.032
615.000	24.742	-1.440	23.302	35.512	47.032	47.032
615.010	24.586	-1.420	23.166	35.376	47.032	47.032
615.020	26.638	-1.433	25.205	37.415	47.032	47.032
615.030	23.066	-1.441	21.625	33.835	47.032	47.032
615.040	26.236	-1.417	24.819	37.029	47.032	47.032
615.050	24.364	-1.418	22.946	35.156	47.032	47.032
615.060	25.208	-1.395	23.813	36.023	47.032	47.032
615.070	25.986	-1.402	24.584	36.794	47.032	47.032
615.080	26.369	-1.375	24.994	37.204	47.032	47.032
615.090	25.527	-1.357	24.170	36.380	47.032	47.032
615.100	21.644	-1.373	20.271	32.481	47.032	47.032
615.110	24.588	-1.374	23.214	35.424	47.032	47.032
615.120	26.052	-1.357	24.695	36.905	47.032	47.032
615.130	24.203	-1.355	22.848	35.058	47.032	47.032
615.140	24.627	-1.374	23.253	35.463	47.032	47.032
615.150	25.150	-1.355	23.795	36.005	47.032	47.032
615.160	26.321	-1.335	24.986	37.196	47.032	47.032
615.170	24.154	-1.341	22.813	35.023	47.032	47.032
615.180	23.316	-1.348	21.968	34.178	47.032	47.032
615.190	27.499	-1.345	26.154	38.364	47.032	47.032
615.200	25.143	-1.333	23.810	36.020	47.032	47.032
615.210	24.703	-1.324	23.379	35.589	47.032	47.032
615.220	26.296	-1.313	24.983	37.193	47.032	47.032
615.230	24.217	-1.305	22.912	35.122	47.032	47.032

615.240	25.065	-1.312	23.753	35.963	47.032	47.032
615.250	23.157	-1.301	21.856	34.066	47.032	47.032
615.260	24.077	-1.313	22.764	34.974	47.032	47.032
615.270	24.566	-1.305	23.261	35.471	47.032	47.032
615.280	25.118	-1.292	23.826	36.036	47.032	47.032
615.290	25.036	-1.282	23.754	35.964	47.032	47.032
615.300	24.322	-1.285	23.037	35.247	47.032	47.032
615.310	26.841	-1.290	25.551	37.761	47.032	47.032
615.320	24.442	-1.291	23.151	35.361	47.032	47.032
615.330	23.370	-1.281	22.089	34.299	47.032	47.032
615.340	24.011	-1.285	22.726	34.936	47.032	47.032
615.350	25.994	-1.248	24.746	36.956	47.032	47.032
615.360	23.161	-1.275	21.886	34.096	47.032	47.032
615.370	24.407	-1.283	23.124	35.334	47.032	47.032
615.380	26.036	-1.267	24.769	36.979	47.032	47.032
615.390	24.040	-1.255	22.785	34.995	47.032	47.032
615.400	23.952	-1.270	22.682	34.892	47.032	47.032
615.410	23.495	-1.269	22.226	34.436	47.032	47.032
615.420	23.769	-1.249	22.520	34.730	47.032	47.032
615.430	26.754	-1.271	25.483	37.693	47.032	47.032
615.440	26.127	-1.256	24.871	37.081	47.032	47.032
615.450	24.240	-1.245	22.995	35.205	47.032	47.032
615.460	25.279	-1.241	24.038	36.248	47.032	47.032
615.470	25.684	-1.232	24.452	36.662	47.032	47.032
615.480	25.090	-1.241	23.849	36.059	47.032	47.032
615.490	25.675	-1.252	24.423	36.633	47.032	47.032
615.500	24.191	-1.243	22.948	35.158	47.032	47.032
615.510	25.509	-1.264	24.245	36.455	47.032	47.032
615.520	23.338	-1.241	22.097	34.307	47.032	47.032
615.530	24.466	-1.234	23.232	35.442	47.032	47.032
615.540	24.299	-1.221	23.078	35.288	47.032	47.032
615.550	24.278	-1.239	23.039	35.249	47.032	47.032
615.560	25.523	-1.251	24.272	36.482	47.032	47.032
615.570	23.450	-1.229	22.221	34.431	47.032	47.032
615.580	25.199	-1.209	23.990	36.200	47.032	47.032
615.590	24.875	-1.222	23.653	35.863	47.032	47.032
615.600	24.707	-1.204	23.503	35.713	47.032	47.032
615.610	24.184	-1.215	22.969	35.179	47.032	47.032
615.620	24.509	-1.218	23.291	35.501	47.032	47.032
615.630	25.820	-1.222	24.598	36.808	47.032	47.032
615.640	24.062	-1.214	22.848	35.058	47.032	47.032
615.650	23.023	-1.224	21.799	34.009	47.032	47.032
615.660	24.470	-1.195	23.275	35.485	47.032	47.032
615.670	25.201	-1.197	24.004	36.214	47.032	47.032
615.680	24.856	-1.203	23.653	35.863	47.032	47.032
615.690	23.207	-1.221	21.986	34.196	47.032	47.032

615.700	24.686	-1.226	23.460	35.670	47.032	47.032
615.710	23.001	-1.200	21.801	34.011	47.032	47.032
615.720	26.570	-1.196	25.374	37.584	47.032	47.032
615.730	25.864	-1.189	24.675	36.885	47.032	47.032
615.740	25.422	-1.196	24.226	36.436	47.032	47.032
615.750	25.589	-1.210	24.379	36.589	47.032	47.032
615.760	25.388	-1.213	24.175	36.385	47.032	47.032
615.770	24.989	-1.197	23.792	36.002	47.032	47.032
615.780	25.954	-1.158	24.796	37.006	47.032	47.032
615.790	25.589	-1.166	24.423	36.633	47.032	47.032
615.800	25.508	-1.193	24.315	36.525	47.032	47.032
615.810	26.385	-1.197	25.188	37.398	47.032	47.032
615.820	24.406	-1.197	23.209	35.419	47.032	47.032
615.830	25.827	-1.204	24.623	36.833	47.032	47.032
615.840	25.688	-1.194	24.494	36.704	47.032	47.032
615.850	24.099	-1.191	22.908	35.118	47.032	47.032
615.860	24.482	-1.209	23.273	35.483	47.032	47.032
615.870	24.514	-1.178	23.336	35.546	47.032	47.032
615.880	25.125	-1.196	23.929	36.139	47.032	47.032
615.890	25.706	-1.200	24.506	36.716	47.032	47.032
615.900	24.494	-1.200	23.294	35.504	47.032	47.032
615.910	26.262	-1.203	25.059	37.269	47.032	47.032
615.920	26.693	-1.191	25.502	37.712	47.032	47.032
615.930	27.093	-1.218	25.875	38.085	47.032	47.032
615.940	25.124	-1.200	23.924	36.134	47.032	47.032
615.950	25.783	-1.208	24.575	36.785	47.032	47.032
615.960	24.614	-1.210	23.404	35.614	47.032	47.032
615.970	24.622	-1.212	23.410	35.620	47.032	47.032
615.980	25.151	-1.211	23.940	36.150	47.032	47.032
615.990	26.627	-1.199	25.428	37.638	47.032	47.032
616.000	25.183	-1.207	23.976	36.186	47.032	47.032
616.010	24.450	-1.209	23.241	35.451	47.032	47.032
616.020	23.993	-1.195	22.798	35.008	47.032	47.032
616.030	26.444	-1.216	25.228	37.438	47.032	47.032
616.040	27.685	-1.197	26.488	38.698	47.032	47.032
616.050	27.177	-1.191	25.986	38.196	47.032	47.032
616.060	25.367	-1.200	24.167	36.377	47.032	47.032
616.070	27.154	-1.208	25.946	38.156	47.032	47.032
616.080	24.491	-1.203	23.288	35.498	47.032	47.032
616.090	27.162	-1.206	25.956	38.166	47.032	47.032
616.100	27.129	-1.233	25.896	38.106	47.032	47.032
616.110	24.989	-1.219	23.770	35.980	47.032	47.032
616.120	25.111	-1.236	23.875	36.085	47.032	47.032
616.130	24.538	-1.231	23.307	35.517	47.032	47.032
616.140	24.373	-1.216	23.157	35.367	47.032	47.032
616.150	24.901	-1.205	23.696	35.906	47.032	47.032

616.160	25.849	-1.225	24.624	36.834	47.032	47.032
616.170	27.426	-1.212	26.214	38.424	47.032	47.032
616.180	27.869	-1.221	26.648	38.858	47.032	47.032
616.190	26.316	-1.216	25.100	37.310	47.032	47.032
616.200	25.652	-1.241	24.411	36.621	47.032	47.032
616.210	25.082	-1.233	23.849	36.059	47.032	47.032
616.220	26.335	-1.236	25.099	37.309	47.032	47.032
616.230	27.810	-1.236	26.574	38.784	47.032	47.032
616.240	26.443	-1.235	25.208	37.418	47.032	47.032
616.250	25.236	-1.235	24.001	36.211	47.032	47.032
616.260	26.379	-1.239	25.140	37.350	47.032	47.032
616.270	26.339	-1.250	25.089	37.299	47.032	47.032
616.280	26.807	-1.246	25.561	37.771	47.032	47.032
616.290	27.130	-1.217	25.913	38.123	47.032	47.032
616.300	26.734	-1.224	25.510	37.720	47.032	47.032
616.310	27.438	-1.241	26.197	38.407	47.032	47.032
616.320	26.178	-1.233	24.945	37.155	47.032	47.032
616.330	28.254	-1.231	27.023	39.233	47.032	47.032
616.340	28.618	-1.248	27.370	39.580	47.032	47.032
616.350	24.404	-1.243	23.161	35.371	47.032	47.032
616.360	24.106	-1.243	22.863	35.073	47.032	47.032
616.370	27.782	-1.254	26.528	38.738	47.032	47.032
616.380	27.938	-1.252	26.686	38.896	47.032	47.032
616.390	26.117	-1.246	24.871	37.081	47.032	47.032
616.400	23.261	-1.261	22.000	34.210	47.032	47.032
616.410	25.473	-1.256	24.217	36.427	47.032	47.032
616.420	23.970	-1.266	22.704	34.914	47.032	47.032
616.430	24.304	-1.258	23.046	35.256	47.032	47.032
616.440	27.599	-1.245	26.354	38.564	47.032	47.032
616.450	28.070	-1.245	26.825	39.035	47.032	47.032
616.460	25.431	-1.265	24.166	36.376	47.032	47.032
616.470	25.386	-1.267	24.119	36.329	47.032	47.032
616.480	25.473	-1.262	24.211	36.421	47.032	47.032
616.490	26.248	-1.274	24.974	37.184	47.032	47.032
616.500	25.009	-1.272	23.737	35.947	47.032	47.032
616.510	26.150	-1.259	24.891	37.101	47.032	47.032
616.520	25.314	-1.247	24.067	36.277	47.032	47.032
616.530	26.401	-1.261	25.140	37.350	47.032	47.032
616.540	24.554	-1.251	23.303	35.513	47.032	47.032
616.550	25.037	-1.265	23.772	35.982	47.032	47.032
616.560	26.333	-1.269	25.064	37.274	47.032	47.032
616.570	26.283	-1.268	25.015	37.225	47.032	47.032
616.580	27.460	-1.303	26.157	38.367	47.032	47.032
616.590	25.415	-1.279	24.136	36.346	47.032	47.032
616.600	24.457	-1.267	23.190	35.400	47.032	47.032
616.610	25.079	-1.275	23.804	36.014	47.032	47.032

616.620	26.633	-1.266	25.367	37.577	47.032	47.032
616.630	25.586	-1.277	24.309	36.519	47.032	47.032
616.640	25.279	-1.259	24.020	36.230	47.032	47.032
616.650	25.416	-1.251	24.165	36.375	47.032	47.032
616.660	23.023	-1.270	21.753	33.963	47.032	47.032
616.670	26.233	-1.267	24.966	37.176	47.032	47.032
616.680	26.953	-1.258	25.695	37.905	47.032	47.032
616.690	26.272	-1.254	25.018	37.228	47.032	47.032
616.700	26.701	-1.266	25.435	37.645	47.032	47.032
616.710	26.702	-1.291	25.411	37.621	47.032	47.032
616.720	25.345	-1.324	24.021	36.231	47.032	47.032
616.730	24.307	-1.296	23.011	35.221	47.032	47.032
616.740	25.987	-1.288	24.699	36.909	47.032	47.032
616.750	25.782	-1.285	24.497	36.707	47.032	47.032
616.760	25.859	-1.286	24.573	36.783	47.032	47.032
616.770	27.123	-1.274	25.849	38.059	47.032	47.032
616.780	25.881	-1.279	24.602	36.812	47.032	47.032
616.790	26.867	-1.298	25.569	37.779	47.032	47.032
616.800	25.129	-1.301	23.828	36.038	47.032	47.032
616.810	25.373	-1.286	24.087	36.297	47.032	47.032
616.820	26.305	-1.275	25.030	37.240	47.032	47.032
616.830	25.048	-1.272	23.776	35.986	47.032	47.032
616.840	25.913	-1.270	24.643	36.853	47.032	47.032
616.850	25.738	-1.289	24.449	36.659	47.032	47.032
616.860	26.115	-1.286	24.829	37.039	47.032	47.032
616.870	27.536	-1.286	26.250	38.460	47.032	47.032
616.880	27.279	-1.284	25.995	38.205	47.032	47.032
616.890	26.986	-1.271	25.715	37.925	47.032	47.032
616.900	25.562	-1.281	24.281	36.491	47.032	47.032
616.910	23.803	-1.285	22.518	34.728	47.032	47.032
616.920	25.253	-1.283	23.970	36.180	47.032	47.032
616.930	25.760	-1.285	24.475	36.685	47.032	47.032
616.940	27.376	-1.289	26.087	38.297	47.032	47.032
616.950	25.108	-1.278	23.830	36.040	47.032	47.032
616.960	25.107	-1.276	23.831	36.041	47.032	47.032
616.970	25.916	-1.277	24.639	36.849	47.032	47.032
616.980	25.378	-1.301	24.077	36.287	47.032	47.032
616.990	25.259	-1.298	23.961	36.171	47.032	47.032
617.000	24.916	-1.294	23.622	35.832	47.032	47.032
617.010	26.564	-1.286	25.278	37.488	47.032	47.032
617.020	26.585	-1.268	25.317	37.527	47.032	47.032
617.030	26.188	-1.267	24.921	37.131	47.032	47.032
617.040	26.114	-1.280	24.834	37.044	47.032	47.032
617.050	26.789	-1.277	25.512	37.722	47.032	47.032
617.060	24.831	-1.281	23.550	35.760	47.032	47.032
617.070	25.091	-1.297	23.794	36.004	47.032	47.032

617.080	26.011	-1.297	24.714	36.924	47.032	47.032
617.090	24.036	-1.289	22.747	34.957	47.032	47.032
617.100	22.405	-1.294	21.111	33.321	47.032	47.032
617.110	24.120	-1.299	22.821	35.031	47.032	47.032
617.120	25.494	-1.300	24.194	36.404	47.032	47.032
617.130	26.555	-1.276	25.279	37.489	47.032	47.032
617.140	26.704	-1.282	25.422	37.632	47.032	47.032
617.150	25.972	-1.279	24.693	36.903	47.032	47.032
617.160	23.910	-1.299	22.611	34.821	47.032	47.032
617.170	27.087	-1.289	25.798	38.008	47.032	47.032
617.180	24.543	-1.275	23.268	35.478	47.032	47.032
617.190	25.381	-1.273	24.108	36.318	47.032	47.032
617.200	24.216	-1.266	22.950	35.160	47.032	47.032
617.210	26.987	-1.272	25.715	37.925	47.032	47.032
617.220	25.755	-1.260	24.495	36.705	47.032	47.032
617.230	25.562	-1.277	24.285	36.495	47.032	47.032
617.240	27.527	-1.270	26.257	38.467	47.032	47.032
617.250	26.756	-1.273	25.483	37.693	47.032	47.032
617.260	27.473	-1.270	26.203	38.413	47.032	47.032
617.270	25.241	-1.261	23.980	36.190	47.032	47.032
617.280	27.117	-1.256	25.861	38.071	47.032	47.032
617.290	25.344	-1.270	24.074	36.284	47.032	47.032
617.300	25.162	-1.272	23.890	36.100	47.032	47.032
617.310	27.020	-1.266	25.754	37.964	47.032	47.032
617.320	26.819	-1.267	25.552	37.762	47.032	47.032
617.330	27.360	-1.252	26.108	38.318	47.032	47.032
617.340	25.691	-1.261	24.430	36.640	47.032	47.032
617.350	24.779	-1.250	23.529	35.739	47.032	47.032
617.360	26.413	-1.276	25.137	37.347	47.032	47.032
617.370	25.920	-1.262	24.658	36.868	47.032	47.032
617.380	26.229	-1.256	24.973	37.183	47.032	47.032
617.390	26.233	-1.254	24.979	37.189	47.032	47.032
617.400	25.707	-1.247	24.460	36.670	47.032	47.032
617.410	25.691	-1.248	24.443	36.653	47.032	47.032
617.420	25.874	-1.259	24.615	36.825	47.032	47.032
617.430	25.142	-1.260	23.882	36.092	47.032	47.032
617.440	23.790	-1.252	22.538	34.748	47.032	47.032
617.450	25.006	-1.255	23.751	35.961	47.032	47.032
617.460	26.558	-1.239	25.319	37.529	47.032	47.032
617.470	24.493	-1.236	23.257	35.467	47.032	47.032
617.480	24.452	-1.234	23.218	35.428	47.032	47.032
617.490	24.748	-1.240	23.508	35.718	47.032	47.032
617.500	25.264	-1.236	24.028	36.238	47.032	47.032
617.510	25.024	-1.235	23.789	35.999	47.032	47.032
617.520	24.809	-1.247	23.562	35.772	47.032	47.032
617.530	26.350	-1.240	25.110	37.320	47.032	47.032

617.540	25.848	-1.219	24.629	36.839	47.032	47.032
617.550	26.912	-1.247	25.665	37.875	47.032	47.032
617.560	27.116	-1.234	25.882	38.092	47.032	47.032
617.570	25.083	-1.233	23.850	36.060	47.032	47.032
617.580	26.631	-1.239	25.392	37.602	47.032	47.032
617.590	26.270	-1.249	25.021	37.231	47.032	47.032
617.600	25.688	-1.264	24.424	36.634	47.032	47.032
617.610	26.921	-1.246	25.675	37.885	47.032	47.032
617.620	25.731	-1.217	24.514	36.724	47.032	47.032
617.630	26.346	-1.235	25.111	37.321	47.032	47.032
617.640	25.490	-1.235	24.255	36.465	47.032	47.032
617.650	25.614	-1.226	24.388	36.598	47.032	47.032
617.660	23.906	-1.216	22.690	34.900	47.032	47.032
617.670	25.794	-1.235	24.559	36.769	47.032	47.032
617.680	25.361	-1.231	24.130	36.340	47.032	47.032
617.690	26.745	-1.231	25.514	37.724	47.032	47.032
617.700	26.638	-1.235	25.403	37.613	47.032	47.032
617.710	26.870	-1.208	25.662	37.872	47.032	47.032
617.720	26.542	-1.210	25.332	37.542	47.032	47.032
617.730	25.124	-1.201	23.923	36.133	47.032	47.032
617.740	27.342	-1.218	26.124	38.334	47.032	47.032
617.750	25.800	-1.223	24.577	36.787	47.032	47.032
617.760	25.525	-1.218	24.307	36.517	47.032	47.032
617.770	25.473	-1.217	24.256	36.466	47.032	47.032
617.780	28.329	-1.216	27.113	39.323	47.032	47.032
617.790	26.325	-1.235	25.090	37.300	47.032	47.032
617.800	26.118	-1.224	24.894	37.104	47.032	47.032
617.810	26.789	-1.232	25.557	37.767	47.032	47.032
617.820	25.812	-1.217	24.595	36.805	47.032	47.032
617.830	28.717	-1.212	27.505	39.715	47.032	47.032
617.840	25.939	-1.221	24.718	36.928	47.032	47.032
617.850	25.724	-1.214	24.510	36.720	47.032	47.032
617.860	25.381	-1.201	24.180	36.390	47.032	47.032
617.870	23.742	-1.210	22.532	34.742	47.032	47.032
617.880	26.513	-1.212	25.301	37.511	47.032	47.032
617.890	24.312	-1.210	23.102	35.312	47.032	47.032
617.900	24.946	-1.217	23.729	35.939	47.032	47.032
617.910	23.635	-1.207	22.428	34.638	47.032	47.032
617.920	24.955	-1.198	23.757	35.967	47.032	47.032
617.930	26.465	-1.201	25.264	37.474	47.032	47.032
617.940	23.344	-1.230	22.114	34.324	47.032	47.032
617.950	26.208	-1.224	24.984	37.194	47.032	47.032
617.960	25.283	-1.212	24.071	36.281	47.032	47.032
617.970	25.810	-1.208	24.602	36.812	47.032	47.032
617.980	24.972	-1.202	23.770	35.980	47.032	47.032
617.990	25.300	-1.197	24.103	36.313	47.032	47.032

618.000	25.777	-1.220	24.557	36.767	47.032	47.032
618.010	26.258	-1.217	25.041	37.251	47.032	47.032
618.020	26.248	-1.214	25.034	37.244	47.032	47.032
618.030	25.544	-1.215	24.329	36.539	47.032	47.032
618.040	25.797	-1.208	24.589	36.799	47.032	47.032
618.050	27.784	-1.199	26.585	38.795	47.032	47.032
618.060	24.827	-1.218	23.609	35.819	47.032	47.032
618.070	24.969	-1.227	23.742	35.952	47.032	47.032
618.080	26.795	-1.216	25.579	37.789	47.032	47.032
618.090	24.816	-1.209	23.607	35.817	47.032	47.032
618.100	23.952	-1.224	22.728	34.938	47.032	47.032
618.110	25.605	-1.220	24.385	36.595	47.032	47.032
618.120	27.440	-1.211	26.229	38.439	47.032	47.032
618.130	25.793	-1.215	24.578	36.788	47.032	47.032
618.140	25.902	-1.223	24.679	36.889	47.032	47.032
618.150	24.630	-1.227	23.403	35.613	47.032	47.032
618.160	25.248	-1.227	24.021	36.231	47.032	47.032
618.170	25.865	-1.231	24.634	36.844	47.032	47.032
618.180	24.325	-1.219	23.106	35.316	47.032	47.032
618.190	23.994	-1.231	22.763	34.973	47.032	47.032
618.200	24.920	-1.229	23.691	35.901	47.032	47.032
618.210	26.719	-1.227	25.492	37.702	47.032	47.032
618.220	23.106	-1.234	21.872	34.082	47.032	47.032
618.230	25.378	-1.241	24.137	36.347	47.032	47.032
618.240	26.082	-1.245	24.837	37.047	47.032	47.032
618.250	23.668	-1.239	22.429	34.639	47.032	47.032
618.260	22.303	-1.239	21.064	33.274	47.032	47.032
618.270	26.565	-1.252	25.313	37.523	47.032	47.032
618.280	25.122	-1.248	23.874	36.084	47.032	47.032
618.290	24.518	-1.250	23.268	35.478	47.032	47.032
618.300	24.453	-1.254	23.199	35.409	47.032	47.032
618.310	24.108	-1.231	22.877	35.087	47.032	47.032
618.320	26.422	-1.240	25.182	37.392	47.032	47.032
618.330	24.488	-1.268	23.220	35.430	47.032	47.032
618.340	24.486	-1.260	23.226	35.436	47.032	47.032
618.350	25.129	-1.262	23.867	36.077	47.032	47.032
618.360	23.948	-1.263	22.685	34.895	47.032	47.032
618.370	25.072	-1.259	23.813	36.023	47.032	47.032
618.380	25.135	-1.261	23.874	36.084	47.032	47.032
618.390	25.293	-1.258	24.035	36.245	47.032	47.032
618.400	25.812	-1.281	24.531	36.741	47.032	47.032
618.410	26.340	-1.295	25.045	37.255	47.032	47.032
618.420	24.021	-1.271	22.750	34.960	47.032	47.032
618.430	24.919	-1.249	23.670	35.880	47.032	47.032
618.440	25.944	-1.272	24.672	36.882	47.032	47.032
618.450	25.619	-1.283	24.336	36.546	47.032	47.032

618.460	25.830	-1.291	24.539	36.749	47.032	47.032
618.470	24.342	-1.287	23.055	35.265	47.032	47.032
618.480	24.839	-1.297	23.542	35.752	47.032	47.032
618.490	24.800	-1.298	23.502	35.712	47.032	47.032
618.500	26.195	-1.303	24.892	37.102	47.032	47.032
618.510	26.603	-1.294	25.309	37.519	47.032	47.032
618.520	25.098	-1.290	23.808	36.018	47.032	47.032
618.530	23.820	-1.321	22.499	34.709	47.032	47.032
618.540	26.431	-1.321	25.110	37.320	47.032	47.032
618.550	24.538	-1.330	23.208	35.418	47.032	47.032
618.560	27.193	-1.326	25.867	38.077	47.032	47.032
618.570	26.838	-1.333	25.505	37.715	47.032	47.032
618.580	24.653	-1.325	23.328	35.538	47.032	47.032
618.590	25.229	-1.349	23.880	36.090	47.032	47.032
618.600	23.085	-1.343	21.742	33.952	47.032	47.032
618.610	24.872	-1.313	23.559	35.769	47.032	47.032
618.620	23.770	-1.344	22.426	34.636	47.032	47.032
618.630	25.721	-1.359	24.362	36.572	47.032	47.032
618.640	26.244	-1.375	24.869	37.079	47.032	47.032
618.650	23.915	-1.368	22.547	34.757	47.032	47.032
618.660	25.975	-1.377	24.598	36.808	47.032	47.032
618.670	27.134	-1.361	25.773	37.983	47.032	47.032
618.680	25.145	-1.381	23.764	35.974	47.032	47.032
618.690	27.305	-1.382	25.923	38.133	47.032	47.032
618.700	27.477	-1.385	26.092	38.302	47.032	47.032
618.710	24.235	-1.389	22.846	35.056	47.032	47.032
618.720	25.035	-1.381	23.654	35.864	47.032	47.032
618.730	24.668	-1.381	23.287	35.497	47.032	47.032
618.740	25.554	-1.382	24.172	36.382	47.032	47.032
618.750	25.696	-1.402	24.294	36.504	47.032	47.032
618.760	27.828	-1.396	26.432	38.642	47.032	47.032
618.770	26.297	-1.422	24.875	37.085	47.032	47.032
618.780	26.838	-1.425	25.413	37.623	47.032	47.032
618.790	25.887	-1.413	24.474	36.684	47.032	47.032
618.800	23.982	-1.437	22.545	34.755	47.032	47.032
618.810	25.666	-1.435	24.231	36.441	47.032	47.032
618.820	25.038	-1.432	23.606	35.816	47.032	47.032
618.830	25.769	-1.446	24.323	36.533	47.032	47.032
618.840	26.118	-1.427	24.691	36.901	47.032	47.032
618.850	26.838	-1.443	25.395	37.605	47.032	47.032
618.860	26.945	-1.456	25.489	37.699	47.032	47.032
618.870	27.580	-1.456	26.124	38.334	47.032	47.032
618.880	26.261	-1.472	24.789	36.999	47.032	47.032
618.890	25.448	-1.454	23.994	36.204	47.032	47.032
618.900	26.415	-1.467	24.948	37.158	47.032	47.032
618.910	24.199	-1.476	22.723	34.933	47.032	47.032

618.920	26.372	-1.475	24.897	37.107	47.032	47.032
618.930	25.233	-1.510	23.723	35.933	47.032	47.032
618.940	27.757	-1.507	26.250	38.460	47.032	47.032
618.950	26.883	-1.505	25.378	37.588	47.032	47.032
618.960	25.233	-1.516	23.717	35.927	47.032	47.032
618.970	25.529	-1.502	24.027	36.237	47.032	47.032
618.980	26.454	-1.514	24.940	37.150	47.032	47.032
618.990	25.579	-1.523	24.056	36.266	47.032	47.032
619.000	26.390	-1.524	24.866	37.076	47.032	47.032
619.010	24.932	-1.537	23.395	35.605	47.032	47.032
619.020	26.457	-1.534	24.923	37.133	47.032	47.032
619.030	26.500	-1.569	24.931	37.141	47.032	47.032
619.040	25.103	-1.578	23.525	35.735	47.032	47.032
619.050	25.604	-1.570	24.034	36.244	47.032	47.032
619.060	25.716	-1.566	24.150	36.360	47.032	47.032
619.070	23.871	-1.563	22.308	34.518	47.032	47.032
619.080	24.303	-1.573	22.730	34.940	47.032	47.032
619.090	26.060	-1.584	24.476	36.686	47.032	47.032
619.100	28.031	-1.600	26.431	38.641	47.032	47.032
619.110	27.129	-1.600	25.529	37.739	47.032	47.032
619.120	25.469	-1.598	23.871	36.081	47.032	47.032
619.130	24.551	-1.607	22.944	35.154	47.032	47.032
619.140	25.021	-1.625	23.396	35.606	47.032	47.032
619.150	25.231	-1.640	23.591	35.801	47.032	47.032
619.160	25.500	-1.645	23.855	36.065	47.032	47.032
619.170	26.431	-1.669	24.762	36.972	47.032	47.032
619.180	26.851	-1.659	25.192	37.402	47.032	47.032
619.190	26.432	-1.663	24.769	36.979	47.032	47.032
619.200	26.839	-1.658	25.181	37.391	47.032	47.032
619.210	24.901	-1.681	23.220	35.430	47.032	47.032
619.220	26.780	-1.681	25.099	37.309	47.032	47.032
619.230	25.722	-1.675	24.047	36.257	47.032	47.032
619.240	26.020	-1.700	24.320	36.530	47.032	47.032
619.250	25.937	-1.704	24.233	36.443	47.032	47.032
619.260	25.098	-1.710	23.388	35.598	47.032	47.032
619.270	26.094	-1.727	24.367	36.577	47.032	47.032
619.280	27.531	-1.722	25.809	38.019	47.032	47.032
619.290	25.691	-1.752	23.939	36.149	47.032	47.032
619.300	24.585	-1.759	22.826	35.036	47.032	47.032
619.310	26.201	-1.753	24.448	36.658	47.032	47.032
619.320	24.592	-1.763	22.829	35.039	47.032	47.032
619.330	25.781	-1.776	24.005	36.215	47.032	47.032
619.340	26.821	-1.787	25.034	37.244	47.032	47.032
619.350	25.572	-1.799	23.773	35.983	47.032	47.032
619.360	26.226	-1.808	24.418	36.628	47.032	47.032
619.370	26.761	-1.812	24.949	37.159	47.032	47.032

619.380	25.153	-1.835	23.318	35.528	47.032	47.032
619.390	25.170	-1.840	23.330	35.540	47.032	47.032
619.400	23.754	-1.839	21.915	34.125	47.032	47.032
619.410	24.578	-1.854	22.724	34.934	47.032	47.032
619.420	25.672	-1.876	23.796	36.006	47.032	47.032
619.430	25.293	-1.895	23.398	35.608	47.032	47.032
619.440	26.271	-1.898	24.373	36.583	47.032	47.032
619.450	27.137	-1.913	25.224	37.434	47.032	47.032
619.460	28.813	-1.904	26.909	39.119	47.032	47.032
619.470	26.357	-1.925	24.432	36.642	47.032	47.032
619.480	26.992	-1.948	25.044	37.254	47.032	47.032
619.490	27.105	-1.967	25.138	37.348	47.032	47.032
619.500	27.891	-1.968	25.923	38.133	47.032	47.032
619.510	25.335	-1.978	23.357	35.567	47.032	47.032
619.520	24.701	-1.994	22.707	34.917	47.032	47.032
619.530	24.366	-2.025	22.341	34.551	47.032	47.032
619.540	25.688	-2.051	23.637	35.847	47.032	47.032
619.550	25.455	-2.052	23.403	35.613	47.032	47.032
619.560	25.778	-2.049	23.729	35.939	47.032	47.032
619.570	25.648	-2.081	23.567	35.777	47.032	47.032
619.580	23.035	-2.085	20.950	33.160	47.032	47.032
619.590	26.032	-2.100	23.932	36.142	47.032	47.032
619.600	22.922	-2.099	20.823	33.033	47.032	47.032
619.610	25.866	-2.105	23.761	35.971	47.032	47.032
619.620	24.844	-2.144	22.700	34.910	47.032	47.032
619.630	25.389	-2.154	23.235	35.445	47.032	47.032
619.640	23.595	-2.174	21.421	33.631	47.032	47.032
619.650	23.355	-2.207	21.148	33.358	47.032	47.032
619.660	23.111	-2.205	20.906	33.116	47.032	47.032
619.670	21.142	-2.234	18.908	31.118	47.032	47.032
619.680	21.835	-2.260	19.575	31.785	47.032	47.032
619.690	20.261	-2.286	17.975	30.185	47.032	47.032
619.700	21.065	-2.312	18.753	30.963	47.032	47.032
619.710	21.668	-2.313	19.355	31.565	47.032	47.032
619.720	21.888	-2.350	19.538	31.748	47.032	47.032
619.730	22.303	-2.374	19.929	32.139	47.032	47.032
619.740	22.394	-2.385	20.009	32.219	47.032	47.032
619.750	22.301	-2.420	19.881	32.091	47.032	47.032
619.760	20.319	-2.459	17.860	30.070	47.032	47.032
619.770	20.311	-2.448	17.863	30.073	47.032	47.032
619.780	20.233	-2.471	17.762	29.972	47.032	47.032
619.790	21.303	-2.499	18.804	31.014	47.032	47.032
619.800	19.017	-2.532	16.485	28.695	47.032	47.032
619.810	19.755	-2.584	17.171	29.381	47.032	47.032
619.820	16.542	-2.621	13.921	26.131	47.032	47.032
619.830	17.007	-2.627	14.380	26.590	47.032	47.032

619.840	18.515	-2.656	15.859	28.069	47.032	47.032
619.850	15.139	-2.701	12.438	24.648	47.032	47.032
619.860	15.364	-2.735	12.629	24.839	47.032	47.032
619.870	16.153	-2.769	13.384	25.594	47.032	47.032
619.880	14.515	-2.818	11.697	23.907	47.032	47.032
619.890	12.671	-2.889	9.782	21.992	47.032	47.032
619.900	13.891	-2.902	10.989	23.199	47.032	47.032
619.910	11.426	-2.925	8.501	20.711	47.032	47.032
619.920	11.497	-2.992	8.505	20.715	47.032	47.032
619.930	10.321	-3.051	7.270	19.480	47.032	47.032
619.940	7.611	-3.109	4.502	16.712	47.032	47.032
619.950	3.062	-3.173	-0.111	12.099	47.032	47.032
619.960	2.791	-3.228	-0.437	11.773	47.032	47.032
619.970	-1.072	-3.291	-4.363	7.847	47.032	47.032
619.980	-4.736	-3.366	-8.102	4.108	47.032	47.032
619.990	-8.675	-3.439	-12.114	0.096	47.032	47.032
Upper Band Edge						
620.000	-10.709	-3.510	-14.219	-2.009	47.032	0.032
620.010	-11.174	-3.597	-14.771	-2.561	1.032	0.032
620.020	-11.536	-3.671	-15.207	-2.997	1.032	0.032
620.030	-11.258	-3.752	-15.010	-2.800	1.032	0.032
620.040	-11.819	-3.860	-15.679	-3.469	1.032	0.032
620.050	-12.374	-3.953	-16.327	-4.117	1.032	0.032
620.060	-13.038	-4.062	-17.100	-4.890	1.032	0.032
620.070	-11.621	-4.194	-15.815	-3.605	1.032	0.032
620.080	-13.180	-4.326	-17.506	-5.296	1.032	0.032
620.090	-10.040	-4.450	-14.490	-2.280	1.032	0.032
620.100	-13.960	-4.598	-18.558	-6.348	1.032	0.032
620.110	-11.825	-4.735	-16.560	-4.350	1.032	0.032
620.120	-12.749	-4.928	-17.677	-5.467	1.032	0.032
620.130	-12.745	-5.115	-17.860	-5.650	1.032	0.032
620.140	-13.956	-5.300	-19.256	-7.046	1.032	0.032
620.150	-10.999	-5.477	-16.476	-4.266	1.032	0.032
620.160	-12.556	-5.676	-18.232	-6.022	1.032	0.032
620.170	-13.298	-5.900	-19.198	-6.988	1.032	0.032
620.180	-12.706	-6.151	-18.857	-6.647	1.032	0.032
620.190	-13.121	-6.417	-19.538	-7.328	1.032	0.032
620.200	-12.009	-6.719	-18.728	-6.518	1.032	0.032
620.210	-15.522	-6.992	-22.514	-10.304	1.032	0.032
620.220	-12.742	-7.296	-20.038	-7.828	1.032	0.032
620.230	-14.584	-7.603	-22.187	-9.977	1.032	0.032
620.240	-12.072	-7.940	-20.012	-7.802	1.032	0.032
620.250	-13.643	-8.288	-21.931	-9.721	0.988	0.032
620.260	-13.956	-8.682	-22.638	-10.428	0.985	0.032
620.270	-13.438	-9.052	-22.490	-10.280	0.981	0.032

620.280	-13.672	-9.464	-23.136	-10.926	0.977	0.032
620.290	-12.317	-9.879	-22.196	-9.986	0.973	0.032
620.300	-13.444	-10.325	-23.769	-11.559	0.969	0.032
620.310	-12.151	-10.783	-22.934	-10.724	0.965	0.032
620.320	-11.595	-11.234	-22.829	-10.619	0.961	0.032
620.330	-14.470	-11.748	-26.218	-14.008	0.956	0.032
620.340	-14.586	-12.236	-26.822	-14.612	0.951	0.032
620.350	-13.122	-12.737	-25.859	-13.649	0.947	0.032
620.360	-12.431	-13.262	-25.693	-13.483	0.942	0.032
620.370	-14.893	-13.819	-28.712	-16.502	0.937	0.032
620.380	-13.871	-14.353	-28.224	-16.014	0.931	0.032
620.390	-11.951	-14.839	-26.790	-14.580	0.926	0.032
620.400	-13.367	-15.388	-28.755	-16.545	0.921	0.032
620.410	-13.599	-15.935	-29.534	-17.324	0.915	0.032
620.420	-13.001	-16.439	-29.440	-17.230	0.909	0.032
620.430	-12.735	-16.973	-29.708	-17.498	0.903	0.032
620.440	-14.112	-17.445	-31.557	-19.347	0.897	0.032
620.450	-13.289	-17.922	-31.211	-19.001	0.891	0.032
620.460	-13.327	-18.341	-31.668	-19.458	0.885	0.032
620.470	-11.580	-18.728	-30.308	-18.098	0.878	0.032
620.480	-12.367	-19.059	-31.426	-19.216	0.872	0.032
620.490	-14.928	-19.350	-34.278	-22.068	0.865	0.032
620.500	-11.666	-19.585	-31.251	-19.041	0.858	0.032
620.510	-12.893	-19.774	-32.667	-20.457	0.851	-0.083
620.520	-11.364	-19.880	-31.244	-19.034	0.844	-0.198
620.530	-14.094	-19.951	-34.045	-21.835	0.837	-0.313
620.540	-13.975	-19.997	-33.972	-21.762	0.829	-0.428
620.550	-14.635	-19.972	-34.607	-22.397	0.822	-0.543
620.560	-13.009	-19.911	-32.920	-20.710	0.814	-0.658
620.570	-13.359	-19.849	-33.208	-20.998	0.806	-0.773
620.580	-13.445	-19.764	-33.209	-20.999	0.798	-0.888
620.590	-12.338	-19.643	-31.981	-19.771	0.790	-1.003
620.600	-13.855	-19.543	-33.398	-21.188	0.782	-1.118
620.610	-12.311	-19.403	-31.714	-19.504	0.773	-1.233
620.620	-15.039	-19.274	-34.313	-22.103	0.765	-1.348
620.630	-14.279	-19.161	-33.440	-21.230	0.756	-1.463
620.640	-15.052	-19.030	-34.082	-21.872	0.747	-1.578
620.650	-12.713	-18.908	-31.621	-19.411	0.738	-1.693
620.660	-13.461	-18.784	-32.245	-20.035	0.729	-1.808
620.670	-12.664	-18.659	-31.323	-19.113	0.720	-1.923
620.680	-14.214	-18.562	-32.776	-20.566	0.711	-2.038
620.690	-14.961	-18.479	-33.440	-21.230	0.701	-2.153
620.700	-12.176	-18.368	-30.544	-18.334	0.691	-2.268
620.710	-13.901	-18.273	-32.174	-19.964	0.682	-2.383
620.720	-12.544	-18.201	-30.745	-18.535	0.672	-2.498
620.730	-13.872	-18.092	-31.964	-19.754	0.662	-2.613

620.740	-12.787	-18.035	-30.822	-18.612	0.651	-2.728
620.750	-12.607	-17.963	-30.570	-18.360	0.641	-2.843
620.760	-14.316	-17.886	-32.202	-19.992	0.631	-2.958
620.770	-11.541	-17.830	-29.371	-17.161	0.620	-3.073
620.780	-12.971	-17.777	-30.748	-18.538	0.609	-3.188
620.790	-12.512	-17.733	-30.245	-18.035	0.598	-3.303
620.800	-14.598	-17.691	-32.289	-20.079	0.587	-3.418
620.810	-13.491	-17.630	-31.121	-18.911	0.576	-3.533
620.820	-12.767	-17.607	-30.374	-18.164	0.565	-3.648
620.830	-11.426	-17.589	-29.015	-16.805	0.553	-3.763
620.840	-10.950	-17.569	-28.519	-16.309	0.542	-3.878
620.850	-12.847	-17.540	-30.387	-18.177	0.530	-3.993
620.860	-14.998	-17.497	-32.495	-20.285	0.518	-4.108
620.870	-14.363	-17.494	-31.857	-19.647	0.506	-4.223
620.880	-11.679	-17.490	-29.169	-16.959	0.494	-4.338
620.890	-13.361	-17.504	-30.865	-18.655	0.482	-4.453
620.900	-12.922	-17.491	-30.413	-18.203	0.469	-4.568
620.910	-12.622	-17.496	-30.118	-17.908	0.457	-4.683
620.920	-12.465	-17.478	-29.943	-17.733	0.444	-4.798
620.930	-13.024	-17.465	-30.489	-18.279	0.431	-4.913
620.940	-12.780	-17.479	-30.259	-18.049	0.418	-5.028
620.950	-12.334	-17.513	-29.847	-17.637	0.405	-5.143
620.960	-14.772	-17.527	-32.299	-20.089	0.392	-5.258
620.970	-14.069	-17.538	-31.607	-19.397	0.378	-5.373
620.980	-10.723	-17.547	-28.270	-16.060	0.365	-5.488
620.990	-12.453	-17.580	-30.033	-17.823	0.351	-5.603
621.000	-11.823	-17.577	-29.400	-17.190	0.337	-5.718
621.010	-12.263	-17.605	-29.868	-17.658	0.323	-5.833
621.020	-13.054	-17.630	-30.684	-18.474	0.309	-5.948
621.030	-12.212	-17.678	-29.890	-17.680	0.295	-6.063
621.040	-15.156	-17.694	-32.850	-20.640	0.281	-6.178
621.050	-13.506	-17.714	-31.220	-19.010	0.266	-6.293
621.060	-13.444	-17.739	-31.183	-18.973	0.251	-6.408
621.070	-13.470	-17.772	-31.242	-19.032	0.237	-6.523
621.080	-13.531	-17.822	-31.353	-19.143	0.222	-6.638
621.090	-14.337	-17.846	-32.183	-19.973	0.207	-6.753
621.100	-11.869	-17.885	-29.754	-17.544	0.191	-6.868
621.110	-16.283	-17.911	-34.194	-21.984	0.176	-6.983
621.120	-13.682	-17.930	-31.612	-19.402	0.161	-7.098
621.130	-14.759	-17.993	-32.752	-20.542	0.145	-7.213
621.140	-13.346	-18.044	-31.390	-19.180	0.129	-7.328
621.150	-13.296	-18.090	-31.386	-19.176	0.113	-7.443
621.160	-12.167	-18.112	-30.279	-18.069	0.097	-7.558
621.170	-14.484	-18.170	-32.654	-20.444	0.081	-7.673
621.180	-14.377	-18.225	-32.602	-20.392	0.065	-7.788
621.190	-14.032	-18.256	-32.288	-20.078	0.048	-7.903

621.200	-12.724	-18.294	-31.018	-18.808	0.032	-8.018
621.210	-11.880	-18.339	-30.219	-18.009	0.015	-8.133
621.220	-13.946	-18.391	-32.337	-20.127	-0.002	-8.248
621.230	-15.021	-18.434	-33.455	-21.245	-0.019	-8.363
621.240	-14.935	-18.499	-33.434	-21.224	-0.036	-8.478
621.250	-15.264	-18.524	-33.788	-21.578	-0.053	-8.593
621.260	-14.329	-18.597	-32.926	-20.716	-0.071	-8.708
621.270	-13.576	-18.641	-32.217	-20.007	-0.088	-8.823
621.280	-16.717	-18.694	-35.411	-23.201	-0.106	-8.938
621.290	-12.957	-18.745	-31.702	-19.492	-0.124	-9.053
621.300	-14.733	-18.798	-33.531	-21.321	-0.142	-9.168
621.310	-13.794	-18.835	-32.629	-20.419	-0.160	-9.283
621.320	-13.876	-18.909	-32.785	-20.575	-0.178	-9.398
621.330	-13.371	-18.971	-32.342	-20.132	-0.197	-9.513
621.340	-13.328	-19.035	-32.363	-20.153	-0.215	-9.628
621.350	-15.348	-19.084	-34.432	-22.222	-0.234	-9.743
621.360	-14.694	-19.131	-33.825	-21.615	-0.253	-9.858
621.370	-14.645	-19.191	-33.836	-21.626	-0.272	-9.973
621.380	-15.225	-19.218	-34.443	-22.233	-0.291	-10.088
621.390	-12.114	-19.300	-31.414	-19.204	-0.310	-10.203
621.400	-13.797	-19.341	-33.138	-20.928	-0.329	-10.318
621.410	-11.802	-19.401	-31.203	-18.993	-0.349	-10.433
621.420	-14.124	-19.477	-33.601	-21.391	-0.369	-10.548
621.430	-14.885	-19.552	-34.437	-22.227	-0.388	-10.663
621.440	-12.380	-19.600	-31.980	-19.770	-0.408	-10.778
621.450	-14.336	-19.666	-34.002	-21.792	-0.428	-10.893
621.460	-13.812	-19.696	-33.508	-21.298	-0.449	-11.008
621.470	-14.769	-19.776	-34.545	-22.335	-0.469	-11.123
621.480	-12.001	-19.822	-31.823	-19.613	-0.489	-11.238
621.490	-14.563	-19.884	-34.447	-22.237	-0.510	-11.353
621.500	-14.637	-19.941	-34.578	-22.368	-0.531	-11.468
621.510	-15.071	-20.013	-35.084	-22.874	-0.552	-11.583
621.520	-13.824	-20.072	-33.896	-21.686	-0.573	-11.698
621.530	-12.700	-20.145	-32.845	-20.635	-0.594	-11.813
621.540	-14.490	-20.217	-34.707	-22.497	-0.615	-11.928
621.550	-13.467	-20.275	-33.742	-21.532	-0.637	-12.043
621.560	-12.467	-20.335	-32.802	-20.592	-0.658	-12.158
621.570	-14.310	-20.384	-34.694	-22.484	-0.680	-12.273
621.580	-14.971	-20.435	-35.406	-23.196	-0.702	-12.388
621.590	-13.459	-20.487	-33.946	-21.736	-0.724	-12.503
621.600	-14.178	-20.549	-34.727	-22.517	-0.746	-12.618
621.610	-13.130	-20.639	-33.769	-21.559	-0.768	-12.733
621.620	-13.726	-20.703	-34.429	-22.219	-0.791	-12.848
621.630	-12.565	-20.738	-33.303	-21.093	-0.813	-12.963
621.640	-16.864	-20.813	-37.677	-25.467	-0.836	-13.078
621.650	-13.008	-20.883	-33.891	-21.681	-0.859	-13.193

621.660	-12.119	-20.922	-33.041	-20.831	-0.882	-13.308
621.670	-11.286	-21.007	-32.293	-20.083	-0.905	-13.423
621.680	-12.981	-21.066	-34.047	-21.837	-0.928	-13.538
621.690	-15.244	-21.162	-36.406	-24.196	-0.952	-13.653
621.700	-12.811	-21.209	-34.020	-21.810	-0.975	-13.768
621.710	-15.442	-21.269	-36.711	-24.501	-0.999	-13.883
621.720	-12.028	-21.324	-33.352	-21.142	-1.023	-13.998
621.730	-15.157	-21.409	-36.566	-24.356	-1.047	-14.113
621.740	-16.316	-21.463	-37.779	-25.569	-1.071	-14.228
621.750	-13.488	-21.553	-35.041	-22.831	-1.095	-14.343
621.760	-12.463	-21.598	-34.061	-21.851	-1.119	-14.458
621.770	-14.533	-21.661	-36.194	-23.984	-1.144	-14.573
621.780	-13.708	-21.705	-35.413	-23.203	-1.169	-14.688
621.790	-14.683	-21.787	-36.470	-24.260	-1.193	-14.803
621.800	-14.079	-21.853	-35.932	-23.722	-1.218	-14.918
621.810	-13.854	-21.902	-35.756	-23.546	-1.243	-15.033
621.820	-14.816	-21.972	-36.788	-24.578	-1.269	-15.148
621.830	-14.061	-22.034	-36.095	-23.885	-1.294	-15.263
621.840	-12.987	-22.095	-35.082	-22.872	-1.319	-15.378
621.850	-13.425	-22.166	-35.591	-23.381	-1.345	-15.493
621.860	-12.036	-22.250	-34.286	-22.076	-1.371	-15.608
621.870	-13.729	-22.300	-36.029	-23.819	-1.397	-15.723
621.880	-14.042	-22.358	-36.400	-24.190	-1.423	-15.838
621.890	-14.253	-22.462	-36.715	-24.505	-1.449	-15.953
621.900	-14.427	-22.518	-36.945	-24.735	-1.475	-16.068
621.910	-12.360	-22.566	-34.926	-22.716	-1.502	-16.183
621.920	-13.428	-22.627	-36.055	-23.845	-1.528	-16.298
621.930	-13.824	-22.690	-36.514	-24.304	-1.555	-16.413
621.940	-13.183	-22.779	-35.962	-23.752	-1.582	-16.528
621.950	-14.023	-22.826	-36.849	-24.639	-1.609	-16.643
621.960	-15.360	-22.871	-38.231	-26.021	-1.636	-16.758
621.970	-14.747	-22.931	-37.678	-25.468	-1.663	-16.873
621.980	-12.326	-23.017	-35.343	-23.133	-1.691	-16.988
621.990	-13.793	-23.072	-36.865	-24.655	-1.718	-17.103
622.000	-14.811	-23.149	-37.960	-25.750	-1.746	-17.218
622.010	-13.641	-23.211	-36.852	-24.642	-1.774	-17.333
622.020	-14.441	-23.272	-37.713	-25.503	-1.802	-17.448
622.030	-12.366	-23.332	-35.698	-23.488	-1.830	-17.563
622.040	-13.472	-23.390	-36.862	-24.652	-1.858	-17.678
622.050	-13.869	-23.440	-37.309	-25.099	-1.887	-17.793
622.060	-14.065	-23.539	-37.604	-25.394	-1.915	-17.908
622.070	-16.387	-23.574	-39.961	-27.751	-1.944	-18.023
622.080	-13.646	-23.647	-37.293	-25.083	-1.973	-18.138
622.090	-16.159	-23.730	-39.889	-27.679	-2.002	-18.253
622.100	-12.837	-23.776	-36.613	-24.403	-2.031	-18.368
622.110	-13.768	-23.834	-37.602	-25.392	-2.060	-18.483

622.120	-14.631	-23.903	-38.534	-26.324	-2.089	-18.598
622.130	-13.219	-23.976	-37.195	-24.985	-2.119	-18.713
622.140	-13.887	-24.060	-37.947	-25.737	-2.149	-18.828
622.150	-14.397	-24.110	-38.507	-26.297	-2.178	-18.943
622.160	-14.126	-24.169	-38.295	-26.085	-2.208	-19.058
622.170	-12.696	-24.217	-36.913	-24.703	-2.238	-19.173
622.180	-13.537	-24.313	-37.850	-25.640	-2.269	-19.288
622.190	-13.709	-24.368	-38.077	-25.867	-2.299	-19.403
622.200	-13.428	-24.420	-37.848	-25.638	-2.329	-19.518
622.210	-14.679	-24.479	-39.158	-26.948	-2.360	-19.633
622.220	-13.520	-24.556	-38.076	-25.866	-2.391	-19.748
622.230	-16.474	-24.608	-41.082	-28.872	-2.422	-19.863
622.240	-16.216	-24.687	-40.903	-28.693	-2.453	-19.978
622.250	-13.621	-24.746	-38.367	-26.157	-2.484	-20.093
622.260	-13.469	-24.826	-38.295	-26.085	-2.515	-20.208
622.270	-15.577	-24.902	-40.479	-28.269	-2.547	-20.323
622.280	-15.110	-24.943	-40.053	-27.843	-2.578	-20.438
622.290	-17.104	-24.982	-42.086	-29.876	-2.610	-20.553
622.300	-14.773	-25.067	-39.840	-27.630	-2.642	-20.668
622.310	-13.178	-25.148	-38.326	-26.116	-2.674	-20.783
622.320	-12.514	-25.202	-37.716	-25.506	-2.706	-20.898
622.330	-13.637	-25.252	-38.889	-26.679	-2.738	-21.013
622.340	-16.419	-25.290	-41.709	-29.499	-2.771	-21.128
622.350	-15.539	-25.397	-40.936	-28.726	-2.803	-21.243
622.360	-13.791	-25.449	-39.240	-27.030	-2.836	-21.358
622.370	-13.539	-25.523	-39.062	-26.852	-2.869	-21.473
622.380	-12.989	-25.573	-38.562	-26.352	-2.902	-21.588
622.390	-16.498	-25.649	-42.147	-29.937	-2.935	-21.703
622.400	-15.844	-25.706	-41.550	-29.340	-2.968	-21.818
622.410	-15.625	-25.751	-41.376	-29.166	-3.002	-21.933
622.420	-12.986	-25.829	-38.815	-26.605	-3.035	-22.048
622.430	-15.911	-25.885	-41.796	-29.586	-3.069	-22.163
622.440	-16.466	-25.965	-42.431	-30.221	-3.103	-22.278
622.450	-13.245	-26.002	-39.247	-27.037	-3.137	-22.393
622.460	-14.921	-26.093	-41.014	-28.804	-3.171	-22.508
622.470	-13.124	-26.138	-39.262	-27.052	-3.205	-22.623
622.480	-14.825	-26.202	-41.027	-28.817	-3.239	-22.738
622.490	-13.049	-26.268	-39.317	-27.107	-3.274	-22.853
622.500	-15.254	-26.294	-41.548	-29.338	-3.309	-22.968
622.510	-15.834	-26.409	-42.243	-30.033	-3.343	-23.083
622.520	-15.040	-26.446	-41.486	-29.276	-3.378	-23.198
622.530	-13.990	-26.520	-40.510	-28.300	-3.413	-23.313
622.540	-15.274	-26.550	-41.824	-29.614	-3.449	-23.428
622.550	-15.180	-26.603	-41.783	-29.573	-3.484	-23.543
622.560	-14.203	-26.698	-40.901	-28.691	-3.519	-23.658
622.570	-17.193	-26.763	-43.956	-31.746	-3.555	-23.773

622.580	-13.147	-26.827	-39.974	-27.764	-3.591	-23.888
622.590	-14.367	-26.892	-41.259	-29.049	-3.627	-24.003
622.600	-14.030	-26.945	-40.975	-28.765	-3.663	-24.118
622.610	-14.482	-26.997	-41.479	-29.269	-3.699	-24.233
622.620	-15.342	-27.063	-42.405	-30.195	-3.735	-24.348
622.630	-13.798	-27.133	-40.931	-28.721	-3.772	-24.463
622.640	-14.786	-27.188	-41.974	-29.764	-3.808	-24.578
622.650	-15.058	-27.231	-42.289	-30.079	-3.845	-24.693
622.660	-12.849	-27.311	-40.160	-27.950	-3.882	-24.808
622.670	-13.521	-27.367	-40.888	-28.678	-3.919	-24.923
622.680	-14.770	-27.428	-42.198	-29.988	-3.956	-25.038
622.690	-12.503	-27.491	-39.994	-27.784	-3.993	-25.153
622.700	-12.358	-27.530	-39.888	-27.678	-4.031	-25.268
622.710	-13.770	-27.614	-41.384	-29.174	-4.068	-25.383
622.720	-16.085	-27.686	-43.771	-31.561	-4.106	-25.498
622.730	-13.655	-27.724	-41.379	-29.169	-4.144	-25.613
622.740	-13.687	-27.758	-41.445	-29.235	-4.182	-25.728
622.750	-13.842	-27.819	-41.661	-29.451	-4.220	-25.843
622.760	-14.703	-27.905	-42.608	-30.398	-4.258	-25.958
622.770	-13.862	-27.950	-41.812	-29.602	-4.297	-26.073
622.780	-15.028	-28.038	-43.066	-30.856	-4.335	-26.188
622.790	-14.121	-28.083	-42.204	-29.994	-4.374	-26.303
622.800	-15.705	-28.146	-43.851	-31.641	-4.413	-26.418
622.810	-13.932	-28.208	-42.140	-29.930	-4.452	-26.533
622.820	-13.820	-28.253	-42.073	-29.863	-4.491	-26.648
622.830	-15.572	-28.324	-43.896	-31.686	-4.530	-26.763
622.840	-14.160	-28.382	-42.542	-30.332	-4.569	-26.878
622.850	-13.597	-28.446	-42.043	-29.833	-4.609	-26.993
622.860	-16.613	-28.494	-45.107	-32.897	-4.649	-27.108
622.870	-15.943	-28.543	-44.486	-32.276	-4.688	-27.223
622.880	-14.019	-28.620	-42.639	-30.429	-4.728	-27.338
622.890	-15.043	-28.678	-43.721	-31.511	-4.768	-27.453
622.900	-14.368	-28.758	-43.126	-30.916	-4.809	-27.568
622.910	-14.264	-28.778	-43.042	-30.832	-4.849	-27.683
622.920	-14.612	-28.835	-43.447	-31.237	-4.889	-27.798
622.930	-13.745	-28.893	-42.638	-30.428	-4.930	-27.913
622.940	-13.684	-28.970	-42.654	-30.444	-4.971	-28.028
622.950	-12.594	-29.024	-41.618	-29.408	-5.012	-28.143
622.960	-14.237	-29.099	-43.336	-31.126	-5.053	-28.258
622.970	-16.028	-29.176	-45.204	-32.994	-5.094	-28.373
622.980	-16.058	-29.232	-45.290	-33.080	-5.135	-28.488
622.990	-15.063	-29.277	-44.340	-32.130	-5.177	-28.603
623.000	-13.506	-29.319	-42.825	-30.615	-5.218	-28.968
623.010	-12.882	-29.395	-42.277	-30.067	-5.260	-28.968
623.020	-14.416	-29.452	-43.868	-31.658	-5.302	-28.968
623.030	-13.585	-29.517	-43.102	-30.892	-5.344	-28.968

623.040	-14.954	-29.555	-44.509	-32.299	-5.386	-28.968
623.050	-14.630	-29.594	-44.224	-32.014	-5.428	-28.968
623.060	-15.931	-29.661	-45.592	-33.382	-5.471	-28.968
623.070	-16.648	-29.747	-46.395	-34.185	-5.513	-28.968
623.080	-14.908	-29.799	-44.707	-32.497	-5.556	-28.968
623.090	-15.576	-29.855	-45.431	-33.221	-5.599	-28.968
623.100	-14.674	-29.910	-44.584	-32.374	-5.642	-28.968
623.110	-16.348	-29.975	-46.323	-34.113	-5.685	-28.968
623.120	-14.048	-30.025	-44.073	-31.863	-5.728	-28.968
623.130	-15.325	-30.091	-45.416	-33.206	-5.772	-28.968
623.140	-15.459	-30.133	-45.592	-33.382	-5.815	-28.968
623.150	-16.535	-30.173	-46.708	-34.498	-5.859	-28.968
623.160	-14.587	-30.238	-44.825	-32.615	-5.903	-28.968
623.170	-14.755	-30.318	-45.073	-32.863	-5.947	-28.968
623.180	-15.153	-30.351	-45.504	-33.294	-5.991	-28.968
623.190	-16.944	-30.393	-47.337	-35.127	-6.035	-28.968
623.200	-15.744	-30.444	-46.188	-33.978	-6.079	-28.968
623.210	-16.013	-30.528	-46.541	-34.331	-6.124	-28.968
623.220	-14.920	-30.582	-45.502	-33.292	-6.169	-28.968
623.230	-14.310	-30.635	-44.945	-32.735	-6.213	-28.968
623.240	-14.613	-30.683	-45.296	-33.086	-6.258	-28.968
623.250	-14.726	-30.740	-45.466	-33.256	-6.303	-28.968
623.260	-15.048	-30.826	-45.874	-33.664	-6.349	-28.968
623.270	-16.250	-30.896	-47.146	-34.936	-6.394	-28.968
623.280	-15.495	-30.905	-46.400	-34.190	-6.439	-28.968
623.290	-15.065	-30.958	-46.023	-33.813	-6.485	-28.968
623.300	-16.469	-31.033	-47.502	-35.292	-6.531	-28.968
623.310	-16.560	-31.096	-47.656	-35.446	-6.577	-28.968
623.320	-16.246	-31.170	-47.416	-35.206	-6.623	-28.968
623.330	-15.794	-31.216	-47.010	-34.800	-6.669	-28.968
623.340	-16.693	-31.247	-47.940	-35.730	-6.715	-28.968
623.350	-14.590	-31.305	-45.895	-33.685	-6.762	-28.968
623.360	-14.558	-31.412	-45.970	-33.760	-6.808	-28.968
623.370	-16.612	-31.426	-48.038	-35.828	-6.855	-28.968
623.380	-16.405	-31.468	-47.873	-35.663	-6.902	-28.968
623.390	-16.291	-31.528	-47.819	-35.609	-6.949	-28.968
623.400	-14.816	-31.593	-46.409	-34.199	-6.996	-28.968
623.410	-17.344	-31.645	-48.989	-36.779	-7.043	-28.968
623.420	-16.098	-31.703	-47.801	-35.591	-7.091	-28.968
623.430	-15.306	-31.756	-47.062	-34.852	-7.138	-28.968
623.440	-14.293	-31.800	-46.093	-33.883	-7.186	-28.968
623.450	-16.924	-31.864	-48.788	-36.578	-7.234	-28.968
623.460	-16.726	-31.932	-48.658	-36.448	-7.282	-28.968
623.470	-15.524	-31.976	-47.500	-35.290	-7.330	-28.968
623.480	-15.126	-32.029	-47.155	-34.945	-7.378	-28.968
623.490	-16.099	-32.088	-48.187	-35.977	-7.427	-28.968

623.500	-15.895	-32.163	-48.058	-35.848	-7.475	-28.968
623.510	-16.291	-32.205	-48.496	-36.286	-7.524	-28.968
623.520	-16.432	-32.236	-48.668	-36.458	-7.573	-28.968
623.530	-16.817	-32.303	-49.120	-36.910	-7.622	-28.968
623.540	-16.343	-32.341	-48.684	-36.474	-7.671	-28.968
623.550	-17.071	-32.403	-49.474	-37.264	-7.720	-28.968
623.560	-17.118	-32.461	-49.579	-37.369	-7.769	-28.968
623.570	-16.398	-32.521	-48.919	-36.709	-7.819	-28.968
623.580	-16.186	-32.560	-48.746	-36.536	-7.869	-28.968
623.590	-16.044	-32.623	-48.667	-36.457	-7.918	-28.968
623.600	-16.013	-32.675	-48.688	-36.478	-7.968	-28.968
623.610	-17.322	-32.722	-50.044	-37.834	-8.018	-28.968
623.620	-15.859	-32.795	-48.654	-36.444	-8.069	-28.968
623.630	-15.759	-32.841	-48.600	-36.390	-8.119	-28.968
623.640	-15.343	-32.908	-48.251	-36.041	-8.169	-28.968
623.650	-15.544	-32.962	-48.506	-36.296	-8.220	-28.968
623.660	-15.239	-32.991	-48.230	-36.020	-8.271	-28.968
623.670	-16.728	-33.067	-49.795	-37.585	-8.322	-28.968
623.680	-16.178	-33.098	-49.276	-37.066	-8.373	-28.968
623.690	-16.476	-33.150	-49.626	-37.416	-8.424	-28.968
623.700	-15.964	-33.200	-49.164	-36.954	-8.475	-28.968
623.710	-15.426	-33.249	-48.675	-36.465	-8.527	-28.968
623.720	-15.526	-33.292	-48.818	-36.608	-8.578	-28.968
623.730	-15.650	-33.355	-49.005	-36.795	-8.630	-28.968
623.740	-16.431	-33.419	-49.850	-37.640	-8.682	-28.968
623.750	-14.686	-33.467	-48.153	-35.943	-8.734	-28.968
623.760	-17.111	-33.549	-50.660	-38.450	-8.786	-28.968
623.770	-14.853	-33.579	-48.432	-36.222	-8.838	-28.968
623.780	-17.342	-33.615	-50.957	-38.747	-8.891	-28.968
623.790	-16.545	-33.697	-50.242	-38.032	-8.943	-28.968
623.800	-18.186	-33.743	-51.929	-39.719	-8.996	-28.968
623.810	-18.710	-33.779	-52.489	-40.279	-9.049	-28.968
623.820	-16.245	-33.811	-50.056	-37.846	-9.102	-28.968
623.830	-18.260	-33.891	-52.151	-39.941	-9.155	-28.968
623.840	-16.731	-33.955	-50.686	-38.476	-9.208	-28.968
623.850	-17.164	-33.989	-51.153	-38.943	-9.262	-28.968
623.860	-16.790	-34.040	-50.830	-38.620	-9.315	-28.968
623.870	-15.453	-34.080	-49.533	-37.323	-9.369	-28.968
623.880	-15.326	-34.130	-49.456	-37.246	-9.423	-28.968
623.890	-17.604	-34.212	-51.816	-39.606	-9.477	-28.968
623.900	-17.348	-34.240	-51.588	-39.378	-9.531	-28.968
623.910	-16.945	-34.314	-51.259	-39.049	-9.585	-28.968
623.920	-15.696	-34.356	-50.052	-37.842	-9.639	-28.968
623.930	-17.340	-34.428	-51.768	-39.558	-9.694	-28.968
623.940	-16.996	-34.455	-51.451	-39.241	-9.749	-28.968
623.950	-17.363	-34.510	-51.873	-39.663	-9.803	-28.968

623.960	-18.029	-34.553	-52.582	-40.372	-9.858	-28.968
623.970	-17.375	-34.611	-51.986	-39.776	-9.913	-28.968
623.980	-17.587	-34.664	-52.251	-40.041	-9.969	-28.968
623.990	-16.945	-34.702	-51.647	-39.437	-10.024	-28.968
624.000	-15.657	-34.766	-50.423	-38.213	-10.079	-28.968
624.010	-17.094	-34.806	-51.900	-39.690	-10.135	-28.968
624.020	-16.701	-34.856	-51.557	-39.347	-10.191	-28.968
624.030	-18.106	-34.912	-53.018	-40.808	-10.247	-28.968
624.040	-14.630	-34.948	-49.578	-37.368	-10.303	-28.968
624.050	-17.006	-35.027	-52.033	-39.823	-10.359	-28.968
624.060	-14.904	-35.055	-49.959	-37.749	-10.415	-28.968
624.070	-16.779	-35.118	-51.897	-39.687	-10.472	-28.968
624.080	-16.928	-35.172	-52.100	-39.890	-10.528	-28.968
624.090	-17.035	-35.216	-52.251	-40.041	-10.585	-28.968
624.100	-17.553	-35.280	-52.833	-40.623	-10.642	-28.968
624.110	-17.679	-35.301	-52.980	-40.770	-10.699	-28.968
624.120	-16.922	-35.362	-52.284	-40.074	-10.756	-28.968
624.130	-17.008	-35.426	-52.434	-40.224	-10.813	-28.968
624.140	-15.722	-35.464	-51.186	-38.976	-10.871	-28.968
624.150	-15.589	-35.521	-51.110	-38.900	-10.928	-28.968
624.160	-17.834	-35.555	-53.389	-41.179	-10.986	-28.968
624.170	-17.404	-35.616	-53.020	-40.810	-11.044	-28.968
624.180	-15.512	-35.671	-51.183	-38.973	-11.102	-28.968
624.190	-17.767	-35.711	-53.478	-41.268	-11.160	-28.968
624.200	-19.776	-35.741	-55.517	-43.307	-11.218	-28.968
624.210	-20.423	-35.793	-56.216	-44.006	-11.277	-28.968
624.220	-17.131	-35.855	-52.986	-40.776	-11.335	-28.968
624.230	-18.288	-35.914	-54.202	-41.992	-11.394	-28.968
624.240	-19.014	-35.955	-54.969	-42.759	-11.453	-28.968
624.250	-17.962	-36.003	-53.965	-41.755	-11.512	-28.968
624.260	-18.330	-36.050	-54.380	-42.170	-11.571	-28.968
624.270	-19.495	-36.081	-55.576	-43.366	-11.630	-28.968
624.280	-19.305	-36.132	-55.437	-43.227	-11.689	-28.968
624.290	-18.407	-36.173	-54.580	-42.370	-11.749	-28.968
624.300	-17.884	-36.246	-54.130	-41.920	-11.809	-28.968
624.310	-16.620	-36.303	-52.923	-40.713	-11.868	-28.968
624.320	-16.421	-36.356	-52.777	-40.567	-11.928	-28.968
624.330	-17.422	-36.382	-53.804	-41.594	-11.988	-28.968
624.340	-18.769	-36.447	-55.216	-43.006	-12.049	-28.968
624.350	-17.955	-36.485	-54.440	-42.230	-12.109	-28.968
624.360	-16.930	-36.542	-53.472	-41.262	-12.169	-28.968
624.370	-19.905	-36.585	-56.490	-44.280	-12.230	-28.968
624.380	-17.774	-36.627	-54.401	-42.191	-12.291	-28.968
624.390	-18.640	-36.723	-55.363	-43.153	-12.352	-28.968
624.400	-17.240	-36.735	-53.975	-41.765	-12.413	-28.968
624.410	-20.242	-36.793	-57.035	-44.825	-12.474	-28.968

624.420	-18.009	-36.815	-54.824	-42.614	-12.535	-28.968
624.430	-17.369	-36.878	-54.247	-42.037	-12.597	-28.968
624.440	-17.926	-36.925	-54.851	-42.641	-12.658	-28.968
624.450	-20.160	-36.952	-57.112	-44.902	-12.720	-28.968
624.460	-21.149	-37.060	-58.209	-45.999	-12.782	-28.968
624.470	-17.018	-37.078	-54.096	-41.886	-12.844	-28.968
624.480	-20.299	-37.096	-57.395	-45.185	-12.906	-28.968
624.490	-17.794	-37.174	-54.968	-42.758	-12.968	-28.968
624.500	-19.376	-37.211	-56.587	-44.377	-13.031	-28.968
624.510	-17.400	-37.274	-54.674	-42.464	-13.093	-28.968
624.520	-17.763	-37.306	-55.069	-42.859	-13.156	-28.968
624.530	-19.169	-37.369	-56.538	-44.328	-13.219	-28.968
624.540	-19.763	-37.396	-57.159	-44.949	-13.282	-28.968
624.550	-21.018	-37.422	-58.440	-46.230	-13.345	-28.968
624.560	-19.323	-37.490	-56.813	-44.603	-13.408	-28.968
624.570	-18.235	-37.554	-55.789	-43.579	-13.472	-28.968
624.580	-18.874	-37.591	-56.465	-44.255	-13.535	-28.968
624.590	-19.355	-37.674	-57.029	-44.819	-13.599	-28.968
624.600	-19.051	-37.689	-56.740	-44.530	-13.663	-28.968
624.610	-18.565	-37.732	-56.297	-44.087	-13.727	-28.968
624.620	-17.918	-37.774	-55.692	-43.482	-13.791	-28.968
624.630	-20.673	-37.822	-58.495	-46.285	-13.855	-28.968
624.640	-18.168	-37.878	-56.046	-43.836	-13.919	-28.968
624.650	-19.227	-37.909	-57.136	-44.926	-13.984	-28.968
624.660	-21.678	-37.970	-59.648	-47.438	-14.049	-28.968
624.670	-19.801	-37.972	-57.773	-45.563	-14.113	-28.968
624.680	-19.493	-38.012	-57.505	-45.295	-14.178	-28.968
624.690	-20.643	-38.097	-58.740	-46.530	-14.243	-28.968
624.700	-20.230	-38.144	-58.374	-46.164	-14.309	-28.968
624.710	-20.306	-38.203	-58.509	-46.299	-14.374	-28.968
624.720	-17.260	-38.236	-55.496	-43.286	-14.439	-28.968
624.730	-17.687	-38.295	-55.982	-43.772	-14.505	-28.968
624.740	-20.823	-38.303	-59.126	-46.916	-14.571	-28.968
624.750	-20.592	-38.367	-58.959	-46.749	-14.637	-28.968
624.760	-18.178	-38.404	-56.582	-44.372	-14.703	-28.968
624.770	-20.547	-38.463	-59.010	-46.800	-14.769	-28.968
624.780	-20.944	-38.499	-59.443	-47.233	-14.835	-28.968
624.790	-19.338	-38.593	-57.931	-45.721	-14.902	-28.968
624.800	-18.890	-38.619	-57.509	-45.299	-14.968	-28.968
624.810	-20.769	-38.658	-59.427	-47.217	-15.035	-28.968
624.820	-19.502	-38.698	-58.200	-45.990	-15.102	-28.968
624.830	-18.857	-38.745	-57.602	-45.392	-15.169	-28.968
624.840	-19.901	-38.799	-58.700	-46.490	-15.236	-28.968
624.850	-20.373	-38.824	-59.197	-46.987	-15.303	-28.968
624.860	-21.373	-38.859	-60.232	-48.022	-15.371	-28.968
624.870	-20.807	-38.949	-59.756	-47.546	-15.438	-28.968

624.880	-22.267	-38.978	-61.245	-49.035	-15.506	-28.968
624.890	-19.326	-39.041	-58.367	-46.157	-15.574	-28.968
624.900	-20.073	-39.020	-59.093	-46.883	-15.642	-28.968
624.910	-20.050	-39.105	-59.155	-46.945	-15.710	-28.968
624.920	-21.177	-39.147	-60.324	-48.114	-15.778	-28.968
624.930	-20.733	-39.204	-59.937	-47.727	-15.847	-28.968
624.940	-21.320	-39.231	-60.551	-48.341	-15.915	-28.968
624.950	-20.366	-39.287	-59.653	-47.443	-15.984	-28.968
624.960	-20.700	-39.324	-60.024	-47.814	-16.053	-28.968
624.970	-19.743	-39.373	-59.116	-46.906	-16.122	-28.968
624.980	-18.900	-39.391	-58.291	-46.081	-16.191	-28.968
624.990	-19.636	-39.489	-59.125	-46.915	-16.260	-28.968
625.000	-20.933	-39.680	-60.613	-48.403	-16.329	-28.968
625.010	-19.590	-39.544	-59.134	-46.924	-16.399	-28.968
625.020	-21.984	-39.573	-61.557	-49.347	-16.469	-28.968
625.030	-20.131	-39.626	-59.757	-47.547	-16.538	-28.968
625.040	-19.993	-39.674	-59.667	-47.457	-16.608	-28.968
625.050	-20.277	-39.751	-60.028	-47.818	-16.678	-28.968
625.060	-18.425	-39.833	-58.258	-46.048	-16.749	-28.968
625.070	-19.047	-39.795	-58.842	-46.632	-16.819	-28.968
625.080	-18.635	-39.877	-58.512	-46.302	-16.889	-28.968
625.090	-19.654	-39.923	-59.577	-47.367	-16.960	-28.968
625.100	-21.429	-39.934	-61.363	-49.153	-17.031	-28.968
625.110	-23.188	-39.974	-63.162	-50.952	-17.102	-28.968
625.120	-22.140	-40.041	-62.181	-49.971	-17.173	-28.968
625.130	-23.269	-40.067	-63.336	-51.126	-17.244	-28.968
625.140	-21.214	-40.112	-61.326	-49.116	-17.315	-28.968
625.150	-22.608	-40.160	-62.768	-50.558	-17.387	-28.968
625.160	-21.554	-40.234	-61.788	-49.578	-17.458	-28.968
625.170	-20.307	-40.294	-60.601	-48.391	-17.530	-28.968
625.180	-22.780	-40.310	-63.090	-50.880	-17.602	-28.968
625.190	-21.755	-40.325	-62.080	-49.870	-17.674	-28.968
625.200	-21.475	-40.407	-61.882	-49.672	-17.746	-28.968
625.210	-22.336	-40.398	-62.734	-50.524	-17.818	-28.968
625.220	-21.698	-40.472	-62.170	-49.960	-17.891	-28.968
625.230	-23.272	-40.500	-63.772	-51.562	-17.963	-28.968
625.240	-20.918	-40.530	-61.448	-49.238	-18.036	-28.968
625.250	-23.169	-40.623	-63.792	-51.582	-18.109	-28.968
625.260	-21.266	-40.651	-61.917	-49.707	-18.182	-28.968
625.270	-22.829	-40.705	-63.534	-51.324	-18.255	-28.968
625.280	-20.896	-40.734	-61.630	-49.420	-18.328	-28.968
625.290	-22.365	-40.780	-63.145	-50.935	-18.402	-28.968
625.300	-22.687	-40.857	-63.544	-51.334	-18.475	-28.968
625.310	-21.826	-40.838	-62.664	-50.454	-18.549	-28.968
625.320	-23.372	-40.893	-64.265	-52.055	-18.623	-28.968
625.330	-22.866	-40.932	-63.798	-51.588	-18.697	-28.968

625.340	-21.228	-40.958	-62.186	-49.976	-18.771	-28.968
625.350	-23.647	-41.047	-64.694	-52.484	-18.845	-28.968
625.360	-21.986	-41.060	-63.046	-50.836	-18.919	-28.968
625.370	-23.266	-41.130	-64.396	-52.186	-18.994	-28.968
625.380	-22.940	-41.135	-64.075	-51.865	-19.069	-28.968
625.390	-22.262	-41.230	-63.492	-51.282	-19.143	-28.968
625.400	-23.335	-41.274	-64.609	-52.399	-19.218	-28.968
625.410	-24.997	-41.300	-66.297	-54.087	-19.293	-28.968
625.420	-24.990	-41.350	-66.340	-54.130	-19.369	-28.968
625.430	-24.279	-41.339	-65.618	-53.408	-19.444	-28.968
625.440	-23.075	-41.441	-64.516	-52.306	-19.519	-28.968
625.450	-22.127	-41.444	-63.571	-51.361	-19.595	-28.968
625.460	-25.245	-41.502	-66.747	-54.537	-19.671	-28.968
625.470	-24.076	-41.514	-65.590	-53.380	-19.747	-28.968
625.480	-23.952	-41.585	-65.537	-53.327	-19.823	-28.968
625.490	-23.653	-41.628	-65.281	-53.071	-19.899	-28.968
625.500	-24.114	-41.649	-65.763	-53.553	-19.975	-28.968
625.510	-23.279	-41.669	-64.948	-52.738	-20.052	-28.968
625.520	-24.558	-41.710	-66.268	-54.058	-20.128	-28.968
625.530	-22.605	-41.773	-64.378	-52.168	-20.205	-28.968
625.540	-23.465	-41.822	-65.287	-53.077	-20.282	-28.968
625.550	-23.550	-41.843	-65.393	-53.183	-20.359	-28.968
625.560	-23.608	-41.912	-65.520	-53.310	-20.436	-28.968
625.570	-22.542	-41.968	-64.510	-52.300	-20.513	-28.968
625.580	-23.695	-42.001	-65.696	-53.486	-20.591	-28.968
625.590	-22.451	-42.021	-64.472	-52.262	-20.668	-28.968
625.600	-23.998	-42.058	-66.056	-53.846	-20.746	-28.968
625.610	-21.864	-42.124	-63.988	-51.778	-20.824	-28.968
625.620	-24.821	-42.167	-66.988	-54.778	-20.902	-28.968
625.630	-24.567	-42.203	-66.770	-54.560	-20.980	-28.968
625.640	-24.236	-42.278	-66.514	-54.304	-21.058	-28.968
625.650	-21.418	-42.305	-63.723	-51.513	-21.137	-28.968
625.660	-24.395	-42.326	-66.721	-54.511	-21.215	-28.968
625.670	-23.335	-42.396	-65.731	-53.521	-21.294	-28.968
625.680	-22.881	-42.393	-65.274	-53.064	-21.373	-28.968
625.690	-23.571	-42.431	-66.002	-53.792	-21.452	-28.968
625.700	-23.196	-42.485	-65.681	-53.471	-21.531	-28.968
625.710	-23.952	-42.486	-66.438	-54.228	-21.610	-28.968
625.720	-21.084	-42.568	-63.652	-51.442	-21.689	-28.968
625.730	-22.771	-42.630	-65.401	-53.191	-21.769	-28.968
625.740	-24.473	-42.660	-67.133	-54.923	-21.849	-28.968
625.750	-22.628	-42.707	-65.335	-53.125	-21.928	-28.968
625.760	-23.442	-42.738	-66.180	-53.970	-22.008	-28.968
625.770	-22.767	-42.809	-65.576	-53.366	-22.088	-28.968
625.780	-23.664	-42.820	-66.484	-54.274	-22.169	-28.968
625.790	-24.244	-42.913	-67.157	-54.947	-22.249	-28.968

625.800	-22.172	-42.928	-65.100	-52.890	-22.329	-28.968
625.810	-22.466	-42.919	-65.385	-53.175	-22.410	-28.968
625.820	-25.773	-42.976	-68.749	-56.539	-22.491	-28.968
625.830	-24.463	-42.994	-67.457	-55.247	-22.572	-28.968
625.840	-23.690	-43.035	-66.725	-54.515	-22.653	-28.968
625.850	-24.765	-43.084	-67.849	-55.639	-22.734	-28.968
625.860	-24.468	-43.111	-67.579	-55.369	-22.815	-28.968
625.870	-25.338	-43.160	-68.498	-56.288	-22.897	-28.968
625.880	-24.094	-43.255	-67.349	-55.139	-22.978	-28.968
625.890	-23.183	-43.265	-66.448	-54.238	-23.060	-28.968
625.900	-23.710	-43.309	-67.019	-54.809	-23.142	-28.968
625.910	-23.620	-43.312	-66.932	-54.722	-23.224	-28.968
625.920	-23.339	-43.352	-66.691	-54.481	-23.306	-28.968
625.930	-22.071	-43.428	-65.499	-53.289	-23.388	-28.968
625.940	-24.390	-43.395	-67.785	-55.575	-23.471	-28.968
625.950	-21.602	-43.473	-65.075	-52.865	-23.553	-28.968
625.960	-25.618	-43.587	-69.205	-56.995	-23.636	-28.968
625.970	-24.205	-43.559	-67.764	-55.554	-23.719	-28.968
625.980	-23.487	-43.579	-67.066	-54.856	-23.802	-28.968
625.990	-25.116	-43.686	-68.802	-56.592	-23.885	-28.968
626.000	-25.079	-43.680	-68.759	-56.549	-23.968	-28.968
626.010	-24.216	-43.704	-67.920	-55.710	-23.968	-28.968
626.020	-24.710	-43.772	-68.482	-56.272	-23.968	-28.968
626.030	-26.299	-43.800	-70.099	-57.889	-23.968	-28.968
626.040	-22.714	-43.863	-66.577	-54.367	-23.968	-28.968
626.050	-21.608	-43.885	-65.493	-53.283	-23.968	-28.968
626.060	-21.850	-43.925	-65.775	-53.565	-23.968	-28.968
626.070	-23.735	-43.984	-67.719	-55.509	-23.968	-28.968
626.080	-24.215	-44.026	-68.241	-56.031	-23.968	-28.968
626.090	-24.351	-44.059	-68.410	-56.200	-23.968	-28.968
626.100	-24.969	-44.097	-69.066	-56.856	-23.968	-28.968
626.110	-24.644	-44.108	-68.752	-56.542	-23.968	-28.968
626.120	-25.577	-44.197	-69.774	-57.564	-23.968	-28.968
626.130	-23.979	-44.244	-68.223	-56.013	-23.968	-28.968
626.140	-22.298	-44.220	-66.518	-54.308	-23.968	-28.968
626.150	-24.213	-44.285	-68.498	-56.288	-23.968	-28.968
626.160	-23.206	-44.253	-67.459	-55.249	-23.968	-28.968
626.170	-24.287	-44.360	-68.647	-56.437	-23.968	-28.968
626.180	-22.759	-44.413	-67.172	-54.962	-23.968	-28.968
626.190	-25.058	-44.403	-69.461	-57.251	-23.968	-28.968
626.200	-23.599	-44.457	-68.056	-55.846	-23.968	-28.968
626.210	-22.731	-44.506	-67.237	-55.027	-23.968	-28.968
626.220	-24.917	-44.576	-69.493	-57.283	-23.968	-28.968
626.230	-26.817	-44.591	-71.408	-59.198	-23.968	-28.968
626.240	-26.299	-44.664	-70.963	-58.753	-23.968	-28.968
626.250	-23.236	-44.700	-67.936	-55.726	-23.968	-28.968

626.260	-23.603	-44.721	-68.324	-56.114	-23.968	-28.968
626.270	-24.302	-44.753	-69.055	-56.845	-23.968	-28.968
626.280	-24.894	-44.763	-69.657	-57.447	-23.968	-28.968
626.290	-22.836	-44.824	-67.660	-55.450	-23.968	-28.968
626.300	-24.749	-44.834	-69.583	-57.373	-23.968	-28.968
626.310	-23.965	-44.913	-68.878	-56.668	-23.968	-28.968
626.320	-22.938	-44.975	-67.913	-55.703	-23.968	-28.968
626.330	-22.355	-44.973	-67.328	-55.118	-23.968	-28.968
626.340	-24.895	-45.031	-69.926	-57.716	-23.968	-28.968
626.350	-26.384	-45.037	-71.421	-59.211	-23.968	-28.968
626.360	-26.502	-45.060	-71.562	-59.352	-23.968	-28.968
626.370	-24.158	-45.074	-69.232	-57.022	-23.968	-28.968
626.380	-24.426	-45.143	-69.569	-57.359	-23.968	-28.968
626.390	-24.042	-45.200	-69.242	-57.032	-23.968	-28.968
626.400	-24.720	-45.271	-69.991	-57.781	-23.968	-28.968
626.410	-25.618	-45.323	-70.941	-58.731	-23.968	-28.968
626.420	-25.732	-45.295	-71.027	-58.817	-23.968	-28.968
626.430	-26.058	-45.375	-71.433	-59.223	-23.968	-28.968
626.440	-25.097	-45.419	-70.516	-58.306	-23.968	-28.968
626.450	-24.489	-45.418	-69.907	-57.697	-23.968	-28.968
626.460	-24.706	-45.457	-70.163	-57.953	-23.968	-28.968
626.470	-25.110	-45.497	-70.607	-58.397	-23.968	-28.968
626.480	-24.922	-45.561	-70.483	-58.273	-23.968	-28.968
626.490	-24.302	-45.549	-69.851	-57.641	-23.968	-28.968
626.500	-24.115	-45.628	-69.743	-57.533	-23.968	-28.968
626.510	-23.339	-45.623	-68.962	-56.752	-23.968	-28.968
626.520	-24.915	-45.692	-70.607	-58.397	-23.968	-28.968
626.530	-24.734	-45.716	-70.450	-58.240	-23.968	-28.968
626.540	-25.182	-45.722	-70.904	-58.694	-23.968	-28.968
626.550	-23.501	-45.790	-69.291	-57.081	-23.968	-28.968
626.560	-23.573	-45.823	-69.396	-57.186	-23.968	-28.968
626.570	-24.230	-45.865	-70.095	-57.885	-23.968	-28.968
626.580	-25.979	-45.888	-71.867	-59.657	-23.968	-28.968
626.590	-25.492	-45.938	-71.430	-59.220	-23.968	-28.968
626.600	-24.594	-46.008	-70.602	-58.392	-23.968	-28.968
626.610	-25.525	-46.011	-71.536	-59.326	-23.968	-28.968
626.620	-23.363	-46.047	-69.410	-57.200	-23.968	-28.968
626.630	-27.430	-46.121	-73.551	-61.341	-23.968	-28.968
626.640	-25.527	-46.166	-71.693	-59.483	-23.968	-28.968
626.650	-25.157	-46.166	-71.323	-59.113	-23.968	-28.968
626.660	-24.016	-46.204	-70.220	-58.010	-23.968	-28.968
626.670	-24.499	-46.245	-70.744	-58.534	-23.968	-28.968
626.680	-24.074	-46.298	-70.372	-58.162	-23.968	-28.968
626.690	-26.474	-46.328	-72.802	-60.592	-23.968	-28.968
626.700	-24.083	-46.298	-70.381	-58.171	-23.968	-28.968
626.710	-23.919	-46.400	-70.319	-58.109	-23.968	-28.968

626.720	-26.404	-46.405	-72.809	-60.599	-23.968	-28.968
626.730	-24.974	-46.399	-71.373	-59.163	-23.968	-28.968
626.740	-26.083	-46.489	-72.572	-60.362	-23.968	-28.968
626.750	-25.470	-46.561	-72.031	-59.821	-23.968	-28.968
626.760	-24.479	-46.584	-71.063	-58.853	-23.968	-28.968
626.770	-25.030	-46.634	-71.664	-59.454	-23.968	-28.968
626.780	-24.095	-46.678	-70.773	-58.563	-23.968	-28.968
626.790	-25.655	-46.657	-72.312	-60.102	-23.968	-28.968
626.800	-24.474	-46.691	-71.165	-58.955	-23.968	-28.968
626.810	-26.066	-46.795	-72.861	-60.651	-23.968	-28.968
626.820	-26.297	-46.834	-73.131	-60.921	-23.968	-28.968
626.830	-27.043	-46.828	-73.871	-61.661	-23.968	-28.968
626.840	-25.849	-46.896	-72.745	-60.535	-23.968	-28.968
626.850	-25.303	-46.876	-72.179	-59.969	-23.968	-28.968
626.860	-25.821	-46.916	-72.737	-60.527	-23.968	-28.968
626.870	-24.626	-47.005	-71.631	-59.421	-23.968	-28.968
626.880	-25.117	-47.018	-72.135	-59.925	-23.968	-28.968
626.890	-25.123	-47.010	-72.133	-59.923	-23.968	-28.968
626.900	-25.095	-47.076	-72.171	-59.961	-23.968	-28.968
626.910	-25.249	-47.118	-72.367	-60.157	-23.968	-28.968
626.920	-26.030	-47.131	-73.161	-60.951	-23.968	-28.968
626.930	-25.786	-47.218	-73.004	-60.794	-23.968	-28.968
626.940	-26.320	-47.238	-73.558	-61.348	-23.968	-28.968
626.950	-25.542	-47.292	-72.834	-60.624	-23.968	-28.968
626.960	-26.323	-47.301	-73.624	-61.414	-23.968	-28.968
626.970	-24.952	-47.306	-72.258	-60.048	-23.968	-28.968
626.980	-25.092	-47.403	-72.495	-60.285	-23.968	-28.968
626.990	-24.413	-47.355	-71.768	-59.558	-23.968	-28.968
627.000	-23.174	-47.376	-70.550	-58.340	-23.968	-28.968
627.010	-24.979	-47.504	-72.483	-60.273	-23.968	-28.968
627.020	-24.377	-47.566	-71.943	-59.733	-23.968	-28.968
627.030	-25.880	-47.497	-73.377	-61.167	-23.968	-28.968
627.040	-24.806	-47.607	-72.413	-60.203	-23.968	-28.968
627.050	-28.400	-47.624	-76.024	-63.814	-23.968	-28.968
627.060	-25.418	-47.604	-73.022	-60.812	-23.968	-28.968
627.070	-27.194	-47.745	-74.939	-62.729	-23.968	-28.968
627.080	-26.318	-47.737	-74.055	-61.845	-23.968	-28.968
627.090	-24.815	-47.806	-72.621	-60.411	-23.968	-28.968
627.100	-26.338	-47.790	-74.128	-61.918	-23.968	-28.968
627.110	-25.695	-47.879	-73.574	-61.364	-23.968	-28.968
627.120	-25.812	-47.912	-73.724	-61.514	-23.968	-28.968
627.130	-25.179	-47.914	-73.093	-60.883	-23.968	-28.968
627.140	-24.245	-47.917	-72.162	-59.952	-23.968	-28.968
627.150	-26.192	-47.955	-74.147	-61.937	-23.968	-28.968
627.160	-25.096	-47.983	-73.079	-60.869	-23.968	-28.968
627.170	-25.392	-48.010	-73.402	-61.192	-23.968	-28.968

627.180	-26.596	-48.047	-74.643	-62.433	-23.968	-28.968
627.190	-24.914	-48.103	-73.017	-60.807	-23.968	-28.968
627.200	-25.870	-48.185	-74.055	-61.845	-23.968	-28.968
627.210	-26.478	-48.087	-74.565	-62.355	-23.968	-28.968
627.220	-25.996	-48.227	-74.223	-62.013	-23.968	-28.968
627.230	-26.189	-48.206	-74.395	-62.185	-23.968	-28.968
627.240	-24.396	-48.264	-72.660	-60.450	-23.968	-28.968
627.250	-26.437	-48.213	-74.650	-62.440	-23.968	-28.968
627.260	-25.704	-48.429	-74.133	-61.923	-23.968	-28.968
627.270	-24.566	-48.389	-72.955	-60.745	-23.968	-28.968
627.280	-25.733	-48.416	-74.149	-61.939	-23.968	-28.968
627.290	-25.939	-48.468	-74.407	-62.197	-23.968	-28.968
627.300	-25.433	-48.553	-73.986	-61.776	-23.968	-28.968
627.310	-28.495	-48.574	-77.069	-64.859	-23.968	-28.968
627.320	-27.234	-48.597	-75.831	-63.621	-23.968	-28.968
627.330	-25.866	-48.624	-74.490	-62.280	-23.968	-28.968
627.340	-24.996	-48.556	-73.552	-61.342	-23.968	-28.968
627.350	-26.903	-48.597	-75.500	-63.290	-23.968	-28.968
627.360	-27.587	-48.707	-76.294	-64.084	-23.968	-28.968
627.370	-23.517	-48.691	-72.208	-59.998	-23.968	-28.968
627.380	-26.054	-48.744	-74.798	-62.588	-23.968	-28.968
627.390	-26.182	-48.815	-74.997	-62.787	-23.968	-28.968
627.400	-26.172	-48.866	-75.038	-62.828	-23.968	-28.968
627.410	-25.809	-48.785	-74.594	-62.384	-23.968	-28.968
627.420	-27.631	-48.874	-76.505	-64.295	-23.968	-28.968
627.430	-27.335	-48.986	-76.321	-64.111	-23.968	-28.968
627.440	-25.108	-48.957	-74.065	-61.855	-23.968	-28.968
627.450	-25.690	-49.103	-74.793	-62.583	-23.968	-28.968
627.460	-26.384	-49.023	-75.407	-63.197	-23.968	-28.968
627.470	-28.645	-49.140	-77.785	-65.575	-23.968	-28.968
627.480	-27.372	-49.117	-76.489	-64.279	-23.968	-28.968
627.490	-25.499	-49.131	-74.630	-62.420	-23.968	-28.968
627.500	-25.315	-49.188	-74.503	-62.293	-23.968	-28.968
627.510	-26.544	-49.235	-75.779	-63.569	-23.968	-28.968
627.520	-25.795	-49.250	-75.045	-62.835	-23.968	-28.968
627.530	-25.404	-49.234	-74.638	-62.428	-23.968	-28.968
627.540	-23.590	-49.351	-72.941	-60.731	-23.968	-28.968
627.550	-25.981	-49.374	-75.355	-63.145	-23.968	-28.968
627.560	-25.218	-49.398	-74.616	-62.406	-23.968	-28.968
627.570	-26.507	-49.395	-75.902	-63.692	-23.968	-28.968
627.580	-26.140	-49.449	-75.589	-63.379	-23.968	-28.968
627.590	-26.628	-49.510	-76.138	-63.928	-23.968	-28.968
627.600	-25.293	-49.515	-74.808	-62.598	-23.968	-28.968
627.610	-26.756	-49.530	-76.286	-64.076	-23.968	-28.968
627.620	-25.484	-49.592	-75.076	-62.866	-23.968	-28.968
627.630	-26.325	-49.586	-75.911	-63.701	-23.968	-28.968

627.640	-26.071	-49.689	-75.760	-63.550	-23.968	-28.968
627.650	-28.462	-49.648	-78.110	-65.900	-23.968	-28.968
627.660	-26.608	-49.786	-76.394	-64.184	-23.968	-28.968
627.670	-26.499	-49.783	-76.282	-64.072	-23.968	-28.968
627.680	-26.533	-49.806	-76.339	-64.129	-23.968	-28.968
627.690	-26.706	-49.833	-76.539	-64.329	-23.968	-28.968
627.700	-26.581	-49.867	-76.448	-64.238	-23.968	-28.968
627.710	-25.639	-49.848	-75.487	-63.277	-23.968	-28.968
627.720	-26.234	-49.934	-76.168	-63.958	-23.968	-28.968
627.730	-26.142	-49.962	-76.104	-63.894	-23.968	-28.968
627.740	-25.163	-50.021	-75.184	-62.974	-23.968	-28.968
627.750	-24.788	-50.026	-74.814	-62.604	-23.968	-28.968
627.760	-24.935	-50.098	-75.033	-62.823	-23.968	-28.968
627.770	-26.739	-50.072	-76.811	-64.601	-23.968	-28.968
627.780	-26.994	-50.084	-77.078	-64.868	-23.968	-28.968
627.790	-26.338	-50.202	-76.540	-64.330	-23.968	-28.968
627.800	-28.407	-50.206	-78.613	-66.403	-23.968	-28.968
627.810	-26.884	-50.267	-77.151	-64.941	-23.968	-28.968
627.820	-27.765	-50.265	-78.030	-65.820	-23.968	-28.968
627.830	-28.702	-50.293	-78.995	-66.785	-23.968	-28.968
627.840	-26.383	-50.281	-76.664	-64.454	-23.968	-28.968
627.850	-28.650	-50.430	-79.080	-66.870	-23.968	-28.968
627.860	-26.122	-50.475	-76.597	-64.387	-23.968	-28.968
627.870	-26.790	-50.414	-77.204	-64.994	-23.968	-28.968
627.880	-27.991	-50.421	-78.412	-66.202	-23.968	-28.968
627.890	-26.915	-50.480	-77.395	-65.185	-23.968	-28.968
627.900	-25.674	-50.532	-76.206	-63.996	-23.968	-28.968
627.910	-27.754	-50.573	-78.327	-66.117	-23.968	-28.968
627.920	-25.760	-50.640	-76.400	-64.190	-23.968	-28.968
627.930	-26.732	-50.627	-77.359	-65.149	-23.968	-28.968
627.940	-26.074	-50.655	-76.729	-64.519	-23.968	-28.968
627.950	-26.585	-50.713	-77.298	-65.088	-23.968	-28.968
627.960	-26.607	-50.623	-77.230	-65.020	-23.968	-28.968
627.970	-27.220	-50.696	-77.916	-65.706	-23.968	-28.968
627.980	-27.538	-50.776	-78.314	-66.104	-23.968	-28.968
627.990	-28.010	-50.787	-78.797	-66.587	-23.968	-28.968
628.000	-26.814	-50.720	-77.534	-65.324	-23.968	-28.968
628.010	-26.348	-50.810	-77.158	-64.948	-23.968	-28.968
628.020	-26.805	-50.918	-77.723	-65.513	-23.968	-28.968
628.030	-28.894	-50.886	-79.780	-67.570	-23.968	-28.968
628.040	-27.260	-51.064	-78.324	-66.114	-23.968	-28.968
628.050	-26.336	-50.983	-77.319	-65.109	-23.968	-28.968
628.060	-26.589	-51.000	-77.589	-65.379	-23.968	-28.968
628.070	-26.370	-51.135	-77.505	-65.295	-23.968	-28.968
628.080	-26.708	-51.135	-77.843	-65.633	-23.968	-28.968
628.090	-26.510	-51.099	-77.609	-65.399	-23.968	-28.968

628.100	-27.335	-51.102	-78.437	-66.227	-23.968	-28.968
628.110	-26.228	-51.271	-77.499	-65.289	-23.968	-28.968
628.120	-26.725	-51.299	-78.024	-65.814	-23.968	-28.968
628.130	-28.406	-51.232	-79.638	-67.428	-23.968	-28.968
628.140	-28.050	-51.277	-79.327	-67.117	-23.968	-28.968
628.150	-28.134	-51.251	-79.385	-67.175	-23.968	-28.968
628.160	-26.357	-51.406	-77.763	-65.553	-23.968	-28.968
628.170	-28.273	-51.389	-79.662	-67.452	-23.968	-28.968
628.180	-27.478	-51.354	-78.832	-66.622	-23.968	-28.968
628.190	-28.229	-51.388	-79.617	-67.407	-23.968	-28.968
628.200	-25.394	-51.477	-76.871	-64.661	-23.968	-28.968
628.210	-29.151	-51.503	-80.654	-68.444	-23.968	-28.968
628.220	-28.077	-51.512	-79.589	-67.379	-23.968	-28.968
628.230	-27.437	-51.531	-78.968	-66.758	-23.968	-28.968
628.240	-26.700	-51.589	-78.289	-66.079	-23.968	-28.968
628.250	-27.400	-51.698	-79.098	-66.888	-23.968	-28.968
628.260	-27.993	-51.714	-79.707	-67.497	-23.968	-28.968
628.270	-28.882	-51.714	-80.596	-68.386	-23.968	-28.968
628.280	-27.020	-51.696	-78.716	-66.506	-23.968	-28.968
628.290	-26.331	-51.735	-78.066	-65.856	-23.968	-28.968
628.300	-26.921	-51.720	-78.641	-66.431	-23.968	-28.968
628.310	-27.179	-51.840	-79.019	-66.809	-23.968	-28.968
628.320	-28.451	-51.938	-80.389	-68.179	-23.968	-28.968
628.330	-27.119	-51.852	-78.971	-66.761	-23.968	-28.968
628.340	-28.356	-51.894	-80.250	-68.040	-23.968	-28.968
628.350	-29.167	-52.013	-81.180	-68.970	-23.968	-28.968
628.360	-26.540	-51.948	-78.488	-66.278	-23.968	-28.968
628.370	-27.882	-52.066	-79.948	-67.738	-23.968	-28.968
628.380	-29.389	-52.012	-81.401	-69.191	-23.968	-28.968
628.390	-29.251	-52.078	-81.329	-69.119	-23.968	-28.968
628.400	-28.644	-52.216	-80.860	-68.650	-23.968	-28.968
628.410	-26.710	-52.149	-78.859	-66.649	-23.968	-28.968
628.420	-27.449	-52.343	-79.792	-67.582	-23.968	-28.968
628.430	-28.659	-52.234	-80.893	-68.683	-23.968	-28.968
628.440	-27.774	-52.338	-80.112	-67.902	-23.968	-28.968
628.450	-30.239	-52.344	-82.583	-70.373	-23.968	-28.968
628.460	-27.865	-52.296	-80.161	-67.951	-23.968	-28.968
628.470	-28.908	-52.235	-81.143	-68.933	-23.968	-28.968
628.480	-26.751	-52.394	-79.145	-66.935	-23.968	-28.968
628.490	-28.825	-52.281	-81.106	-68.896	-23.968	-28.968
628.500	-28.332	-52.382	-80.714	-68.504	-23.968	-28.968
628.510	-29.155	-52.572	-81.727	-69.517	-23.968	-28.968
628.520	-27.002	-52.491	-79.493	-67.283	-23.968	-28.968
628.530	-28.495	-52.438	-80.933	-68.723	-23.968	-28.968
628.540	-32.086	-52.542	-84.628	-72.418	-23.968	-28.968
628.550	-29.212	-52.442	-81.654	-69.444	-23.968	-28.968

628.560	-28.608	-52.563	-81.171	-68.961	-23.968	-28.968
628.570	-30.985	-52.546	-83.531	-71.321	-23.968	-28.968
628.580	-29.253	-52.706	-81.959	-69.749	-23.968	-28.968
628.590	-30.526	-52.804	-83.330	-71.120	-23.968	-28.968
628.600	-28.838	-52.716	-81.554	-69.344	-23.968	-28.968
628.610	-27.682	-52.780	-80.462	-68.252	-23.968	-28.968
628.620	-30.338	-52.793	-83.131	-70.921	-23.968	-28.968
628.630	-30.519	-52.823	-83.342	-71.132	-23.968	-28.968
628.640	-26.979	-52.893	-79.872	-67.662	-23.968	-28.968
628.650	-28.826	-52.936	-81.762	-69.552	-23.968	-28.968
628.660	-28.794	-52.913	-81.707	-69.497	-23.968	-28.968
628.670	-29.817	-52.911	-82.728	-70.518	-23.968	-28.968
628.680	-27.975	-52.967	-80.942	-68.732	-23.968	-28.968
628.690	-27.845	-52.954	-80.799	-68.589	-23.968	-28.968
628.700	-28.167	-53.121	-81.288	-69.078	-23.968	-28.968
628.710	-28.109	-53.055	-81.164	-68.954	-23.968	-28.968
628.720	-27.569	-53.169	-80.738	-68.528	-23.968	-28.968
628.730	-29.123	-53.263	-82.386	-70.176	-23.968	-28.968
628.740	-30.045	-53.176	-83.221	-71.011	-23.968	-28.968
628.750	-29.652	-53.109	-82.761	-70.551	-23.968	-28.968
628.760	-29.114	-53.332	-82.446	-70.236	-23.968	-28.968
628.770	-28.869	-53.343	-82.212	-70.002	-23.968	-28.968
628.780	-28.125	-53.250	-81.375	-69.165	-23.968	-28.968
628.790	-29.357	-53.336	-82.693	-70.483	-23.968	-28.968
628.800	-29.705	-53.307	-83.012	-70.802	-23.968	-28.968
628.810	-30.069	-53.400	-83.469	-71.259	-23.968	-28.968
628.820	-28.539	-53.399	-81.938	-69.728	-23.968	-28.968
628.830	-29.345	-53.420	-82.765	-70.555	-23.968	-28.968
628.840	-30.413	-53.458	-83.871	-71.661	-23.968	-28.968
628.850	-27.547	-53.540	-81.087	-68.877	-23.968	-28.968
628.860	-29.168	-53.468	-82.636	-70.426	-23.968	-28.968
628.870	-28.100	-53.559	-81.659	-69.449	-23.968	-28.968
628.880	-28.695	-53.598	-82.293	-70.083	-23.968	-28.968
628.890	-30.451	-53.732	-84.183	-71.973	-23.968	-28.968
628.900	-29.698	-53.642	-83.340	-71.130	-23.968	-28.968
628.910	-30.749	-53.736	-84.485	-72.275	-23.968	-28.968
628.920	-28.247	-53.687	-81.934	-69.724	-23.968	-28.968
628.930	-28.570	-53.702	-82.272	-70.062	-23.968	-28.968
628.940	-30.102	-53.938	-84.040	-71.830	-23.968	-28.968
628.950	-29.350	-53.748	-83.098	-70.888	-23.968	-28.968
628.960	-28.502	-53.927	-82.429	-70.219	-23.968	-28.968
628.970	-26.858	-53.975	-80.833	-68.623	-23.968	-28.968
628.980	-28.468	-53.853	-82.321	-70.111	-23.968	-28.968
628.990	-29.763	-53.868	-83.631	-71.421	-23.968	-28.968
629.000	-27.564	-53.859	-81.423	-69.213	-23.968	-28.968
629.010	-28.614	-53.895	-82.509	-70.299	-23.968	-28.968

629.020	-29.495	-53.887	-83.382	-71.172	-23.968	-28.968
629.030	-30.339	-54.032	-84.371	-72.161	-23.968	-28.968
629.040	-29.709	-53.940	-83.649	-71.439	-23.968	-28.968
629.050	-29.611	-53.988	-83.599	-71.389	-23.968	-28.968
629.060	-30.662	-54.254	-84.916	-72.706	-23.968	-28.968
629.070	-30.461	-54.140	-84.601	-72.391	-23.968	-28.968
629.080	-31.720	-54.162	-85.882	-73.672	-23.968	-28.968
629.090	-30.165	-54.196	-84.361	-72.151	-23.968	-28.968
629.100	-31.371	-54.113	-85.484	-73.274	-23.968	-28.968
629.110	-27.812	-54.356	-82.168	-69.958	-23.968	-28.968
629.120	-29.549	-54.264	-83.813	-71.603	-23.968	-28.968
629.130	-28.550	-54.404	-82.954	-70.744	-23.968	-28.968
629.140	-30.747	-54.344	-85.091	-72.881	-23.968	-28.968
629.150	-31.422	-54.403	-85.825	-73.615	-23.968	-28.968
629.160	-30.967	-54.388	-85.355	-73.145	-23.968	-28.968
629.170	-29.769	-54.501	-84.270	-72.060	-23.968	-28.968
629.180	-30.994	-54.506	-85.500	-73.290	-23.968	-28.968
629.190	-30.677	-54.424	-85.101	-72.891	-23.968	-28.968
629.200	-28.910	-54.474	-83.384	-71.174	-23.968	-28.968
629.210	-29.384	-54.497	-83.881	-71.671	-23.968	-28.968
629.220	-32.491	-54.554	-87.045	-74.835	-23.968	-28.968
629.230	-30.684	-54.635	-85.319	-73.109	-23.968	-28.968
629.240	-29.414	-54.757	-84.171	-71.961	-23.968	-28.968
629.250	-29.900	-54.748	-84.648	-72.438	-23.968	-28.968
629.260	-28.187	-54.612	-82.799	-70.589	-23.968	-28.968
629.270	-30.681	-54.646	-85.327	-73.117	-23.968	-28.968
629.280	-32.799	-54.759	-87.558	-75.348	-23.968	-28.968
629.290	-30.122	-54.813	-84.935	-72.725	-23.968	-28.968
629.300	-29.865	-54.791	-84.656	-72.446	-23.968	-28.968
629.310	-29.795	-54.706	-84.501	-72.291	-23.968	-28.968
629.320	-31.836	-54.965	-86.801	-74.591	-23.968	-28.968
629.330	-32.010	-54.740	-86.750	-74.540	-23.968	-28.968
629.340	-30.970	-54.956	-85.926	-73.716	-23.968	-28.968
629.350	-30.897	-55.103	-86.000	-73.790	-23.968	-28.968
629.360	-30.519	-54.979	-85.498	-73.288	-23.968	-28.968
629.370	-29.854	-55.044	-84.898	-72.688	-23.968	-28.968
629.380	-30.146	-55.057	-85.203	-72.993	-23.968	-28.968
629.390	-29.611	-55.050	-84.661	-72.451	-23.968	-28.968
629.400	-31.716	-55.144	-86.860	-74.650	-23.968	-28.968
629.410	-31.598	-55.185	-86.783	-74.573	-23.968	-28.968
629.420	-30.658	-55.224	-85.882	-73.672	-23.968	-28.968
629.430	-29.218	-55.140	-84.358	-72.148	-23.968	-28.968
629.440	-30.220	-55.023	-85.243	-73.033	-23.968	-28.968
629.450	-31.026	-55.271	-86.297	-74.087	-23.968	-28.968
629.460	-30.672	-55.212	-85.884	-73.674	-23.968	-28.968
629.470	-33.612	-55.420	-89.032	-76.822	-23.968	-28.968

629.480	-29.994	-55.496	-85.490	-73.280	-23.968	-28.968
629.490	-32.033	-55.328	-87.361	-75.151	-23.968	-28.968
629.500	-31.459	-55.314	-86.773	-74.563	-23.968	-28.968
629.510	-30.427	-55.377	-85.804	-73.594	-23.968	-28.968
629.520	-31.155	-55.403	-86.558	-74.348	-23.968	-28.968
629.530	-32.663	-55.520	-88.183	-75.973	-23.968	-28.968
629.540	-32.332	-55.577	-87.909	-75.699	-23.968	-28.968
629.550	-29.209	-55.627	-84.836	-72.626	-23.968	-28.968
629.560	-30.313	-55.596	-85.909	-73.699	-23.968	-28.968
629.570	-30.928	-55.646	-86.574	-74.364	-23.968	-28.968
629.580	-31.888	-55.712	-87.600	-75.390	-23.968	-28.968
629.590	-29.962	-55.679	-85.641	-73.431	-23.968	-28.968
629.600	-30.974	-55.667	-86.641	-74.431	-23.968	-28.968
629.610	-31.846	-55.519	-87.365	-75.155	-23.968	-28.968
629.620	-31.555	-55.691	-87.246	-75.036	-23.968	-28.968
629.630	-32.478	-55.800	-88.278	-76.068	-23.968	-28.968
629.640	-31.322	-55.736	-87.058	-74.848	-23.968	-28.968
629.650	-31.213	-55.719	-86.932	-74.722	-23.968	-28.968
629.660	-31.951	-55.743	-87.694	-75.484	-23.968	-28.968
629.670	-30.242	-55.786	-86.028	-73.818	-23.968	-28.968
629.680	-31.756	-55.911	-87.667	-75.457	-23.968	-28.968
629.690	-30.156	-55.961	-86.117	-73.907	-23.968	-28.968
629.700	-32.609	-56.029	-88.638	-76.428	-23.968	-28.968
629.710	-31.456	-55.931	-87.387	-75.177	-23.968	-28.968
629.720	-29.933	-55.990	-85.923	-73.713	-23.968	-28.968
629.730	-34.000	-56.109	-90.109	-77.899	-23.968	-28.968
629.740	-32.854	-56.066	-88.920	-76.710	-23.968	-28.968
629.750	-31.671	-56.114	-87.785	-75.575	-23.968	-28.968
629.760	-32.231	-56.210	-88.441	-76.231	-23.968	-28.968
629.770	-31.227	-56.257	-87.484	-75.274	-23.968	-28.968
629.780	-32.161	-56.238	-88.399	-76.189	-23.968	-28.968
629.790	-31.542	-56.216	-87.758	-75.548	-23.968	-28.968
629.800	-34.191	-56.282	-90.473	-78.263	-23.968	-28.968
629.810	-31.572	-56.288	-87.860	-75.650	-23.968	-28.968
629.820	-31.421	-56.200	-87.621	-75.411	-23.968	-28.968
629.830	-33.321	-56.309	-89.630	-77.420	-23.968	-28.968
629.840	-31.200	-56.351	-87.551	-75.341	-23.968	-28.968
629.850	-31.031	-56.355	-87.386	-75.176	-23.968	-28.968
629.860	-32.349	-56.456	-88.805	-76.595	-23.968	-28.968
629.870	-32.112	-56.461	-88.573	-76.363	-23.968	-28.968
629.880	-32.639	-56.265	-88.904	-76.694	-23.968	-28.968
629.890	-30.410	-56.498	-86.908	-74.698	-23.968	-28.968
629.900	-31.606	-56.556	-88.162	-75.952	-23.968	-28.968
629.910	-30.855	-56.529	-87.384	-75.174	-23.968	-28.968
629.920	-32.222	-56.646	-88.868	-76.658	-23.968	-28.968
629.930	-29.418	-56.493	-85.911	-73.701	-23.968	-28.968

629.940	-29.687	-56.734	-86.421	-74.211	-23.968	-28.968
629.950	-29.498	-56.683	-86.181	-73.971	-23.968	-28.968
629.960	-31.092	-56.821	-87.913	-75.703	-23.968	-28.968
629.970	-31.670	-56.836	-88.506	-76.296	-23.968	-28.968
629.980	-32.506	-56.733	-89.239	-77.029	-23.968	-28.968
629.990	-32.343	-56.786	-89.129	-76.919	-23.968	-28.968
630.000	-29.707	-56.815	-86.522	-74.312	-23.968	-28.968
630.010	-30.361	-56.877	-87.238	-75.028	-23.968	-28.968
630.020	-33.465	-56.876	-90.341	-78.131	-23.968	-28.968
630.030	-31.818	-56.899	-88.717	-76.507	-23.968	-28.968
630.040	-31.153	-57.064	-88.217	-76.007	-23.968	-28.968
630.050	-31.784	-56.975	-88.759	-76.549	-23.968	-28.968
630.060	-31.064	-56.822	-87.886	-75.676	-23.968	-28.968
630.070	-31.553	-57.010	-88.563	-76.353	-23.968	-28.968
630.080	-31.502	-56.908	-88.410	-76.200	-23.968	-28.968
630.090	-29.207	-57.034	-86.241	-74.031	-23.968	-28.968
630.100	-32.214	-57.220	-89.434	-77.224	-23.968	-28.968
630.110	-31.341	-57.038	-88.379	-76.169	-23.968	-28.968
630.120	-34.029	-57.088	-91.117	-78.907	-23.968	-28.968
630.130	-33.410	-57.171	-90.581	-78.371	-23.968	-28.968
630.140	-33.108	-57.177	-90.285	-78.075	-23.968	-28.968
630.150	-32.932	-57.191	-90.123	-77.913	-23.968	-28.968
630.160	-31.355	-57.299	-88.654	-76.444	-23.968	-28.968
630.170	-32.410	-57.274	-89.684	-77.474	-23.968	-28.968
630.180	-32.964	-57.319	-90.283	-78.073	-23.968	-28.968
630.190	-32.546	-57.310	-89.856	-77.646	-23.968	-28.968
630.200	-32.517	-57.217	-89.734	-77.524	-23.968	-28.968
630.210	-34.788	-57.213	-92.001	-79.791	-23.968	-28.968
630.220	-32.166	-57.525	-89.691	-77.481	-23.968	-28.968
630.230	-31.878	-57.392	-89.270	-77.060	-23.968	-28.968
630.240	-35.193	-57.484	-92.677	-80.467	-23.968	-28.968
630.250	-31.721	-57.574	-89.295	-77.085	-23.968	-28.968
630.260	-30.826	-57.460	-88.286	-76.076	-23.968	-28.968
630.270	-31.077	-57.630	-88.707	-76.497	-23.968	-28.968
630.280	-30.981	-57.542	-88.523	-76.313	-23.968	-28.968
630.290	-32.963	-57.610	-90.573	-78.363	-23.968	-28.968
630.300	-33.488	-57.626	-91.114	-78.904	-23.968	-28.968
630.310	-32.430	-57.613	-90.043	-77.833	-23.968	-28.968
630.320	-34.043	-57.697	-91.740	-79.530	-23.968	-28.968
630.330	-32.576	-57.552	-90.128	-77.918	-23.968	-28.968
630.340	-32.301	-57.859	-90.160	-77.950	-23.968	-28.968
630.350	-33.145	-57.737	-90.882	-78.672	-23.968	-28.968
630.360	-32.232	-57.648	-89.880	-77.670	-23.968	-28.968
630.370	-33.171	-57.988	-91.159	-78.949	-23.968	-28.968
630.380	-33.150	-57.798	-90.948	-78.738	-23.968	-28.968
630.390	-34.256	-57.962	-92.218	-80.008	-23.968	-28.968

630.400	-33.779	-57.914	-91.693	-79.483	-23.968	-28.968
630.410	-33.032	-58.001	-91.033	-78.823	-23.968	-28.968
630.420	-33.149	-57.840	-90.989	-78.779	-23.968	-28.968
630.430	-33.346	-58.071	-91.417	-79.207	-23.968	-28.968
630.440	-32.729	-57.924	-90.653	-78.443	-23.968	-28.968
630.450	-33.961	-57.938	-91.899	-79.689	-23.968	-28.968
630.460	-32.428	-57.894	-90.322	-78.112	-23.968	-28.968
630.470	-32.934	-57.937	-90.871	-78.661	-23.968	-28.968
630.480	-33.015	-58.211	-91.226	-79.016	-23.968	-28.968
630.490	-35.660	-58.326	-93.986	-81.776	-23.968	-28.968
630.500	-32.373	-58.267	-90.640	-78.430	-23.968	-28.968
630.510	-34.091	-58.101	-92.192	-79.982	-23.968	-28.968
630.520	-32.792	-58.201	-90.993	-78.783	-23.968	-28.968
630.530	-32.642	-58.236	-90.878	-78.668	-23.968	-28.968
630.540	-31.763	-58.198	-89.961	-77.751	-23.968	-28.968
630.550	-33.370	-58.295	-91.665	-79.455	-23.968	-28.968
630.560	-32.720	-58.254	-90.974	-78.764	-23.968	-28.968
630.570	-33.592	-58.287	-91.879	-79.669	-23.968	-28.968
630.580	-33.973	-58.135	-92.108	-79.898	-23.968	-28.968
630.590	-33.187	-58.394	-91.581	-79.371	-23.968	-28.968
630.600	-33.773	-58.371	-92.144	-79.934	-23.968	-28.968
630.610	-32.027	-58.391	-90.418	-78.208	-23.968	-28.968
630.620	-32.867	-58.531	-91.398	-79.188	-23.968	-28.968
630.630	-34.198	-58.536	-92.734	-80.524	-23.968	-28.968
630.640	-32.990	-58.583	-91.573	-79.363	-23.968	-28.968
630.650	-32.481	-58.621	-91.102	-78.892	-23.968	-28.968
630.660	-33.626	-58.384	-92.010	-79.800	-23.968	-28.968
630.670	-33.043	-58.618	-91.661	-79.451	-23.968	-28.968
630.680	-31.983	-58.630	-90.613	-78.403	-23.968	-28.968
630.690	-32.828	-58.582	-91.410	-79.200	-23.968	-28.968
630.700	-35.447	-58.589	-94.036	-81.826	-23.968	-28.968
630.710	-33.284	-58.911	-92.195	-79.985	-23.968	-28.968
630.720	-34.504	-58.813	-93.317	-81.107	-23.968	-28.968
630.730	-33.667	-58.867	-92.534	-80.324	-23.968	-28.968
630.740	-35.094	-58.776	-93.870	-81.660	-23.968	-28.968
630.750	-32.608	-58.666	-91.274	-79.064	-23.968	-28.968
630.760	-33.431	-58.958	-92.389	-80.179	-23.968	-28.968
630.770	-34.687	-58.849	-93.536	-81.326	-23.968	-28.968
630.780	-33.632	-59.007	-92.639	-80.429	-23.968	-28.968
630.790	-32.470	-58.808	-91.278	-79.068	-23.968	-28.968
630.800	-30.878	-58.966	-89.844	-77.634	-23.968	-28.968
630.810	-33.381	-58.867	-92.248	-80.038	-23.968	-28.968
630.820	-33.185	-59.103	-92.288	-80.078	-23.968	-28.968
630.830	-35.292	-58.856	-94.148	-81.938	-23.968	-28.968
630.840	-35.145	-59.016	-94.161	-81.951	-23.968	-28.968
630.850	-33.316	-58.930	-92.246	-80.036	-23.968	-28.968

630.860	-34.567	-59.174	-93.741	-81.531	-23.968	-28.968
630.870	-33.452	-58.966	-92.418	-80.208	-23.968	-28.968
630.880	-36.123	-59.289	-95.412	-83.202	-23.968	-28.968
630.890	-33.529	-59.193	-92.722	-80.512	-23.968	-28.968
630.900	-33.482	-59.075	-92.557	-80.347	-23.968	-28.968
630.910	-34.827	-59.280	-94.107	-81.897	-23.968	-28.968
630.920	-33.824	-59.098	-92.922	-80.712	-23.968	-28.968
630.930	-35.577	-59.373	-94.950	-82.740	-23.968	-28.968
630.940	-32.571	-58.929	-91.500	-79.290	-23.968	-28.968
630.950	-32.832	-59.377	-92.209	-79.999	-23.968	-28.968
630.960	-33.974	-59.417	-93.391	-81.181	-23.968	-28.968
630.970	-31.934	-59.304	-91.238	-79.028	-23.968	-28.968
630.980	-33.655	-59.529	-93.184	-80.974	-23.968	-28.968
630.990	-34.393	-59.231	-93.624	-81.414	-23.968	-28.968
631.000	-31.753	-59.519	-91.272	-79.062	-23.968	-28.968
631.010	-32.483	-59.399	-91.882	-79.672	-23.968	-28.968
631.020	-34.959	-59.444	-94.403	-82.193	-23.968	-28.968
631.030	-33.696	-59.751	-93.447	-81.237	-23.968	-28.968
631.040	-35.821	-59.713	-95.534	-83.324	-23.968	-28.968
631.050	-34.033	-59.836	-93.869	-81.659	-23.968	-28.968
631.060	-35.376	-59.530	-94.906	-82.696	-23.968	-28.968
631.070	-33.000	-59.857	-92.857	-80.647	-23.968	-28.968
631.080	-35.388	-59.630	-95.018	-82.808	-23.968	-28.968
631.090	-34.452	-59.810	-94.262	-82.052	-23.968	-28.968
631.100	-34.211	-59.803	-94.014	-81.804	-23.968	-28.968
631.110	-33.172	-59.667	-92.839	-80.629	-23.968	-28.968
631.120	-34.024	-59.792	-93.816	-81.606	-23.968	-28.968
631.130	-35.707	-59.900	-95.607	-83.397	-23.968	-28.968
631.140	-35.962	-59.789	-95.751	-83.541	-23.968	-28.968
631.150	-35.182	-59.872	-95.054	-82.844	-23.968	-28.968
631.160	-35.163	-60.077	-95.240	-83.030	-23.968	-28.968
631.170	-33.315	-60.034	-93.349	-81.139	-23.968	-28.968
631.180	-34.352	-59.779	-94.131	-81.921	-23.968	-28.968
631.190	-33.718	-59.906	-93.624	-81.414	-23.968	-28.968
631.200	-33.587	-59.915	-93.502	-81.292	-23.968	-28.968
631.210	-32.647	-60.005	-92.652	-80.442	-23.968	-28.968
631.220	-36.288	-60.022	-96.310	-84.100	-23.968	-28.968
631.230	-35.818	-59.794	-95.612	-83.402	-23.968	-28.968
631.240	-33.680	-60.204	-93.884	-81.674	-23.968	-28.968
631.250	-35.343	-60.183	-95.526	-83.316	-23.968	-28.968
631.260	-35.923	-60.055	-95.978	-83.768	-23.968	-28.968
631.270	-37.769	-60.118	-97.887	-85.677	-23.968	-28.968
631.280	-35.182	-60.231	-95.413	-83.203	-23.968	-28.968
631.290	-33.948	-60.438	-94.386	-82.176	-23.968	-28.968
631.300	-36.055	-60.242	-96.297	-84.087	-23.968	-28.968
631.310	-35.598	-60.030	-95.628	-83.418	-23.968	-28.968

631.320	-35.372	-60.471	-95.843	-83.633	-23.968	-28.968
631.330	-34.075	-60.310	-94.385	-82.175	-23.968	-28.968
631.340	-33.714	-60.308	-94.022	-81.812	-23.968	-28.968
631.350	-33.275	-60.313	-93.588	-81.378	-23.968	-28.968
631.360	-34.081	-60.485	-94.566	-82.356	-23.968	-28.968
631.370	-34.749	-60.339	-95.088	-82.878	-23.968	-28.968
631.380	-34.038	-60.678	-94.716	-82.506	-23.968	-28.968
631.390	-33.720	-60.236	-93.956	-81.746	-23.968	-28.968
631.400	-33.714	-60.344	-94.058	-81.848	-23.968	-28.968
631.410	-33.302	-60.568	-93.870	-81.660	-23.968	-28.968
631.420	-33.581	-60.333	-93.914	-81.704	-23.968	-28.968
631.430	-35.814	-60.694	-96.508	-84.298	-23.968	-28.968
631.440	-32.429	-60.497	-92.926	-80.716	-23.968	-28.968
631.450	-34.054	-60.570	-94.624	-82.414	-23.968	-28.968
631.460	-35.278	-60.634	-95.912	-83.702	-23.968	-28.968
631.470	-35.926	-60.824	-96.750	-84.540	-23.968	-28.968
631.480	-33.832	-60.576	-94.408	-82.198	-23.968	-28.968
631.490	-36.753	-60.342	-97.095	-84.885	-23.968	-28.968
631.500	-33.525	-60.725	-94.250	-82.040	-23.968	-28.968
631.510	-33.512	-60.804	-94.316	-82.106	-23.968	-28.968
631.520	-34.304	-60.843	-95.147	-82.937	-23.968	-28.968
631.530	-34.471	-60.924	-95.395	-83.185	-23.968	-28.968
631.540	-36.369	-60.928	-97.297	-85.087	-23.968	-28.968
631.550	-32.784	-60.840	-93.624	-81.414	-23.968	-28.968
631.560	-33.962	-60.777	-94.739	-82.529	-23.968	-28.968
631.570	-34.606	-61.022	-95.628	-83.418	-23.968	-28.968
631.580	-35.208	-60.775	-95.983	-83.773	-23.968	-28.968
631.590	-33.474	-60.991	-94.465	-82.255	-23.968	-28.968
631.600	-32.942	-61.234	-94.176	-81.966	-23.968	-28.968
631.610	-34.150	-61.071	-95.221	-83.011	-23.968	-28.968
631.620	-33.277	-61.025	-94.302	-82.092	-23.968	-28.968
631.630	-33.422	-60.944	-94.366	-82.156	-23.968	-28.968
631.640	-36.294	-61.093	-97.387	-85.177	-23.968	-28.968
631.650	-35.295	-61.109	-96.404	-84.194	-23.968	-28.968
631.660	-35.820	-61.290	-97.110	-84.900	-23.968	-28.968
631.670	-35.591	-61.072	-96.663	-84.453	-23.968	-28.968
631.680	-37.281	-61.411	-98.692	-86.482	-23.968	-28.968
631.690	-36.044	-61.259	-97.303	-85.093	-23.968	-28.968
631.700	-33.753	-61.347	-95.100	-82.890	-23.968	-28.968
631.710	-31.789	-61.299	-93.088	-80.878	-23.968	-28.968
631.720	-32.895	-61.236	-94.131	-81.921	-23.968	-28.968
631.730	-33.408	-61.321	-94.729	-82.519	-23.968	-28.968
631.740	-34.340	-61.321	-95.661	-83.451	-23.968	-28.968
631.750	-34.285	-61.378	-95.663	-83.453	-23.968	-28.968
631.760	-33.108	-61.404	-94.512	-82.302	-23.968	-28.968
631.770	-35.060	-61.621	-96.681	-84.471	-23.968	-28.968

631.780	-35.693	-61.509	-97.202	-84.992	-23.968	-28.968
631.790	-34.905	-61.412	-96.317	-84.107	-23.968	-28.968
631.800	-35.013	-61.528	-96.541	-84.331	-23.968	-28.968
631.810	-35.053	-61.609	-96.662	-84.452	-23.968	-28.968
631.820	-35.644	-61.763	-97.407	-85.197	-23.968	-28.968
631.830	-34.247	-61.555	-95.802	-83.592	-23.968	-28.968
631.840	-36.691	-61.241	-97.932	-85.722	-23.968	-28.968
631.850	-35.580	-61.475	-97.055	-84.845	-23.968	-28.968
631.860	-33.292	-61.588	-94.880	-82.670	-23.968	-28.968
631.870	-34.411	-61.631	-96.042	-83.832	-23.968	-28.968
631.880	-37.372	-61.747	-99.119	-86.909	-23.968	-28.968
631.890	-35.260	-61.630	-96.890	-84.680	-23.968	-28.968
631.900	-34.964	-61.663	-96.627	-84.417	-23.968	-28.968
631.910	-34.169	-61.569	-95.738	-83.528	-23.968	-28.968
631.920	-33.888	-61.698	-95.586	-83.376	-23.968	-28.968
631.930	-35.230	-61.914	-97.144	-84.934	-23.968	-28.968
631.940	-34.975	-61.808	-96.783	-84.573	-23.968	-28.968
631.950	-34.229	-61.785	-96.014	-83.804	-23.968	-28.968
631.960	-33.695	-61.761	-95.456	-83.246	-23.968	-28.968
631.970	-33.848	-61.852	-95.700	-83.490	-23.968	-28.968
631.980	-35.313	-62.035	-97.348	-85.138	-23.968	-28.968
631.990	-36.387	-61.925	-98.312	-86.102	-23.968	-28.968
+12 MHz From Channel Edge						
632.000	-36.743	-62.140	-98.883	-86.673	-23.968	-28.968

4.4.2 Protection to Radio Navigation Satellite Services

Method of Measurement:

Tests were performed to ensure compliance with FCC Rule §74.794(a)(3)(b)(1), as listed above, that spurious output in the GPS band must be attenuated at least 85dB. To confirm compliance with this rule section the test setup depicted in Figure 4-3 was used. The LPU-500, modulated with a ATSC compliant 8-VSB modulator, was adjusted to obtain a 50 Watt average channel power (47dBm) measurement on the spectrum analyzer at the output of the mask filter. The metering circuit was adjusted to obtain a 100% reading on the forward power meter. With the transmitter properly configured for digital operation and the average power set to 50 Watts, spurious emissions into the GPS band were measured. Results of the measurements are shown in the spectrum analyzer plot displayed in Figure 4-13. In no case were spurious emissions observed above the -85dB threshold.

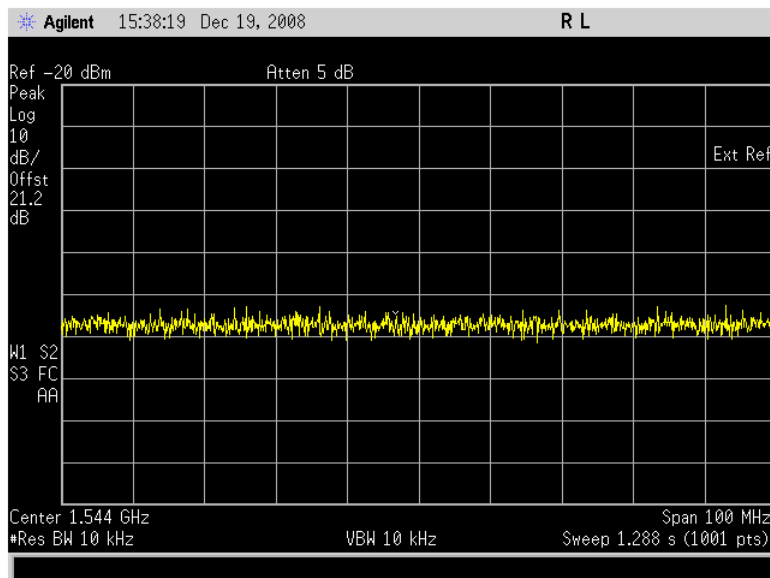


Figure 4-13: Spurious Emissions in GPS Band

4.4.3 Spurious Emissions Tests with Analog Modulation

Part 74.736 of the Rules states:

§ 74.736 Emissions and bandwidth.

(a) *The license of a low power TV, TV translator, or TV booster station authorizes the transmission of the visual signal by amplitude modulation (A5) and the accompanying aural signal by frequency modulation (F3).*

(b) *Standard width television channels will be assigned and the transmitting apparatus shall be operated so as to limit spurious emissions to the lowest practicable value. Any emissions including intermodulation products and radio frequency harmonics which are not essential for the transmission of the desired picture and sound information shall be considered to be spurious emissions.*

(c) *Any emissions appearing on frequencies more than 3 MHz above or below the upper and lower edges, respectively, of the assigned channel shall be attenuated no less than:*

- (1) *30 dB for transmitters rated at no more than 1 watt power output.*
- (2) *50 dB for transmitters rated at more than 1 watt power output.*
- (3) *60 dB for transmitters rated at more than 100 watts power output.*

(d) *Greater attenuation than that specified in paragraph (c) of this section may be required if interference results from emissions outside the assigned channel.*

Method of Measurement:

To confirm compliance with the above rule for analog television operations, tests were then run on the separate visual and aural carriers at their rated output levels using the test setup in Figure 4-1. Measurements were taken after the output filter. The transmitter was modulated with color bars at 87.5% and at a peak sync visual output of 250 watts (54dBm). The results of the test are displayed on the spectrum analyzer plot labeled Figure 4-14. In no case are the out of band emissions attenuated less than -60dB relative to the peak carrier level.

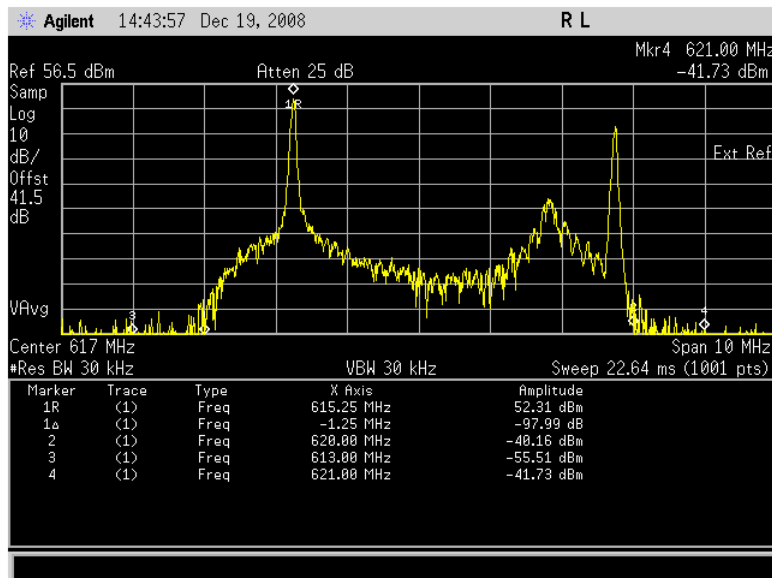


Figure 4-14: Out of Band Attenuation for Analog Operations

4.5 FREQUENCY STABILITY

The LPU transmitter series utilizes a triple conversion architecture to generate the output channel frequency from the 44 MHz IF input. The first conversion mixes the 44 MHz signal with the first Local Oscillator (LO1) and creates a second IF (IF2) centered at 466 MHz. The IF2 signal is the mixed with a second local oscillator (LO2) to produce the third IF (IF3) centered at 2154 MHz. The IF3 signal is then mixed with the third local oscillator to produce the desired output channel. The local oscillators are locked to a 10 MHz ovenized crystal oscillator (F_{ref}) which provides the required frequency stability.

The first converter, first local oscillator frequency is 422 MHz and is generated in the following way. The 10 MHz oscillator reference input is divided by 5 and is used as the reference for a phase locked loop. The divide ratio of the loop is 844, so when locked the VCO output is at 1688 MHz which is fed to the 2nd mixer in the first converter and also divided by 4 and fed to the 1st in the first converter. The resultant mix at the second mixer provides a 2154 MHz output. The output frequency is derived at the output of the output converter by mixing the 2154 MHz input from the first converter with a 1 MHz step tuned PPL tuned LO (LO3) which has an output of between 2627 and 2957 MHz. The resultant high side mix produces a desired output frequency of between 473 to 803 MHz in 1 MHz steps.

The equation for the output frequency of LO1= $((F_{ref}/5)*844)/4 = F_{ref}*42.2$.

Therefore, LO1= 42.2* F_{ref}

The equation for the output frequency of LO2= $((F_{ref}/5**844) = F_{ref}*168.8$.

The third local oscillator (LO3) is variable and generates frequencies between 2627 and 2957 MHz in the following way. The 10 MHz oscillator is divided by 10 and used as the

reference in a phase locked loop circuit. The VCO output is divided by N with N variable between 2627 and 2957 MHz and this is fed to the phase detector. The frequency of the VCO will be N MHz.

The equation for the output frequency of LO3= $(F_{ref}/10)*N = F_{ref}*(N/10)$.

The transmitter output frequency (F_{out}) is determined by the following equations:

$$IF2 = LO1 + IF$$

$$IF3 = LO2 + IF2$$

$$F_{out} = LO3 - IF3$$

$$F_{out} = LO3 - LO2 - LO1 - IF$$

$$F_{out} = F_{ref}*((N/10) - 168.8 * F_{ref} - 42.2 * F_{ref}) - IF$$

$$F_{out} = F_{ref}*((N/10) - 211) - IF \quad N = 2627 \text{ to } 2957$$

$F_{ref} = 10\text{MHz} \pm dF$, where dF is frequency Variance of 10 MHz oscillator.

So for the frequency stability term of the output is $dF_{out} = \pm dF*((N/10) - 211)$.

The frequency stability of the 10 MHz oscillator over temperature is $\pm 2e-7$ so for the 10 MHz oscillator $dF = 2 \text{ Hz}$. The worst case frequency is when $N = 2957$ so worst case stability is:

$$dF_{out} = \pm 2*((N/10) - 211) = \pm 169.4 \text{ Hz}.$$

Alternatively, the 10MHz reference oscillator may be locked to an external precision 10 MHz reference source such as a GPS or LORAN receiver to provide an even higher stability.

4.6 FIELD STRENGTH OF SPURIOUS EMISSIONS

Visual Carrier or 8-VSB Output Power: 250 Watts Peak or 100 Watts Average Power

Modulation: NTSC Composite Television Signals or 8-VSB Modulated Carriers

Spectrum Analyzer Settings:

Frequency Span:	1 MHz/Division
Center Frequency:	Adjusted Continuously from 10 MHz to 26 GHz
Resolution Bandwidth:	100 KHz
Video Bandwidth:	100 KHz
Analyzer Noise Floor	<-89dBm

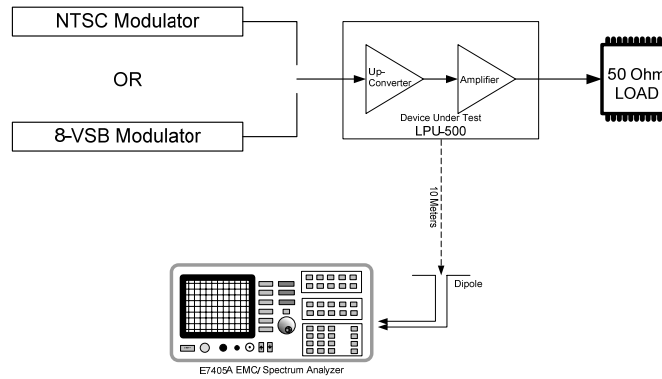


Figure 4-15: Test Setup for Measuring Radiated Emissions

Method of Measurement:

Using the test setup in Figure 4-15, the transmitter was driven to full power (52dBm) with analog visual and aural modulation. The test was repeated using 8-VSB modulation at an average power of 47dBm on the channel, and no difference was noted. A center frequency of 617 MHz was used as a reference. The spectrum analyzer was moved 10 meters from the unit under test. A dipole antenna was cut to the 10 MHz reference oscillator frequency and oriented to maximize the received level and the data was recorded into Table 4-8. Then the dipole was cut to the 44 MHz IF frequency, then the 1st, 2nd, and 3rd LO frequencies, where each time the antenna was oriented to achieve the maximum signal and the data then recorded. Then the antenna was cut to the 617 MHz output reference frequency and then the 2nd through 10th harmonic frequencies where each time the antenna was connected to the spectrum analyzer and oriented to achieve a maximum receive level and the data recorded.

Table 4-5: Radiated Emissions Data

FREQUENCY (MHz)	SOURCE	PEAK LEVEL (dB)
10	10 MHz Reference	None Observed
44	IF Frequency	None Observed
422	1 st LO	None Observed
1688	2 nd LO	None Observed
2771	3 rd LO	
617	Reference Channel	None Observed
1234	2 nd Harmonic	None Observed
1851	3 rd Harmonic	None Observed
2468	4 th Harmonic	None Observed
3085	5 th Harmonic	None Observed
3702	6 th Harmonic	None Observed
4319	7 th Harmonic	None Observed
4936	8 th Harmonic	None Observed
5553	9 th Harmonic	None Observed
6170	10 th Harmonic	None Observed

Spurious Radiation:

The transmitter system is comprised of fully enclosed modules, encapsulated in a doubly enclosed casing. Due to the design techniques employed for the very high gain of the system and the mitigation of signal leakage, no radiated signals were detected to the threshold of the Spectrum Analyzer of -89dB.

5.0 SUMMARY

This report demonstrates that the LPU-500 transmitter system meets or exceeds the FCC Type Acceptance Criteria for devices utilized under FCC Rule Parts 73 and 74. Peak and average power outputs were verified with direct power measurements at UHF. Measurements of spurious emissions at the RF output indicated no emissions above that specified in the applicable rules. Field strength measurements of spurious emissions revealed no detectable emissions down to the measurement equipment threshold of <-89 dBm.