



**FCC ID: BMTLPU300
Confirmation # EA674002**

FCC TYPE ACCEPTANCE REPORT

For the

EMCEE LPU-300 UHF Transmitter

18 July, 2008

**EMCEE Communications
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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.....	7
4.2.1.4 Differential Gain & Phase	8
4.2.1.5 Audio Modulation	8
4.2.1.6 FM Noise	9
4.2.2 Digital Modulation Characteristics.....	9
4.2.2.2 DEMODULATED DIGITAL PERFORMANCE CHARACTERISTICS	14
4.3 OCCUPIED BANDWIDTH	15
4.3.1 Modulation Channel Occupancy.....	15
4.3.2 Occupied Bandwidth in Analog Operation	16
4.3.3 Occupied Bandwidth in Digital Operation	16
4.4 SPURIOUS EMISSIONS AT ANTENNA TERMINALS.....	17
4.4.1 Spurious Emissions Tests with Digital Modulation.....	18
4.4.2 Protection to Radio Navigation Satellite Services	75
4.4.3 Spurious Emissions Tests with Analog Modulation.....	76
4.5 FREQUENCY STABILITY	77
4.6 FIELD STRENGTH OF SPURIOUS EMISSIONS	78
5.0 SUMMARY	80

1.0 INTRODUCTION

This test report contains the required information for type acceptance of the EMCEE Model LPU-300 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 30.0 Watts average power in digital mode or 100 Watts peak 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.

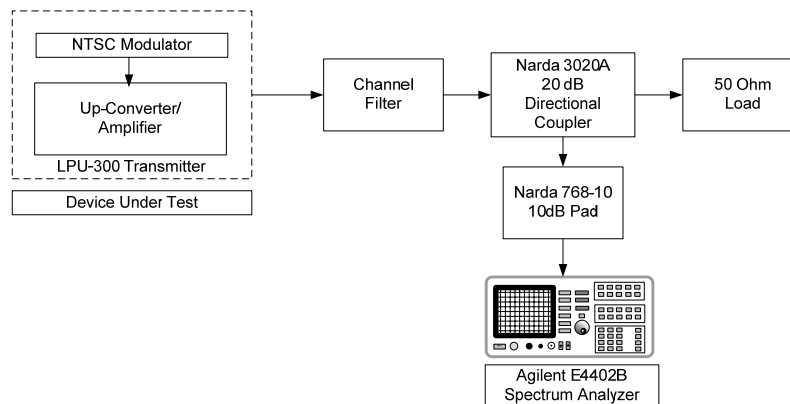


Figure 4-1: Test Setup for Analog Power Measurement

Method of Measurement:

The LPU-300, modulated with color bars at 87.5%, was adjusted to obtain a 100 Watt Peak Visual (50dBm) and 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 100 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.

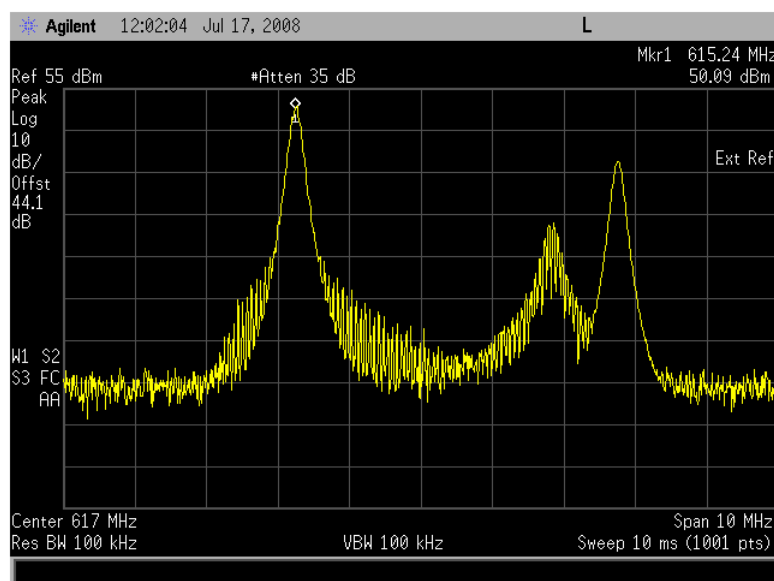


Figure 4-2: Analog Peak Power Measurement Plot

4.1.2 Digital RF Power Measurement

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

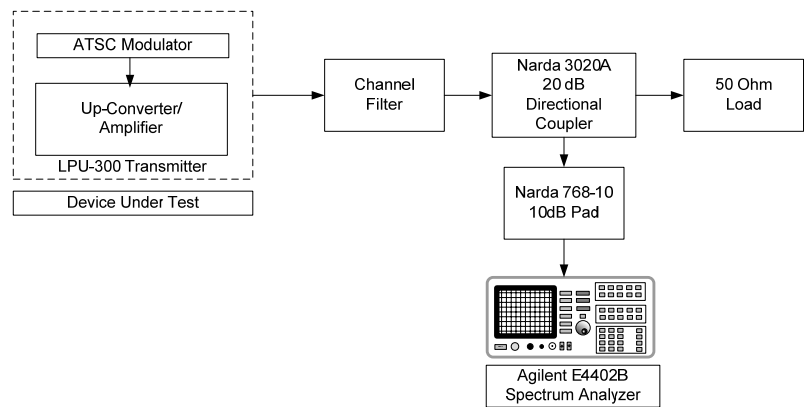


Figure 4-3: Test Setup for Digital Power Measurement

Method of Measurement:

The LPU-300, modulated with a ATSC compliant 8VSB modulator, was adjusted to obtain a 30 Watt average channel power (45dBm) 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 30 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.

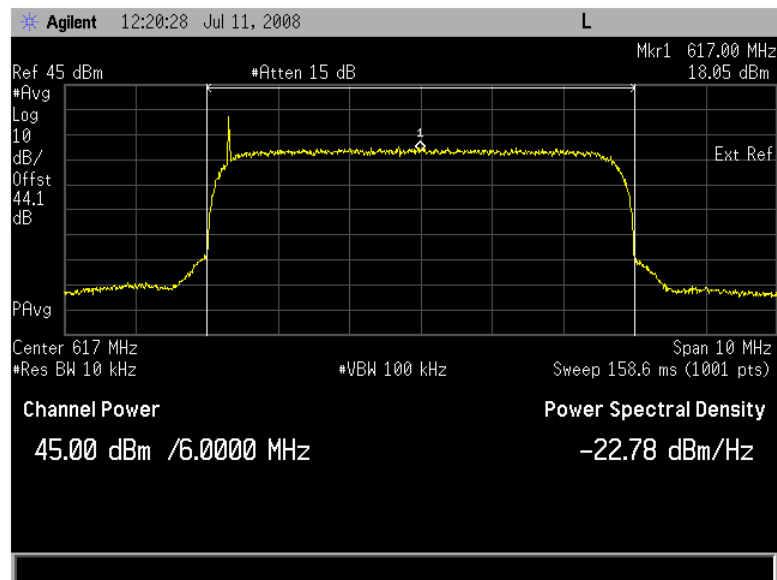


Figure 4-4: Digital Power Measurement Test

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.

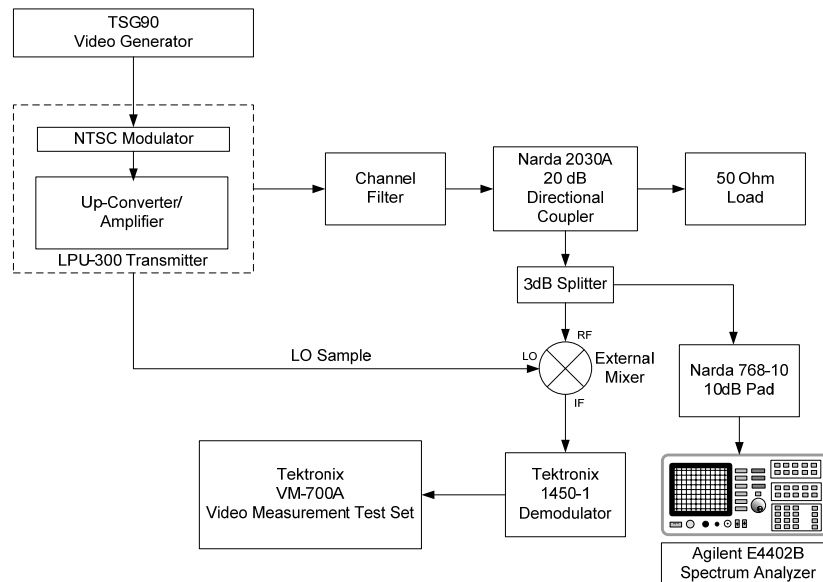


Figure 4-5: Test Setup for Analog Modulation Characteristics

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.

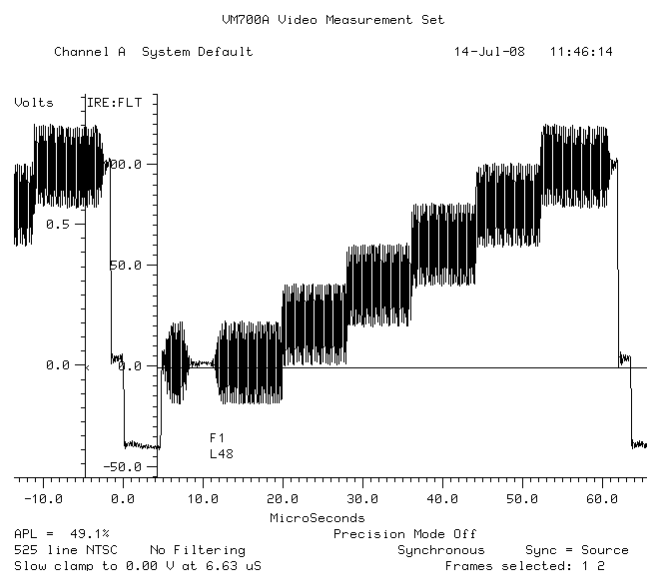


Figure 4-6: Substantially Linear Demodulated Video Waveform Plot

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.

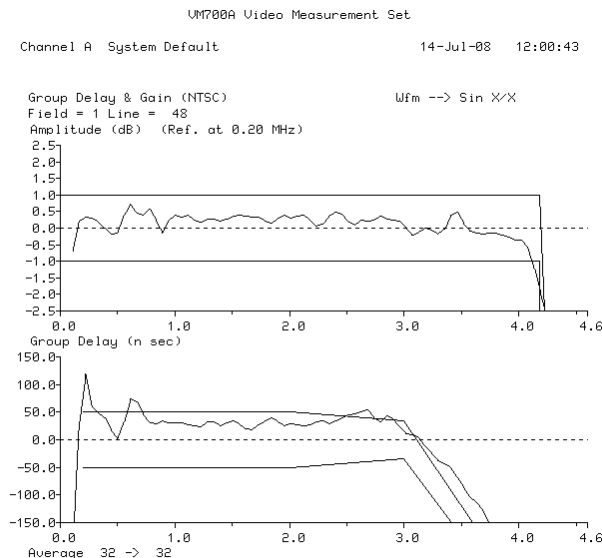


Figure 4-7 Group Delay & Gain Measurement Plot

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.

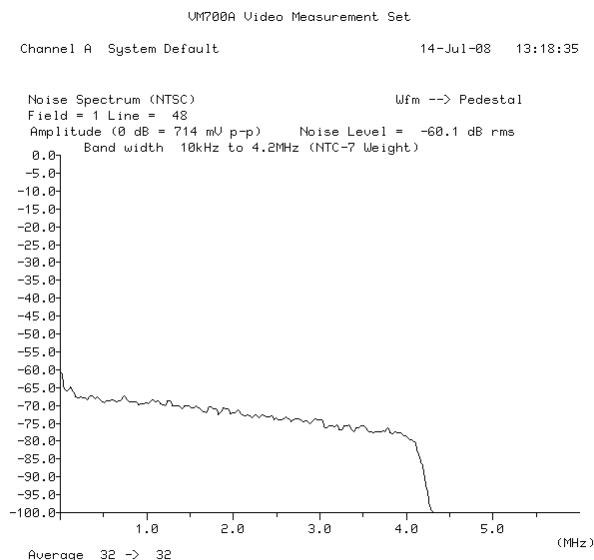


Figure 4-8: NTSC Noise Spectrum Plot

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 2.05% peak to peak as shown in Figure 4-9. The differential phase was observed to be a maximum of .97 degrees as shown in Figure 4-9.

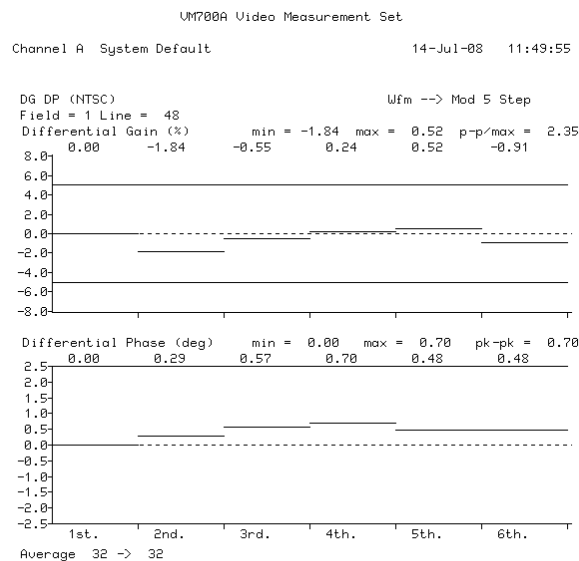


Figure 4-9: Differential Gain & Phase Plot

4.2.1.5 Audio Modulation

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

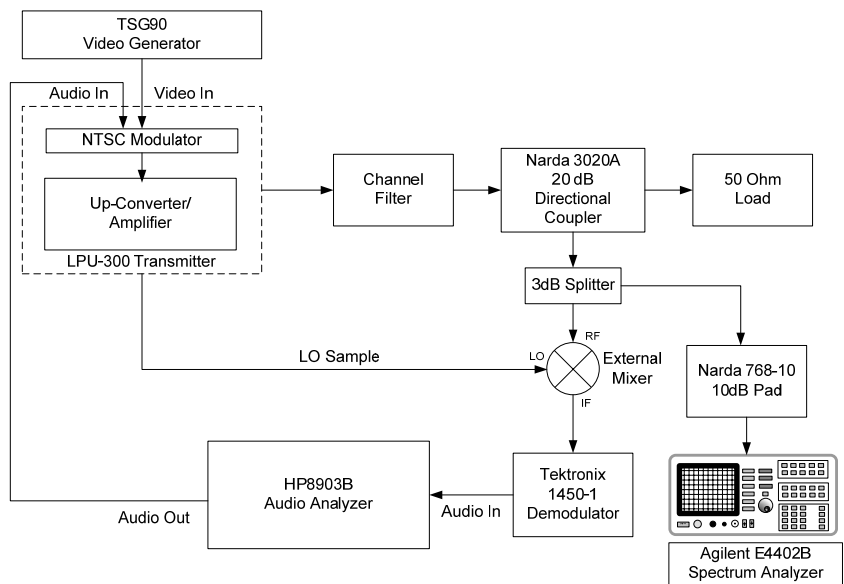


Figure 4-10: Test Setup for Measuring FM Response and Distortion

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	.7%
100Hz	.8%
500Hz	.7%
1 KHz	.6%
5 KHz	.5%
10 KHz	.5%
15 KHz (Reference)	.5%

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	-1.1dB
100Hz	-.7dB
500Hz	-.8dB
1 KHz	0dB (Reference)
2 KHz	+.7dB
3 KHz	+2.6dB
4 KHz	+5.4dB
5 KHz	+6.7dB
7 KHz	+9.4dB
10 KHz	+11.6dB
12 KHz	+13.7dB
15 KHz	+15.4dB

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 nonlinearities 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. (Note: change this analogy to "footprints in the sand on a crowded beach" if you are reading this in a warm climate.)

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.

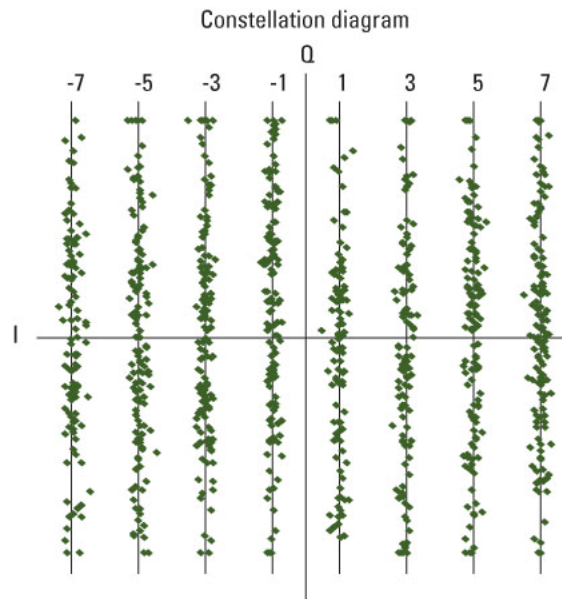


Figure 4-11: 8-VSB Constellation Diagram

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.

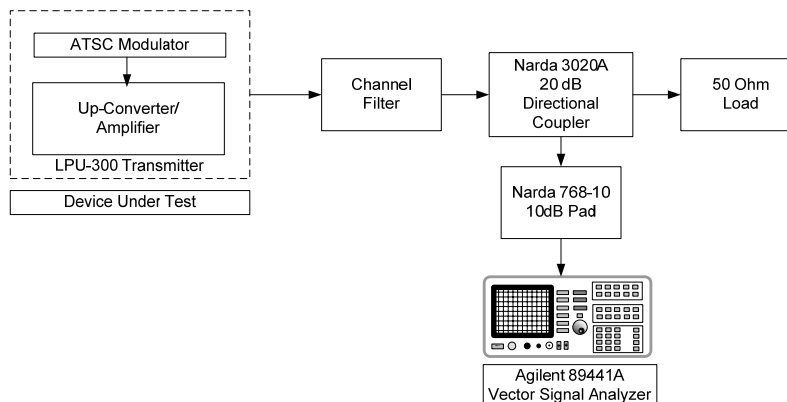


Figure 4-12: Digital Demodulation Test Setup

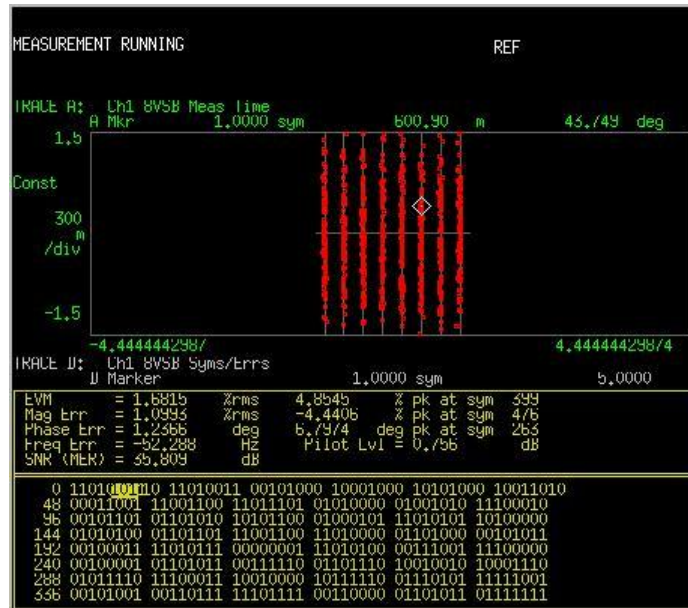


Figure 4-13: Digital Demodulation Test Results

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.

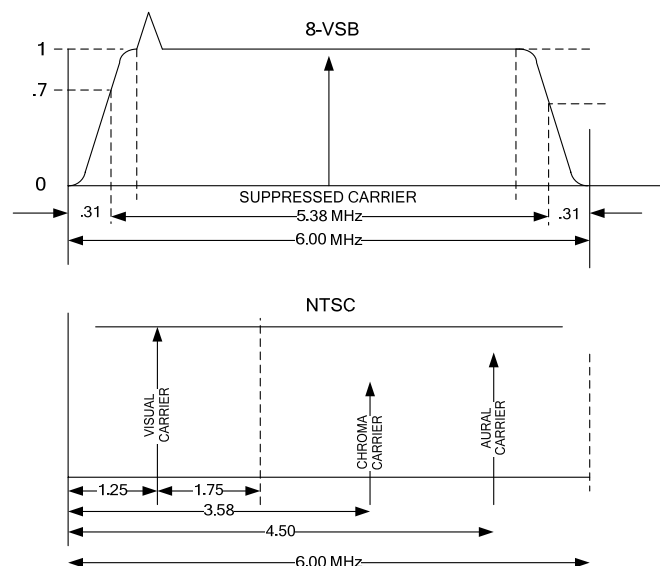


Figure 4-12: Digital & Analog modulation occupancy

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.

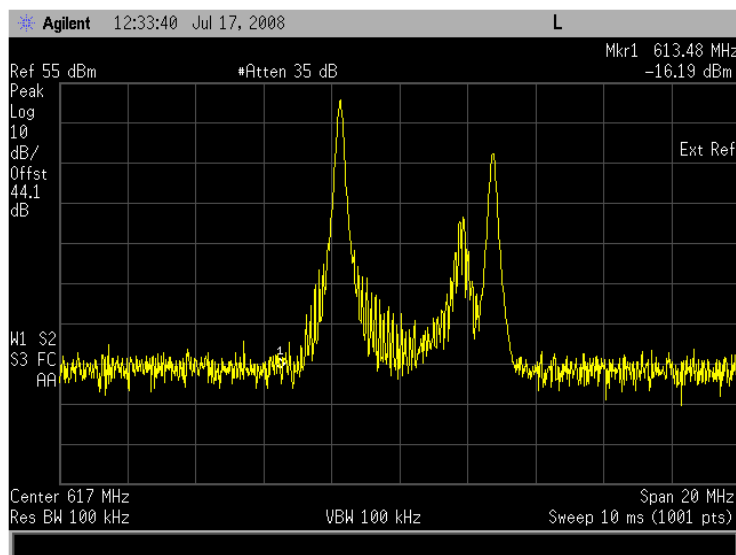


Figure 4-13: Occupied Bandwidth Plot in Analog Operation

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.

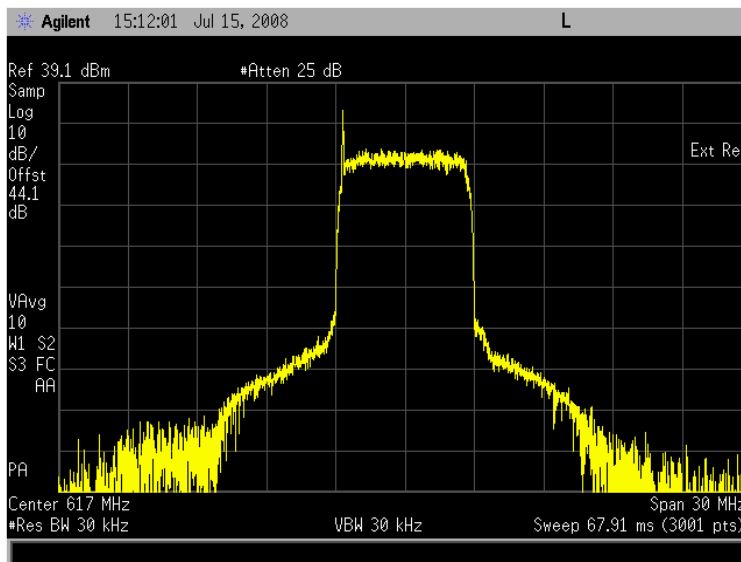


Figure 4-14: Occupied Bandwidth Plot in Digital Operation

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 30 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.

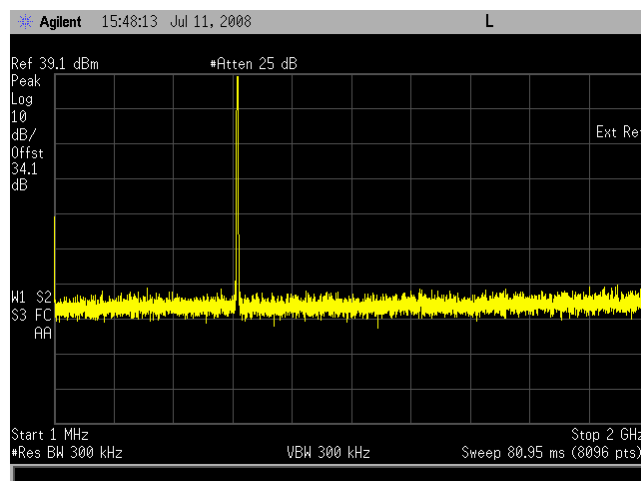


Figure 4-15: Spurious Emissions Spectrum Analyzer Plot

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.

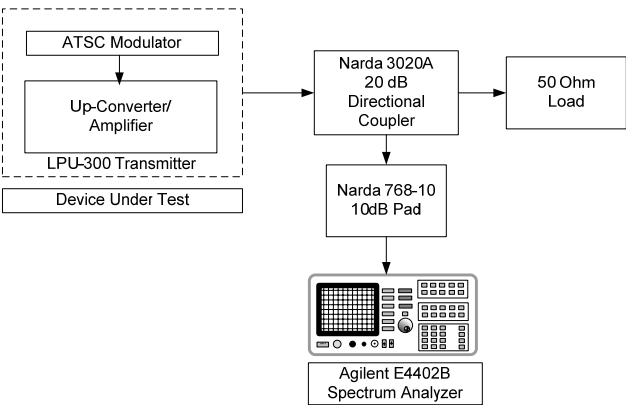


Figure 4-11: Output Filter Measurement Setup

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.

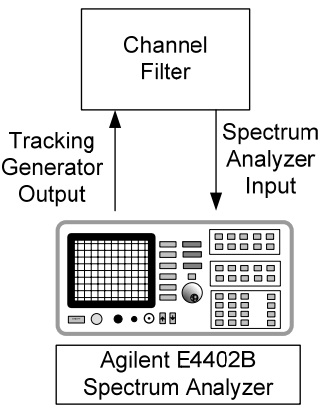


Figure 4-12: Output Filter Measurement Setup

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 45dBm 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 §27.794 (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.

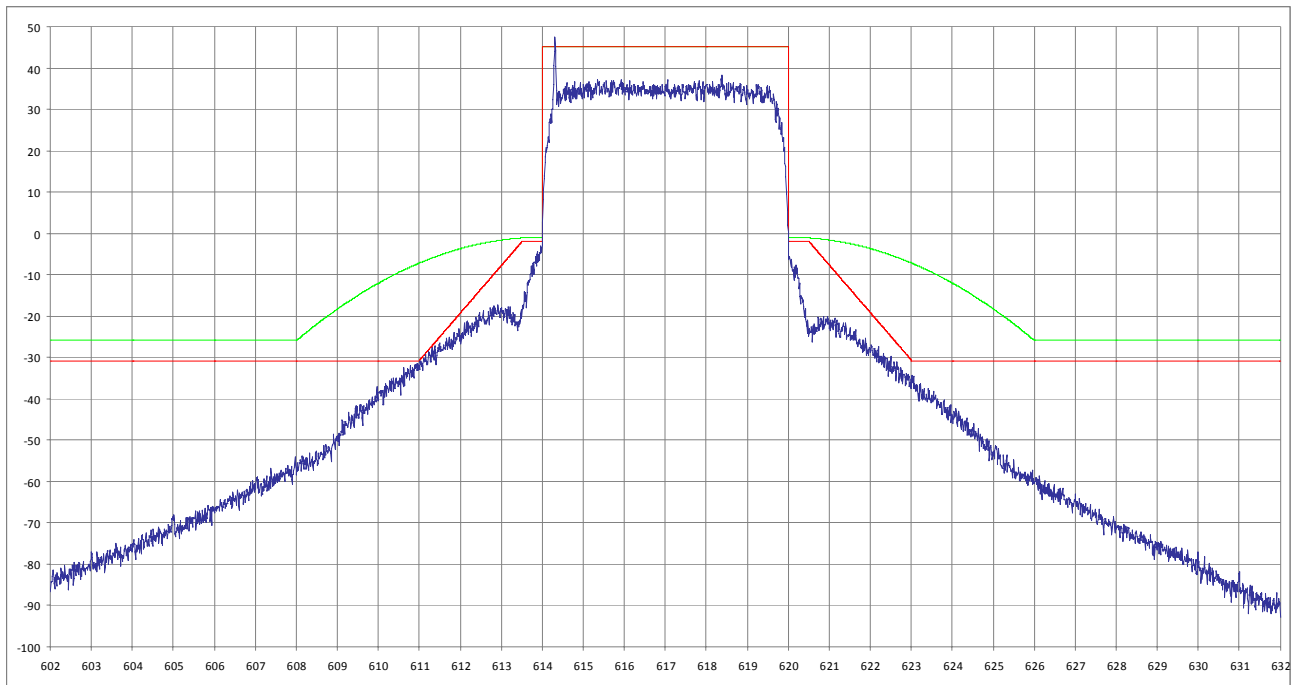


Figure 4-13: Spectral Output Compared To Mask Boundaries

Table 4-4: Spurious Emissions for Digital Operations

Measurement Center Frequency -12 MHz From Channel Edge	Tx Output No Filter	Band-Pass Filter Response	Combined Transmitter + Filter Output	Output Corrected to 500 KHz Res BW	Simple Mask Boundary	Stringent Mask Boundary
602.000	-39.954	-58.983	-98.937	-86.727	-25.914	-30.914
602.010	-37.452	-59.004	-96.456	-84.246	-25.914	-30.914
602.020	-37.782	-58.885	-96.667	-84.457	-25.914	-30.914
602.030	-37.239	-59.068	-96.307	-84.097	-25.914	-30.914
602.040	-37.593	-58.749	-96.342	-84.132	-25.914	-30.914
602.050	-36.389	-58.737	-95.126	-82.916	-25.914	-30.914
602.060	-34.790	-58.829	-93.619	-81.409	-25.914	-30.914
602.070	-34.923	-58.998	-93.921	-81.711	-25.914	-30.914
602.080	-37.122	-58.721	-95.843	-83.633	-25.914	-30.914
602.090	-37.851	-58.872	-96.723	-84.513	-25.914	-30.914
602.100	-39.344	-58.828	-98.172	-85.962	-25.914	-30.914
602.110	-36.417	-58.962	-95.379	-83.169	-25.914	-30.914
602.120	-37.490	-58.760	-96.250	-84.040	-25.914	-30.914

602.130	-35.757	-58.904	-94.661	-82.451	-25.914	-30.914
602.140	-37.846	-58.621	-96.467	-84.257	-25.914	-30.914
602.150	-38.868	-58.570	-97.438	-85.228	-25.914	-30.914
602.160	-35.618	-58.675	-94.293	-82.083	-25.914	-30.914
602.170	-37.087	-58.467	-95.554	-83.344	-25.914	-30.914
602.180	-36.617	-58.563	-95.180	-82.970	-25.914	-30.914
602.190	-37.509	-58.388	-95.897	-83.687	-25.914	-30.914
602.200	-36.952	-58.535	-95.487	-83.277	-25.914	-30.914
602.210	-37.303	-58.469	-95.772	-83.562	-25.914	-30.914
602.220	-37.586	-58.384	-95.970	-83.760	-25.914	-30.914
602.230	-38.485	-58.497	-96.982	-84.772	-25.914	-30.914
602.240	-36.330	-58.423	-94.753	-82.543	-25.914	-30.914
602.250	-38.240	-58.474	-96.714	-84.504	-25.914	-30.914
602.260	-34.848	-58.263	-93.111	-80.901	-25.914	-30.914
602.270	-36.028	-58.543	-94.571	-82.361	-25.914	-30.914
602.280	-36.390	-58.405	-94.795	-82.585	-25.914	-30.914
602.290	-37.293	-58.481	-95.774	-83.564	-25.914	-30.914
602.300	-35.545	-58.412	-93.957	-81.747	-25.914	-30.914
602.310	-36.865	-58.450	-95.315	-83.105	-25.914	-30.914
602.320	-37.248	-58.379	-95.627	-83.417	-25.914	-30.914
602.330	-37.816	-58.337	-96.153	-83.943	-25.914	-30.914
602.340	-37.748	-57.966	-95.714	-83.504	-25.914	-30.914
602.350	-34.288	-58.271	-92.559	-80.349	-25.914	-30.914
602.360	-36.581	-58.113	-94.694	-82.484	-25.914	-30.914
602.370	-37.363	-58.180	-95.543	-83.333	-25.914	-30.914
602.380	-36.734	-58.195	-94.929	-82.719	-25.914	-30.914
602.390	-37.490	-58.087	-95.577	-83.367	-25.914	-30.914
602.400	-37.044	-58.120	-95.164	-82.954	-25.914	-30.914
602.410	-38.138	-58.178	-96.316	-84.106	-25.914	-30.914
602.420	-36.862	-57.945	-94.807	-82.597	-25.914	-30.914
602.430	-37.146	-58.094	-95.240	-83.030	-25.914	-30.914
602.440	-40.564	-57.907	-98.471	-86.261	-25.914	-30.914
602.450	-35.303	-58.082	-93.385	-81.175	-25.914	-30.914
602.460	-35.248	-58.056	-93.304	-81.094	-25.914	-30.914
602.470	-36.580	-58.023	-94.603	-82.393	-25.914	-30.914
602.480	-36.650	-58.103	-94.753	-82.543	-25.914	-30.914
602.490	-35.420	-57.912	-93.332	-81.122	-25.914	-30.914
602.500	-37.723	-57.902	-95.625	-83.415	-25.914	-30.914
602.510	-35.767	-57.860	-93.627	-81.417	-25.914	-30.914
602.520	-35.780	-57.769	-93.549	-81.339	-25.914	-30.914
602.530	-34.881	-57.623	-92.504	-80.294	-25.914	-30.914
602.540	-34.787	-57.782	-92.569	-80.359	-25.914	-30.914
602.550	-35.117	-57.793	-92.910	-80.700	-25.914	-30.914
602.560	-39.363	-57.991	-97.354	-85.144	-25.914	-30.914
602.570	-37.773	-57.843	-95.616	-83.406	-25.914	-30.914
602.580	-33.996	-57.707	-91.703	-79.493	-25.914	-30.914
602.590	-36.015	-57.718	-93.733	-81.523	-25.914	-30.914
602.600	-36.027	-57.683	-93.710	-81.500	-25.914	-30.914
602.610	-37.322	-57.755	-95.077	-82.867	-25.914	-30.914
602.620	-35.928	-57.524	-93.452	-81.242	-25.914	-30.914
602.630	-34.759	-57.744	-92.503	-80.293	-25.914	-30.914
602.640	-36.498	-57.566	-94.064	-81.854	-25.914	-30.914
602.650	-36.225	-57.510	-93.735	-81.525	-25.914	-30.914
602.660	-34.729	-57.606	-92.335	-80.125	-25.914	-30.914
602.670	-36.392	-57.590	-93.982	-81.772	-25.914	-30.914

602.680	-37.275	-57.457	-94.732	-82.522	-25.914	-30.914
602.690	-36.607	-57.308	-93.915	-81.705	-25.914	-30.914
602.700	-34.347	-57.409	-91.756	-79.546	-25.914	-30.914
602.710	-34.656	-57.317	-91.973	-79.763	-25.914	-30.914
602.720	-35.448	-57.238	-92.686	-80.476	-25.914	-30.914
602.730	-38.617	-57.376	-95.993	-83.783	-25.914	-30.914
602.740	-36.127	-57.207	-93.334	-81.124	-25.914	-30.914
602.750	-36.002	-57.307	-93.309	-81.099	-25.914	-30.914
602.760	-37.857	-57.463	-95.320	-83.110	-25.914	-30.914
602.770	-36.377	-57.318	-93.695	-81.485	-25.914	-30.914
602.780	-35.085	-57.280	-92.365	-80.155	-25.914	-30.914
602.790	-36.195	-57.237	-93.432	-81.222	-25.914	-30.914
602.800	-34.521	-57.090	-91.611	-79.401	-25.914	-30.914
602.810	-36.612	-57.245	-93.857	-81.647	-25.914	-30.914
602.820	-36.704	-57.148	-93.852	-81.642	-25.914	-30.914
602.830	-36.698	-57.148	-93.846	-81.636	-25.914	-30.914
602.840	-36.098	-57.051	-93.149	-80.939	-25.914	-30.914
602.850	-37.604	-57.086	-94.690	-82.480	-25.914	-30.914
602.860	-36.241	-57.141	-93.382	-81.172	-25.914	-30.914
602.870	-36.360	-56.876	-93.236	-81.026	-25.914	-30.914
602.880	-36.161	-56.888	-93.049	-80.839	-25.914	-30.914
602.890	-35.855	-57.066	-92.921	-80.711	-25.914	-30.914
602.900	-35.946	-57.103	-93.049	-80.839	-25.914	-30.914
602.910	-36.651	-56.972	-93.623	-81.413	-25.914	-30.914
602.920	-35.609	-56.965	-92.574	-80.364	-25.914	-30.914
602.930	-35.508	-56.757	-92.265	-80.055	-25.914	-30.914
602.940	-35.734	-56.843	-92.577	-80.367	-25.914	-30.914
602.950	-35.246	-56.882	-92.128	-79.918	-25.914	-30.914
602.960	-36.994	-56.912	-93.906	-81.696	-25.914	-30.914
602.970	-34.986	-56.632	-91.618	-79.408	-25.914	-30.914
602.980	-34.332	-56.724	-91.056	-78.846	-25.914	-30.914
602.990	-32.983	-56.790	-89.773	-77.563	-25.914	-30.914
603.000	-32.353	-56.823	-89.176	-76.966	-25.914	-30.914
603.010	-32.868	-56.764	-89.632	-77.422	-25.914	-30.914
603.020	-34.000	-56.649	-90.649	-78.439	-25.914	-30.914
603.030	-36.854	-56.501	-93.355	-81.145	-25.914	-30.914
603.040	-35.898	-56.642	-92.540	-80.330	-25.914	-30.914
603.050	-35.201	-56.620	-91.821	-79.611	-25.914	-30.914
603.060	-36.131	-56.607	-92.738	-80.528	-25.914	-30.914
603.070	-35.623	-56.564	-92.187	-79.977	-25.914	-30.914
603.080	-36.567	-56.479	-93.046	-80.836	-25.914	-30.914
603.090	-36.347	-56.501	-92.848	-80.638	-25.914	-30.914
603.100	-35.506	-56.396	-91.902	-79.692	-25.914	-30.914
603.110	-37.034	-56.524	-93.558	-81.348	-25.914	-30.914
603.120	-36.233	-56.350	-92.583	-80.373	-25.914	-30.914
603.130	-37.695	-56.417	-94.112	-81.902	-25.914	-30.914
603.140	-32.819	-56.407	-89.226	-77.016	-25.914	-30.914
603.150	-34.696	-56.535	-91.231	-79.021	-25.914	-30.914
603.160	-35.958	-56.445	-92.403	-80.193	-25.914	-30.914
603.170	-34.340	-56.357	-90.697	-78.487	-25.914	-30.914
603.180	-35.848	-56.302	-92.150	-79.940	-25.914	-30.914
603.190	-37.197	-56.118	-93.315	-81.105	-25.914	-30.914
603.200	-35.323	-56.177	-91.500	-79.290	-25.914	-30.914
603.210	-35.038	-56.087	-91.125	-78.915	-25.914	-30.914
603.220	-35.549	-56.143	-91.692	-79.482	-25.914	-30.914

603.230	-34.470	-56.183	-90.653	-78.443	-25.914	-30.914
603.240	-34.604	-55.873	-90.477	-78.267	-25.914	-30.914
603.250	-36.384	-56.090	-92.474	-80.264	-25.914	-30.914
603.260	-35.307	-56.078	-91.385	-79.175	-25.914	-30.914
603.270	-35.462	-56.031	-91.493	-79.283	-25.914	-30.914
603.280	-35.531	-56.036	-91.567	-79.357	-25.914	-30.914
603.290	-34.427	-55.998	-90.425	-78.215	-25.914	-30.914
603.300	-33.709	-56.042	-89.751	-77.541	-25.914	-30.914
603.310	-36.689	-55.929	-92.618	-80.408	-25.914	-30.914
603.320	-38.205	-55.991	-94.196	-81.986	-25.914	-30.914
603.330	-37.030	-55.908	-92.938	-80.728	-25.914	-30.914
603.340	-35.146	-55.976	-91.122	-78.912	-25.914	-30.914
603.350	-34.814	-55.912	-90.726	-78.516	-25.914	-30.914
603.360	-33.956	-55.760	-89.716	-77.506	-25.914	-30.914
603.370	-35.900	-55.965	-91.865	-79.655	-25.914	-30.914
603.380	-33.173	-55.760	-88.933	-76.723	-25.914	-30.914
603.390	-33.311	-55.682	-88.993	-76.783	-25.914	-30.914
603.400	-35.191	-55.781	-90.972	-78.762	-25.914	-30.914
603.410	-35.214	-55.815	-91.029	-78.819	-25.914	-30.914
603.420	-36.413	-55.774	-92.187	-79.977	-25.914	-30.914
603.430	-34.885	-55.797	-90.682	-78.472	-25.914	-30.914
603.440	-34.684	-55.640	-90.324	-78.114	-25.914	-30.914
603.450	-33.101	-55.596	-88.697	-76.487	-25.914	-30.914
603.460	-35.220	-55.595	-90.815	-78.605	-25.914	-30.914
603.470	-35.398	-55.625	-91.023	-78.813	-25.914	-30.914
603.480	-34.527	-55.711	-90.238	-78.028	-25.914	-30.914
603.490	-35.337	-55.586	-90.923	-78.713	-25.914	-30.914
603.500	-36.435	-55.532	-91.967	-79.757	-25.914	-30.914
603.510	-35.795	-55.507	-91.302	-79.092	-25.914	-30.914
603.520	-34.217	-55.490	-89.707	-77.497	-25.914	-30.914
603.530	-34.113	-55.469	-89.582	-77.372	-25.914	-30.914
603.540	-34.711	-55.480	-90.191	-77.981	-25.914	-30.914
603.550	-34.910	-55.339	-90.249	-78.039	-25.914	-30.914
603.560	-33.240	-55.395	-88.635	-76.425	-25.914	-30.914
603.570	-35.328	-55.389	-90.717	-78.507	-25.914	-30.914
603.580	-34.753	-55.336	-90.089	-77.879	-25.914	-30.914
603.590	-33.991	-55.277	-89.268	-77.058	-25.914	-30.914
603.600	-31.972	-55.213	-87.185	-74.975	-25.914	-30.914
603.610	-34.353	-55.158	-89.511	-77.301	-25.914	-30.914
603.620	-32.852	-55.150	-88.002	-75.792	-25.914	-30.914
603.630	-34.468	-55.227	-89.695	-77.485	-25.914	-30.914
603.640	-35.791	-55.178	-90.969	-78.759	-25.914	-30.914
603.650	-34.499	-55.224	-89.723	-77.513	-25.914	-30.914
603.660	-34.892	-55.149	-90.041	-77.831	-25.914	-30.914
603.670	-34.110	-54.984	-89.094	-76.884	-25.914	-30.914
603.680	-34.992	-55.181	-90.173	-77.963	-25.914	-30.914
603.690	-35.489	-55.022	-90.511	-78.301	-25.914	-30.914
603.700	-33.073	-55.056	-88.129	-75.919	-25.914	-30.914
603.710	-37.777	-55.022	-92.799	-80.589	-25.914	-30.914
603.720	-34.847	-55.009	-89.856	-77.646	-25.914	-30.914
603.730	-35.556	-54.999	-90.555	-78.345	-25.914	-30.914
603.740	-35.169	-54.865	-90.034	-77.824	-25.914	-30.914
603.750	-36.738	-54.911	-91.649	-79.439	-25.914	-30.914
603.760	-35.288	-54.826	-90.114	-77.904	-25.914	-30.914
603.770	-35.115	-54.948	-90.063	-77.853	-25.914	-30.914

603.780	-35.382	-54.685	-90.067	-77.857	-25.914	-30.914
603.790	-36.079	-54.755	-90.834	-78.624	-25.914	-30.914
603.800	-33.785	-54.767	-88.552	-76.342	-25.914	-30.914
603.810	-34.265	-54.683	-88.948	-76.738	-25.914	-30.914
603.820	-32.797	-54.765	-87.562	-75.352	-25.914	-30.914
603.830	-33.275	-54.680	-87.955	-75.745	-25.914	-30.914
603.840	-35.174	-54.522	-89.696	-77.486	-25.914	-30.914
603.850	-35.018	-54.719	-89.737	-77.527	-25.914	-30.914
603.860	-35.422	-54.664	-90.086	-77.876	-25.914	-30.914
603.870	-33.856	-54.605	-88.461	-76.251	-25.914	-30.914
603.880	-33.991	-54.574	-88.565	-76.355	-25.914	-30.914
603.890	-36.883	-54.492	-91.375	-79.165	-25.914	-30.914
603.900	-33.642	-54.423	-88.065	-75.855	-25.914	-30.914
603.910	-33.688	-54.483	-88.171	-75.961	-25.914	-30.914
603.920	-34.794	-54.441	-89.235	-77.025	-25.914	-30.914
603.930	-34.442	-54.466	-88.908	-76.698	-25.914	-30.914
603.940	-34.261	-54.464	-88.725	-76.515	-25.914	-30.914
603.950	-34.482	-54.288	-88.770	-76.560	-25.914	-30.914
603.960	-33.023	-54.301	-87.324	-75.114	-25.914	-30.914
603.970	-33.955	-54.320	-88.275	-76.065	-25.914	-30.914
603.980	-34.242	-54.209	-88.451	-76.241	-25.914	-30.914
603.990	-34.894	-54.270	-89.164	-76.954	-25.914	-30.914
604.000	-32.968	-54.218	-87.186	-74.976	-25.914	-30.914
604.010	-33.862	-54.210	-88.072	-75.862	-25.914	-30.914
604.020	-33.561	-54.257	-87.818	-75.608	-25.914	-30.914
604.030	-32.017	-54.246	-86.263	-74.053	-25.914	-30.914
604.040	-33.072	-54.179	-87.251	-75.041	-25.914	-30.914
604.050	-33.041	-54.249	-87.290	-75.080	-25.914	-30.914
604.060	-35.141	-54.134	-89.275	-77.065	-25.914	-30.914
604.070	-37.043	-53.948	-90.991	-78.781	-25.914	-30.914
604.080	-35.205	-54.065	-89.270	-77.060	-25.914	-30.914
604.090	-34.976	-53.989	-88.965	-76.755	-25.914	-30.914
604.100	-33.565	-53.978	-87.543	-75.333	-25.914	-30.914
604.110	-35.351	-53.888	-89.239	-77.029	-25.914	-30.914
604.120	-34.150	-53.855	-88.005	-75.795	-25.914	-30.914
604.130	-33.986	-53.916	-87.902	-75.692	-25.914	-30.914
604.140	-32.107	-53.833	-85.940	-73.730	-25.914	-30.914
604.150	-34.801	-53.850	-88.651	-76.441	-25.914	-30.914
604.160	-34.409	-53.798	-88.207	-75.997	-25.914	-30.914
604.170	-33.829	-53.832	-87.661	-75.451	-25.914	-30.914
604.180	-35.600	-53.793	-89.393	-77.183	-25.914	-30.914
604.190	-32.666	-53.876	-86.542	-74.332	-25.914	-30.914
604.200	-33.202	-53.788	-86.990	-74.780	-25.914	-30.914
604.210	-36.050	-53.612	-89.662	-77.452	-25.914	-30.914
604.220	-33.397	-53.609	-87.006	-74.796	-25.914	-30.914
604.230	-31.676	-53.706	-85.382	-73.172	-25.914	-30.914
604.240	-31.525	-53.680	-85.205	-72.995	-25.914	-30.914
604.250	-32.562	-53.614	-86.176	-73.966	-25.914	-30.914
604.260	-32.802	-53.417	-86.219	-74.009	-25.914	-30.914
604.270	-35.157	-53.478	-88.635	-76.425	-25.914	-30.914
604.280	-34.407	-53.593	-88.000	-75.790	-25.914	-30.914
604.290	-33.761	-53.500	-87.261	-75.051	-25.914	-30.914
604.300	-33.292	-53.652	-86.944	-74.734	-25.914	-30.914
604.310	-33.184	-53.436	-86.620	-74.410	-25.914	-30.914
604.320	-33.089	-53.451	-86.540	-74.330	-25.914	-30.914

604.330	-31.393	-53.272	-84.665	-72.455	-25.914	-30.914
604.340	-33.033	-53.419	-86.452	-74.242	-25.914	-30.914
604.350	-34.149	-53.273	-87.422	-75.212	-25.914	-30.914
604.360	-34.609	-53.190	-87.799	-75.589	-25.914	-30.914
604.370	-34.677	-53.267	-87.944	-75.734	-25.914	-30.914
604.380	-32.942	-53.379	-86.321	-74.111	-25.914	-30.914
604.390	-33.839	-53.193	-87.032	-74.822	-25.914	-30.914
604.400	-34.643	-53.228	-87.871	-75.661	-25.914	-30.914
604.410	-32.309	-53.124	-85.433	-73.223	-25.914	-30.914
604.420	-32.384	-53.121	-85.505	-73.295	-25.914	-30.914
604.430	-32.704	-53.033	-85.737	-73.527	-25.914	-30.914
604.440	-31.739	-53.089	-84.828	-72.618	-25.914	-30.914
604.450	-30.932	-53.046	-83.978	-71.768	-25.914	-30.914
604.460	-33.782	-53.026	-86.808	-74.598	-25.914	-30.914
604.470	-32.546	-52.948	-85.494	-73.284	-25.914	-30.914
604.480	-34.226	-52.918	-87.144	-74.934	-25.914	-30.914
604.490	-34.882	-52.936	-87.818	-75.608	-25.914	-30.914
604.500	-30.969	-52.850	-83.819	-71.609	-25.914	-30.914
604.510	-32.479	-52.858	-85.337	-73.127	-25.914	-30.914
604.520	-33.366	-52.932	-86.298	-74.088	-25.914	-30.914
604.530	-33.229	-52.860	-86.089	-73.879	-25.914	-30.914
604.540	-33.527	-52.910	-86.437	-74.227	-25.914	-30.914
604.550	-32.422	-52.849	-85.271	-73.061	-25.914	-30.914
604.560	-32.662	-52.747	-85.409	-73.199	-25.914	-30.914
604.570	-33.818	-52.782	-86.600	-74.390	-25.914	-30.914
604.580	-32.309	-52.657	-84.966	-72.756	-25.914	-30.914
604.590	-32.237	-52.598	-84.835	-72.625	-25.914	-30.914
604.600	-31.887	-52.722	-84.609	-72.399	-25.914	-30.914
604.610	-32.797	-52.712	-85.509	-73.299	-25.914	-30.914
604.620	-32.493	-52.576	-85.069	-72.859	-25.914	-30.914
604.630	-30.772	-52.597	-83.369	-71.159	-25.914	-30.914
604.640	-34.646	-52.531	-87.177	-74.967	-25.914	-30.914
604.650	-32.556	-52.461	-85.017	-72.807	-25.914	-30.914
604.660	-31.876	-52.445	-84.321	-72.111	-25.914	-30.914
604.670	-31.470	-52.366	-83.836	-71.626	-25.914	-30.914
604.680	-32.096	-52.473	-84.569	-72.359	-25.914	-30.914
604.690	-31.980	-52.479	-84.459	-72.249	-25.914	-30.914
604.700	-32.502	-52.382	-84.884	-72.674	-25.914	-30.914
604.710	-34.951	-52.272	-87.223	-75.013	-25.914	-30.914
604.720	-32.787	-52.384	-85.171	-72.961	-25.914	-30.914
604.730	-35.494	-52.227	-87.721	-75.511	-25.914	-30.914
604.740	-33.907	-52.265	-86.172	-73.962	-25.914	-30.914
604.750	-32.863	-52.247	-85.110	-72.900	-25.914	-30.914
604.760	-32.401	-52.217	-84.618	-72.408	-25.914	-30.914
604.770	-33.471	-52.238	-85.709	-73.499	-25.914	-30.914
604.780	-31.544	-52.163	-83.707	-71.497	-25.914	-30.914
604.790	-33.057	-52.173	-85.230	-73.020	-25.914	-30.914
604.800	-32.644	-52.041	-84.685	-72.475	-25.914	-30.914
604.810	-32.781	-52.042	-84.823	-72.613	-25.914	-30.914
604.820	-31.833	-52.024	-83.857	-71.647	-25.914	-30.914
604.830	-32.264	-52.079	-84.343	-72.133	-25.914	-30.914
604.840	-33.596	-52.066	-85.662	-73.452	-25.914	-30.914
604.850	-34.013	-51.943	-85.956	-73.746	-25.914	-30.914
604.860	-32.385	-51.901	-84.286	-72.076	-25.914	-30.914
604.870	-32.467	-51.952	-84.419	-72.209	-25.914	-30.914

604.880	-30.580	-51.956	-82.536	-70.326	-25.914	-30.914
604.890	-31.844	-51.870	-83.714	-71.504	-25.914	-30.914
604.900	-32.827	-51.790	-84.617	-72.407	-25.914	-30.914
604.910	-31.302	-51.787	-83.089	-70.879	-25.914	-30.914
604.920	-31.916	-51.768	-83.684	-71.474	-25.914	-30.914
604.930	-32.744	-51.740	-84.484	-72.274	-25.914	-30.914
604.940	-32.712	-51.707	-84.419	-72.209	-25.914	-30.914
604.950	-31.113	-51.665	-82.778	-70.568	-25.914	-30.914
604.960	-29.497	-51.665	-81.162	-68.952	-25.914	-30.914
604.970	-29.889	-51.613	-81.502	-69.292	-25.914	-30.914
604.980	-29.332	-51.652	-80.984	-68.774	-25.914	-30.914
604.990	-29.010	-51.619	-80.629	-68.419	-25.914	-30.914
605.000	-29.999	-51.585	-81.584	-69.374	-25.914	-30.914
605.010	-28.821	-51.479	-80.300	-68.090	-25.914	-30.914
605.020	-31.193	-51.444	-82.637	-70.427	-25.914	-30.914
605.030	-32.938	-51.457	-84.395	-72.185	-25.914	-30.914
605.040	-33.644	-51.327	-84.971	-72.761	-25.914	-30.914
605.050	-34.207	-51.404	-85.611	-73.401	-25.914	-30.914
605.060	-33.119	-51.395	-84.514	-72.304	-25.914	-30.914
605.070	-33.081	-51.377	-84.458	-72.248	-25.914	-30.914
605.080	-32.141	-51.286	-83.427	-71.217	-25.914	-30.914
605.090	-31.650	-51.343	-82.993	-70.783	-25.914	-30.914
605.100	-32.718	-51.263	-83.981	-71.771	-25.914	-30.914
605.110	-31.352	-51.226	-82.578	-70.368	-25.914	-30.914
605.120	-33.179	-51.233	-84.412	-72.202	-25.914	-30.914
605.130	-32.473	-51.133	-83.606	-71.396	-25.914	-30.914
605.140	-34.866	-51.168	-86.034	-73.824	-25.914	-30.914
605.150	-31.924	-51.185	-83.109	-70.899	-25.914	-30.914
605.160	-30.913	-51.120	-82.033	-69.823	-25.914	-30.914
605.170	-30.614	-51.010	-81.624	-69.414	-25.914	-30.914
605.180	-32.649	-51.043	-83.692	-71.482	-25.914	-30.914
605.190	-33.907	-51.013	-84.920	-72.710	-25.914	-30.914
605.200	-32.033	-51.026	-83.059	-70.849	-25.914	-30.914
605.210	-31.985	-50.890	-82.875	-70.665	-25.914	-30.914
605.220	-33.375	-50.885	-84.260	-72.050	-25.914	-30.914
605.230	-32.350	-50.821	-83.171	-70.961	-25.914	-30.914
605.240	-32.617	-50.790	-83.407	-71.197	-25.914	-30.914
605.250	-32.846	-50.843	-83.689	-71.479	-25.914	-30.914
605.260	-32.929	-50.870	-83.799	-71.589	-25.914	-30.914
605.270	-31.956	-50.745	-82.701	-70.491	-25.914	-30.914
605.280	-32.843	-50.666	-83.509	-71.299	-25.914	-30.914
605.290	-32.717	-50.762	-83.479	-71.269	-25.914	-30.914
605.300	-32.241	-50.626	-82.867	-70.657	-25.914	-30.914
605.310	-30.351	-50.677	-81.028	-68.818	-25.914	-30.914
605.320	-32.123	-50.644	-82.767	-70.557	-25.914	-30.914
605.330	-30.409	-50.570	-80.979	-68.769	-25.914	-30.914
605.340	-33.241	-50.521	-83.762	-71.552	-25.914	-30.914
605.350	-30.574	-50.499	-81.073	-68.863	-25.914	-30.914
605.360	-30.581	-50.539	-81.120	-68.910	-25.914	-30.914
605.370	-30.727	-50.413	-81.140	-68.930	-25.914	-30.914
605.380	-33.751	-50.417	-84.168	-71.958	-25.914	-30.914
605.390	-30.296	-50.530	-80.826	-68.616	-25.914	-30.914
605.400	-31.483	-50.367	-81.850	-69.640	-25.914	-30.914
605.410	-30.851	-50.401	-81.252	-69.042	-25.914	-30.914
605.420	-31.608	-50.302	-81.910	-69.700	-25.914	-30.914

605.430	-32.051	-50.267	-82.318	-70.108	-25.914	-30.914
605.440	-30.619	-50.270	-80.889	-68.679	-25.914	-30.914
605.450	-31.466	-50.279	-81.745	-69.535	-25.914	-30.914
605.460	-33.012	-50.176	-83.188	-70.978	-25.914	-30.914
605.470	-32.482	-50.202	-82.684	-70.474	-25.914	-30.914
605.480	-30.853	-50.195	-81.048	-68.838	-25.914	-30.914
605.490	-30.796	-50.169	-80.965	-68.755	-25.914	-30.914
605.500	-31.091	-50.027	-81.118	-68.908	-25.914	-30.914
605.510	-31.062	-50.138	-81.200	-68.990	-25.914	-30.914
605.520	-31.309	-49.997	-81.306	-69.096	-25.914	-30.914
605.530	-29.423	-50.000	-79.423	-67.213	-25.914	-30.914
605.540	-31.011	-49.989	-81.000	-68.790	-25.914	-30.914
605.550	-33.904	-49.974	-83.878	-71.668	-25.914	-30.914
605.560	-31.597	-49.877	-81.474	-69.264	-25.914	-30.914
605.570	-32.264	-49.863	-82.127	-69.917	-25.914	-30.914
605.580	-29.768	-49.891	-79.659	-67.449	-25.914	-30.914
605.590	-32.547	-49.786	-82.333	-70.123	-25.914	-30.914
605.600	-30.233	-49.810	-80.043	-67.833	-25.914	-30.914
605.610	-32.179	-49.791	-81.970	-69.760	-25.914	-30.914
605.620	-30.281	-49.772	-80.053	-67.843	-25.914	-30.914
605.630	-29.620	-49.692	-79.312	-67.102	-25.914	-30.914
605.640	-32.818	-49.670	-82.488	-70.278	-25.914	-30.914
605.650	-31.876	-49.641	-81.517	-69.307	-25.914	-30.914
605.660	-30.345	-49.640	-79.985	-67.775	-25.914	-30.914
605.670	-32.096	-49.544	-81.640	-69.430	-25.914	-30.914
605.680	-31.974	-49.530	-81.504	-69.294	-25.914	-30.914
605.690	-32.731	-49.556	-82.287	-70.077	-25.914	-30.914
605.700	-31.385	-49.549	-80.934	-68.724	-25.914	-30.914
605.710	-29.625	-49.498	-79.123	-66.913	-25.914	-30.914
605.720	-32.703	-49.447	-82.150	-69.940	-25.914	-30.914
605.730	-32.254	-49.424	-81.678	-69.468	-25.914	-30.914
605.740	-31.106	-49.409	-80.515	-68.305	-25.914	-30.914
605.750	-31.053	-49.332	-80.385	-68.175	-25.914	-30.914
605.760	-32.224	-49.375	-81.599	-69.389	-25.914	-30.914
605.770	-29.323	-49.317	-78.640	-66.430	-25.914	-30.914
605.780	-31.083	-49.224	-80.307	-68.097	-25.914	-30.914
605.790	-32.853	-49.264	-82.117	-69.907	-25.914	-30.914
605.800	-31.092	-49.177	-80.269	-68.059	-25.914	-30.914
605.810	-31.962	-49.167	-81.129	-68.919	-25.914	-30.914
605.820	-30.634	-49.076	-79.710	-67.500	-25.914	-30.914
605.830	-31.231	-49.104	-80.335	-68.125	-25.914	-30.914
605.840	-28.832	-49.087	-77.919	-65.709	-25.914	-30.914
605.850	-29.230	-49.063	-78.293	-66.083	-25.914	-30.914
605.860	-30.143	-49.008	-79.151	-66.941	-25.914	-30.914
605.870	-29.985	-48.970	-78.955	-66.745	-25.914	-30.914
605.880	-30.212	-48.994	-79.206	-66.996	-25.914	-30.914
605.890	-33.011	-48.906	-81.917	-69.707	-25.914	-30.914
605.900	-30.764	-48.936	-79.700	-67.490	-25.914	-30.914
605.910	-30.489	-48.852	-79.341	-67.131	-25.914	-30.914
605.920	-29.733	-48.816	-78.549	-66.339	-25.914	-30.914
605.930	-33.842	-48.884	-82.726	-70.516	-25.914	-30.914
605.940	-29.755	-48.714	-78.469	-66.259	-25.914	-30.914
605.950	-29.522	-48.766	-78.288	-66.078	-25.914	-30.914
605.960	-30.641	-48.650	-79.291	-67.081	-25.914	-30.914
605.970	-30.510	-48.643	-79.153	-66.943	-25.914	-30.914

605.980	-29.830	-48.603	-78.433	-66.223	-25.914	-30.914
605.990	-30.381	-48.664	-79.045	-66.835	-25.914	-30.914
606.000	-31.177	-48.599	-79.776	-67.566	-25.914	-30.914
606.010	-30.409	-48.538	-78.947	-66.737	-25.914	-30.914
606.020	-29.984	-48.537	-78.521	-66.311	-25.914	-30.914
606.030	-30.573	-48.488	-79.061	-66.851	-25.914	-30.914
606.040	-29.697	-48.456	-78.153	-65.943	-25.914	-30.914
606.050	-30.222	-48.417	-78.639	-66.429	-25.914	-30.914
606.060	-31.052	-48.376	-79.428	-67.218	-25.914	-30.914
606.070	-29.772	-48.378	-78.150	-65.940	-25.914	-30.914
606.080	-30.391	-48.344	-78.735	-66.525	-25.914	-30.914
606.090	-30.003	-48.238	-78.241	-66.031	-25.914	-30.914
606.100	-30.252	-48.248	-78.500	-66.290	-25.914	-30.914
606.110	-30.389	-48.207	-78.596	-66.386	-25.914	-30.914
606.120	-31.119	-48.220	-79.339	-67.129	-25.914	-30.914
606.130	-30.645	-48.229	-78.874	-66.664	-25.914	-30.914
606.140	-28.446	-48.176	-76.622	-64.412	-25.914	-30.914
606.150	-28.960	-48.146	-77.106	-64.896	-25.914	-30.914
606.160	-30.101	-48.104	-78.205	-65.995	-25.914	-30.914
606.170	-29.182	-48.057	-77.239	-65.029	-25.914	-30.914
606.180	-30.391	-48.041	-78.432	-66.222	-25.914	-30.914
606.190	-31.446	-47.957	-79.403	-67.193	-25.914	-30.914
606.200	-30.183	-47.924	-78.107	-65.897	-25.914	-30.914
606.210	-30.581	-47.912	-78.493	-66.283	-25.914	-30.914
606.220	-29.320	-47.952	-77.272	-65.062	-25.914	-30.914
606.230	-29.895	-47.858	-77.753	-65.543	-25.914	-30.914
606.240	-29.067	-47.801	-76.868	-64.658	-25.914	-30.914
606.250	-28.827	-47.839	-76.666	-64.456	-25.914	-30.914
606.260	-30.391	-47.762	-78.153	-65.943	-25.914	-30.914
606.270	-31.082	-47.652	-78.734	-66.524	-25.914	-30.914
606.280	-29.804	-47.696	-77.500	-65.290	-25.914	-30.914
606.290	-30.452	-47.679	-78.131	-65.921	-25.914	-30.914
606.300	-29.820	-47.634	-77.454	-65.244	-25.914	-30.914
606.310	-29.947	-47.622	-77.569	-65.359	-25.914	-30.914
606.320	-28.695	-47.594	-76.289	-64.079	-25.914	-30.914
606.330	-29.318	-47.564	-76.882	-64.672	-25.914	-30.914
606.340	-29.668	-47.434	-77.102	-64.892	-25.914	-30.914
606.350	-29.428	-47.517	-76.945	-64.735	-25.914	-30.914
606.360	-29.412	-47.448	-76.860	-64.650	-25.914	-30.914
606.370	-28.401	-47.431	-75.832	-63.622	-25.914	-30.914
606.380	-28.332	-47.424	-75.756	-63.546	-25.914	-30.914
606.390	-30.327	-47.329	-77.656	-65.446	-25.914	-30.914
606.400	-29.827	-47.295	-77.122	-64.912	-25.914	-30.914
606.410	-29.409	-47.271	-76.680	-64.470	-25.914	-30.914
606.420	-28.907	-47.218	-76.125	-63.915	-25.914	-30.914
606.430	-31.336	-47.287	-78.623	-66.413	-25.914	-30.914
606.440	-30.741	-47.222	-77.963	-65.753	-25.914	-30.914
606.450	-27.727	-47.134	-74.861	-62.651	-25.914	-30.914
606.460	-28.736	-47.120	-75.856	-63.646	-25.914	-30.914
606.470	-29.563	-47.174	-76.737	-64.527	-25.914	-30.914
606.480	-29.309	-47.072	-76.381	-64.171	-25.914	-30.914
606.490	-30.060	-47.041	-77.101	-64.891	-25.914	-30.914
606.500	-29.872	-47.000	-76.872	-64.662	-25.914	-30.914
606.510	-29.173	-46.977	-76.150	-63.940	-25.914	-30.914
606.520	-28.791	-46.925	-75.716	-63.506	-25.914	-30.914

606.530	-31.182	-46.908	-78.090	-65.880	-25.914	-30.914
606.540	-30.535	-46.888	-77.423	-65.213	-25.914	-30.914
606.550	-27.495	-46.866	-74.361	-62.151	-25.914	-30.914
606.560	-28.071	-46.756	-74.827	-62.617	-25.914	-30.914
606.570	-27.505	-46.714	-74.219	-62.009	-25.914	-30.914
606.580	-29.270	-46.674	-75.944	-63.734	-25.914	-30.914
606.590	-31.266	-46.692	-77.958	-65.748	-25.914	-30.914
606.600	-32.578	-46.650	-79.228	-67.018	-25.914	-30.914
606.610	-28.403	-46.676	-75.079	-62.869	-25.914	-30.914
606.620	-29.263	-46.626	-75.889	-63.679	-25.914	-30.914
606.630	-29.755	-46.547	-76.302	-64.092	-25.914	-30.914
606.640	-28.894	-46.575	-75.469	-63.259	-25.914	-30.914
606.650	-29.609	-46.496	-76.105	-63.895	-25.914	-30.914
606.660	-28.936	-46.485	-75.421	-63.211	-25.914	-30.914
606.670	-28.311	-46.417	-74.728	-62.518	-25.914	-30.914
606.680	-28.976	-46.404	-75.380	-63.170	-25.914	-30.914
606.690	-29.252	-46.394	-75.646	-63.436	-25.914	-30.914
606.700	-29.493	-46.370	-75.863	-63.653	-25.914	-30.914
606.710	-31.468	-46.273	-77.741	-65.531	-25.914	-30.914
606.720	-28.832	-46.310	-75.142	-62.932	-25.914	-30.914
606.730	-28.360	-46.252	-74.612	-62.402	-25.914	-30.914
606.740	-30.323	-46.234	-76.557	-64.347	-25.914	-30.914
606.750	-31.023	-46.191	-77.214	-65.004	-25.914	-30.914
606.760	-29.250	-46.146	-75.396	-63.186	-25.914	-30.914
606.770	-29.815	-46.070	-75.885	-63.675	-25.914	-30.914
606.780	-28.319	-46.028	-74.347	-62.137	-25.914	-30.914
606.790	-28.503	-46.026	-74.529	-62.319	-25.914	-30.914
606.800	-27.989	-46.002	-73.991	-61.781	-25.914	-30.914
606.810	-29.401	-46.003	-75.404	-63.194	-25.914	-30.914
606.820	-28.797	-45.887	-74.684	-62.474	-25.914	-30.914
606.830	-30.947	-45.879	-76.826	-64.616	-25.914	-30.914
606.840	-29.676	-45.862	-75.538	-63.328	-25.914	-30.914
606.850	-27.567	-45.871	-73.438	-61.228	-25.914	-30.914
606.860	-28.853	-45.783	-74.636	-62.426	-25.914	-30.914
606.870	-29.741	-45.766	-75.507	-63.297	-25.914	-30.914
606.880	-26.636	-45.735	-72.371	-60.161	-25.914	-30.914
606.890	-29.410	-45.646	-75.056	-62.846	-25.914	-30.914
606.900	-28.485	-45.601	-74.086	-61.876	-25.914	-30.914
606.910	-29.466	-45.588	-75.054	-62.844	-25.914	-30.914
606.920	-27.923	-45.562	-73.485	-61.275	-25.914	-30.914
606.930	-26.373	-45.578	-71.951	-59.741	-25.914	-30.914
606.940	-28.943	-45.496	-74.439	-62.229	-25.914	-30.914
606.950	-28.198	-45.506	-73.704	-61.494	-25.914	-30.914
606.960	-27.665	-45.459	-73.124	-60.914	-25.914	-30.914
606.970	-27.150	-45.490	-72.640	-60.430	-25.914	-30.914
606.980	-29.374	-45.357	-74.731	-62.521	-25.914	-30.914
606.990	-27.573	-45.349	-72.922	-60.712	-25.914	-30.914
607.000	-28.812	-45.344	-74.156	-61.946	-25.914	-30.914
607.010	-27.841	-45.225	-73.066	-60.856	-25.914	-30.914
607.020	-26.081	-45.236	-71.317	-59.107	-25.914	-30.914
607.030	-26.520	-45.245	-71.765	-59.555	-25.914	-30.914
607.040	-26.010	-45.186	-71.196	-58.986	-25.914	-30.914
607.050	-28.370	-45.139	-73.509	-61.299	-25.914	-30.914
607.060	-28.874	-45.110	-73.984	-61.774	-25.914	-30.914
607.070	-26.729	-45.084	-71.813	-59.603	-25.914	-30.914

607.080	-29.918	-45.042	-74.960	-62.750	-25.914	-30.914
607.090	-29.274	-45.027	-74.301	-62.091	-25.914	-30.914
607.100	-29.811	-44.947	-74.758	-62.548	-25.914	-30.914
607.110	-27.921	-44.932	-72.853	-60.643	-25.914	-30.914
607.120	-28.140	-44.887	-73.027	-60.817	-25.914	-30.914
607.130	-27.739	-44.859	-72.598	-60.388	-25.914	-30.914
607.140	-27.954	-44.834	-72.788	-60.578	-25.914	-30.914
607.150	-30.939	-44.769	-75.708	-63.498	-25.914	-30.914
607.160	-30.384	-44.760	-75.144	-62.934	-25.914	-30.914
607.170	-30.422	-44.692	-75.114	-62.904	-25.914	-30.914
607.180	-28.637	-44.697	-73.334	-61.124	-25.914	-30.914
607.190	-29.769	-44.681	-74.450	-62.240	-25.914	-30.914
607.200	-29.586	-44.617	-74.203	-61.993	-25.914	-30.914
607.210	-26.890	-44.595	-71.485	-59.275	-25.914	-30.914
607.220	-28.012	-44.523	-72.535	-60.325	-25.914	-30.914
607.230	-27.591	-44.511	-72.102	-59.892	-25.914	-30.914
607.240	-29.136	-44.492	-73.628	-61.418	-25.914	-30.914
607.250	-28.875	-44.447	-73.322	-61.112	-25.914	-30.914
607.260	-28.699	-44.381	-73.080	-60.870	-25.914	-30.914
607.270	-26.562	-44.392	-70.954	-58.744	-25.914	-30.914
607.280	-28.861	-44.291	-73.152	-60.942	-25.914	-30.914
607.290	-30.303	-44.300	-74.603	-62.393	-25.914	-30.914
607.300	-29.482	-44.289	-73.771	-61.561	-25.914	-30.914
607.310	-28.884	-44.238	-73.122	-60.912	-25.914	-30.914
607.320	-27.935	-44.225	-72.160	-59.950	-25.914	-30.914
607.330	-30.062	-44.154	-74.216	-62.006	-25.914	-30.914
607.340	-27.019	-44.133	-71.152	-58.942	-25.914	-30.914
607.350	-29.118	-44.120	-73.238	-61.028	-25.914	-30.914
607.360	-29.870	-44.068	-73.938	-61.728	-25.914	-30.914
607.370	-27.722	-44.001	-71.723	-59.513	-25.914	-30.914
607.380	-25.049	-43.965	-69.014	-56.804	-25.914	-30.914
607.390	-27.040	-44.003	-71.043	-58.833	-25.914	-30.914
607.400	-27.392	-43.919	-71.311	-59.101	-25.914	-30.914
607.410	-29.594	-43.862	-73.456	-61.246	-25.914	-30.914
607.420	-27.939	-43.796	-71.735	-59.525	-25.914	-30.914
607.430	-27.438	-43.761	-71.199	-58.989	-25.914	-30.914
607.440	-29.418	-43.789	-73.207	-60.997	-25.914	-30.914
607.450	-29.501	-43.756	-73.257	-61.047	-25.914	-30.914
607.460	-28.962	-43.717	-72.679	-60.469	-25.914	-30.914
607.470	-26.756	-43.636	-70.392	-58.182	-25.914	-30.914
607.480	-29.176	-43.616	-72.792	-60.582	-25.914	-30.914
607.490	-28.754	-43.575	-72.329	-60.119	-25.914	-30.914
607.500	-26.814	-43.532	-70.346	-58.136	-25.914	-30.914
607.510	-27.067	-43.512	-70.579	-58.369	-25.914	-30.914
607.520	-27.845	-43.457	-71.302	-59.092	-25.914	-30.914
607.530	-29.012	-43.422	-72.434	-60.224	-25.914	-30.914
607.540	-27.089	-43.383	-70.472	-58.262	-25.914	-30.914
607.550	-28.611	-43.371	-71.982	-59.772	-25.914	-30.914
607.560	-27.741	-43.354	-71.095	-58.885	-25.914	-30.914
607.570	-27.704	-43.270	-70.974	-58.764	-25.914	-30.914
607.580	-26.815	-43.245	-70.060	-57.850	-25.914	-30.914
607.590	-28.911	-43.228	-72.139	-59.929	-25.914	-30.914
607.600	-28.467	-43.152	-71.619	-59.409	-25.914	-30.914
607.610	-27.336	-43.112	-70.448	-58.238	-25.914	-30.914
607.620	-26.332	-43.111	-69.443	-57.233	-25.914	-30.914

607.630	-27.986	-43.119	-71.105	-58.895	-25.914	-30.914
607.640	-27.335	-43.011	-70.346	-58.136	-25.914	-30.914
607.650	-28.005	-42.974	-70.979	-58.769	-25.914	-30.914
607.660	-28.057	-42.981	-71.038	-58.828	-25.914	-30.914
607.670	-27.202	-42.885	-70.087	-57.877	-25.914	-30.914
607.680	-26.997	-42.879	-69.876	-57.666	-25.914	-30.914
607.690	-27.890	-42.851	-70.741	-58.531	-25.914	-30.914
607.700	-27.704	-42.788	-70.492	-58.282	-25.914	-30.914
607.710	-29.594	-42.748	-72.342	-60.132	-25.914	-30.914
607.720	-27.828	-42.726	-70.554	-58.344	-25.914	-30.914
607.730	-27.732	-42.689	-70.421	-58.211	-25.914	-30.914
607.740	-26.278	-42.693	-68.971	-56.761	-25.914	-30.914
607.750	-27.561	-42.640	-70.201	-57.991	-25.914	-30.914
607.760	-27.632	-42.565	-70.197	-57.987	-25.914	-30.914
607.770	-27.435	-42.528	-69.963	-57.753	-25.914	-30.914
607.780	-27.132	-42.483	-69.615	-57.405	-25.914	-30.914
607.790	-25.829	-42.497	-68.326	-56.116	-25.914	-30.914
607.800	-27.697	-42.401	-70.098	-57.888	-25.914	-30.914
607.810	-27.088	-42.409	-69.497	-57.287	-25.914	-30.914
607.820	-28.493	-42.356	-70.849	-58.639	-25.914	-30.914
607.830	-27.707	-42.323	-70.030	-57.820	-25.914	-30.914
607.840	-27.036	-42.311	-69.347	-57.137	-25.914	-30.914
607.850	-27.863	-42.259	-70.122	-57.912	-25.914	-30.914
607.860	-28.958	-42.207	-71.165	-58.955	-25.914	-30.914
607.870	-26.389	-42.163	-68.552	-56.342	-25.914	-30.914
607.880	-28.030	-42.144	-70.174	-57.964	-25.914	-30.914
607.890	-29.792	-42.097	-71.889	-59.679	-25.914	-30.914
607.900	-30.886	-42.045	-72.931	-60.721	-25.914	-30.914
607.910	-28.601	-42.013	-70.614	-58.404	-25.914	-30.914
607.920	-28.502	-41.997	-70.499	-58.289	-25.914	-30.914
607.930	-27.796	-41.937	-69.733	-57.523	-25.914	-30.914
607.940	-26.850	-41.929	-68.779	-56.569	-25.914	-30.914
607.950	-26.359	-41.867	-68.226	-56.016	-25.914	-30.914
607.960	-26.491	-41.811	-68.302	-56.092	-25.914	-30.914
607.970	-24.512	-41.782	-66.294	-54.084	-25.914	-30.914
607.980	-26.307	-41.748	-68.055	-55.845	-25.914	-30.914
607.990	-27.520	-41.676	-69.196	-56.986	-25.914	-30.914
608.000	-28.899	-41.657	-70.556	-58.346	-25.914	-30.914
608.010	-25.948	-41.650	-67.598	-55.388	-25.831	-30.914
608.020	-26.722	-41.590	-68.312	-56.102	-25.748	-30.914
608.030	-28.085	-41.543	-69.628	-57.418	-25.665	-30.914
608.040	-27.265	-41.530	-68.795	-56.585	-25.582	-30.914
608.050	-27.960	-41.460	-69.420	-57.210	-25.499	-30.914
608.060	-26.102	-41.443	-67.545	-55.335	-25.417	-30.914
608.070	-26.287	-41.382	-67.669	-55.459	-25.334	-30.914
608.080	-26.485	-41.396	-67.881	-55.671	-25.252	-30.914
608.090	-25.594	-41.325	-66.919	-54.709	-25.170	-30.914
608.100	-25.961	-41.280	-67.241	-55.031	-25.088	-30.914
608.110	-26.142	-41.232	-67.374	-55.164	-25.006	-30.914
608.120	-28.548	-41.171	-69.719	-57.509	-24.924	-30.914
608.130	-24.783	-41.151	-65.934	-53.724	-24.843	-30.914
608.140	-25.205	-41.143	-66.348	-54.138	-24.761	-30.914
608.150	-26.384	-41.108	-67.492	-55.282	-24.680	-30.914
608.160	-25.143	-41.070	-66.213	-54.003	-24.599	-30.914
608.170	-26.908	-41.043	-67.951	-55.741	-24.518	-30.914

608.180	-28.345	-40.959	-69.304	-57.094	-24.437	-30.914
608.190	-26.906	-40.936	-67.842	-55.632	-24.356	-30.914
608.200	-26.036	-40.883	-66.919	-54.709	-24.275	-30.914
608.210	-27.317	-40.860	-68.177	-55.967	-24.195	-30.914
608.220	-27.145	-40.832	-67.977	-55.767	-24.114	-30.914
608.230	-25.808	-40.754	-66.562	-54.352	-24.034	-30.914
608.240	-28.464	-40.702	-69.166	-56.956	-23.954	-30.914
608.250	-27.397	-40.681	-68.078	-55.868	-23.874	-30.914
608.260	-25.946	-40.660	-66.606	-54.396	-23.794	-30.914
608.270	-27.254	-40.603	-67.857	-55.647	-23.715	-30.914
608.280	-27.467	-40.570	-68.037	-55.827	-23.635	-30.914
608.290	-28.885	-40.538	-69.423	-57.213	-23.556	-30.914
608.300	-28.194	-40.502	-68.696	-56.486	-23.477	-30.914
608.310	-27.118	-40.446	-67.564	-55.354	-23.398	-30.914
608.320	-24.823	-40.419	-65.242	-53.032	-23.319	-30.914
608.330	-26.896	-40.373	-67.269	-55.059	-23.240	-30.914
608.340	-27.876	-40.320	-68.196	-55.986	-23.161	-30.914
608.350	-28.172	-40.300	-68.472	-56.262	-23.083	-30.914
608.360	-26.623	-40.249	-66.872	-54.662	-23.004	-30.914
608.370	-27.333	-40.184	-67.517	-55.307	-22.926	-30.914
608.380	-26.178	-40.176	-66.354	-54.144	-22.848	-30.914
608.390	-27.592	-40.115	-67.707	-55.497	-22.770	-30.914
608.400	-28.325	-40.072	-68.397	-56.187	-22.692	-30.914
608.410	-29.474	-40.038	-69.512	-57.302	-22.614	-30.914
608.420	-27.417	-39.985	-67.402	-55.192	-22.537	-30.914
608.430	-27.876	-39.968	-67.844	-55.634	-22.459	-30.914
608.440	-27.132	-39.945	-67.077	-54.867	-22.382	-30.914
608.450	-27.437	-39.898	-67.335	-55.125	-22.305	-30.914
608.460	-26.886	-39.850	-66.736	-54.526	-22.228	-30.914
608.470	-25.635	-39.793	-65.428	-53.218	-22.151	-30.914
608.480	-25.153	-39.758	-64.911	-52.701	-22.074	-30.914
608.490	-27.018	-39.731	-66.749	-54.539	-21.998	-30.914
608.500	-27.405	-39.684	-67.089	-54.879	-21.921	-30.914
608.510	-28.710	-39.604	-68.314	-56.104	-21.845	-30.914
608.520	-28.201	-39.598	-67.799	-55.589	-21.769	-30.914
608.530	-25.866	-39.561	-65.427	-53.217	-21.693	-30.914
608.540	-26.731	-39.518	-66.249	-54.039	-21.617	-30.914
608.550	-27.292	-39.497	-66.789	-54.579	-21.541	-30.914
608.560	-27.019	-39.427	-66.446	-54.236	-21.465	-30.914
608.570	-26.675	-39.390	-66.065	-53.855	-21.390	-30.914
608.580	-26.064	-39.364	-65.428	-53.218	-21.314	-30.914
608.590	-26.202	-39.322	-65.524	-53.314	-21.239	-30.914
608.600	-25.916	-39.287	-65.203	-52.993	-21.164	-30.914
608.610	-26.392	-39.235	-65.627	-53.417	-21.089	-30.914
608.620	-26.381	-39.213	-65.594	-53.384	-21.014	-30.914
608.630	-26.379	-39.160	-65.539	-53.329	-20.940	-30.914
608.640	-26.519	-39.093	-65.612	-53.402	-20.865	-30.914
608.650	-27.934	-39.067	-67.001	-54.791	-20.791	-30.914
608.660	-26.923	-39.037	-65.960	-53.750	-20.717	-30.914
608.670	-24.564	-38.975	-63.539	-51.329	-20.643	-30.914
608.680	-27.381	-38.938	-66.319	-54.109	-20.569	-30.914
608.690	-27.496	-38.908	-66.404	-54.194	-20.495	-30.914
608.700	-26.363	-38.866	-65.229	-53.019	-20.421	-30.914
608.710	-27.109	-38.804	-65.913	-53.703	-20.348	-30.914
608.720	-24.469	-38.773	-63.242	-51.032	-20.274	-30.914

608.730	-25.498	-38.759	-64.257	-52.047	-20.201	-30.914
608.740	-25.069	-38.696	-63.765	-51.555	-20.128	-30.914
608.750	-26.317	-38.635	-64.952	-52.742	-20.055	-30.914
608.760	-26.383	-38.597	-64.980	-52.770	-19.982	-30.914
608.770	-26.861	-38.561	-65.422	-53.212	-19.909	-30.914
608.780	-25.984	-38.501	-64.485	-52.275	-19.837	-30.914
608.790	-25.199	-38.466	-63.665	-51.455	-19.764	-30.914
608.800	-25.810	-38.433	-64.243	-52.033	-19.692	-30.914
608.810	-26.324	-38.404	-64.728	-52.518	-19.620	-30.914
608.820	-26.729	-38.320	-65.049	-52.839	-19.548	-30.914
608.830	-26.581	-38.305	-64.886	-52.676	-19.476	-30.914
608.840	-27.001	-38.253	-65.254	-53.044	-19.404	-30.914
608.850	-29.142	-38.226	-67.368	-55.158	-19.333	-30.914
608.860	-26.132	-38.179	-64.311	-52.101	-19.261	-30.914
608.870	-25.196	-38.141	-63.337	-51.127	-19.190	-30.914
608.880	-25.468	-38.122	-63.590	-51.380	-19.119	-30.914
608.890	-24.692	-38.078	-62.770	-50.560	-19.048	-30.914
608.900	-22.844	-38.007	-60.851	-48.641	-18.977	-30.914
608.910	-23.384	-37.990	-61.374	-49.164	-18.906	-30.914
608.920	-25.043	-37.911	-62.954	-50.744	-18.835	-30.914
608.930	-24.918	-37.895	-62.813	-50.603	-18.765	-30.914
608.940	-26.563	-37.825	-64.388	-52.178	-18.694	-30.914
608.950	-24.305	-37.778	-62.083	-49.873	-18.624	-30.914
608.960	-23.892	-37.740	-61.632	-49.422	-18.554	-30.914
608.970	-24.772	-37.705	-62.477	-50.267	-18.484	-30.914
608.980	-23.677	-37.665	-61.342	-49.132	-18.414	-30.914
608.990	-23.598	-37.616	-61.214	-49.004	-18.345	-30.914
609.000	-23.525	-37.602	-61.127	-48.917	-18.275	-30.914
609.010	-25.025	-37.535	-62.560	-50.350	-18.206	-30.914
609.020	-23.845	-37.489	-61.334	-49.124	-18.137	-30.914
609.030	-23.017	-37.453	-60.470	-48.260	-18.068	-30.914
609.040	-24.866	-37.409	-62.275	-50.065	-17.999	-30.914
609.050	-26.049	-37.369	-63.418	-51.208	-17.930	-30.914
609.060	-23.539	-37.315	-60.854	-48.644	-17.861	-30.914
609.070	-23.774	-37.284	-61.058	-48.848	-17.793	-30.914
609.080	-23.668	-37.243	-60.911	-48.701	-17.724	-30.914
609.090	-22.776	-37.187	-59.963	-47.753	-17.656	-30.914
609.100	-22.951	-37.133	-60.084	-47.874	-17.588	-30.914
609.110	-23.127	-37.100	-60.227	-48.017	-17.520	-30.914
609.120	-20.217	-37.043	-57.260	-45.050	-17.452	-30.914
609.130	-20.699	-37.007	-57.706	-45.496	-17.384	-30.914
609.140	-23.988	-36.951	-60.939	-48.729	-17.317	-30.914
609.150	-23.599	-36.910	-60.509	-48.299	-17.249	-30.914
609.160	-21.543	-36.884	-58.427	-46.217	-17.182	-30.914
609.170	-24.015	-36.834	-60.849	-48.639	-17.115	-30.914
609.180	-22.155	-36.770	-58.925	-46.715	-17.048	-30.914
609.190	-20.930	-36.765	-57.695	-45.485	-16.981	-30.914
609.200	-21.056	-36.693	-57.749	-45.539	-16.914	-30.914
609.210	-22.025	-36.639	-58.664	-46.454	-16.848	-30.914
609.220	-21.619	-36.607	-58.226	-46.016	-16.781	-30.914
609.230	-21.976	-36.554	-58.530	-46.320	-16.715	-30.914
609.240	-22.313	-36.522	-58.835	-46.625	-16.649	-30.914
609.250	-22.590	-36.466	-59.056	-46.846	-16.583	-30.914
609.260	-21.633	-36.425	-58.058	-45.848	-16.517	-30.914
609.270	-19.178	-36.375	-55.553	-43.343	-16.451	-30.914

609.280	-20.720	-36.335	-57.055	-44.845	-16.385	-30.914
609.290	-21.134	-36.286	-57.420	-45.210	-16.320	-30.914
609.300	-20.309	-36.237	-56.546	-44.336	-16.254	-30.914
609.310	-22.342	-36.189	-58.531	-46.321	-16.189	-30.914
609.320	-23.228	-36.137	-59.365	-47.155	-16.124	-30.914
609.330	-21.876	-36.097	-57.973	-45.763	-16.059	-30.914
609.340	-19.998	-36.065	-56.063	-43.853	-15.994	-30.914
609.350	-21.047	-36.028	-57.075	-44.865	-15.930	-30.914
609.360	-21.287	-35.962	-57.249	-45.039	-15.865	-30.914
609.370	-20.471	-35.918	-56.389	-44.179	-15.801	-30.914
609.380	-22.463	-35.872	-58.335	-46.125	-15.737	-30.914
609.390	-22.147	-35.835	-57.982	-45.772	-15.673	-30.914
609.400	-23.010	-35.795	-58.805	-46.595	-15.609	-30.914
609.410	-20.173	-35.724	-55.897	-43.687	-15.545	-30.914
609.420	-23.496	-35.706	-59.202	-46.992	-15.481	-30.914
609.430	-19.582	-35.661	-55.243	-43.033	-15.418	-30.914
609.440	-18.919	-35.606	-54.525	-42.315	-15.354	-30.914
609.450	-18.279	-35.571	-53.850	-41.640	-15.291	-30.914
609.460	-21.458	-35.495	-56.953	-44.743	-15.228	-30.914
609.470	-18.586	-35.463	-54.049	-41.839	-15.165	-30.914
609.480	-20.109	-35.412	-55.521	-43.311	-15.102	-30.914
609.490	-20.791	-35.366	-56.157	-43.947	-15.039	-30.914
609.500	-20.598	-35.341	-55.939	-43.729	-14.977	-30.914
609.510	-21.539	-35.286	-56.825	-44.615	-14.914	-30.914
609.520	-21.552	-35.255	-56.807	-44.597	-14.852	-30.914
609.530	-20.654	-35.198	-55.852	-43.642	-14.790	-30.914
609.540	-20.067	-35.131	-55.198	-42.988	-14.728	-30.914
609.550	-18.478	-35.091	-53.569	-41.359	-14.666	-30.914
609.560	-20.078	-35.034	-55.112	-42.902	-14.604	-30.914
609.570	-18.643	-34.983	-53.626	-41.416	-14.543	-30.914
609.580	-20.014	-34.947	-54.961	-42.751	-14.481	-30.914
609.590	-20.465	-34.894	-55.359	-43.149	-14.420	-30.914
609.600	-22.097	-34.839	-56.936	-44.726	-14.359	-30.914
609.610	-23.843	-34.772	-58.615	-46.405	-14.298	-30.914
609.620	-19.239	-34.777	-54.016	-41.806	-14.237	-30.914
609.630	-20.313	-34.731	-55.044	-42.834	-14.176	-30.914
609.640	-19.274	-34.659	-53.933	-41.723	-14.115	-30.914
609.650	-21.161	-34.613	-55.774	-43.564	-14.055	-30.914
609.660	-21.194	-34.582	-55.776	-43.566	-13.994	-30.914
609.670	-20.402	-34.523	-54.925	-42.715	-13.934	-30.914
609.680	-19.804	-34.469	-54.273	-42.063	-13.874	-30.914
609.690	-20.390	-34.418	-54.808	-42.598	-13.814	-30.914
609.700	-20.561	-34.367	-54.928	-42.718	-13.754	-30.914
609.710	-20.530	-34.335	-54.865	-42.655	-13.695	-30.914
609.720	-19.099	-34.281	-53.380	-41.170	-13.635	-30.914
609.730	-21.693	-34.248	-55.941	-43.731	-13.576	-30.914
609.740	-21.215	-34.199	-55.414	-43.204	-13.517	-30.914
609.750	-20.239	-34.165	-54.404	-42.194	-13.458	-30.914
609.760	-18.627	-34.122	-52.749	-40.539	-13.399	-30.914
609.770	-18.811	-34.035	-52.846	-40.636	-13.340	-30.914
609.780	-20.881	-33.989	-54.870	-42.660	-13.281	-30.914
609.790	-18.502	-33.954	-52.456	-40.246	-13.223	-30.914
609.800	-19.524	-33.900	-53.424	-41.214	-13.164	-30.914
609.810	-19.467	-33.832	-53.299	-41.089	-13.106	-30.914
609.820	-20.123	-33.803	-53.926	-41.716	-13.048	-30.914

609.830	-19.903	-33.736	-53.639	-41.429	-12.990	-30.914
609.840	-18.016	-33.685	-51.701	-39.491	-12.932	-30.914
609.850	-18.756	-33.636	-52.392	-40.182	-12.874	-30.914
609.860	-20.703	-33.590	-54.293	-42.083	-12.817	-30.914
609.870	-19.438	-33.558	-52.996	-40.786	-12.759	-30.914
609.880	-19.422	-33.517	-52.939	-40.729	-12.702	-30.914
609.890	-19.911	-33.453	-53.364	-41.154	-12.645	-30.914
609.900	-20.211	-33.403	-53.614	-41.404	-12.588	-30.914
609.910	-18.465	-33.356	-51.821	-39.611	-12.531	-30.914
609.920	-18.262	-33.307	-51.569	-39.359	-12.474	-30.914
609.930	-19.019	-33.236	-52.255	-40.045	-12.418	-30.914
609.940	-19.825	-33.215	-53.040	-40.830	-12.361	-30.914
609.950	-18.607	-33.147	-51.754	-39.544	-12.305	-30.914
609.960	-16.162	-33.114	-49.276	-37.066	-12.249	-30.914
609.970	-17.527	-33.083	-50.610	-38.400	-12.193	-30.914
609.980	-19.736	-33.011	-52.747	-40.537	-12.137	-30.914
609.990	-18.406	-32.954	-51.360	-39.150	-12.081	-30.914
610.000	-17.668	-32.905	-50.573	-38.363	-12.025	-30.914
610.010	-17.737	-32.850	-50.587	-38.377	-11.970	-30.914
610.020	-17.962	-32.794	-50.756	-38.546	-11.914	-30.914
610.030	-18.065	-32.768	-50.833	-38.623	-11.859	-30.914
610.040	-17.726	-32.708	-50.434	-38.224	-11.804	-30.914
610.050	-17.617	-32.648	-50.265	-38.055	-11.749	-30.914
610.060	-18.998	-32.592	-51.590	-39.380	-11.694	-30.914
610.070	-19.015	-32.542	-51.557	-39.347	-11.640	-30.914
610.080	-17.686	-32.496	-50.182	-37.972	-11.585	-30.914
610.090	-18.177	-32.457	-50.634	-38.424	-11.531	-30.914
610.100	-17.764	-32.421	-50.185	-37.975	-11.477	-30.914
610.110	-21.204	-32.356	-53.560	-41.350	-11.423	-30.914
610.120	-21.373	-32.310	-53.683	-41.473	-11.369	-30.914
610.130	-18.820	-32.257	-51.077	-38.867	-11.315	-30.914
610.140	-19.233	-32.203	-51.436	-39.226	-11.261	-30.914
610.150	-17.125	-32.148	-49.273	-37.063	-11.208	-30.914
610.160	-19.579	-32.104	-51.683	-39.473	-11.154	-30.914
610.170	-16.614	-32.046	-48.660	-36.450	-11.101	-30.914
610.180	-16.914	-32.002	-48.916	-36.706	-11.048	-30.914
610.190	-19.581	-31.944	-51.525	-39.315	-10.995	-30.914
610.200	-18.894	-31.892	-50.786	-38.576	-10.942	-30.914
610.210	-17.096	-31.856	-48.952	-36.742	-10.889	-30.914
610.220	-17.984	-31.788	-49.772	-37.562	-10.837	-30.914
610.230	-17.514	-31.750	-49.264	-37.054	-10.784	-30.914
610.240	-18.692	-31.686	-50.378	-38.168	-10.732	-30.914
610.250	-18.937	-31.639	-50.576	-38.366	-10.680	-30.914
610.260	-17.959	-31.568	-49.527	-37.317	-10.628	-30.914
610.270	-16.288	-31.514	-47.802	-35.592	-10.576	-30.914
610.280	-17.606	-31.489	-49.095	-36.885	-10.524	-30.914
610.290	-18.719	-31.440	-50.159	-37.949	-10.473	-30.914
610.300	-16.710	-31.394	-48.104	-35.894	-10.421	-30.914
610.310	-19.142	-31.332	-50.474	-38.264	-10.370	-30.914
610.320	-16.127	-31.270	-47.397	-35.187	-10.319	-30.914
610.330	-17.425	-31.236	-48.661	-36.451	-10.268	-30.914
610.340	-17.120	-31.154	-48.274	-36.064	-10.217	-30.914
610.350	-16.875	-31.124	-47.999	-35.789	-10.166	-30.914
610.360	-19.442	-31.055	-50.497	-38.287	-10.115	-30.914
610.370	-16.309	-31.006	-47.315	-35.105	-10.065	-30.914

610.380	-17.878	-30.960	-48.838	-36.628	-10.014	-30.914
610.390	-18.840	-30.907	-49.747	-37.537	-9.964	-30.914
610.400	-18.857	-30.839	-49.696	-37.486	-9.914	-30.914
610.410	-18.105	-30.799	-48.904	-36.694	-9.864	-30.914
610.420	-16.481	-30.755	-47.236	-35.026	-9.814	-30.914
610.430	-17.502	-30.708	-48.210	-36.000	-9.765	-30.914
610.440	-16.790	-30.652	-47.442	-35.232	-9.715	-30.914
610.450	-17.888	-30.584	-48.472	-36.262	-9.666	-30.914
610.460	-17.504	-30.509	-48.013	-35.803	-9.617	-30.914
610.470	-17.943	-30.485	-48.428	-36.218	-9.568	-30.914
610.480	-18.798	-30.435	-49.233	-37.023	-9.519	-30.914
610.490	-17.520	-30.376	-47.896	-35.686	-9.470	-30.914
610.500	-17.862	-30.323	-48.185	-35.975	-9.421	-30.914
610.510	-18.498	-30.260	-48.758	-36.548	-9.373	-30.914
610.520	-17.475	-30.213	-47.688	-35.478	-9.324	-30.914
610.530	-17.155	-30.134	-47.289	-35.079	-9.276	-30.914
610.540	-21.198	-30.097	-51.295	-39.085	-9.228	-30.914
610.550	-17.649	-30.032	-47.681	-35.471	-9.180	-30.914
610.560	-17.040	-29.986	-47.026	-34.816	-9.132	-30.914
610.570	-18.194	-29.933	-48.127	-35.917	-9.084	-30.914
610.580	-16.686	-29.899	-46.585	-34.375	-9.037	-30.914
610.590	-18.153	-29.839	-47.992	-35.782	-8.989	-30.914
610.600	-18.577	-29.764	-48.341	-36.131	-8.942	-30.914
610.610	-19.577	-29.722	-49.299	-37.089	-8.895	-30.914
610.620	-15.065	-29.681	-44.746	-32.536	-8.848	-30.914
610.630	-19.418	-29.623	-49.041	-36.831	-8.801	-30.914
610.640	-17.991	-29.558	-47.549	-35.339	-8.754	-30.914
610.650	-16.762	-29.486	-46.248	-34.038	-8.708	-30.914
610.660	-16.826	-29.429	-46.255	-34.045	-8.661	-30.914
610.670	-16.420	-29.392	-45.812	-33.602	-8.615	-30.914
610.680	-17.866	-29.329	-47.195	-34.985	-8.569	-30.914
610.690	-16.645	-29.271	-45.916	-33.706	-8.523	-30.914
610.700	-17.582	-29.217	-46.799	-34.589	-8.477	-30.914
610.710	-15.778	-29.179	-44.957	-32.747	-8.431	-30.914
610.720	-16.363	-29.153	-45.516	-33.306	-8.385	-30.914
610.730	-16.157	-29.063	-45.220	-33.010	-8.340	-30.914
610.740	-17.052	-28.998	-46.050	-33.840	-8.294	-30.914
610.750	-17.228	-28.956	-46.184	-33.974	-8.249	-30.914
610.760	-18.693	-28.899	-47.592	-35.382	-8.204	-30.914
610.770	-15.303	-28.842	-44.145	-31.935	-8.159	-30.914
610.780	-17.052	-28.774	-45.826	-33.616	-8.114	-30.914
610.790	-16.579	-28.717	-45.296	-33.086	-8.070	-30.914
610.800	-18.388	-28.666	-47.054	-34.844	-8.025	-30.914
610.810	-16.807	-28.602	-45.409	-33.199	-7.981	-30.914
610.820	-18.192	-28.570	-46.762	-34.552	-7.937	-30.914
610.830	-16.185	-28.546	-44.731	-32.521	-7.893	-30.914
610.840	-16.584	-28.459	-45.043	-32.833	-7.849	-30.914
610.850	-18.142	-28.381	-46.523	-34.313	-7.805	-30.914
610.860	-18.801	-28.324	-47.125	-34.915	-7.761	-30.914
610.870	-16.855	-28.267	-45.122	-32.912	-7.718	-30.914
610.880	-17.239	-28.233	-45.472	-33.262	-7.674	-30.914
610.890	-15.773	-28.188	-43.961	-31.751	-7.631	-30.914
610.900	-16.835	-28.127	-44.962	-32.752	-7.588	-30.914
610.910	-16.065	-28.027	-44.092	-31.882	-7.545	-30.914
610.920	-16.779	-27.983	-44.762	-32.552	-7.502	-30.914

610.930	-15.833	-27.939	-43.772	-31.562	-7.459	-30.914
610.940	-16.144	-27.871	-44.015	-31.805	-7.417	-30.914
610.950	-17.524	-27.842	-45.366	-33.156	-7.374	-30.914
610.960	-15.949	-27.785	-43.734	-31.524	-7.332	-30.914
610.970	-17.653	-27.687	-45.340	-33.130	-7.290	-30.914
610.980	-16.659	-27.658	-44.317	-32.107	-7.248	-30.914
610.990	-16.739	-27.603	-44.342	-32.132	-7.206	-30.914
611.000	-17.500	-27.546	-45.046	-32.836	-7.164	-30.914
611.010	-16.596	-27.469	-44.065	-31.855	-7.123	-30.549
611.020	-15.653	-27.412	-43.065	-30.855	-7.081	-30.434
611.030	-16.677	-27.360	-44.037	-31.827	-7.040	-30.319
611.040	-15.658	-27.338	-42.996	-30.786	-6.999	-30.204
611.050	-17.115	-27.236	-44.351	-32.141	-6.958	-30.089
611.060	-16.632	-27.198	-43.830	-31.620	-6.917	-29.974
611.070	-16.987	-27.149	-44.136	-31.926	-6.876	-29.859
611.080	-18.324	-27.087	-45.411	-33.201	-6.835	-29.744
611.090	-16.702	-27.010	-43.712	-31.502	-6.795	-29.629
611.100	-15.786	-26.954	-42.740	-30.530	-6.754	-29.514
611.110	-15.552	-26.889	-42.441	-30.231	-6.714	-29.399
611.120	-16.379	-26.833	-43.212	-31.002	-6.674	-29.284
611.130	-15.791	-26.762	-42.553	-30.343	-6.634	-29.169
611.140	-16.390	-26.727	-43.117	-30.907	-6.594	-29.054
611.150	-14.736	-26.695	-41.431	-29.221	-6.555	-28.939
611.160	-15.693	-26.592	-42.285	-30.075	-6.515	-28.824
611.170	-16.687	-26.564	-43.251	-31.041	-6.476	-28.709
611.180	-17.451	-26.504	-43.955	-31.745	-6.437	-28.594
611.190	-16.771	-26.464	-43.235	-31.025	-6.398	-28.479
611.200	-17.616	-26.380	-43.996	-31.786	-6.359	-28.364
611.210	-15.371	-26.330	-41.701	-29.491	-6.320	-28.249
611.220	-14.609	-26.264	-40.873	-28.663	-6.281	-28.134
611.230	-15.600	-26.182	-41.782	-29.572	-6.243	-28.019
611.240	-15.492	-26.131	-41.623	-29.413	-6.204	-27.904
611.250	-14.968	-26.074	-41.042	-28.832	-6.166	-27.789
611.260	-15.844	-26.024	-41.868	-29.658	-6.128	-27.674
611.270	-17.303	-25.942	-43.245	-31.035	-6.090	-27.559
611.280	-17.428	-25.902	-43.330	-31.120	-6.052	-27.444
611.290	-15.754	-25.856	-41.610	-29.400	-6.014	-27.329
611.300	-13.972	-25.786	-39.758	-27.548	-5.977	-27.214
611.310	-14.754	-25.727	-40.481	-28.271	-5.939	-27.099
611.320	-16.269	-25.680	-41.949	-29.739	-5.902	-26.984
611.330	-15.783	-25.604	-41.387	-29.177	-5.865	-26.869
611.340	-15.300	-25.547	-40.847	-28.637	-5.828	-26.754
611.350	-17.308	-25.490	-42.798	-30.588	-5.791	-26.639
611.360	-15.185	-25.421	-40.606	-28.396	-5.754	-26.524
611.370	-14.095	-25.355	-39.450	-27.240	-5.718	-26.409
611.380	-16.037	-25.306	-41.343	-29.133	-5.681	-26.294
611.390	-15.077	-25.251	-40.328	-28.118	-5.645	-26.179
611.400	-18.790	-25.161	-43.951	-31.741	-5.609	-26.064
611.410	-17.922	-25.112	-43.034	-30.824	-5.573	-25.949
611.420	-16.602	-25.062	-41.664	-29.454	-5.537	-25.834
611.430	-16.082	-25.005	-41.087	-28.877	-5.501	-25.719
611.440	-15.706	-24.944	-40.650	-28.440	-5.465	-25.604
611.450	-15.852	-24.881	-40.733	-28.523	-5.430	-25.489
611.460	-15.073	-24.806	-39.879	-27.669	-5.394	-25.374
611.470	-16.070	-24.742	-40.812	-28.602	-5.359	-25.259

611.480	-14.367	-24.690	-39.057	-26.847	-5.324	-25.144
611.490	-14.004	-24.630	-38.634	-26.424	-5.289	-25.029
611.500	-15.809	-24.566	-40.375	-28.165	-5.254	-24.914
611.510	-15.101	-24.493	-39.594	-27.384	-5.220	-24.799
611.520	-16.350	-24.456	-40.806	-28.596	-5.185	-24.684
611.530	-15.959	-24.401	-40.360	-28.150	-5.151	-24.569
611.540	-15.843	-24.354	-40.197	-27.987	-5.117	-24.454
611.550	-16.382	-24.268	-40.650	-28.440	-5.083	-24.339
611.560	-16.178	-24.199	-40.377	-28.167	-5.049	-24.224
611.570	-16.450	-24.145	-40.595	-28.385	-5.015	-24.109
611.580	-15.262	-24.100	-39.362	-27.152	-4.981	-23.994
611.590	-15.064	-24.020	-39.084	-26.874	-4.948	-23.879
611.600	-16.140	-23.973	-40.113	-27.903	-4.914	-23.764
611.610	-15.968	-23.887	-39.855	-27.645	-4.881	-23.649
611.620	-16.266	-23.830	-40.096	-27.886	-4.848	-23.534
611.630	-16.624	-23.753	-40.377	-28.167	-4.815	-23.419
611.640	-14.687	-23.709	-38.396	-26.186	-4.782	-23.304
611.650	-15.750	-23.651	-39.401	-27.191	-4.749	-23.189
611.660	-14.301	-23.585	-37.886	-25.676	-4.717	-23.074
611.670	-14.036	-23.523	-37.559	-25.349	-4.684	-22.959
611.680	-15.447	-23.454	-38.901	-26.691	-4.652	-22.844
611.690	-16.935	-23.400	-40.335	-28.125	-4.620	-22.729
611.700	-15.259	-23.351	-38.610	-26.400	-4.588	-22.614
611.710	-15.975	-23.298	-39.273	-27.063	-4.556	-22.499
611.720	-14.149	-23.231	-37.380	-25.170	-4.524	-22.384
611.730	-16.117	-23.146	-39.263	-27.053	-4.493	-22.269
611.740	-16.913	-23.075	-39.988	-27.778	-4.461	-22.154
611.750	-16.839	-23.040	-39.879	-27.669	-4.430	-22.039
611.760	-16.250	-22.980	-39.230	-27.020	-4.399	-21.924
611.770	-15.114	-22.916	-38.030	-25.820	-4.368	-21.809
611.780	-14.886	-22.843	-37.729	-25.519	-4.337	-21.694
611.790	-17.636	-22.776	-40.412	-28.202	-4.306	-21.579
611.800	-15.872	-22.729	-38.601	-26.391	-4.275	-21.464
611.810	-15.330	-22.676	-38.006	-25.796	-4.245	-21.349
611.820	-15.423	-22.564	-37.987	-25.777	-4.214	-21.234
611.830	-16.987	-22.538	-39.525	-27.315	-4.184	-21.119
611.840	-13.827	-22.443	-36.270	-24.060	-4.154	-21.004
611.850	-16.255	-22.412	-38.667	-26.457	-4.124	-20.889
611.860	-16.068	-22.351	-38.419	-26.209	-4.094	-20.774
611.870	-16.634	-22.270	-38.904	-26.694	-4.065	-20.659
611.880	-15.786	-22.198	-37.984	-25.774	-4.035	-20.544
611.890	-15.141	-22.138	-37.279	-25.069	-4.006	-20.429
611.900	-15.709	-22.087	-37.796	-25.586	-3.977	-20.314
611.910	-15.643	-22.030	-37.673	-25.463	-3.948	-20.199
611.920	-14.445	-21.996	-36.441	-24.231	-3.919	-20.084
611.930	-15.051	-21.901	-36.952	-24.742	-3.890	-19.969
611.940	-15.260	-21.839	-37.099	-24.889	-3.861	-19.854
611.950	-15.433	-21.770	-37.203	-24.993	-3.833	-19.739
611.960	-15.284	-21.727	-37.011	-24.801	-3.804	-19.624
611.970	-13.685	-21.662	-35.347	-23.137	-3.776	-19.509
611.980	-16.635	-21.582	-38.217	-26.007	-3.748	-19.394
611.990	-15.414	-21.544	-36.958	-24.748	-3.720	-19.279
612.000	-15.333	-21.456	-36.789	-24.579	-3.692	-19.164
612.010	-17.464	-21.414	-38.878	-26.668	-3.664	-19.049
612.020	-16.439	-21.325	-37.764	-25.554	-3.637	-18.934

612.030	-15.066	-21.273	-36.339	-24.129	-3.609	-18.819
612.040	-16.459	-21.220	-37.679	-25.469	-3.582	-18.704
612.050	-15.085	-21.178	-36.263	-24.053	-3.555	-18.589
612.060	-16.049	-21.073	-37.122	-24.912	-3.528	-18.474
612.070	-16.614	-21.007	-37.621	-25.411	-3.501	-18.359
612.080	-16.031	-20.968	-36.999	-24.789	-3.474	-18.244
612.090	-13.053	-20.890	-33.943	-21.733	-3.448	-18.129
612.100	-14.309	-20.837	-35.146	-22.936	-3.421	-18.014
612.110	-15.759	-20.797	-36.556	-24.346	-3.395	-17.899
612.120	-14.816	-20.738	-35.554	-23.344	-3.369	-17.784
612.130	-16.281	-20.646	-36.927	-24.717	-3.343	-17.669
612.140	-13.126	-20.598	-33.724	-21.514	-3.317	-17.554
612.150	-15.621	-20.546	-36.167	-23.957	-3.291	-17.439
612.160	-15.317	-20.465	-35.782	-23.572	-3.265	-17.324
612.170	-13.033	-20.399	-33.432	-21.222	-3.240	-17.209
612.180	-14.907	-20.354	-35.261	-23.051	-3.214	-17.094
612.190	-16.324	-20.271	-36.595	-24.385	-3.189	-16.979
612.200	-13.643	-20.227	-33.870	-21.660	-3.164	-16.864
612.210	-14.958	-20.171	-35.129	-22.919	-3.139	-16.749
612.220	-14.854	-20.121	-34.975	-22.765	-3.114	-16.634
612.230	-14.523	-20.035	-34.558	-22.348	-3.090	-16.519
612.240	-16.184	-19.988	-36.172	-23.962	-3.065	-16.404
612.250	-16.313	-19.925	-36.238	-24.028	-3.041	-16.289
612.260	-15.328	-19.861	-35.189	-22.979	-3.017	-16.174
612.270	-17.317	-19.799	-37.116	-24.906	-2.993	-16.059
612.280	-14.213	-19.753	-33.966	-21.756	-2.969	-15.944
612.290	-14.514	-19.682	-34.196	-21.986	-2.945	-15.829
612.300	-15.991	-19.614	-35.605	-23.395	-2.921	-15.714
612.310	-15.320	-19.531	-34.851	-22.641	-2.898	-15.599
612.320	-15.676	-19.478	-35.154	-22.944	-2.874	-15.484
612.330	-15.604	-19.441	-35.045	-22.835	-2.851	-15.369
612.340	-14.761	-19.371	-34.132	-21.922	-2.828	-15.254
612.350	-15.504	-19.322	-34.826	-22.616	-2.805	-15.139
612.360	-14.399	-19.257	-33.656	-21.446	-2.782	-15.024
612.370	-15.133	-19.217	-34.350	-22.140	-2.759	-14.909
612.380	-13.421	-19.154	-32.575	-20.365	-2.737	-14.794
612.390	-14.617	-19.084	-33.701	-21.491	-2.714	-14.679
612.400	-15.389	-19.028	-34.417	-22.207	-2.692	-14.564
612.410	-17.258	-18.966	-36.224	-24.014	-2.670	-14.449
612.420	-14.392	-18.915	-33.307	-21.097	-2.648	-14.334
612.430	-14.407	-18.861	-33.268	-21.058	-2.626	-14.219
612.440	-15.924	-18.818	-34.742	-22.532	-2.604	-14.104
612.450	-13.241	-18.730	-31.971	-19.761	-2.583	-13.989
612.460	-12.771	-18.695	-31.466	-19.256	-2.561	-13.874
612.470	-13.531	-18.638	-32.169	-19.959	-2.540	-13.759
612.480	-14.730	-18.572	-33.302	-21.092	-2.519	-13.644
612.490	-13.857	-18.522	-32.379	-20.169	-2.498	-13.529
612.500	-14.823	-18.469	-33.292	-21.082	-2.477	-13.414
612.510	-14.943	-18.400	-33.343	-21.133	-2.456	-13.299
612.520	-14.795	-18.353	-33.148	-20.938	-2.435	-13.184
612.530	-14.089	-18.315	-32.404	-20.194	-2.415	-13.069
612.540	-14.336	-18.240	-32.576	-20.366	-2.394	-12.954
612.550	-14.017	-18.193	-32.210	-20.000	-2.374	-12.839
612.560	-12.697	-18.139	-30.836	-18.626	-2.354	-12.724
612.570	-14.654	-18.079	-32.733	-20.523	-2.334	-12.609

612.580	-16.117	-18.050	-34.167	-21.957	-2.314	-12.494
612.590	-15.029	-17.984	-33.013	-20.803	-2.295	-12.379
612.600	-15.630	-17.954	-33.584	-21.374	-2.275	-12.264
612.610	-15.972	-17.916	-33.888	-21.678	-2.256	-12.149
612.620	-16.307	-17.851	-34.158	-21.948	-2.237	-12.034
612.630	-15.410	-17.807	-33.217	-21.007	-2.218	-11.919
612.640	-16.245	-17.757	-34.002	-21.792	-2.199	-11.804
612.650	-15.456	-17.682	-33.138	-20.928	-2.180	-11.689
612.660	-15.288	-17.654	-32.942	-20.732	-2.161	-11.574
612.670	-14.922	-17.612	-32.534	-20.324	-2.143	-11.459
612.680	-13.485	-17.556	-31.041	-18.831	-2.124	-11.344
612.690	-16.906	-17.511	-34.417	-22.207	-2.106	-11.229
612.700	-16.566	-17.473	-34.039	-21.829	-2.088	-11.114
612.710	-15.022	-17.426	-32.448	-20.238	-2.070	-10.999
612.720	-14.674	-17.379	-32.053	-19.843	-2.052	-10.884
612.730	-12.887	-17.355	-30.242	-18.032	-2.034	-10.769
612.740	-14.103	-17.322	-31.425	-19.215	-2.017	-10.654
612.750	-14.225	-17.279	-31.504	-19.294	-1.999	-10.539
612.760	-15.637	-17.238	-32.875	-20.665	-1.982	-10.424
612.770	-15.306	-17.200	-32.506	-20.296	-1.965	-10.309
612.780	-13.436	-17.159	-30.595	-18.385	-1.948	-10.194
612.790	-12.982	-17.134	-30.116	-17.906	-1.931	-10.079
612.800	-15.008	-17.086	-32.094	-19.884	-1.914	-9.964
612.810	-15.160	-17.070	-32.230	-20.020	-1.898	-9.849
612.820	-12.680	-17.040	-29.720	-17.510	-1.881	-9.734
612.830	-14.486	-16.988	-31.474	-19.264	-1.865	-9.619
612.840	-13.849	-16.966	-30.815	-18.605	-1.849	-9.504
612.850	-13.318	-16.950	-30.268	-18.058	-1.833	-9.389
612.860	-13.967	-16.905	-30.872	-18.662	-1.817	-9.274
612.870	-14.580	-16.912	-31.492	-19.282	-1.801	-9.159
612.880	-14.820	-16.884	-31.704	-19.494	-1.785	-9.044
612.890	-14.675	-16.829	-31.504	-19.294	-1.770	-8.929
612.900	-13.829	-16.826	-30.655	-18.445	-1.754	-8.814
612.910	-13.912	-16.815	-30.727	-18.517	-1.739	-8.699
612.920	-12.799	-16.795	-29.594	-17.384	-1.724	-8.584
612.930	-14.800	-16.795	-31.595	-19.385	-1.709	-8.469
612.940	-14.216	-16.763	-30.979	-18.769	-1.694	-8.354
612.950	-15.592	-16.752	-32.344	-20.134	-1.680	-8.239
612.960	-15.859	-16.754	-32.613	-20.403	-1.665	-8.124
612.970	-15.867	-16.744	-32.611	-20.401	-1.651	-8.009
612.980	-13.696	-16.760	-30.456	-18.246	-1.637	-7.894
612.990	-14.479	-16.737	-31.216	-19.006	-1.623	-7.779
613.000	-13.358	-16.752	-30.110	-17.900	-1.609	-7.664
613.010	-14.403	-16.757	-31.160	-18.950	-1.595	-7.549
613.020	-14.787	-16.758	-31.545	-19.335	-1.581	-7.434
613.030	-14.059	-16.741	-30.800	-18.590	-1.568	-7.319
613.040	-14.116	-16.771	-30.887	-18.677	-1.554	-7.204
613.050	-16.433	-16.801	-33.234	-21.024	-1.541	-7.089
613.060	-15.105	-16.831	-31.936	-19.726	-1.528	-6.974
613.070	-14.730	-16.845	-31.575	-19.365	-1.515	-6.859
613.080	-15.725	-16.883	-32.608	-20.398	-1.502	-6.744
613.090	-13.883	-16.885	-30.768	-18.558	-1.489	-6.629
613.100	-13.572	-16.935	-30.507	-18.297	-1.477	-6.514
613.110	-13.789	-16.986	-30.775	-18.565	-1.464	-6.399
613.120	-14.593	-17.023	-31.616	-19.406	-1.452	-6.284

613.130	-16.771	-17.072	-33.843	-21.633	-1.440	-6.169
613.140	-15.903	-17.142	-33.045	-20.835	-1.428	-6.054
613.150	-13.570	-17.200	-30.770	-18.560	-1.416	-5.939
613.160	-14.779	-17.273	-32.052	-19.842	-1.404	-5.824
613.170	-12.531	-17.336	-29.867	-17.657	-1.393	-5.709
613.180	-14.143	-17.406	-31.549	-19.339	-1.381	-5.594
613.190	-15.153	-17.487	-32.640	-20.430	-1.370	-5.479
613.200	-14.427	-17.592	-32.019	-19.809	-1.359	-5.364
613.210	-12.346	-17.682	-30.028	-17.818	-1.348	-5.249
613.220	-14.925	-17.760	-32.685	-20.475	-1.337	-5.134
613.230	-13.872	-17.875	-31.747	-19.537	-1.326	-5.019
613.240	-15.679	-17.980	-33.659	-21.449	-1.315	-4.904
613.250	-14.370	-18.108	-32.478	-20.268	-1.305	-4.789
613.260	-16.131	-18.254	-34.385	-22.175	-1.294	-4.674
613.270	-14.453	-18.386	-32.839	-20.629	-1.284	-4.559
613.280	-14.084	-18.517	-32.601	-20.391	-1.274	-4.444
613.290	-12.605	-18.655	-31.260	-19.050	-1.264	-4.329
613.300	-13.154	-18.817	-31.971	-19.761	-1.254	-4.214
613.310	-14.725	-18.957	-33.682	-21.472	-1.245	-4.099
613.320	-12.646	-19.126	-31.772	-19.562	-1.235	-3.984
613.330	-15.324	-19.268	-34.592	-22.382	-1.226	-3.869
613.340	-14.163	-19.410	-33.573	-21.363	-1.217	-3.754
613.350	-14.033	-19.559	-33.592	-21.382	-1.208	-3.639
613.360	-14.482	-19.697	-34.179	-21.969	-1.199	-3.524
613.370	-13.902	-19.783	-33.685	-21.475	-1.190	-3.409
613.380	-14.146	-19.884	-34.030	-21.820	-1.181	-3.294
613.390	-15.745	-19.959	-35.704	-23.494	-1.173	-3.179
613.400	-13.680	-19.979	-33.659	-21.449	-1.164	-3.064
613.410	-13.938	-19.968	-33.906	-21.696	-1.156	-2.949
613.420	-14.934	-19.905	-34.839	-22.629	-1.148	-2.834
613.430	-13.886	-19.800	-33.686	-21.476	-1.140	-2.719
613.440	-13.529	-19.607	-33.136	-20.926	-1.132	-2.604
613.450	-14.785	-19.408	-34.193	-21.983	-1.124	-2.489
613.460	-13.990	-19.140	-33.130	-20.920	-1.117	-2.374
613.470	-12.774	-18.787	-31.561	-19.351	-1.109	-2.259
613.480	-12.223	-18.414	-30.637	-18.427	-1.102	-2.144
613.490	-14.369	-17.991	-32.360	-20.150	-1.095	-2.029
613.500	-15.176	-17.544	-32.720	-20.510	-1.088	-1.914
613.510	-13.297	-17.098	-30.395	-18.185	-1.081	-1.914
613.520	-13.259	-16.584	-29.843	-17.633	-1.074	-1.914
613.530	-13.430	-16.063	-29.493	-17.283	-1.068	-1.914
613.540	-14.783	-15.552	-30.335	-18.125	-1.061	-1.914
613.550	-13.397	-15.033	-28.430	-16.220	-1.055	-1.914
613.560	-11.839	-14.515	-26.354	-14.144	-1.049	-1.914
613.570	-14.617	-14.000	-28.617	-16.407	-1.043	-1.914
613.580	-14.994	-13.508	-28.502	-16.292	-1.037	-1.914
613.590	-13.540	-13.006	-26.546	-14.336	-1.031	-1.914
613.600	-14.859	-12.515	-27.374	-15.164	-1.025	-1.914
613.610	-18.132	-12.045	-30.177	-17.967	-1.020	-1.914
613.620	-14.952	-11.588	-26.540	-14.330	-1.014	-1.914
613.630	-13.164	-11.151	-24.315	-12.105	-1.009	-1.914
613.640	-13.283	-10.709	-23.992	-11.782	-1.004	-1.914
613.650	-14.467	-10.262	-24.729	-12.519	-0.999	-1.914
613.660	-14.014	-9.870	-23.884	-11.674	-0.994	-1.914
613.670	-14.101	-9.475	-23.576	-11.366	-0.990	-1.914

613.680	-15.021	-9.080	-24.101	-11.891	-0.985	-1.914
613.690	-14.653	-8.736	-23.389	-11.179	-0.981	-1.914
613.700	-13.867	-8.396	-22.263	-10.053	-0.977	-1.914
613.710	-13.840	-8.043	-21.883	-9.673	-0.973	-1.914
613.720	-12.302	-7.713	-20.015	-7.805	-0.969	-1.914
613.730	-12.692	-7.400	-20.092	-7.882	-0.965	-1.914
613.740	-12.863	-7.135	-19.998	-7.788	-0.961	-1.914
613.750	-15.789	-6.857	-22.646	-10.436	-0.958	-1.914
613.760	-15.069	-6.593	-21.662	-9.452	-0.914	-1.914
613.770	-12.946	-6.350	-19.296	-7.086	-0.914	-1.914
613.780	-14.958	-6.112	-21.070	-8.860	-0.914	-1.914
613.790	-16.206	-5.893	-22.099	-9.889	-0.914	-1.914
613.800	-13.625	-5.654	-19.279	-7.069	-0.914	-1.914
613.810	-13.714	-5.459	-19.173	-6.963	-0.914	-1.914
613.820	-14.003	-5.278	-19.281	-7.071	-0.914	-1.914
613.830	-14.402	-5.120	-19.522	-7.312	-0.914	-1.914
613.840	-12.821	-4.933	-17.754	-5.544	-0.914	-1.914
613.850	-15.401	-4.770	-20.171	-7.961	-0.914	-1.914
613.860	-15.266	-4.600	-19.866	-7.656	-0.914	-1.914
613.870	-12.916	-4.463	-17.379	-5.169	-0.914	-1.914
613.880	-12.242	-4.339	-16.581	-4.371	-0.914	-1.914
613.890	-15.029	-4.215	-19.244	-7.034	-0.914	-1.914
613.900	-14.913	-4.100	-19.013	-6.803	-0.914	-1.914
613.910	-13.322	-3.950	-17.272	-5.062	-0.914	-1.914
613.920	-14.847	-3.857	-18.704	-6.494	-0.914	-1.914
613.930	-13.391	-3.771	-17.162	-4.952	-0.914	-1.914
613.940	-13.266	-3.693	-16.959	-4.749	-0.914	-1.914
613.950	-13.412	-3.595	-17.007	-4.797	-0.914	-1.914
613.960	-11.685	-3.498	-15.183	-2.973	-0.914	-1.914
613.970	-12.299	-3.416	-15.715	-3.505	-0.914	-1.914
613.980	-13.475	-3.343	-16.818	-4.608	-0.914	-1.914
613.990	-11.759	-3.277	-15.036	-2.826	-0.914	-1.914
Lower Band						
Edge						
614.000	-11.146	-3.218	-14.364	-2.154	-0.914	-1.914
614.010	-6.352	-3.158	-9.510	2.700	45.086	45.086
614.020	-0.912	-3.079	-3.991	8.219	45.086	45.086
614.030	1.304	-3.044	-1.740	10.470	45.086	45.086
614.040	4.092	-2.977	1.115	13.325	45.086	45.086
614.050	4.668	-2.898	1.770	13.980	45.086	45.086
614.060	7.852	-2.849	5.003	17.213	45.086	45.086
614.070	8.265	-2.818	5.447	17.657	45.086	45.086
614.080	9.016	-2.796	6.220	18.430	45.086	45.086
614.090	11.276	-2.732	8.544	20.754	45.086	45.086
614.100	10.253	-2.698	7.555	19.765	45.086	45.086
614.110	11.327	-2.637	8.690	20.900	45.086	45.086
614.120	11.714	-2.611	9.103	21.313	45.086	45.086
614.130	13.303	-2.576	10.727	22.937	45.086	45.086
614.140	13.798	-2.562	11.236	23.446	45.086	45.086
614.150	12.354	-2.527	9.827	22.037	45.086	45.086
614.160	16.348	-2.470	13.878	26.088	45.086	45.086
614.170	17.016	-2.455	14.561	26.771	45.086	45.086
614.180	17.653	-2.428	15.225	27.435	45.086	45.086
614.190	17.951	-2.397	15.554	27.764	45.086	45.086
614.200	16.641	-2.375	14.266	26.476	45.086	45.086

614.210	18.987	-2.341	16.646	28.856	45.086	45.086
614.220	16.979	-2.322	14.657	26.867	45.086	45.086
614.230	19.013	-2.298	16.715	28.925	45.086	45.086
614.240	19.989	-2.259	17.730	29.940	45.086	45.086
614.250	19.958	-2.237	17.721	29.931	45.086	45.086
614.260	22.362	-2.220	20.142	32.352	45.086	45.086
614.270	25.945	-2.198	23.747	35.957	45.086	45.086
614.280	30.616	-2.189	28.427	40.637	45.086	45.086
614.290	34.088	-2.165	31.923	44.133	45.086	45.086
614.300	37.339	-2.155	35.184	47.394	45.086	45.086
614.310	37.498	-2.125	35.373	47.583	45.086	45.086
614.320	34.129	-2.112	32.017	44.227	45.086	45.086
614.330	30.246	-2.108	28.138	40.348	45.086	45.086
614.340	24.484	-2.078	22.406	34.616	45.086	45.086
614.350	21.102	-2.049	19.053	31.263	45.086	45.086
614.360	22.919	-2.034	20.885	33.095	45.086	45.086
614.370	23.711	-2.016	21.695	33.905	45.086	45.086
614.380	22.072	-2.003	20.069	32.279	45.086	45.086
614.390	24.093	-1.986	22.107	34.317	45.086	45.086
614.400	20.574	-1.966	18.608	30.818	45.086	45.086
614.410	24.164	-1.958	22.206	34.416	45.086	45.086
614.420	22.730	-1.952	20.778	32.988	45.086	45.086
614.430	22.763	-1.942	20.821	33.031	45.086	45.086
614.440	23.452	-1.914	21.538	33.748	45.086	45.086
614.450	21.030	-1.908	19.122	31.332	45.086	45.086
614.460	22.399	-1.893	20.506	32.716	45.086	45.086
614.470	21.904	-1.873	20.031	32.241	45.086	45.086
614.480	22.453	-1.884	20.569	32.779	45.086	45.086
614.490	22.903	-1.858	21.045	33.255	45.086	45.086
614.500	23.670	-1.846	21.824	34.034	45.086	45.086
614.510	24.376	-1.843	22.533	34.743	45.086	45.086
614.520	23.951	-1.825	22.126	34.336	45.086	45.086
614.530	24.571	-1.812	22.759	34.969	45.086	45.086
614.540	22.857	-1.812	21.045	33.255	45.086	45.086
614.550	21.576	-1.802	19.774	31.984	45.086	45.086
614.560	25.009	-1.792	23.217	35.427	45.086	45.086
614.570	21.781	-1.775	20.006	32.216	45.086	45.086
614.580	24.401	-1.741	22.660	34.870	45.086	45.086
614.590	26.088	-1.742	24.346	36.556	45.086	45.086
614.600	23.811	-1.715	22.096	34.306	45.086	45.086
614.610	23.196	-1.721	21.475	33.685	45.086	45.086
614.620	23.228	-1.725	21.503	33.713	45.086	45.086
614.630	23.972	-1.698	22.274	34.484	45.086	45.086
614.640	24.671	-1.694	22.977	35.187	45.086	45.086
614.650	22.145	-1.679	20.466	32.676	45.086	45.086
614.660	21.247	-1.674	19.573	31.783	45.086	45.086
614.670	24.248	-1.668	22.580	34.790	45.086	45.086
614.680	24.168	-1.661	22.507	34.717	45.086	45.086
614.690	20.979	-1.640	19.339	31.549	45.086	45.086
614.700	23.521	-1.626	21.895	34.105	45.086	45.086
614.710	22.883	-1.632	21.251	33.461	45.086	45.086
614.720	24.144	-1.623	22.521	34.731	45.086	45.086
614.730	25.154	-1.624	23.530	35.740	45.086	45.086
614.740	21.858	-1.616	20.242	32.452	45.086	45.086
614.750	24.630	-1.598	23.032	35.242	45.086	45.086

614.760	24.077	-1.586	22.491	34.701	45.086	45.086
614.770	22.539	-1.593	20.946	33.156	45.086	45.086
614.780	26.127	-1.593	24.534	36.744	45.086	45.086
614.790	22.277	-1.586	20.691	32.901	45.086	45.086
614.800	21.937	-1.581	20.356	32.566	45.086	45.086
614.810	24.477	-1.562	22.915	35.125	45.086	45.086
614.820	24.290	-1.563	22.727	34.937	45.086	45.086
614.830	23.756	-1.550	22.206	34.416	45.086	45.086
614.840	21.936	-1.536	20.400	32.610	45.086	45.086
614.850	24.310	-1.526	22.784	34.994	45.086	45.086
614.860	24.200	-1.523	22.677	34.887	45.086	45.086
614.870	24.531	-1.515	23.016	35.226	45.086	45.086
614.880	23.313	-1.513	21.800	34.010	45.086	45.086
614.890	22.944	-1.510	21.434	33.644	45.086	45.086
614.900	23.034	-1.492	21.542	33.752	45.086	45.086
614.910	23.929	-1.485	22.444	34.654	45.086	45.086
614.920	25.660	-1.496	24.164	36.374	45.086	45.086
614.930	23.269	-1.496	21.773	33.983	45.086	45.086
614.940	22.570	-1.490	21.080	33.290	45.086	45.086
614.950	22.930	-1.467	21.463	33.673	45.086	45.086
614.960	24.419	-1.450	22.969	35.179	45.086	45.086
614.970	21.857	-1.453	20.404	32.614	45.086	45.086
614.980	22.803	-1.455	21.348	33.558	45.086	45.086
614.990	23.454	-1.439	22.015	34.225	45.086	45.086
615.000	25.199	-1.440	23.759	35.969	45.086	45.086
615.010	24.426	-1.420	23.006	35.216	45.086	45.086
615.020	21.906	-1.433	20.473	32.683	45.086	45.086
615.030	24.305	-1.441	22.864	35.074	45.086	45.086
615.040	24.291	-1.417	22.874	35.084	45.086	45.086
615.050	24.084	-1.418	22.666	34.876	45.086	45.086
615.060	25.183	-1.395	23.788	35.998	45.086	45.086
615.070	23.530	-1.402	22.128	34.338	45.086	45.086
615.080	25.419	-1.375	24.044	36.254	45.086	45.086
615.090	24.544	-1.357	23.187	35.397	45.086	45.086
615.100	25.176	-1.373	23.803	36.013	45.086	45.086
615.110	22.101	-1.374	20.727	32.937	45.086	45.086
615.120	23.830	-1.357	22.473	34.683	45.086	45.086
615.130	25.886	-1.355	24.531	36.741	45.086	45.086
615.140	24.615	-1.374	23.241	35.451	45.086	45.086
615.150	23.423	-1.355	22.068	34.278	45.086	45.086
615.160	25.036	-1.335	23.701	35.911	45.086	45.086
615.170	24.529	-1.341	23.188	35.398	45.086	45.086
615.180	21.529	-1.348	20.181	32.391	45.086	45.086
615.190	24.334	-1.345	22.989	35.199	45.086	45.086
615.200	23.122	-1.333	21.789	33.999	45.086	45.086
615.210	23.438	-1.324	22.114	34.324	45.086	45.086
615.220	21.808	-1.313	20.495	32.705	45.086	45.086
615.230	23.764	-1.305	22.459	34.669	45.086	45.086
615.240	22.772	-1.312	21.460	33.670	45.086	45.086
615.250	23.537	-1.301	22.236	34.446	45.086	45.086
615.260	24.064	-1.313	22.751	34.961	45.086	45.086
615.270	22.954	-1.305	21.649	33.859	45.086	45.086
615.280	23.992	-1.292	22.700	34.910	45.086	45.086
615.290	25.306	-1.282	24.024	36.234	45.086	45.086
615.300	24.624	-1.285	23.339	35.549	45.086	45.086

615.310	22.799	-1.290	21.509	33.719	45.086	45.086
615.320	23.059	-1.291	21.768	33.978	45.086	45.086
615.330	24.213	-1.281	22.932	35.142	45.086	45.086
615.340	25.350	-1.285	24.065	36.275	45.086	45.086
615.350	26.167	-1.248	24.919	37.129	45.086	45.086
615.360	25.350	-1.275	24.075	36.285	45.086	45.086
615.370	24.722	-1.283	23.439	35.649	45.086	45.086
615.380	25.698	-1.267	24.431	36.641	45.086	45.086
615.390	23.398	-1.255	22.143	34.353	45.086	45.086
615.400	22.502	-1.270	21.232	33.442	45.086	45.086
615.410	23.576	-1.269	22.307	34.517	45.086	45.086
615.420	23.221	-1.249	21.972	34.182	45.086	45.086
615.430	24.342	-1.271	23.071	35.281	45.086	45.086
615.440	24.571	-1.256	23.315	35.525	45.086	45.086
615.450	22.627	-1.245	21.382	33.592	45.086	45.086
615.460	23.737	-1.241	22.496	34.706	45.086	45.086
615.470	23.066	-1.232	21.834	34.044	45.086	45.086
615.480	24.516	-1.241	23.275	35.485	45.086	45.086
615.490	25.136	-1.252	23.884	36.094	45.086	45.086
615.500	24.696	-1.243	23.453	35.663	45.086	45.086
615.510	25.424	-1.264	24.160	36.370	45.086	45.086
615.520	22.678	-1.241	21.437	33.647	45.086	45.086
615.530	22.661	-1.234	21.427	33.637	45.086	45.086
615.540	23.371	-1.221	22.150	34.360	45.086	45.086
615.550	24.337	-1.239	23.098	35.308	45.086	45.086
615.560	26.007	-1.251	24.756	36.966	45.086	45.086
615.570	23.542	-1.229	22.313	34.523	45.086	45.086
615.580	23.179	-1.209	21.970	34.180	45.086	45.086
615.590	24.157	-1.222	22.935	35.145	45.086	45.086
615.600	23.874	-1.204	22.670	34.880	45.086	45.086
615.610	23.304	-1.215	22.089	34.299	45.086	45.086
615.620	22.824	-1.218	21.606	33.816	45.086	45.086
615.630	21.966	-1.222	20.744	32.954	45.086	45.086
615.640	22.190	-1.214	20.976	33.186	45.086	45.086
615.650	23.376	-1.224	22.152	34.362	45.086	45.086
615.660	25.534	-1.195	24.339	36.549	45.086	45.086
615.670	22.319	-1.197	21.122	33.332	45.086	45.086
615.680	25.466	-1.203	24.263	36.473	45.086	45.086
615.690	24.668	-1.221	23.447	35.657	45.086	45.086
615.700	25.826	-1.226	24.600	36.810	45.086	45.086
615.710	23.142	-1.200	21.942	34.152	45.086	45.086
615.720	23.660	-1.196	22.464	34.674	45.086	45.086
615.730	25.817	-1.189	24.628	36.838	45.086	45.086
615.740	24.864	-1.196	23.668	35.878	45.086	45.086
615.750	25.481	-1.210	24.271	36.481	45.086	45.086
615.760	24.293	-1.213	23.080	35.290	45.086	45.086
615.770	24.836	-1.197	23.639	35.849	45.086	45.086
615.780	23.341	-1.158	22.183	34.393	45.086	45.086
615.790	22.895	-1.166	21.729	33.939	45.086	45.086
615.800	22.648	-1.193	21.455	33.665	45.086	45.086
615.810	24.124	-1.197	22.927	35.137	45.086	45.086
615.820	24.232	-1.197	23.035	35.245	45.086	45.086
615.830	23.993	-1.204	22.789	34.999	45.086	45.086
615.840	24.274	-1.194	23.080	35.290	45.086	45.086
615.850	22.477	-1.191	21.286	33.496	45.086	45.086

615.860	24.346	-1.209	23.137	35.347	45.086	45.086
615.870	24.087	-1.178	22.909	35.119	45.086	45.086
615.880	25.033	-1.196	23.837	36.047	45.086	45.086
615.890	24.430	-1.200	23.230	35.440	45.086	45.086
615.900	25.161	-1.200	23.961	36.171	45.086	45.086
615.910	24.766	-1.203	23.563	35.773	45.086	45.086
615.920	26.121	-1.191	24.930	37.140	45.086	45.086
615.930	23.836	-1.218	22.618	34.828	45.086	45.086
615.940	25.357	-1.200	24.157	36.367	45.086	45.086
615.950	22.727	-1.208	21.519	33.729	45.086	45.086
615.960	25.252	-1.210	24.042	36.252	45.086	45.086
615.970	23.052	-1.212	21.840	34.050	45.086	45.086
615.980	24.531	-1.211	23.320	35.530	45.086	45.086
615.990	24.190	-1.199	22.991	35.201	45.086	45.086
616.000	24.283	-1.207	23.076	35.286	45.086	45.086
616.010	22.488	-1.209	21.279	33.489	45.086	45.086
616.020	23.447	-1.195	22.252	34.462	45.086	45.086
616.030	24.246	-1.216	23.030	35.240	45.086	45.086
616.040	23.851	-1.197	22.654	34.864	45.086	45.086
616.050	24.911	-1.191	23.720	35.930	45.086	45.086
616.060	23.231	-1.200	22.031	34.241	45.086	45.086
616.070	23.335	-1.208	22.127	34.337	45.086	45.086
616.080	23.296	-1.203	22.093	34.303	45.086	45.086
616.090	24.233	-1.206	23.027	35.237	45.086	45.086
616.100	23.223	-1.233	21.990	34.200	45.086	45.086
616.110	21.409	-1.219	20.190	32.400	45.086	45.086
616.120	25.845	-1.236	24.609	36.819	45.086	45.086
616.130	23.172	-1.231	21.941	34.151	45.086	45.086
616.140	24.012	-1.216	22.796	35.006	45.086	45.086
616.150	24.386	-1.205	23.181	35.391	45.086	45.086
616.160	22.944	-1.225	21.719	33.929	45.086	45.086
616.170	24.746	-1.212	23.534	35.744	45.086	45.086
616.180	22.792	-1.221	21.571	33.781	45.086	45.086
616.190	22.399	-1.216	21.183	33.393	45.086	45.086
616.200	22.449	-1.241	21.208	33.418	45.086	45.086
616.210	23.385	-1.233	22.152	34.362	45.086	45.086
616.220	23.561	-1.236	22.325	34.535	45.086	45.086
616.230	24.903	-1.236	23.667	35.877	45.086	45.086
616.240	24.932	-1.235	23.697	35.907	45.086	45.086
616.250	22.898	-1.235	21.663	33.873	45.086	45.086
616.260	24.496	-1.239	23.257	35.467	45.086	45.086
616.270	23.566	-1.250	22.316	34.526	45.086	45.086
616.280	23.073	-1.246	21.827	34.037	45.086	45.086
616.290	22.475	-1.217	21.258	33.468	45.086	45.086
616.300	22.360	-1.224	21.136	33.346	45.086	45.086
616.310	23.275	-1.241	22.034	34.244	45.086	45.086
616.320	24.802	-1.233	23.569	35.779	45.086	45.086
616.330	23.868	-1.231	22.637	34.847	45.086	45.086
616.340	24.825	-1.248	23.577	35.787	45.086	45.086
616.350	22.523	-1.243	21.280	33.490	45.086	45.086
616.360	24.231	-1.243	22.988	35.198	45.086	45.086
616.370	23.504	-1.254	22.250	34.460	45.086	45.086
616.380	23.411	-1.252	22.159	34.369	45.086	45.086
616.390	24.365	-1.246	23.119	35.329	45.086	45.086
616.400	22.199	-1.261	20.938	33.148	45.086	45.086

616.410	23.739	-1.256	22.483	34.693	45.086	45.086
616.420	24.487	-1.266	23.221	35.431	45.086	45.086
616.430	24.268	-1.258	23.010	35.220	45.086	45.086
616.440	23.815	-1.245	22.570	34.780	45.086	45.086
616.450	25.201	-1.245	23.956	36.166	45.086	45.086
616.460	25.637	-1.265	24.372	36.582	45.086	45.086
616.470	24.097	-1.267	22.830	35.040	45.086	45.086
616.480	23.940	-1.262	22.678	34.888	45.086	45.086
616.490	24.902	-1.274	23.628	35.838	45.086	45.086
616.500	22.782	-1.272	21.510	33.720	45.086	45.086
616.510	23.941	-1.259	22.682	34.892	45.086	45.086
616.520	22.869	-1.247	21.622	33.832	45.086	45.086
616.530	23.084	-1.261	21.823	34.033	45.086	45.086
616.540	23.922	-1.251	22.671	34.881	45.086	45.086
616.550	23.421	-1.265	22.156	34.366	45.086	45.086
616.560	23.735	-1.269	22.466	34.676	45.086	45.086
616.570	22.734	-1.268	21.466	33.676	45.086	45.086
616.580	22.710	-1.303	21.407	33.617	45.086	45.086
616.590	23.137	-1.279	21.858	34.068	45.086	45.086
616.600	23.247	-1.267	21.980	34.190	45.086	45.086
616.610	24.524	-1.275	23.249	35.459	45.086	45.086
616.620	24.365	-1.266	23.099	35.309	45.086	45.086
616.630	22.501	-1.277	21.224	33.434	45.086	45.086
616.640	24.465	-1.259	23.206	35.416	45.086	45.086
616.650	22.285	-1.251	21.034	33.244	45.086	45.086
616.660	23.537	-1.270	22.267	34.477	45.086	45.086
616.670	23.630	-1.267	22.363	34.573	45.086	45.086
616.680	21.696	-1.258	20.438	32.648	45.086	45.086
616.690	24.906	-1.254	23.652	35.862	45.086	45.086
616.700	23.604	-1.266	22.338	34.548	45.086	45.086
616.710	25.046	-1.291	23.755	35.965	45.086	45.086
616.720	22.400	-1.324	21.076	33.286	45.086	45.086
616.730	23.317	-1.296	22.021	34.231	45.086	45.086
616.740	24.893	-1.288	23.605	35.815	45.086	45.086
616.750	24.546	-1.285	23.261	35.471	45.086	45.086
616.760	22.864	-1.286	21.578	33.788	45.086	45.086
616.770	24.701	-1.274	23.427	35.637	45.086	45.086
616.780	21.922	-1.279	20.643	32.853	45.086	45.086
616.790	21.624	-1.298	20.326	32.536	45.086	45.086
616.800	24.947	-1.301	23.646	35.856	45.086	45.086
616.810	23.684	-1.286	22.398	34.608	45.086	45.086
616.820	22.809	-1.275	21.534	33.744	45.086	45.086
616.830	24.324	-1.272	23.052	35.262	45.086	45.086
616.840	23.391	-1.270	22.121	34.331	45.086	45.086
616.850	24.222	-1.289	22.933	35.143	45.086	45.086
616.860	23.097	-1.286	21.811	34.021	45.086	45.086
616.870	22.714	-1.286	21.428	33.638	45.086	45.086
616.880	24.528	-1.284	23.244	35.454	45.086	45.086
616.890	22.795	-1.271	21.524	33.734	45.086	45.086
616.900	23.278	-1.281	21.997	34.207	45.086	45.086
616.910	23.501	-1.285	22.216	34.426	45.086	45.086
616.920	25.050	-1.283	23.767	35.977	45.086	45.086
616.930	25.130	-1.285	23.845	36.055	45.086	45.086
616.940	22.996	-1.289	21.707	33.917	45.086	45.086
616.950	23.209	-1.278	21.931	34.141	45.086	45.086

616.960	23.204	-1.276	21.928	34.138	45.086	45.086
616.970	23.238	-1.277	21.961	34.171	45.086	45.086
616.980	22.381	-1.301	21.080	33.290	45.086	45.086
616.990	24.590	-1.298	23.292	35.502	45.086	45.086
Channel Center						
617.000	25.030	-1.294	23.736	35.946	45.086	45.086
617.010	25.152	-1.286	23.866	36.076	45.086	45.086
617.020	23.554	-1.268	22.286	34.496	45.086	45.086
617.030	23.432	-1.267	22.165	34.375	45.086	45.086
617.040	24.519	-1.280	23.239	35.449	45.086	45.086
617.050	26.220	-1.277	24.943	37.153	45.086	45.086
617.060	23.243	-1.281	21.962	34.172	45.086	45.086
617.070	23.493	-1.297	22.196	34.406	45.086	45.086
617.080	22.676	-1.297	21.379	33.589	45.086	45.086
617.090	23.847	-1.289	22.558	34.768	45.086	45.086
617.100	22.461	-1.294	21.167	33.377	45.086	45.086
617.110	22.023	-1.299	20.724	32.934	45.086	45.086
617.120	23.350	-1.300	22.050	34.260	45.086	45.086
617.130	21.525	-1.276	20.249	32.459	45.086	45.086
617.140	23.864	-1.282	22.582	34.792	45.086	45.086
617.150	23.201	-1.279	21.922	34.132	45.086	45.086
617.160	22.797	-1.299	21.498	33.708	45.086	45.086
617.170	23.674	-1.289	22.385	34.595	45.086	45.086
617.180	22.888	-1.275	21.613	33.823	45.086	45.086
617.190	23.397	-1.273	22.124	34.334	45.086	45.086
617.200	24.411	-1.266	23.145	35.355	45.086	45.086
617.210	22.009	-1.272	20.737	32.947	45.086	45.086
617.220	22.185	-1.260	20.925	33.135	45.086	45.086
617.230	25.054	-1.277	23.777	35.987	45.086	45.086
617.240	24.121	-1.270	22.851	35.061	45.086	45.086
617.250	22.176	-1.273	20.903	33.113	45.086	45.086
617.260	23.012	-1.270	21.742	33.952	45.086	45.086
617.270	23.655	-1.261	22.394	34.604	45.086	45.086
617.280	23.524	-1.256	22.268	34.478	45.086	45.086
617.290	24.280	-1.270	23.010	35.220	45.086	45.086
617.300	23.847	-1.272	22.575	34.785	45.086	45.086
617.310	24.896	-1.266	23.630	35.840	45.086	45.086
617.320	24.179	-1.267	22.912	35.122	45.086	45.086
617.330	22.628	-1.252	21.376	33.586	45.086	45.086
617.340	24.519	-1.261	23.258	35.468	45.086	45.086
617.350	23.387	-1.250	22.137	34.347	45.086	45.086
617.360	23.983	-1.276	22.707	34.917	45.086	45.086
617.370	23.461	-1.262	22.199	34.409	45.086	45.086
617.380	21.213	-1.256	19.957	32.167	45.086	45.086
617.390	22.587	-1.254	21.333	33.543	45.086	45.086
617.400	22.769	-1.247	21.522	33.732	45.086	45.086
617.410	24.988	-1.248	23.740	35.950	45.086	45.086
617.420	24.312	-1.259	23.053	35.263	45.086	45.086
617.430	24.927	-1.260	23.667	35.877	45.086	45.086
617.440	23.307	-1.252	22.055	34.265	45.086	45.086
617.450	23.194	-1.255	21.939	34.149	45.086	45.086
617.460	23.146	-1.239	21.907	34.117	45.086	45.086
617.470	22.894	-1.236	21.658	33.868	45.086	45.086
617.480	21.518	-1.234	20.284	32.494	45.086	45.086

617.490	23.396	-1.240	22.156	34.366	45.086	45.086
617.500	24.582	-1.236	23.346	35.556	45.086	45.086
617.510	24.730	-1.235	23.495	35.705	45.086	45.086
617.520	22.764	-1.247	21.517	33.727	45.086	45.086
617.530	23.533	-1.240	22.293	34.503	45.086	45.086
617.540	22.527	-1.219	21.308	33.518	45.086	45.086
617.550	23.936	-1.247	22.689	34.899	45.086	45.086
617.560	25.072	-1.234	23.838	36.048	45.086	45.086
617.570	23.853	-1.233	22.620	34.830	45.086	45.086
617.580	24.785	-1.239	23.546	35.756	45.086	45.086
617.590	23.382	-1.249	22.133	34.343	45.086	45.086
617.600	23.473	-1.264	22.209	34.419	45.086	45.086
617.610	24.081	-1.246	22.835	35.045	45.086	45.086
617.620	24.677	-1.217	23.460	35.670	45.086	45.086
617.630	24.074	-1.235	22.839	35.049	45.086	45.086
617.640	23.188	-1.235	21.953	34.163	45.086	45.086
617.650	22.896	-1.226	21.670	33.880	45.086	45.086
617.660	24.116	-1.216	22.900	35.110	45.086	45.086
617.670	23.266	-1.235	22.031	34.241	45.086	45.086
617.680	23.210	-1.231	21.979	34.189	45.086	45.086
617.690	24.412	-1.231	23.181	35.391	45.086	45.086
617.700	25.784	-1.235	24.549	36.759	45.086	45.086
617.710	24.102	-1.208	22.894	35.104	45.086	45.086
617.720	24.630	-1.210	23.420	35.630	45.086	45.086
617.730	24.056	-1.201	22.855	35.065	45.086	45.086
617.740	25.324	-1.218	24.106	36.316	45.086	45.086
617.750	21.421	-1.223	20.198	32.408	45.086	45.086
617.760	22.439	-1.218	21.221	33.431	45.086	45.086
617.770	21.090	-1.217	19.873	32.083	45.086	45.086
617.780	24.267	-1.216	23.051	35.261	45.086	45.086
617.790	24.034	-1.235	22.799	35.009	45.086	45.086
617.800	25.314	-1.224	24.090	36.300	45.086	45.086
617.810	23.790	-1.232	22.558	34.768	45.086	45.086
617.820	25.986	-1.217	24.769	36.979	45.086	45.086
617.830	24.910	-1.212	23.698	35.908	45.086	45.086
617.840	24.052	-1.221	22.831	35.041	45.086	45.086
617.850	24.533	-1.214	23.319	35.529	45.086	45.086
617.860	22.780	-1.201	21.579	33.789	45.086	45.086
617.870	21.300	-1.210	20.090	32.300	45.086	45.086
617.880	23.855	-1.212	22.643	34.853	45.086	45.086
617.890	23.923	-1.210	22.713	34.923	45.086	45.086
617.900	22.908	-1.217	21.691	33.901	45.086	45.086
617.910	25.645	-1.207	24.438	36.648	45.086	45.086
617.920	22.694	-1.198	21.496	33.706	45.086	45.086
617.930	23.497	-1.201	22.296	34.506	45.086	45.086
617.940	22.213	-1.230	20.983	33.193	45.086	45.086
617.950	20.813	-1.224	19.589	31.799	45.086	45.086
617.960	24.611	-1.212	23.399	35.609	45.086	45.086
617.970	24.041	-1.208	22.833	35.043	45.086	45.086
617.980	24.495	-1.202	23.293	35.503	45.086	45.086
617.990	24.751	-1.197	23.554	35.764	45.086	45.086
618.000	25.056	-1.220	23.836	36.046	45.086	45.086
618.010	25.034	-1.217	23.817	36.027	45.086	45.086
618.020	23.870	-1.214	22.656	34.866	45.086	45.086
618.030	23.207	-1.215	21.992	34.202	45.086	45.086

618.040	24.363	-1.208	23.155	35.365	45.086	45.086
618.050	23.217	-1.199	22.018	34.228	45.086	45.086
618.060	22.809	-1.218	21.591	33.801	45.086	45.086
618.070	23.475	-1.227	22.248	34.458	45.086	45.086
618.080	24.917	-1.216	23.701	35.911	45.086	45.086
618.090	22.855	-1.209	21.646	33.856	45.086	45.086
618.100	24.589	-1.224	23.365	35.575	45.086	45.086
618.110	23.152	-1.220	21.932	34.142	45.086	45.086
618.120	23.783	-1.211	22.572	34.782	45.086	45.086
618.130	24.402	-1.215	23.187	35.397	45.086	45.086
618.140	22.441	-1.223	21.218	33.428	45.086	45.086
618.150	25.690	-1.227	24.463	36.673	45.086	45.086
618.160	23.507	-1.227	22.280	34.490	45.086	45.086
618.170	23.962	-1.231	22.731	34.941	45.086	45.086
618.180	22.899	-1.219	21.680	33.890	45.086	45.086
618.190	22.196	-1.231	20.965	33.175	45.086	45.086
618.200	24.219	-1.229	22.990	35.200	45.086	45.086
618.210	23.170	-1.227	21.943	34.153	45.086	45.086
618.220	23.451	-1.234	22.217	34.427	45.086	45.086
618.230	22.592	-1.241	21.351	33.561	45.086	45.086
618.240	24.572	-1.245	23.327	35.537	45.086	45.086
618.250	23.241	-1.239	22.002	34.212	45.086	45.086
618.260	24.140	-1.239	22.901	35.111	45.086	45.086
618.270	22.235	-1.252	20.983	33.193	45.086	45.086
618.280	23.693	-1.248	22.445	34.655	45.086	45.086
618.290	25.101	-1.250	23.851	36.061	45.086	45.086
618.300	21.727	-1.254	20.473	32.683	45.086	45.086
618.310	24.909	-1.231	23.678	35.888	45.086	45.086
618.320	21.986	-1.240	20.746	32.956	45.086	45.086
618.330	23.697	-1.268	22.429	34.639	45.086	45.086
618.340	24.408	-1.260	23.148	35.358	45.086	45.086
618.350	24.554	-1.262	23.292	35.502	45.086	45.086
618.360	26.464	-1.263	25.201	37.411	45.086	45.086
618.370	25.113	-1.259	23.854	36.064	45.086	45.086
618.380	24.587	-1.261	23.326	35.536	45.086	45.086
618.390	27.438	-1.258	26.180	38.390	45.086	45.086
618.400	24.021	-1.281	22.740	34.950	45.086	45.086
618.410	25.023	-1.295	23.728	35.938	45.086	45.086
618.420	24.362	-1.271	23.091	35.301	45.086	45.086
618.430	24.691	-1.249	23.442	35.652	45.086	45.086
618.440	23.707	-1.272	22.435	34.645	45.086	45.086
618.450	22.707	-1.283	21.424	33.634	45.086	45.086
618.460	21.962	-1.291	20.671	32.881	45.086	45.086
618.470	22.725	-1.287	21.438	33.648	45.086	45.086
618.480	21.439	-1.297	20.142	32.352	45.086	45.086
618.490	25.400	-1.298	24.102	36.312	45.086	45.086
618.500	22.358	-1.303	21.055	33.265	45.086	45.086
618.510	23.066	-1.294	21.772	33.982	45.086	45.086
618.520	22.412	-1.290	21.122	33.332	45.086	45.086
618.530	25.641	-1.321	24.320	36.530	45.086	45.086
618.540	24.859	-1.321	23.538	35.748	45.086	45.086
618.550	22.310	-1.330	20.980	33.190	45.086	45.086
618.560	22.838	-1.326	21.512	33.722	45.086	45.086
618.570	23.584	-1.333	22.251	34.461	45.086	45.086
618.580	23.351	-1.325	22.026	34.236	45.086	45.086

618.590	25.245	-1.349	23.896	36.106	45.086	45.086
618.600	23.987	-1.343	22.644	34.854	45.086	45.086
618.610	24.399	-1.313	23.086	35.296	45.086	45.086
618.620	23.756	-1.344	22.412	34.622	45.086	45.086
618.630	24.261	-1.359	22.902	35.112	45.086	45.086
618.640	24.541	-1.375	23.166	35.376	45.086	45.086
618.650	25.652	-1.368	24.284	36.494	45.086	45.086
618.660	22.151	-1.377	20.774	32.984	45.086	45.086
618.670	23.607	-1.361	22.246	34.456	45.086	45.086
618.680	20.852	-1.381	19.471	31.681	45.086	45.086
618.690	22.332	-1.382	20.950	33.160	45.086	45.086
618.700	24.296	-1.385	22.911	35.121	45.086	45.086
618.710	23.959	-1.389	22.570	34.780	45.086	45.086
618.720	24.074	-1.381	22.693	34.903	45.086	45.086
618.730	24.696	-1.381	23.315	35.525	45.086	45.086
618.740	23.630	-1.382	22.248	34.458	45.086	45.086
618.750	24.378	-1.402	22.976	35.186	45.086	45.086
618.760	23.912	-1.396	22.516	34.726	45.086	45.086
618.770	24.645	-1.422	23.223	35.433	45.086	45.086
618.780	23.700	-1.425	22.275	34.485	45.086	45.086
618.790	23.302	-1.413	21.889	34.099	45.086	45.086
618.800	22.805	-1.437	21.368	33.578	45.086	45.086
618.810	24.886	-1.435	23.451	35.661	45.086	45.086
618.820	23.364	-1.432	21.932	34.142	45.086	45.086
618.830	25.358	-1.446	23.912	36.122	45.086	45.086
618.840	25.258	-1.427	23.831	36.041	45.086	45.086
618.850	21.110	-1.443	19.667	31.877	45.086	45.086
618.860	22.664	-1.456	21.208	33.418	45.086	45.086
618.870	22.766	-1.456	21.310	33.520	45.086	45.086
618.880	23.195	-1.472	21.723	33.933	45.086	45.086
618.890	23.689	-1.454	22.235	34.445	45.086	45.086
618.900	24.040	-1.467	22.573	34.783	45.086	45.086
618.910	23.975	-1.476	22.499	34.709	45.086	45.086
618.920	24.786	-1.475	23.311	35.521	45.086	45.086
618.930	23.487	-1.510	21.977	34.187	45.086	45.086
618.940	22.893	-1.507	21.386	33.596	45.086	45.086
618.950	21.496	-1.505	19.991	32.201	45.086	45.086
618.960	21.866	-1.516	20.350	32.560	45.086	45.086
618.970	20.545	-1.502	19.043	31.253	45.086	45.086
618.980	25.051	-1.514	23.537	35.747	45.086	45.086
618.990	23.052	-1.523	21.529	33.739	45.086	45.086
619.000	24.025	-1.524	22.501	34.711	45.086	45.086
619.010	24.223	-1.537	22.686	34.896	45.086	45.086
619.020	22.417	-1.534	20.883	33.093	45.086	45.086
619.030	23.162	-1.569	21.593	33.803	45.086	45.086
619.040	22.935	-1.578	21.357	33.567	45.086	45.086
619.050	23.238	-1.570	21.668	33.878	45.086	45.086
619.060	21.899	-1.566	20.333	32.543	45.086	45.086
619.070	23.048	-1.563	21.485	33.695	45.086	45.086
619.080	22.799	-1.573	21.226	33.436	45.086	45.086
619.090	23.721	-1.584	22.137	34.347	45.086	45.086
619.100	24.327	-1.600	22.727	34.937	45.086	45.086
619.110	23.113	-1.600	21.513	33.723	45.086	45.086
619.120	24.097	-1.598	22.499	34.709	45.086	45.086
619.130	23.801	-1.607	22.194	34.404	45.086	45.086

619.140	20.873	-1.625	19.248	31.458	45.086	45.086
619.150	23.750	-1.640	22.110	34.320	45.086	45.086
619.160	22.239	-1.645	20.594	32.804	45.086	45.086
619.170	22.585	-1.669	20.916	33.126	45.086	45.086
619.180	23.014	-1.659	21.355	33.565	45.086	45.086
619.190	23.231	-1.663	21.568	33.778	45.086	45.086
619.200	22.671	-1.658	21.013	33.223	45.086	45.086
619.210	22.553	-1.681	20.872	33.082	45.086	45.086
619.220	25.418	-1.681	23.737	35.947	45.086	45.086
619.230	22.825	-1.675	21.150	33.360	45.086	45.086
619.240	24.186	-1.700	22.486	34.696	45.086	45.086
619.250	25.531	-1.704	23.827	36.037	45.086	45.086
619.260	24.928	-1.710	23.218	35.428	45.086	45.086
619.270	24.493	-1.727	22.766	34.976	45.086	45.086
619.280	24.979	-1.722	23.257	35.467	45.086	45.086
619.290	23.205	-1.752	21.453	33.663	45.086	45.086
619.300	23.891	-1.759	22.132	34.342	45.086	45.086
619.310	23.323	-1.753	21.570	33.780	45.086	45.086
619.320	23.012	-1.763	21.249	33.459	45.086	45.086
619.330	21.469	-1.776	19.693	31.903	45.086	45.086
619.340	24.923	-1.787	23.136	35.346	45.086	45.086
619.350	24.312	-1.799	22.513	34.723	45.086	45.086
619.360	21.120	-1.808	19.312	31.522	45.086	45.086
619.370	21.214	-1.812	19.402	31.612	45.086	45.086
619.380	22.705	-1.835	20.870	33.080	45.086	45.086
619.390	22.112	-1.840	20.272	32.482	45.086	45.086
619.400	22.753	-1.839	20.914	33.124	45.086	45.086
619.410	21.165	-1.854	19.311	31.521	45.086	45.086
619.420	23.003	-1.876	21.127	33.337	45.086	45.086
619.430	23.656	-1.895	21.761	33.971	45.086	45.086
619.440	22.684	-1.898	20.786	32.996	45.086	45.086
619.450	22.513	-1.913	20.600	32.810	45.086	45.086
619.460	23.566	-1.904	21.662	33.872	45.086	45.086
619.470	24.937	-1.925	23.012	35.222	45.086	45.086
619.480	25.518	-1.948	23.570	35.780	45.086	45.086
619.490	24.619	-1.967	22.652	34.862	45.086	45.086
619.500	22.466	-1.968	20.498	32.708	45.086	45.086
619.510	24.242	-1.978	22.264	34.474	45.086	45.086
619.520	22.474	-1.994	20.480	32.690	45.086	45.086
619.530	25.374	-2.025	23.349	35.559	45.086	45.086
619.540	23.903	-2.051	21.852	34.062	45.086	45.086
619.550	24.351	-2.052	22.299	34.509	45.086	45.086
619.560	21.732	-2.049	19.683	31.893	45.086	45.086
619.570	22.824	-2.081	20.743	32.953	45.086	45.086
619.580	22.353	-2.085	20.268	32.478	45.086	45.086
619.590	22.427	-2.100	20.327	32.537	45.086	45.086
619.600	21.397	-2.099	19.298	31.508	45.086	45.086
619.610	21.750	-2.105	19.645	31.855	45.086	45.086
619.620	22.231	-2.144	20.087	32.297	45.086	45.086
619.630	22.377	-2.154	20.223	32.433	45.086	45.086
619.640	23.566	-2.174	21.392	33.602	45.086	45.086
619.650	22.423	-2.207	20.216	32.426	45.086	45.086
619.660	21.362	-2.205	19.157	31.367	45.086	45.086
619.670	20.123	-2.234	17.889	30.099	45.086	45.086
619.680	17.560	-2.260	15.300	27.510	45.086	45.086

619.690	16.883	-2.286	14.597	26.807	45.086	45.086
619.700	16.885	-2.312	14.573	26.783	45.086	45.086
619.710	21.924	-2.313	19.611	31.821	45.086	45.086
619.720	21.389	-2.350	19.039	31.249	45.086	45.086
619.730	18.657	-2.374	16.283	28.493	45.086	45.086
619.740	20.518	-2.385	18.133	30.343	45.086	45.086
619.750	19.376	-2.420	16.956	29.166	45.086	45.086
619.760	18.459	-2.459	16.000	28.210	45.086	45.086
619.770	18.062	-2.448	15.614	27.824	45.086	45.086
619.780	15.558	-2.471	13.087	25.297	45.086	45.086
619.790	18.240	-2.499	15.741	27.951	45.086	45.086
619.800	16.392	-2.532	13.860	26.070	45.086	45.086
619.810	15.638	-2.584	13.054	25.264	45.086	45.086
619.820	14.462	-2.621	11.841	24.051	45.086	45.086
619.830	14.367	-2.627	11.740	23.950	45.086	45.086
619.840	17.299	-2.656	14.643	26.853	45.086	45.086
619.850	14.425	-2.701	11.724	23.934	45.086	45.086
619.860	13.163	-2.735	10.428	22.638	45.086	45.086
619.870	12.878	-2.769	10.109	22.319	45.086	45.086
619.880	13.741	-2.818	10.923	23.133	45.086	45.086
619.890	10.506	-2.889	7.617	19.827	45.086	45.086
619.900	11.428	-2.902	8.526	20.736	45.086	45.086
619.910	7.674	-2.925	4.749	16.959	45.086	45.086
619.920	6.907	-2.992	3.915	16.125	45.086	45.086
619.930	4.969	-3.051	1.918	14.128	45.086	45.086
619.940	4.610	-3.109	1.501	13.711	45.086	45.086
619.950	0.811	-3.173	-2.362	9.848	45.086	45.086
619.960	0.682	-3.228	-2.546	9.664	45.086	45.086
619.970	-3.171	-3.291	-6.462	5.748	45.086	45.086
619.980	-6.766	-3.366	-10.132	2.078	45.086	45.086
619.990	-8.393	-3.439	-11.832	0.378	45.086	45.086
Upper Band Edge						
620.000	-12.578	-3.510	-16.088	-3.878	45.086	-1.914
620.010	-14.991	-3.597	-18.588	-6.378	-0.914	-1.914
620.020	-14.684	-3.671	-18.355	-6.145	-0.914	-1.914
620.030	-14.110	-3.752	-17.862	-5.652	-0.914	-1.914
620.040	-15.192	-3.860	-19.052	-6.842	-0.914	-1.914
620.050	-15.313	-3.953	-19.266	-7.056	-0.914	-1.914
620.060	-16.227	-4.062	-20.289	-8.079	-0.914	-1.914
620.070	-15.473	-4.194	-19.667	-7.457	-0.914	-1.914
620.080	-14.259	-4.326	-18.585	-6.375	-0.914	-1.914
620.090	-16.730	-4.450	-21.180	-8.970	-0.914	-1.914
620.100	-16.666	-4.598	-21.264	-9.054	-0.914	-1.914
620.110	-16.275	-4.735	-21.010	-8.800	-0.914	-1.914
620.120	-16.249	-4.928	-21.177	-8.967	-0.914	-1.914
620.130	-18.477	-5.115	-23.592	-11.382	-0.914	-1.914
620.140	-16.236	-5.300	-21.536	-9.326	-0.914	-1.914
620.150	-14.959	-5.477	-20.436	-8.226	-0.914	-1.914
620.160	-15.942	-5.676	-21.618	-9.408	-0.914	-1.914
620.170	-16.858	-5.900	-22.758	-10.548	-0.914	-1.914
620.180	-13.807	-6.151	-19.958	-7.748	-0.914	-1.914
620.190	-13.858	-6.417	-20.275	-8.065	-0.914	-1.914
620.200	-15.252	-6.719	-21.971	-9.761	-0.914	-1.914
620.210	-13.585	-6.992	-20.577	-8.367	-0.914	-1.914

620.220	-14.604	-7.296	-21.900	-9.690	-0.914	-1.914
620.230	-15.305	-7.603	-22.908	-10.698	-0.914	-1.914
620.240	-15.188	-7.940	-23.128	-10.918	-0.914	-1.914
620.250	-14.783	-8.288	-23.071	-10.861	-0.958	-1.914
620.260	-16.818	-8.682	-25.500	-13.290	-0.961	-1.914
620.270	-15.178	-9.052	-24.230	-12.020	-0.965	-1.914
620.280	-16.829	-9.464	-26.293	-14.083	-0.969	-1.914
620.290	-17.501	-9.879	-27.380	-15.170	-0.973	-1.914
620.300	-18.914	-10.325	-29.239	-17.029	-0.977	-1.914
620.310	-16.400	-10.783	-27.183	-14.973	-0.981	-1.914
620.320	-16.758	-11.234	-27.992	-15.782	-0.985	-1.914
620.330	-15.884	-11.748	-27.632	-15.422	-0.990	-1.914
620.340	-16.225	-12.236	-28.461	-16.251	-0.994	-1.914
620.350	-16.059	-12.737	-28.796	-16.586	-0.999	-1.914
620.360	-14.787	-13.262	-28.049	-15.839	-1.004	-1.914
620.370	-16.055	-13.819	-29.874	-17.664	-1.009	-1.914
620.380	-15.966	-14.353	-30.319	-18.109	-1.014	-1.914
620.390	-17.712	-14.839	-32.551	-20.341	-1.020	-1.914
620.400	-15.812	-15.388	-31.200	-18.990	-1.025	-1.914
620.410	-14.529	-15.935	-30.464	-18.254	-1.031	-1.914
620.420	-16.421	-16.439	-32.860	-20.650	-1.037	-1.914
620.430	-17.135	-16.973	-34.108	-21.898	-1.043	-1.914
620.440	-17.172	-17.445	-34.617	-22.407	-1.049	-1.914
620.450	-15.776	-17.922	-33.698	-21.488	-1.055	-1.914
620.460	-18.058	-18.341	-36.399	-24.189	-1.061	-1.914
620.470	-14.386	-18.728	-33.114	-20.904	-1.068	-1.914
620.480	-16.726	-19.059	-35.785	-23.575	-1.074	-1.914
620.490	-17.713	-19.350	-37.063	-24.853	-1.081	-1.914
620.500	-16.250	-19.585	-35.835	-23.625	-1.088	-1.914
620.510	-16.700	-19.774	-36.474	-24.264	-1.095	-2.029
620.520	-15.429	-19.880	-35.309	-23.099	-1.102	-2.144
620.530	-16.290	-19.951	-36.241	-24.031	-1.109	-2.259
620.540	-15.842	-19.997	-35.839	-23.629	-1.117	-2.374
620.550	-16.296	-19.972	-36.268	-24.058	-1.124	-2.489
620.560	-14.965	-19.911	-34.876	-22.666	-1.132	-2.604
620.570	-16.405	-19.849	-36.254	-24.044	-1.140	-2.719
620.580	-17.616	-19.764	-37.380	-25.170	-1.148	-2.834
620.590	-18.929	-19.643	-38.572	-26.362	-1.156	-2.949
620.600	-14.972	-19.543	-34.515	-22.305	-1.164	-3.064
620.610	-16.597	-19.403	-36.000	-23.790	-1.173	-3.179
620.620	-17.446	-19.274	-36.720	-24.510	-1.181	-3.294
620.630	-15.008	-19.161	-34.169	-21.959	-1.190	-3.409
620.640	-15.948	-19.030	-34.978	-22.768	-1.199	-3.524
620.650	-17.535	-18.908	-36.443	-24.233	-1.208	-3.639
620.660	-17.210	-18.784	-35.994	-23.784	-1.217	-3.754
620.670	-16.322	-18.659	-34.981	-22.771	-1.226	-3.869
620.680	-17.388	-18.562	-35.950	-23.740	-1.235	-3.984
620.690	-17.538	-18.479	-36.017	-23.807	-1.245	-4.099
620.700	-16.743	-18.368	-35.111	-22.901	-1.254	-4.214
620.710	-17.031	-18.273	-35.304	-23.094	-1.264	-4.329
620.720	-17.044	-18.201	-35.245	-23.035	-1.274	-4.444
620.730	-14.410	-18.092	-32.502	-20.292	-1.284	-4.559
620.740	-15.034	-18.035	-33.069	-20.859	-1.294	-4.674
620.750	-17.746	-17.963	-35.709	-23.499	-1.305	-4.789
620.760	-16.352	-17.886	-34.238	-22.028	-1.315	-4.904

620.770	-16.919	-17.830	-34.749	-22.539	-1.326	-5.019
620.780	-15.989	-17.777	-33.766	-21.556	-1.337	-5.134
620.790	-15.636	-17.733	-33.369	-21.159	-1.348	-5.249
620.800	-15.105	-17.691	-32.796	-20.586	-1.359	-5.364
620.810	-15.748	-17.630	-33.378	-21.168	-1.370	-5.479
620.820	-16.545	-17.607	-34.152	-21.942	-1.381	-5.594
620.830	-17.787	-17.589	-35.376	-23.166	-1.393	-5.709
620.840	-16.174	-17.569	-33.743	-21.533	-1.404	-5.824
620.850	-14.812	-17.540	-32.352	-20.142	-1.416	-5.939
620.860	-16.571	-17.497	-34.068	-21.858	-1.428	-6.054
620.870	-17.708	-17.494	-35.202	-22.992	-1.440	-6.169
620.880	-16.791	-17.490	-34.281	-22.071	-1.452	-6.284
620.890	-16.827	-17.504	-34.331	-22.121	-1.464	-6.399
620.900	-16.664	-17.491	-34.155	-21.945	-1.477	-6.514
620.910	-15.511	-17.496	-33.007	-20.797	-1.489	-6.629
620.920	-15.538	-17.478	-33.016	-20.806	-1.502	-6.744
620.930	-15.919	-17.465	-33.384	-21.174	-1.515	-6.859
620.940	-16.344	-17.479	-33.823	-21.613	-1.528	-6.974
620.950	-16.565	-17.513	-34.078	-21.868	-1.541	-7.089
620.960	-14.714	-17.527	-32.241	-20.031	-1.554	-7.204
620.970	-15.477	-17.538	-33.015	-20.805	-1.568	-7.319
620.980	-16.613	-17.547	-34.160	-21.950	-1.581	-7.434
620.990	-16.299	-17.580	-33.879	-21.669	-1.595	-7.549
621.000	-17.773	-17.577	-35.350	-23.140	-1.609	-7.664
621.010	-15.519	-17.605	-33.124	-20.914	-1.623	-7.779
621.020	-18.136	-17.630	-35.766	-23.556	-1.637	-7.894
621.030	-16.208	-17.678	-33.886	-21.676	-1.651	-8.009
621.040	-16.432	-17.694	-34.126	-21.916	-1.665	-8.124
621.050	-16.155	-17.714	-33.869	-21.659	-1.680	-8.239
621.060	-17.398	-17.739	-35.137	-22.927	-1.694	-8.354
621.070	-15.430	-17.772	-33.202	-20.992	-1.709	-8.469
621.080	-15.593	-17.822	-33.415	-21.205	-1.724	-8.584
621.090	-17.628	-17.846	-35.474	-23.264	-1.739	-8.699
621.100	-16.104	-17.885	-33.989	-21.779	-1.754	-8.814
621.110	-15.814	-17.911	-33.725	-21.515	-1.770	-8.929
621.120	-15.624	-17.930	-33.554	-21.344	-1.785	-9.044
621.130	-14.795	-17.993	-32.788	-20.578	-1.801	-9.159
621.140	-16.533	-18.044	-34.577	-22.367	-1.817	-9.274
621.150	-16.249	-18.090	-34.339	-22.129	-1.833	-9.389
621.160	-19.299	-18.112	-37.411	-25.201	-1.849	-9.504
621.170	-16.813	-18.170	-34.983	-22.773	-1.865	-9.619
621.180	-14.955	-18.225	-33.180	-20.970	-1.881	-9.734
621.190	-15.804	-18.256	-34.060	-21.850	-1.898	-9.849
621.200	-15.872	-18.294	-34.166	-21.956	-1.914	-9.964
621.210	-17.713	-18.339	-36.052	-23.842	-1.931	-10.079
621.220	-16.997	-18.391	-35.388	-23.178	-1.948	-10.194
621.230	-15.512	-18.434	-33.946	-21.736	-1.965	-10.309
621.240	-17.818	-18.499	-36.317	-24.107	-1.982	-10.424
621.250	-18.797	-18.524	-37.321	-25.111	-1.999	-10.539
621.260	-18.533	-18.597	-37.130	-24.920	-2.017	-10.654
621.270	-18.766	-18.641	-37.407	-25.197	-2.034	-10.769
621.280	-17.143	-18.694	-35.837	-23.627	-2.052	-10.884
621.290	-16.273	-18.745	-35.018	-22.808	-2.070	-10.999
621.300	-16.467	-18.798	-35.265	-23.055	-2.088	-11.114
621.310	-17.023	-18.835	-35.858	-23.648	-2.106	-11.229

621.320	-16.913	-18.909	-35.822	-23.612	-2.124	-11.344
621.330	-15.752	-18.971	-34.723	-22.513	-2.143	-11.459
621.340	-14.764	-19.035	-33.799	-21.589	-2.161	-11.574
621.350	-15.460	-19.084	-34.544	-22.334	-2.180	-11.689
621.360	-15.616	-19.131	-34.747	-22.537	-2.199	-11.804
621.370	-17.462	-19.191	-36.653	-24.443	-2.218	-11.919
621.380	-16.433	-19.218	-35.651	-23.441	-2.237	-12.034
621.390	-16.121	-19.300	-35.421	-23.211	-2.256	-12.149
621.400	-14.574	-19.341	-33.915	-21.705	-2.275	-12.264
621.410	-15.852	-19.401	-35.253	-23.043	-2.295	-12.379
621.420	-18.261	-19.477	-37.738	-25.528	-2.314	-12.494
621.430	-17.363	-19.552	-36.915	-24.705	-2.334	-12.609
621.440	-17.323	-19.600	-36.923	-24.713	-2.354	-12.724
621.450	-17.095	-19.666	-36.761	-24.551	-2.374	-12.839
621.460	-16.892	-19.696	-36.588	-24.378	-2.394	-12.954
621.470	-17.353	-19.776	-37.129	-24.919	-2.415	-13.069
621.480	-16.700	-19.822	-36.522	-24.312	-2.435	-13.184
621.490	-16.930	-19.884	-36.814	-24.604	-2.456	-13.299
621.500	-15.164	-19.941	-35.105	-22.895	-2.477	-13.414
621.510	-17.896	-20.013	-37.909	-25.699	-2.498	-13.529
621.520	-17.688	-20.072	-37.760	-25.550	-2.519	-13.644
621.530	-17.011	-20.145	-37.156	-24.946	-2.540	-13.759
621.540	-16.634	-20.217	-36.851	-24.641	-2.561	-13.874
621.550	-17.353	-20.275	-37.628	-25.418	-2.583	-13.989
621.560	-16.530	-20.335	-36.865	-24.655	-2.604	-14.104
621.570	-16.768	-20.384	-37.152	-24.942	-2.626	-14.219
621.580	-17.605	-20.435	-38.040	-25.830	-2.648	-14.334
621.590	-15.556	-20.487	-36.043	-23.833	-2.670	-14.449
621.600	-17.204	-20.549	-37.753	-25.543	-2.692	-14.564
621.610	-15.454	-20.639	-36.093	-23.883	-2.714	-14.679
621.620	-17.217	-20.703	-37.920	-25.710	-2.737	-14.794
621.630	-16.448	-20.738	-37.186	-24.976	-2.759	-14.909
621.640	-14.738	-20.813	-35.551	-23.341	-2.782	-15.024
621.650	-16.044	-20.883	-36.927	-24.717	-2.805	-15.139
621.660	-17.802	-20.922	-38.724	-26.514	-2.828	-15.254
621.670	-18.021	-21.007	-39.028	-26.818	-2.851	-15.369
621.680	-17.507	-21.066	-38.573	-26.363	-2.874	-15.484
621.690	-17.547	-21.162	-38.709	-26.499	-2.898	-15.599
621.700	-18.342	-21.209	-39.551	-27.341	-2.921	-15.714
621.710	-16.725	-21.269	-37.994	-25.784	-2.945	-15.829
621.720	-16.950	-21.324	-38.274	-26.064	-2.969	-15.944
621.730	-17.436	-21.409	-38.845	-26.635	-2.993	-16.059
621.740	-16.393	-21.463	-37.856	-25.646	-3.017	-16.174
621.750	-17.046	-21.553	-38.599	-26.389	-3.041	-16.289
621.760	-17.421	-21.598	-39.019	-26.809	-3.065	-16.404
621.770	-18.194	-21.661	-39.855	-27.645	-3.090	-16.519
621.780	-18.429	-21.705	-40.134	-27.924	-3.114	-16.634
621.790	-17.653	-21.787	-39.440	-27.230	-3.139	-16.749
621.800	-18.793	-21.853	-40.646	-28.436	-3.164	-16.864
621.810	-19.015	-21.902	-40.917	-28.707	-3.189	-16.979
621.820	-15.987	-21.972	-37.959	-25.749	-3.214	-17.094
621.830	-18.748	-22.034	-40.782	-28.572	-3.240	-17.209
621.840	-15.943	-22.095	-38.038	-25.828	-3.265	-17.324
621.850	-17.361	-22.166	-39.527	-27.317	-3.291	-17.439
621.860	-18.323	-22.250	-40.573	-28.363	-3.317	-17.554

621.870	-16.523	-22.300	-38.823	-26.613	-3.343	-17.669
621.880	-15.163	-22.358	-37.521	-25.311	-3.369	-17.784
621.890	-18.706	-22.462	-41.168	-28.958	-3.395	-17.899
621.900	-19.113	-22.518	-41.631	-29.421	-3.421	-18.014
621.910	-16.300	-22.566	-38.866	-26.656	-3.448	-18.129
621.920	-18.549	-22.627	-41.176	-28.966	-3.474	-18.244
621.930	-18.547	-22.690	-41.237	-29.027	-3.501	-18.359
621.940	-17.639	-22.779	-40.418	-28.208	-3.528	-18.474
621.950	-18.934	-22.826	-41.760	-29.550	-3.555	-18.589
621.960	-17.178	-22.871	-40.049	-27.839	-3.582	-18.704
621.970	-16.980	-22.931	-39.911	-27.701	-3.609	-18.819
621.980	-17.189	-23.017	-40.206	-27.996	-3.637	-18.934
621.990	-17.018	-23.072	-40.090	-27.880	-3.664	-19.049
622.000	-17.949	-23.149	-41.098	-28.888	-3.692	-19.164
622.010	-16.625	-23.211	-39.836	-27.626	-3.720	-19.279
622.020	-15.905	-23.272	-39.177	-26.967	-3.748	-19.394
622.030	-16.307	-23.332	-39.639	-27.429	-3.776	-19.509
622.040	-16.183	-23.390	-39.573	-27.363	-3.804	-19.624
622.050	-17.154	-23.440	-40.594	-28.384	-3.833	-19.739
622.060	-17.987	-23.539	-41.526	-29.316	-3.861	-19.854
622.070	-18.074	-23.574	-41.648	-29.438	-3.890	-19.969
622.080	-18.106	-23.647	-41.753	-29.543	-3.919	-20.084
622.090	-16.442	-23.730	-40.172	-27.962	-3.948	-20.199
622.100	-16.398	-23.776	-40.174	-27.964	-3.977	-20.314
622.110	-18.598	-23.834	-42.432	-30.222	-4.006	-20.429
622.120	-18.072	-23.903	-41.975	-29.765	-4.035	-20.544
622.130	-17.819	-23.976	-41.795	-29.585	-4.065	-20.659
622.140	-16.404	-24.060	-40.464	-28.254	-4.094	-20.774
622.150	-19.173	-24.110	-43.283	-31.073	-4.124	-20.889
622.160	-17.590	-24.169	-41.759	-29.549	-4.154	-21.004
622.170	-16.940	-24.217	-41.157	-28.947	-4.184	-21.119
622.180	-17.943	-24.313	-42.256	-30.046	-4.214	-21.234
622.190	-16.078	-24.368	-40.446	-28.236	-4.245	-21.349
622.200	-15.237	-24.420	-39.657	-27.447	-4.275	-21.464
622.210	-19.070	-24.479	-43.549	-31.339	-4.306	-21.579
622.220	-17.319	-24.556	-41.875	-29.665	-4.337	-21.694
622.230	-18.631	-24.608	-43.239	-31.029	-4.368	-21.809
622.240	-17.142	-24.687	-41.829	-29.619	-4.399	-21.924
622.250	-18.237	-24.746	-42.983	-30.773	-4.430	-22.039
622.260	-18.212	-24.826	-43.038	-30.828	-4.461	-22.154
622.270	-16.910	-24.902	-41.812	-29.602	-4.493	-22.269
622.280	-19.018	-24.943	-43.961	-31.751	-4.524	-22.384
622.290	-17.212	-24.982	-42.194	-29.984	-4.556	-22.499
622.300	-18.434	-25.067	-43.501	-31.291	-4.588	-22.614
622.310	-16.050	-25.148	-41.198	-28.988	-4.620	-22.729
622.320	-19.178	-25.202	-44.380	-32.170	-4.652	-22.844
622.330	-19.313	-25.252	-44.565	-32.355	-4.684	-22.959
622.340	-17.438	-25.290	-42.728	-30.518	-4.717	-23.074
622.350	-16.554	-25.397	-41.951	-29.741	-4.749	-23.189
622.360	-16.990	-25.449	-42.439	-30.229	-4.782	-23.304
622.370	-16.805	-25.523	-42.328	-30.118	-4.815	-23.419
622.380	-18.974	-25.573	-44.547	-32.337	-4.848	-23.534
622.390	-19.810	-25.649	-45.459	-33.249	-4.881	-23.649
622.400	-19.127	-25.706	-44.833	-32.623	-4.914	-23.764
622.410	-17.547	-25.751	-43.298	-31.088	-4.948	-23.879

622.420	-16.457	-25.829	-42.286	-30.076	-4.981	-23.994
622.430	-19.235	-25.885	-45.120	-32.910	-5.015	-24.109
622.440	-20.664	-25.965	-46.629	-34.419	-5.049	-24.224
622.450	-16.990	-26.002	-42.992	-30.782	-5.083	-24.339
622.460	-18.809	-26.093	-44.902	-32.692	-5.117	-24.454
622.470	-18.727	-26.138	-44.865	-32.655	-5.151	-24.569
622.480	-19.293	-26.202	-45.495	-33.285	-5.185	-24.684
622.490	-19.203	-26.268	-45.471	-33.261	-5.220	-24.799
622.500	-15.557	-26.294	-41.851	-29.641	-5.254	-24.914
622.510	-17.957	-26.409	-44.366	-32.156	-5.289	-25.029
622.520	-19.703	-26.446	-46.149	-33.939	-5.324	-25.144
622.530	-18.875	-26.520	-45.395	-33.185	-5.359	-25.259
622.540	-18.415	-26.550	-44.965	-32.755	-5.394	-25.374
622.550	-17.773	-26.603	-44.376	-32.166	-5.430	-25.489
622.560	-18.814	-26.698	-45.512	-33.302	-5.465	-25.604
622.570	-18.613	-26.763	-45.376	-33.166	-5.501	-25.719
622.580	-16.377	-26.827	-43.204	-30.994	-5.537	-25.834
622.590	-17.950	-26.892	-44.842	-32.632	-5.573	-25.949
622.600	-17.551	-26.945	-44.496	-32.286	-5.609	-26.064
622.610	-19.162	-26.997	-46.159	-33.949	-5.645	-26.179
622.620	-18.518	-27.063	-45.581	-33.371	-5.681	-26.294
622.630	-20.738	-27.133	-47.871	-35.661	-5.718	-26.409
622.640	-16.156	-27.188	-43.344	-31.134	-5.754	-26.524
622.650	-16.315	-27.231	-43.546	-31.336	-5.791	-26.639
622.660	-17.900	-27.311	-45.211	-33.001	-5.828	-26.754
622.670	-17.081	-27.367	-44.448	-32.238	-5.865	-26.869
622.680	-17.458	-27.428	-44.886	-32.676	-5.902	-26.984
622.690	-17.608	-27.491	-45.099	-32.889	-5.939	-27.099
622.700	-20.888	-27.530	-48.418	-36.208	-5.977	-27.214
622.710	-18.537	-27.614	-46.151	-33.941	-6.014	-27.329
622.720	-19.835	-27.686	-47.521	-35.311	-6.052	-27.444
622.730	-18.368	-27.724	-46.092	-33.882	-6.090	-27.559
622.740	-16.917	-27.758	-44.675	-32.465	-6.128	-27.674
622.750	-17.776	-27.819	-45.595	-33.385	-6.166	-27.789
622.760	-20.076	-27.905	-47.981	-35.771	-6.204	-27.904
622.770	-18.127	-27.950	-46.077	-33.867	-6.243	-28.019
622.780	-17.385	-28.038	-45.423	-33.213	-6.281	-28.134
622.790	-20.591	-28.083	-48.674	-36.464	-6.320	-28.249
622.800	-18.181	-28.146	-46.327	-34.117	-6.359	-28.364
622.810	-18.000	-28.208	-46.208	-33.998	-6.398	-28.479
622.820	-18.053	-28.253	-46.306	-34.096	-6.437	-28.594
622.830	-18.064	-28.324	-46.388	-34.178	-6.476	-28.709
622.840	-18.749	-28.382	-47.131	-34.921	-6.515	-28.824
622.850	-18.578	-28.446	-47.024	-34.814	-6.555	-28.939
622.860	-20.574	-28.494	-49.068	-36.858	-6.594	-29.054
622.870	-20.131	-28.543	-48.674	-36.464	-6.634	-29.169
622.880	-17.542	-28.620	-46.162	-33.952	-6.674	-29.284
622.890	-18.299	-28.678	-46.977	-34.767	-6.714	-29.399
622.900	-18.798	-28.758	-47.556	-35.346	-6.754	-29.514
622.910	-17.533	-28.778	-46.311	-34.101	-6.795	-29.629
622.920	-17.640	-28.835	-46.475	-34.265	-6.835	-29.744
622.930	-18.688	-28.893	-47.581	-35.371	-6.876	-29.859
622.940	-17.877	-28.970	-46.847	-34.637	-6.917	-29.974
622.950	-20.145	-29.024	-49.169	-36.959	-6.958	-30.089
622.960	-19.179	-29.099	-48.278	-36.068	-6.999	-30.204

622.970	-19.553	-29.176	-48.729	-36.519	-7.040	-30.319
622.980	-20.531	-29.232	-49.763	-37.553	-7.081	-30.434
622.990	-18.151	-29.277	-47.428	-35.218	-7.123	-30.549
623.000	-19.878	-29.319	-49.197	-36.987	-7.164	-30.914
623.010	-17.043	-29.395	-46.438	-34.228	-7.206	-30.914
623.020	-18.776	-29.452	-48.228	-36.018	-7.248	-30.914
623.030	-18.830	-29.517	-48.347	-36.137	-7.290	-30.914
623.040	-17.918	-29.555	-47.473	-35.263	-7.332	-30.914
623.050	-17.218	-29.594	-46.812	-34.602	-7.374	-30.914
623.060	-20.013	-29.661	-49.674	-37.464	-7.417	-30.914
623.070	-18.768	-29.747	-48.515	-36.305	-7.459	-30.914
623.080	-18.920	-29.799	-48.719	-36.509	-7.502	-30.914
623.090	-19.552	-29.855	-49.407	-37.197	-7.545	-30.914
623.100	-20.462	-29.910	-50.372	-38.162	-7.588	-30.914
623.110	-19.039	-29.975	-49.014	-36.804	-7.631	-30.914
623.120	-18.849	-30.025	-48.874	-36.664	-7.674	-30.914
623.130	-20.003	-30.091	-50.094	-37.884	-7.718	-30.914
623.140	-18.630	-30.133	-48.763	-36.553	-7.761	-30.914
623.150	-19.041	-30.173	-49.214	-37.004	-7.805	-30.914
623.160	-20.222	-30.238	-50.460	-38.250	-7.849	-30.914
623.170	-22.356	-30.318	-52.674	-40.464	-7.893	-30.914
623.180	-20.562	-30.351	-50.913	-38.703	-7.937	-30.914
623.190	-22.327	-30.393	-52.720	-40.510	-7.981	-30.914
623.200	-18.323	-30.444	-48.767	-36.557	-8.025	-30.914
623.210	-20.428	-30.528	-50.956	-38.746	-8.070	-30.914
623.220	-18.791	-30.582	-49.373	-37.163	-8.114	-30.914
623.230	-17.922	-30.635	-48.557	-36.347	-8.159	-30.914
623.240	-21.334	-30.683	-52.017	-39.807	-8.204	-30.914
623.250	-20.599	-30.740	-51.339	-39.129	-8.249	-30.914
623.260	-21.720	-30.826	-52.546	-40.336	-8.294	-30.914
623.270	-19.009	-30.896	-49.905	-37.695	-8.340	-30.914
623.280	-19.745	-30.905	-50.650	-38.440	-8.385	-30.914
623.290	-21.345	-30.958	-52.303	-40.093	-8.431	-30.914
623.300	-19.590	-31.033	-50.623	-38.413	-8.477	-30.914
623.310	-18.606	-31.096	-49.702	-37.492	-8.523	-30.914
623.320	-20.572	-31.170	-51.742	-39.532	-8.569	-30.914
623.330	-21.227	-31.216	-52.443	-40.233	-8.615	-30.914
623.340	-20.907	-31.247	-52.154	-39.944	-8.661	-30.914
623.350	-20.599	-31.305	-51.904	-39.694	-8.708	-30.914
623.360	-19.630	-31.412	-51.042	-38.832	-8.754	-30.914
623.370	-19.755	-31.426	-51.181	-38.971	-8.801	-30.914
623.380	-21.394	-31.468	-52.862	-40.652	-8.848	-30.914
623.390	-20.729	-31.528	-52.257	-40.047	-8.895	-30.914
623.400	-20.585	-31.593	-52.178	-39.968	-8.942	-30.914
623.410	-18.091	-31.645	-49.736	-37.526	-8.989	-30.914
623.420	-20.409	-31.703	-52.112	-39.902	-9.037	-30.914
623.430	-18.490	-31.756	-50.246	-38.036	-9.084	-30.914
623.440	-19.233	-31.800	-51.033	-38.823	-9.132	-30.914
623.450	-20.706	-31.864	-52.570	-40.360	-9.180	-30.914
623.460	-20.280	-31.932	-52.212	-40.002	-9.228	-30.914
623.470	-20.731	-31.976	-52.707	-40.497	-9.276	-30.914
623.480	-21.240	-32.029	-53.269	-41.059	-9.324	-30.914
623.490	-19.335	-32.088	-51.423	-39.213	-9.373	-30.914
623.500	-19.994	-32.163	-52.157	-39.947	-9.421	-30.914
623.510	-20.228	-32.205	-52.433	-40.223	-9.470	-30.914

623.520	-20.681	-32.236	-52.917	-40.707	-9.519	-30.914
623.530	-20.321	-32.303	-52.624	-40.414	-9.568	-30.914
623.540	-18.094	-32.341	-50.435	-38.225	-9.617	-30.914
623.550	-20.187	-32.403	-52.590	-40.380	-9.666	-30.914
623.560	-19.727	-32.461	-52.188	-39.978	-9.715	-30.914
623.570	-19.807	-32.521	-52.328	-40.118	-9.765	-30.914
623.580	-19.537	-32.560	-52.097	-39.887	-9.814	-30.914
623.590	-18.827	-32.623	-51.450	-39.240	-9.864	-30.914
623.600	-19.457	-32.675	-52.132	-39.922	-9.914	-30.914
623.610	-20.048	-32.722	-52.770	-40.560	-9.964	-30.914
623.620	-21.688	-32.795	-54.483	-42.273	-10.014	-30.914
623.630	-19.470	-32.841	-52.311	-40.101	-10.065	-30.914
623.640	-19.512	-32.908	-52.420	-40.210	-10.115	-30.914
623.650	-20.965	-32.962	-53.927	-41.717	-10.166	-30.914
623.660	-19.939	-32.991	-52.930	-40.720	-10.217	-30.914
623.670	-20.403	-33.067	-53.470	-41.260	-10.268	-30.914
623.680	-20.590	-33.098	-53.688	-41.478	-10.319	-30.914
623.690	-21.249	-33.150	-54.399	-42.189	-10.370	-30.914
623.700	-20.235	-33.200	-53.435	-41.225	-10.421	-30.914
623.710	-20.017	-33.249	-53.266	-41.056	-10.473	-30.914
623.720	-20.995	-33.292	-54.287	-42.077	-10.524	-30.914
623.730	-19.915	-33.355	-53.270	-41.060	-10.576	-30.914
623.740	-22.470	-33.419	-55.889	-43.679	-10.628	-30.914
623.750	-22.419	-33.467	-55.886	-43.676	-10.680	-30.914
623.760	-22.407	-33.549	-55.956	-43.746	-10.732	-30.914
623.770	-19.784	-33.579	-53.363	-41.153	-10.784	-30.914
623.780	-19.418	-33.615	-53.033	-40.823	-10.837	-30.914
623.790	-18.838	-33.697	-52.535	-40.325	-10.889	-30.914
623.800	-19.784	-33.743	-53.527	-41.317	-10.942	-30.914
623.810	-21.681	-33.779	-55.460	-43.250	-10.995	-30.914
623.820	-21.726	-33.811	-55.537	-43.327	-11.048	-30.914
623.830	-20.363	-33.891	-54.254	-42.044	-11.101	-30.914
623.840	-21.636	-33.955	-55.591	-43.381	-11.154	-30.914
623.850	-20.906	-33.989	-54.895	-42.685	-11.208	-30.914
623.860	-22.768	-34.040	-56.808	-44.598	-11.261	-30.914
623.870	-20.640	-34.080	-54.720	-42.510	-11.315	-30.914
623.880	-20.148	-34.130	-54.278	-42.068	-11.369	-30.914
623.890	-20.949	-34.212	-55.161	-42.951	-11.423	-30.914
623.900	-23.100	-34.240	-57.340	-45.130	-11.477	-30.914
623.910	-21.776	-34.314	-56.090	-43.880	-11.531	-30.914
623.920	-20.059	-34.356	-54.415	-42.205	-11.585	-30.914
623.930	-19.536	-34.428	-53.964	-41.754	-11.640	-30.914
623.940	-20.673	-34.455	-55.128	-42.918	-11.694	-30.914
623.950	-21.672	-34.510	-56.182	-43.972	-11.749	-30.914
623.960	-18.999	-34.553	-53.552	-41.342	-11.804	-30.914
623.970	-23.309	-34.611	-57.920	-45.710	-11.859	-30.914
623.980	-21.319	-34.664	-55.983	-43.773	-11.914	-30.914
623.990	-22.436	-34.702	-57.138	-44.928	-11.970	-30.914
624.000	-21.596	-34.766	-56.362	-44.152	-12.025	-30.914
624.010	-23.445	-34.806	-58.251	-46.041	-12.081	-30.914
624.020	-22.042	-34.856	-56.898	-44.688	-12.137	-30.914
624.030	-22.282	-34.912	-57.194	-44.984	-12.193	-30.914
624.040	-20.300	-34.948	-55.248	-43.038	-12.249	-30.914
624.050	-20.630	-35.027	-55.657	-43.447	-12.305	-30.914
624.060	-21.655	-35.055	-56.710	-44.500	-12.361	-30.914

624.070	-20.954	-35.118	-56.072	-43.862	-12.418	-30.914
624.080	-20.915	-35.172	-56.087	-43.877	-12.474	-30.914
624.090	-19.321	-35.216	-54.537	-42.327	-12.531	-30.914
624.100	-20.427	-35.280	-55.707	-43.497	-12.588	-30.914
624.110	-22.749	-35.301	-58.050	-45.840	-12.645	-30.914
624.120	-23.617	-35.362	-58.979	-46.769	-12.702	-30.914
624.130	-21.461	-35.426	-56.887	-44.677	-12.759	-30.914
624.140	-19.767	-35.464	-55.231	-43.021	-12.817	-30.914
624.150	-21.964	-35.521	-57.485	-45.275	-12.874	-30.914
624.160	-19.788	-35.555	-55.343	-43.133	-12.932	-30.914
624.170	-21.805	-35.616	-57.421	-45.211	-12.990	-30.914
624.180	-21.708	-35.671	-57.379	-45.169	-13.048	-30.914
624.190	-20.772	-35.711	-56.483	-44.273	-13.106	-30.914
624.200	-22.968	-35.741	-58.709	-46.499	-13.164	-30.914
624.210	-23.917	-35.793	-59.710	-47.500	-13.223	-30.914
624.220	-23.829	-35.855	-59.684	-47.474	-13.281	-30.914
624.230	-21.505	-35.914	-57.419	-45.209	-13.340	-30.914
624.240	-22.522	-35.955	-58.477	-46.267	-13.399	-30.914
624.250	-21.156	-36.003	-57.159	-44.949	-13.458	-30.914
624.260	-23.764	-36.050	-59.814	-47.604	-13.517	-30.914
624.270	-24.007	-36.081	-60.088	-47.878	-13.576	-30.914
624.280	-21.807	-36.132	-57.939	-45.729	-13.635	-30.914
624.290	-21.683	-36.173	-57.856	-45.646	-13.695	-30.914
624.300	-21.209	-36.246	-57.455	-45.245	-13.754	-30.914
624.310	-23.481	-36.303	-59.784	-47.574	-13.814	-30.914
624.320	-23.454	-36.356	-59.810	-47.600	-13.874	-30.914
624.330	-22.370	-36.382	-58.752	-46.542	-13.934	-30.914
624.340	-21.533	-36.447	-57.980	-45.770	-13.994	-30.914
624.350	-20.470	-36.485	-56.955	-44.745	-14.055	-30.914
624.360	-24.332	-36.542	-60.874	-48.664	-14.115	-30.914
624.370	-24.115	-36.585	-60.700	-48.490	-14.176	-30.914
624.380	-23.277	-36.627	-59.904	-47.694	-14.237	-30.914
624.390	-21.307	-36.723	-58.030	-45.820	-14.298	-30.914
624.400	-24.289	-36.735	-61.024	-48.814	-14.359	-30.914
624.410	-23.685	-36.793	-60.478	-48.268	-14.420	-30.914
624.420	-22.704	-36.815	-59.519	-47.309	-14.481	-30.914
624.430	-23.250	-36.878	-60.128	-47.918	-14.543	-30.914
624.440	-22.932	-36.925	-59.857	-47.647	-14.604	-30.914
624.450	-24.534	-36.952	-61.486	-49.276	-14.666	-30.914
624.460	-24.004	-37.060	-61.064	-48.854	-14.728	-30.914
624.470	-22.727	-37.078	-59.805	-47.595	-14.790	-30.914
624.480	-22.490	-37.096	-59.586	-47.376	-14.852	-30.914
624.490	-21.997	-37.174	-59.171	-46.961	-14.914	-30.914
624.500	-23.928	-37.211	-61.139	-48.929	-14.977	-30.914
624.510	-22.862	-37.274	-60.136	-47.926	-15.039	-30.914
624.520	-20.970	-37.306	-58.276	-46.066	-15.102	-30.914
624.530	-22.718	-37.369	-60.087	-47.877	-15.165	-30.914
624.540	-22.732	-37.396	-60.128	-47.918	-15.228	-30.914
624.550	-24.593	-37.422	-62.015	-49.805	-15.291	-30.914
624.560	-22.687	-37.490	-60.177	-47.967	-15.354	-30.914
624.570	-23.707	-37.554	-61.261	-49.051	-15.418	-30.914
624.580	-22.924	-37.591	-60.515	-48.305	-15.481	-30.914
624.590	-23.031	-37.674	-60.705	-48.495	-15.545	-30.914
624.600	-23.304	-37.689	-60.993	-48.783	-15.609	-30.914
624.610	-24.358	-37.732	-62.090	-49.880	-15.673	-30.914

624.620	-24.477	-37.774	-62.251	-50.041	-15.737	-30.914
624.630	-21.543	-37.822	-59.365	-47.155	-15.801	-30.914
624.640	-22.011	-37.878	-59.889	-47.679	-15.865	-30.914
624.650	-26.030	-37.909	-63.939	-51.729	-15.930	-30.914
624.660	-26.968	-37.970	-64.938	-52.728	-15.994	-30.914
624.670	-25.371	-37.972	-63.343	-51.133	-16.059	-30.914
624.680	-22.795	-38.012	-60.807	-48.597	-16.124	-30.914
624.690	-24.134	-38.097	-62.231	-50.021	-16.189	-30.914
624.700	-23.555	-38.144	-61.699	-49.489	-16.254	-30.914
624.710	-25.597	-38.203	-63.800	-51.590	-16.320	-30.914
624.720	-23.941	-38.236	-62.177	-49.967	-16.385	-30.914
624.730	-24.673	-38.295	-62.968	-50.758	-16.451	-30.914
624.740	-23.209	-38.303	-61.512	-49.302	-16.517	-30.914
624.750	-24.251	-38.367	-62.618	-50.408	-16.583	-30.914
624.760	-25.872	-38.404	-64.276	-52.066	-16.649	-30.914
624.770	-24.969	-38.463	-63.432	-51.222	-16.715	-30.914
624.780	-24.777	-38.499	-63.276	-51.066	-16.781	-30.914
624.790	-25.963	-38.593	-64.556	-52.346	-16.848	-30.914
624.800	-25.169	-38.619	-63.788	-51.578	-16.914	-30.914
624.810	-25.351	-38.658	-64.009	-51.799	-16.981	-30.914
624.820	-25.645	-38.698	-64.343	-52.133	-17.048	-30.914
624.830	-23.288	-38.745	-62.033	-49.823	-17.115	-30.914
624.840	-24.856	-38.799	-63.655	-51.445	-17.182	-30.914
624.850	-22.968	-38.824	-61.792	-49.582	-17.249	-30.914
624.860	-24.674	-38.859	-63.533	-51.323	-17.317	-30.914
624.870	-25.685	-38.949	-64.634	-52.424	-17.384	-30.914
624.880	-23.380	-38.978	-62.358	-50.148	-17.452	-30.914
624.890	-24.038	-39.041	-63.079	-50.869	-17.520	-30.914
624.900	-28.132	-39.020	-67.152	-54.942	-17.588	-30.914
624.910	-26.410	-39.105	-65.515	-53.305	-17.656	-30.914
624.920	-24.831	-39.147	-63.978	-51.768	-17.724	-30.914
624.930	-24.205	-39.204	-63.409	-51.199	-17.793	-30.914
624.940	-24.707	-39.231	-63.938	-51.728	-17.861	-30.914
624.950	-26.407	-39.287	-65.694	-53.484	-17.930	-30.914
624.960	-27.299	-39.324	-66.623	-54.413	-17.999	-30.914
624.970	-27.512	-39.373	-66.885	-54.675	-18.068	-30.914
624.980	-26.605	-39.391	-65.996	-53.786	-18.137	-30.914
624.990	-25.591	-39.489	-65.080	-52.870	-18.206	-30.914
625.000	-26.448	-39.680	-66.128	-53.918	-18.275	-30.914
625.010	-25.410	-39.544	-64.954	-52.744	-18.345	-30.914
625.020	-25.617	-39.573	-65.190	-52.980	-18.414	-30.914
625.030	-27.004	-39.626	-66.630	-54.420	-18.484	-30.914
625.040	-25.208	-39.674	-64.882	-52.672	-18.554	-30.914
625.050	-23.865	-39.751	-63.616	-51.406	-18.624	-30.914
625.060	-23.959	-39.833	-63.792	-51.582	-18.694	-30.914
625.070	-24.622	-39.795	-64.417	-52.207	-18.765	-30.914
625.080	-23.787	-39.877	-63.664	-51.454	-18.835	-30.914
625.090	-25.625	-39.923	-65.548	-53.338	-18.906	-30.914
625.100	-28.216	-39.934	-68.150	-55.940	-18.977	-30.914
625.110	-26.628	-39.974	-66.602	-54.392	-19.048	-30.914
625.120	-26.671	-40.041	-66.712	-54.502	-19.119	-30.914
625.130	-24.046	-40.067	-64.113	-51.903	-19.190	-30.914
625.140	-26.695	-40.112	-66.807	-54.597	-19.261	-30.914
625.150	-26.068	-40.160	-66.228	-54.018	-19.333	-30.914
625.160	-25.685	-40.234	-65.919	-53.709	-19.404	-30.914

625.170	-25.751	-40.294	-66.045	-53.835	-19.476	-30.914
625.180	-27.767	-40.310	-68.077	-55.867	-19.548	-30.914
625.190	-28.088	-40.325	-68.413	-56.203	-19.620	-30.914
625.200	-28.189	-40.407	-68.596	-56.386	-19.692	-30.914
625.210	-28.606	-40.398	-69.004	-56.794	-19.764	-30.914
625.220	-28.644	-40.472	-69.116	-56.906	-19.837	-30.914
625.230	-27.753	-40.500	-68.253	-56.043	-19.909	-30.914
625.240	-25.297	-40.530	-65.827	-53.617	-19.982	-30.914
625.250	-27.862	-40.623	-68.485	-56.275	-20.055	-30.914
625.260	-29.455	-40.651	-70.106	-57.896	-20.128	-30.914
625.270	-28.376	-40.705	-69.081	-56.871	-20.201	-30.914
625.280	-27.228	-40.734	-67.962	-55.752	-20.274	-30.914
625.290	-28.673	-40.780	-69.453	-57.243	-20.348	-30.914
625.300	-27.118	-40.857	-67.975	-55.765	-20.421	-30.914
625.310	-26.361	-40.838	-67.199	-54.989	-20.495	-30.914
625.320	-24.894	-40.893	-65.787	-53.577	-20.569	-30.914
625.330	-26.445	-40.932	-67.377	-55.167	-20.643	-30.914
625.340	-28.975	-40.958	-69.933	-57.723	-20.717	-30.914
625.350	-27.178	-41.047	-68.225	-56.015	-20.791	-30.914
625.360	-26.828	-41.060	-67.888	-55.678	-20.865	-30.914
625.370	-26.438	-41.130	-67.568	-55.358	-20.940	-30.914
625.380	-27.114	-41.135	-68.249	-56.039	-21.014	-30.914
625.390	-27.375	-41.230	-68.605	-56.395	-21.089	-30.914
625.400	-27.059	-41.274	-68.333	-56.123	-21.164	-30.914
625.410	-27.395	-41.300	-68.695	-56.485	-21.239	-30.914
625.420	-27.843	-41.350	-69.193	-56.983	-21.314	-30.914
625.430	-28.397	-41.339	-69.736	-57.526	-21.390	-30.914
625.440	-28.274	-41.441	-69.715	-57.505	-21.465	-30.914
625.450	-28.045	-41.444	-69.489	-57.279	-21.541	-30.914
625.460	-29.733	-41.502	-71.235	-59.025	-21.617	-30.914
625.470	-27.670	-41.514	-69.184	-56.974	-21.693	-30.914
625.480	-27.442	-41.585	-69.027	-56.817	-21.769	-30.914
625.490	-28.371	-41.628	-69.999	-57.789	-21.845	-30.914
625.500	-25.398	-41.649	-67.047	-54.837	-21.921	-30.914
625.510	-29.659	-41.669	-71.328	-59.118	-21.998	-30.914
625.520	-28.238	-41.710	-69.948	-57.738	-22.074	-30.914
625.530	-28.232	-41.773	-70.005	-57.795	-22.151	-30.914
625.540	-29.559	-41.822	-71.381	-59.171	-22.228	-30.914
625.550	-29.746	-41.843	-71.589	-59.379	-22.305	-30.914
625.560	-28.740	-41.912	-70.652	-58.442	-22.382	-30.914
625.570	-27.906	-41.968	-69.874	-57.664	-22.459	-30.914
625.580	-28.363	-42.001	-70.364	-58.154	-22.537	-30.914
625.590	-28.698	-42.021	-70.719	-58.509	-22.614	-30.914
625.600	-27.964	-42.058	-70.022	-57.812	-22.692	-30.914
625.610	-26.614	-42.124	-68.738	-56.528	-22.770	-30.914
625.620	-27.054	-42.167	-69.221	-57.011	-22.848	-30.914
625.630	-28.401	-42.203	-70.604	-58.394	-22.926	-30.914
625.640	-29.654	-42.278	-71.932	-59.722	-23.004	-30.914
625.650	-29.614	-42.305	-71.919	-59.709	-23.083	-30.914
625.660	-27.634	-42.326	-69.960	-57.750	-23.161	-30.914
625.670	-29.087	-42.396	-71.483	-59.273	-23.240	-30.914
625.680	-27.901	-42.393	-70.294	-58.084	-23.319	-30.914
625.690	-28.947	-42.431	-71.378	-59.168	-23.398	-30.914
625.700	-28.813	-42.485	-71.298	-59.088	-23.477	-30.914
625.710	-27.910	-42.486	-70.396	-58.186	-23.556	-30.914

625.720	-28.115	-42.568	-70.683	-58.473	-23.635	-30.914
625.730	-28.275	-42.630	-70.905	-58.695	-23.715	-30.914
625.740	-27.635	-42.660	-70.295	-58.085	-23.794	-30.914
625.750	-28.850	-42.707	-71.557	-59.347	-23.874	-30.914
625.760	-28.150	-42.738	-70.888	-58.678	-23.954	-30.914
625.770	-27.183	-42.809	-69.992	-57.782	-24.034	-30.914
625.780	-27.895	-42.820	-70.715	-58.505	-24.114	-30.914
625.790	-29.111	-42.913	-72.024	-59.814	-24.195	-30.914
625.800	-27.843	-42.928	-70.771	-58.561	-24.275	-30.914
625.810	-28.588	-42.919	-71.507	-59.297	-24.356	-30.914
625.820	-29.745	-42.976	-72.721	-60.511	-24.437	-30.914
625.830	-27.445	-42.994	-70.439	-58.229	-24.518	-30.914
625.840	-30.216	-43.035	-73.251	-61.041	-24.599	-30.914
625.850	-29.853	-43.084	-72.937	-60.727	-24.680	-30.914
625.860	-28.188	-43.111	-71.299	-59.089	-24.761	-30.914
625.870	-27.817	-43.160	-70.977	-58.767	-24.843	-30.914
625.880	-28.648	-43.255	-71.903	-59.693	-24.924	-30.914
625.890	-28.437	-43.265	-71.702	-59.492	-25.006	-30.914
625.900	-26.567	-43.309	-69.876	-57.666	-25.088	-30.914
625.910	-27.966	-43.312	-71.278	-59.068	-25.170	-30.914
625.920	-26.901	-43.352	-70.253	-58.043	-25.252	-30.914
625.930	-28.735	-43.428	-72.163	-59.953	-25.334	-30.914
625.940	-27.766	-43.395	-71.161	-58.951	-25.417	-30.914
625.950	-26.064	-43.473	-69.537	-57.327	-25.499	-30.914
625.960	-29.436	-43.587	-73.023	-60.813	-25.582	-30.914
625.970	-27.996	-43.559	-71.555	-59.345	-25.665	-30.914
625.980	-28.042	-43.579	-71.621	-59.411	-25.748	-30.914
625.990	-28.900	-43.686	-72.586	-60.376	-25.831	-30.914
626.000	-28.998	-43.680	-72.678	-60.468	-25.914	-30.914
626.010	-28.553	-43.704	-72.257	-60.047	-25.914	-30.914
626.020	-28.468	-43.772	-72.240	-60.030	-25.914	-30.914
626.030	-27.434	-43.800	-71.234	-59.024	-25.914	-30.914
626.040	-27.844	-43.863	-71.707	-59.497	-25.914	-30.914
626.050	-29.112	-43.885	-72.997	-60.787	-25.914	-30.914
626.060	-27.435	-43.925	-71.360	-59.150	-25.914	-30.914
626.070	-27.708	-43.984	-71.692	-59.482	-25.914	-30.914
626.080	-28.969	-44.026	-72.995	-60.785	-25.914	-30.914
626.090	-30.151	-44.059	-74.210	-62.000	-25.914	-30.914
626.100	-27.765	-44.097	-71.862	-59.652	-25.914	-30.914
626.110	-29.748	-44.108	-73.856	-61.646	-25.914	-30.914
626.120	-27.935	-44.197	-72.132	-59.922	-25.914	-30.914
626.130	-26.586	-44.244	-70.830	-58.620	-25.914	-30.914
626.140	-28.387	-44.220	-72.607	-60.397	-25.914	-30.914
626.150	-30.992	-44.285	-75.277	-63.067	-25.914	-30.914
626.160	-28.589	-44.253	-72.842	-60.632	-25.914	-30.914
626.170	-28.460	-44.360	-72.820	-60.610	-25.914	-30.914
626.180	-32.287	-44.413	-76.700	-64.490	-25.914	-30.914
626.190	-30.050	-44.403	-74.453	-62.243	-25.914	-30.914
626.200	-30.160	-44.457	-74.617	-62.407	-25.914	-30.914
626.210	-28.760	-44.506	-73.266	-61.056	-25.914	-30.914
626.220	-29.588	-44.576	-74.164	-61.954	-25.914	-30.914
626.230	-30.393	-44.591	-74.984	-62.774	-25.914	-30.914
626.240	-28.420	-44.664	-73.084	-60.874	-25.914	-30.914
626.250	-27.418	-44.700	-72.118	-59.908	-25.914	-30.914
626.260	-30.551	-44.721	-75.272	-63.062	-25.914	-30.914

626.270	-28.785	-44.753	-73.538	-61.328	-25.914	-30.914
626.280	-30.326	-44.763	-75.089	-62.879	-25.914	-30.914
626.290	-29.598	-44.824	-74.422	-62.212	-25.914	-30.914
626.300	-28.889	-44.834	-73.723	-61.513	-25.914	-30.914
626.310	-30.038	-44.913	-74.951	-62.741	-25.914	-30.914
626.320	-30.263	-44.975	-75.238	-63.028	-25.914	-30.914
626.330	-27.984	-44.973	-72.957	-60.747	-25.914	-30.914
626.340	-30.651	-45.031	-75.682	-63.472	-25.914	-30.914
626.350	-29.727	-45.037	-74.764	-62.554	-25.914	-30.914
626.360	-27.707	-45.060	-72.767	-60.557	-25.914	-30.914
626.370	-30.604	-45.074	-75.678	-63.468	-25.914	-30.914
626.380	-30.638	-45.143	-75.781	-63.571	-25.914	-30.914
626.390	-30.040	-45.200	-75.240	-63.030	-25.914	-30.914
626.400	-28.805	-45.271	-74.076	-61.866	-25.914	-30.914
626.410	-31.188	-45.323	-76.511	-64.301	-25.914	-30.914
626.420	-29.296	-45.295	-74.591	-62.381	-25.914	-30.914
626.430	-30.001	-45.375	-75.376	-63.166	-25.914	-30.914
626.440	-29.684	-45.419	-75.103	-62.893	-25.914	-30.914
626.450	-30.210	-45.418	-75.628	-63.418	-25.914	-30.914
626.460	-31.768	-45.457	-77.225	-65.015	-25.914	-30.914
626.470	-28.341	-45.497	-73.838	-61.628	-25.914	-30.914
626.480	-27.414	-45.561	-72.975	-60.765	-25.914	-30.914
626.490	-29.366	-45.549	-74.915	-62.705	-25.914	-30.914
626.500	-30.276	-45.628	-75.904	-63.694	-25.914	-30.914
626.510	-29.705	-45.623	-75.328	-63.118	-25.914	-30.914
626.520	-30.936	-45.692	-76.628	-64.418	-25.914	-30.914
626.530	-29.496	-45.716	-75.212	-63.002	-25.914	-30.914
626.540	-29.685	-45.722	-75.407	-63.197	-25.914	-30.914
626.550	-30.334	-45.790	-76.124	-63.914	-25.914	-30.914
626.560	-29.186	-45.823	-75.009	-62.799	-25.914	-30.914
626.570	-28.848	-45.865	-74.713	-62.503	-25.914	-30.914
626.580	-31.242	-45.888	-77.130	-64.920	-25.914	-30.914
626.590	-28.157	-45.938	-74.095	-61.885	-25.914	-30.914
626.600	-29.733	-46.008	-75.741	-63.531	-25.914	-30.914
626.610	-28.142	-46.011	-74.153	-61.943	-25.914	-30.914
626.620	-31.009	-46.047	-77.056	-64.846	-25.914	-30.914
626.630	-27.720	-46.121	-73.841	-61.631	-25.914	-30.914
626.640	-31.672	-46.166	-77.838	-65.628	-25.914	-30.914
626.650	-28.847	-46.166	-75.013	-62.803	-25.914	-30.914
626.660	-30.171	-46.204	-76.375	-64.165	-25.914	-30.914
626.670	-29.047	-46.245	-75.292	-63.082	-25.914	-30.914
626.680	-28.228	-46.298	-74.526	-62.316	-25.914	-30.914
626.690	-27.594	-46.328	-73.922	-61.712	-25.914	-30.914
626.700	-29.161	-46.298	-75.459	-63.249	-25.914	-30.914
626.710	-29.378	-46.400	-75.778	-63.568	-25.914	-30.914
626.720	-29.150	-46.405	-75.555	-63.345	-25.914	-30.914
626.730	-30.098	-46.399	-76.497	-64.287	-25.914	-30.914
626.740	-30.142	-46.489	-76.631	-64.421	-25.914	-30.914
626.750	-30.004	-46.561	-76.565	-64.355	-25.914	-30.914
626.760	-30.710	-46.584	-77.294	-65.084	-25.914	-30.914
626.770	-31.074	-46.634	-77.708	-65.498	-25.914	-30.914
626.780	-29.629	-46.678	-76.307	-64.097	-25.914	-30.914
626.790	-30.089	-46.657	-76.746	-64.536	-25.914	-30.914
626.800	-30.032	-46.691	-76.723	-64.513	-25.914	-30.914
626.810	-31.749	-46.795	-78.544	-66.334	-25.914	-30.914

626.820	-29.711	-46.834	-76.545	-64.335	-25.914	-30.914
626.830	-29.838	-46.828	-76.666	-64.456	-25.914	-30.914
626.840	-29.250	-46.896	-76.146	-63.936	-25.914	-30.914
626.850	-29.538	-46.876	-76.414	-64.204	-25.914	-30.914
626.860	-30.908	-46.916	-77.824	-65.614	-25.914	-30.914
626.870	-29.779	-47.005	-76.784	-64.574	-25.914	-30.914
626.880	-29.556	-47.018	-76.574	-64.364	-25.914	-30.914
626.890	-30.261	-47.010	-77.271	-65.061	-25.914	-30.914
626.900	-30.136	-47.076	-77.212	-65.002	-25.914	-30.914
626.910	-30.845	-47.118	-77.963	-65.753	-25.914	-30.914
626.920	-32.631	-47.131	-79.762	-67.552	-25.914	-30.914
626.930	-30.836	-47.218	-78.054	-65.844	-25.914	-30.914
626.940	-30.211	-47.238	-77.449	-65.239	-25.914	-30.914
626.950	-30.318	-47.292	-77.610	-65.400	-25.914	-30.914
626.960	-30.854	-47.301	-78.155	-65.945	-25.914	-30.914
626.970	-29.202	-47.306	-76.508	-64.298	-25.914	-30.914
626.980	-29.659	-47.403	-77.062	-64.852	-25.914	-30.914
626.990	-29.694	-47.355	-77.049	-64.839	-25.914	-30.914
627.000	-27.748	-47.376	-75.124	-62.914	-25.914	-30.914
627.010	-28.957	-47.504	-76.461	-64.251	-25.914	-30.914
627.020	-30.581	-47.566	-78.147	-65.937	-25.914	-30.914
627.030	-29.594	-47.497	-77.091	-64.881	-25.914	-30.914
627.040	-30.654	-47.607	-78.261	-66.051	-25.914	-30.914
627.050	-29.332	-47.624	-76.956	-64.746	-25.914	-30.914
627.060	-31.237	-47.604	-78.841	-66.631	-25.914	-30.914
627.070	-31.130	-47.745	-78.875	-66.665	-25.914	-30.914
627.080	-30.071	-47.737	-77.808	-65.598	-25.914	-30.914
627.090	-29.410	-47.806	-77.216	-65.006	-25.914	-30.914
627.100	-28.680	-47.790	-76.470	-64.260	-25.914	-30.914
627.110	-29.962	-47.879	-77.841	-65.631	-25.914	-30.914
627.120	-32.424	-47.912	-80.336	-68.126	-25.914	-30.914
627.130	-29.908	-47.914	-77.822	-65.612	-25.914	-30.914
627.140	-30.371	-47.917	-78.288	-66.078	-25.914	-30.914
627.150	-29.469	-47.955	-77.424	-65.214	-25.914	-30.914
627.160	-30.137	-47.983	-78.120	-65.910	-25.914	-30.914
627.170	-32.657	-48.010	-80.667	-68.457	-25.914	-30.914
627.180	-30.075	-48.047	-78.122	-65.912	-25.914	-30.914
627.190	-29.557	-48.103	-77.660	-65.450	-25.914	-30.914
627.200	-31.241	-48.185	-79.426	-67.216	-25.914	-30.914
627.210	-31.774	-48.087	-79.861	-67.651	-25.914	-30.914
627.220	-29.901	-48.227	-78.128	-65.918	-25.914	-30.914
627.230	-31.703	-48.206	-79.909	-67.699	-25.914	-30.914
627.240	-31.480	-48.264	-79.744	-67.534	-25.914	-30.914
627.250	-29.376	-48.213	-77.589	-65.379	-25.914	-30.914
627.260	-29.980	-48.429	-78.409	-66.199	-25.914	-30.914
627.270	-30.721	-48.389	-79.110	-66.900	-25.914	-30.914
627.280	-30.761	-48.416	-79.177	-66.967	-25.914	-30.914
627.290	-29.999	-48.468	-78.467	-66.257	-25.914	-30.914
627.300	-31.473	-48.553	-80.026	-67.816	-25.914	-30.914
627.310	-31.782	-48.574	-80.356	-68.146	-25.914	-30.914
627.320	-31.295	-48.597	-79.892	-67.682	-25.914	-30.914
627.330	-30.567	-48.624	-79.191	-66.981	-25.914	-30.914
627.340	-31.188	-48.556	-79.744	-67.534	-25.914	-30.914
627.350	-30.957	-48.597	-79.554	-67.344	-25.914	-30.914
627.360	-29.033	-48.707	-77.740	-65.530	-25.914	-30.914

627.370	-29.723	-48.691	-78.414	-66.204	-25.914	-30.914
627.380	-32.349	-48.744	-81.093	-68.883	-25.914	-30.914
627.390	-32.396	-48.815	-81.211	-69.001	-25.914	-30.914
627.400	-32.774	-48.866	-81.640	-69.430	-25.914	-30.914
627.410	-30.422	-48.785	-79.207	-66.997	-25.914	-30.914
627.420	-31.873	-48.874	-80.747	-68.537	-25.914	-30.914
627.430	-31.246	-48.986	-80.232	-68.022	-25.914	-30.914
627.440	-30.807	-48.957	-79.764	-67.554	-25.914	-30.914
627.450	-31.410	-49.103	-80.513	-68.303	-25.914	-30.914
627.460	-31.038	-49.023	-80.061	-67.851	-25.914	-30.914
627.470	-31.071	-49.140	-80.211	-68.001	-25.914	-30.914
627.480	-29.885	-49.117	-79.002	-66.792	-25.914	-30.914
627.490	-31.940	-49.131	-81.071	-68.861	-25.914	-30.914
627.500	-30.669	-49.188	-79.857	-67.647	-25.914	-30.914
627.510	-32.293	-49.235	-81.528	-69.318	-25.914	-30.914
627.520	-32.623	-49.250	-81.873	-69.663	-25.914	-30.914
627.530	-33.252	-49.234	-82.486	-70.276	-25.914	-30.914
627.540	-32.687	-49.351	-82.038	-69.828	-25.914	-30.914
627.550	-32.069	-49.374	-81.443	-69.233	-25.914	-30.914
627.560	-31.130	-49.398	-80.528	-68.318	-25.914	-30.914
627.570	-30.778	-49.395	-80.173	-67.963	-25.914	-30.914
627.580	-29.514	-49.449	-78.963	-66.753	-25.914	-30.914
627.590	-31.516	-49.510	-81.026	-68.816	-25.914	-30.914
627.600	-30.865	-49.515	-80.380	-68.170	-25.914	-30.914
627.610	-31.971	-49.530	-81.501	-69.291	-25.914	-30.914
627.620	-30.719	-49.592	-80.311	-68.101	-25.914	-30.914
627.630	-31.012	-49.586	-80.598	-68.388	-25.914	-30.914
627.640	-32.784	-49.689	-82.473	-70.263	-25.914	-30.914
627.650	-31.164	-49.648	-80.812	-68.602	-25.914	-30.914
627.660	-31.568	-49.786	-81.354	-69.144	-25.914	-30.914
627.670	-32.245	-49.783	-82.028	-69.818	-25.914	-30.914
627.680	-32.644	-49.806	-82.450	-70.240	-25.914	-30.914
627.690	-35.176	-49.833	-85.009	-72.799	-25.914	-30.914
627.700	-33.381	-49.867	-83.248	-71.038	-25.914	-30.914
627.710	-32.125	-49.848	-81.973	-69.763	-25.914	-30.914
627.720	-31.271	-49.934	-81.205	-68.995	-25.914	-30.914
627.730	-31.283	-49.962	-81.245	-69.035	-25.914	-30.914
627.740	-32.426	-50.021	-82.447	-70.237	-25.914	-30.914
627.750	-31.871	-50.026	-81.897	-69.687	-25.914	-30.914
627.760	-32.213	-50.098	-82.311	-70.101	-25.914	-30.914
627.770	-32.483	-50.072	-82.555	-70.345	-25.914	-30.914
627.780	-32.197	-50.084	-82.281	-70.071	-25.914	-30.914
627.790	-32.626	-50.202	-82.828	-70.618	-25.914	-30.914
627.800	-32.933	-50.206	-83.139	-70.929	-25.914	-30.914
627.810	-31.228	-50.267	-81.495	-69.285	-25.914	-30.914
627.820	-32.440	-50.265	-82.705	-70.495	-25.914	-30.914
627.830	-32.158	-50.293	-82.451	-70.241	-25.914	-30.914
627.840	-31.683	-50.281	-81.964	-69.754	-25.914	-30.914
627.850	-32.393	-50.430	-82.823	-70.613	-25.914	-30.914
627.860	-31.539	-50.475	-82.014	-69.804	-25.914	-30.914
627.870	-34.004	-50.414	-84.418	-72.208	-25.914	-30.914
627.880	-32.895	-50.421	-83.316	-71.106	-25.914	-30.914
627.890	-34.560	-50.480	-85.040	-72.830	-25.914	-30.914
627.900	-32.559	-50.532	-83.091	-70.881	-25.914	-30.914
627.910	-31.850	-50.573	-82.423	-70.213	-25.914	-30.914

627.920	-30.610	-50.640	-81.250	-69.040	-25.914	-30.914
627.930	-30.086	-50.627	-80.713	-68.503	-25.914	-30.914
627.940	-32.073	-50.655	-82.728	-70.518	-25.914	-30.914
627.950	-31.967	-50.713	-82.680	-70.470	-25.914	-30.914
627.960	-31.782	-50.623	-82.405	-70.195	-25.914	-30.914
627.970	-33.952	-50.696	-84.648	-72.438	-25.914	-30.914
627.980	-31.156	-50.776	-81.932	-69.722	-25.914	-30.914
627.990	-32.547	-50.787	-83.334	-71.124	-25.914	-30.914
628.000	-33.017	-50.720	-83.737	-71.527	-25.914	-30.914
628.010	-32.513	-50.810	-83.323	-71.113	-25.914	-30.914
628.020	-32.044	-50.918	-82.962	-70.752	-25.914	-30.914
628.030	-32.407	-50.886	-83.293	-71.083	-25.914	-30.914
628.040	-32.296	-51.064	-83.360	-71.150	-25.914	-30.914
628.050	-31.793	-50.983	-82.776	-70.566	-25.914	-30.914
628.060	-32.846	-51.000	-83.846	-71.636	-25.914	-30.914
628.070	-31.958	-51.135	-83.093	-70.883	-25.914	-30.914
628.080	-34.617	-51.135	-85.752	-73.542	-25.914	-30.914
628.090	-33.856	-51.099	-84.955	-72.745	-25.914	-30.914
628.100	-33.640	-51.102	-84.742	-72.532	-25.914	-30.914
628.110	-31.835	-51.271	-83.106	-70.896	-25.914	-30.914
628.120	-32.085	-51.299	-83.384	-71.174	-25.914	-30.914
628.130	-32.307	-51.232	-83.539	-71.329	-25.914	-30.914
628.140	-33.368	-51.277	-84.645	-72.435	-25.914	-30.914
628.150	-33.315	-51.251	-84.566	-72.356	-25.914	-30.914
628.160	-35.349	-51.406	-86.755	-74.545	-25.914	-30.914
628.170	-31.517	-51.389	-82.906	-70.696	-25.914	-30.914
628.180	-31.182	-51.354	-82.536	-70.326	-25.914	-30.914
628.190	-32.558	-51.388	-83.946	-71.736	-25.914	-30.914
628.200	-31.516	-51.477	-82.993	-70.783	-25.914	-30.914
628.210	-33.067	-51.503	-84.570	-72.360	-25.914	-30.914
628.220	-31.910	-51.512	-83.422	-71.212	-25.914	-30.914
628.230	-31.603	-51.531	-83.134	-70.924	-25.914	-30.914
628.240	-32.701	-51.589	-84.290	-72.080	-25.914	-30.914
628.250	-34.030	-51.698	-85.728	-73.518	-25.914	-30.914
628.260	-32.807	-51.714	-84.521	-72.311	-25.914	-30.914
628.270	-32.893	-51.714	-84.607	-72.397	-25.914	-30.914
628.280	-31.683	-51.696	-83.379	-71.169	-25.914	-30.914
628.290	-31.791	-51.735	-83.526	-71.316	-25.914	-30.914
628.300	-31.857	-51.720	-83.577	-71.367	-25.914	-30.914
628.310	-34.552	-51.840	-86.392	-74.182	-25.914	-30.914
628.320	-33.346	-51.938	-85.284	-73.074	-25.914	-30.914
628.330	-34.291	-51.852	-86.143	-73.933	-25.914	-30.914
628.340	-32.786	-51.894	-84.680	-72.470	-25.914	-30.914
628.350	-34.088	-52.013	-86.101	-73.891	-25.914	-30.914
628.360	-33.843	-51.948	-85.791	-73.581	-25.914	-30.914
628.370	-33.112	-52.066	-85.178	-72.968	-25.914	-30.914
628.380	-34.026	-52.012	-86.038	-73.828	-25.914	-30.914
628.390	-31.946	-52.078	-84.024	-71.814	-25.914	-30.914
628.400	-33.717	-52.216	-85.933	-73.723	-25.914	-30.914
628.410	-32.948	-52.149	-85.097	-72.887	-25.914	-30.914
628.420	-33.958	-52.343	-86.301	-74.091	-25.914	-30.914
628.430	-33.536	-52.234	-85.770	-73.560	-25.914	-30.914
628.440	-33.689	-52.338	-86.027	-73.817	-25.914	-30.914
628.450	-33.125	-52.344	-85.469	-73.259	-25.914	-30.914
628.460	-34.869	-52.296	-87.165	-74.955	-25.914	-30.914

628.470	-32.349	-52.235	-84.584	-72.374	-25.914	-30.914
628.480	-32.182	-52.394	-84.576	-72.366	-25.914	-30.914
628.490	-31.824	-52.281	-84.105	-71.895	-25.914	-30.914
628.500	-33.079	-52.382	-85.461	-73.251	-25.914	-30.914
628.510	-33.046	-52.572	-85.618	-73.408	-25.914	-30.914
628.520	-34.563	-52.491	-87.054	-74.844	-25.914	-30.914
628.530	-33.914	-52.438	-86.352	-74.142	-25.914	-30.914
628.540	-33.422	-52.542	-85.964	-73.754	-25.914	-30.914
628.550	-33.476	-52.442	-85.918	-73.708	-25.914	-30.914
628.560	-34.610	-52.563	-87.173	-74.963	-25.914	-30.914
628.570	-34.657	-52.546	-87.203	-74.993	-25.914	-30.914
628.580	-32.361	-52.706	-85.067	-72.857	-25.914	-30.914
628.590	-33.722	-52.804	-86.526	-74.316	-25.914	-30.914
628.600	-31.632	-52.716	-84.348	-72.138	-25.914	-30.914
628.610	-32.720	-52.780	-85.500	-73.290	-25.914	-30.914
628.620	-32.941	-52.793	-85.734	-73.524	-25.914	-30.914
628.630	-32.466	-52.823	-85.289	-73.079	-25.914	-30.914
628.640	-32.966	-52.893	-85.859	-73.649	-25.914	-30.914
628.650	-33.957	-52.936	-86.893	-74.683	-25.914	-30.914
628.660	-32.126	-52.913	-85.039	-72.829	-25.914	-30.914
628.670	-33.985	-52.911	-86.896	-74.686	-25.914	-30.914
628.680	-32.654	-52.967	-85.621	-73.411	-25.914	-30.914
628.690	-33.242	-52.954	-86.196	-73.986	-25.914	-30.914
628.700	-33.870	-53.121	-86.991	-74.781	-25.914	-30.914
628.710	-35.783	-53.055	-88.838	-76.628	-25.914	-30.914
628.720	-32.836	-53.169	-86.005	-73.795	-25.914	-30.914
628.730	-33.202	-53.263	-86.465	-74.255	-25.914	-30.914
628.740	-33.900	-53.176	-87.076	-74.866	-25.914	-30.914
628.750	-34.233	-53.109	-87.342	-75.132	-25.914	-30.914
628.760	-34.341	-53.332	-87.673	-75.463	-25.914	-30.914
628.770	-33.493	-53.343	-86.836	-74.626	-25.914	-30.914
628.780	-33.946	-53.250	-87.196	-74.986	-25.914	-30.914
628.790	-32.884	-53.336	-86.220	-74.010	-25.914	-30.914
628.800	-35.096	-53.307	-88.403	-76.193	-25.914	-30.914
628.810	-33.297	-53.400	-86.697	-74.487	-25.914	-30.914
628.820	-33.533	-53.399	-86.932	-74.722	-25.914	-30.914
628.830	-31.739	-53.420	-85.159	-72.949	-25.914	-30.914
628.840	-32.240	-53.458	-85.698	-73.488	-25.914	-30.914
628.850	-33.301	-53.540	-86.841	-74.631	-25.914	-30.914
628.860	-33.406	-53.468	-86.874	-74.664	-25.914	-30.914
628.870	-33.234	-53.559	-86.793	-74.583	-25.914	-30.914
628.880	-36.008	-53.598	-89.606	-77.396	-25.914	-30.914
628.890	-36.400	-53.732	-90.132	-77.922	-25.914	-30.914
628.900	-36.578	-53.642	-90.220	-78.010	-25.914	-30.914
628.910	-34.293	-53.736	-88.029	-75.819	-25.914	-30.914
628.920	-33.756	-53.687	-87.443	-75.233	-25.914	-30.914
628.930	-37.417	-53.702	-91.119	-78.909	-25.914	-30.914
628.940	-34.049	-53.938	-87.987	-75.777	-25.914	-30.914
628.950	-32.937	-53.748	-86.685	-74.475	-25.914	-30.914
628.960	-33.429	-53.927	-87.356	-75.146	-25.914	-30.914
628.970	-32.890	-53.975	-86.865	-74.655	-25.914	-30.914
628.980	-33.251	-53.853	-87.104	-74.894	-25.914	-30.914
628.990	-34.814	-53.868	-88.682	-76.472	-25.914	-30.914
629.000	-34.123	-53.859	-87.982	-75.772	-25.914	-30.914
629.010	-32.977	-53.895	-86.872	-74.662	-25.914	-30.914

629.020	-33.913	-53.887	-87.800	-75.590	-25.914	-30.914
629.030	-33.338	-54.032	-87.370	-75.160	-25.914	-30.914
629.040	-35.661	-53.940	-89.601	-77.391	-25.914	-30.914
629.050	-33.961	-53.988	-87.949	-75.739	-25.914	-30.914
629.060	-32.808	-54.254	-87.062	-74.852	-25.914	-30.914
629.070	-33.999	-54.140	-88.139	-75.929	-25.914	-30.914
629.080	-35.814	-54.162	-89.976	-77.766	-25.914	-30.914
629.090	-32.455	-54.196	-86.651	-74.441	-25.914	-30.914
629.100	-34.086	-54.113	-88.199	-75.989	-25.914	-30.914
629.110	-32.951	-54.356	-87.307	-75.097	-25.914	-30.914
629.120	-33.119	-54.264	-87.383	-75.173	-25.914	-30.914
629.130	-34.681	-54.404	-89.085	-76.875	-25.914	-30.914
629.140	-34.409	-54.344	-88.753	-76.543	-25.914	-30.914
629.150	-34.304	-54.403	-88.707	-76.497	-25.914	-30.914
629.160	-34.639	-54.388	-89.027	-76.817	-25.914	-30.914
629.170	-33.686	-54.501	-88.187	-75.977	-25.914	-30.914
629.180	-34.011	-54.506	-88.517	-76.307	-25.914	-30.914
629.190	-34.519	-54.424	-88.943	-76.733	-25.914	-30.914
629.200	-34.229	-54.474	-88.703	-76.493	-25.914	-30.914
629.210	-35.113	-54.497	-89.610	-77.400	-25.914	-30.914
629.220	-33.177	-54.554	-87.731	-75.521	-25.914	-30.914
629.230	-33.283	-54.635	-87.918	-75.708	-25.914	-30.914
629.240	-34.766	-54.757	-89.523	-77.313	-25.914	-30.914
629.250	-35.724	-54.748	-90.472	-78.262	-25.914	-30.914
629.260	-35.399	-54.612	-90.011	-77.801	-25.914	-30.914
629.270	-33.107	-54.646	-87.753	-75.543	-25.914	-30.914
629.280	-36.676	-54.759	-91.435	-79.225	-25.914	-30.914
629.290	-35.723	-54.813	-90.536	-78.326	-25.914	-30.914
629.300	-33.850	-54.791	-88.641	-76.431	-25.914	-30.914
629.310	-36.015	-54.706	-90.721	-78.511	-25.914	-30.914
629.320	-33.468	-54.965	-88.433	-76.223	-25.914	-30.914
629.330	-34.900	-54.740	-89.640	-77.430	-25.914	-30.914
629.340	-34.223	-54.956	-89.179	-76.969	-25.914	-30.914
629.350	-35.108	-55.103	-90.211	-78.001	-25.914	-30.914
629.360	-35.106	-54.979	-90.085	-77.875	-25.914	-30.914
629.370	-33.566	-55.044	-88.610	-76.400	-25.914	-30.914
629.380	-35.454	-55.057	-90.511	-78.301	-25.914	-30.914
629.390	-33.403	-55.050	-88.453	-76.243	-25.914	-30.914
629.400	-35.454	-55.144	-90.598	-78.388	-25.914	-30.914
629.410	-34.797	-55.185	-89.982	-77.772	-25.914	-30.914
629.420	-33.165	-55.224	-88.389	-76.179	-25.914	-30.914
629.430	-36.207	-55.140	-91.347	-79.137	-25.914	-30.914
629.440	-35.893	-55.023	-90.916	-78.706	-25.914	-30.914
629.450	-33.839	-55.271	-89.110	-76.900	-25.914	-30.914
629.460	-32.983	-55.212	-88.195	-75.985	-25.914	-30.914
629.470	-34.251	-55.420	-89.671	-77.461	-25.914	-30.914
629.480	-35.117	-55.496	-90.613	-78.403	-25.914	-30.914
629.490	-33.995	-55.328	-89.323	-77.113	-25.914	-30.914
629.500	-35.333	-55.314	-90.647	-78.437	-25.914	-30.914
629.510	-34.169	-55.377	-89.546	-77.336	-25.914	-30.914
629.520	-33.750	-55.403	-89.153	-76.943	-25.914	-30.914
629.530	-35.130	-55.520	-90.650	-78.440	-25.914	-30.914
629.540	-35.325	-55.577	-90.902	-78.692	-25.914	-30.914
629.550	-35.475	-55.627	-91.102	-78.892	-25.914	-30.914
629.560	-34.411	-55.596	-90.007	-77.797	-25.914	-30.914

629.570	-33.389	-55.646	-89.035	-76.825	-25.914	-30.914
629.580	-35.633	-55.712	-91.345	-79.135	-25.914	-30.914
629.590	-35.552	-55.679	-91.231	-79.021	-25.914	-30.914
629.600	-32.660	-55.667	-88.327	-76.117	-25.914	-30.914
629.610	-36.712	-55.519	-92.231	-80.021	-25.914	-30.914
629.620	-36.094	-55.691	-91.785	-79.575	-25.914	-30.914
629.630	-36.412	-55.800	-92.212	-80.002	-25.914	-30.914
629.640	-36.210	-55.736	-91.946	-79.736	-25.914	-30.914
629.650	-35.807	-55.719	-91.526	-79.316	-25.914	-30.914
629.660	-35.042	-55.743	-90.785	-78.575	-25.914	-30.914
629.670	-34.587	-55.786	-90.373	-78.163	-25.914	-30.914
629.680	-35.707	-55.911	-91.618	-79.408	-25.914	-30.914
629.690	-35.618	-55.961	-91.579	-79.369	-25.914	-30.914
629.700	-35.199	-56.029	-91.228	-79.018	-25.914	-30.914
629.710	-34.551	-55.931	-90.482	-78.272	-25.914	-30.914
629.720	-33.896	-55.990	-89.886	-77.676	-25.914	-30.914
629.730	-36.620	-56.109	-92.729	-80.519	-25.914	-30.914
629.740	-32.794	-56.066	-88.860	-76.650	-25.914	-30.914
629.750	-34.975	-56.114	-91.089	-78.879	-25.914	-30.914
629.760	-35.446	-56.210	-91.656	-79.446	-25.914	-30.914
629.770	-34.754	-56.257	-91.011	-78.801	-25.914	-30.914
629.780	-34.595	-56.238	-90.833	-78.623	-25.914	-30.914
629.790	-35.198	-56.216	-91.414	-79.204	-25.914	-30.914
629.800	-34.688	-56.282	-90.970	-78.760	-25.914	-30.914
629.810	-34.699	-56.288	-90.987	-78.777	-25.914	-30.914
629.820	-35.382	-56.200	-91.582	-79.372	-25.914	-30.914
629.830	-34.525	-56.309	-90.834	-78.624	-25.914	-30.914
629.840	-37.669	-56.351	-94.020	-81.810	-25.914	-30.914
629.850	-36.331	-56.355	-92.686	-80.476	-25.914	-30.914
629.860	-36.532	-56.456	-92.988	-80.778	-25.914	-30.914
629.870	-35.974	-56.461	-92.435	-80.225	-25.914	-30.914
629.880	-34.769	-56.265	-91.034	-78.824	-25.914	-30.914
629.890	-35.985	-56.498	-92.483	-80.273	-25.914	-30.914
629.900	-35.744	-56.556	-92.300	-80.090	-25.914	-30.914
629.910	-37.109	-56.529	-93.638	-81.428	-25.914	-30.914
629.920	-36.701	-56.646	-93.347	-81.137	-25.914	-30.914
629.930	-36.817	-56.493	-93.310	-81.100	-25.914	-30.914
629.940	-34.434	-56.734	-91.168	-78.958	-25.914	-30.914
629.950	-37.808	-56.683	-94.491	-82.281	-25.914	-30.914
629.960	-37.186	-56.821	-94.007	-81.797	-25.914	-30.914
629.970	-37.969	-56.836	-94.805	-82.595	-25.914	-30.914
629.980	-36.102	-56.733	-92.835	-80.625	-25.914	-30.914
629.990	-32.480	-56.786	-89.266	-77.056	-25.914	-30.914
630.000	-36.044	-56.815	-92.859	-80.649	-25.914	-30.914
630.010	-34.663	-56.877	-91.540	-79.330	-25.914	-30.914
630.020	-35.715	-56.876	-92.591	-80.381	-25.914	-30.914
630.030	-37.025	-56.899	-93.924	-81.714	-25.914	-30.914
630.040	-36.067	-57.064	-93.131	-80.921	-25.914	-30.914
630.050	-36.071	-56.975	-93.046	-80.836	-25.914	-30.914
630.060	-39.984	-56.822	-96.806	-84.596	-25.914	-30.914
630.070	-36.742	-57.010	-93.752	-81.542	-25.914	-30.914
630.080	-36.874	-56.908	-93.782	-81.572	-25.914	-30.914
630.090	-38.796	-57.034	-95.830	-83.620	-25.914	-30.914
630.100	-35.819	-57.220	-93.039	-80.829	-25.914	-30.914
630.110	-37.497	-57.038	-94.535	-82.325	-25.914	-30.914

630.120	-36.930	-57.088	-94.018	-81.808	-25.914	-30.914
630.130	-37.177	-57.171	-94.348	-82.138	-25.914	-30.914
630.140	-33.149	-57.177	-90.326	-78.116	-25.914	-30.914
630.150	-36.033	-57.191	-93.224	-81.014	-25.914	-30.914
630.160	-35.690	-57.299	-92.989	-80.779	-25.914	-30.914
630.170	-37.150	-57.274	-94.424	-82.214	-25.914	-30.914
630.180	-37.247	-57.319	-94.566	-82.356	-25.914	-30.914
630.190	-36.794	-57.310	-94.104	-81.894	-25.914	-30.914
630.200	-36.315	-57.217	-93.532	-81.322	-25.914	-30.914
630.210	-39.741	-57.213	-96.954	-84.744	-25.914	-30.914
630.220	-36.642	-57.525	-94.167	-81.957	-25.914	-30.914
630.230	-36.736	-57.392	-94.128	-81.918	-25.914	-30.914
630.240	-36.226	-57.484	-93.710	-81.500	-25.914	-30.914
630.250	-36.860	-57.574	-94.434	-82.224	-25.914	-30.914
630.260	-34.641	-57.460	-92.101	-79.891	-25.914	-30.914
630.270	-38.454	-57.630	-96.084	-83.874	-25.914	-30.914
630.280	-35.456	-57.542	-92.998	-80.788	-25.914	-30.914
630.290	-36.127	-57.610	-93.737	-81.527	-25.914	-30.914
630.300	-38.817	-57.626	-96.443	-84.233	-25.914	-30.914
630.310	-36.729	-57.613	-94.342	-82.132	-25.914	-30.914
630.320	-37.024	-57.697	-94.721	-82.511	-25.914	-30.914
630.330	-36.265	-57.552	-93.817	-81.607	-25.914	-30.914
630.340	-35.337	-57.859	-93.196	-80.986	-25.914	-30.914
630.350	-39.512	-57.737	-97.249	-85.039	-25.914	-30.914
630.360	-36.140	-57.648	-93.788	-81.578	-25.914	-30.914
630.370	-36.292	-57.988	-94.280	-82.070	-25.914	-30.914
630.380	-38.589	-57.798	-96.387	-84.177	-25.914	-30.914
630.390	-38.474	-57.962	-96.436	-84.226	-25.914	-30.914
630.400	-37.559	-57.914	-95.473	-83.263	-25.914	-30.914
630.410	-37.604	-58.001	-95.605	-83.395	-25.914	-30.914
630.420	-37.366	-57.840	-95.206	-82.996	-25.914	-30.914
630.430	-36.952	-58.071	-95.023	-82.813	-25.914	-30.914
630.440	-35.869	-57.924	-93.793	-81.583	-25.914	-30.914
630.450	-36.730	-57.938	-94.668	-82.458	-25.914	-30.914
630.460	-38.122	-57.894	-96.016	-83.806	-25.914	-30.914
630.470	-36.796	-57.937	-94.733	-82.523	-25.914	-30.914
630.480	-36.539	-58.211	-94.750	-82.540	-25.914	-30.914
630.490	-38.160	-58.326	-96.486	-84.276	-25.914	-30.914
630.500	-37.751	-58.267	-96.018	-83.808	-25.914	-30.914
630.510	-37.120	-58.101	-95.221	-83.011	-25.914	-30.914
630.520	-38.603	-58.201	-96.804	-84.594	-25.914	-30.914
630.530	-37.891	-58.236	-96.127	-83.917	-25.914	-30.914
630.540	-37.766	-58.198	-95.964	-83.754	-25.914	-30.914
630.550	-37.300	-58.295	-95.595	-83.385	-25.914	-30.914
630.560	-38.711	-58.254	-96.965	-84.755	-25.914	-30.914
630.570	-38.997	-58.287	-97.284	-85.074	-25.914	-30.914
630.580	-37.731	-58.135	-95.866	-83.656	-25.914	-30.914
630.590	-40.005	-58.394	-98.399	-86.189	-25.914	-30.914
630.600	-38.271	-58.371	-96.642	-84.432	-25.914	-30.914
630.610	-38.714	-58.391	-97.105	-84.895	-25.914	-30.914
630.620	-37.378	-58.531	-95.909	-83.699	-25.914	-30.914
630.630	-39.004	-58.536	-97.540	-85.330	-25.914	-30.914
630.640	-41.743	-58.583	-100.326	-88.116	-25.914	-30.914
630.650	-37.505	-58.621	-96.126	-83.916	-25.914	-30.914
630.660	-38.439	-58.384	-96.823	-84.613	-25.914	-30.914

630.670	-37.612	-58.618	-96.230	-84.020	-25.914	-30.914
630.680	-40.215	-58.630	-98.845	-86.635	-25.914	-30.914
630.690	-37.663	-58.582	-96.245	-84.035	-25.914	-30.914
630.700	-40.129	-58.589	-98.718	-86.508	-25.914	-30.914
630.710	-37.833	-58.911	-96.744	-84.534	-25.914	-30.914
630.720	-38.635	-58.813	-97.448	-85.238	-25.914	-30.914
630.730	-38.455	-58.867	-97.322	-85.112	-25.914	-30.914
630.740	-39.176	-58.776	-97.952	-85.742	-25.914	-30.914
630.750	-37.589	-58.666	-96.255	-84.045	-25.914	-30.914
630.760	-38.223	-58.958	-97.181	-84.971	-25.914	-30.914
630.770	-40.612	-58.849	-99.461	-87.251	-25.914	-30.914
630.780	-40.430	-59.007	-99.437	-87.227	-25.914	-30.914
630.790	-41.257	-58.808	-100.065	-87.855	-25.914	-30.914
630.800	-37.588	-58.966	-96.554	-84.344	-25.914	-30.914
630.810	-42.502	-58.867	-101.369	-89.159	-25.914	-30.914
630.820	-38.363	-59.103	-97.466	-85.256	-25.914	-30.914
630.830	-37.360	-58.856	-96.216	-84.006	-25.914	-30.914
630.840	-38.630	-59.016	-97.646	-85.436	-25.914	-30.914
630.850	-37.315	-58.930	-96.245	-84.035	-25.914	-30.914
630.860	-39.669	-59.174	-98.843	-86.633	-25.914	-30.914
630.870	-37.657	-58.966	-96.623	-84.413	-25.914	-30.914
630.880	-38.013	-59.289	-97.302	-85.092	-25.914	-30.914
630.890	-38.796	-59.193	-97.989	-85.779	-25.914	-30.914
630.900	-37.876	-59.075	-96.951	-84.741	-25.914	-30.914
630.910	-40.952	-59.280	-100.232	-88.022	-25.914	-30.914
630.920	-38.763	-59.098	-97.861	-85.651	-25.914	-30.914
630.930	-38.233	-59.373	-97.606	-85.396	-25.914	-30.914
630.940	-39.780	-58.929	-98.709	-86.499	-25.914	-30.914
630.950	-37.772	-59.377	-97.149	-84.939	-25.914	-30.914
630.960	-39.528	-59.417	-98.945	-86.735	-25.914	-30.914
630.970	-37.319	-59.304	-96.623	-84.413	-25.914	-30.914
630.980	-36.859	-59.529	-96.388	-84.178	-25.914	-30.914
630.990	-35.208	-59.231	-94.439	-82.229	-25.914	-30.914
631.000	-34.454	-59.519	-93.973	-81.763	-25.914	-30.914
631.010	-35.910	-59.399	-95.309	-83.099	-25.914	-30.914
631.020	-39.332	-59.444	-98.776	-86.566	-25.914	-30.914
631.030	-38.300	-59.751	-98.051	-85.841	-25.914	-30.914
631.040	-39.624	-59.713	-99.337	-87.127	-25.914	-30.914
631.050	-38.918	-59.836	-98.754	-86.544	-25.914	-30.914
631.060	-39.292	-59.530	-98.822	-86.612	-25.914	-30.914
631.070	-38.881	-59.857	-98.738	-86.528	-25.914	-30.914
631.080	-37.128	-59.630	-96.758	-84.548	-25.914	-30.914
631.090	-37.704	-59.810	-97.514	-85.304	-25.914	-30.914
631.100	-42.926	-59.803	-102.729	-90.519	-25.914	-30.914
631.110	-39.602	-59.667	-99.269	-87.059	-25.914	-30.914
631.120	-38.789	-59.792	-98.581	-86.371	-25.914	-30.914
631.130	-41.650	-59.900	-101.550	-89.340	-25.914	-30.914
631.140	-39.319	-59.789	-99.108	-86.898	-25.914	-30.914
631.150	-38.343	-59.872	-98.215	-86.005	-25.914	-30.914
631.160	-39.069	-60.077	-99.146	-86.936	-25.914	-30.914
631.170	-39.182	-60.034	-99.216	-87.006	-25.914	-30.914
631.180	-38.762	-59.779	-98.541	-86.331	-25.914	-30.914
631.190	-37.989	-59.906	-97.895	-85.685	-25.914	-30.914
631.200	-40.615	-59.915	-100.530	-88.320	-25.914	-30.914
631.210	-41.669	-60.005	-101.674	-89.464	-25.914	-30.914

631.220	-44.163	-60.022	-104.185	-91.975	-25.914	-30.914
631.230	-39.843	-59.794	-99.637	-87.427	-25.914	-30.914
631.240	-39.539	-60.204	-99.743	-87.533	-25.914	-30.914
631.250	-39.414	-60.183	-99.597	-87.387	-25.914	-30.914
631.260	-37.242	-60.055	-97.297	-85.087	-25.914	-30.914
631.270	-39.020	-60.118	-99.138	-86.928	-25.914	-30.914
631.280	-41.105	-60.231	-101.336	-89.126	-25.914	-30.914
631.290	-41.397	-60.438	-101.835	-89.625	-25.914	-30.914
631.300	-37.197	-60.242	-97.439	-85.229	-25.914	-30.914
631.310	-38.837	-60.030	-98.867	-86.657	-25.914	-30.914
631.320	-41.176	-60.471	-101.647	-89.437	-25.914	-30.914
631.330	-41.077	-60.310	-101.387	-89.177	-25.914	-30.914
631.340	-38.523	-60.308	-98.831	-86.621	-25.914	-30.914
631.350	-40.677	-60.313	-100.990	-88.780	-25.914	-30.914
631.360	-39.994	-60.485	-100.479	-88.269	-25.914	-30.914
631.370	-40.192	-60.339	-100.531	-88.321	-25.914	-30.914
631.380	-41.814	-60.678	-102.492	-90.282	-25.914	-30.914
631.390	-42.001	-60.236	-102.237	-90.027	-25.914	-30.914
631.400	-43.006	-60.344	-103.350	-91.140	-25.914	-30.914
631.410	-38.697	-60.568	-99.265	-87.055	-25.914	-30.914
631.420	-38.704	-60.333	-99.037	-86.827	-25.914	-30.914
631.430	-40.301	-60.694	-100.995	-88.785	-25.914	-30.914
631.440	-39.925	-60.497	-100.422	-88.212	-25.914	-30.914
631.450	-39.119	-60.570	-99.689	-87.479	-25.914	-30.914
631.460	-39.585	-60.634	-100.219	-88.009	-25.914	-30.914
631.470	-39.078	-60.824	-99.902	-87.692	-25.914	-30.914
631.480	-41.584	-60.576	-102.160	-89.950	-25.914	-30.914
631.490	-39.766	-60.342	-100.108	-87.898	-25.914	-30.914
631.500	-39.657	-60.725	-100.382	-88.172	-25.914	-30.914
631.510	-40.019	-60.804	-100.823	-88.613	-25.914	-30.914
631.520	-38.566	-60.843	-99.409	-87.199	-25.914	-30.914
631.530	-38.745	-60.924	-99.669	-87.459	-25.914	-30.914
631.540	-38.209	-60.928	-99.137	-86.927	-25.914	-30.914
631.550	-40.099	-60.840	-100.939	-88.729	-25.914	-30.914
631.560	-39.793	-60.777	-100.570	-88.360	-25.914	-30.914
631.570	-42.712	-61.022	-103.734	-91.524	-25.914	-30.914
631.580	-40.496	-60.775	-101.271	-89.061	-25.914	-30.914
631.590	-41.276	-60.991	-102.267	-90.057	-25.914	-30.914
631.600	-39.636	-61.234	-100.870	-88.660	-25.914	-30.914
631.610	-40.737	-61.071	-101.808	-89.598	-25.914	-30.914
631.620	-42.400	-61.025	-103.425	-91.215	-25.914	-30.914
631.630	-40.207	-60.944	-101.151	-88.941	-25.914	-30.914
631.640	-38.312	-61.093	-99.405	-87.195	-25.914	-30.914
631.650	-40.930	-61.109	-102.039	-89.829	-25.914	-30.914
631.660	-39.229	-61.290	-100.519	-88.309	-25.914	-30.914
631.670	-42.641	-61.072	-103.713	-91.503	-25.914	-30.914
631.680	-38.993	-61.411	-100.404	-88.194	-25.914	-30.914
631.690	-39.586	-61.259	-100.845	-88.635	-25.914	-30.914
631.700	-39.032	-61.347	-100.379	-88.169	-25.914	-30.914
631.710	-41.215	-61.299	-102.514	-90.304	-25.914	-30.914
631.720	-40.158	-61.236	-101.394	-89.184	-25.914	-30.914
631.730	-41.397	-61.321	-102.718	-90.508	-25.914	-30.914
631.740	-40.008	-61.321	-101.329	-89.119	-25.914	-30.914
631.750	-38.874	-61.378	-100.252	-88.042	-25.914	-30.914
631.760	-40.600	-61.404	-102.004	-89.794	-25.914	-30.914

631.770	-42.632	-61.621	-104.253	-92.043	-25.914	-30.914
631.780	-40.743	-61.509	-102.252	-90.042	-25.914	-30.914
631.790	-41.215	-61.412	-102.627	-90.417	-25.914	-30.914
631.800	-41.860	-61.528	-103.388	-91.178	-25.914	-30.914
631.810	-40.109	-61.609	-101.718	-89.508	-25.914	-30.914
631.820	-40.249	-61.763	-102.012	-89.802	-25.914	-30.914
631.830	-39.365	-61.555	-100.920	-88.710	-25.914	-30.914
631.840	-39.271	-61.241	-100.512	-88.302	-25.914	-30.914
631.850	-39.592	-61.475	-101.067	-88.857	-25.914	-30.914
631.860	-41.223	-61.588	-102.811	-90.601	-25.914	-30.914
631.870	-41.467	-61.631	-103.098	-90.888	-25.914	-30.914
631.880	-40.402	-61.747	-102.149	-89.939	-25.914	-30.914
631.890	-42.215	-61.630	-103.845	-91.635	-25.914	-30.914
631.900	-41.514	-61.663	-103.177	-90.967	-25.914	-30.914
631.910	-37.594	-61.569	-99.163	-86.953	-25.914	-30.914
631.920	-41.314	-61.698	-103.012	-90.802	-25.914	-30.914
631.930	-39.739	-61.914	-101.653	-89.443	-25.914	-30.914
631.940	-40.698	-61.808	-102.506	-90.296	-25.914	-30.914
631.950	-40.211	-61.785	-101.996	-89.786	-25.914	-30.914
631.960	-38.650	-61.761	-100.411	-88.201	-25.914	-30.914
631.970	-39.406	-61.852	-101.258	-89.048	-25.914	-30.914
631.980	-39.820	-62.035	-101.855	-89.645	-25.914	-30.914
631.990	-39.585	-61.925	-101.510	-89.300	-25.914	-30.914
+12 MHz From Channel Edge 632.000	-42.933	-62.140	-105.073	-92.863	-25.914	-30.914

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-300, modulated with a ATSC compliant 8-VSB modulator, was adjusted to obtain a 30 Watt average channel power (45dBm) 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 30 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.

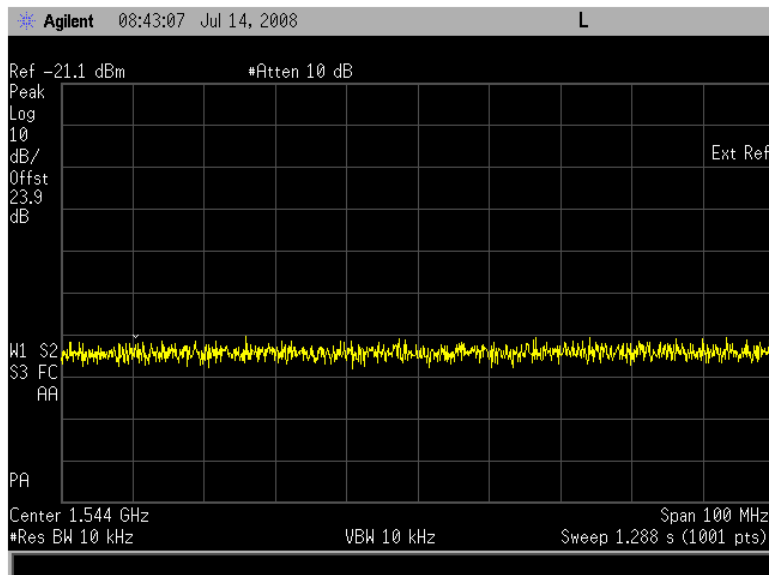


Figure 4-13: Spurious Emissions in GPS Band

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 100 watts (50dBm). 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.

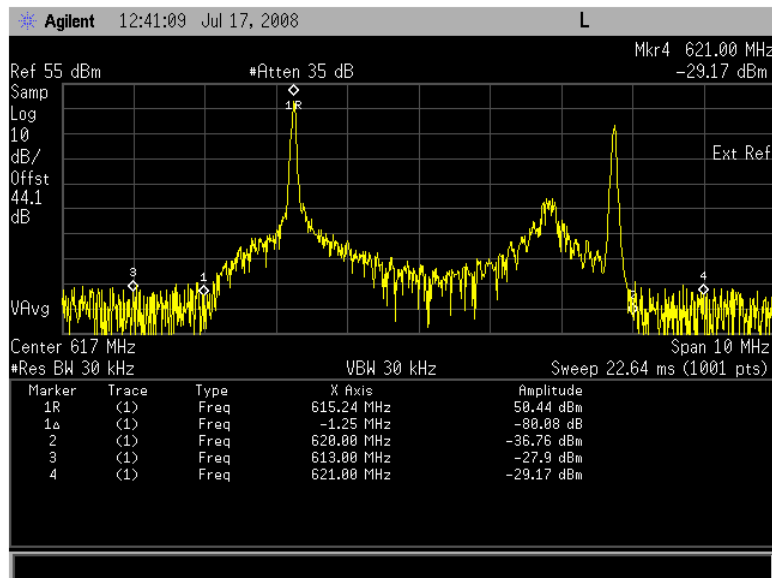


Figure 4-14: Out of Band Attenuation for Analog Operations

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: 100 Watts Peak or 30 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

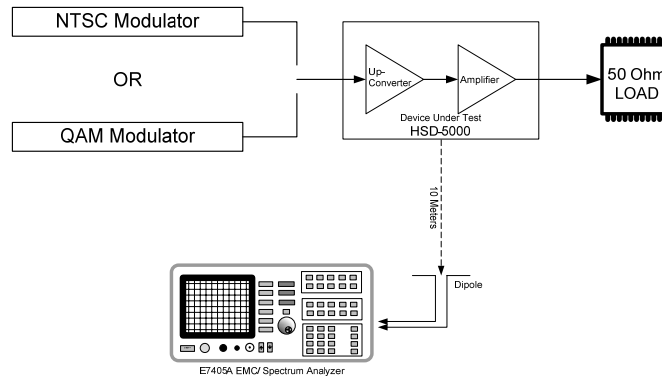


Figure 4-15: Test Setup for Measuring Radiated Emissions

Method of Measurement:

Using the test setup in Figure 4-15, the transmitter was driven to full power (50dBm) with analog visual and aural modulation. The test was repeated using 8-VSB modulation at an average power of 45dBm 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-300 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.