

## 6. OCCUPIED BANDWIDTH

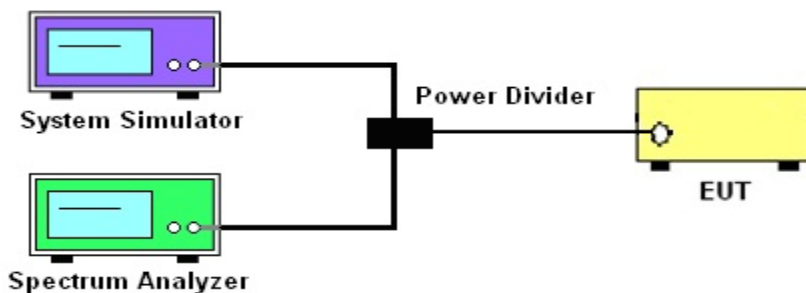
### 6.1 DESCRIPTION OF OCCUPIED BANDWIDTH MEASUREMENT

#### 6.1.1 MEASUREMENT METHOD

1. The occupied bandwidth is the width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5% of the total mean transmitted power.

2. The 26 db emission bandwidth is defined as the frequency range between two points, one above and one below the carrier frequency, at which the spectral density of the emission is attenuated 26 db below the maximum in-band spectral density of the modulated signal. spectral density (power per unit bandwidth) is to be measured with a detector of resolution bandwidth equal to approximately 1.0% of the emission bandwidth.

#### 6.1.2 TEST SETUP



#### 6.1.3 TEST PROCEDURES

1. The testing follows FCC KDB 971168 D01 v03r01 Section 4.2 and 4.3.
2. The EUT was connected to spectrum and system simulator via a power divider.
3. Select lowest, middle, and highest channels for each band and different modulation.
4. Set the test probe and measure the Occupied Bandwidth of the spectrum analyzer.
5. Measure and record the Occupied Bandwidth from the Spectrum Analyzer.

	LTE					
LTE BW	1.4M	3M	5M	10M	15M	20M
Span	3MHz	6MHz	10MHz	20MHz	30MHz	40MHz
RBW	30kHz	30kHz	100kHz	100kHz	300kHz	300kHz
VBW	100kHz	100kHz	300kHz	300kHz	1000kHz	1000kHz
Detector	PK	PK	PK	PK	PK	PK
Trace	Max	Max	Max	Max	Max	Max
Sweep Count	Auto	Auto	Auto	Auto	Auto	Auto

#### 6.1.4 MEASUREMENT RESULT

Note: Test chart See Appendix II

## 7. CONDUCTED BAND EDGE

### 7.1 DESCRIPTION OF CONDUCTED BAND EDGE MEASUREMENT

#### 7.1.1 MEASUREMENT METHOD

##### 1. §22.917(a)

For operations in the 824 – 849 MHz band, the FCC limit is  $43 + 10\log_{10}(P[\text{Watts}])$  dB below the transmitter power  $P(\text{Watts})$  in a 100kHz bandwidth. However, in the 1MHz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

##### 2. §24.238 (a)

For operations in the 1850-1910 and 1930-1990 MHz band, the FCC limit is  $43 + 10\log_{10}(P[\text{Watts}])$  dB below the transmitter power  $P(\text{Watts})$  in a 1MHz bandwidth. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed

##### 3. §27.53 (h)

For operations in the 1710 – 1755 MHz band, the FCC limit is  $43 + 10\log_{10}(P[\text{Watts}])$  dB below the transmitter power  $P(\text{Watts})$  in a 1 MHz bandwidth. However, in the 1MHz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

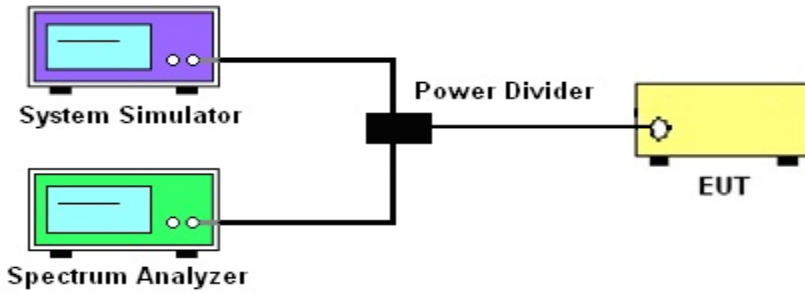
##### 4. §27.53(m)(4)

For operations in the 2500 MHz ~ 2570 MHz band this section, the attenuation factor shall be not less than  $40 + 10 \log (P)$  dB on all frequencies between the channel edge and 5 megahertz from the channel edge,  $43 + 10 \log (P)$  dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and  $55 + 10 \log (P)$  dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less that  $43 + 10 \log (P)$  dB on all frequencies between 2490.5 MHz and 2496 MHz and  $55 + 10 \log (P)$  dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

##### 5. §27.53 (g)

For operations in the 698 -746 MHz band, the FCC limit is  $43 + 10\log_{10}(P[\text{Watts}])$  dB below the transmitter power  $P(\text{Watts})$  in a 100 kHz bandwidth. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

### 7.1.2 TEST SETUP



### 7.1.3 TEST PROCEDURES

1. The testing FCC KDB 971168 D01 v03r01 Section 6.0 and ANSI C63.26 2015 Section 5.7.
2. The EUT was connected to spectrum analyzer and system simulator via a power divider.
3. The band edges of low and high channels for the highest RF powers were measured. Set RBW  $\geq$  1% EBW in the 1MHz band immediately outside and adjacent to the band edge.
4. Set spectrum analyzer with RMS/AVG detector.
5. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
6. The limit line is derived from  $43 + 10\log(P)$  dB below the transmitter power P(Watts)
 
$$= P(W) - [43 + 10\log(P)] \text{ (dB)}$$

$$= [30 + 10\log(P)] \text{ (dBm)} - [43 + 10\log(P)] \text{ (dB)}$$

$$= -13\text{dBm}.$$

Band 7:  
 $= P(W) - [55 + 10\log(P)] \text{ (dB)}$   
 $= [30 + 10\log(P)] \text{ (dBm)} - [55 + 10\log(P)] \text{ (dB)}$   
 $= -25\text{dBm}.$

	LTE					
LTE BW	1.4M	3M	5M	10M	15M	20M
Span	12MHz	13MHz	15MHz	20MHz	25MHz	30MHz
RBW	30kHz	30kHz	100kHz	100kHz	300kHz	300kHz
VBW	100kHz	100kHz	300kHz	300kHz	1000kHz	1000kHz
Detector	RMS	RMS	RMS	RMS	RMS	RMS
Trace	Max	Max	Max	Max	Max	Max
Sweep Count	Auto	Auto	Auto	Auto	Auto	Auto

### 7.1.4 MEASUREMENT RESULT

Note: Test chart See Appendix II

## 8. CONDUCTED SPURIOUS EMISSION

### 8.1 DESCRIPTION OF CONDUCTED SPURIOUS EMISSION MEASUREMENT

#### 8.1.1 MEASUREMENT METHOD

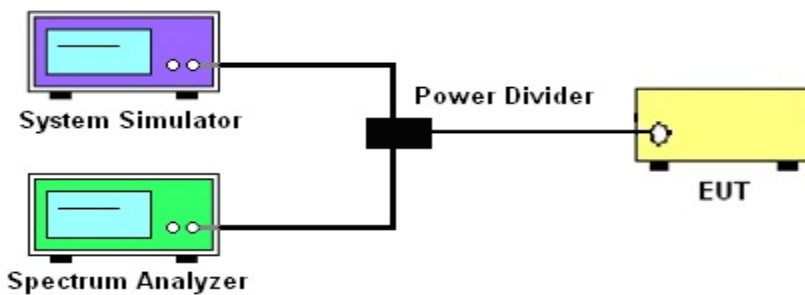
The power of any emission outside of the authorized operating frequency ranges must be lower than the transmitter power (P) by a factor of at least  $43 + 10 \log (P)$  dB.

For Band 7:

The power of any emission outside of the authorized operating frequency ranges must be lower than the transmitter power (P) by a factor of at least  $55 + 10 \log (P)$  dB.

It is measured by means of a calibrated spectrum analyzer and scanned from 30 MHz up to a frequency including its 10th harmonic.

#### 8.1.2 TEST SETUP



#### 8.1.3 TEST PROCEDURES

1. The testing FCC KDB 971168 D01 v03r01 Section 6.0 and ANSI C63.26 2015 Section 5.7.
2. The EUT was connected to spectrum analyzer and system simulator via a power divider.
3. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement
4. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking the record of maximum spurious emission.
5. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
6. The limit line is derived from  $43 + 10\log(P)$ dB below the transmitter power P(Watts)  
 $= P(W) - [43 + 10\log(P)] \text{ (dB)} = [30 + 10\log(P)] \text{ (dBm)} - [43 + 10\log(P)] \text{ (dB)}$   
 $= -13\text{dBm}$ .

For Band 7:  $P(W) - [43 + 10\log(P)] \text{ (dB)} = -25\text{dBm}$

	LTE					
LTE BW	1.4M	3M	5M	10M	15M	20M
Span	Auto	Auto	Auto	Auto	Auto	Auto
RBW	1000kHz	1000kHz	1000kHz	1000kHz	1000kHz	1000kHz
VBW	3000kHz	3000kHz	3000kHz	3000kHz	3000kHz	3000kHz
Detector	PK	PK	PK	PK	PK	PK
Trace	Max	Max	Max	Max	Max	Max

#### 8.1.4 TEST RESULTS

Note: Test chart See Appendix II

## 9. RADIATED SPURIOUS EMISSION

### 9.1 DESCRIPTION OF RADIATED SPURIOUS EMISSION

#### 9.1.1 MEASUREMENT METHOD

The radiated spurious emission was measured by substitution method according to ANSI C63.26 2015. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least  $43 + 10 \log (P)$  dB.

For Band 7 The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least  $55 + 10 \log (P)$  dB. The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic.

#### 9.1.2 TEST SETUP

The procedure of radiated spurious emissions is as follows:

a) Pre-calibration With pre-calibration method, the Radiated Spurious Emissions(RSE) is calculated as,  $RSE = R_x (dBuV) + CL (dB) + SA (dB) + Gain (dBi) - 107 (dBuV \text{ to } dBm)$  The SA is calibrated using following setup.

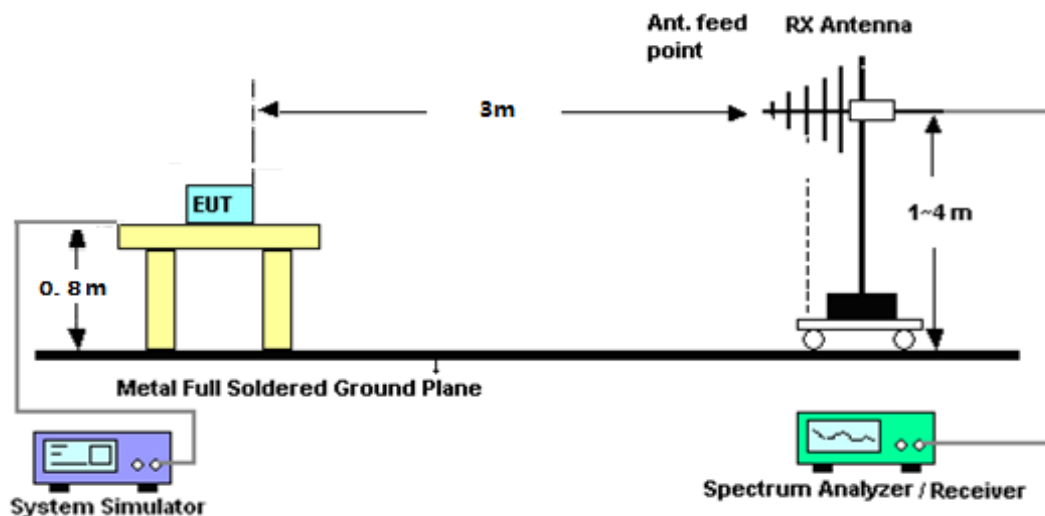
b) EUT was placed on 1.5 m non-conductive stand at a 3 m test distance from the receive antenna. A receiving antenna was placed on the antenna mast 3 m from the test item for emission measurements. The height of receiving antenna is 0.8m. The test setup refers to figure below. Detected emissions were maximized at each frequency by rotating the test item and adjusting the receiving antenna polarization. The radiated emission measurements of all non-harmonic and harmonics of the transmit frequency through the 10th harmonic measured with peak detector and 1MHz bandwidth.

Radiated emissions measurements were made only at the upper, middle, and lower carrier frequencies It was decided that measurements at these three carrier frequencies would be sufficient to demonstrate compliance with emissions limits because it was seen that all the significant spurs occur well outside the band and no radiation was seen from a carrier in one block of any band into any of the other blocks.

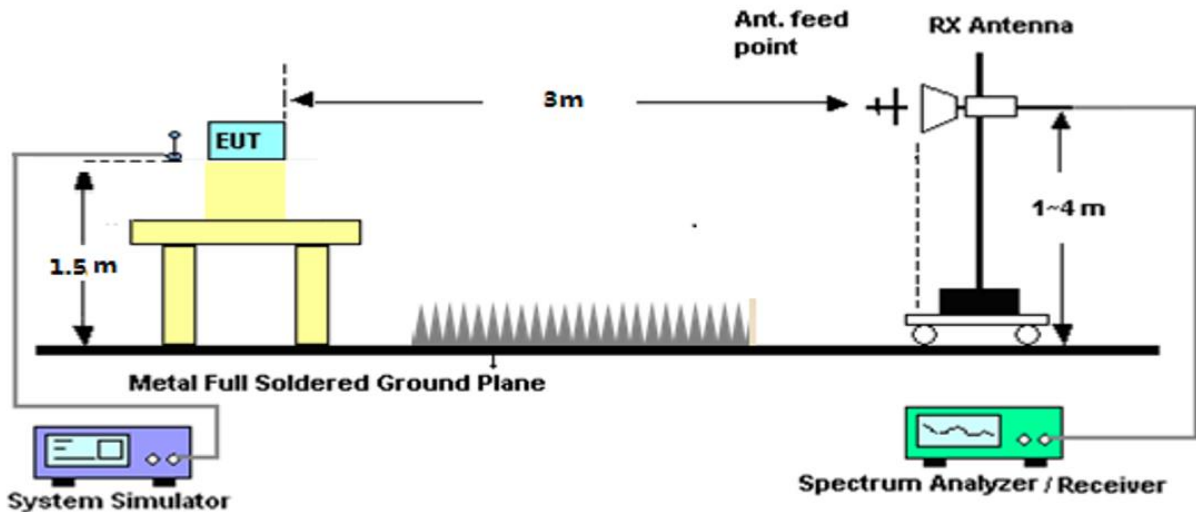
The substitution method is used. Substitution values at each frequency are measured before and saved to the test software. A "reference path loss" is established and the ARpl is the attenuation of "reference path loss", and including the gain of receive antenna, the gain of the preamplifier, the cable loss and the air loss. The measurement results are obtained as described below:

$Power = P_{Mea} + AR_{pl}$

For radiated test from 30MHz to 1GHz



For radiated test from above 1GHz



### 9.1.3 TEST PROCEDURES

1. The testing FCC KDB 971168 D01 Section 7 and ANSI C63.26 2015 Section 5.5.
2. The EUT was placed on a rotatable wooden table with 1.5 meter above ground.
3. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.
4. The table was rotated 360 degrees to determine the position of the highest spurious emission.
5. The height of the receiving antenna is varied between one meter and four meters to search the maximum spurious emission for both horizontal and vertical polarizations
6. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking the record of maximum spurious emission.
7. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
8. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
9. Taking the record of output power at antenna port.
10. Repeat step 7 to step 8 for another polarization.
11. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

The limit line is derived from  $43 + 10\log(P)\text{dB}$  below the transmitter power  $P(\text{Watts})$   
 $= P(\text{W}) - [43 + 10\log(P)] (\text{dB})$   
 $= [30 + 10\log(P)] (\text{dBm}) - [43 + 10\log(P)] (\text{dB})$   
 $= -13\text{dBm}$

For Band 7:

The limit line is derived from  $55 + 10\log(P)\text{dB}$  below the transmitter power  $P(\text{Watts})$   
 $= [30 + 10\log(P)] (\text{dBm}) - [55 + 10\log(P)] (\text{dB})$   
 $= -25\text{dBm}$

$P_{\text{Mea}} = \text{S.G Level} + \text{Ant-Cable loss}$ ;  $\text{Margin} = P_{\text{Mea}} - \text{Limit}$ .

### 9.1.4 TEST RESULTS

Note: Test chart See Appendix II

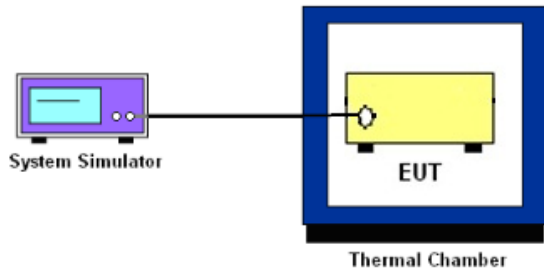
## 10. FREQUENCY STABILITY

### 10.1 DESCRIPTION OF FREQUENCY STABILITY MEASUREMENT

#### 10.1.1 MEASUREMENT METHOD

The frequency stability shall be measured by variation of ambient temperature and variation of primary supply voltage to ensure that the fundamental emission stays within the authorized frequency block. The frequency stability of the transmitter shall be maintained within  $\pm 0.00025\%$  ( $\pm 2.5\text{ppm}$ ) of the center frequency.

#### 10.1.2 TEST SETUP



#### 10.1.3 TEST PROCEDURES FOR TEMPERATURE VARIATION

1. The EUT was set up in the thermal chamber and connected with the system simulator.
2. With power OFF, the temperature was decreased to  $-30^{\circ}\text{C}$  and the EUT was stabilized before testing. Power was applied and the maximum change in frequency was recorded within one minute.
3. With power OFF, the temperature was raised in  $10^{\circ}\text{C}$  step up to  $50^{\circ}\text{C}$ . The EUT was stabilized at each step for at least half an hour. Power was applied and the maximum frequency change was recorded within one minute.

#### 10.1.4 TEST PROCEDURES FOR VOLTAGE VARIATION

1. The testing follows FCC KDB 971168 D01v01r03 Section 9.
2. The EUT was placed in a temperature chamber at  $25\pm 5^{\circ}\text{C}$  and connected with the system simulator.
3. The power supply voltage to the EUT was varied from 85% to 115% of the nominal value measured at the input to the EUT.
4. The variation in frequency was measured for the worst case.

#### 10.1.5 TEST RESULTS

Note: Test chart See Appendix II

## APPENDIX I-PHOTOS OF TEST SETUP

Note: See test photos in setup photo document for the actual connections between Product and support equipment.

## APPENDIX II-TEST DATA

Conducted output power

Band	Bandwidth (MHz)	UL Channel	RB Size	RB Position	Modulation	Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP Limit (dBm)	Verdict
Band2	1.4	18607	1	#0	QPSK	22.50	0.6	23.10	33.01	PASS
Band2	1.4	18607	1	#Mid	QPSK	22.52	0.6	23.12	33.01	PASS
Band2	1.4	18607	1	#Max	QPSK	22.52	0.6	23.12	33.01	PASS
Band2	1.4	18607	3	#0	QPSK	22.58	0.6	23.18	33.01	PASS
Band2	1.4	18607	3	#Mid	QPSK	22.57	0.6	23.17	33.01	PASS
Band2	1.4	18607	3	#Max	QPSK	22.64	0.6	23.24	33.01	PASS
Band2	1.4	18607	6	#0	QPSK	21.78	0.6	22.38	33.01	PASS
Band2	1.4	18607	1	#0	QAM16	21.84	0.6	22.44	33.01	PASS
Band2	1.4	18607	1	#Mid	QAM16	21.83	0.6	22.43	33.01	PASS
Band2	1.4	18607	1	#Max	QAM16	21.85	0.6	22.45	33.01	PASS
Band2	1.4	18607	3	#0	QAM16	22.03	0.6	22.63	33.01	PASS
Band2	1.4	18607	3	#Mid	QAM16	21.99	0.6	22.59	33.01	PASS
Band2	1.4	18607	3	#Max	QAM16	22.05	0.6	22.65	33.01	PASS
Band2	1.4	18607	6	#0	QAM16	21.12	0.6	21.72	33.01	PASS
Band2	1.4	18900	1	#0	QPSK	22.42	0.6	23.02	33.01	PASS
Band2	1.4	18900	1	#Mid	QPSK	22.43	0.6	23.03	33.01	PASS
Band2	1.4	18900	1	#Max	QPSK	22.35	0.6	22.95	33.01	PASS
Band2	1.4	18900	3	#0	QPSK	22.61	0.6	23.21	33.01	PASS
Band2	1.4	18900	3	#Mid	QPSK	22.56	0.6	23.16	33.01	PASS
Band2	1.4	18900	3	#Max	QPSK	22.57	0.6	23.17	33.01	PASS
Band2	1.4	18900	6	#0	QPSK	21.68	0.6	22.28	33.01	PASS
Band2	1.4	18900	1	#0	QAM16	21.84	0.6	22.44	33.01	PASS
Band2	1.4	18900	1	#Mid	QAM16	21.79	0.6	22.39	33.01	PASS
Band2	1.4	18900	1	#Max	QAM16	21.80	0.6	22.40	33.01	PASS
Band2	1.4	18900	3	#0	QAM16	22.10	0.6	22.70	33.01	PASS
Band2	1.4	18900	3	#Mid	QAM16	22.09	0.6	22.69	33.01	PASS
Band2	1.4	18900	3	#Max	QAM16	22.09	0.6	22.69	33.01	PASS
Band2	1.4	18900	6	#0	QAM16	21.06	0.6	21.66	33.01	PASS
Band2	1.4	19193	1	#0	QPSK	21.57	0.6	22.17	33.01	PASS
Band2	1.4	19193	1	#Mid	QPSK	21.57	0.6	22.17	33.01	PASS
Band2	1.4	19193	1	#Max	QPSK	21.50	0.6	22.10	33.01	PASS
Band2	1.4	19193	3	#0	QPSK	21.74	0.6	22.34	33.01	PASS
Band2	1.4	19193	3	#Mid	QPSK	21.70	0.6	22.30	33.01	PASS
Band2	1.4	19193	3	#Max	QPSK	21.69	0.6	22.29	33.01	PASS
Band2	1.4	19193	6	#0	QPSK	20.75	0.6	21.35	33.01	PASS
Band2	1.4	19193	1	#0	QAM16	20.68	0.6	21.28	33.01	PASS
Band2	1.4	19193	1	#Mid	QAM16	20.59	0.6	21.19	33.01	PASS
Band2	1.4	19193	1	#Max	QAM16	20.64	0.6	21.24	33.01	PASS
Band2	1.4	19193	3	#0	QAM16	21.11	0.6	21.71	33.01	PASS
Band2	1.4	19193	3	#Mid	QAM16	21.07	0.6	21.67	33.01	PASS
Band2	1.4	19193	3	#Max	QAM16	21.11	0.6	21.71	33.01	PASS
Band2	1.4	19193	6	#0	QAM16	20.25	0.6	20.85	33.01	PASS
Band2	3	18615	1	#0	QPSK	22.38	0.6	22.98	33.01	PASS
Band2	3	18615	1	#Mid	QPSK	22.39	0.6	22.99	33.01	PASS
Band2	3	18615	1	#Max	QPSK	22.49	0.6	23.09	33.01	PASS
Band2	3	18615	8	#0	QPSK	21.88	0.6	22.48	33.01	PASS
Band2	3	18615	8	#Mid	QPSK	21.90	0.6	22.50	33.01	PASS
Band2	3	18615	8	#Max	QPSK	21.90	0.6	22.50	33.01	PASS
Band2	3	18615	15	#0	QPSK	21.91	0.6	22.51	33.01	PASS
Band2	3	18615	1	#0	QAM16	21.55	0.6	22.15	33.01	PASS
Band2	3	18615	1	#Mid	QAM16	21.50	0.6	22.10	33.01	PASS
Band2	3	18615	1	#Max	QAM16	21.58	0.6	22.18	33.01	PASS
Band2	3	18615	8	#0	QAM16	21.10	0.6	21.70	33.01	PASS







Band2	15	18900	1	#0	QAM16	22.52	0.6	23.12	33.01	PASS
Band2	15	18900	1	#Mid	QAM16	22.18	0.6	22.78	33.01	PASS
Band2	15	18900	1	#Max	QAM16	21.99	0.6	22.59	33.01	PASS
Band2	15	18900	36	#0	QAM16	21.45	0.6	22.05	33.01	PASS
Band2	15	18900	36	#Mid	QAM16	21.20	0.6	21.80	33.01	PASS
Band2	15	18900	36	#Max	QAM16	21.00	0.6	21.60	33.01	PASS
Band2	15	18900	75	#0	QAM16	21.22	0.6	21.82	33.01	PASS
Band2	15	19125	1	#0	QPSK	22.33	0.6	22.93	33.01	PASS
Band2	15	19125	1	#Mid	QPSK	22.30	0.6	22.90	33.01	PASS
Band2	15	19125	1	#Max	QPSK	21.79	0.6	22.39	33.01	PASS
Band2	15	19125	36	#0	QPSK	21.65	0.6	22.25	33.01	PASS
Band2	15	19125	36	#Mid	QPSK	21.55	0.6	22.15	33.01	PASS
Band2	15	19125	36	#Max	QPSK	21.16	0.6	21.76	33.01	PASS
Band2	15	19125	75	#0	QPSK	21.49	0.6	22.09	33.01	PASS
Band2	15	19125	1	#0	QAM16	21.73	0.6	22.33	33.01	PASS
Band2	15	19125	1	#Mid	QAM16	21.66	0.6	22.26	33.01	PASS
Band2	15	19125	1	#Max	QAM16	21.20	0.6	21.80	33.01	PASS
Band2	15	19125	36	#0	QAM16	20.95	0.6	21.55	33.01	PASS
Band2	15	19125	36	#Mid	QAM16	20.87	0.6	21.47	33.01	PASS
Band2	15	19125	36	#Max	QAM16	20.51	0.6	21.11	33.01	PASS
Band2	15	19125	75	#0	QAM16	20.75	0.6	21.35	33.01	PASS
Band2	20	18700	1	#0	QPSK	22.55	0.6	23.15	33.01	PASS
Band2	20	18700	1	#Mid	QPSK	22.83	0.6	23.43	33.01	PASS
Band2	20	18700	1	#Max	QPSK	23.05	0.6	23.65	33.01	PASS
Band2	20	18700	50	#0	QPSK	22.00	0.6	22.60	33.01	PASS
Band2	20	18700	50	#Mid	QPSK	22.27	0.6	22.87	33.01	PASS
Band2	20	18700	50	#Max	QPSK	22.54	0.6	23.14	33.01	PASS
Band2	20	18700	100	#0	QPSK	22.30	0.6	22.90	33.01	PASS
Band2	20	18700	1	#0	QAM16	22.01	0.6	22.61	33.01	PASS
Band2	20	18700	1	#Mid	QAM16	22.28	0.6	22.88	33.01	PASS
Band2	20	18700	1	#Max	QAM16	22.48	0.6	23.08	33.01	PASS
Band2	20	18700	50	#0	QAM16	21.30	0.6	21.90	33.01	PASS
Band2	20	18700	50	#Mid	QAM16	21.55	0.6	22.15	33.01	PASS
Band2	20	18700	50	#Max	QAM16	21.80	0.6	22.40	33.01	PASS
Band2	20	18700	100	#0	QAM16	21.57	0.6	22.17	33.01	PASS
Band2	20	18900	1	#0	QPSK	22.85	0.6	23.45	33.01	PASS
Band2	20	18900	1	#Mid	QPSK	22.64	0.6	23.24	33.01	PASS
Band2	20	18900	1	#Max	QPSK	22.22	0.6	22.82	33.01	PASS
Band2	20	18900	50	#0	QPSK	22.53	0.6	23.13	33.01	PASS
Band2	20	18900	50	#Mid	QPSK	22.10	0.6	22.70	33.01	PASS
Band2	20	18900	50	#Max	QPSK	21.82	0.6	22.42	33.01	PASS
Band2	20	18900	100	#0	QPSK	22.15	0.6	22.75	33.01	PASS
Band2	20	18900	1	#0	QAM16	22.36	0.6	22.96	33.01	PASS
Band2	20	18900	1	#Mid	QAM16	22.19	0.6	22.79	33.01	PASS
Band2	20	18900	1	#Max	QAM16	21.77	0.6	22.37	33.01	PASS
Band2	20	18900	50	#0	QAM16	21.82	0.6	22.42	33.01	PASS
Band2	20	18900	50	#Mid	QAM16	21.40	0.6	22.00	33.01	PASS
Band2	20	18900	50	#Max	QAM16	21.19	0.6	21.79	33.01	PASS
Band2	20	18900	100	#0	QAM16	21.39	0.6	21.99	33.01	PASS
Band2	20	19100	1	#0	QPSK	22.22	0.6	22.82	33.01	PASS
Band2	20	19100	1	#Mid	QPSK	22.51	0.6	23.11	33.01	PASS
Band2	20	19100	1	#Max	QPSK	21.82	0.6	22.42	33.01	PASS
Band2	20	19100	50	#0	QPSK	21.48	0.6	22.08	33.01	PASS
Band2	20	19100	50	#Mid	QPSK	21.77	0.6	22.37	33.01	PASS
Band2	20	19100	50	#Max	QPSK	21.33	0.6	21.93	33.01	PASS
Band2	20	19100	100	#0	QPSK	21.38	0.6	21.98	33.01	PASS
Band2	20	19100	1	#0	QAM16	21.65	0.6	22.25	33.01	PASS
Band2	20	19100	1	#Mid	QAM16	21.90	0.6	22.50	33.01	PASS
Band2	20	19100	1	#Max	QAM16	21.31	0.6	21.91	33.01	PASS
Band2	20	19100	50	#0	QAM16	20.71	0.6	21.31	33.01	PASS
Band2	20	19100	50	#Mid	QAM16	21.04	0.6	21.64	33.01	PASS
Band2	20	19100	50	#Max	QAM16	20.60	0.6	21.20	33.01	PASS
Band2	20	19100	100	#0	QAM16	20.62	0.6	21.22	33.01	PASS

Band	Bandwidth (MHz)	UL Channel	RB Size	RB Position	Modulation	Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP Limit (dBm)	Verdict
Band4	1.4	19957	1	#0	QPSK	22.77	0.7	23.47	30	PASS
Band4	1.4	19957	1	#Mid	QPSK	22.76	0.7	23.46	30	PASS
Band4	1.4	19957	1	#Max	QPSK	22.71	0.7	23.41	30	PASS
Band4	1.4	19957	3	#0	QPSK	22.78	0.7	23.48	30	PASS
Band4	1.4	19957	3	#Mid	QPSK	22.78	0.7	23.48	30	PASS
Band4	1.4	19957	3	#Max	QPSK	22.83	0.7	23.53	30	PASS
Band4	1.4	19957	6	#0	QPSK	21.93	0.7	22.63	30	PASS
Band4	1.4	19957	1	#0	QAM16	22.09	0.7	22.79	30	PASS
Band4	1.4	19957	1	#Mid	QAM16	22.04	0.7	22.74	30	PASS
Band4	1.4	19957	1	#Max	QAM16	22.10	0.7	22.80	30	PASS
Band4	1.4	19957	3	#0	QAM16	22.28	0.7	22.98	30	PASS
Band4	1.4	19957	3	#Mid	QAM16	22.24	0.7	22.94	30	PASS
Band4	1.4	19957	3	#Max	QAM16	22.23	0.7	22.93	30	PASS
Band4	1.4	19957	6	#0	QAM16	21.38	0.7	22.08	30	PASS
Band4	1.4	20175	1	#0	QPSK	22.79	0.7	23.49	30	PASS
Band4	1.4	20175	1	#Mid	QPSK	22.75	0.7	23.45	30	PASS
Band4	1.4	20175	1	#Max	QPSK	22.75	0.7	23.45	30	PASS
Band4	1.4	20175	3	#0	QPSK	22.97	0.7	23.67	30	PASS
Band4	1.4	20175	3	#Mid	QPSK	22.93	0.7	23.63	30	PASS
Band4	1.4	20175	3	#Max	QPSK	22.92	0.7	23.62	30	PASS
Band4	1.4	20175	6	#0	QPSK	22.02	0.7	22.72	30	PASS
Band4	1.4	20175	1	#0	QAM16	22.16	0.7	22.86	30	PASS
Band4	1.4	20175	1	#Mid	QAM16	22.17	0.7	22.87	30	PASS
Band4	1.4	20175	1	#Max	QAM16	22.17	0.7	22.87	30	PASS
Band4	1.4	20175	3	#0	QAM16	22.42	0.7	23.12	30	PASS
Band4	1.4	20175	3	#Mid	QAM16	22.37	0.7	23.07	30	PASS
Band4	1.4	20175	3	#Max	QAM16	22.44	0.7	23.14	30	PASS
Band4	1.4	20175	6	#0	QAM16	21.45	0.7	22.15	30	PASS
Band4	1.4	20393	1	#0	QPSK	22.68	0.7	23.38	30	PASS
Band4	1.4	20393	1	#Mid	QPSK	22.73	0.7	23.43	30	PASS
Band4	1.4	20393	1	#Max	QPSK	22.71	0.7	23.41	30	PASS
Band4	1.4	20393	3	#0	QPSK	22.87	0.7	23.57	30	PASS
Band4	1.4	20393	3	#Mid	QPSK	22.82	0.7	23.52	30	PASS
Band4	1.4	20393	3	#Max	QPSK	22.90	0.7	23.60	30	PASS
Band4	1.4	20393	6	#0	QPSK	22.00	0.7	22.70	30	PASS
Band4	1.4	20393	1	#0	QAM16	21.82	0.7	22.52	30	PASS
Band4	1.4	20393	1	#Mid	QAM16	21.81	0.7	22.51	30	PASS
Band4	1.4	20393	1	#Max	QAM16	21.80	0.7	22.50	30	PASS
Band4	1.4	20393	3	#0	QAM16	22.25	0.7	22.95	30	PASS
Band4	1.4	20393	3	#Mid	QAM16	22.21	0.7	22.91	30	PASS
Band4	1.4	20393	3	#Max	QAM16	22.34	0.7	23.04	30	PASS
Band4	1.4	20393	6	#0	QAM16	21.42	0.7	22.12	30	PASS
Band4	3	19965	1	#0	QPSK	22.64	0.7	23.34	30	PASS
Band4	3	19965	1	#Mid	QPSK	22.58	0.7	23.28	30	PASS
Band4	3	19965	1	#Max	QPSK	22.55	0.7	23.25	30	PASS
Band4	3	19965	8	#0	QPSK	22.07	0.7	22.77	30	PASS
Band4	3	19965	8	#Mid	QPSK	22.06	0.7	22.76	30	PASS
Band4	3	19965	8	#Max	QPSK	22.03	0.7	22.73	30	PASS
Band4	3	19965	15	#0	QPSK	22.07	0.7	22.77	30	PASS
Band4	3	19965	1	#0	QAM16	22.04	0.7	22.74	30	PASS
Band4	3	19965	1	#Mid	QAM16	21.99	0.7	22.69	30	PASS
Band4	3	19965	1	#Max	QAM16	21.99	0.7	22.69	30	PASS
Band4	3	19965	8	#0	QAM16	21.34	0.7	22.04	30	PASS
Band4	3	19965	8	#Mid	QAM16	21.34	0.7	22.04	30	PASS
Band4	3	19965	8	#Max	QAM16	21.27	0.7	21.97	30	PASS
Band4	3	19965	15	#0	QAM16	21.35	0.7	22.05	30	PASS
Band4	3	20175	1	#0	QPSK	22.75	0.7	23.45	30	PASS
Band4	3	20175	1	#Mid	QPSK	22.72	0.7	23.42	30	PASS
Band4	3	20175	1	#Max	QPSK	22.80	0.7	23.50	30	PASS
Band4	3	20175	8	#0	QPSK	22.20	0.7	22.90	30	PASS
Band4	3	20175	8	#Mid	QPSK	22.19	0.7	22.89	30	PASS
Band4	3	20175	8	#Max	QPSK	22.19	0.7	22.89	30	PASS
Band4	3	20175	15	#0	QPSK	22.23	0.7	22.93	30	PASS
Band4	3	20175	1	#0	QAM16	21.91	0.7	22.61	30	PASS
Band4	3	20175	1	#Mid	QAM16	21.88	0.7	22.58	30	PASS





Band4	15	20325	36	#Max	QPSK	22.16	0.7	22.86	30	PASS
Band4	15	20325	75	#0	QPSK	22.18	0.7	22.88	30	PASS
Band4	15	20325	1	#0	QAM16	22.21	0.7	22.91	30	PASS
Band4	15	20325	1	#Mid	QAM16	22.20	0.7	22.90	30	PASS
Band4	15	20325	1	#Max	QAM16	22.32	0.7	23.02	30	PASS
Band4	15	20325	36	#0	QAM16	21.36	0.7	22.06	30	PASS
Band4	15	20325	36	#Mid	QAM16	21.33	0.7	22.03	30	PASS
Band4	15	20325	36	#Max	QAM16	21.40	0.7	22.10	30	PASS
Band4	15	20325	75	#0	QAM16	21.43	0.7	22.13	30	PASS
Band4	20	20050	1	#0	QPSK	22.75	0.7	23.45	30	PASS
Band4	20	20050	1	#Mid	QPSK	22.95	0.7	23.65	30	PASS
Band4	20	20050	1	#Max	QPSK	23.03	0.7	23.73	30	PASS
Band4	20	20050	50	#0	QPSK	22.29	0.7	22.99	30	PASS
Band4	20	20050	50	#Mid	QPSK	22.35	0.7	23.05	30	PASS
Band4	20	20050	50	#Max	QPSK	22.46	0.7	23.16	30	PASS
Band4	20	20050	100	#0	QPSK	22.31	0.7	23.01	30	PASS
Band4	20	20050	1	#0	QAM16	22.26	0.7	22.96	30	PASS
Band4	20	20050	1	#Mid	QAM16	22.49	0.7	23.19	30	PASS
Band4	20	20050	1	#Max	QAM16	22.55	0.7	23.25	30	PASS
Band4	20	20050	50	#0	QAM16	21.58	0.7	22.28	30	PASS
Band4	20	20050	50	#Mid	QAM16	21.67	0.7	22.37	30	PASS
Band4	20	20050	50	#Max	QAM16	21.74	0.7	22.44	30	PASS
Band4	20	20050	100	#0	QAM16	21.59	0.7	22.29	30	PASS
Band4	20	20175	1	#0	QPSK	22.90	0.7	23.60	30	PASS
Band4	20	20175	1	#Mid	QPSK	23.07	0.7	23.77	30	PASS
Band4	20	20175	1	#Max	QPSK	22.98	0.7	23.68	30	PASS
Band4	20	20175	50	#0	QPSK	22.35	0.7	23.05	30	PASS
Band4	20	20175	50	#Mid	QPSK	22.41	0.7	23.11	30	PASS
Band4	20	20175	50	#Max	QPSK	22.50	0.7	23.20	30	PASS
Band4	20	20175	100	#0	QPSK	22.42	0.7	23.12	30	PASS
Band4	20	20175	1	#0	QAM16	22.35	0.7	23.05	30	PASS
Band4	20	20175	1	#Mid	QAM16	22.43	0.7	23.13	30	PASS
Band4	20	20175	1	#Max	QAM16	22.39	0.7	23.09	30	PASS
Band4	20	20175	50	#0	QAM16	21.58	0.7	22.28	30	PASS
Band4	20	20175	50	#Mid	QAM16	21.63	0.7	22.33	30	PASS
Band4	20	20175	50	#Max	QAM16	21.73	0.7	22.43	30	PASS
Band4	20	20175	100	#0	QAM16	21.65	0.7	22.35	30	PASS
Band4	20	20300	1	#0	QPSK	22.86	0.7	23.56	30	PASS
Band4	20	20300	1	#Mid	QPSK	22.88	0.7	23.58	30	PASS
Band4	20	20300	1	#Max	QPSK	22.89	0.7	23.59	30	PASS
Band4	20	20300	50	#0	QPSK	22.26	0.7	22.96	30	PASS
Band4	20	20300	50	#Mid	QPSK	22.31	0.7	23.01	30	PASS
Band4	20	20300	50	#Max	QPSK	22.29	0.7	22.99	30	PASS
Band4	20	20300	100	#0	QPSK	22.24	0.7	22.94	30	PASS
Band4	20	20300	1	#0	QAM16	22.29	0.7	22.99	30	PASS
Band4	20	20300	1	#Mid	QAM16	22.35	0.7	23.05	30	PASS
Band4	20	20300	1	#Max	QAM16	22.37	0.7	23.07	30	PASS
Band4	20	20300	50	#0	QAM16	21.56	0.7	22.26	30	PASS
Band4	20	20300	50	#Mid	QAM16	21.60	0.7	22.30	30	PASS
Band4	20	20300	50	#Max	QAM16	21.60	0.7	22.30	30	PASS
Band4	20	20300	100	#0	QAM16	21.54	0.7	22.24	30	PASS





Band5	3	20525	1	#Max	QAM16	21.82	-3.9	15.77	38.45	PASS
Band5	3	20525	8	#0	QAM16	21.29	-3.9	15.24	38.45	PASS
Band5	3	20525	8	#Mid	QAM16	21.35	-3.9	15.30	38.45	PASS
Band5	3	20525	8	#Max	QAM16	21.39	-3.9	15.34	38.45	PASS
Band5	3	20525	15	#0	QAM16	21.45	-3.9	15.40	38.45	PASS
Band5	3	20635	1	#0	QPSK	22.65	-3.9	16.60	38.45	PASS
Band5	3	20635	1	#Mid	QPSK	22.61	-3.9	16.56	38.45	PASS
Band5	3	20635	1	#Max	QPSK	22.54	-3.9	16.49	38.45	PASS
Band5	3	20635	8	#0	QPSK	22.12	-3.9	16.07	38.45	PASS
Band5	3	20635	8	#Mid	QPSK	22.15	-3.9	16.10	38.45	PASS
Band5	3	20635	8	#Max	QPSK	22.08	-3.9	16.03	38.45	PASS
Band5	3	20635	15	#0	QPSK	22.13	-3.9	16.08	38.45	PASS
Band5	3	20635	1	#0	QAM16	22.35	-3.9	16.30	38.45	PASS
Band5	3	20635	1	#Mid	QAM16	22.32	-3.9	16.27	38.45	PASS
Band5	3	20635	1	#Max	QAM16	22.24	-3.9	16.19	38.45	PASS
Band5	3	20635	8	#0	QAM16	21.37	-3.9	15.32	38.45	PASS
Band5	3	20635	8	#Mid	QAM16	21.40	-3.9	15.35	38.45	PASS
Band5	3	20635	8	#Max	QAM16	21.34	-3.9	15.29	38.45	PASS
Band5	3	20635	15	#0	QAM16	21.43	-3.9	15.38	38.45	PASS
Band5	5	20425	1	#0	QPSK	22.68	-3.9	16.63	38.45	PASS
Band5	5	20425	1	#Mid	QPSK	22.79	-3.9	16.74	38.45	PASS
Band5	5	20425	1	#Max	QPSK	22.71	-3.9	16.66	38.45	PASS
Band5	5	20425	12	#0	QPSK	22.07	-3.9	16.02	38.45	PASS
Band5	5	20425	12	#Mid	QPSK	22.11	-3.9	16.06	38.45	PASS
Band5	5	20425	12	#Max	QPSK	22.04	-3.9	15.99	38.45	PASS
Band5	5	20425	25	#0	QPSK	22.13	-3.9	16.08	38.45	PASS
Band5	5	20425	1	#0	QAM16	22.21	-3.9	16.16	38.45	PASS
Band5	5	20425	1	#Mid	QAM16	22.24	-3.9	16.19	38.45	PASS
Band5	5	20425	1	#Max	QAM16	22.32	-3.9	16.27	38.45	PASS
Band5	5	20425	12	#0	QAM16	21.29	-3.9	15.24	38.45	PASS
Band5	5	20425	12	#Mid	QAM16	21.29	-3.9	15.24	38.45	PASS
Band5	5	20425	12	#Max	QAM16	21.28	-3.9	15.23	38.45	PASS
Band5	5	20425	25	#0	QAM16	21.45	-3.9	15.40	38.45	PASS
Band5	5	20525	1	#0	QPSK	22.75	-3.9	16.70	38.45	PASS
Band5	5	20525	1	#Mid	QPSK	22.90	-3.9	16.85	38.45	PASS
Band5	5	20525	1	#Max	QPSK	22.93	-3.9	16.88	38.45	PASS
Band5	5	20525	12	#0	QPSK	22.13	-3.9	16.08	38.45	PASS
Band5	5	20525	12	#Mid	QPSK	22.25	-3.9	16.20	38.45	PASS
Band5	5	20525	12	#Max	QPSK	22.30	-3.9	16.25	38.45	PASS
Band5	5	20525	25	#0	QPSK	22.25	-3.9	16.20	38.45	PASS
Band5	5	20525	1	#0	QAM16	22.32	-3.9	16.27	38.45	PASS
Band5	5	20525	1	#Mid	QAM16	22.45	-3.9	16.40	38.45	PASS
Band5	5	20525	1	#Max	QAM16	22.51	-3.9	16.46	38.45	PASS
Band5	5	20525	12	#0	QAM16	21.43	-3.9	15.38	38.45	PASS
Band5	5	20525	12	#Mid	QAM16	21.49	-3.9	15.44	38.45	PASS
Band5	5	20525	12	#Max	QAM16	21.58	-3.9	15.53	38.45	PASS
Band5	5	20525	25	#0	QAM16	21.49	-3.9	15.44	38.45	PASS
Band5	5	20625	1	#0	QPSK	23.01	-3.9	16.96	38.45	PASS
Band5	5	20625	1	#Mid	QPSK	22.95	-3.9	16.90	38.45	PASS
Band5	5	20625	1	#Max	QPSK	22.84	-3.9	16.79	38.45	PASS
Band5	5	20625	12	#0	QPSK	22.31	-3.9	16.26	38.45	PASS
Band5	5	20625	12	#Mid	QPSK	22.29	-3.9	16.24	38.45	PASS
Band5	5	20625	12	#Max	QPSK	22.22	-3.9	16.17	38.45	PASS
Band5	5	20625	25	#0	QPSK	22.30	-3.9	16.25	38.45	PASS
Band5	5	20625	1	#0	QAM16	22.77	-3.9	16.72	38.45	PASS
Band5	5	20625	1	#Mid	QAM16	22.77	-3.9	16.72	38.45	PASS
Band5	5	20625	1	#Max	QAM16	22.63	-3.9	16.58	38.45	PASS
Band5	5	20625	12	#0	QAM16	21.56	-3.9	15.51	38.45	PASS
Band5	5	20625	12	#Mid	QAM16	21.52	-3.9	15.47	38.45	PASS
Band5	5	20625	12	#Max	QAM16	21.50	-3.9	15.45	38.45	PASS
Band5	5	20625	25	#0	QAM16	21.52	-3.9	15.47	38.45	PASS
Band5	10	20450	1	#0	QPSK	22.75	-3.9	16.70	38.45	PASS
Band5	10	20450	1	#Mid	QPSK	22.80	-3.9	16.75	38.45	PASS
Band5	10	20450	1	#Max	QPSK	22.85	-3.9	16.80	38.45	PASS
Band5	10	20450	25	#0	QPSK	22.17	-3.9	16.12	38.45	PASS
Band5	10	20450	25	#Mid	QPSK	22.12	-3.9	16.07	38.45	PASS
Band5	10	20450	25	#Max	QPSK	22.14	-3.9	16.09	38.45	PASS
Band5	10	20450	50	#0	QPSK	22.20	-3.9	16.15	38.45	PASS

Band5	10	20450	1	#0	QAM16	21.80	-3.9	15.75	38.45	PASS
Band5	10	20450	1	#Mid	QAM16	21.90	-3.9	15.85	38.45	PASS
Band5	10	20450	1	#Max	QAM16	21.96	-3.9	15.91	38.45	PASS
Band5	10	20450	25	#0	QAM16	21.43	-3.9	15.38	38.45	PASS
Band5	10	20450	25	#Mid	QAM16	21.41	-3.9	15.36	38.45	PASS
Band5	10	20450	25	#Max	QAM16	21.42	-3.9	15.37	38.45	PASS
Band5	10	20450	50	#0	QAM16	21.45	-3.9	15.40	38.45	PASS
Band5	10	20525	1	#0	QPSK	22.74	-3.9	16.69	38.45	PASS
Band5	10	20525	1	#Mid	QPSK	22.88	-3.9	16.83	38.45	PASS
Band5	10	20525	1	#Max	QPSK	23.08	-3.9	17.03	38.45	PASS
Band5	10	20525	25	#0	QPSK	22.12	-3.9	16.07	38.45	PASS
Band5	10	20525	25	#Mid	QPSK	22.27	-3.9	16.22	38.45	PASS
Band5	10	20525	25	#Max	QPSK	22.40	-3.9	16.35	38.45	PASS
Band5	10	20525	50	#0	QPSK	22.31	-3.9	16.26	38.45	PASS
Band5	10	20525	1	#0	QAM16	22.40	-3.9	16.35	38.45	PASS
Band5	10	20525	1	#Mid	QAM16	22.50	-3.9	16.45	38.45	PASS
Band5	10	20525	1	#Max	QAM16	22.72	-3.9	16.67	38.45	PASS
Band5	10	20525	25	#0	QAM16	21.41	-3.9	15.36	38.45	PASS
Band5	10	20525	25	#Mid	QAM16	21.54	-3.9	15.49	38.45	PASS
Band5	10	20525	25	#Max	QAM16	21.66	-3.9	15.61	38.45	PASS
Band5	10	20525	50	#0	QAM16	21.56	-3.9	15.51	38.45	PASS
Band5	10	20600	1	#0	QPSK	23.07	-3.9	17.02	38.45	PASS
Band5	10	20600	1	#Mid	QPSK	23.13	-3.9	17.08	38.45	PASS
Band5	10	20600	1	#Max	QPSK	22.93	-3.9	16.88	38.45	PASS
Band5	10	20600	25	#0	QPSK	22.43	-3.9	16.38	38.45	PASS
Band5	10	20600	25	#Mid	QPSK	22.42	-3.9	16.37	38.45	PASS
Band5	10	20600	25	#Max	QPSK	22.27	-3.9	16.22	38.45	PASS
Band5	10	20600	50	#0	QPSK	22.41	-3.9	16.36	38.45	PASS
Band5	10	20600	1	#0	QAM16	22.37	-3.9	16.32	38.45	PASS
Band5	10	20600	1	#Mid	QAM16	22.56	-3.9	16.51	38.45	PASS
Band5	10	20600	1	#Max	QAM16	22.31	-3.9	16.26	38.45	PASS
Band5	10	20600	25	#0	QAM16	21.67	-3.9	15.62	38.45	PASS
Band5	10	20600	25	#Mid	QAM16	21.67	-3.9	15.62	38.45	PASS
Band5	10	20600	25	#Max	QAM16	21.56	-3.9	15.51	38.45	PASS
Band5	10	20600	50	#0	QAM16	21.68	-3.9	15.63	38.45	PASS