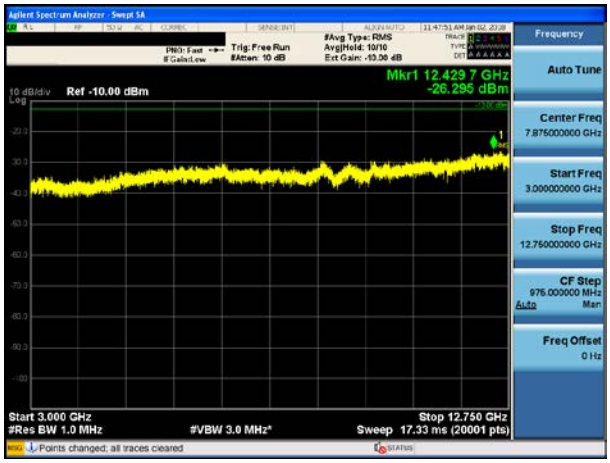
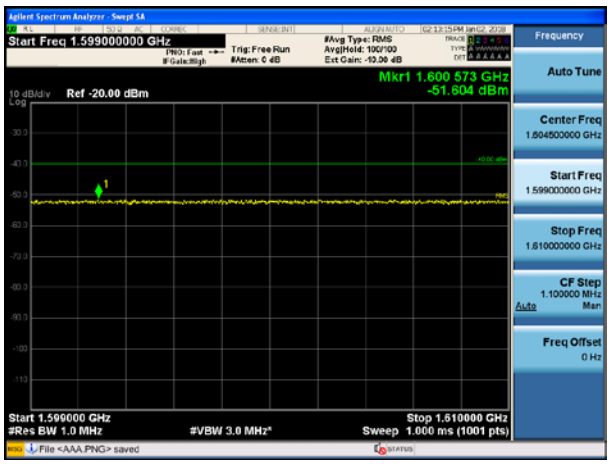
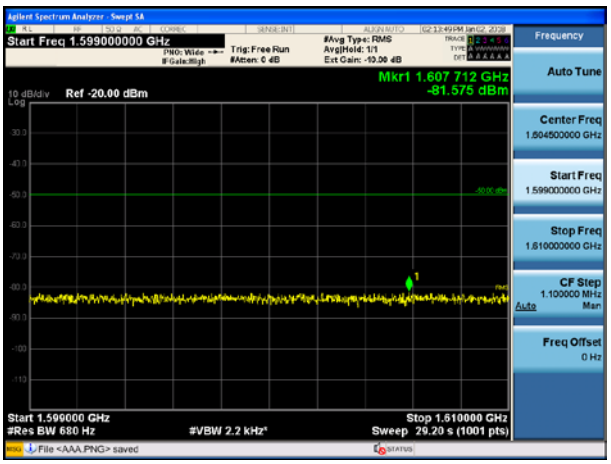
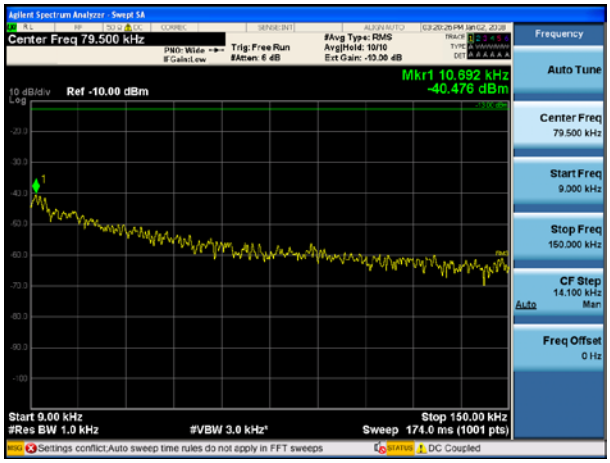
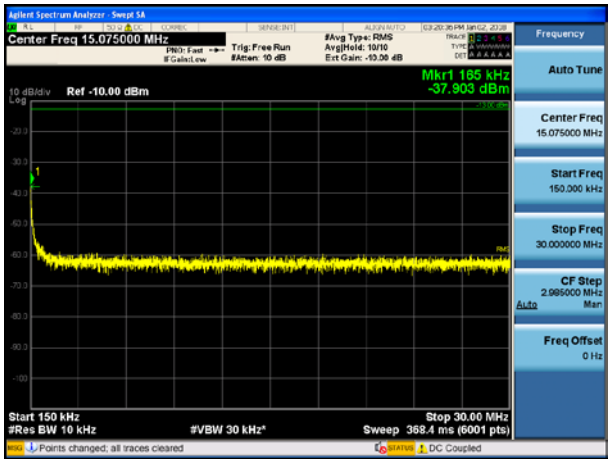
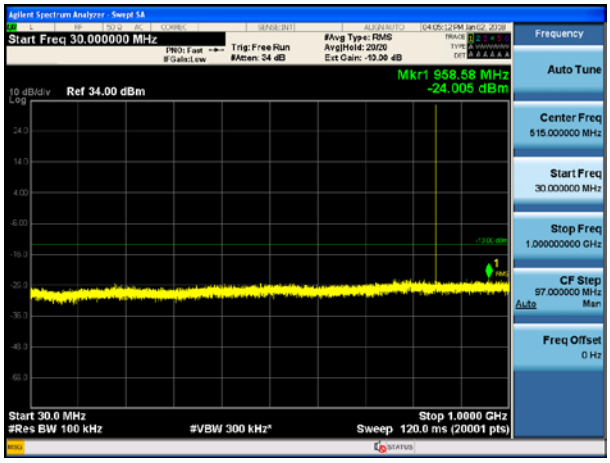
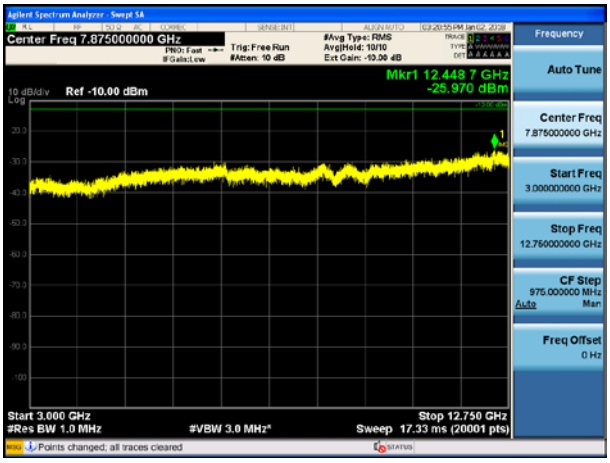
3 ㎓ ~ 12.75 ㎓


1599 ㎒ ~ 1610 ㎒ (1)	1599 ㎒ ~ 1610 ㎒ (2)
	

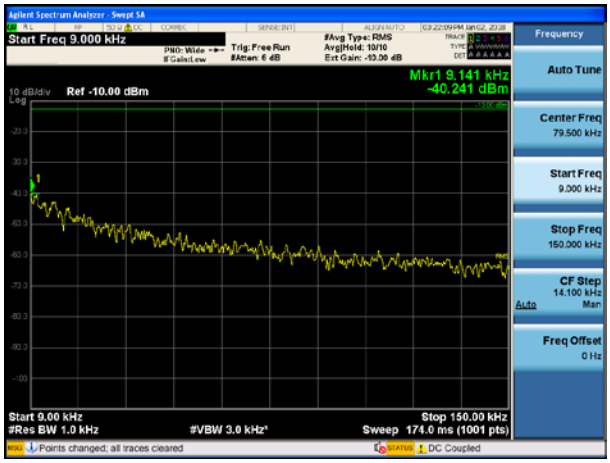
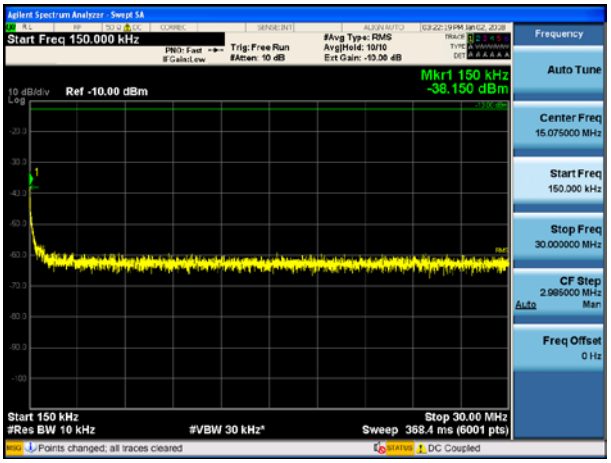
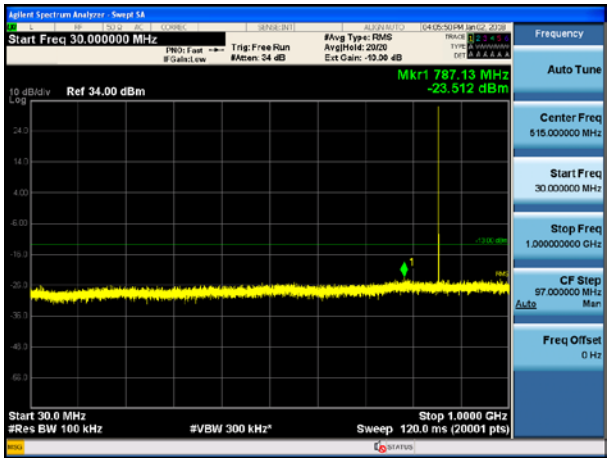
800 P25(6.25 kHz)_DL

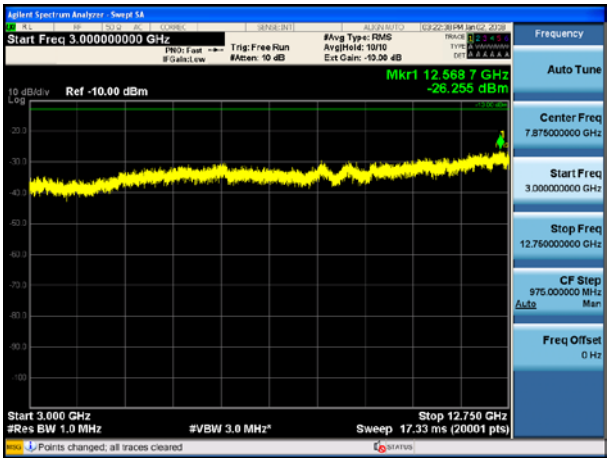
[Downlink_Low]

9 kHz ~ 150 kHz	150 kHz ~ 30 MHz
	
30 MHz ~ 1 GHz	**1 GHz ~ 3 GHz**
	

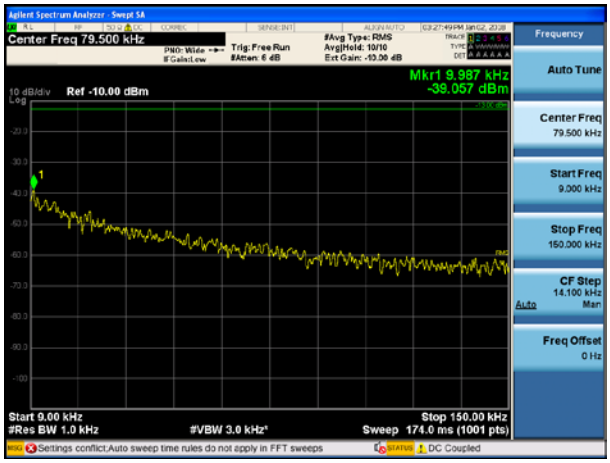
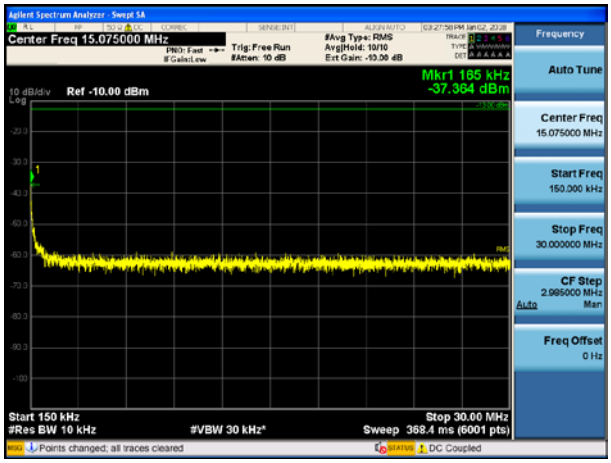
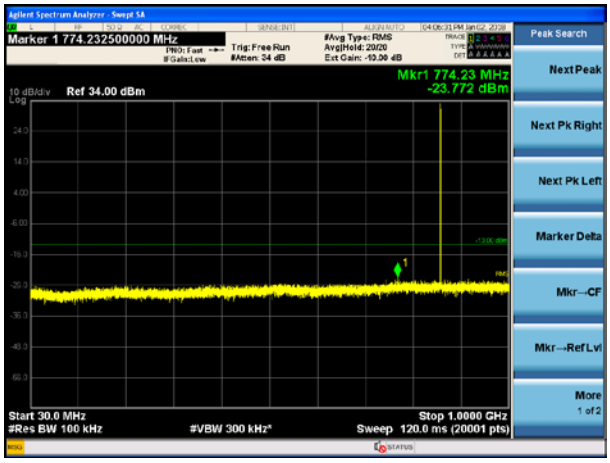
3 GHz ~ 12.75 GHz


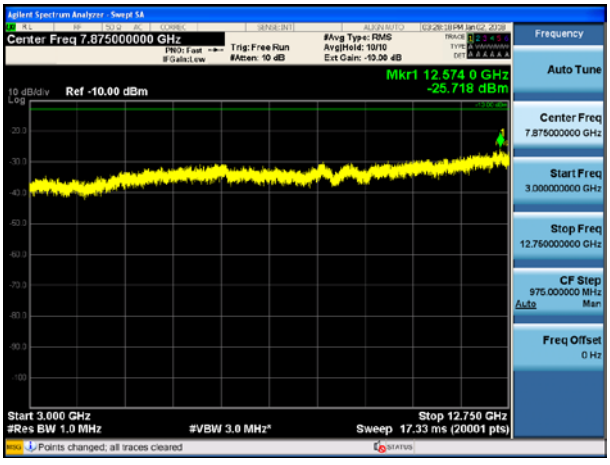
[Downlink_Middle]

9 ㎑ ~ 150 ㎑	150 ㎑ ~ 30 ㎒
	
30 ㎒ ~ 1 ㎓	**1 ㎓ ~ 3 ㎓**
	

3 ㎓ ~ 12.75 ㎓


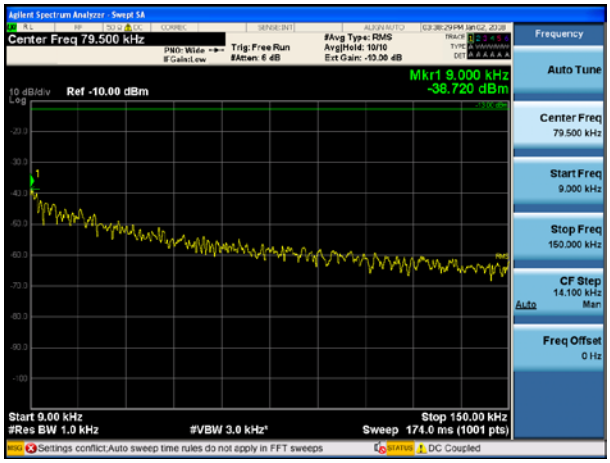
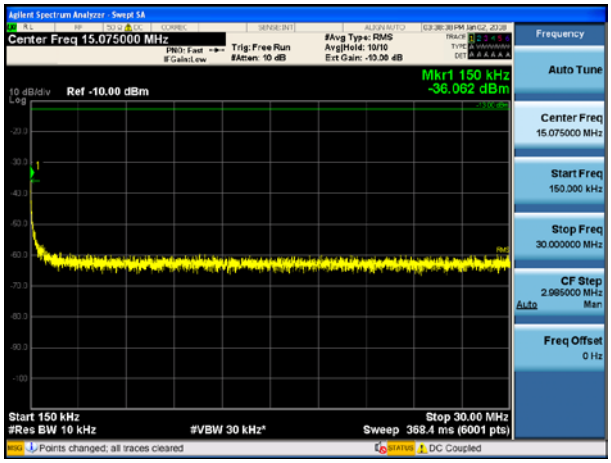
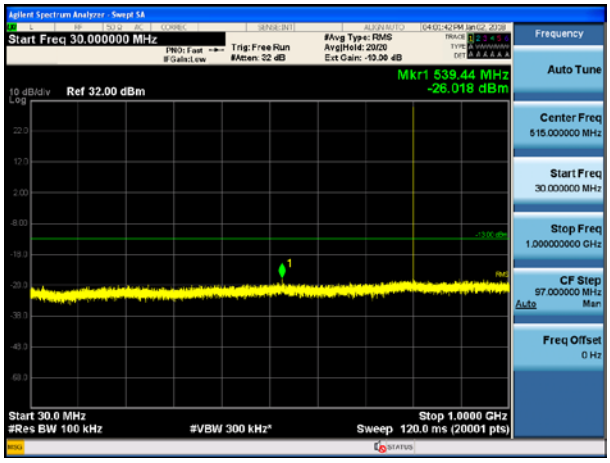
[Downlink_High]

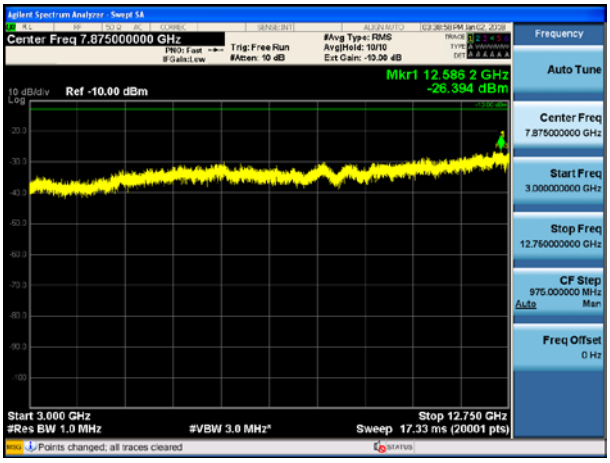
9 kHz ~ 150 kHz	150 kHz ~ 30 MHz
	
30 MHz ~ 1 GHz	**1 GHz ~ 3 GHz**
	

3 GHz ~ 12.75 GHz


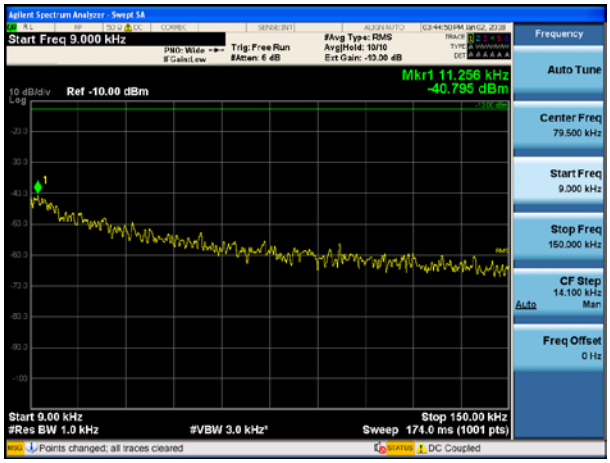
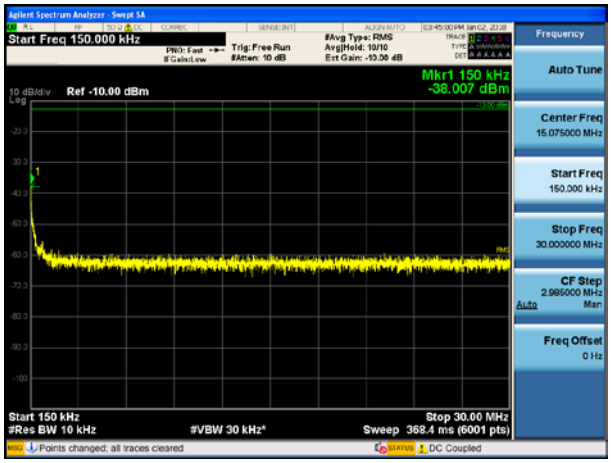
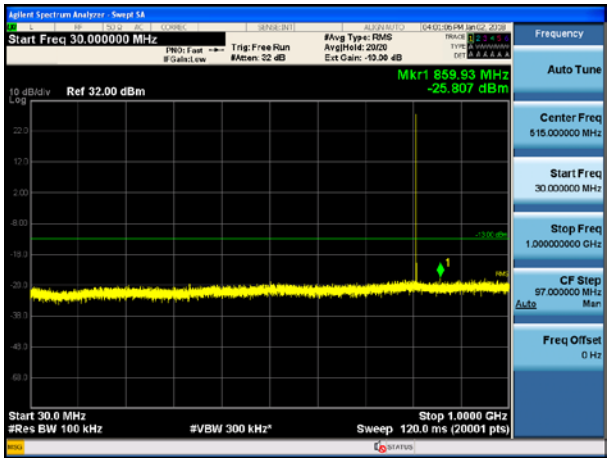
800 P25(6.25 kHz)_UL

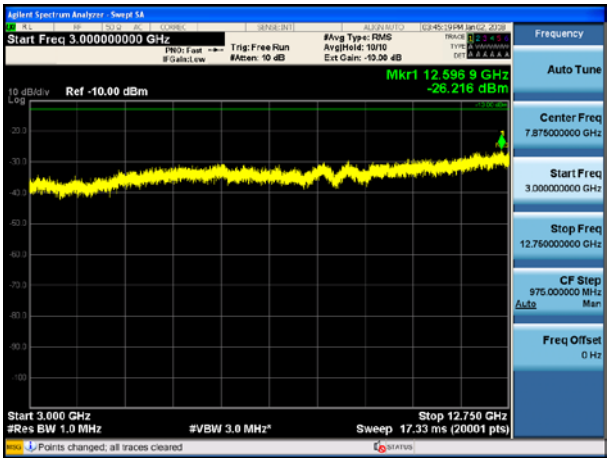
[Uplink_Low]

9 kHz ~ 150 kHz	150 kHz ~ 30 MHz
	
30 MHz ~ 1 GHz	**1 GHz ~ 3 GHz**
	

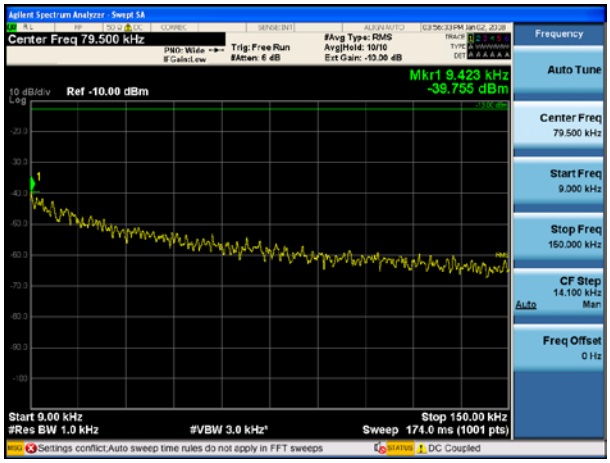
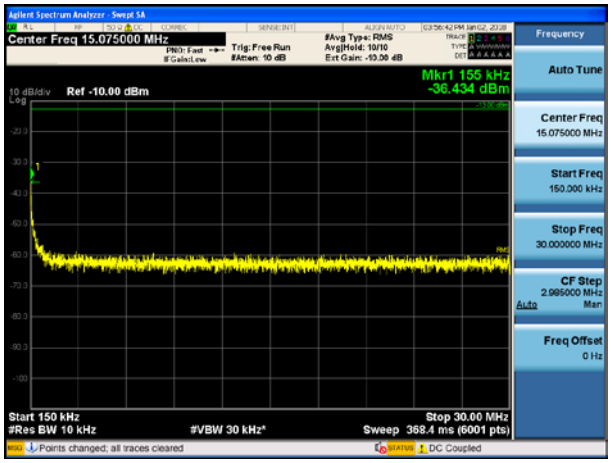
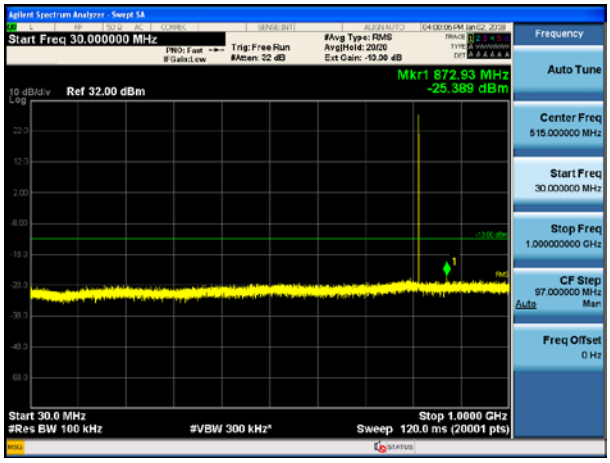
3 GHz ~ 12.75 GHz


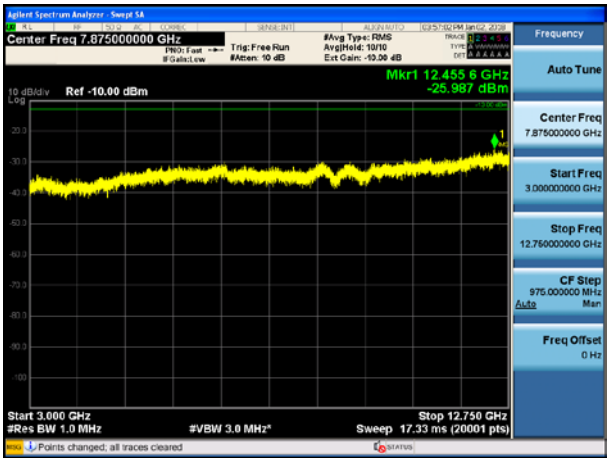
[Uplink_Middle]

9 kHz ~ 150 kHz	150 kHz ~ 30 MHz
	
30 MHz ~ 1 GHz	**1 GHz ~ 3 GHz**
	

3 GHz ~ 12.75 GHz


[Uplink_High]

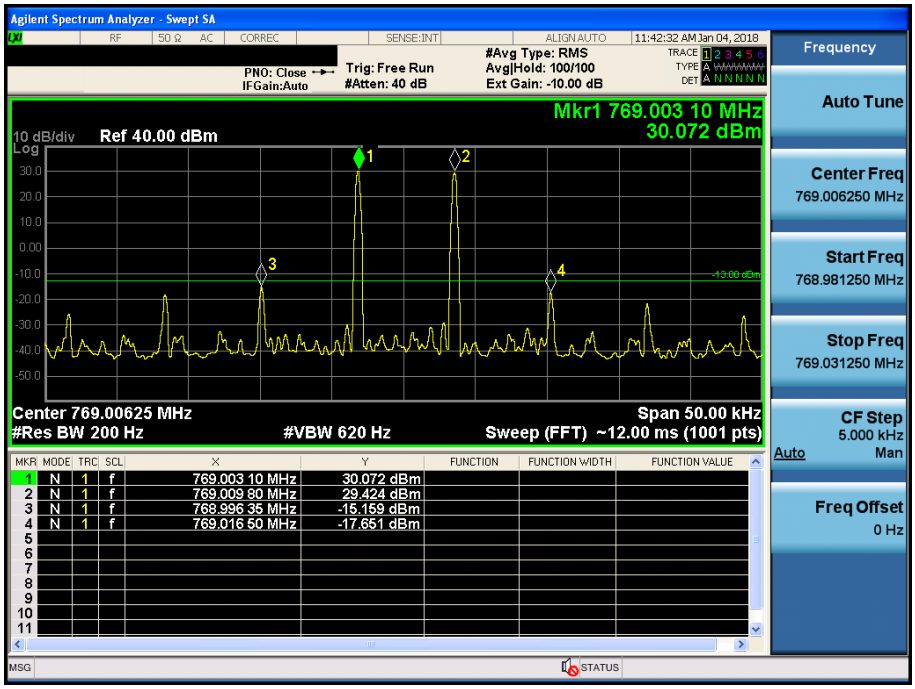
9 kHz ~ 150 kHz	150 kHz ~ 30 MHz
	
30 MHz ~ 1 GHz	**1 GHz ~ 3 GHz**
	

3 GHz ~ 12.75 GHz


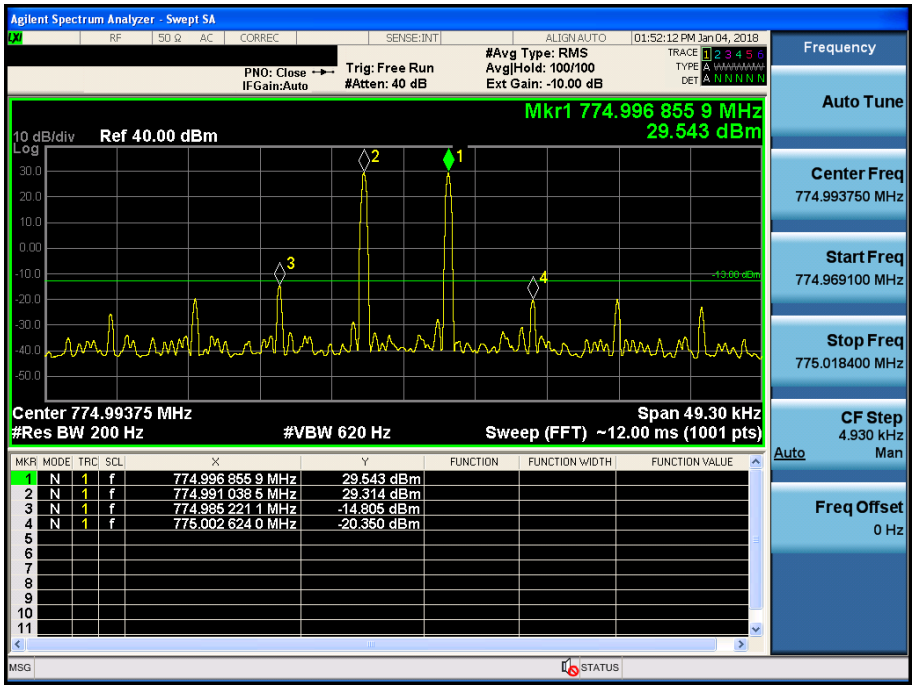
Intermodulation Spurious Emissions

700 P25(6.25 kHz)_DL

[Downlink - Low]

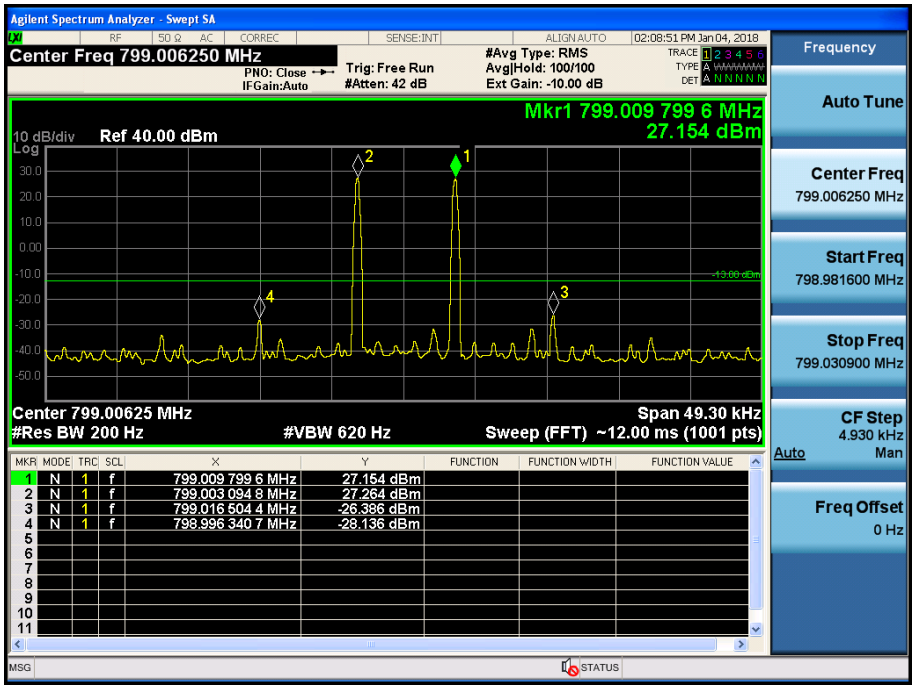


[Downlink - High]

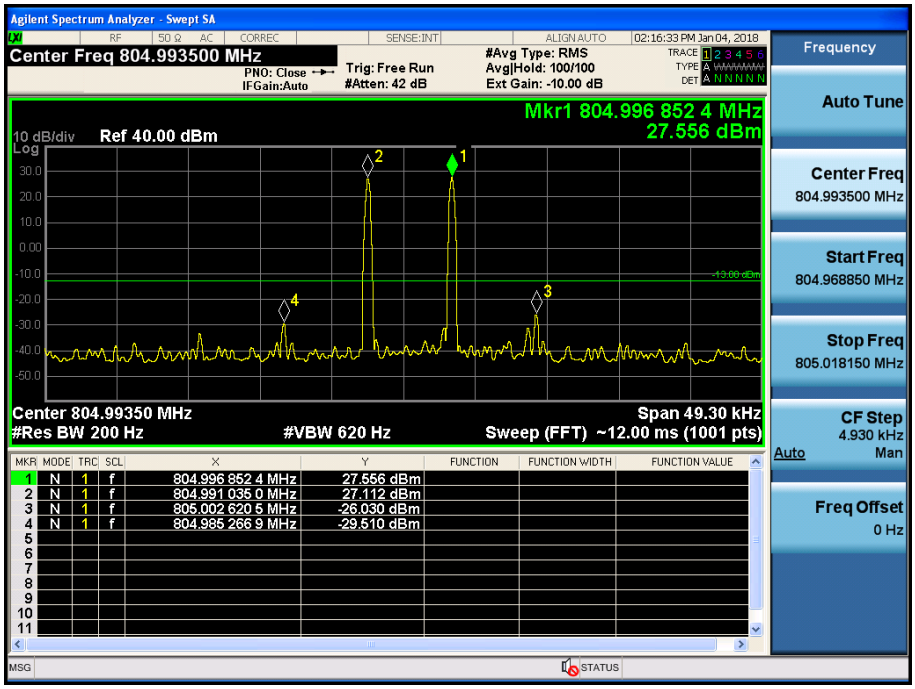


700 P25(6.25 kHz)_UL

[Uplink - Low]

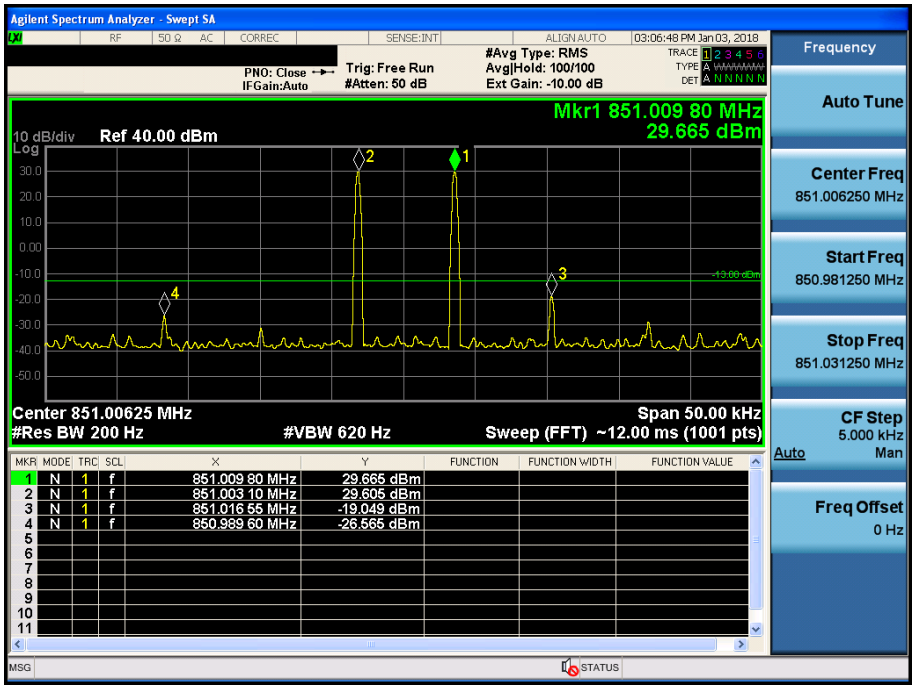


[Uplink - High]

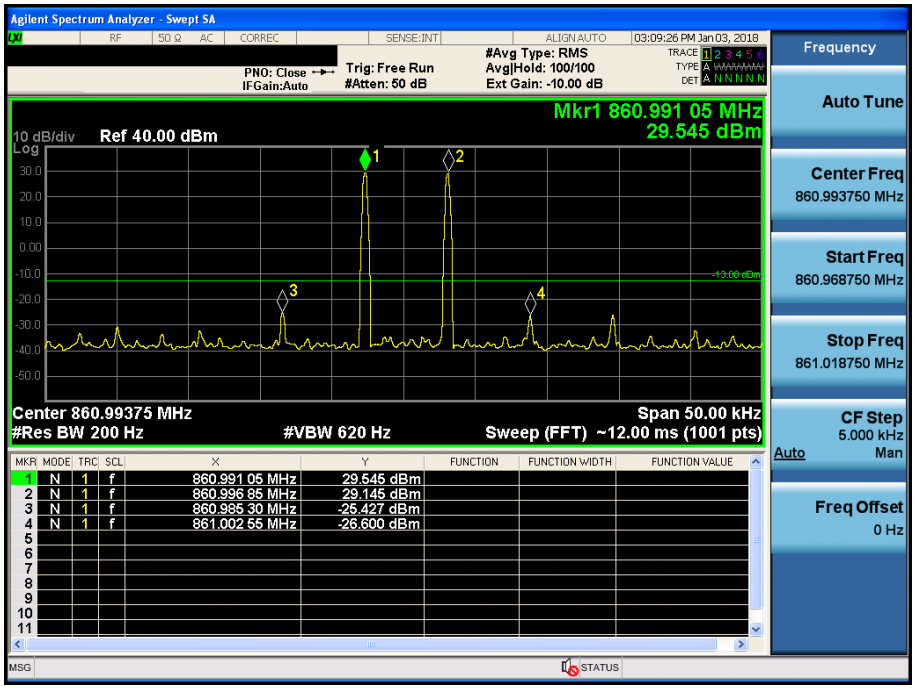


800 P25(6.25 kHz)_DL

[Downlink - Low]

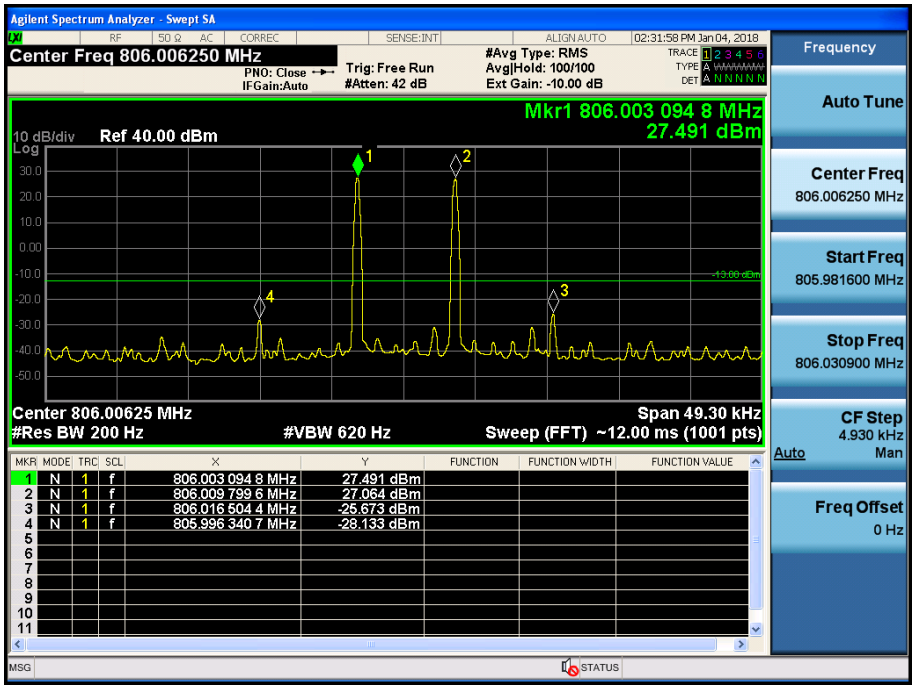


[Downlink - High]

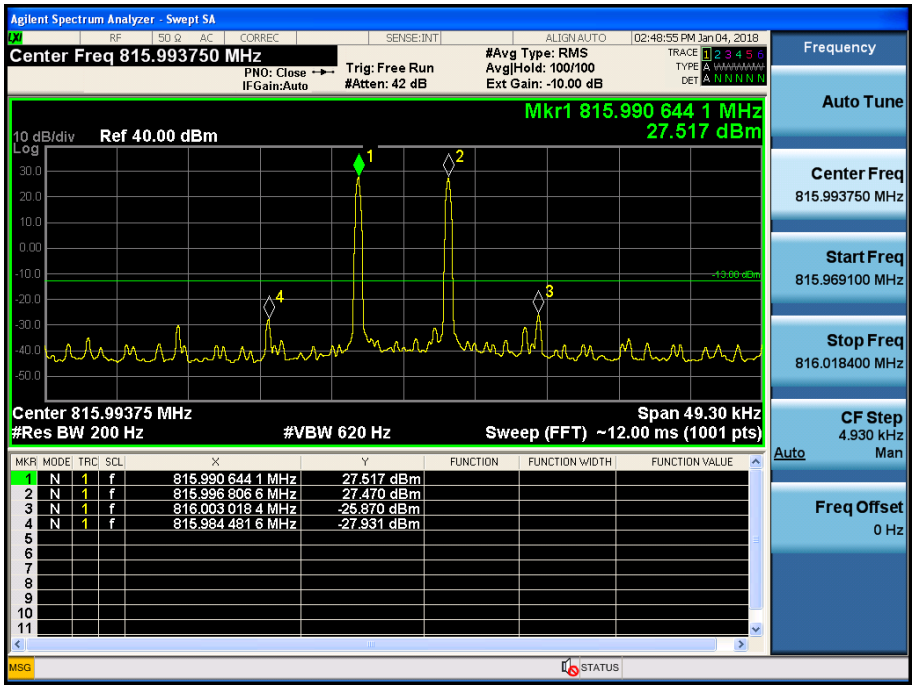


800 P25(6.25 kHz)_UL

[Uplink - Low]



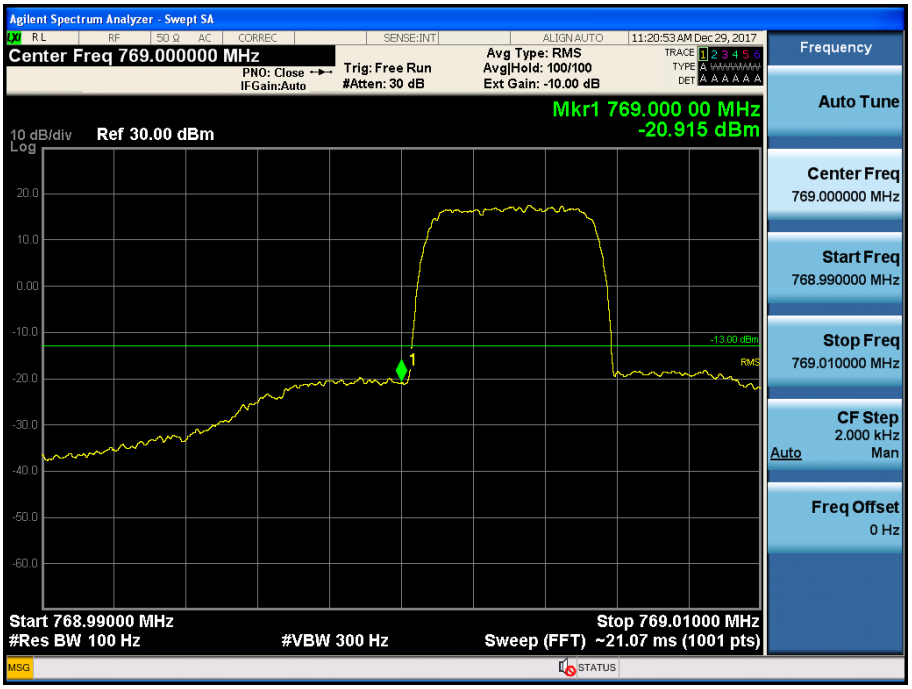
[Uplink - High]



BAND EDGE

700 P25(6.25 kHz)_DL

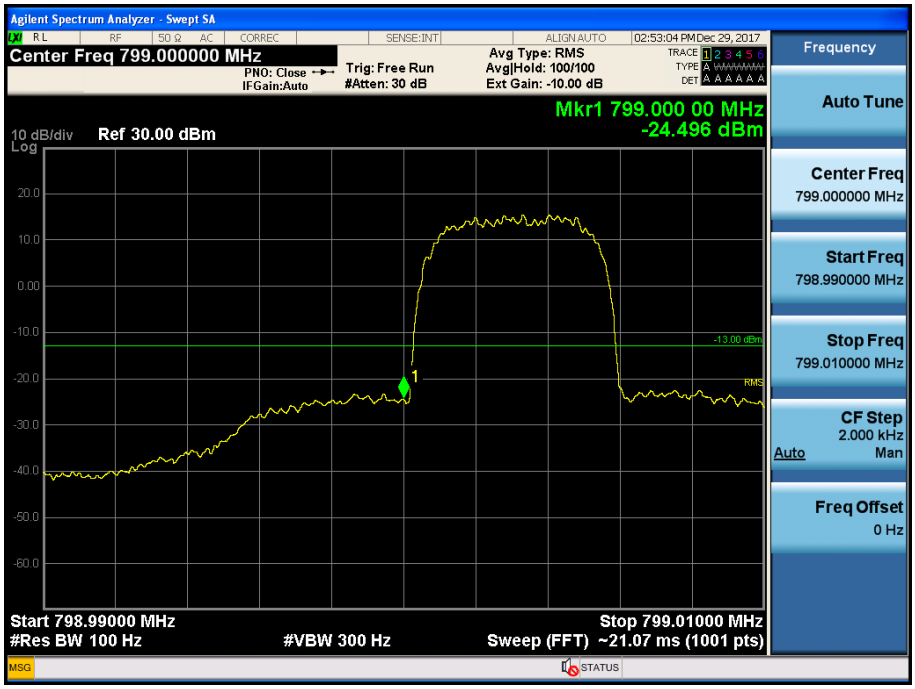
[Downlink - Low]



[Downlink - High]

700 P25(6.25 kHz)_UL

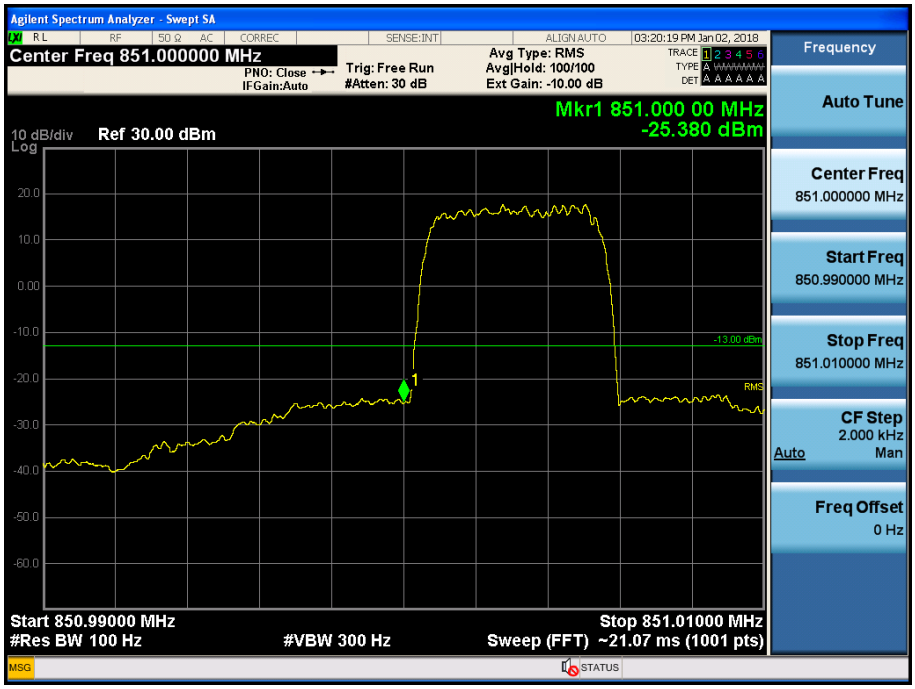
[Uplink - Low]



[Uplink - High]

800 P25(6.25 kHz)_DL

[Downlink - Low]



[Downlink - High]

800 P25(6.25 kHz)_UL

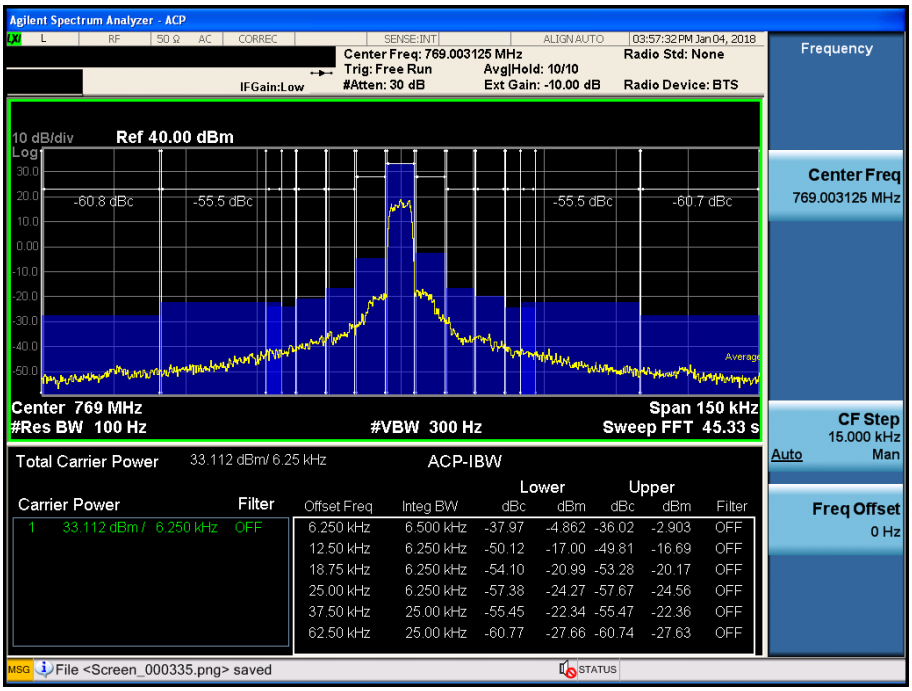
[Uplink - Low]

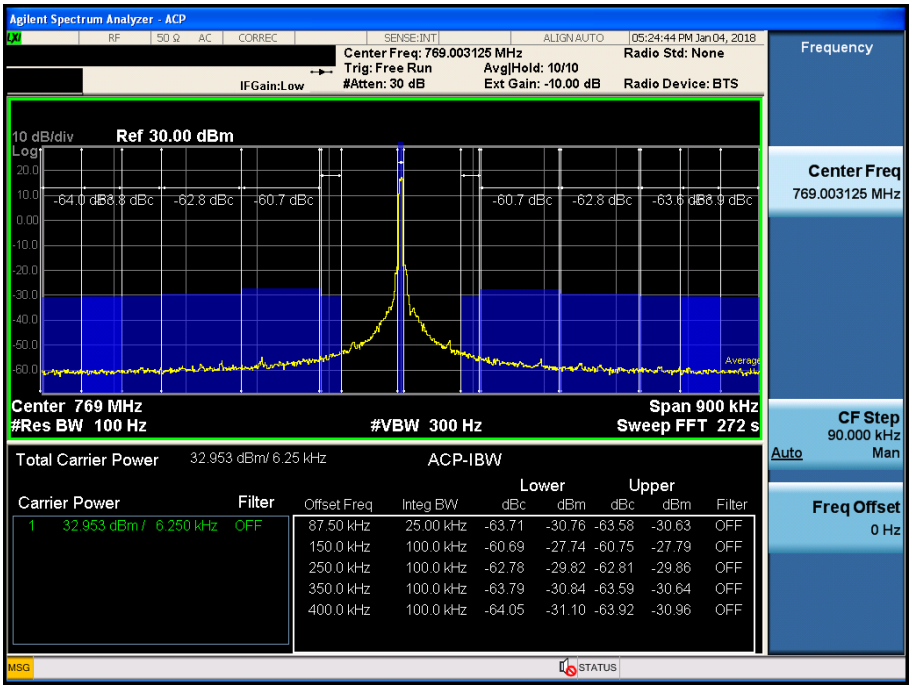
[Uplink - High]

ACP

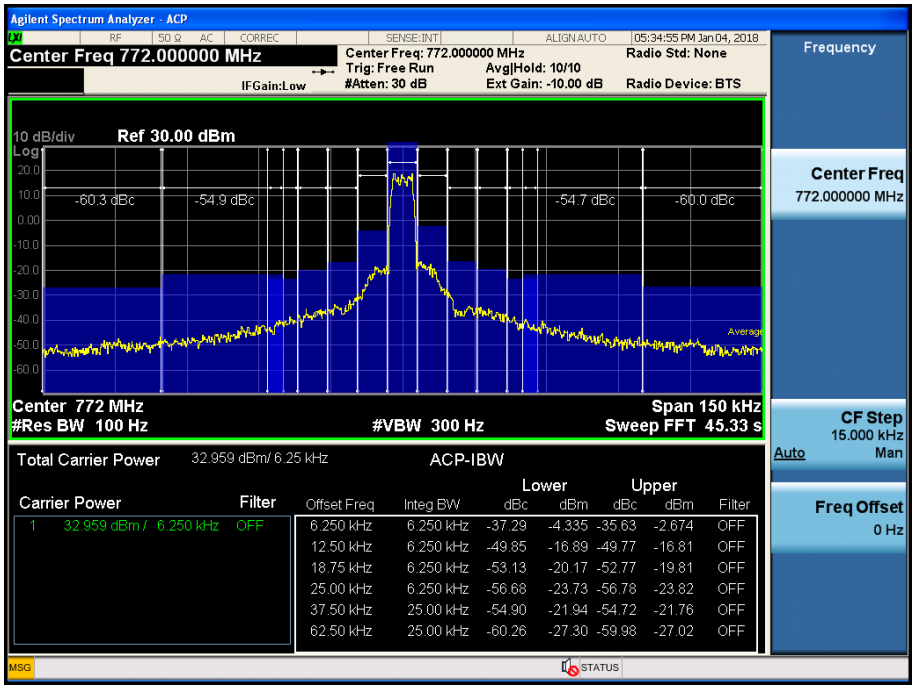
700 P25(6.25 kHz)_DL

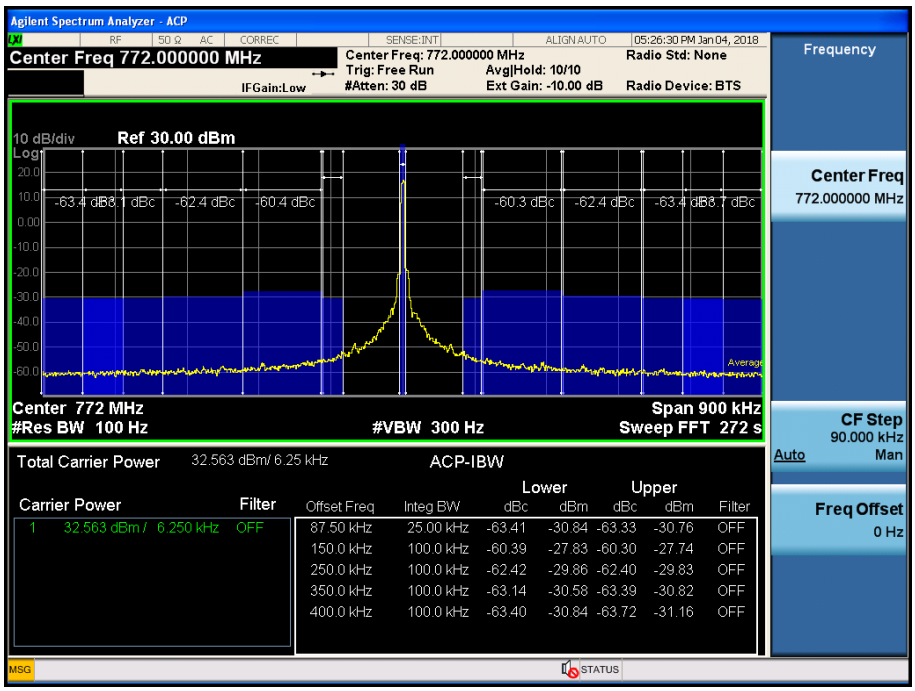
[Low]



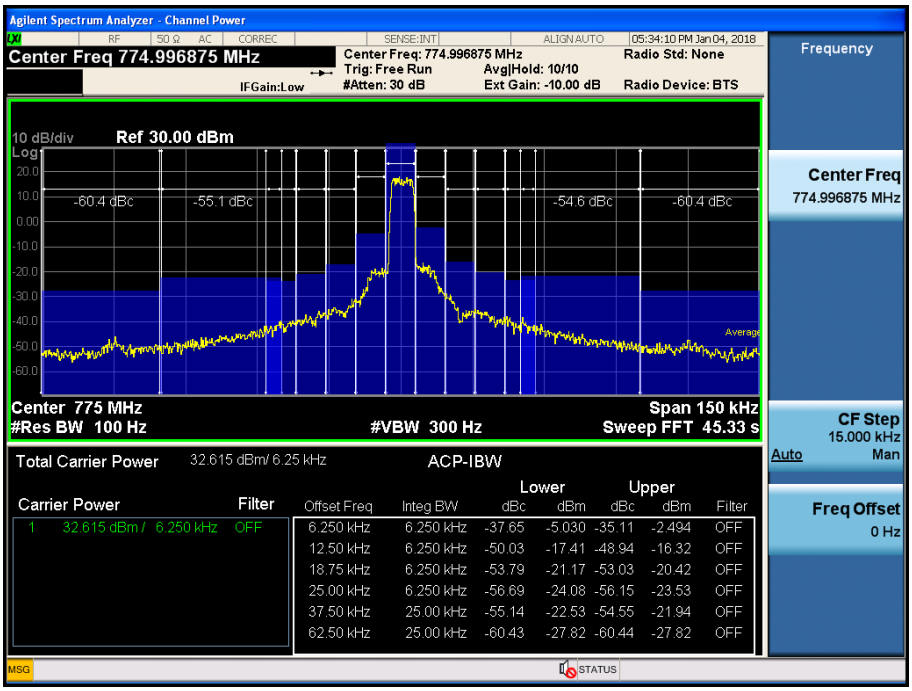


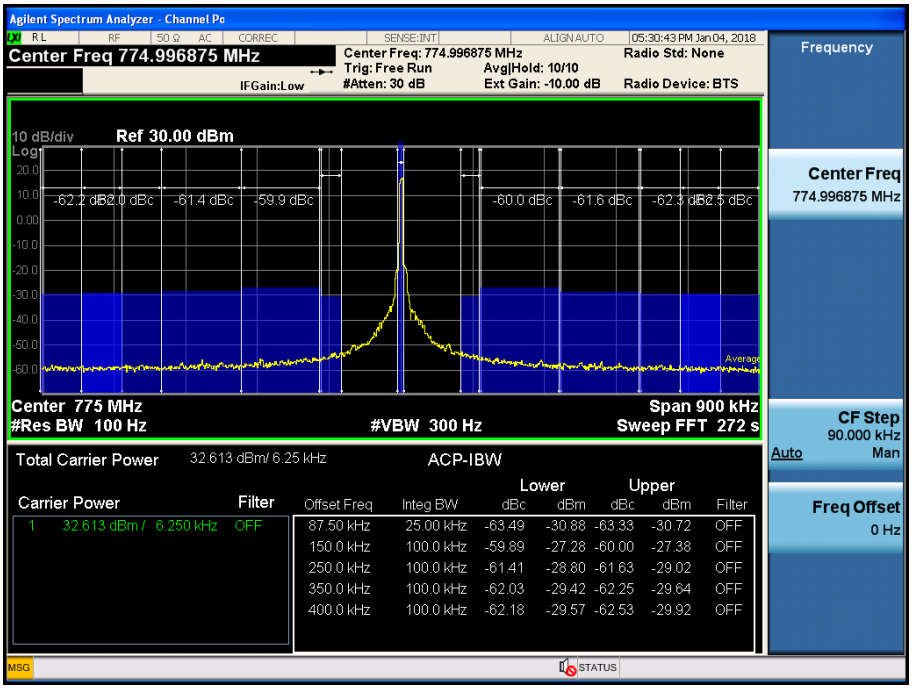
[Middle]


Agilent Spectrum Analyzer - ACP
Center Freq 772.000000 MHz
Center Freq: 772.000000 MHz
Trig: Free Run
Avg|Hold: 10/10
#Atten: 30 dB
Ext Gain: -10.00 dB
Radio Std: None
Radio Device: BTS
IFGain:Low
05:34:55 PM Jan 04, 2018
Frequency
10 dB/div
Ref 30.00 dBm
-60.3 dBc
-54.9 dBc
-54.7 dBc
-60.0 dBc
Center 772 MHz
#Res BW 100 Hz
#VBW 300 Hz
Span 150 kHz
Sweep FFT 45.33 s
Center Freq
772.000000 MHz
CF Step
15.000 kHz
Auto
Man
Freq Offset
0 Hz
Total Carrier Power
32.959 dBm/ 6.25 kHz
ACP-IBW
Carrier Power
Filter
1 32.959 dBm / 6.250 kHz OFF
Lower
Upper
Offset Freq
Integ BW
dBc
dBm
dBc
dBm
Filter
6.250 kHz 6.250 kHz -37.29 -4.335 -35.63 -2.674 OFF
12.50 kHz 6.250 kHz -49.85 -16.89 -49.77 -16.81 OFF
18.75 kHz 6.250 kHz -53.13 -20.17 -52.77 -19.81 OFF
25.00 kHz 6.250 kHz -56.68 -23.73 -56.78 -23.82 OFF
37.50 kHz 25.00 kHz -54.90 -21.94 -54.72 -21.76 OFF
62.50 kHz 25.00 kHz -60.26 -27.30 -59.98 -27.02 OFF
MSG
STATUS


Agilent Spectrum Analyzer - ACP
Center Freq 772.000000 MHz
Center Freq: 772.000000 MHz
Trig: Free Run
Avg|Hold: 10/10
#Atten: 30 dB
Ext Gain: -10.00 dB
Radio Std: None
Radio Device: BTS
IFGain:Low
05:26:30 PM Jan 04, 2018
Frequency
10 dB/div
Ref 30.00 dBm
-63.4 dBc
-63.1 dBc
-62.4 dBc
-60.4 dBc
-60.3 dBc
-62.4 dBc
-63.4 dBc
-63.7 dBc
Center 772 MHz
#Res BW 100 Hz
#VBW 300 Hz
Span 900 kHz
Sweep FFT 272 s
Center Freq
772.000000 MHz
CF Step
90.000 kHz
Auto
Man
Freq Offset
0 Hz
Total Carrier Power
32.563 dBm/ 6.25 kHz
ACP-IBW
Carrier Power
Filter
1 32.563 dBm / 6.250 kHz OFF
Lower
Upper
Offset Freq
Integ BW
dBc
dBm
dBc
dBm
Filter
87.50 kHz 25.00 kHz -63.41 -30.84 -63.33 -30.76 OFF
150.0 kHz 100.0 kHz -60.39 -27.83 -60.30 -27.74 OFF
250.0 kHz 100.0 kHz -62.42 -29.86 -62.40 -29.83 OFF
350.0 kHz 100.0 kHz -63.14 -30.58 -63.39 -30.82 OFF
400.0 kHz 100.0 kHz -63.40 -30.84 -63.72 -31.16 OFF
MSG
STATUS

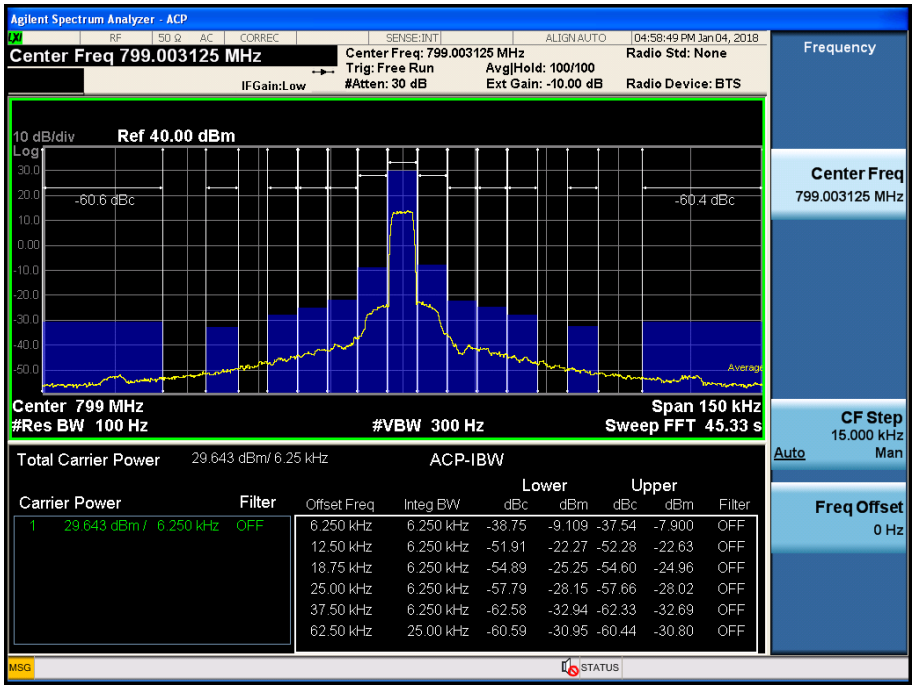
[High]

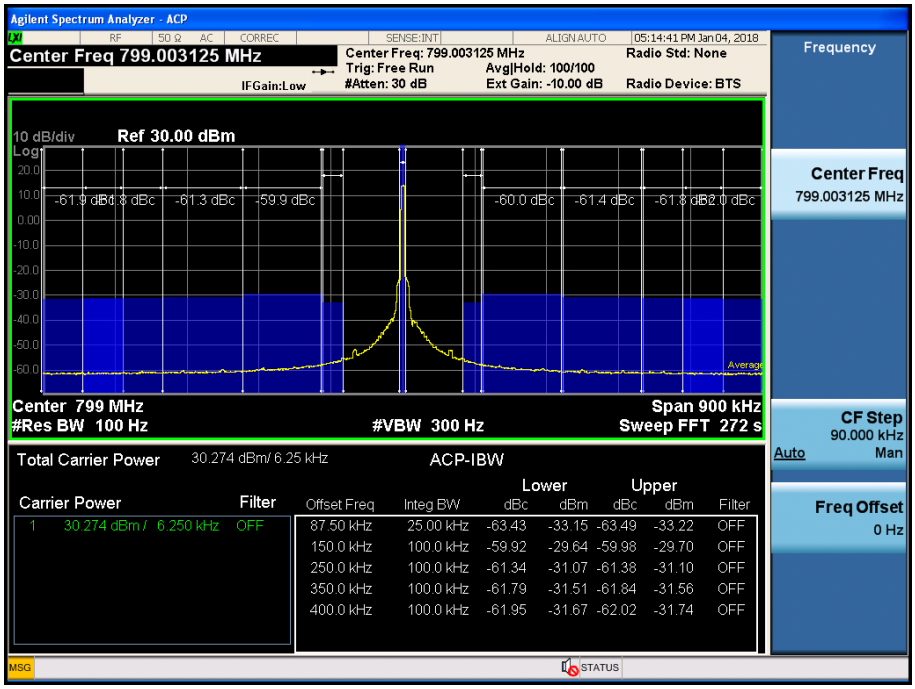

Agilent Spectrum Analyzer - Channel Power
Center Freq 774.996875 MHz
Center Freq: 774.996875 MHz
Trig: Free Run
Avg|Hold: 10/10
#Atten: 30 dB
Ext Gain: -10.00 dB
Radio Std: None
Radio Device: BTS
IFGain:Low
05:34:10 PM Jan 04, 2018
10 dB/div
Ref 30.00 dBm
-60.4 dBc
-55.1 dBc
-54.6 dBc
-60.4 dBc
Center 775 MHz
#Res BW 100 Hz
#VBW 300 Hz
Span 150 kHz
Sweep FFT 45.33 s
Total Carrier Power
32.615 dBm/ 6.25 kHz
ACP-IBW
Carrier Power
Filter
1 32.615 dBm / 6.250 kHz OFF
Offset Freq
Integ BW
Lower dBc
Lower dBm
Upper dBc
Upper dBm
Filter
6.250 kHz 6.250 kHz -37.65 -5.030 -35.11 -2.494 OFF
12.50 kHz 6.250 kHz -50.03 -17.41 -48.94 -16.32 OFF
18.75 kHz 6.250 kHz -53.79 -21.17 -53.03 -20.42 OFF
25.00 kHz 6.250 kHz -56.69 -24.08 -56.15 -23.53 OFF
37.50 kHz 25.00 kHz -55.14 -22.53 -54.55 -21.94 OFF
62.50 kHz 25.00 kHz -60.43 -27.82 -60.44 -27.82 OFF
Frequency
Center Freq
774.996875 MHz
CF Step
15.000 kHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS


Agilent Spectrum Analyzer - Channel Po
Center Freq 774.996875 MHz
Center Freq: 774.996875 MHz
Trig: Free Run
Avg|Hold: 10/10
#Atten: 30 dB
Ext Gain: -10.00 dB
Radio Std: None
Radio Device: BTS
IFGain:Low
05:30:43 PM Jan 04, 2018
10 dB/div
Ref 30.00 dBm
-62.2 dBc
-62.0 dBc
-61.4 dBc
-59.9 dBc
-60.0 dBc
-61.6 dBc
-62.3 dBc
-62.5 dBc
Center 775 MHz
#Res BW 100 Hz
#VBW 300 Hz
Span 900 kHz
Sweep FFT 272 s
Total Carrier Power
32.613 dBm/ 6.25 kHz
ACP-IBW
Carrier Power
Filter
1 32.613 dBm / 6.250 kHz OFF
Offset Freq
Integ BW
Lower dBc
Lower dBm
Upper dBc
Upper dBm
Filter
87.50 kHz 25.00 kHz -63.49 -30.88 -63.33 -30.72 OFF
150.0 kHz 100.0 kHz -59.89 -27.28 -60.00 -27.38 OFF
250.0 kHz 100.0 kHz -61.41 -28.80 -61.63 -29.02 OFF
350.0 kHz 100.0 kHz -62.03 -29.42 -62.25 -29.64 OFF
400.0 kHz 100.0 kHz -62.18 -29.57 -62.53 -29.92 OFF
Frequency
Center Freq
774.996875 MHz
CF Step
90.000 kHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

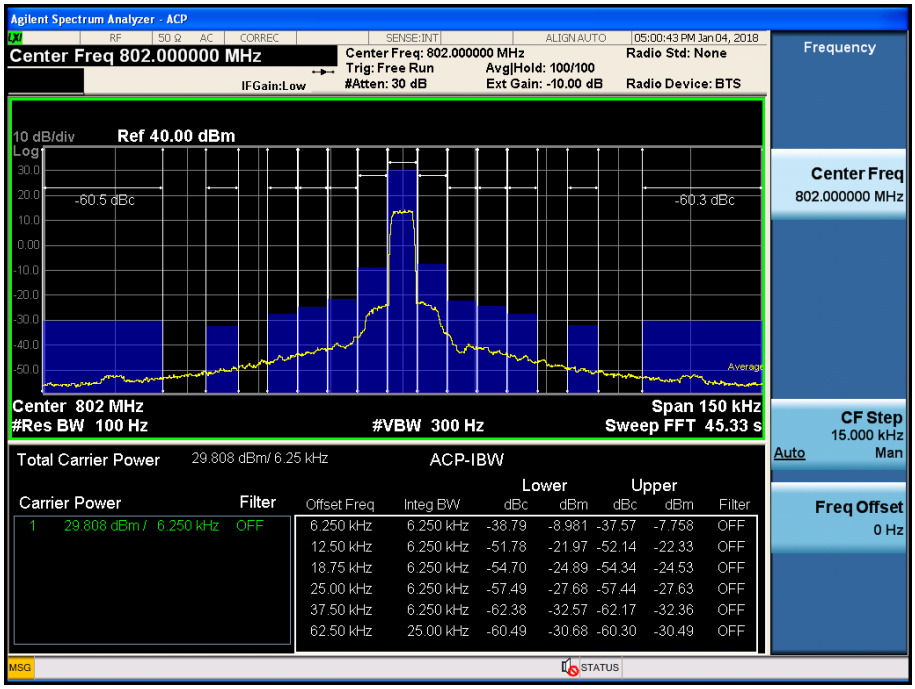
700 P25(6.25 kHz)_UL

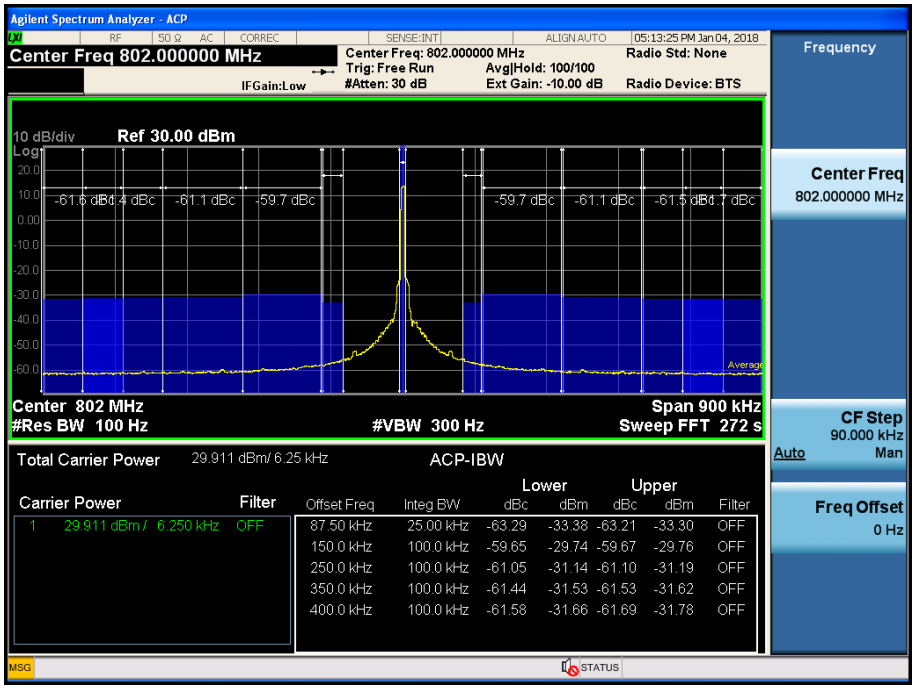
[Low]



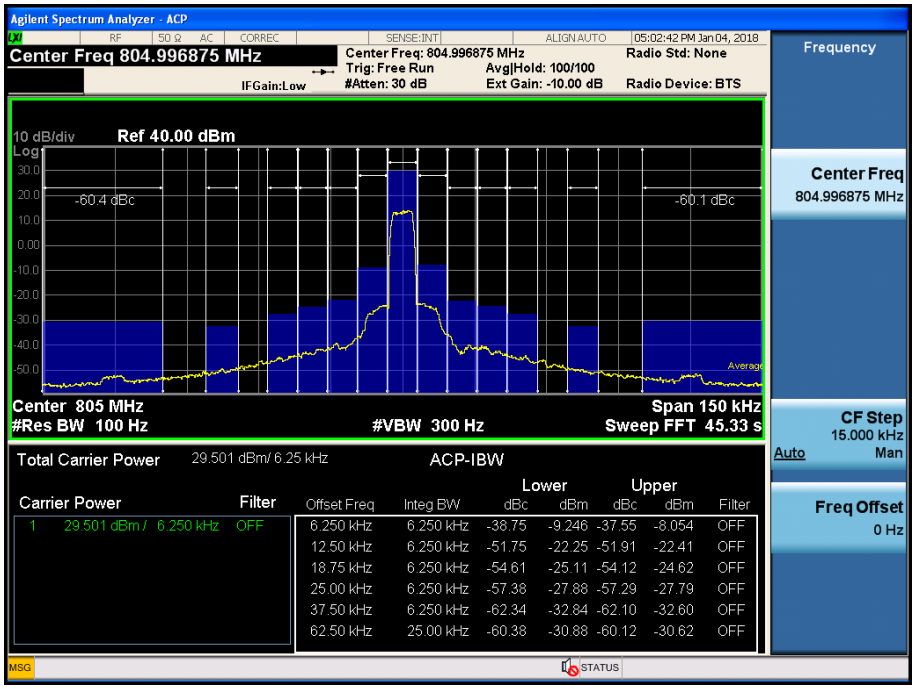


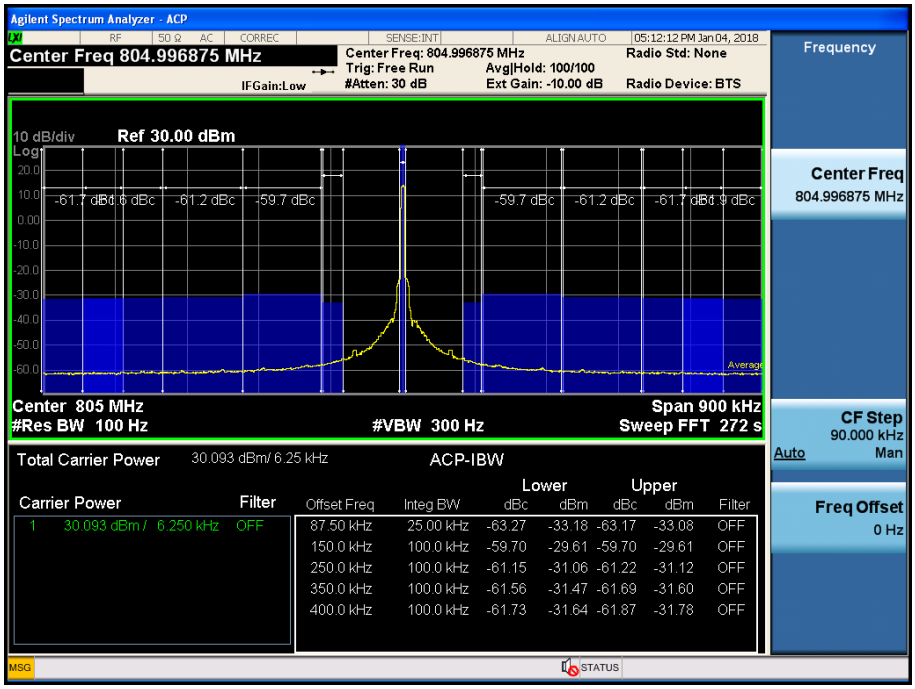
[Middle]


Agilent Spectrum Analyzer - ACP
Center Freq 802.000000 MHz
Center Freq: 802.000000 MHz
Trig: Free Run
Avg|Hold: 100/100
#Atten: 30 dB
Ext Gain: -10.00 dB
Radio Std: None
Radio Device: BTS
IFGain:Low
05:00:43 PM Jan 04, 2018
Frequency
10 dB/div
Ref 40.00 dBm
-60.5 dBc
-60.3 dBc
Center 802 MHz
#Res BW 100 Hz
#VBW 300 Hz
Span 150 kHz
Sweep FFT 45.33 s
Center Freq
802.000000 MHz
CF Step
15.000 kHz
Auto
Man
Freq Offset
0 Hz
Total Carrier Power
29.808 dBm/ 6.25 kHz
ACP-IBW
Carrier Power
Filter
1 29.808 dBm / 6.250 kHz OFF
Offset Freq
Integ BW
Lower dBc
Lower dBm
Upper dBc
Upper dBm
Filter
6.250 kHz 6.250 kHz -38.79 -8.981 -37.57 -7.758 OFF
12.50 kHz 6.250 kHz -51.78 -21.97 -52.14 -22.33 OFF
18.75 kHz 6.250 kHz -54.70 -24.89 -54.34 -24.53 OFF
25.00 kHz 6.250 kHz -57.49 -27.68 -57.44 -27.63 OFF
37.50 kHz 6.250 kHz -62.38 -32.57 -62.17 -32.36 OFF
62.50 kHz 25.00 kHz -60.49 -30.68 -60.30 -30.49 OFF
MSG
STATUS


Agilent Spectrum Analyzer - ACP
Center Freq 802.000000 MHz
Center Freq: 802.000000 MHz
Trig: Free Run
Avg|Hold: 100/100
#Atten: 30 dB
Ext Gain: -10.00 dB
Radio Std: None
Radio Device: BTS
IFGain:Low
05:13:25 PM Jan 04, 2018
Frequency
10 dB/div
Ref 30.00 dBm
-61.6 dBc
-61.4 dBc
-61.1 dBc
-59.7 dBc
-59.7 dBc
-61.1 dBc
-61.5 dBc
-61.7 dBc
Center 802 MHz
#Res BW 100 Hz
#VBW 300 Hz
Span 900 kHz
Sweep FFT 272 s
Center Freq
802.000000 MHz
CF Step
90.000 kHz
Auto
Man
Freq Offset
0 Hz
Total Carrier Power
29.911 dBm/ 6.25 kHz
ACP-IBW
Carrier Power
Filter
1 29.911 dBm / 6.250 kHz OFF
Offset Freq
Integ BW
Lower dBc
Lower dBm
Upper dBc
Upper dBm
Filter
87.50 kHz 25.00 kHz -63.29 -33.38 -63.21 -33.30 OFF
150.0 kHz 100.0 kHz -59.65 -29.74 -59.67 -29.76 OFF
250.0 kHz 100.0 kHz -61.05 -31.14 -61.10 -31.19 OFF
350.0 kHz 100.0 kHz -61.44 -31.53 -61.53 -31.62 OFF
400.0 kHz 100.0 kHz -61.58 -31.66 -61.69 -31.78 OFF
MSG
STATUS

[High]


Agilent Spectrum Analyzer - ACP
Center Freq 804.996875 MHz
Center Freq: 804.996875 MHz
Trig: Free Run
Avg|Hold: 100/100
#Atten: 30 dB
Ext Gain: -10.00 dB
Radio Std: None
Radio Device: BTS
IFGain:Low
05:02:42 PM Jan 04, 2018
Frequency
10 dB/div
Ref 40.00 dBm
-60.4 dBc
-60.1 dBc
Center Freq
804.996875 MHz
Center 805 MHz
#Res BW 100 Hz
#VBW 300 Hz
Span 150 kHz
Sweep FFT 45.33 s
CF Step
15.000 kHz
Auto
Man
Total Carrier Power
29.501 dBm/ 6.25 kHz
ACP-IBW
Freq Offset
0 Hz
Carrier Power
Filter
1 29.501 dBm / 6.250 kHz OFF
Offset Freq
Integ BW
Lower dBc
Lower dBm
Upper dBc
Upper dBm
Filter
6.250 kHz 6.250 kHz -38.75 -9.246 -37.55 -8.054 OFF
12.50 kHz 6.250 kHz -51.75 -22.25 -51.91 -22.41 OFF
18.75 kHz 6.250 kHz -54.61 -25.11 -54.12 -24.62 OFF
25.00 kHz 6.250 kHz -57.38 -27.88 -57.29 -27.79 OFF
37.50 kHz 6.250 kHz -62.34 -32.84 -62.10 -32.60 OFF
62.50 kHz 25.00 kHz -60.38 -30.88 -60.12 -30.62 OFF
MSG
STATUS


Agilent Spectrum Analyzer - ACP
Center Freq 804.996875 MHz
Center Freq: 804.996875 MHz
Trig: Free Run
Avg|Hold: 100/100
#Atten: 30 dB
Ext Gain: -10.00 dB
Radio Std: None
Radio Device: BTS
IFGain:Low
05:12:12 PM Jan 04, 2018
Frequency
10 dB/div
Ref 30.00 dBm
-61.7 dBc
-61.6 dBc
-61.2 dBc
-59.7 dBc
-59.7 dBc
-61.2 dBc
-61.7 dBc
-61.9 dBc
Center Freq
804.996875 MHz
Center 805 MHz
#Res BW 100 Hz
#VBW 300 Hz
Span 900 kHz
Sweep FFT 272 s
CF Step
90.000 kHz
Auto
Man
Total Carrier Power
30.093 dBm/ 6.25 kHz
ACP-IBW
Freq Offset
0 Hz
Carrier Power
Filter
1 30.093 dBm / 6.250 kHz OFF
Offset Freq
Integ BW
Lower dBc
Lower dBm
Upper dBc
Upper dBm
Filter
87.50 kHz 25.00 kHz -63.27 -33.18 -63.17 -33.08 OFF
150.0 kHz 100.0 kHz -59.70 -29.61 -59.70 -29.61 OFF
250.0 kHz 100.0 kHz -61.15 -31.06 -61.22 -31.12 OFF
350.0 kHz 100.0 kHz -61.56 -31.47 -61.69 -31.60 OFF
400.0 kHz 100.0 kHz -61.73 -31.64 -61.87 -31.78 OFF
MSG
STATUS

12. RADIATED SPURIOUS EMISSIONS

FCC Rules

Test Requirements:

§ 2.1053 Measurements required: Field strength of spurious radiation.

(a) Measurements shall be made to detect spurious emissions that may be radiated directly from the cabinet, control circuits, power leads, or intermediate circuit elements under normal conditions of installation and operation. Curves or equivalent data shall be supplied showing the magnitude of each harmonic and other spurious emission. For this test, single sideband, independent sideband, and controlled carrier transmitters shall be modulated under the conditions specified in paragraph (c) of §2.1049, as appropriate. For equipment operating on frequencies below 890 MHz, an open field test is normally required, with the measuring instrument antenna located in the far-field at all test frequencies. In the event it is either impractical or impossible to make open field measurements (e.g. a broadcast transmitter installed in a building) measurements will be accepted of the equipment as installed. Such measurements must be accompanied by a description of the site where the measurements were made showing the location of any possible source of reflections which might distort the field strength measurements. Information submitted shall include the relative radiated power of each spurious emission with reference to the rated power output of the transmitter, assuming all emissions are radiated from halfwave dipole antennas.

(b) The measurements specified in paragraph (a) of this section shall be made for the following equipment:

(1) Those in which the spurious emissions are required to be 60 dB or more below the mean power of the transmitter.

(2) All equipment operating on frequencies higher than 25 MHz.

(3) All equipment where the antenna is an integral part of, and attached directly to the transmitter.

(4) Other types of equipment as required, when deemed necessary by the Commission.

IC Rules

Test Requirements:

RSS-Gen

7. Receiver Limits

7.1 Receiver Emission Limits

7.1.2 Receiver Radiated Limits

Radiated emission measurements shall be performed with the receiver antenna connected to the receiver antenna terminals. The search for spurious emissions shall be from the lowest frequency internally generated or used in the receiver (e.g. local oscillator, intermediate or carrier frequency), or 30 MHz, whichever is higher, to at least 5x the highest tunable or local oscillator frequency, whichever is higher, without exceeding 40 GHz.

Spurious emissions from receivers shall not exceed the radiated limits shown in Table 2 below:

Table 2 – Receiver Radiated Limits	
Frequency (MHz)	**Field Strength (μv/m at 3 metres)***
30-88	100
88-216	150
216-960	200
Above 960	500

Footnote *

Measurements for compliance with limits in the above table may be performed at distances other than 3 meters, in accordance with Section 6.5.

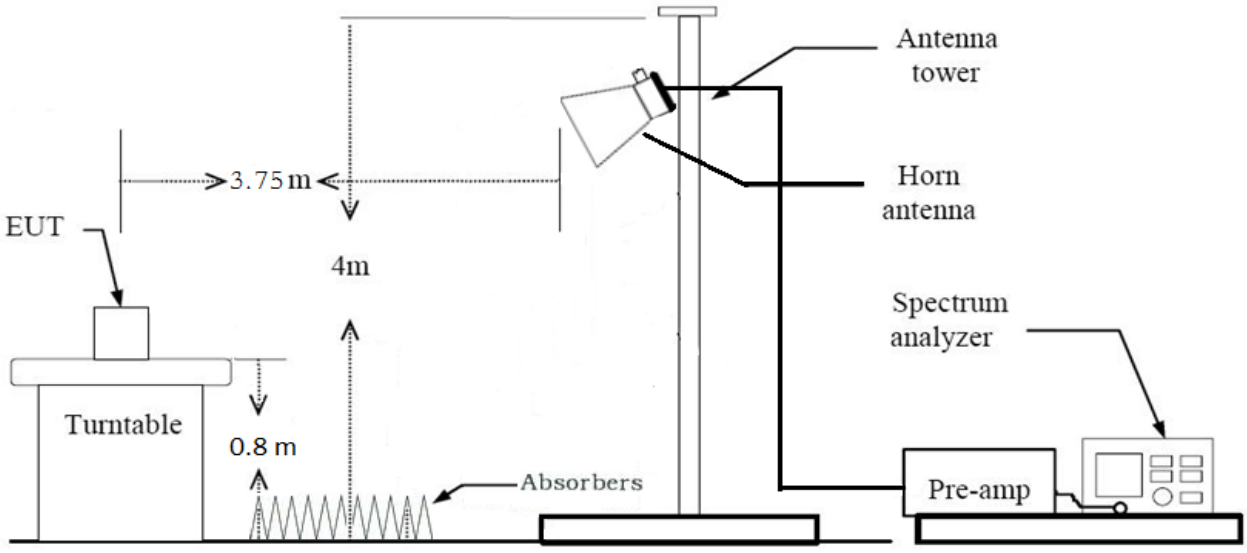
Test Procedures:

As required by 47 CFR 2.1053, *field strength of radiated spurious measurements* were made in accordance with the procedures of ANSI/TIA-603-E-2016 "Land Mobile FM or PM Communications Equipment Measurement and Performance Standards".

Radiated emission measurements were performed inside a 3 meter semi-anechoic chamber.

The EUT was set at a distance of 3m from the receiving antenna. The EUT's RF ports were terminated to 50ohm load. The EUT was set to transmit at the low, mid and high channels of the transmitter frequency range at its maximum power level. The EUT was rotated about 360and the receiving antenna scanned from 1-3m in order to capture the maximum emission. A calibrated antenna source was positioned in place of the EUT and the previously recorded signal was duplicated. The maximum EIRP of the emission was calculated by adding the forward power to the calibrated source plus its appropriate gain value. These steps were carried. out with the receiving antenna in both vertical and horizontal polarization. Harmonic emissions up to the 10th or 40GHz, whichever was the lesser, were investigated.

Radiated Spurious Emissions Test Setup



Note :

1. According to SVSWR requirement in ANSI 63.4-2014, we performed the radiated test at 3.75 m distance from center of turn table. So, we applied the distance factor(reference distance : 3 m).
2. Distance extrapolation factor = 20 log (test distance / specific distance) (dB)

Receiver Spurious Emissions Test Result:

ISED Rule(s):	**RSS-Gen**
Test Requirements:	**Blow the table**
Operating conditions:	**Under normal test conditions**
Method of testing:	**Radiated**
S/A. Settings:	**F < 1 GHz: RBW: 120 kHz, VBW: 300 kHz (Quasi Peak)** **F > 1 GHz: RBW: 1 MHz, VBW: 1 MHz (Peak)**
Mode of operation:	**Receive**

Frequency (MHz)	Field Strength (microvolts/m at 3 meters)
30 – 88	100
88 - 216	150
216 – 960	200
Above 960	500

Operation Mode: Receive:

30 MHz ~ 1 GHz

Frequency	Reading	Ant. factor	Cable loss	Ant. POL	Total	Limit	Margin
MHz	dBμN	dB /m	dB	(H/V)	dBμN/m	dBμN/m	dB
No critical peaks found							

Above 1 GHz

Frequency	Reading	Ant. factor	Cable loss	Ant. POL	Total	Limit	Margin
MHz	dBμN	dB /m	dB	(H/V)	dBμN/m	dBμN/m	dB
No critical peaks found							

Radiated Spurious Emissions Test Result:

PS 700

[Downlink]

Ch.	Freq.(MHz)	Measured Level [dBuV/m]	Measured Power [dBm]	Ant. Factor [dB/m]	C.L [dB]	A.G. [dB]	H.P.F.. [dB]	D.F. [dB]	Pol.	Result [dBm]
No Critical Peaks Found										

* C.L.: Cable Loss / A.G.: Ant. Gain / H.P.F.: High Pass Filter / D.F.: Distance Factor (3.75 m)

[Uplink]

Ch.	Freq.(MHz)	Measured Level [dBuV/m]	Measured Power [dBm]	Ant. Factor [dB/m]	C.L [dB]	A.G. [dB]	H.P.F.. [dB]	D.F. [dB]	Pol.	Result [dBm]
No Critical Peaks Found										

* C.L.: Cable Loss / A.G.: Ant. Gain / H.P.F.: High Pass Filter / D.F.: Distance Factor (3.75 m)

PS 800

[Downlink]

Ch.	Freq.(MHz)	Measured Level [dBuV/m]	Measured Power [dBm]	Ant. Factor [dB/m]	C.L [dB]	A.G. [dB]	H.P.F.. [dB]	D.F. [dB]	Pol.	Result [dBm]
No Critical Peaks Found										

* C.L.: Cable Loss / A.G.: Ant. Gain / H.P.F.: High Pass Filter / D.F.: Distance Factor (3.75 m)

[Uplink]

Ch.	Freq.(MHz)	Measured Level [dBuV/m]	Measured Power [dBm]	Ant. Factor [dB/m]	C.L [dB]	A.G. [dB]	H.P.F.. [dB]	D.F. [dB]	Pol.	Result [dBm]
No Critical Peaks Found										

* C.L.: Cable Loss / A.G.: Ant. Gain / H.P.F.: High Pass Filter / D.F.: Distance Factor (3.75 m)

13. FREQUENCY STABILITY OVER TEMPERATURE AND VOLTAGE VARIATIONS

FCC Rules

Test Requirements:

§ 2.1055 Measurements required: Frequency stability.

(a) The frequency stability shall be measured with variation of ambient temperature as follows:

(1) From −30° to + 50° centigrade for all equipment except that specified in paragraphs (a) (2) and (3) of this section.

§ 90.213 Frequency stability.

(a) Unless noted elsewhere, transmitters used in the services governed by this part must have a minimum frequency stability as specified in the following table.

Minimum Frequency Stability [Parts per million (ppm)]

Frequency range (MHz)	Fixed and base stations	Mobile stations	
		Over 2 watts output	2 watts or less output
Below 25	100	100	200
25-50	20	20	50
72-76	5		50
150-174	5	5	[4]50
216-220	1.0		1.0
220-222[12]	0.1	1.5	1.5
421-512	2.5	5	5
806-809	1.0	1.5	1.5
809-824	1.5	2.5	2.5
851-854	1.0	1.5	1.5
854-869	1.5	2.5	2.5
896-901	0.1	1.5	1.5
902-928	2.5	2.5	2.5
902-928[13]	2.5	2.5	2.5
929-930	1.5		
935-940	0.1	1.5	1.5
1427-1435	300	300	300
Above 2450			

(b) For the purpose of determining the frequency stability limits, the power of a transmitter is considered to be the maximum rated output power as specified by the manufacturer.

§ 90.539 Frequency stability.

Transmitters designed to operate in 769-775 MHz and 799-805 MHz frequency bands must meet the frequency stability requirements in this section.

(a) Mobile, portable and control transmitters must normally use automatic frequency control (AFC) to lock on to the base station signal.

(b) The frequency stability of base transmitters operating in the narrowband segment must be 100 parts per billion or better.

(c) The frequency stability of mobile, portable, and control transmitters operating in the narrowband segment must be 400 parts per billion or better when AFC is locked to the base station. When AFC is not locked to the base station, the frequency stability must be at least 1.0 ppm for 6.25 kHz, 1.5 ppm for 12.5 kHz (2 channel aggregate), and 2.5 ppm for 25 kHz (4 channel aggregate).

(d) The frequency stability of base transmitters operating in the wideband segment must be 1 part per million or better.

(e) The frequency stability of mobile, portable and control transmitters operating in the wideband segment must be 1.25 parts per million or better when AFC is locked to a base station, and 5 parts per million or better when AFC is not locked.

IC Rules

Test Requirements:

5. Transmitter and Receiver Specifications

5.3 Transmitter Frequency Stability

The carrier frequency shall not depart from the reference frequency in excess of the values given in Table 1. For transmitters that have an output power of less than 120 mW, the frequency stability shall comply with the limits listed in Table 1 or, alternatively, with the conditions in Section 5.10.

For fixed and base station equipment, in lieu of meeting the frequency stability limit specified in Table 1, the test report can show that the frequency stability is met by demonstrating that the unwanted emission limits, related to the equipment's nominal carrier frequency measured under normal operation, are met when the equipment is tested at the temperature and supply voltage variations specified for the frequency stability measurement in RSS-Gen.

Table 1 — Transmitter Frequency Stability

Frequency Band (MHz)	Channel Bandwidth (kHz)	Frequency Stability (ppm)		
		Base/Fixed	Mobile Station	
			Output Power >2 W	Output Power ≤2 W
27.41-28 and 29.7-50	20	20	20	50
72-76	20	5	20	50

138-174	30	5	5	5
	15	2.5	5	5
	7.5	1	2	5
217-218 and 219-220	12.5	1	5	5
220-222	5	0.1	1.5	1.5
406.1-430 and 450-470	25	0.5	1	1
	25	2.5	5	5
	12.5	1.5	2.5	2.5
	6.25	0.5	1	1
768-776 and 798-806	25	0.1	0.4	0.4
	12.5			
	6.25			
	50	1	1.25	1.25
806-821/851-866 and 821-824/866- 869	25	0.1	0.1	0.1
	25	1.5	2.5	2.5
	12.5	1	1.5	1.5
	6.25	0.1	0.4	0.4
896-901/935-940	12.5	0.1	1.5	1.5
929-930/931-932	25	1.5	N/A	N/A
928-929/952-953 and 932-932.5/941- 941.5	25	1.5	N/A	N/A
	12.5	1	3 (for remote station)	N/A
932.5-935/941.5-944	25	2.5	N/A	N/A
	12.5	2.5	N/A	N/A

Test Procedures:

As required by 47 CFR 2.1055, *Frequency Stability measurements* were made at the RF output terminals using a Spectrum Analyzer.

The EUT was placed in the Environmental Chamber.

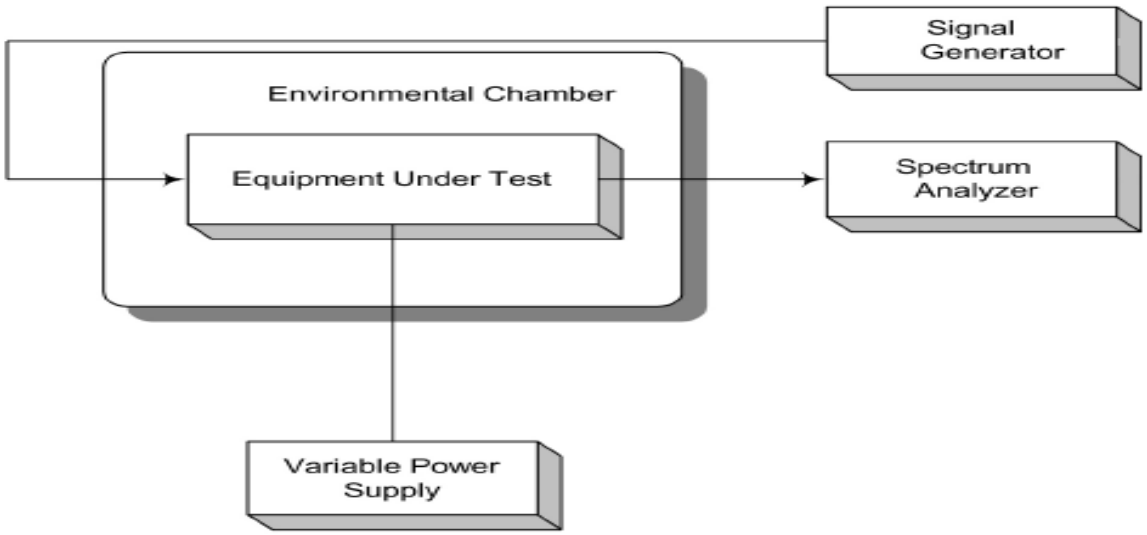
A CW signal was injected into the EUT at the appropriate RF level. The frequency counter option on the Spectrum Analyzer was used to measure frequency deviations.

The frequency drift was investigated for every 10 °C increment until the unit is stabilized then recorded the reading in tabular format with the temperature range of -30 to 50 °C.

Voltage supplied to EUT is 110 Vac reference temperature was done at 20°C.

The voltage was varied by ± 15 % of nominal

Test Setup:



* Note: This EUT is supported power supply both of AC and DC. Test results are only attached worst cases.

Frequency Stability and Voltage Test Results

PS 700

[Downlink]

Reference: 120 Vac at 20°C **Freq.** = 772.0 MHz

Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (Hz)	ppm
100%	+20(Ref)	772 000 001	0.908	0.000	0.00000
	-30	772 000 001	0.923	0.014	0.00002
	-20	772 000 000	-0.392	-1.300	-0.00168
	-10	772 000 001	0.979	0.071	0.00009
	0	772 000 000	0.042	-0.866	-0.00112
	10	771 999 999	-0.746	-1.655	-0.00214
	30	772 000 000	0.081	-0.828	-0.00107
	40	772 000 001	0.768	-0.141	-0.00018
	50	772 000 001	0.611	-0.298	-0.00039
High	20	772 000 000	-0.454	-1.363	-0.00177
Low	20	772 000 000	0.388	-0.521	-0.00067

[Uplink]

Reference: 120 Vac at 20°C **Freq.** = 802.0 MHz

Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (Hz)	ppm
100%	+20(Ref)	772 000 000	0.244	0.000	0.00000
	-30	772 000 000	0.263	-0.645	-0.00084
	-20	771 999 999	-0.659	-1.567	-0.00203
	-10	772 000 000	0.398	-0.510	-0.00066
	0	772 000 001	0.651	-0.257	-0.00033
	10	772 000 000	-0.297	-1.205	-0.00156
	30	772 000 000	0.136	-0.772	-0.00100
	40	772 000 001	0.823	-0.085	-0.00011
	50	772 000 001	0.789	-0.119	-0.00015
High	20	772 000 000	-0.079	-0.987	-0.00128
Low	20	772 000 001	0.512	-0.396	-0.00051

PS 800

[Downlink]

Reference: 110 Vac at 20°C **Freq.** = 856.0 MHz

Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (Hz)	ppm
100%	+20(Ref)	856 000 001	0.685	0.000	0.00000
	-30	856 000 001	0.730	-0.178	-0.00023
	-20	856 000 000	-0.056	-0.964	-0.00125
	-10	856 000 001	0.704	-0.204	-0.00026
	0	856 000 001	0.541	-0.367	-0.00047
	10	855 999 999	-0.569	-1.477	-0.00191
	30	856 000 000	0.060	-0.848	-0.00110
	40	856 000 000	0.425	-0.483	-0.00063
	50	856 000 000	0.187	-0.721	-0.00093
High	20	856 000 000	-0.234	-1.142	-0.00148
Low	20	856 000 000	0.242	-0.666	-0.00086

[Uplink]

Reference: 110 Vac at 20°C **Freq.** = 811.0 MHz

Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (Hz)	ppm
100%	+20(Ref)	856 000 001	0.879	0.000	0.00000
	-30	856 000 000	0.268	-0.640	-0.00083
	-20	855 999 999	-0.610	-1.518	-0.00197
	-10	856 000 001	0.987	0.079	0.00010
	0	856 000 001	0.660	-0.248	-0.00032
	10	856 000 000	-0.251	-1.159	-0.00150
	30	856 000 001	0.652	-0.256	-0.00033
	40	856 000 001	0.522	-0.386	-0.00050
	50	856 000 000	0.226	-0.682	-0.00088
High	20	856 000 000	-0.185	-1.093	-0.00142
Low	20	856 000 001	0.532	-0.376	-0.00049