CH78									
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin Limit (dB)	Polarization	Test value
2483.50	49.80	27.26	6.83	37.87	46.02	74.00	-27.98	Vertical	Peak
2500.00	35.40	27.20	6.84	37.87	31.57	74.00	-42.43	Vertical	
2483.50	50.36	27.26	6.83	37.87	46.58	74.00	-27.42	Horizontal	
2500.00	34.26	27.20	6.84	37.87	30.43	74.00	-43.57	Horizontal	
2483.50	45.40	27.26	6.83	37.87	41.62	54.00	-12.38	Vertical	Average
2500.00	22.66	27.20	6.84	37.87	18.83	54.00	-35.17	Vertical	
2483.50	41.46	27.26	6.83	37.87	37.68	54.00	-16.32	Horizontal	
2500.00	21.71	27.20	6.84	37.87	17.88	54.00	-36.12	Horizontal	

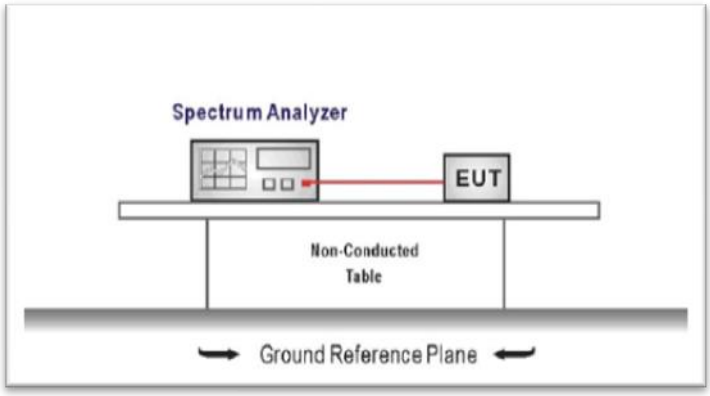
CH00									
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin Limit (dB)	Polarization	Test value
2310.00	33.05	28.05	6.62	37.65	30.07	74.00	-43.93	Vertical	Peak
2390.13	41.60	27.65	6.75	37.87	38.13	74.00	-35.87	Vertical	
2310.00	34.05	28.05	6.62	37.65	31.07	74.00	-42.93	Horizontal	
2390.03	34.88	27.65	6.75	37.87	31.41	74.00	-42.59	Horizontal	
2310.00	22.74	28.05	6.62	37.65	19.76	54.00	-34.24	Vertical	Average
2390.03	23.27	27.65	6.75	37.87	19.80	54.00	-34.20	Vertical	
2310.00	21.87	28.05	6.62	37.65	18.89	54.00	-35.11	Horizontal	
2390.03	21.85	27.65	6.75	37.87	18.38	54.00	-35.62	Horizontal	

5.10. Band edge and Spurious Emissions (conducted)

LIMIT

FCC CFR Title 47 Part 15 Subpart C Section 15.247 (d):In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.

TEST CONFIGURATION



TEST PROCEDURE

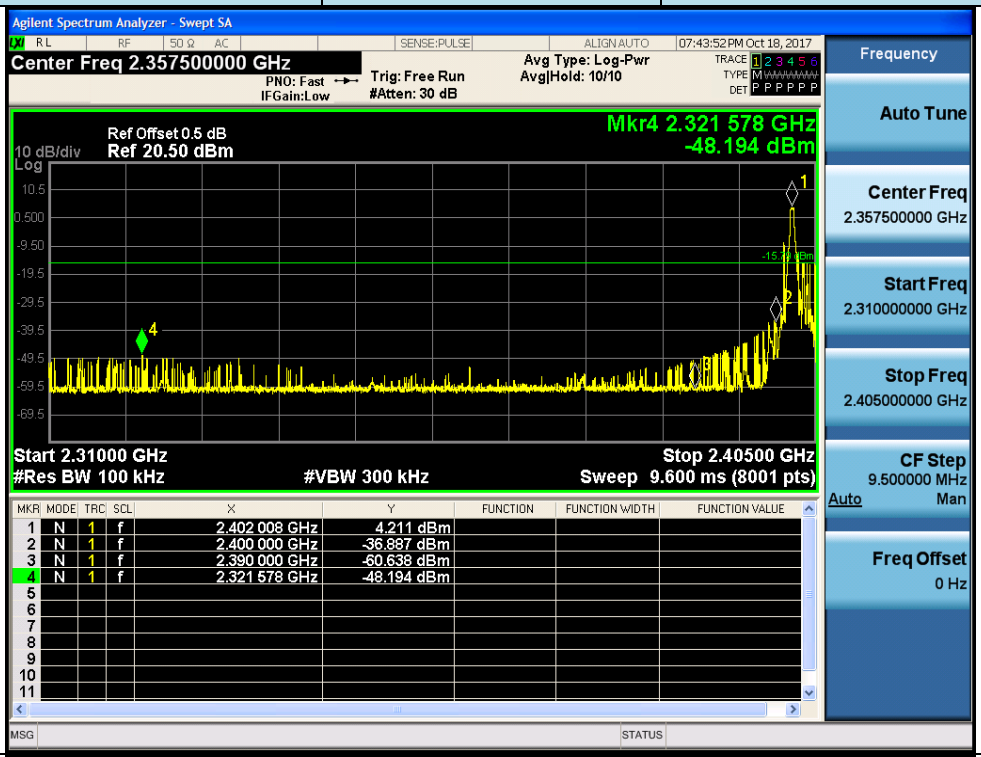
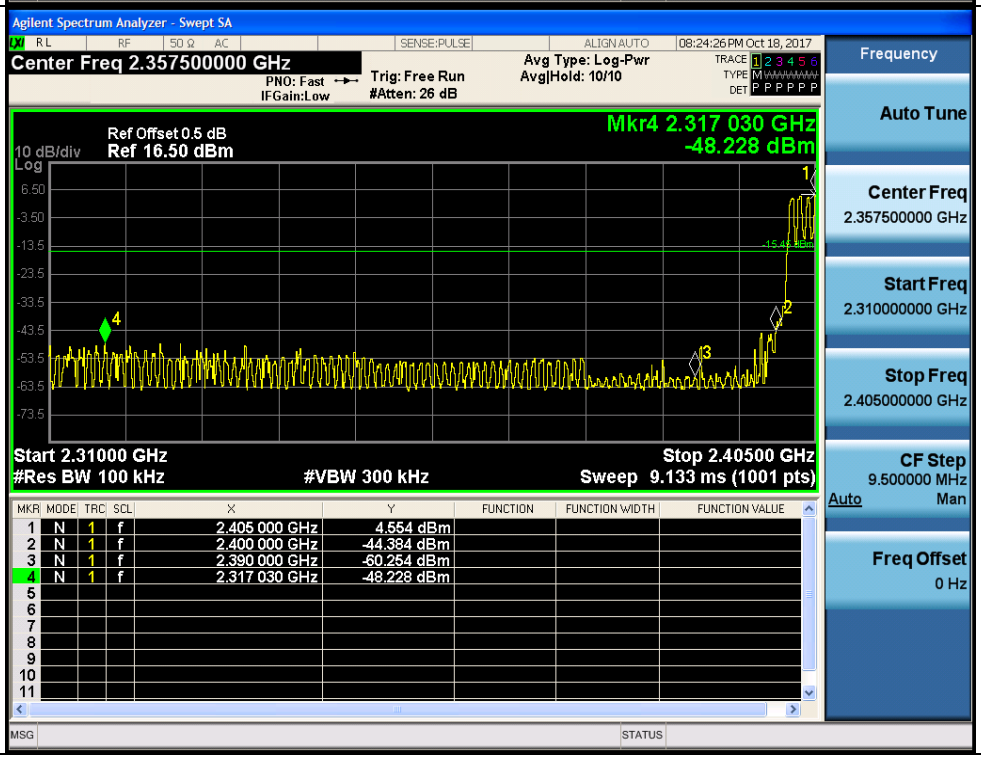
1. The transmitter output was connected to the spectrum analyzer through an attenuator, the path loss was compensated to the results for each measurement.
2. Set to the maximum power setting and enable the EUT transmit continuously
3. Use the following spectrum analyzer settings:
   RBW = 100 kHz, VBW ≥ RBW
   Sweep = auto, Detector function = peak, Trace = max hold
4. Measure and record the results in the test report.

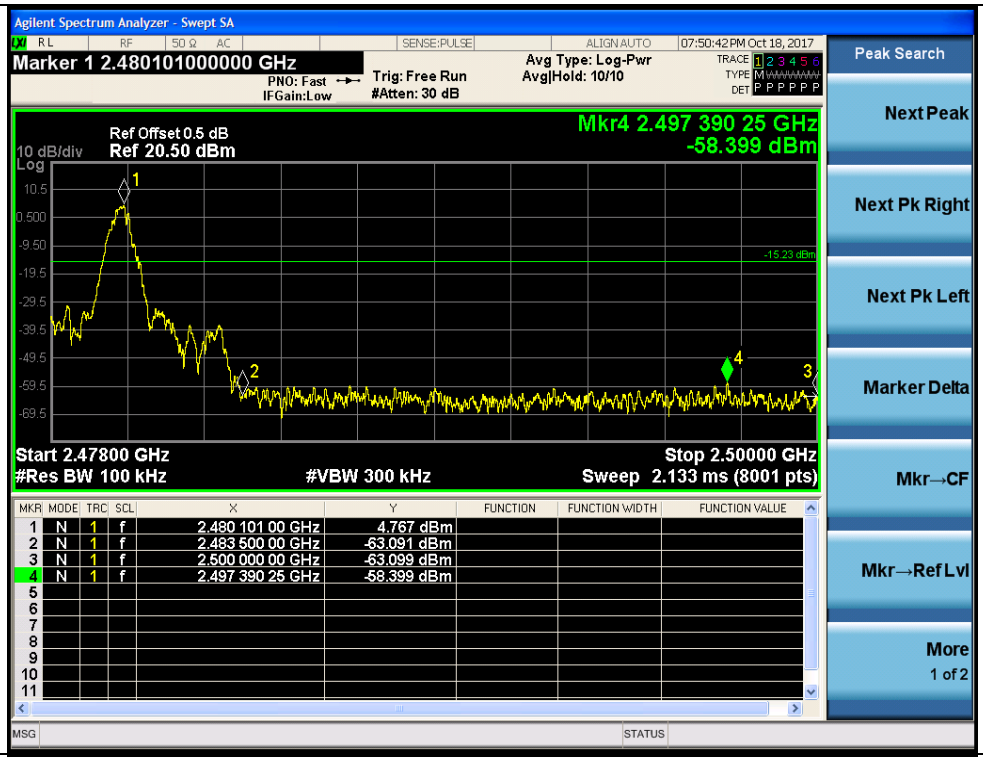
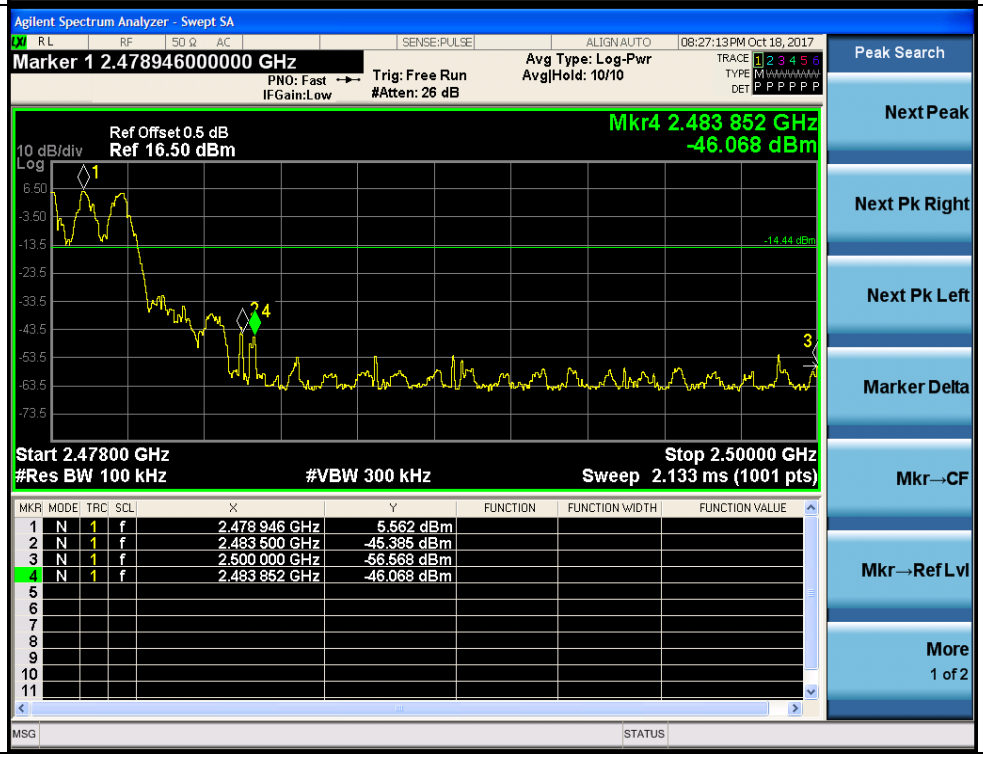
TEST MODE:

Please refer to the clause 3.3

TEST RESULTS

☒ **Passed** ☐ **Not Applicable**

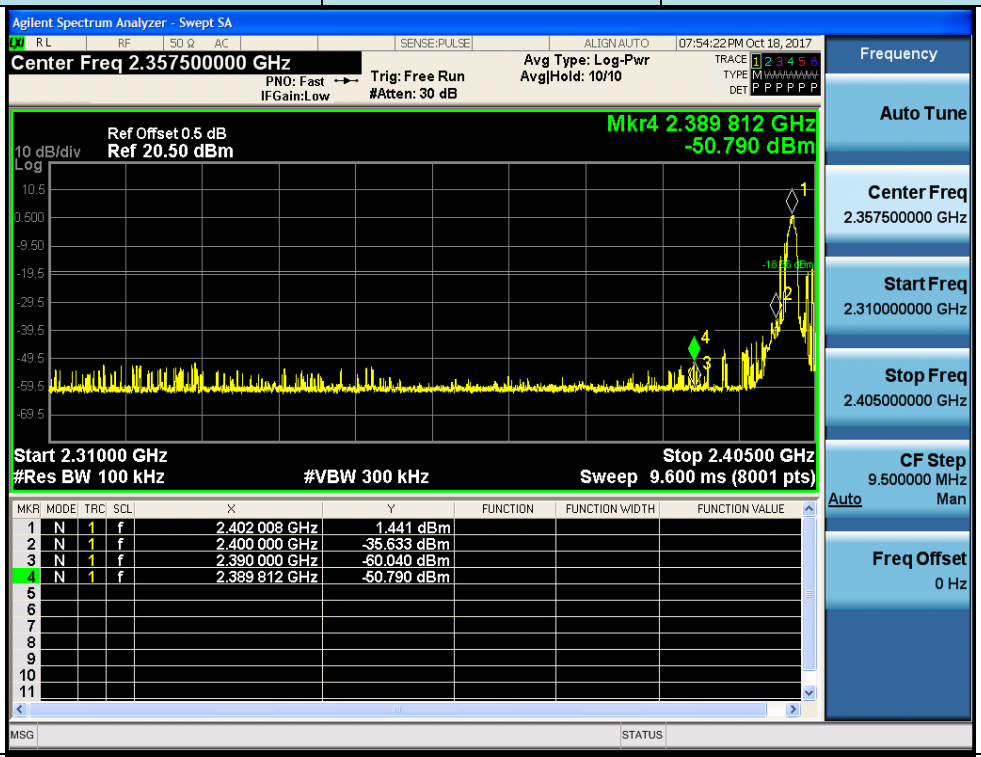
Test Item:	Band edge	Modulation type:	GFSK
CH00 No hopping mode			
CH00 Hopping mode			

CH78 No hopping mode	
CH78 Hopping mode	

Test Item:	Band edge	Modulation type:	π/4DQPSK

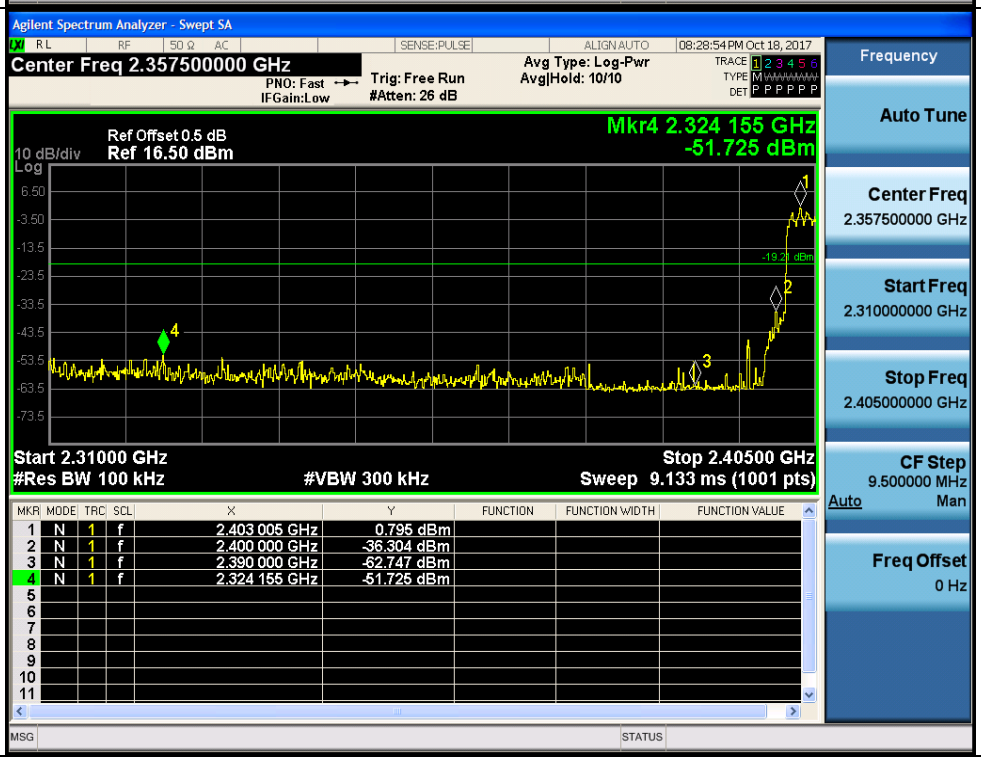
CH00

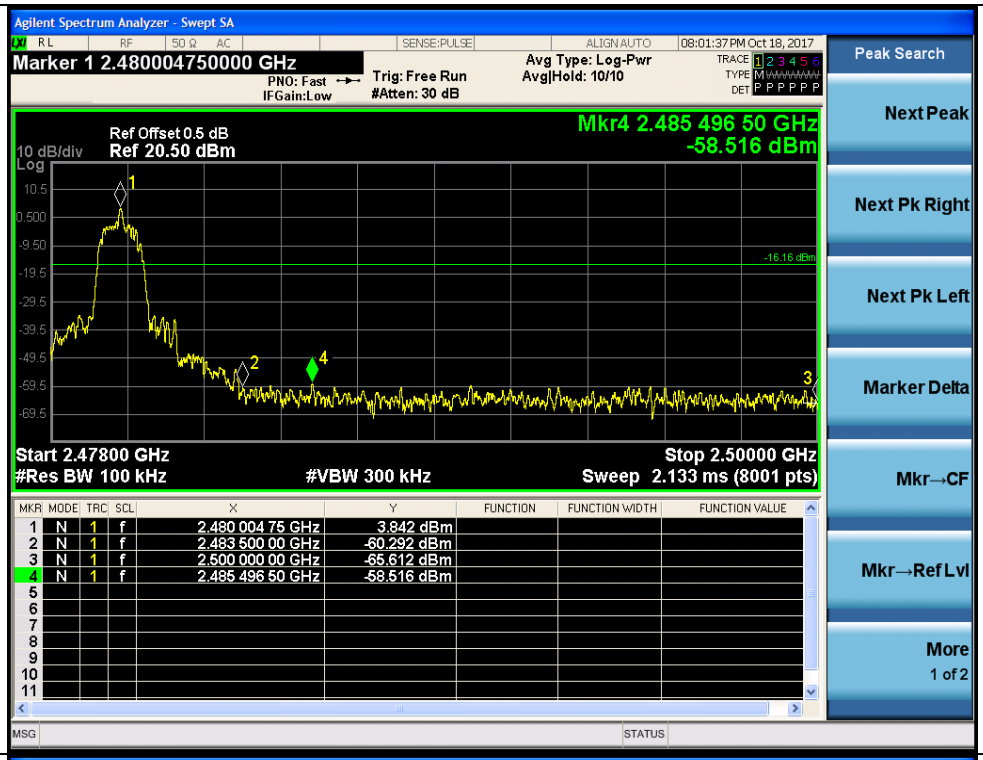
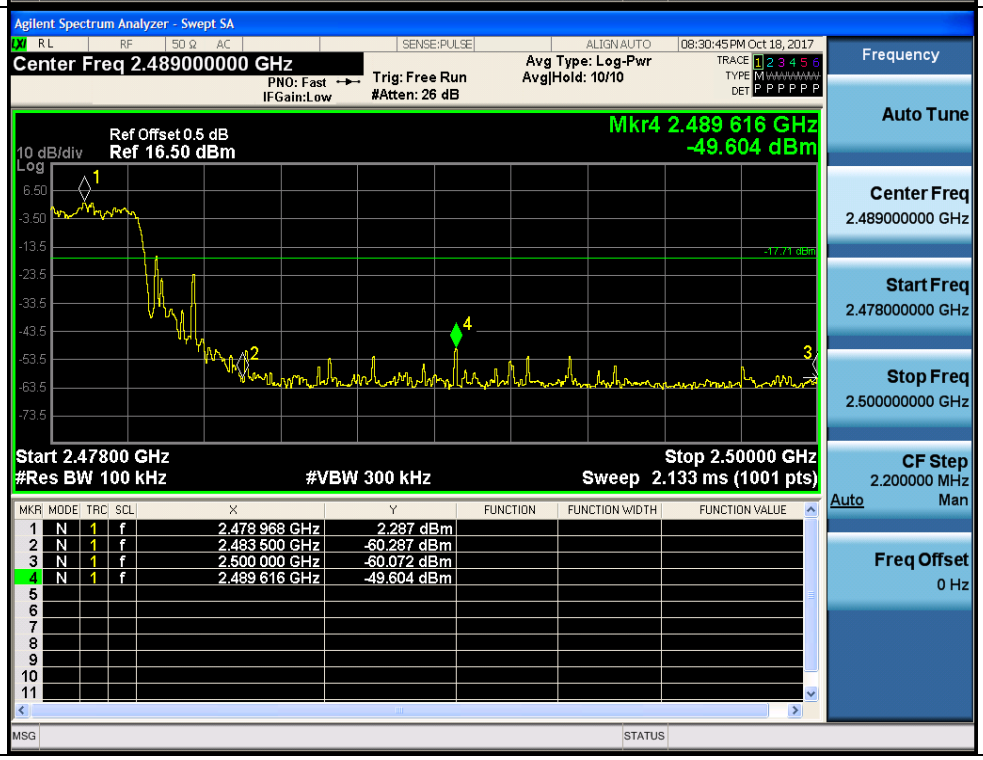
No hopping mode



CH00

Hopping mode

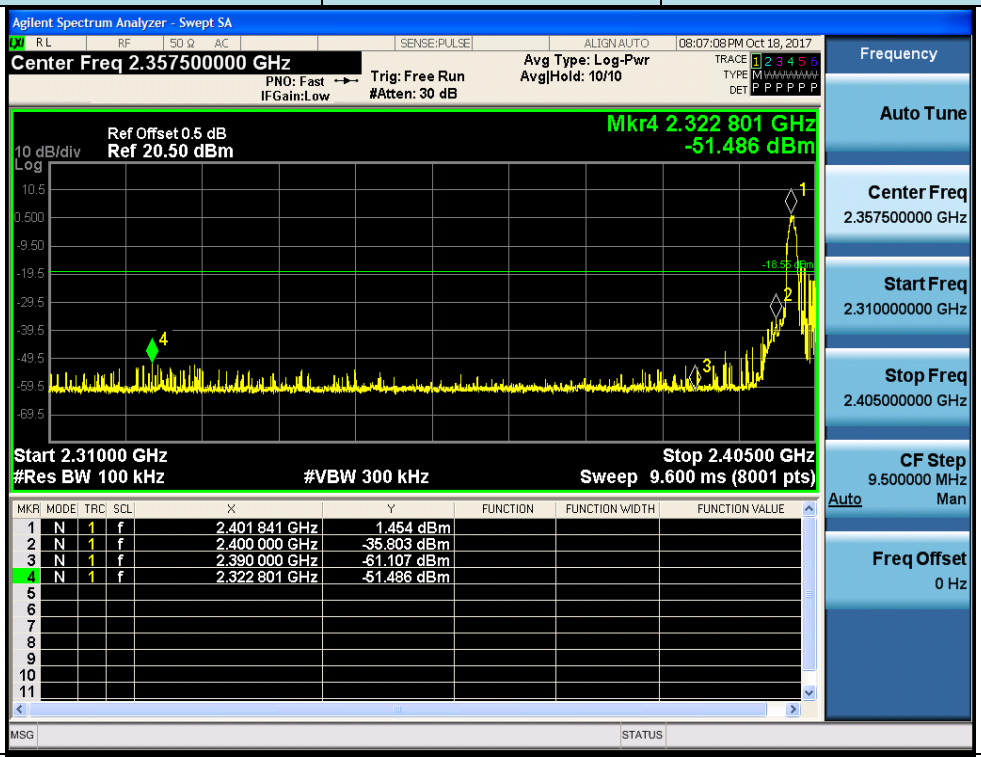


CH78 No hopping mode	
CH78 Hopping mode	

Test Item:	Band edge	Modulation type:	8DPSK

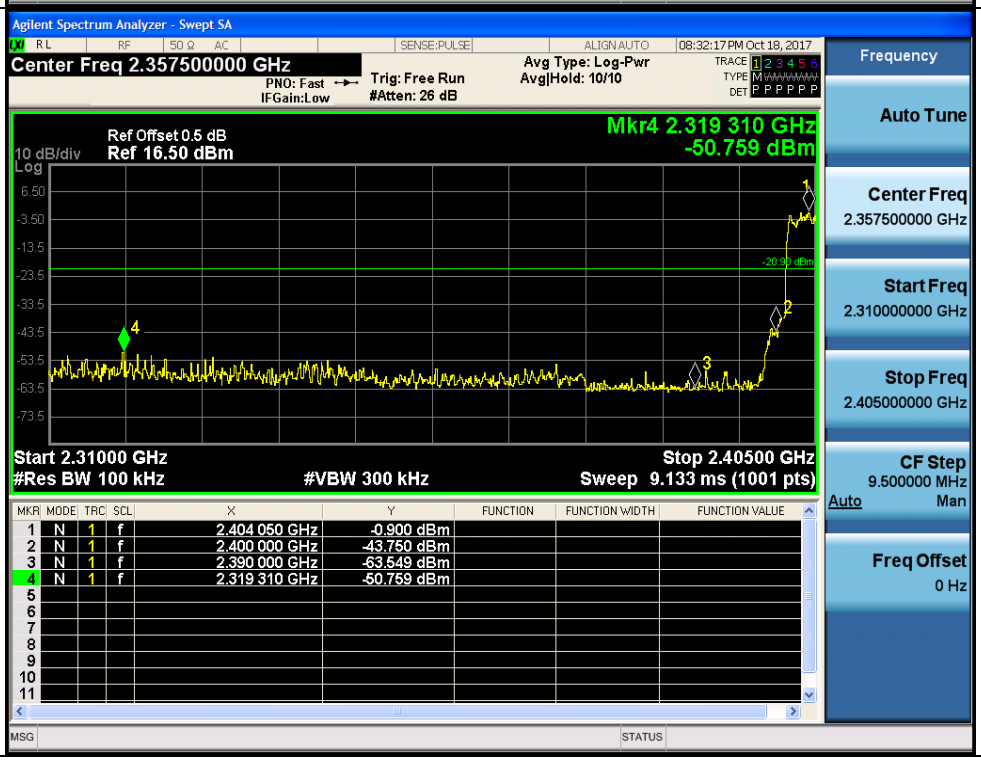
CH00

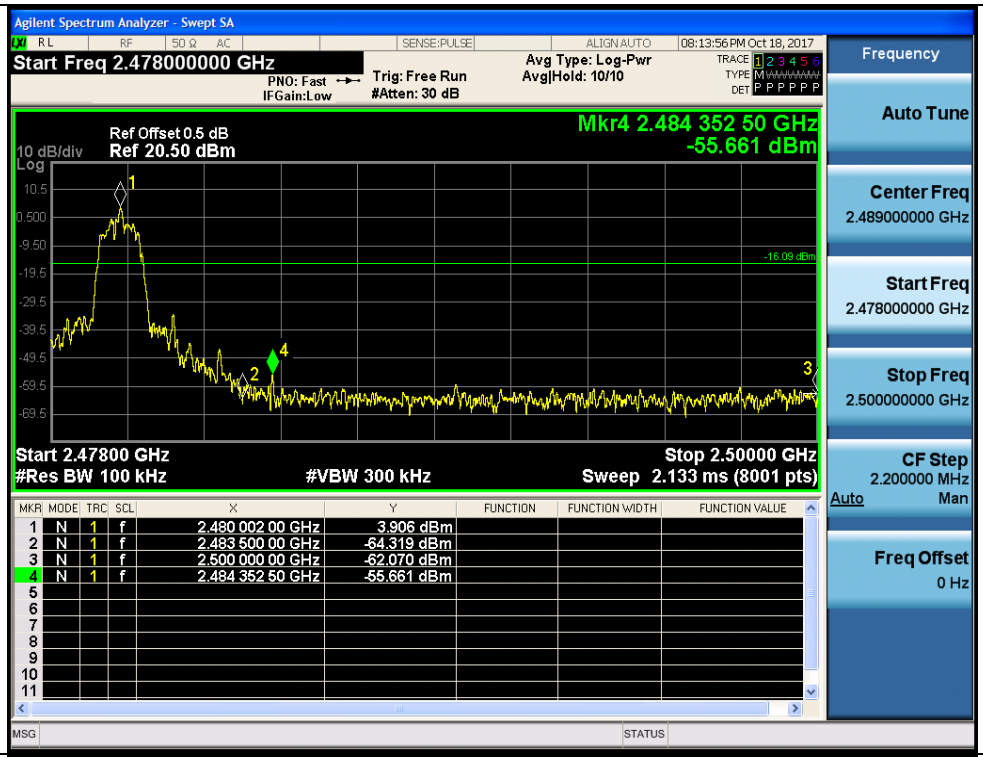
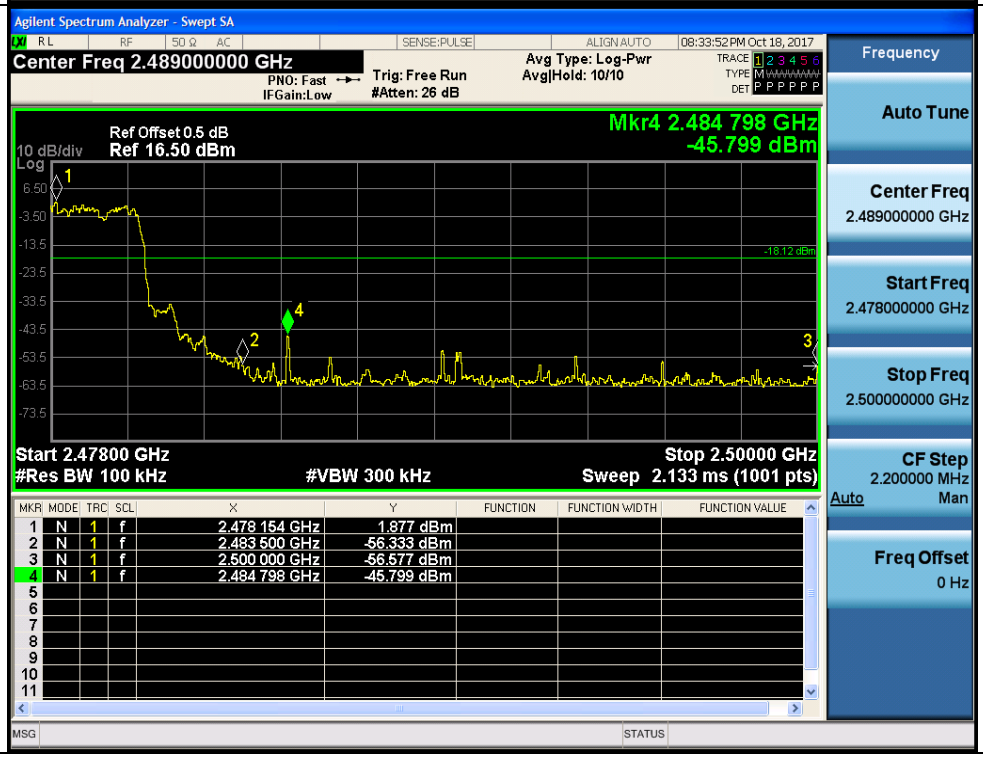
No hopping mode

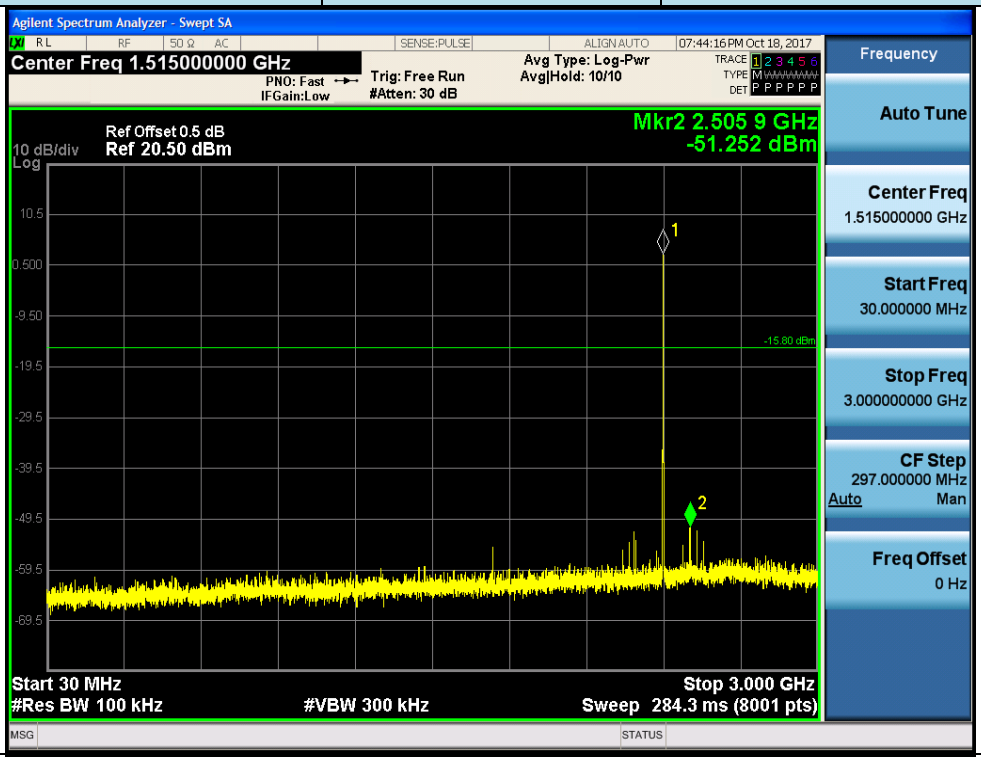
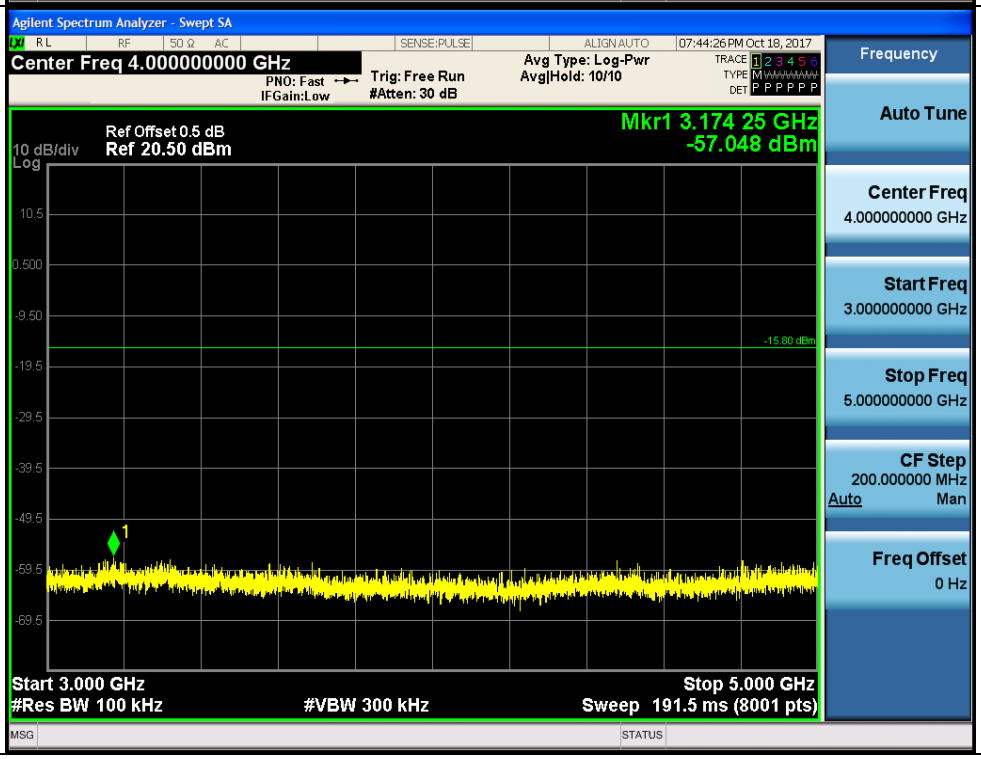


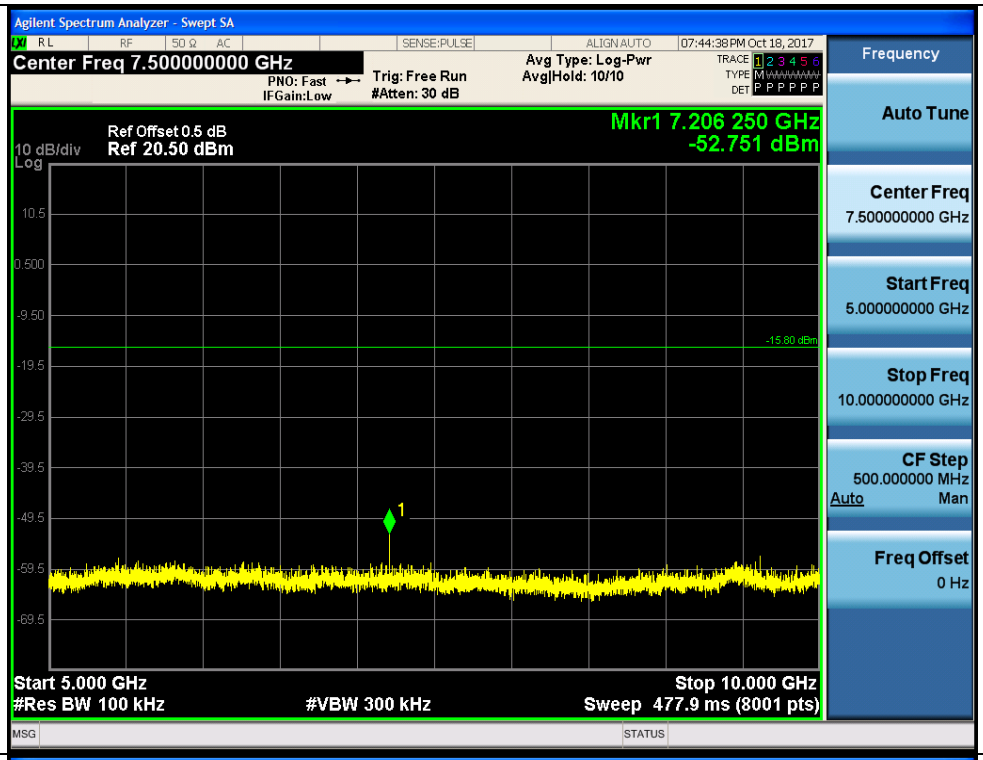
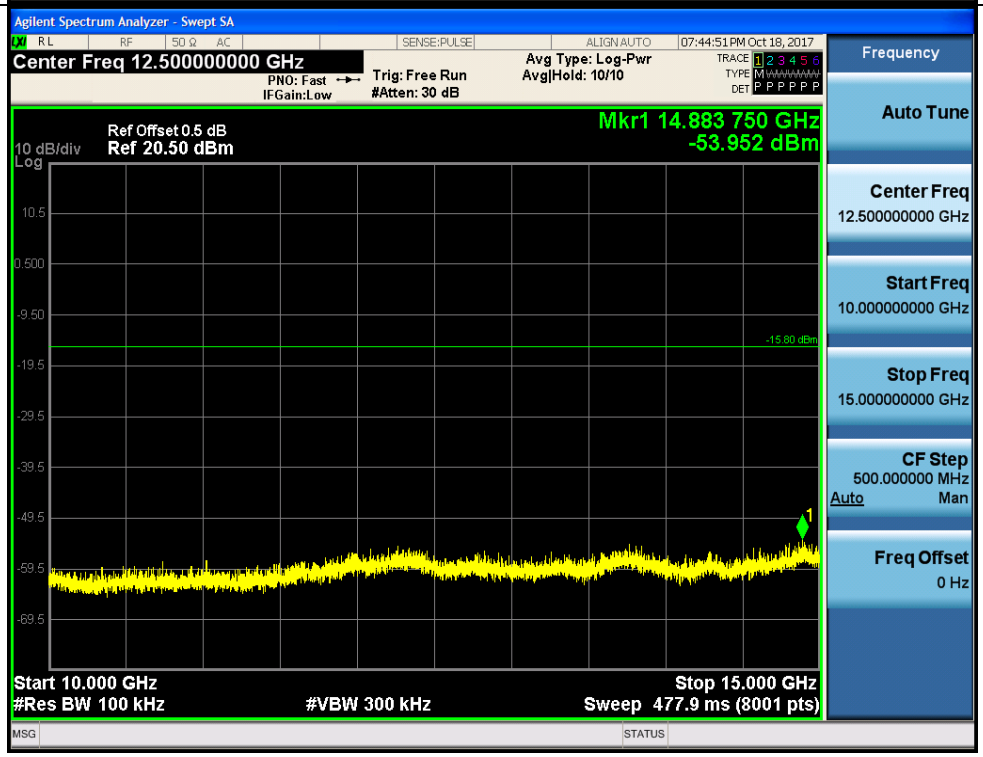
CH00

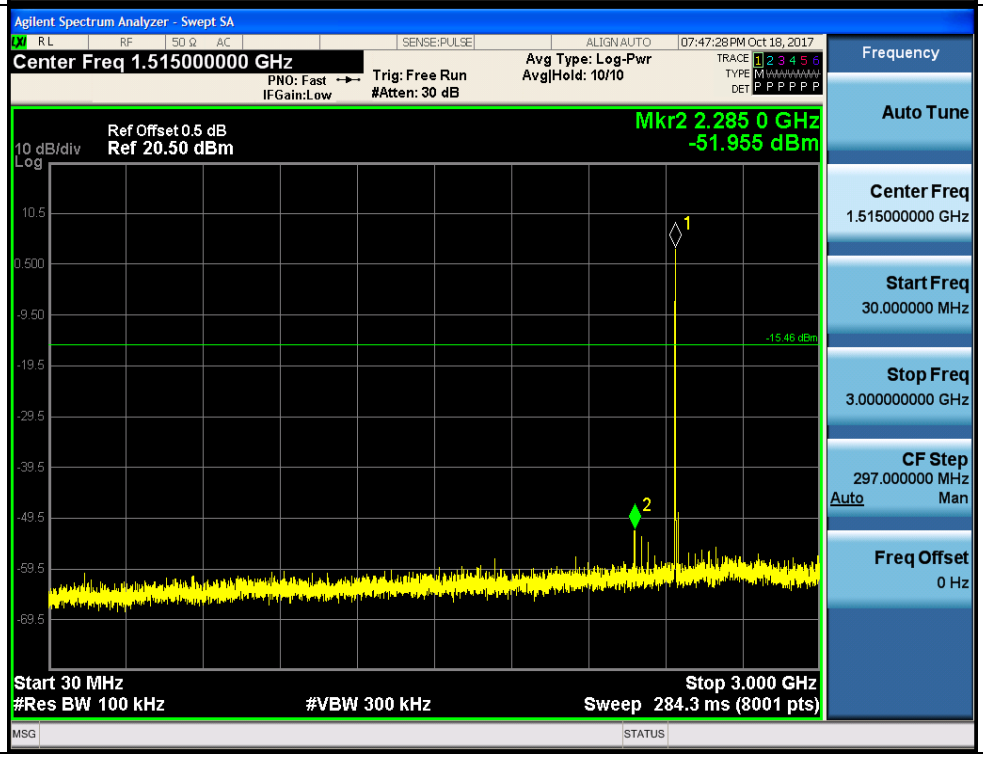
Hopping mode

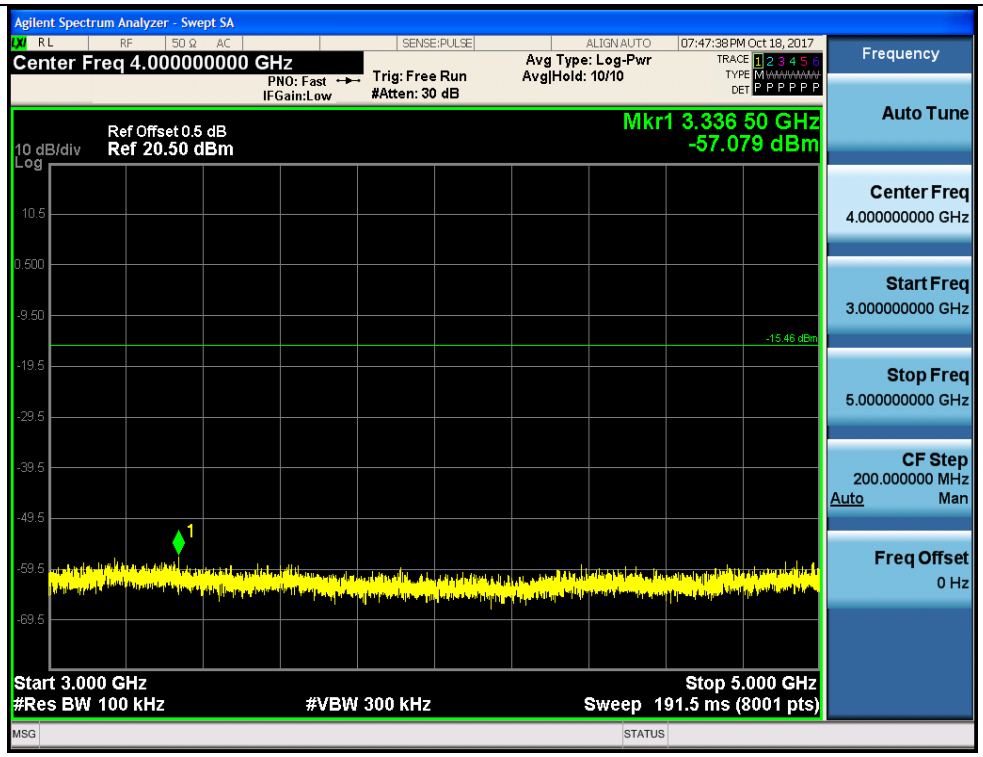
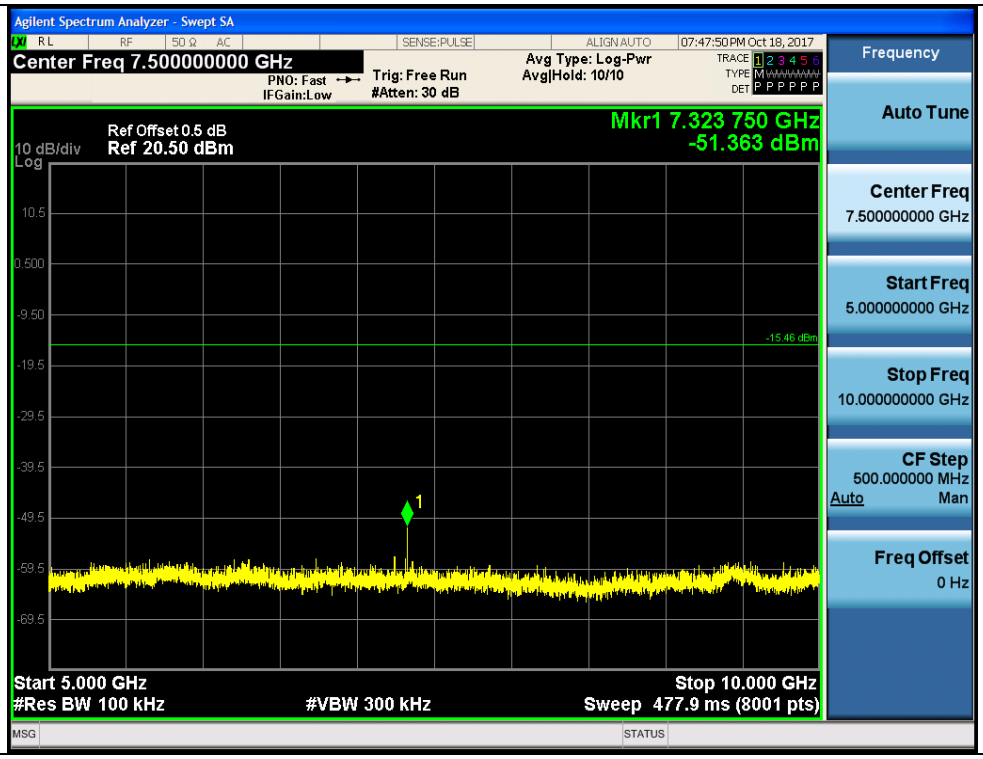


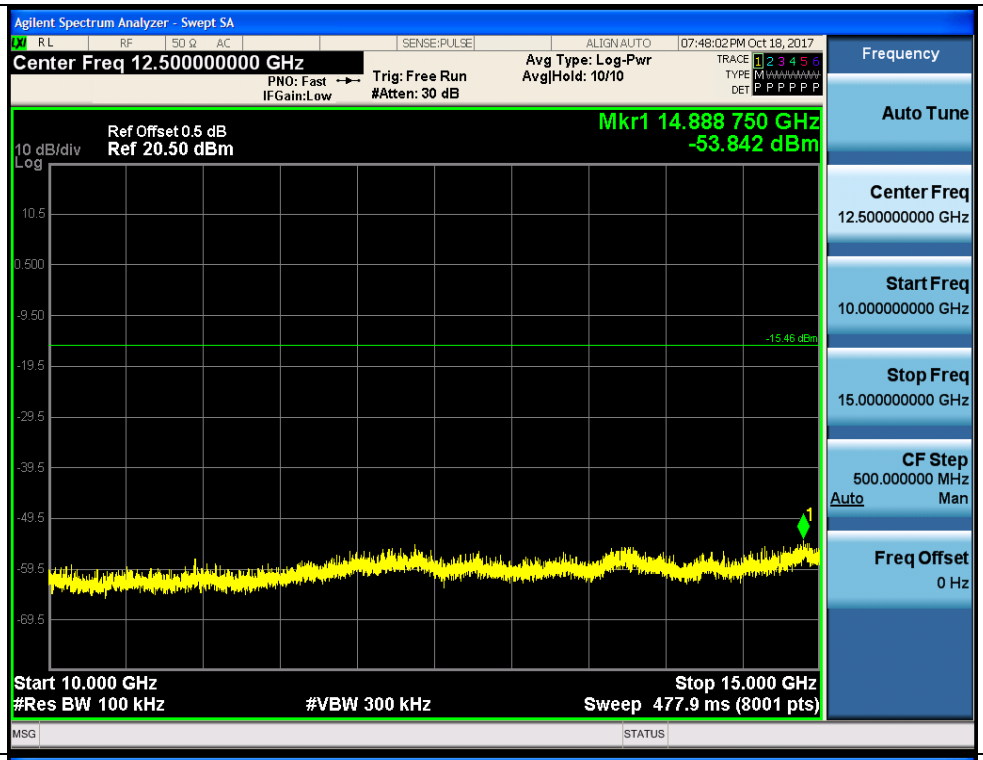
CH78 No hopping mode	
CH78 Hoppig mode	

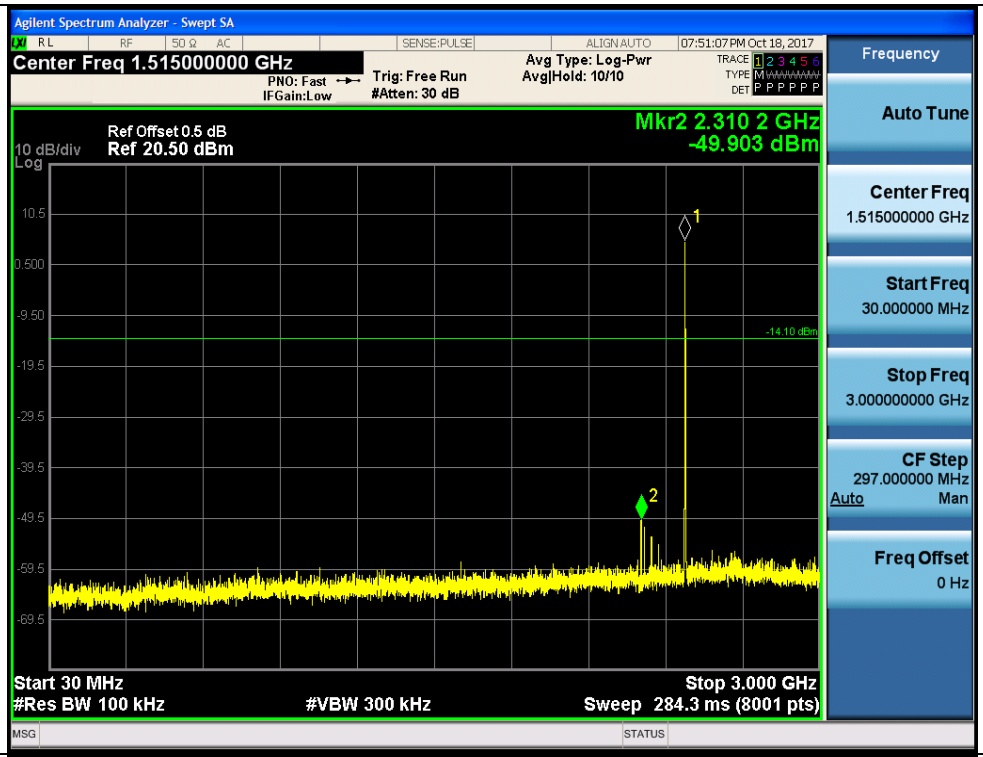
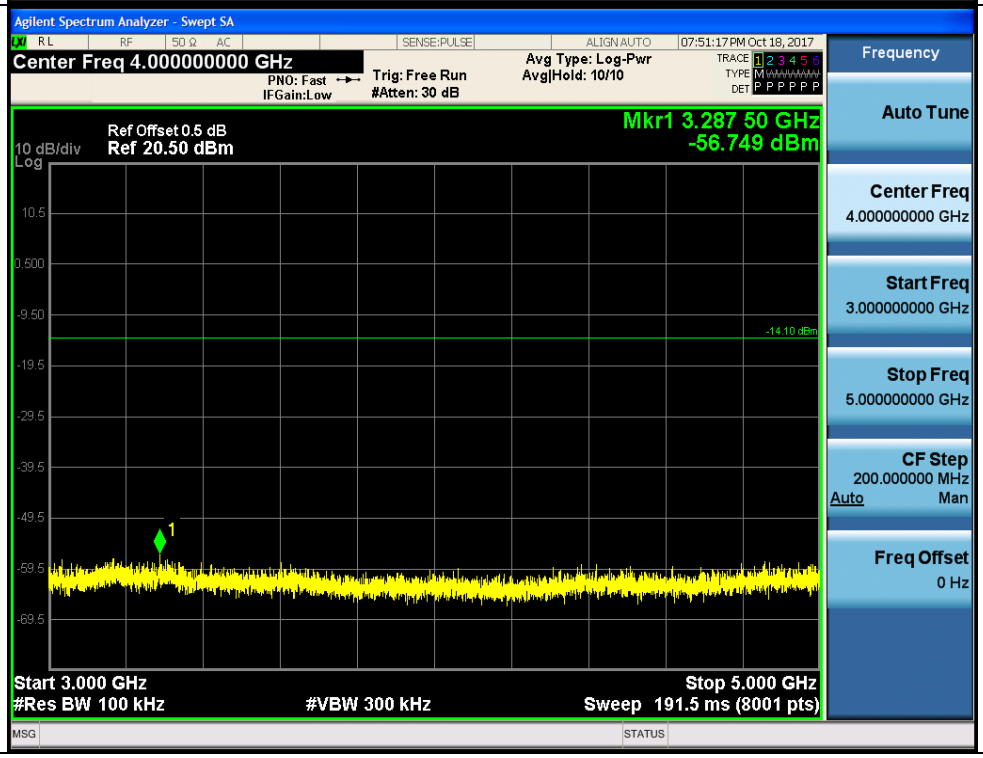
Test Item:	SE	Modulation type:	GFSK
CH00 30MHz~3GHz			
CH00 3GHz~5GHz			

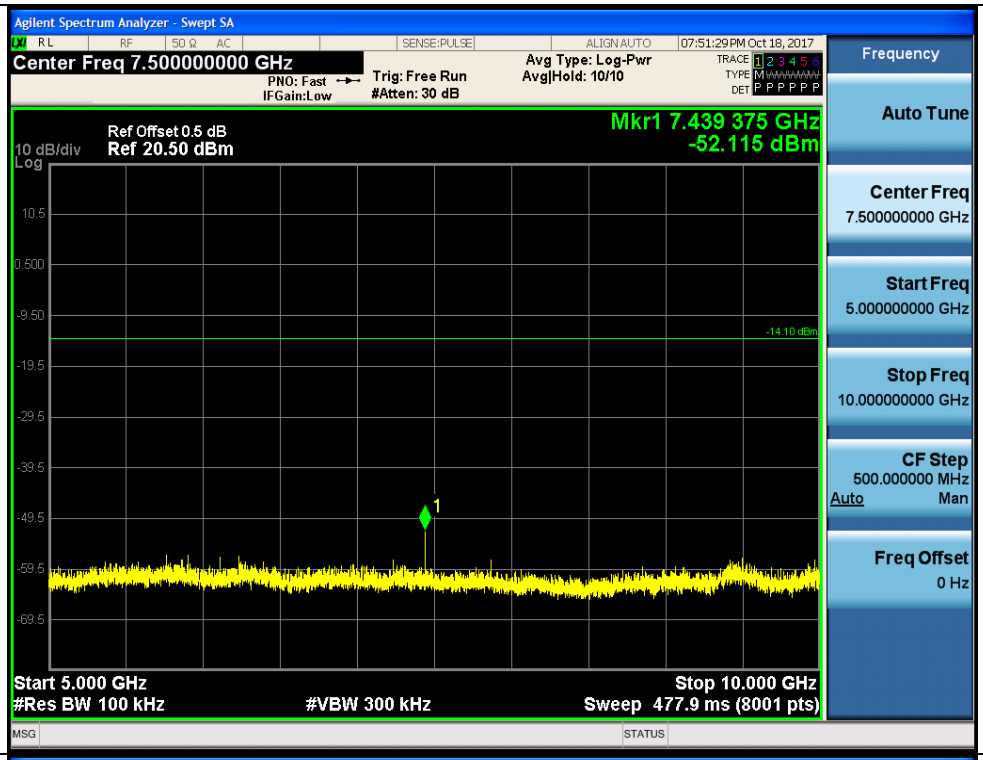
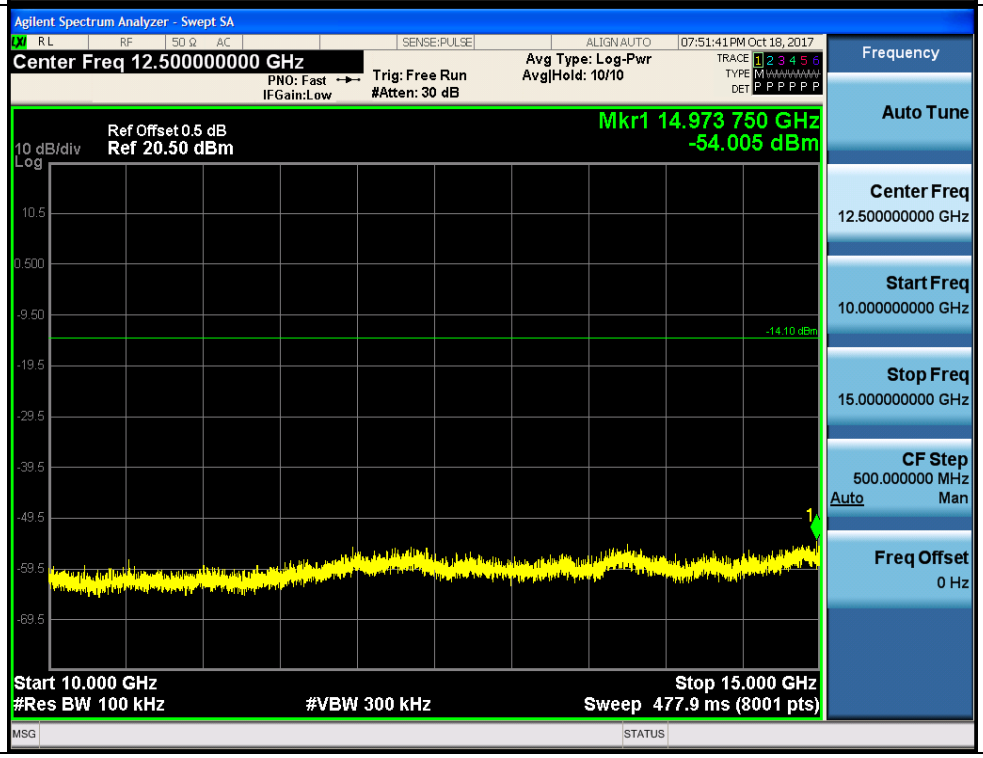
CH00 5GHz~10GHz	
CH00 10GHz~15GHz	

CH00 15GHz~25GHz	
CH39 30MHz~3GHz	

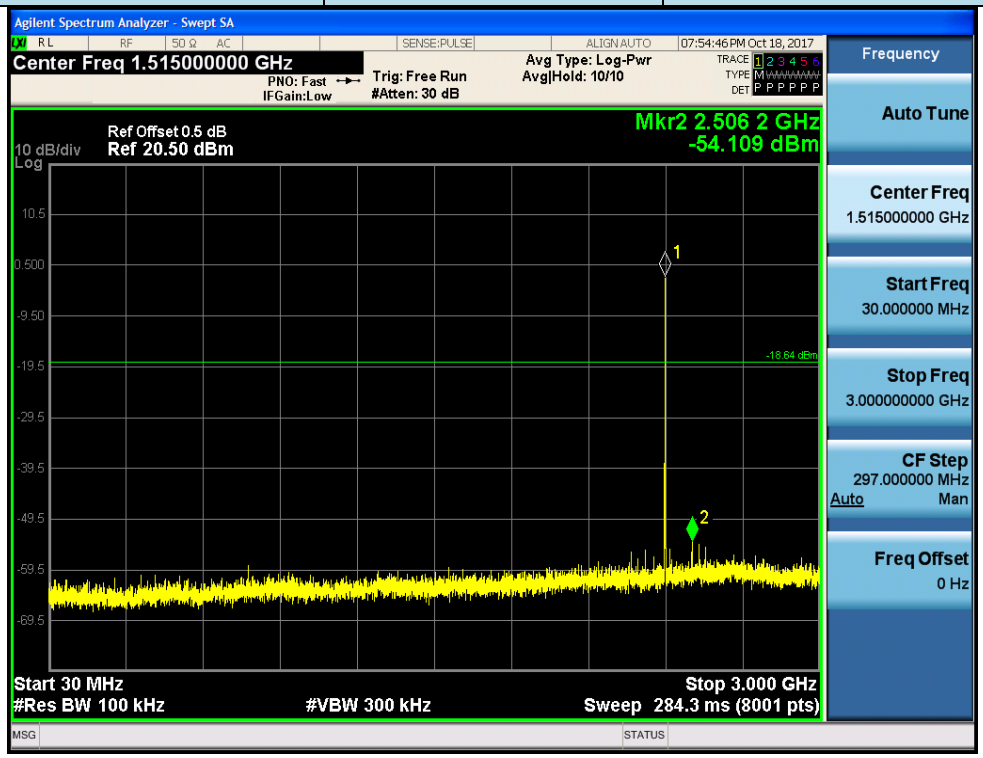
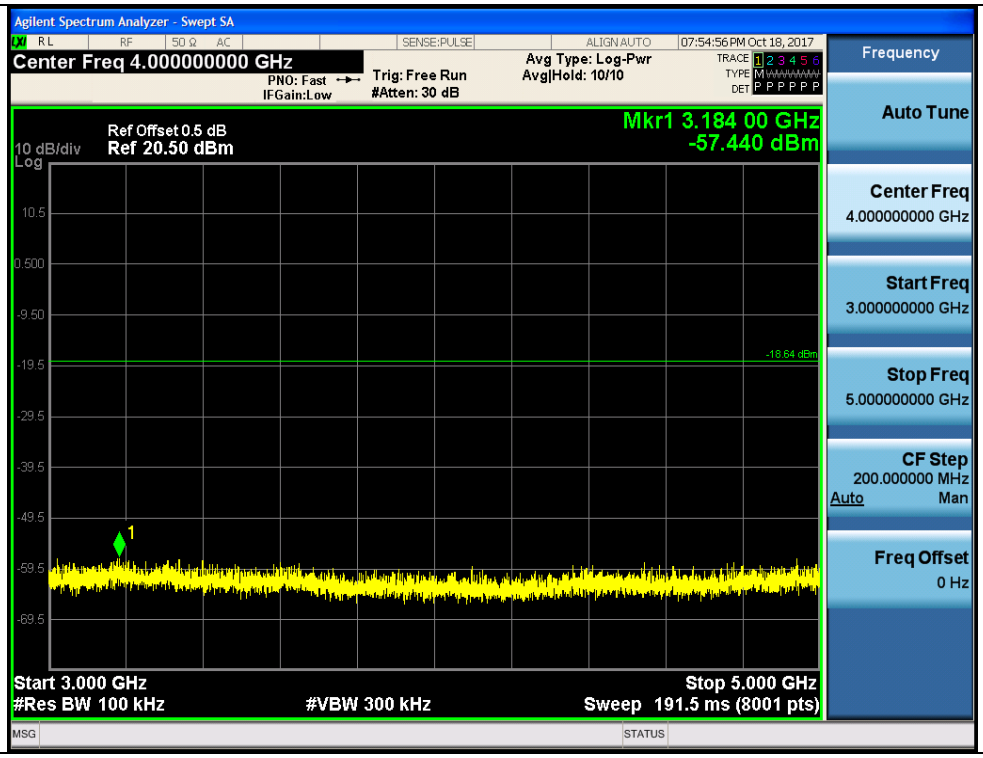
CH39 3GHz~5GHz	
CH39 5GHz~10GHz	

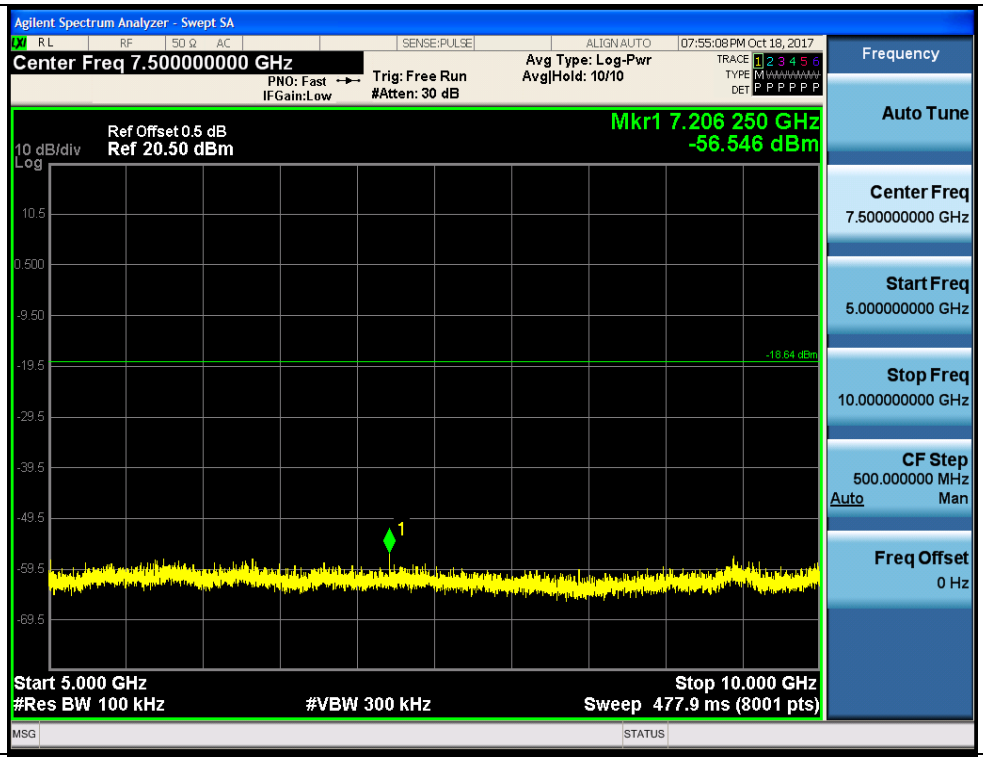
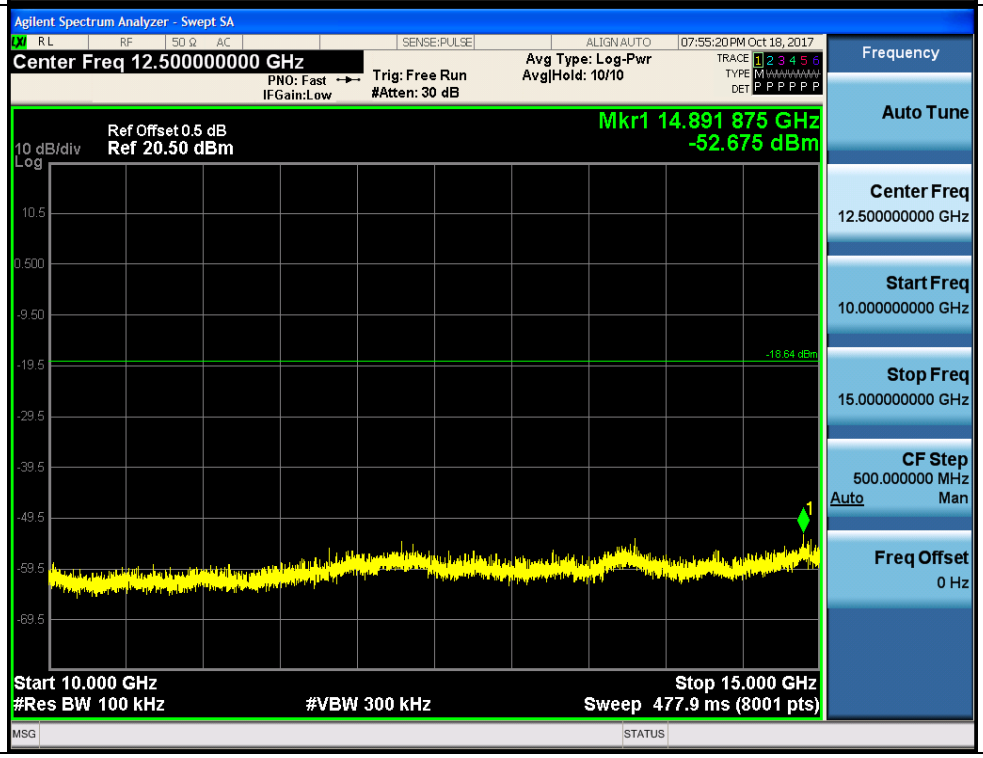
CH39 10GHz~15GHz	
CH39 15GHz~25GHz	

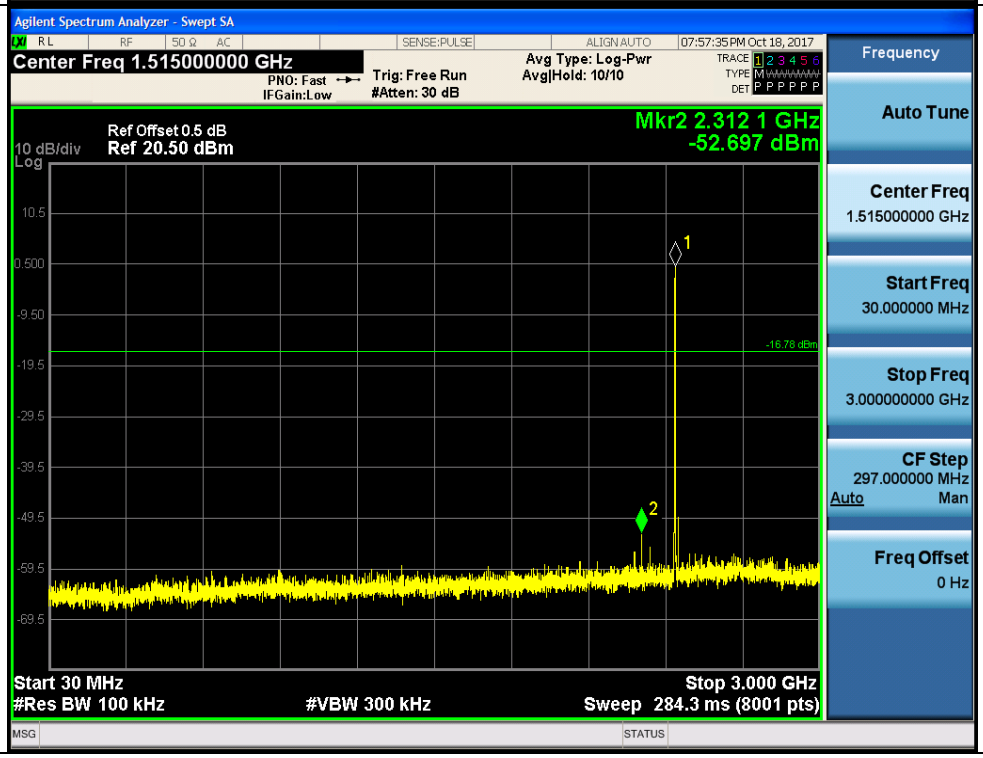
CH78 30MHz~3GHz	
CH78 3GHz~5GHz	

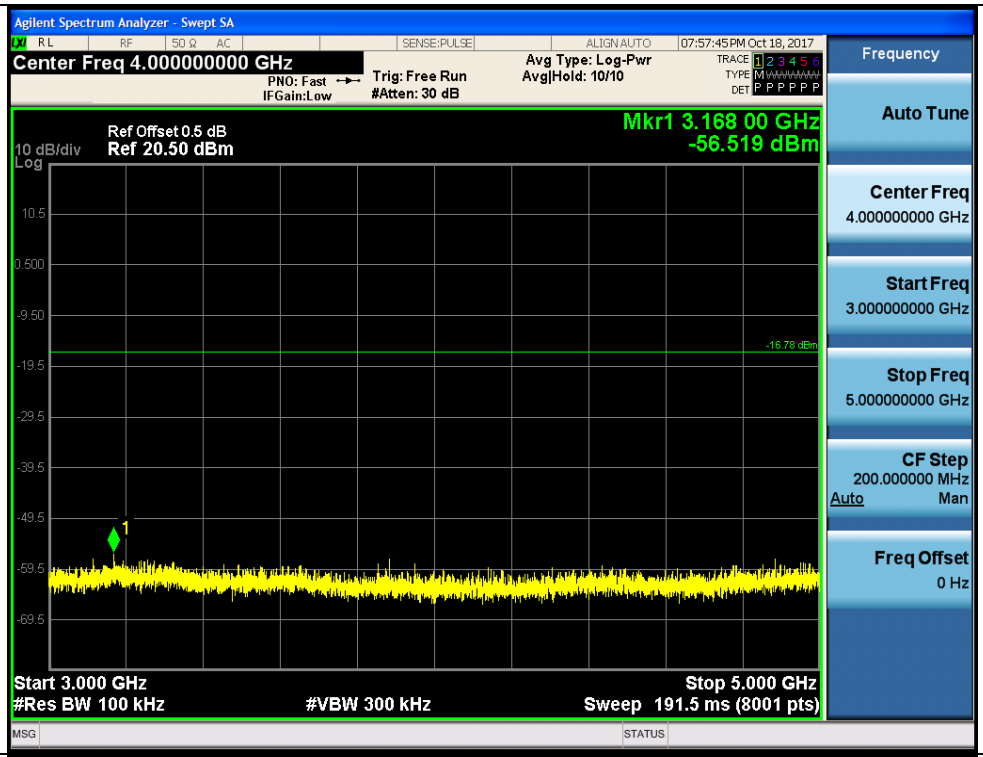
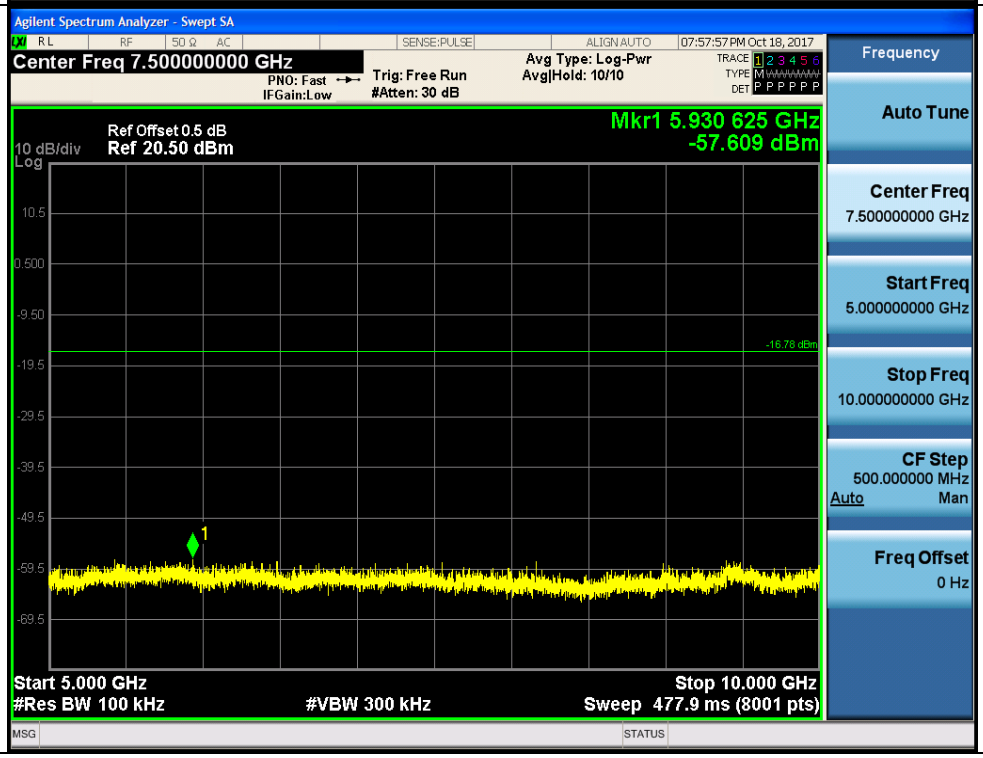
CH78 5GHz~10GHz	
CH78 10GHz~15GHz	

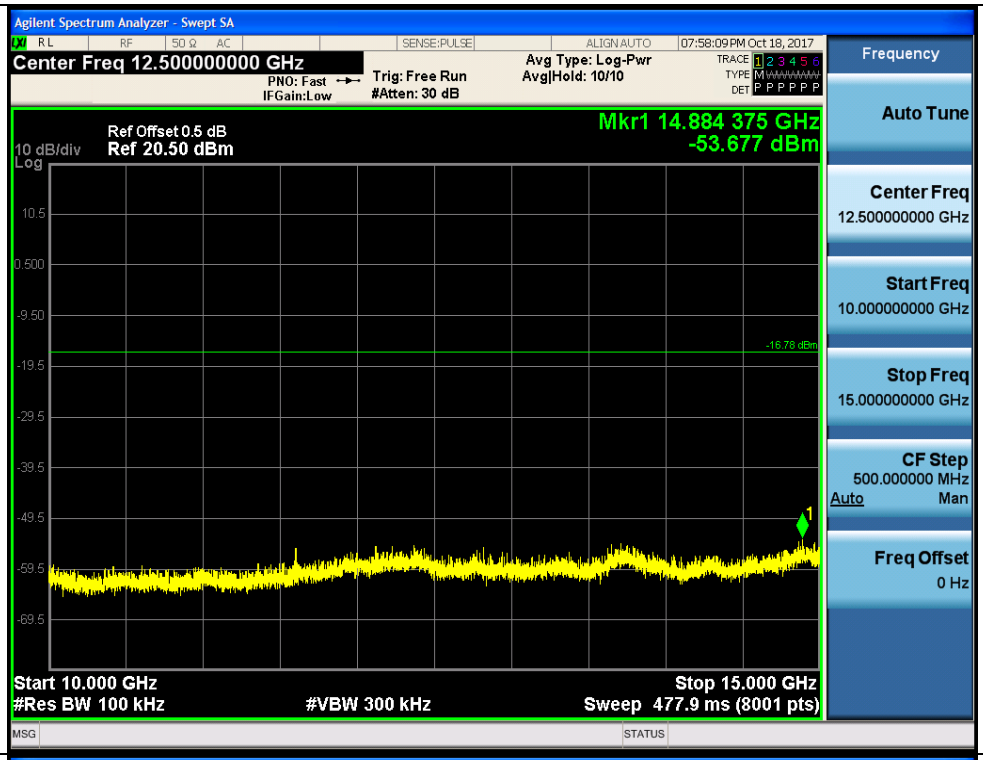
CH78 15GHz~25GHz	

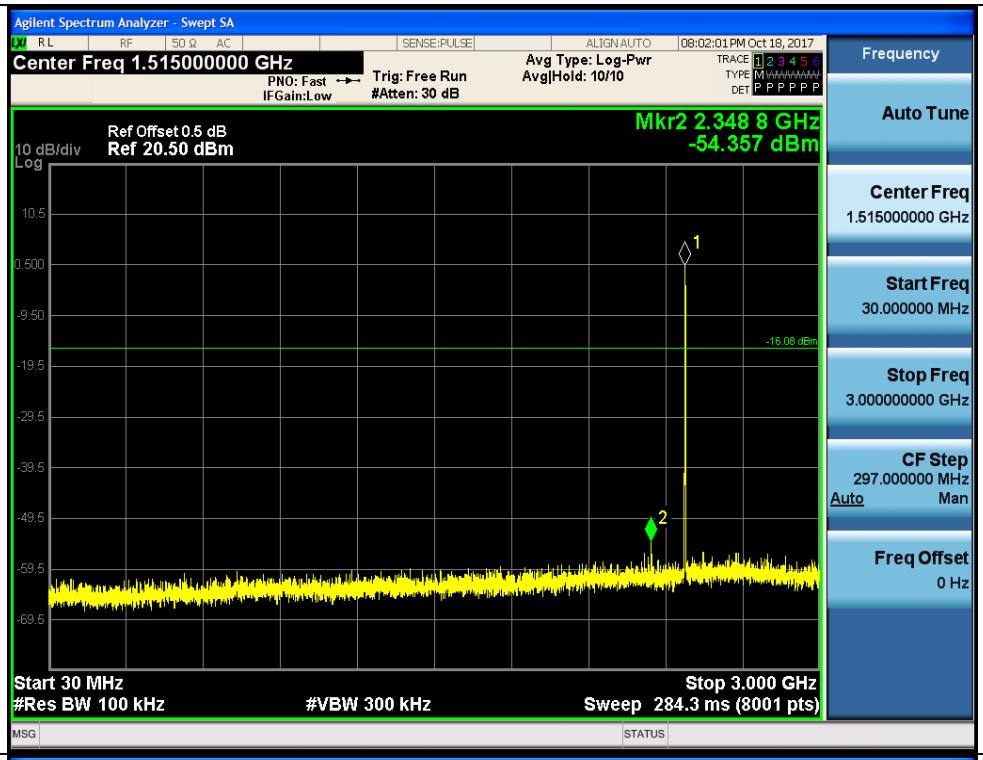
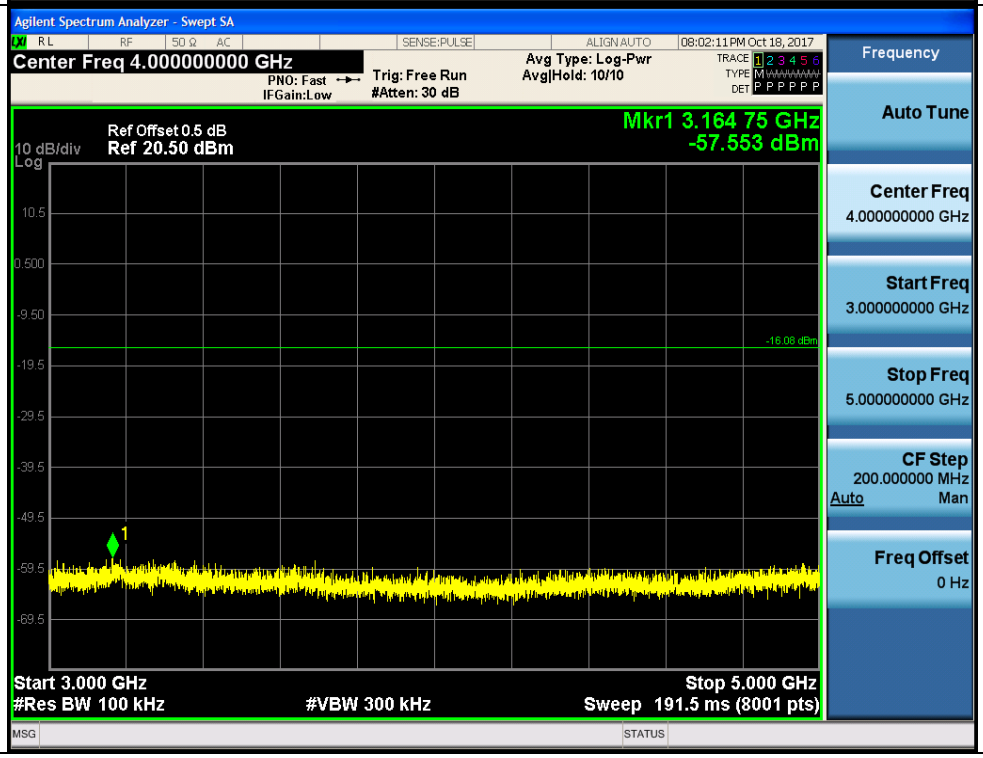
Test Item:	SE	Modulation type:	π/4DQPSK
CH00 30MHz~3GHz			
CH00 3GHz~5GHz			

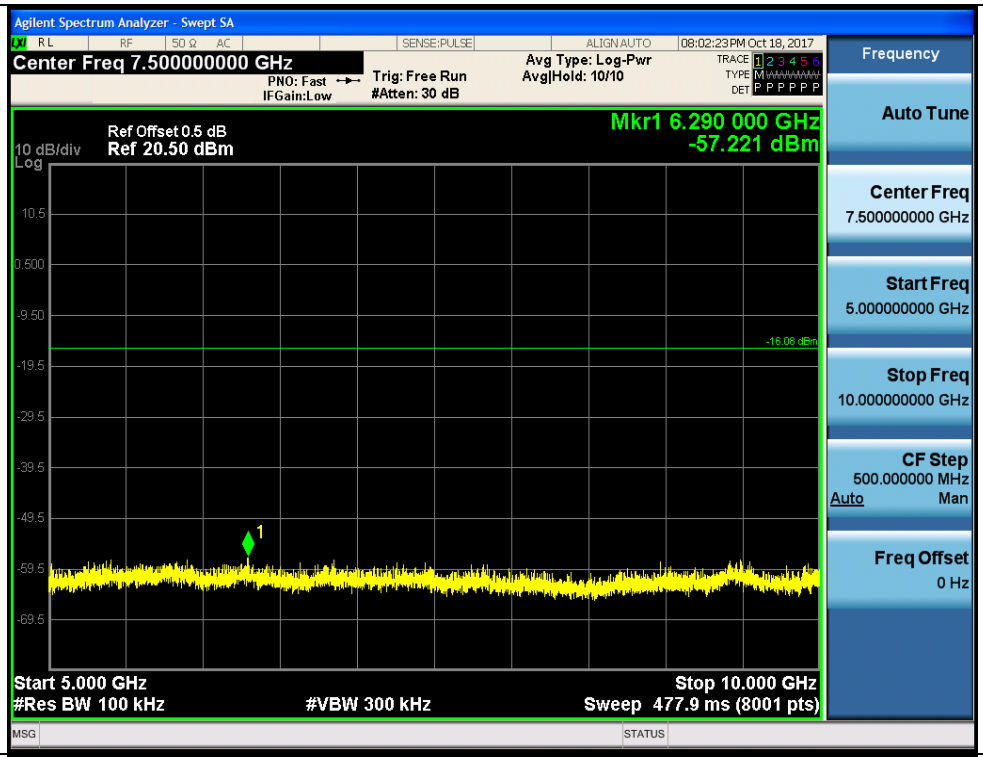
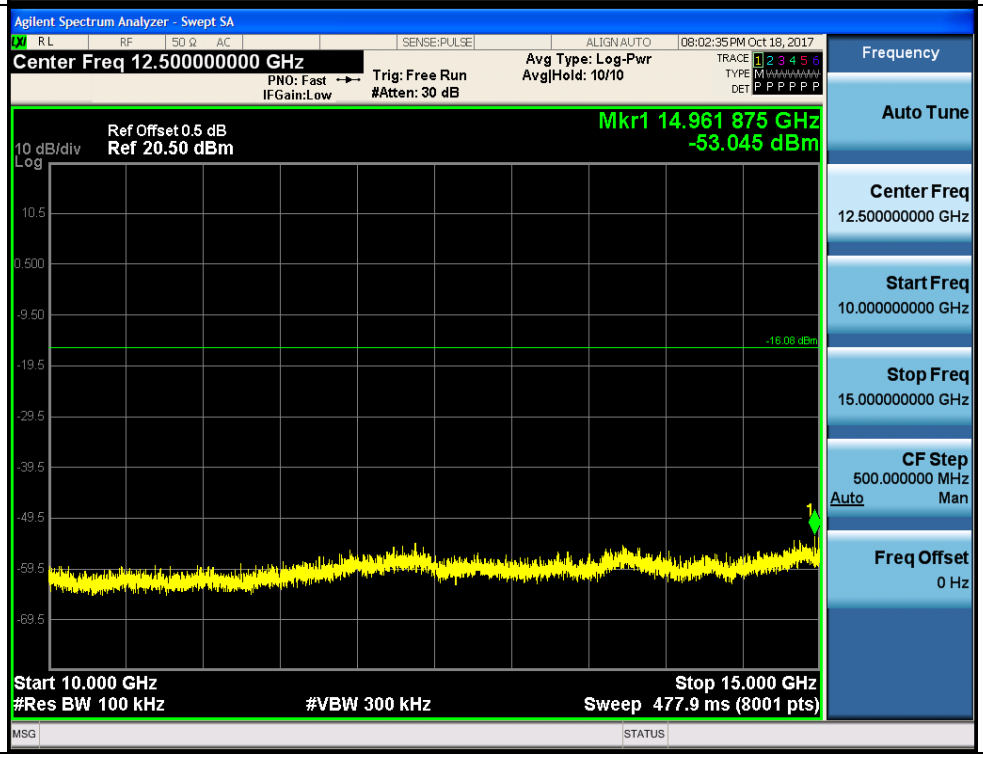
CH00 5GHz~10GHz	
CH00 10GHz~15GHz	

CH00 15GHz~25GHz	
CH39 30MHz~3GHz	

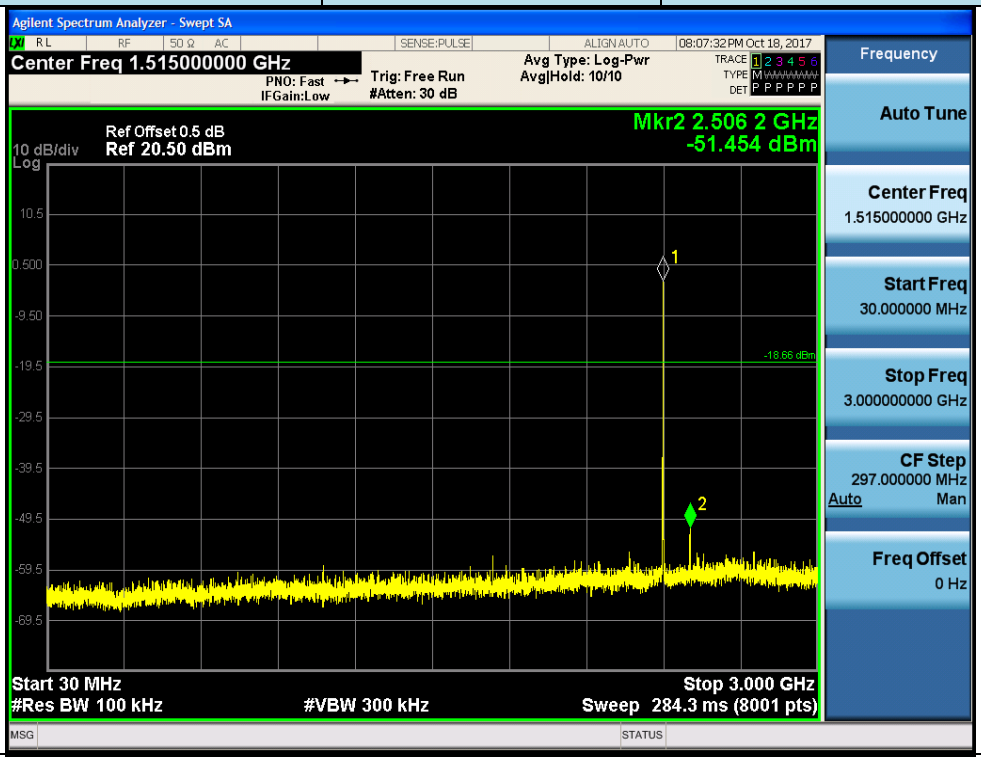
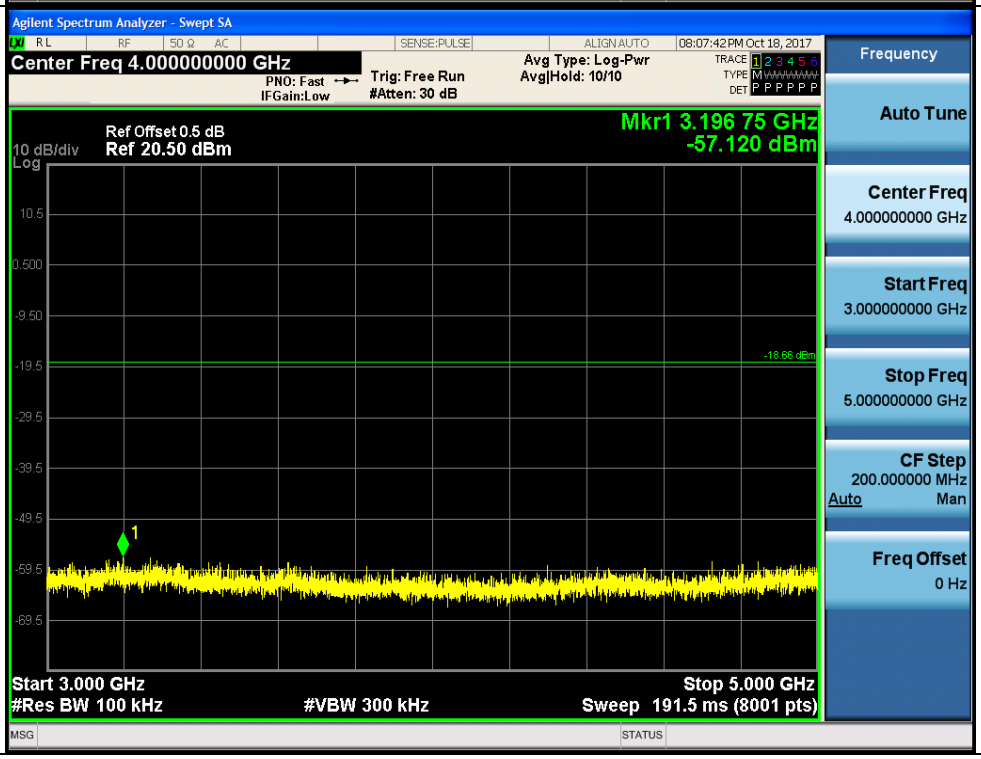
CH39 3GHz~5GHz	
CH39 5GHz~10GHz	

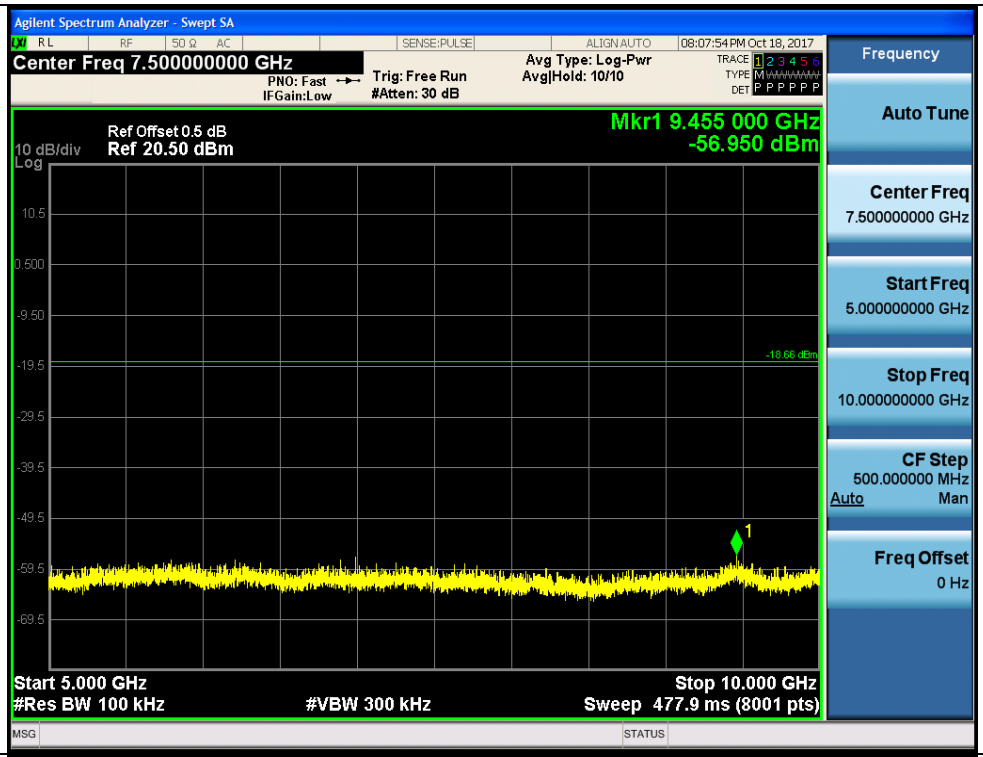
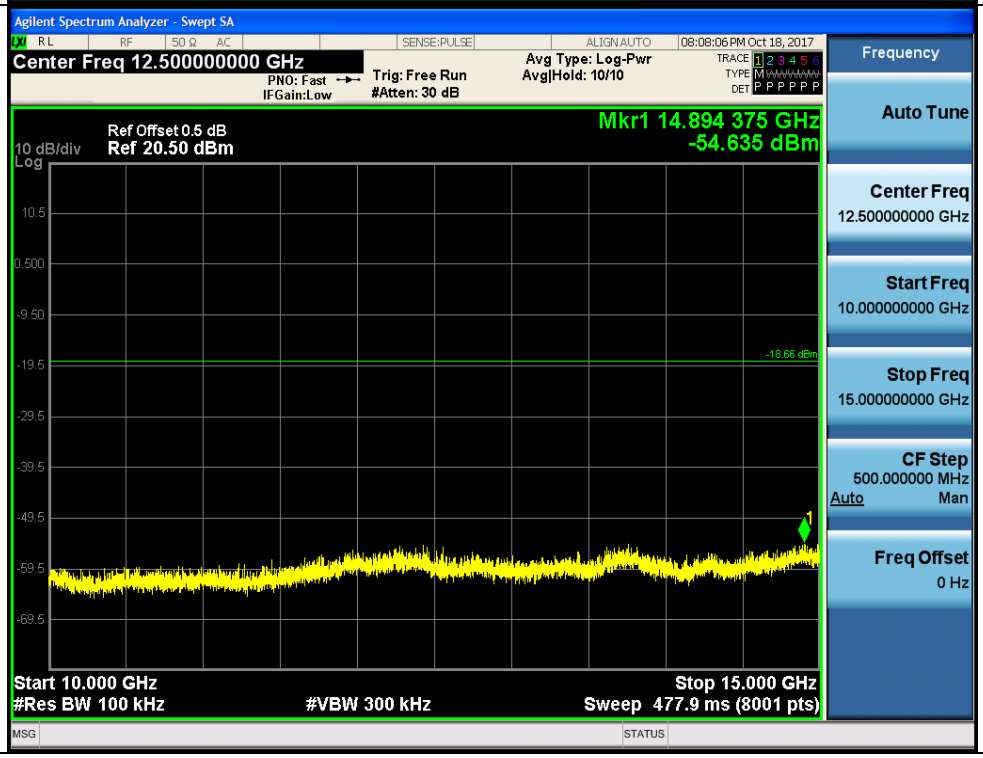
CH39 10GHz~15GHz	
CH39 15GHz~25GHz	

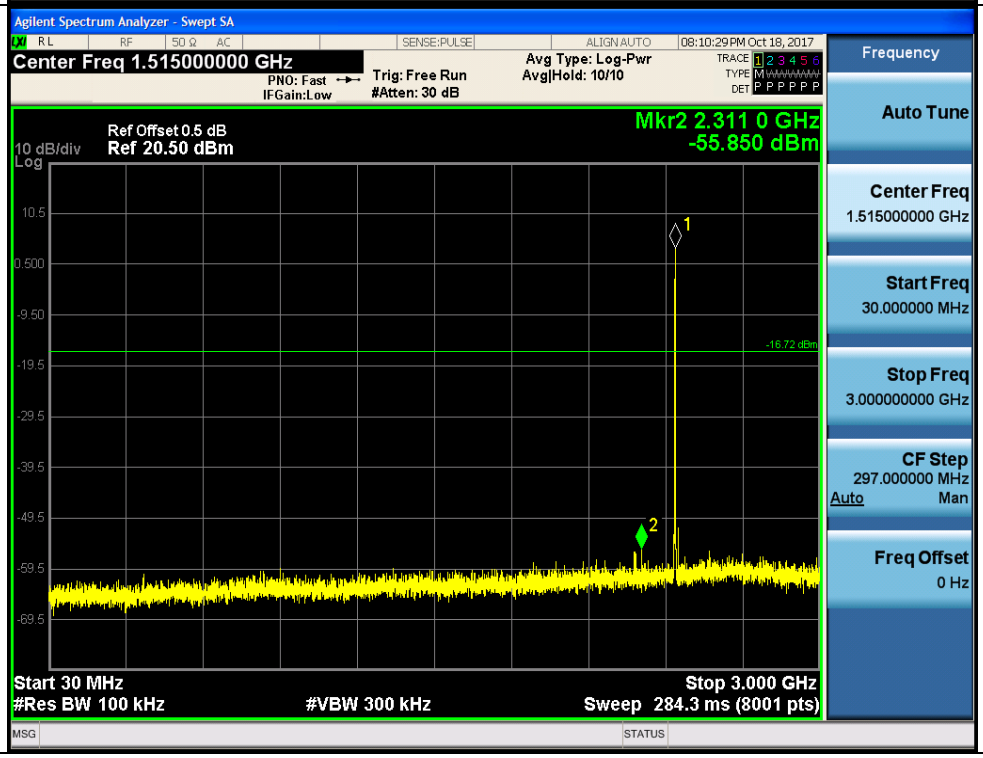
CH78 30MHz~3GHz	
CH78 3GHz~5GHz	

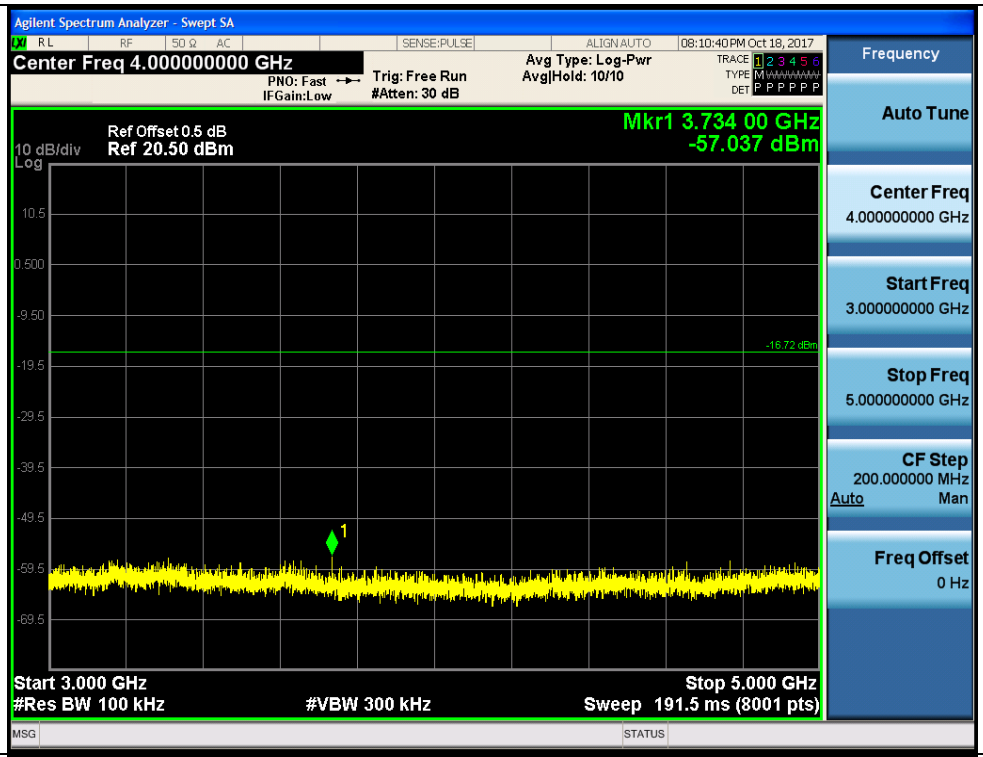
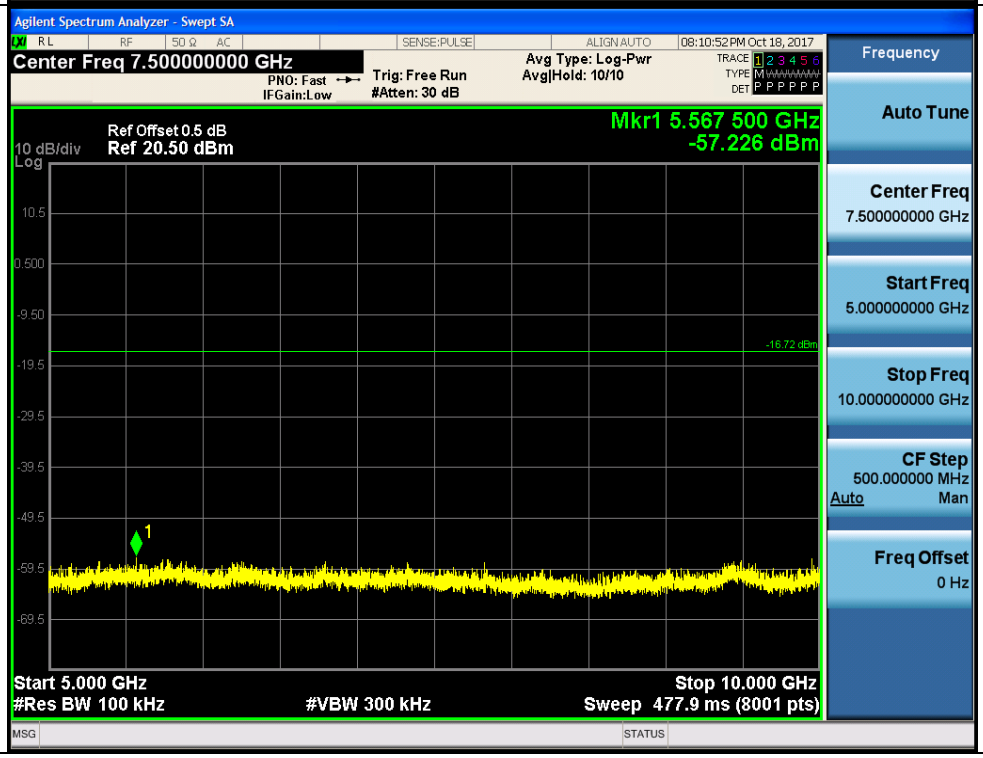
CH78 5GHz~10GHz	
CH78 10GHz~15GHz	

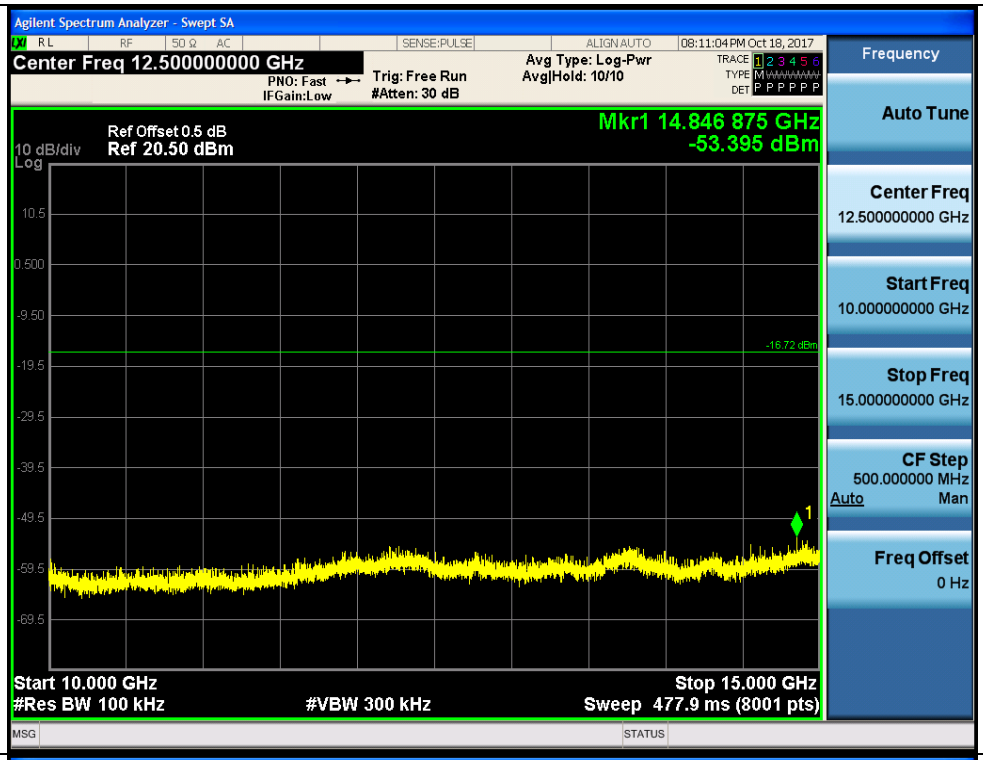
CH78 15GHz~25GHz	

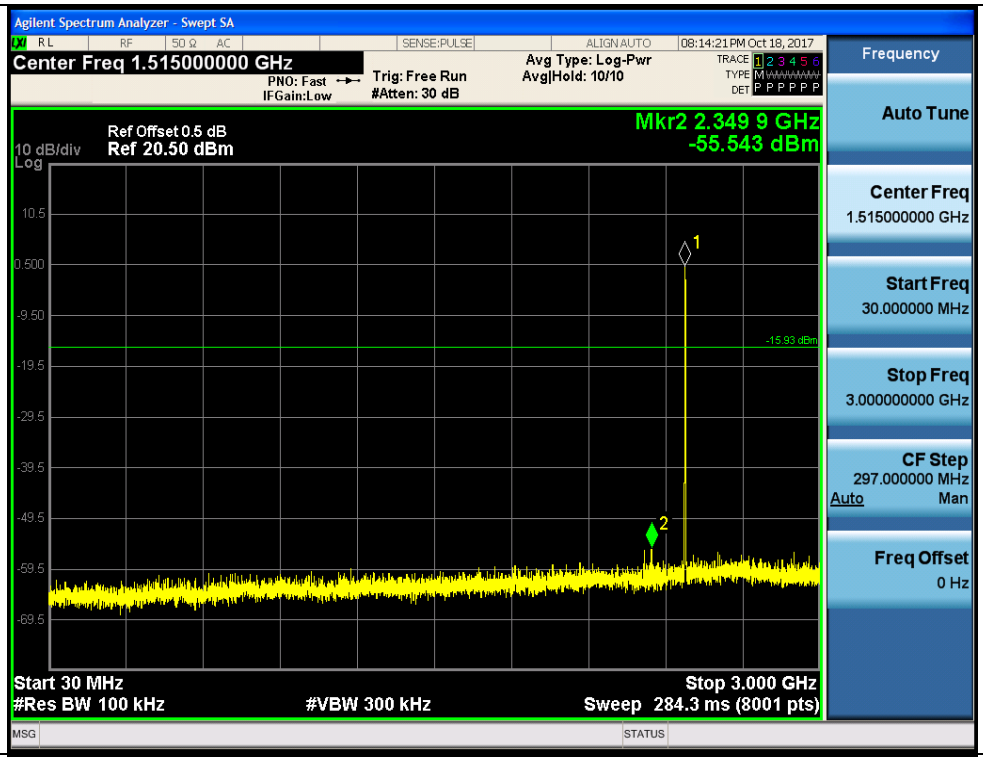
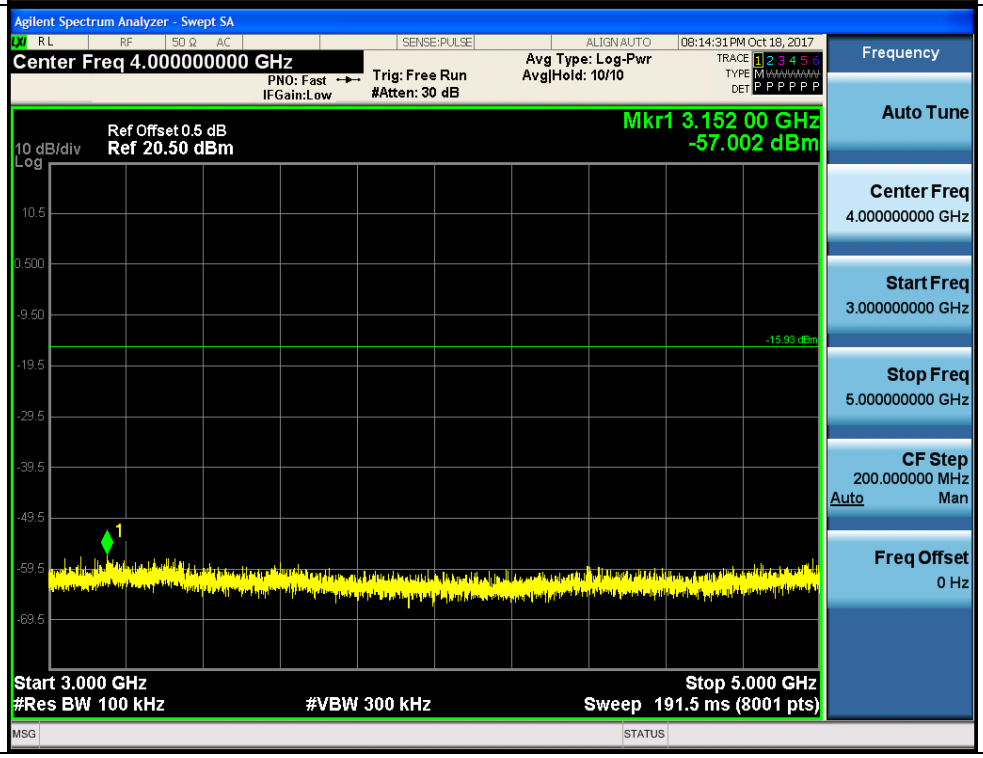
Test Item:	SE	Modulation type:	8DPSK
CH00 30MHz~3GHz			
CH00 3GHz~5GHz			

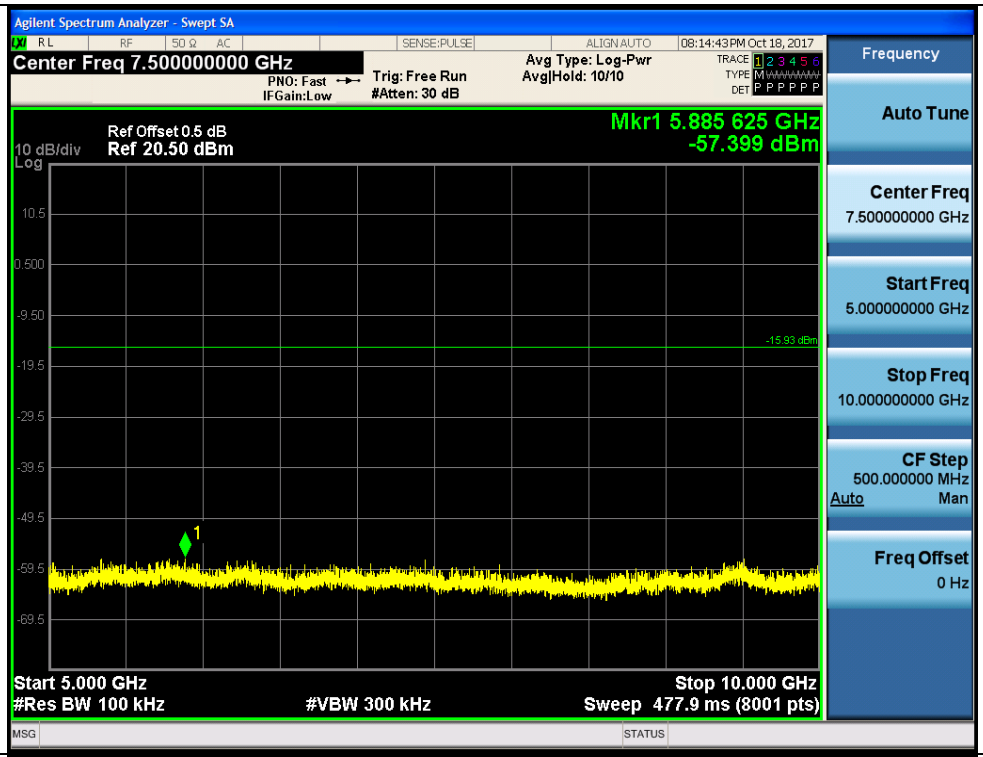
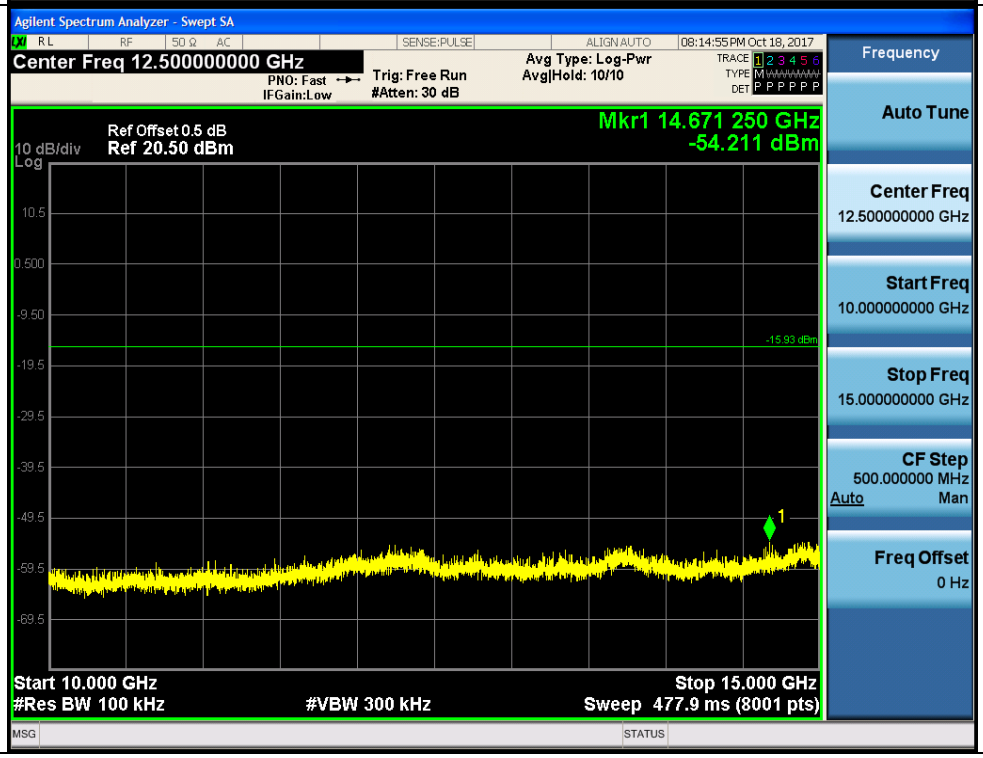
CH00 5GHz~10GHz	
CH00 10GHz~15GHz	

CH00 15GHz~25GHz	
CH39 30MHz~3GHz	

CH39 3GHz~5GHz	
CH39 5GHz~10GHz	

CH39 10GHz~15GHz	
CH39 15GHz~25GHz	

CH78 30MHz~3GHz	
CH78 3GHz~5GHz	

CH78 5GHz~10GHz	
CH78 10GHz~15GHz	

CH78 15GHz~25GHz	

5.11. Spurious Emissions (radiated)

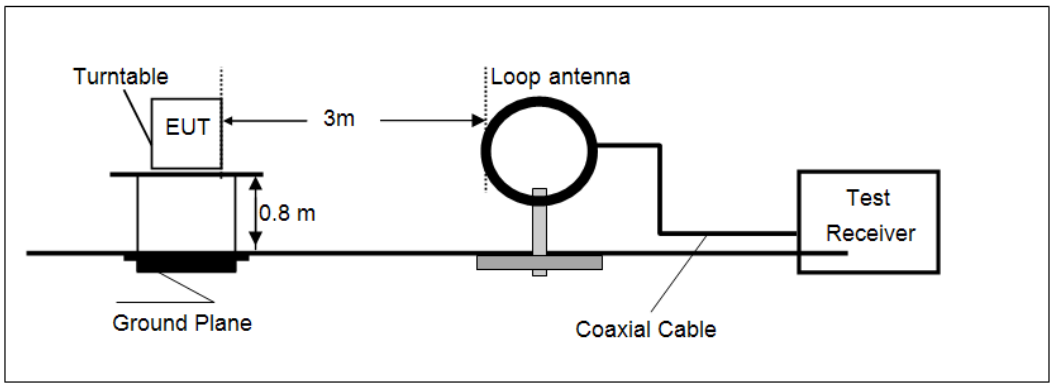
LIMIT

FCC CFR Title 47 Part 15 Subpart C Section 15.209

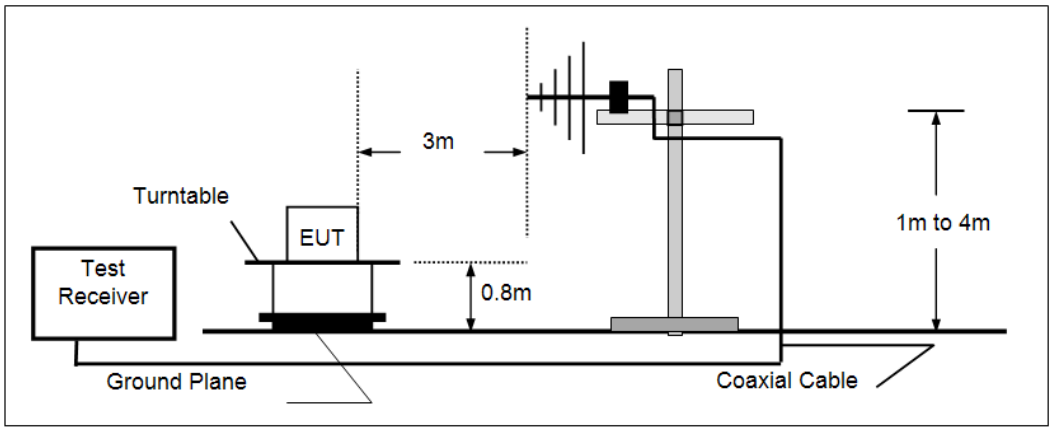
Frequency	Limit (dBuV/m @3m)	Value
30 MHz ~ 88 MHz	40.00	Quasi-peak
88 MHz ~ 216 MHz	43.50	Quasi-peak
216 MHz ~ 960 MHz	46.00	Quasi-peak
960 MHz ~ 1 GHz	54.00	Quasi-peak
Above 1 GHz	54.00	Average
	74.00	Peak

TEST CONFIGURATION

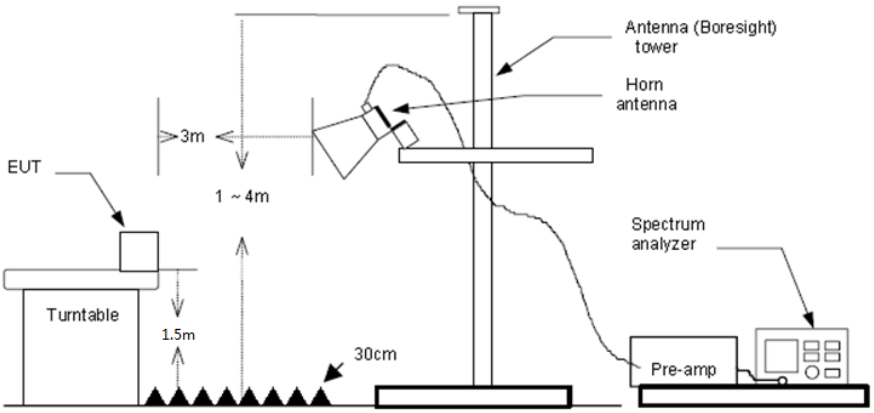
- Below 30 MHz



- 30 MHz ~1000 MHz



- Above 1 GHz



TEST PROCEDURE

1. The EUT was tested according to ANSI C63.10:2013.
2. The EUT is placed on a turn table which is 0.8 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level.
3. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.
4. The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna.
5. Use the following spectrum analyzer settings
   (1) Span shall wide enough to fully capture the emission being measured;
   (2) Below 1 GHz, RBW=120 kHz, VBW=300 kHz, Sweep=auto, Detector function=QP, Trace=max hold;
   If the emission level of the EUT measured by the peak detectoris 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.
   (3) Above 1 GHz, RBW=1 MHz, VBW=3 MHz Peak detector for Peak value
   RBW=1 MHz, VBW=10 Hz Peak detector for Average value.

TEST MODE:

Please refer to the clause 3.3

TEST RESULTS

☒ **Passed** ☐ **Not Applicable**

Note:

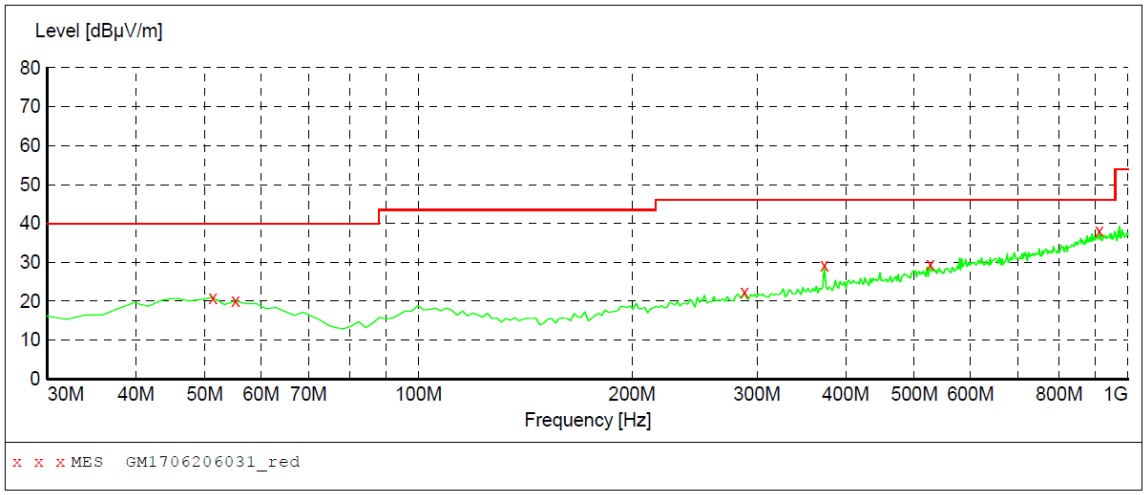
1) Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2) The emission levels of other frequencies are very lower than the limit and not show in test report.
3) Below 1 GHz,Have pre-scan all modulation mode, found the GFSK modulation High channel which it was worst case, so only the worst case's data on the test report.
4) Above 1 GHz,Have pre-scan all modulation mode, found the GFSK modulation which it was worst case, so only the worst case's data on the test report
5) The peak level is lower than average limit(54 dBuV/m), this data is the too weak instrument of signal is unable to test.

➢ **9 kHz ~ 30 MHz**

The low frequency, which started from 9 kHz to 30 MHz, was pre-scanned and the result which was 20 dB lower than the limit line per 15.31(o) was not reported.

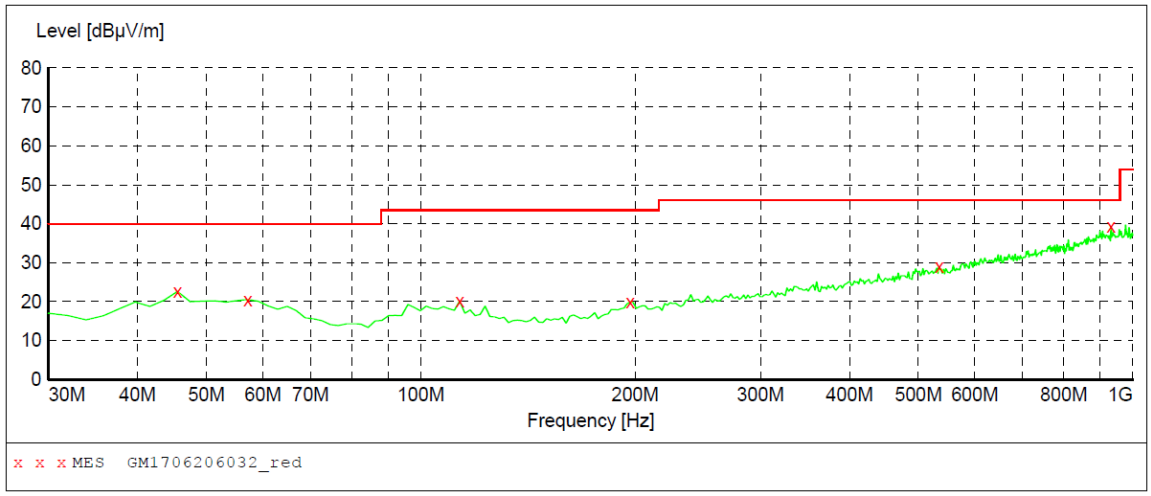
➢ **30 MHz ~ 1 GHz**

Polarization:	Vertical



Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
51.340000	21.00	-8.8	40.0	19.0	QP	100.0	121.00	VERTICAL
55.220000	20.10	-9.2	40.0	19.9	QP	100.0	94.00	VERTICAL
288.020000	22.40	-7.5	46.0	23.6	QP	100.0	14.00	VERTICAL
373.380000	29.20	-5.3	46.0	16.8	QP	100.0	134.00	VERTICAL
526.640000	29.40	-1.2	46.0	16.6	QP	100.0	214.00	VERTICAL
910.760000	38.20	6.9	46.0	7.8	QP	100.0	134.00	VERTICAL

Polarization:	Horizontal



Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
45.520000	22.60	-8.8	40.0	17.4	QP	100.0	147.00	HORIZONTAL
57.160000	20.50	-9.4	40.0	19.5	QP	100.0	0.00	HORIZONTAL
113.420000	20.10	-11.3	43.5	23.4	QP	300.0	351.00	HORIZONTAL
196.840000	19.90	-9.8	43.5	23.6	QP	100.0	333.00	HORIZONTAL
534.400000	29.00	-1.1	46.0	17.0	QP	300.0	242.00	HORIZONTAL
932.100000	39.30	7.1	46.0	6.7	QP	100.0	147.00	HORIZONTAL

- **Above 1 GHz**

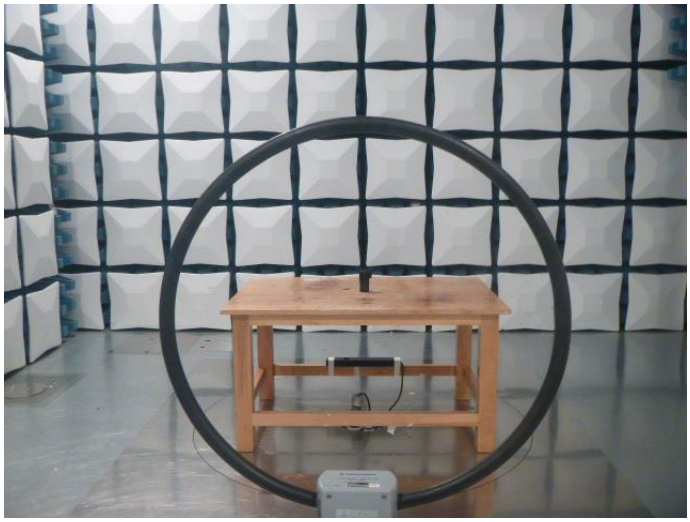
CH00 for GFSK									
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin Limit (dB)	Polarization	Test value
1782.18	40.66	25.37	5.93	37.10	34.86	74.00	-39.14	Vertical	Peak
3815.03	33.26	29.62	8.52	38.22	33.18	74.00	-40.82	Vertical	
4958.68	38.98	31.46	9.64	36.52	43.56	74.00	-30.44	Vertical	
7451.57	36.96	36.20	12.24	34.86	50.54	74.00	-23.46	Vertical	
1195.05	41.15	26.26	4.65	36.57	35.49	74.00	-38.51	Horizontal	Peak
2987.92	40.48	28.59	7.47	38.24	38.30	74.00	-35.70	Horizontal	
4809.50	41.22	31.58	9.55	36.93	45.42	74.00	-28.58	Horizontal	
8002.06	32.78	37.10	12.30	34.53	47.65	74.00	-26.35	Horizontal	

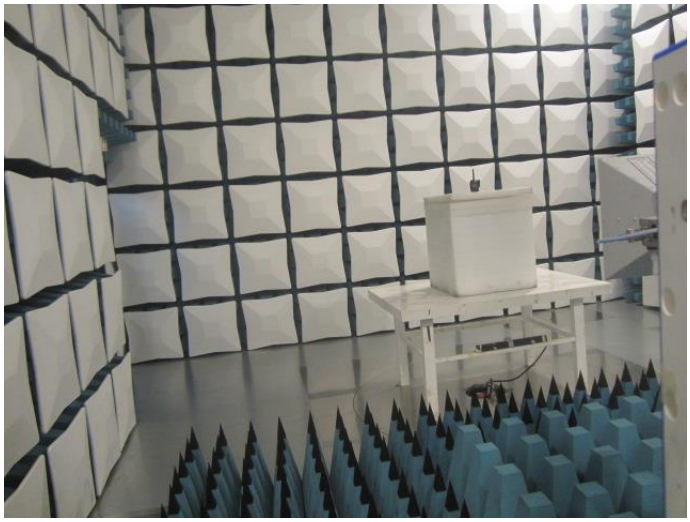
CH39 for GFSK									
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin Limit (dB)	Polarization	Test value
1107.19	42.69	25.56	4.45	36.62	36.08	74.00	-37.92	Vertical	Peak
3200.50	38.81	28.80	7.72	38.20	37.13	74.00	-36.87	Vertical	
4809.50	40.20	31.58	9.55	36.93	44.40	74.00	-29.60	Vertical	
7527.83	32.38	36.13	12.49	34.92	46.08	74.00	-27.92	Vertical	
1195.05	46.98	26.26	4.65	36.57	41.32	74.00	-32.68	Horizontal	Peak
3291.39	36.70	28.25	7.83	38.36	34.42	74.00	-39.58	Horizontal	
4883.52	41.05	31.43	9.59	36.73	45.34	74.00	-28.66	Horizontal	
7319.96	35.04	36.30	11.99	34.92	48.41	74.00	-25.59	Horizontal	

CH78 for GFSK									
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin Limit (dB)	Polarization	Test value
1453.82	39.78	25.85	5.15	36.53	34.25	74.00	-39.75	Vertical	Peak
3192.37	40.03	28.80	7.71	38.20	38.34	74.00	-35.66	Vertical	
4883.52	43.32	31.43	9.59	36.73	47.61	74.00	-26.39	Vertical	
7338.62	35.93	36.30	12.01	34.90	49.34	74.00	-24.66	Vertical	
1786.72	37.98	25.37	5.93	37.11	32.17	74.00	-41.83	Horizontal	Peak
3873.75	35.77	29.67	8.60	38.19	35.85	74.00	-38.15	Horizontal	
4958.68	42.91	31.46	9.64	36.52	47.49	74.00	-26.51	Horizontal	
7663.17	31.93	36.14	12.89	35.01	45.95	74.00	-28.05	Horizontal	

6. TEST SETUP PHOTOS

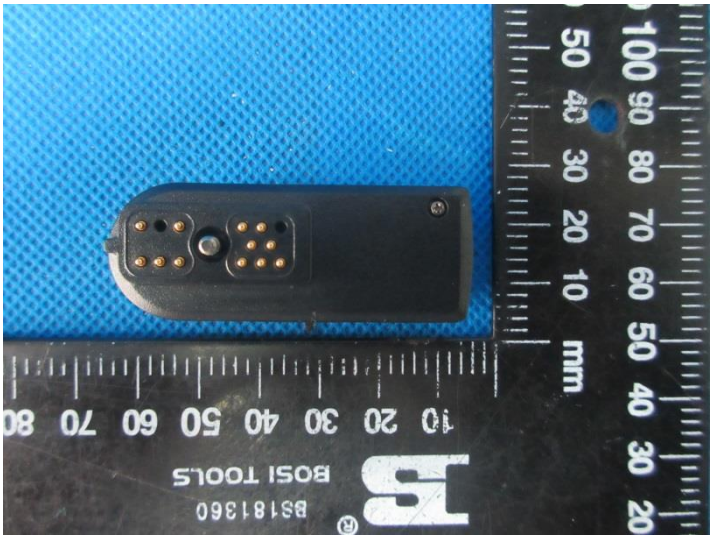
Radiated Emission:



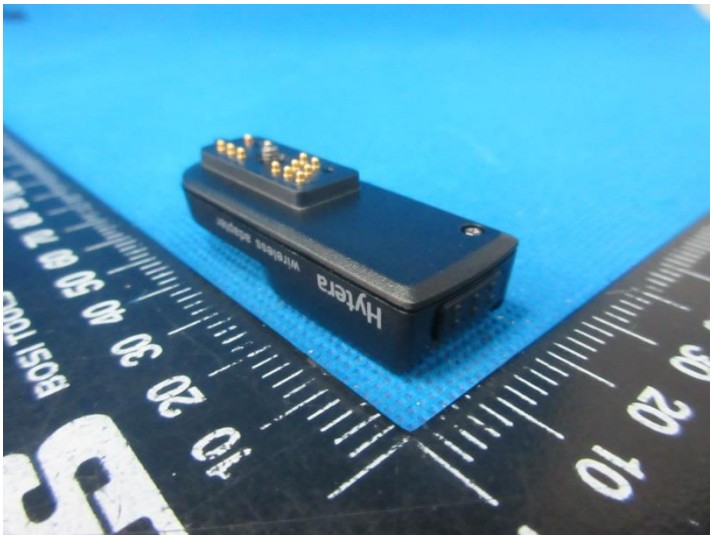


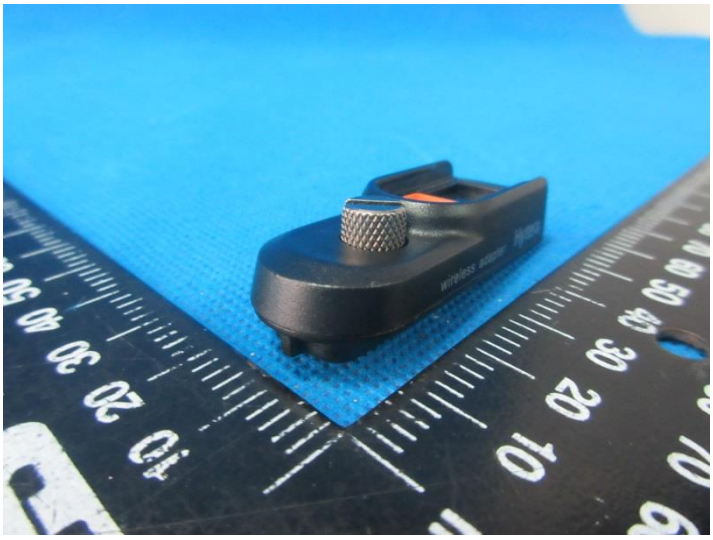
7. EXTERANAL AND INTERNAL PHOTOS

External Photos of the EUT

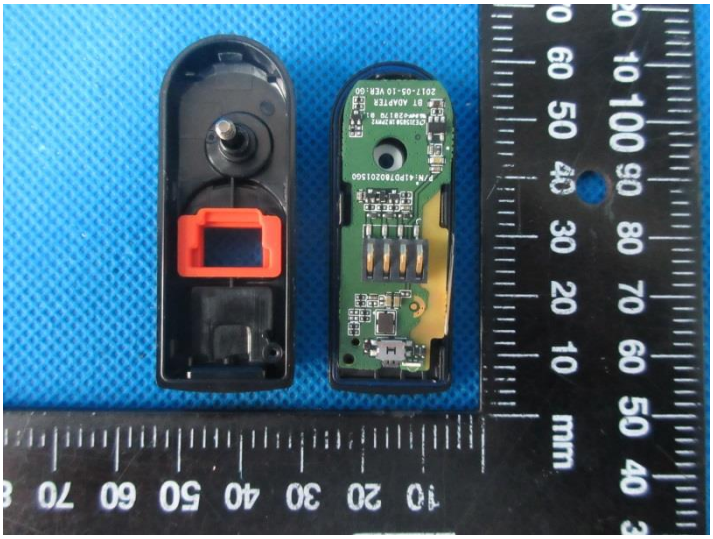


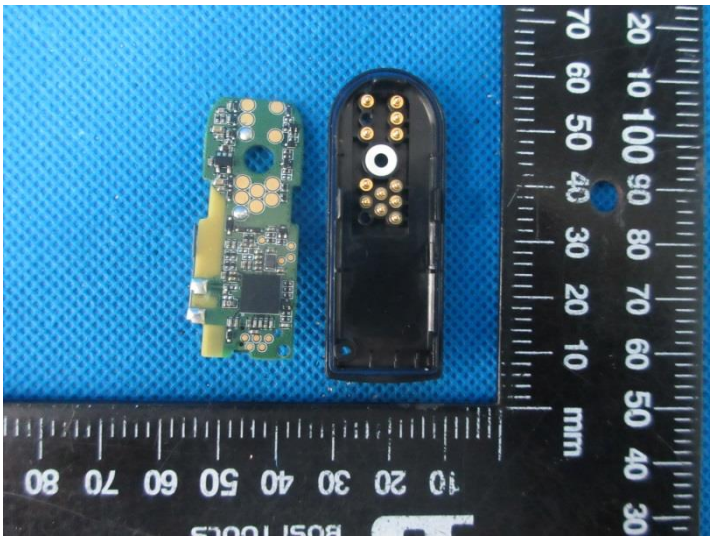

wireless adapter
Hytera

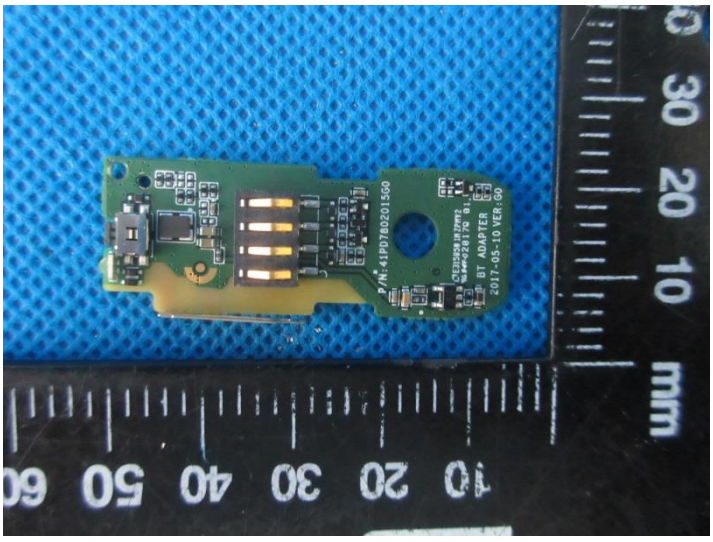

Hytera

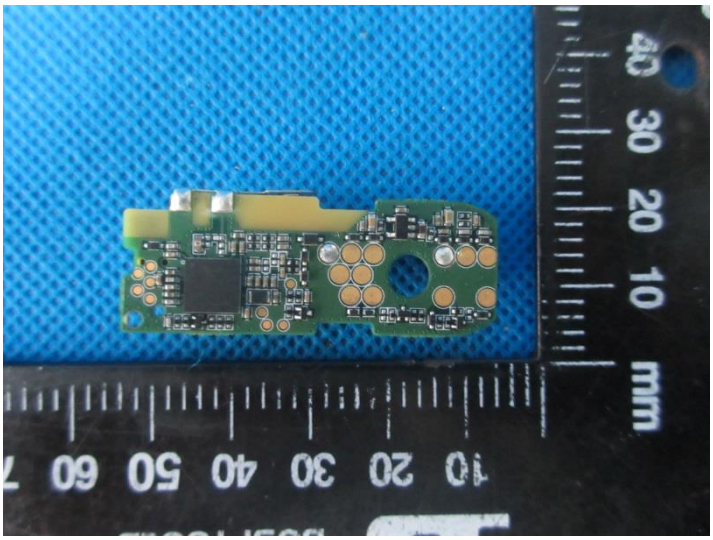


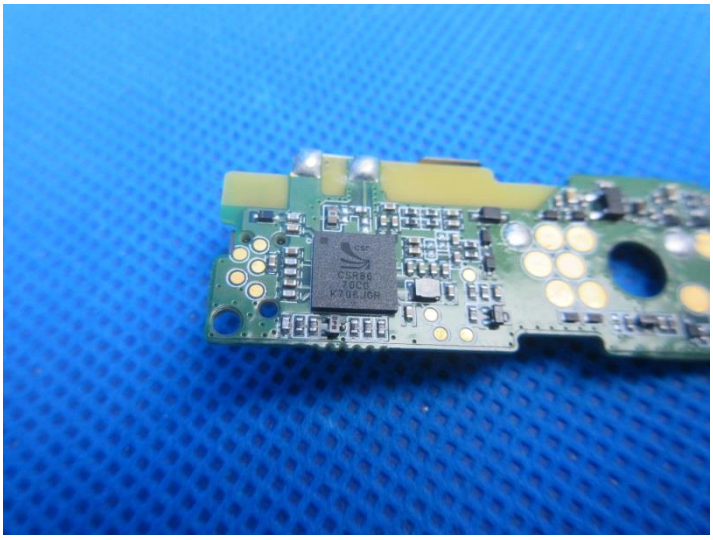
Internal Photos of the EUT

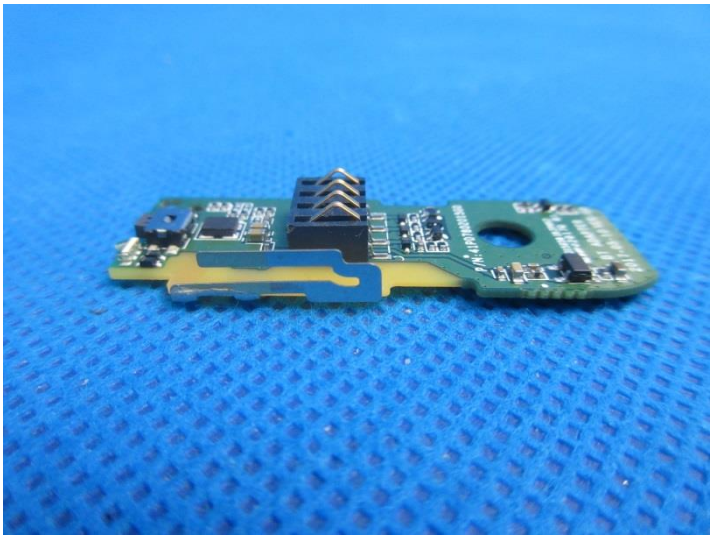












.....End of Report.....