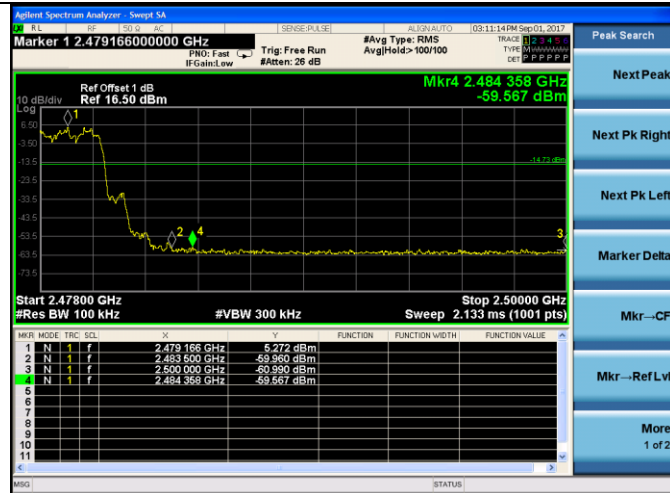


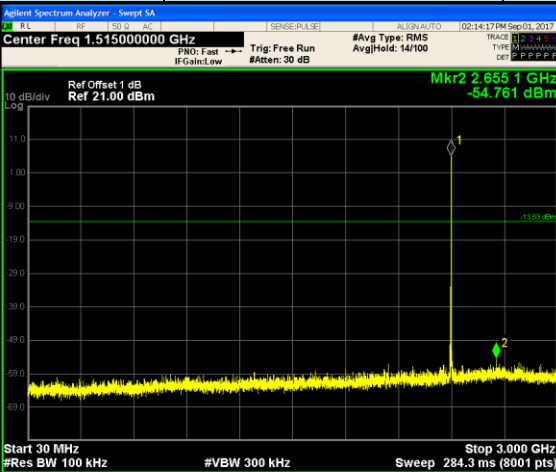
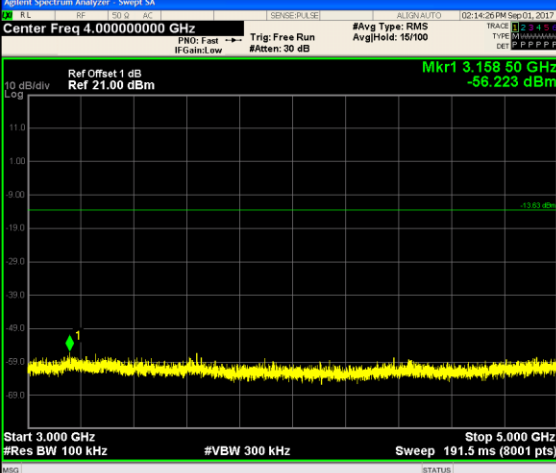
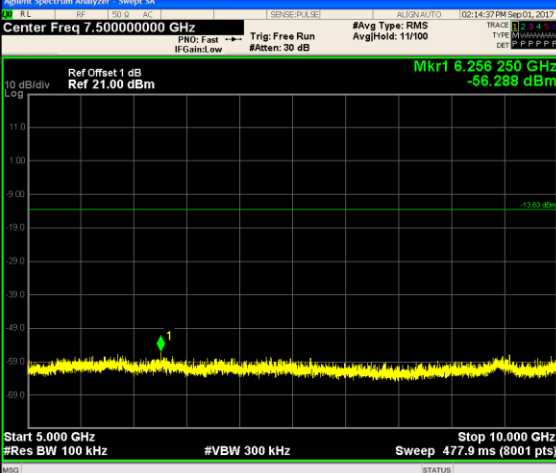
CH78
Hopping mode

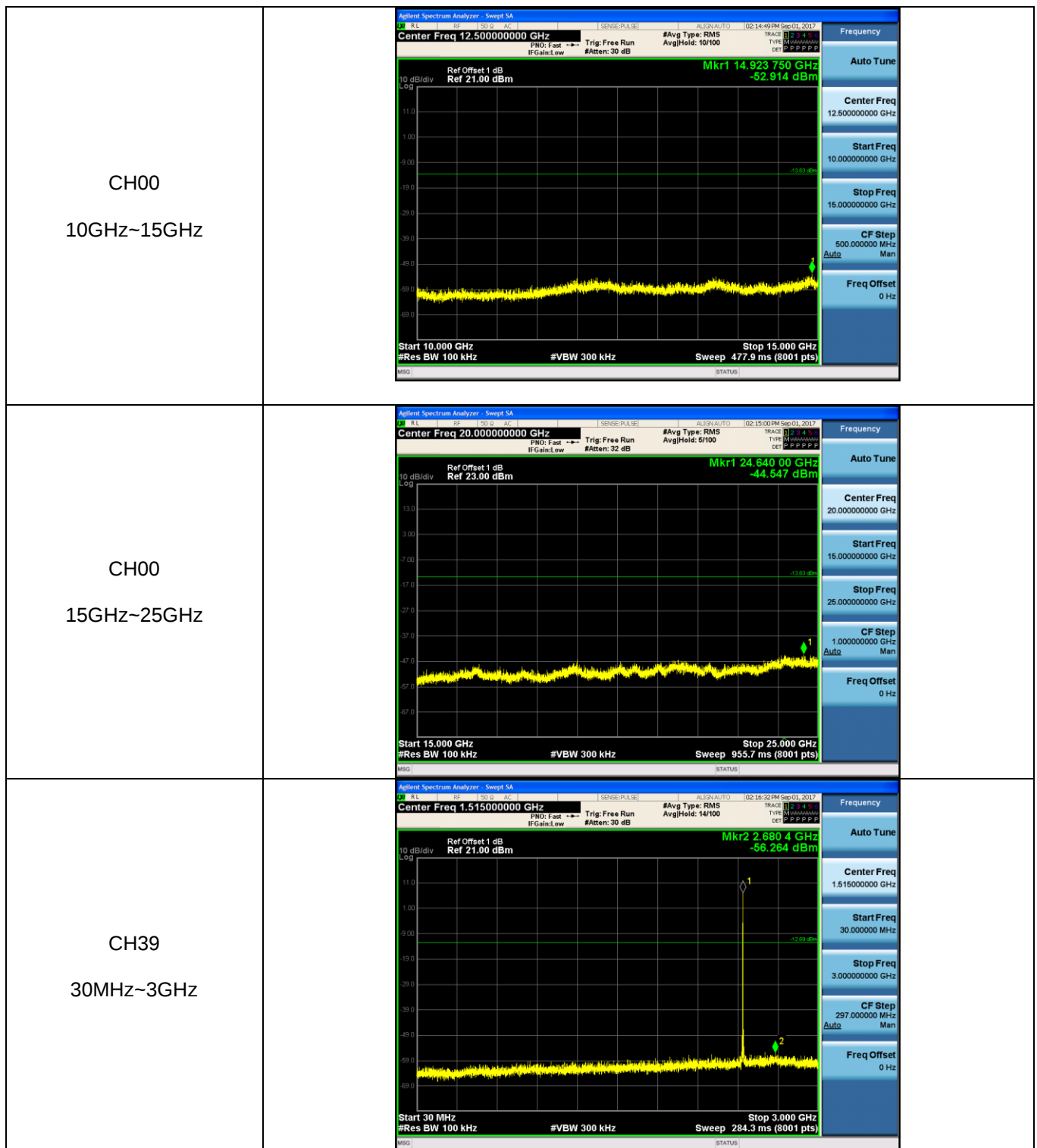


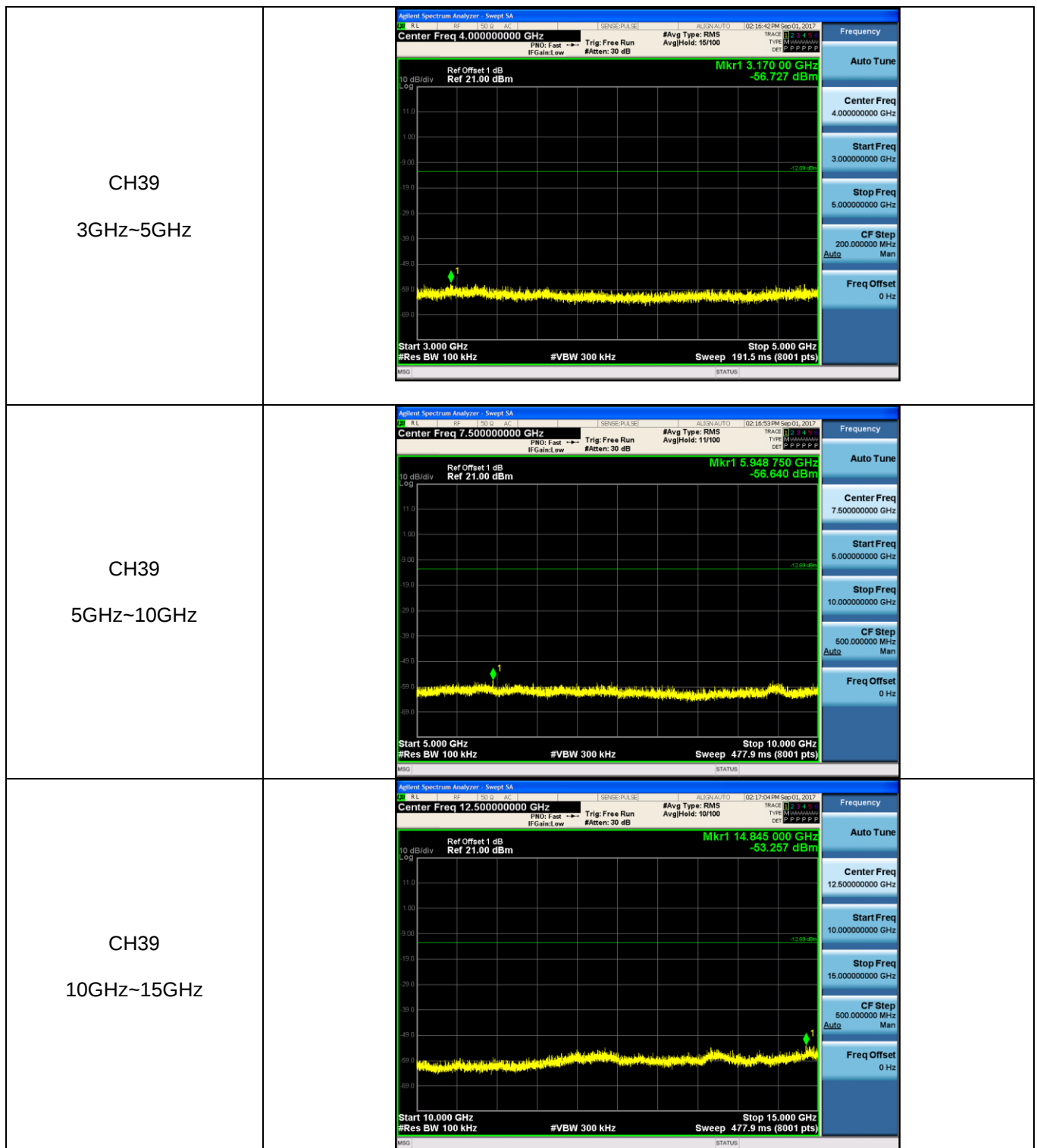
Test Item:	Band edge	Modulation type:	8DPSK																																													
CH00 No hopping mode	Agilent Spectrum Analyzer - Swept SA RL BP 50 G AC SENSE: PULSE ALPHA: AUTO 02:33:46 PM Sep 01, 2017 Center Freq 2.357500000 GHz PRF: Fast IF Gain: Low Trig: Free Run #Atten: 30 dB #Avg Type: RMS AvgHld: 100/100 TRACE 1 2 3 4 5 6 TYPE: MARGINAL DET: P P P P P P Frequency Auto Tune Center Freq 2.357500000 GHz Start Freq 2.310000000 GHz Stop Freq 2.405000000 GHz CF Step 9.500000 MHz Man Freq Offset 0 Hz Ref Offset 1 dB Ref 20.50 dBm Mkr4 2.339 889 GHz -58.188 dBm Start 2.31000 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 9.600 ms (8001 pts) <table><thead><tr><th>MKR</th><th>MODE</th><th>TRC</th><th>SCL</th><th>X</th><th>Y</th><th>FUNCTION</th><th>FUNCTION WIDTH</th><th>FUNCTION VALUE</th></tr></thead><tbody><tr><td>1</td><td>N</td><td>1</td><td>f</td><td>2.402 079 GHz</td><td>4.809 dBm</td><td></td><td></td><td></td></tr><tr><td>2</td><td>N</td><td>1</td><td>f</td><td>2.400 000 GHz</td><td>-63.479 dBm</td><td></td><td></td><td></td></tr><tr><td>3</td><td>N</td><td>1</td><td>f</td><td>2.390 000 GHz</td><td>-61.215 dBm</td><td></td><td></td><td></td></tr><tr><td>4</td><td>N</td><td>1</td><td>f</td><td>2.339 889 GHz</td><td>-58.188 dBm</td><td></td><td></td><td></td></tr></tbody></table> MSO (STATUS)			MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	N	1	f	2.402 079 GHz	4.809 dBm				2	N	1	f	2.400 000 GHz	-63.479 dBm				3	N	1	f	2.390 000 GHz	-61.215 dBm				4	N	1	f	2.339 889 GHz	-58.188 dBm			
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CH00 Hopping mode	Agilent Spectrum Analyzer - Swept SA RL BP 50 G AC SENSE: PULSE ALPHA: AUTO 09:02:23 PM Sep 01, 2017 Marker 1 2.405000000000 GHz PRF: Fast IF Gain: Low Trig: Free Run #Atten: 26 dB #Avg Type: RMS AvgHld: 100/100 TRACE 1 2 3 4 5 6 TYPE: MARGINAL DET: P P P P P P Peak Search Next Peak Next Pk Right Next Pk Left Marker Delta Mkr--CF Mkr--Ref Lvl More 1 of 2 Ref Offset 1 dB Ref 16.50 dBm Mkr4 2.350 470 GHz -60.829 dBm Start 2.31000 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 9.133 ms (1001 pts) <table><thead><tr><th>MKR</th><th>MODE</th><th>TRC</th><th>SCL</th><th>X</th><th>Y</th><th>FUNCTION</th><th>FUNCTION WIDTH</th><th>FUNCTION VALUE</th></tr></thead><tbody><tr><td>1</td><td>N</td><td>1</td><td>f</td><td>2.405 000 GHz</td><td>5.087 dBm</td><td></td><td></td><td></td></tr><tr><td>2</td><td>N</td><td>1</td><td>f</td><td>2.400 000 GHz</td><td>-61.163 dBm</td><td></td><td></td><td></td></tr><tr><td>3</td><td>N</td><td>1</td><td>f</td><td>2.390 000 GHz</td><td>-62.544 dBm</td><td></td><td></td><td></td></tr><tr><td>4</td><td>N</td><td>1</td><td>f</td><td>2.350 470 GHz</td><td>-60.829 dBm</td><td></td><td></td><td></td></tr></tbody></table> MSO (STATUS)			MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	N	1	f	2.405 000 GHz	5.087 dBm				2	N	1	f	2.400 000 GHz	-61.163 dBm				3	N	1	f	2.390 000 GHz	-62.544 dBm				4	N	1	f	2.350 470 GHz	-60.829 dBm			
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CH78 No hopping mode	Agilent Spectrum Analyzer - Swept SA RL BP 50 G AC SENSE: PULSE ALPHA: AUTO 02:41:47 PM Sep 01, 2017 Center Freq 2.489000000 GHz PRF: Fast IF Gain: Low Trig: Free Run #Atten: 30 dB #Avg Type: RMS AvgHld: 100/100 TRACE 1 2 3 4 5 6 TYPE: MARGINAL DET: P P P P P P Frequency Auto Tune Center Freq 2.489000000 GHz Start Freq 2.478000000 GHz Stop Freq 2.500000000 GHz CF Step 2.200000 MHz Man Freq Offset 0 Hz Ref Offset 1 dB Ref 20.50 dBm Mkr4 2.484 220 50 GHz -48.483 dBm Start 2.47800 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 2.133 ms (8001 pts) <table><thead><tr><th>MKR</th><th>MODE</th><th>TRC</th><th>SCL</th><th>X</th><th>Y</th><th>FUNCTION</th><th>FUNCTION WIDTH</th><th>FUNCTION VALUE</th></tr></thead><tbody><tr><td>1</td><td>N</td><td>1</td><td>f</td><td>2.480 067 00 GHz</td><td>3.678 dBm</td><td></td><td></td><td></td></tr><tr><td>2</td><td>N</td><td>1</td><td>f</td><td>2.483 800 00 GHz</td><td>-68.109 dBm</td><td></td><td></td><td></td></tr><tr><td>3</td><td>N</td><td>1</td><td>f</td><td>2.500 000 00 GHz</td><td>-61.599 dBm</td><td></td><td></td><td></td></tr><tr><td>4</td><td>N</td><td>1</td><td>f</td><td>2.484 220 50 GHz</td><td>-48.483 dBm</td><td></td><td></td><td></td></tr></tbody></table> MSO (STATUS)			MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	N	1	f	2.480 067 00 GHz	3.678 dBm				2	N	1	f	2.483 800 00 GHz	-68.109 dBm				3	N	1	f	2.500 000 00 GHz	-61.599 dBm				4	N	1	f	2.484 220 50 GHz	-48.483 dBm			
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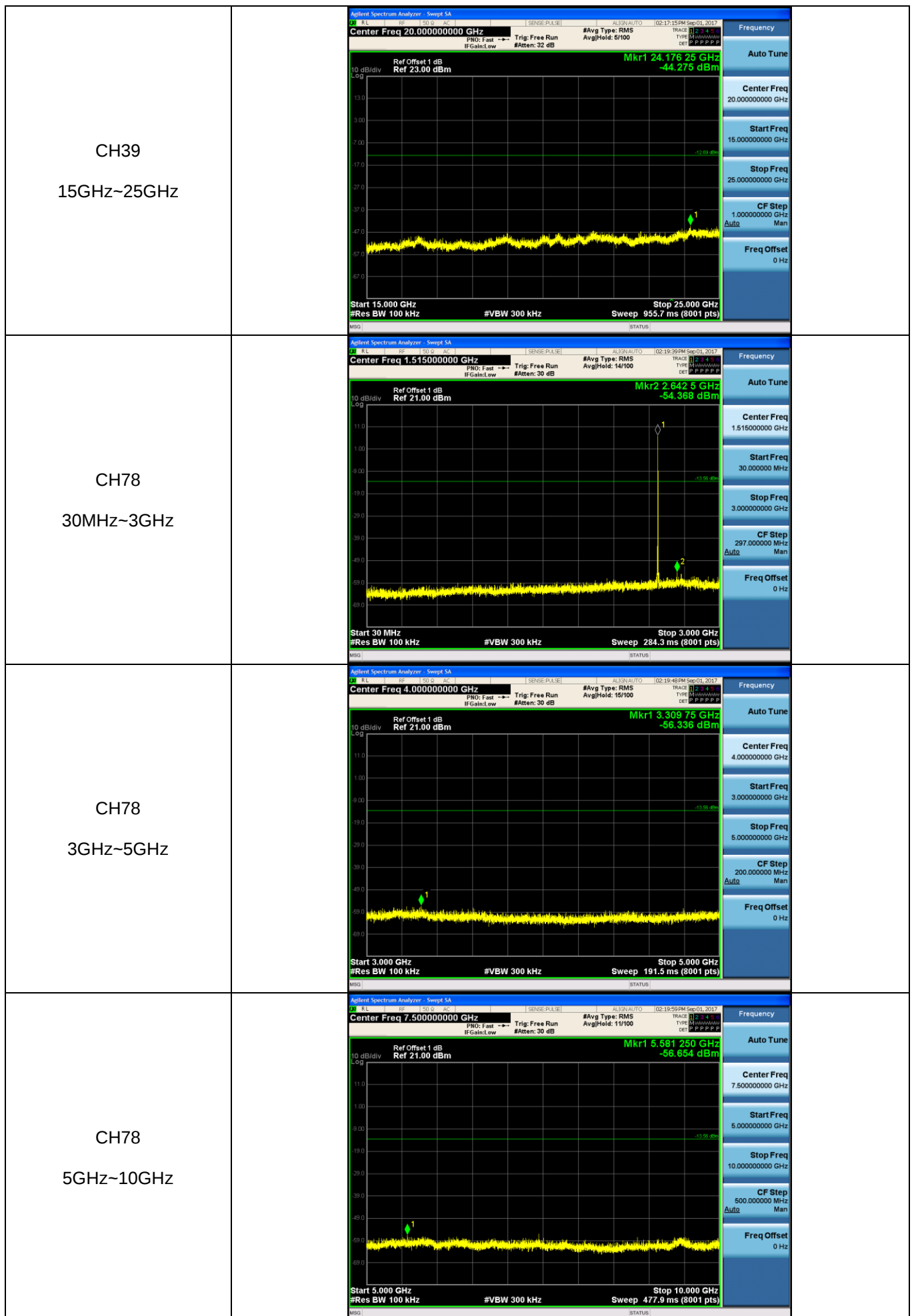
CH78
Hoppig mode

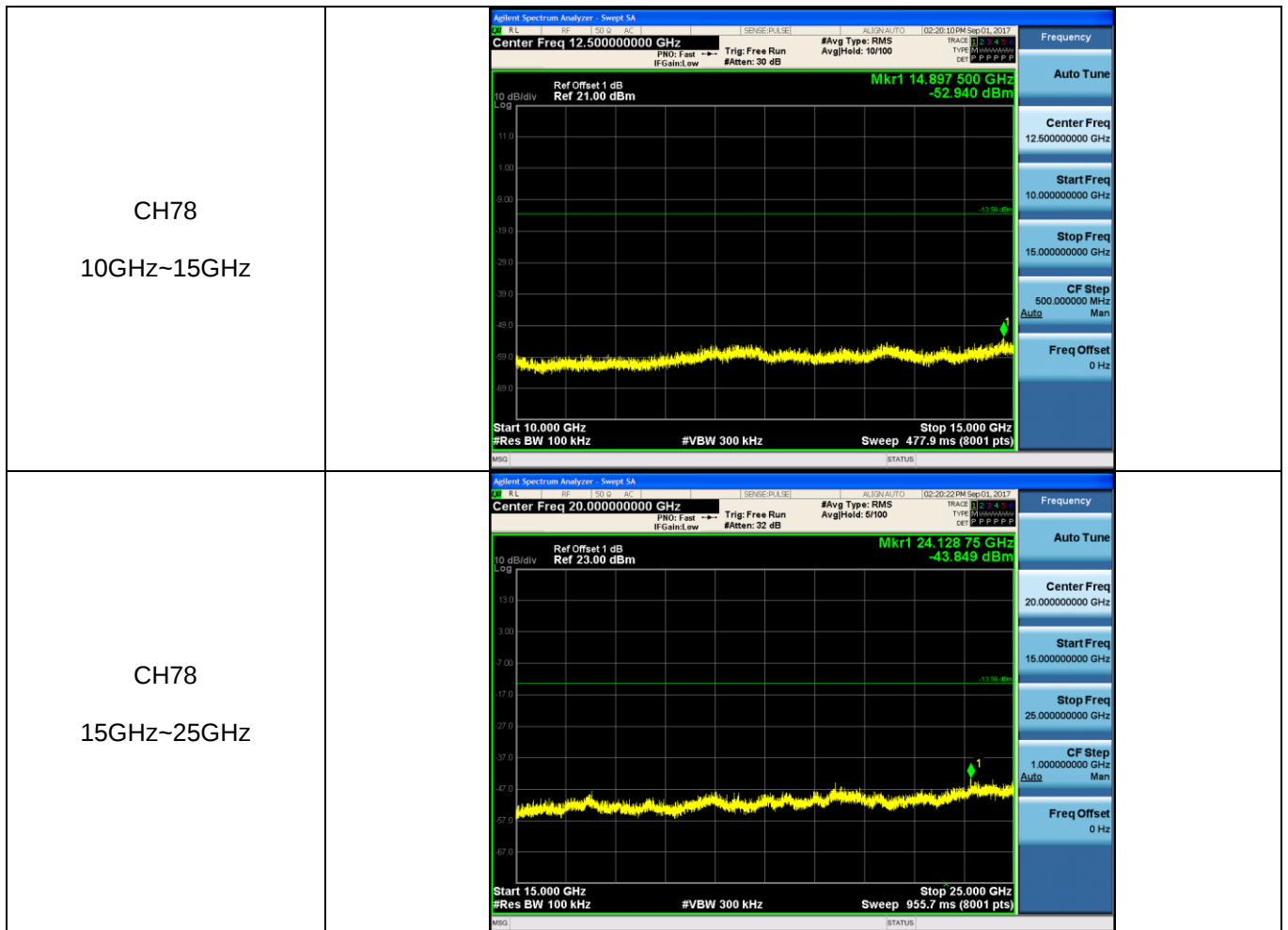


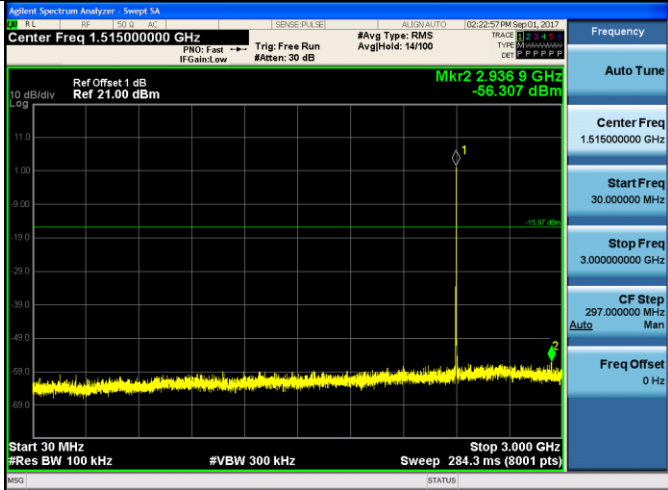
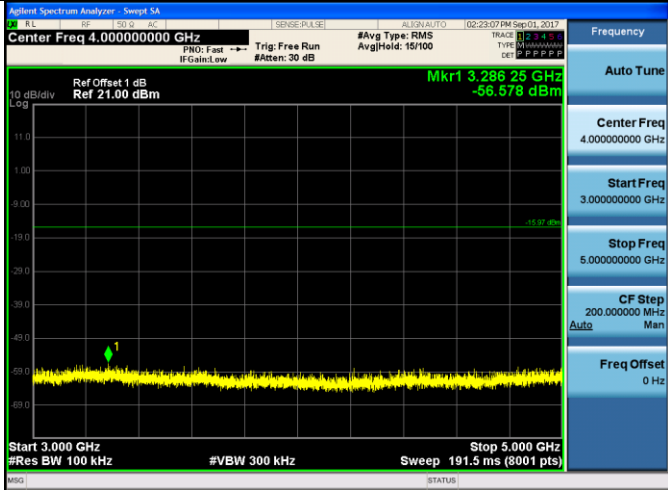
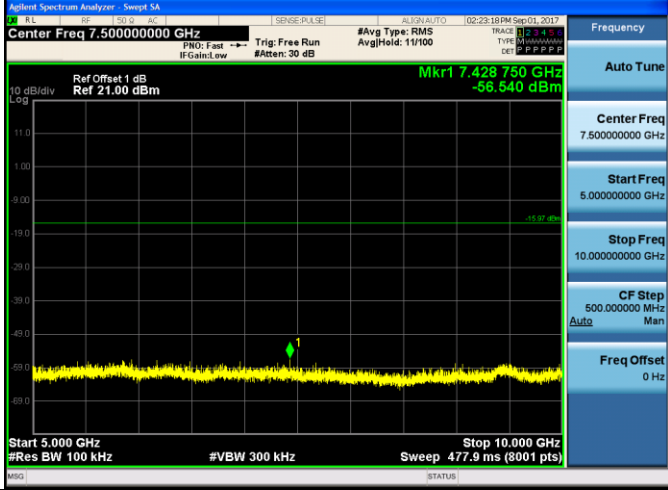
Test Item:	SE	Modulation type:	GFSK
CH00 30MHz~3GHz			
CH00 3GHz~5GHz			
CH00 5GHz~10GHz			

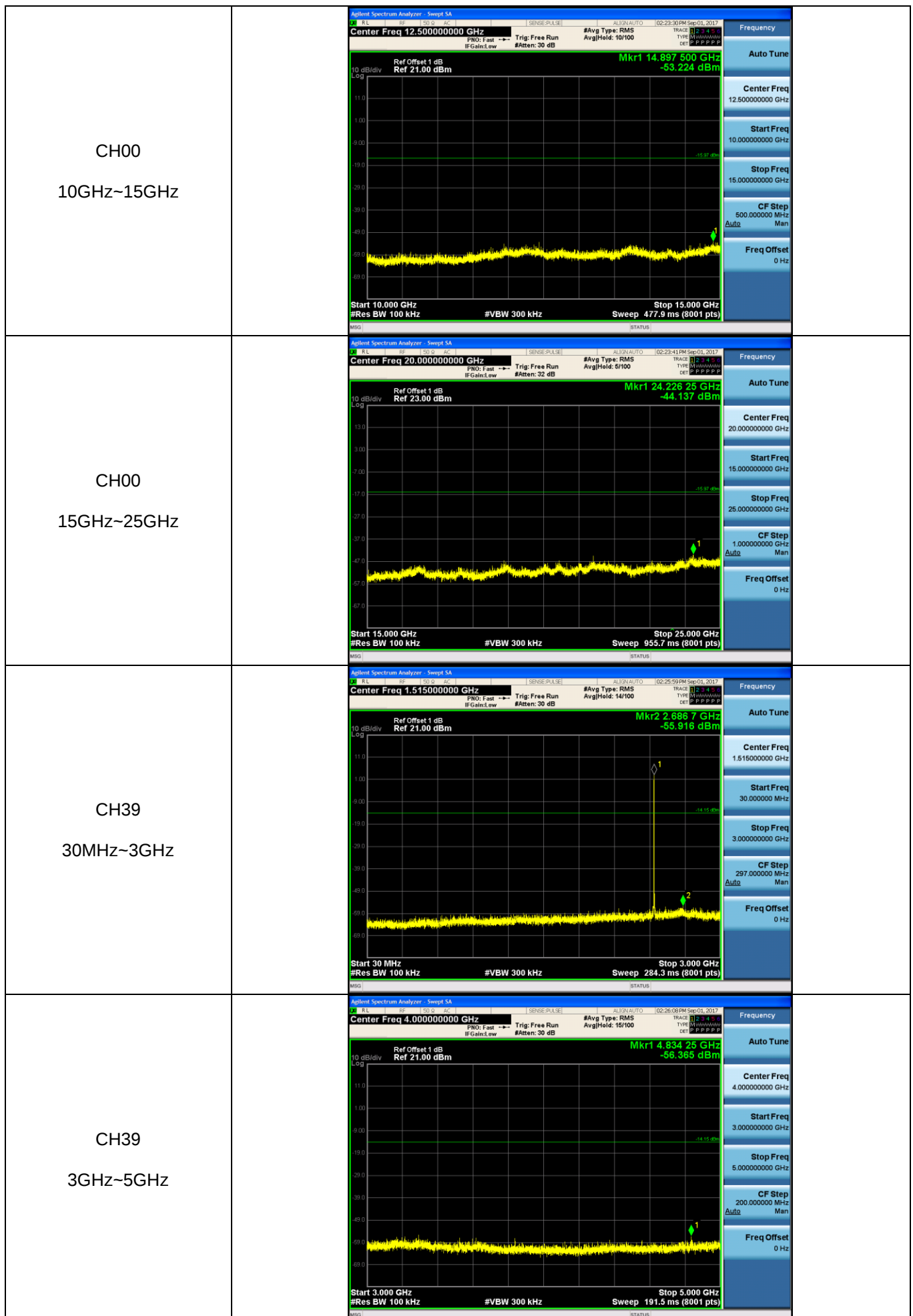


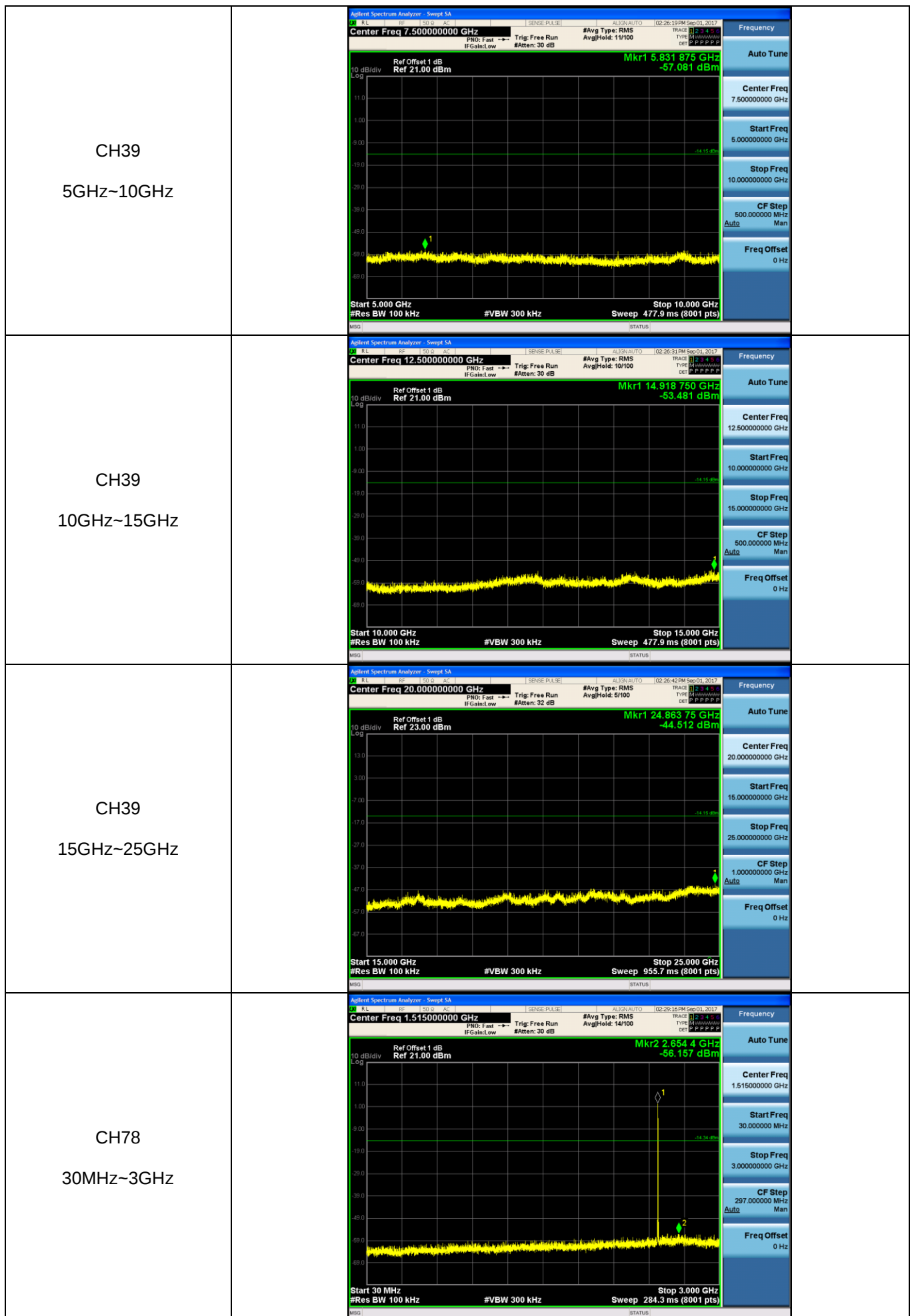


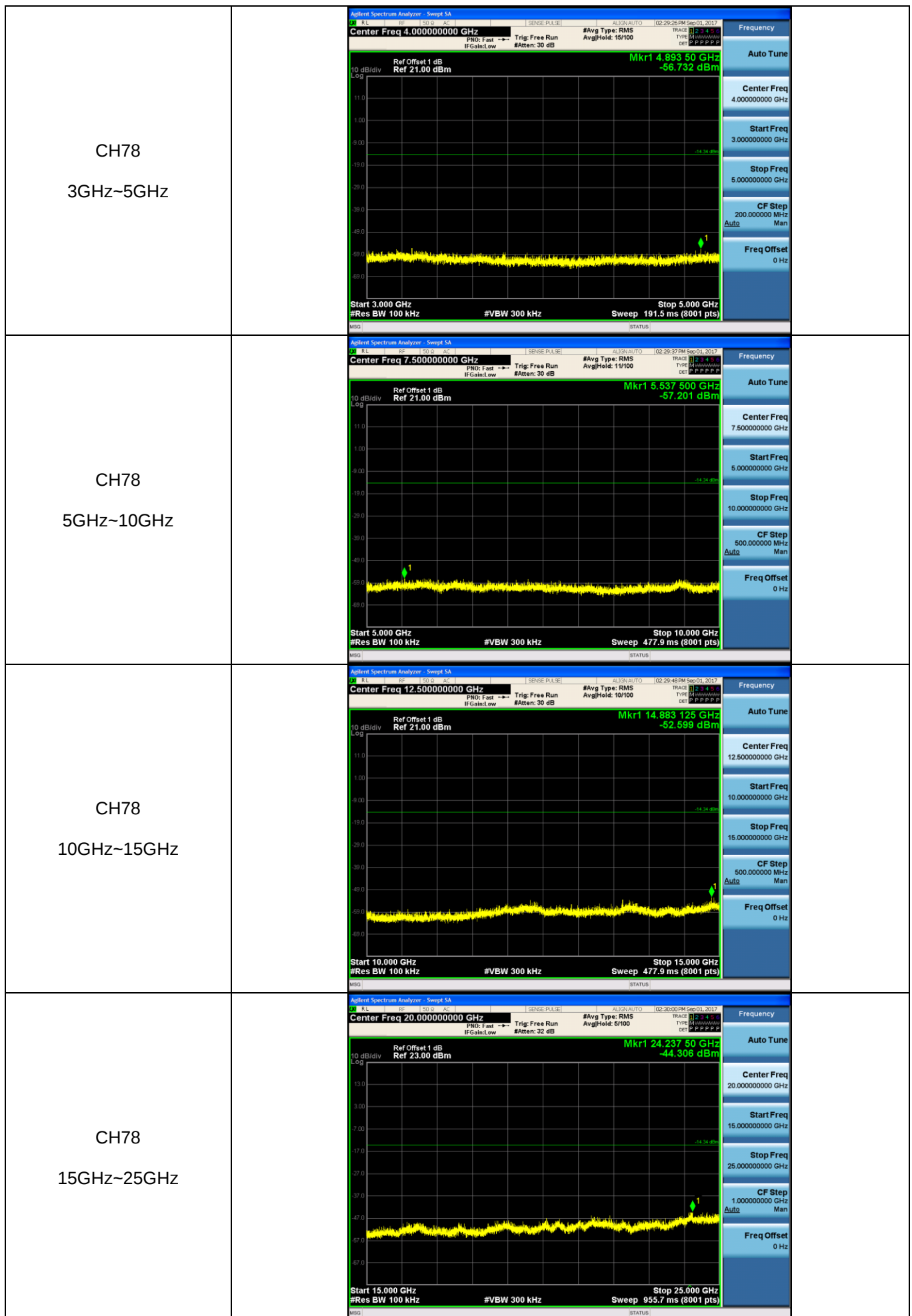


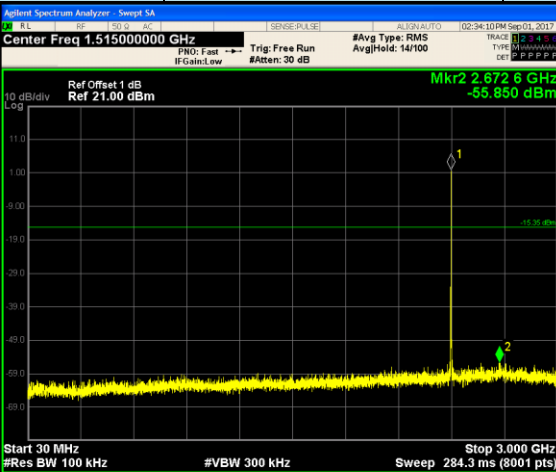
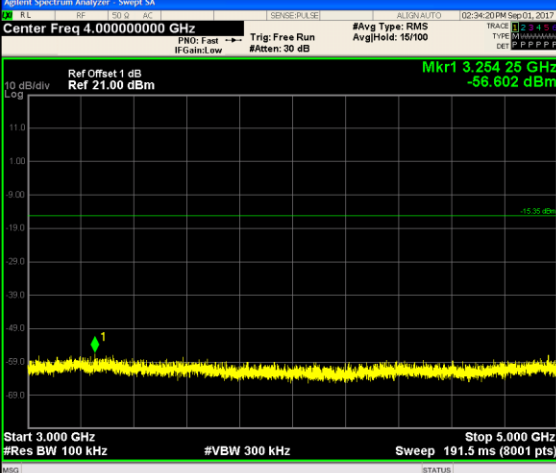
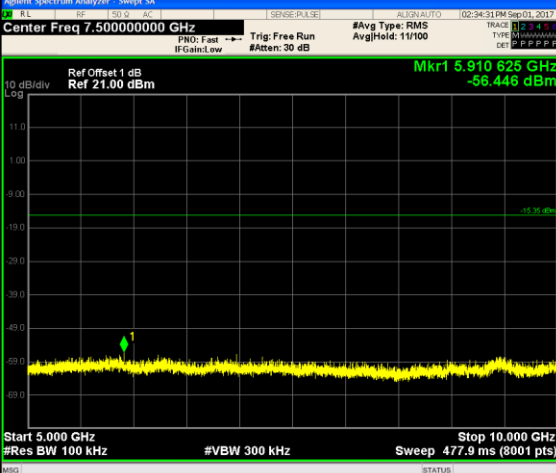


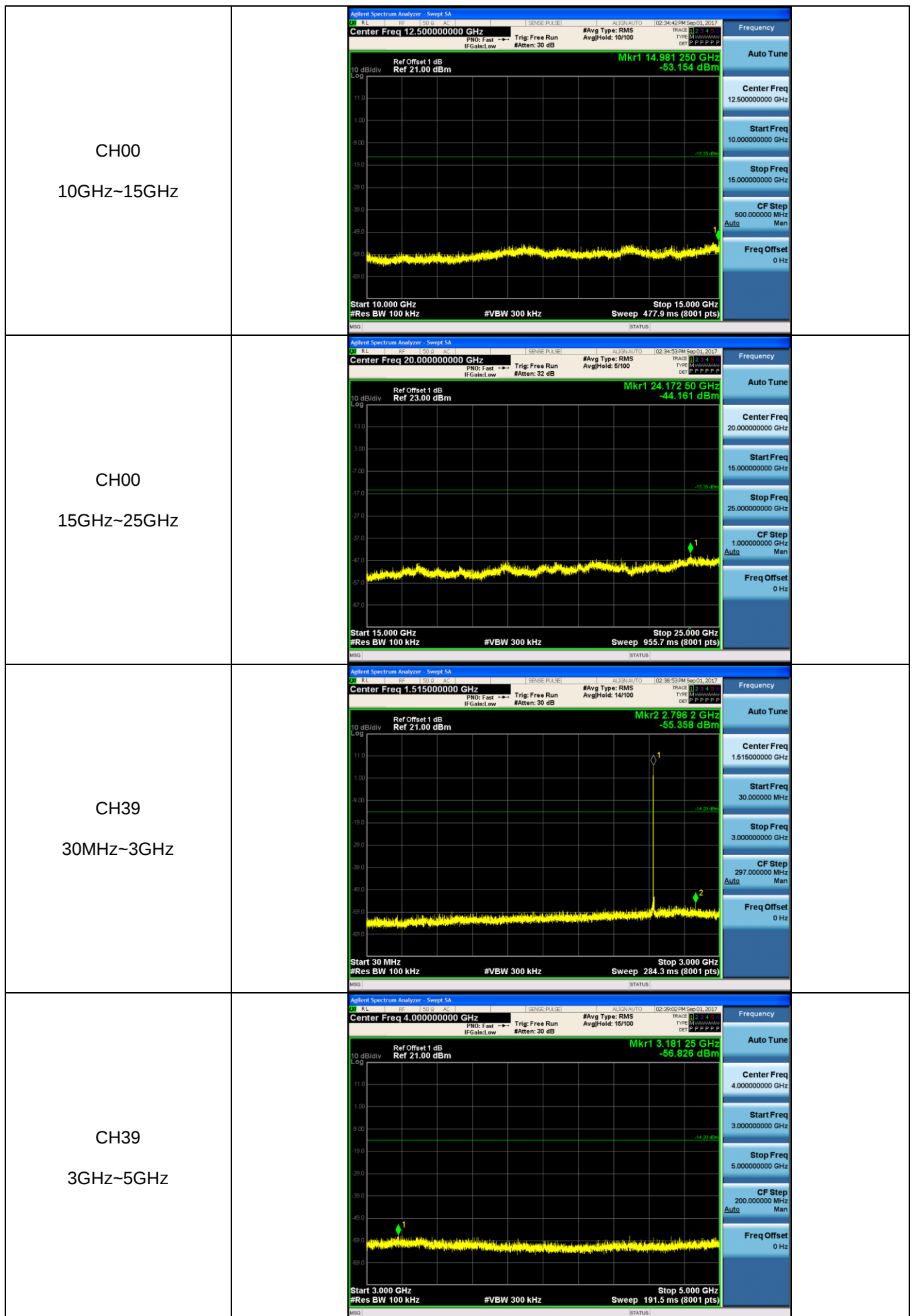
Test Item:	SE	Modulation type:	$\pi/4$ DQPSK
CH00 30MHz~3GHz			
CH00 3GHz~5GHz			
CH00 5GHz~10GHz			

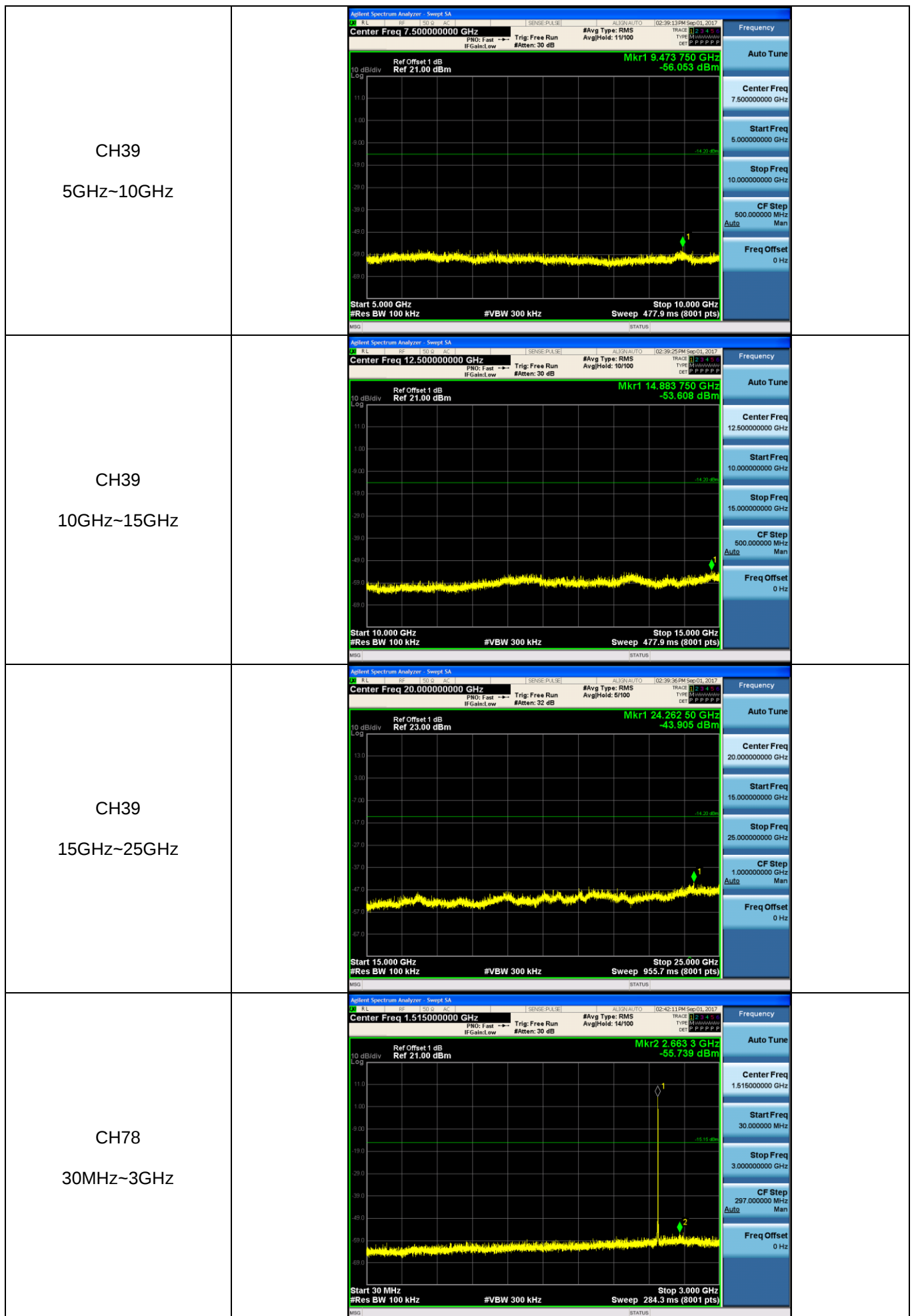


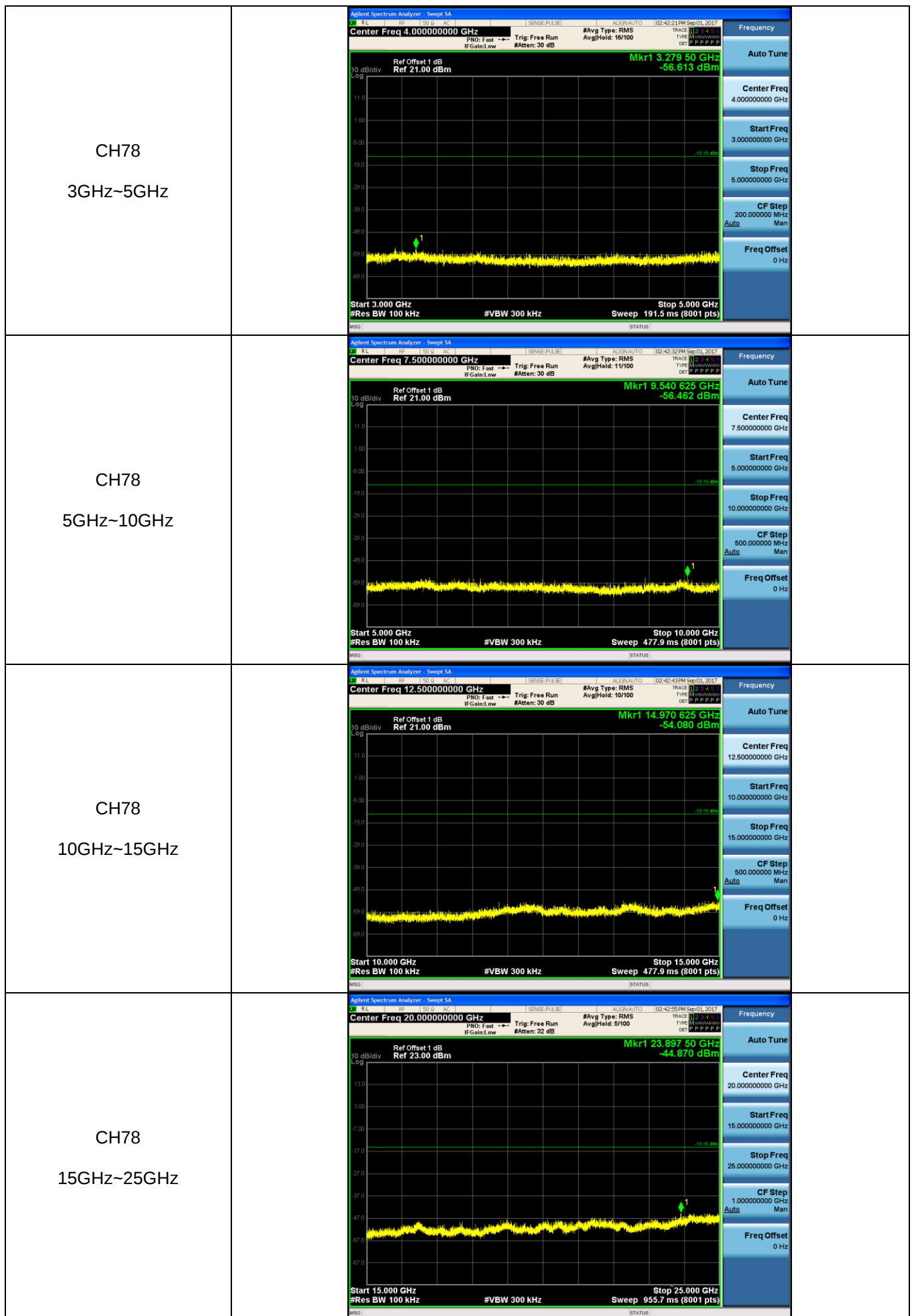




Test Item:	SE	Modulation type:	8DPSK
CH00 30MHz~3GHz			
CH00 3GHz~5GHz			
CH00 5GHz~10GHz			







5.11. Spurious Emissions (radiated)

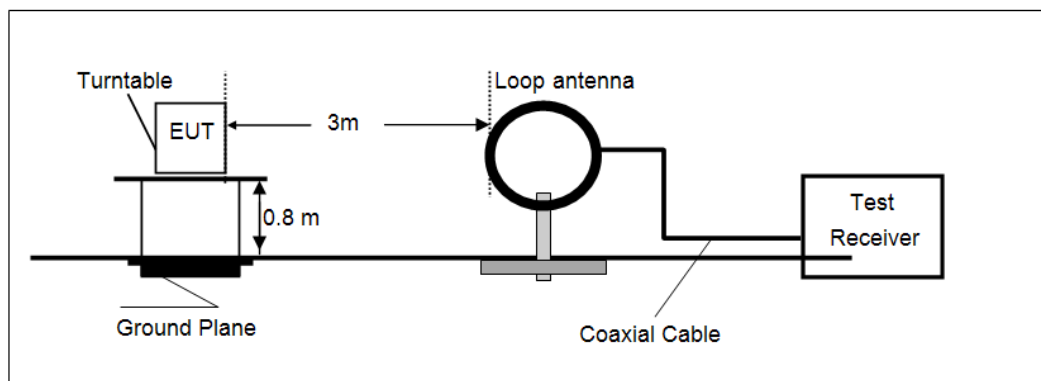
LIMIT

FCC CFR Title 47 Part 15 Subpart C Section 15.209

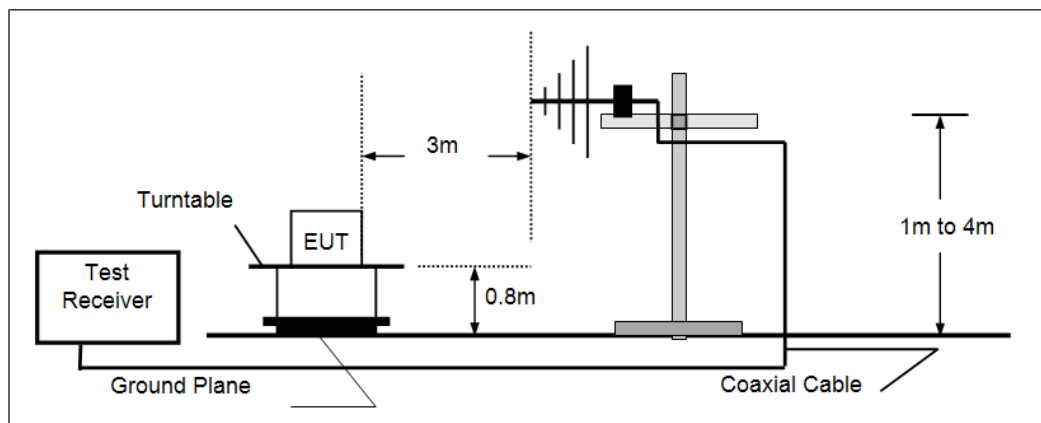
Frequency	Limit (dBuV/m @3m)	Value
30 MHz ~ 88 MHz	40.00	Quasi-peak
88 MHz ~ 216 MHz	43.50	Quasi-peak
216 MHz ~ 960 MHz	46.00	Quasi-peak
960 MHz ~ 1 GHz	54.00	Quasi-peak
Above 1 GHz	54.00	Average
	74.00	Peak

TEST CONFIGURATION

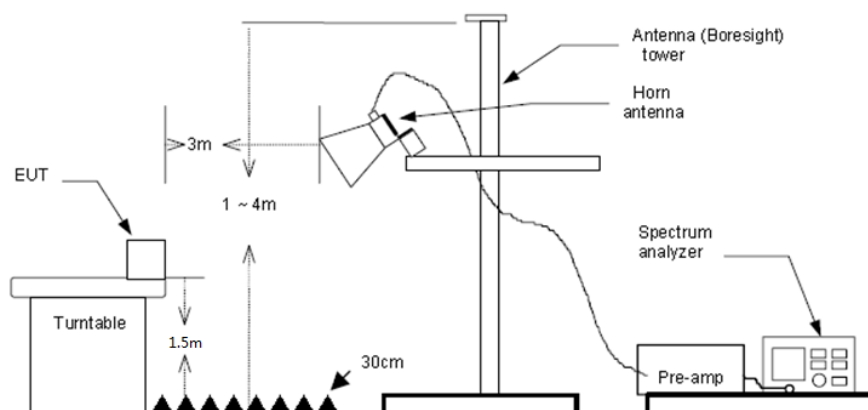
- Below 30 MHz



- 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=peak, Trace=max hold;
If the emission level of the EUT measured by the peak detector is 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 Mid 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.

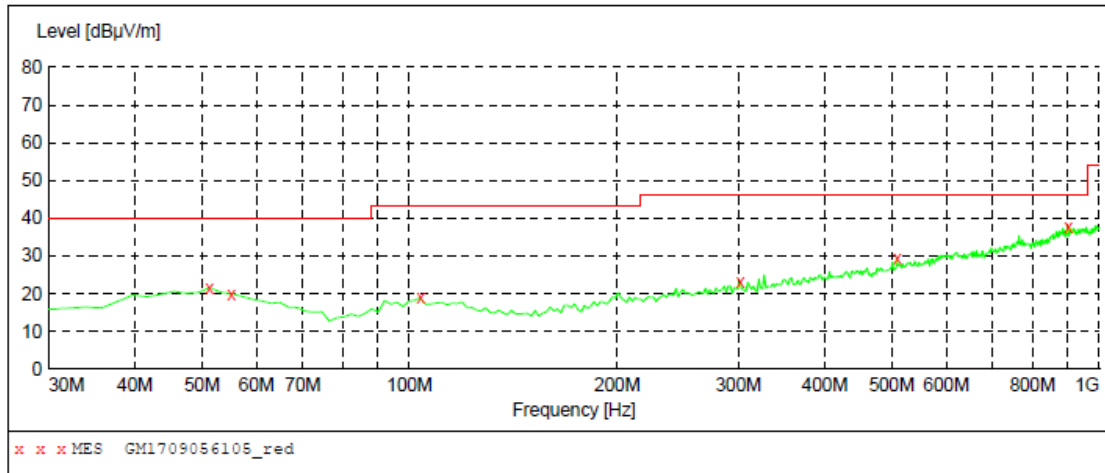
➤ **9 kHz ~ 30 MHz**

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

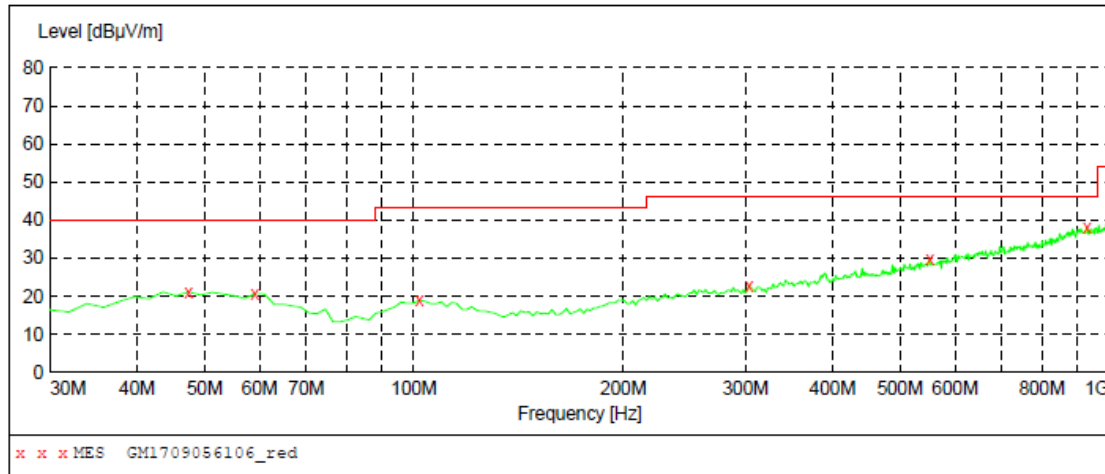
**MEASUREMENT RESULT: "GM1709056105_red"**

9/5/2017 9:23PM

Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
51.340000	21.60	-8.8	40.0	18.4	QP	100.0	177.00	VERTICAL
55.220000	20.00	-9.2	40.0	20.0	QP	100.0	85.00	VERTICAL
103.720000	18.90	-10.5	43.5	24.6	QP	100.0	360.00	VERTICAL
301.600000	23.10	-7.2	46.0	22.9	QP	100.0	190.00	VERTICAL
509.180000	29.30	-1.5	46.0	16.7	QP	100.0	113.00	VERTICAL
901.060000	37.80	6.7	46.0	8.2	QP	100.0	45.00	VERTICAL

Polarization:

Horizontal

**MEASUREMENT RESULT: "GM1709056106_red"**

9/5/2017 9:26PM

Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
47.460000	21.20	-8.8	40.0	18.8	QP	100.0	0.00	HORIZONTAL
59.100000	20.70	-9.8	40.0	19.3	QP	100.0	237.00	HORIZONTAL
101.780000	18.90	-10.5	43.5	24.6	QP	100.0	130.00	HORIZONTAL
303.540000	22.90	-7.2	46.0	23.1	QP	100.0	199.00	HORIZONTAL
551.860000	29.70	-0.7	46.0	16.3	QP	100.0	261.00	HORIZONTAL
928.220000	38.00	7.1	46.0	8.0	QP	100.0	248.00	HORIZONTAL

➤ Above 1 GHz

CH00									
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization	Test value
1491.30	37.72	25.81	5.26	36.58	32.21	74.00	-41.79	Vertical	Peak
3634.91	36.41	29.30	8.31	38.26	35.76	74.00	-38.24	Vertical	Peak
4809.50	60.77	31.58	9.55	36.93	64.97	74.00	-9.03	Vertical	Peak
7209.02	42.94	36.21	11.87	35.07	55.95	74.00	-18.05	Vertical	Peak
7209.02	23.81	36.21	11.87	35.07	36.82	54.00	-17.18	Vertical	Average
4809.50	40.01	31.58	9.55	36.93	44.21	54.00	-9.79	Vertical	Average
1472.44	36.40	25.83	5.21	36.55	30.89	74.00	-43.11	Horizontal	Peak
3534.54	36.19	29.10	8.17	38.36	35.10	74.00	-38.90	Horizontal	Peak
4809.50	58.80	31.58	9.55	36.93	63.00	74.00	-11.00	Horizontal	Peak
7209.02	42.56	36.21	11.87	35.07	55.57	74.00	-18.43	Horizontal	Peak
4809.50	47.67	31.58	9.55	36.93	51.87	54.00	-2.13	Horizontal	Average
7209.02	33.01	36.21	11.87	35.07	46.02	54.00	-7.98	Horizontal	Average

CH39									
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization	Test value
1685.12	35.29	25.16	5.74	36.90	29.29	74.00	-44.71	Vertical	Peak
3570.71	34.82	29.21	8.22	38.31	33.94	74.00	-40.06	Vertical	Peak
4883.52	51.50	31.43	9.59	36.73	55.79	74.00	-18.21	Vertical	Peak
7009.96	32.34	35.33	11.85	34.80	44.72	74.00	-29.28	Vertical	Peak
4883.52	30.81	31.43	9.59	36.73	35.10	54.00	-18.90	Vertical	Average
1746.25	37.23	25.29	5.86	37.03	31.35	74.00	-42.65	Horizontal	Peak
3376.24	35.94	28.20	7.93	38.51	33.56	74.00	-40.44	Horizontal	Peak
4883.52	46.97	31.43	9.59	36.73	51.26	74.00	-22.74	Horizontal	Peak
8002.06	33.39	37.10	12.30	34.53	48.26	74.00	-25.74	Horizontal	Peak
4883.52	35.22	31.43	9.59	36.73	39.51	54.00	-14.49	Horizontal	Average

CH78									
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization	Test value
1260.67	37.02	26.24	4.76	36.54	31.48	74.00	-42.52	Vertical	Peak
3570.71	35.09	29.21	8.22	38.31	34.21	74.00	-39.79	Vertical	Peak
4958.68	51.80	31.46	9.64	36.52	56.38	74.00	-17.62	Vertical	Peak
7451.57	35.58	36.20	12.24	34.86	49.16	74.00	-24.84	Vertical	Peak
4958.68	32.14	31.46	9.64	36.52	36.72	54.00	-17.28	Vertical	Average
1800.42	37.06	25.40	5.96	37.14	31.28	74.00	-42.72	Horizontal	Peak
3208.66	35.75	28.75	7.73	38.22	34.01	74.00	-39.99	Horizontal	Peak
4958.68	60.29	31.46	9.64	36.52	64.87	74.00	-9.13	Horizontal	Peak
7451.57	49.91	36.20	12.24	34.86	63.49	74.00	-10.51	Horizontal	Peak
7451.57	23.14	36.20	12.24	34.86	36.72	54.00	-17.28	Horizontal	Average
4958.68	27.36	31.46	9.64	36.52	31.94	54.00	-22.06	Horizontal	Average

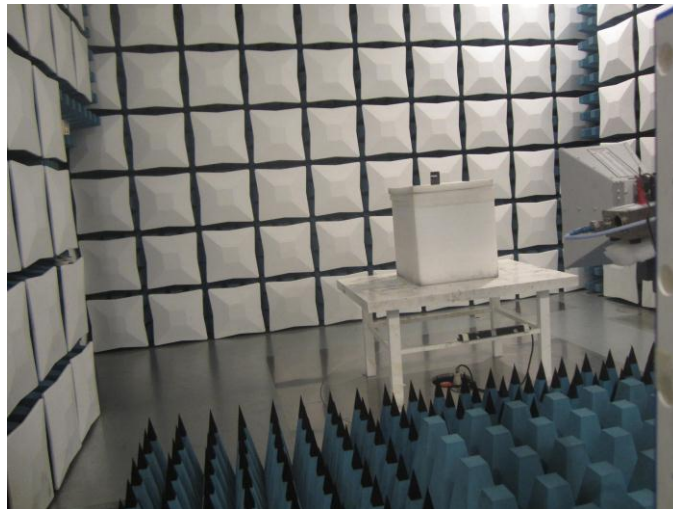
6. TEST SETUP PHOTOS

Conducted Emissions (AC Mains)



Radiated Emissions





7. EXTERANAL AND INTERNAL PHOTOS

Reference to the test report No.: TRE1708019401.

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