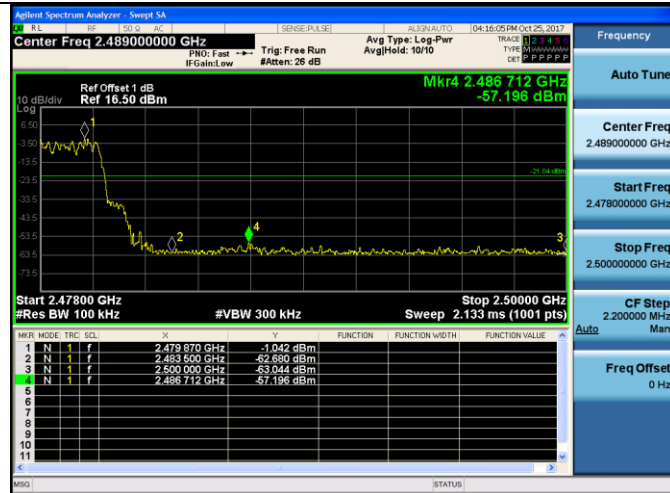
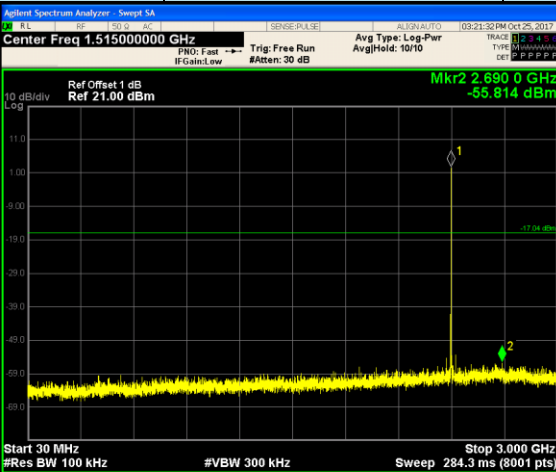
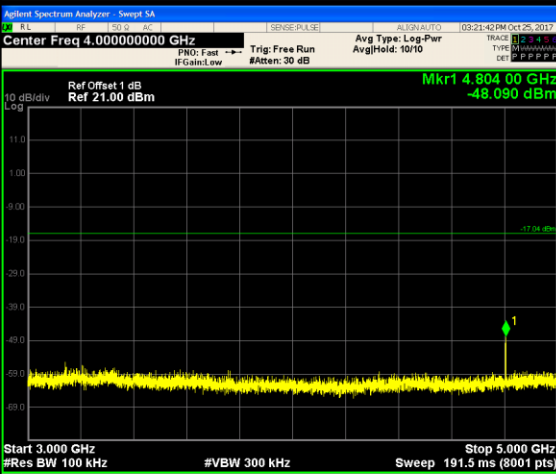
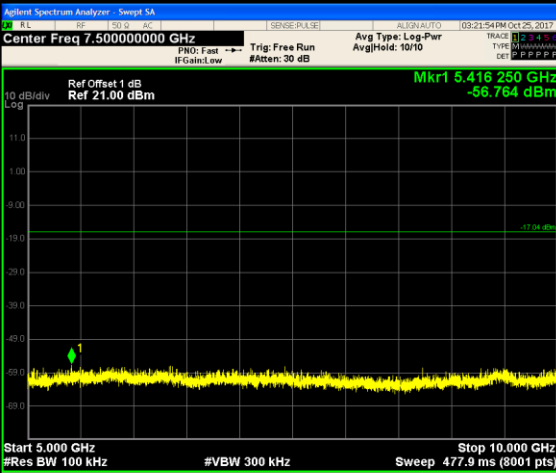
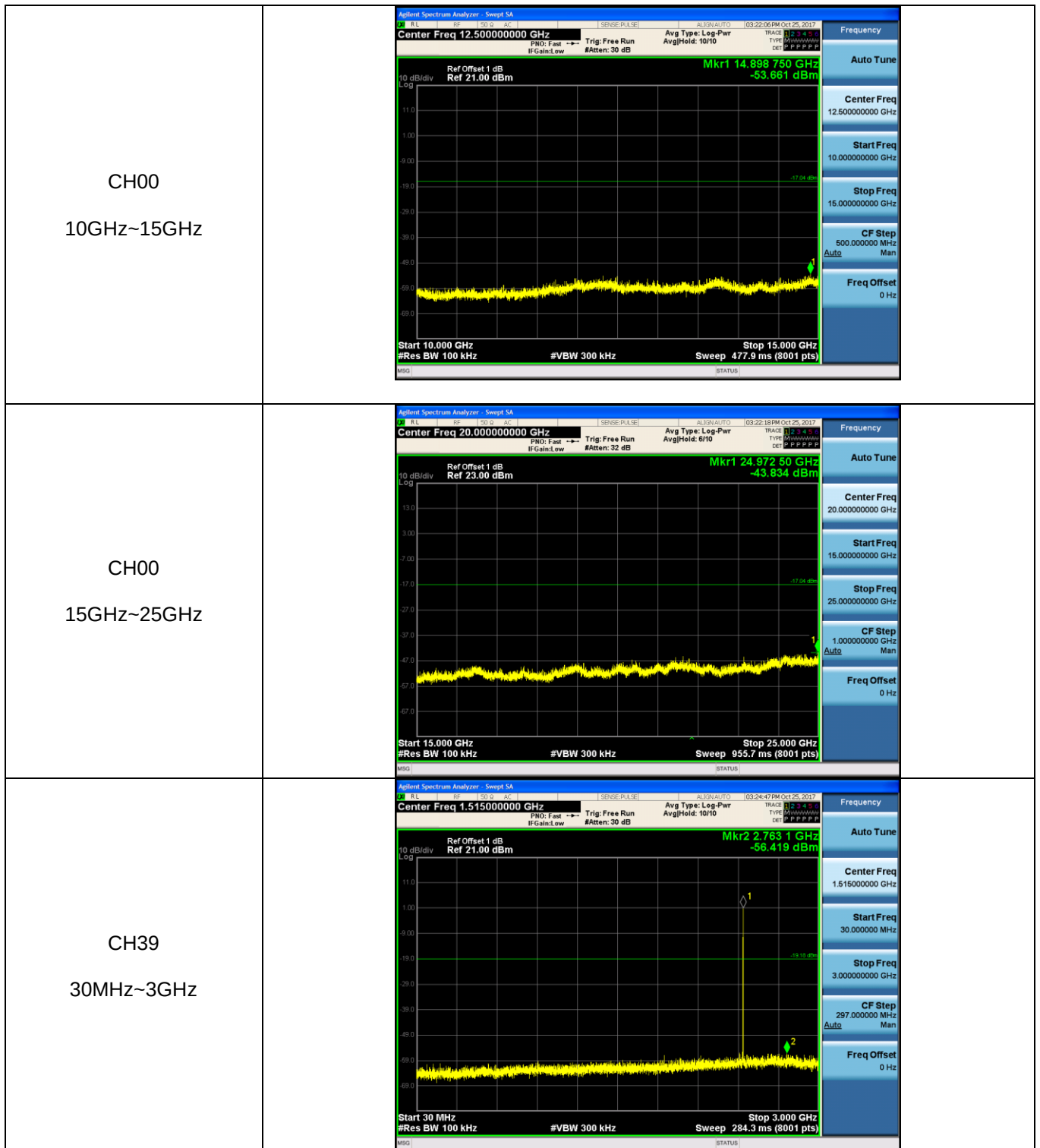
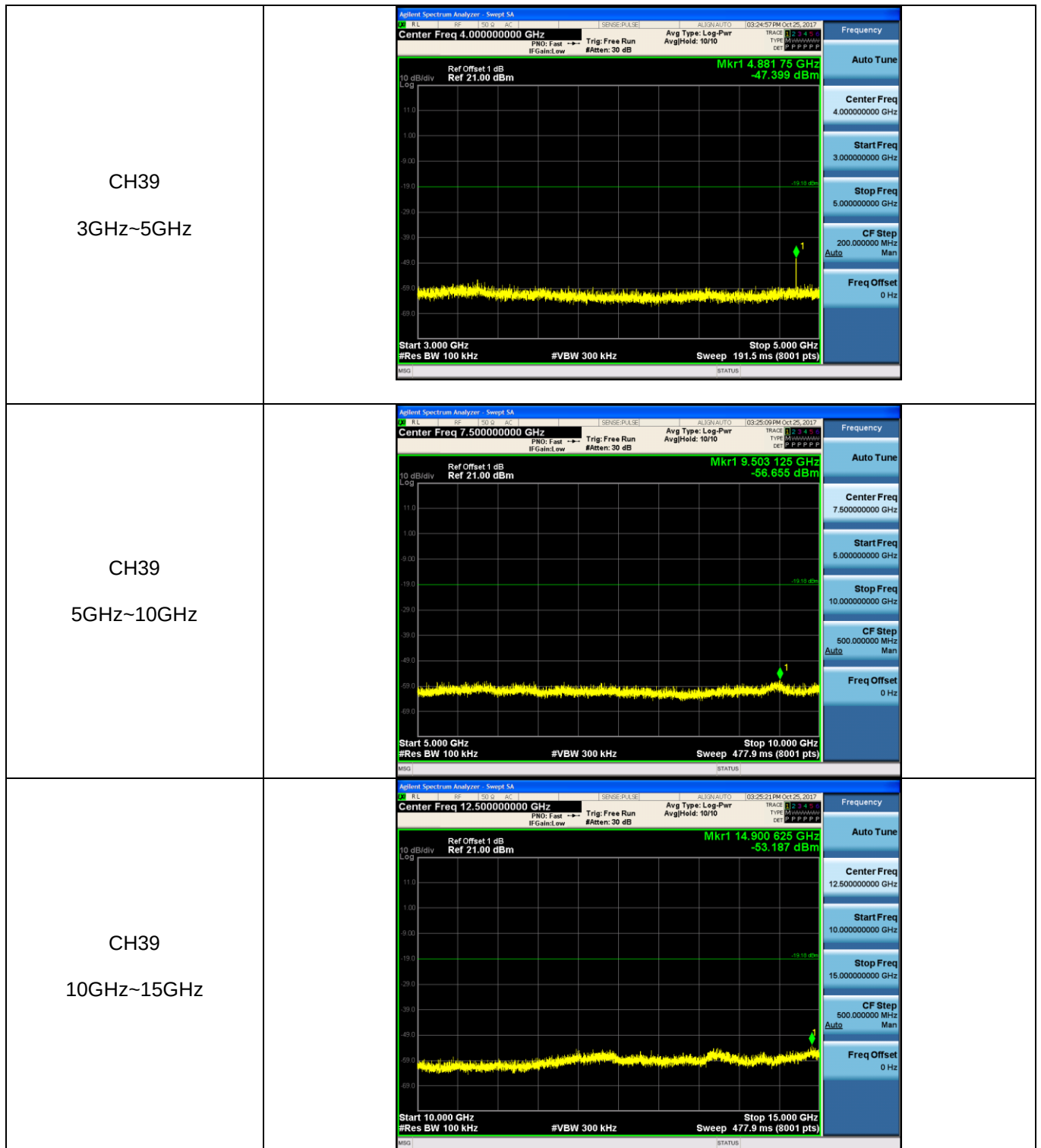


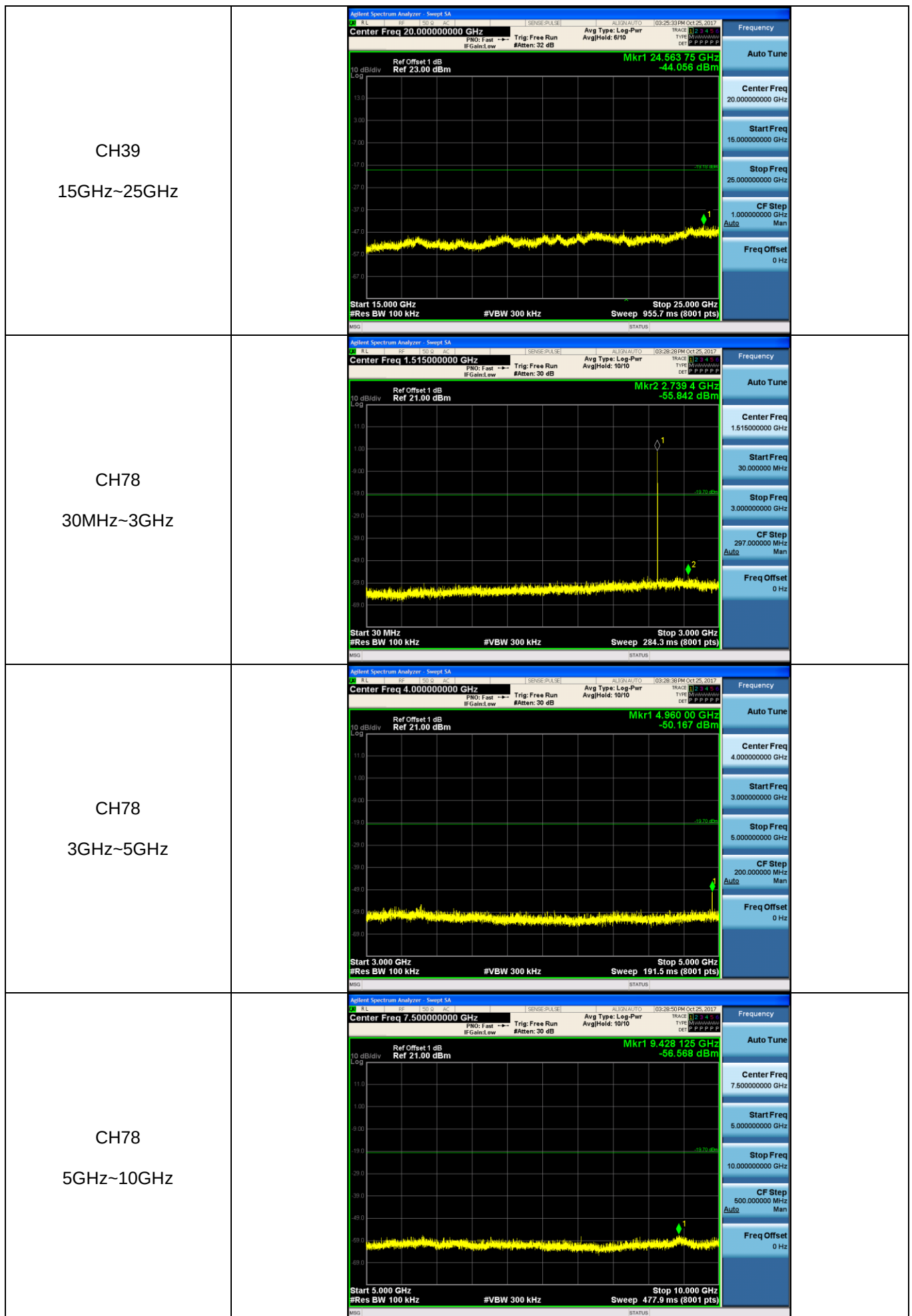
CH78
Hoppig mode

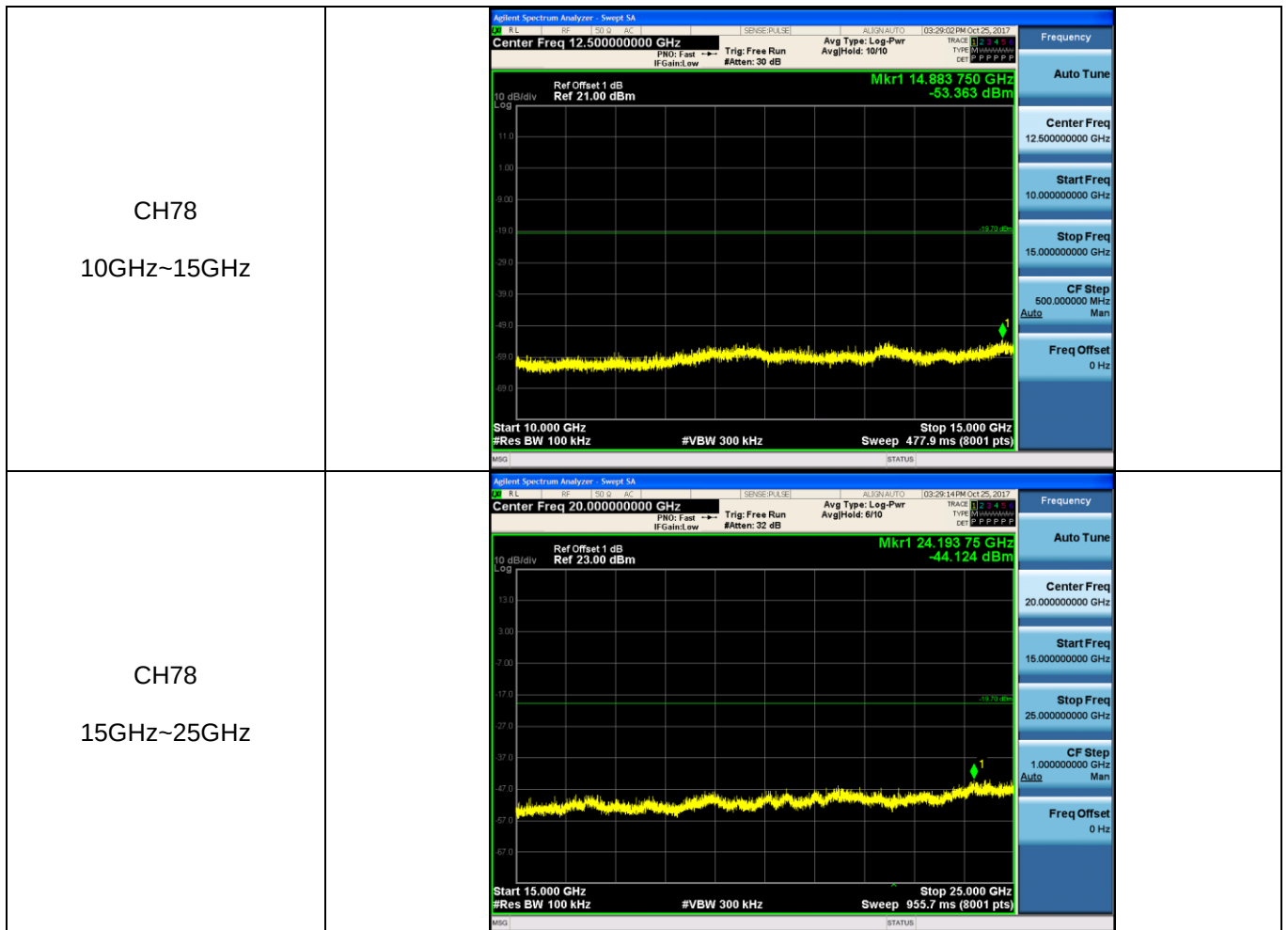


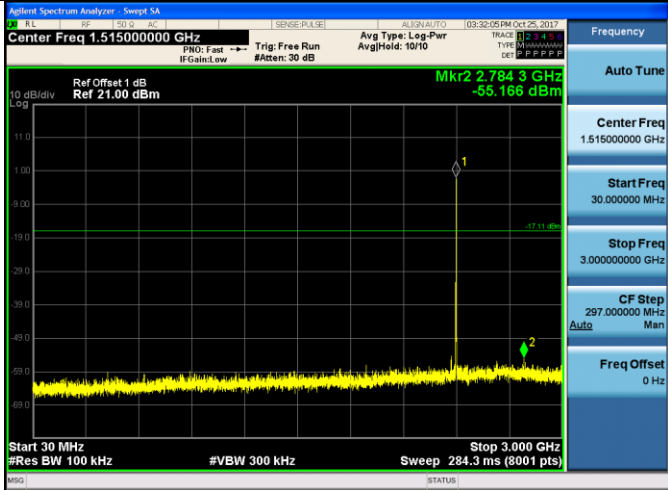
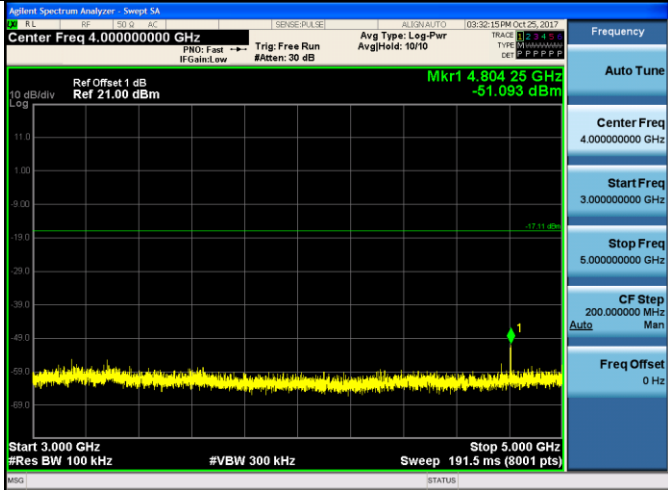
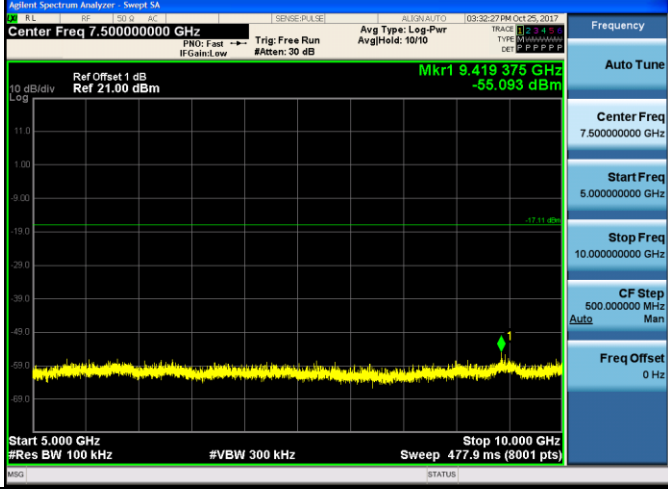
Test Item:	SE	Modulation type:	GFSK
CH00 30MHz~3GHz			
CH00 3GHz~5GHz			
CH00 5GHz~10GHz			

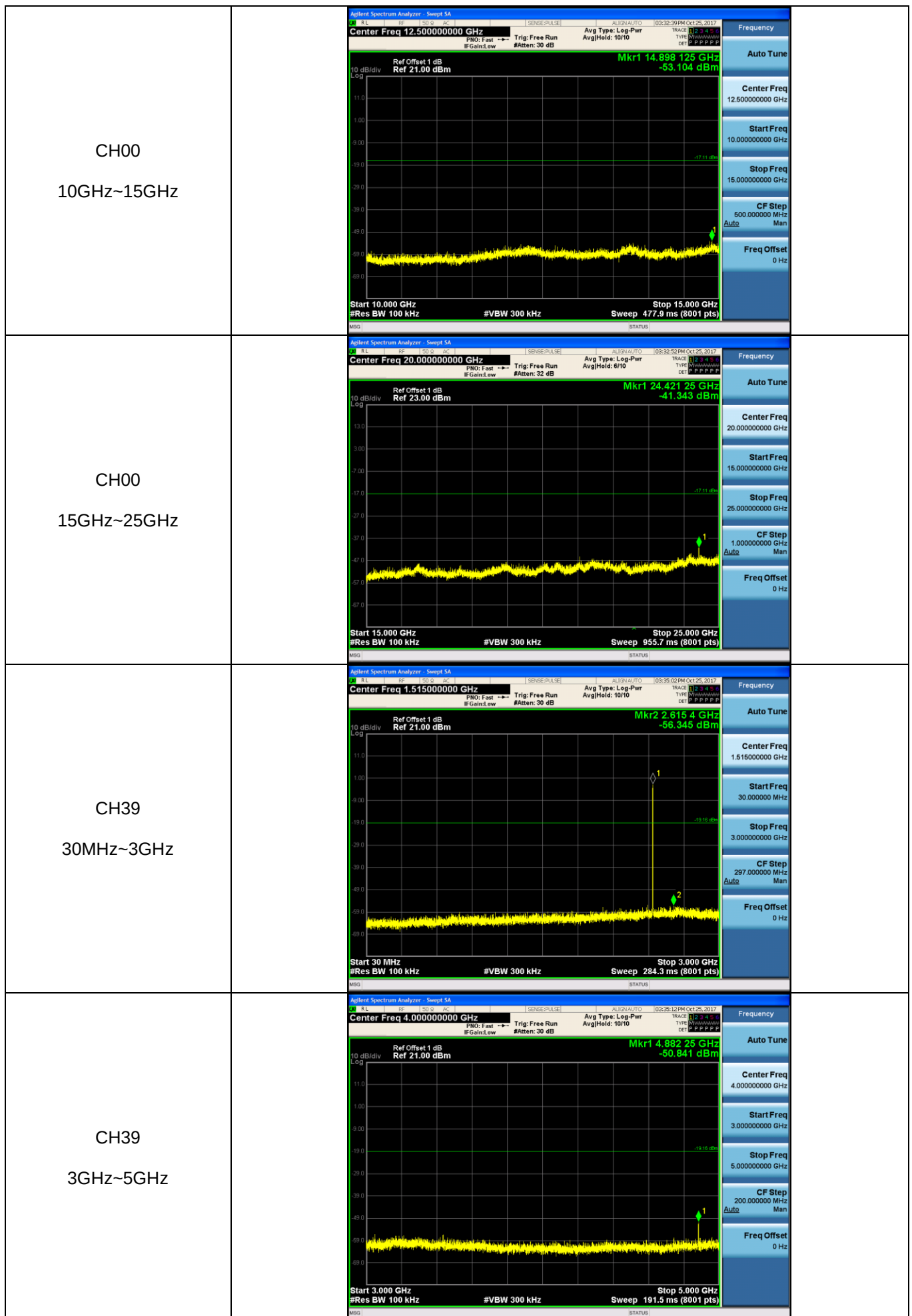


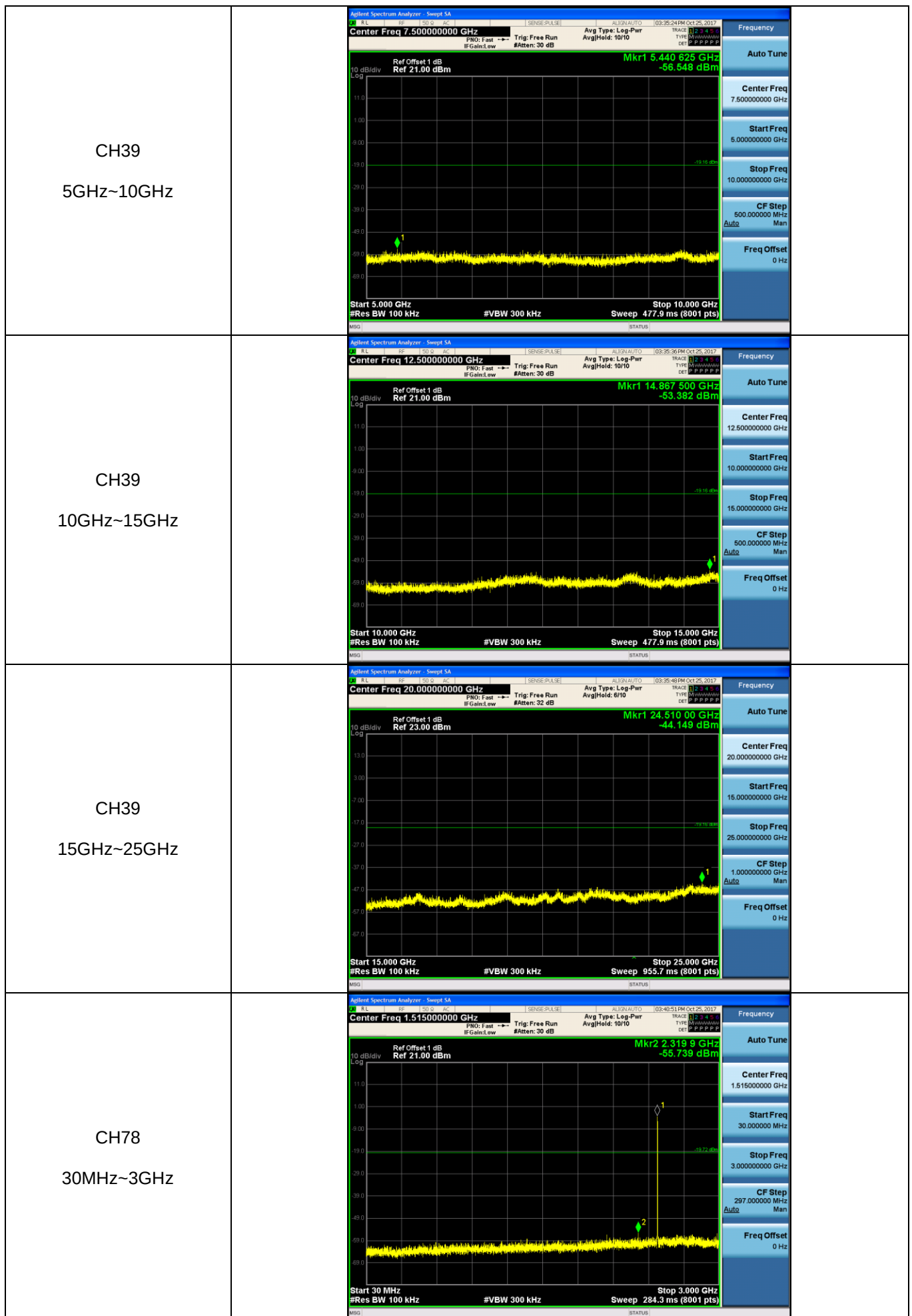


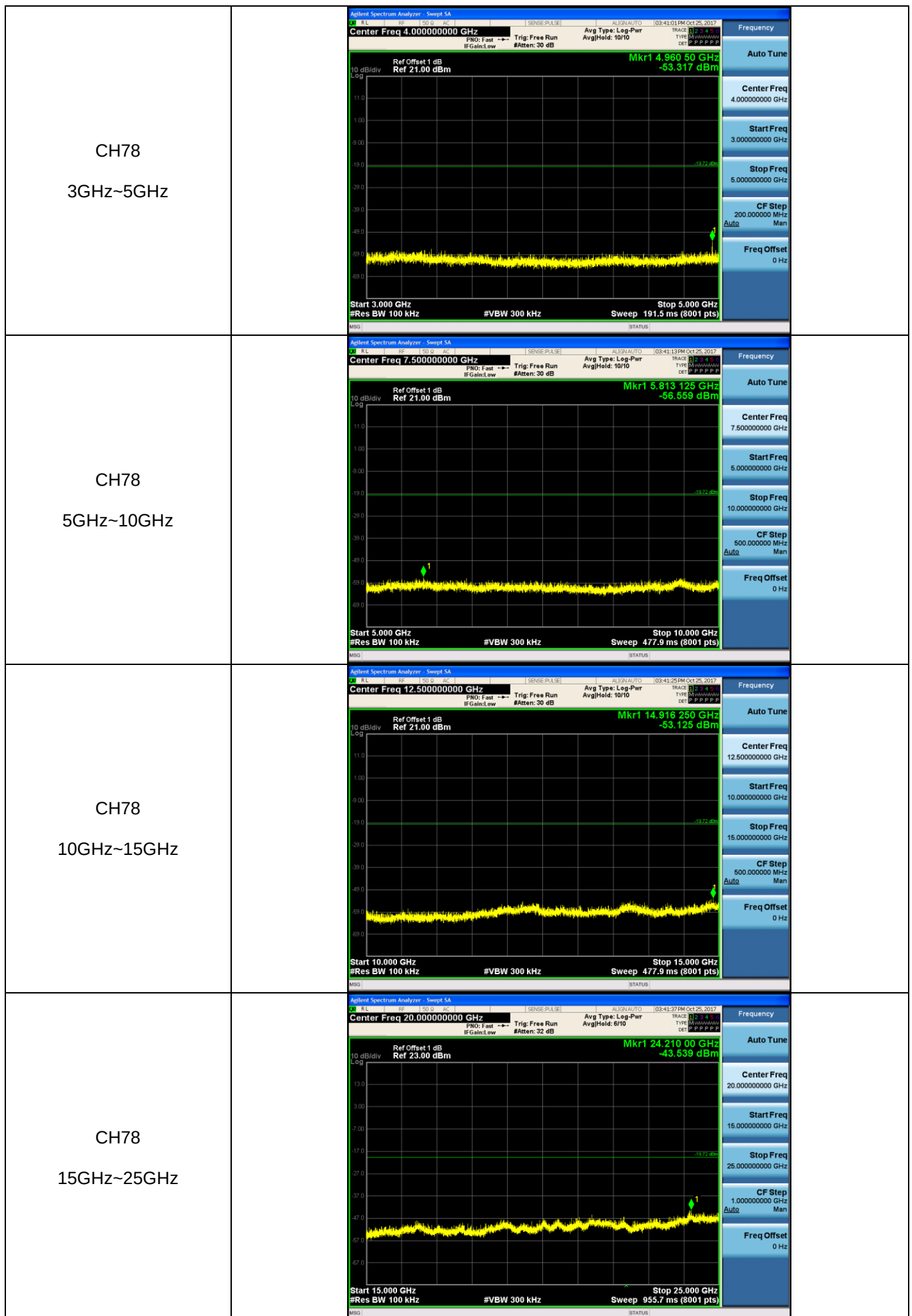


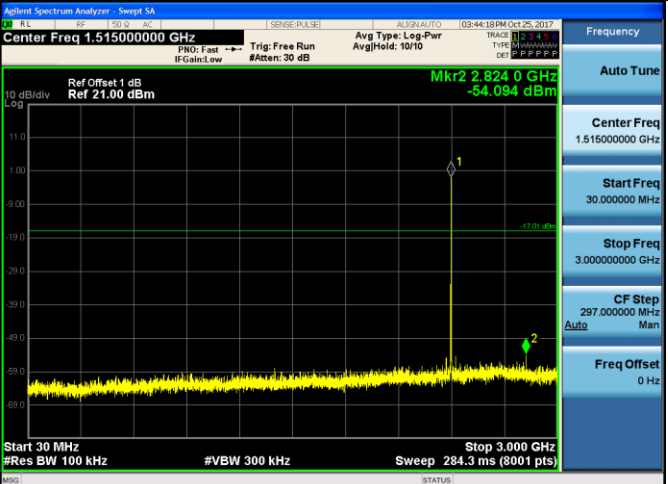
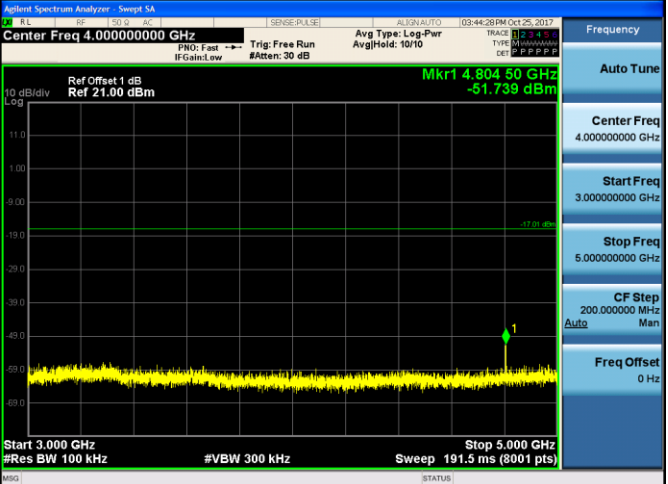
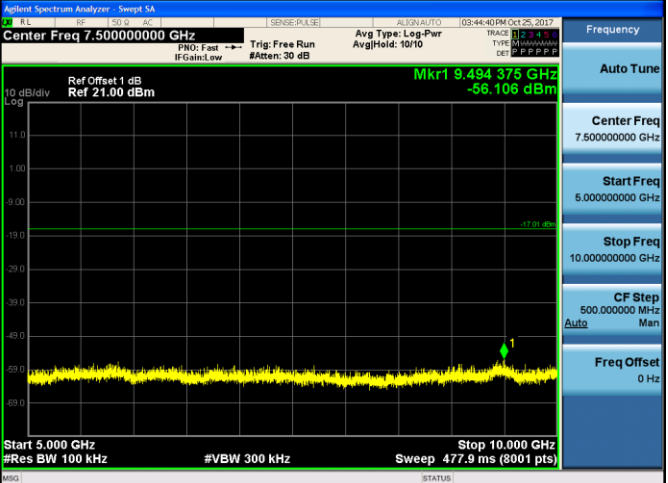


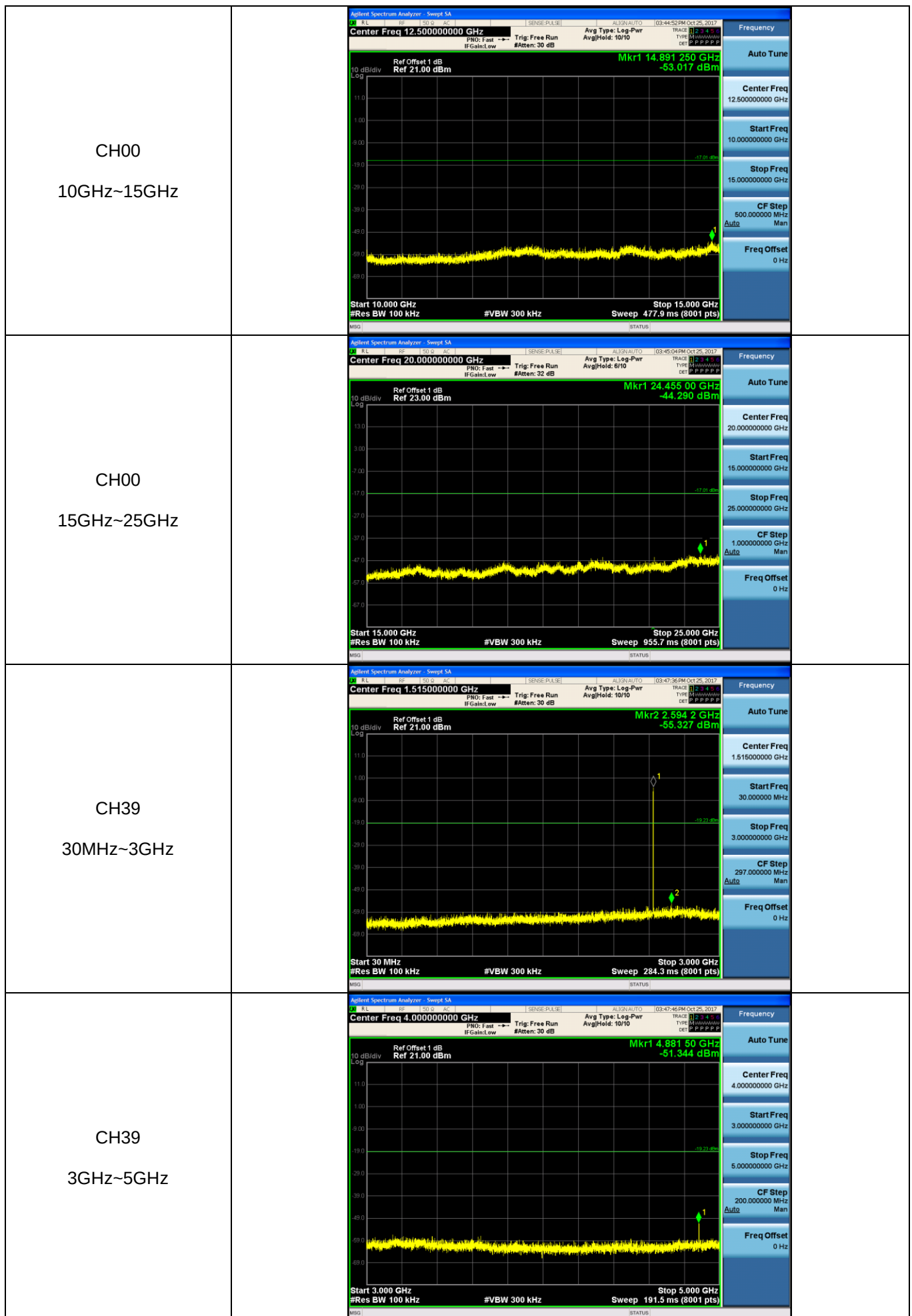
Test Item:	SE	Modulation type:	$\pi/4$ DQPSK
CH00 30MHz~3GHz			
CH00 3GHz~5GHz			
CH00 5GHz~10GHz			

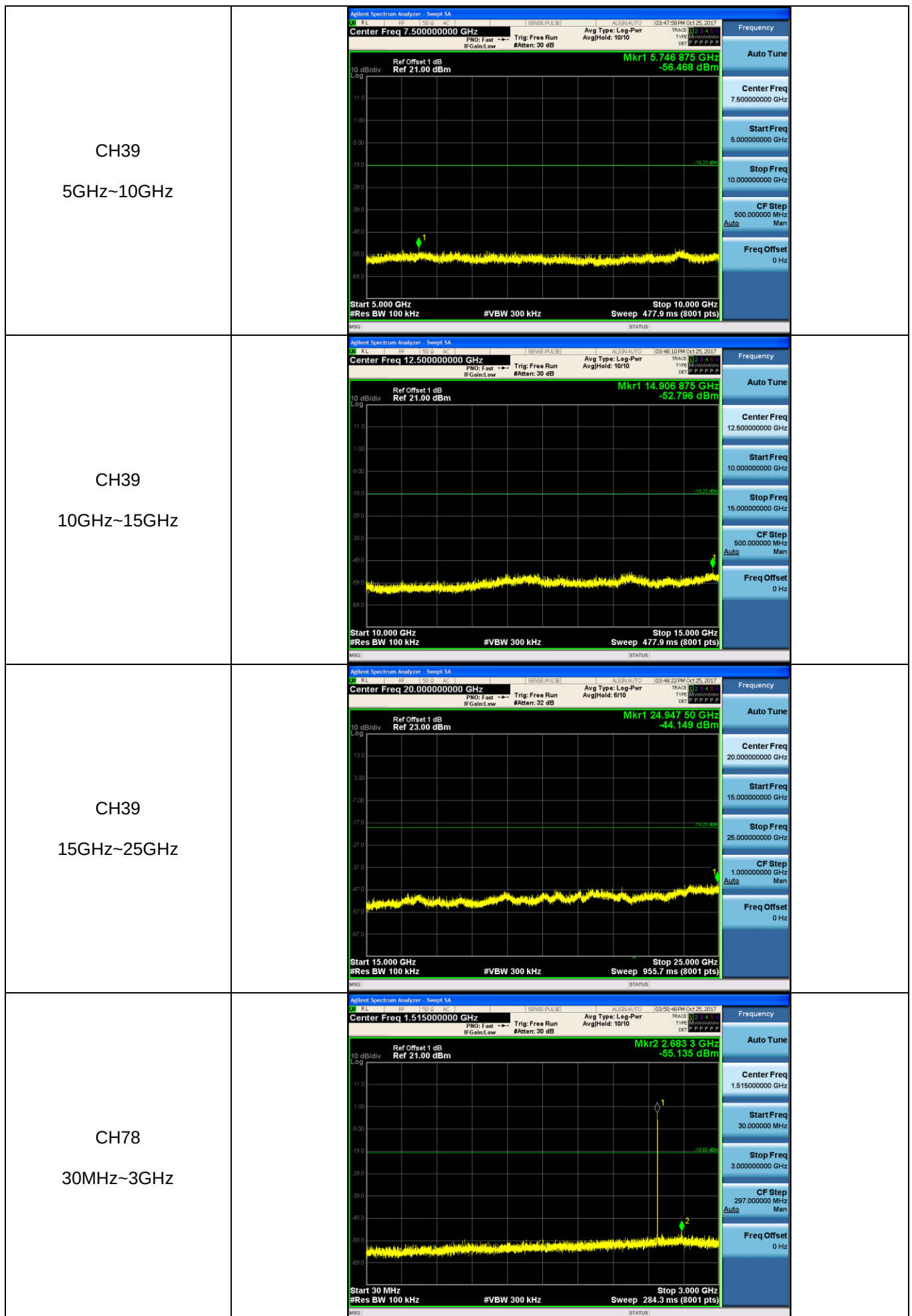


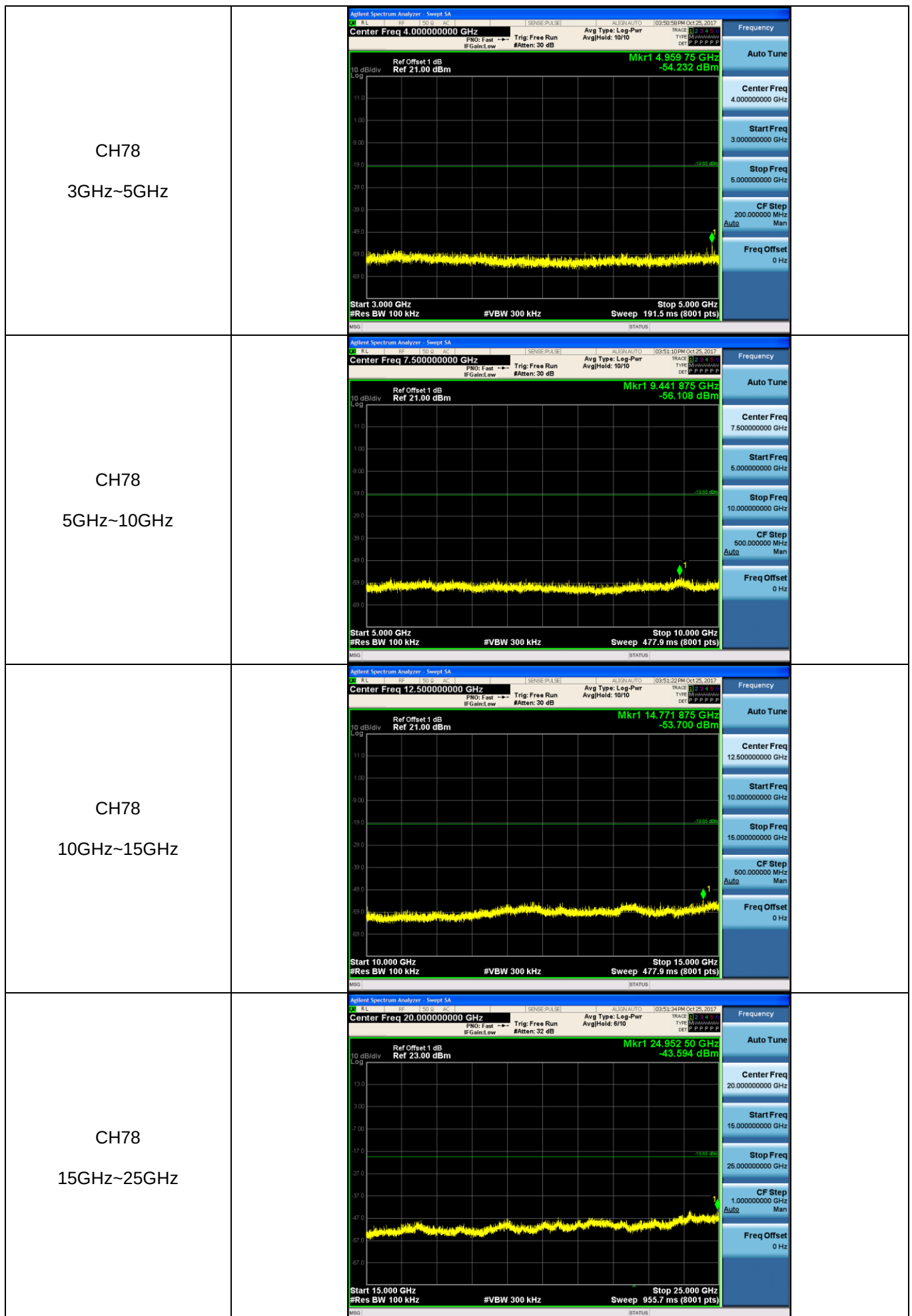




Test Item:	SE	Modulation type:	8DPSK
CH00 30MHz~3GHz			
CH00 3GHz~5GHz			
CH00 5GHz~10GHz			







5.11. Spurious Emissions (radiated)

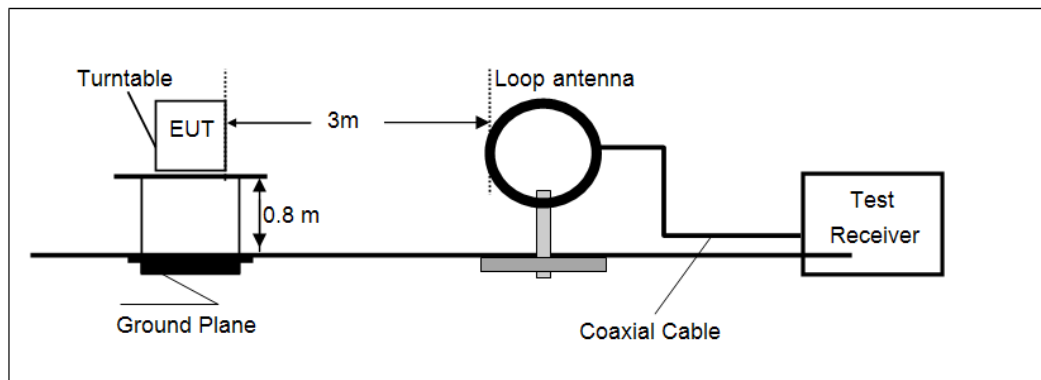
LIMIT

FCC CFR Title 47 Part 15 Subpart C Section 15.209

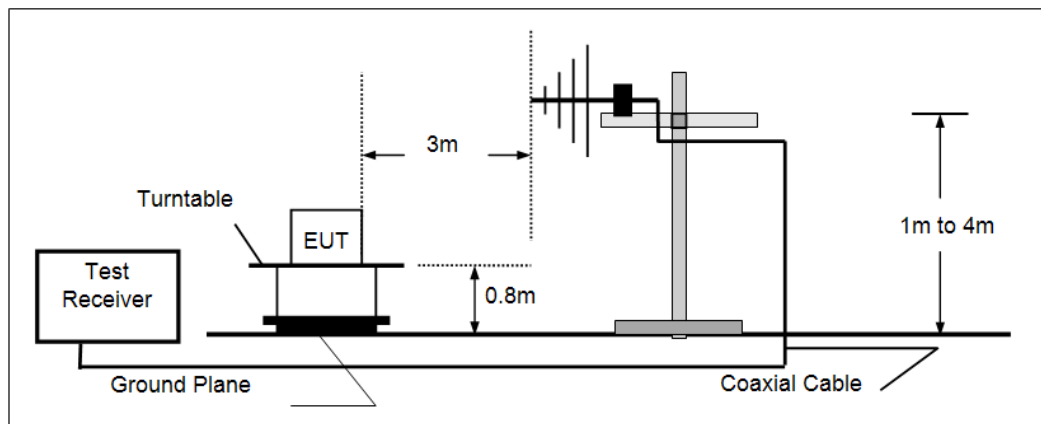
Frequency	Limit (dBuV/m @3m)	Value
30 MHz ~ 88 MHz	40.00	Quasi-peak
88 MHz ~ 216 MHz	43.50	Quasi-peak
216 MHz ~ 960 MHz	46.00	Quasi-peak
960 MHz ~ 1 GHz	54.00	Quasi-peak
Above 1 GHz	54.00	Average
	74.00	Peak

TEST CONFIGURATION

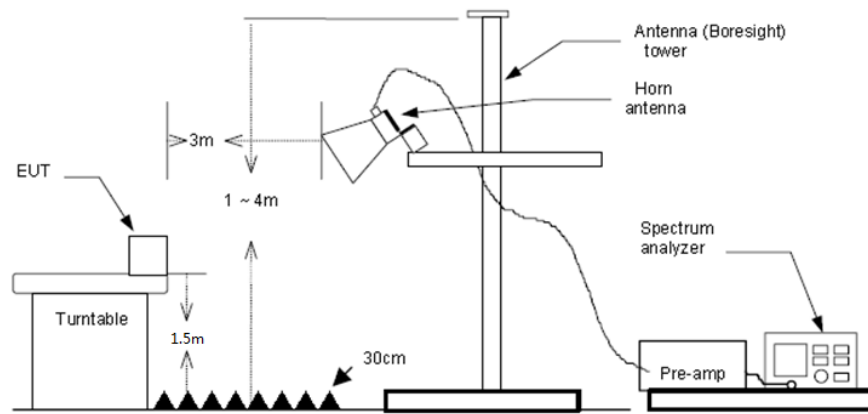
- Below 30 MHz



- 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 turntable 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 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.

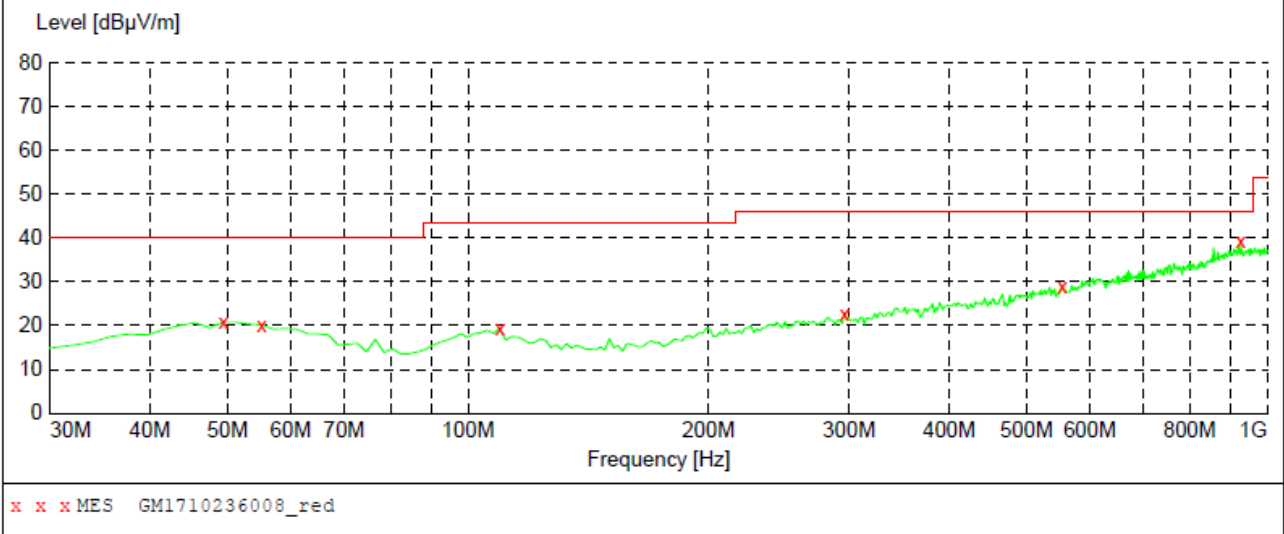
➤ 9 kHz ~ 30 MHz

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:

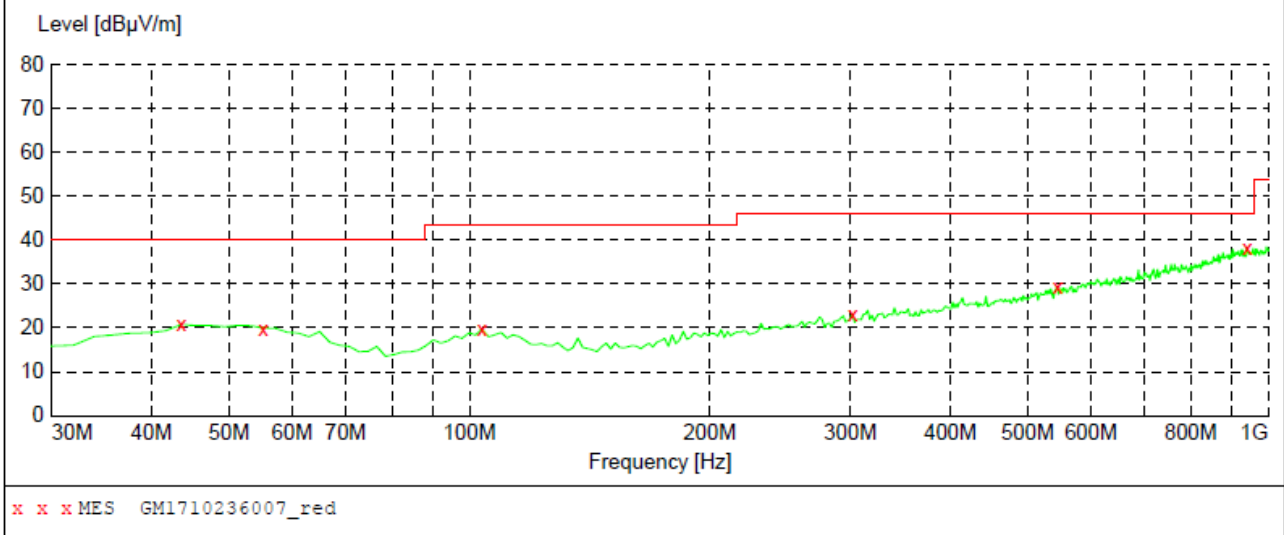
Vertical



Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
49.400000	20.70	-8.7	40.0	19.3	QP	100.0	259.00	VERTICAL
55.220000	20.10	-9.2	40.0	19.9	QP	100.0	236.00	VERTICAL
109.540000	19.30	-10.8	43.5	24.2	QP	100.0	309.00	VERTICAL
295.780000	22.90	-7.3	46.0	23.1	QP	100.0	275.00	VERTICAL
553.800000	29.10	-0.7	46.0	16.9	QP	100.0	285.00	VERTICAL
926.280000	39.30	7.1	46.0	6.7	QP	100.0	189.00	VERTICAL

Polarization:

Horizontal



Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
43.580000	20.70	-9.1	40.0	19.3	Q	100.0	203.00	HORIZONTAL
55.220000	19.90	-9.2	40.0	20.1	QP	300.0	127.00	HORIZONTAL
103.720000	19.70	-10.5	43.5	23.8	QP	300.0	305.00	HORIZONTAL
301.600000	23.20	-7.2	46.0	22.8	QP	100.0	214.00	HORIZONTAL
544.100000	29.30	-0.9	46.0	16.7	QP	100.0	40.00	HORIZONTAL
939.860000	38.20	7.2	46.0	7.8	QP	300.0	253.00	HORIZONTAL

➤ 1 GHz ~ 25 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
1498.91	41.85	25.80	5.28	36.59	36.34	74.00	-37.66	Vertical	Peak
3747.66	34.31	29.44	8.44	38.24	33.95	74.00	-40.05	Vertical	Peak
4809.50	43.83	31.58	9.55	36.93	48.03	74.00	-25.97	Vertical	Peak
6678.99	33.01	34.20	11.45	35.21	43.45	74.00	-30.55	Vertical	Peak
1498.91	42.27	25.80	5.28	36.59	36.76	74.00	-37.24	Horizontal	Peak
3003.17	40.06	28.61	7.48	38.23	37.92	74.00	-36.08	Horizontal	Peak
4809.50	41.88	31.58	9.55	36.93	46.08	74.00	-27.92	Horizontal	Peak
6577.75	32.21	34.16	11.32	35.35	42.34	74.00	-31.66	Horizontal	Peak

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
1378.14	38.21	25.96	4.96	36.47	32.66	74.00	-41.34	Vertical	Peak
1894.45	40.48	25.31	6.11	37.22	34.68	74.00	-39.32	Vertical	Peak
3299.78	39.45	28.20	7.84	38.37	37.12	74.00	-36.88	Vertical	Peak
4883.52	44.60	31.43	9.59	36.73	48.89	74.00	-25.11	Vertical	Peak
1461.24	43.10	25.84	5.17	36.54	37.57	74.00	-36.43	Horizontal	Peak
3588.94	32.69	29.27	8.25	38.29	31.92	74.00	-42.08	Horizontal	Peak
4883.52	44.86	31.43	9.59	36.73	49.15	74.00	-24.85	Horizontal	Peak
7585.53	32.33	36.19	12.67	34.97	46.22	74.00	-27.78	Horizontal	Peak

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
1498.91	44.75	25.80	5.28	36.59	39.24	74.00	-34.76	Vertical	Peak
3625.67	38.42	29.30	8.30	38.26	37.76	74.00	-36.24	Vertical	Peak
4946.07	42.83	31.45	9.63	36.55	47.36	74.00	-26.64	Vertical	Peak
7045.74	31.96	35.44	11.85	34.86	44.39	74.00	-29.61	Vertical	Peak
1498.91	42.77	25.80	5.28	36.59	37.26	74.00	-36.74	Horizontal	Peak
2995.54	40.05	28.60	7.48	38.23	37.90	74.00	-36.10	Horizontal	Peak
4946.07	40.54	31.45	9.63	36.55	45.07	74.00	-28.93	Horizontal	Peak
7432.62	33.26	36.23	12.18	34.85	46.82	74.00	-27.18	Horizontal	Peak

Remark:

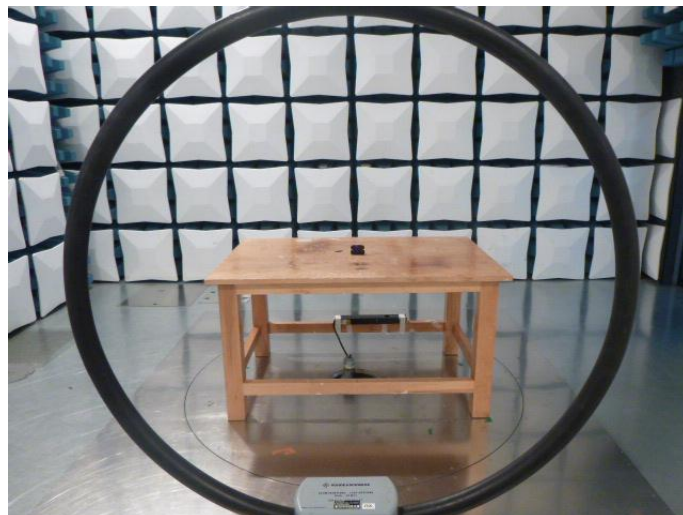
1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. The peak level is lower than average limit(54 dBuV/m), this data is the too weak instrument of signal is unable to test.
3. The emission levels of other frequencies(test frequency band is 1GHz to 25GHz) are very lower than the limit and not show in test report.

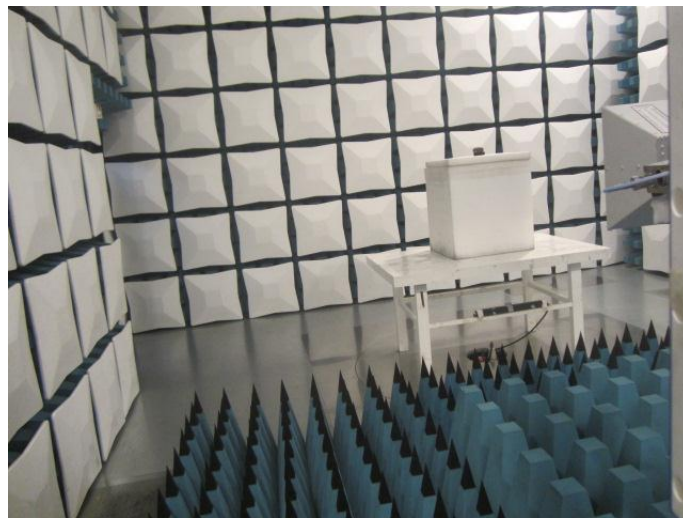
6. TEST SETUP PHOTOS

Conducted Emissions (AC Mains)



Radiated Emissions





7. EXTERANAL AND INTERNAL PHOTOS

EXTERANAL PHOTOS

SPE30:







SPE31:

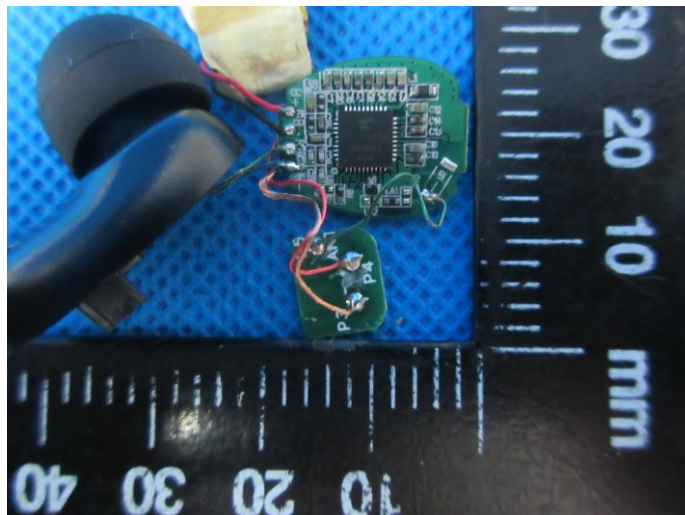
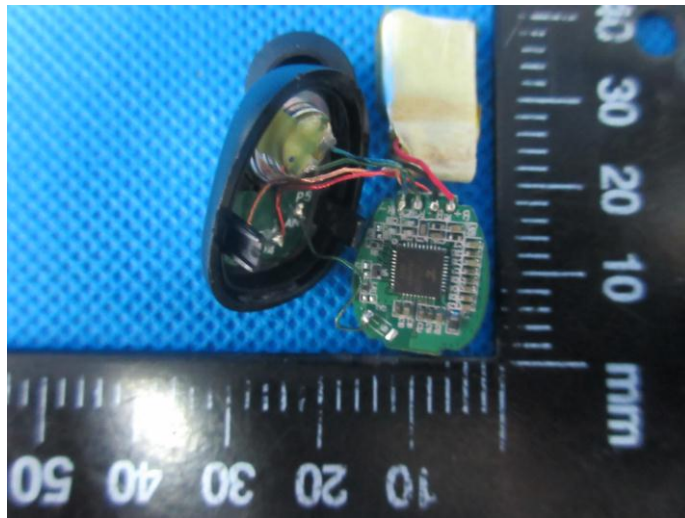


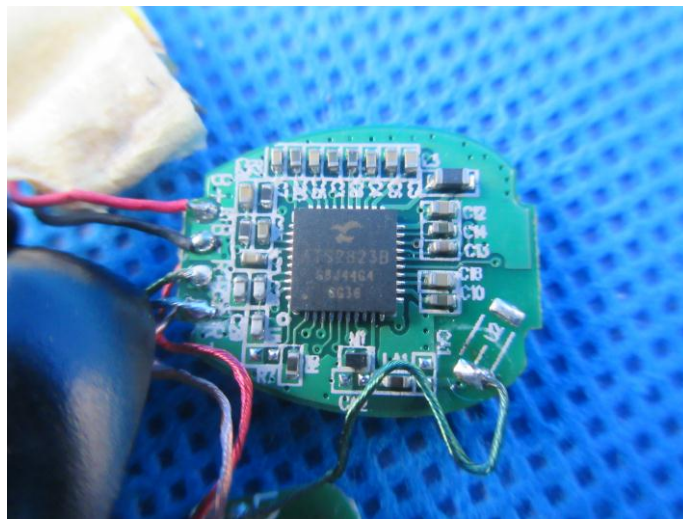
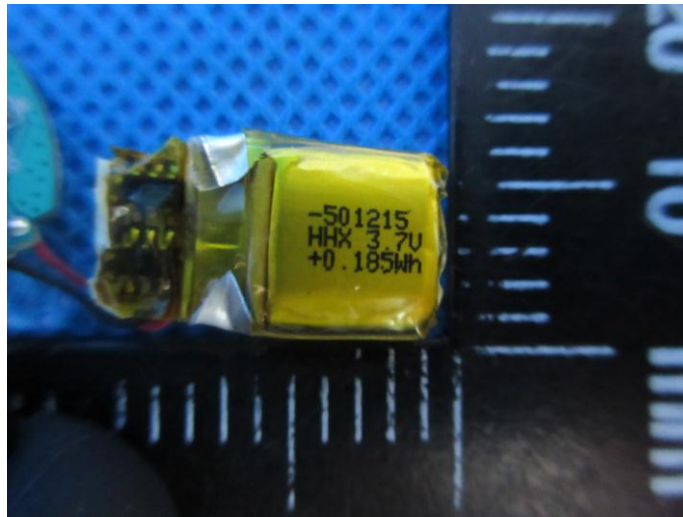






INTERNAL PHOTOS





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