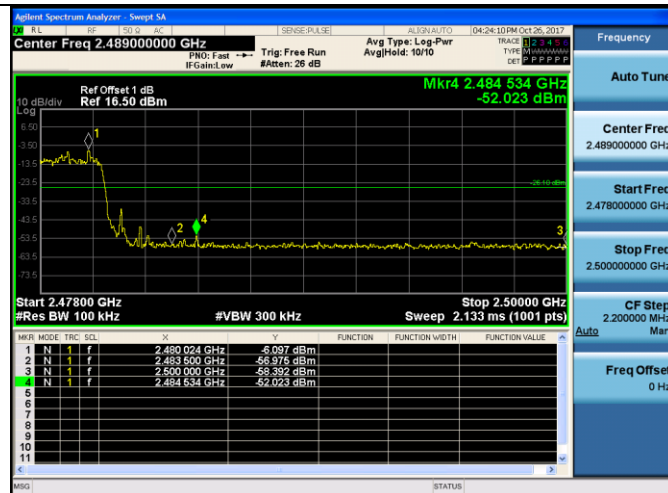
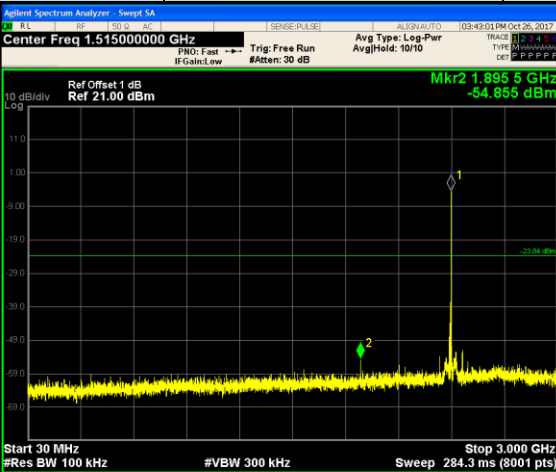
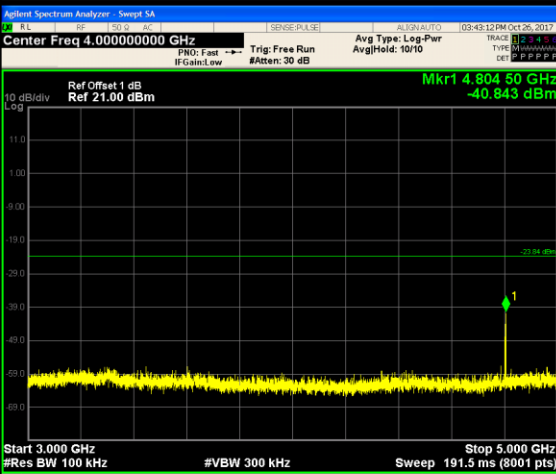
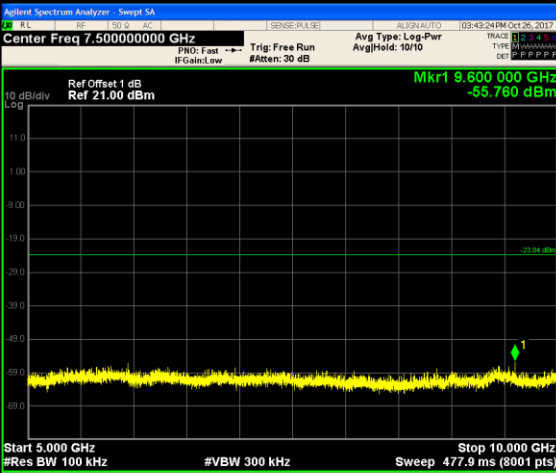
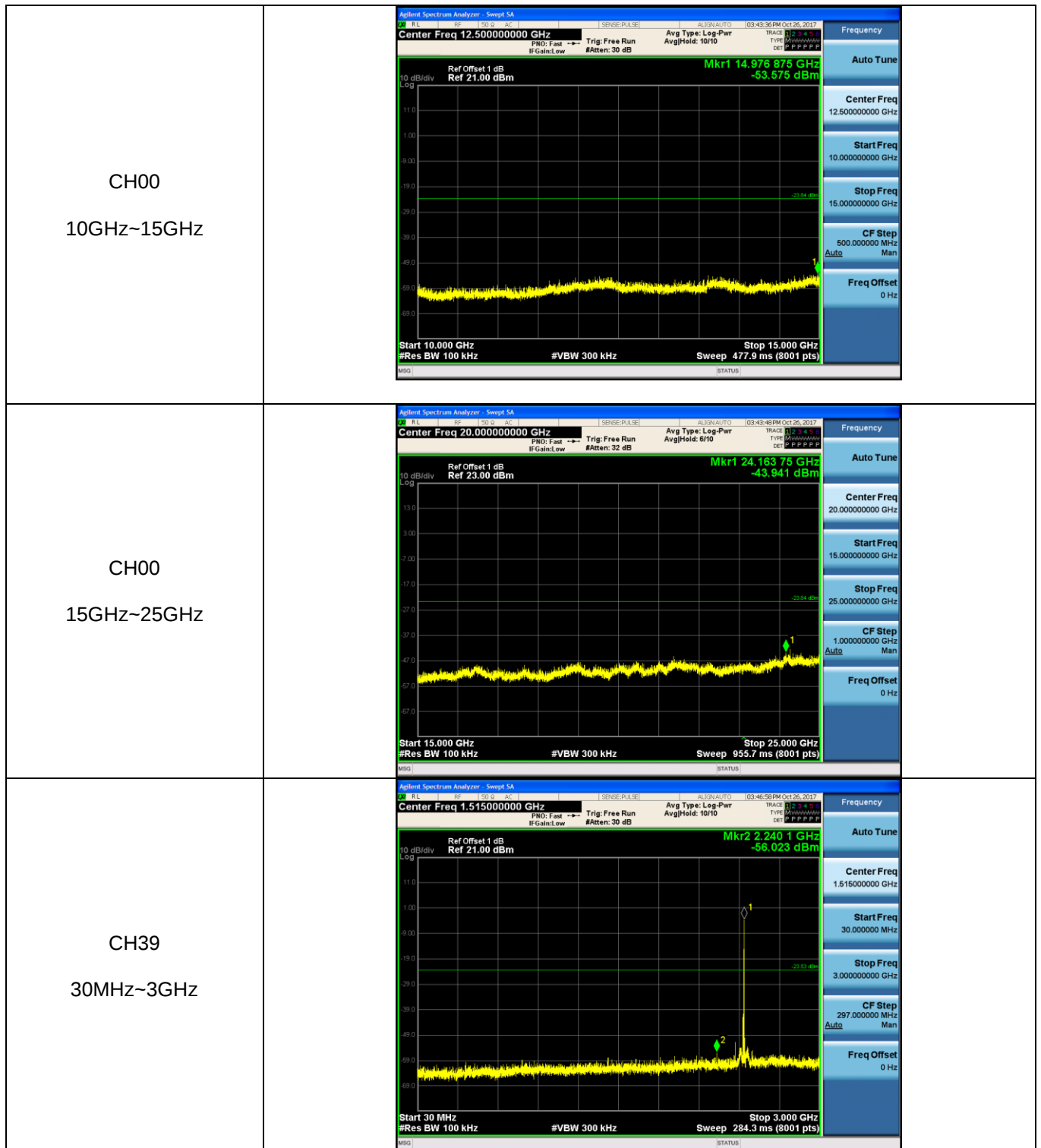
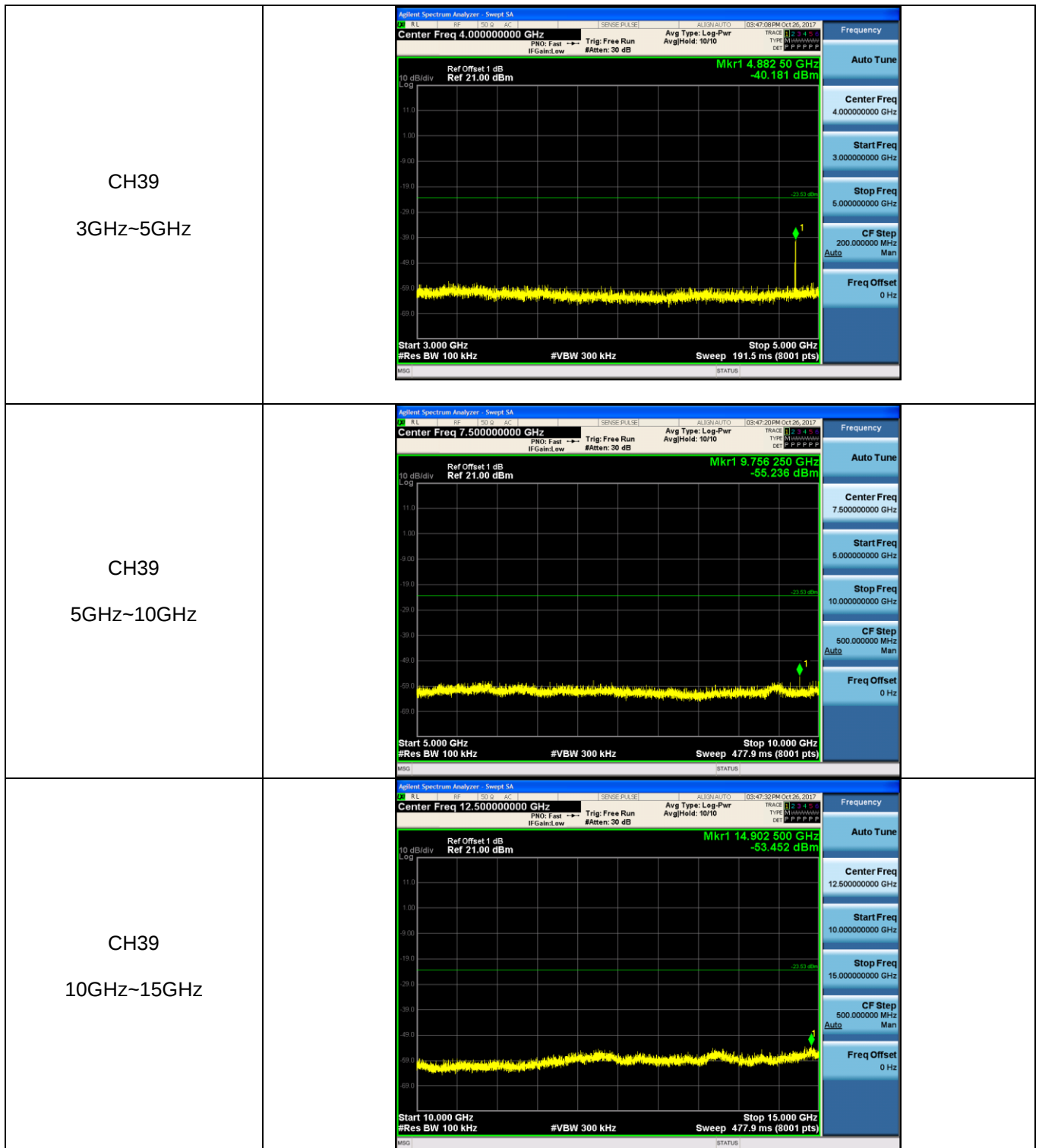


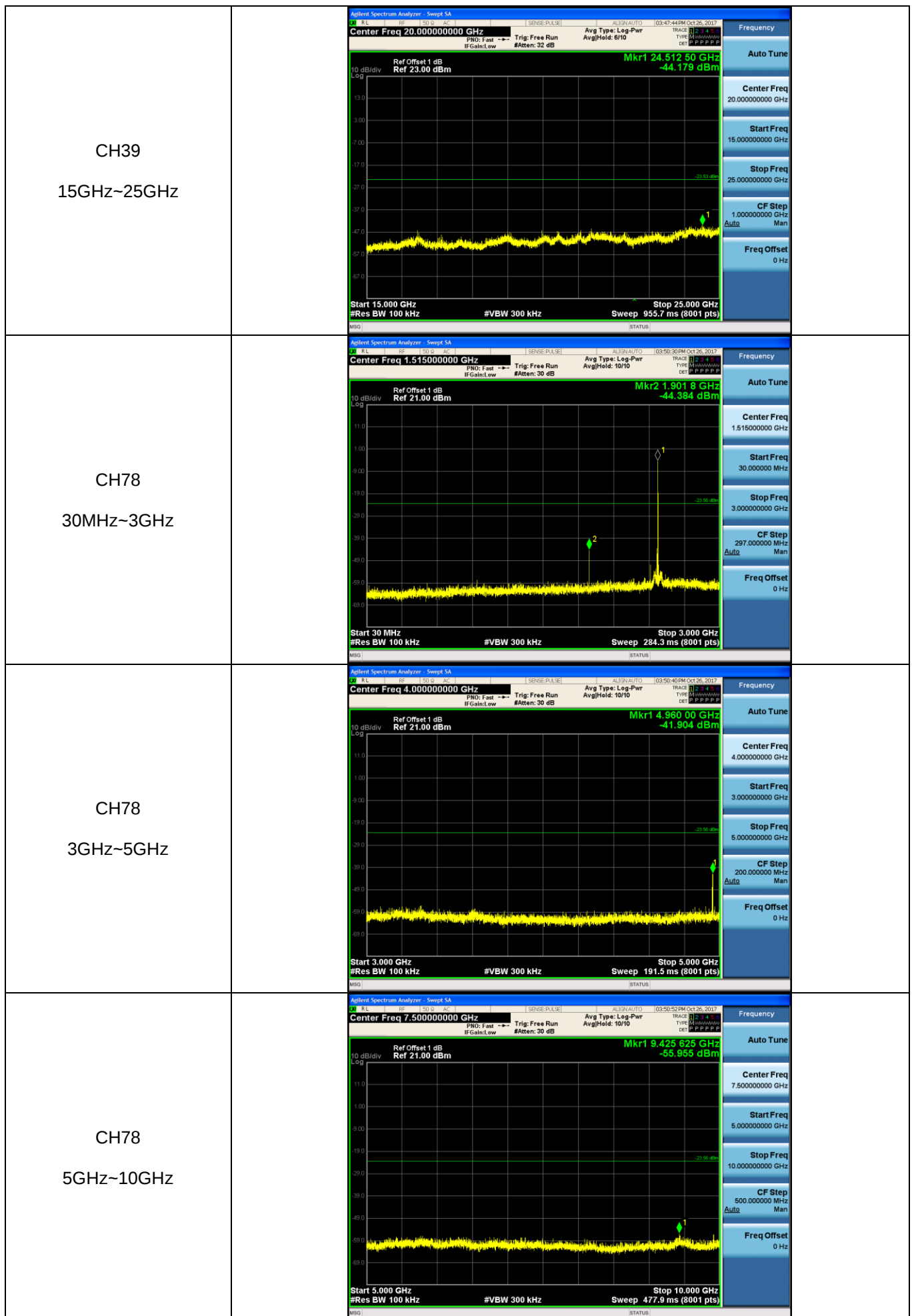
CH78
Hoppig mode

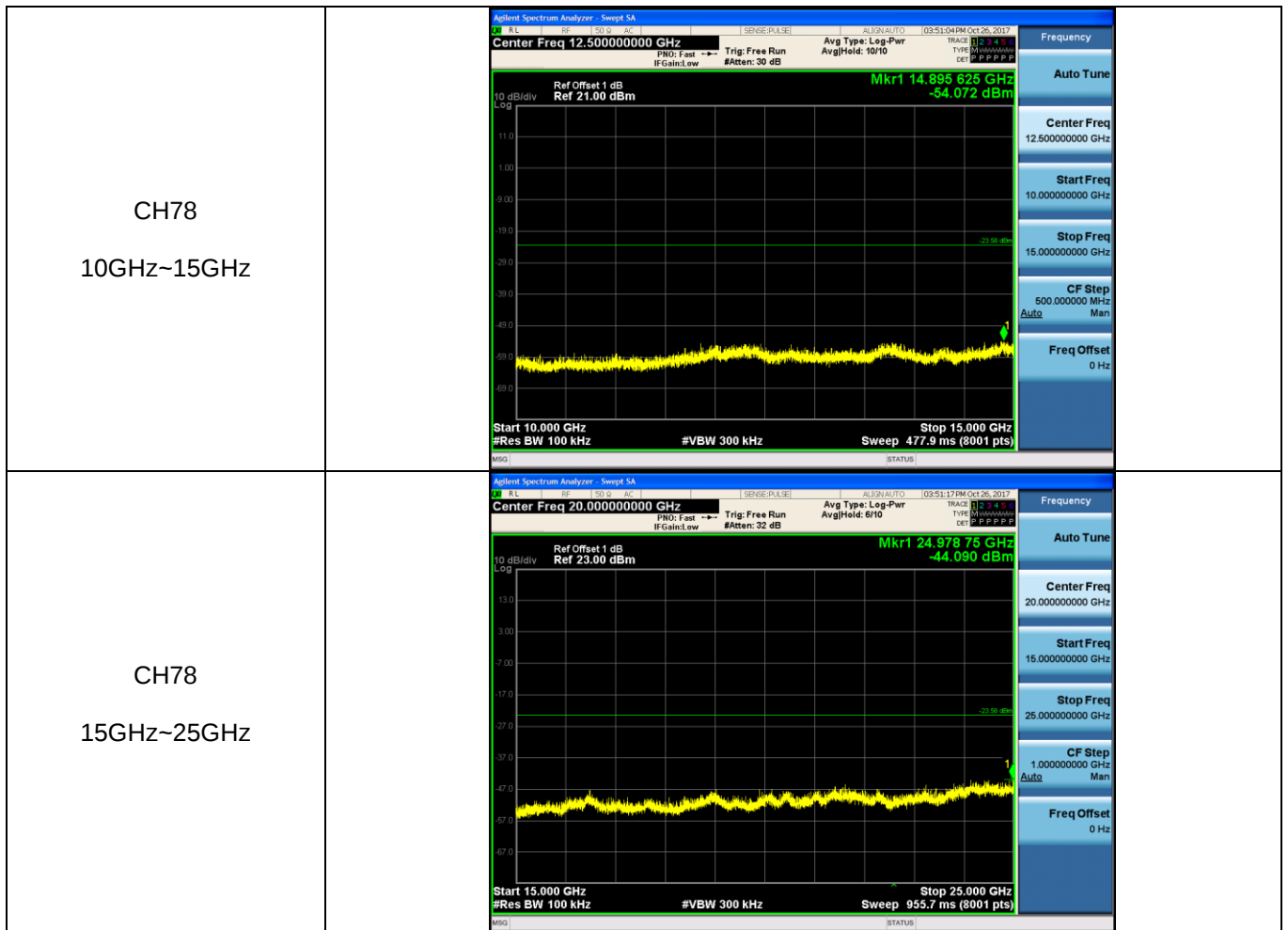


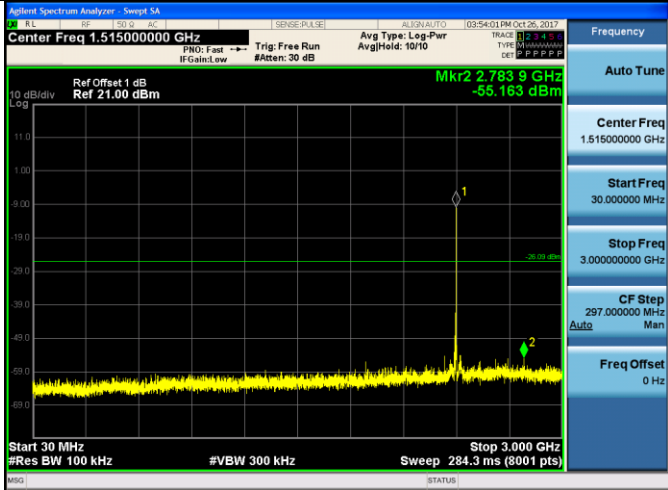
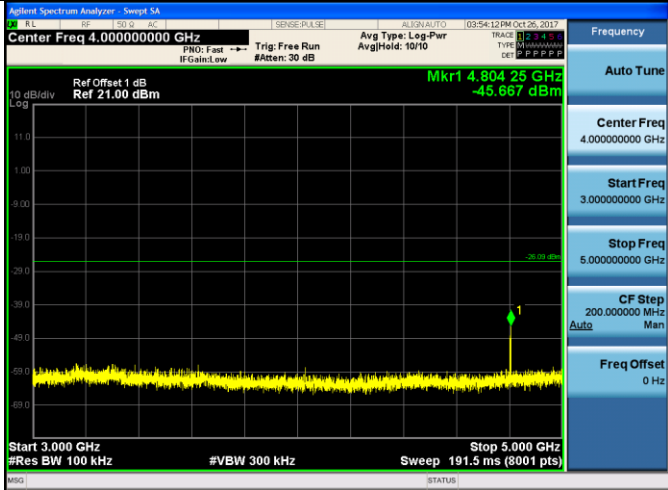
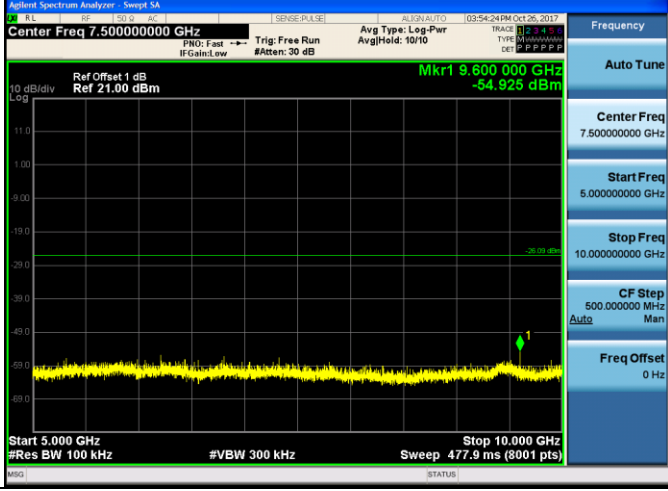
Test Item:	SE	Modulation type:	GFSK
CH00 30MHz~3GHz			
CH00 3GHz~5GHz			
CH00 5GHz~10GHz			

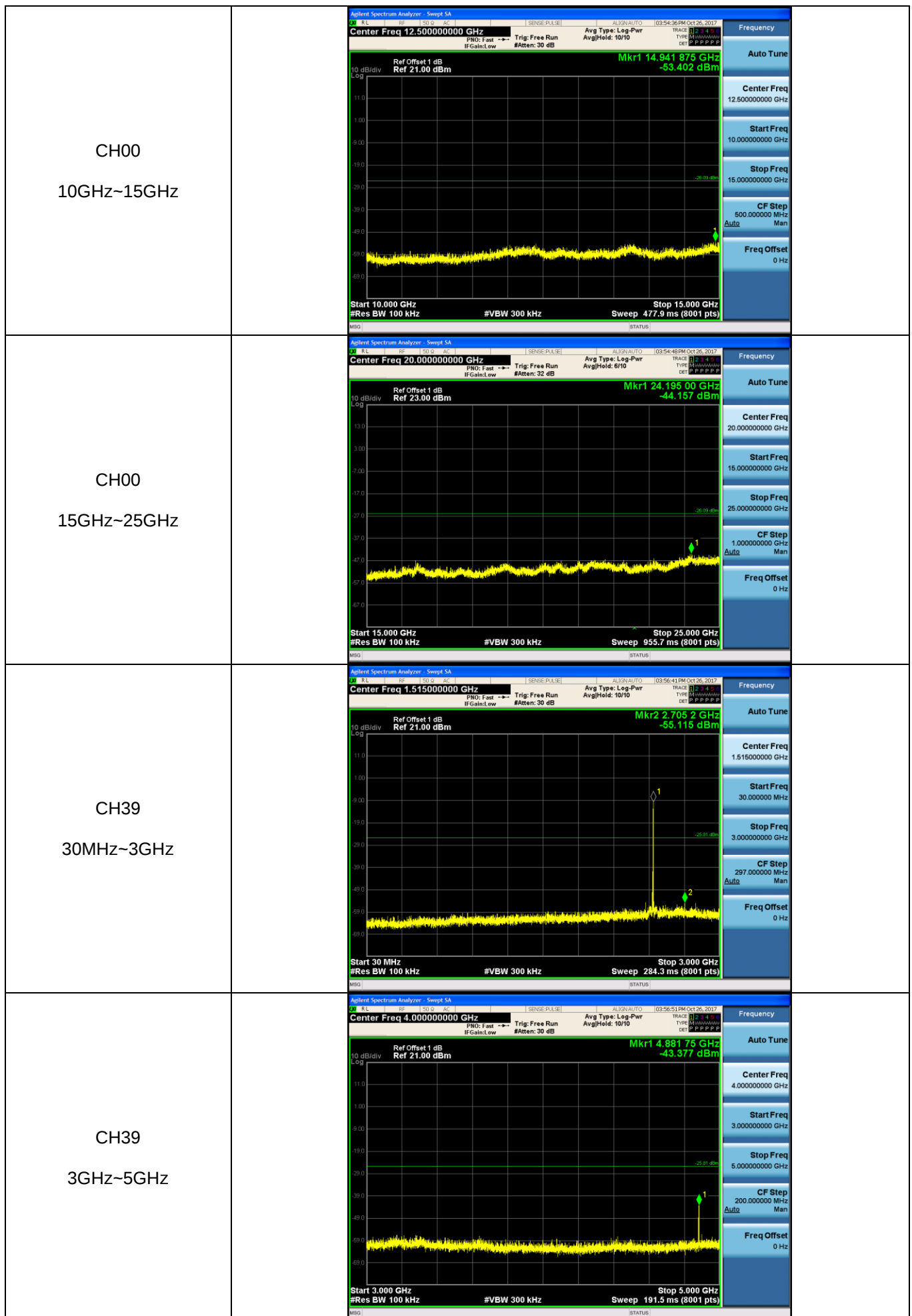


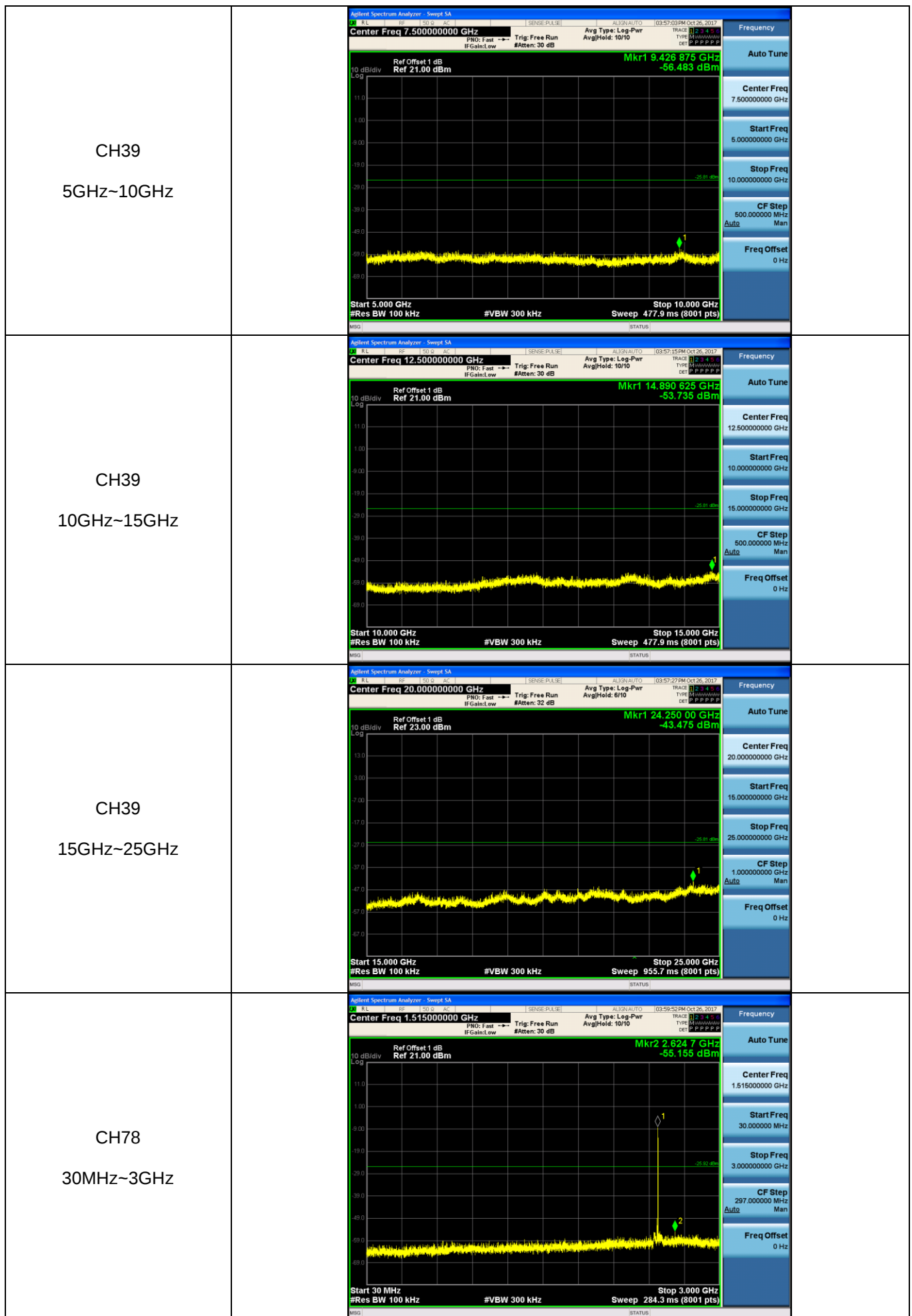


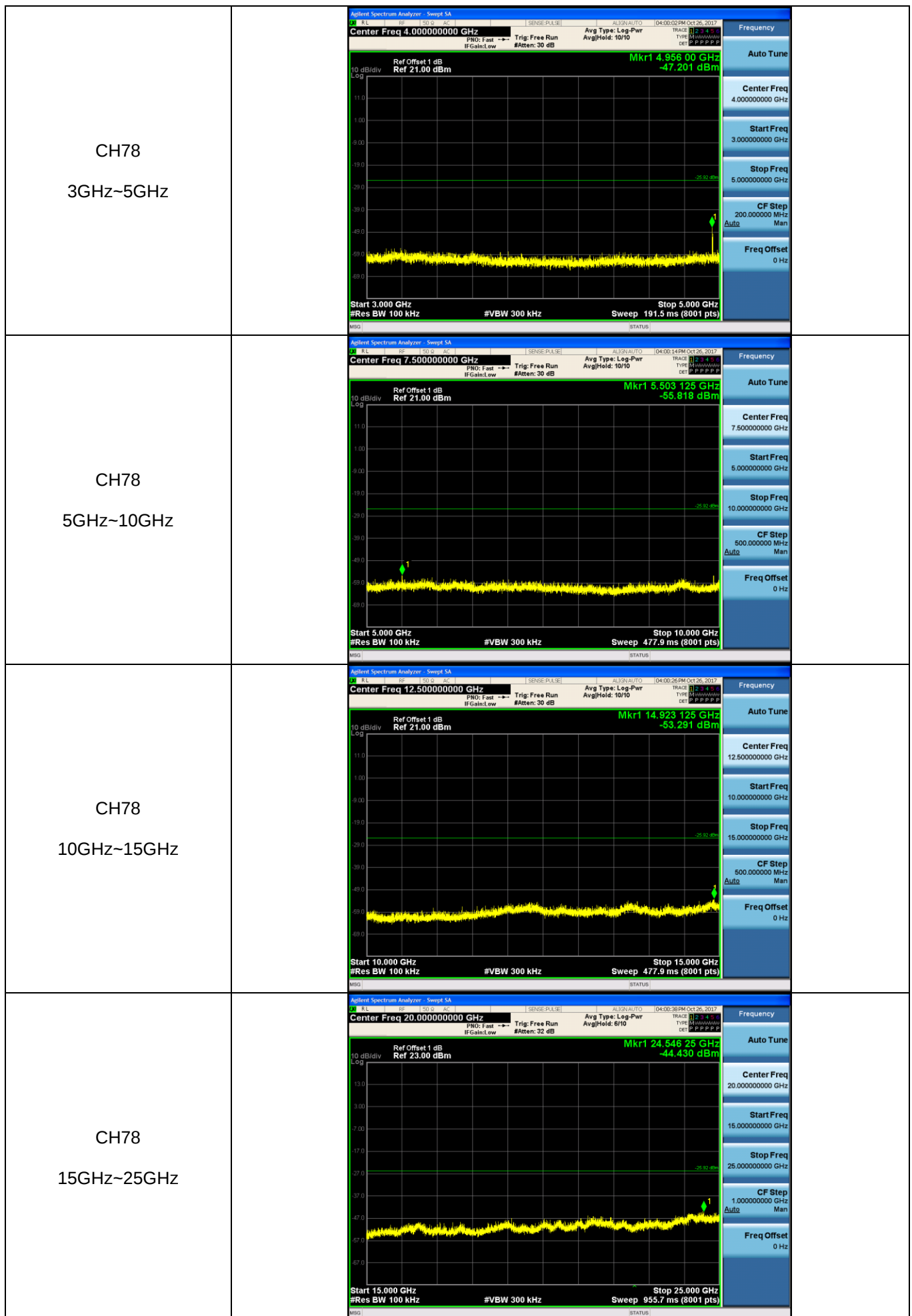


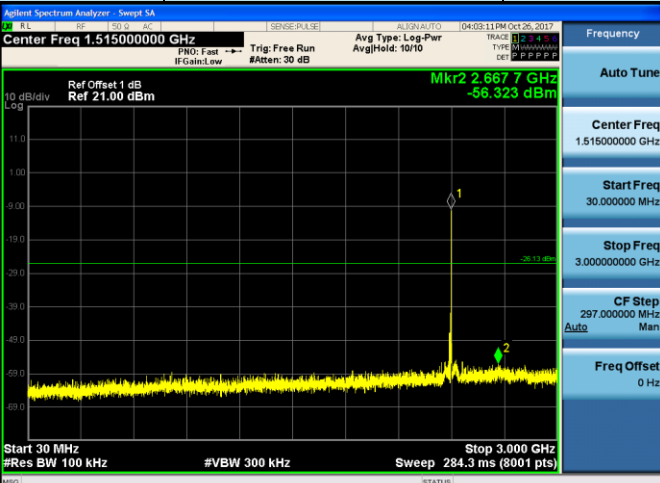
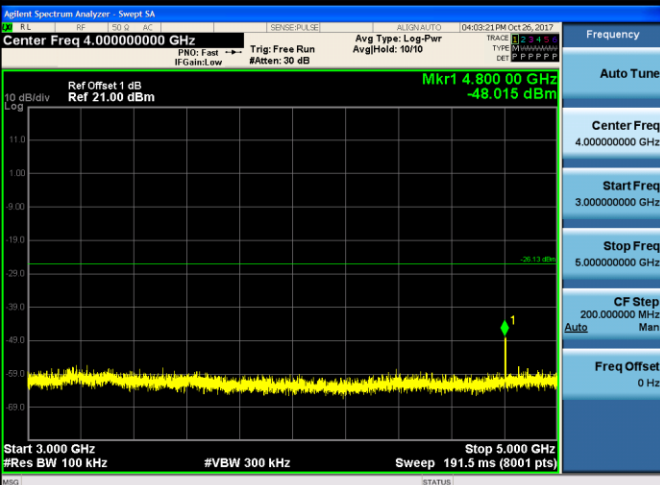
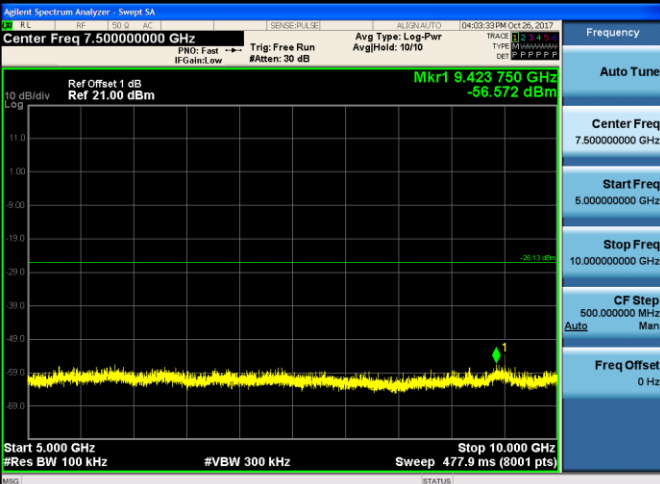


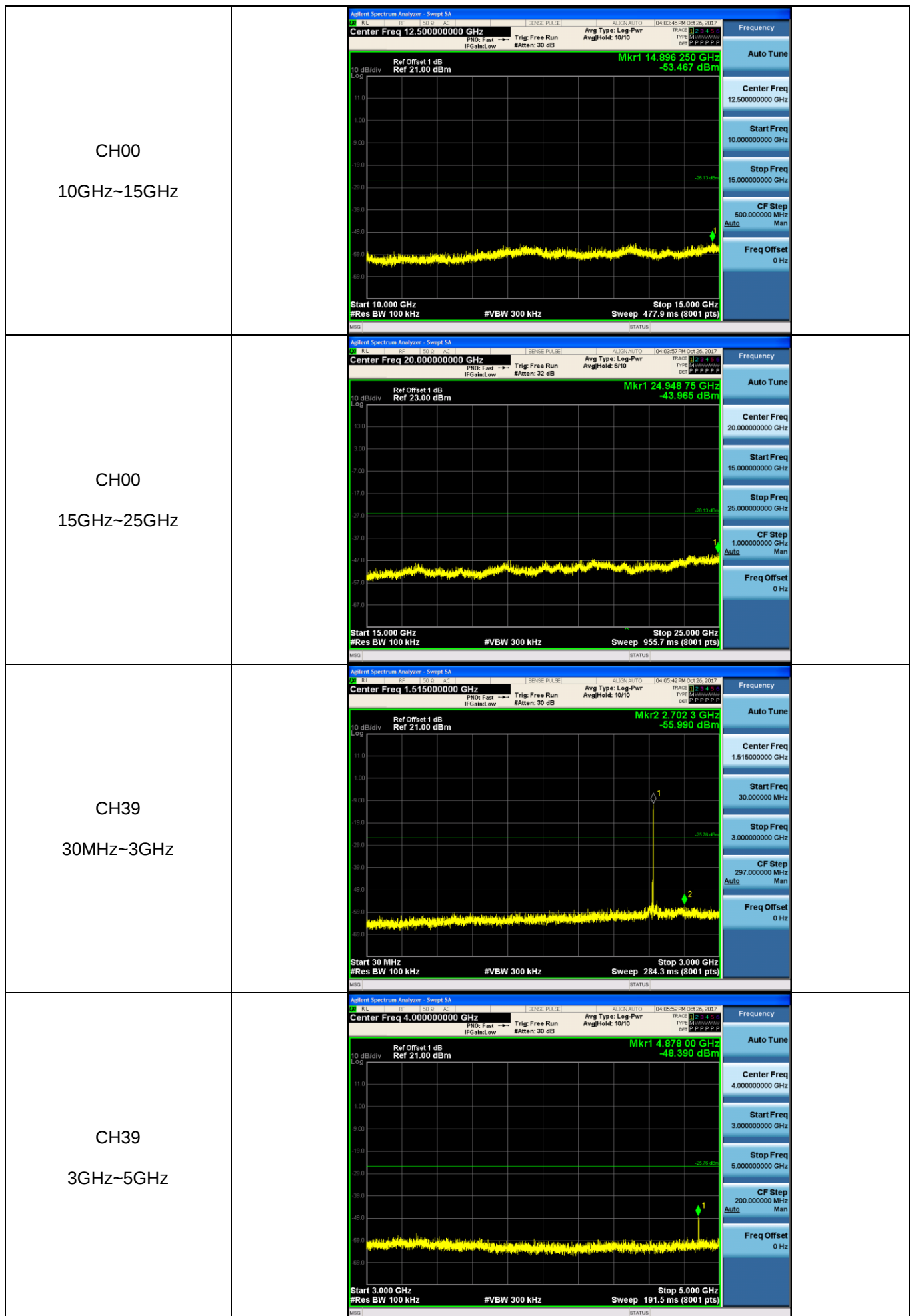
Test Item:	SE	Modulation type:	$\pi/4$ DQPSK
CH00 30MHz~3GHz			
CH00 3GHz~5GHz			
CH00 5GHz~10GHz			

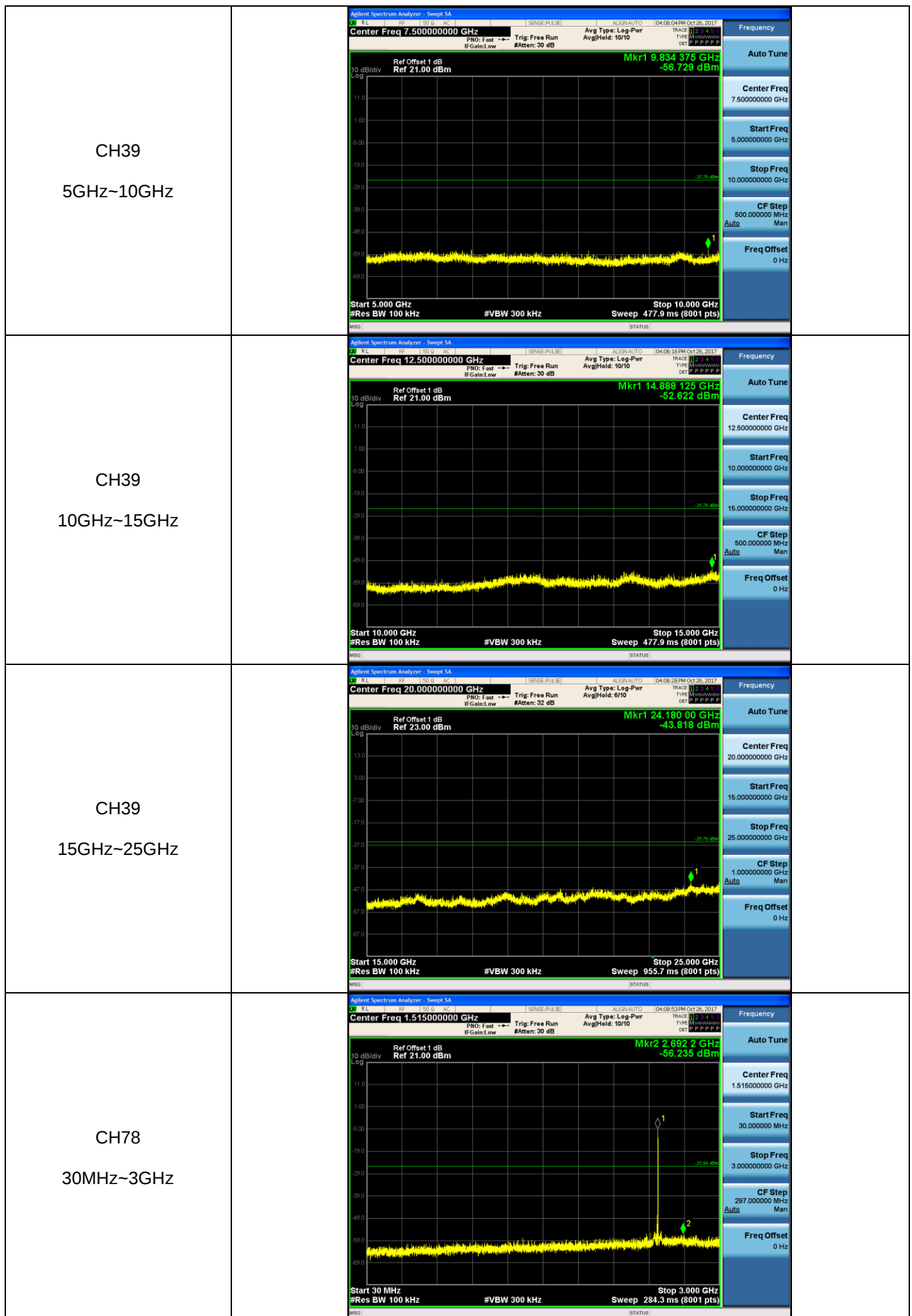


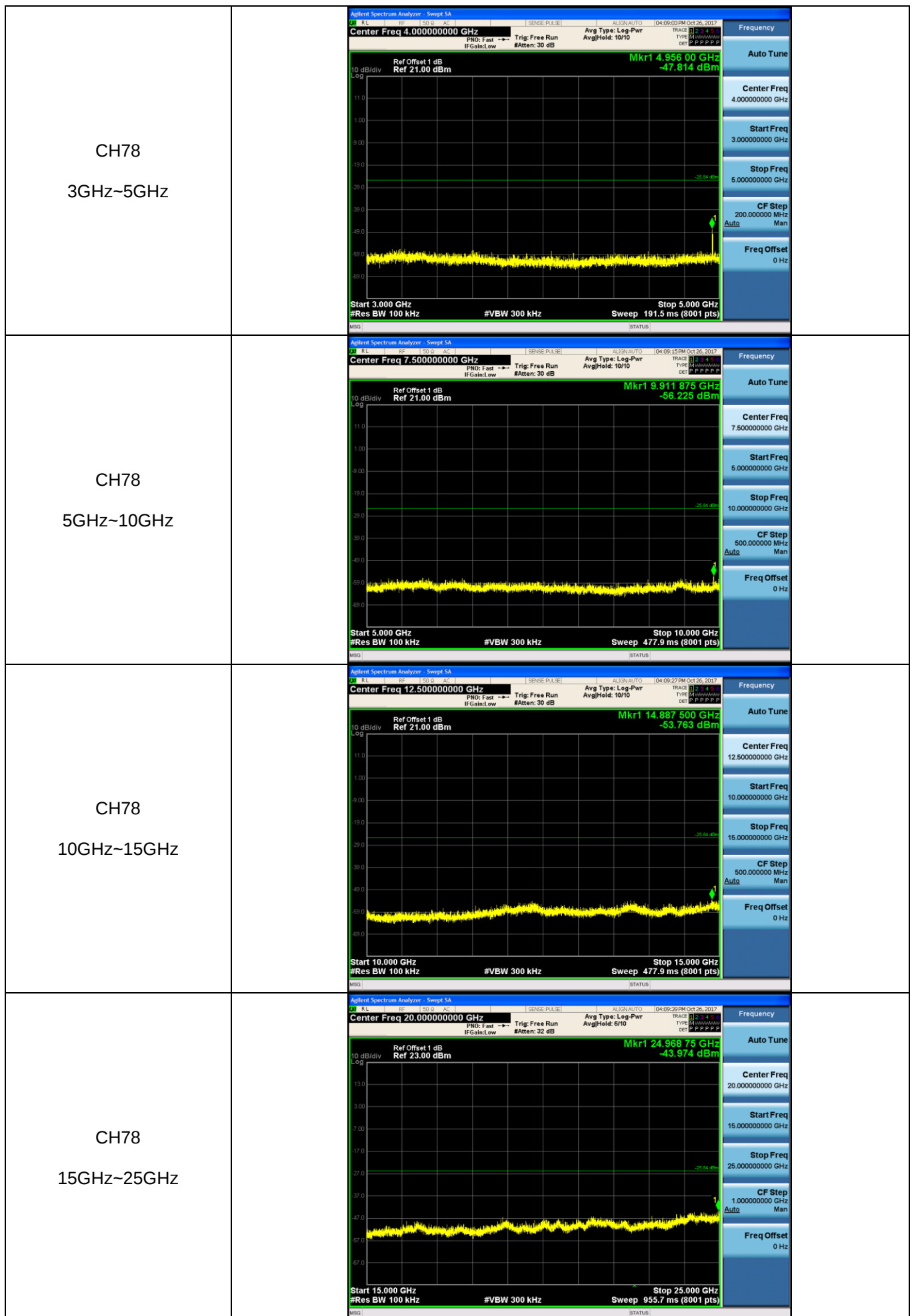




Test Item:	SE	Modulation type:	8DPSK
CH00 30MHz~3GHz			
CH00 3GHz~5GHz			
CH00 5GHz~10GHz			







5.11. Spurious Emissions (radiated)

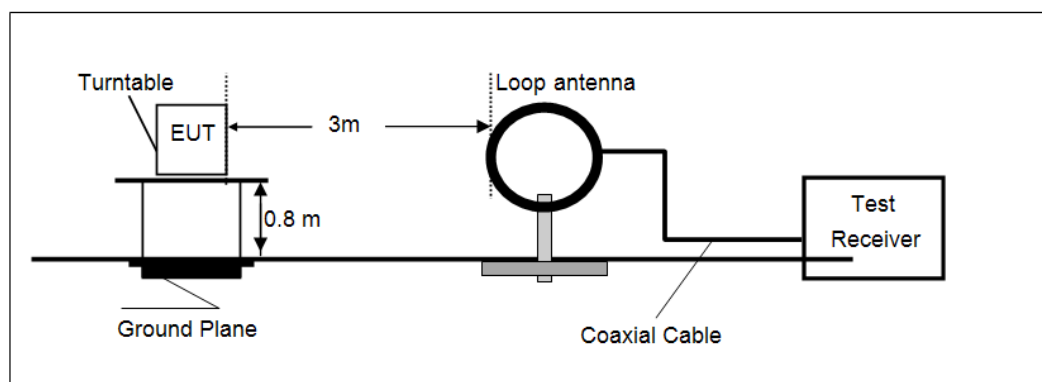
LIMIT

FCC CFR Title 47 Part 15 Subpart C Section 15.209

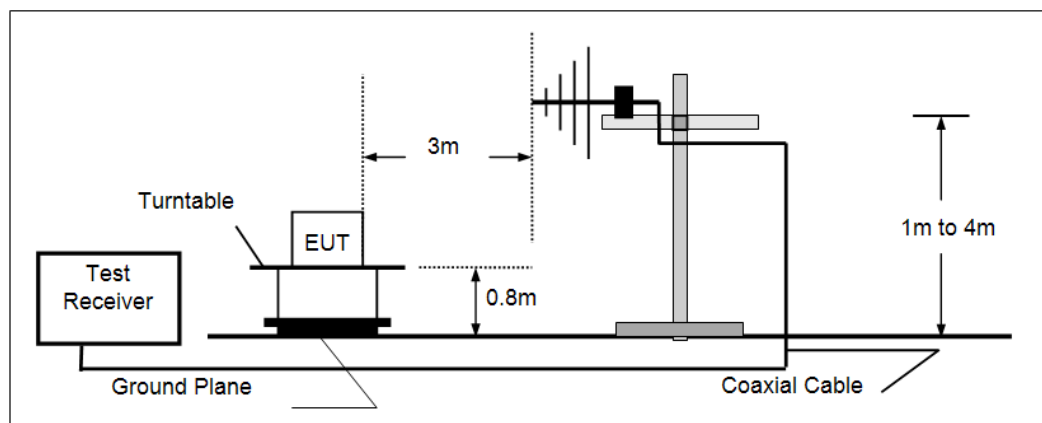
Frequency	Limit (dBuV/m @3m)	Value
30 MHz ~ 88 MHz	40.00	Quasi-peak
88 MHz ~ 216 MHz	43.50	Quasi-peak
216 MHz ~ 960 MHz	46.00	Quasi-peak
960 MHz ~ 1 GHz	54.00	Quasi-peak
Above 1 GHz	54.00	Average
	74.00	Peak

TEST CONFIGURATION

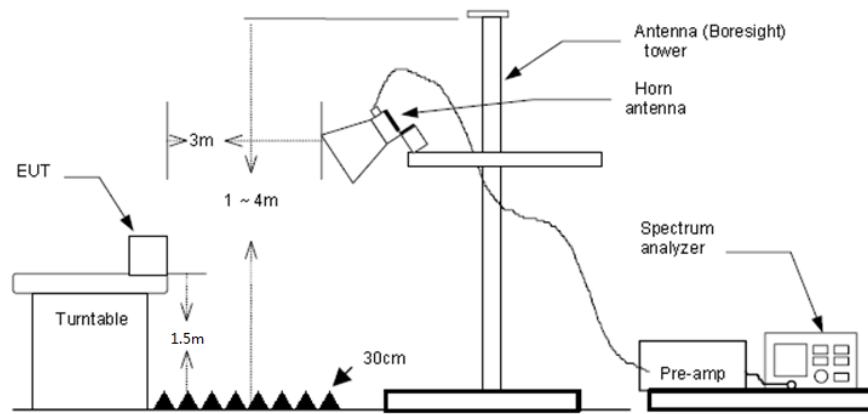
- Below 30 MHz



- 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 too weak instrument of signal is unable to test.

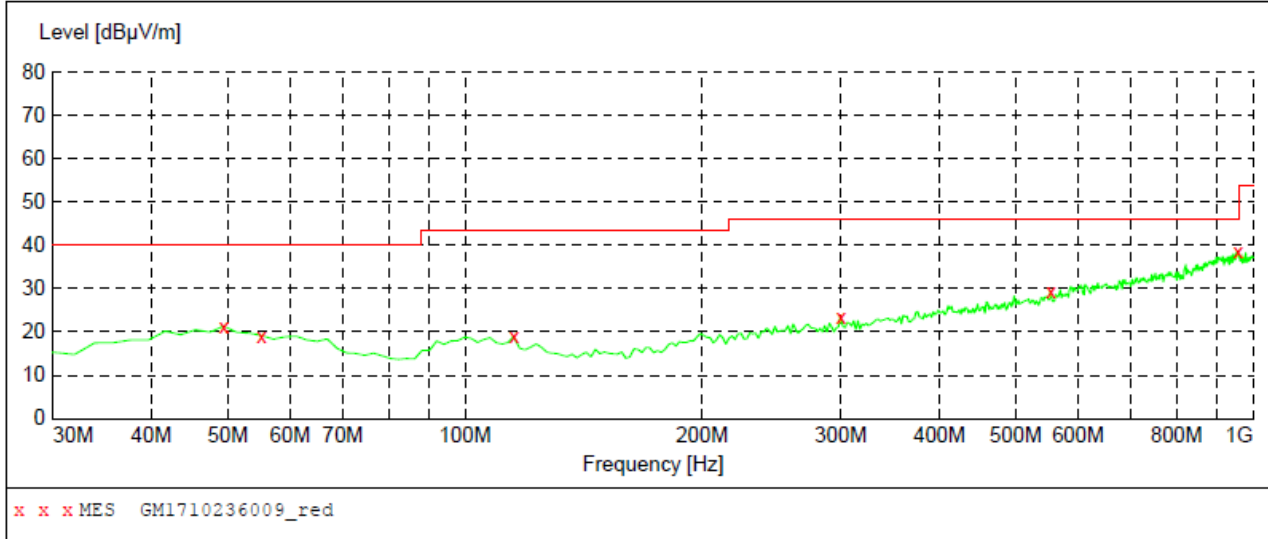
➤ 9 kHz ~ 30 MHz

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:

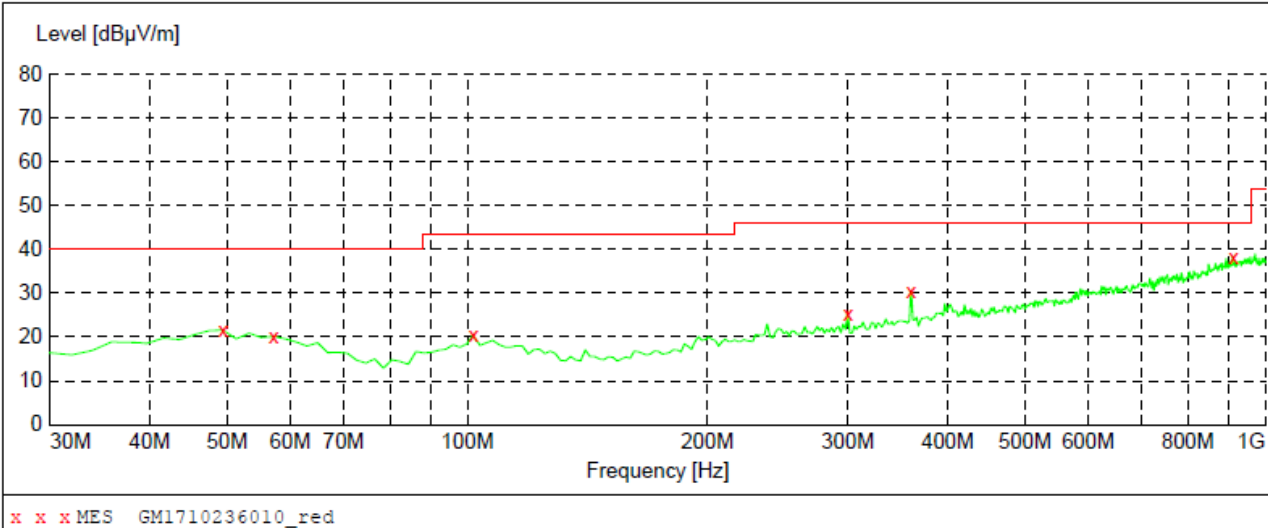
Vertical



Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
49.400000	21.30	-8.7	40.0	18.7	QP	100.0	299.00	VERTICAL
55.220000	19.10	-9.2	40.0	20.9	QP	100.0	338.00	VERTICAL
115.360000	18.90	-11.6	43.5	24.6	QP	100.0	242.00	VERTICAL
299.660000	23.50	-7.3	46.0	22.5	QP	100.0	50.00	VERTICAL
553.800000	29.20	-0.7	46.0	16.8	QP	100.0	203.00	VERTICAL
957.320000	38.60	7.3	46.0	7.4	QP	100.0	326.00	VERTICAL

Polarization:

Horizontal



Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
49.400000	21.60	-8.7	40.0	18.4	QP	100.0	27.00	HORIZONTAL
57.160000	20.10	-9.4	40.0	19.9	QP	300.0	127.00	HORIZONTAL
101.780000	20.40	-10.5	43.5	23.1	QP	100.0	353.00	HORIZONTAL
299.660000	25.30	-7.3	46.0	20.7	QP	100.0	177.00	HORIZONTAL
359.800000	30.50	-5.6	46.0	15.5	QP	100.0	0.00	HORIZONTAL
910.760000	38.40	6.9	46.0	7.6	QP	300.0	0.00	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
1483.73	47.88	25.82	5.24	36.57	42.37	74.00	-31.63	Vertical	Peak
3041.64	35.89	28.68	7.53	38.22	33.88	74.00	-40.12	Vertical	Peak
4501.49	33.19	30.70	9.30	37.39	35.80	74.00	-38.20	Vertical	Peak
6544.35	32.98	34.09	11.26	35.35	42.98	74.00	-31.02	Vertical	Peak
1495.10	43.06	25.80	5.27	36.58	37.55	74.00	-36.45	Horizontal	Peak
2097.51	42.70	26.69	6.35	37.32	38.42	74.00	-35.58	Horizontal	Peak
3579.82	34.98	29.24	8.24	38.30	34.16	74.00	-39.84	Horizontal	Peak
4946.07	39.93	31.45	9.63	36.55	44.46	74.00	-29.54	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
2086.86	41.65	26.65	6.34	37.32	37.32	74.00	-36.68	Vertical	Peak
3815.03	34.84	29.62	8.52	38.22	34.76	74.00	-39.24	Vertical	Peak
5574.67	32.88	31.83	10.25	35.99	38.97	74.00	-35.03	Vertical	Peak
7566.25	31.65	36.17	12.61	34.95	45.48	74.00	-28.52	Vertical	Peak
2092.18	44.31	26.67	6.35	37.32	40.01	74.00	-33.99	Horizontal	Peak
2972.75	38.10	28.57	7.47	38.25	35.89	74.00	-38.11	Horizontal	Peak
4933.50	41.82	31.43	9.63	36.59	46.29	74.00	-27.71	Horizontal	Peak
7117.84	32.03	35.71	11.86	34.96	44.64	74.00	-29.36	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
2092.18	47.45	26.67	6.35	37.32	43.15	74.00	-30.85	Vertical	Peak
3200.50	38.22	28.80	7.72	38.20	36.54	74.00	-37.46	Vertical	Peak
4958.68	41.19	31.46	9.64	36.52	45.77	74.00	-28.23	Vertical	Peak
7394.88	31.49	36.30	12.06	34.83	45.02	74.00	-28.98	Vertical	Peak
2092.18	41.81	26.67	6.35	37.32	37.51	74.00	-36.49	Horizontal	Peak
4343.90	33.32	30.33	9.08	37.59	35.14	74.00	-38.86	Horizontal	Peak
5806.41	32.30	32.11	10.59	35.32	39.68	74.00	-34.32	Horizontal	Peak
7900.86	32.49	36.70	12.78	34.80	47.17	74.00	-26.83	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.

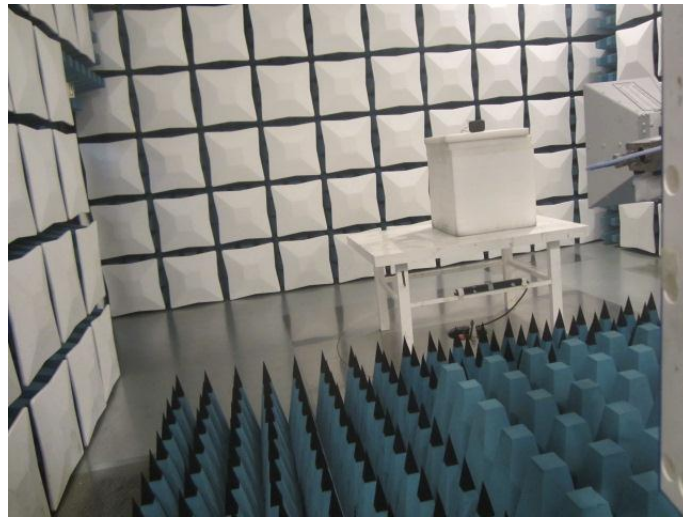
6. TEST SETUP PHOTOS

Conducted Emissions (AC Mains)



Radiated Emissions





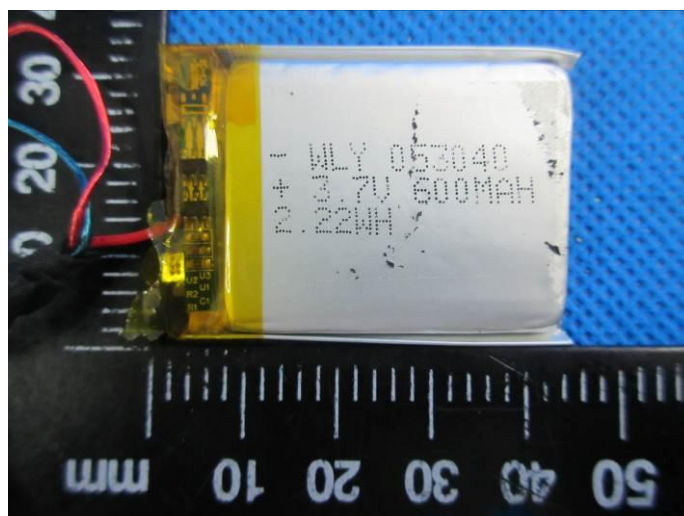
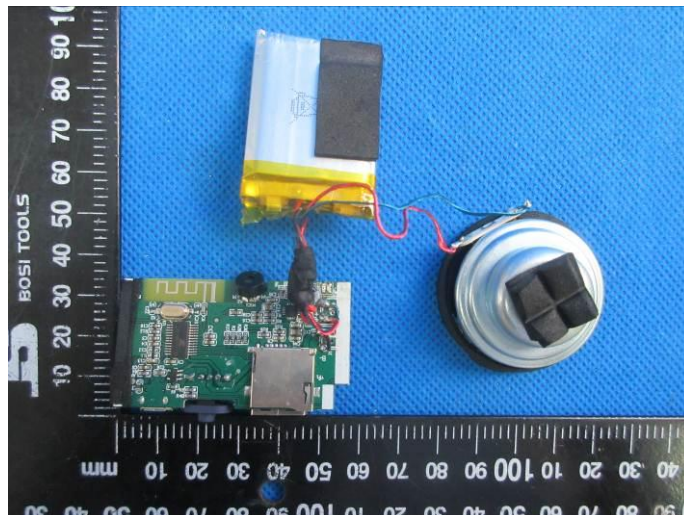
7. EXTERANAL AND INTERNAL PHOTOS

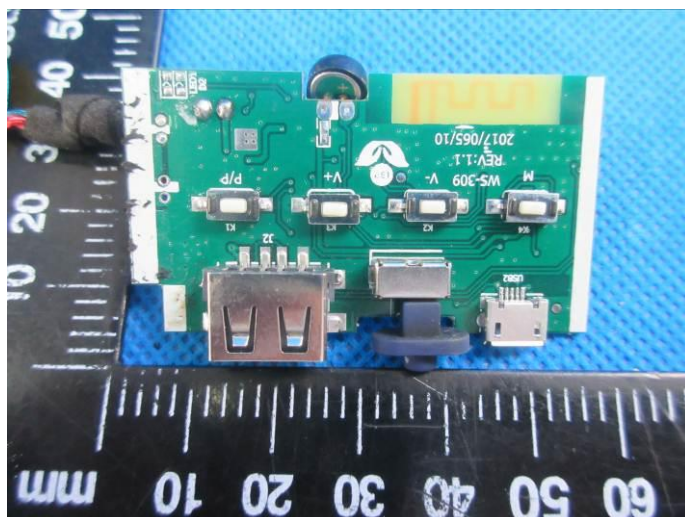
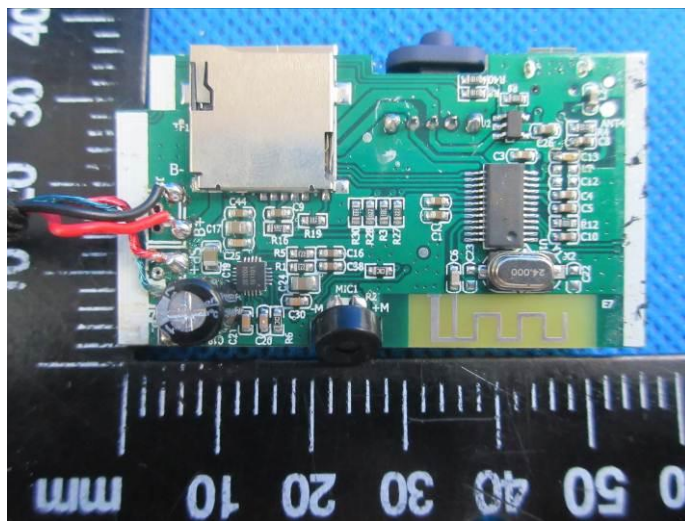
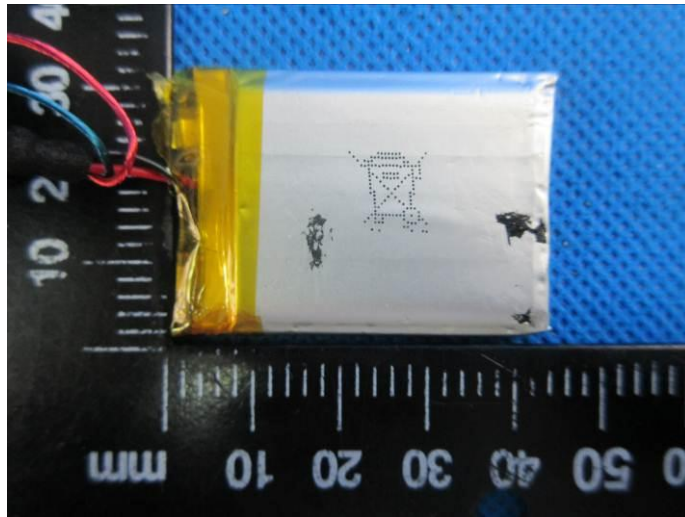
EXTERANAL PHOTOS

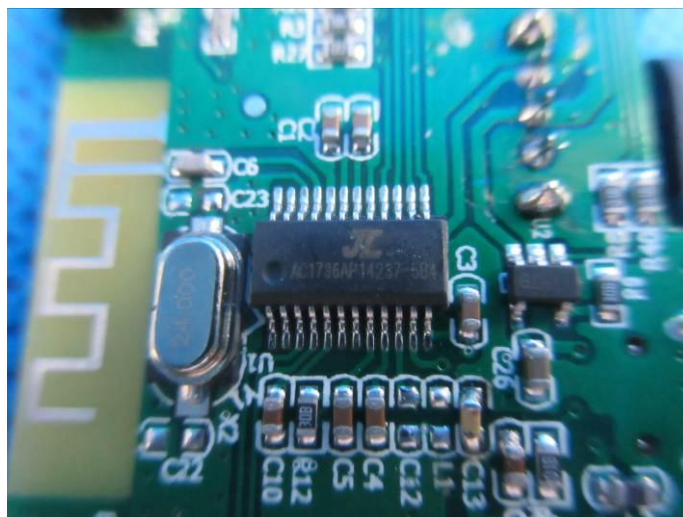




INTERNAL PHOTOS







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