



RF TEST REPORT

Product Name: Access Point

Model Name: ITS867216A

FCC ID: PQC-867216A

Issued For : Philips Medical Systems North America Co.

3000 Minuteman Road Andover, MA 01810-1099 USA

Issued By : Shenzhen LGT Test Service Co., Ltd.

Room 205, Building 13, Zone B, Chen Hsiong Industrial Park,
No.177 Renmin West Road, Jinsha Community, Kengzi
Street, Pingshan New District, Shenzhen, China

Report Number: LGT22K037RF01

Sample Received Date: Nov. 14, 2022

Date of Tested: Nov. 14, 2022 – Dec. 06, 2022

Date of Issue: Dec. 06, 2022

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TEST REPORT CERTIFICATION

Applicant Philips Medical Systems North America Co.
Address 3000 Minuteman Road Andover, MA 01810-1099 USA

Manufacturer RTX A/S
Address Stroemmen 6 DK-9400 Noerresundby Denmark

Product Name Access Point
Trademark PHILIPS
Model Name ITS867216A
Sample Status: Normal

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
47 CFR FCC Part 95H 47 CFR FCC Part 27 ANSI C63.26:2015	PASS

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Technical Director





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Revision History

Rev.	Issue Date	Revisions
00	Dec. 06, 2022	Initial Issue



1. SUMMARY OF TEST

47 CFR FCC Part 95H 47 CFR FCC Part 27			
Range Of Measurements	Specification Reference	Judgment	Remark
RF power output	Part 2.1046(a) Part 27.50(e)	PASS	--
Transmitter Fundamental Fieldstrength	Part 95.2369(b)	PASS	--
Occupied Bandwidth	Part 2.1049	PASS	--
Conducted Spurious & Band Edge Emission	Part 27.53(j)	PASS	--
Radiated Emission	Part 27.53(j)	PASS	--
Radiated Emission & field strength	Part 95.2369 & 95.2379	PASS	--
Frequency Stability	Part 95.2565 & Part 27.54	PASS	--



1.1 TEST FACTORY

Company Name:	Shenzhen LGT Test Service Co., Ltd.
Address:	Room 205, Building 13, Zone B, Chen Hsong Industrial Park, No.177 Renmin West Road, Jinsha Community, Kengzi Street, Pingshan New District, Shenzhen, China
Accreditation Certificate	A2LA Certificate No.: 6727.01
	FCC Registration No.: 746540
	CAB ID: CN0136

1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement $y \pm U$, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95 %.

Parameter	Uncertainty
Occupied Channel Bandwidth	$\pm 3.2 \%$
RF Output Power, Conducted	$\pm 0.71 \text{dB}$
Power Spectral Density, Conducted	$\pm 1.57 \text{ dB}$
Unwanted Emission, Conducted	$\pm 0.63 \text{dB}$
Conducted emission	$\pm 2.80 \text{dB}$
All Emissions, Radiated (0.009-30MHz)	$\pm 2.16 \text{dB}$
All Emissions, Radiated (30MHz-1GHz)	$\pm 4.40 \text{dB}$
All Emissions, Radiated (1GHz-18GHz)	$\pm 5.49 \text{dB}$
Temperature	$\pm 0.5^\circ\text{C}$
Humidity	$\pm 2\%$
Duty Cycle	$\pm 2.3\%$



2. GENERAL INFORMATION

2.1 TECHNICAL SPECIFICATIONS AND REGULATIONS

2.1.1 PRODUCT DESCRIPTION

A major technical description of EUT is described as following:

Product Name	Access Point
Trademark	PHILIPS
Model Name	ITS867216A
Series Model	N/A
Model Difference	N/A
Assigned frequency range	1390-1400 MHz 1427-1435 MHz
Antenna	Access Point: metal antenna Remote antenna: rod antenna
Antenna gain	Access Point ANT 1: 1 dBi Access Point ANT 2: 1 dBi Remote antenna ANT 1: 2 dBi Remote antenna ANT 2: 2 dBi
Power Input	DC 48V from LAN Port
Extreme Vol. Limits	AC 108V to AC 132V (Nominal 120V for PoE switch input)
Operation temperature	0°C to +55°C
Test extreme Temp. Tolerance	-30°C to +50°C
Hardware version number	N/A
Software version number	N/A

Note:

1. The antenna information refer the manufacturer provide report, applicable only to the tested sample identified in the report.
2. Antenna 1 and Antenna 2 do not support simultaneous transmission.



2.1.2 Channel list

Mode	Channel Number	95	27	Modulation type
		1395-1400	1390-1395	
SH 1.0 WMTS	1	1395.8977	/	GFSK
	2	1397.4970	/	
	3	1399.0963	/	
	4	1427.8979	/	
	5	1429.4972	/	
	6	1431.0965	/	
	7	1430.2410	/	
SH 2.0 WMTS	14	1396.636	/	DBPSK
	15	1398.364	/	
	16	1428.513	/	
	17	1430.241	/	
SH 2.0 E-WMTS	11	/	1391.452	DQPSK
	12	/	1393.180	
	13	/	1394.908	
	18	1431.969	/	
	19	/	1433.697	

2.1.3 RELATED SUBMITTAL(S) / GRANT (S)

This submittal(s) (test report) is intended for filing to comply with the 47 CFR Part 2, 27.

2.1.4 SPECIAL ACCESSORIES

The charger, antenna supplied by the applicant were used as accessories and being tested with eut intended for fcc grant together.

2.1.5 EUT CONFIGURATION

The EUT configuration for testing is installed on RF field strength measurement to meet the Commission's requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

2.1.6 EUT EXERCISE

The Transmitter was operated in the maximum output power mode through Communication Tester. The TX frequency was fixed which was for the purpose of the measurements.



2.1.7 DESCRIPTION OF THE TEST MODES

SH 1.0 WMTS		SH 2.0 WMTS		SH 2.0 E-WMTS	
Channel	Frequency	Channel	Frequency	Channel	Frequency
1	1395.8977	14	1396.636	11	1391.452
4	1427.8979	16	1428.513	13	1394.908
6	1431.0965	17	1430.241	18	1431.969
/	/	/	/	19	1433.697

Note: Only the worst modulation GFSK, DBPSK, D8PSK was tested and recorded in this report.

2.1.8 TEST SOFTWARE AND POWER LEVEL

During testing channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level.

Test software Version	Test program: 1.4GHz	
CMD	SH 1.0 WMTS	Default
	SH 2.0 WMTS	Default
	SH 2.0 E-WMTS	Default



2.1.9 DESCRIPTION OF necessary accessories AND support units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Accessories Equipment

Description	Manufacturer	Model	S/N	Rating
coaxial and unshielded twisted pair (UTP) cable	N/A	N/A	N/A	74FT

Auxiliary Equipment

Description	Manufacturer	Model	S/N	Rating
Laptop	HUAWEI	HKF-16	N/A	N/A
8-Poxt Gigabit Desktop Switch with 4-Port PoE	TP-LINK	TL-SG1008P	N/A	48V==1.25A
Adapter	TP-LNK	T480125-2-DT	N/A	Input: 100-240V-50/60Hz 1.4A Output: 48V==1.25A
Smart-hopping Access Point Controller	Philips	ITS867214A	N/A	Input: 100-240V-50/60Hz 1.5A
USB-A to USB-B cable	N/A	N/A	N/A	1.7m, shielded
RJ45 cable	N/A	N/A	N/A	2m
RJ45 cable	N/A	N/A	N/A	1m
RJ45 cable	N/A	N/A	N/A	1m

Note:

- (1) For detachable type I/O cable should be specified the length in cm in «Length» column.
- (2) "YES" is means "with core"; "NO" is means "without core".



2.1.11 MEASUREMENT INSTRUMENTS

Conducted Emission					
Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Until
EMI Test Receiver	R&S	ESU8	100372	2022.04.12	2023.04.11
LISN	COM-POWER	LI-115	02032	2022.04.13	2023.04.12
LISN	SCHWARZBECK	NNLK 8121	00847	2022.08.19	2023.08.18
CE Cable	N.A	C01	N.A	2022.05.05	2023.05.04
ISN	FCC	T4-02	91317	2022.06.08	2023.06.07
ISN	SCHWARZBECK	NTFM 8158	00303	2022.08.19	2023.08.18
Transient Limiter	CYBERTEK	EM5010A	E2250100049	2022.08.19	2023.08.18
Temperature & Humidity	KTJ	TA218B	N.A	2022.05.05	2023.05.04
Testing Software	EMC-I_V1.4.0.3_SKET				

RF Radiated Test equipment					
Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Until
EMI Test Receiver	R&S	ESU8	100372	2022.04.12	2023.04.11
Active loop Antenna	R&S	HFH2-Z2	POS871398181	2022.06.02	2024.06.01
Spectrum Analyzer	Kesight	N9010B	MY60242508	2022.04.29	2023.04.28
Bilog Antenna	SCHAFFNER	CBL6112B	2705	2022.06.05	2024.06.04
Horn Antenna	Schwarzbeck	3115	10SL0060	2022.06.02	2024.06.01
Pre-amplifier(0.1M -3GHz)	HP	8447D	2727A05655	2022.04.11	2023.04.10
Pre-amplifier(1-26 .5G)	Agilent	8449B	3008A4722	2022.04.13	2023.04.12
RE Cable (9K-1G)	N.A	R01	N.A	2022.05.05	2023.05.04
RE Cable (1-26G)	N.A	R02	N.A	2022.05.05	2023.05.04
Wireless Communications Test Set	R&S	CMW 500	137737	2022.04.29	2023.04.28
Temperature & Humidity	KTJ	TA218B	N.A	2022.05.05	2023.05.04
Testing Software	EMC-I_V1.4.0.3_SKET				

RF Conducted Test equipment					
Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Until
Signal Analyzer	Keysight	N9010B	MY60242508	2022.04.29	2023.04.28
RF Automatic Test system	MW	MW200-RFCB	MW220322LG	2022.04.29	2023.04.28
MXG Vector Signal Generator	Keysight	N5182B	MY59100717	2022.06.02	2023.06.01
Temperature & Humidity	KTJ	TA218B	N.A	2022.05.05	2023.05.04
Temperature& Humidity test chamber	AISRY	LX-1000L	171200018	2022.05.10	2023.05.09
Attenuator	eastsheep	90db	N.A	2022.04.29	2023.04.28
Router	WAVLINK	WL-WN575A2	WL1512260336	N.C.R	N.C.R
Router	TP-LINK	TL-WR885N	1125074010735	N.C.R	N.C.R
Testing Software	MTS8310_V2.0.0.0_MW				



3. RF POWER OUTPUT (Part 27)

3.1 LIMIT

Frequency Band (MHz)	Maximum peak output power, EIRP	
	W	dBm
1390.0 – 1392.0	4	36
1392.0 – 1395.0	1	30
1432.0 – 1435.0	4	36

3.2 MEASUREMENT METHOD

A test PC was used to establish communication with the EUT. Its parameters were set to force the EUT transmitting at maximum output power. The measured power in the radio frequency on the transmitter output terminals shall be reported.

Configuration follows C63.26:2015 Section 5.2.

3.3 TEST PROCEDURES

1. The EUT transmitter output port was connected to spectrum analyzer through an attenuator.
2. Set EUT at maximum power level through the test PC.
3. Select lowest/middle/highest channels for each band and different modulation.
4. Measure and record the reading from the spectrum analyzer.

5. EIRP = Reading + Ant Gain



3.5 TEST RESULTS

SH 2.0 E-WMTS

Modulation Type	Test Frequency (MHz)	Peak Output Power (dBm)	Ant Gain (dBi)	Peak EIRP (dBm)	Peak EIRP (W)	Limits (W)	Verdict
D8PSK	1391.452	13.65	1.00	14.65	0.029	4	PASS
	1393.180	13.61	1.00	14.61	0.029	1	PASS
	1394.908	13.93	1.00	14.93	0.031	1	PASS
	1433.697	13.89	1.00	14.89	0.031	4	PASS
DBPSK	1391.452	14.01	1.00	15.01	0.032	4	PASS
	1393.180	13.96	1.00	14.96	0.031	1	PASS
	1394.908	14.26	1.00	15.26	0.034	1	PASS
	1433.697	14.19	1.00	15.19	0.033	4	PASS



4. OCCUPIED BANDWIDTH (PART 27 & 95)

4.1 LIMIT

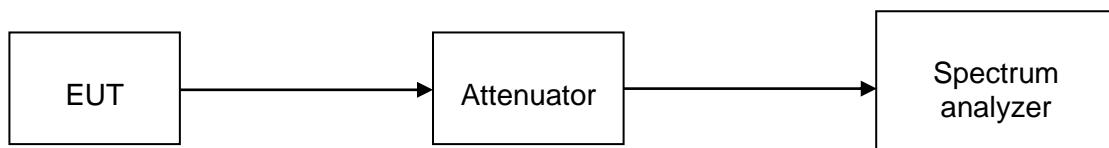
Reported only, no limit applied.

4.2 MEASUREMENT METHOD

1. The occupied bandwidth is the width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5% of the total mean transmitted power.
2. The 26 db emission bandwidth is defined as the frequency range between two points, one above and one below the carrier frequency, at which the spectral density of the emission is attenuated 26 db below the maximum in-band spectral density of the modulated signal. spectral density (power per unit bandwidth) is to be measured with a detector of resolution bandwidth equal to approximately 1.0% of the emission bandwidth.

Configuration follows C63.26:2015 Section 5.4.

4.3 TEST SETUP



4.4 TEST PROCEDURES

1. The testing follows C63.26:2015 Section 5.4.
2. The EUT transmitter output port was connected to spectrum analyzer through an attenuator.
3. Select lowest, middle, and highest channels for each band and different modulation.
4. Set the test probe and measure the Occupied Bandwidth of the spectrum analyzer.
5. Measure and record the Occupied Bandwidth from the Spectrum Analyzer.



4.5 TEST RESULTS

SH 1.0 WMTS

Test Frequency (MHz)	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)
1395.898	1.1389	1.2560
1397.497	1.1373	1.2590
1399.096	1.1284	1.2490
1427.898	1.1420	1.2590
1429.497	1.1349	1.2510
1431.097	1.1413	1.2610
1430.241	1.1463	1.2570

CH1



CH2





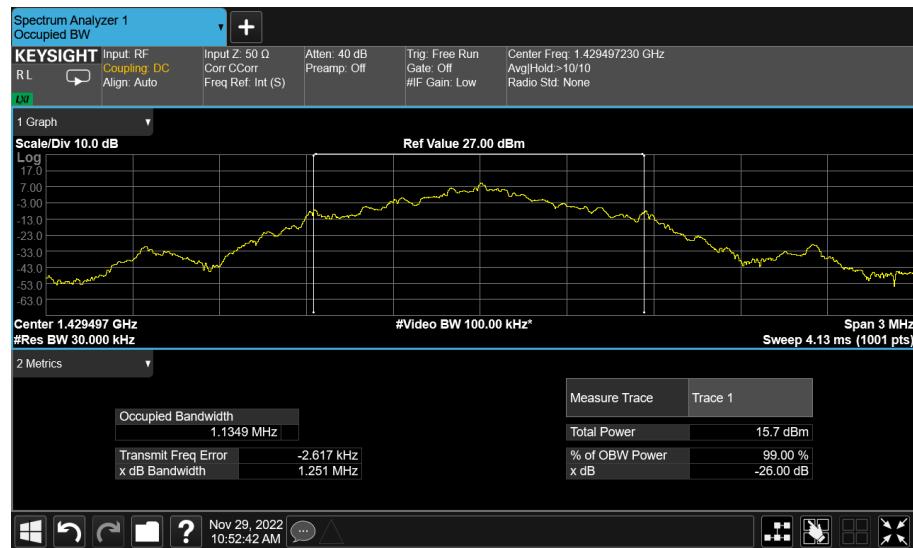
CH3



CH4



CH5





CH6



CH7





SH 2.0 WMTS

Modulation Type	Test Frequency (MHz)	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)
D8PSK	1396.636	1.4223	1.6920
	1398.364	1.4232	1.6940
	1428.513	1.4240	1.6930
	1430.241	1.4240	1.6930
DBPSK	1396.636	1.4359	1.6900
	1398.364	1.4357	1.6900
	1428.513	1.4358	1.6900
	1430.241	1.4349	1.6890

D8PSK
CH14



CH15





CH16



CH17

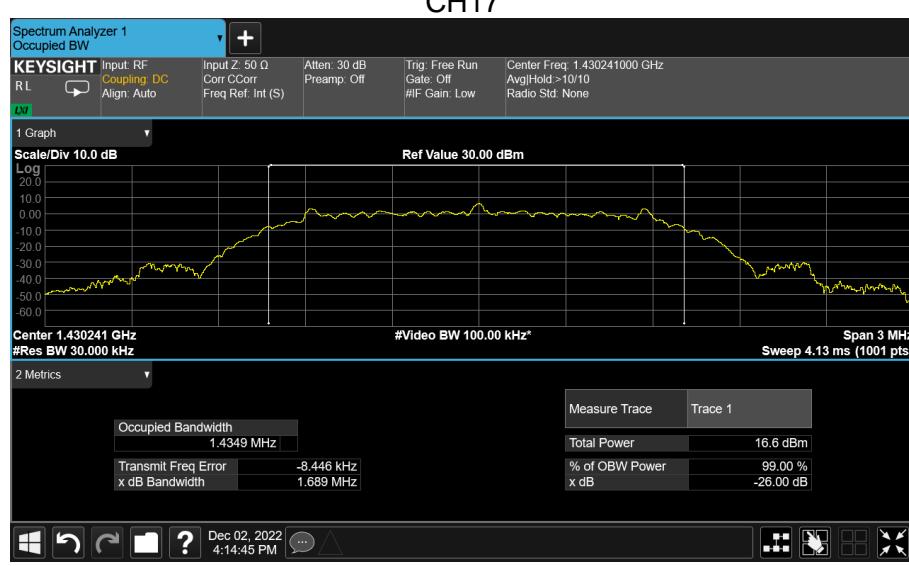
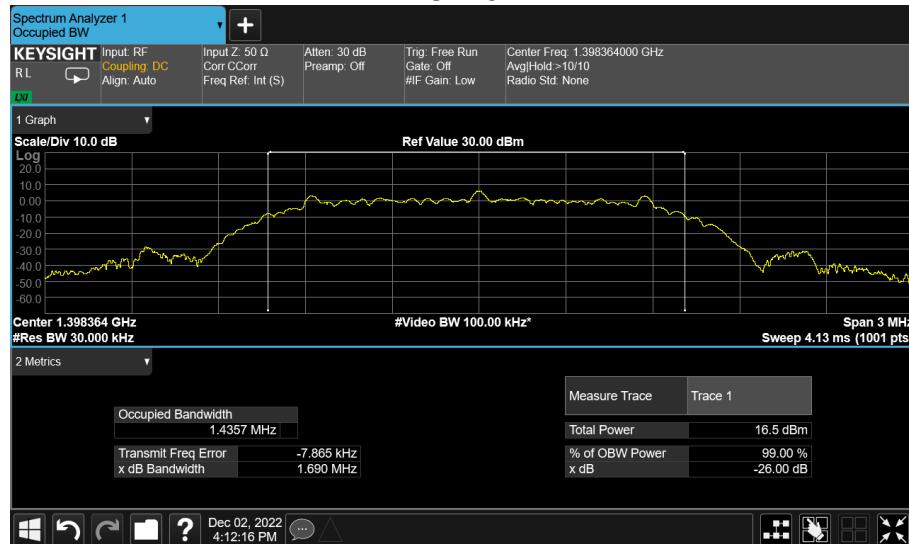


DBPSK CH14





CH15





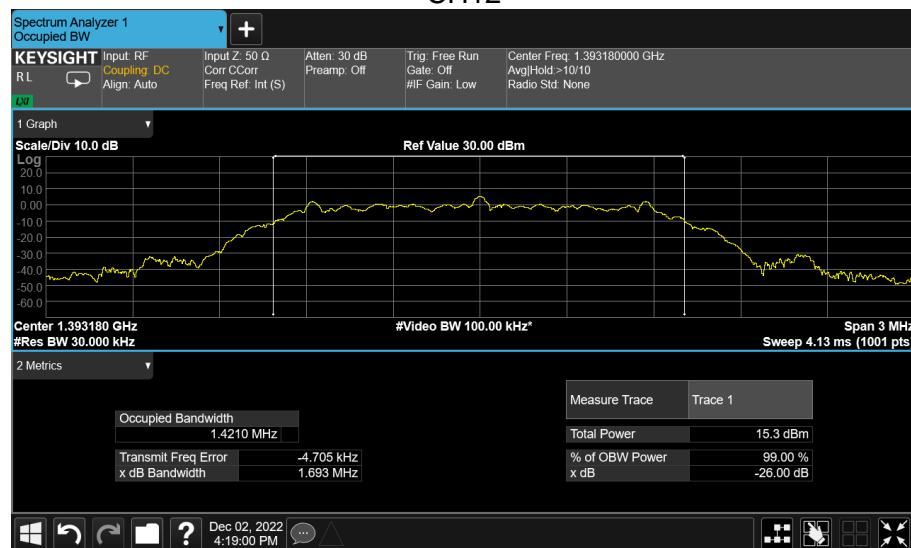
SH 2.0 E-WMTS

Modulation Type	Test Frequency (MHz)	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)
D8PSK	1391.452	1.4201	1.6870
	1393.180	1.4210	1.6930
	1394.908	1.4176	1.6910
	1431.969	1.4208	1.6910
	1433.697	1.4245	1.6920
DBPSK	1391.452	1.4376	1.6900
	1393.180	1.4358	1.6900
	1394.908	1.4374	1.6890
	1431.969	1.4365	1.6890
	1433.697	1.4371	1.6910

D8PSK
CH11

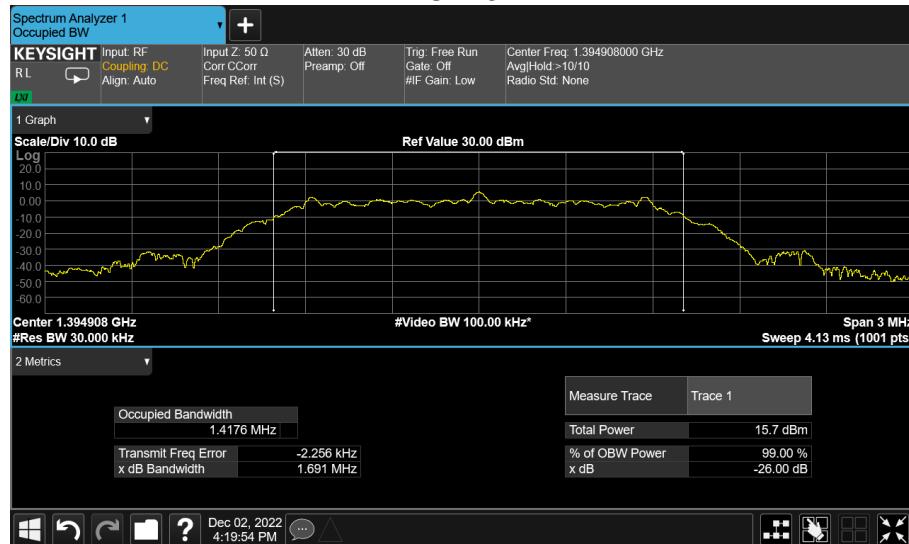


CH12





CH13



CH18

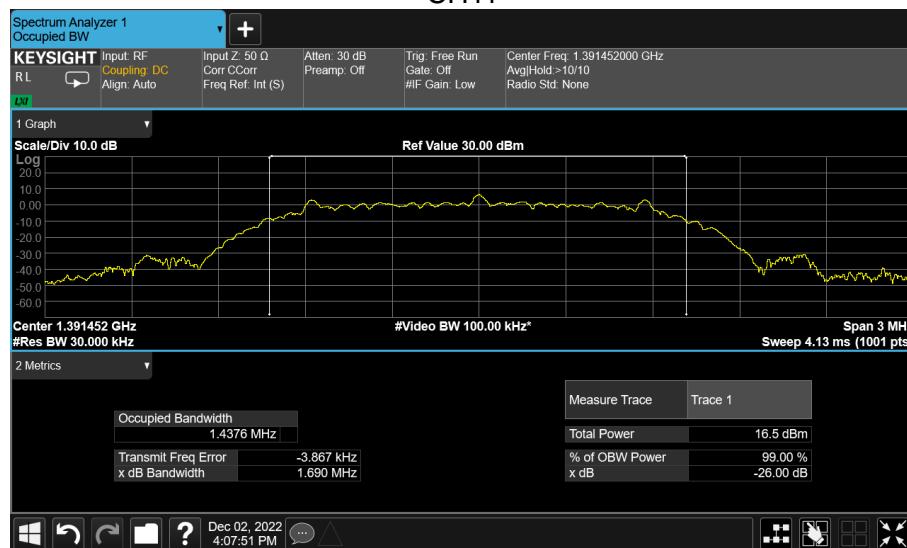


CH19

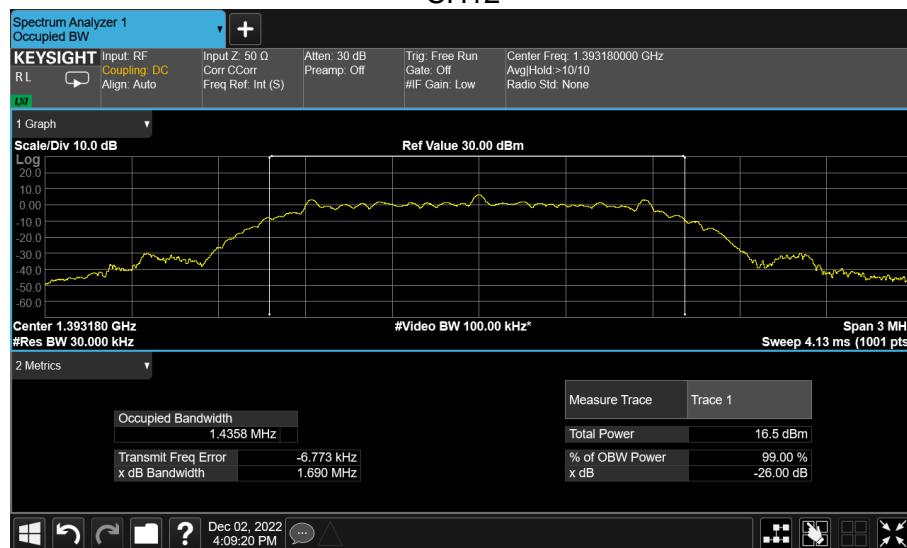




DBPSK CH11



CH12



CH13





CH18



CH19





5. CONDUCTED SPURIOUS EMISSION (PART 27 & 95)

5.1 LIMIT

According to FCC PART 27.53 (j)

- (1) For operations in the unpaired 1390-1392 MHz band and the paired 1392-1395 MHz and 1432-1435 MHz bands, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) by at least $43 + 10 \log (P)$ dB.
- (2) In the 1390-1395 MHz and 1432-1435 MHz bands, licensees are encouraged to take all reasonable steps to ensure that unwanted emission power does not exceed the following levels in the band 1400-1427 MHz:
 - (i) For stations of point-to-point systems in the fixed service: -45 dBW/27 MHz.
 - (ii) For stations in the mobile service: -60 dBW/27 MHz.

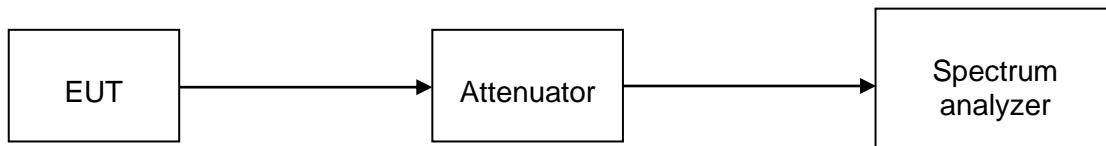
5.2 MEASUREMENT METHOD

1. §22.917(a)

Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater. However, in the 1 MHz bands immediately outside and adjacent to the channel blocks at 2305, 2310, 2315, 2320, 2345, 2350, 2355, and 2360 MHz, a resolution bandwidth of at least 1 percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e., 1 MHz). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

Configuration follows C63.26:2015 Section 5.7.

5.3 TEST SETUP



5.4 TEST PROCEDURES

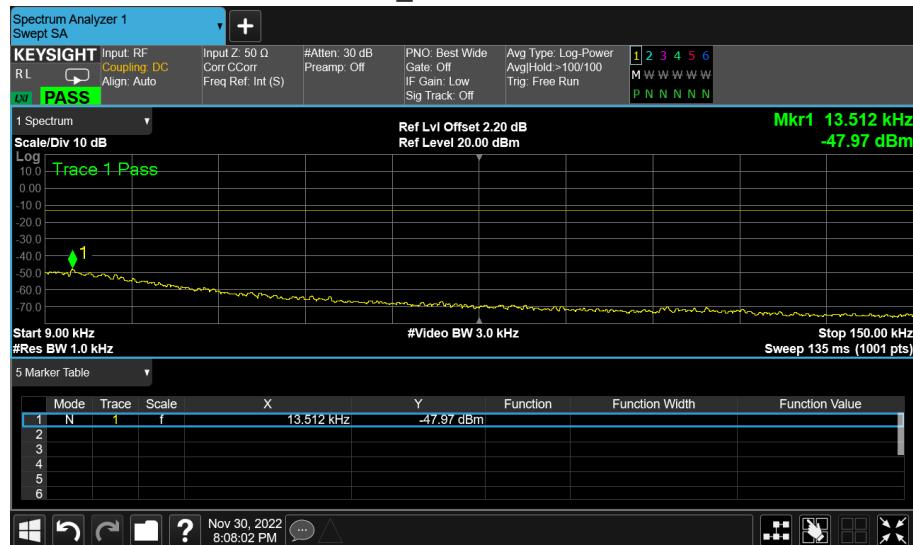
1. The testing follows C63.26:2015 Section 5.7.
2. The EUT transmitter output port was connected to spectrum analyzer through an attenuator.
3. The band edges of low and high channels for the highest RF powers were measured. Set RBW $\geq 1\% \text{ EBW}$ in the 1MHz band immediately outside and adjacent to the band edge.
4. Set spectrum analyzer with RMS/PEAK detector.
5. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
6. The limit line is derived from $43 + 10\log(P)$ dB below the transmitter power P(Watts)
$$= P(W) - [43 + 10\log(P)] \text{ (dB)}$$
$$= [30 + 10\log(P)] \text{ (dBm)} - [43 + 10\log(P)] \text{ (dB)}$$
$$= -13 \text{ dBm.}$$



5.5 TEST RESULTS

SH 1.0 WMTS_GFSK

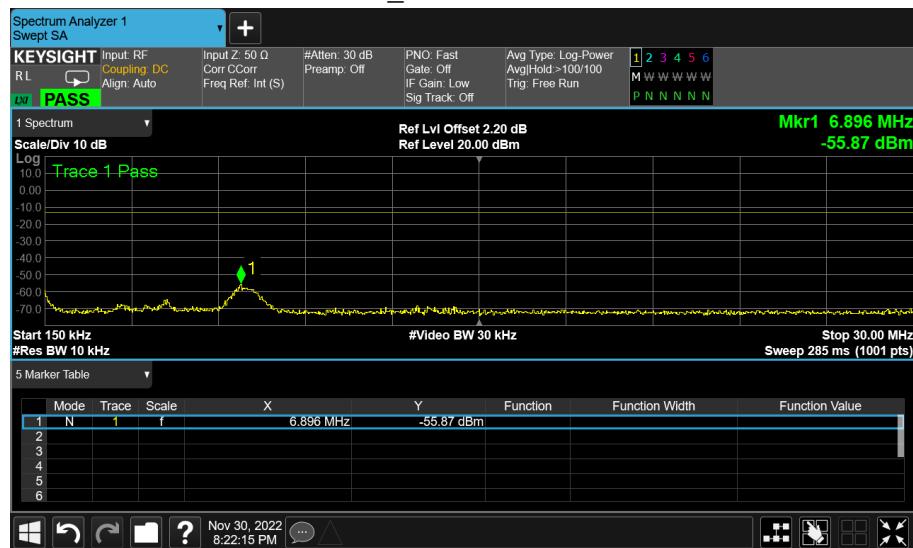
CH1_9kHz-150kHz



CH1_150kHz-30MHz

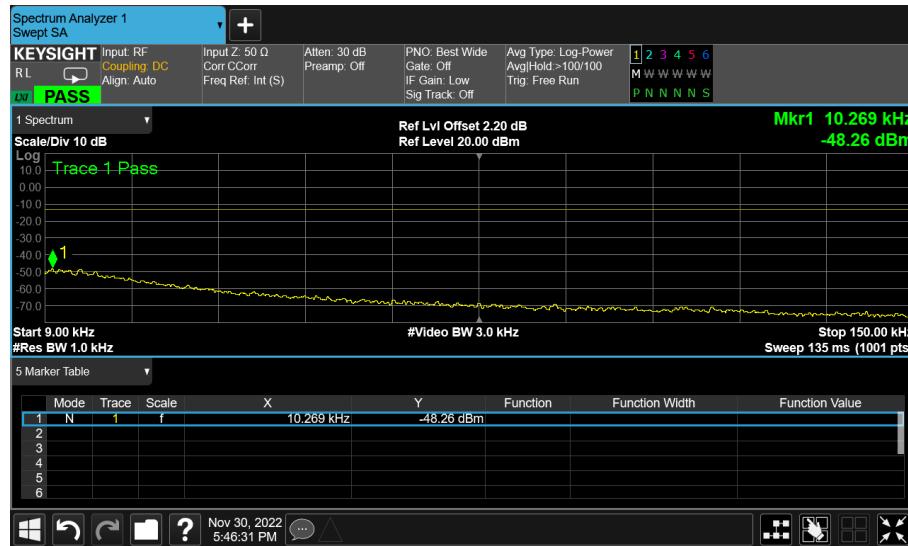


CH1_30MHz-15GHz

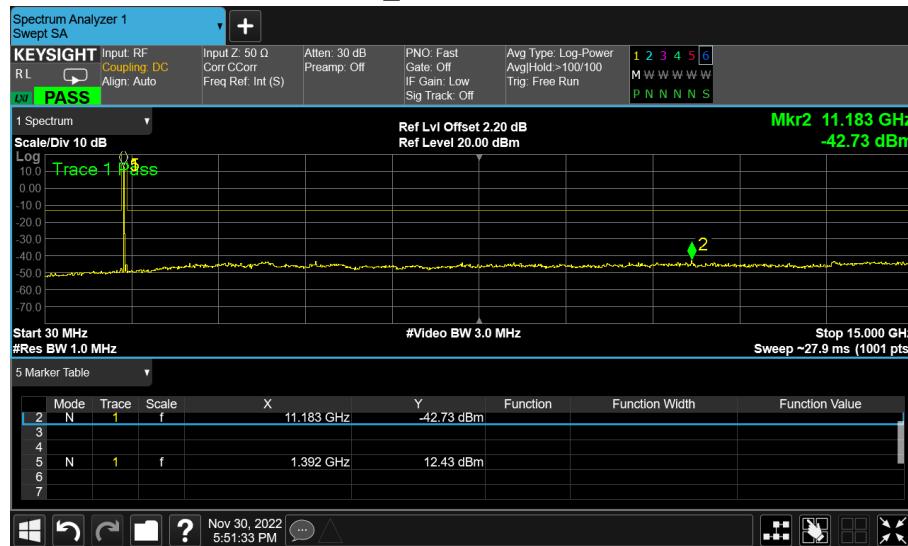




CH2_9kHz-150kHz



CH2_150kHz-30MHz

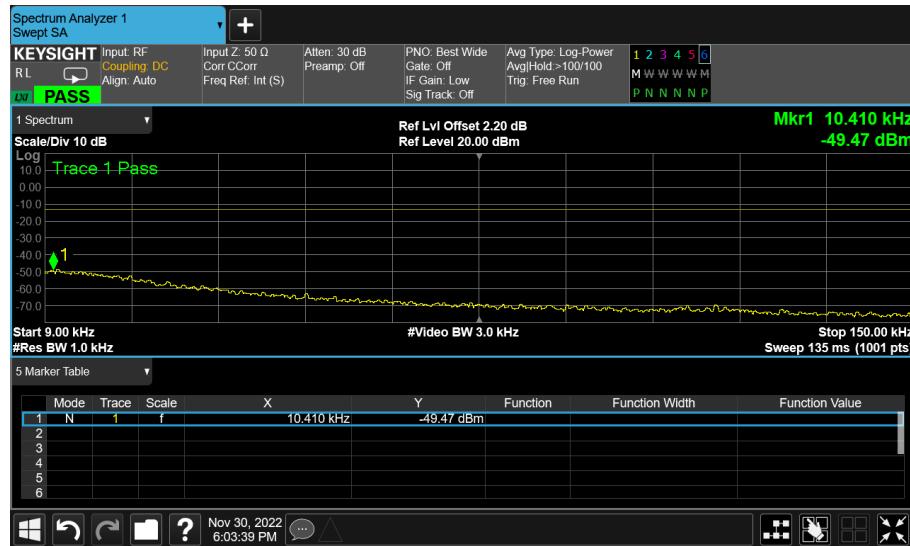


CH2_30MHz-15GHz

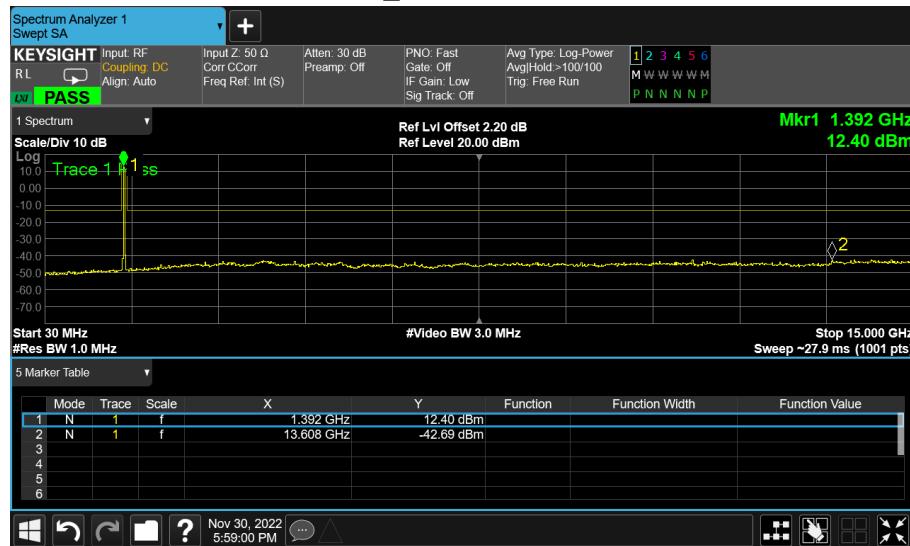




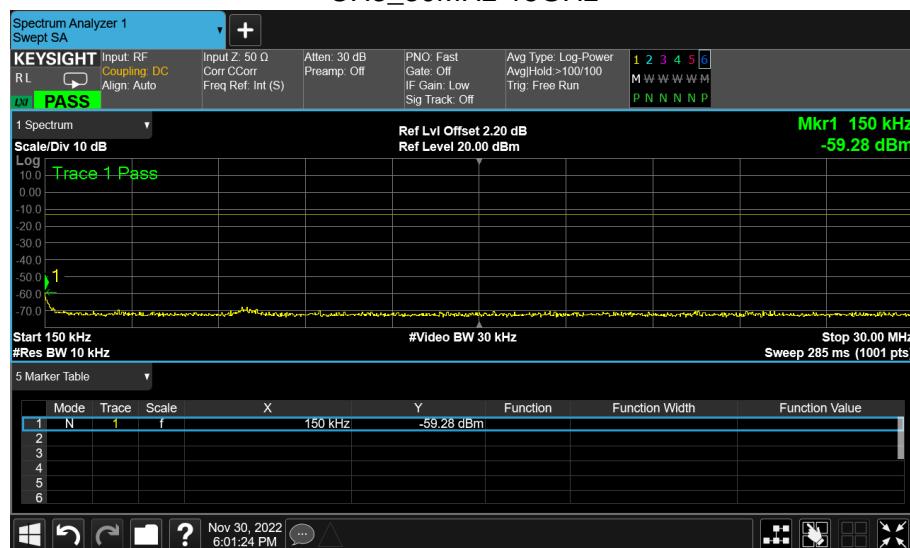
CH3_9kHz-150kHz



CH3_150kHz-30MHz

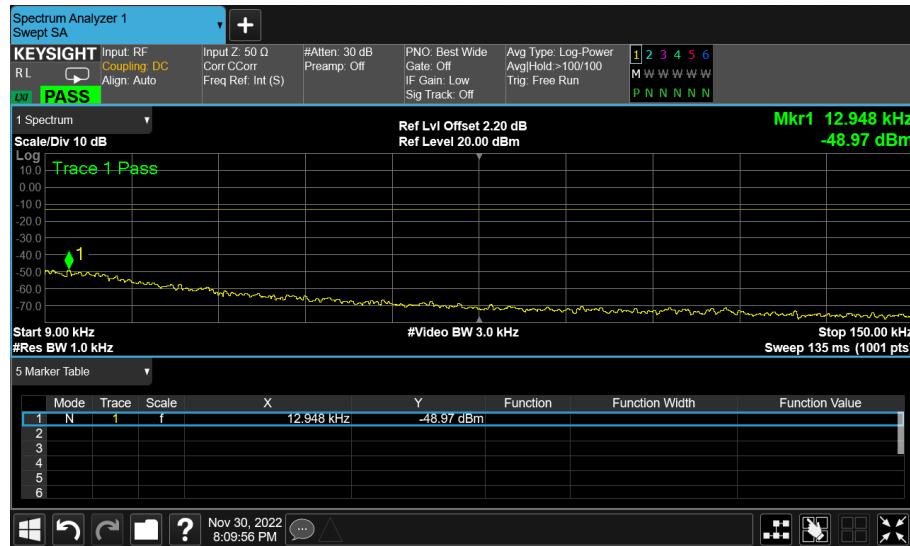


CH3_30MHz-15GHz

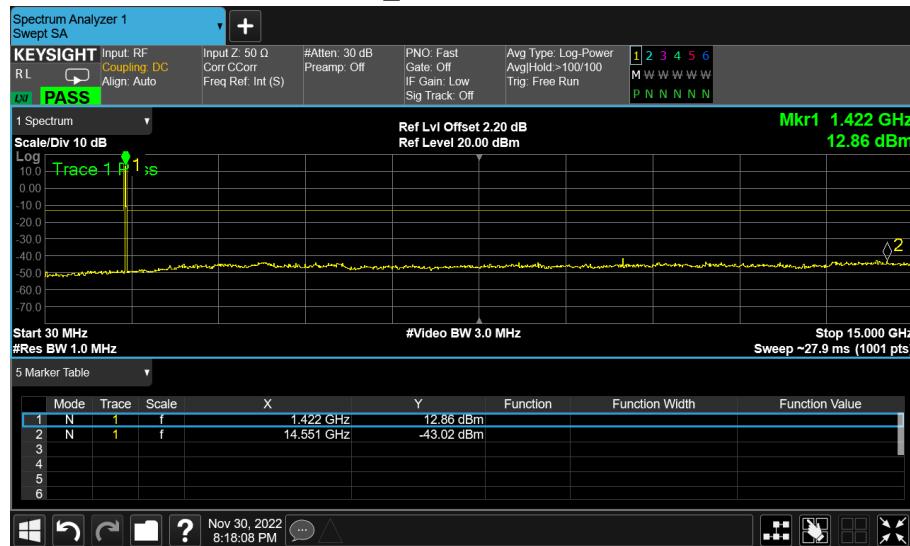




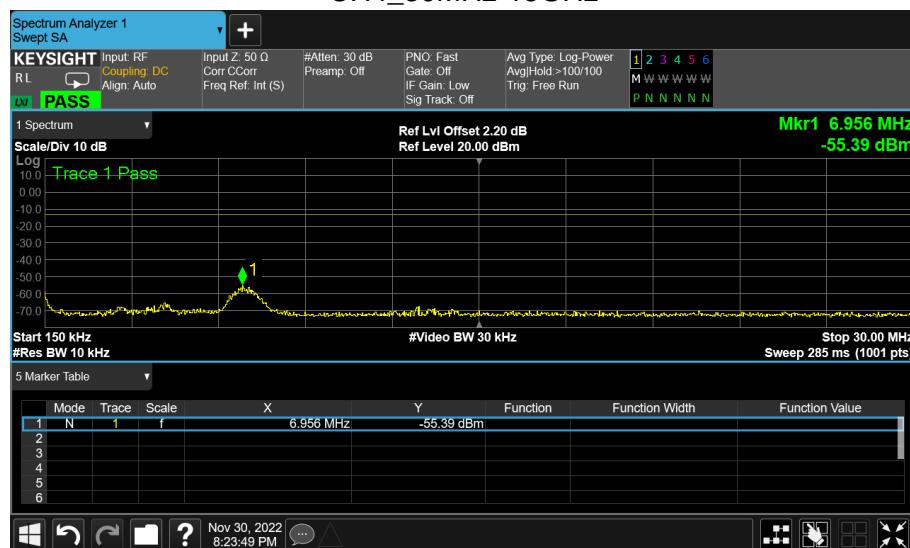
CH4_9kHz-150kHz



CH4_150kHz-30MHz

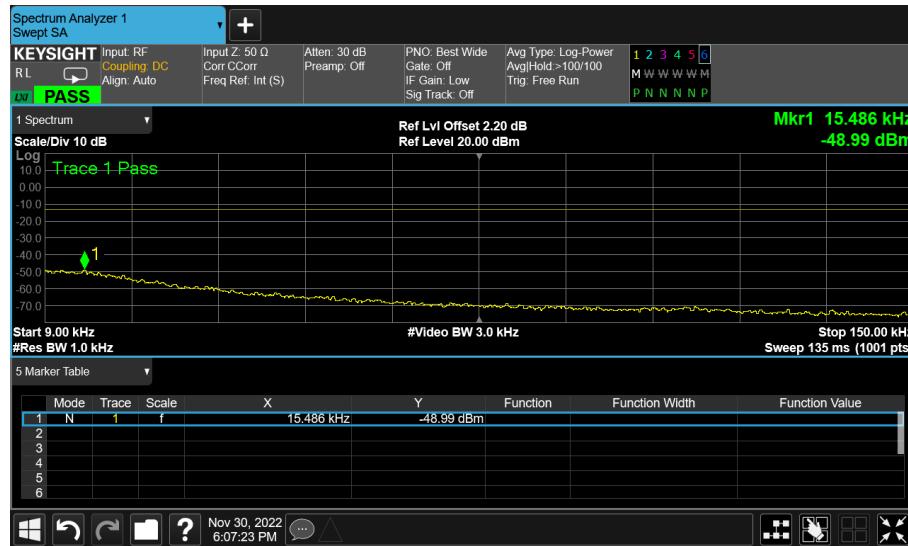


CH4_30MHz-15GHz





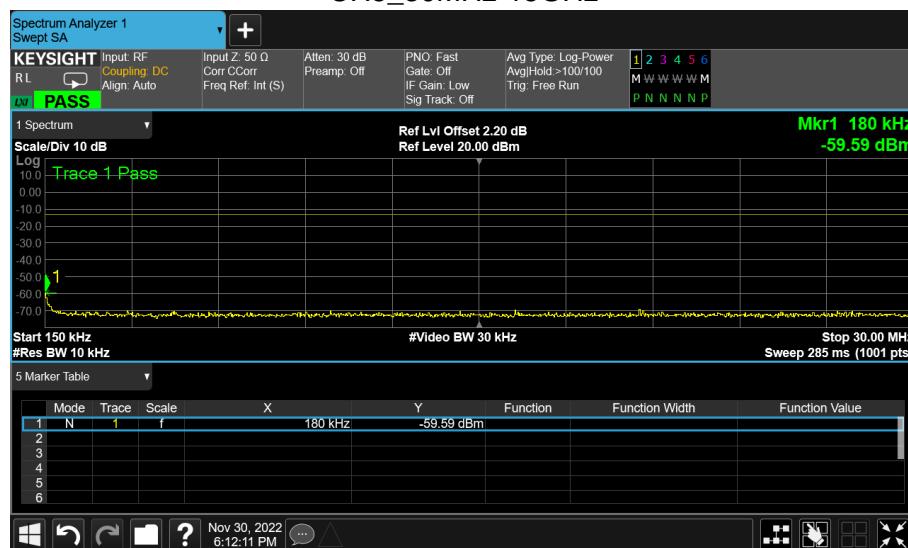
CH5_9kHz-150kHz



CH5_150kHz-30MHz

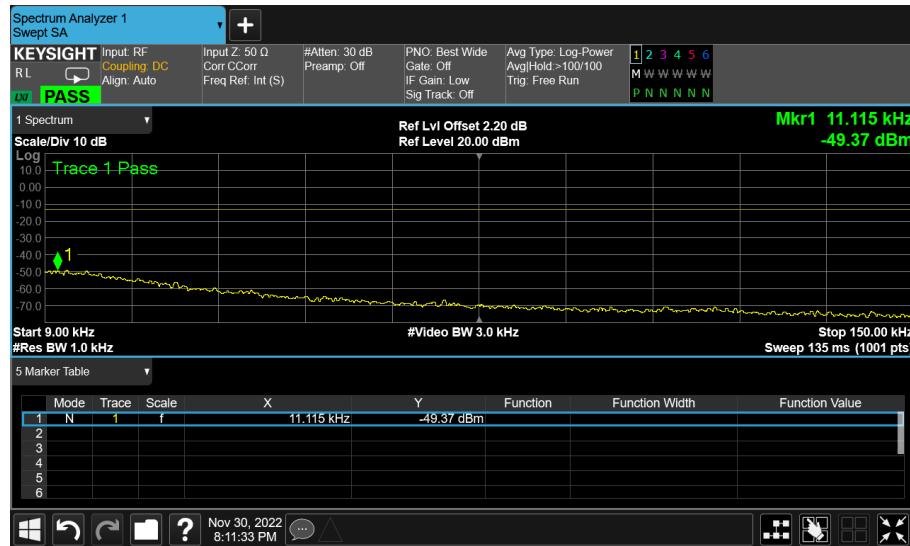


CH5_30MHz-15GHz





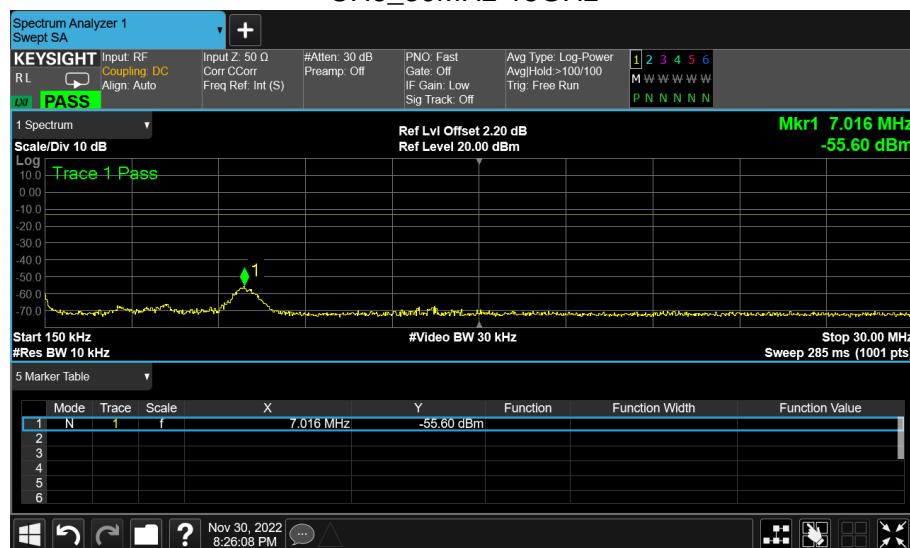
CH6_9kHz-150kHz



CH6_150kHz-30MHz

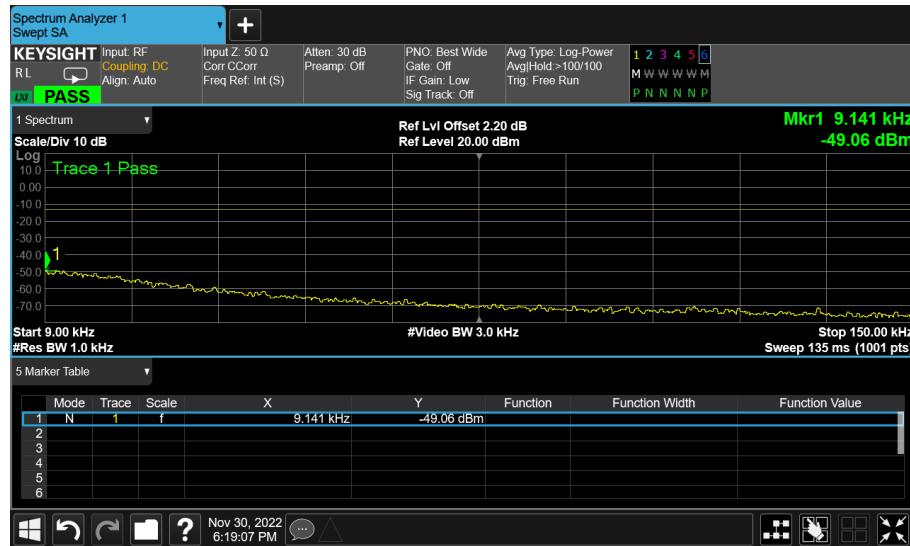


CH6_30MHz-15GHz

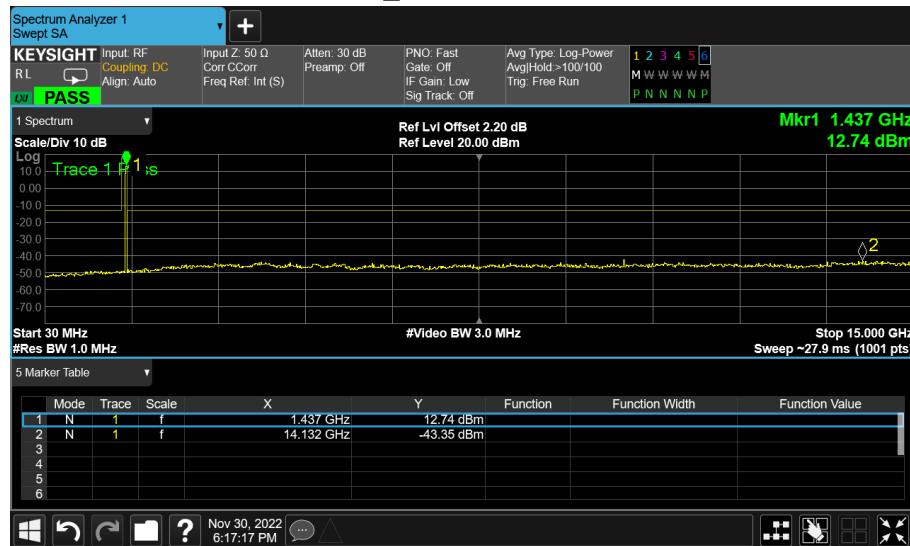




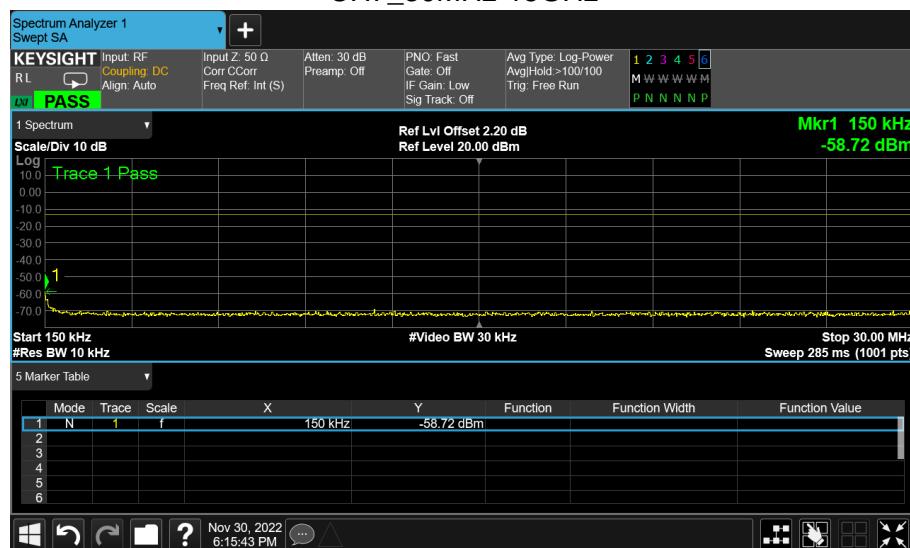
CH7_9kHz-150kHz



CH7_150kHz-30MHz



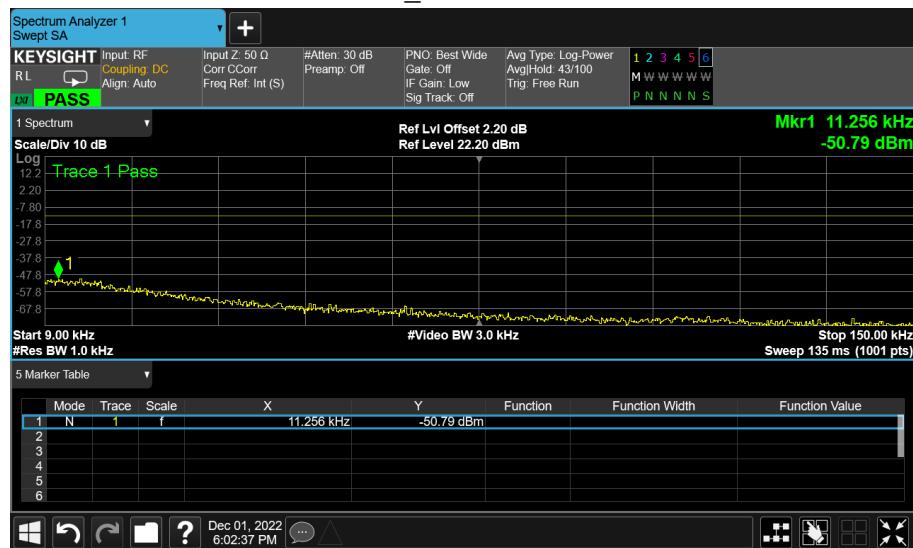
CH7_30MHz-15GHz



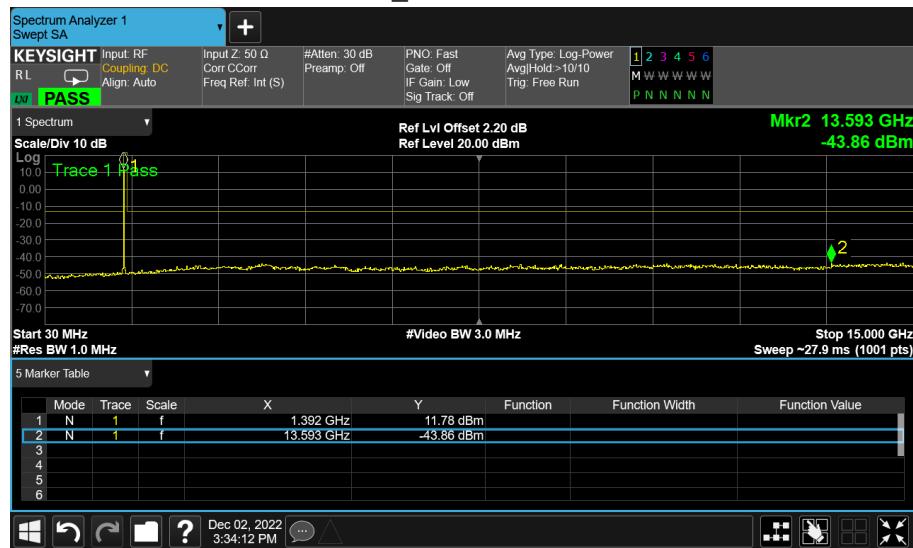


SH 2.0 WMTS_D8PSK

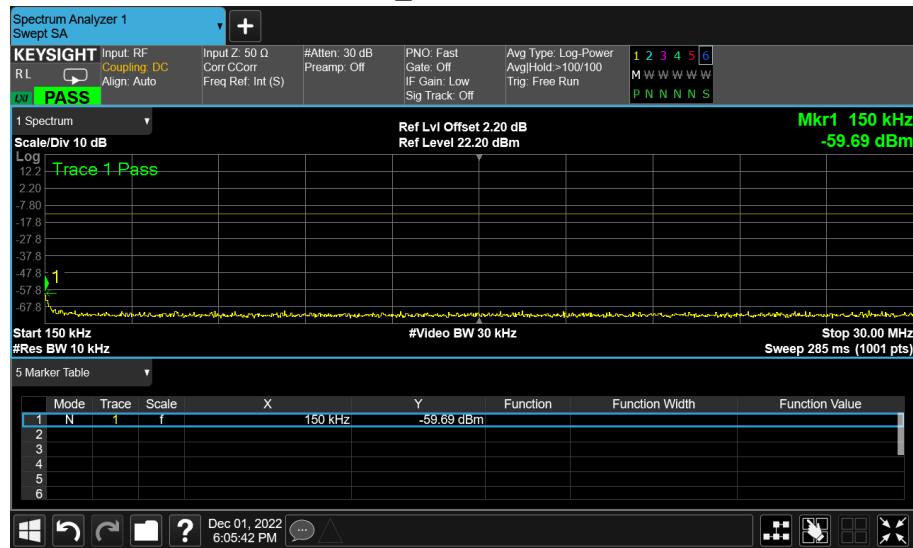
CH14_9kHz-150kHz



CH14_150kHz-30MHz

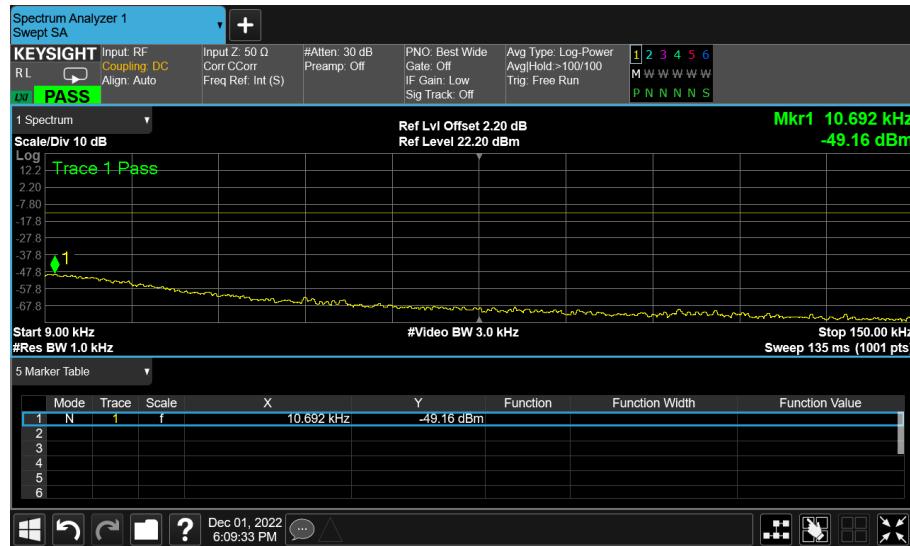


CH14_30MHz-15GHz

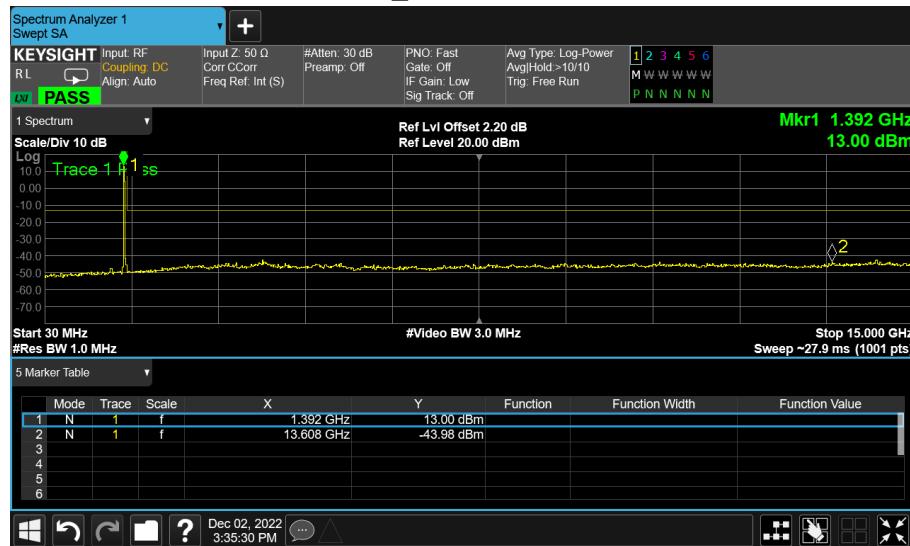




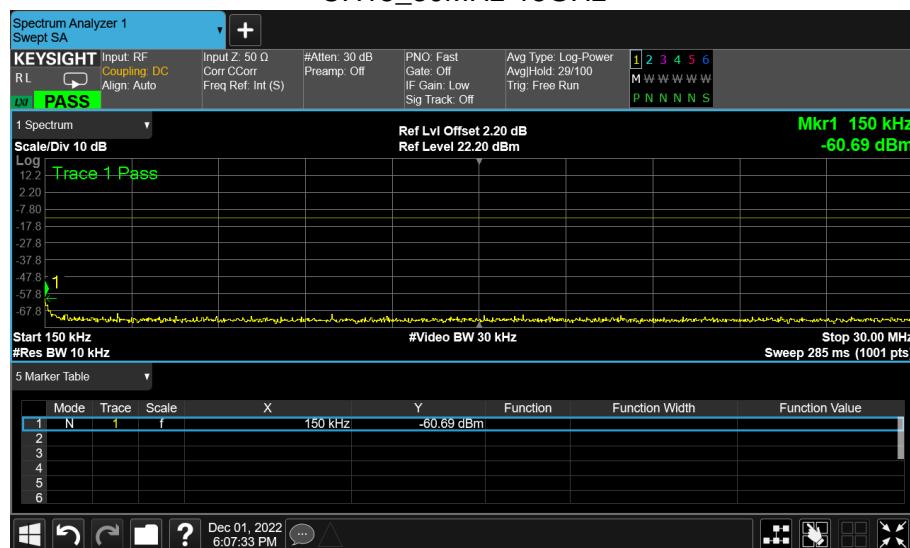
CH15_9kHz-150kHz



CH15_150kHz-30MHz

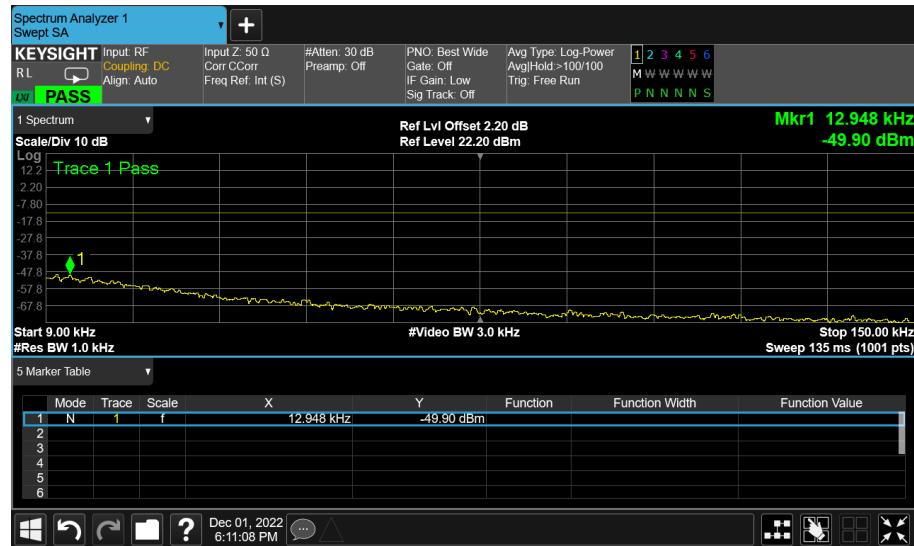


CH15_30MHz-15GHz

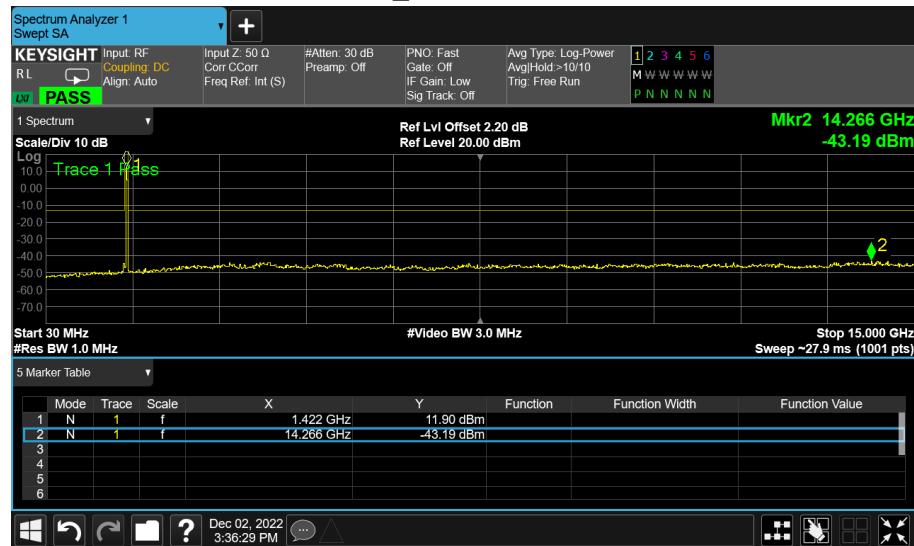




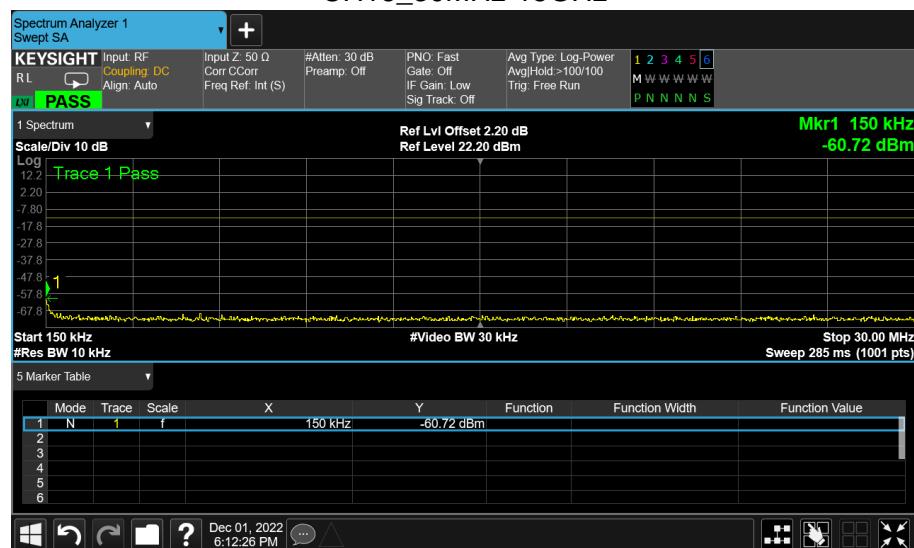
CH16_9kHz-150kHz



CH16_150kHz-30MHz

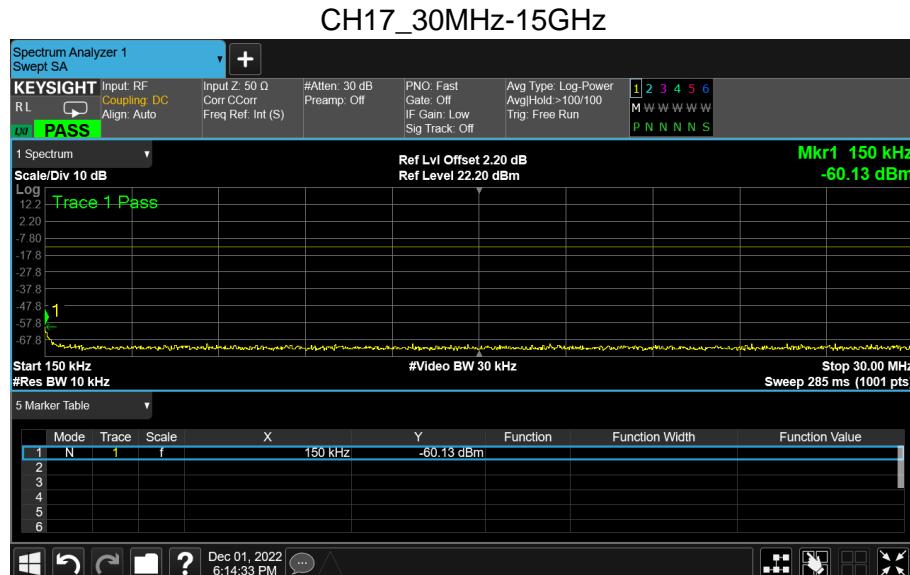
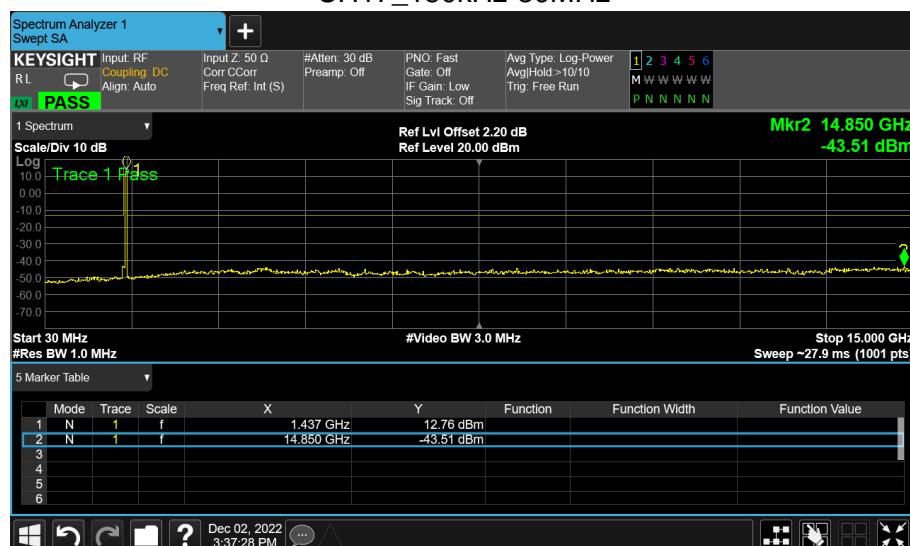


CH16_30MHz-15GHz





CH17_9kHz-150kHz



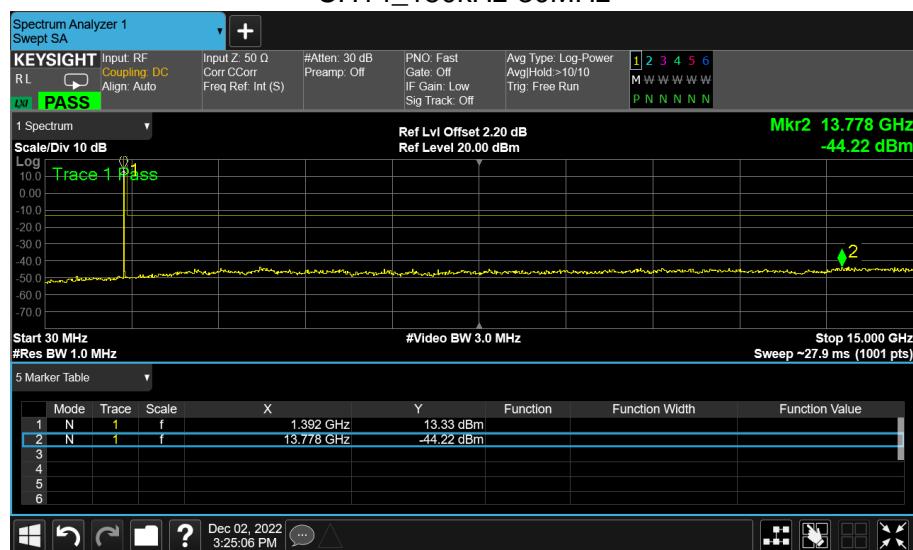


SH 2.0 WMTS_DBPSK

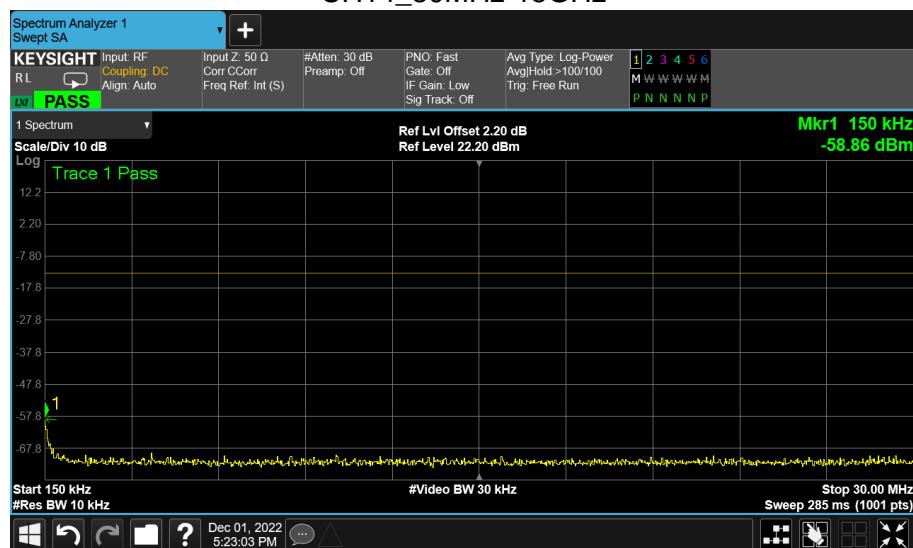
CH14_9kHz-150kHz



CH14_150kHz-30MHz



CH14_30MHz-15GHz

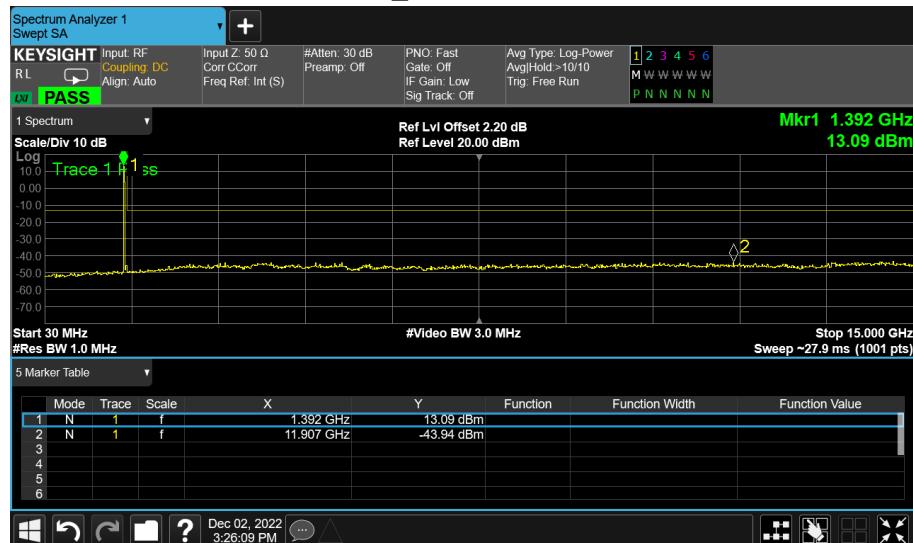




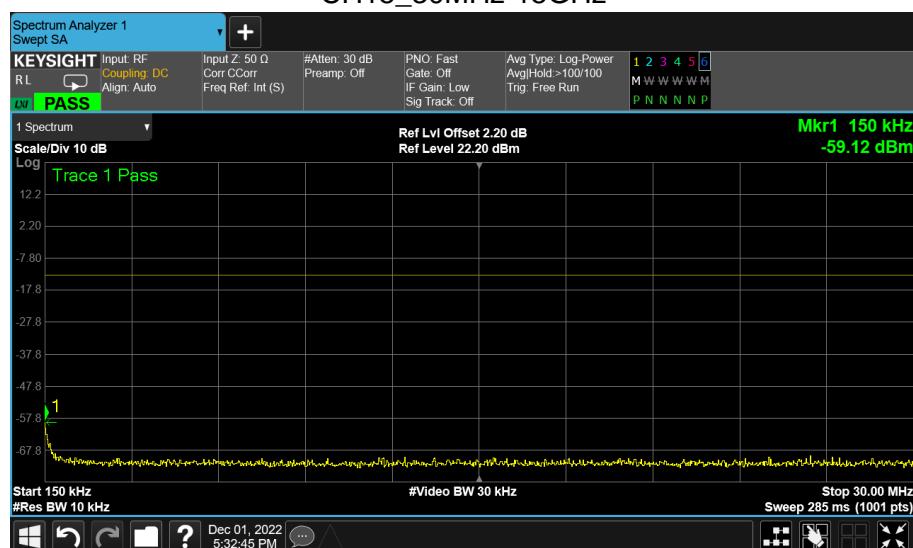
CH15_9kHz-150kHz



CH15_150kHz-30MHz



CH15_30MHz-15GHz

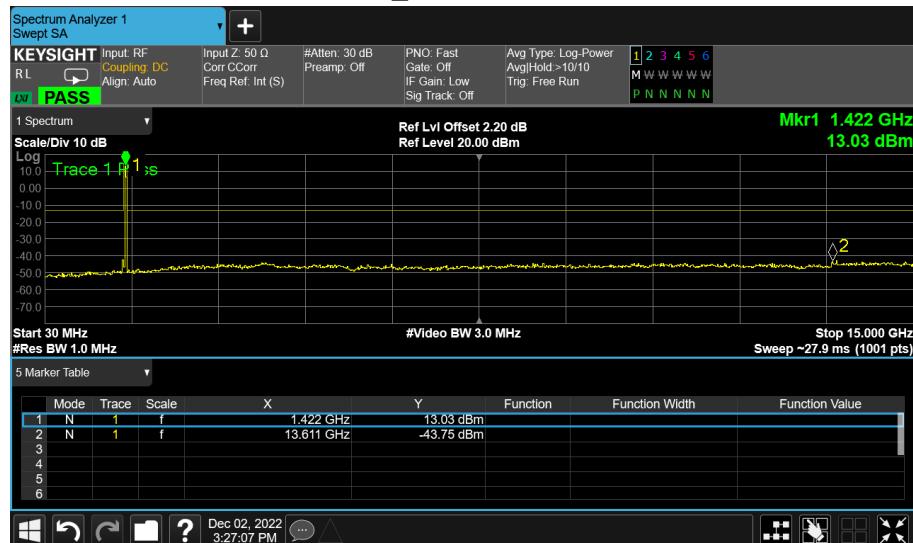




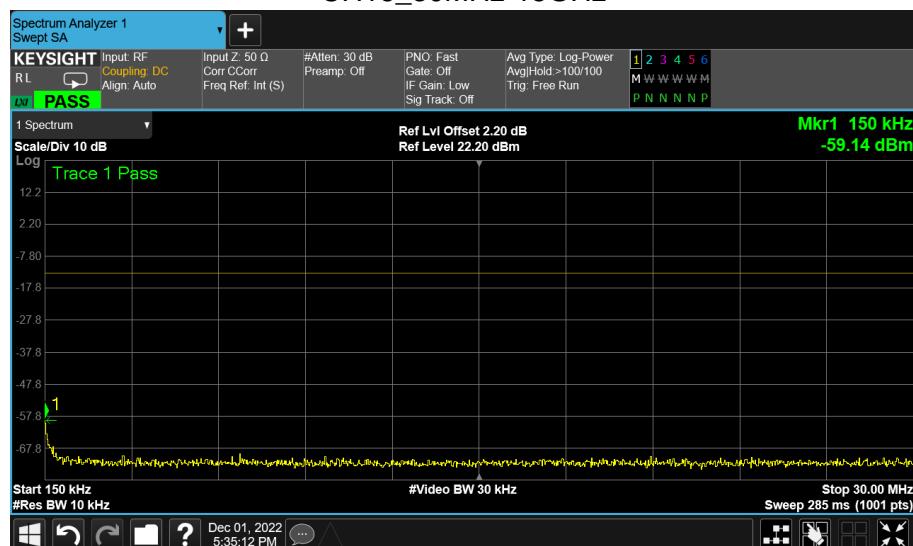
CH16_9kHz-150kHz



CH16_150kHz-30MHz

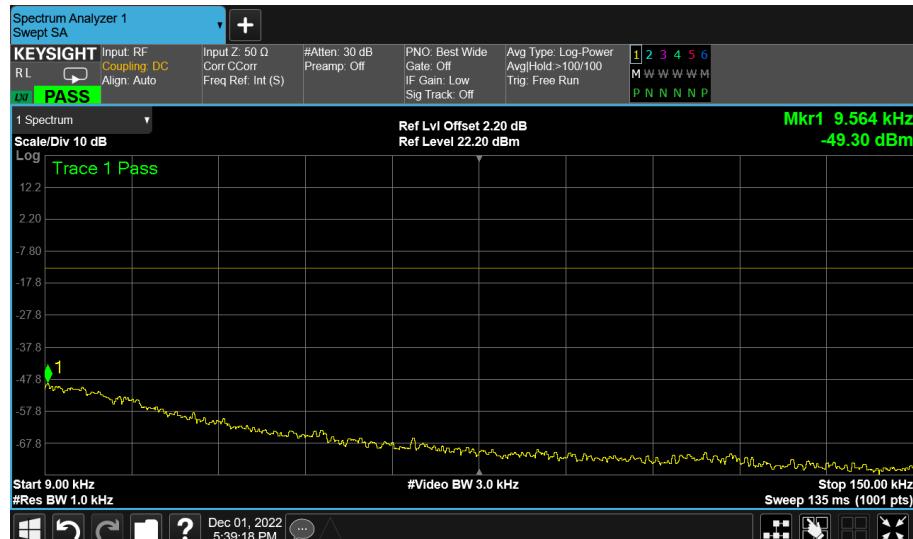


CH16_30MHz-15GHz

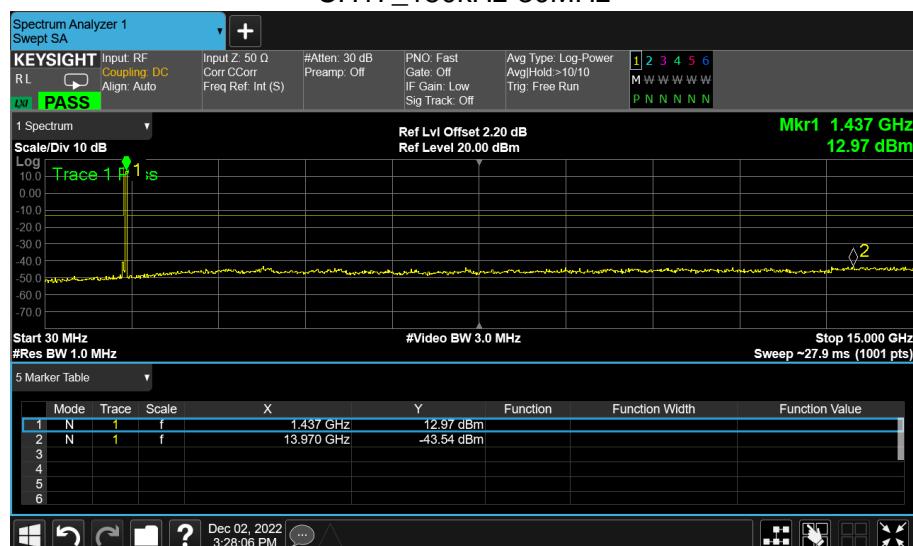




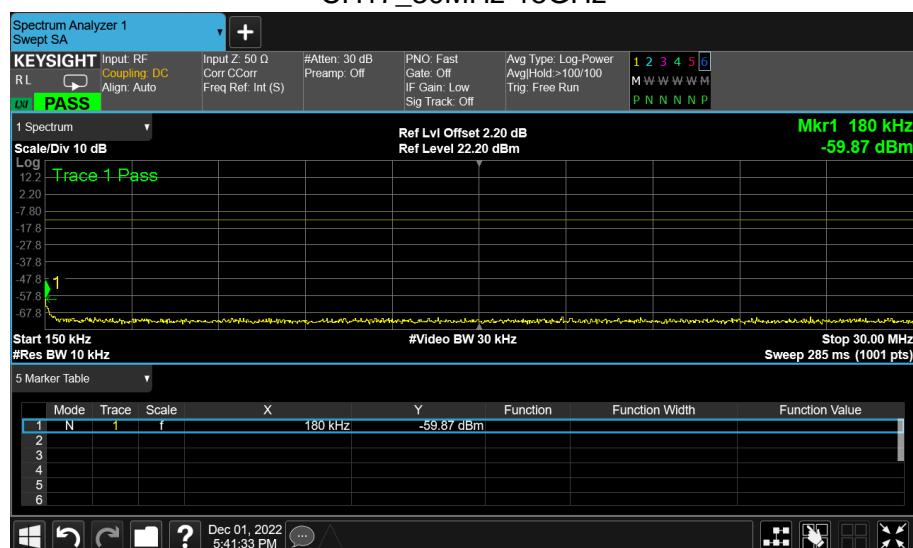
CH17_9kHz-150kHz



CH17_150kHz-30MHz



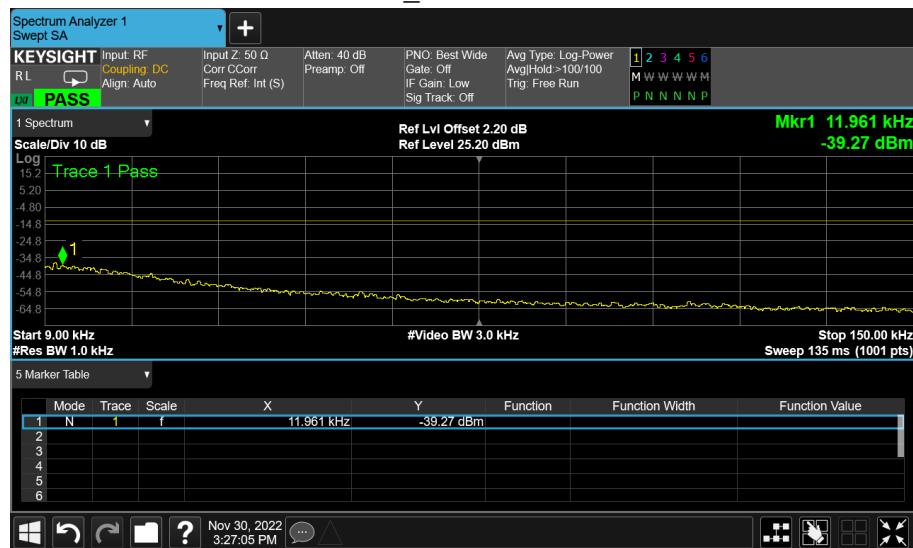
CH17_30MHz-15GHz



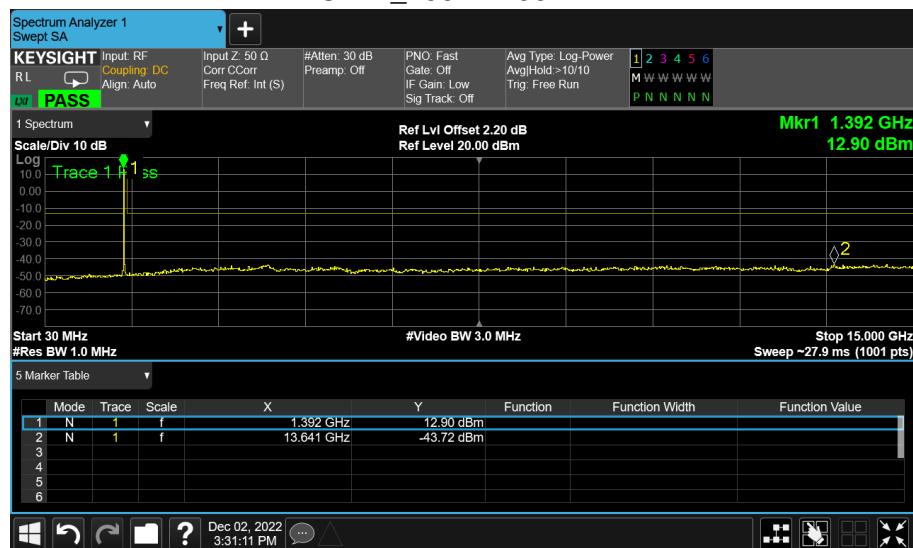


SH 2.0 E-WMTS_D8PSK

CH11_9kHz-150kHz



CH11_150kHz-30MHz



CH11_30MHz-15GHz

