

FCC TEST REPORT

Product Name: FleetOne Shipborne Satellite Broadband Terminal
Trade Mark: N/A
Model No.: Fleet One
Add. Model No.: N/A
Report Number: 190522008RFC-1
Test Standards: FCC 47 CFR Part 25
FCC ID: 2AT37FLEETONE
Test Result: PASS
Date of Issue: July 23, 2019

Prepared for:

Chengdu Spaceon Technology Co., Ltd.
No.88, Xinye Road, Scientific Industry Park, Chengdu Hi-tech Industry Zone,Chendu,China

Prepared by:

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Version

Version No.	Date	Description
V1.0	July 23, 2019	Original



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1. GENERAL INFORMATION

1.1 CLIENT INFORMATION

Applicant:	Chengdu Spaceon Technology Co., Ltd.
Address of Applicant:	No.88, Xinye Road, Scientific Industry Park, Chengdu Hi-tech Industry Zone,Chendu,China
Manufacturer:	Chengdu Spaceon Technology Co., Ltd.
Address of Manufacturer:	No.88, Xinye Road, Scientific Industry Park, Chengdu Hi-tech Industry Zone,Chendu,China

1.2 EUT INFORMATION

1.2.1 General Description of EUT

Product Name:	FleetOne Shipborne Satellite Broadband Terminal	
Model No.:	Fleet One	
Add. Model No.:	N/A	
Trade Mark:	N/A	
DUT Stage:	Identical Prototype	
Rating:	DC 12/24V form External Power DC 7.4V form inside battery	
EUT Supports Function:	MSS frequency bands	1626.5 MHz to 1660.5 MHz
Software Version:	v1.1	
Hardware Version:	v1.0	
Sample Received Date:	May 22, 2019	
Sample Tested Date:	May 27, 2019 to May 31, 2019	

1.2.2 Description of Accessories

Battery	
Model No.:	1808
Battery Type:	Rechargeable Li-ion Battery
Rated Voltage:	7.4 Vdc
Limited Charge Voltage:	8.4 Vdc
Rated Capacity:	6 Ah

1.3 PRODUCT SPECIFICATION SUBJECTIVE TO THIS STANDARD

Frequency Bands:	1626.5 MHz to 1660.5 MHz	
Type of Modulation:	QPSK, Pi/4 QPSK, 16QAM, 32QAM, 64QAM	
Nominated Bandwidth:	30 kHz/ 50 kHz/ 90 kHz/ 100 kHz/ 190 kHz/ 200 kHz	
Antenna Type:	Antenna 1	Helical Antenna
	Antenna 2	Helical Antenna
Antenna Gain:	Antenna 1	10 dBi
	Antenna 2	10 dBi
Maximum EIRP:	17.342 dBW / 54.23 W	
Normal Test Voltage:	24 Vdc	
Extreme Test Voltage:	20.4 to 27.6Vdc	
Extreme Test Temperature:	-30 ℃ to +50 ℃	

1.4 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested with associated equipment below.

1) Support Equipment

Description	Manufacturer	Model No.	Serial Number	Supplied by
Notebook	Lenovo	E450	SL10G10780	UnionTrust
mouse	DELL	MS111	CN-011D3V-738	UnionTrust
USB disk	Kingston	DTSE9	N/A	UnionTrust
Battery * 2	Camel	6-QWLZ-48	N/A	UnionTrust

2) Support Cable

Cable No.	Description	Connector	Length	Supplied by
1	Antenna Cable * 2	SMA	0.30 Meter	UnionTrust

1.5 TEST LOCATION

Shenzhen UnionTrust Quality and Technology Co., Ltd.

Address: 16/F, Block A, Building 6, Baoneng Science and Technology Park, Qingxiang Road No.1, Longhua New District, Shenzhen, China 518109

Telephone: +86 (0) 755 2823 0888

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1.6 TEST FACILITY

The test facility is recognized, certified, or accredited by the following organizations:

CNAS-Lab Code: L9069

The measuring equipment utilized to perform the tests documented in this report has been calibrated once a year or in accordance with the manufacturer's recommendations, and is traceable under the ISO/IEC/EN 17025 to international or national standards. Equipment has been calibrated by accredited calibration laboratories.

A2LA-Lab Certificate No.: 4312.01

Shenzhen UnionTrust Quality and Technology Co., Ltd. has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

ISED Wireless Device Testing Laboratories

CAB identifier: CN0032

FCC Accredited Lab.

Designation Number: CN1194

Test Firm Registration Number: 259480

1.7 DEVIATION FROM STANDARDS

No deviations from the applicable test standard were made during testing.

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1.8 ABNORMALITIES FROM STANDARD CONDITIONS

None.

1.9 OTHER INFORMATION REQUESTED BY THE CUSTOMER

None.

1.10 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the Product as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

No.	Item	Measurement Uncertainty
1	Frequency Tolerance	$\pm 6.3 \times 10^{-8}$
2	Occupied Bandwidth	$\pm 2.3 \%$
3	Radiated Spurious Emissions (30MHz-1GHz)	± 4.7 dB
4	Radiated Spurious Emissions (1GHz-18GHz)	± 5.1 dB
5	Equivalent Isotropic Radiated Power	Radiated: ± 5.1 dB (1GHz-18GHz) Conducted: ± 0.52 dB
6	Spurious Emissions at Antenna Terminals	± 1.48 dB
7	Limits on Emissions from Mobile Earth Stations for Protection of Aeronautical Radio navigation-Satellite Service	Radiated: ± 5.1 dB (1GHz-18GHz) Conducted: ± 1.48 dB

2. TEST SUMMARY

FCC 47 CFR Part 25 Test Cases		
Test Item	Test Requirement	Result
Occupied Bandwidth	FCC 47 CFR Part 2.1049	PASS
Frequency Tolerance	FCC 47 CFR Part 25.202(d) FCC 47 CFR Part 2.1055	PASS
Spurious Emissions at Antenna Terminals	FCC 47 CFR Part 25.202(f)	PASS
Radiated Spurious Emissions	FCC 47 CFR Part 25.202(f)	PASS
Equivalent Isotropic Radiated Power	FCC 47 CFR Part 25.204	PASS
Limits on Emissions from Mobile Earth Stations for Protection of Aeronautical Radio navigation-Satellite Service	FCC 47 CFR Part 25.216	PASS

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3. EQUIPMENT LIST

Radiated Emission Test Equipment List						
Used	Equipment	Manufacturer	Model No.	Serial Number	Cal. date (mm dd, yyyy)	Cal. Due date (mm dd, yyyy)
☒	3M Chamber & Accessory Equipment	ETS-LINDGREN	3M	N/A	Dec. 03, 2018	Dec. 03, 2021
☒	Receiver	R&S	ESIB26	100114	Nov. 24, 2018	Nov. 24, 2019
☐	Loop Antenna	ETS-LINDGREN	6502	00202525	Dec. 03, 2018	Dec. 03, 2019
☒	Broadband Antenna	ETS-LINDGREN	3142E	00201566	Dec. 08, 2018	Dec. 08, 2019
☒	6dB Attenuator	Talent	RA6A5-N-18	18103001	Dec. 08, 2018	Dec. 08, 2019
☒	Preamplifier	HP	8447F	2805A02960	Nov. 24, 2018	Nov. 24, 2019
☐	Broadband Antenna (Pre-amplifier)	ETS-LINDGREN	3142E-PA	00201891	May 18, 2019	May 18, 2020
☐	6dB Attenuator	Talent	RA6A5-N-18	18103002	Nov. 24, 2018	Nov. 24, 2019
☐	Horn Antenna	ETS-LINDGREN	3117	00164202	Dec. 08, 2018	Dec. 08, 2019
☒	Horn Antenna (Pre-amplifier)	ETS-LINDGREN	3117-PA	00201874	May 18, 2019	May 18, 2020
☒	Multi device Controller	ETS-LINDGREN	7006-001	00160105	N/A	N/A
☐	Highpass Filter (1.2GHz~18GHz)	Micro-Tronics	HPM50108	G552	Nov. 29, 2018	Nov. 29, 2019
☒	Highpass Filter (3GHz~18GHz)	Micro-Tronics	HPM50117	G005	Nov. 29, 2018	Nov. 29, 2019
☒	Test Software	Audix	e3	Software Version: 9.160333		

Conducted RF test Equipment List						
Used	Equipment	Manufacturer	Model No.	Serial Number	Cal. date (mm dd, yyyy)	Cal. Due date (mm dd, yyyy)
☒	EXA Spectrum Analyzer	KEYSIGHT	N9010A	MY51440197	Nov. 24, 2018	Nov. 24, 2019
☐	Receiver	R&S	ESR7	1316.3003K07-101181-K3	Nov. 24, 2018	Nov. 24, 2019
☒	DC Source	KIKUSUI	PWR400L	LK003024	Sep. 18, 2018	Sep. 18, 2019
☒	Temp & Humidity chamber	Espec	GL(U)04KA(W)	16921H201P3	Sep. 18, 2018	Sep. 18, 2019
☐	Temp & Humidity chamber	Votisch	VT4002	58566133290020	Jun. 05, 2018	Jun. 05, 2019

4. TEST CONFIGURATION

4.1 ENVIRONMENTAL CONDITIONS FOR TESTING

4.1.1 Normal or Extreme Test Conditions

Test Environment	Selected Values During Tests		
Test Condition	Ambient		
	Temperature (°C)	Voltage (V)	Relative Humidity (%)
TN/VN	+15 to +35	24	20 to 75
TL/VL	-30	20.4	20 to 75
TH/VL	+50	20.4	20 to 75
TL/VH	-30	27.6	20 to 75
TH/VH	+50	27.6	20 to 75
Remark: 1) The EUT just work in such extreme temperature of -30 °C to +50 °C and the extreme voltage of 20.4 V to 27.6 V, so here the EUT is tested in the temperature of -30 °C to +50 °C and the voltage of 20.4 V to 27.6 V. 2) VN: Normal Voltage; TN: Normal Temperature; TL: Low Extreme Test Temperature; TH: High Extreme Test Temperature; VL: Low Extreme Test Voltage; VH: High Extreme Test Voltage.			

4.1.2 Record of Normal Environment

Test Item	Temperature (°C)	Relative Humidity (%)	Pressure (kPa)	Tested by
Occupied Bandwidth	25.6	44	100.01	Hank Wu
Frequency Tolerance	25.6	44	100.01	Hank Wu
Spurious Emissions at Antenna Terminals	25.6	44	100.01	Hank Wu
Radiated Spurious Emissions	25.2	52	100.02	Fire Huo
Equivalent Isotropic Radiated Power	25.2	52	100.02	Fire Huo
Limits on Emissions from Mobile Earth Stations for Protection of Aeronautical Radio navigation-Satellite Service	25.6	44	100.01	Hank Wu

4.2 TEST CHANNELS

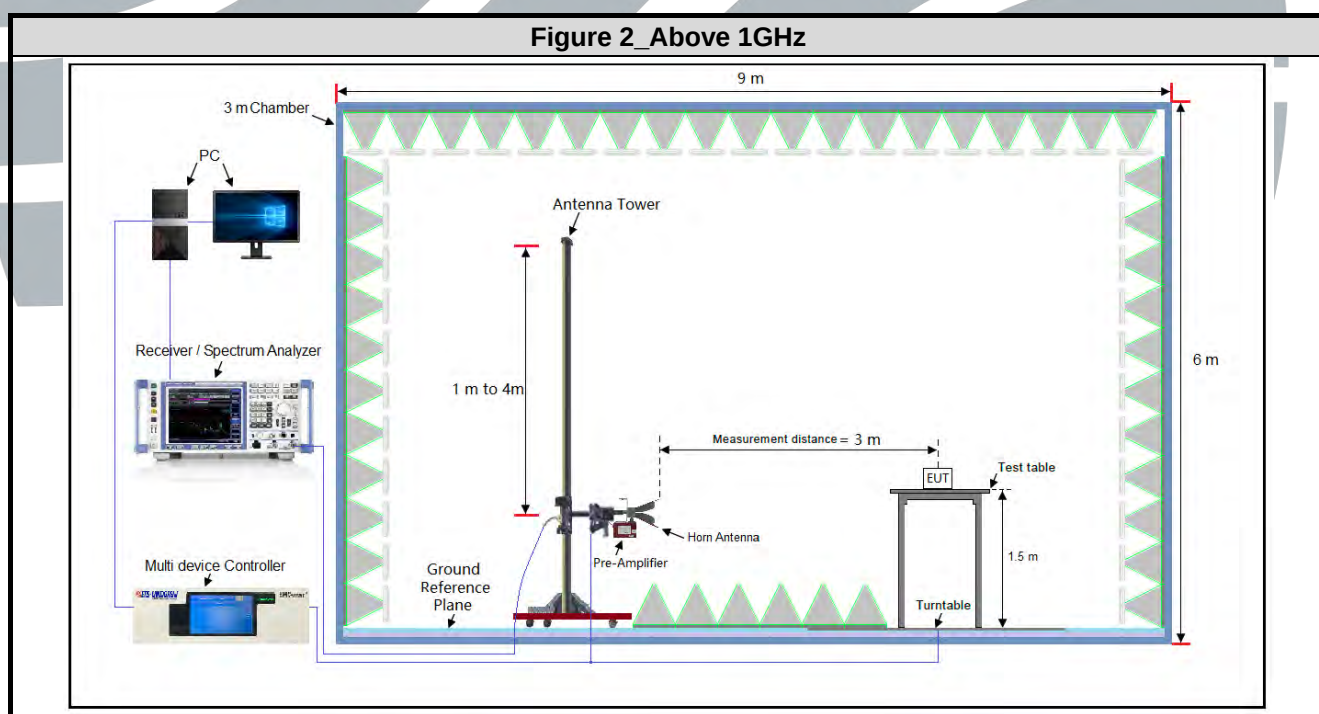
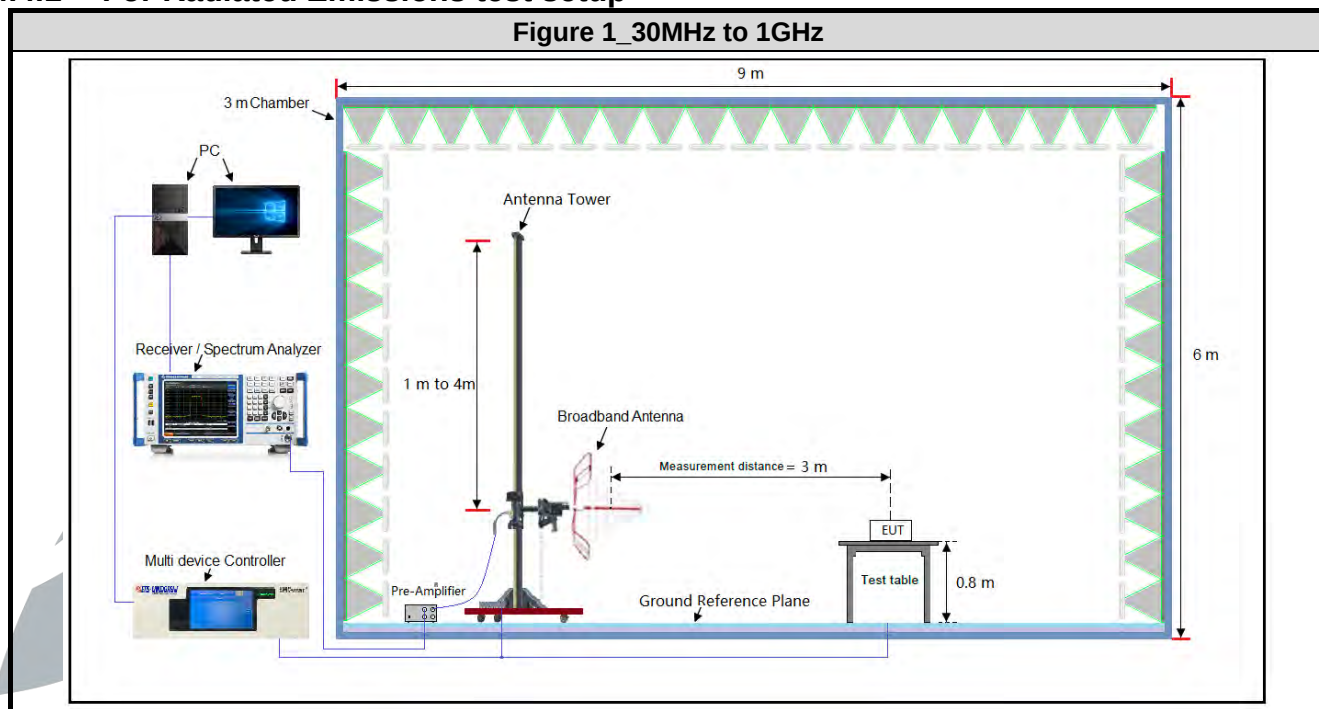
Test RF Channel Lists		
Lowest	Middle	Highest
1626.6 MHz	1643.5 MHz	1660.4 MHz

4.3 EUT TEST STATUS

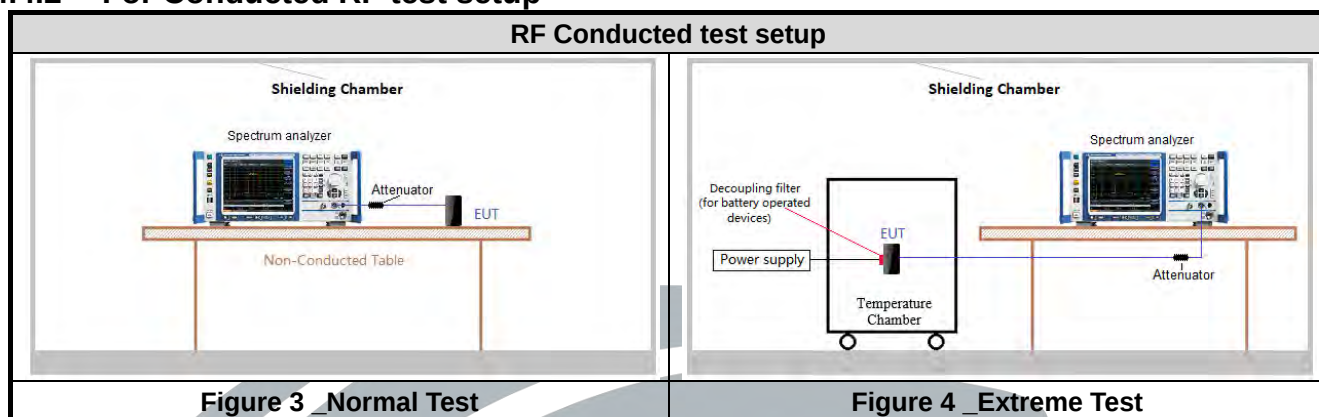
Description
1. Keep the EUT in continuously transmitting with modulation test single.
2. Keep the EUT in continuously transmitting with Un-modulation test single.

4.4 TEST SETUP

4.4.1 For Radiated Emissions test setup



4.4.2 For Conducted RF test setup



4.5 SYSTEM TEST CONFIGURATION

For emissions testing, the equipment under test (EUT) setup to transmit continuously to simplify the measurement methodology. Care was taken to ensure proper power supply voltages during testing. During testing, radiated emission were performed with the EUT set to transmit at the channel with highest output power as worst-case scenario. It was powered by a 24Vdc (2 x 12V batteries). Only the worst case data were recorded in this test report.

The signal is maximized through rotation and placement in the three orthogonal axes. The antenna height and polarization are varied during the search for maximum signal level. The antenna height is varied from 1 to 4 meters. Radiated emissions are taken at three meters unless the signal level is too low for measurement at that distance. If necessary, a pre-amplifier is used and/or the test is conducted at a closer distance. Therefore, all final radiated testing was performed with the EUT in (see table below) orientation.

Frequency	Mode	Antenna Port	Worst-case axis positioning
Above 1GHz	1TX	Chain 0	Y axis

All readings are extrapolated back to the equivalent three meter reading using inverse scaling with distance. Analyzer resolution is 100 kHz or greater for frequencies below 1000 MHz. The resolution is 1 MHz or greater for frequencies above 1000 MHz. The spurious emissions more than 20 dB below the permissible value are not reported.

Radiated emission measurement were performed from the lowest radio frequency signal generated in the device which is greater than 9 kHz to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.

5. RADIO TECHNICAL REQUIREMENTS SPECIFICATION

5.1 REFERENCE DOCUMENTS FOR TESTING

No.	Identity	Document Title
1	FCC 47 CFR Part 2	Frequency allocations and radio treaty matters; general rules and regulations
2	FCC 47 CFR Part 25	Satellite Communications
3	ANSI C63.26-2015	American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services

5.2 OCCUPIED BANDWIDTH

Test Requirement: FCC 47 CFR Part 2.1049

Test Method: FCC 47 CFR Part 2.1049

Limit: None specified.

Test Setup: Refer to section 4.4.2 for details.

Instruments Used: Refer to section 3 for details

Test Results:

BW	Channel	Frequency	Occupied Bandwidth (kHz)	
			Antenna 1	Antenna 2
Type 1	Lowest	1626.6 MHz	18.756	18.944
	Middle	1643.5 MHz	18.809	18.760
	Highest	1660.4 MHz	18.967	18.947
Type 2	Lowest	1626.6 MHz	36.959	37.187
	Middle	1643.5 MHz	37.335	37.257
	Highest	1660.4 MHz	37.336	37.144
Type 3	Lowest	1626.6 MHz	74.065	74.219
	Middle	1643.5 MHz	74.428	74.519
	Highest	1660.4 MHz	74.631	74.133
Type 4	Lowest	1626.6 MHz	87.144	87.126
	Middle	1643.5 MHz	87.002	86.815
	Highest	1660.4 MHz	87.044	86.952
Type 5	Lowest	1626.6 MHz	166.510	167.470
	Middle	1643.5 MHz	166.860	167.320
	Highest	1660.4 MHz	166.720	166.730
Type 6	Lowest	1626.6 MHz	174.260	174.730
	Middle	1643.5 MHz	174.190	174.760
	Highest	1660.4 MHz	174.490	174.320

The test plots as follows:

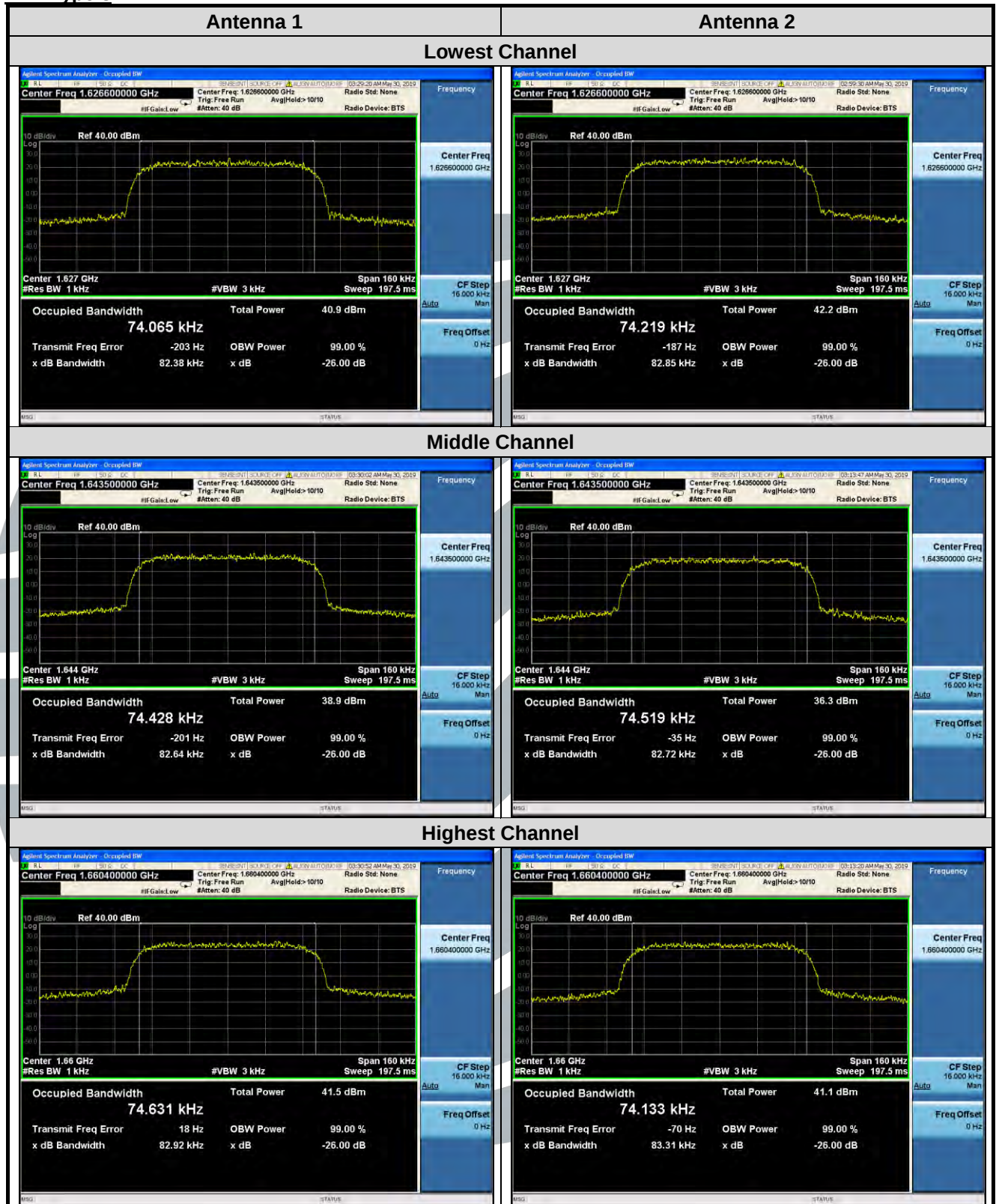
BW: Type 1



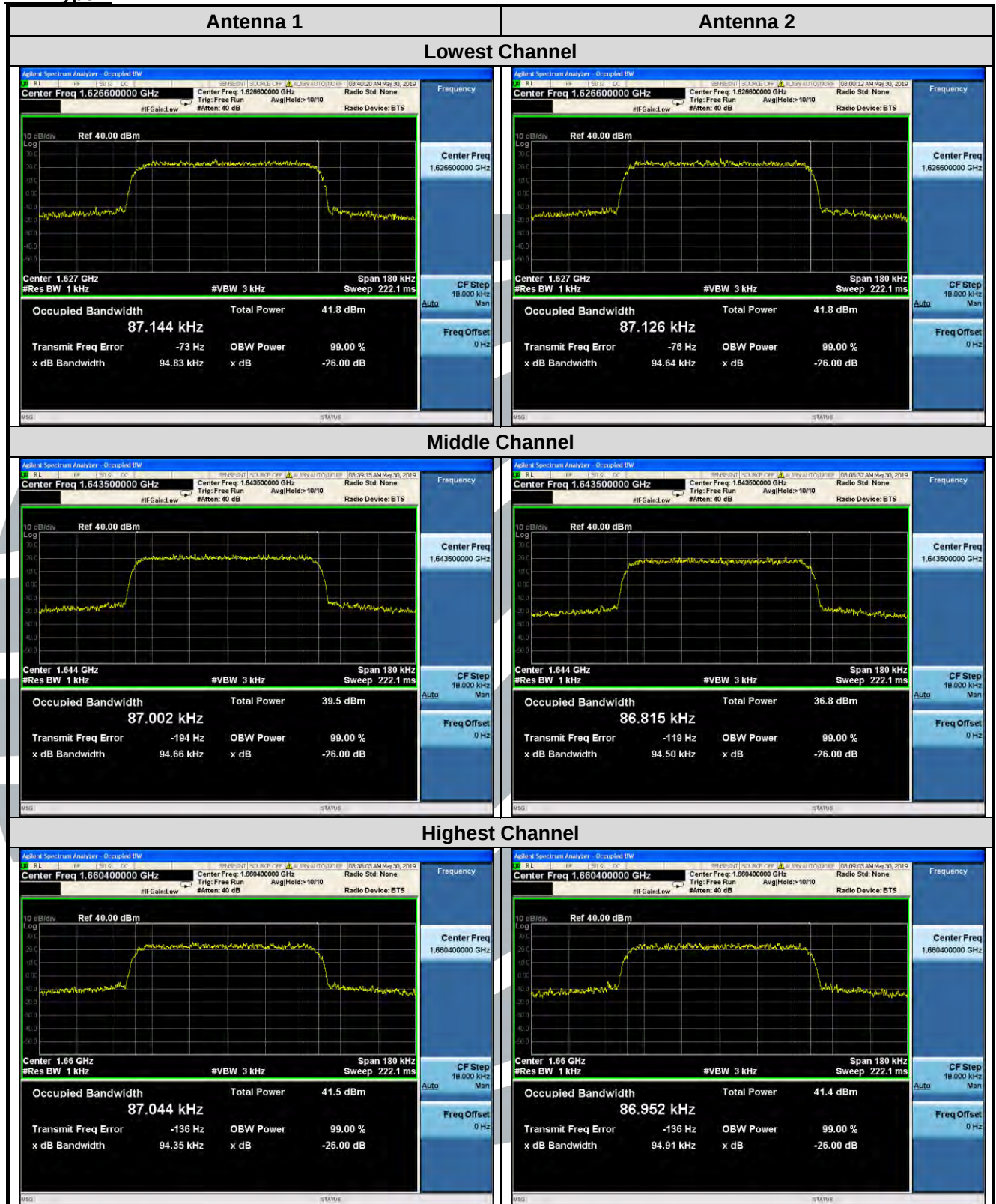
BW: Type 2



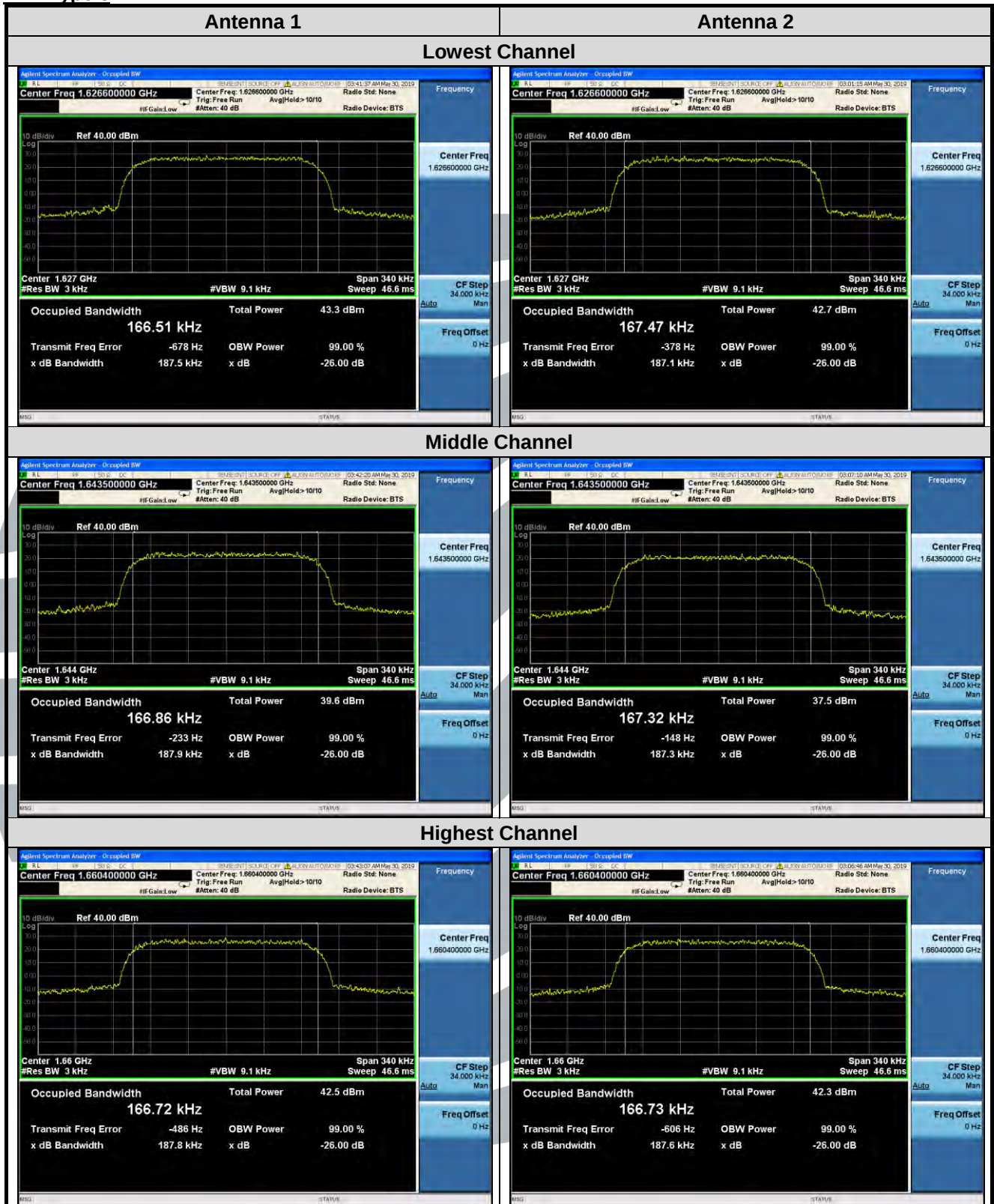
BW: Type 3



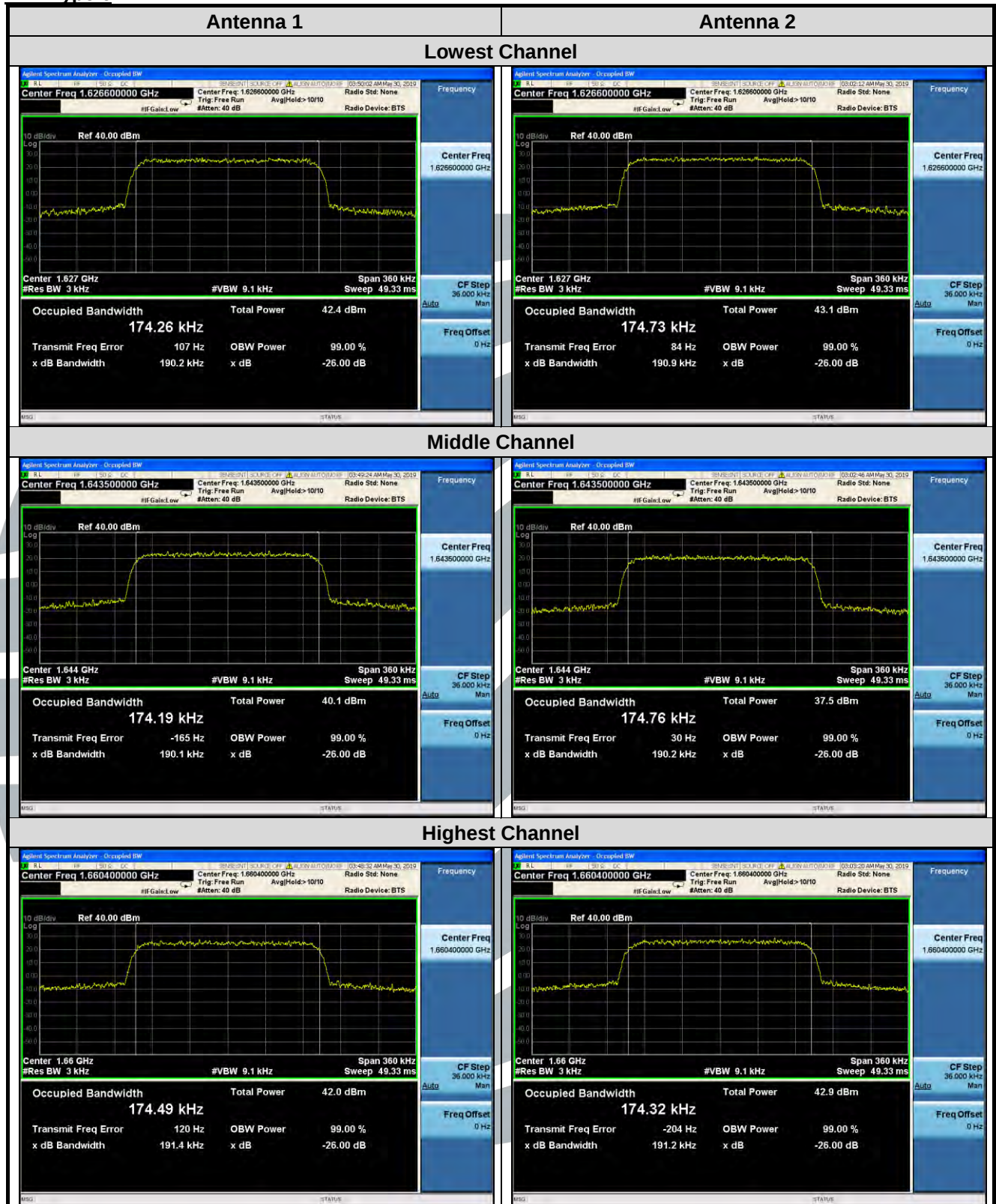
BW: Type 4



BW: Type 5



BW: Type 6



5.3 FREQUENCY TOLERANCE

Test Requirement: FCC 47 CFR Part 25.202(d)

Test Method: FCC 47 CFR Part 2.1055

Limit: The carrier frequency of each earth station transmitter authorized in these services shall be maintained within 0.001 percent (10 ppm) of the reference frequency.

Test Setup: Refer to section 4.4.2 for details.

Instruments Used: Refer to section 3 for details

Test Results:

Frequency	Voltage	Temperature	Measured value	Deviation		Limit	Results
(MHz)	(Vdc)	(°C)	(MHz)	(%)	(ppm)	(%)	
1643.5	VL	TN	1643.49973	-0.000017	-0.17	0.001	Pass
	VN		1643.49973	-0.000017	-0.17	0.001	Pass
	VH		1643.49973	-0.000016	-0.16	0.001	Pass
	VN	50	1643.4997	-0.000019	-0.19	0.001	Pass
		40	1643.49971	-0.000018	-0.18	0.001	Pass
		30	1643.49971	-0.000018	-0.18	0.001	Pass
		20	1643.49972	-0.000017	-0.17	0.001	Pass
		10	1643.49972	-0.000017	-0.17	0.001	Pass
		0	1643.49973	-0.000017	-0.17	0.001	Pass
		-10	1643.49972	-0.000017	-0.17	0.001	Pass
		-20	1643.49972	-0.000017	-0.17	0.001	Pass
		-30	1643.49972	-0.000017	-0.17	0.001	Pass

5.4 SPURIOUS EMISSIONS AT ANTENNA TERMINALS

Test Requirement: FCC 47 CFR Part 25.202(f)

Test Method: KDB 971168 D01v03r01, clause 6

The authorized emissions bandwidth used for measurements below was declared by the manufacturer as 30 kHz/ 50 kHz/ 90 kHz/ 100 kHz/ 190 kHz/ 200 kHz.

Measurements have been made in a bandwidth greater than 4 kHz which was considered worst case.

Limit:

(1) In any 4 kHz band, the center frequency of which is removed from the assigned frequency by more than 50 percent up to and including 100 percent of the authorized bandwidth: 25 dB;

(2) In any 4 kHz band, the center frequency of which is removed from the assigned frequency by more than 100 percent up to and including 250 percent of the authorized bandwidth: 35 dB;

(3) In any 4 kHz band, the center frequency of which is removed from the assigned frequency by more than 250 percent of the authorized bandwidth: An amount equal to 43 dB plus 10 times the logarithm (to the base 10) of the transmitter power in watts;

(4) In any event, when an emission outside of the authorized bandwidth causes harmful interference, the Commission may, at its discretion, require greater attenuation than specified in paragraphs (f) (1), (2) and (3) of this section.

Test Setup:

Refer to section 4.4.2 for details.

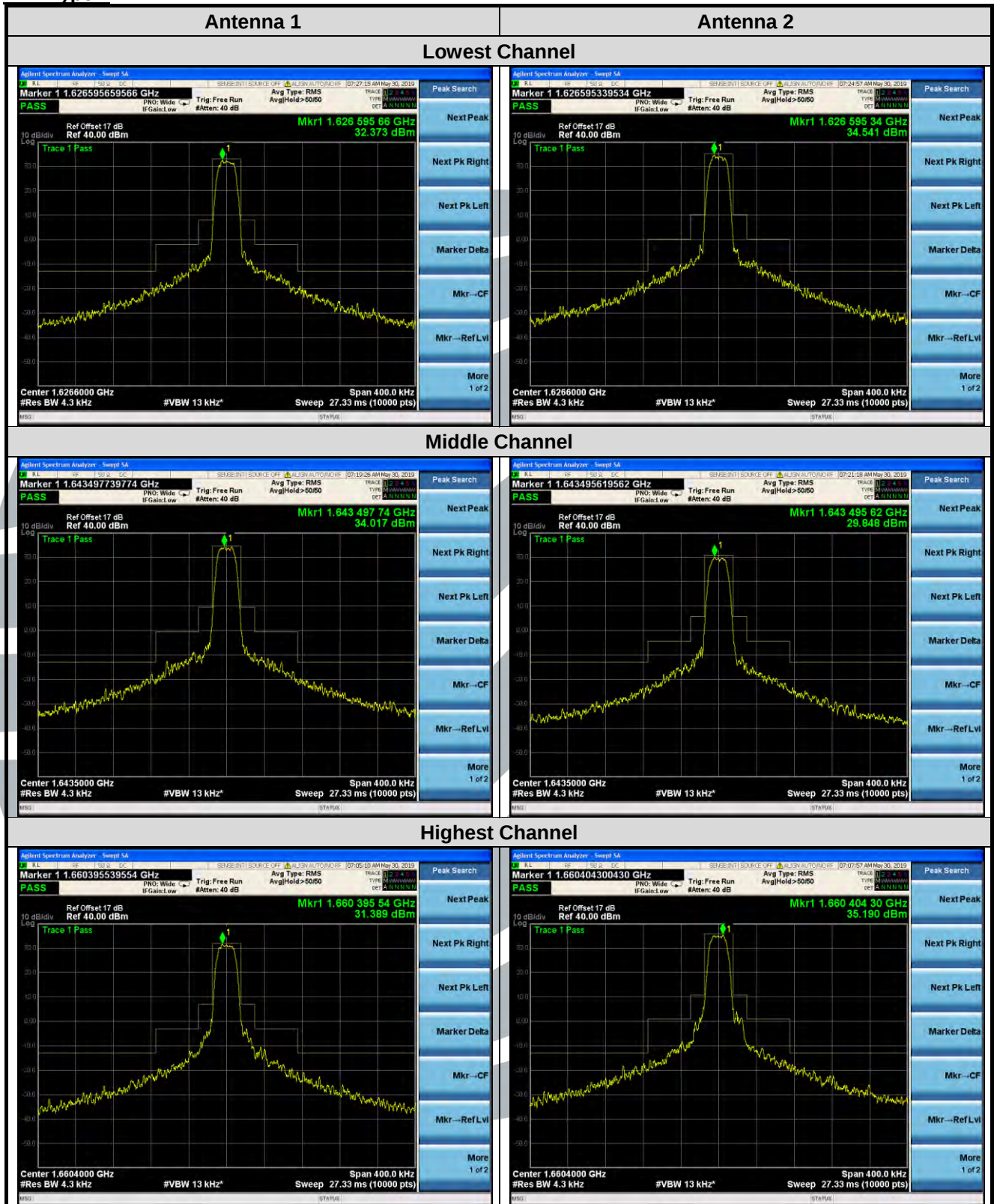
Instruments Used:

Refer to section 3 for details

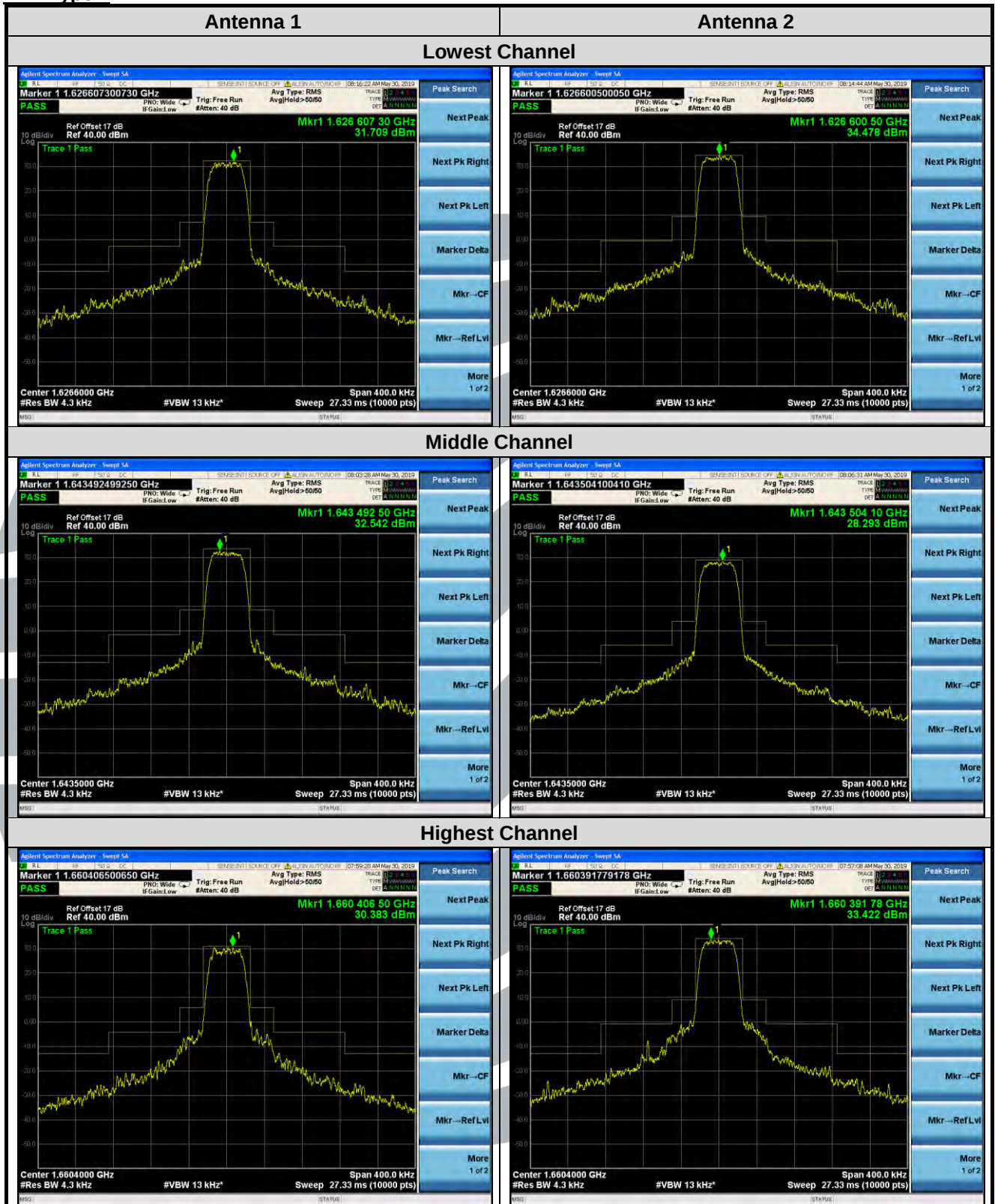
Test Results:

Spurious emission within the bands

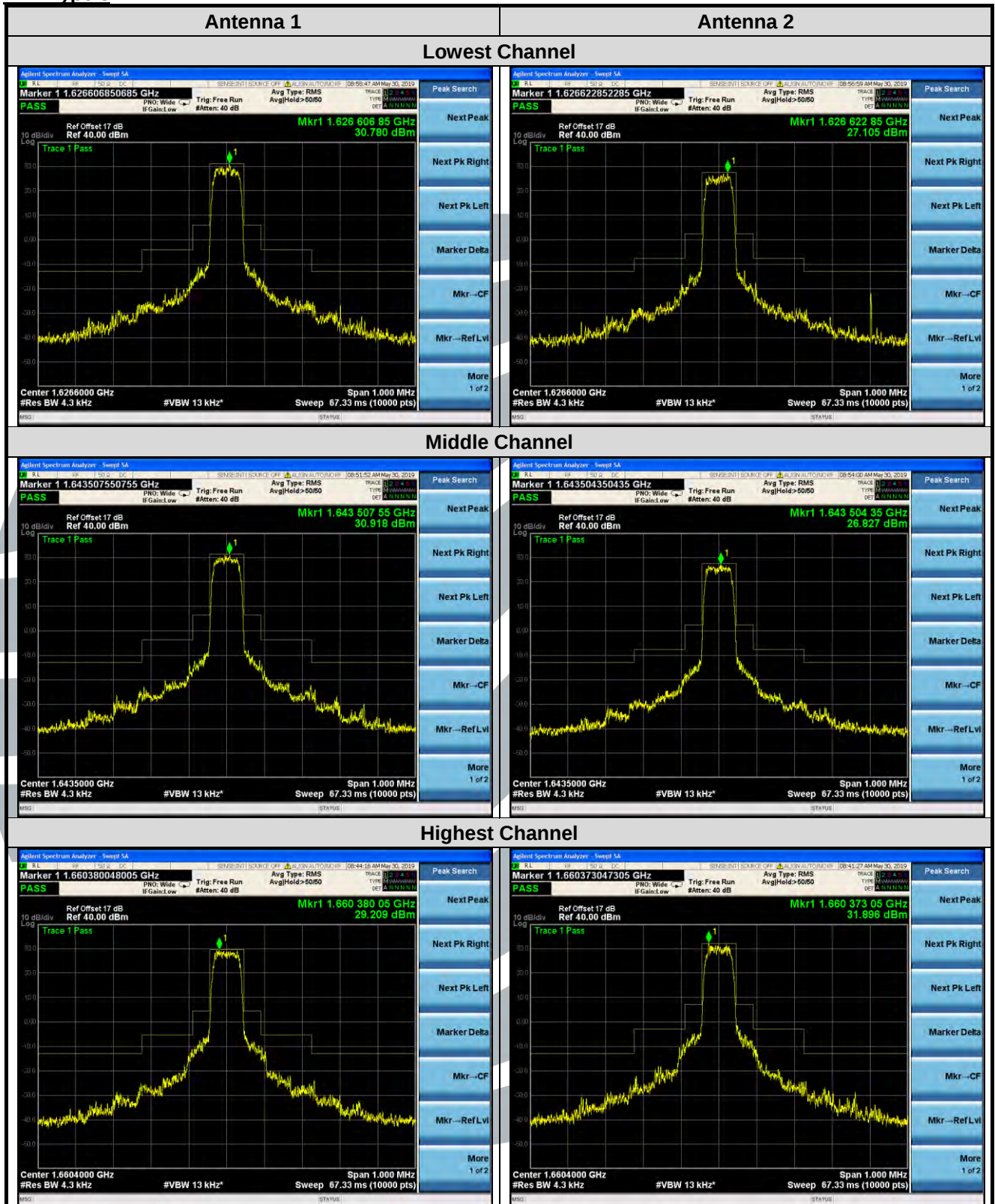
BW: Type 1



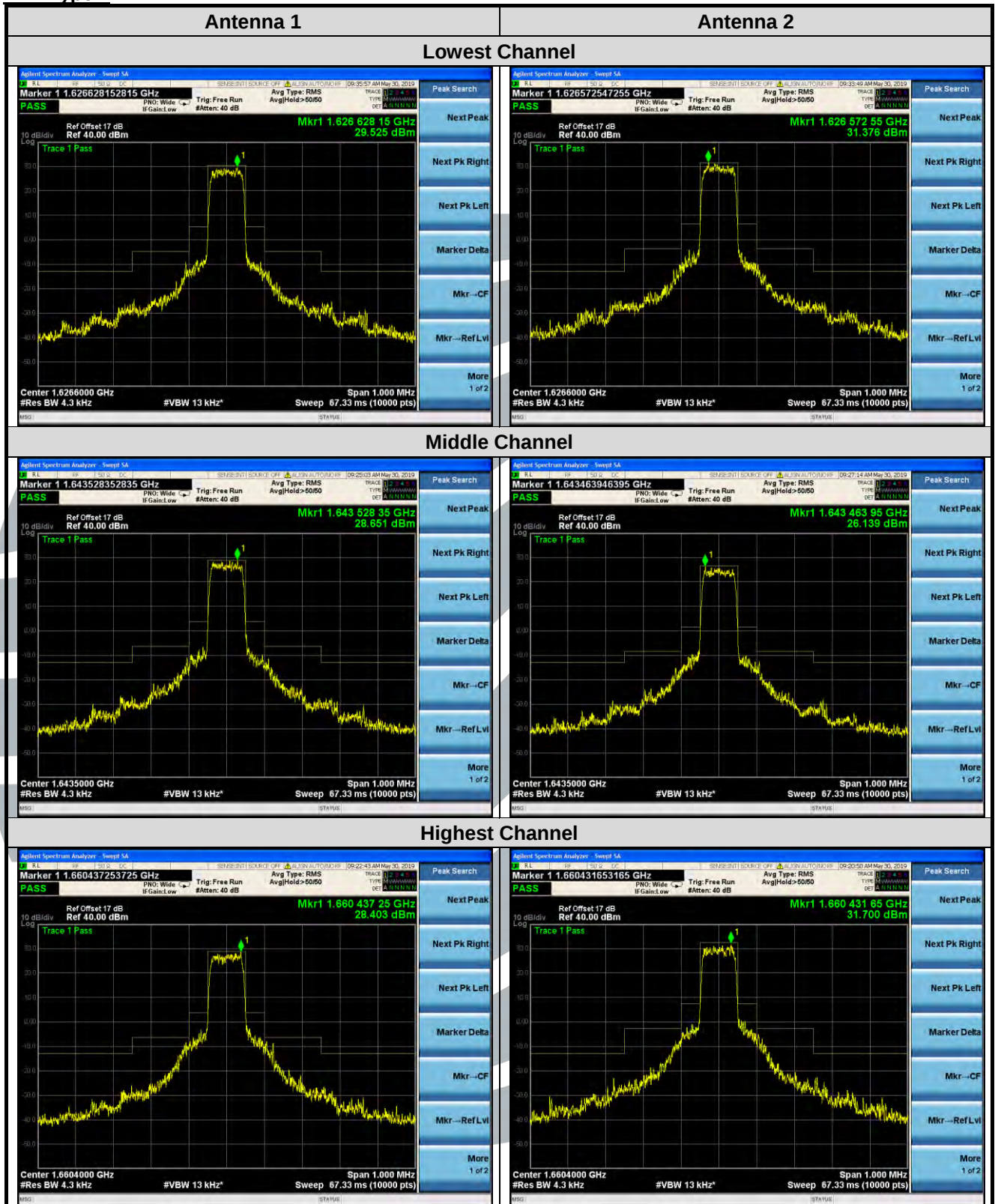
BW: Type 2



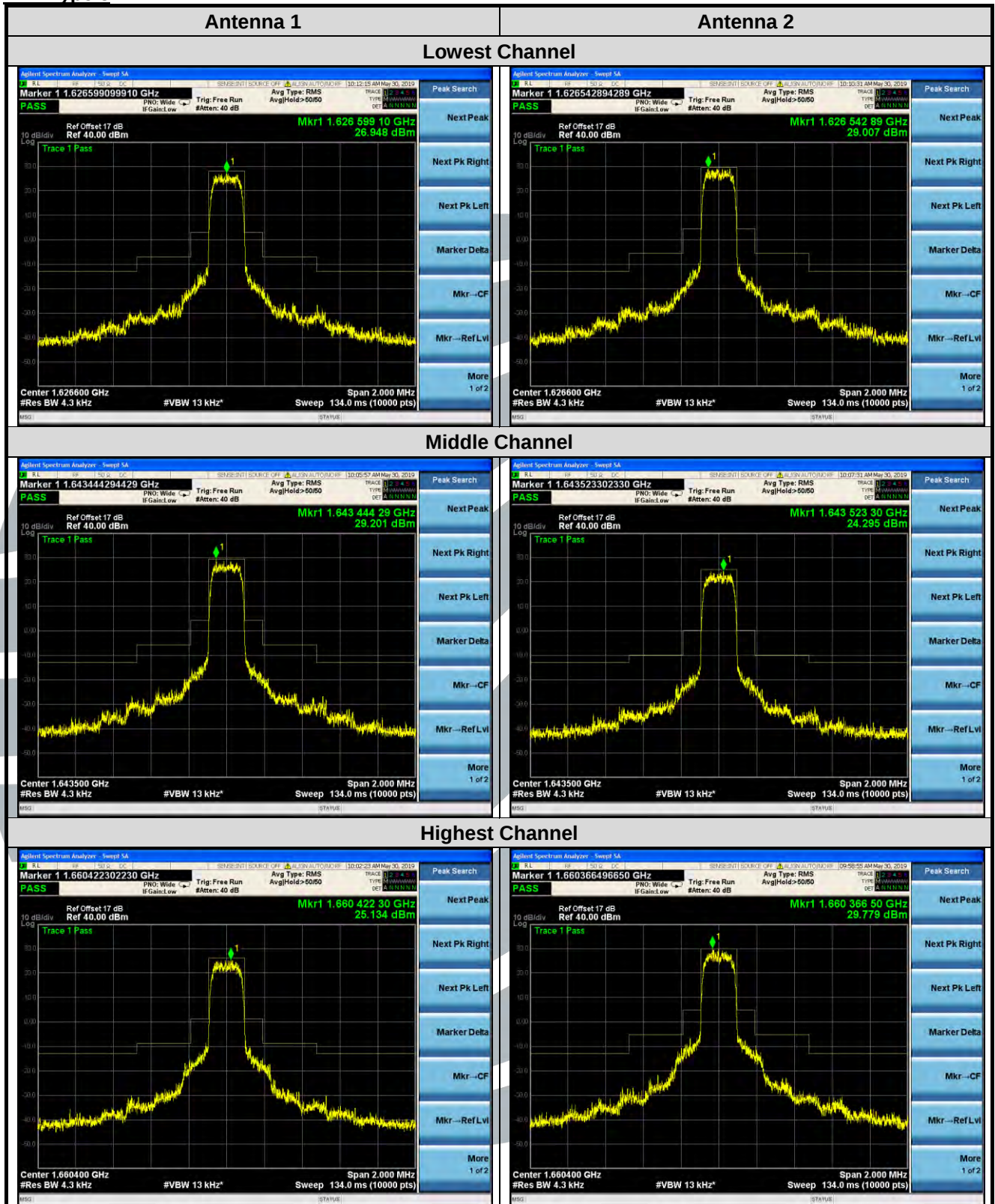
BW: Type 3



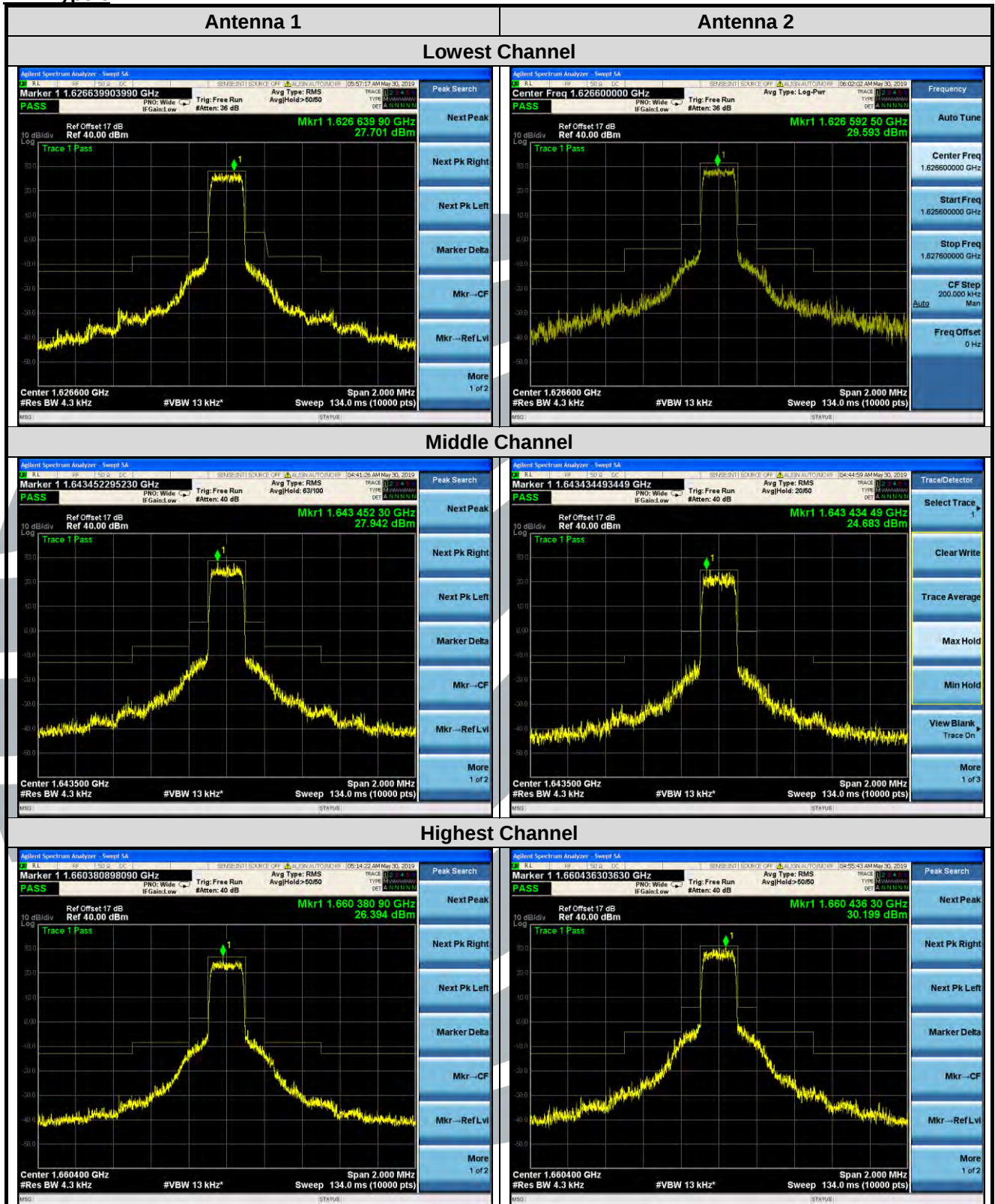
BW: Type 4



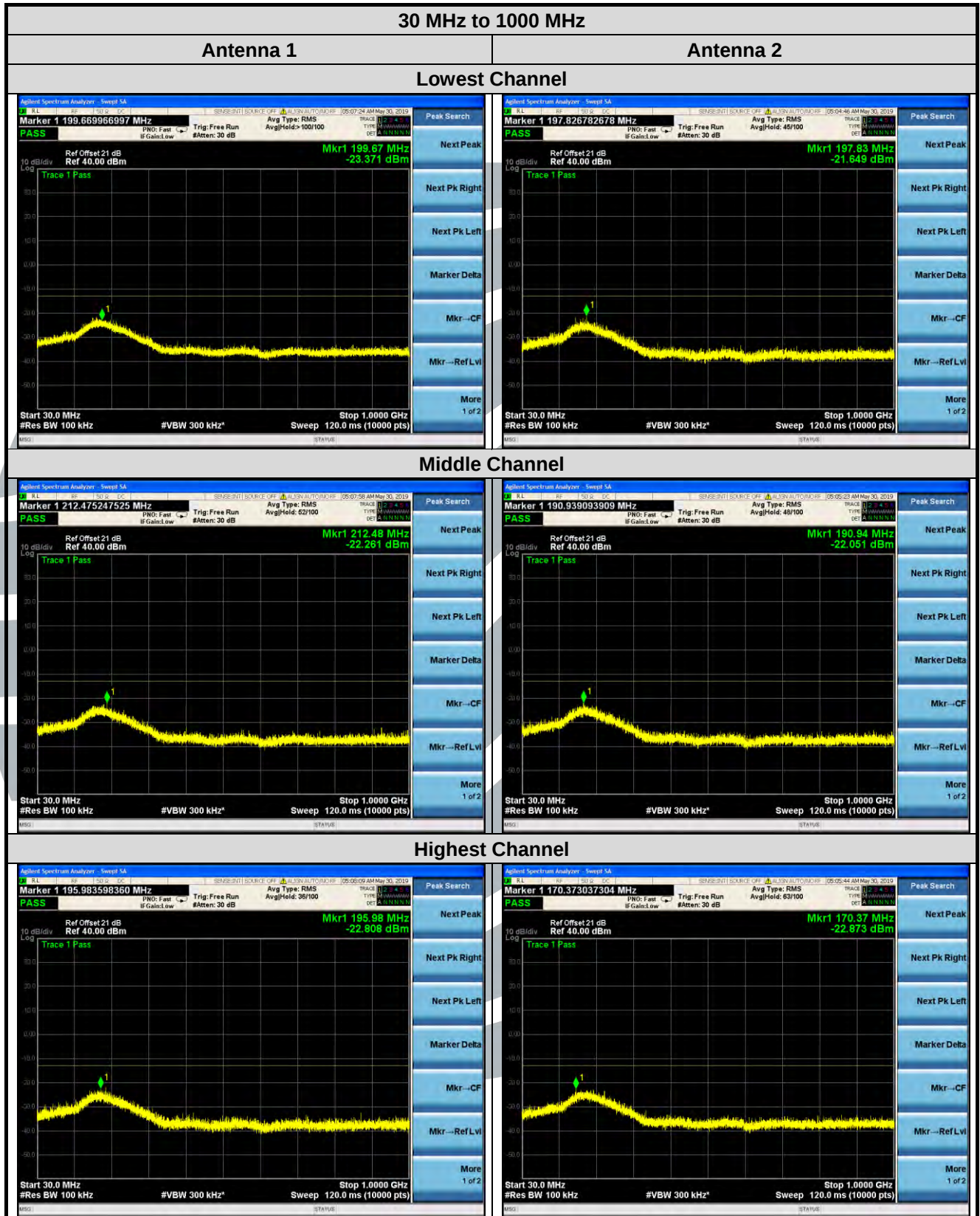
BW: Type 5

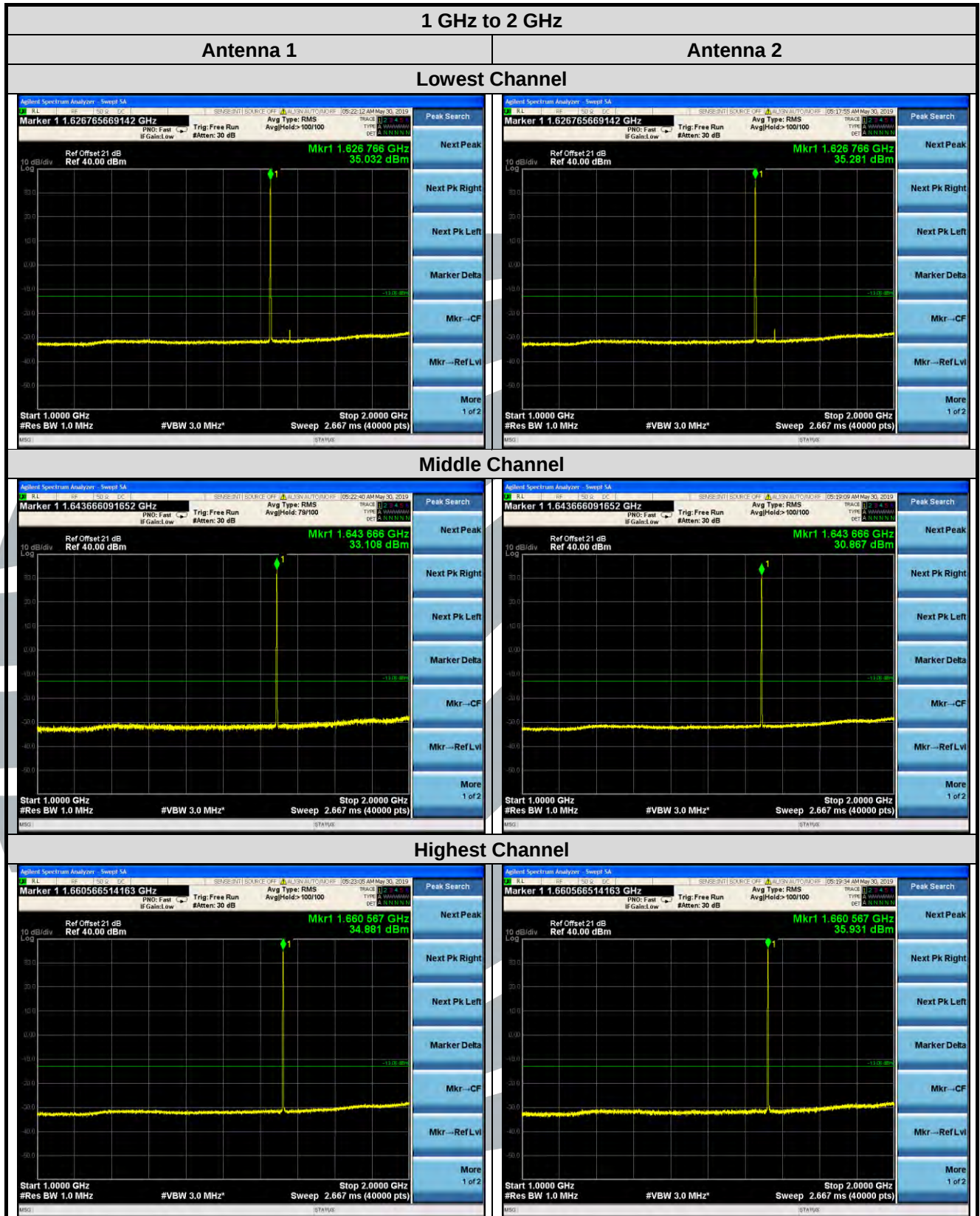


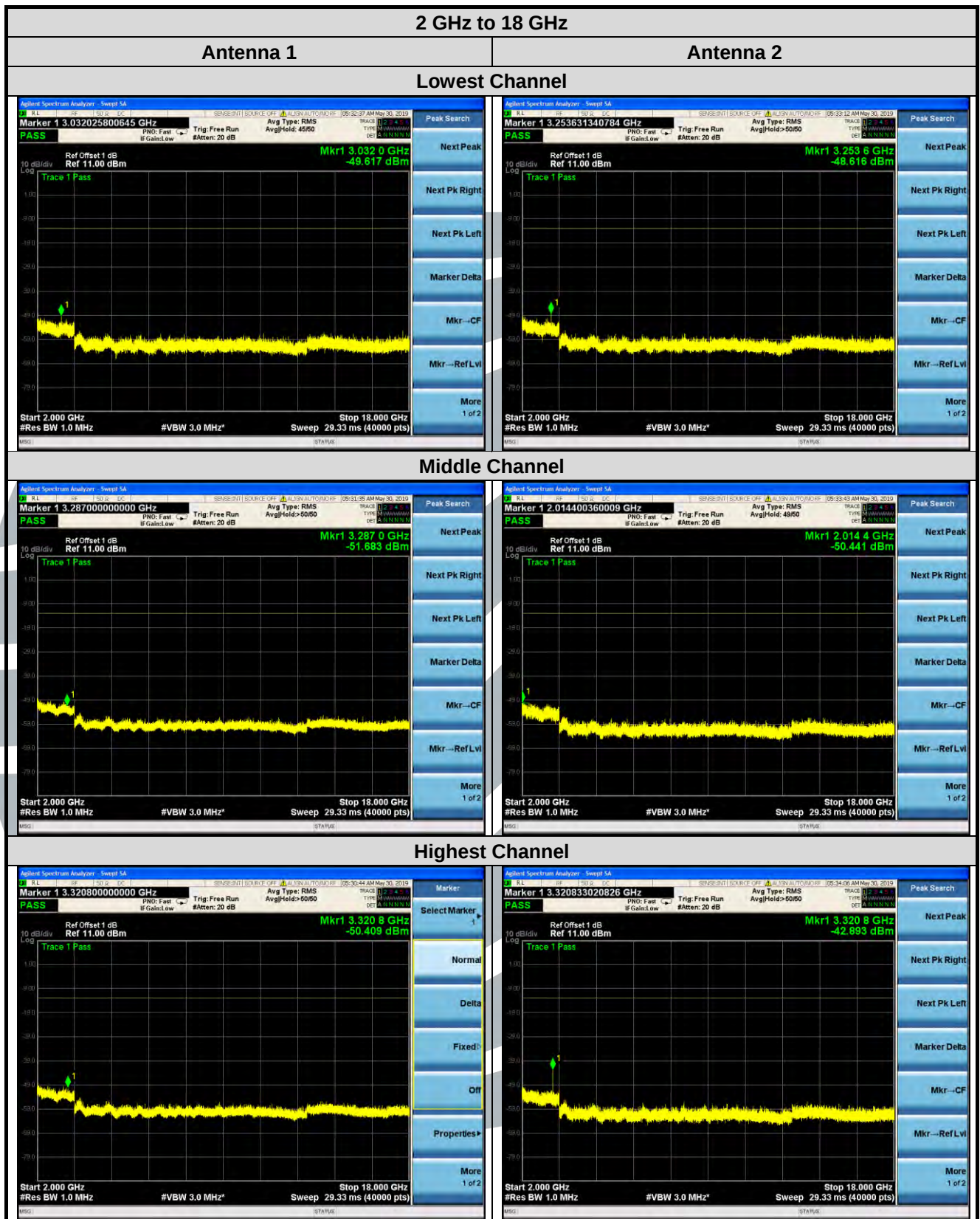
BW: Type 6



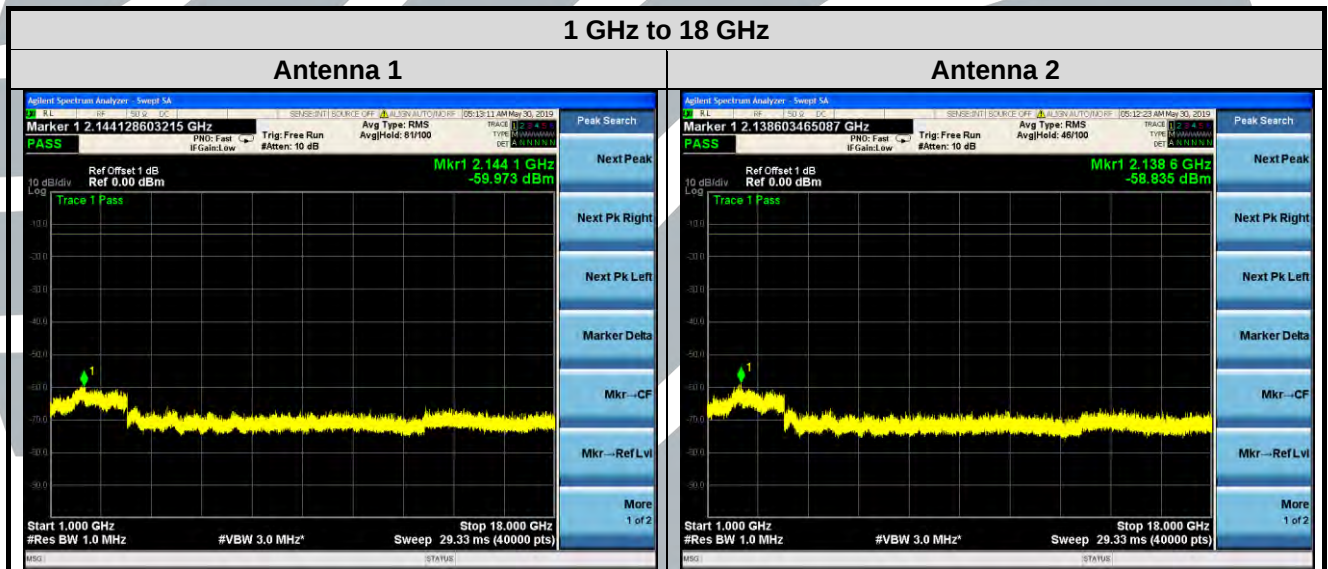
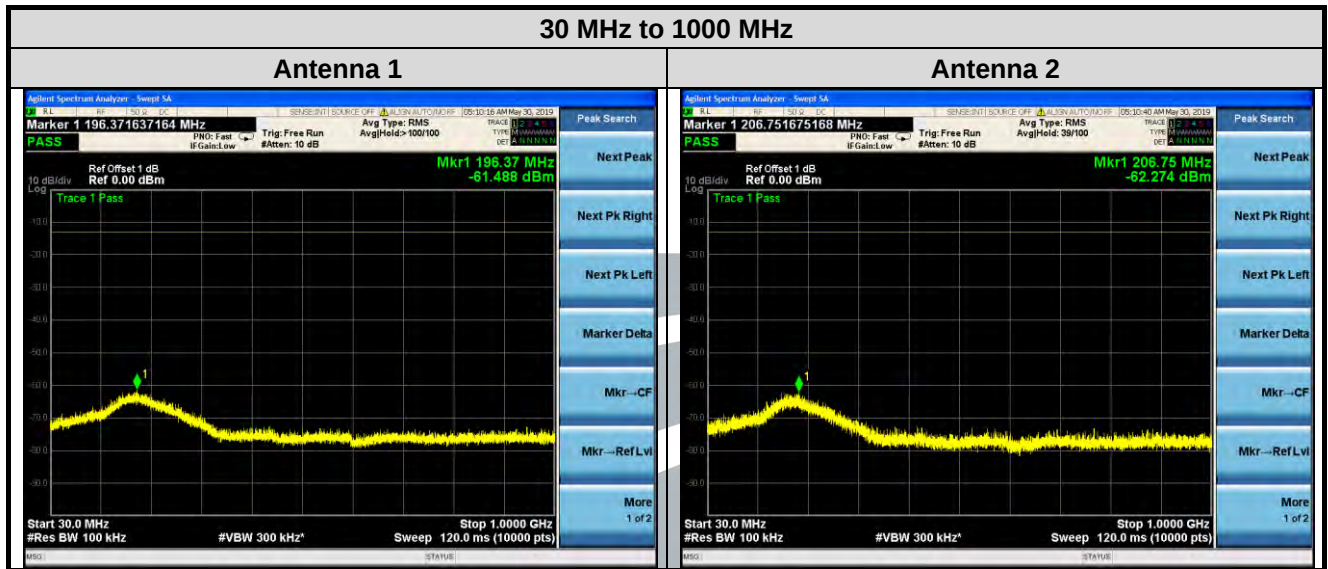
Spurious emissions outside the bands: Carrier ON
Worst results: Type 1







Spurious emissions outside the bands: Carrier OFF



5.5 RADIATED SPURIOUS EMISSIONS

Test Requirement: FCC 47 CFR Part 25.202(f)

Test Method: ANSI C63.26-2015, clause 5.5

Limit:

(1) In any 4 kHz band, the center frequency of which is removed from the assigned frequency by more than 50 percent up to and including 100 percent of the authorized bandwidth: 25 dB;

(2) In any 4 kHz band, the center frequency of which is removed from the assigned frequency by more than 100 percent up to and including 250 percent of the authorized bandwidth: 35 dB;

(3) In any 4 kHz band, the center frequency of which is removed from the assigned frequency by more than 250 percent of the authorized bandwidth: An amount equal to 43 dB plus 10 times the logarithm (to the base 10) of the transmitter power in watts;

(4) In any event, when an emission outside of the authorized bandwidth causes harmful interference, the Commission may, at its discretion, require greater attenuation than specified in paragraphs (f) (1), (2) and (3) of this section.

Test Setup: Refer to section 4.4.1 for details.

Instruments Used: Refer to section 3 for details

Test Results: Pass

Carrier ON, worst results: Type 1

Lowest Channel

No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Antenna Polaxis
1	3253.20	-57.92	11.74	-46.18	-13.00	-33.18	Horizontal
2	4879.80	-61.55	15.77	-45.78	-13.00	-32.78	Horizontal
3	3253.20	-36.06	13.09	-22.97	-13.00	-9.97	Vertical
4	4879.80	-34.23	12.40	-21.83	-13.00	-8.83	Vertical

Middle Channel

No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Antenna Polaxis
1	3287.00	-58.61	11.86	-46.75	-13.00	-33.75	Horizontal
2	4930.50	-63.95	15.81	-48.14	-13.00	-35.14	Horizontal
3	3287.00	-33.88	13.18	-20.70	-13.00	-7.70	Vertical
4	4930.50	-35.67	16.81	-18.86	-13.00	-5.86	Vertical

Highest Channel

No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Antenna Polaxis
1	3320.80	-59.98	11.98	-48.00	-13.00	-35.00	Horizontal
2	4981.20	-61.93	15.84	-46.09	-13.00	-33.09	Horizontal
3	3320.80	-34.51	13.29	-21.22	-13.00	-8.22	Vertical
4	4981.20	-35.21	16.84	-18.37	-13.00	-5.37	Vertical

5.6 EQUIVALENT ISOTROPIC RADIATED POWER

Test Requirement: FCC 47 CFR Part 25.204

Test Method: KDB 971168 D01v03r01, clause 5.2

Limit:
+ 40 dBW in any 4 kHz band for $\theta \leq 0^\circ$
+ 40 + 3 θ dBW in any 4 kHz band for $0^\circ < \theta \leq 5^\circ$

where θ is the angle of elevation of the horizon viewed from the center of radiation of the antenna of the earth station and measured in degrees as positive above the horizontal plane and negative below it.

Test Setup: Refer to section 4.4.2 for details.

Instruments Used: Refer to section 3 for details

Test Results: Pass

BW	Channel	EIRP						Limit
		(dBm)			(dBW)			
		Antenna 1	Antenna 2	Total	Antenna 1	Antenna 2	Total	(dBW)
Type 1	Lowest	43.012	45.122	47.204	13.012	15.122	17.204	40
	Middle	44.420	40.627	45.935	14.420	10.627	15.935	40
	Highest	41.930	45.869	47.342	11.930	15.869	17.342	40
Type 2	Lowest	42.217	44.503	46.519	12.217	14.503	16.519	40
	Middle	43.473	39.038	44.809	13.473	9.038	14.809	40
	Highest	40.848	44.137	45.807	10.848	14.137	15.807	40
Type 3	Lowest	41.004	42.295	44.708	11.004	12.295	14.708	40
	Middle	41.359	37.450	42.841	11.359	7.450	12.841	40
	Highest	39.562	42.080	44.011	9.562	12.080	14.011	40
Type 4	Lowest	40.248	41.422	43.885	10.248	11.422	13.885	40
	Middle	41.868	36.553	42.988	11.868	6.553	12.988	40
	Highest	38.773	42.454	44.003	8.773	12.454	14.003	40
Type 5	Lowest	38.012	39.502	41.831	8.012	9.502	11.831	40
	Middle	39.329	35.083	40.716	9.329	5.083	10.716	40
	Highest	36.196	39.862	41.415	6.196	9.862	11.415	40
Type 6	Lowest	38.069	41.303	42.991	8.069	11.303	12.991	40
	Middle	38.613	34.837	40.133	8.613	4.837	10.133	40
	Highest	36.516	41.064	42.370	6.516	11.064	12.370	40

5.7 LIMITS ON EMISSIONS FROM MOBILE EARTH STATIONS FOR PROTECTION OF AERONAUTICAL RADIO NAVIGATION-SATELLITE SERVICE

Test Requirement: FCC 47 CFR Part 25.216

Test Method: ANSI C63.26-2015, clause 5.7

Limits:

25.216 (c) The e.i.r.p. density of emissions from mobile earth stations placed in service after July 21, 2002 with assigned uplink frequencies between 1610 MHz and 1660.5 MHz shall not exceed -70 dBW/MHz, averaged over any 2 millisecond active transmission interval, in the band 1559-1605 MHz. The e.i.r.p. of discrete emissions of less than 700 Hz bandwidth from such stations shall not exceed -80 dBW, averaged over any 2 millisecond active transmission interval, in the 1559-1605 MHz band.

25.216 (i) The e.i.r.p density of carrier-off state emissions from mobile earth stations manufactured more than six months after Federal Register publication of the rule changes adopted in FCC 03-283 with assigned uplink frequencies between 1 and 3 GHz shall not exceed -80 dBW/MHz in the 1559-1610 MHz band averaged over any two millisecond interval.

Test Setup: Refer to section 4.4.2 for details.

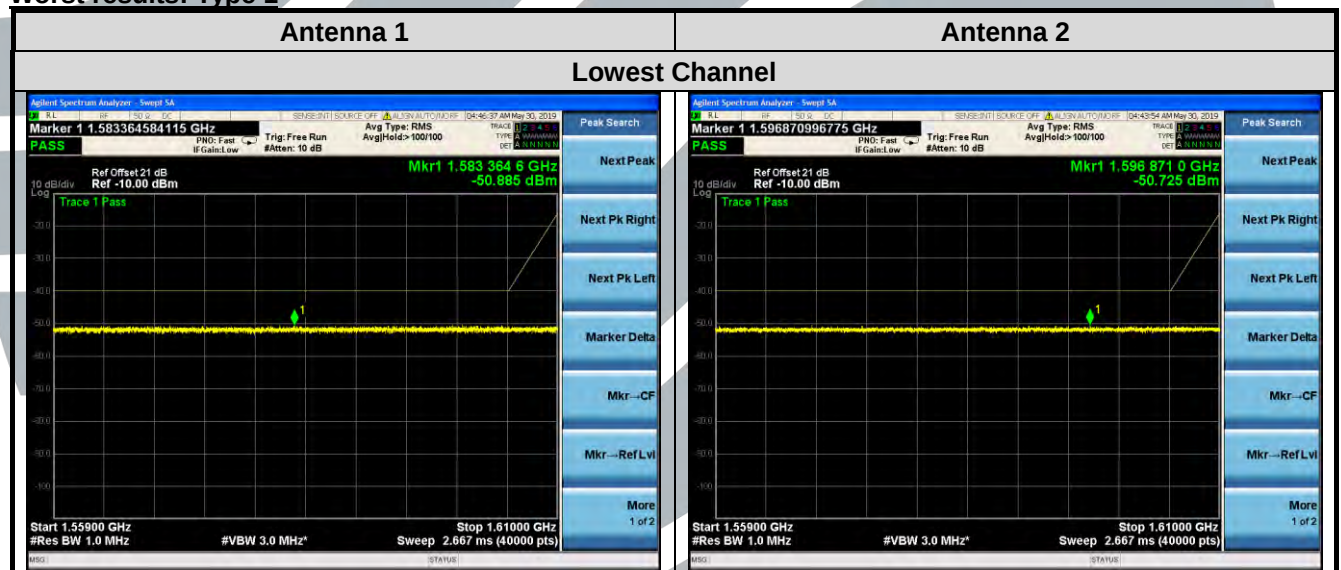
Equipment Used: Refer to section 3 for details.

Test Results: Pass

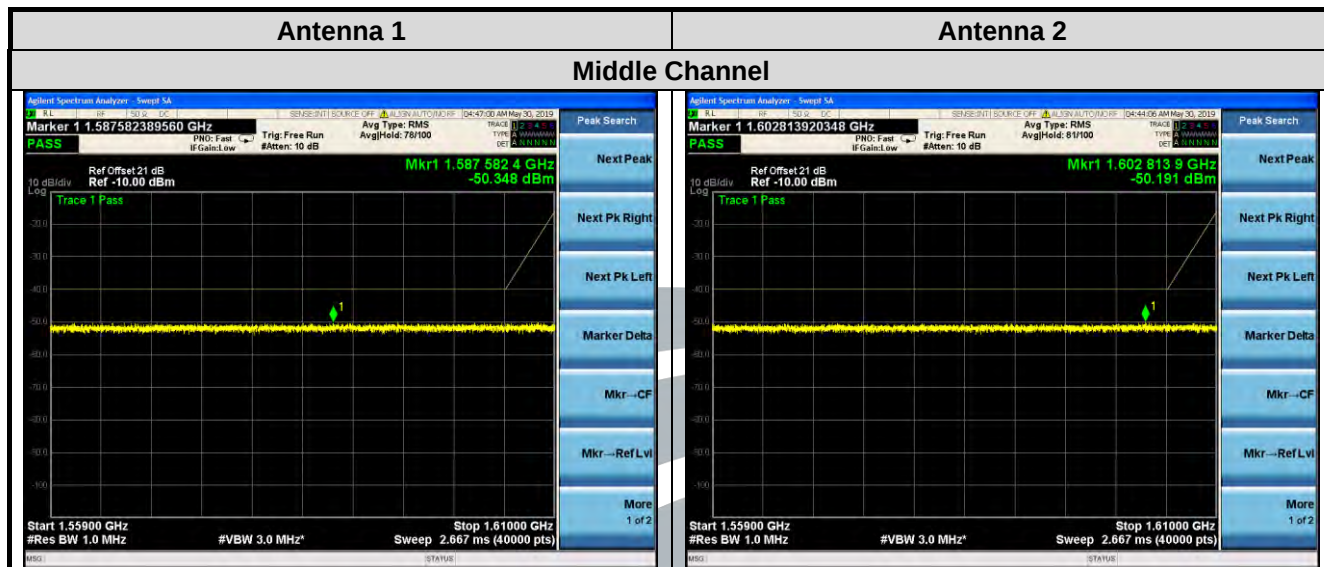
Broadband Emission Results

Carrier ON

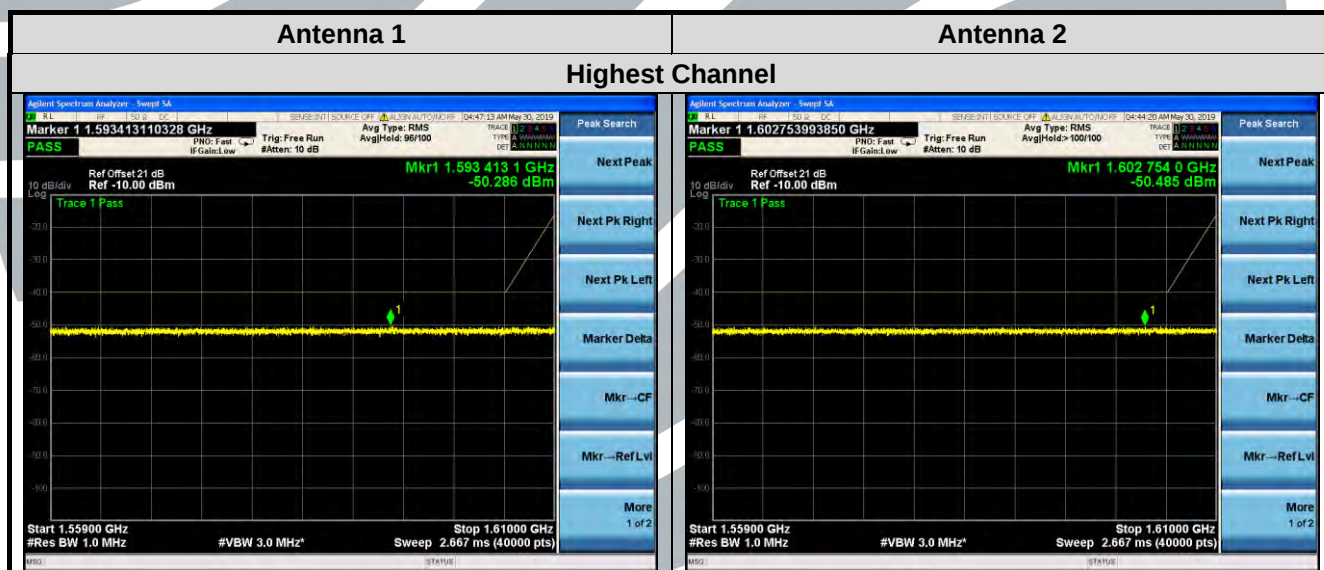
Worst results: Type 1



No.	Frequency	Level		Limit
	(MHz)	(dBm)	(dBW)	(dBW)
Antenna 1	1583.3646	-50.885	-80.885	-70
Antenna 2	1596.8710	-50.725	-80.725	-70

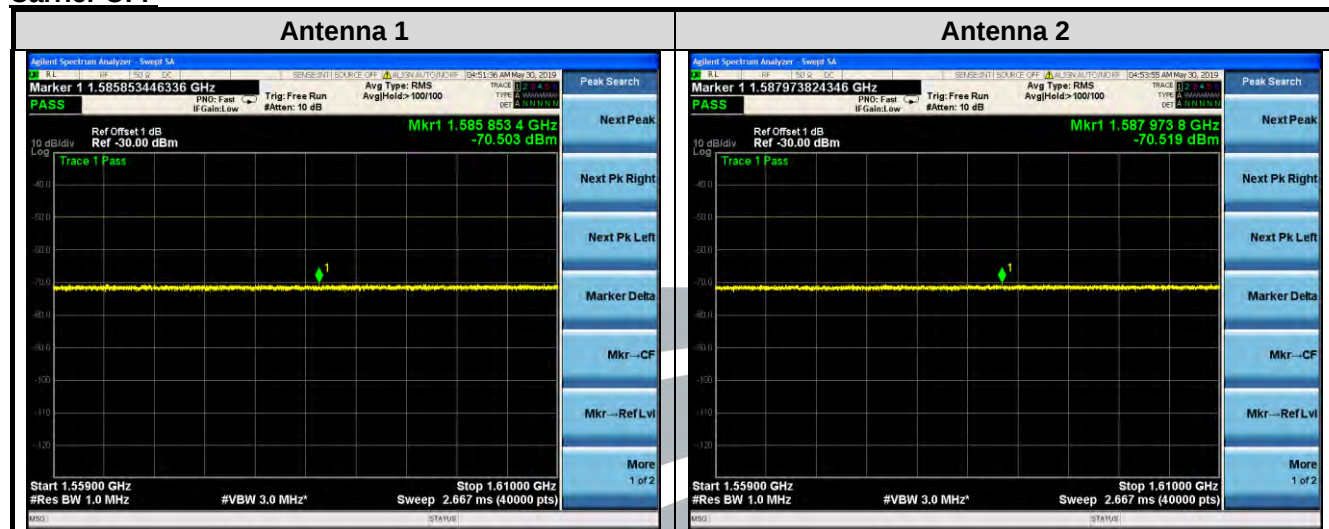


No.	Frequency	Level		Limit
	(MHz)	(dBm)	(dBW)	(dBW)
Antenna 1	1587.5824	-50.348	-80.348	-70
Antenna 2	1602.8139	-50.191	-80.191	-70



No.	Frequency	Level		Limit
	(MHz)	(dBm)	(dBW)	(dBW)
Antenna 1	1593.4131	-50.286	-80.286	-70
Antenna 2	1602.7540	-50.485	-80.485	-70

Carrier OFF



No.	Frequency	Level		Limit
	(MHz)	(dBm)	(dBW)	(dBW)
Antenna 1	1585.8534	-70.503	-100.503	-80
Antenna 2	1587.9738	-70.519	-100.519	-80

Discrete Emission Results

Carrier ON

Lowest Channel				
No.	Frequency	Level		Results
	(MHz)	(dBm)	(dBW)	
Antenna 1	*	*	*	Pass
Antenna 2	*	*	*	Pass

Middle Channel				
No.	Frequency	Level		Results
	(MHz)	(dBm)	(dBW)	
Antenna 1	*	*	*	Pass
Antenna 2	*	*	*	Pass

Highest Channel				
No.	Frequency	Level		Results
	(MHz)	(dBm)	(dBW)	
Antenna 1	*	*	*	Pass
Antenna 2	*	*	*	Pass

*No emissions were detected within 10 dB of the limit.

Carrier OFF

No.	Frequency	Level		Results
	(MHz)	(dBm)	(dBW)	
Antenna 1	*	*	*	Pass
Antenna 2	*	*	*	Pass

*No emissions were detected within 10 dB of the limit.

APPENDIX 1 PHOTOS OF TEST SETUP

See test photos attached in Appendix 1 for the actual connections between Product and support equipment.

APPENDIX 2 PHOTOS OF EUT CONSTRUCTIONAL DETAILS

Refer to Appendix 2 for EUT external and internal photos.

*** End of Report ***

The test report is effective only with both signature and specialized stamp. The result(s) shown in this report refer only to the sample(s) tested. Without written approval of UnionTrust, this report can't be reproduced except in full.
