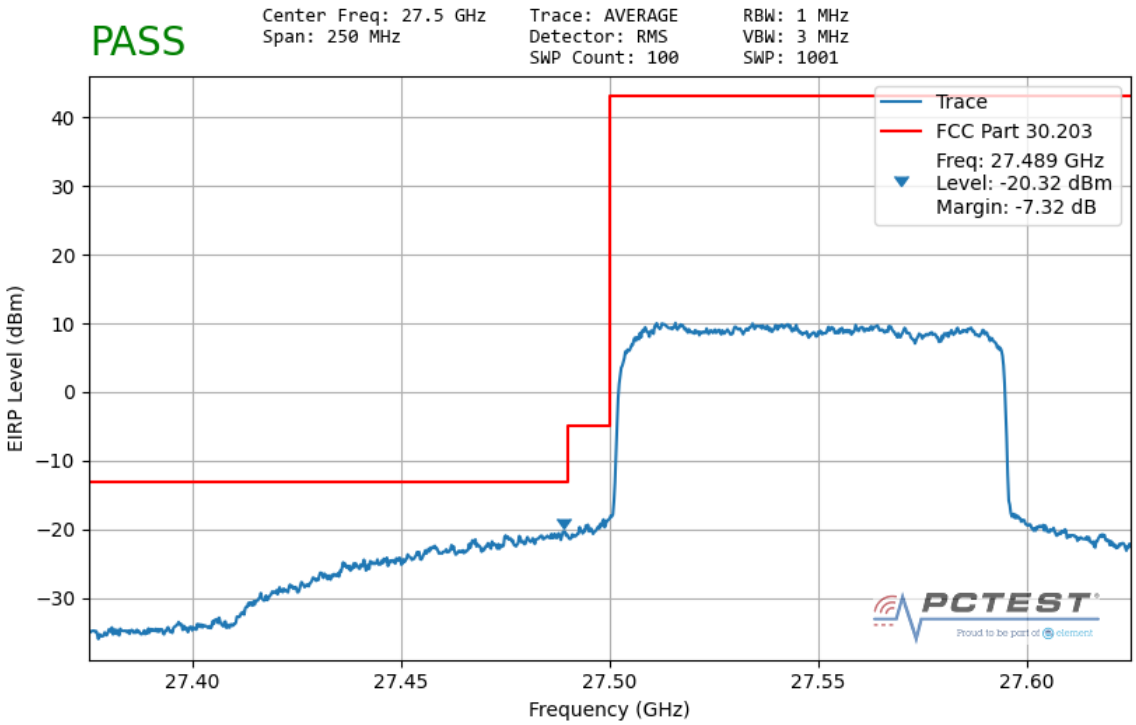
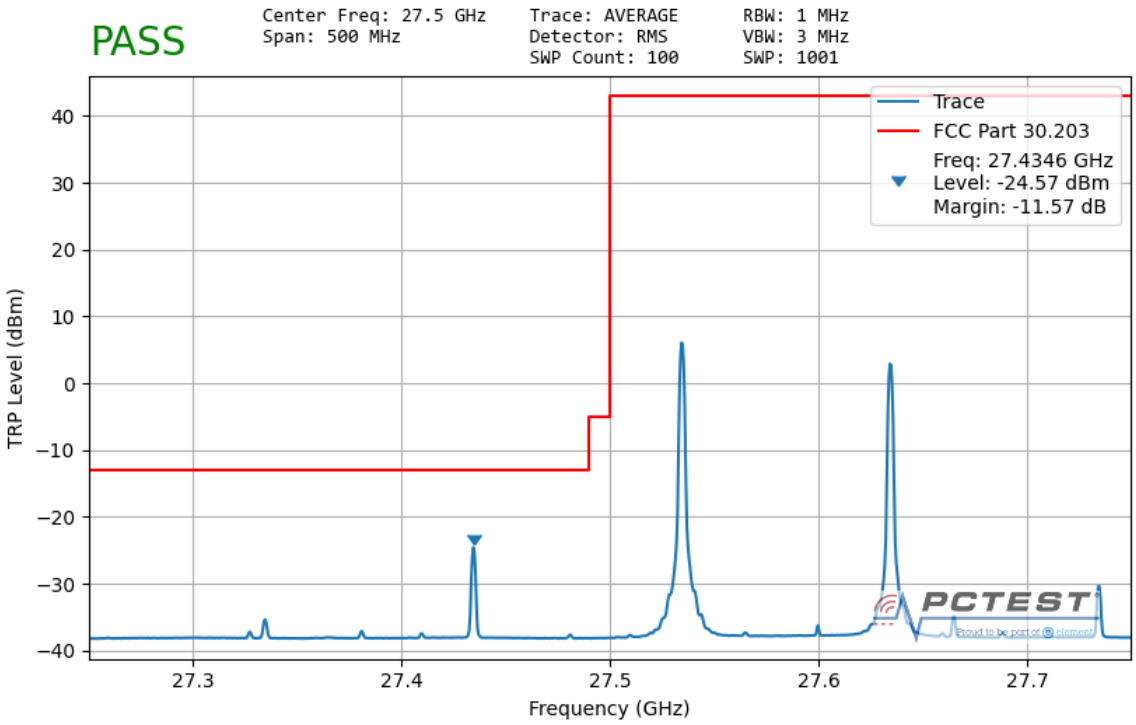
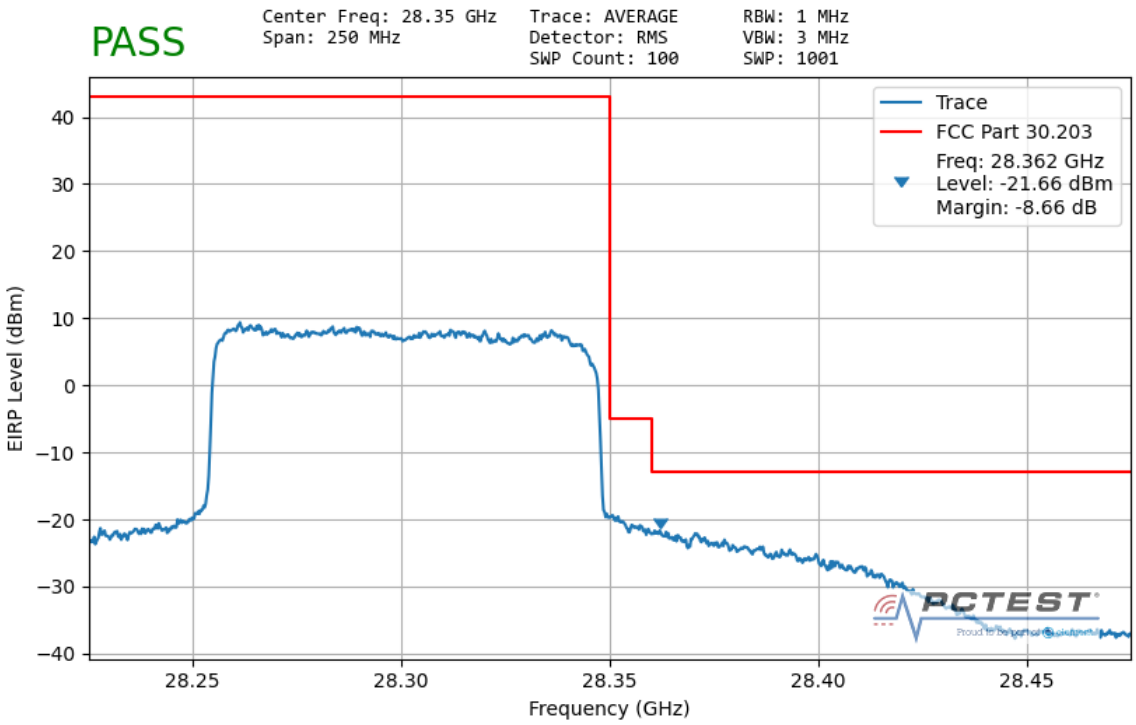


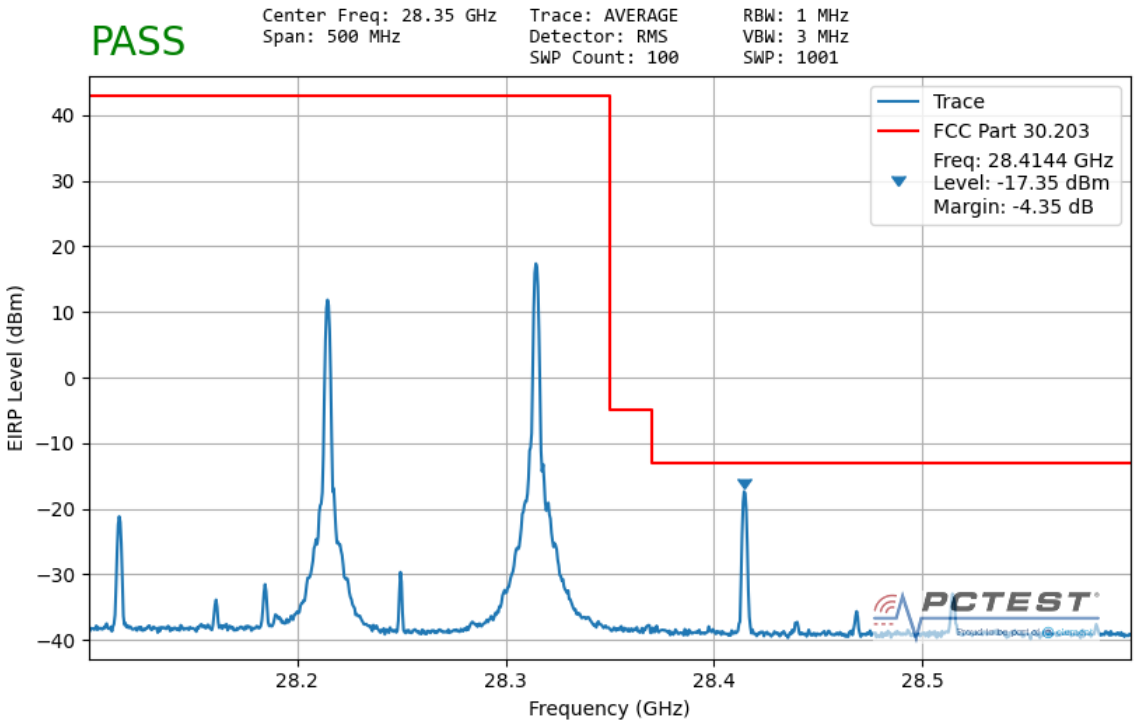
Plot 7-67. Ant 1 Lower Band Edge (100MHz-1CC – QPSK Full RB)



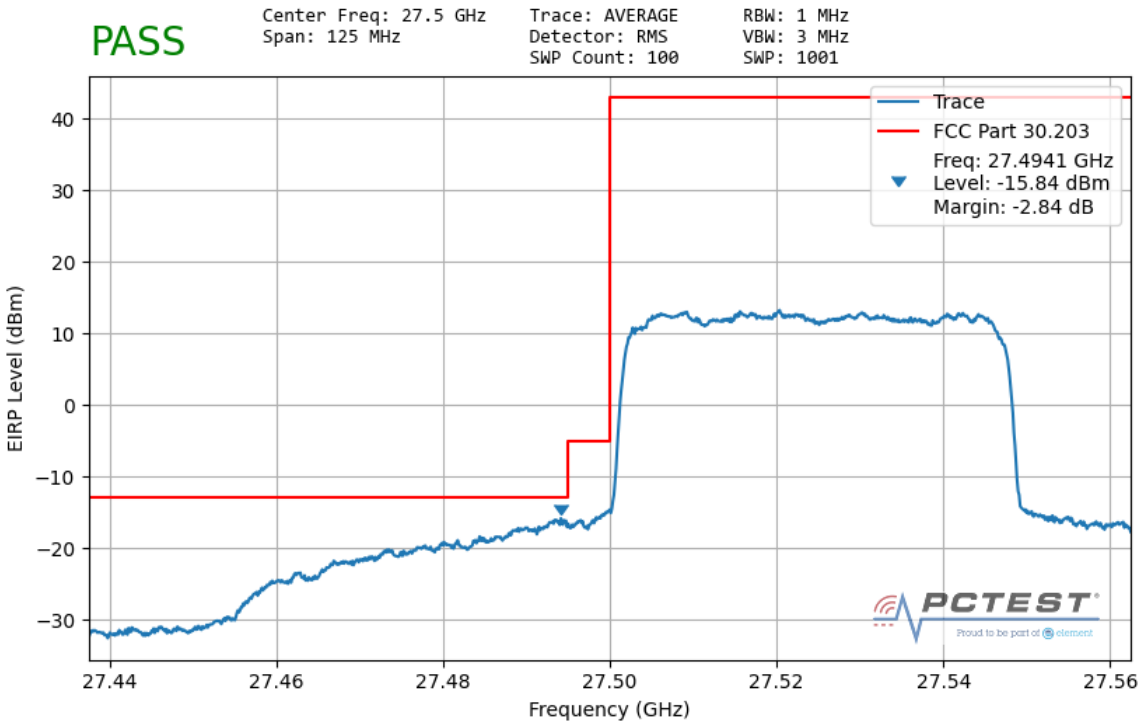
Plot 7-68. Ant 1 Lower Band Edge – TRP (100MHz-2CC – QPSK 1 RB)



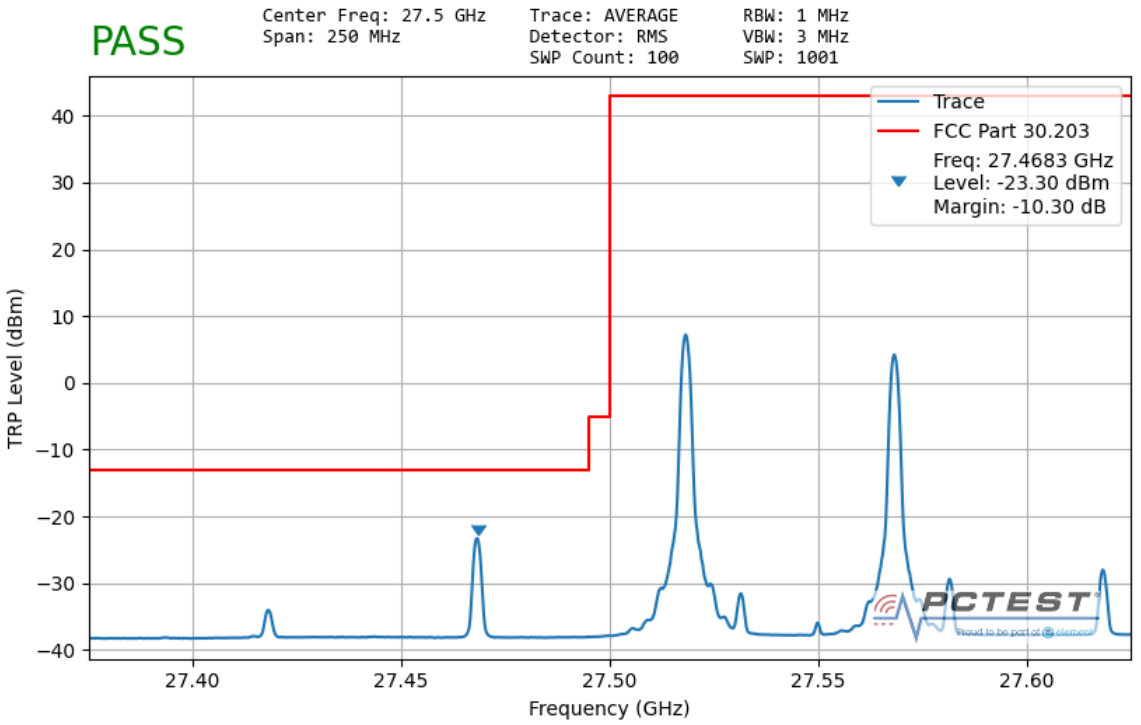
Plot 7-69. Ant 1 Upper Band Edge (100MHz-1CC – QPSK Full RB)



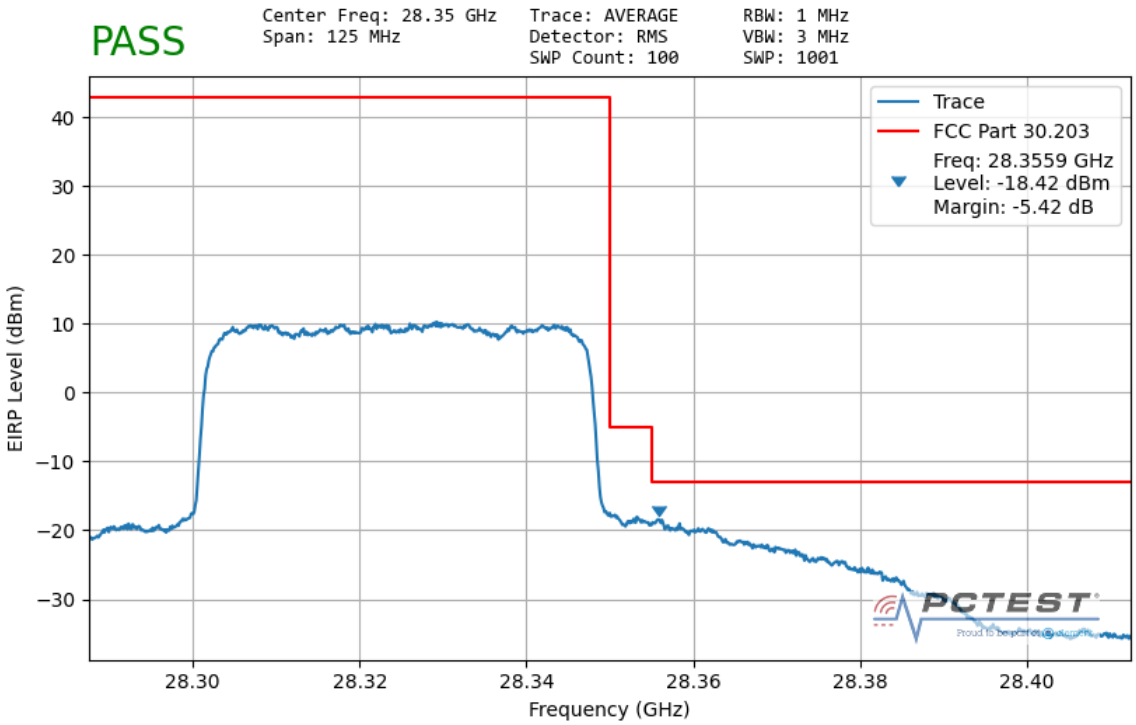
Plot 7-70. Ant 1 Upper Band Edge (100MHz-2CC – QPSK 1 RB)



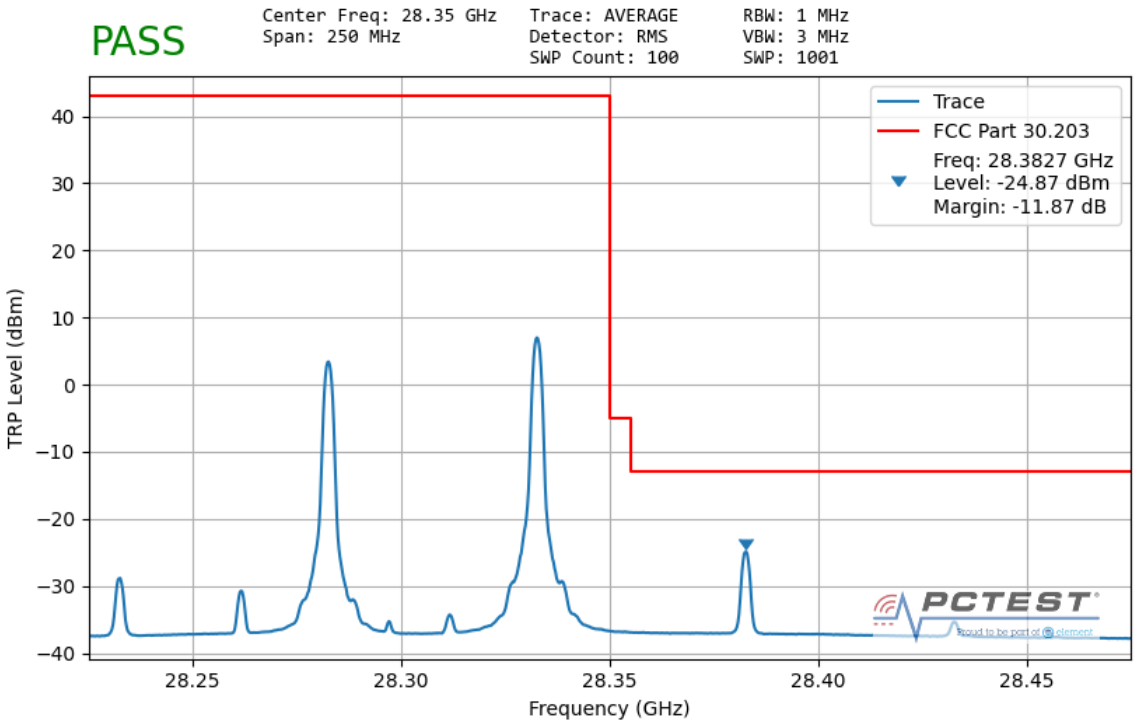
Plot 7-71. Ant 2 Lower Band Edge (50MHz-1CC – QPSK Full RB)



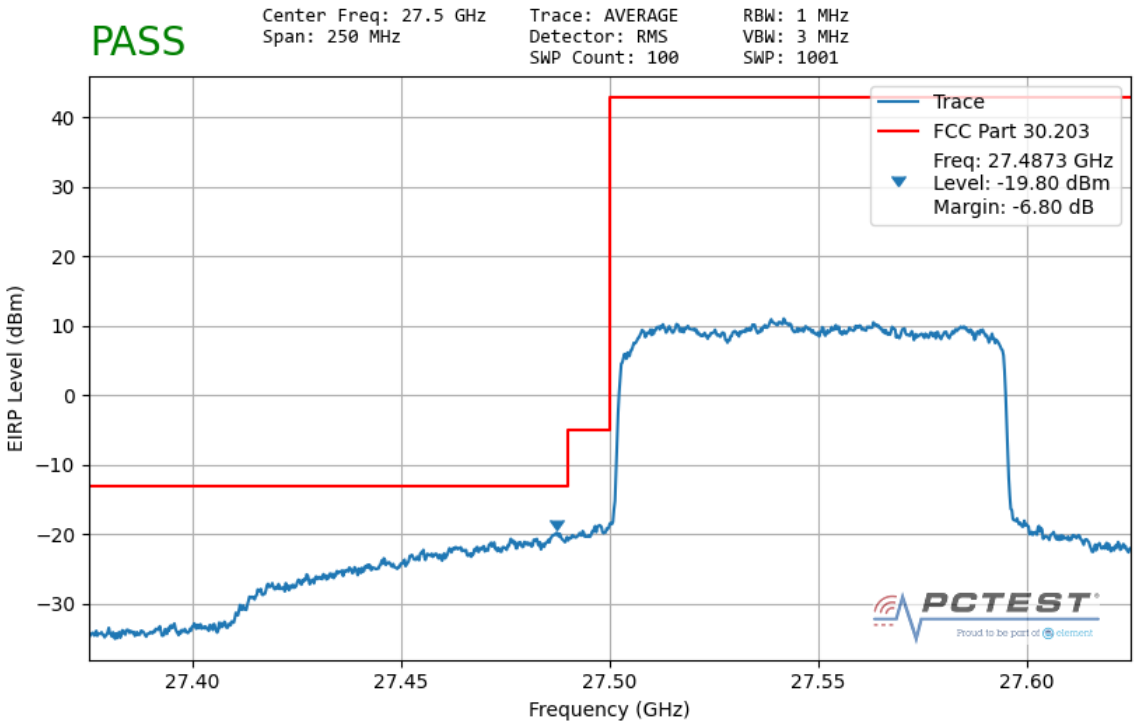
Plot 7-72. Ant 2 Lower Band Edge – TRP (50MHz-2CC – QPSK 1 RB)



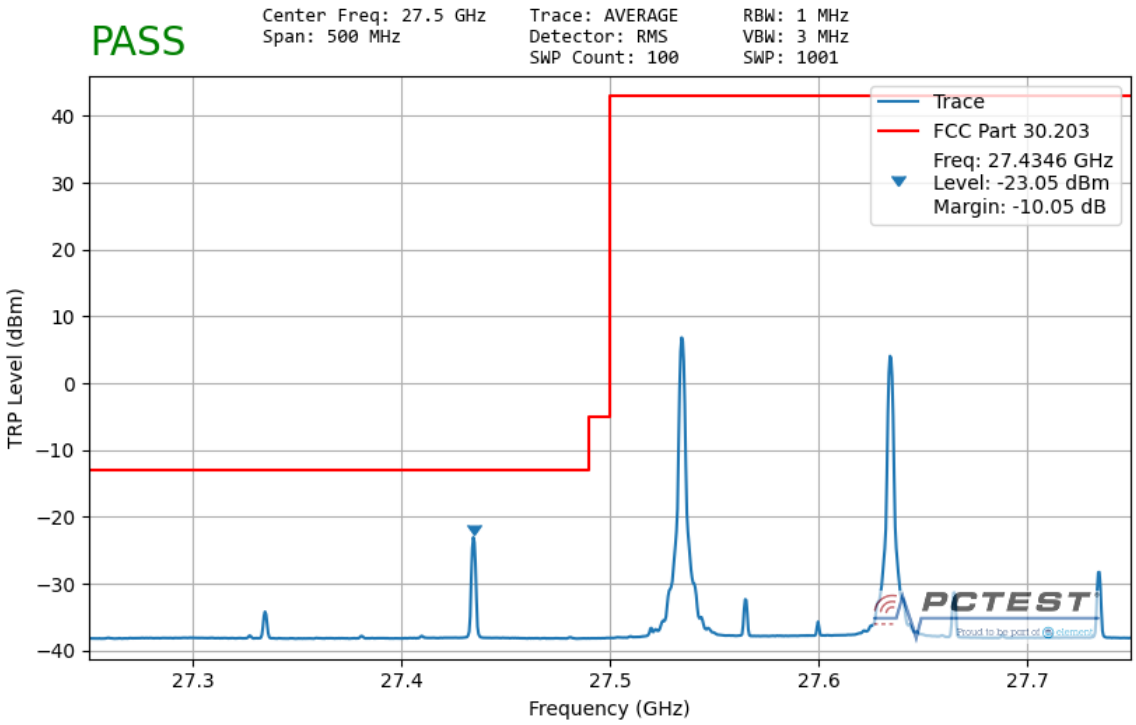
Plot 7-73. Ant 2 Upper Band Edge (50MHz-1CC – QPSK Full RB)



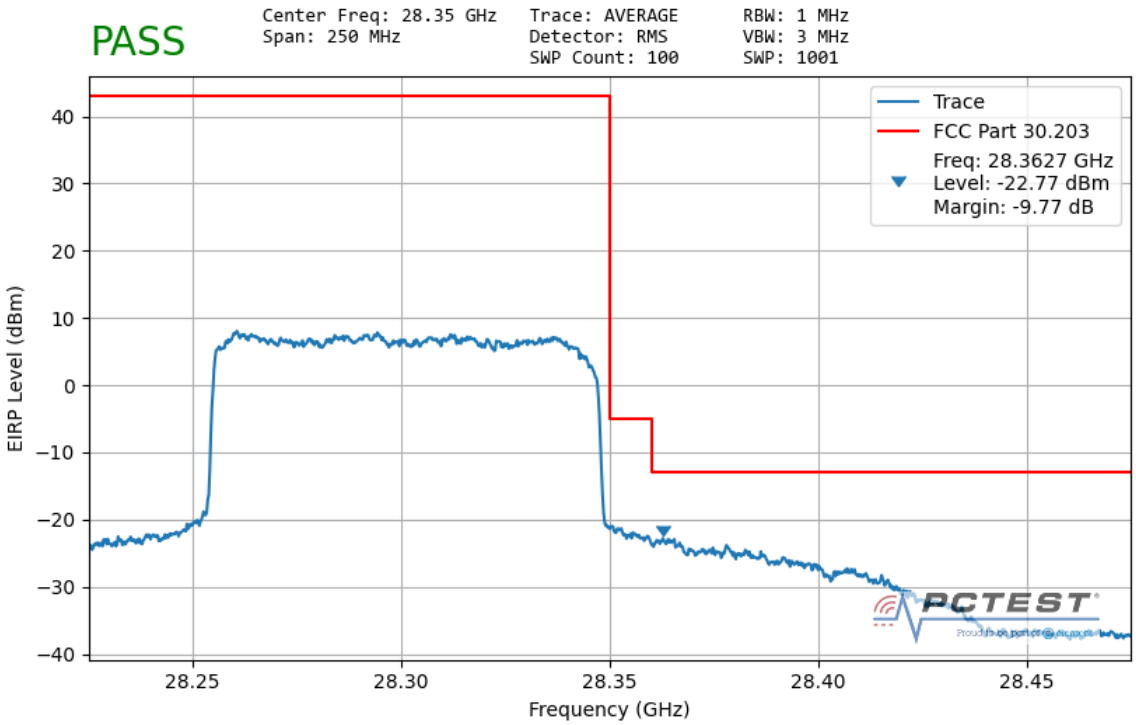
Plot 7-74. Ant 2 Upper Band Edge – TRP (50MHz-2CC – QPSK 1 RB)



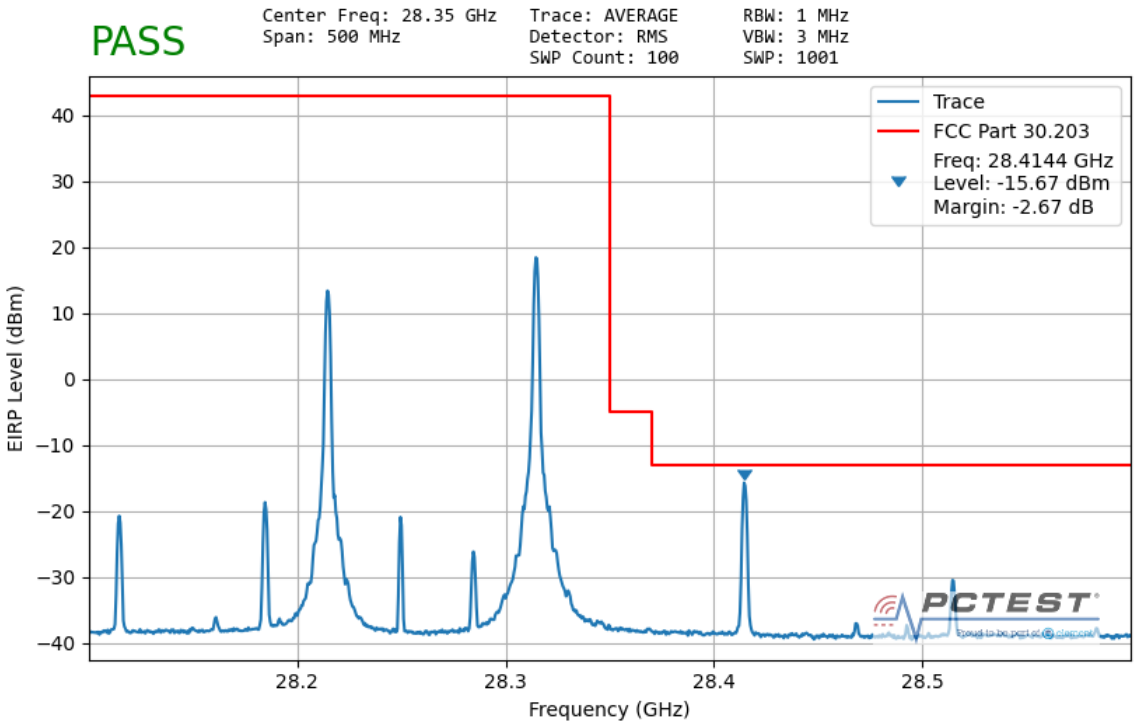
Plot 7-75. Ant 2 Lower Band Edge (100MHz-1CC – QPSK Full RB)



Plot 7-76. Ant 2 Lower Band Edge – TRP (100MHz-2CC – QPSK 1 RB)

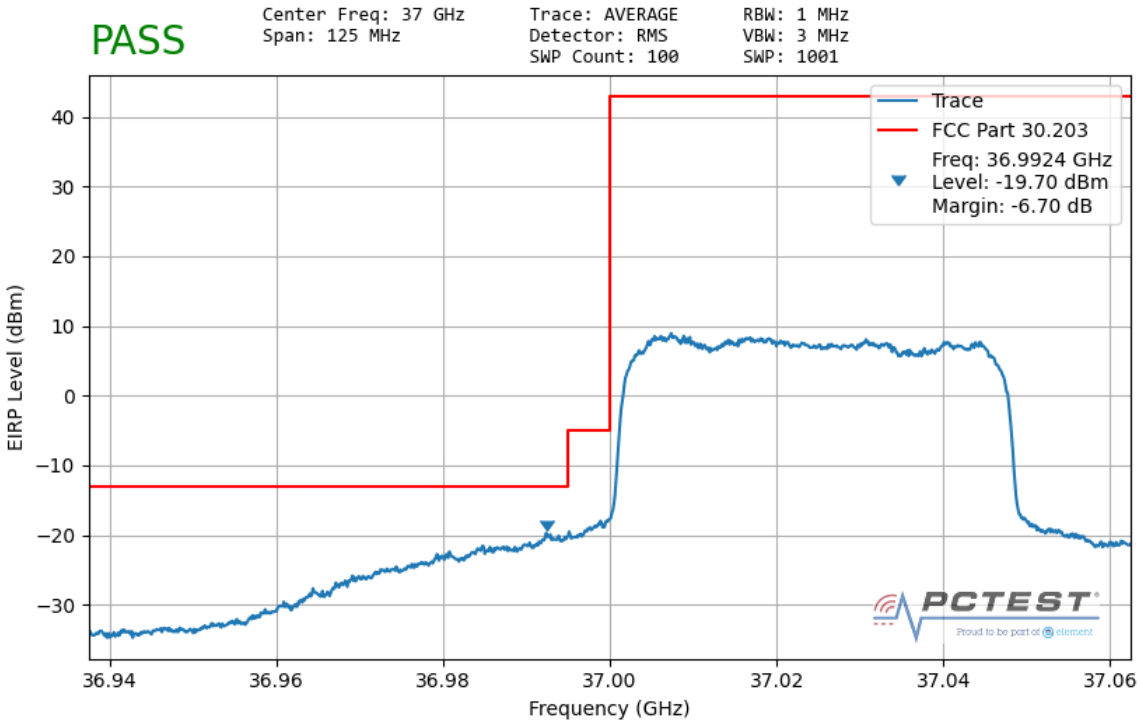


Plot 7-77. Ant 2 Upper Band Edge (100MHz-1CC – QPSK Full RB)

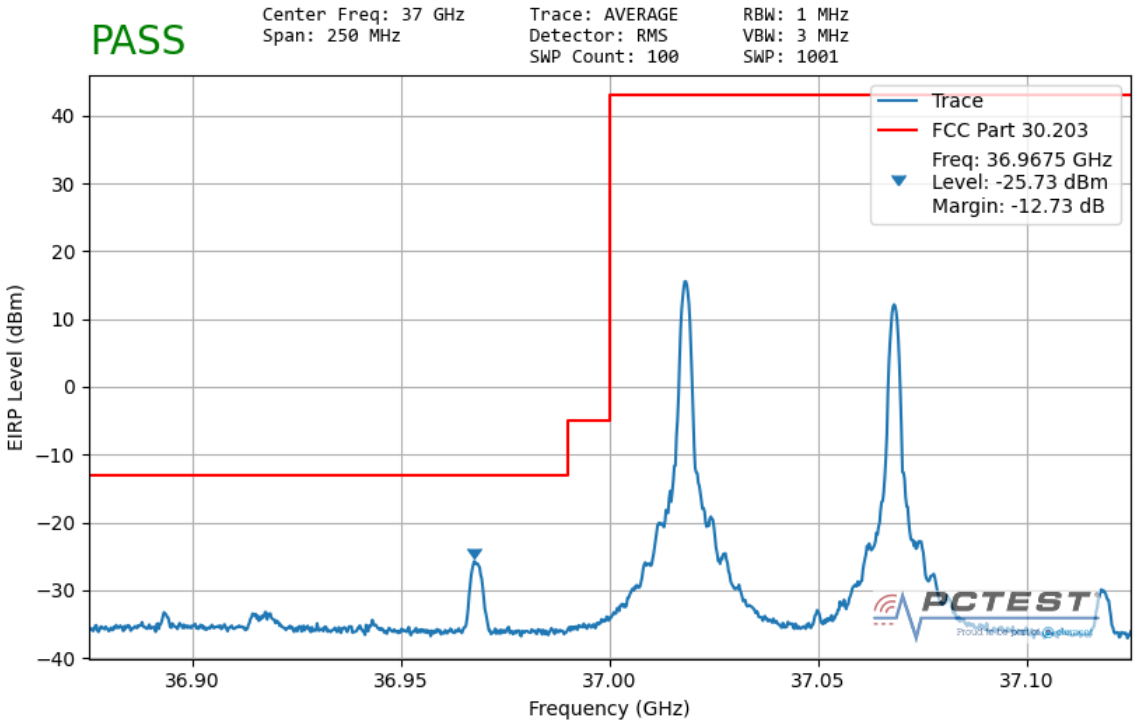


Plot 7-78. Ant 2 Upper Band Edge (100MHz-2CC – QPSK 1 RB)

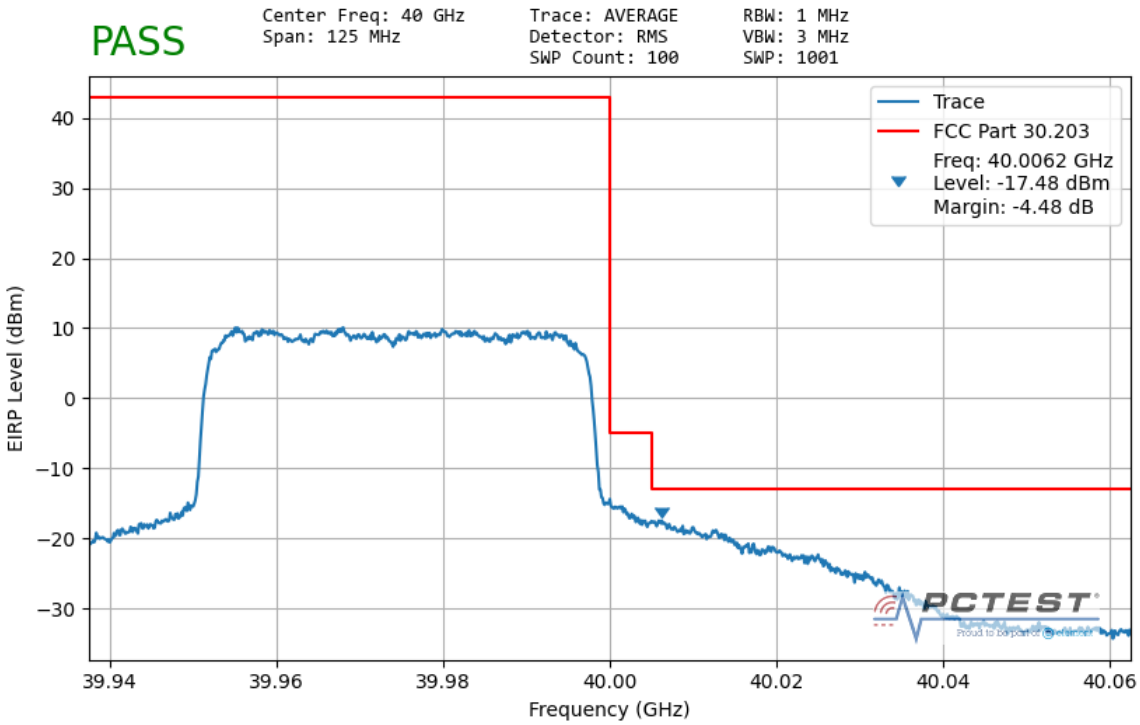
Band n260 – Worst Case



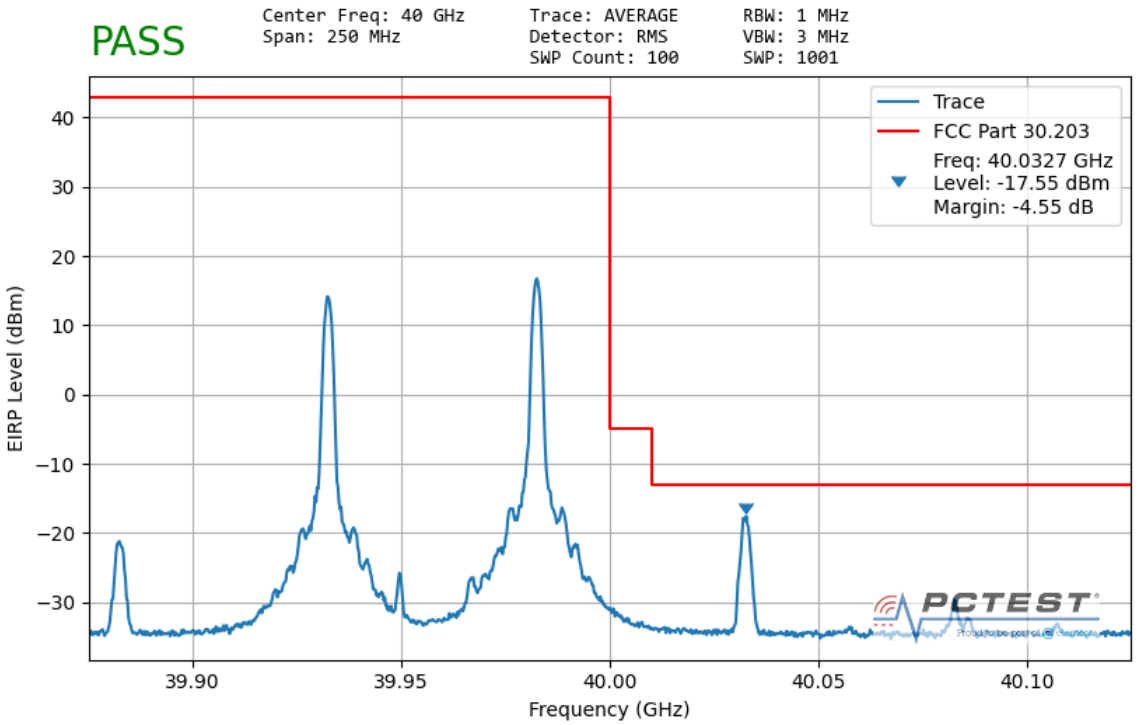
Plot 7-79. Ant 1 Lower Band Edge (50MHz-1CC – QPSK Full RB)



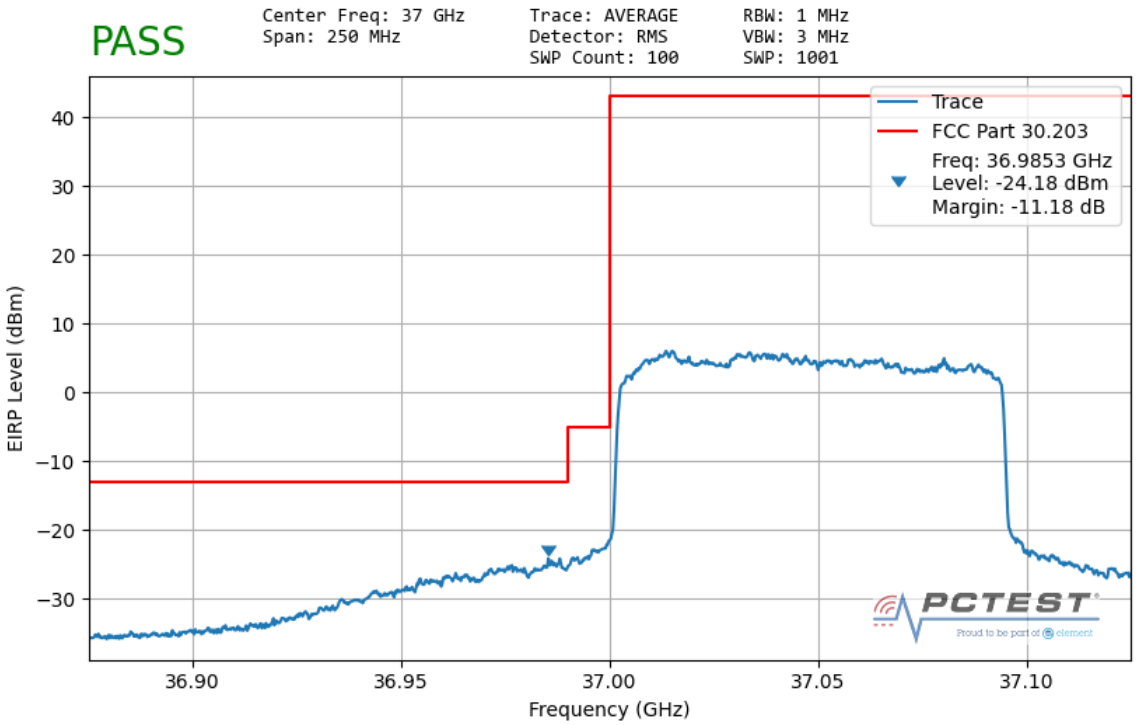
Plot 7-80. Ant 1 Lower Band Edge (50MHz-2CC – QPSK 1 RB)



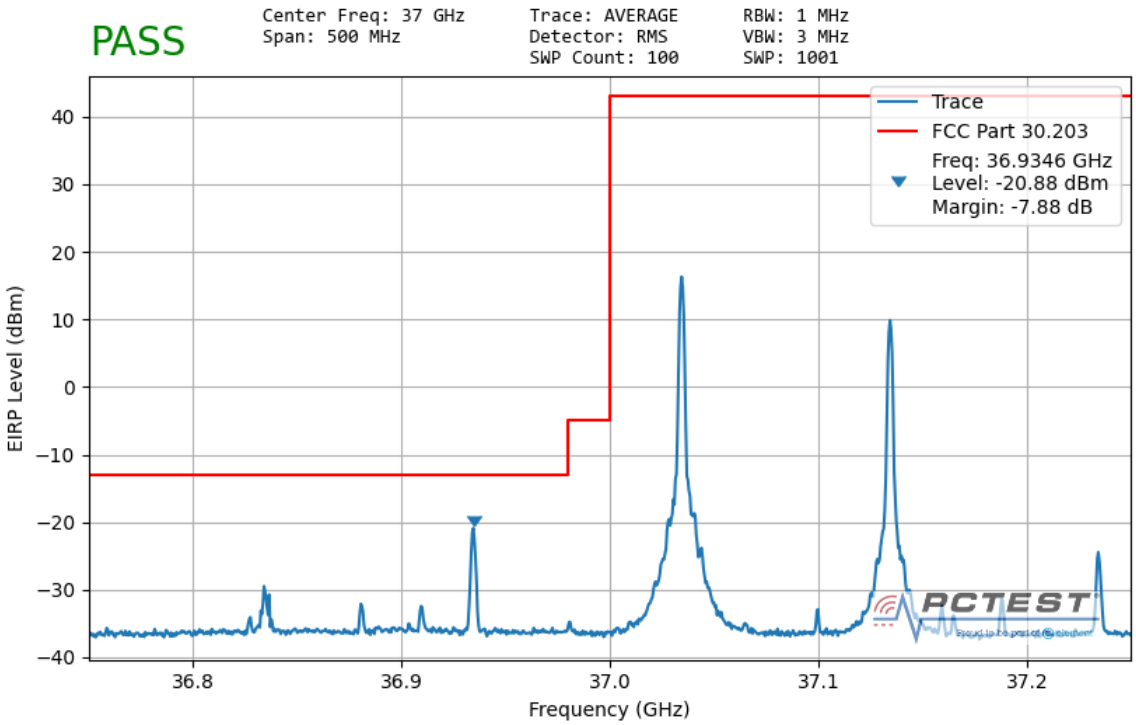
Plot 7-81. Ant 1 Upper Band Edge (50MHz-1CC – QPSK Full RB)



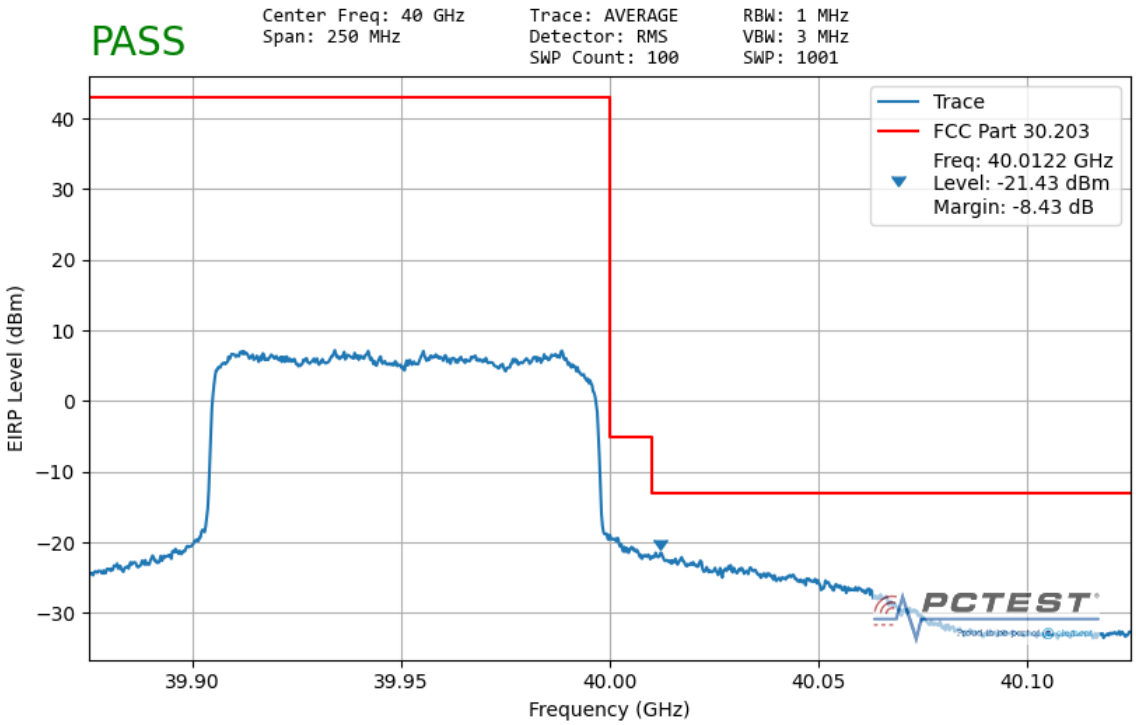
Plot 7-82. Ant 1 Upper Band Edge (50MHz-2CC – QPSK 1 RB)



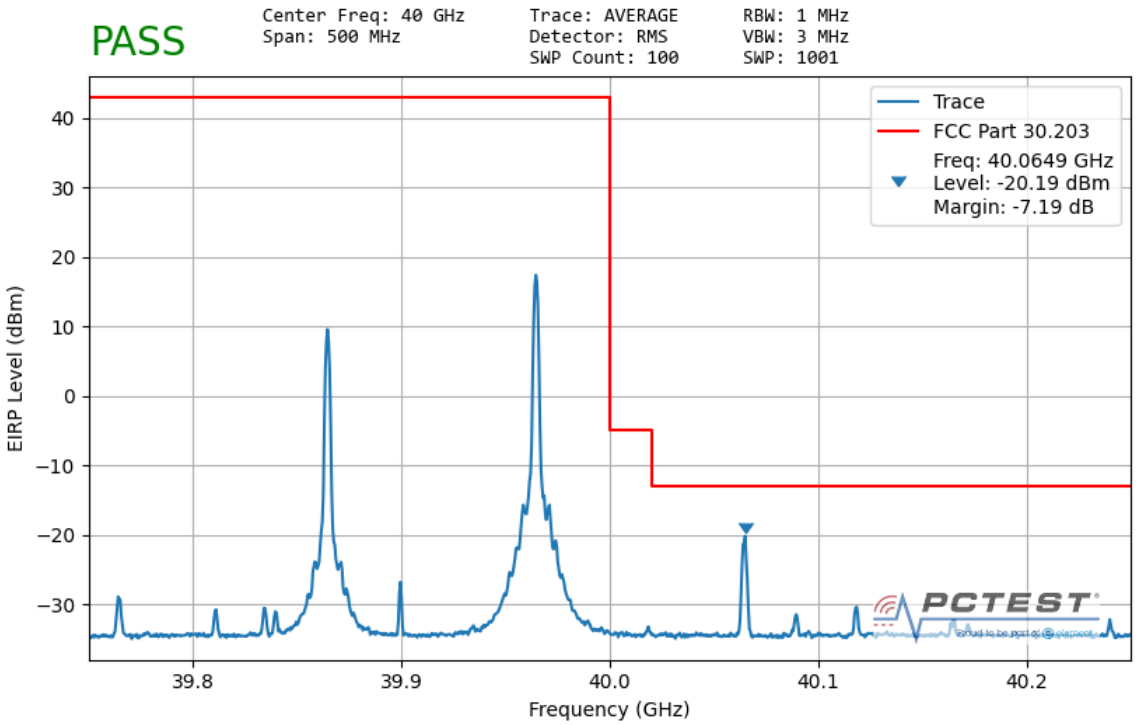
Plot 7-83. Ant 1 Lower Band Edge (100MHz-1CC – QPSK Full RB)



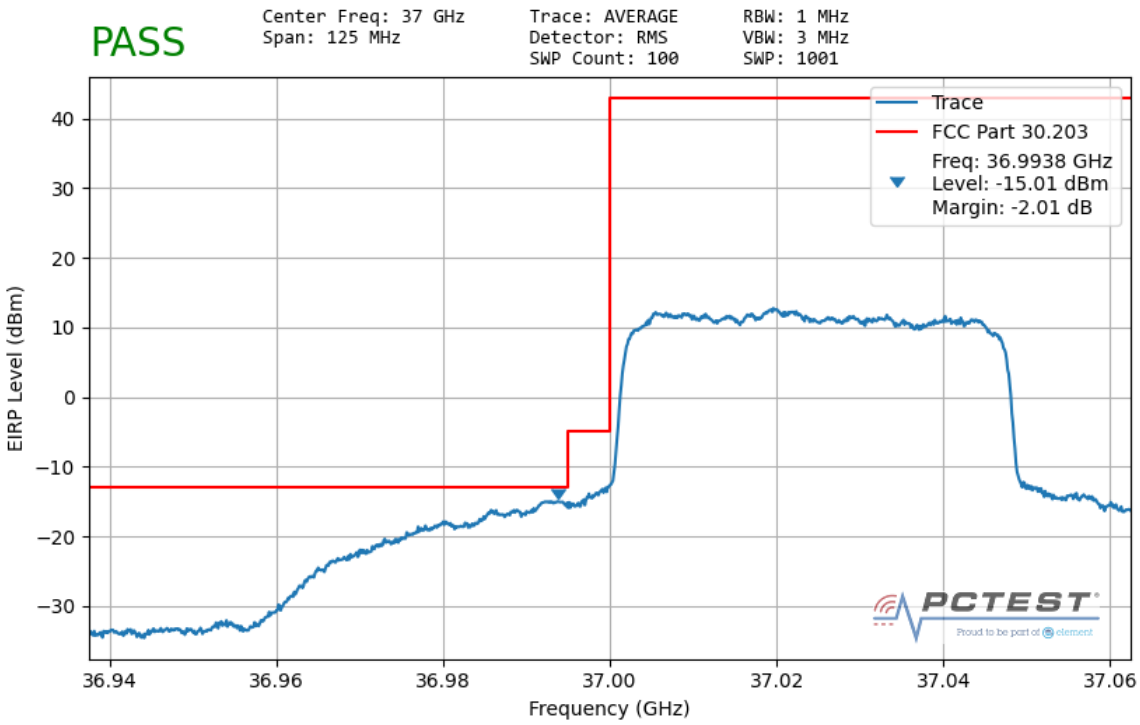
Plot 7-84. Ant 1 Lower Band Edge (100MHz-2CC – QPSK 1 RB)



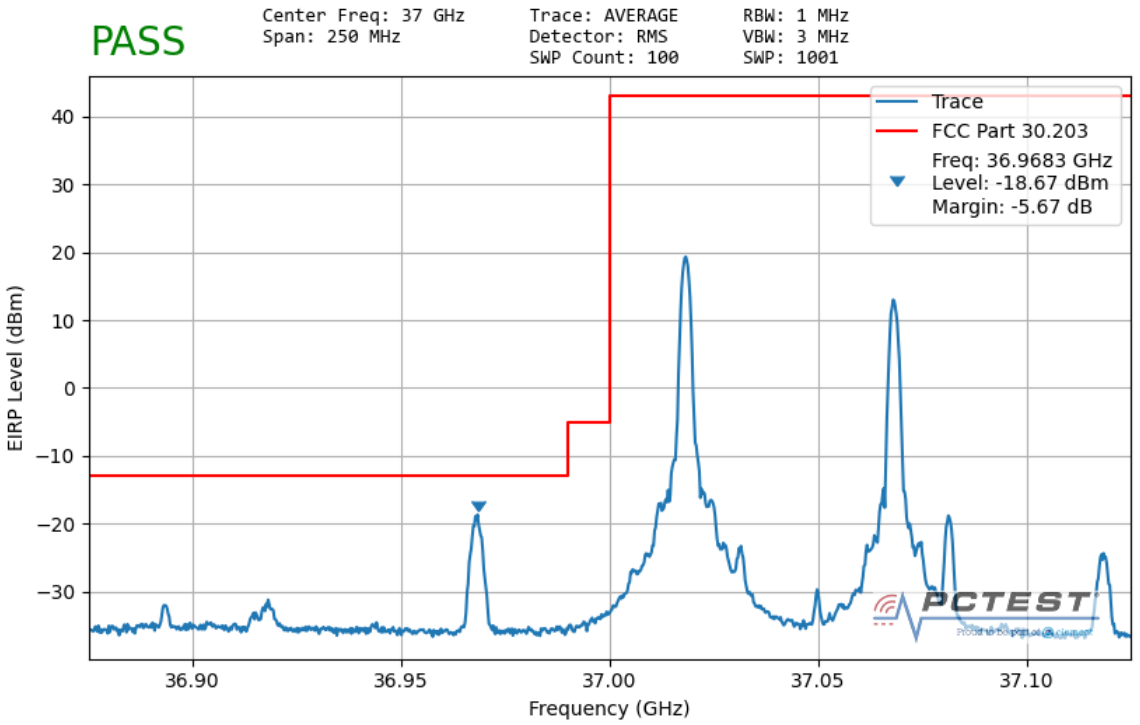
Plot 7-85. Ant 1 Upper Band Edge (100MHz-1CC – QPSK Full RB)



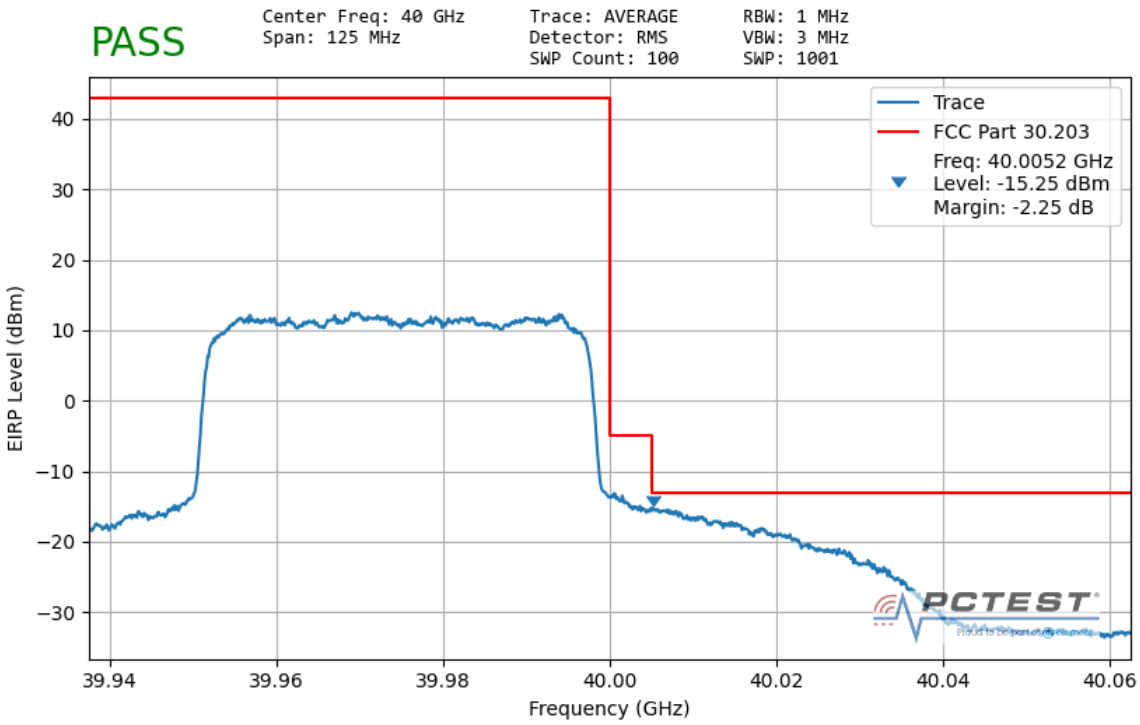
Plot 7-86. Ant 1 Upper Band Edge (100MHz-2CC – QPSK 1 RB)



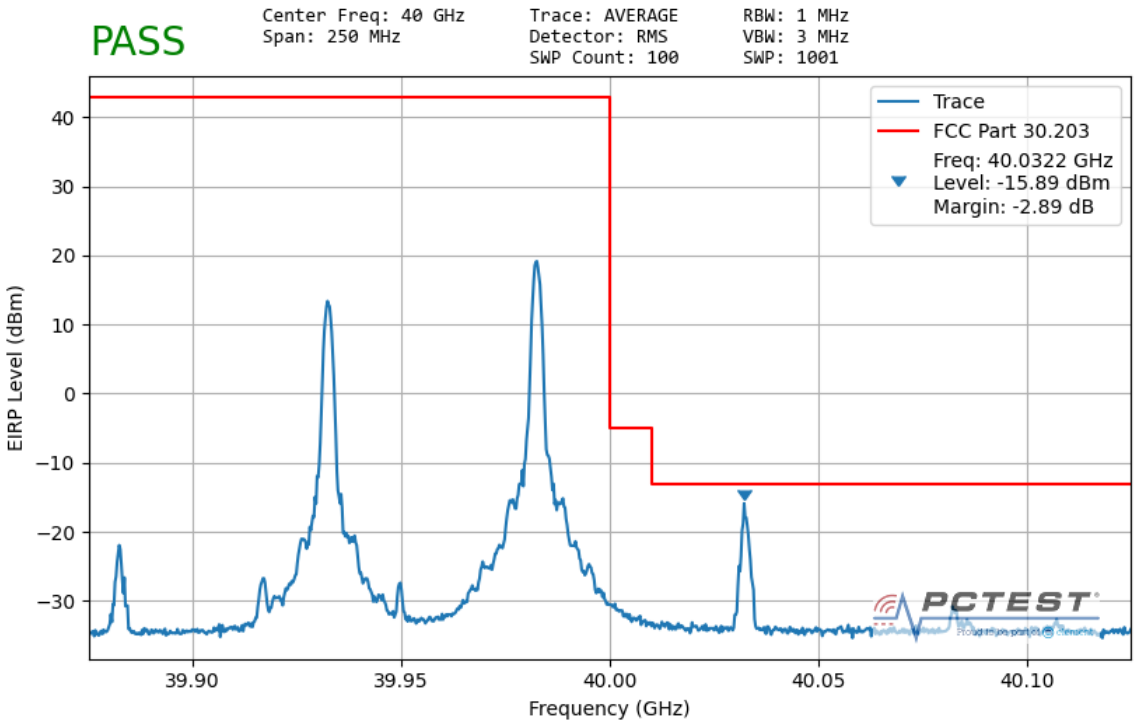
Plot 7-87. Ant 2 Lower Band Edge (50MHz-1CC – QPSK Full RB)



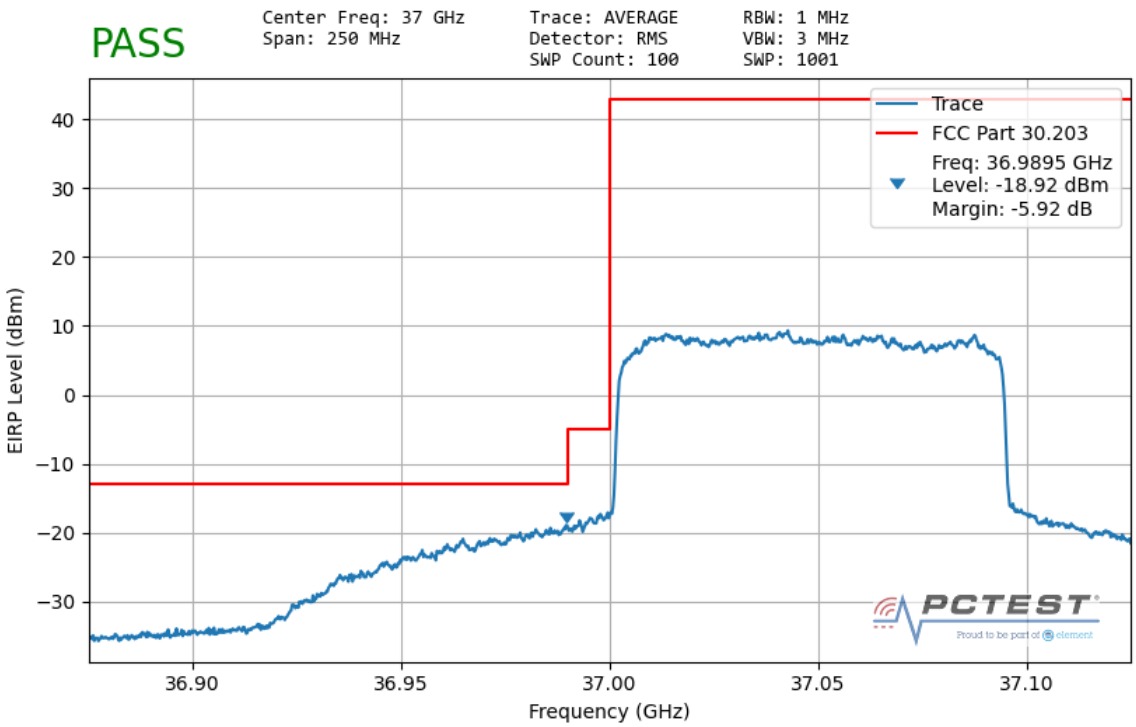
Plot 7-88. Ant 2 Lower Band Edge (50MHz-2CC – QPSK 1 RB)



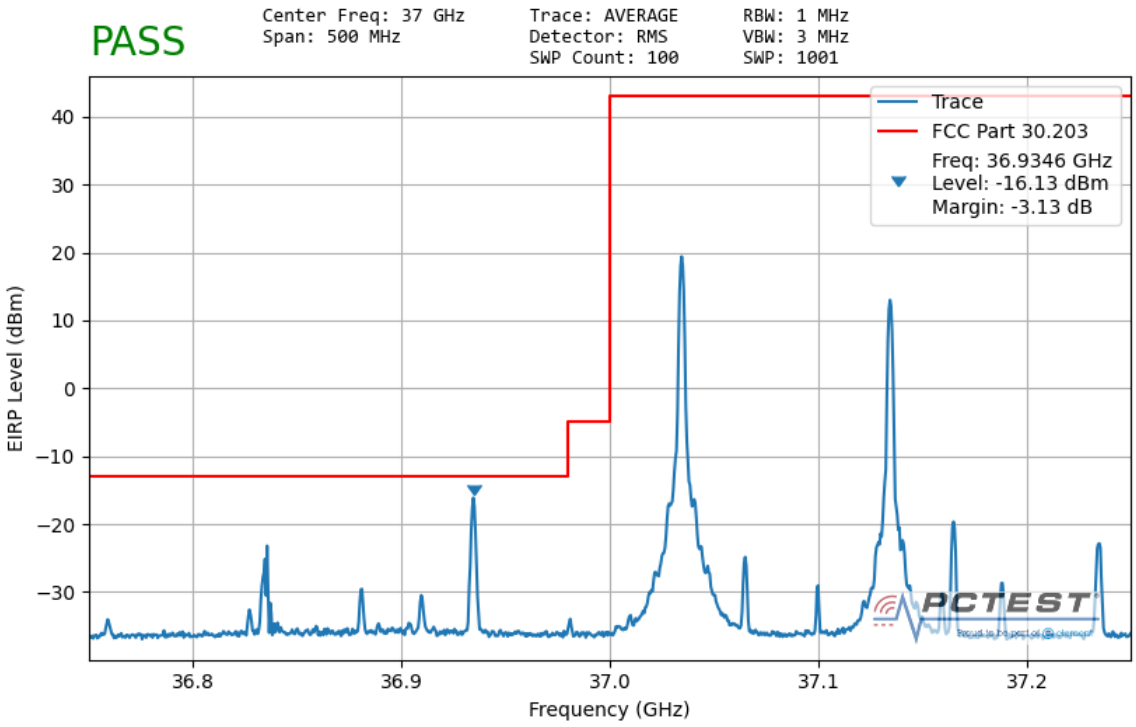
Plot 7-89. Ant 2 Upper Band Edge (50MHz-1CC – QPSK Full RB)



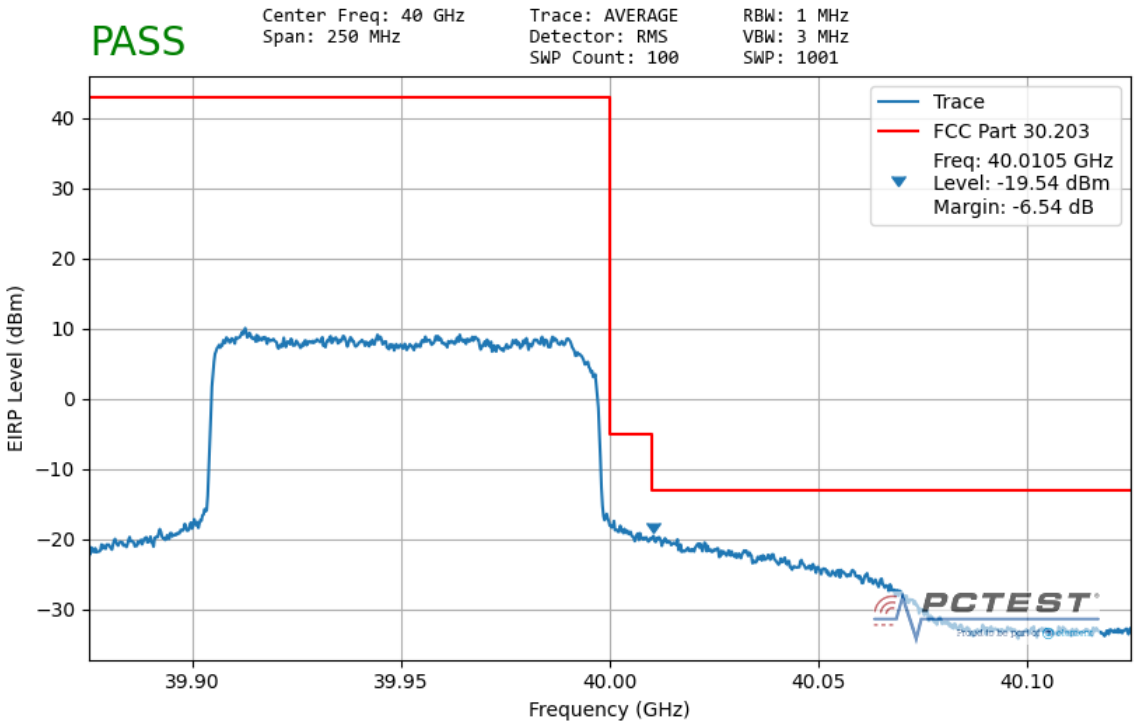
Plot 7-90. Ant 2 Upper Band Edge (50MHz-2CC – QPSK 1 RB)



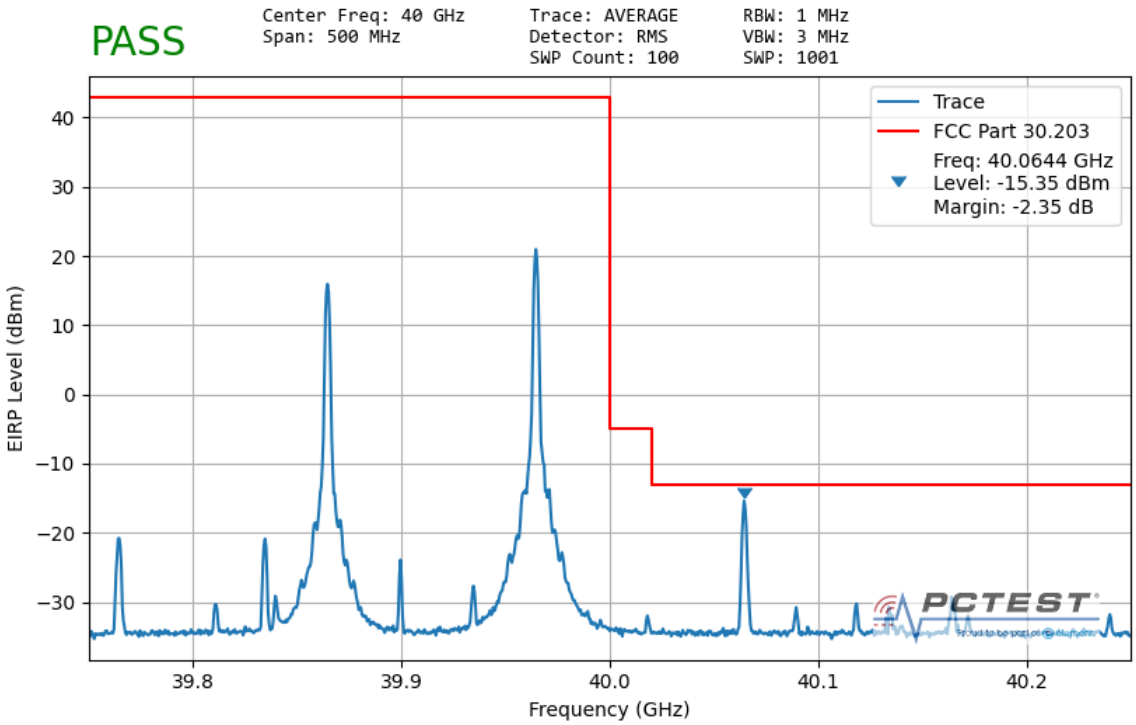
Plot 7-91. Ant 2 Lower Band Edge (100MHz-1CC – QPSK Full RB)



Plot 7-92. Ant 2 Lower Band Edge (100MHz-2CC – QPSK 1 RB)



Plot 7-93. Ant 2 Upper Band Edge (100MHz-1CC – QPSK Full RB)



Plot 7-94. Ant 2 Upper Band Edge (100MHz-2CC – QPSK 1 RB)

7.6 Frequency Stability / Temperature Variation

§2.1055

Test Overview and Limit

Frequency stability testing is performed in accordance with the guidelines of ANSI C63.26-2015. The frequency stability of the transmitter is measured by:

a.) **Temperature:** The temperature is varied from -30°C to +50°C in 10°C increments using an environmental chamber.

b.) **Primary Supply Voltage:** The primary supply voltage is varied from 85% to 115% of the nominal value for non hand-carried battery and AC powered equipment. For hand-carried, battery-powered equipment, primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacturer.

Test Procedure Used

ANSI C63.5-2015 Section 5.6
KDB 842590 D01 v01r01 Section 4.5

Test Settings

1. The carrier frequency of the transmitter is measured at room temperature (20°C to provide a reference).
2. The equipment is turned on in a "standby" condition for fifteen minutes before applying power to the transmitter. Measurement of the carrier frequency of the transmitter is made within one minute after applying power to the transmitter.
3. Frequency measurements are made at 10°C intervals ranging from -30°C to +50°C. A period of at least one half-hour is provided to allow stabilization of the equipment at each temperature level.

Test Setup

The EUT was measured using horn antenna connected to a spectrum analyzer. The EUT was placed inside an environmental chamber. Using a foam plug, the horn antenna measured the frequency of the fundamental signal.

Test Notes

The Frequency Deviation column in the table below is the amount of deviation measured from the center frequency of the Reference measurement (first row).

Frequency Stability Measurements (Band n261)

§2.1055

OPERATING FREQUENCY:	27,924,960,000	Hz
CHANNEL:	2077915	
REFERENCE VOLTAGE:	4.31	VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.31	+ 20 (Ref)	27,744,519,318	0	0.0000000
100 %		- 30	27,955,336,498	-210,817,180	-0.7549417
100 %		- 20	27,682,397,292	62,122,026	0.2224606
100 %		- 10	28,196,353,081	-451,833,763	-1.6180283
100 %		0	28,114,309,836	-369,790,518	-1.3242294
100 %		+ 10	27,989,806,398	-245,287,080	-0.8783793
100 %		+ 20	27,627,085,042	117,434,276	0.4205352
100 %		+ 30	27,640,717,639	103,801,679	0.3717165
100 %		+ 40	27,844,405,834	-99,886,516	-0.3576962
100 %		+ 50	28,100,868,938	-356,349,620	-1.2760972
BATT. ENDPOINT	3.51	+ 20	27,797,228,314	-52,708,996	-0.1887523

Table 7-55. Frequency Stability Data (n261)

Note:

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

Frequency Stability Measurements (Band n261)

§2.1055

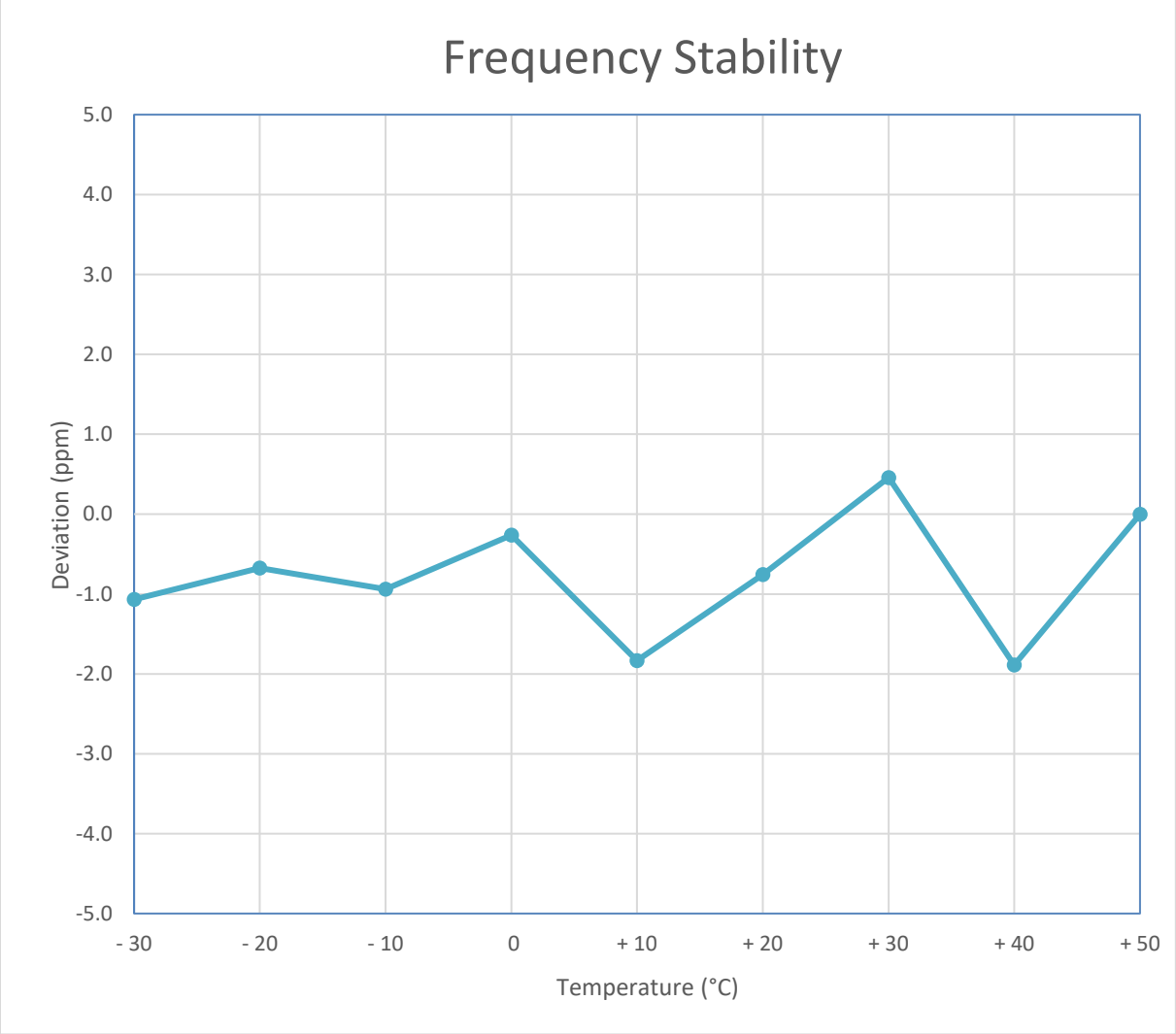


Figure 7-1. Frequency Stability Graph (n261)

Frequency Stability Measurements (Band n260)

§2.1055

OPERATING FREQUENCY:	38,499,960,000	Hz
CHANNEL:	2254165	
REFERENCE VOLTAGE:	4.31	VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.31	+ 20 (Ref)	38,323,272,366	0	0.0000000
100 %		- 30	38,490,019,937	-166,747,571	-0.4331110
100 %		- 20	38,624,873,995	-301,601,629	-0.7833817
100 %		- 10	38,314,343,932	8,928,434	0.0231908
100 %		0	38,280,557,945	42,714,421	0.1109467
100 %		+ 10	38,479,264,772	-155,992,406	-0.4051755
100 %		+ 20	38,388,428,301	-65,155,935	-0.1692364
100 %		+ 30	38,191,954,754	131,317,612	0.3410851
100 %		+ 40	38,194,281,608	128,990,758	0.3350413
100 %		+ 50	38,799,058,685	-475,786,319	-1.2358099
BATT. ENDPOINT	3.51	+ 20	38,697,326,784	-374,054,418	-0.9715709

Table 7-56. Frequency Stability Data (n260)

Note:

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

Frequency Stability Measurements (Band n260)

§2.1055

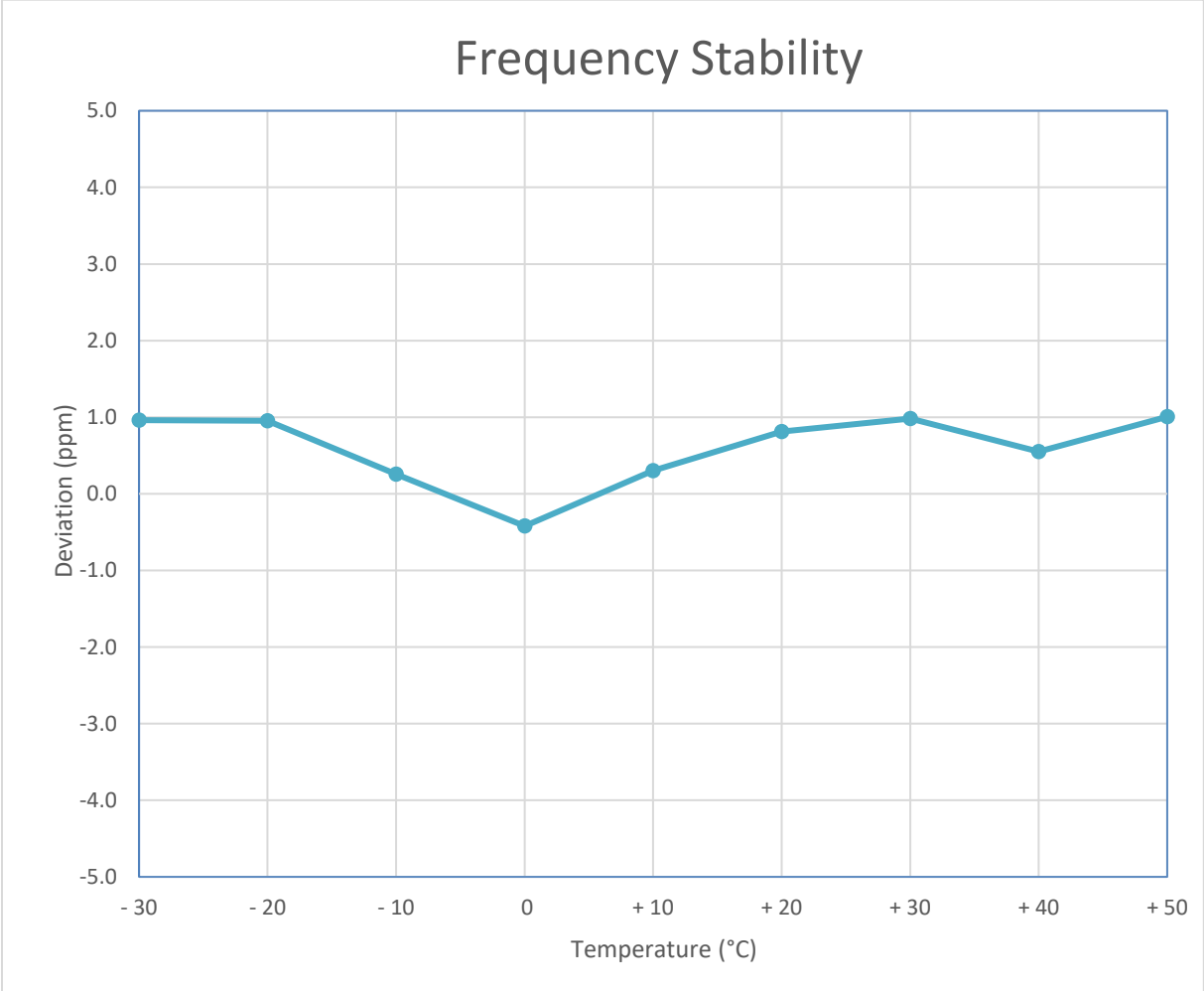


Figure 7-2. Frequency Stability Graph (n260)

8.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **Samsung Portable Handset FCC ID: A3LSMA426U** complies with all the requirements of Part 30.

9.0 APPENDIX A

9.1 VDI Mixer Verification Certificate

Virginia Diodes, Inc
979 2nd St. SE
Suite 309
Charlottesville, VA 22902
Phone: 434-297-3257
Fax: 434-297-3258

Certificate of Conformance

To: PCTEST Engineering Laboratory
7185 Oakland Mills Road
Columbia, MD 21046
United States

From: Virginia Diodes, Inc
979 2nd St. SE
Suite 309
Charlottesville, VA 22902

Packing List No: 202943
Shipping Date: 08/28/20
Today's Date: 08/28/20
PO Number: 200414.DP2

Quantity Shipped	Unit	Description	Order-Job Number
1	EA	VDIWR19.0SAX-M-M4 WR19SAX-M-M4 / SN: SAX 679	20177A-01

The VDI product(s) in this shipment meet(s) the guidelines for performance specifications established in accordance with the corresponding Purchase Order. Data presented in the User Guide, where applicable, has been obtained in accordance with VDI's Quality Management System. All instruments, used to obtain data, which require calibration have been calibrated with equipment traceable to the National Institute of Standards and Technology (NIST) and through NIST to the International System of Units (SI).

Authorized Signature
Virginia Diodes, Inc

Page 1 of 1

Virginia Diodes, Inc
979 2nd St. SE
Suite 309
Charlottesville, VA 22902
Phone: 434-297-3257
Fax: 434-297-3258

Certificate of Conformance

To: PCTEST Engineering Laboratory
7185 Oakland Mills Road
Columbia, MD 21046
United States

From: Virginia Diodes, Inc
979 2nd St. SE
Suite 309
Charlottesville, VA 22902

Packing List No: 202695
Shipping Date: 08/12/20
Today's Date: 08/14/20
PO Number: 200414.DP2

Quantity Shipped	Unit	Description	Order-Job Number
1	EA	VDIWR12.0SAX-M-M6 S/N: SAX 680	20177B-01

The VDI product(s) in this shipment meet(s) the guidelines for performance specifications established in accordance with the corresponding Purchase Order. Data presented in the User Guide, where applicable, has been obtained in accordance with VDI's Quality Management System. All instruments, used to obtain data, which require calibration have been calibrated with equipment traceable to the National Institute of Standards and Technology (NIST) and through NIST to the International System of Units (SI).

Authorized Signature
Virginia Diodes, Inc

Page 1 of 1

Virginia Diodes, Inc
979 2nd St. SE
Suite 309
Charlottesville, VA 22902
Phone: 434-297-3257
Fax: 434-297-3258

Certificate of Conformance

To: PCTEST Engineering Laboratory
7185 Oakland Mills Road
Columbia, MD 21046
United States

From: Virginia Diodes, Inc
979 2nd St. SE
Suite 309
Charlottesville, VA 22902

Packing List No: 203623
Shipping Date: 10/22/20
Today's Date: 10/22/20
PO Number: 200414.DP2

Quantity Shipped	Unit	Description	Order-Job Number
1	EA	VDIWR8.0SAX-M-M9 S/N: SAX 681	20177C-01

The VDI product(s) in this shipment meet(s) the guidelines for performance specifications established in accordance with the corresponding Purchase Order. Data presented in the User Guide, where applicable, has been obtained in accordance with VDI's Quality Management System. All instruments, used to obtain data, which require calibration have been calibrated with equipment traceable to the National Institute of Standards and Technology (NIST) and through NIST to the International System of Units (SI).

Authorized Signature
Virginia Diodes, Inc

Page 1 of 1

Virginia Diodes, Inc
979 2nd St. SE
Suite 309
Charlottesville, VA 22902
Phone: 434-297-3257
Fax: 434-297-3258

Certificate of Conformance

To: PCTEST Engineering Laboratory
7185 Oakland Mills Road
Columbia, MD 21046
United States

From: Virginia Diodes, Inc
979 2nd St. SE
Suite 309
Charlottesville, VA 22902

Packing List No: 203281 **Today's Date:** 09/24/20
Shipping Date: 09/24/20 **PO Number:** 200414.DP2

Quantity Shipped	Unit	Description	Order-Job Number
1	EA	VDIWR5.1SAX-M-M18 WR5.1SAX-M-M18 - Mini Spectrum Analyzer Extension Module; SN: SAX 682.	20177D-01

The VDI product(s) in this shipment meet(s) the guidelines for performance specifications established in accordance with the corresponding Purchase Order. Data presented in the User Guide, where applicable, has been obtained in accordance with VDI's Quality Management System. All instruments, used to obtain data, which require calibration have been calibrated with equipment traceable to the National Institute of Standards and Technology (NIST) and through NIST to the International System of Units (SI).

Authorized Signature
Virginia Diodes, Inc