Radio Test Report

Airspan Communications Ltd

Aircreek 2.5

95.2320T02

47 CFR Part 27 Effective Date 1st October 2021
↳ 47CFR part 2J Effective Date 1st October 2021
TNB: Licensed Non-Broadcast Station Transmitter
Test Date: 7th December 2022 to 12th April 2023
Report Number: 03-14011-2-23 Issue 01

The testing was carried out by RN Electronics Ltd, an independent test house, at their test facility located at:

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This laboratory is accredited in accordance with the recognised International Standard ISO/IEC 17025. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer joint ISO-ILAC-IAF communiqué dated April 2017).

Arnolds Court, Arnolds Farm Lane, Mountnessing, Brentwood Essex, CM13 1UT

Certificate of Test 14011-2

The equipment noted below has been fully tested by R.N. Electronics Limited and, where appropriate, conforms to the relevant subpart of FCC Part 27. This is a certificate of test only and should not be confused with an equipment authorisation. Other standards may also apply.

Equipment:	Aircreek 2.5
Model Number:	95.2320T02
Unique Serial Number:	EA385301BFD0
Applicant:	Airspan Communications Ltd 33 Bath Road Slough, Berkshire SL1 3UF UK
Proposed FCC ID	O2J-AC25
Full measurement results are detailed in Report Number:	03-14011-2-23 Issue 01
Test Standards:	47 CFR Part 27 Effective Date 1st October 2021 ↳ 47CFR part 2J Effective Date 1st October 2021 TNB: Licensed Non-Broadcast Station Transmitter

NOTE:
Certain test requirements are subject to applicant's declaration. For details refer to section 3 of this report.

DEVIATIONS: No deviations have been applied.

This certificate relates only to the unit tested as identified by a unique serial number and in the condition at the time it was tested. It does not relate to any other similar equipment and performance of the product before or after the test cannot be guaranteed. Whilst every effort is made to assure quality of testing, type tests are not exhaustive and although no non-conformances may be found, this doesn't exclude the possibility of unit not meeting the intentions of the standard or the requirements of the Federal Regulations, particularly under different conditions to those during testing. Any compliance statements are made reliant on (a) the application of the product and use of the assigned band being acceptable to the FCC and (b) the modes of operation as instructed to us by the Customer based on their specific knowledge of the application and functionality of the EUT. Statements of compliance, where measurements were made, do not include the measurement uncertainty. The measurement uncertainty, where stated, is the expanded uncertainty based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95%.

Date Of Test: 7th December 2022 to 12th April 2023

Test Engineer:
Jack Chilvers

Jack Chilvers
Digitally signed by: Jack Chilvers
DN: CN = Jack Chilvers email = Jack.Chilvers@kiwa.com C = GB O = RN Electronics OU = RN Electronics
Date: 2023.04.24 13:11:37 Z

Approved By:
Radio Approvals Manager

Digitally signed by: Daniel Sims
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Date: 2023.04.24 13:05:08 Z

Customer Representative:

UKAS TESTING 2360

File Name: Airspan Communications Ltd.14011-2 Issue 01

1 Contents

2 Equipment under test (EUT)

2.1 Equipment specification

Applicant	Airspan Communications Ltd 33 Bath Road Slough, Berkshire SL1 3UF UK	
Manufacturer of EUT	Airspan Communications Ltd	
Full Name of EUT	Aircreek 2.5	
Model Number of EUT	95.2320T02	
Serial Number of EUT	EA385301BFD0	
Date Received	7th December 2022	
Date of Test:	7th December 2022 to 23rd March 2023	
Purpose of Test	To demonstrate design compliance to the relevant rules of Chapter 47 of the Code of Federal Regulations.	
Date Report Issued	17th April 2023	
Main Function	RF data communications	
Information Specification	Height	210mm
	Width	320mm
	Depth	100mm
	Weight	<3kg
	Voltage	100-240V AC (5.5V DC)
	Current	2A
EUT Supplied PSU	Manufacturer	Dee Van Enterprise Co., Ltd
	Model number	DSA-60PFE-12
	Serial number	0
	Input voltage	100-240V AC 50-60Hz
	Input current	2.0A
	Output	+12.0V DC 5.0A

2.2 Configurations for testing

General Parameters	
EUT Normal use position	Table top
Choice of model(s) for type tests	Production Prototype
Antenna details	Dual Band/Dual Polar B66/B25, Dual Slant -45°, 6.5dBi gain
Antenna port	Internal ports available
Baseband Data port (yes/no)?	no
Highest Signal generated in EUT	1780 MHz
Lowest Signal generated in EUT	Not specified
Hardware Version (HVIN)	999-09-402
Software Version	V06475122_230306R
Firmware Version (FVIN)	TK-148288f d12bd0d9b0
Type of Equipment	eNB
Technology Type	LTE
Geo-location (yes/no)	No
TX Parameters	
Alignment range – transmitter	1710-1780 MHz (Band 66), 1850-1915 MHz (Band 25)
EUT Declared Modulation Parameters	QPSK, 16QAM, 64QAM
EUT Declared Power level	+23 dBm Max
EUT Declared Signal Bandwidths	5 MHz, 10 MHz, 15 MHz, 20 MHz
EUT Declared Channel Spacing's	5 MHz, 10 MHz, 15 MHz, 20 MHz
EUT Declared Duty Cycle	up to 100%
Unmodulated carrier available?	No
Declared frequency stability	+- 0.1ppm
RX Parameters	
Alignment range – receiver	2110-2200 MHz (Band 66), 1930-1995 MHz (Band 25)
EUT Declared RX Signal Bandwidth	5 MHz, 10 MHz, 15 MHz, 20 MHz
Receiver Signal Level (RSL)	Not specified
Method of Monitoring Receiver BER	N/A
FCC Parameters	
FCC Transmitter Class	TNB: Licensed Non-Broadcast Station Transmitter

2.3 Functional description

4G UE RF LTE Module supporting LTE bands 66 and 25.

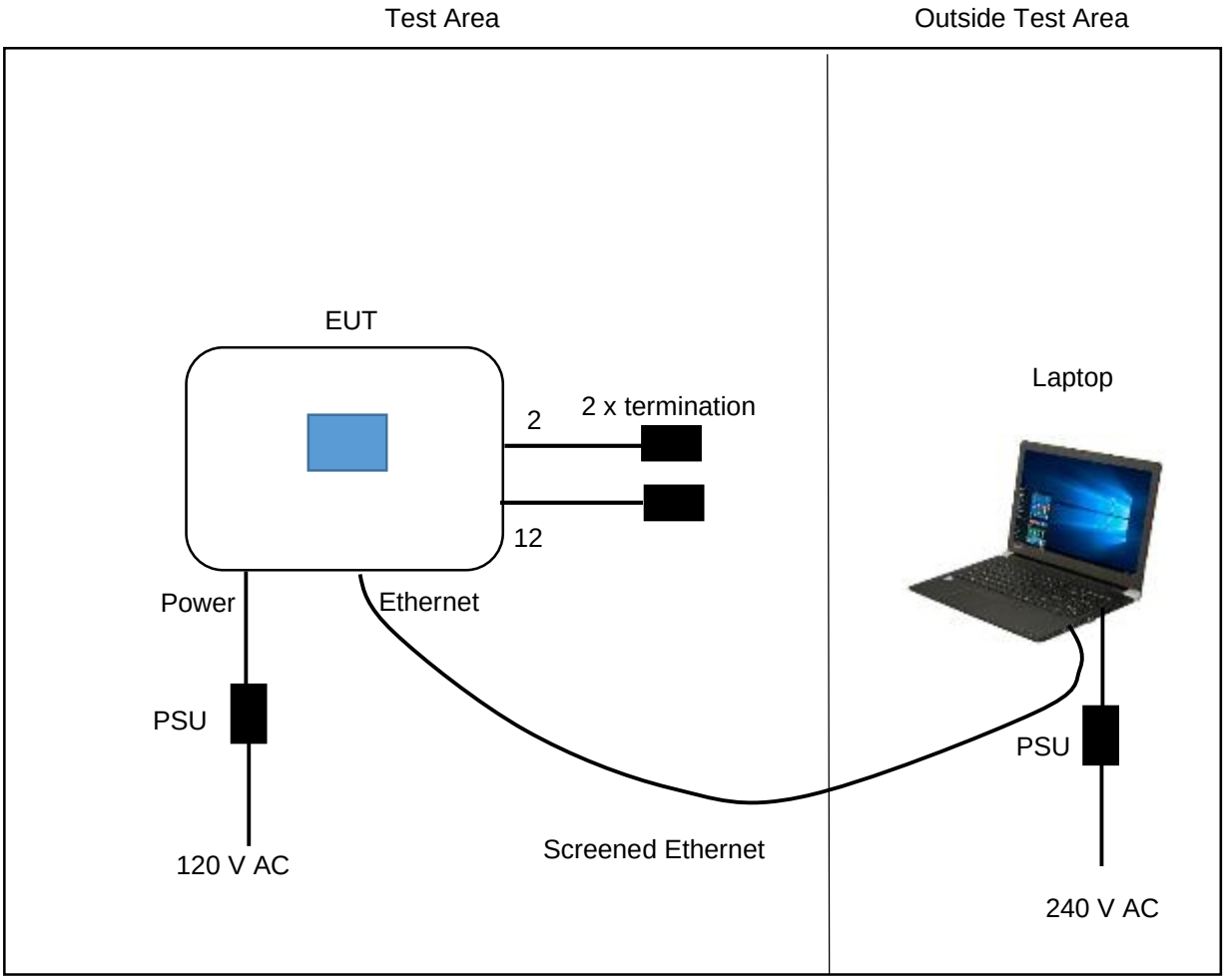
2.4 Modes of operation

Mode Reference	Description	Used for testing
Mode 1	Low Channel, 5MHz BW, QPSK, 1%RB Lower	Yes
Mode 2	Low Channel, 5MHz BW, QPSK, 1%RB Upper	Yes
Mode 3	Low Channel, 5MHz BW, QPSK, 50%RB	Yes
Mode 4	Low Channel, 5MHz BW, QPSK, 100%RB	Yes
Mode 5	Mid Channel, 5MHz BW, QPSK, 1%RB Lower	Yes
Mode 6	Mid Channel, 5MHz BW, QPSK, 1%RB Upper	Yes
Mode 7	Mid Channel, 5MHz BW, QPSK, 50%RB	Yes
Mode 8	Mid Channel, 5MHz BW, QPSK, 100%RB	Yes
Mode 9	High Channel, 5MHz BW, QPSK, 1%RB Lower	Yes
Mode 10	High Channel, 5MHz BW, QPSK, 1%RB Upper	Yes
Mode 11	High Channel, 5MHz BW, QPSK, 50%RB	Yes
Mode 12	High Channel, 5MHz BW, QPSK, 100%RB	Yes
Mode 13	Low Channel, 5MHz BW, 16QAM, 1%RB Lower	Yes
Mode 14	Low Channel, 5MHz BW, 16QAM, 1%RB Upper	Yes
Mode 15	Low Channel, 5MHz BW, 16QAM, 50%RB	Yes
Mode 16	Low Channel, 5MHz BW, 16QAM, 100%RB	Yes
Mode 17	Mid Channel, 5MHz BW, 16QAM, 1%RB Lower	Yes
Mode 18	Mid Channel, 5MHz BW, 16QAM, 1%RB Upper	Yes
Mode 19	Mid Channel, 5MHz BW, 16QAM, 50%RB	Yes
Mode 20	Mid Channel, 5MHz BW, 16QAM, 100%RB	Yes
Mode 21	High Channel, 5MHz BW, 16QAM, 1%RB Lower	Yes
Mode 22	High Channel, 5MHz BW, 16QAM, 1%RB Upper	Yes
Mode 23	High Channel, 5MHz BW, 16QAM, 50%RB	Yes
Mode 24	High Channel, 5MHz BW, 16QAM, 100%RB	Yes
Mode 25	Low Channel, 5MHz BW, 64QAM, 1%RB Lower	Yes
Mode 26	Low Channel, 5MHz BW, 64QAM, 1%RB Upper	Yes
Mode 27	Low Channel, 5MHz BW, 64QAM, 50%RB	Yes
Mode 28	Low Channel, 5MHz BW, 64QAM, 100%RB	Yes
Mode 29	Mid Channel, 5MHz BW, 64QAM, 1%RB Lower	Yes
Mode 30	Mid Channel, 5MHz BW, 64QAM, 1%RB Upper	Yes
Mode 31	Mid Channel, 5MHz BW, 64QAM, 50%RB	Yes
Mode 32	Mid Channel, 5MHz BW, 64QAM, 100%RB	Yes
Mode 33	High Channel, 5MHz BW, 64QAM, 1%RB Lower	Yes
Mode 34	High Channel, 5MHz BW, 64QAM, 1%RB Upper	Yes
Mode 35	High Channel, 5MHz BW, 64QAM, 50%RB	Yes
Mode 36	High Channel, 5MHz BW, 64QAM, 100%RB	Yes
Mode 37	Low Channel, 10MHz BW, QPSK, 1%RB Lower	Yes
Mode 38	Low Channel, 10MHz BW, QPSK, 1%RB Upper	Yes
Mode 39	Low Channel, 10MHz BW, QPSK, 50%RB	Yes
Mode 40	Low Channel, 10MHz BW, QPSK, 100%RB	Yes
Mode 41	Mid Channel, 10MHz BW, QPSK, 1%RB Lower	Yes
Mode 42	Mid Channel, 10MHz BW, QPSK, 1%RB Upper	Yes
Mode 43	Mid Channel, 10MHz BW, QPSK, 50%RB	Yes
Mode 44	Mid Channel, 10MHz BW, QPSK, 100%RB	Yes
Mode 45	High Channel, 10MHz BW, QPSK, 1%RB Lower	Yes

Mode 46	High Channel, 10MHz BW, QPSK, 1%RB Upper	Yes
Mode 47	High Channel, 10MHz BW, QPSK, 50%RB	Yes
Mode 48	High Channel, 10MHz BW, QPSK, 100%RB	Yes
Mode 49	Low Channel, 10MHz BW, 16QAM, 1%RB Lower	Yes
Mode 50	Low Channel, 10MHz BW, 16QAM, 1%RB Upper	Yes
Mode 51	Low Channel, 10MHz BW, 16QAM, 50%RB	Yes
Mode 52	Low Channel, 10MHz BW, 16QAM, 100%RB	Yes
Mode 53	Mid Channel, 10MHz BW, 16QAM, 1%RB Lower	Yes
Mode 54	Mid Channel, 10MHz BW, 16QAM, 1%RB Upper	Yes
Mode 55	Mid Channel, 10MHz BW, 16QAM, 50%RB	Yes
Mode 56	Mid Channel, 10MHz BW, 16QAM, 100%RB	Yes
Mode 57	High Channel, 10MHz BW, 16QAM, 1%RB Lower	Yes
Mode 58	High Channel, 10MHz BW, 16QAM, 1%RB Upper	Yes
Mode 59	High Channel, 10MHz BW, 16QAM, 50%RB	Yes
Mode 60	High Channel, 10MHz BW, 16QAM, 100%RB	Yes
Mode 61	Low Channel, 10MHz BW, 64QAM, 1%RB Lower	Yes
Mode 62	Low Channel, 10MHz BW, 64QAM, 1%RB Upper	Yes
Mode 63	Low Channel, 10MHz BW, 64QAM, 50%RB	Yes
Mode 64	Low Channel, 10MHz BW, 64QAM, 100%RB	Yes
Mode 65	Mid Channel, 10MHz BW, 64QAM, 1%RB Lower	Yes
Mode 66	Mid Channel, 10MHz BW, 64QAM, 1%RB Upper	Yes
Mode 67	Mid Channel, 10MHz BW, 64QAM, 50%RB	Yes
Mode 68	Mid Channel, 10MHz BW, 64QAM, 100%RB	Yes
Mode 69	High Channel, 10MHz BW, 64QAM, 1%RB Lower	Yes
Mode 70	High Channel, 10MHz BW, 64QAM, 1%RB Upper	Yes
Mode 71	High Channel, 10MHz BW, 64QAM, 50%RB	Yes
Mode 72	High Channel, 10MHz BW, 64QAM, 100%RB	Yes
Mode 73	Low Channel, 15MHz BW, QPSK, 1%RB Lower	Yes
Mode 74	Low Channel, 15MHz BW, QPSK, 1%RB Upper	Yes
Mode 75	Low Channel, 15MHz BW, QPSK, 50%RB	Yes
Mode 76	Low Channel, 15MHz BW, QPSK, 100%RB	Yes
Mode 77	Mid Channel, 15MHz BW, QPSK, 1%RB Lower	Yes
Mode 78	Mid Channel, 15MHz BW, QPSK, 1%RB Upper	Yes
Mode 79	Mid Channel, 15MHz BW, QPSK, 50%RB	Yes
Mode 80	Mid Channel, 15MHz BW, QPSK, 100%RB	Yes
Mode 81	High Channel, 15MHz BW, QPSK, 1%RB Lower	Yes
Mode 82	High Channel, 15MHz BW, QPSK, 1%RB Upper	Yes
Mode 83	High Channel, 15MHz BW, QPSK, 50%RB	Yes
Mode 84	High Channel, 15MHz BW, QPSK, 100%RB	Yes
Mode 85	Low Channel, 15MHz BW, 16QAM, 1%RB Lower	Yes
Mode 86	Low Channel, 15MHz BW, 16QAM, 1%RB Upper	Yes
Mode 87	Low Channel, 15MHz BW, 16QAM, 50%RB	Yes
Mode 88	Low Channel, 15MHz BW, 16QAM, 100%RB	Yes
Mode 89	Mid Channel, 15MHz BW, 16QAM, 1%RB Lower	Yes
Mode 90	Mid Channel, 15MHz BW, 16QAM, 1%RB Upper	Yes
Mode 91	Mid Channel, 15MHz BW, 16QAM, 50%RB	Yes
Mode 92	Mid Channel, 15MHz BW, 16QAM, 100%RB	Yes
Mode 93	High Channel, 15MHz BW, 16QAM, 1%RB Lower	Yes
Mode 94	High Channel, 15MHz BW, 16QAM, 1%RB Upper	Yes
Mode 95	High Channel, 15MHz BW, 16QAM, 50%RB	Yes
Mode 96	High Channel, 15MHz BW, 16QAM, 100%RB	Yes
Mode 97	Low Channel, 15MHz BW, 64QAM, 1%RB Lower	Yes
Mode 98	Low Channel, 15MHz BW, 64QAM, 1%RB Upper	Yes

Mode 99	Low Channel, 15MHz BW, 64QAM, 50%RB	Yes
Mode 100	Low Channel, 15MHz BW, 64QAM, 100%RB	Yes
Mode 101	Mid Channel, 15MHz BW, 64QAM, 1%RB Lower	Yes
Mode 102	Mid Channel, 15MHz BW, 64QAM, 1%RB Upper	Yes
Mode 103	Mid Channel, 15MHz BW, 64QAM, 50%RB	Yes
Mode 104	Mid Channel, 15MHz BW, 64QAM, 100%RB	Yes
Mode 105	High Channel, 15MHz BW, 64QAM, 1%RB Lower	Yes
Mode 106	High Channel, 15MHz BW, 64QAM, 1%RB Upper	Yes
Mode 107	High Channel, 15MHz BW, 64QAM, 50%RB	Yes
Mode 108	High Channel, 15MHz BW, 64QAM, 100%RB	Yes
Mode 109	Low Channel, 20MHz BW, QPSK, 1%RB Lower	Yes
Mode 110	Low Channel, 20MHz BW, QPSK, 1%RB Upper	Yes
Mode 111	Low Channel, 20MHz BW, QPSK, 50%RB	Yes
Mode 112	Low Channel, 20MHz BW, QPSK, 100%RB	Yes
Mode 113	Mid Channel, 20MHz BW, QPSK, 1%RB Lower	Yes
Mode 114	Mid Channel, 20MHz BW, QPSK, 1%RB Upper	Yes
Mode 115	Mid Channel, 20MHz BW, QPSK, 50%RB	Yes
Mode 116	Mid Channel, 20MHz BW, QPSK, 100%RB	Yes
Mode 117	High Channel, 20MHz BW, QPSK, 1%RB Lower	Yes
Mode 118	High Channel, 20MHz BW, QPSK, 1%RB Upper	Yes
Mode 119	High Channel, 20MHz BW, QPSK, 50%RB	Yes
Mode 120	High Channel, 20MHz BW, QPSK, 100%RB	Yes
Mode 121	Low Channel, 20MHz BW, 16QAM, 1%RB Lower	Yes
Mode 122	Low Channel, 20MHz BW, 16QAM, 1%RB Upper	Yes
Mode 123	Low Channel, 20MHz BW, 16QAM, 50%RB	Yes
Mode 124	Low Channel, 20MHz BW, 16QAM, 100%RB	Yes
Mode 125	Mid Channel, 20MHz BW, 16QAM, 1%RB Lower	Yes
Mode 126	Mid Channel, 20MHz BW, 16QAM, 1%RB Upper	Yes
Mode 127	Mid Channel, 20MHz BW, 16QAM, 50%RB	Yes
Mode 128	Mid Channel, 20MHz BW, 16QAM, 100%RB	Yes
Mode 129	High Channel, 20MHz BW, 16QAM, 1%RB Lower	Yes
Mode 130	High Channel, 20MHz BW, 16QAM, 1%RB Upper	Yes
Mode 131	High Channel, 20MHz BW, 16QAM, 50%RB	Yes
Mode 132	High Channel, 20MHz BW, 16QAM, 100%RB	Yes
Mode 133	Low Channel, 20MHz BW, 64QAM, 1%RB Lower	Yes
Mode 134	Low Channel, 20MHz BW, 64QAM, 1%RB Upper	Yes
Mode 135	Low Channel, 20MHz BW, 64QAM, 50%RB	Yes
Mode 136	Low Channel, 20MHz BW, 64QAM, 100%RB	Yes
Mode 137	Mid Channel, 20MHz BW, 64QAM, 1%RB Lower	Yes
Mode 138	Mid Channel, 20MHz BW, 64QAM, 1%RB Upper	Yes
Mode 139	Mid Channel, 20MHz BW, 64QAM, 50%RB	Yes
Mode 140	Mid Channel, 20MHz BW, 64QAM, 100%RB	Yes
Mode 141	High Channel, 20MHz BW, 64QAM, 1%RB Lower	Yes
Mode 142	High Channel, 20MHz BW, 64QAM, 1%RB Upper	Yes
Mode 143	High Channel, 20MHz BW, 64QAM, 50%RB	Yes
Mode 144	High Channel, 20MHz BW, 64QAM, 100%RB	Yes

2.5 Emissions configuration



The unit was powered from the AC/DC adapter supplied by the client. For conducted tests the internal antenna was disconnected and a UFL to SMA cable attached to the internal port(s). The unit was configured with test modes in software to allow permanent transmit modes of device on the top, middle and bottom channels utilising different combinations of QPSK, 16QAM and 64QAM modulations, along with 5, 10, 15 and 20 MHz Bandwidths as stated within section 2.4 of this report. Combinations of Resource Block settings ranging from 1RB to 50%RB up to the full 100%RB for each Bandwidth setting were also used to determine any worst cases for tests. The modes were set using the UE Control software provided by the client, using either the" script runner" tab or the "Test Tone" tab. All the modes were available through the pre-sets loaded in the software. The transmit mode was 100% continuous with modulation. RF output power target settings for each mode were also set in the software via a % number setting. In order for the EUT to comply with test limits the following target RF output powers were set: -

5 MHz channel spacing maximum single port target power +17.00 dBm
10 MHz, 15 MHz and 20 MHz channel spacing maximum single port target power +20 dBm
(Please also see modifications section 10 in this report)

Conducted and radiated spurious emissions testing for all modes was carried out at a maximum target RF output power of +23.00 dBm as a worst case regardless of channel/Bandwidth/Modulation or Resource Block settings.

Where antenna gain is added to results to demonstrate EIRP an antenna gain of 6.5 dBi was used as declared by the applicant. The unit also supports MIMO operation on two ports. Both RF ports are declared

as being identical, therefore for 2 port MIMO operation 3dB has been added to results where applicable per KDB 662911 D01 methodology.

2.5.1 Signal leads

Port Name	Cable Type	Connected
TXRX1	RF	Yes
RX2	RF	Yes
TXRX3	RF	Yes
RX4	RF	Yes
Ethernet	Screened CAT5E	Yes
Power	Two core DC jack	Yes

3 Summary of test results

The Aircreek 2.5, 95.2320T02 was tested for compliance to the following standard(s):

47 CFR Part 27 Effective Date 1st October 2021
↳ 47CFR part 2J Effective Date 1st October 2021
TNB: Licensed Non-Broadcast Station Transmitter

Any compliance statements are made reliant on (a) the application of the product and use of the assigned band being acceptable to the FCC and (b) the modes of operation as instructed to us by the Customer based on their specific knowledge of the application and functionality of the EUT. Whilst every effort is made to assure quality of testing, type tests are not exhaustive and although no non-conformances may be found, this doesn't exclude the possibility of equipment not meeting the intentions of the standard or the essential requirements of the directive, particularly under different conditions to those during testing. Statements of compliance, where measurements were made, do not include the measurement uncertainty. The measurement uncertainty, where stated, is the expanded uncertainty based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95%.

Title	References	Results
Transmitter Tests		
1. Spurious emissions at antenna terminals	FCC Part 27 Clause 27.53(h)(1) FCC Part 2 Clause 2.1051	PASSED[2]
2. RF Power Output	FCC Part 27 Clause 27.50(d) FCC Part 2 Clause 2.1046	PASSED
3. Frequency stability	FCC Part 27 Clause 27.54 FCC Part 2 Clause 2.1055	PASSED
4. Occupied Bandwidth	FCC Part 27 Clause 27.54 FCC Part 2 Clause 2.1049	PASSED
5. Field strength of spurious radiations	FCC Part 27 Clause 27.53(h)(1) FCC Part 2 Clause 2.1053	PASSED[2]
6. Band edge / spectrum mask additional emissions limitations	FCC Part 27 Clause 27.53(h) FCC Part 2 Clause 2.1051	PASSED
7. Modulation characteristics	FCC Part 2 Clause 2.1047	Declaration[1]

[1] Manufacturer declaration, see modulation information provided in section 2.1 of this report.
[2] Spectrum investigated up to a frequency of 20GHz based on 10 times the highest channel/ signal generated in equipment of 1780MHz.

4 Specifications

The tests were performed and operated in accordance with R.N. Electronics Ltd procedures and the relevant standards listed below.

4.1 Relevant standards

Ref.	Standard Number	Version	Description
4.1.1	FCC Part 27	2021	Miscellaneous Wireless Communications Services
4.1.2	47CFR part 2J	2021	Part 2 – Frequency Allocations and radio treaty matters; General rules and regulations
4.1.3	KDB 971168 D01 v03	2017	Federal Communications Commission Office of Engineering and Technology Laboratory Division; Measurement Guidance for Certification of Licensed Digital Transmitters
4.1.4	ANSI C63.26	2015	American National Standard for Compliance testing of transmitters used in Licensed radio services
4.1.5	KDB 662911 D01 v02r01	2013	Federal Communications Commission Office of Engineering and Technology Laboratory Division; Emissions Testing of Transmitters with Multiple Outputs in the Same Band
4.1.6	TIA-603-E	2016	Land Mobile FM or PM Communications Equipment Measurement and Performance Standards, Telecommunications Industry Association, June 2010

4.2 Deviations

No deviations were applied.

4.3 Tests at extremes of temperature & voltage

The following test conditions were used to simulate testing at nominal or extremes.

Temperature Test Conditions		Voltage Test Conditions	
T nominal	20 °C	V nominal	120V AC
T minimum	-30 °C	V minimum	102V AC
T maximum	50 °C	V maximum	138V AC

Extremes of voltage are based on nominal +/-15%.

Extremes of temperature are based upon FCC's requirements.

The ambient test conditions of humidity and pressure in the laboratory were as specified in each specific test section within this report

4.4 Test fixtures

In order to measure RF parameters at temperature extremes, the EUT was tested in a temperature-controlled chamber as follows:

A permanent internal RF port was used for testing.

5 Tests, methods and results

5.1 Spurious emissions at antenna terminals

5.1.1 Test methods

Test Requirements:	FCC Part 27 Clause 27.53(h)(1) [Reference 4.1.1 of this report]
Test Method:	FCC Part 27 Clause 27.53(h)(3) [Reference 4.1.1 of this report]
	FCC Part 2 Clause 2.1051 [Reference 4.1.2 of this report
Limits:	FCC Part 27 Clause 27.53(h)(1) [Reference 4.1.1 of this report]

5.1.2 Configuration of EUT

The EUT was operated on a test bench. Measurements were made at the 50 ohm coaxial transmit / receive port. All test modes specified in section 2.4 were initially checked, 5MHz BW, QPSK mode with 1Resource Block (1RB) setting was found to be the worst case for emissions, therefore, the EUT was operated in Modes 1, 2, 5, 6, 9 and 10 for this test.

5.1.3 Test procedure

Tests were made in accordance with the Test Method noted above using the measuring equipment noted in the 'Test Equipment' Section at Site N. A complete scan of emissions from the lowest frequency generated/ used within the equipment up to 10 times the highest frequency generated/ used was made, to identify any signals within 20dB of the limits. Any identified spurious signals were measured in the required bandwidths.

5.1.4 Test equipment

H071, F075, F081

See Section 8 for more details

5.1.5 Test results

Temperature of test environment	21°C
Humidity of test environment	48%
Pressure of test environment	101kPa

Band	1710-1780 MHz
Power Level	23 dBm
Channel Spacing	5 MHz
Mod Scheme	QPSK 1RB
Low channel	1712.5 MHz

Spurious Frequency (MHz)	Measured Spurious Level (dBm)	Difference to Limit (dB)
No Spurious emissions found within 20 dB of limits.		

Plots
14011, PT27, Band 66, QPSK, 5MHz, 1RB, Port 1, 9-150 kHz
14011, PT27, Band 66, QPSK, 5MHz, 1RB, Port 1, 0.15-30 MHz
14011, PT27, Band 66, QPSK, 5MHz, 1RB, Port 1, 30-1707 MHz
14011, PT27, Band 66, QPSK, 5MHz, 1RB, Port 1, 1783-20000 MHz

Band	1710-1780 MHz
Power Level	23 dBm
Channel Spacing	5 MHz
Mod Scheme	QPSK 1RB
Mid channel	1745 MHz

Spurious Frequency (MHz)	Measured Spurious Level (dBm)	Difference to Limit (dB)
No Spurious emissions found within 20 dB of limits.		

Plots
14011, PT27, Band 66, QPSK, 5MHz, 1RB, Port 1, 9-150 kHz
14011, PT27, Band 66, QPSK, 5MHz, 1RB, Port 1, 0.15-30 MHz
14011, PT27, Band 66, QPSK, 5MHz, 1RB, Port 1, 30-1707 MHz
14011, PT27, Band 66, QPSK, 5MHz, 1RB, Port 1, 1783-20000 MHz

Band	1710-1780 MHz
Power Level	23 dBm
Channel Spacing	5 MHz
Mod Scheme	QPSK 1RB
High channel	1777.5 MHz

Spurious Frequency (MHz)	Measured Spurious Level (dBm)	Difference to Limit (dB)
No Spurious emissions found within 20 dB of limits.		

Plots
14011, PT27, Band 66, QPSK, 5MHz, 1RB, Port 1, 9-150 kHz
14011, PT27, Band 66, QPSK, 5MHz, 1RB, Port 1, 0.15-30 MHz
14011, PT27, Band 66, QPSK, 5MHz, 1RB, Port 1, 30-1707 MHz
14011, PT27, Band 66, QPSK, 5MHz, 1RB, Port 1, 1783-20000 MHz

The plots referred to in the above table may be found in section 6. Please also refer to Band edge emissions results for emissions close to the band/block edges.

LIMITS:

The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least 43 + 10 $\log_{10}$ (P) dB. (mean output power in watts) dB. = -13 dBm.

These results show that the EUT has PASSED this test.

The uncertainty gives a 95% confidence interval in the measurement. Expanded uncertainty (K=2) is as follows: ± 2.8 dB up to 26.5 GHz.

5.2 RF Power Output

5.2.1 Test methods

Test Requirements: FCC Part 27 Clause 27.50(d) [Reference 4.1.1 of this report]
Test Method: FCC Part 27 Clause 27.50 [Reference 4.1.1 of this report]
FCC Part 2 Clause 2.1046 [Reference 4.1.2 of this report
Limits: FCC Part 27 Clause 27.50(d)(4)(5) [Reference 4.1.1 of this report]

5.2.2 Configuration of EUT

The EUT was measured on a bench using a power meter & a spectrum analyser connected via a suitable coupler and attenuation to the internal RF port. The EUT was set to each mode and test signal in turn (see section 2.4) and highest power levels recorded.

5.2.3 Test procedure

Tests were made in accordance with the Test Method noted above using the measuring equipment listed in the 'Test Equipment' Section. Power meter reading stated is maximum power observed using an average power head. A PAPR measurement was also performed on the analyser and the trace data/screen image captured.
Measurements were made on a test bench in site N.

5.2.4 Test equipment

E291-2, E533, E622, E632, F072-2, F072-3, F075, F081, F391, H071

See Section 8 for more details

5.2.5 Test results

Temperature of test environment	20°C
Humidity of test environment	50%
Pressure of test environment	102kPa

Band	1710-1780 MHz
Power Level	17 dBm
Channel Spacing	5 MHz
Mod Scheme	QPSK, 16 QAM & 64 QAM
Low channel	1712.5 MHz

Test Instance (e.g. modulation or Resource block)	Average Cond Power (dBm) TX Chain 1	Antenna Gain dBi	TX Power EIRP (dBm)	TX Power EIRP (W)	Power Limit (dBm) EIRP	Power Margin (dB)	Peak to AV ratio (dB)	PK to AV Limit (dB)	PK to AV Margin (dB)
QPSK, 1%RB Lower	17.71	6.5	24.21	0.264	30	-5.79	6.83	13	-6.17
QPSK, 1%RB Upper	17.71	6.5	24.21	0.264	30	-5.79	6.3	13	-6.7
QPSK, 50%RB	18.24	6.5	24.74	0.298	30	-5.26	6.94	13	-6.06
QPSK, 100%RB	17.76	6.5	24.26	0.267	30	-5.74	7.12	13	-5.88
16QAM, 1%RB Lower	18.22	6.5	24.72	0.296	30	-5.28	8.12	13	-4.88
16QAM, 1%RB Upper	17.51	6.5	24.01	0.252	30	-5.99	6.85	13	-6.15
16QAM, 50%RB	18.33	6.5	24.83	0.304	30	-5.17	7.61	13	-5.39
16QAM, 100%RB	17.80	6.5	24.3	0.269	30	-5.7	8.34	13	-4.66
64QAM, 1%RB Lower	17.85	6.5	24.35	0.272	30	-5.65	7.15	13	-5.85
64QAM, 1%RB Upper	17.61	6.5	24.11	0.258	30	-5.89	6.98	13	-6.02
64QAM, 50%RB	18.28	6.5	24.78	0.301	30	-5.22	7.85	13	-5.15
64QAM, 100%RB	17.76	6.5	24.26	0.267	30	-5.74	8.05	13	-4.95

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Parameter setting	Plot filename/reference
QPSK, 1%RB Lower	14011-2 PAPR,Band 66, Part 27, QPSK, 5 MHz, 1 RB Low, Low Chan, PWR setting 17
QPSK, 1%RB Upper	14011-2 PAPR,Band 66, Part 27, QPSK, 5 MHz, 1 RB High, Low Chan, PWR setting 17
QPSK, 50%RB	14011-2 PAPR,Band 66, Part 27, QPSK, 5 MHz, 50% RB, Low Chan, PWR setting 17
QPSK, 100%RB	14011-2 PAPR,Band 66, Part 27, QPSK, 5 MHz, 100 RB Low, Low Chan, PWR setting 17
16QAM, 1%RB Lower	14011-2 PAPR,Band 66, Part 27, 16 QAM, 5 MHz, 1 RB Low, Low Chan, PWR setting 17
16QAM, 1%RB Upper	14011-2 PAPR,Band 66, Part 27, 16 QAM, 5 MHz, 1 RB High, Low Chan, PWR setting 17
16QAM, 50%RB	14011-2 PAPR,Band 66, Part 27, 16 QAM, 5 MHz, 50% RB, Low Chan, PWR setting 17
16QAM, 100%RB	14011-2 PAPR,Band 66, Part 27, 16 QAM, 5 MHz, 100% RB , Low Chan, PWR setting 17
64QAM, 1%RB Lower	14011-2 PAPR,Band 66, Part 27, 64 QAM, 5 MHz, 1 RB Low, Low Chan, PWR setting 17
64QAM, 1%RB Upper	14011-2 PAPR,Band 66, Part 27, 64 QAM, 5 MHz, 1 RB High, Low Chan, PWR setting 17
64QAM, 50%RB	14011-2 PAPR,Band 66, Part 27, 64 QAM, 5 MHz, 50% RB, Low Chan, PWR setting 17
64QAM, 100%RB	14011-2 PAPR,Band 66, Part 27, 64 QAM, 5 MHz, 100% RB, Low Chan, PWR setting 17

MIMO Calculation per KDB662911 D01:

Test Instance (e.g. modulation or Resource block)	Average Cond Power (dBm) TX Chain 1	Antenna Gain dBi	TX Power EIRP (dBm)	'+3dB for MIMO 2port (EIRP dBm)	TX Power EIRP (W)	Power Limit (dBm) EIRP	Power Margin (dB)
QPSK, 1%RB Lower	17.71	6.5	24.21	27.21	0.526	30	-2.79
QPSK, 1%RB Upper	17.71	6.5	24.21	27.21	0.526	30	-2.79
QPSK, 50%RB	18.24	6.5	24.74	27.74	0.594	30	-2.26
QPSK, 100%RB	17.76	6.5	24.26	27.26	0.532	30	-2.74
16QAM, 1%RB Lower	18.22	6.5	24.72	27.72	0.592	30	-2.28
16QAM, 1%RB Upper	17.51	6.5	24.01	27.01	0.502	30	-2.99
16QAM, 50%RB	18.33	6.5	24.83	27.83	0.607	30	-2.17
16QAM, 100%RB	17.80	6.5	24.3	27.3	0.537	30	-2.7
64QAM, 1%RB Lower	17.85	6.5	24.35	27.35	0.543	30	-2.65
64QAM, 1%RB Upper	17.61	6.5	24.11	27.11	0.514	30	-2.89
64QAM, 50%RB	18.28	6.5	24.78	27.78	0.600	30	-2.22
64QAM, 100%RB	17.76	6.5	24.26	27.26	0.532	30	-2.74

Setup Table

Band	1710-1780 MHz
Power Level	17 dBm
Channel Spacing	5 MHz
Mod Scheme	QPSK, 16 QAM & 64 QAM
Mid channel	1745 MHz

Test Instance (e.g. modulation or Resource block)	Average Cond Power (dBm) TX Chain 1	Antenna Gain dBi	TX Power EIRP (dBm)	TX Power EIRP (W)	Power Limit (dBm) EIRP	Power Margin (dB)	Peak to AV ratio (dB)	PK to AV Limit (dB)	PK to AV Margin (dB)
QPSK, 1%RB Lower	17.27	6.5	23.77	0.238	30	-6.23	5.8	13	-7.2
QPSK, 1%RB Upper	17.12	6.5	23.62	0.230	30	-6.38	5.83	13	-7.17
QPSK, 50%RB	17.56	6.5	24.06	0.255	30	-5.94	6.52	13	-6.48
QPSK, 100%RB	17.16	6.5	23.66	0.232	30	-6.34	7.03	13	-5.97
16QAM, 1%RB Lower	17.31	6.5	23.81	0.240	30	-6.19	5.81	13	-7.19
16QAM, 1%RB Upper	17.06	6.5	23.56	0.227	30	-6.44	5.85	13	-7.15
16QAM, 50%RB	17.56	6.5	24.06	0.255	30	-5.94	6.91	13	-6.09
16QAM, 100%RB	17.09	6.5	23.59	0.229	30	-6.41	7.3	13	-5.7
64QAM, 1%RB Lower	17.3	6.5	23.8	0.240	30	-6.2	6.53	13	-6.47
64QAM, 1%RB Upper	17.01	6.5	23.51	0.224	30	-6.49	6.55	13	-6.45
64QAM, 50%RB	17.11	6.5	23.61	0.230	30	-6.39	7.21	13	-5.79
64QAM, 100%RB	17.21	6.5	23.71	0.235	30	-6.29	7.69	13	-5.31

Parameter setting	Plot filename/reference
QPSK, 1%RB Lower	14011-2 PAPR,Band 66, Part 27, QPSK, 5 MHz, 1 RB Low, Mid Chan, PWR setting 19
QPSK, 1%RB Upper	14011-2 PAPR,Band 66, Part 27, QPSK, 5 MHz, 1 RB High, Mid Chan, PWR setting 19
QPSK, 50%RB	14011-2 PAPR,Band 66, Part 27, QPSK, 5 MHz, 50% RB Low, Mid Chan, PWR setting 19
QPSK, 100%RB	14011-2 PAPR,Band 66, Part 27, QPSK, 5 MHz, 100 RB, Mid Chan, PWR setting 19
16QAM, 1%RB Lower	14011-2 PAPR,Band 66, Part 27, 16 QAM, 5 MHz, 1 RB Low, Mid Chan, PWR setting 19
16QAM, 1%RB Upper	14011-2 PAPR,Band 66, Part 27, 16 QAM, 5 MHz, 1 RB High, Mid Chan, PWR setting 19
16QAM, 50%RB	14011-2 PAPR,Band 66, Part 27, 16 QAM, 5 MHz, 50% RB Low, Mid Chan, PWR setting 19
16QAM, 100%RB	14011-2 PAPR,Band 66, Part 27, 16 QAM, 5 MHz, 100 RB, Mid Chan, PWR setting 19
64QAM, 1%RB Lower	14011-2 PAPR,Band 66, Part 27, 64 QAM, 5 MHz, 1 RB Low, Mid Chan, PWR setting 19
64QAM, 1%RB Upper	14011-2 PAPR,Band 66, Part 27, 64 QAM, 5 MHz, 1 RB High, Mid Chan, PWR setting 19
64QAM, 50%RB	14011-2 PAPR,Band 66, Part 27, 64 QAM, 5 MHz, 50% RB Low, Mid Chan, PWR setting 19
64QAM, 100%RB	14011-2 PAPR,Band 66, Part 27, 64 QAM, 5 MHz, 100 RB , Mid Chan, PWR setting 19

MIMO Calculation per KDB662911 D01:

Test Instance (e.g. modulation or Resource block)	Average Cond Power (dBm) TX Chain 1	Antenna Gain dBi	TX Power EIRP (dBm)	'+3dB for MIMO 2port (EIRP dBm)	TX Power EIRP (W)	Power Limit (dBm) EIRP	Power Margin (dB)
QPSK, 1%RB Lower	17.71	6.5	23.77	26.77	0.475	30	-3.23
QPSK, 1%RB Upper	17.71	6.5	23.62	26.62	0.459	30	-3.38
QPSK, 50%RB	18.24	6.5	24.06	27.06	0.508	30	-2.94
QPSK, 100%RB	17.76	6.5	23.66	26.66	0.463	30	-3.34
16QAM, 1%RB Lower	18.22	6.5	23.81	26.81	0.480	30	-3.19

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16QAM, 1%RB Upper	17.51	6.5	23.56	26.56	0.453	30	-3.44
16QAM, 50%RB	18.33	6.5	24.06	27.06	0.508	30	-2.94
16QAM, 100%RB	17.80	6.5	23.59	26.59	0.456	30	-3.41
64QAM, 1%RB Lower	17.85	6.5	23.8	26.8	0.479	30	-3.2
64QAM, 1%RB Upper	17.61	6.5	23.51	26.51	0.448	30	-3.49
64QAM, 50%RB	18.28	6.5	23.61	26.61	0.458	30	-3.39
64QAM, 100%RB	17.76	6.5	23.71	26.71	0.469	30	-3.29

Setup Table

Band	1710-1780 MHz
Power Level	17 dBm
Channel Spacing	5 MHz
Mod Scheme	QPSK, 16 QAM & 64 QAM
High channel	1777.5 MHz

Test Instance (e.g. modulation or Resource block)	Average Cond Power (dBm) TX Chain 1	Antenna Gain dBi	TX Power EIRP (dBm)	TX Power EIRP (W)	Power Limit (dBm) EIRP	Power Margin (dB)	Peak to AV ratio (dB)	PK to AV Limit (dB)	PK to AV Margin (dB)
QPSK, 1%RB Lower	17.44	6.5	23.94	0.248	30	-6.06	5.6	13	-7.4
QPSK, 1%RB Upper	17.17	6.5	23.67	0.233	30	-6.33	5.72	13	-7.28
QPSK, 50%RB	17.13	6.5	23.63	0.231	30	-6.37	6.74	13	-6.26
QPSK, 100%RB	17.05	6.5	23.55	0.226	30	-6.45	6.95	13	-6.05
16QAM, 1%RB Lower	17.35	6.5	23.85	0.243	30	-6.15	7.01	13	-5.99
16QAM, 1%RB Upper	17.16	6.5	23.66	0.232	30	-6.34	7.18	13	-5.82
16QAM, 50%RB	17.18	6.5	23.68	0.233	30	-6.32	7.12	13	-5.88
16QAM, 100%RB	17.11	6.5	23.61	0.230	30	-6.39	7.68	13	-5.32
64QAM, 1%RB Lower	17.45	6.5	23.95	0.248	30	-6.05	6.37	13	-6.63
64QAM, 1%RB Upper	17.14	6.5	23.64	0.231	30	-6.36	6.36	13	-6.64
64QAM, 50%RB	17.11	6.5	23.61	0.230	30	-6.39	7.99	13	-5.01
64QAM, 100%RB	17.12	6.5	23.62	0.230	30	-6.38	7.87	13	-5.13

Parameter setting	Plot filename/reference
QPSK, 1%RB Lower	14011-2 PAPR,Band 66, Part 27, QPSK, 5 MHz, 1 RB Low, High Chan, PWR setting 19
QPSK, 1%RB Upper	14011-2 PAPR,Band 66, Part 27, QPSK, 5 MHz, 1 RB High, High Chan, PWR setting 18
QPSK, 50%RB	14011-2 PAPR,Band 66, Part 27, QPSK, 5 MHz, 50% RB High, High Chan, PWR setting 18
QPSK, 100%RB	14011-2 PAPR,Band 66, Part 27, QPSK, 5 MHz, 100% RB , High Chan, PWR setting 18
16QAM, 1%RB Lower	14011-2 PAPR,Band 66, Part 27, 16 QAM, 5 MHz, 1 RB Low, High Chan, PWR setting 19
16QAM, 1%RB Upper	14011-2 PAPR,Band 66, Part 27, 16 QAM, 5 MHz, 1 RB HIGH, High Chan, PWR setting 18
16QAM, 50%RB	14011-2 PAPR,Band 66, Part 27, 16 QAM, 5 MHz, 50% RB High, High Chan, PWR setting 18
16QAM, 100%RB	14011-2 PAPR,Band 66, Part 27, 16 QAM, 5 MHz, 100 RB, High Chan, PWR setting 18
64QAM, 1%RB Lower	14011-2 PAPR,Band 66, Part 27, 64 QAM, 5 MHz, 1 RB Low, High Chan, PWR setting 19
64QAM, 1%RB Upper	14011-2 PAPR,Band 66, Part 27, 64 QAM, 5 MHz, 1 RB High, High Chan, PWR setting 18
64QAM, 50%RB	14011-2 PAPR,Band 66, Part 27, 64 QAM, 5 MHz, 50% RB High, High Chan, PWR setting 18
64QAM, 100%RB	14011-2 PAPR,Band 66, Part 27, 64 QAM, 5 MHz, 100 RB , High Chan, PWR setting 18

MIMO Calculation per KDB662911 D01:
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Test Instance (e.g. modulation or Resource block)	Average Cond Power (dBm) TX Chain 1	Antenna Gain dBi	TX Power EIRP (dBm)	'+3dB for MIMO 2port (EIRP dBm)	TX Power EIRP (W)	Power Limit (dBm) EIRP	Power Margin (dB)
QPSK, 1%RB Lower	17.71	6.5	23.94	26.94	0.494	30	-3.06
QPSK, 1%RB Upper	17.71	6.5	23.67	26.67	0.465	30	-3.33
QPSK, 50%RB	18.24	6.5	23.63	26.63	0.460	30	-3.37
QPSK, 100%RB	17.76	6.5	23.55	26.55	0.452	30	-3.45
16QAM, 1%RB Lower	18.22	6.5	23.85	26.85	0.484	30	-3.15
16QAM, 1%RB Upper	17.51	6.5	23.66	26.66	0.463	30	-3.34
16QAM, 50%RB	18.33	6.5	23.68	26.68	0.466	30	-3.32
16QAM, 100%RB	17.80	6.5	23.61	26.61	0.458	30	-3.39
64QAM, 1%RB Lower	17.85	6.5	23.95	26.95	0.495	30	-3.05
64QAM, 1%RB Upper	17.61	6.5	23.64	26.64	0.461	30	-3.36
64QAM, 50%RB	18.28	6.5	23.61	26.61	0.458	30	-3.39
64QAM, 100%RB	17.76	6.5	23.62	26.62	0.459	30	-3.38

Setup Table

Band	1710-1780 MHz
Power Level	20 dBm
Channel Spacing	10 MHz
Mod Scheme	QPSK, 16 QAM & 64 QAM
Low channel	1715 MHz

Test Instance (e.g. modulation or Resource block)	Average Cond Power (dBm) TX Chain 1	Antenna Gain dBi	TX Power EIRP (dBm)	TX Power EIRP (W)	Power Limit (dBm) EIRP	Power Margin (dB)	Peak to AV ratio (dB)	PK to AV Limit (dB)	PK to AV Margin (dB)
QPSK, 1%RB Lower	19.76	6.5	26.26	0.423	30	-3.74	5.12	13	-7.88
QPSK, 1%RB Upper	19.71	6.5	26.21	0.418	30	-3.79	5.15	13	-7.85
QPSK, 50%RB	20.27	6.5	26.77	0.475	30	-3.23	5.15	13	-7.85
QPSK, 100%RB	20.21	6.5	26.71	0.469	30	-3.29	5.41	13	-7.59
16QAM, 1%RB Lower	20.31	6.5	26.81	0.480	30	-3.19	5.64	13	-7.36
16QAM, 1%RB Upper	20.44	6.5	26.94	0.494	30	-3.06	5.67	13	-7.33
16QAM, 50%RB	20.29	6.5	26.79	0.478	30	-3.21	5.76	13	-7.24
16QAM, 100%RB	20.23	6.5	26.73	0.471	30	-3.27	5.92	13	-7.08
64QAM, 1%RB Lower	19.73	6.5	26.23	0.420	30	-3.77	5.65	13	-7.35
64QAM, 1%RB Upper	19.68	6.5	26.18	0.415	30	-3.82	5.88	13	-7.12
64QAM, 50%RB	20.29	6.5	26.79	0.478	30	-3.21	5.80	13	-7.20
64QAM, 100%RB	20.2	6.5	26.7	0.468	30	-3.3	6.03	13	-6.97

Parameter setting	Plot filename/reference
QPSK, 1%RB Lower	14011-2 10MHz Low chan, QPSK, 1%RB Lower
QPSK, 1%RB Upper	14011-2 10MHz Low chan, QPSK, 1%RB Upper
QPSK, 50%RB	14011-2 10MHz Low chan, QPSK, 50%RB
QPSK, 100%RB	14011-2 10MHz Low chan, QPSK, 100%RB
16QAM, 1%RB Lower	14011-2 10MHz Low chan,16QAM, 1%RB Lower
16QAM, 1%RB Upper	14011-2 10MHz Low chan,16QAM, 1%RB Upper
16QAM, 50%RB	14011-2 10MHz Low chan,16QAM, 50%RB
16QAM, 100%RB	14011-2 10MHz Low chan,16QAM, 100%RB
64QAM, 1%RB Lower	14011-2 10MHz Low chan,64QAM, 1%RB Lower
64QAM, 1%RB Upper	14011-2 10MHz Low chan,64QAM, 1%RB Upper
64QAM, 50%RB	14011-2 10MHz Low chan,64QAM, 50%RB
64QAM, 100%RB	14011-2 10MHz Low chan,64QAM, 100%RB

MIMO Calculation per KDB662911 D01:

Test Instance (e.g. modulation or Resource block)	Average Cond Power (dBm) TX Chain 1	Antenna Gain dBi	TX Power EIRP (dBm)	'+3dB for MIMO 2port (EIRP dBm)	TX Power EIRP (W)	Power Limit (dBm) EIRP	Power Margin (dB)
QPSK, 1%RB Lower	19.76	6.5	26.26	29.26	0.843	30	-0.74
QPSK, 1%RB Upper	19.71	6.5	26.21	29.21	0.834	30	-0.79
QPSK, 50%RB	20.27	6.5	26.77	29.77	0.948	30	-0.23
QPSK, 100%RB	20.21	6.5	26.71	29.71	0.935	30	-0.29
16QAM, 1%RB Lower	20.31	6.5	26.81	29.81	0.957	30	-0.19
16QAM, 1%RB Upper	20.44	6.5	26.94	29.94	0.986	30	-0.06
16QAM, 50%RB	20.29	6.5	26.79	29.79	0.953	30	-0.21
16QAM, 100%RB	20.23	6.5	26.73	29.73	0.940	30	-0.27
64QAM, 1%RB Lower	19.73	6.5	26.23	29.23	0.838	30	-0.77
64QAM, 1%RB Upper	19.68	6.5	26.18	29.18	0.828	30	-0.82
64QAM, 50%RB	20.29	6.5	26.79	29.79	0.953	30	-0.21
64QAM, 100%RB	20.2	6.5	26.7	29.7	0.933	30	-0.3

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Setup Table

Band	1710-1780 MHz
Power Level	20 dBm
Channel Spacing	10 MHz
Mod Scheme	QPSK, 16 QAM & 64 QAM
Mid channel	1745 MHz

Test Instance (e.g. modulation or Resource block)	Average Cond Power (dBm) TX Chain 1	Antenna Gain dBi	TX Power EIRP (dBm)	TX Power EIRP (W)	Power Limit (dBm) EIRP	Power Margin (dB)	Peak to AV ratio (dB)	PK to AV Limit (dB)	PK to AV Margin (dB)
QPSK, 1%RB Lower	19.99	6.5	26.49	0.446	30	-3.51	5.04	13	-7.96
QPSK, 1%RB Upper	19.46	6.5	25.96	0.394	30	-4.04	5.02	13	-7.98
QPSK, 50%RB	19.73	6.5	26.23	0.420	30	-3.77	5.35	13	-7.65
QPSK, 100%RB	19.65	6.5	26.15	0.412	30	-3.85	5.28	13	-7.72
16QAM, 1%RB Lower	19.75	6.5	26.25	0.422	30	-3.75	5.92	13	-7.08
16QAM, 1%RB Upper	20.31	6.5	26.81	0.480	30	-3.19	5.95	13	-7.05
16QAM, 50%RB	19.62	6.5	26.12	0.409	30	-3.88	5.96	13	-7.04
16QAM, 100%RB	19.66	6.5	26.16	0.413	30	-3.84	6	13	-7
64QAM, 1%RB Lower	19.85	6.5	26.35	0.432	30	-3.65	5.96	13	-7.04
64QAM, 1%RB Upper	19.55	6.5	26.05	0.403	30	-3.95	5.92	13	-7.08
64QAM, 50%RB	19.65	6.5	26.15	0.412	30	-3.85	6.03	13	-6.97
64QAM, 100%RB	19.67	6.5	26.17	0.414	30	-3.83	6.07	13	-6.93

Parameter setting	Plot filename/reference
QPSK, 1%RB Lower	14011-2 10MHz Mid chan,QPSK, 1%RB Lower
QPSK, 1%RB Upper	14011-2 10MHz Mid chan,QPSK, 1%RB Upper
QPSK, 50%RB	14011-2 10MHz Mid chan,QPSK, 50%RB
QPSK, 100%RB	14011-2 10MHz Mid chan,QPSK, 100%RB
16QAM, 1%RB Lower	14011-2 10MHz Mid chan,16QAM, 1%RB Lower
16QAM, 1%RB Upper	14011-2 10MHz Mid chan,16QAM, 1%RB Upper
16QAM, 50%RB	14011-2 10MHz Mid chan,16QAM, 50%RB
16QAM, 100%RB	14011-2 10MHz Mid chan,16QAM, 100%RB
64QAM, 1%RB Lower	14011-2 10MHz Mid chan,64QAM, 1%RB Lower
64QAM, 1%RB Upper	14011-2 10MHz Mid chan,64QAM, 1%RB Upper
64QAM, 50%RB	14011-2 10MHz Mid chan,64QAM, 50%RB
64QAM, 100%RB	14011-2 10MHz Mid chan,64QAM, 100%RB

MIMO Calculation per KDB662911 D01:

Test Instance (e.g. modulation or Resource block)	Average Cond Power (dBm) TX Chain 1	Antenna Gain dBi	TX Power EIRP (dBm)	'+3dB for MIMO 2port (EIRP dBm)	TX Power EIRP (W)	Power Limit (dBm) EIRP	Power Margin (dB)
QPSK, 1%RB Lower	19.99	6.5	26.49	29.49	0.889	30	-0.51
QPSK, 1%RB Upper	19.46	6.5	25.96	28.96	0.787	30	-1.04
QPSK, 50%RB	19.73	6.5	26.23	29.23	0.838	30	-0.77
QPSK, 100%RB	19.65	6.5	26.15	29.15	0.822	30	-0.85
16QAM, 1%RB Lower	19.75	6.5	26.25	29.25	0.841	30	-0.75
16QAM, 1%RB Upper	20.31	6.5	26.81	29.81	0.957	30	-0.19
16QAM, 50%RB	19.62	6.5	26.12	29.12	0.817	30	-0.88
16QAM, 100%RB	19.66	6.5	26.16	29.16	0.824	30	-0.84
64QAM, 1%RB Lower	19.85	6.5	26.35	29.35	0.861	30	-0.65
64QAM, 1%RB Upper	19.55	6.5	26.05	29.05	0.804	30	-0.95
64QAM, 50%RB	19.65	6.5	26.15	29.15	0.822	30	-0.85
64QAM, 100%RB	19.67	6.5	26.17	29.17	0.826	30	-0.83

File Name: Airspan Communications Ltd.14011-2 Issue 01

Setup Table

Band	1710-1780 MHz
Power Level	20 dBm
Channel Spacing	10 MHz
Mod Scheme	QPSK, 16 QAM & 64 QAM
High channel	1775 MHz

Test Instance (e.g. modulation or Resource block)	Average Cond Power (dBm) TX Chain 1	Antenna Gain dBi	TX Power EIRP (dBm)	TX Power EIRP (W)	Power Limit (dBm) EIRP	Power Margin (dB)	Peak to AV ratio (dB)	PK to AV Limit (dB)	PK to AV Margin (dB)
QPSK, 1%RB Lower	19.59	6.5	26.09	0.406	30	-3.91	4.87	13	-8.13
QPSK, 1%RB Upper	19.82	6.5	26.32	0.429	30	-3.68	4.99	13	-8.01
QPSK, 50%RB	19.76	6.5	26.26	0.423	30	-3.74	5.19	13	-7.81
QPSK, 100%RB	20.16	6.5	26.66	0.463	30	-3.34	5.32	13	-7.68
16QAM, 1%RB Lower	20.34	6.5	26.84	0.483	30	-3.16	5.51	13	-7.49
16QAM, 1%RB Upper	19.65	6.5	26.15	0.412	30	-3.85	5.89	13	-7.11
16QAM, 50%RB	19.73	6.5	26.23	0.420	30	-3.77	5.81	13	-7.19
16QAM, 100%RB	20.15	6.5	26.65	0.462	30	-3.35	5.97	13	-7.03
64QAM, 1%RB Lower	19.56	6.5	26.06	0.404	30	-3.94	5.73	13	-7.27
64QAM, 1%RB Upper	19.81	6.5	26.31	0.428	30	-3.69	5.94	13	-7.06
64QAM, 50%RB	19.76	6.5	26.26	0.423	30	-3.74	5.88	13	-7.12
64QAM, 100%RB	20.15	6.5	26.65	0.462	30	-3.35	6.07	13	-6.93

Parameter setting	Plot filename/reference
QPSK, 1%RB Lower	14011-2 10MHz High chan,QPSK, 1%RB Lower
QPSK, 1%RB Upper	14011-2 10MHz High chan,QPSK, 1%RB Upper
QPSK, 50%RB	14011-2 10MHz High chan,QPSK, 50%RB
QPSK, 100%RB	14011-2 10MHz High chan,QPSK, 100%RB
16QAM, 1%RB Lower	14011-2 10MHz High chan,16QAM, 1%RB Lower
16QAM, 1%RB Upper	14011-2 10MHz High chan,16QAM, 1%RB Upper
16QAM, 50%RB	14011-2 10MHz High chan,16QAM, 50%RB
16QAM, 100%RB	14011-2 10MHz High chan,16QAM, 100%RB
64QAM, 1%RB Lower	14011-2 10MHz High chan,64QAM, 1%RB Lower
64QAM, 1%RB Upper	14011-2 10MHz High chan,64QAM, 1%RB Upper
64QAM, 50%RB	14011-2 10MHz High chan,64QAM, 50%RB
64QAM, 100%RB	14011-2 10MHz High chan,64QAM, 100%RB

MIMO Calculation per KDB662911 D01:

Test Instance (e.g. modulation or Resource block)	Average Cond Power (dBm) TX Chain 1	Antenna Gain dBi	TX Power EIRP (dBm)	'+3dB for MIMO 2port (EIRP dBm)	TX Power EIRP (W)	Power Limit (dBm) EIRP	Power Margin (dB)
QPSK, 1%RB Lower	19.59	6.5	26.09	29.09	0.811	30	-0.91
QPSK, 1%RB Upper	19.82	6.5	26.32	29.32	0.855	30	-0.68
QPSK, 50%RB	19.76	6.5	26.26	29.26	0.843	30	-0.74
QPSK, 100%RB	20.16	6.5	26.66	29.66	0.925	30	-0.34
16QAM, 1%RB Lower	20.34	6.5	26.84	29.84	0.964	30	-0.16
16QAM, 1%RB Upper	19.65	6.5	26.15	29.15	0.822	30	-0.85
16QAM, 50%RB	19.73	6.5	26.23	29.23	0.838	30	-0.77
16QAM, 100%RB	20.15	6.5	26.65	29.65	0.923	30	-0.35
64QAM, 1%RB Lower	19.56	6.5	26.06	29.06	0.805	30	-0.94
64QAM, 1%RB Upper	19.81	6.5	26.31	29.31	0.853	30	-0.69
64QAM, 50%RB	19.76	6.5	26.26	29.26	0.843	30	-0.74
64QAM, 100%RB	20.15	6.5	26.65	29.65	0.923	30	-0.35

File Name: Airspan Communications Ltd.14011-2 Issue 01

Setup Table

Band	1710-1780 MHz
Power Level	20 dBm
Channel Spacing	15 MHz
Mod Scheme	QPSK, 16 QAM & 64 QAM
Low channel	1717.5 MHz

Test Instance (e.g. modulation or Resource block)	Average Cond Power (dBm) TX Chain 1	Antenna Gain dBi	TX Power EIRP (dBm)	TX Power EIRP (W)	Power Limit (dBm) EIRP	Power Margin (dB)	Peak to AV ratio (dB)	PK to AV Limit (dB)	PK to AV Margin (dB)
QPSK, 1%RB Lower	20.39	6.5	26.89	0.489	30	-3.11	4.97	13	-8.03
QPSK, 1%RB Upper	19.6	6.5	26.1	0.407	30	-3.9	4.73	13	-8.27
QPSK, 50%RB	19.98	6.5	26.48	0.445	30	-3.52	5.26	13	-7.74
QPSK, 100%RB	20.2	6.5	26.7	0.468	30	-3.3	5.68	13	-7.32
16QAM, 1%RB Lower	20.28	6.5	26.78	0.476	30	-3.22	5.74	13	-7.26
16QAM, 1%RB Upper	19.48	6.5	25.98	0.396	30	-4.02	5.68	13	-7.32
16QAM, 50%RB	19.96	6.5	26.46	0.443	30	-3.54	5.74	13	-7.26
16QAM, 100%RB	20.11	6.5	26.61	0.458	30	-3.39	5.94	13	-7.06
64QAM, 1%RB Lower	20.37	6.5	26.87	0.486	30	-3.13	5.83	13	-7.17
64QAM, 1%RB Upper	19.6	6.5	26.1	0.407	30	-3.9	5.8	13	-7.2
64QAM, 50%RB	19.97	6.5	26.47	0.444	30	-3.53	5.85	13	-7.15
64QAM, 100%RB	20.2	6.5	26.7	0.468	30	-3.3	6.03	13	-6.97

Parameter setting	Plot filename/reference
QPSK, 1%RB Lower	14011-2 15MHz Low chan,QPSK, 1%RB Lower
QPSK, 1%RB Upper	14011-2 15MHz Low chan,QPSK, 1%RB Upper
QPSK, 50%RB	14011-2 15MHz Low chan,QPSK, 50%RB
QPSK, 100%RB	14011-2 15MHz Low chan,QPSK, 100%RB
16QAM, 1%RB Lower	14011-2 15MHz Low chan,16QAM, 1%RB Lower
16QAM, 1%RB Upper	14011-2 15MHz Low chan,16QAM, 1%RB Upper
16QAM, 50%RB	14011-2 15MHz Low chan,16QAM, 50%RB
16QAM, 100%RB	14011-2 15MHz Low chan,16QAM, 100%RB
64QAM, 1%RB Lower	14011-2 15MHz Low chan,64QAM, 1%RB Lower
64QAM, 1%RB Upper	14011-2 15MHz Low chan,64QAM, 1%RB Upper
64QAM, 50%RB	14011-2 15MHz Low chan,64QAM, 50%RB
64QAM, 100%RB	14011-2 15MHz Low chan,64QAM, 100%RB

MIMO Calculation per KDB662911 D01:

Test Instance (e.g. modulation or Resource block)	Average Cond Power (dBm) TX Chain 1	Antenna Gain dBi	TX Power EIRP (dBm)	'+3dB for MIMO 2port (EIRP dBm)	TX Power EIRP (W)	Power Limit (dBm) EIRP	Power Margin (dB)
QPSK, 1%RB Lower	20.39	6.5	26.89	29.89	0.975	30	-0.11
QPSK, 1%RB Upper	19.6	6.5	26.1	29.1	0.813	30	-0.9
QPSK, 50%RB	19.98	6.5	26.48	29.48	0.887	30	-0.52
QPSK, 100%RB	20.2	6.5	26.7	29.7	0.933	30	-0.3
16QAM, 1%RB Lower	20.28	6.5	26.78	29.78	0.951	30	-0.22
16QAM, 1%RB Upper	19.48	6.5	25.98	28.98	0.791	30	-1.02
16QAM, 50%RB	19.96	6.5	26.46	29.46	0.883	30	-0.54
16QAM, 100%RB	20.11	6.5	26.61	29.61	0.914	30	-0.39
64QAM, 1%RB Lower	20.37	6.5	26.87	29.87	0.971	30	-0.13
64QAM, 1%RB Upper	19.6	6.5	26.1	29.1	0.813	30	-0.9
64QAM, 50%RB	19.97	6.5	26.47	29.47	0.885	30	-0.53
64QAM, 100%RB	20.2	6.5	26.7	29.7	0.933	30	-0.3

File Name: Airspan Communications Ltd.14011-2 Issue 01

Setup Table

Band	1710-1780 MHz
Power Level	20 dBm
Channel Spacing	15 MHz
Mod Scheme	QPSK, 16 QAM & 64 QAM
Mid channel	1745 MHz

Test Instance (e.g. modulation or Resource block)	Average Cond Power (dBm) TX Chain 1	Antenna Gain dBi	TX Power EIRP (dBm)	TX Power EIRP (W)	Power Limit (dBm) EIRP	Power Margin (dB)	Peak to AV ratio (dB)	PK to AV Limit (dB)	PK to AV Margin (dB)
QPSK, 1%RB Lower	19.83	6.5	26.33	0.430	30	-3.67	5.03	13	-7.97
QPSK, 1%RB Upper	20.16	6.5	26.66	0.463	30	-3.34	4.94	13	-8.06
QPSK, 50%RB	20.48	6.5	26.98	0.499	30	-3.02	5.29	13	-7.71
QPSK, 100%RB	19.75	6.5	26.25	0.422	30	-3.75	5.38	13	-7.62
16QAM, 1%RB Lower	19.76	6.5	26.26	0.423	30	-3.74	6.05	13	-6.95
16QAM, 1%RB Upper	20.1	6.5	26.6	0.457	30	-3.4	5.76	13	-7.24
16QAM, 50%RB	20.48	6.5	26.98	0.499	30	-3.02	5.78	13	-7.22
16QAM, 100%RB	19.67	6.5	26.17	0.414	30	-3.83	5.83	13	-7.17
64QAM, 1%RB Lower	19.94	6.5	26.44	0.441	30	-3.56	6.15	13	-6.85
64QAM, 1%RB Upper	20.24	6.5	26.74	0.472	30	-3.26	5.81	13	-7.19
64QAM, 50%RB	20.49	6.5	26.99	0.500	30	-3.01	5.86	13	-7.14
64QAM, 100%RB	19.71	6.5	26.21	0.418	30	-3.79	6	13	-7

Parameter setting	Plot filename/reference
QPSK, 1%RB Lower	14011-2 15MHz Mid chan,QPSK, 1%RB Lower
QPSK, 1%RB Upper	14011-2 15MHz Mid chan,QPSK, 1%RB Upper
QPSK, 50%RB	14011-2 15MHz Mid chan,QPSK, 50%RB
QPSK, 100%RB	14011-2 15MHz Mid chan,QPSK, 100%RB
16QAM, 1%RB Lower	14011-2 15MHz Mid chan,16QAM, 1%RB Lower
16QAM, 1%RB Upper	14011-2 15MHz Mid chan,16QAM, 1%RB Upper
16QAM, 50%RB	14011-2 15MHz Mid chan,16QAM, 50%RB
16QAM, 100%RB	14011-2 15MHz Mid chan,16QAM, 100%RB
64QAM, 1%RB Lower	14011-2 15MHz Mid chan,64QAM, 1%RB Lower
64QAM, 1%RB Upper	14011-2 15MHz Mid chan,64QAM, 1%RB Upper
64QAM, 50%RB	14011-2 15MHz Mid chan,64QAM, 50%RB
64QAM, 100%RB	14011-2 15MHz Mid chan,64QAM, 100%RB

MIMO Calculation per KDB662911 D01:

Test Instance (e.g. modulation or Resource block)	Average Cond Power (dBm) TX Chain 1	Antenna Gain dBi	TX Power EIRP (dBm)	'+3dB for MIMO 2port (EIRP dBm)	TX Power EIRP (W)	Power Limit (dBm) EIRP	Power Margin (dB)
QPSK, 1%RB Lower	19.83	6.5	26.33	29.33	0.857	30	-0.67
QPSK, 1%RB Upper	20.16	6.5	26.66	29.66	0.925	30	-0.34
QPSK, 50%RB	20.48	6.5	26.98	29.98	0.995	30	-0.02
QPSK, 100%RB	19.75	6.5	26.25	29.25	0.841	30	-0.75
16QAM, 1%RB Lower	19.76	6.5	26.26	29.26	0.843	30	-0.74
16QAM, 1%RB Upper	20.1	6.5	26.6	29.6	0.912	30	-0.4
16QAM, 50%RB	20.48	6.5	26.98	29.98	0.995	30	-0.02
16QAM, 100%RB	19.67	6.5	26.17	29.17	0.826	30	-0.83
64QAM, 1%RB Lower	19.94	6.5	26.44	29.44	0.879	30	-0.56
64QAM, 1%RB Upper	20.24	6.5	26.74	29.74	0.942	30	-0.26
64QAM, 50%RB	20.49	6.5	26.99	29.99	0.998	30	-0.01
64QAM, 100%RB	19.71	6.5	26.21	29.21	0.834	30	-0.79

File Name: Airspan Communications Ltd.14011-2 Issue 01

Setup Table

Band	1710-1780 MHz
Power Level	20 dBm
Channel Spacing	15 MHz
Mod Scheme	QPSK, 16 QAM & 64 QAM
High channel	1772.5 MHz

Test Instance (e.g. modulation or Resource block)	Average Cond Power (dBm) TX Chain 1	Antenna Gain dBi	TX Power EIRP (dBm)	TX Power EIRP (W)	Power Limit (dBm) EIRP	Power Margin (dB)	Peak to AV ratio (dB)	PK to AV Limit (dB)	PK to AV Margin (dB)
QPSK, 1%RB Lower	20.25	6.5	26.75	0.473	30	-3.25	5.01	13	-7.99
QPSK, 1%RB Upper	19.53	6.5	26.03	0.401	30	-3.97	4.97	13	-8.03
QPSK, 50%RB	19.51	6.5	26.01	0.399	30	-3.99	5.19	13	-7.81
QPSK, 100%RB	19.89	6.5	26.39	0.436	30	-3.61	5.48	13	-7.52
16QAM, 1%RB Lower	20.15	6.5	26.65	0.462	30	-3.35	5.93	13	-7.07
16QAM, 1%RB Upper	20.43	6.5	26.93	0.493	30	-3.07	5.89	13	-7.11
16QAM, 50%RB	19.5	6.5	26	0.398	30	-4	5.65	13	-7.35
16QAM, 100%RB	19.88	6.5	26.38	0.435	30	-3.62	5.9	13	-7.1
64QAM, 1%RB Lower	20.25	6.5	26.75	0.473	30	-3.25	5.7	13	-7.3
64QAM, 1%RB Upper	19.6	6.5	26.1	0.407	30	-3.9	5.78	13	-7.22
64QAM, 50%RB	19.48	6.5	25.98	0.396	30	-4.02	5.82	13	-7.18
64QAM, 100%RB	19.86	6.5	26.36	0.433	30	-3.64	6.1	13	-6.9

Parameter setting	Plot filename/reference
QPSK, 1%RB Lower	14011-2 15MHz High chan,QPSK, 1%RB Lower
QPSK, 1%RB Upper	14011-2 15MHz High chan,QPSK, 1%RB Upper
QPSK, 50%RB	14011-2 15MHz High chan,QPSK, 50%RB
QPSK, 100%RB	14011-2 15MHz High chan,QPSK, 100%RB
16QAM, 1%RB Lower	14011-2 15MHz High chan,16QAM, 1%RB Lower
16QAM, 1%RB Upper	14011-2 15MHz High chan,16QAM, 1%RB Upper
16QAM, 50%RB	14011-2 15MHz High chan,16QAM, 50%RB
16QAM, 100%RB	14011-2 15MHz High chan,16QAM, 100%RB
64QAM, 1%RB Lower	14011-2 15MHz High chan,64QAM, 1%RB Lower
64QAM, 1%RB Upper	14011-2 15MHz High chan,64QAM, 1%RB Upper
64QAM, 50%RB	14011-2 15MHz High chan,64QAM, 50%RB
64QAM, 100%RB	14011-2 15MHz High chan,64QAM, 100%RB

MIMO Calculation per KDB662911 D01:

Test Instance (e.g. modulation or Resource block)	Average Cond Power (dBm) TX Chain 1	Antenna Gain dBi	TX Power EIRP (dBm)	'+3dB for MIMO 2port (EIRP dBm)	TX Power EIRP (W)	Power Limit (dBm) EIRP	Power Margin (dB)
QPSK, 1%RB Lower	20.25	6.5	26.75	29.75	0.944	30	-0.25
QPSK, 1%RB Upper	19.53	6.5	26.03	29.03	0.800	30	-0.97
QPSK, 50%RB	19.51	6.5	26.01	29.01	0.796	30	-0.99
QPSK, 100%RB	19.89	6.5	26.39	29.39	0.869	30	-0.61
16QAM, 1%RB Lower	20.15	6.5	26.65	29.65	0.923	30	-0.35
16QAM, 1%RB Upper	20.43	6.5	26.93	29.93	0.984	30	-0.07
16QAM, 50%RB	19.5	6.5	26	29	0.794	30	-1
16QAM, 100%RB	19.88	6.5	26.38	29.38	0.867	30	-0.62
64QAM, 1%RB Lower	20.25	6.5	26.75	29.75	0.944	30	-0.25
64QAM, 1%RB Upper	19.6	6.5	26.1	29.1	0.813	30	-0.9
64QAM, 50%RB	19.48	6.5	25.98	28.98	0.791	30	-1.02
64QAM, 100%RB	19.86	6.5	26.36	29.36	0.863	30	-0.64

File Name: Airspan Communications Ltd.14011-2 Issue 01

Setup Table

Band	1710-1780 MHz
Power Level	20 dBm
Channel Spacing	20 MHz
Mod Scheme	QPSK, 16 QAM & 64 QAM
Low channel	1720 MHz

Test Instance (e.g. modulation or Resource block)	Average Cond Power (dBm) TX Chain 1	Antenna Gain dBi	TX Power EIRP (dBm)	TX Power EIRP (W)	Power Limit (dBm) EIRP	Power Margin (dB)	Peak to AV ratio (dB)	PK to AV Limit (dB)	PK to AV Margin (dB)
QPSK, 1%RB Lower	19.58	6.5	26.08	0.406	30	-3.92	5.09	13	-7.91
QPSK, 1%RB Upper	19.52	6.5	26.02	0.400	30	-3.98	5.05	13	-7.95
QPSK, 50%RB	20.17	6.5	26.67	0.465	30	-3.33	5.3	13	-7.7
QPSK, 100%RB	19.85	6.5	26.35	0.432	30	-3.65	5.62	13	-7.38
16QAM, 1%RB Lower	20.24	6.5	26.74	0.472	30	-3.26	5.61	13	-7.39
16QAM, 1%RB Upper	20.44	6.5	26.94	0.494	30	-3.06	5.55	13	-7.45
16QAM, 50%RB	20.17	6.5	26.67	0.465	30	-3.33	5.76	13	-7.24
16QAM, 100%RB	19.84	6.5	26.34	0.431	30	-3.66	6.18	13	-6.82
64QAM, 1%RB Lower	19.56	6.5	26.06	0.404	30	-3.94	5.99	13	-7.01
64QAM, 1%RB Upper	19.59	6.5	26.09	0.406	30	-3.91	5.95	13	-7.05
64QAM, 50%RB	20.15	6.5	26.65	0.462	30	-3.35	5.89	13	-7.11
64QAM, 100%RB	19.83	6.5	26.33	0.430	30	-3.67	6.3	13	-6.7

Parameter setting	Plot filename/reference
QPSK, 1%RB Lower	14011-2 20MHz Low chan,QPSK, 1%RB Lower
QPSK, 1%RB Upper	14011-2 20MHz Low chan,QPSK, 1%RB Upper
QPSK, 50%RB	14011-2 20MHz Low chan,QPSK, 50%RB
QPSK, 100%RB	14011-2 20MHz Low chan,QPSK, 100%RB
16QAM, 1%RB Lower	14011-2 20MHz Low chan,16QAM, 1%RB Lower
16QAM, 1%RB Upper	14011-2 20MHz Low chan,16QAM, 1%RB Upper
16QAM, 50%RB	14011-2 20MHz Low chan,16QAM, 50%RB
16QAM, 100%RB	14011-2 20MHz Low chan,16QAM, 100%RB
64QAM, 1%RB Lower	14011-2 20MHz Low chan,64QAM, 1%RB Lower
64QAM, 1%RB Upper	14011-2 20MHz Low chan,64QAM, 1%RB Upper
64QAM, 50%RB	14011-2 20MHz Low chan,64QAM, 50%RB
64QAM, 100%RB	14011-2 20MHz Low chan,64QAM, 100%RB

MIMO Calculation per KDB662911 D01:

Test Instance (e.g. modulation or Resource block)	Average Cond Power (dBm) TX Chain 1	Antenna Gain dBi	TX Power EIRP (dBm)	'+3dB for MIMO 2port (EIRP dBm)	TX Power EIRP (W)	Power Limit (dBm) EIRP	Power Margin (dB)
QPSK, 1%RB Lower	19.58	6.5	26.08	29.08	0.809	30	-0.92
QPSK, 1%RB Upper	19.52	6.5	26.02	29.02	0.798	30	-0.98
QPSK, 50%RB	20.17	6.5	26.67	29.67	0.927	30	-0.33
QPSK, 100%RB	19.85	6.5	26.35	29.35	0.861	30	-0.65
16QAM, 1%RB Lower	20.24	6.5	26.74	29.74	0.942	30	-0.26
16QAM, 1%RB Upper	20.44	6.5	26.94	29.94	0.986	30	-0.06
16QAM, 50%RB	20.17	6.5	26.67	29.67	0.927	30	-0.33
16QAM, 100%RB	19.84	6.5	26.34	29.34	0.859	30	-0.66
64QAM, 1%RB Lower	19.56	6.5	26.06	29.06	0.805	30	-0.94
64QAM, 1%RB Upper	19.59	6.5	26.09	29.09	0.811	30	-0.91
64QAM, 50%RB	20.15	6.5	26.65	29.65	0.923	30	-0.35
64QAM, 100%RB	19.83	6.5	26.33	29.33	0.857	30	-0.67

File Name: Airspan Communications Ltd.14011-2 Issue 01

Setup Table

Band	1710-1780 MHz
Power Level	20 dBm
Channel Spacing	20 MHz
Mod Scheme	QPSK, 16 QAM & 64 QAM
Mid channel	1745 MHz

Test Instance (e.g. modulation or Resource block)	Average Cond Power (dBm) TX Chain 1	Antenna Gain dBi	TX Power EIRP (dBm)	TX Power EIRP (W)	Power Limit (dBm) EIRP	Power Margin (dB)	Peak to AV ratio (dB)	PK to AV Limit (dB)	PK to AV Margin (dB)
QPSK, 1%RB Lower	19.93	6.5	26.43	0.440	30	-3.57	5.17	13	-7.83
QPSK, 1%RB Upper	19.48	6.5	25.98	0.396	30	-4.02	5.14	13	-7.86
QPSK, 50%RB	19.7	6.5	26.2	0.417	30	-3.8	5.32	13	-7.68
QPSK, 100%RB	19.75	6.5	26.25	0.422	30	-3.75	5.11	13	-7.89
16QAM, 1%RB Lower	19.86	6.5	26.36	0.433	30	-3.64	5.77	13	-7.23
16QAM, 1%RB Upper	19.44	6.5	25.94	0.393	30	-4.06	5.65	13	-7.35
16QAM, 50%RB	19.73	6.5	26.23	0.420	30	-3.77	5.93	13	-7.07
16QAM, 100%RB	19.73	6.5	26.23	0.420	30	-3.77	5.92	13	-7.08
64QAM, 1%RB Lower	19.97	6.5	26.47	0.444	30	-3.53	6.1	13	-6.9
64QAM, 1%RB Upper	19.47	6.5	25.97	0.395	30	-4.03	5.96	13	-7.04
64QAM, 50%RB	19.7	6.5	26.2	0.417	30	-3.8	6.06	13	-6.94
64QAM, 100%RB	19.71	6.5	26.21	0.418	30	-3.79	6.05	13	-6.95

Parameter setting	Plot filename/reference
QPSK, 1%RB Lower	14011-2 20MHz Mid chan,QPSK, 1%RB Lower
QPSK, 1%RB Upper	14011-2 20MHz Mid chan,QPSK, 1%RB Upper
QPSK, 50%RB	14011-2 20MHz Mid chan,QPSK, 50%RB
QPSK, 100%RB	14011-2 20MHz Mid chan,QPSK, 100%RB
16QAM, 1%RB Lower	14011-2 20MHz Mid chan,16QAM, 1%RB Lower
16QAM, 1%RB Upper	14011-2 20MHz Mid chan,16QAM, 1%RB Upper
16QAM, 50%RB	14011-2 20MHz Mid chan,16QAM, 50%RB
16QAM, 100%RB	14011-2 20MHz Mid chan,16QAM, 100%RB
64QAM, 1%RB Lower	14011-2 20MHz Mid chan,64QAM, 1%RB Lower
64QAM, 1%RB Upper	14011-2 20MHz Mid chan,64QAM, 1%RB Upper
64QAM, 50%RB	14011-2 20MHz Mid chan,64QAM, 50%RB
64QAM, 100%RB	14011-2 20MHz Mid chan,64QAM, 100%RB

MIMO Calculation per KDB662911 D01:

Test Instance (e.g. modulation or Resource block)	Average Cond Power (dBm) TX Chain 1	Antenna Gain dBi	TX Power EIRP (dBm)	'+3dB for MIMO 2port (EIRP dBm)	TX Power EIRP (W)	Power Limit (dBm) EIRP	Power Margin (dB)
QPSK, 1%RB Lower	19.93	6.5	26.43	29.43	0.877	30	-0.57
QPSK, 1%RB Upper	19.48	6.5	25.98	28.98	0.791	30	-1.02
QPSK, 50%RB	19.7	6.5	26.2	29.2	0.832	30	-0.8
QPSK, 100%RB	19.75	6.5	26.25	29.25	0.841	30	-0.75
16QAM, 1%RB Lower	19.86	6.5	26.36	29.36	0.863	30	-0.64
16QAM, 1%RB Upper	19.44	6.5	25.94	28.94	0.783	30	-1.06
16QAM, 50%RB	19.73	6.5	26.23	29.23	0.838	30	-0.77
16QAM, 100%RB	19.73	6.5	26.23	29.23	0.838	30	-0.77
64QAM, 1%RB Lower	19.97	6.5	26.47	29.47	0.885	30	-0.53
64QAM, 1%RB Upper	19.47	6.5	25.97	28.97	0.789	30	-1.03
64QAM, 50%RB	19.7	6.5	26.2	29.2	0.832	30	-0.8
64QAM, 100%RB	19.71	6.5	26.21	29.21	0.834	30	-0.79

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Setup Table

Band	1710-1780 MHz
Power Level	20 dBm
Channel Spacing	20 MHz
Mod Scheme	QPSK, 16 QAM & 64 QAM
High channel	1770 MHz

Test Instance (e.g. modulation or Resource block)	Average Cond Power (dBm) TX Chain 1	Antenna Gain dBi	TX Power EIRP (dBm)	TX Power EIRP (W)	Power Limit (dBm) EIRP	Power Margin (dB)	Peak to AV ratio (dB)	PK to AV Limit (dB)	PK to AV Margin (dB)
QPSK, 1%RB Lower	20.12	6.5	26.62	0.459	30	-3.38	5.17	13	-7.83
QPSK, 1%RB Upper	19.53	6.5	26.03	0.401	30	-3.97	5.17	13	-7.83
QPSK, 50%RB	20.18	6.5	26.68	0.466	30	-3.32	5.36	13	-7.64
QPSK, 100%RB	20.06	6.5	26.56	0.453	30	-3.44	5.37	13	-7.63
16QAM, 1%RB Lower	20.09	6.5	26.59	0.456	30	-3.41	5.67	13	-7.33
16QAM, 1%RB Upper	19.58	6.5	26.08	0.406	30	-3.92	5.64	13	-7.36
16QAM, 50%RB	20.18	6.5	26.68	0.466	30	-3.32	5.91	13	-7.09
16QAM, 100%RB	20.13	6.5	26.63	0.460	30	-3.37	6	13	-7
64QAM, 1%RB Lower	20.06	6.5	26.56	0.453	30	-3.44	5.88	13	-7.12
64QAM, 1%RB Upper	19.55	6.5	26.05	0.403	30	-3.95	5.94	13	-7.06
64QAM, 50%RB	20.16	6.5	26.66	0.463	30	-3.34	6.02	13	-6.98
64QAM, 100%RB	20.13	6.5	26.63	0.460	30	-3.37	6.11	13	-6.89

Parameter setting	Plot filename/reference
QPSK, 1%RB Lower	14011-2 20MHz High chan,QPSK, 1%RB Lower
QPSK, 1%RB Upper	14011-2 20MHz High chan,QPSK, 1%RB Upper
QPSK, 50%RB	14011-2 20MHz High chan,QPSK, 50%RB
QPSK, 100%RB	14011-2 20MHz High chan,QPSK, 100%RB
16QAM, 1%RB Lower	14011-2 20MHz High chan,16QAM, 1%RB Lower
16QAM, 1%RB Upper	14011-2 20MHz High chan,16QAM, 1%RB Upper
16QAM, 50%RB	14011-2 20MHz High chan,16QAM, 50%RB
16QAM, 100%RB	14011-2 20MHz High chan,16QAM, 100%RB
64QAM, 1%RB Lower	14011-2 20MHz High chan,64QAM, 1%RB Lower
64QAM, 1%RB Upper	14011-2 20MHz High chan,64QAM, 1%RB Upper
64QAM, 50%RB	14011-2 20MHz High chan,64QAM, 50%RB
64QAM, 100%RB	14011-2 20MHz High chan,64QAM, 100%RB

MIMO Calculation per KDB662911 D01:

Test Instance (e.g. modulation or Resource block)	Average Cond Power (dBm) TX Chain 1	Antenna Gain dBi	TX Power EIRP (dBm)	'+3dB for MIMO 2port (EIRP dBm)	TX Power EIRP (W)	Power Limit (dBm) EIRP	Power Margin (dB)
QPSK, 1%RB Lower	20.12	6.5	26.62	29.62	0.916	30	-0.38
QPSK, 1%RB Upper	19.53	6.5	26.03	29.03	0.800	30	-0.97
QPSK, 50%RB	20.18	6.5	26.68	29.68	0.929	30	-0.32
QPSK, 100%RB	20.06	6.5	26.56	29.56	0.904	30	-0.44
16QAM, 1%RB Lower	20.09	6.5	26.59	29.59	0.910	30	-0.41
16QAM, 1%RB Upper	19.58	6.5	26.08	29.08	0.809	30	-0.92
16QAM, 50%RB	20.18	6.5	26.68	29.68	0.929	30	-0.32
16QAM, 100%RB	20.13	6.5	26.63	29.63	0.918	30	-0.37
64QAM, 1%RB Lower	20.06	6.5	26.56	29.56	0.904	30	-0.44
64QAM, 1%RB Upper	19.55	6.5	26.05	29.05	0.804	30	-0.95
64QAM, 50%RB	20.16	6.5	26.66	29.66	0.925	30	-0.34
64QAM, 100%RB	20.13	6.5	26.63	29.63	0.918	30	-0.37

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Any plots referred to in the above tables may be found in section 6.

LIMITS:
FCC Part 27 Clause 27.50(d)
Fixed, mobile, and portable (hand-held) stations operating in the 1710-1755 MHz band and mobile and portable stations operating in the 1695-1710 MHz and 1755-1780 MHz bands are limited to 1 watt EIRP. Fixed stations operating in the 1710-1755 MHz band are limited to a maximum antenna height of 10 meters above ground. Mobile and portable stations operating in these bands must employ a means for limiting power to the minimum necessary for successful communications.
In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB. For two port MIMO results 3dB has been added to single port results in line with KDB662911 D01.

These results show that the EUT has PASSED this test.

The uncertainty gives a 95% confidence interval in the measurement. Expanded uncertainty (K=2) is as follows:
<± 1.0 dB

5.3 Frequency stability

5.3.1 Test methods

Test Requirements: FCC Part 27 Clause 27.54 [Reference 4.1.1 of this report]
Test Method: FCC Part 2 Clause 2.1055 [Reference 4.1.2 of this report]
Limits: FCC Part 27 Clause 27.54[Reference 4.1.1 of this report]

5.3.2 Configuration of EUT

The EUT was placed in a temperature-controlled chamber and thermal balance was achieved before tests began. Measurements were made at the EUT 50 ohm port.
All test modes specified in section 2.4 were initially checked, 5MHz BW, QPSK mode with 1Resource Block (1RB) setting was found to be the worst case for emissions closest to the band edge, therefore, the EUT was operated in Modes 1, and 10 for 5MHz BW QPSK, Additional tests modes used for full test were modes 4 and 12 for 5 MHz QPSK full RB usage, covering upper and lower single Resource Block usage and full RB usage.

5.3.3 Test procedure

Tests were made in accordance with the Test Method noted above, using the measuring equipment listed in the 'Test Equipment' Section.
Temperature stability was achieved at each test level before taking measurements. No CW carrier was available for measurement, the EUT was digitally modulated, and test modes were controlled via a Base station communications test set in a closed loop configuration to obtain its frequency accuracy settings. The requirement is for the fundamental BW to stay within the operational Band. Therefore, the mean amplitude of the band edge emissions at the level of the applicable spurious emissions limit was measured on the upper & lower sides of the modulation envelope. This ensured the fundamental BW including any frequency drift remained within the Band. As the unit is capable of MIMO two port operation, the spurious band edge emissions limit of -16dBm/MHz was used to determine if the modulated signal remained within the band edges limits. Band Edge frequencies are 1710 MHz Lower and 1780 MHz Upper.
Tests were performed using Test Site N.

5.3.4 Test equipment

H071, F075, F081, N607, E623, E555

See Section 8 for more details

5.3.5 Test results

Temperature of test environment 20°C
Humidity of test environment 50%
Pressure of test environment 102kPa

Band	1710-1780 MHz
Power Level	17 dBm
Channel Spacing	5 MHz
Mod Scheme	QPSK 1RB
Low channel	1712.5 MHz
High channel	1775.5 MHz

Test conditions		Frequency Reading (MHz) Low channel band edge	Frequency Reading (MHz) High channel band edge
-30°C	Volts Nominal (120)	1710.098000	1779.932000
-20°C	Volts Nominal (120)	1710.094000	1779.938000
-10°C	Volts Nominal (120)	1710.112000	1779.960000
0°C	Volts Nominal (120)	1710.091000	1779.939000
10°C	Volts Nominal (120)	1710.090000	1779.994000
20°C	Volts Minimum (102)	1710.076000	1779.978000
	Volts Nominal (120)	1710.082000	1779.682000

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	Volts Maximum (138)	1710.069000	1779.860000
30°C	Volts Nominal (120)	1710.089000	1779.967000
40°C	Volts Nominal (120)	1710.105000	1779.788000
50°C	Volts Nominal (120)	1710.077000	1779.946000
Closest Frequency point at -16dBm Band edge limits (MHz) over temperature range		1710.069000	1779.994000
Margin to Band edge (Hz)		69000	6000

Band	1710-1780 MHz
Power Level	17 dBm
Channel Spacing	5 MHz
Mod Scheme	QPSK 100%RB
Low channel	1712.5 MHz
High channel	1775.5 MHz

Test conditions		Frequency Reading (MHz) Low channel band edge	Frequency Reading (MHz) High channel band edge
-30°C	Volts Nominal (120)	1710.211000	1779.803000
-20°C	Volts Nominal (120)	1710.209000	1779.795000
-10°C	Volts Nominal (120)	1710.212000	1779.799000
0°C	Volts Nominal (120)	1710.209000	1779.798000
10°C	Volts Nominal (120)	1710.211000	1779.803000
20°C	Volts Minimum (102)	1710.212000	1779.803000
	Volts Nominal (120)	1710.212000	1779.803000
	Volts Maximum (138)	1710.213000	1779.800000
30°C	Volts Nominal (120)	1710.217000	1779.800000
40°C	Volts Nominal (120)	1710.214000	1779.799000
50°C	Volts Nominal (120)	1710.209000	1779.797000
Closest Frequency point at -16dBm Band edge limits (MHz) over temperature range		1710.209000	1779.803000
Margin to Band edge (Hz)		209000	197000

Analyser plots are shown in section 6.

LIMITS:
FCC Part 27.54: The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

These results show that the EUT has PASSED this test.

The uncertainty gives a 95% confidence interval in the measurement. Expanded uncertainty (K=2) is as follows:
<± 0.7 ppm

5.4 Occupied Bandwidth

5.4.1 Test methods

Test Requirements: FCC Part 27 Clause 27.54 [Reference 4.1.1 of this report]
Test Method: FCC Part 2 Clause 2.1049 [Reference 4.1.2 of this report]
Limits: FCC Part 27 Clause 27.54 [Reference 4.1.1 of this report]

5.4.2 Configuration of EUT

The EUT was operated on a test bench. Measurements were made at the 50 ohm coaxial transmit / receive port. The EUT was operated in all Full Resource Block BW modes listed in section 2.4

5.4.3 Test procedure

Tests were made in accordance with the Test Method noted above using the measuring equipment listed in the 'Test Equipment' Section. A RBW of 200kHz, 3x VBW, auto sweep time and max hold settings were used for the 99% bandwidth. The EUT was set to each Bandwidth/mod scheme in turn at Full Resource Block BW (see section 2.4) and 99% bandwidth recorded.
Tests were performed using Test Site N.

5.4.4 Test equipment

H071, F075, F081

See Section 8 for more details

5.4.5 Test results

Temperature of test environment	20°C
Humidity of test environment	50%
Pressure of test environment	102kPa

Band	1710-1780 MHz
Power Level	17 dBm
Channel Spacing	5 MHz
Mod Scheme	QPSK
Low channel	Low Channel
Mid channel	Middle Channel
High channel	High Channel

	Low channel	Mid channel	High channel
99 % Bandwidth (MHz) Nominal Temp & Volts	4.6882	4.7027	4.6749
Plot for 99 % Bandwidth (MHz) Nominal Temp & Volts	14011-2 OBW,Band 66, Part 24, QPSK, 5 MHz, 100% RB , Low Chan	14011-2 OBW,Band 66, Part 24, QPSK, 5 MHz, 100% RB , Mid Chan	14011-2 OBW,Band 66, Part 24, QPSK, 5 MHz, 100% RB , High Chan
FLOW Worst case (MHz)	1710.1559	1742.64865	1775.16255
FHIGH Worst case (MHz)	1714.8441	1747.35135	1779.83745

Band	1710-1780 MHz
Power Level	22 dBm
Channel Spacing	10 MHz
Mod Scheme	QPSK
Low channel	Low Channel
Mid channel	Middle Channel
High channel	High Channel

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	Low channel	Mid channel	High channel
99 % Bandwidth (MHz) Nominal Temp & Volts	9.0331	8.9727	9.0072
Plot for 99 % Bandwidth (MHz) Nominal Temp & Volts	14011-2 OBW,Band 66, Part 24, QPSK, 10 MHz, 100% RB , Low Chan	14011-2 OBW,Band 66, Part 24, QPSK, 10 MHz, 100% RB , Mid Chan	14011-2 OBW,Band 66, Part 24, QPSK, 10 MHz, 100% RB , High Chan
FLOW Worst case (MHz)	1710.48345	1740.51365	1770.4964
FHIGH Worst case (MHz)	1719.51655	1749.48635	1779.5036

Band	1710-1780 MHz
Power Level	23 dBm
Channel Spacing	15 MHz
Mod Scheme	QPSK
Low channel	Low Channel
Mid channel	Middle Channel
High channel	High Channel

	Low channel	Mid channel	High channel
99 % Bandwidth (MHz) Nominal Temp & Volts	13.476	13.377	13.433
Plot for 99 % Bandwidth (MHz) Nominal Temp & Volts	14011-2 OBW,Band 66, Part 24, QPSK, 15 MHz, 100% RB , Low Chan	14011-2 OBW,Band 66, Part 24, QPSK, 15 MHz, 100% RB , Mid Chan	14011-2 OBW,Band 66, Part 24, QPSK, 15 MHz, 100% RB , High Chan
FLOW Worst case (MHz)	1710.762	1738.3115	1765.7835
FHIGH Worst case (MHz)	1724.238	1751.6885	1779.2165

Band	1710-1780 MHz
Power Level	23 dBm
Channel Spacing	20 MHz
Mod Scheme	QPSK
Low channel	Low Channel
Mid channel	Middle Channel
High channel	High Channel

	Low channel	Mid channel	High channel
99 % Bandwidth (MHz) Nominal Temp & Volts	9.0257	8.982	8.9889
Plot for 99 % Bandwidth (MHz) Nominal Temp & Volts	14011-2 OBW,Band 66, Part 24, QPSK, 20 MHz, 100% RB , Low Chan	14011-2 OBW,Band 66, Part 24, QPSK, 20 MHz, 100% RB , Mid Chan	14011-2 OBW,Band 66, Part 24, QPSK, 20 MHz, 100% RB , High Chan
FLOW Worst case (MHz)	1711.0265	1736.1285	1761.0365
FHIGH Worst case (MHz)	1728.9735	1753.8715	1778.9635

Band	1710-1780 MHz
Power Level	17 dBm
Channel Spacing	5 MHz
Mod Scheme	16QAM
Low channel	Low Channel
Mid channel	Middle Channel
High channel	High Channel

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	Low channel	Mid channel	High channel
99 % Bandwidth (MHz) Nominal Temp & Volts	4.6433	4.6364	4.6319
Plot for 99 % Bandwidth (MHz) Nominal Temp & Volts	14011-2 OBW,Band 66, Part 24, 16 QAM, 5 MHz, 100% RB , Low Chan	14011-2 OBW,Band 66, Part 24, 16 QAM, 5 MHz, 100% RB , Mid Chan	14011-2 OBW,Band 66, Part 24, 16 QAM, 5 MHz, 100% RB , High Chan
FLOW Worst case (MHz)	1710.17835	1742.6818	1775.18405
FHIGH Worst case (MHz)	1714.82165	1747.3182	1779.81595

Band	1710-1780 MHz
Power Level	22 dBm
Channel Spacing	10 MHz
Mod Scheme	16QAM
Low channel	Low Channel
Mid channel	Middle Channel
High channel	High Channel

	Low channel	Mid channel	High channel
99 % Bandwidth (MHz) Nominal Temp & Volts	9.0257	8.982	8.9889
Plot for 99 % Bandwidth (MHz) Nominal Temp & Volts	14011-2 OBW,Band 66, Part 24, 16 QAM, 10 MHz, 100% RB , Low Chan	14011-2 OBW,Band 66, Part 24, 16 QAM, 10 MHz, 100% RB , Mid Chan	14011-2 OBW,Band 66, Part 24, 16 QAM, 10 MHz, 100% RB , High Chan
FLOW Worst case (MHz)	1710.48715	1740.509	1770.50555
FHIGH Worst case (MHz)	1719.51285	1749.491	1779.49445

Band	1710-1780 MHz
Power Level	23 dBm
Channel Spacing	15 MHz
Mod Scheme	16QAM
Low channel	Low Channel
Mid channel	Middle Channel
High channel	High Channel

	Low channel	Mid channel	High channel
99 % Bandwidth (MHz) Nominal Temp & Volts	13.509	13.377	13.429
Plot for 99 % Bandwidth (MHz) Nominal Temp & Volts	14011-2 OBW,Band 66, Part 24, 16 QAM, 15 MHz, 100% RB , Low Chan	14011-2 OBW,Band 66, Part 24, 16 QAM, 15 MHz, 100% RB , Mid Chan	14011-2 OBW,Band 66, Part 24, 16 QAM, 15 MHz, 100% RB , High Chan
FLOW Worst case (MHz)	1710.7455	1738.3115	1765.7855
FHIGH Worst case (MHz)	1724.2545	1751.6885	1779.2145

Band	1710-1780 MHz
Power Level	23 dBm
Channel Spacing	20 MHz
Mod Scheme	16QAM
Low channel	Low Channel
Mid channel	Middle Channel
High channel	High Channel

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	Low channel	Mid channel	High channel
99 % Bandwidth (MHz) Nominal Temp & Volts	17.966	17.711	17.874
Plot for 99 % Bandwidth (MHz) Nominal Temp & Volts	14011-2 OBW,Band 66, Part 24, 16 QAM, 20 MHz, 100% RB , Low Chan	14011-2 OBW,Band 66, Part 24, 16 QAM, 20 MHz, 100% RB , Mid Chan	14011-2 OBW,Band 66, Part 24, 16 QAM, 20 MHz, 100% RB , High Chan
FLOW Worst case (MHz)	1711.017	1736.1445	1761.063
FHIGH Worst case (MHz)	1728.983	1753.8555	1778.937

Band	1710-1780 MHz
Power Level	17 dBm
Channel Spacing	5 MHz
Mod Scheme	64QAM
Low channel	Low Channel
Mid channel	Middle Channel
High channel	High Channel

	Low channel	Mid channel	High channel
99 % Bandwidth (MHz) Nominal Temp & Volts	4.6611	4.6485	4.6581
Plot for 99 % Bandwidth (MHz) Nominal Temp & Volts	14011-2 OBW,Band 66, Part 24, 64 QAM, 5 MHz, 100% RB , Low Chan	14011-2 OBW,Band 66, Part 24, 64 QAM, 5 MHz, 100% RB , Mid Chan	14011-2 OBW,Band 66, Part 24, 64 QAM, 5 MHz, 100% RB , High Chan
FLOW Worst case (MHz)	1710.16945	1742.67575	1775.17095
FHIGH Worst case (MHz)	1714.83055	1747.32425	1779.82905

Band	1710-1780 MHz
Power Level	22 dBm
Channel Spacing	10 MHz
Mod Scheme	64QAM
Low channel	Low Channel
Mid channel	Middle Channel
High channel	High Channel

	Low channel	Mid channel	High channel
99 % Bandwidth (MHz) Nominal Temp & Volts	9.0309	9.0132	9.0183
Plot for 99 % Bandwidth (MHz) Nominal Temp & Volts	14011-2 OBW,Band 66, Part 24, 64 QAM, 10 MHz, 100% RB , Low Chan	14011-2 OBW,Band 66, Part 24, 64 QAM, 10 MHz, 100% RB , Mid Chan	14011-2 OBW,Band 66, Part 24, 64 QAM, 10 MHz, 100% RB , High Chan
FLOW Worst case (MHz)	1710.48455	1740.4934	1770.49085
FHIGH Worst case (MHz)	1719.51545	1749.5066	1779.50915

Band	1710-1780 MHz
Power Level	23 dBm
Channel Spacing	15 MHz
Mod Scheme	64QAM
Low channel	Low Channel
Mid channel	Middle Channel
High channel	High Channel

	Low channel	Mid channel	High channel
99 % Bandwidth (MHz) Nominal Temp & Volts	13.51	13.388	13.42
Plot for 99 % Bandwidth (MHz) Nominal Temp & Volts	14011-2 OBW,Band 66, Part 24, 64 QAM, 15 MHz, 100% RB , Low Chan	14011-2 OBW,Band 66, Part 24, 64 QAM, 15 MHz, 100% RB , Mid Chan	14011-2 OBW,Band 66, Part 24, 64 QAM, 15 MHz, 100% RB , High Chan
FLOW Worst case (MHz)	1710.745	1738.306	1765.79
FHIGH Worst case (MHz)	1724.255	1751.694	1779.21

Band	1710-1780 MHz
Power Level	23 dBm
Channel Spacing	20 MHz
Mod Scheme	64QAM
Low channel	Low Channel
Mid channel	Middle Channel
High channel	High Channel

	Low channel	Mid channel	High channel
99 % Bandwidth (MHz) Nominal Temp & Volts	17.98	17.759	17.895
Plot for 99 % Bandwidth (MHz) Nominal Temp & Volts	14011-2 OBW,Band 66, Part 24, 64 QAM, 20 MHz, 100% RB , Low Chan	14011-2 OBW,Band 66, Part 24, 64 QAM, 20 MHz, 100% RB , Mid Chan	14011-2 OBW,Band 66, Part 24, 64 QAM, 20 MHz, 100% RB , High Chan
FLOW Worst case (MHz)	1711.01	1736.1205	1761.0525
FHIGH Worst case (MHz)	1728.99	1753.8795	1778.9475

Analyser plots for the 99% bandwidth can be found in Section 6 of this report.

LIMITS:
The bandwidth of the emission must be contained within the authorised frequency band.

These results show that the EUT has PASSED this test.

The uncertainty gives a 95% confidence interval in the measurement. Expanded uncertainty (K=2) is as follows:
<± 1.9 %

5.5 Field strength of spurious radiations

5.5.1 Test methods

Test Requirements:	FCC Part 27 Clause 27.53(h)(1) [Reference 4.1.1 of this report]
Test Method:	FCC Part 2 Clause 2.1053 [Reference 4.1.2 of this report]
Limits:	FCC Part 27 Clause 27.53(h)(1) [Reference 4.1.1 of this report]

5.5.2 Configuration of EUT

The EUT was tested in an ALSE and ambient conditions were monitored. Three orthogonal planes were examined. All test modes specified in section 2.4 were initially checked, 5MHz BW, QPSK modulation with 1Resource Block (1RB) setting was found to be the worst case for emissions, therefore, the EUT was operated in Modes 1, 5, 10, 37, 41, 46, 73, 77, 82, 109, 113 and 118 for this test.

5.5.3 Test procedure

Tests were made in accordance with the Test Method noted above using the measuring equipment noted in the 'Test Equipment' Section at Site B & M. Peak field strength from the EUT was maximised by rotating it 360 degrees. Appropriate band-pass filters were used to ensure the fundamental did not distort the results. An RMS detector was used for final measurements.

25MHz - 1GHz.
The measuring antenna was scanned 1 - 4m in both Horizontal and Vertical polarisations. Substitution method was performed using tuned dipoles / a calibrated bi-conical antenna.

1GHz – 18GHz.
The measuring antenna was used in both Horizontal and Vertical polarisations. Substitution method was performed using standard gain horn antennas.

5.5.4 Test equipment

E654, E904, TMS78, TMS79, E642, E856, LPE364, E743, E268

See Section 8 for more details

5.5.5 Test results

Temperature of test environment	20°C
Humidity of test environment	50%
Pressure of test environment	100kPa

Setup Table

Band	1710-1780 MHz
Power Level	23 dBm
Channel Spacing	5 MHz
Mod Scheme	QPSK 1RB
Low channel	Low Chan 1712.5 MHz

Spurious Frequency (MHz)	Measured Spurious Level (dBm)	Difference to Limit (dB)	Antenna Polarisation	EUT Polarisation
No Spurious emissions found within 20 dB of limits.				

Setup Table

Band	1710-1780 MHz
Power Level	23 dBm
Channel Spacing	5 MHz
Mod Scheme	QPSK 1RB
Mid channel	Mid Chan 1745 MHz

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Spurious Frequency (MHz)	Measured Spurious Level (dBm)	Difference to Limit (dB)	Antenna Polarisation	EUT Polarisation
No Spurious emissions found within 20 dB of limits.				

Setup Table

Band	1710-1780 MHz
Power Level	23 dBm
Channel Spacing	5 MHz
Mod Scheme	QPSK 1RB
High channel	High Chan 1777.5 MHz

Spurious Frequency (MHz)	Measured Spurious Level (dBm)	Difference to Limit (dB)	Antenna Polarisation	EUT Polarisation
No Spurious emissions found within 20 dB of limits.				

Setup Table

Band	1710-1780 MHz
Power Level	23 dBm
Channel Spacing	10 MHz
Mod Scheme	QPSK 1RB
Low channel	Low Chan 1715 MHz

Spurious Frequency (MHz)	Measured Spurious Level (dBm)	Difference to Limit (dB)	Antenna Polarisation	EUT Polarisation
No Spurious emissions found within 20 dB of limits.				

Setup Table

Band	1710-1780 MHz
Power Level	23 dBm
Channel Spacing	10 MHz
Mod Scheme	QPSK 1RB
Mid channel	Mid Chan 1745 MHz

Spurious Frequency (MHz)	Measured Spurious Level (dBm)	Difference to Limit (dB)	Antenna Polarisation	EUT Polarisation
No Spurious emissions found within 20 dB of limits.				

Setup Table

Band	1710-1780 MHz
Power Level	23 dBm
Channel Spacing	10 MHz
Mod Scheme	QPSK 1RB
High channel	High Chan 1775 MHz

Spurious Frequency (MHz)	Measured Spurious Level (dBm)	Difference to Limit (dB)	Antenna Polarisation	EUT Polarisation
No Spurious emissions found within 20 dB of limits.				

Setup Table

Band	1710-1780 MHz
Power Level	23 dBm
Channel Spacing	15 MHz
Mod Scheme	QPSK 1RB
Low channel	Low Chan 1717.5 MHz

Spurious Frequency (MHz)	Measured Spurious Level (dBm)	Difference to Limit (dB)	Antenna Polarisation	EUT Polarisation
No Spurious emissions found within 20 dB of limits.				

Setup Table

Band	1710-1780 MHz
Power Level	23 dBm
Channel Spacing	15 MHz
Mod Scheme	QPSK 1RB
Mid channel	Mid Chan 1745 MHz

Spurious Frequency (MHz)	Measured Spurious Level (dBm)	Difference to Limit (dB)	Antenna Polarisation	EUT Polarisation
No Spurious emissions found within 20 dB of limits.				

Setup Table

Band	1710-1780 MHz
Power Level	23 dBm
Channel Spacing	15 MHz
Mod Scheme	QPSK 1RB
High channel	High Chan 1772.5 MHz

Spurious Frequency (MHz)	Measured Spurious Level (dBm)	Difference to Limit (dB)	Antenna Polarisation	EUT Polarisation
No Spurious emissions found within 20 dB of limits.				

Setup Table

Band	1710-1780 MHz
Power Level	23 dBm
Channel Spacing	20 MHz
Mod Scheme	QPSK 1RB
Low channel	Low Chan 1720 MHz

Spurious Frequency (MHz)	Measured Spurious Level (dBm)	Difference to Limit (dB)	Antenna Polarisation	EUT Polarisation
No Spurious emissions found within 20 dB of limits.				

Setup Table

Band	1710-1780 MHz
Power Level	23 dBm
Channel Spacing	20 MHz
Mod Scheme	QPSK 1RB
Mid channel	Mid Chan 1745 MHz

Spurious Frequency (MHz)	Measured Spurious Level (dBm)	Difference to Limit (dB)	Antenna Polarisation	EUT Polarisation
No Spurious emissions found within 20 dB of limits.				

Setup Table

Band	1710-1780 MHz
Power Level	23 dBm
Channel Spacing	20 MHz
Mod Scheme	QPSK 1RB
High channel	High Chan 1770 MHz

Spurious Frequency (MHz)	Measured Spurious Level (dBm)	Difference to Limit (dB)	Antenna Polarisation	EUT Polarisation
No Spurious emissions found within 20 dB of limits.				

No Spurious emissions found within 20 dB of limits, for any test mode

LIMITS:
FCC Part 27 Clause 27.53(h)(1) AWS emissions limits
General protection levels. Except as otherwise specified below, for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10}$ (P) dB. (-13 dBm)

These results show that the EUT has PASSED this test.

The uncertainty gives a 95% confidence interval in the measurement. Expanded uncertainty (K=2) is as follows: 30MHz - 1GHz ± 3.9 dB, 1 – 18 GHz ±3.5dB, 18 – 26.5 GHz ±3.9dB,

5.6 Band edge / spectrum mask additional emissions limitations

5.6.1 Test methods

Test Requirements:	FCC Part 27 Clause 27.53(h)(1) [Reference 4.1.1 of this report]
Test Method:	FCC Part 27 Clause 27.53(h)(3) [Reference 4.1.1 of this report]
Limits:	FCC Part 27 Clause 27.53(h)(1) [Reference 4.1.1 of this report]

5.6.2 Configuration of EUT

The EUT was operated on a test bench. Measurements were made at the 50 ohm coaxial transmit / receive port. All test modes specified in section 2.4 were tested.

5.6.3 Test procedure

Tests were made in accordance with the Test Method noted above, using the measuring equipment listed in the 'Test Equipment' Section. A RBW of 1% of the EBW (emission bandwidth), 3x VBW, auto sweep time and max hold settings were used, per ANSI C63.26 methods to show the band edges. All modulation schemes / rates in combination with channel bandwidths and upper and lower channel frequencies were assessed and plotted. (See section 2.4 for mode details).
The EUT was tested in Site N.

5.6.4 Test equipment

E291-2, E533, E622, E632, F072-2, F072-3, F075, F081, F931, H071

See Section 8 for more details

5.6.5 Test results

Temperature of test environment	20°C
Humidity of test environment	50%
Pressure of test environment	102kPa

Band	1710-1780 MHz
Power Level	17 dBm
Channel Spacing	5 MHz
Mod Scheme	QPSK, 16 QAM & 64 QAM
Low channel	1712.5 MHz

Low channel	Band edge result SISO Port 1 (dBm)	Plot reference Port 1	Band edge result MIMO Port 1+3dB summed (dBm)	SISO Port 1 (dB) Margin	MIMO 2 Port (dB) Margin
QPSK, 1%RB Low	-17.51	14011-2 Band Edge,Band 66, Part 27, QPSK, 5 MHz, 1RB, Low Chan, PWR setting 17	-14.51	-4.51	-1.51
QPSK, 50%RB Low	-26.02	14011-2 Band Edge,Band 66, Part 27, QPSK, 5 MHz, 50% RB Low, Low Chan, PWR setting 17	-23.02	-13.02	-10.02
QPSK, 100%RB	-29.1	14011-2 Band Edge,Band 66, Part 27, QPSK, 5 MHz, 100% RB, Low Chan, PWR setting 17	-26.1	-16.1	-13.1
16QAM, 1%RB Low	-19.54	14011-2 Band Edge,Band 66, Part 27, 16 QAM, 5 MHz, 1 RB Low, Low Chan, PWR setting 17	-16.54	-6.54	-3.54
16QAM, 50%RB Low	-25.56	14011-2 Band Edge,Band 66, Part 27, 16 QAM, 5 MHz, 50% RB Low, Low Chan, PWR setting 17	-22.56	-12.56	-9.56
16QAM, 100%RB	-27.38	14011-2 Band Edge,Band 66, Part 27, 16 QAM, 5 MHz, 100% RB, Low Chan, PWR setting 1	-24.38	-14.38	-11.38
64QAM, 1%RB Low	-18.12	14011-2 Band Edge,Band 66, Part 27, 64 QAM, 5 MHz, 1 RB Low, Low Chan, PWR setting 17	-15.12	-5.12	-2.12
64QAM, 50%RB Low	-25.24	14011-2 Band Edge,Band 66, Part 27, 64 QAM, 5 MHz, 50% RB Low, Low Chan, PWR setting 17	-22.24	-12.24	-9.24
64QAM, 100%RB	-27.6	14011-2 Band Edge,Band 66, Part 27, 64 QAM, 5 MHz, 100% RB , Low Chan, PWR setting 17	-24.6	-14.6	-11.6

Band	1710-1780 MHz
Power Level	17 dBm
Channel Spacing	5 MHz
Mod Scheme	QPSK, 16 QAM & 64 QAM
High channel	1777.5 MHz

High channel	Band edge result SISO Port 1 (dBm)	Plot reference Port 1	Band edge result MIMO Port 1+3dB summed (dBm)	SISO Port 1 (dB) Margin	MIMO 2 Port (dB) Margin
QPSK, 1%RB High	-17.48	14011-2 Band Edge,Band 66, Part 27, QPSK, 5 MHz, 1 RB High, High Chan, PWR setting 18	-14.48	-4.48	-1.48
QPSK, 50%RB High	-25.19	14011-2 Band Edge,Band 66, Part 27, QPSK, 5 MHz, 50% RB High, High Chan, PWR setting 18	-22.19	-12.19	-9.19
QPSK, 100%RB	-28.07	14011-2 Band Edge,Band 66, Part 27, QPSK, 5 MHz, 100% RB, High Chan, PWR setting 18	-25.07	-15.07	-12.07
16QAM, 1%RB High	-17.69	14011-2 Band Edge,Band 66, Part 27, 16 QAM, 5 MHz, 1 RB Low, High Chan, PWR setting 18	-14.69	-4.69	-1.69
16QAM, 50%RB High	-25.38	14011-2 Band Edge,Band 66, Part 27, 16 QAM, 5 MHz, 50% RB High, High Chan, PWR setting 18	-22.38	-12.38	-9.38
16QAM, 100%RB	-27.49	14011-2 Band Edge,Band 66, Part 27, 16 QAM, 5 MHz, 100 RB, High Chan, PWR setting 18	-24.49	-14.49	-11.49
64QAM, 1%RB High	-17.62	14011-2 Band Edge,Band 66, Part 27, 64 QAM, 5 MHz, 1 RB High, High Chan, PWR setting 18	-14.62	-4.62	-1.62
64QAM, 50%RB High	-24.78	14011-2 Band Edge,Band 66, Part 27, 64 QAM, 5 MHz, 50% RB High, High Chan, PWR setting 18	-21.78	-11.78	-8.78
64QAM, 100%RB	-27.57	14011-2 Band Edge,Band 66, Part 27, 64 QAM, 5 MHz, 100 RB, High Chan, PWR setting 18	-24.57	-14.57	-11.57

Band	1710-1780 MHz
Power Level	22 dBm
Channel Spacing	10 MHz
Mod Scheme	QPSK, 16 QAM & 64 QAM
Low channel	1715 MHz

Low channel	Band edge result SISO Port 1 (dBm)	Plot reference Port 1	Band edge result MIMO Port 1+3dB summed (dBm)	SISO Port 1 (dB) Margin	MIMO 2 Port (dB) Margin
QPSK, 1%RB Low	-16.58	14011-2 Band Edge,Band 66, Part 27, QPSK, 10 MHz, 1 RB Low, Low Chan	-13.56	-3.56	-0.56
QPSK, 50%RB Low	-26.35	14011-2 Band Edge,Band 66, Part 27, QPSK, 10 MHz, 50% RB Low, Low Chan	-22.41	-12.41	-9.41
QPSK, 100%RB	-29.49	14011-2 Band Edge,Band 66, Part 27, QPSK, 10 MHz, 100 RB, Low Chan	-23.40	-13.4	-10.40
16QAM, 1%RB Low	-17.17	14011-2 Band Edge,Band 66, Part 27, 16 QAM, 10 MHz, 1 RB Low, Low Chan	-14.19	-4.19	-1.19
16QAM, 50%RB Low	-24.63	14011-2 Band Edge,Band 66, Part 27, 16 QAM, 10 MHz, 50% RB Low, Low Chan	-20.58	-10.58	-7.58
16QAM, 100%RB	-27.98	14011-2 Band Edge,Band 66, Part 27, 16 QAM, 10 MHz, 100 RB, Low Chan	-21.60	-11.6	-8.60
64QAM, 1%RB Low	-16.85	14011-2 Band Edge,Band 66, Part 27, 64 QAM, 10 MHz, 1 RB Low, Low Chan	-13.85	-3.85	-0.85
64QAM, 50%RB Low	-25.24	14011-2 Band Edge,Band 66, Part 27, 64 QAM, 10 MHz, 50% RB Low, Low Chan	-22.24	-12.24	-9.24
64QAM, 100%RB	-28.38	14011-2 Band Edge,Band 66, Part 27, 64 QAM, 10 MHz, 100 RB, Low Chan	-25.38	-15.38	-12.38

Band	1710-1780 MHz
Power Level	22 dBm
Channel Spacing	10 MHz
Mod Scheme	QPSK, 16 QAM & 64 QAM
High channel	1775 MHz

High channel	Band edge result SISO Port 1 (dBm)	Plot reference Port 1	Band edge result MIMO Port 1+3dB summed (dBm)	SISO Port 1 (dB) Margin	MIMO 2 Port (dB) Margin
QPSK, 1%RB High	-16.56	14011-2 Band Edge,Band 66, Part 27, QPSK, 10 MHz, 1 RB HIgh, HIgh Chan	-13.56	-3.56	-0.56
QPSK, 50%RB High	-25.41	14011-2 Band Edge,Band 66, Part 27, QPSK, 10 MHz, 50 RB HIgh, HIgh Chan	-22.41	-12.41	-9.41
QPSK, 100%RB	-26.4	14011-2 Band Edge,Band 66, Part 27, QPSK, 10 MHz, 100 RB , HIgh Chan	-23.40	-13.4	-10.40
16QAM, 1%RB High	-17.19	14011-2 Band Edge,Band 66, Part 27, 16 QAM, 10 MHz, 1 RB HIgh, HIgh Chan	-14.19	-4.19	-1.19
16QAM, 50%RB High	-23.58	14011-2 Band Edge,Band 66, Part 27, 16 QAM, 10 MHz, 50% RB HIgh, HIgh Chan	-20.58	-10.58	-7.58
16QAM, 100%RB	-24.6	14011-2 Band Edge,Band 66, Part 27, 16 QAM, 10 MHz, 100 RB , HIgh Chan	-21.60	-11.6	-8.60
64QAM, 1%RB High	-16.42	14011-2 Band Edge,Band 66, Part 27, 64 QAM, 10 MHz, 1 RB HIgh, HIgh Chan	-13.42	-3.42	-0.42
64QAM, 50%RB High	-23.35	14011-2 Band Edge,Band 66, Part 27, 64 QAM, 10 MHz, 50 RB HIgh, HIgh Chan	-20.35	-10.35	-7.35
64QAM, 100%RB	-25.69	14011-2 Band Edge,Band 66, Part 27, 64 QAM, 10 MHz, 100 RB , HIgh Chan	-22.69	-12.69	-9.69

Band	1710-1780 MHz
Power Level	23 dBm
Channel Spacing	15 MHz
Mod Scheme	QPSK, 16 QAM & 64 QAM
Low channel	1717.5 MHz

Low channel	Band edge result SISO Port 1 (dBm)	Plot reference Port 1	Band edge result MIMO Port 1+3dB summed (dBm)	SISO Port 1 (dB) Margin	MIMO 2 Port (dB) Margin
QPSK, 1%RB Low	-20.75	14011-2 Band Edge,Band 66, Part 27, QPSK, 15 MHz, 1 RB Low, Low Chan	-17.75	-7.75	-4.75
QPSK, 50%RB Low	-28.86	14011-2 Band Edge,Band 66, Part 27, QPSK, 15 MHz, 50% RB Low, Low Chan	-25.86	-15.86	-12.86
QPSK, 100%RB	-31.37	14011-2 Band Edge,Band 66, Part 27, QPSK, 15 MHz, 100 RB , Low Chan	-28.37	-18.37	-15.37
16QAM, 1%RB Low	-20.96	14011-2 Band Edge,Band 66, Part 27, 16 QAM, 15 MHz, 1 RB Low, Low Chan	-17.96	-7.96	-4.96
16QAM, 50%RB Low	-30.17	14011-2 Band Edge,Band 66, Part 27, 16 QAM, 15 MHz, 50% RB Low, Low Chan	-27.17	-17.17	-14.17
16QAM, 100%RB	-30.46	14011-2 Band Edge,Band 66, Part 27, 16 QAM, 15 MHz, 100 RB , Low Chan	-27.46	-17.46	-14.46
64QAM, 1%RB Low	-22	14011-2 Band Edge,Band 66, Part 27, 64 QAM, 15 MHz, 1 RB Low, Low Chan	-19.00	-9	-6.00
64QAM, 50%RB Low	-29.38	14011-2 Band Edge,Band 66, Part 27, 64 QAM, 15 MHz, 50% RB Low, Low Chan	-26.38	-16.38	-13.38
64QAM, 100%RB	-30.28	14011-2 Band Edge,Band 66, Part 27, 64 QAM, 15 MHz, 100 RB, Low Chan	-27.28	-17.28	-14.28

Band	1710-1780 MHz
Power Level	23 dBm
Channel Spacing	15 MHz
Mod Scheme	QPSK, 16 QAM & 64 QAM
High channel	1772.5 MHz

High channel	Band edge result SISO Port 1 (dBm)	Plot reference Port 1	Band edge result MIMO Port 1+3dB summed (dBm)	SISO Port 1 (dB) Margin	MIMO 2 Port (dB) Margin
QPSK, 1%RB High	-17.5	14011-2 Band Edge,Band 66, Part 27, QPSK, 15 MHz, 1 RB High, High Chan	-14.50	-4.5	-1.50
QPSK, 50%RB High	-24.67	14011-2 Band Edge,Band 66, Part 27, QPSK, 15 MHz, 50% RB High, High Chan	-21.67	-11.67	-8.67
QPSK, 100%RB	-24.34	14011-2 Band Edge,Band 66, Part 27, QPSK, 15 MHz, 100 RB , High Chan	-21.34	-11.34	-8.34
16QAM, 1%RB High	-17.15	14011-2 Band Edge,Band 66, Part 27, 16 QAM, 15 MHz, 1 RB High, High Chan	-14.15	-4.15	-1.15
16QAM, 50%RB High	-23.58	14011-2 Band Edge,Band 66, Part 27, 16 QAM, 15 MHz, 50% RB High, High Chan	-20.58	-10.58	-7.58
16QAM, 100%RB	-23.21	14011-2 Band Edge,Band 66, Part 27, 16 QAM, 15 MHz, 100 RB , High Chan	-20.21	-10.21	-7.21
64QAM, 1%RB High	-19.89	14011-2 Band Edge,Band 66, Part 27, 64 QAM, 15 MHz, 1 RB High, High Chan	-16.89	-6.89	-3.89
64QAM, 50%RB High	-22.62	14011-2 Band Edge,Band 66, Part 27, 64 QAM, 15 MHz, 50% RB High, High Chan	-19.62	-9.62	-6.62
64QAM, 100%RB	-23	14011-2 Band Edge,Band 66, Part 27, 64 QAM, 15 MHz, 100 RB, High Chan	-20.00	-10	-7.00

Band	1710-1780 MHz
Power Level	23 dBm
Channel Spacing	20 MHz
Mod Scheme	QPSK, 16 QAM & 64 QAM
Low channel	1720 MHz

Low channel	Band edge result SISO Port 1 (dBm)	Plot reference Port 1	Band edge result MIMO Port 1+3dB summed (dBm)	SISO Port 1 (dB) Margin	MIMO 2 Port (dB) Margin
QPSK, 1%RB Low	-27.25	14011-2 Band Edge,Band 66, Part 27, QPSK, 20 MHz, 1 RB Low, Low Chan	-24.25	-14.25	-11.25
QPSK, 50%RB Low	-34.49	14011-2 Band Edge,Band 66, Part 27, QPSK, 20 MHz, 50% RB Low, Low Chan	-31.49	-21.49	-18.49
QPSK, 100%RB	-33.37	14011-2 Band Edge,Band 66, Part 27, QPSK, 20 MHz, 100 RB, Low Chan	-30.37	-20.37	-17.37
16QAM, 1%RB Low	-24.93	14011-2 Band Edge,Band 66, Part 27, 16 QAM, 20 MHz, 1 RB Low, Low Chan	-21.93	-11.93	-8.93
16QAM, 50%RB Low	-32.1	14011-2 Band Edge,Band 66, Part 27, 16 QAM, 20 MHz, 50% RB Low, Low Chan	-29.10	-19.1	-16.10
16QAM, 100%RB	-32.61	14011-2 Band Edge,Band 66, Part 27, 16 QAM, 20 MHz, 100 RB , Low Chan	-29.61	-19.61	-16.61
64QAM, 1%RB Low	-27.09	14011-2 Band Edge,Band 66, Part 27, 64 QAM, 20 MHz, 1 RB Low, Low Chan	-24.09	-14.09	-11.09
64QAM, 50%RB Low	-31.38	14011-2 Band Edge,Band 66, Part 27, 64 QAM, 20 MHz, 50% RB Low, Low Chan	-28.38	-18.38	-15.38
64QAM, 100%RB	-32.17	14011-2 Band Edge,Band 66, Part 27, 64 QAM, 20 MHz, 100 RB, Low Chan	-29.17	-19.17	-16.17

Band	1710-1780 MHz
Power Level	23 dBm
Channel Spacing	20 MHz
Mod Scheme	QPSK, 16 QAM & 64 QAM
High channel	1770 MHz

High channel	Band edge result SISO Port 1 (dBm)	Plot reference Port 1	Band edge result MIMO Port 1+3dB summed (dBm)	SISO Port 1 (dB) Margin	MIMO 2 Port (dB) Margin
QPSK, 1%RB High	-27.2	14011-2 Band Edge,Band 66, Part 27, QPSK, 20 MHz, 1 RB HIgh, HIgh Chan	-24.20	-14.2	-11.20
QPSK, 50%RB High	-23.83	14011-2 Band Edge,Band 66, Part 27, QPSK, 20 MHz, 50% RB HIgh, HIgh Chan	-20.83	-10.83	-7.83
QPSK, 100%RB	-25.15	14011-2 Band Edge,Band 66, Part 27, QPSK, 20 MHz, 100 RB , HIgh Chan	-22.15	-12.15	-9.15
16QAM, 1%RB High	-25.72	14011-2 Band Edge,Band 66, Part 27, 16 QAM, 20 MHz, 1 RB HIgh, HIgh Chan	-22.72	-12.72	-9.72
16QAM, 50%RB High	-23.74	14011-2 Band Edge,Band 66, Part 27, 16 QAM, 20 MHz, 50% RB HIgh, HIgh Chan	-20.74	-10.74	-7.74
16QAM, 100%RB	-23.71	14011-2 Band Edge,Band 66, Part 27, 16 QAM, 20 MHz, 100 RB, HIgh Chan	-20.71	-10.71	-7.71
64QAM, 1%RB High	-27.29	14011-2 Band Edge,Band 66, Part 27, 64 QAM, 20 MHz, 1 RB HIgh, HIgh Chan	-24.29	-14.29	-11.29
64QAM, 50%RB High	-22.66	14011-2 Band Edge,Band 66, Part 27, 64 QAM, 20 MHz, 50% RB HIgh, HIgh Chan	-19.66	-9.66	-6.66
64QAM, 100%RB	-23.79	14011-2 Band Edge,Band 66, Part 27, 64 QAM, 20 MHz, 100 RB, HIgh Chan	-20.79	-10.79	-7.79

The plots referred to in the above table may be found in section 6.

LIMITS:
FCC Part 27 Clause 27.53(h)(1) AWS emissions limits
General protection levels. Except as otherwise specified below, for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10}$ (P) dB. (-13 dBm).

These results show that the EUT has PASSED this test.

The uncertainty gives a 95% confidence interval in the measurement. Expanded uncertainty (K=2) is as follows: ± 2.8 dB up to 26.5 GHz.

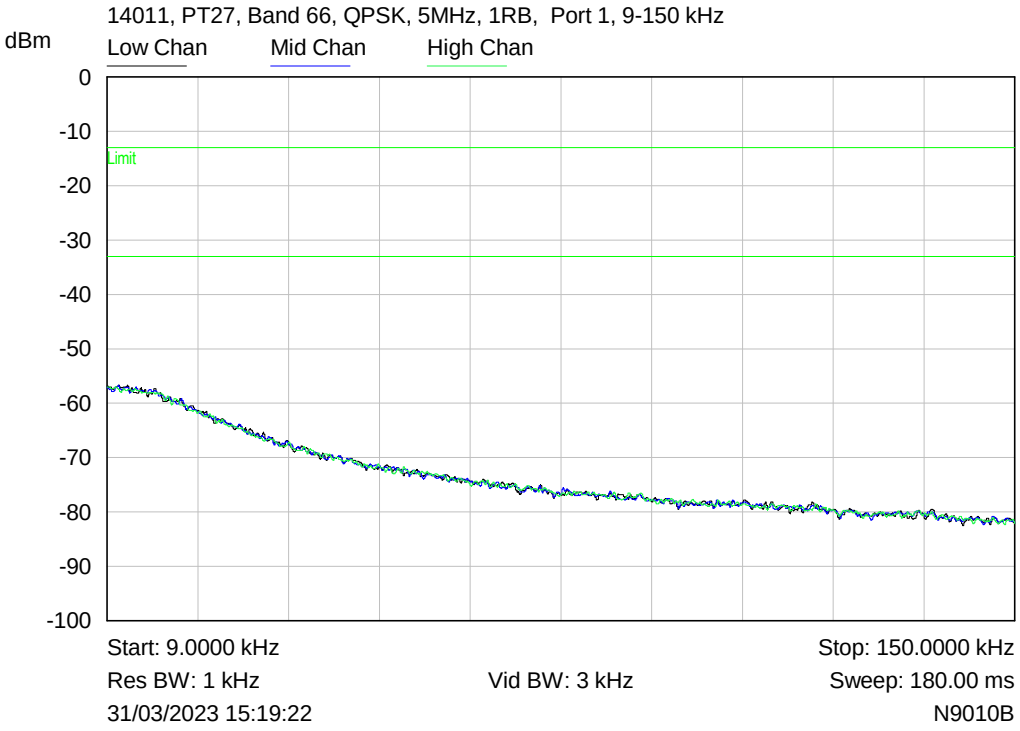
5.7 Modulation characteristics

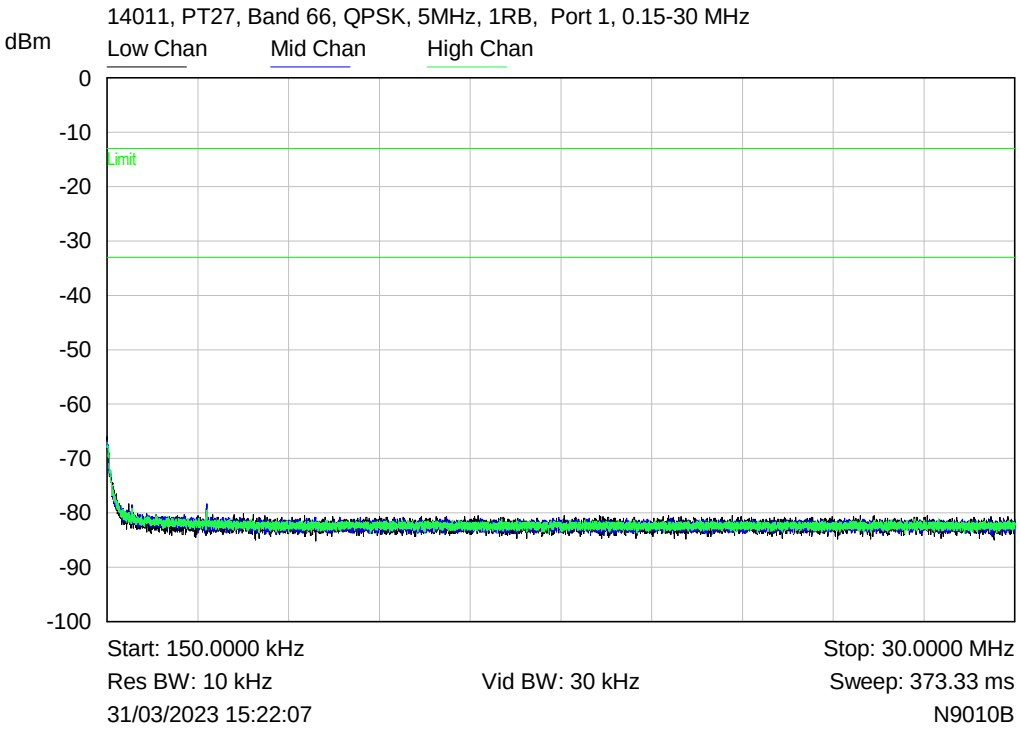
NOT APPLICABLE: Manufacturer declaration, see modulation information provided in section 2.1 of this report.

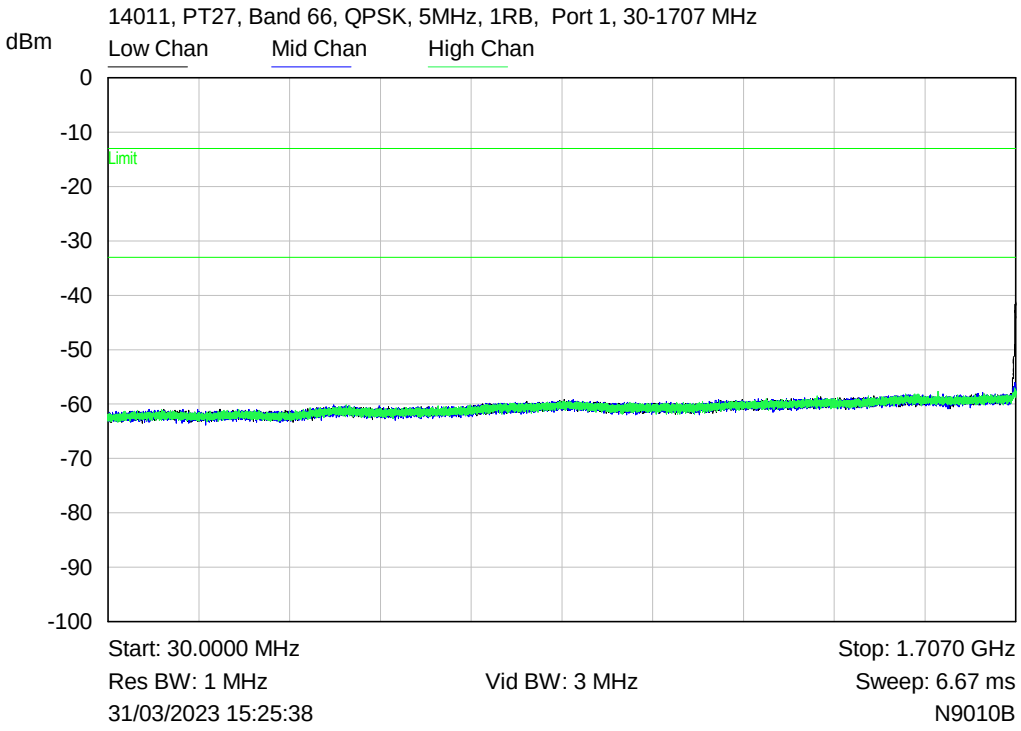
6 Plots/Graphical results

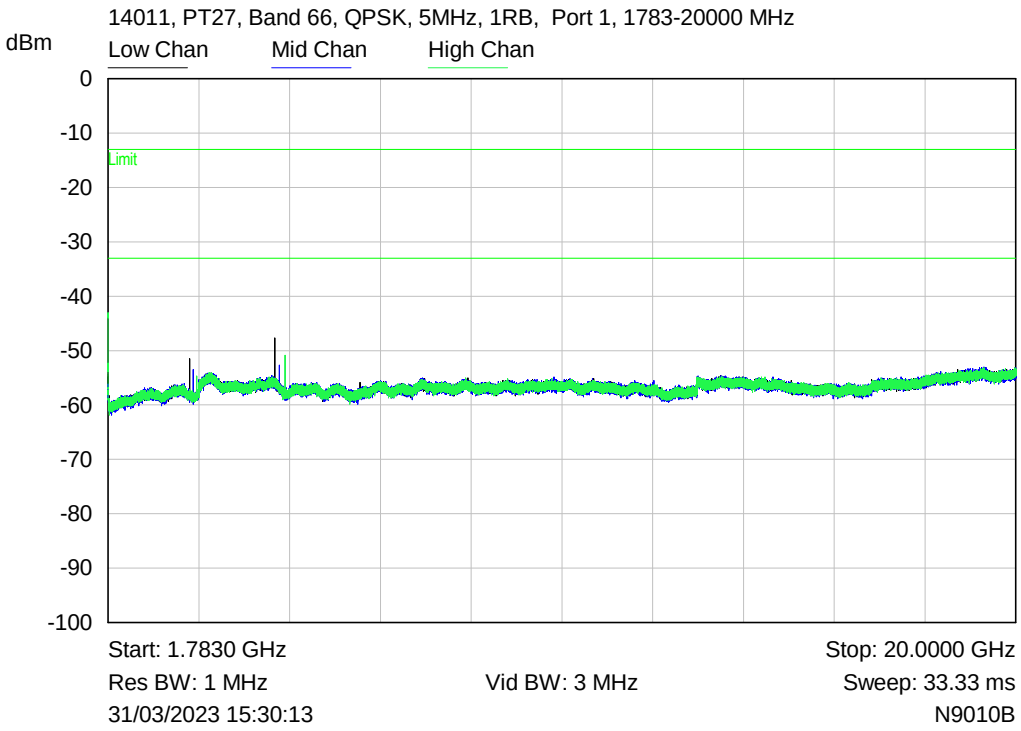
6.1 Spurious emissions at the antenna terminals

RF Parameters: Band 1710-1780 MHz, Power 17 dBm, Channel Spacing 5 MHz, Modulation QPSK, Low, Mid and High Channels



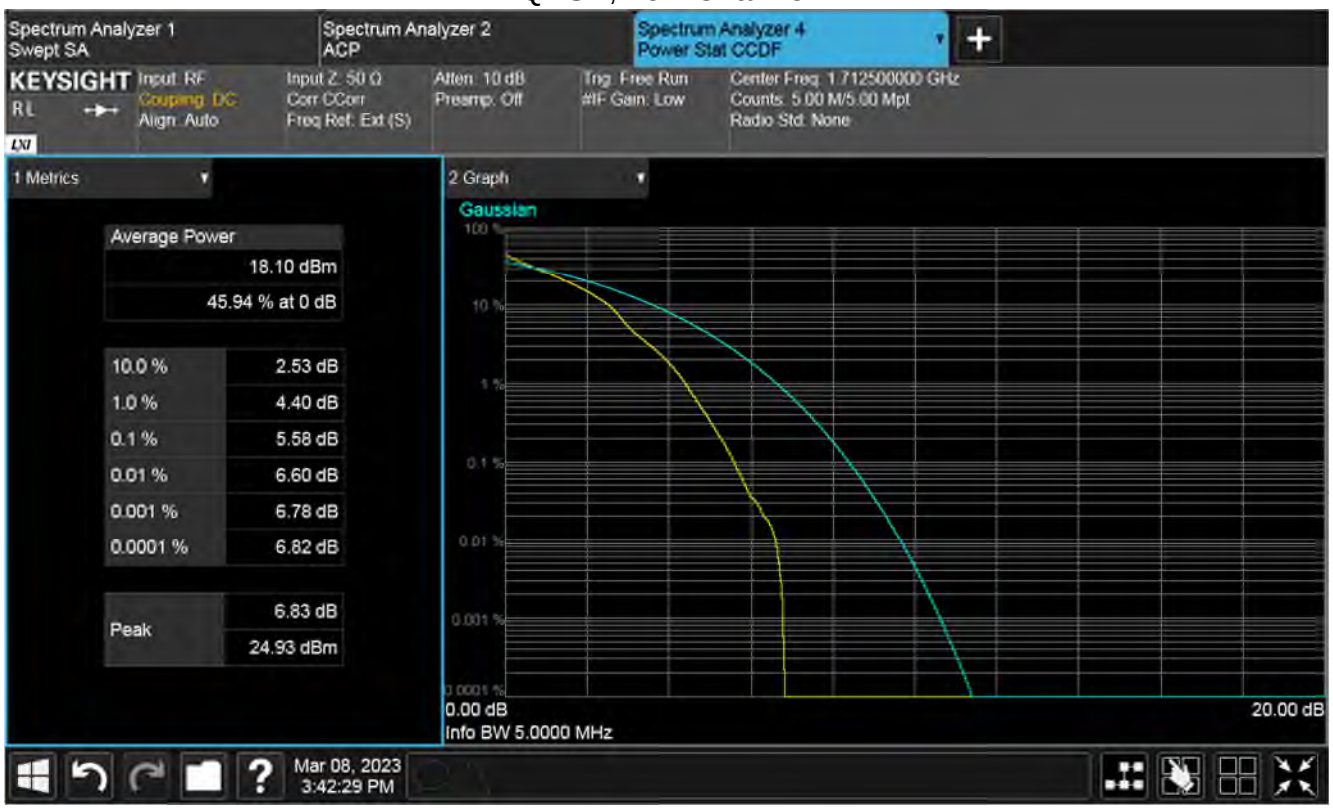



14011, PT27, Band 66, QPSK, 5MHz, 1RB, Port 1, 30-1707 MHz
dBm
Low Chan
Mid Chan
High Chan
0
-10
-20
-30
-40
-50
-60
-70
-80
-90
-100
Limit
Start: 30.0000 MHz
Stop: 1.7070 GHz
Res BW: 1 MHz
Vid BW: 3 MHz
Sweep: 6.67 ms
31/03/2023 15:25:38
N9010B

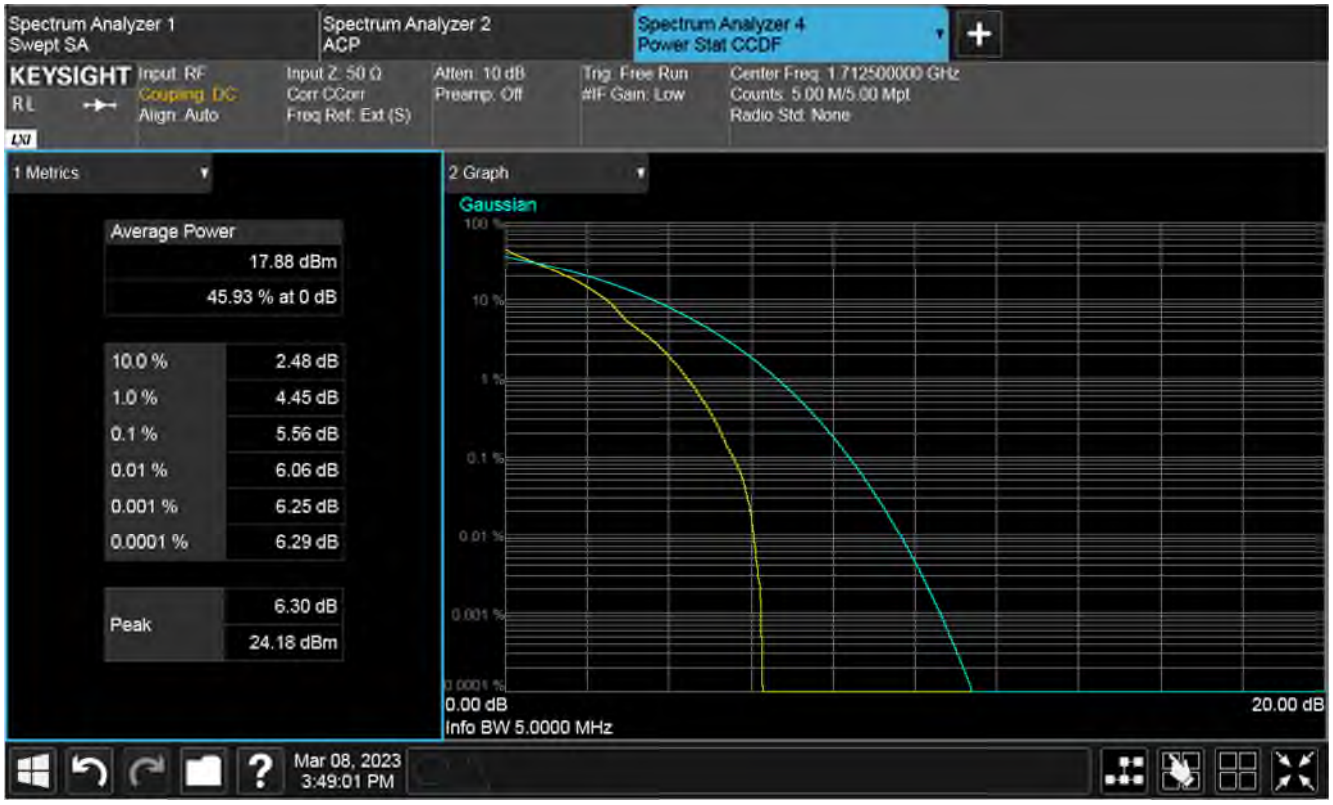

14011, PT27, Band 66, QPSK, 5MHz, 1RB, Port 1, 1783-20000 MHz
dBm
Low Chan
Mid Chan
High Chan
0
-10
-20
-30
-40
-50
-60
-70
-80
-90
-100
Limit
Start: 1.7830 GHz
Stop: 20.0000 GHz
Res BW: 1 MHz
Vid BW: 3 MHz
Sweep: 33.33 ms
31/03/2023 15:30:13
N9010B

6.2 RF Power Output

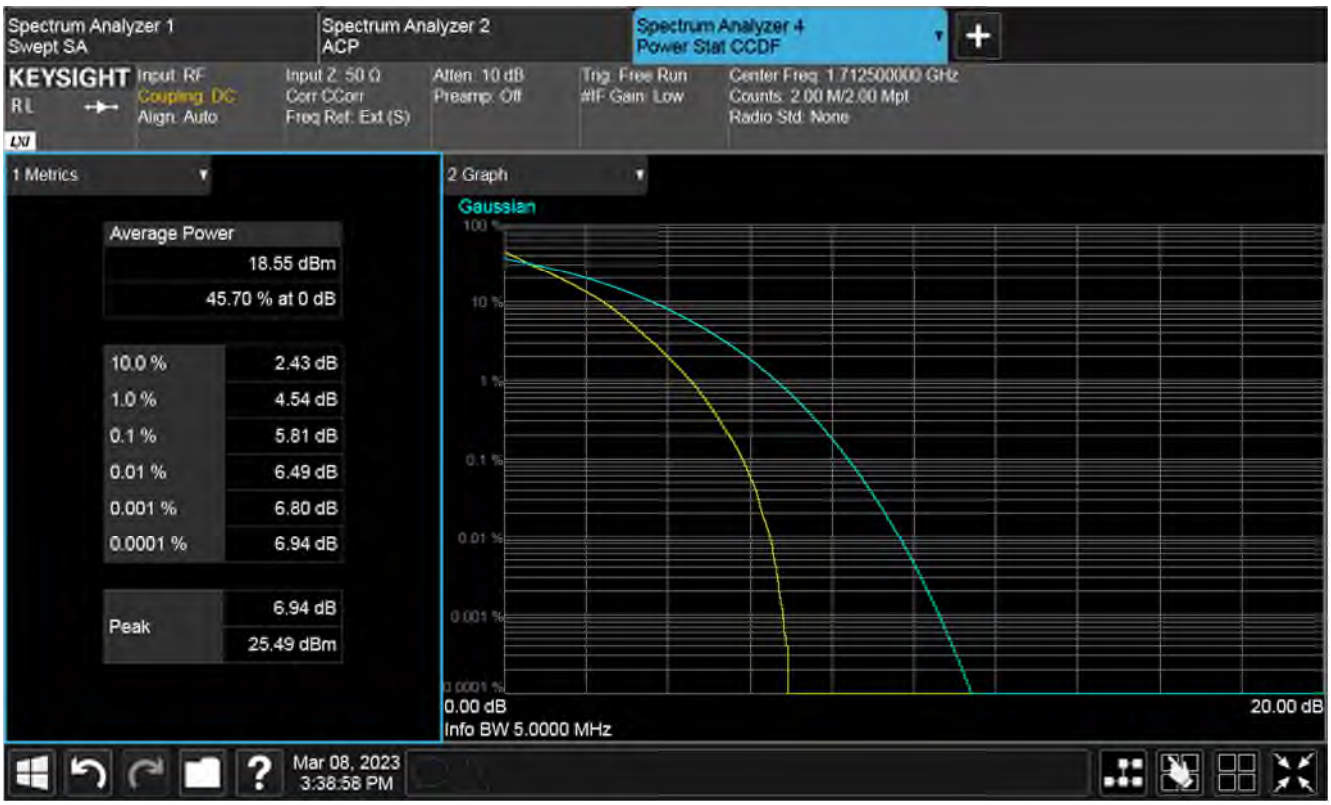
RF Parameters: Band 1710-1780 MHz, Power 17 dBm, Channel Spacing 5 MHz, Modulation QPSK, Low Channel



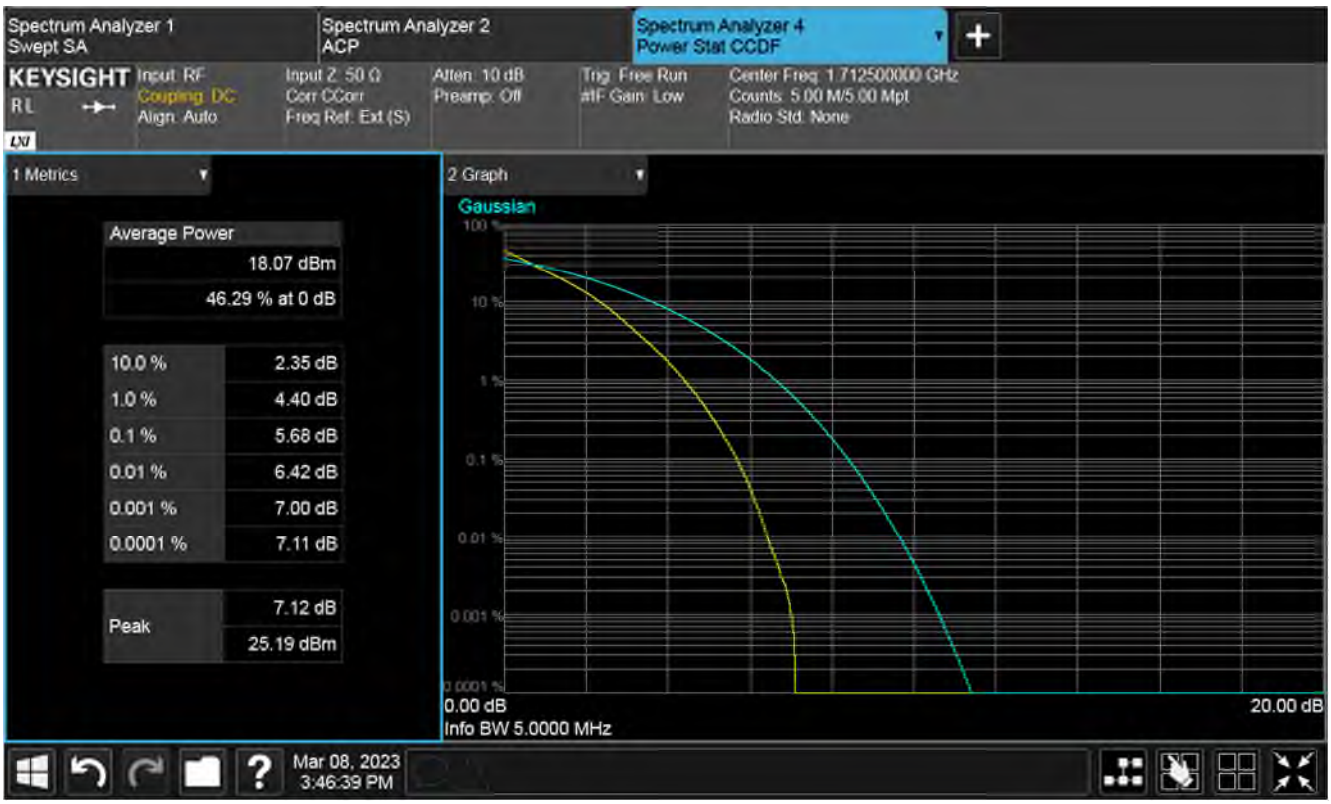
Plot of PAPR Low 1RB, low channel



Plot of PAPR High 1RB, low channel

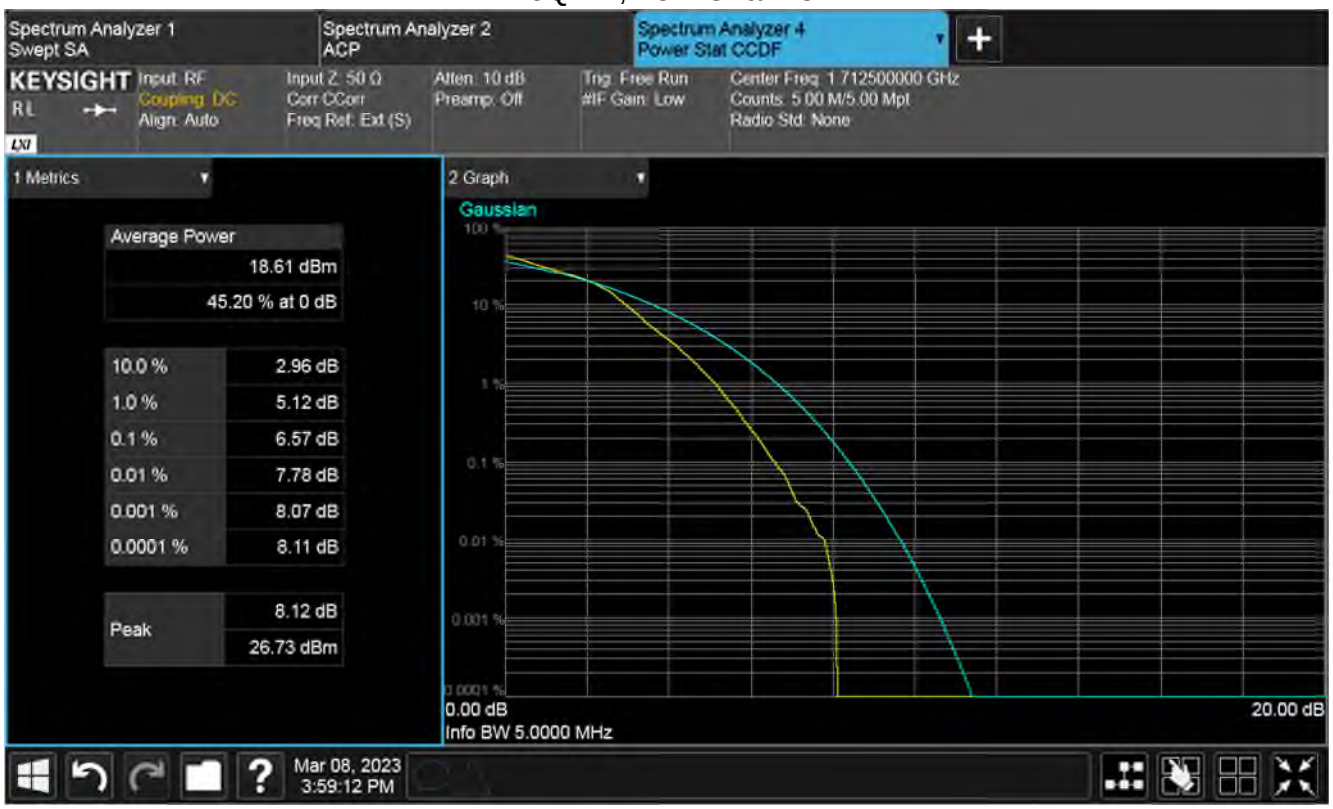


Plot of PAPR 50%RB, low channel



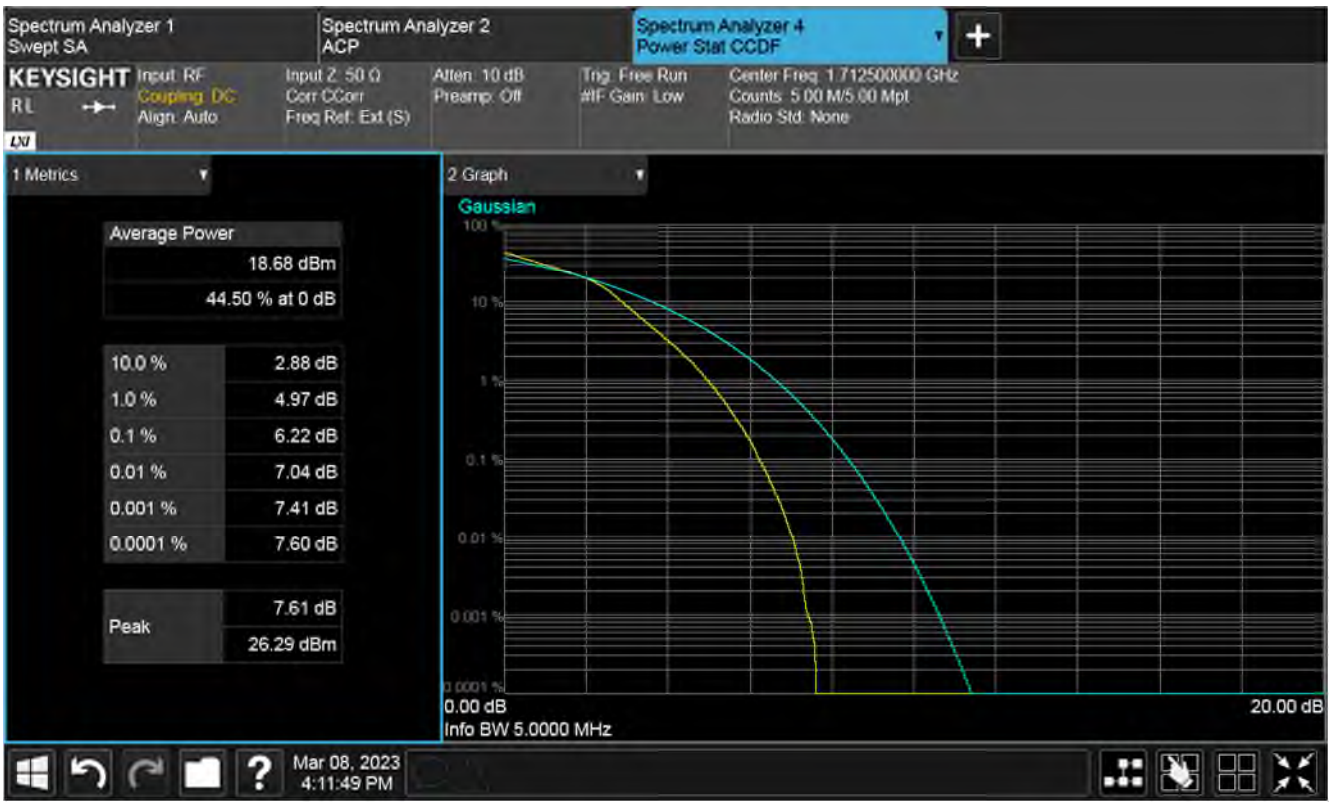
Plot of PAPR 100%RB, low channel

RF Parameters: Band 1710-1780 MHz, Power 17 dBm, Channel Spacing 5 MHz, Modulation 16QAM, Low Channel

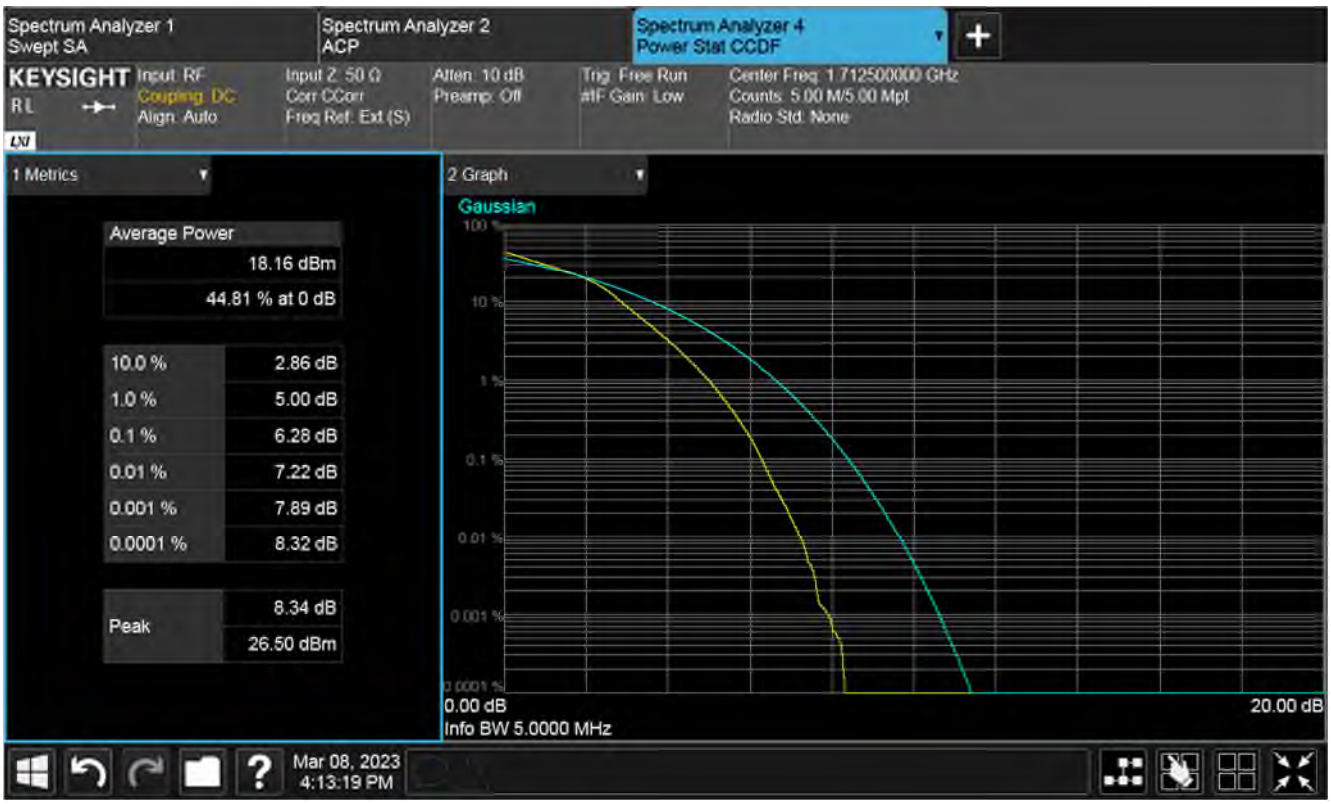


Plot of PAPR Low 1RB, low channel

Plot of PAPR High 1RB, low channel

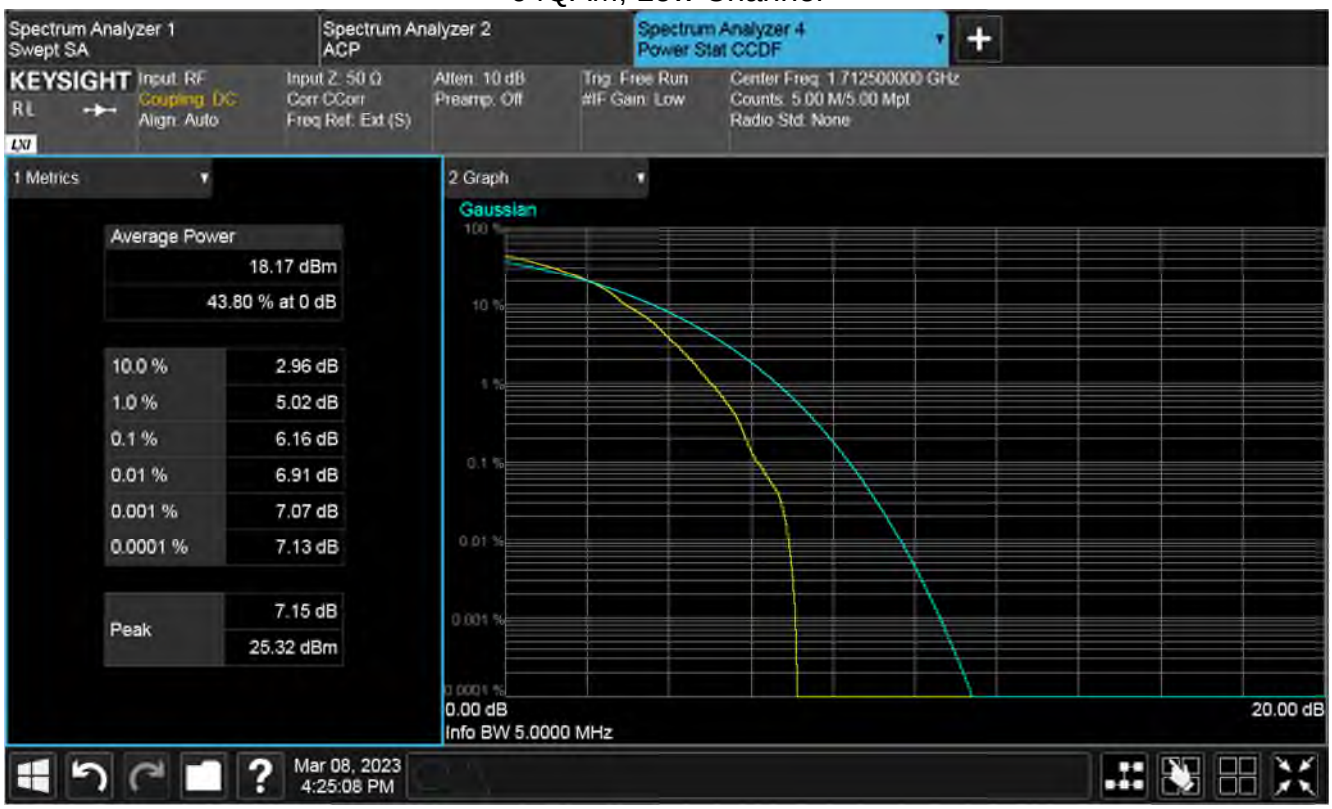


Plot of PAPR 50%RB, low channel



Plot of PAPR 100%RB, low channel

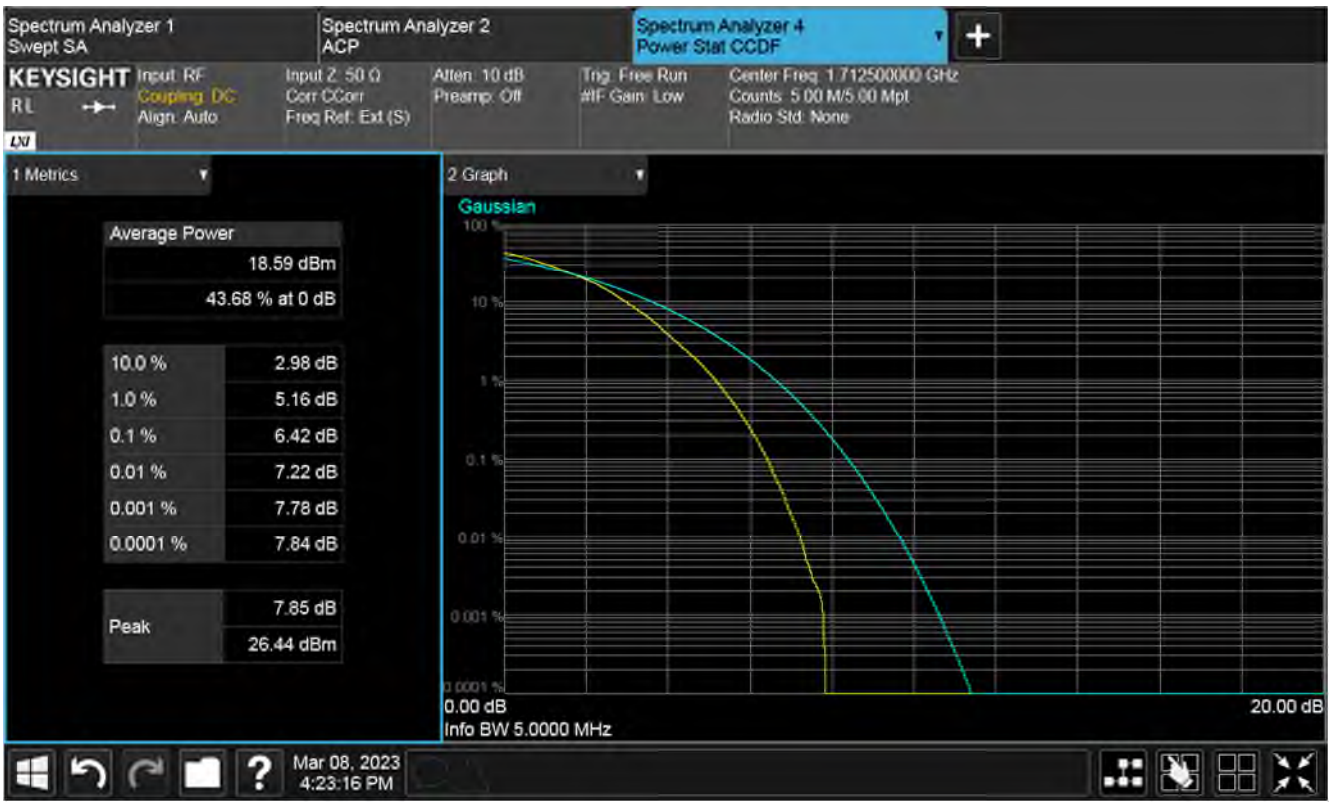
RF Parameters: Band 1710-1780 MHz, Power 17 dBm, Channel Spacing 5 MHz, Modulation 64QAM, Low Channel



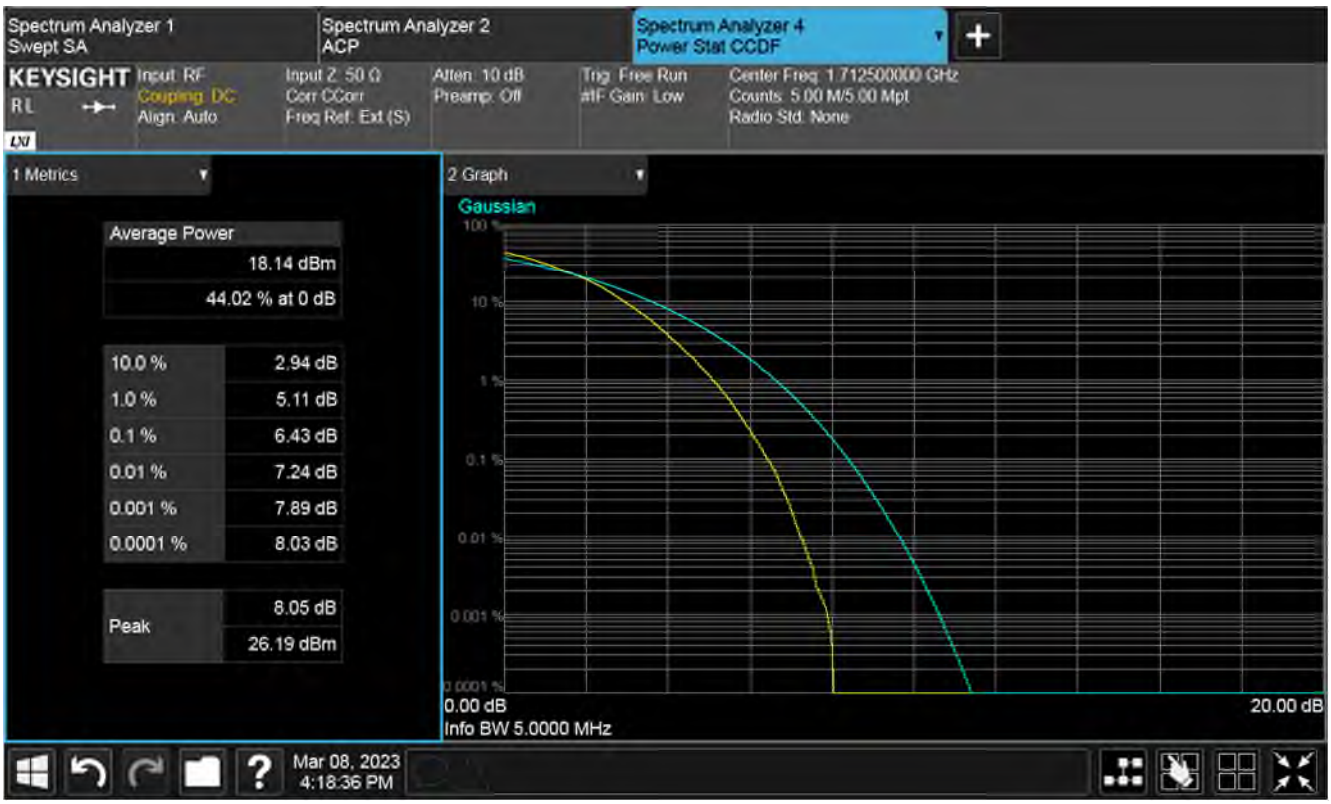
Plot of PAPR Low 1RB, low channel

Plot of PAPR High 1RB, low channel

File Name: Airspan Communications Ltd.14011-2 Issue 01

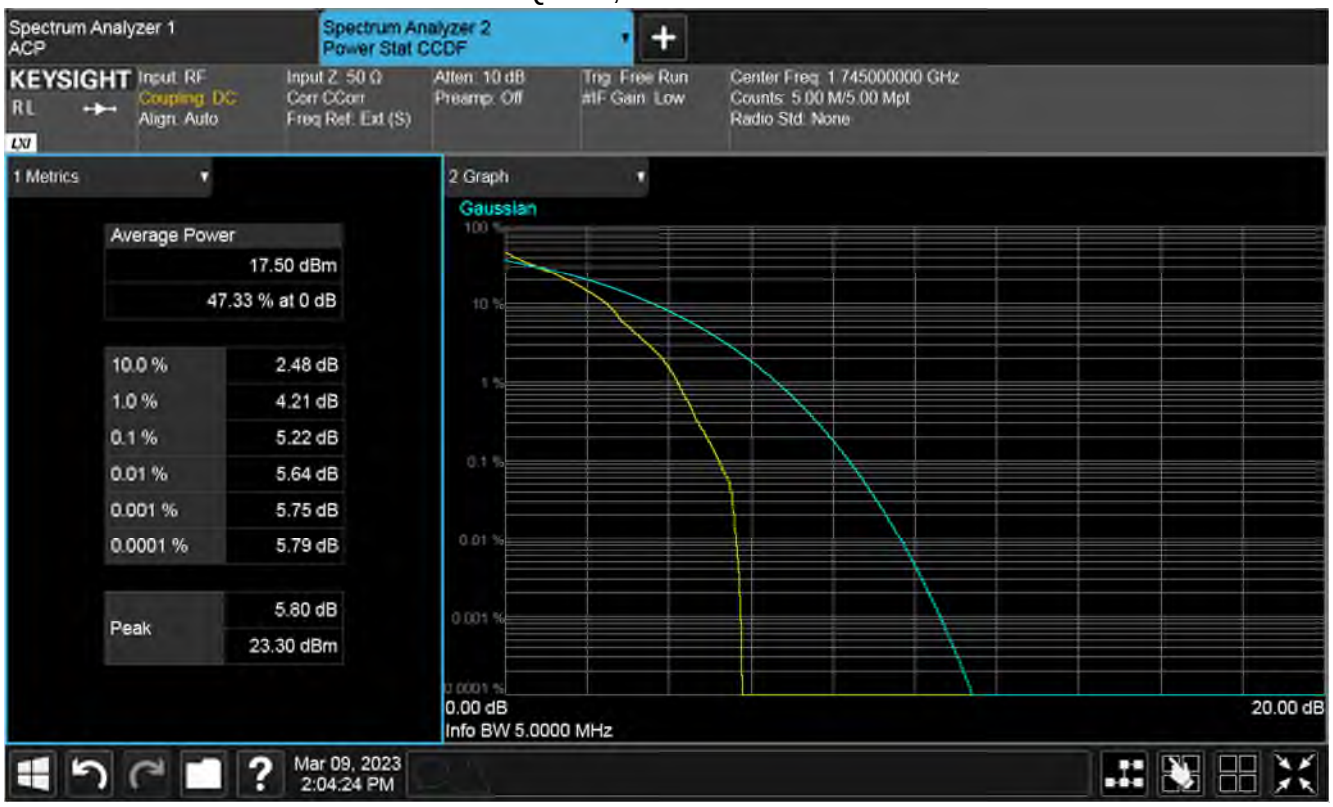


Plot of PAPR 50%RB, low channel

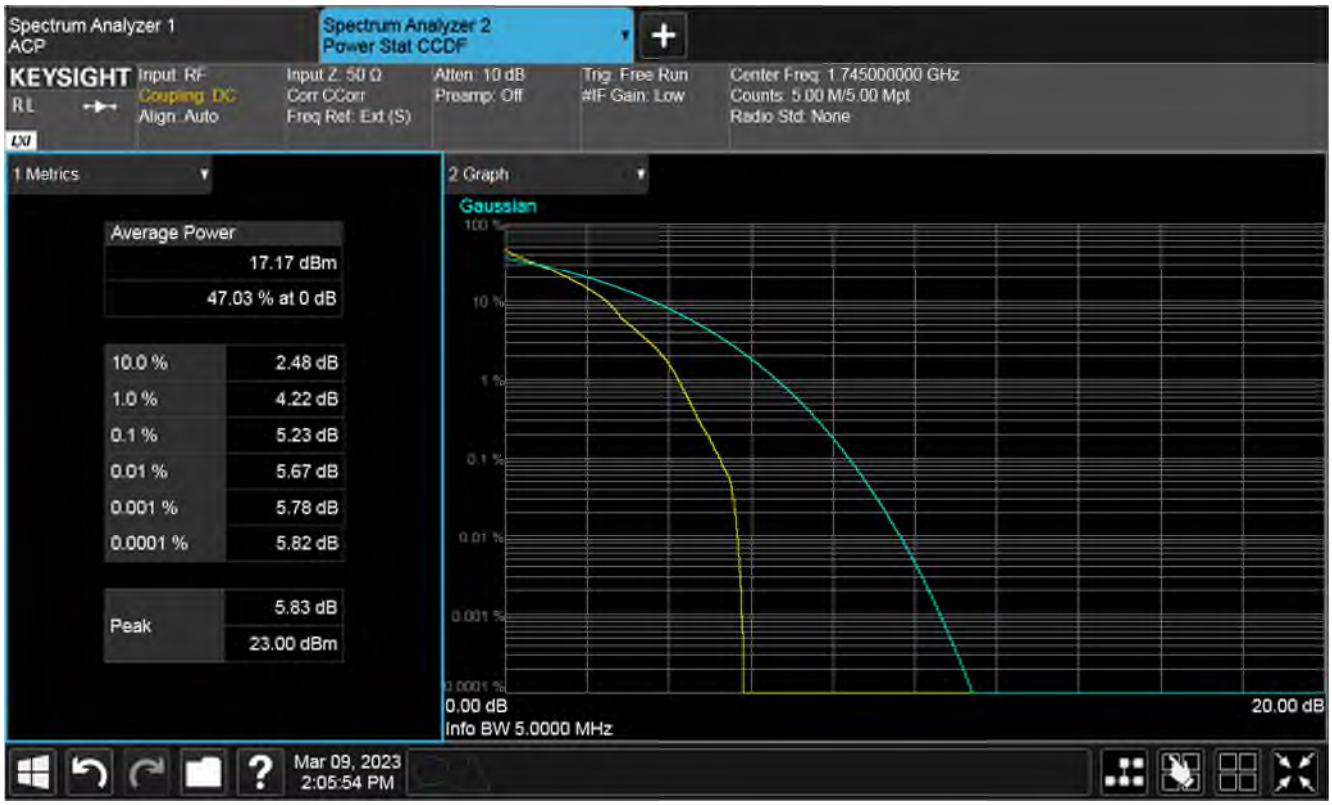


Plot of PAPR 100%RB, low channel

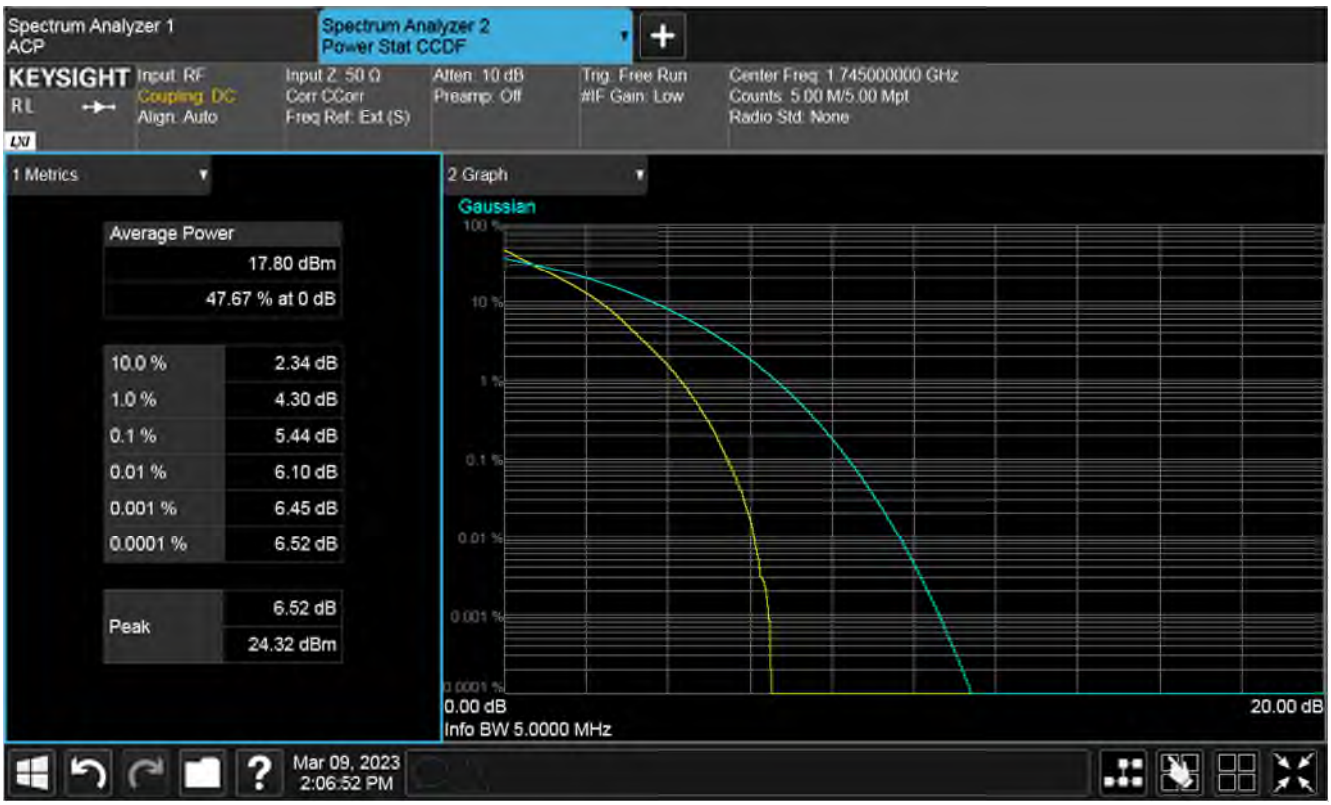
RF Parameters: Band 1710-1780 MHz, Power 17 dBm, Channel Spacing 5 MHz, Modulation QPSK, Mid Channel



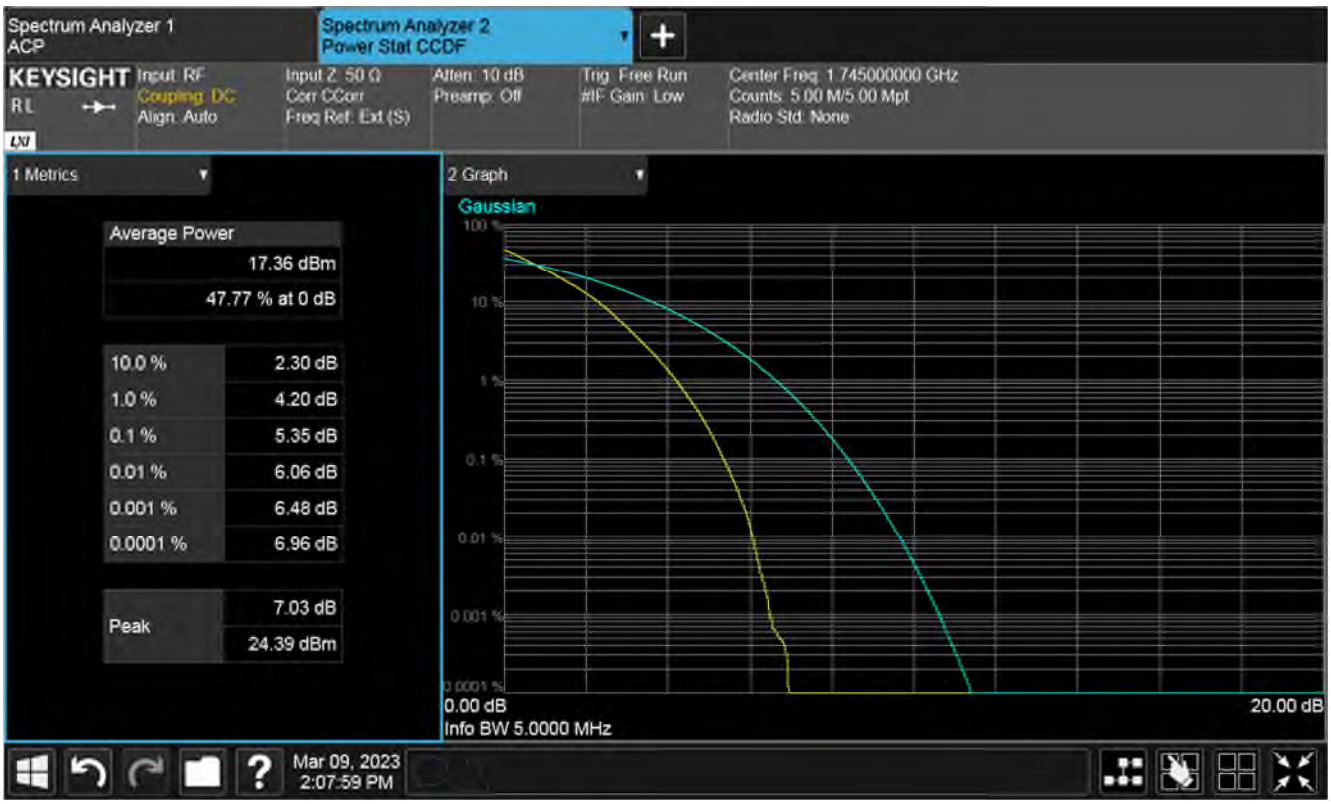
Plot of PAPR Low 1RB, Mid channel



Plot of PAPR High 1RB, Mid channel

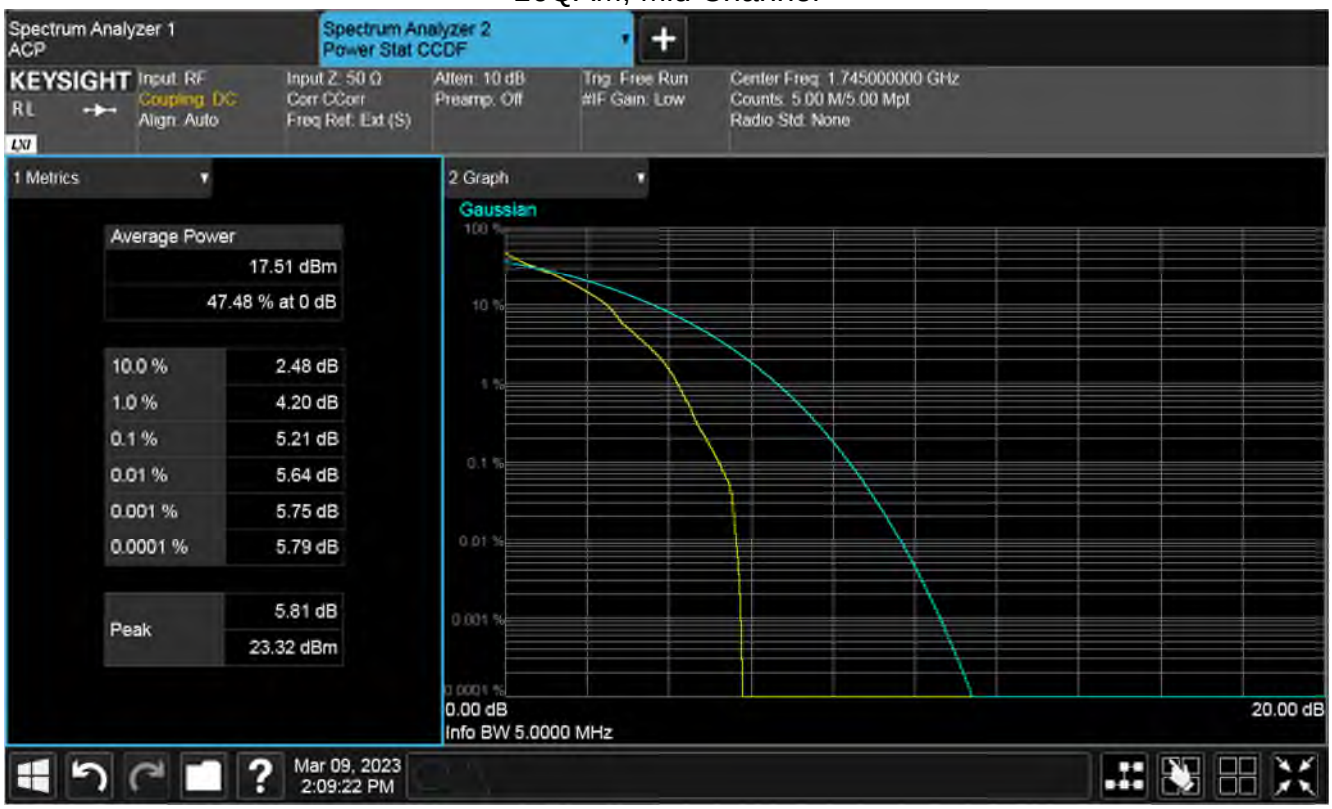


Plot of PAPR 50%RB, Mid channel

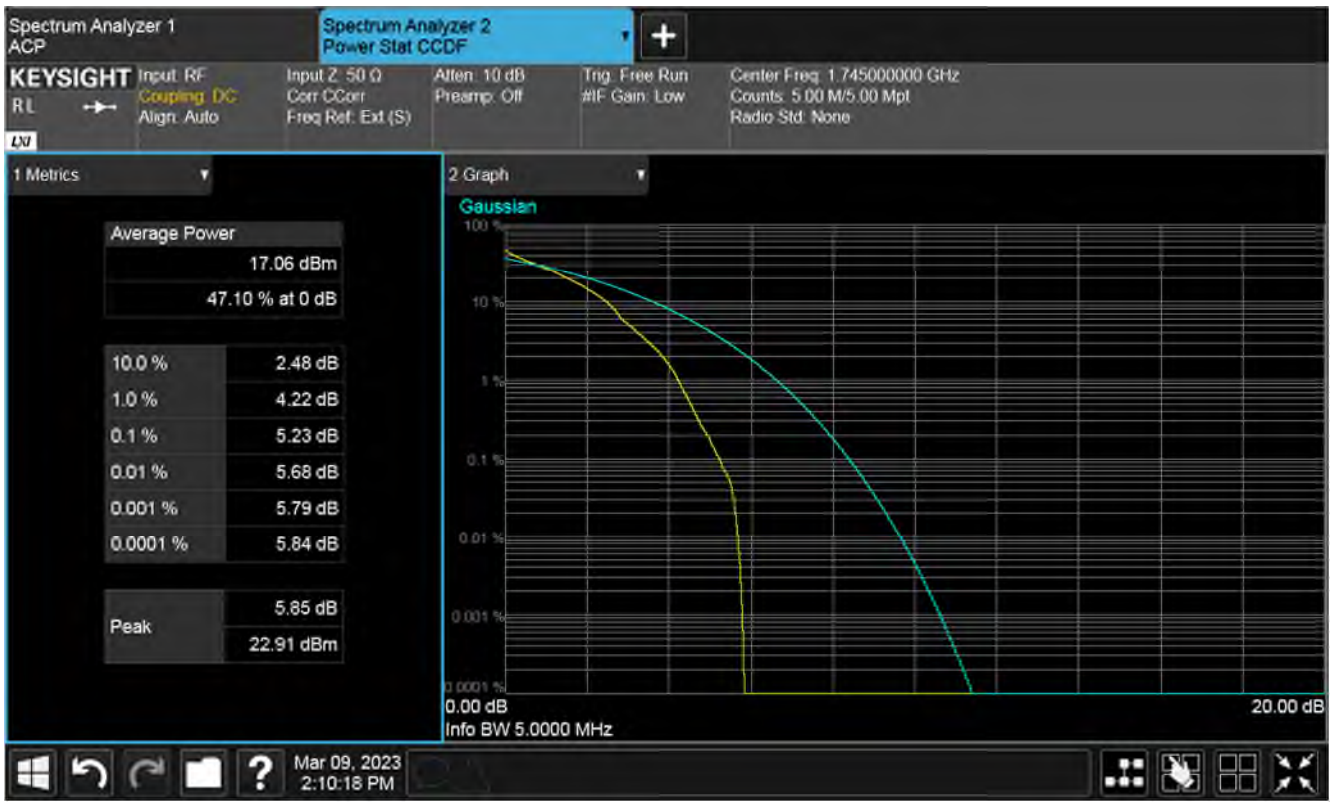


Plot of PAPR 100%RB, Mid channel

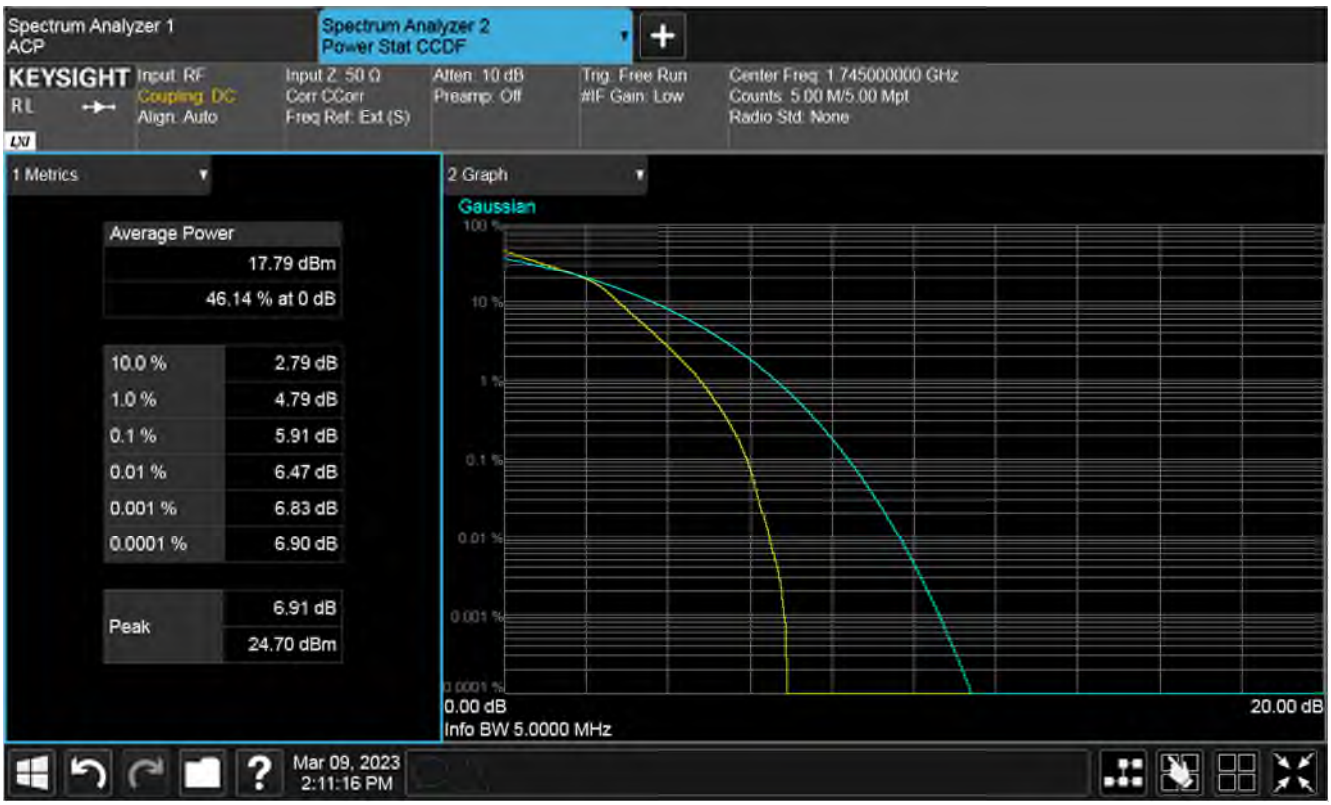
RF Parameters: Band 1710-1780 MHz, Power 17 dBm, Channel Spacing 5 MHz, Modulation 16QAM, Mid Channel



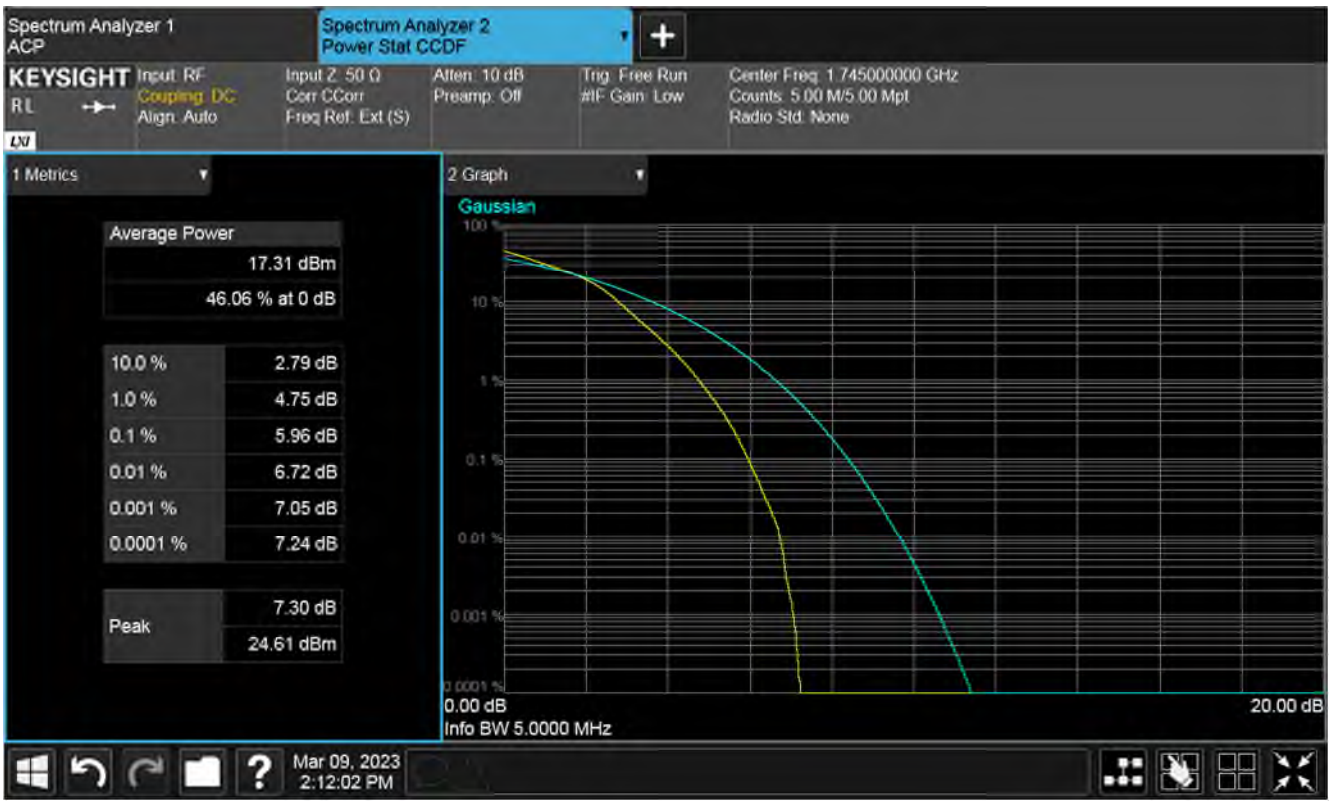
Plot of PAPR Low 1RB, Mid channel



Plot of PAPR High 1RB, Mid channel

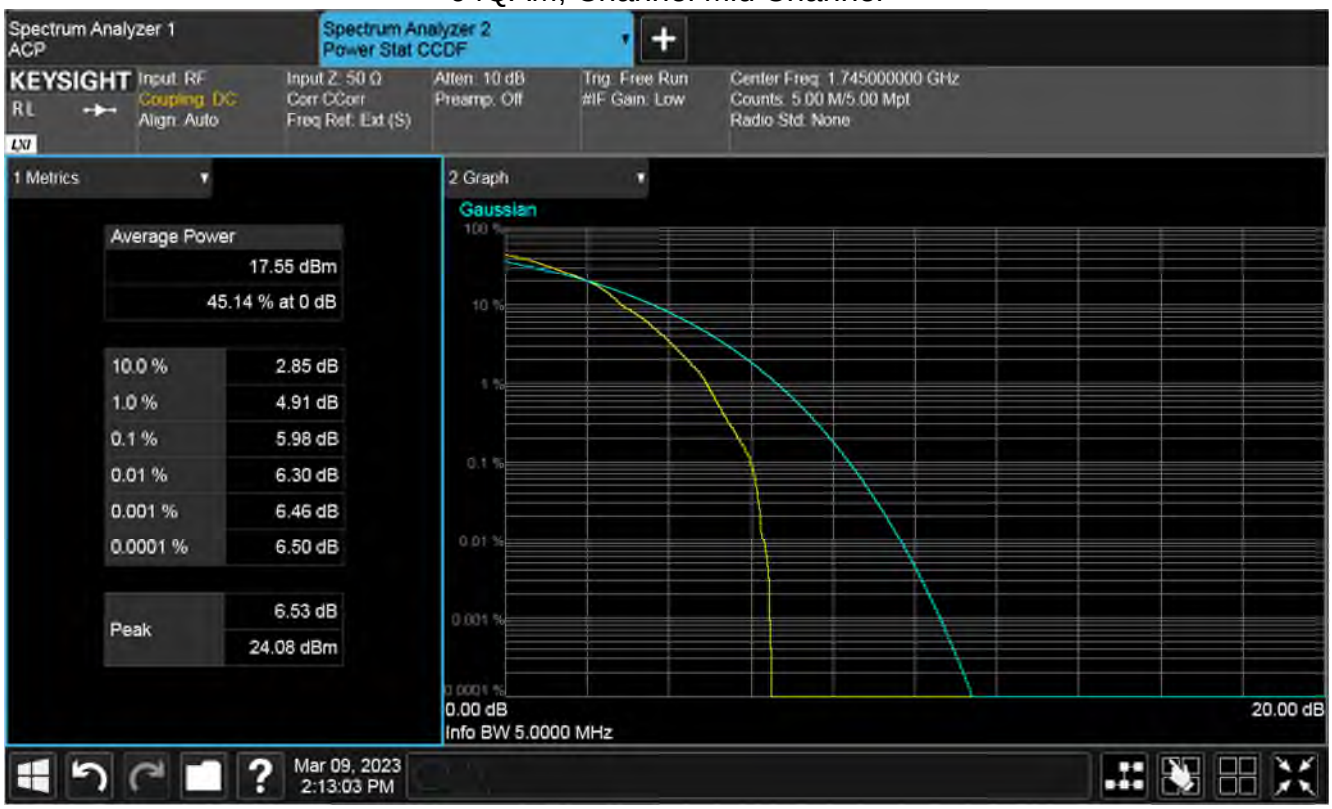


Plot of PAPR 50%RB, Mid channel



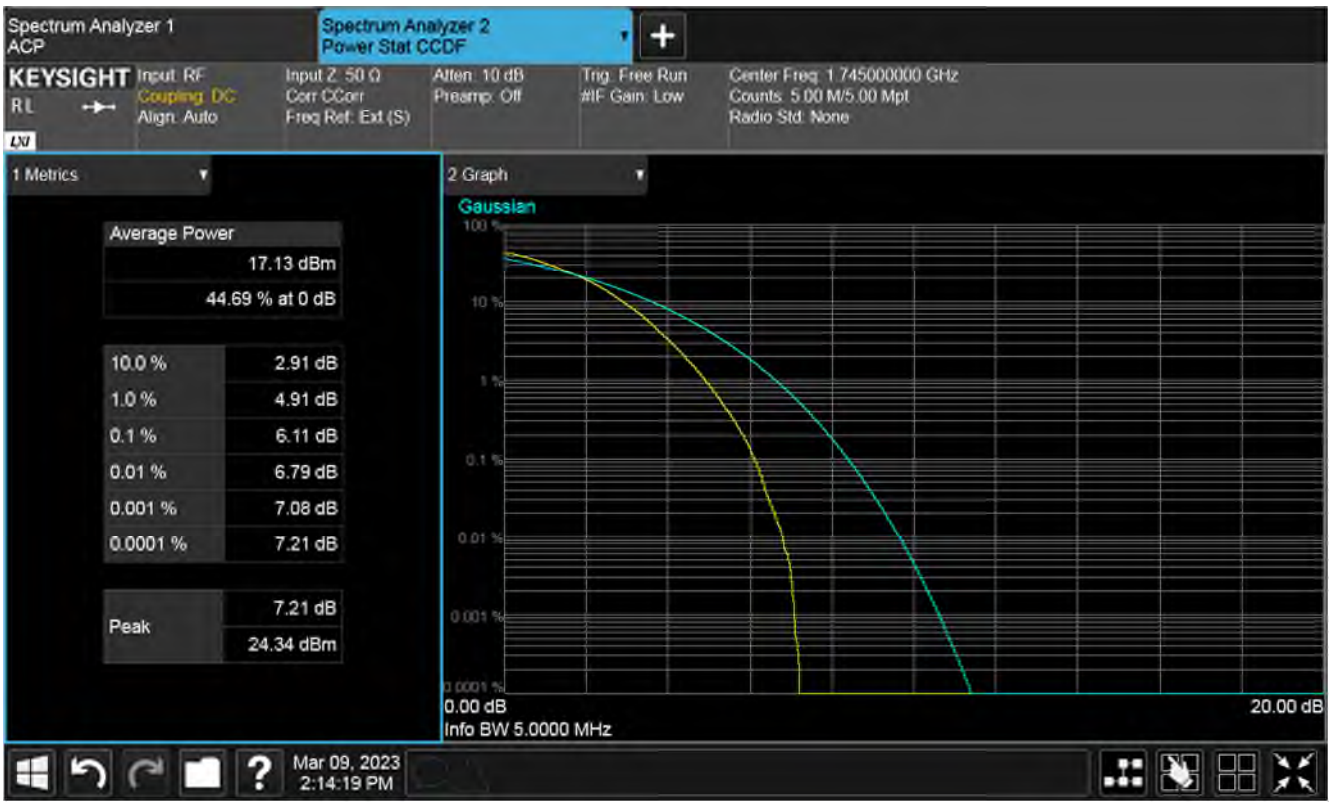
Plot of PAPR 100%RB, Mid channel

RF Parameters: Band 1710-1780 MHz, Power 17 dBm, Channel Spacing 5 MHz, Modulation 64QAM, Channel Mid Channel

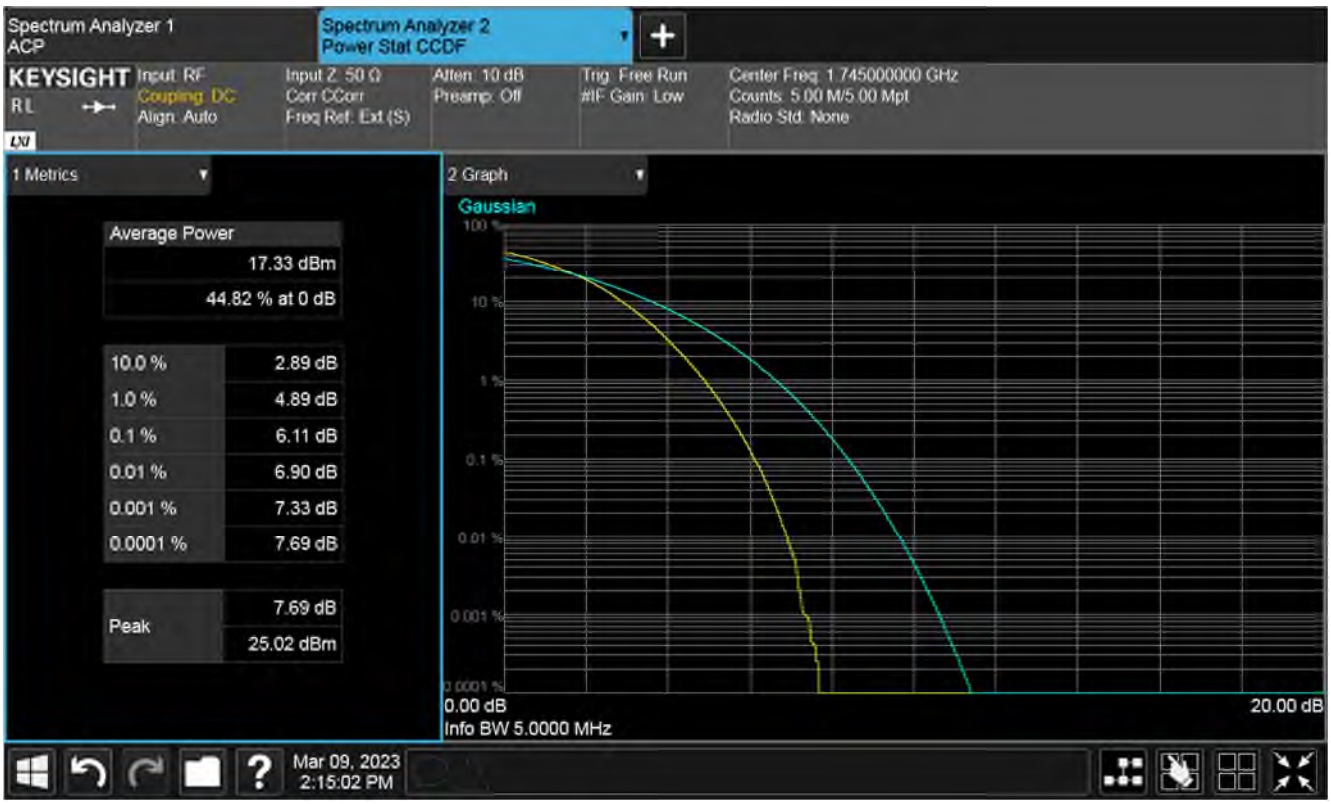


Plot of PAPR Low 1RB, Mid channel

Plot of PAPR High 1RB, Mid channel

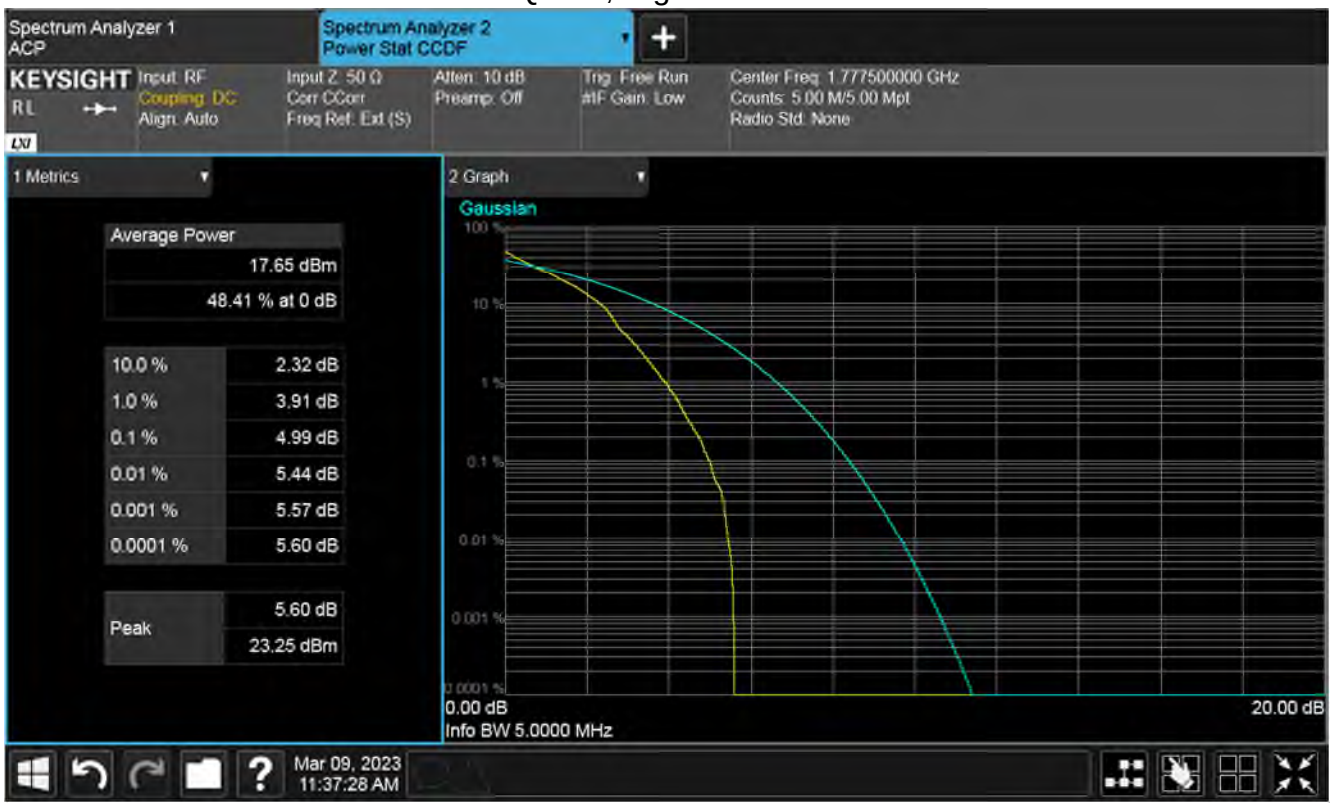


Plot of PAPR 50%RB, Mid channel

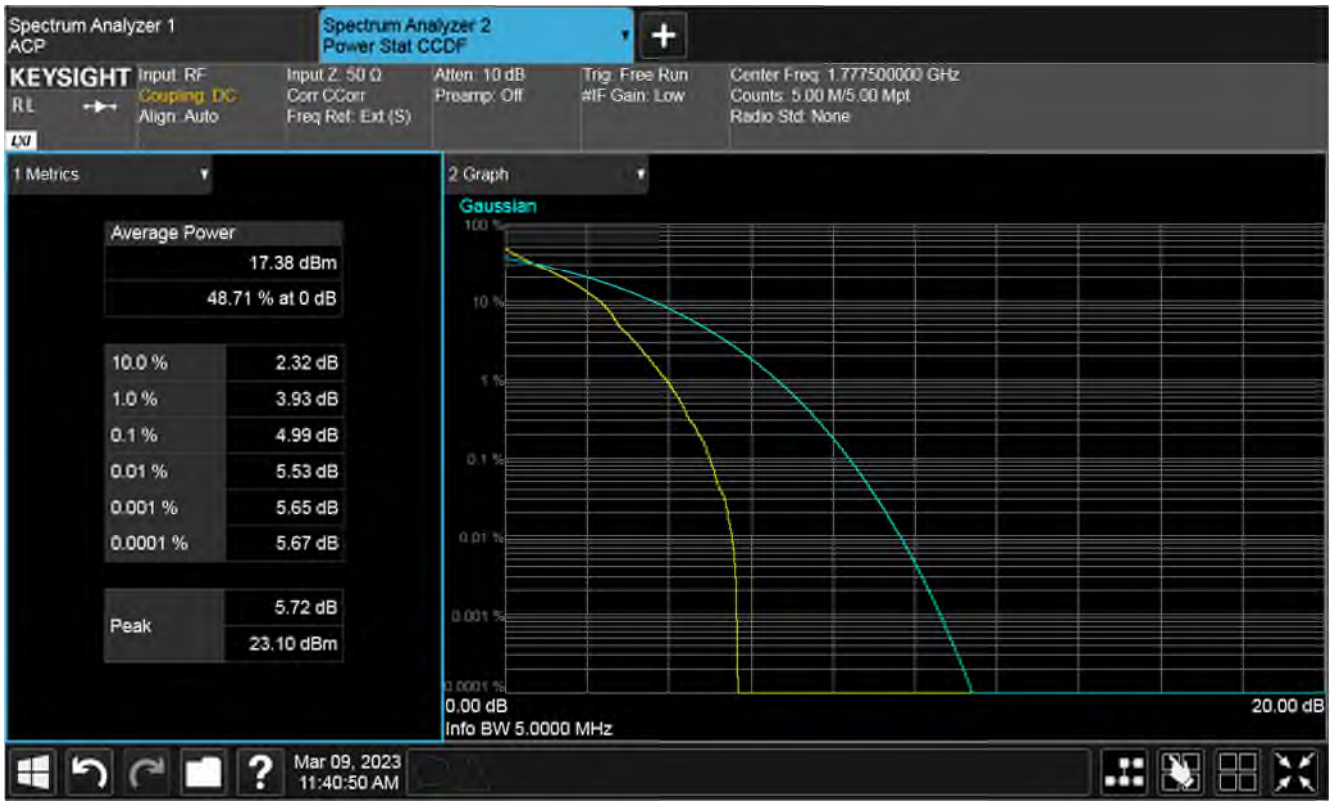


Plot of PAPR 100%RB, Mid channel

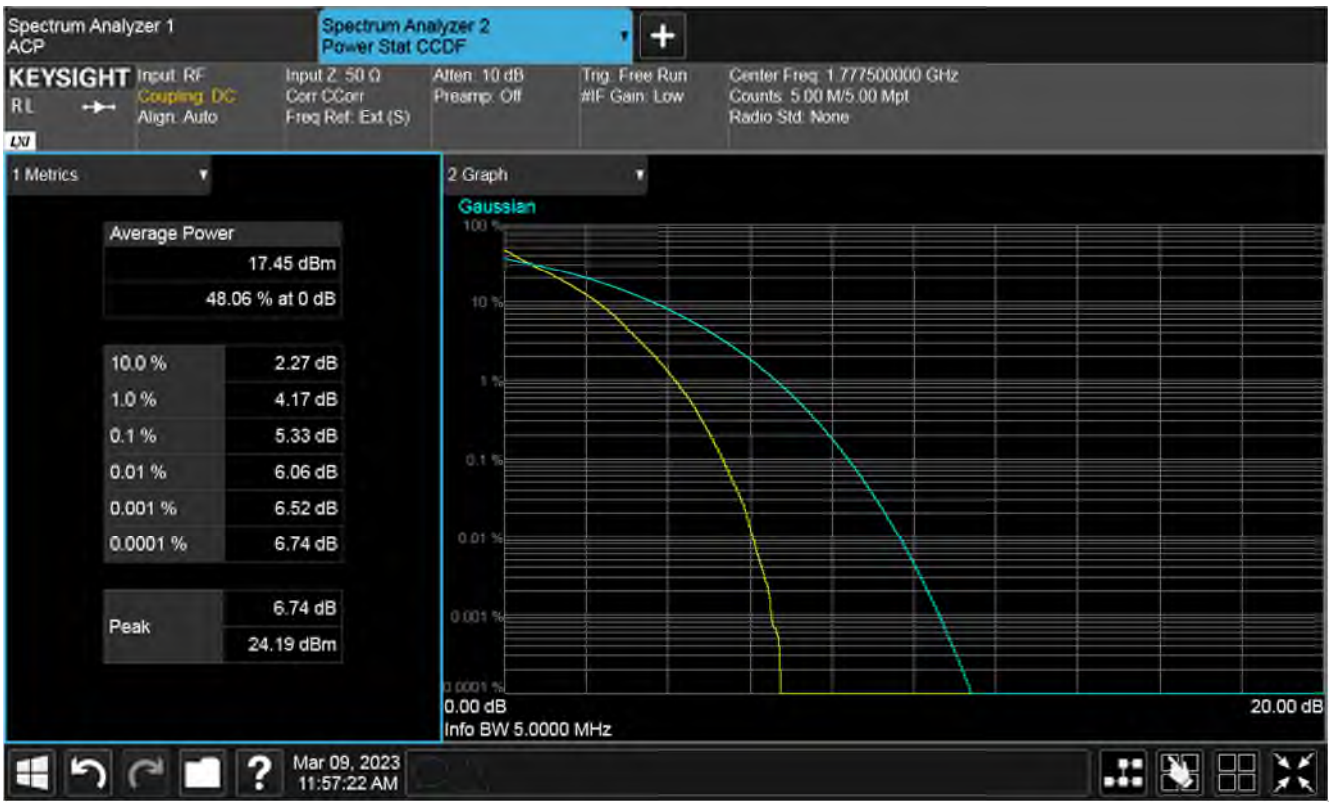
RF Parameters: Band 1710-1780 MHz, Power 17 dBm, Channel Spacing 5 MHz, Modulation QPSK, High Channel



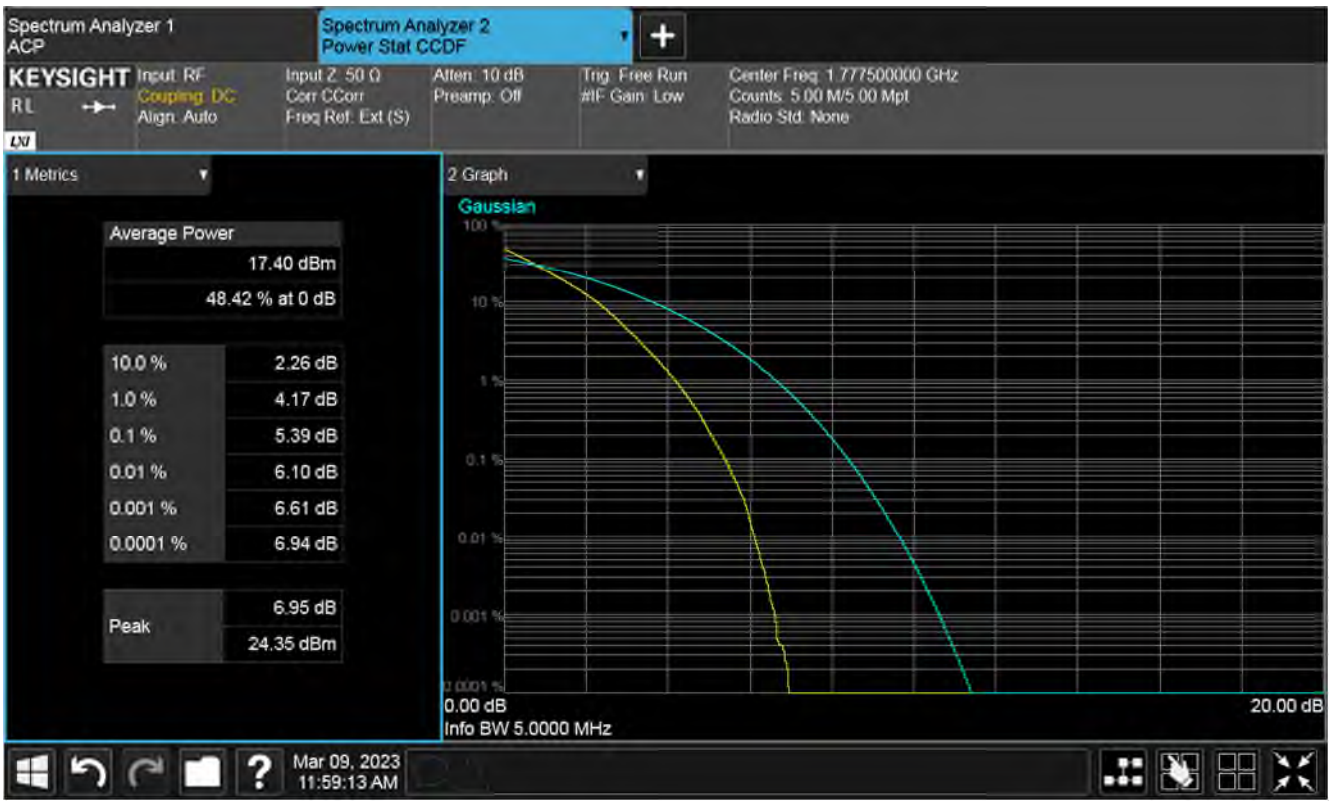
Plot of PAPR Low 1RB, High channel



Plot of PAPR High 1RB, High channel

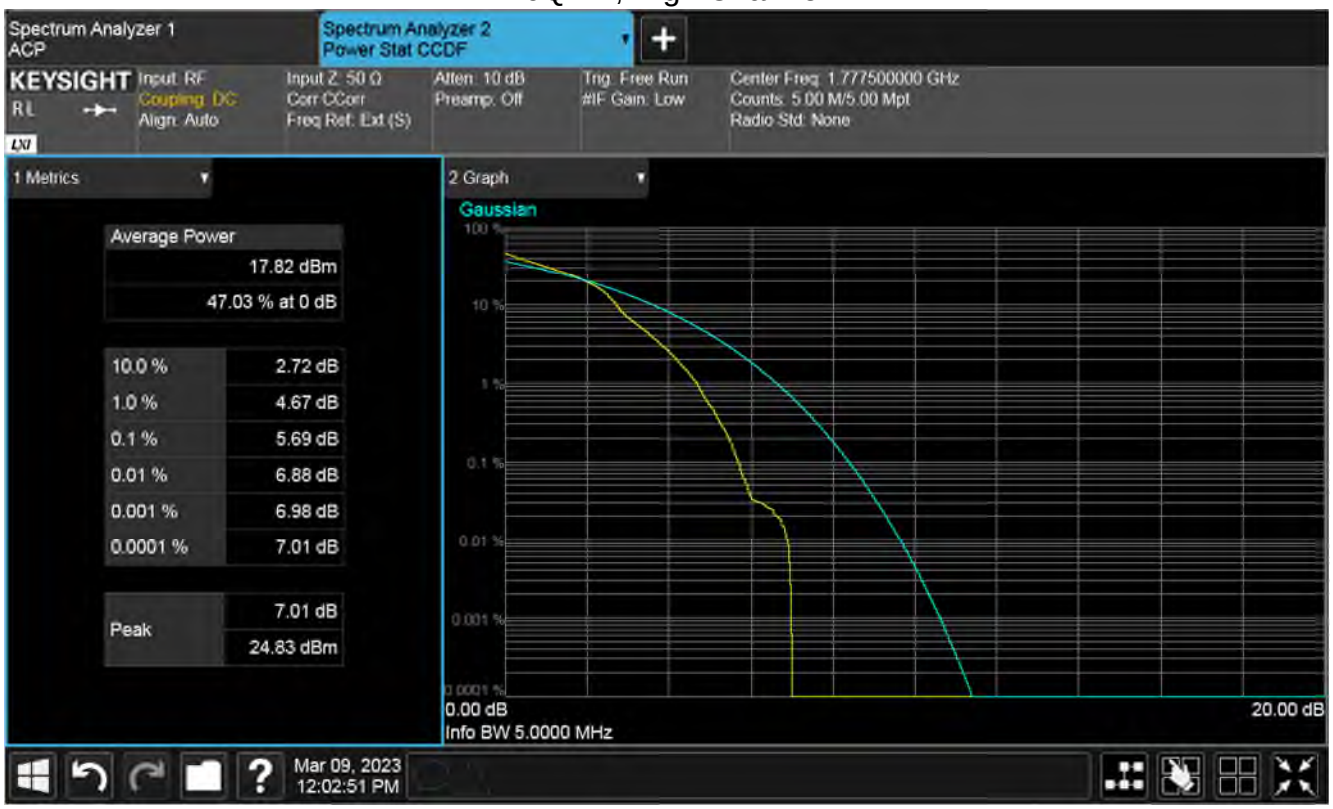


Plot of PAPR 50%RB, High channel

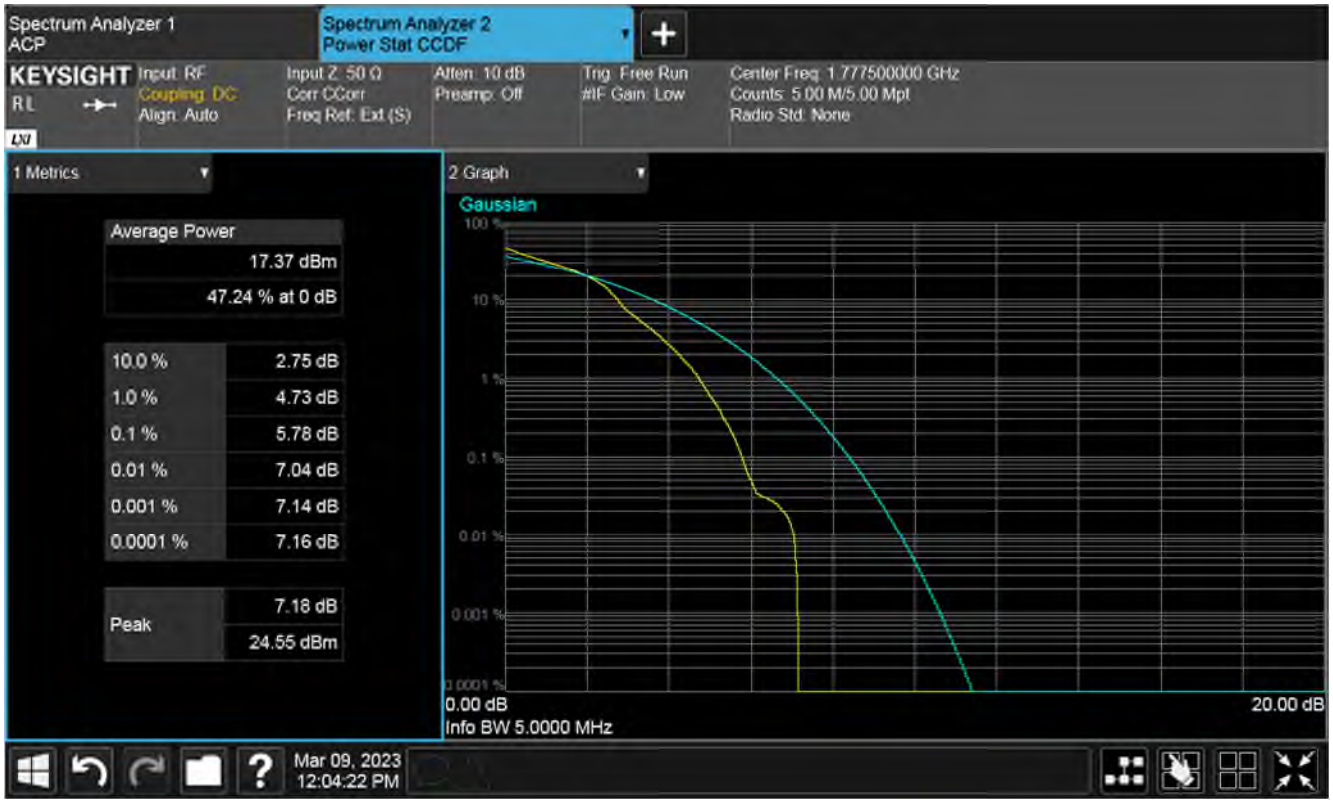


Plot of PAPR 100%RB, High channel

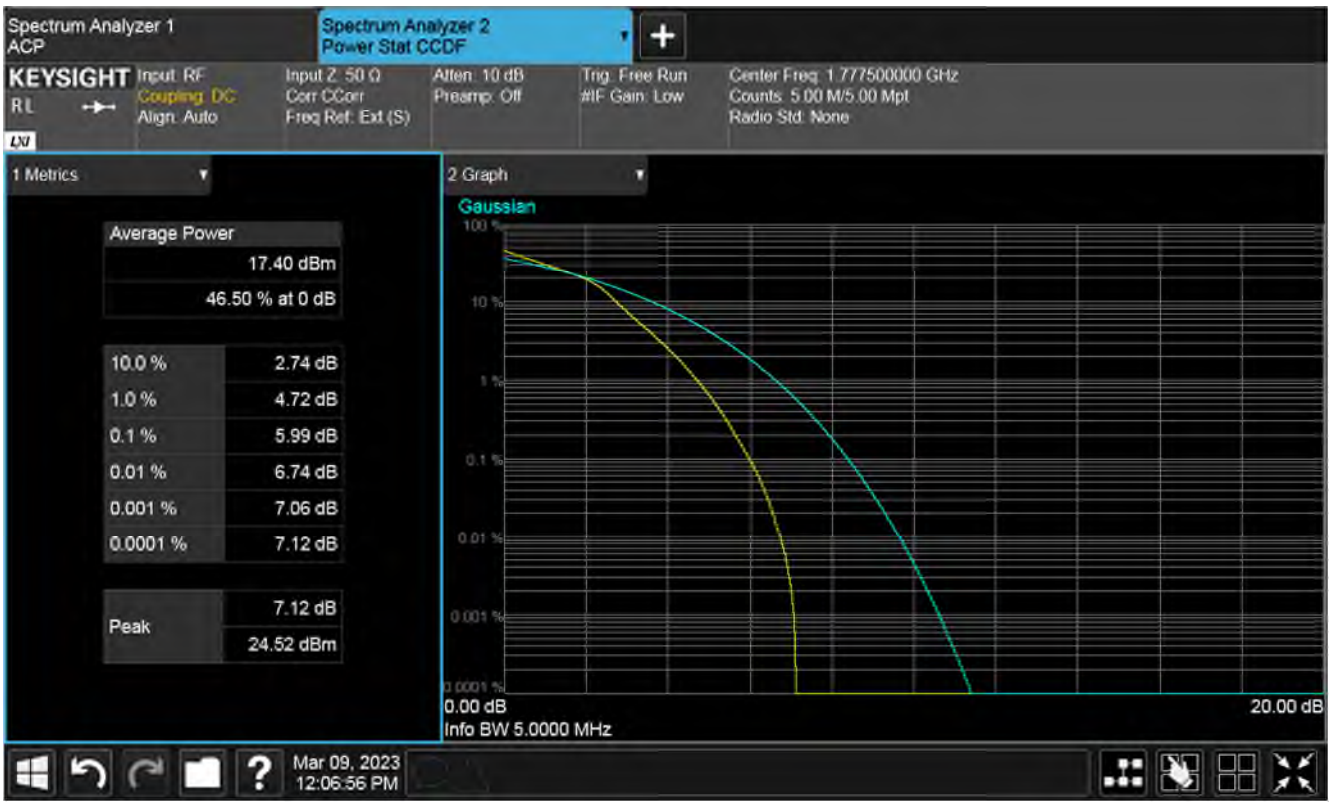
RF Parameters: Band 1710-1780 MHz, Power 17 dBm, Channel Spacing 5 MHz, Modulation 16QAM, High Channel



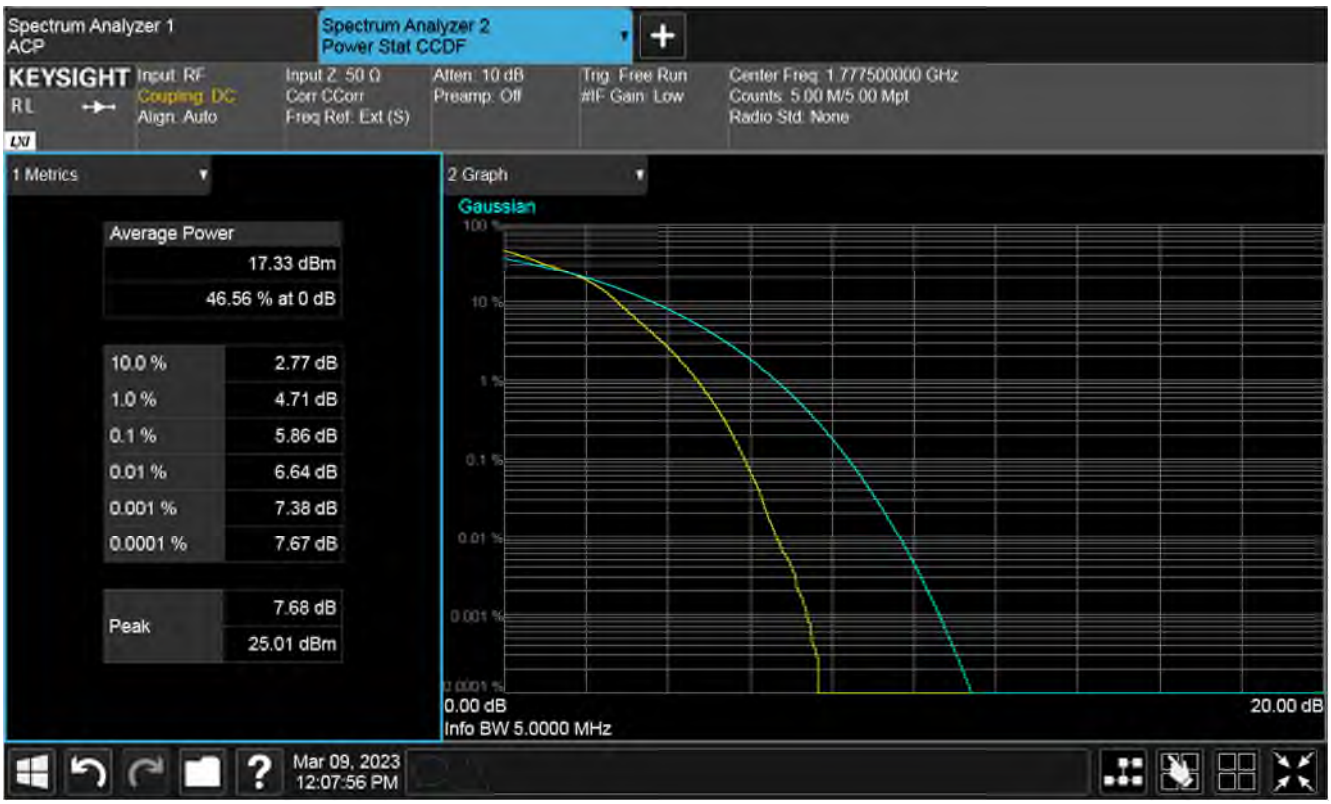
Plot of PAPR Low 1RB, High channel



Plot of PAPR High 1RB, High channel

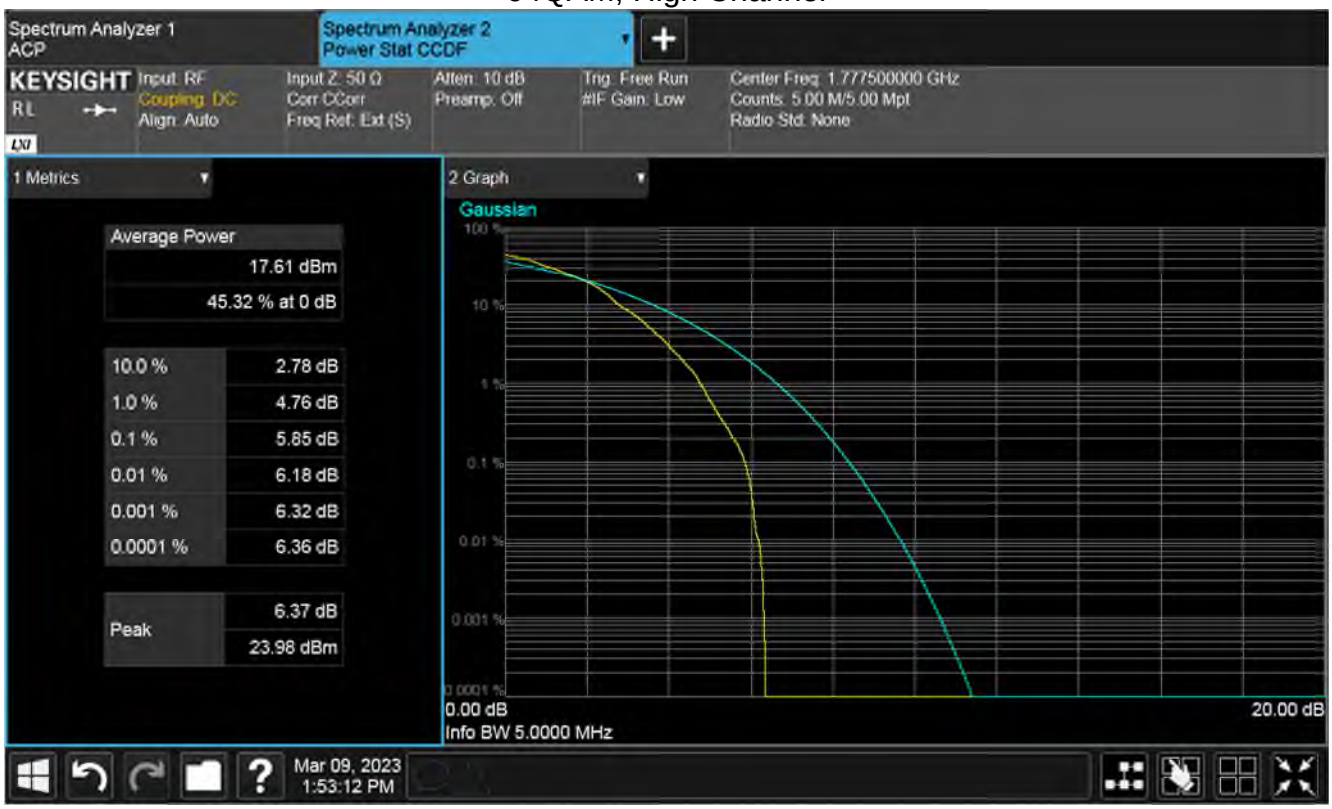


Plot of PAPR 50%RB, High channel

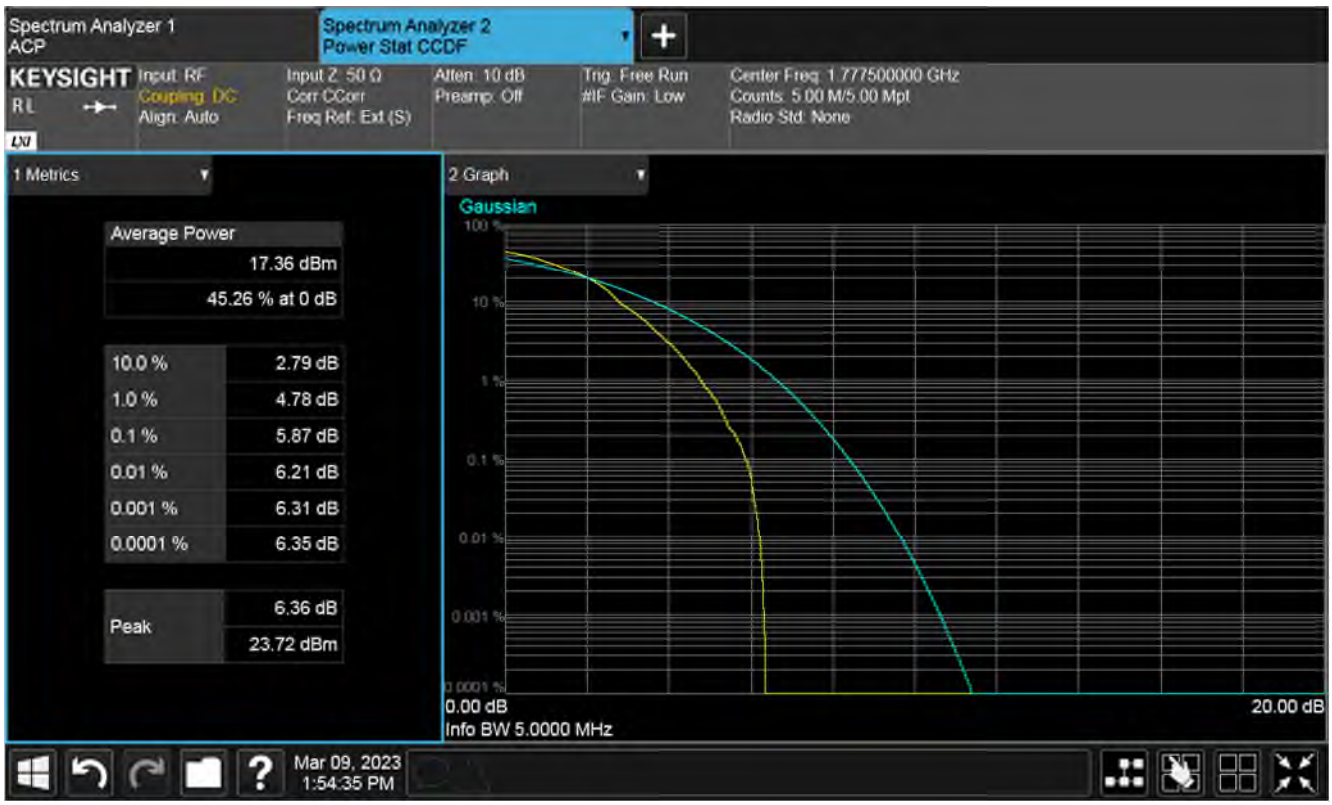


Plot of PAPR 100%RB, High channel

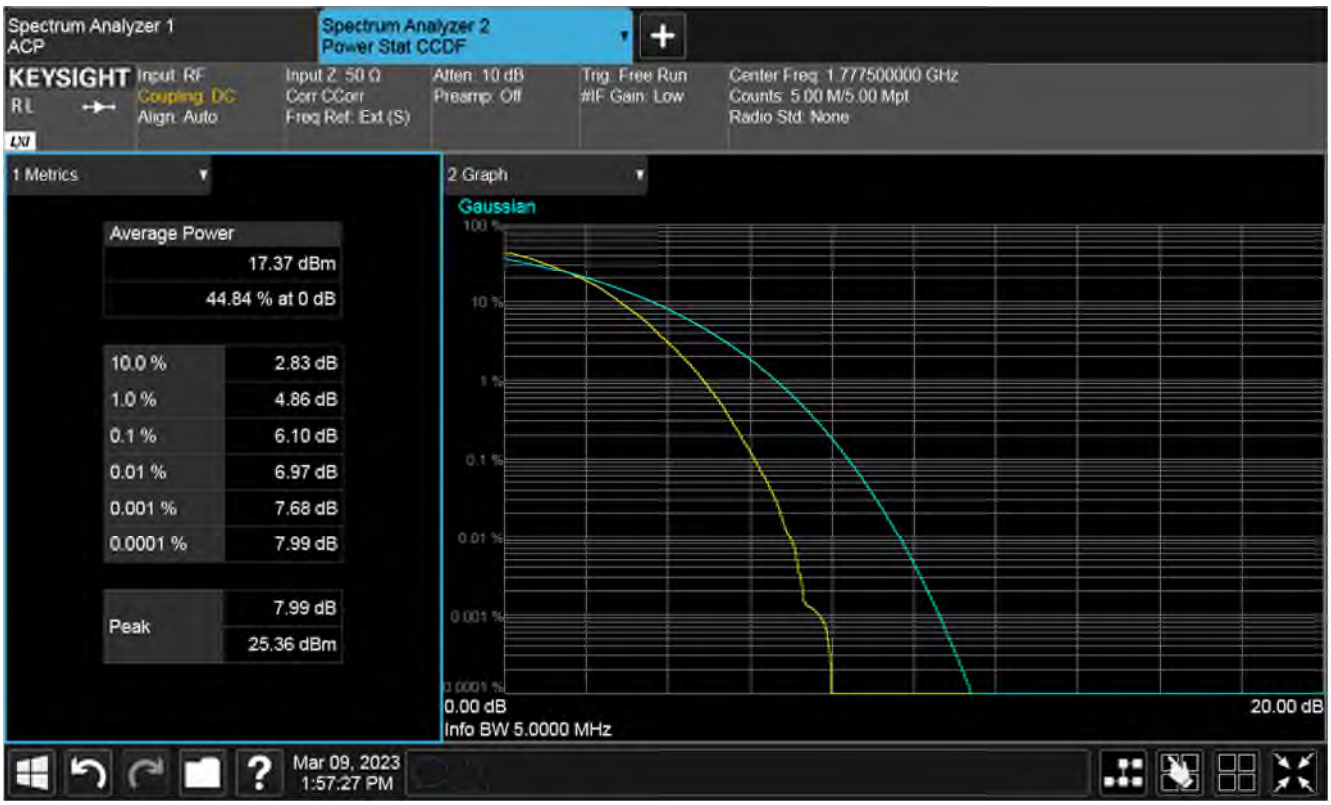
RF Parameters: Band 1710-1780 MHz, Power 17 dBm, Channel Spacing 5 MHz, Modulation 64QAM, High Channel



Plot of PAPR Low 1RB, High channel



Plot of PAPR High 1RB, High channel

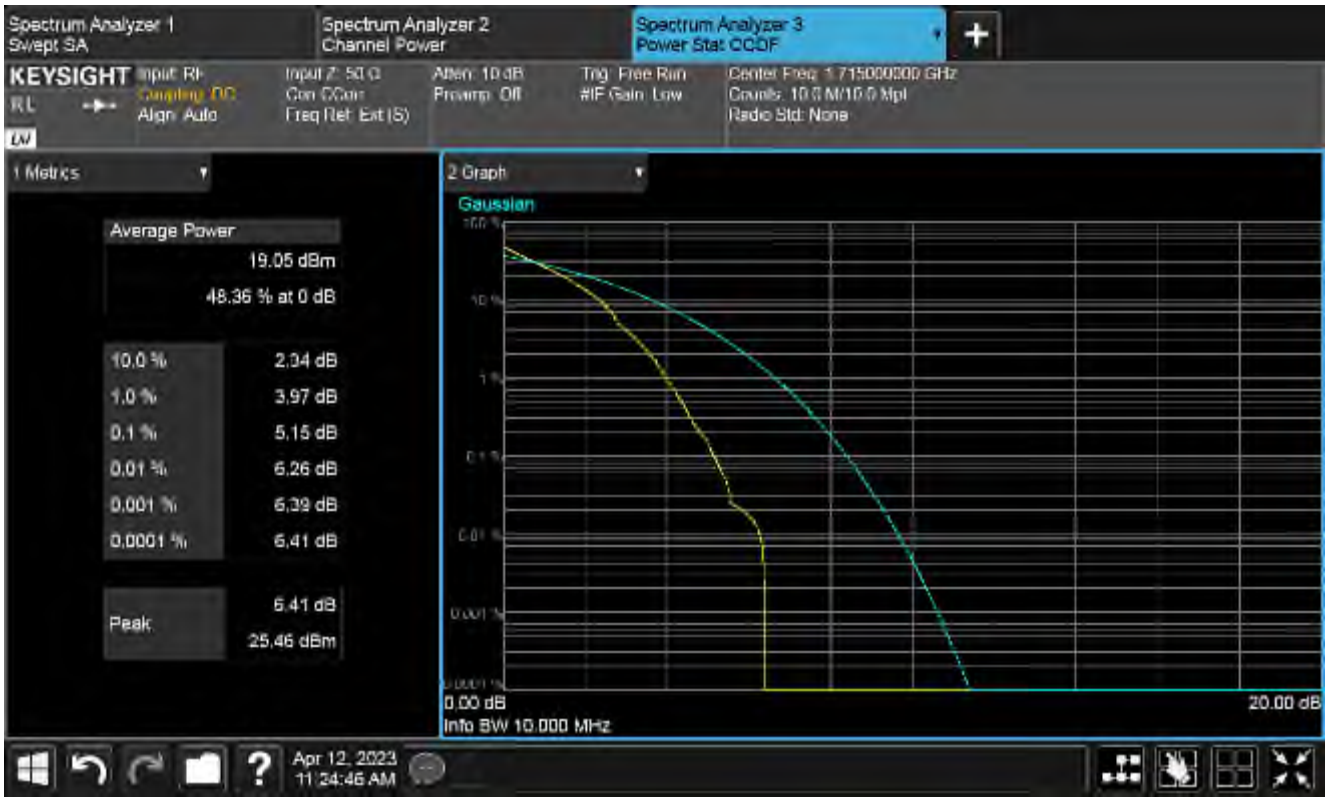


Plot of PAPR 50%RB, High channel

Plot of PAPR 100%RB, High channel

RF Parameters: Band 1710-1780 MHz, Power 20 dBm, Channel Spacing 10 MHz, Modulation QPSK, Low Channel

Plot of PAPR Low 1RB, low channel



Plot of PAPR High 1RB, low channel

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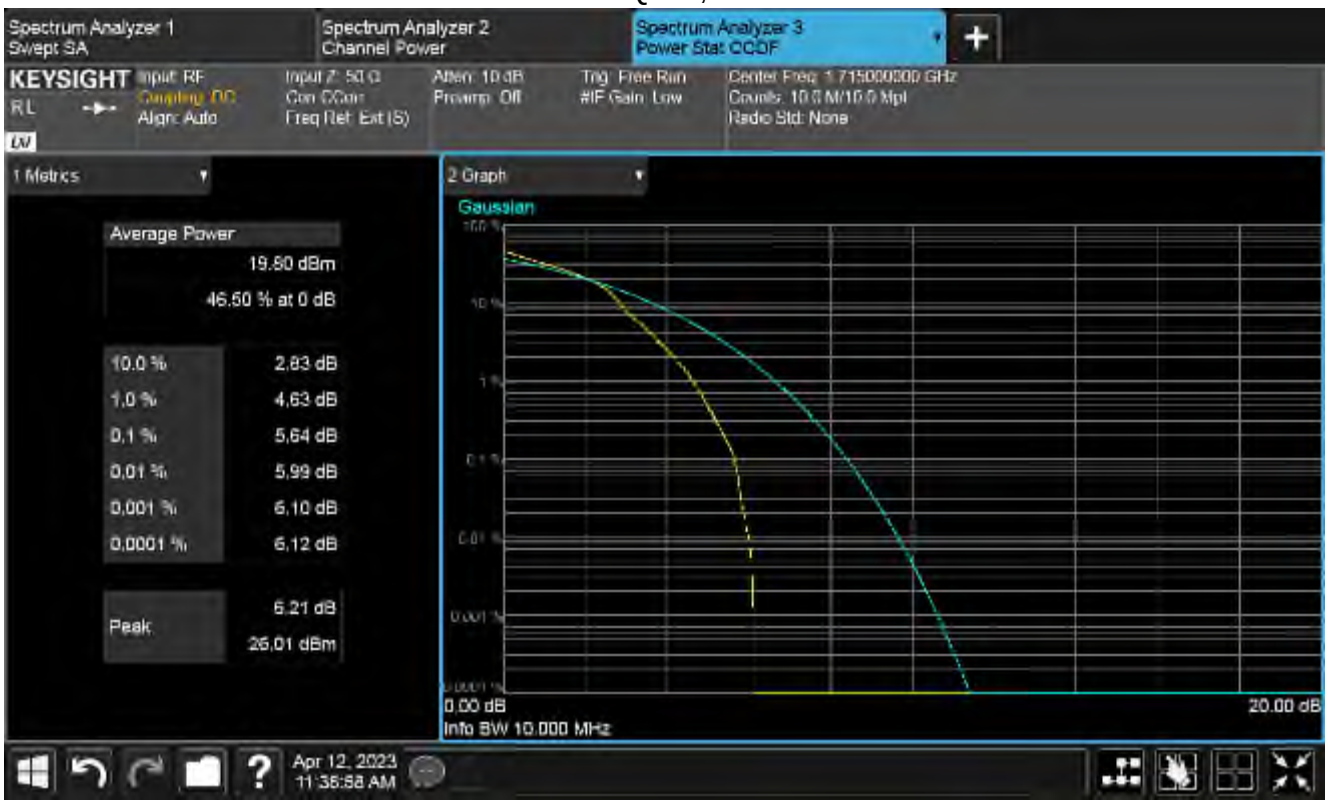
Plot of PAPR 50%RB, low channel

Plot of PAPR 100%RB, low channel

RF Parameters: Band 1710-1780 MHz, Power 20 dBm, Channel Spacing 10 MHz, Modulation 16QAM, Low Channel



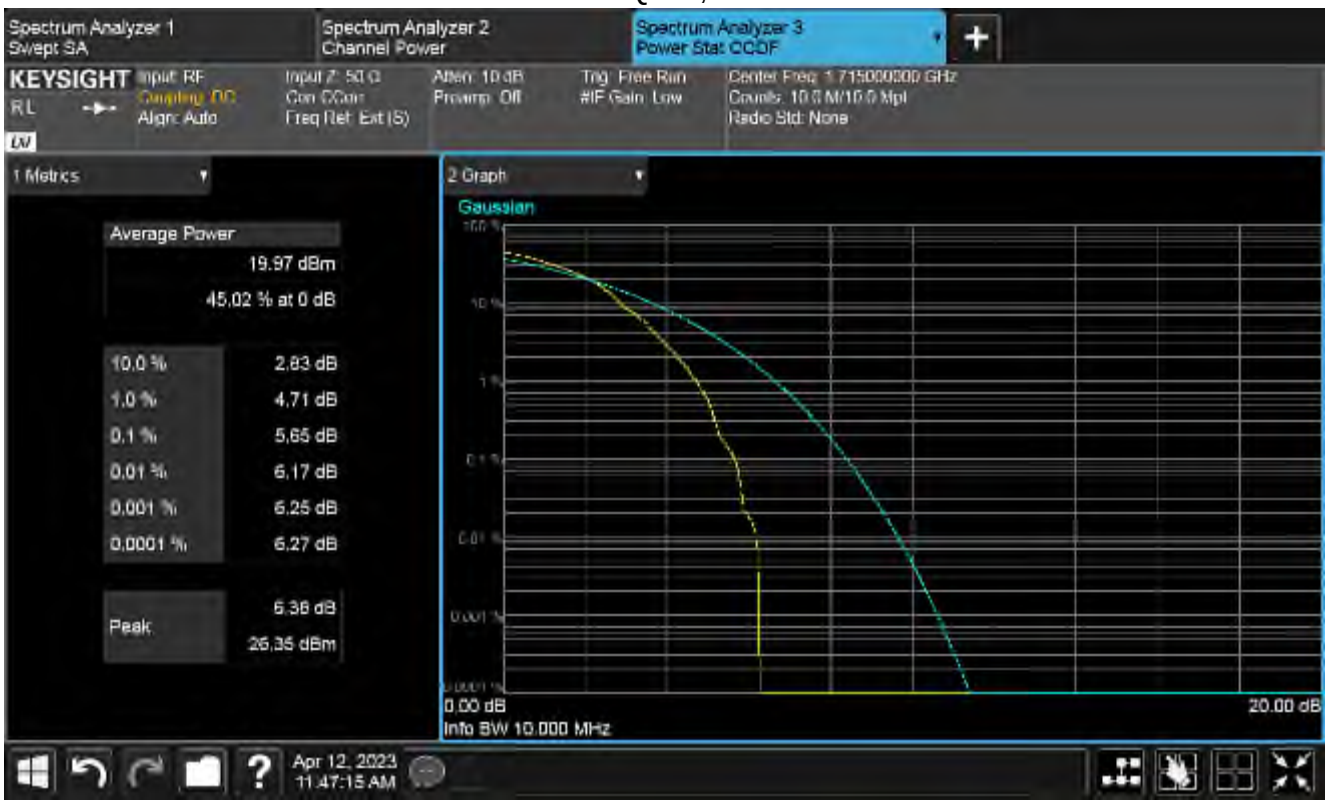
Plot of PAPR Low 1RB, low channel

Plot of PAPR High 1RB, low channel

Plot of PAPR 50%RB, low channel

Plot of PAPR 100%RB, low channel

RF Parameters: Band 1710-1780 MHz, Power 20 dBm, Channel Spacing 10 MHz, Modulation 64QAM, Low Channel



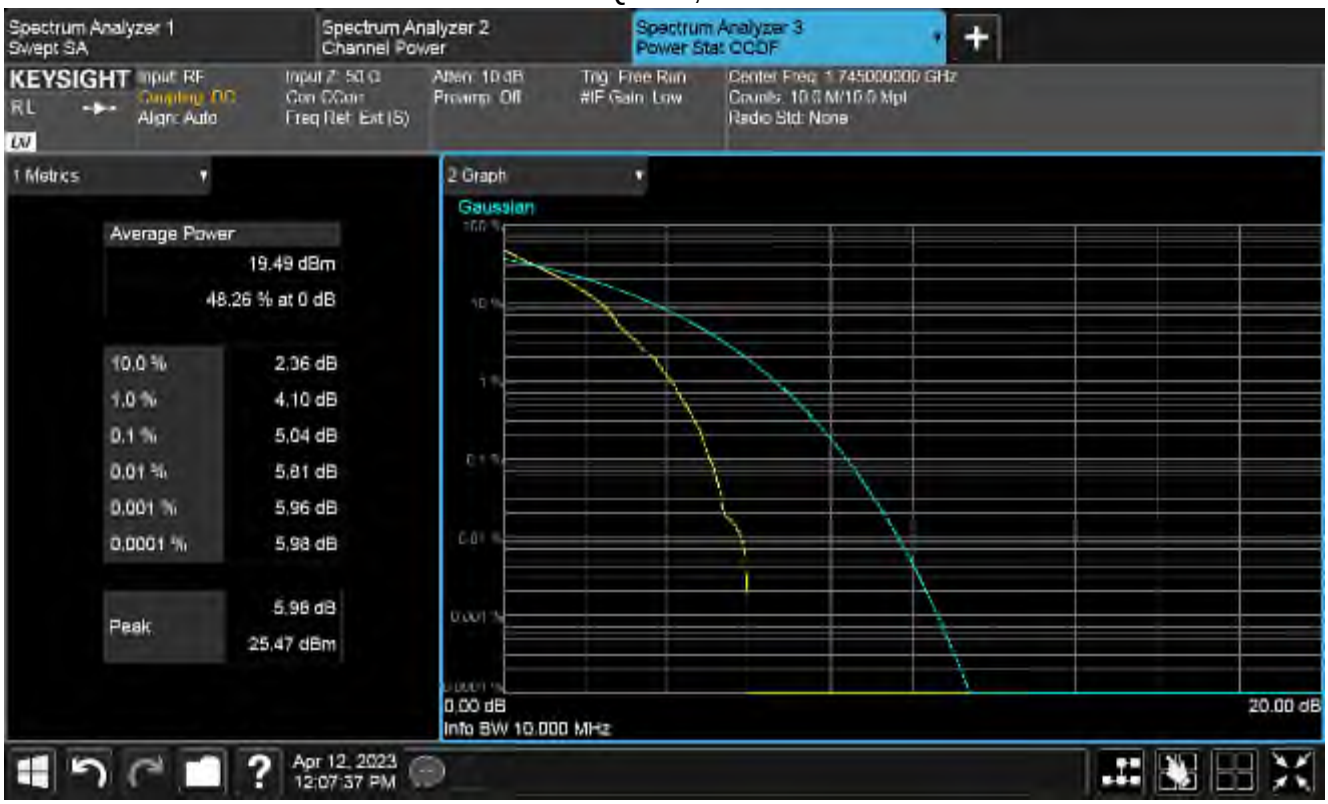
Plot of PAPR Low 1RB, low channel

Plot of PAPR High 1RB, low channel

Plot of PAPR 50%RB, low channel

Plot of PAPR 100%RB, low channel

RF Parameters: Band 1710-1780 MHz, Power 20 dBm, Channel Spacing 10 MHz, Modulation QPSK, Mid Channel



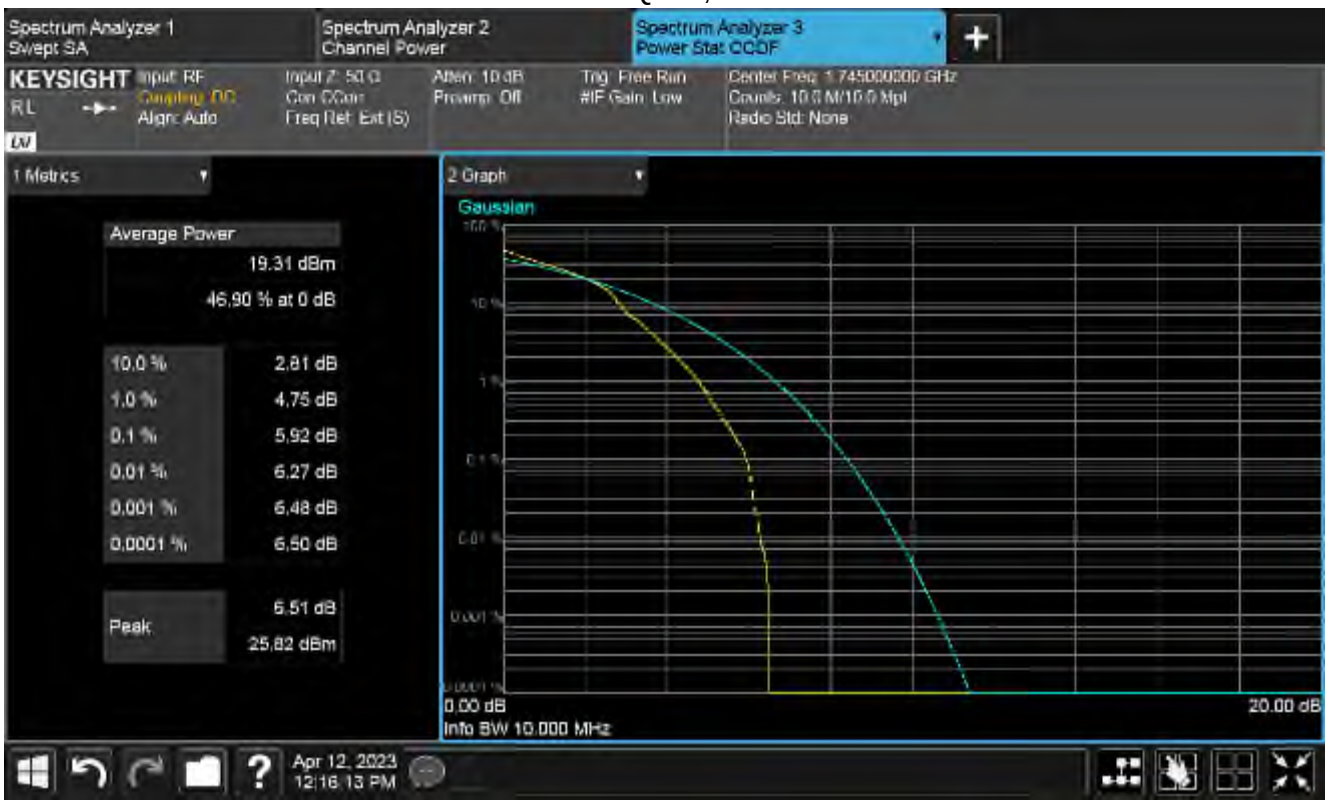
Plot of PAPR Low 1RB, Mid channel

Plot of PAPR High 1RB, Mid channel

Plot of PAPR 50%RB, Mid channel

Plot of PAPR 100%RB, Mid channel

RF Parameters: Band 1710-1780 MHz, Power 20 dBm, Channel Spacing 10 MHz, Modulation 16QAM, Mid Channel



Plot of PAPR Low 1RB, Mid channel

Plot of PAPR High 1RB, Mid channel

Plot of PAPR 50%RB, Mid channel

Plot of PAPR 100%RB, Mid channel

RF Parameters: Band 1710-1780 MHz, Power 20 dBm, Channel Spacing 10 MHz, Modulation 64QAM, Mid Channel

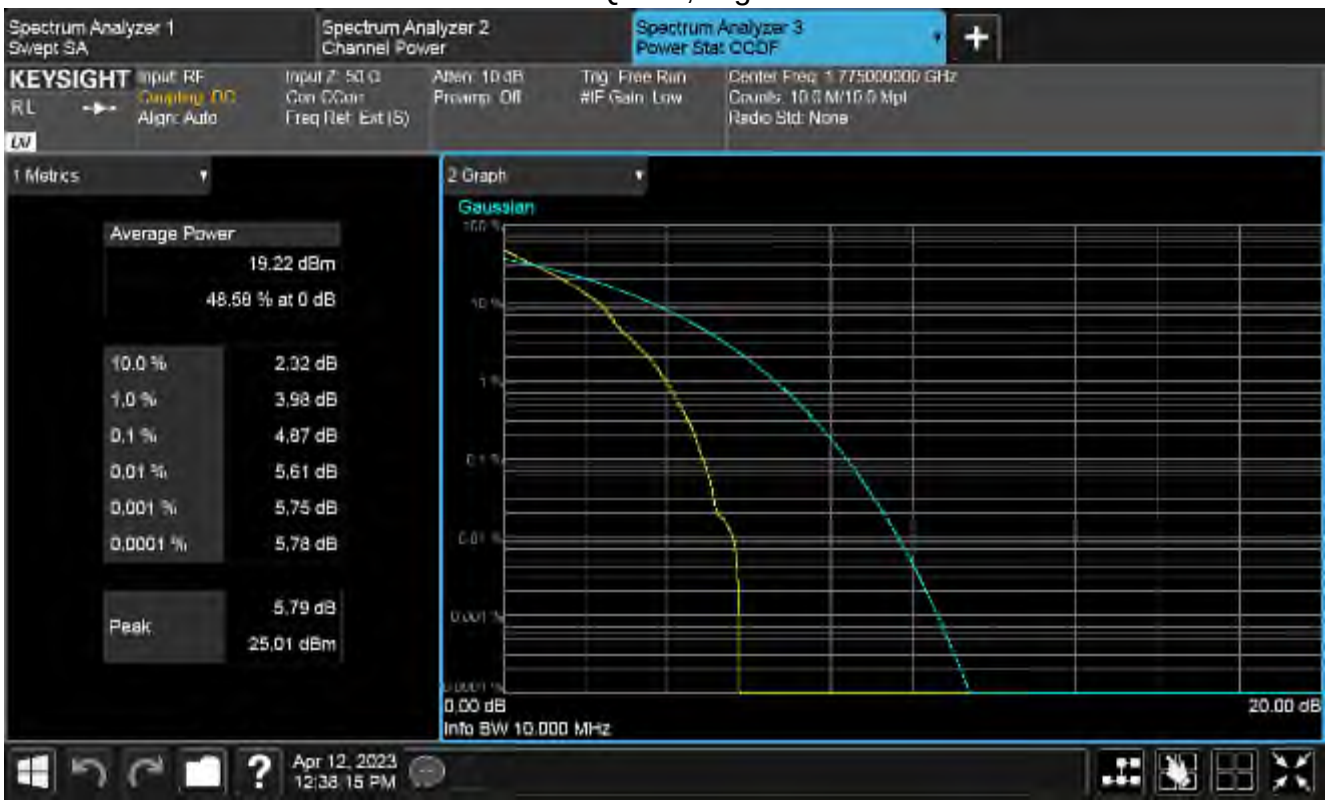
Plot of PAPR Low 1RB, Mid channel

Plot of PAPR High 1RB, Mid channel

Plot of PAPR 50%RB, Mid channel

Plot of PAPR 100%RB, Mid channel

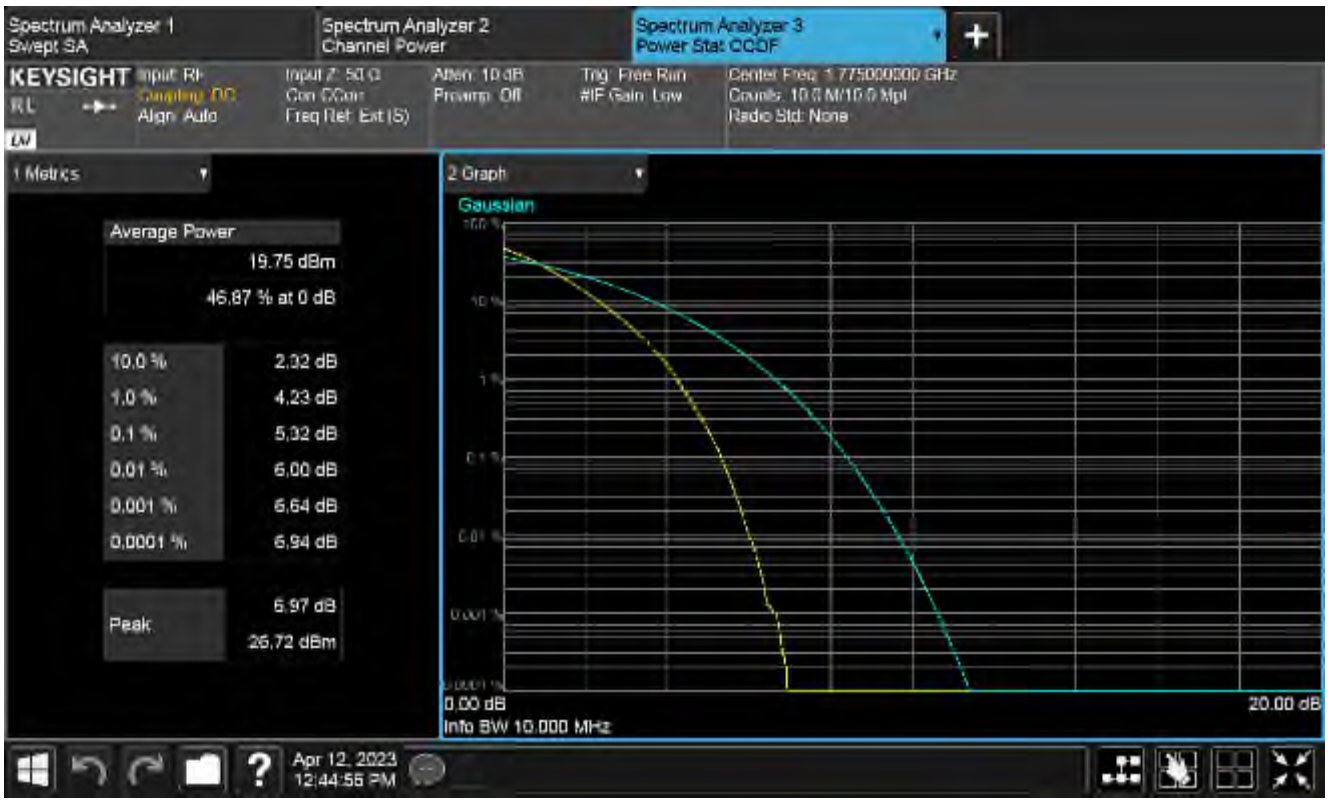
RF Parameters: Band 1710-1780 MHz, Power 20 dBm, Channel Spacing 10 MHz, Modulation QPSK, High Channel



Plot of PAPR Low 1RB, High channel

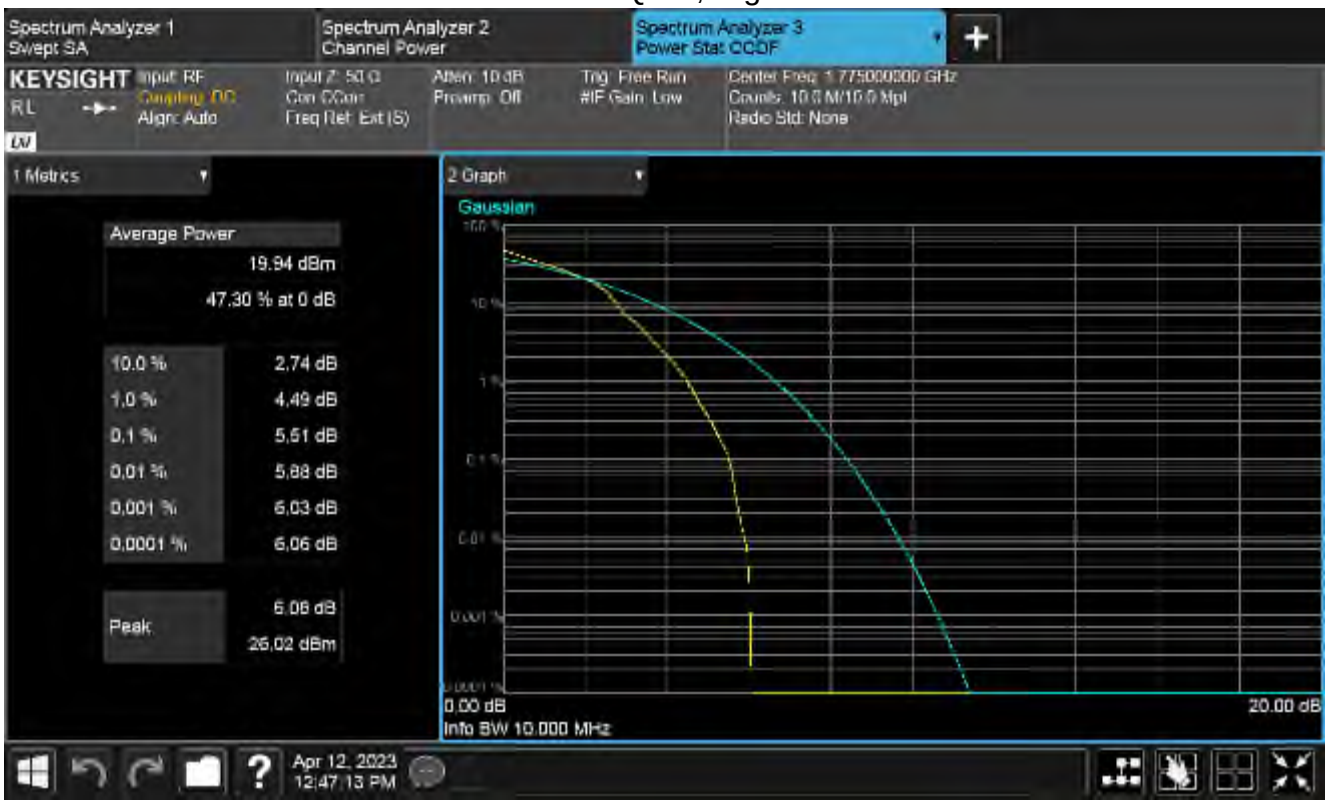
Plot of PAPR High 1RB, High channel

Plot of PAPR 50%RB, High channel



Plot of PAPR 100%RB, High channel

RF Parameters: Band 1710-1780 MHz, Power 20 dBm, Channel Spacing 10 MHz, Modulation 16QAM, High Channel



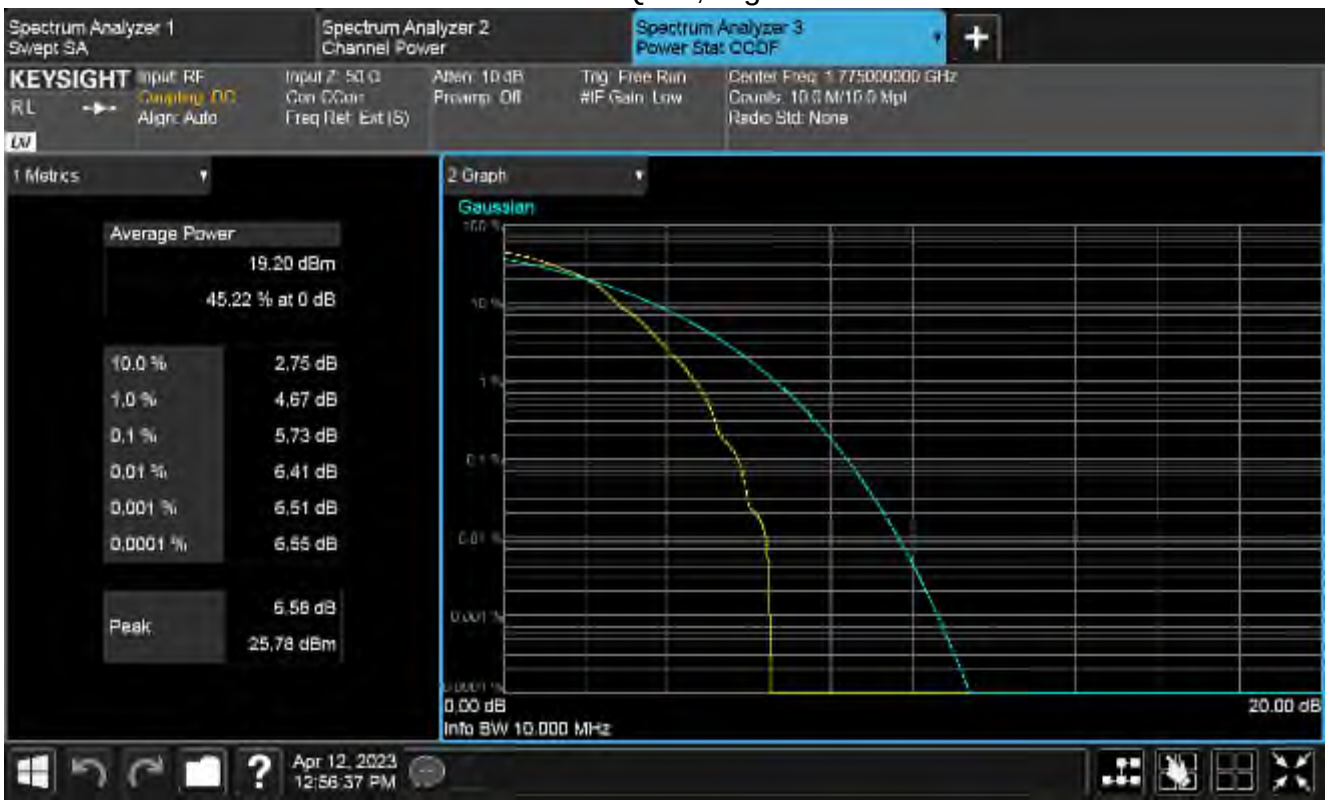
Plot of PAPR Low 1RB, High channel

Plot of PAPR High 1RB, High channel

Plot of PAPR 50%RB, High channel

Plot of PAPR 100%RB, High channel

RF Parameters: Band 1710-1780 MHz, Power 20 dBm, Channel Spacing 10 MHz, Modulation 64QAM, High Channel



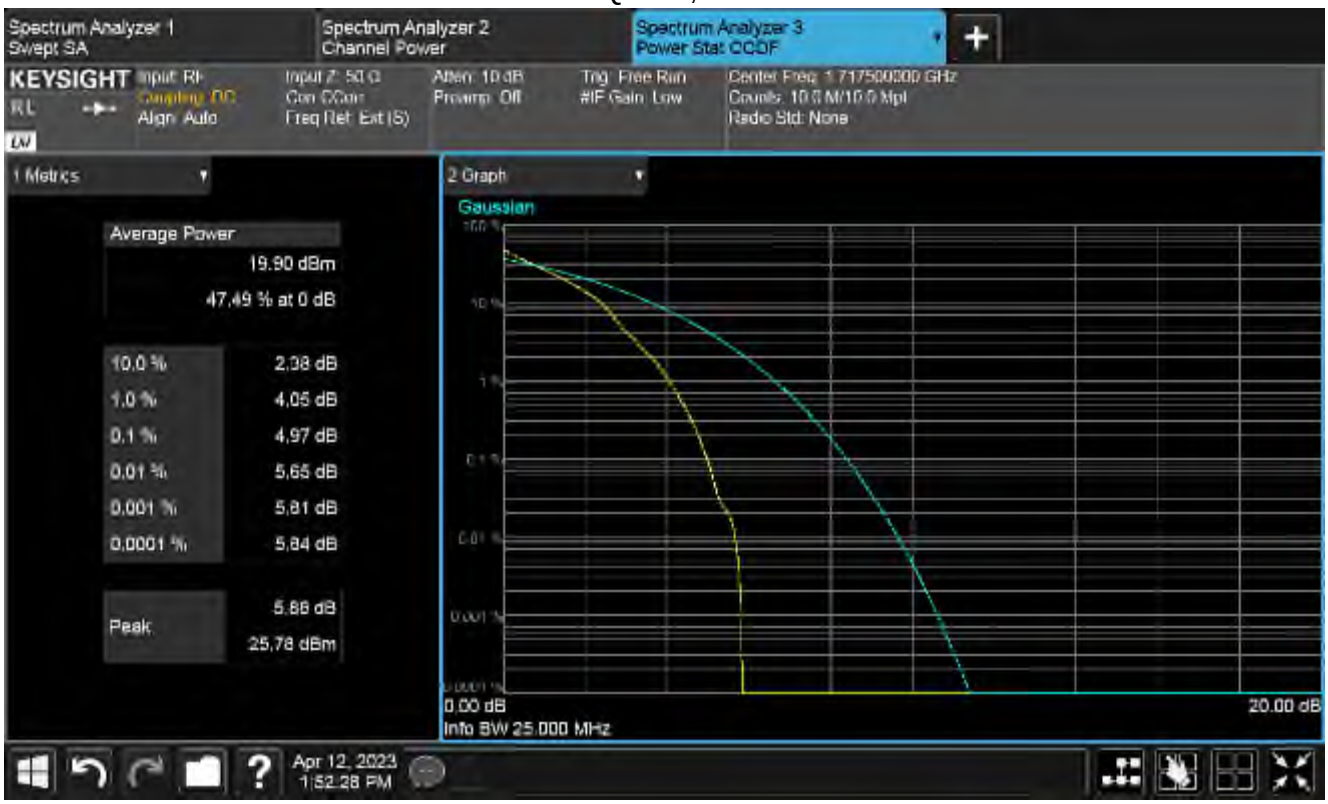
Plot of PAPR Low 1RB, High channel

Plot of PAPR High 1RB, High channel

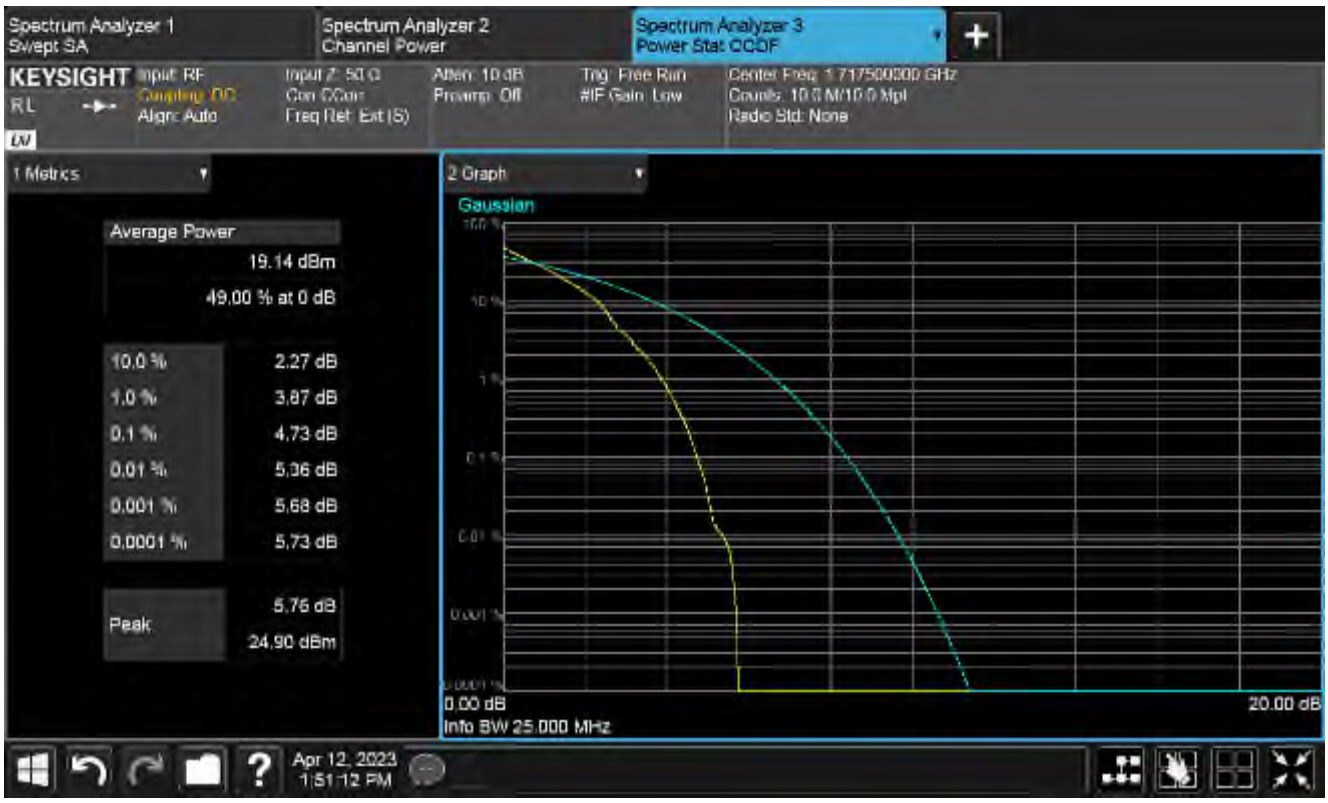
Plot of PAPR 50%RB, High channel

Plot of PAPR 100%RB, High channel

RF Parameters: Band 1710-1780 MHz, Power 20 dBm, Channel Spacing 15 MHz, Modulation QPSK, Low Channel



Plot of PAPR Low 1RB, low channel

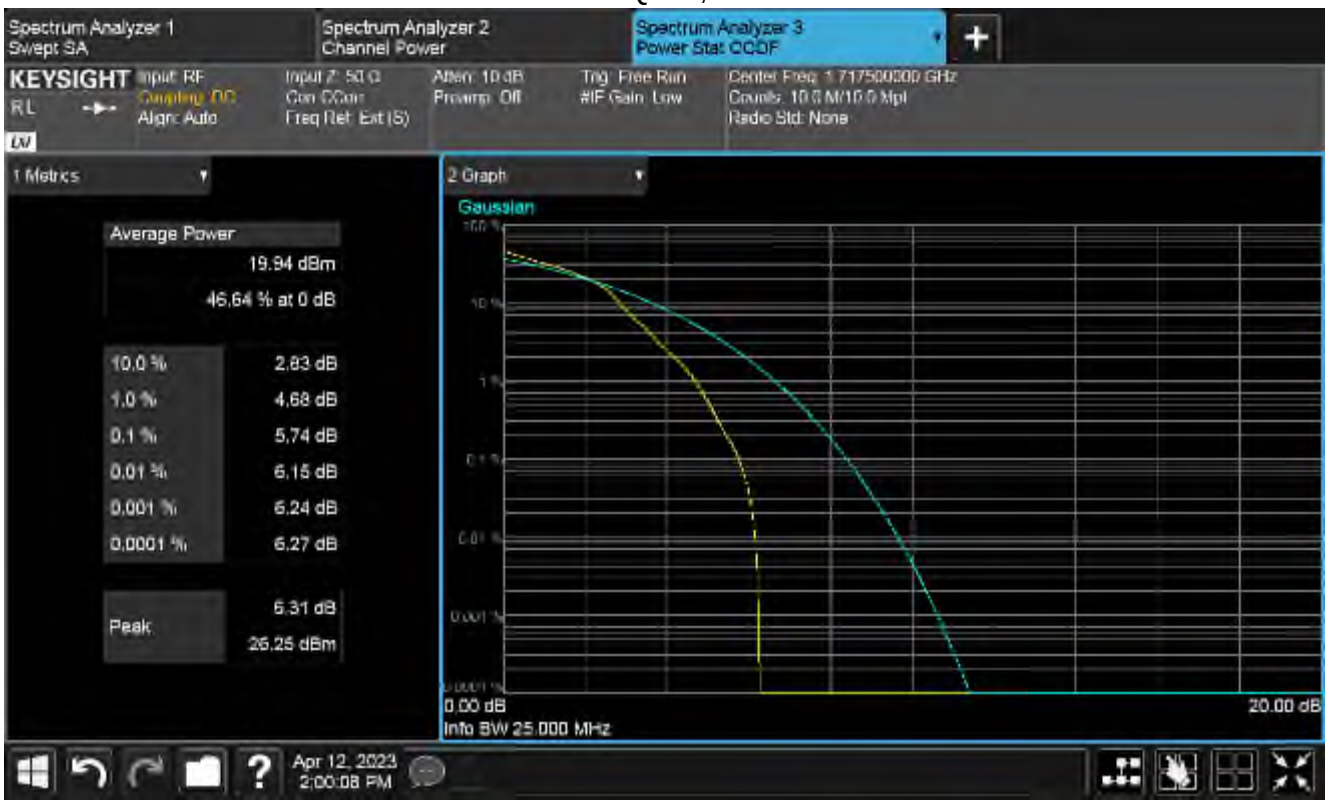


Plot of PAPR High 1RB, low channel

Plot of PAPR 50%RB, low channel

Plot of PAPR 100%RB, low channel

RF Parameters: Band 1710-1780 MHz, Power 20 dBm, Channel Spacing 15 MHz, Modulation 16QAM, Low Channel



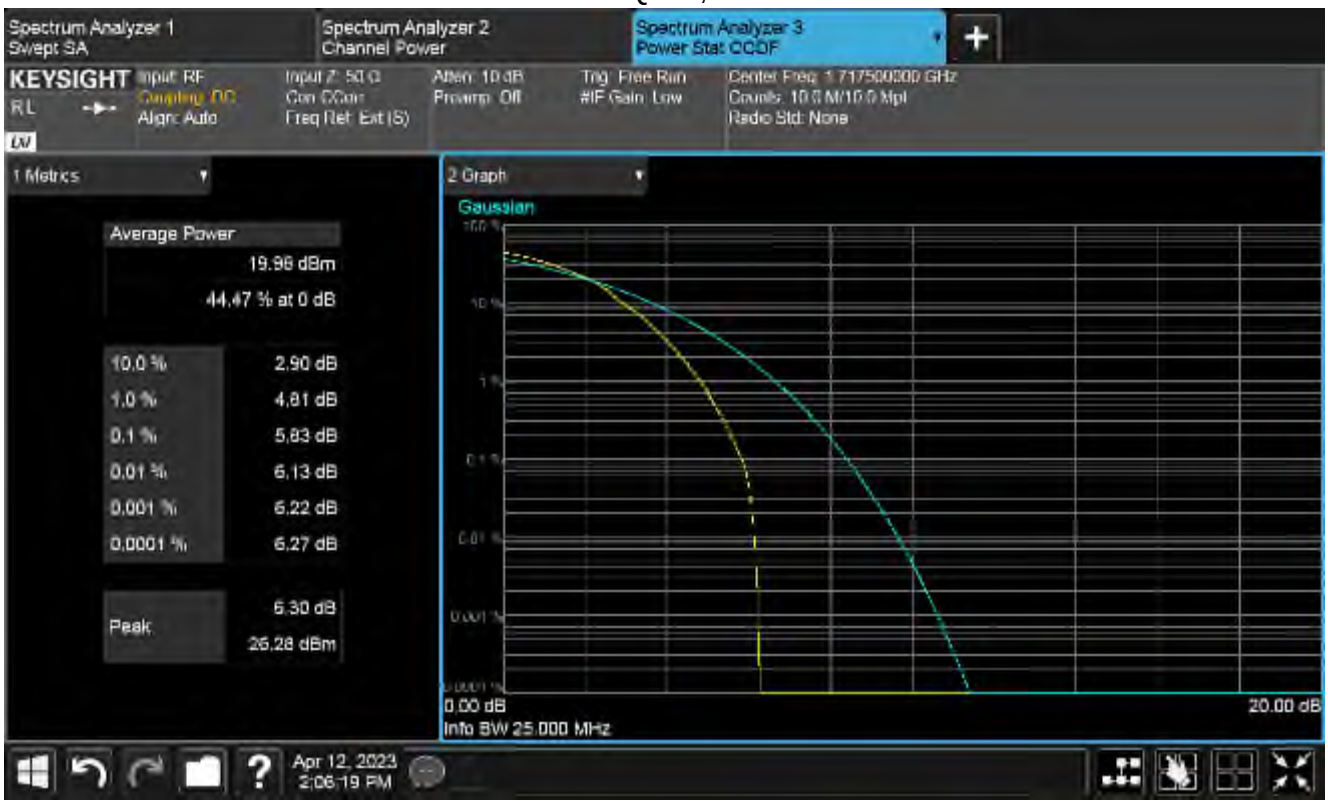
Plot of PAPR Low 1RB, low channel

Plot of PAPR High 1RB, low channel

Plot of PAPR 50%RB, low channel

Plot of PAPR 100%RB, low channel

RF Parameters: Band 1710-1780 MHz, Power 20 dBm, Channel Spacing 15 MHz, Modulation 64QAM, Low Channel



Plot of PAPR Low 1RB, low channel

Plot of PAPR High 1RB, low channel

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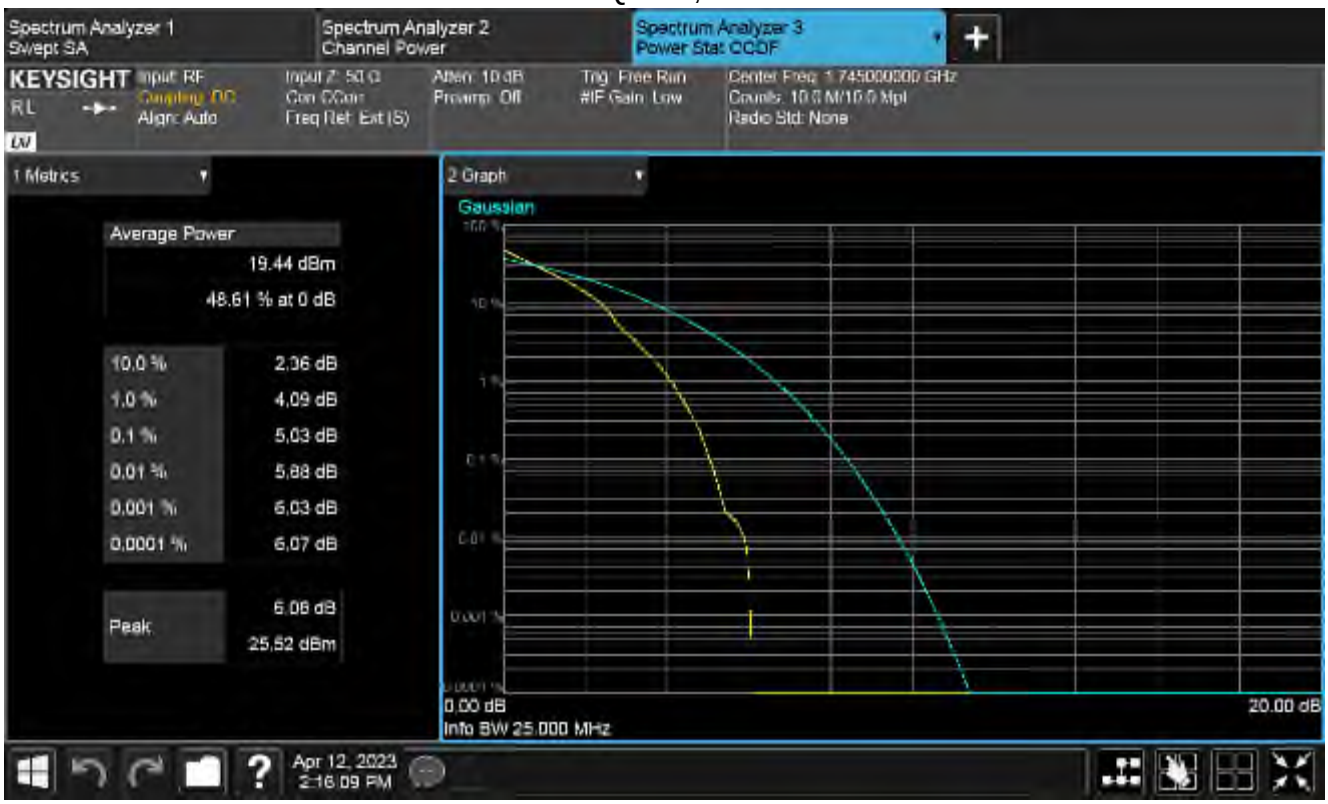
Plot of PAPR 50%RB, low channel

Plot of PAPR 100%RB, low channel

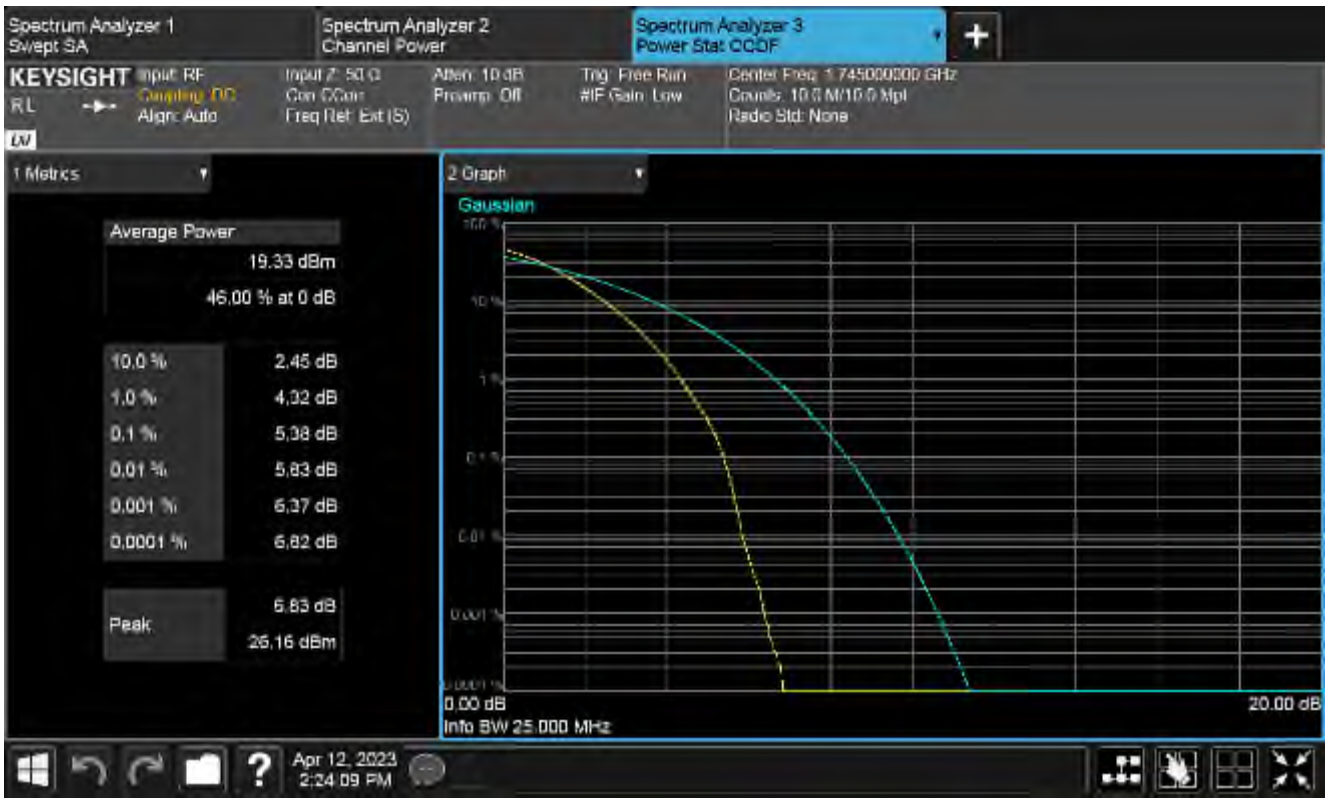
RF Parameters: Band 1710-1780 MHz, Power 20 dBm, Channel Spacing 15 MHz, Modulation QPSK, Mid Channel



Plot of PAPR Low 1RB, Mid channel

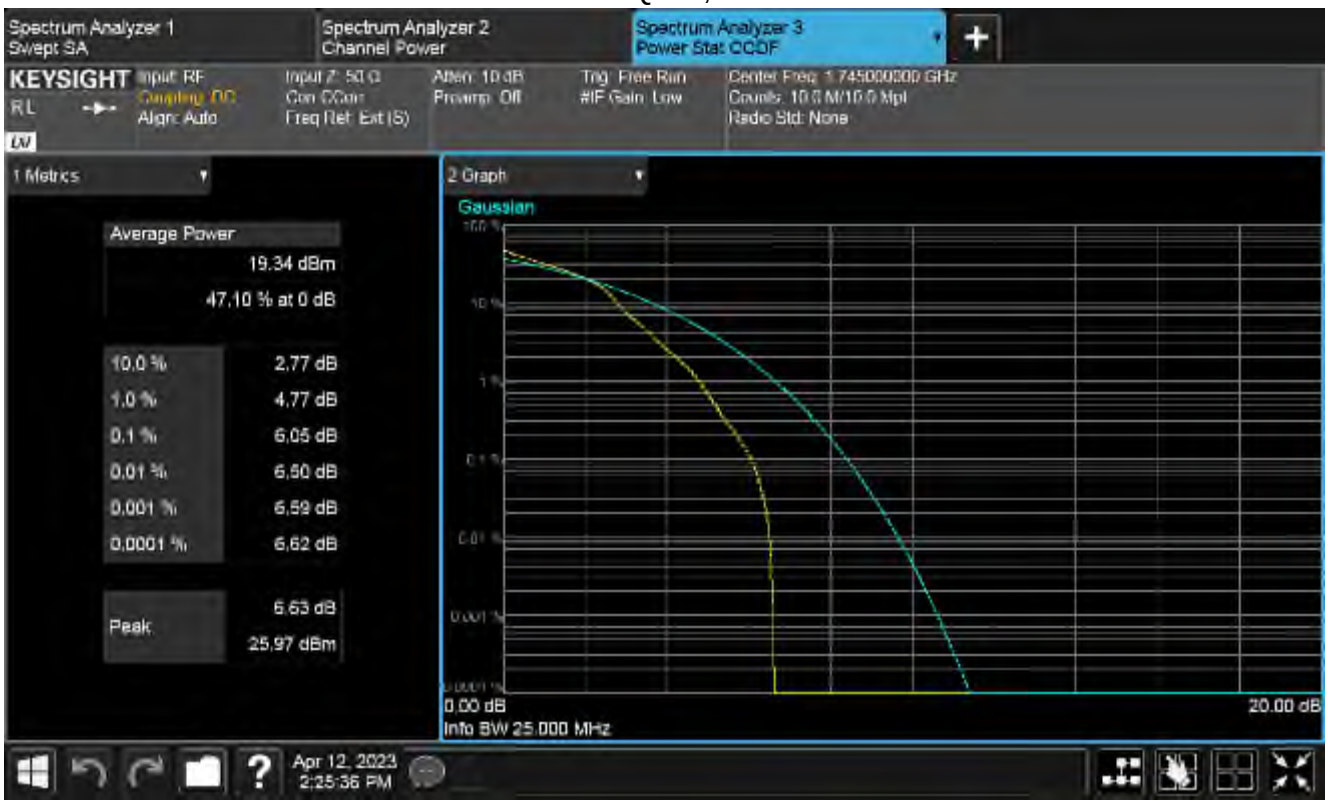
Plot of PAPR High 1RB, Mid channel

Plot of PAPR 50%RB, Mid channel



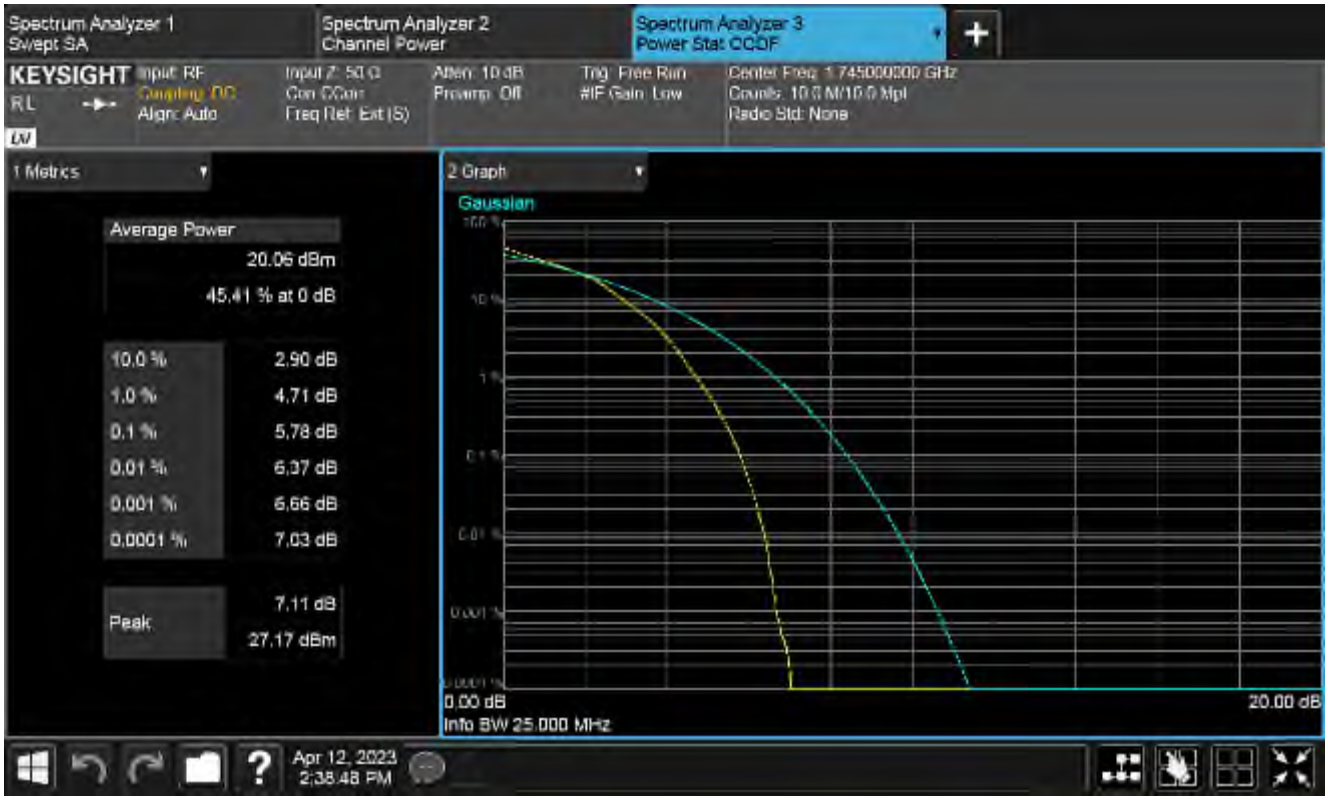
Plot of PAPR 100%RB, Mid channel

RF Parameters: Band 1710-1780 MHz, Power 20 dBm, Channel Spacing 15 MHz, Modulation 16QAM, Mid Channel



Plot of PAPR Low 1RB, Mid channel

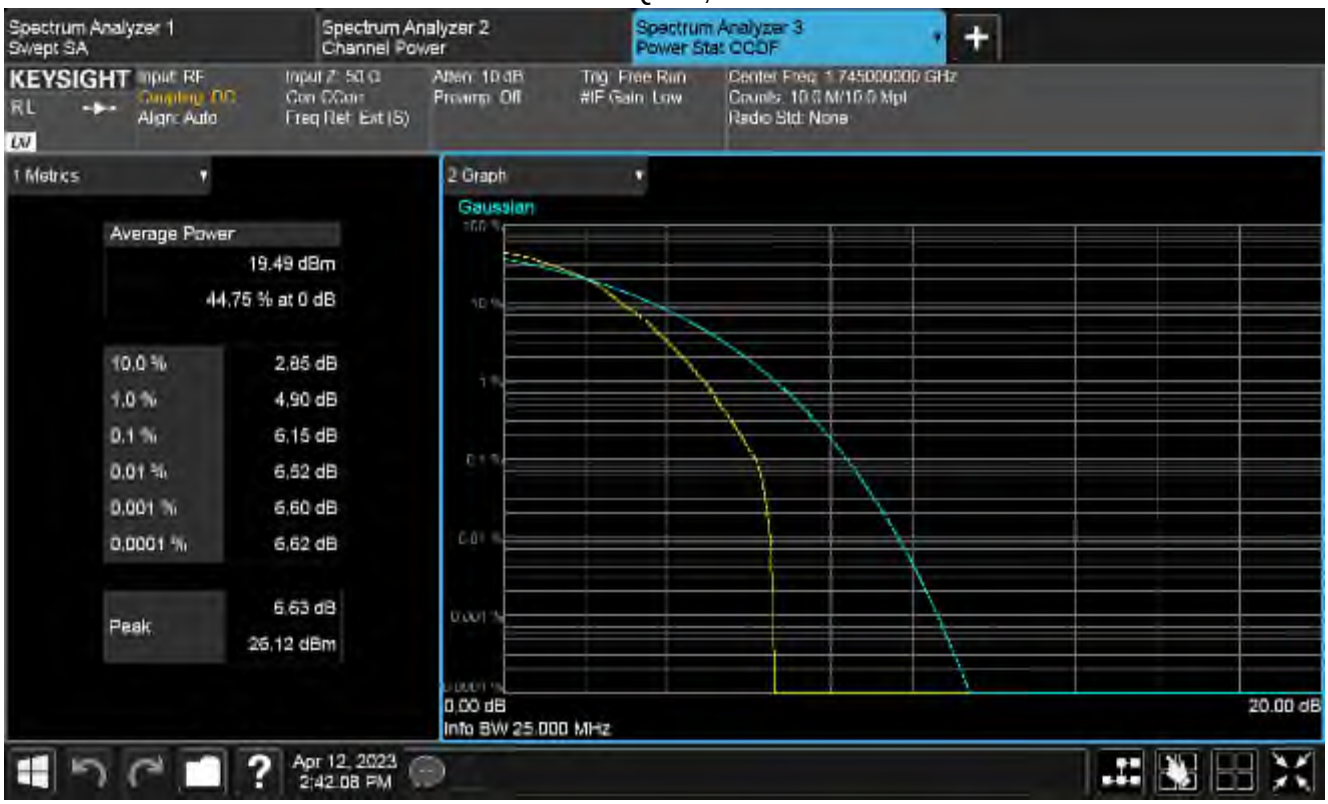
Plot of PAPR High 1RB, Mid channel



Plot of PAPR 50%RB, Mid channel

Plot of PAPR 100%RB, Mid channel

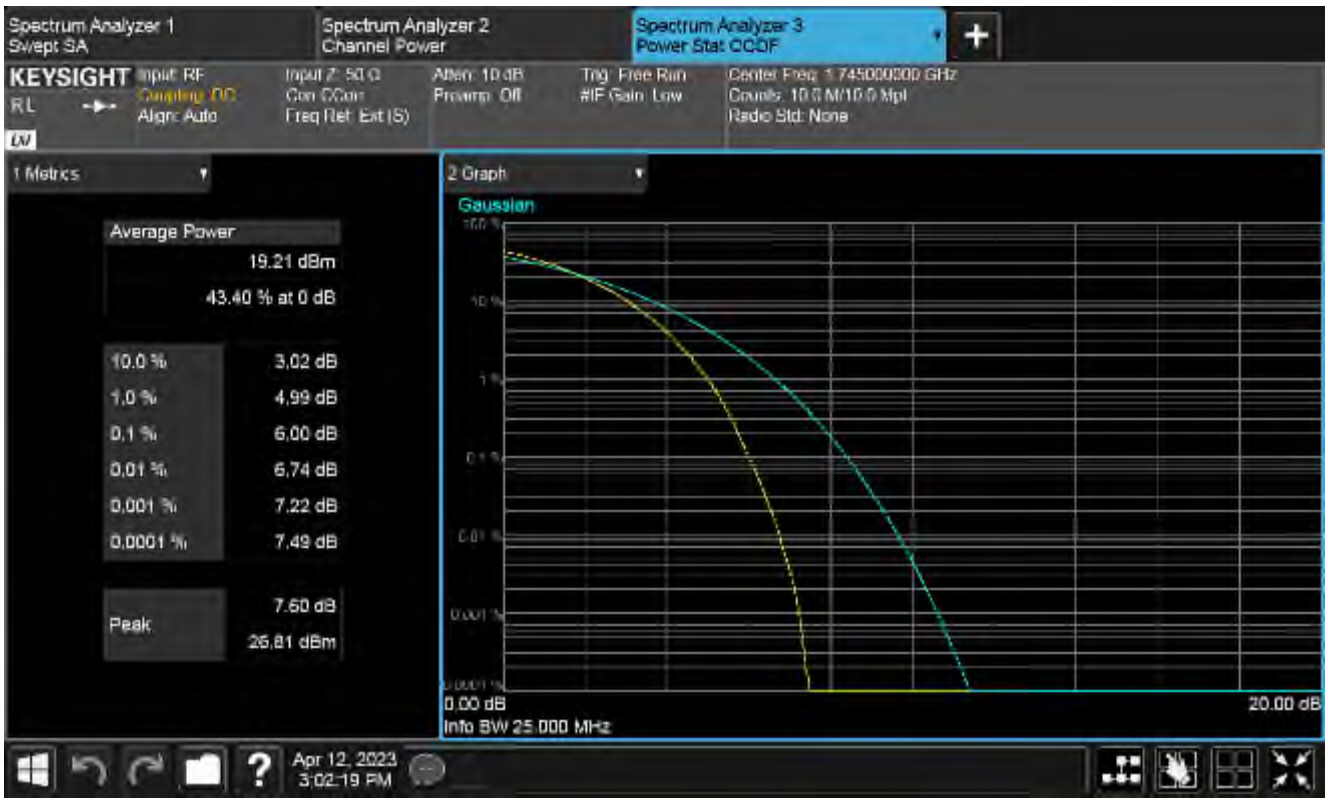
RF Parameters: Band 1710-1780 MHz, Power 20 dBm, Channel Spacing 15 MHz, Modulation 64QAM, Mid Channel



Plot of PAPR Low 1RB, Mid channel

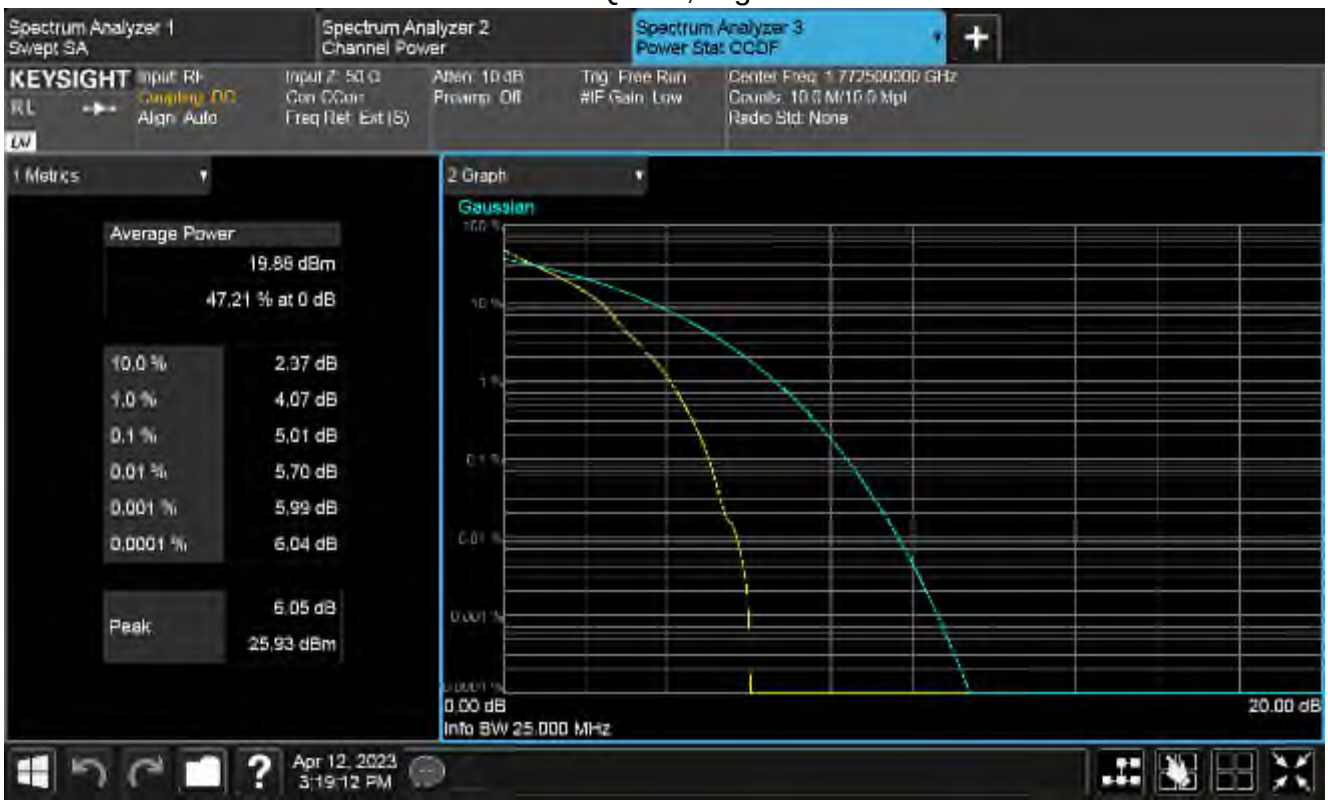
Plot of PAPR High 1RB, Mid channel

Plot of PAPR 50%RB, Mid channel

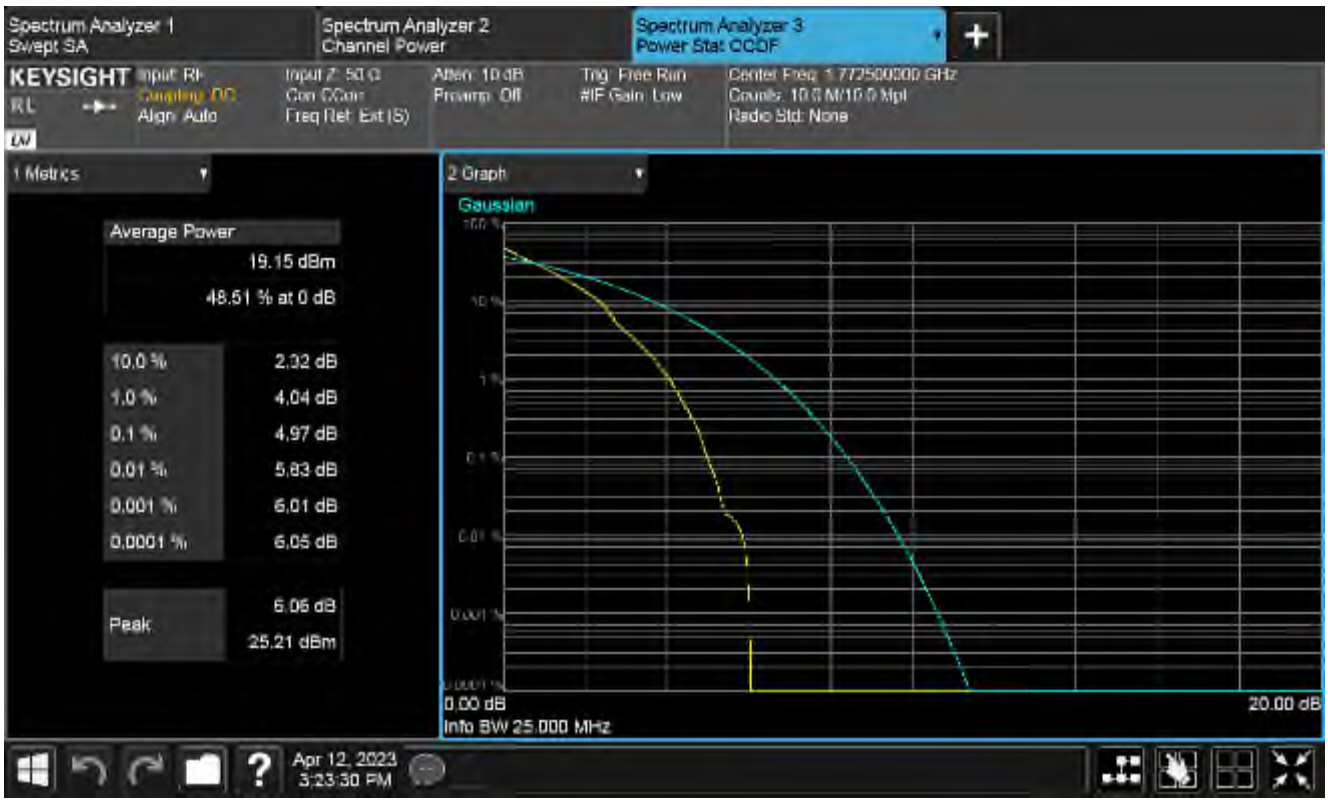


Plot of PAPR 100%RB, Mid channel

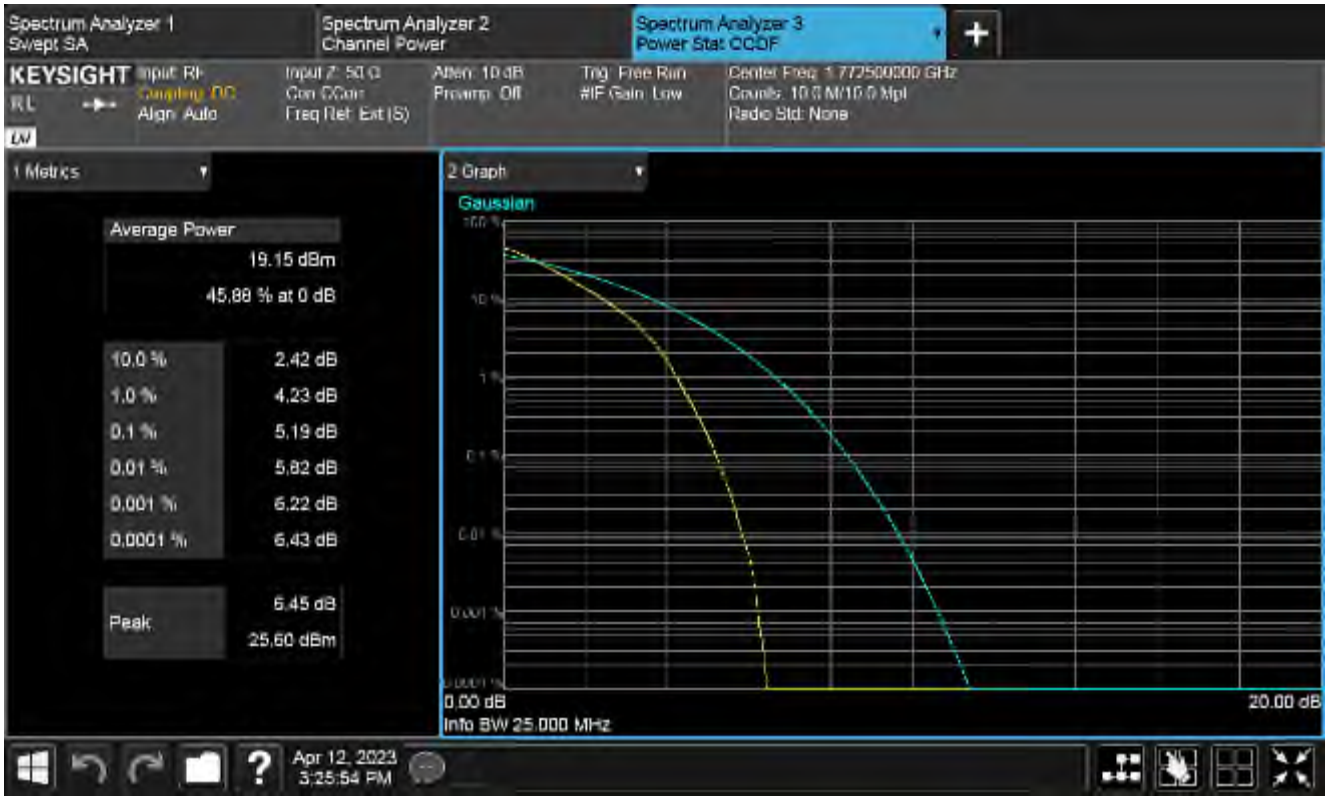
RF Parameters: Band 1710-1780 MHz, Power 20 dBm, Channel Spacing 15 MHz, Modulation QPSK, High Channel



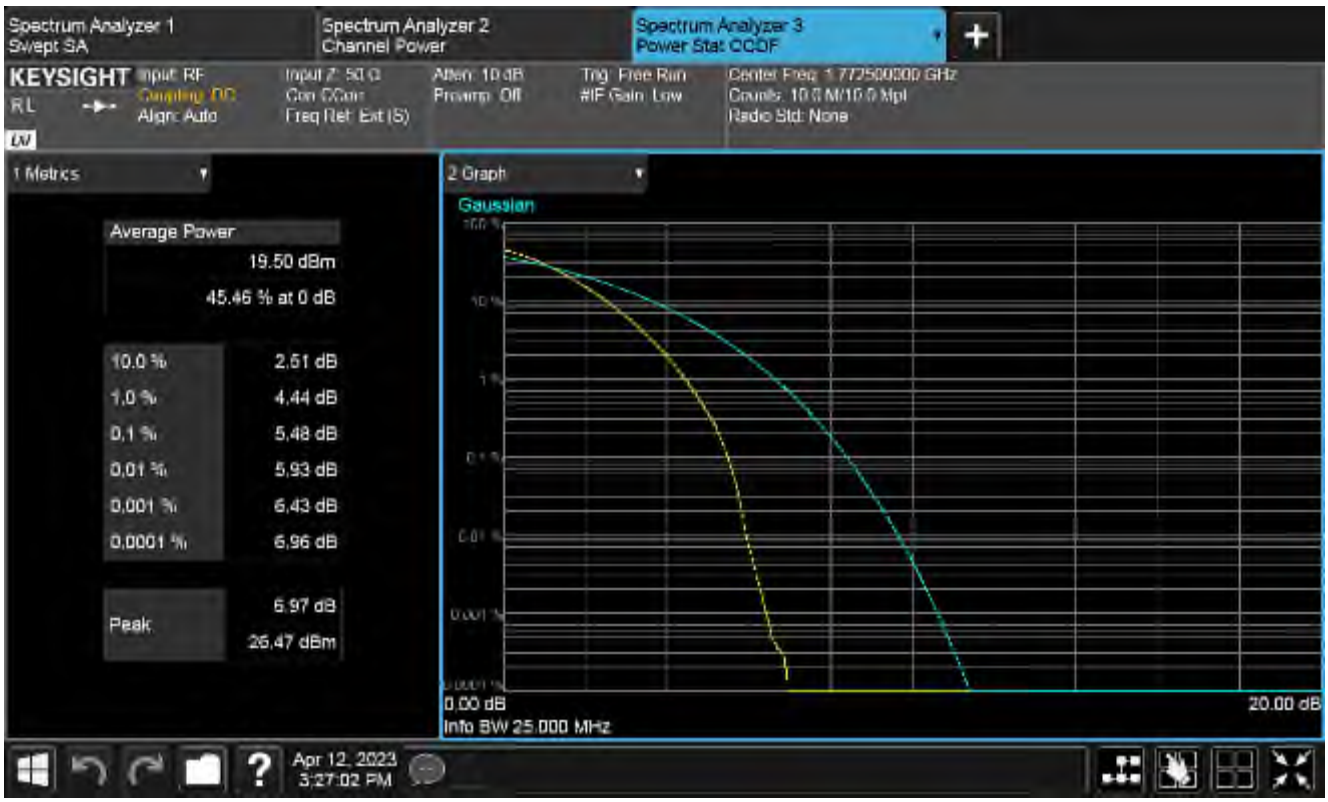
Plot of PAPR Low 1RB, High channel



Plot of PAPR High 1RB, High channel

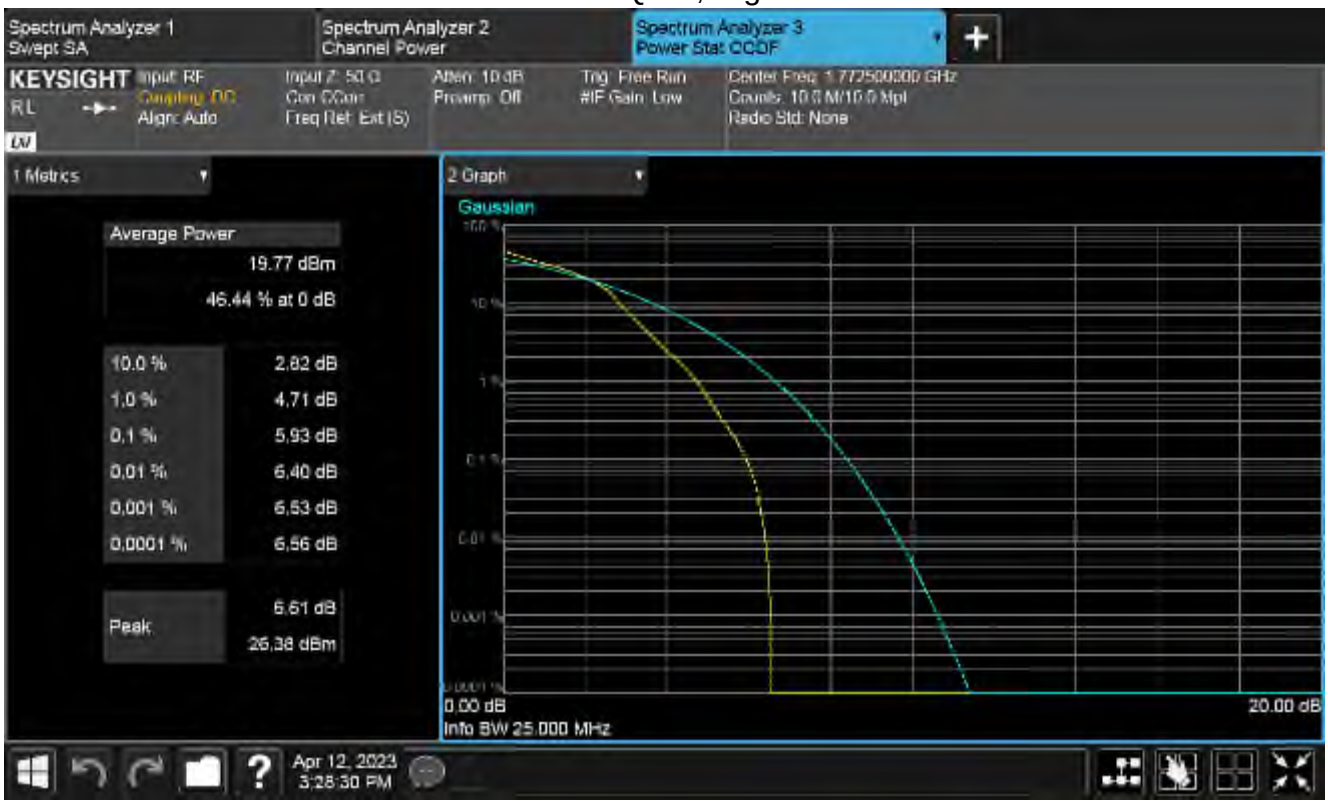


Plot of PAPR 50%RB, High channel



Plot of PAPR 100%RB, High channel

RF Parameters: Band 1710-1780 MHz, Power 20 dBm, Channel Spacing 15 MHz, Modulation 16QAM, High Channel



Plot of PAPR Low 1RB, High channel

Plot of PAPR High 1RB, High channel

Plot of PAPR 50%RB, High channel

Plot of PAPR 100%RB, High channel

RF Parameters: Band 1710-1780 MHz, Power 20 dBm, Channel Spacing 15 MHz, Modulation 64QAM, High Channel

Plot of PAPR Low 1RB, High channel

Plot of PAPR High 1RB, High channel

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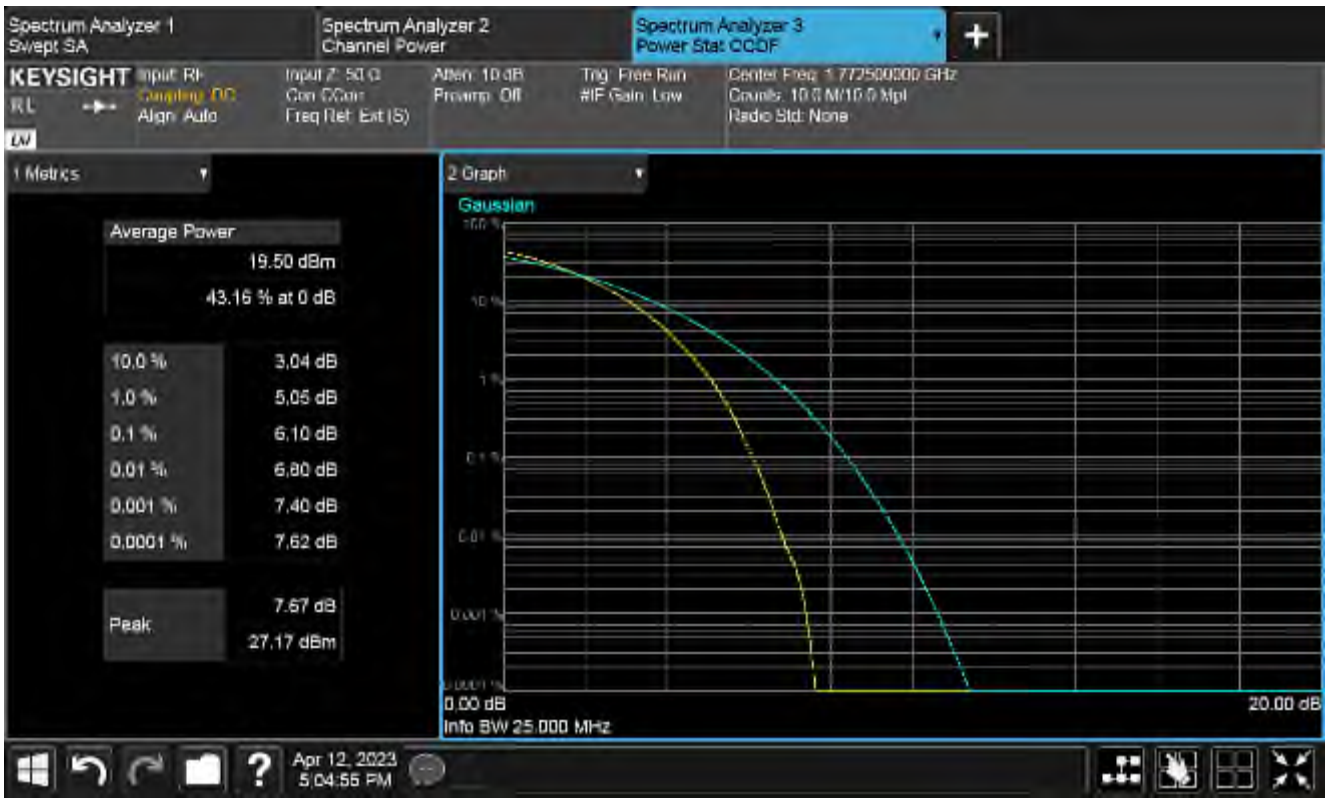
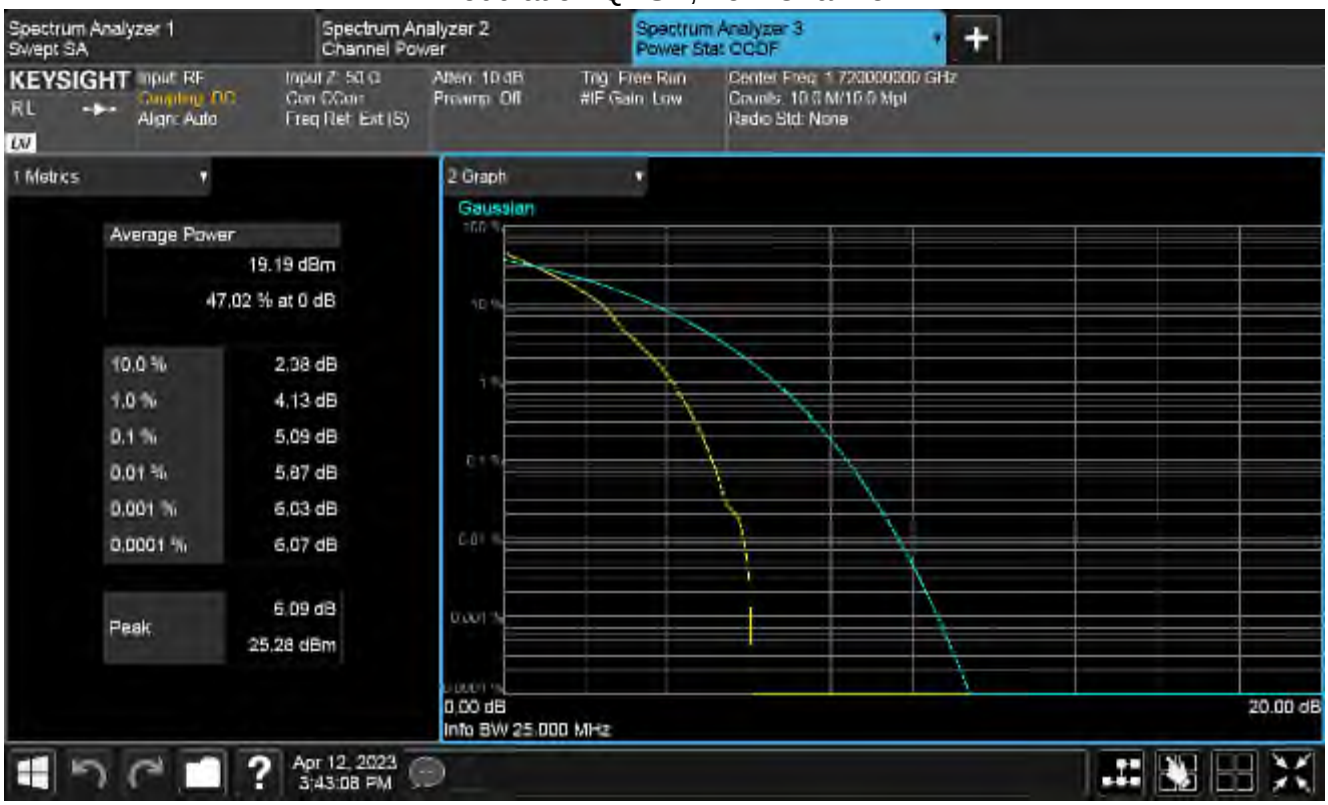
Plot of PAPR 50%RB, High channel



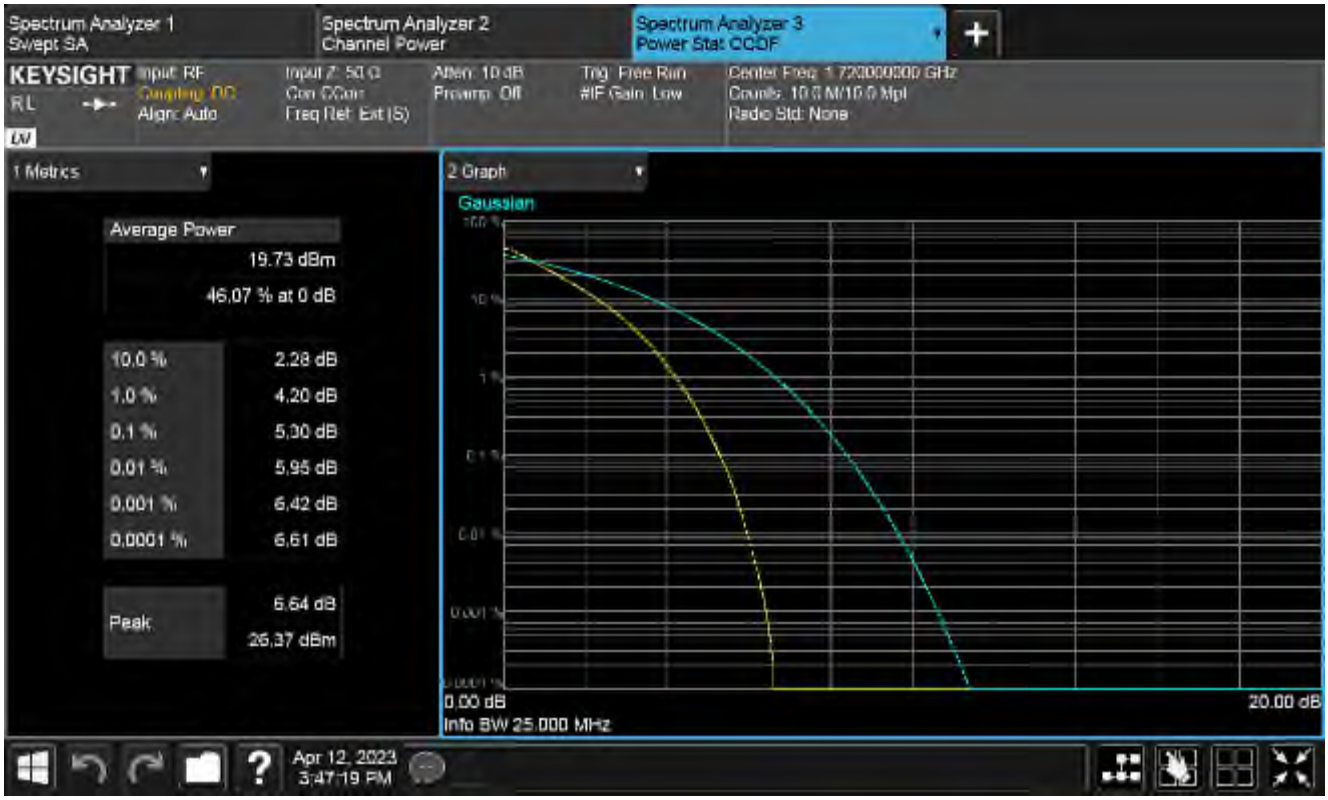
Plot of PAPR 100%RB, High channel

RF Parameters: Band 1710-1780 MHz, Power 20 dBm, Channel Spacing 20 MHz, Modulation QPSK, Low Channel

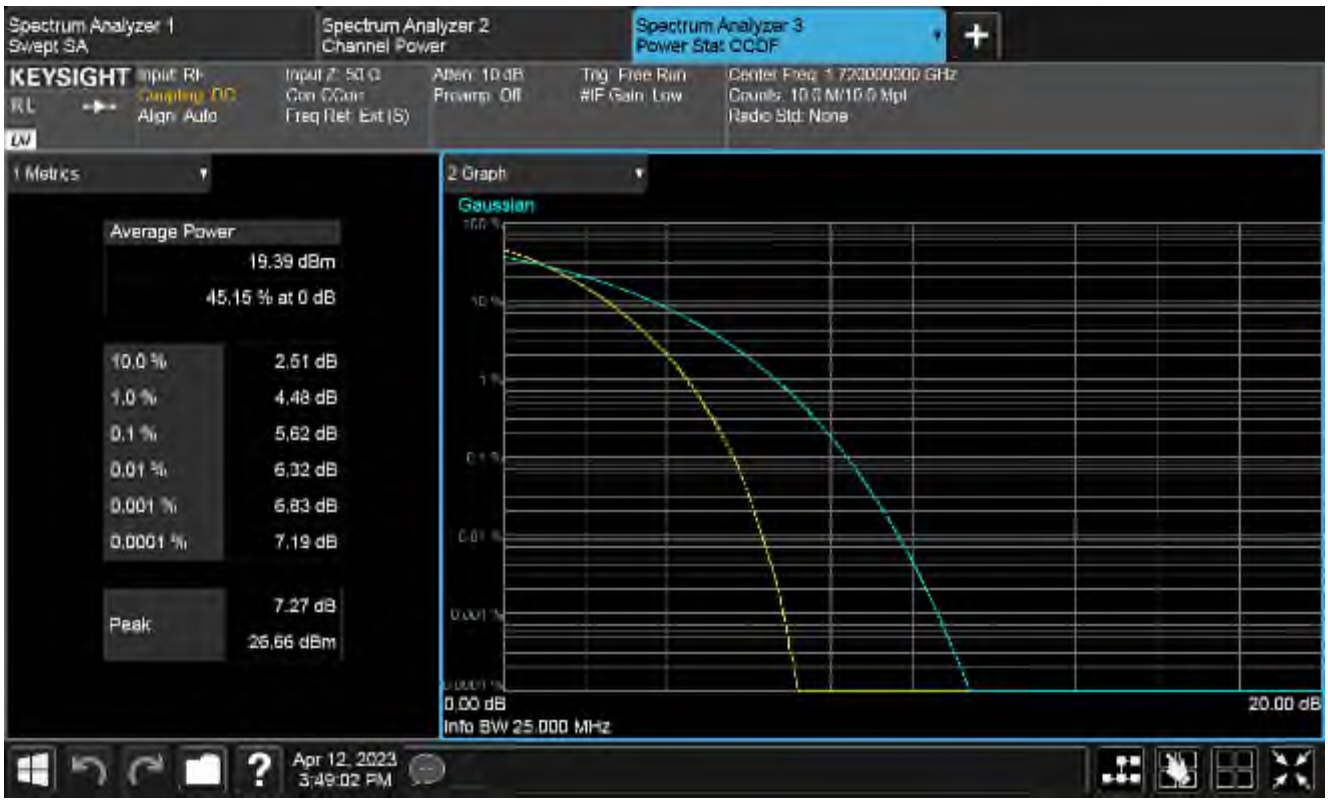


Plot of PAPR Low 1RB, Low channel

Plot of PAPR High 1RB, Low channel



Plot of PAPR 50%RB, Low channel



Plot of PAPR 100%RB, Low channel

RF Parameters: Band 1710-1780 MHz, Power 20 dBm, Channel Spacing 20 MHz, Modulation 16QAM, Low Channel

Plot of PAPR Low 1RB, Low channel

Plot of PAPR High 1RB, Low channel

File Name: Airspan Communications Ltd.14011-2 Issue 01

Plot of PAPR 50%RB, Low channel

Plot of PAPR 100%RB, Low channel

RF Parameters: Band 1710-1780 MHz, Power 20 dBm, Channel Spacing 20 MHz, Modulation 64QAM, Low Channel

Plot of PAPR Low 1RB, Low channel

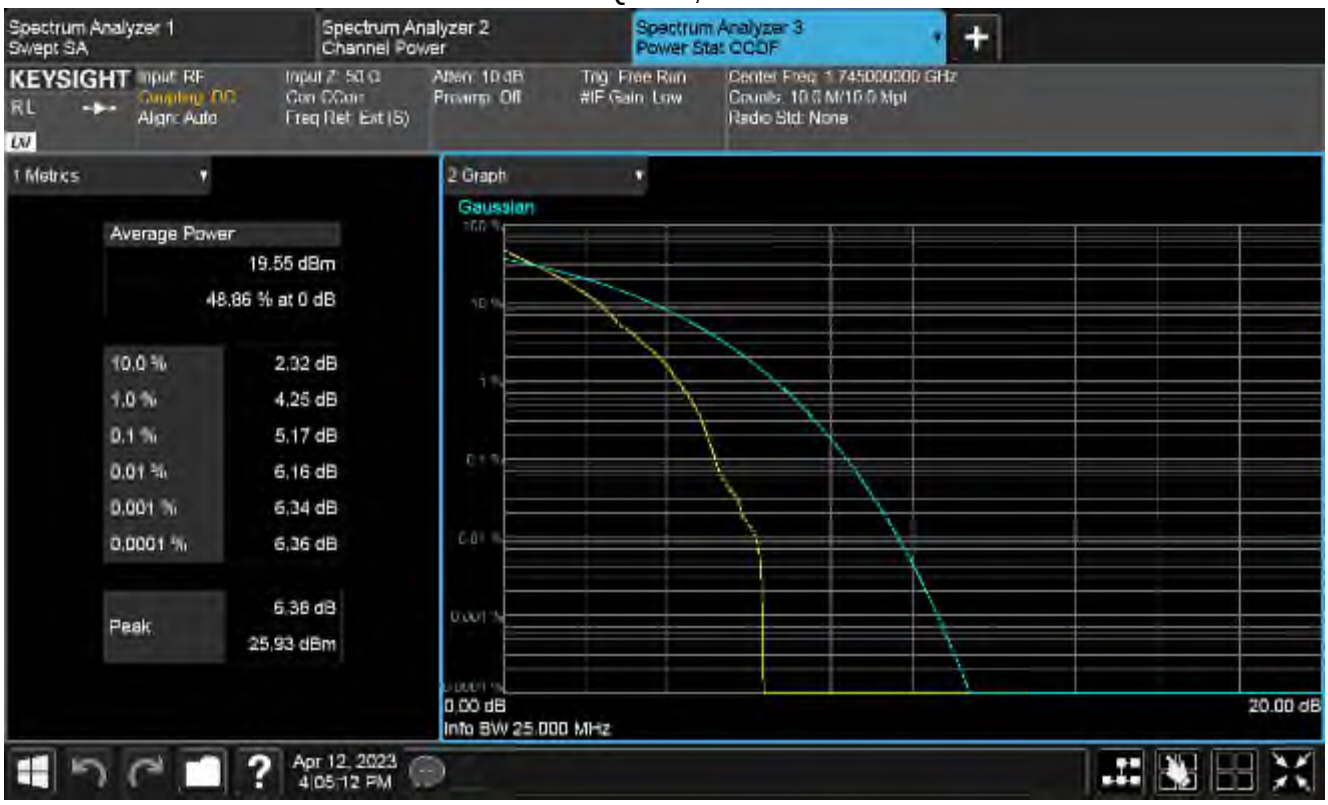
Plot of PAPR High 1RB, Low channel

File Name: Airspan Communications Ltd.14011-2 Issue 01

Plot of PAPR 50%RB, Low channel

Plot of PAPR 100%RB, Low channel

RF Parameters: Band 1710-1780 MHz, Power 20 dBm, Channel Spacing 20 MHz, Modulation QPSK, Mid Channel



Plot of PAPR Low 1RB, Mid channel

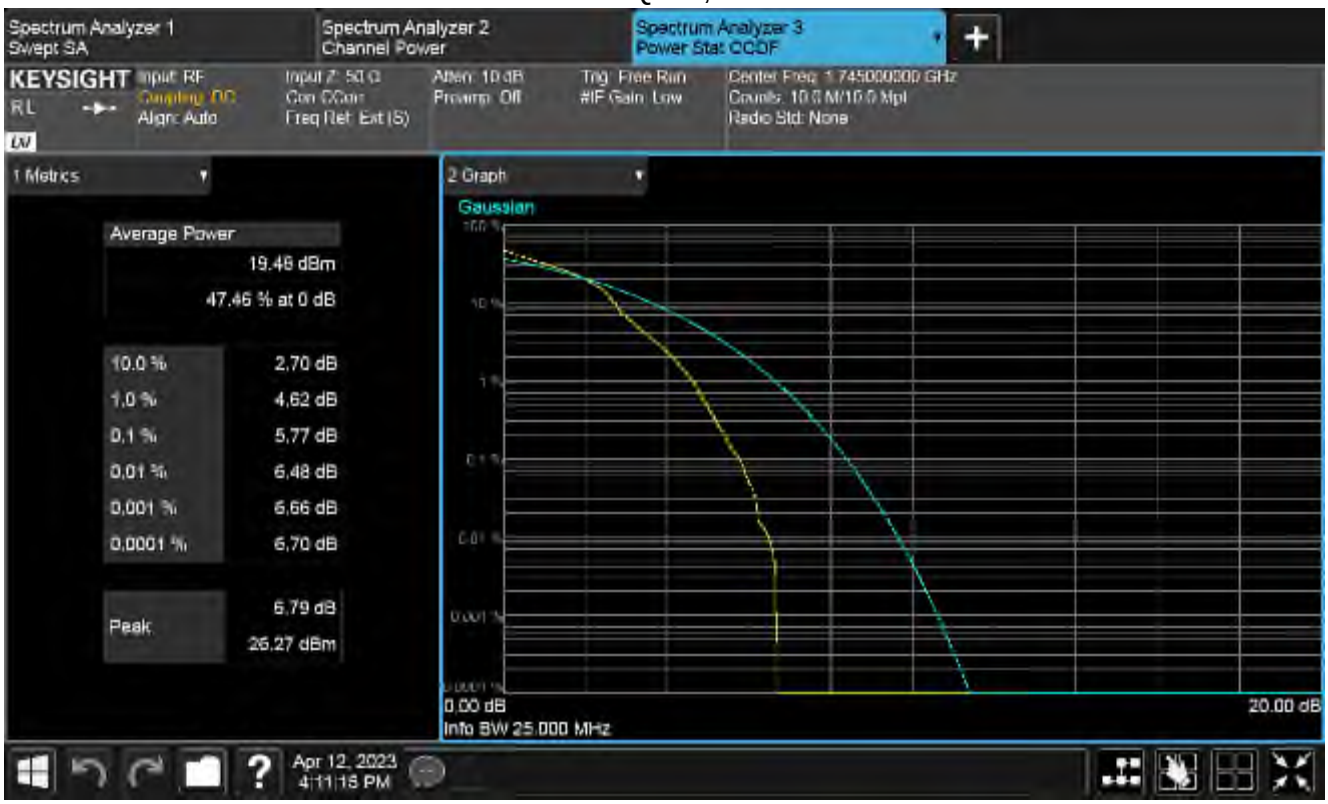
Plot of PAPR High 1RB, Mid channel

File Name: Airspan Communications Ltd.14011-2 Issue 01

Plot of PAPR 50%RB, Mid channel

Plot of PAPR 100%RB, Mid channel

RF Parameters: Band 1710-1780 MHz, Power 20 dBm, Channel Spacing 20 MHz, Modulation 16QAM, Mid Channel



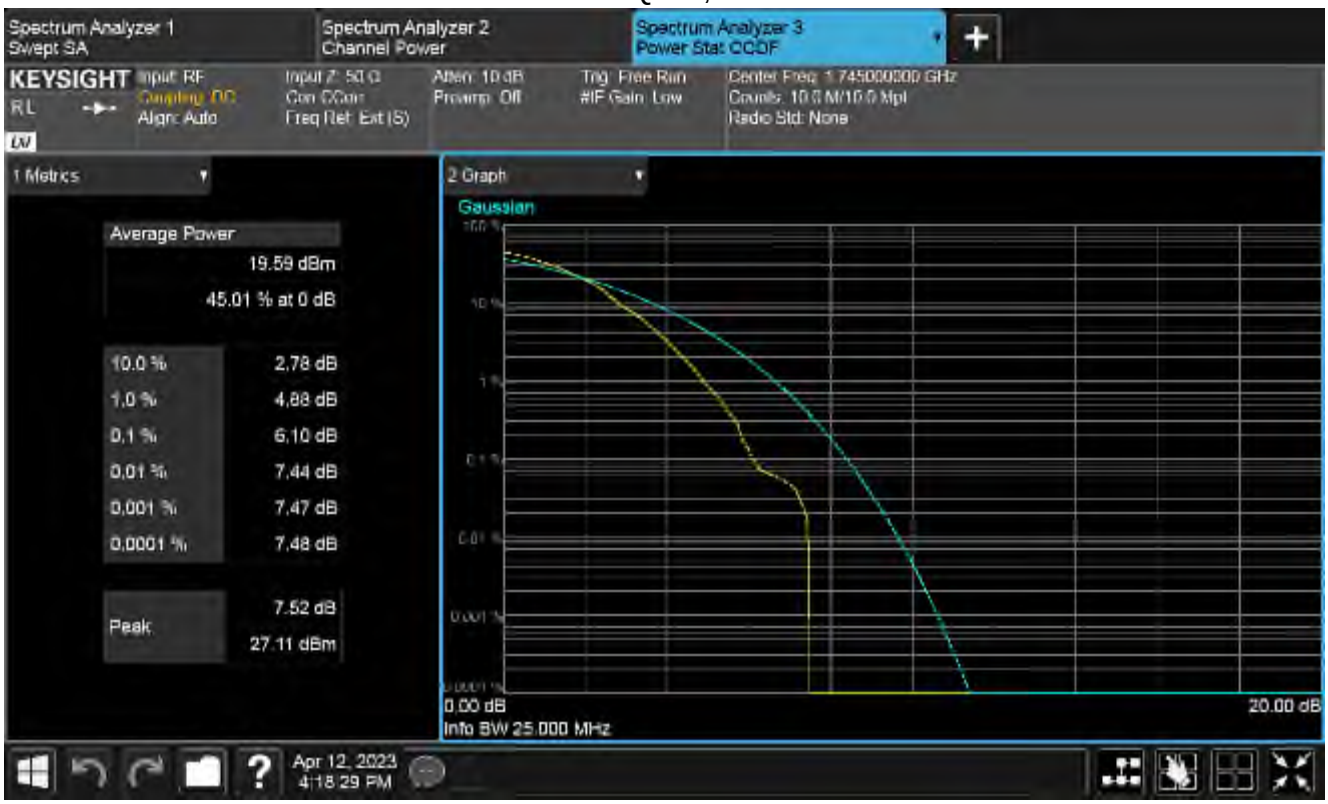
Plot of PAPR Low 1RB, Mid channel

Plot of PAPR High 1RB, Mid channel

Plot of PAPR 50%RB, Mid channel

Plot of PAPR 100%RB, Mid channel

RF Parameters: Band 1710-1780 MHz, Power 20 dBm, Channel Spacing 20 MHz, Modulation 64QAM, Mid Channel



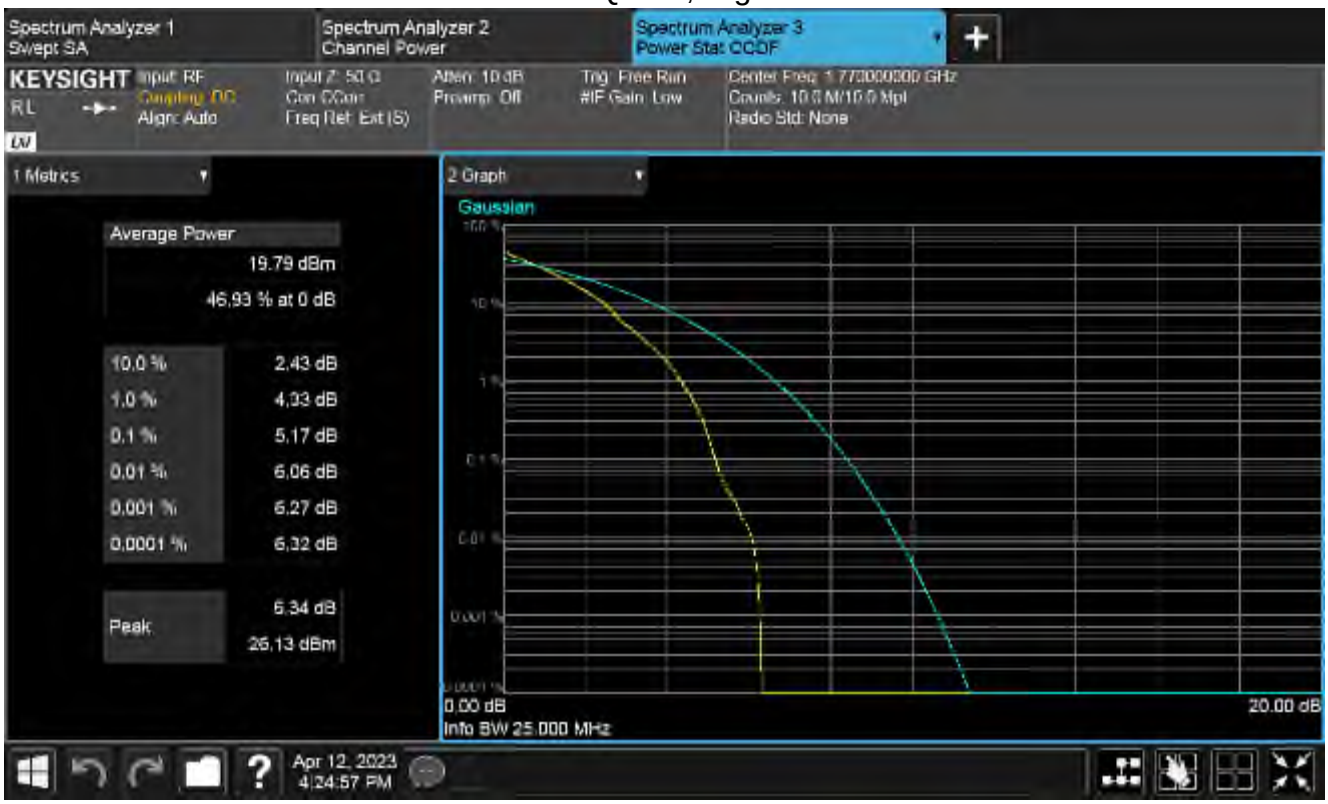
Plot of PAPR Low 1RB, Mid channel

Plot of PAPR High 1RB, Mid channel

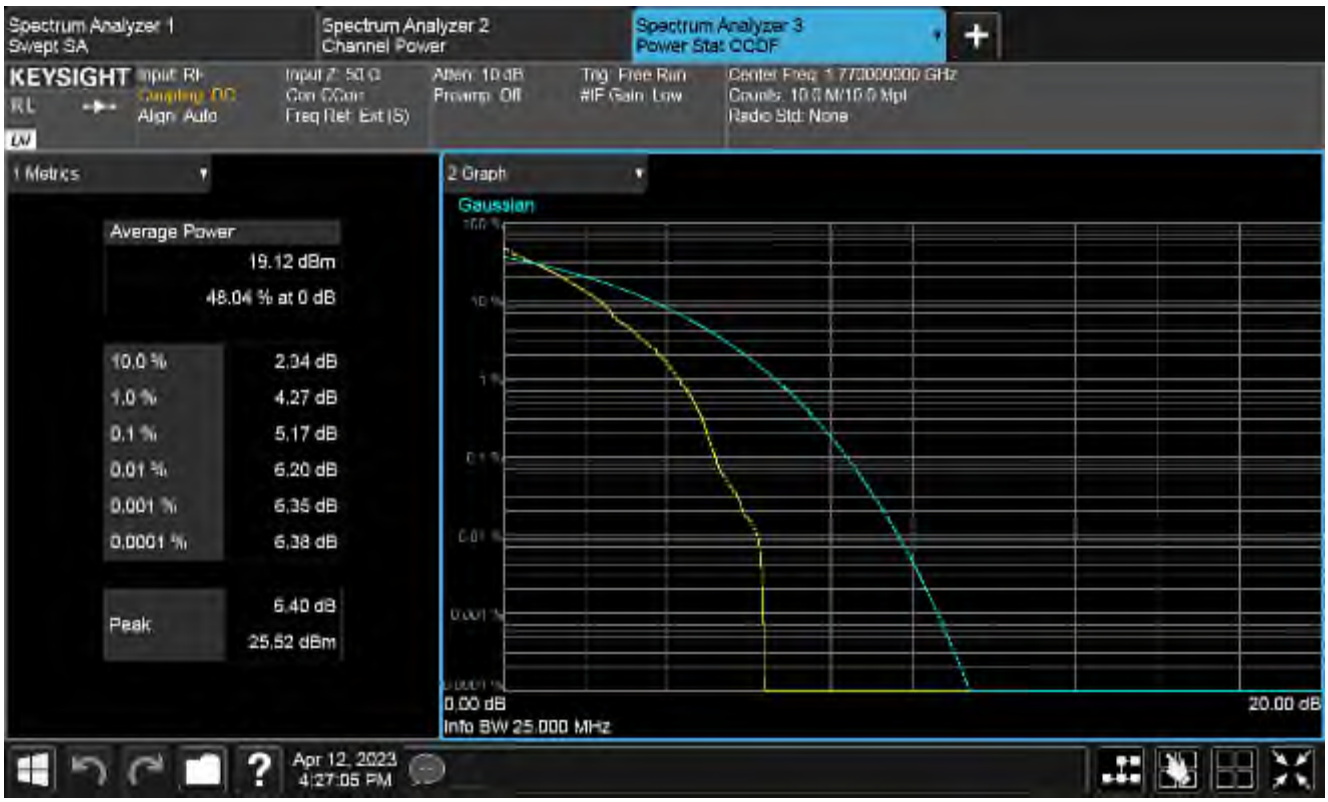
Plot of PAPR 50%RB, Mid channel

Plot of PAPR 100%RB, Mid channel

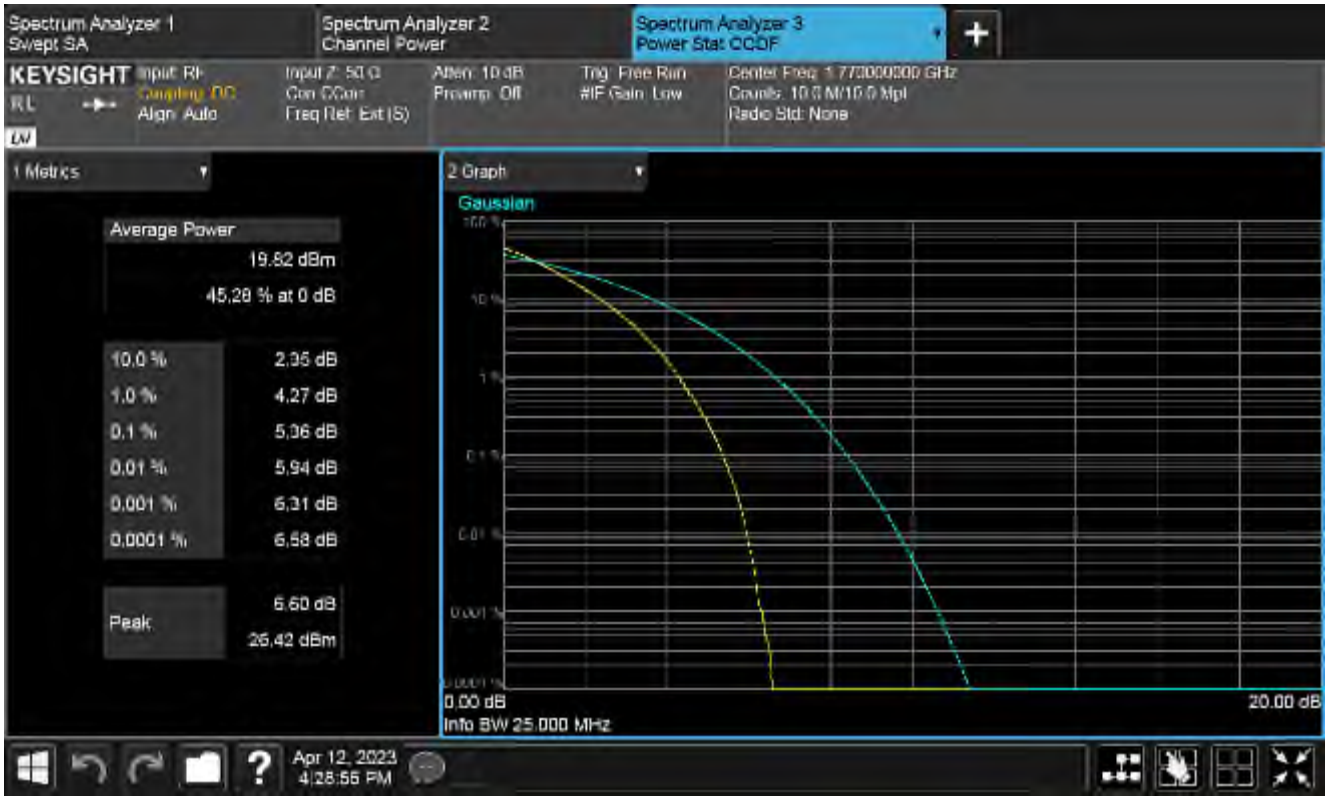
RF Parameters: Band 1710-1780 MHz, Power 20 dBm, Channel Spacing 20 MHz, Modulation QPSK, High Channel



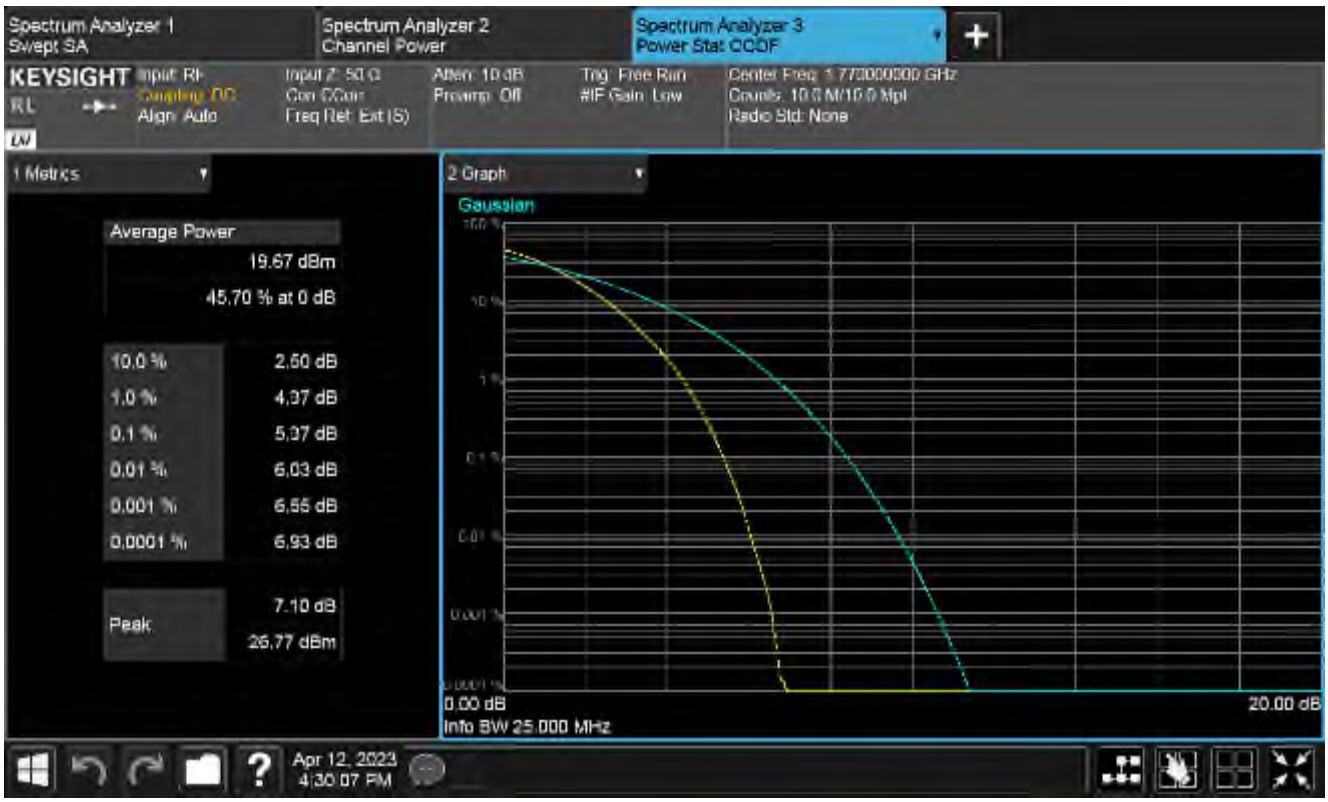
Plot of PAPR Low 1RB, High channel



Plot of PAPR High 1RB, High channel

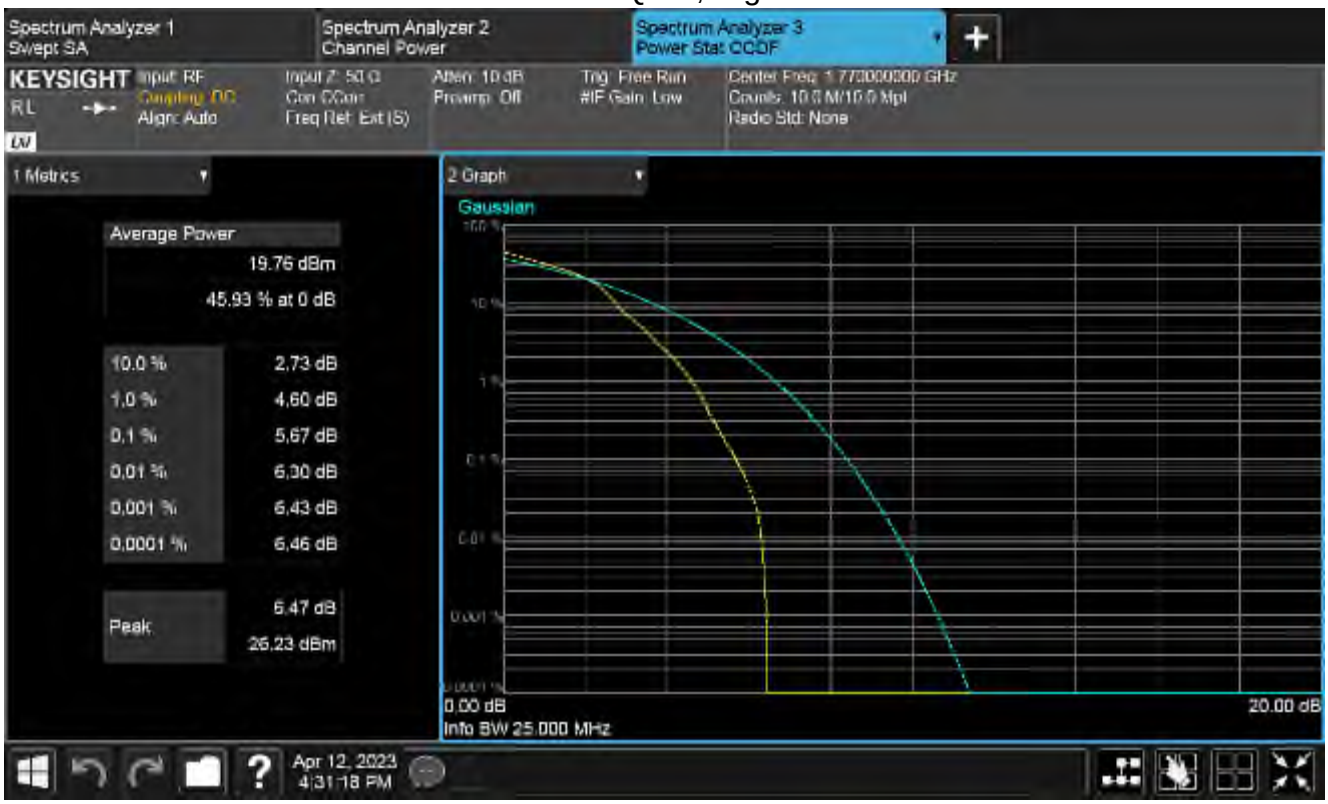


Plot of PAPR 50%RB, High channel



Plot of PAPR 100%RB, High channel

RF Parameters: Band 1710-1780 MHz, Power 20 dBm, Channel Spacing 20 MHz, Modulation 16QAM, High Channel



Plot of PAPR Low 1RB, High channel

Plot of PAPR High 1RB, High channel

Plot of PAPR 50%RB, High channel

Plot of PAPR 100%RB, High channel

RF Parameters: Band 1710-1780 MHz, Power 20 dBm, Channel Spacing 20 MHz, Modulation 64QAM, High Channel

Plot of PAPR Low 1RB, High channel

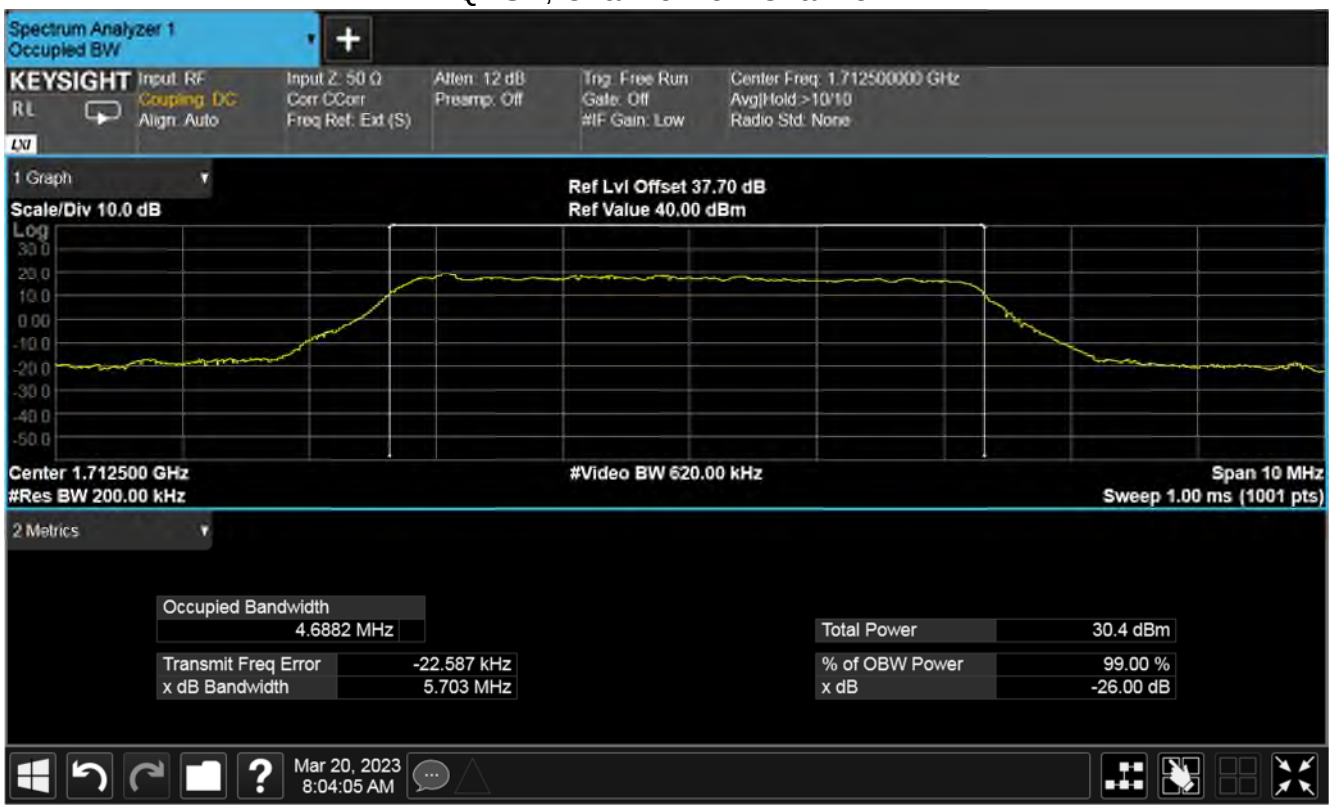
Plot of PAPR High 1RB, High channel

Plot of PAPR 50%RB, High channel

Plot of PAPR 100%RB, High channel

6.3 Occupied Bandwidth

RF Parameters: Band 1710-1780 MHz, Power 17 dBm, Channel Spacing 5 MHz, Modulation QPSK, Channel Low Channel



Plot for 99 % Bandwidth (MHz) Nominal Temp & Volts

RF Parameters: Band 1710-1780 MHz, Power 17 dBm, Channel Spacing 5 MHz, Modulation QPSK, Channel Middle Channel

Plot for 99 % Bandwidth (MHz) Nominal Temp & Volts

File Name: Airspan Communications Ltd.14011-2 Issue 01

RF Parameters: Band 1710-1780 MHz, Power 17 dBm, Channel Spacing 5 MHz, Modulation QPSK, Channel High Channel

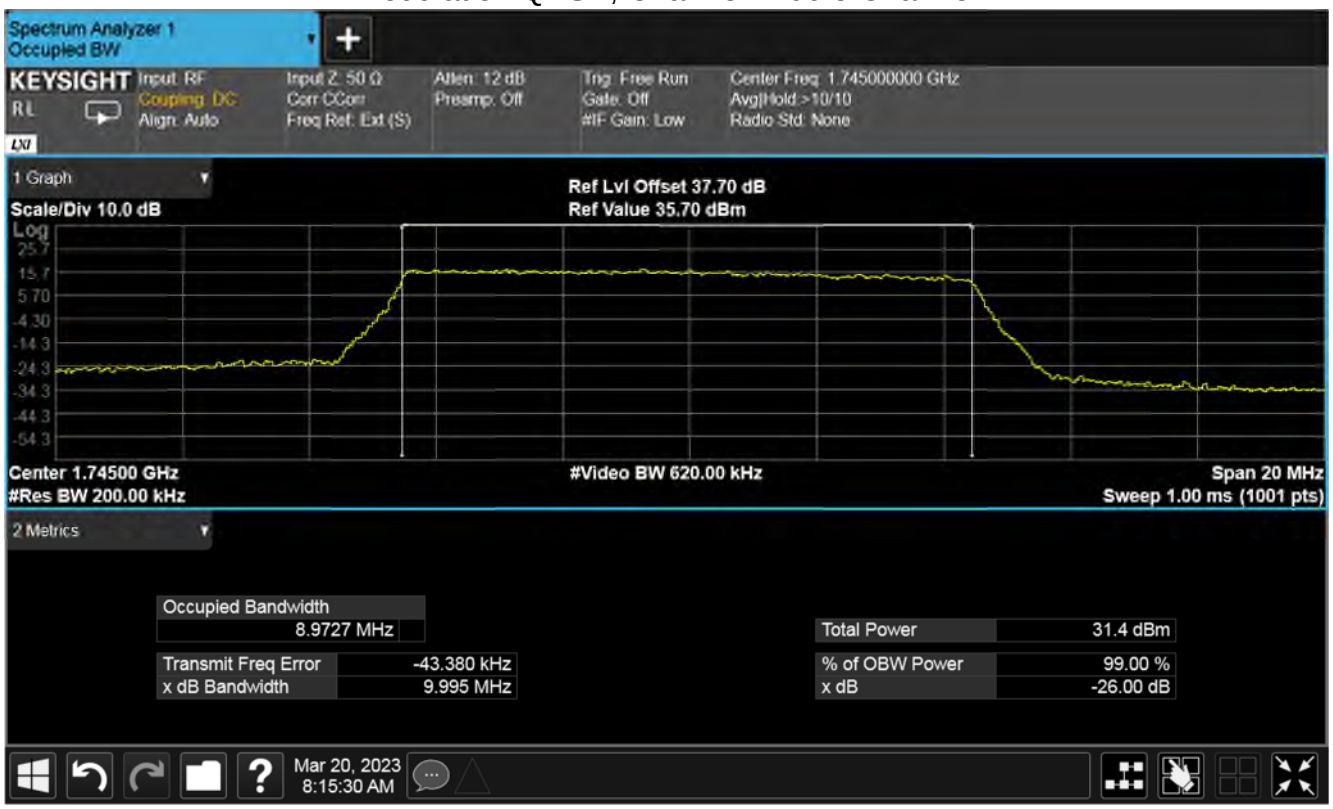
Plot for 99 % Bandwidth (MHz) Nominal Temp & Volts

RF Parameters: Band 1710-1780 MHz, Power 22 dBm, Channel Spacing 10 MHz, Modulation QPSK, Channel Low Channel

Plot for 99 % Bandwidth (MHz) Nominal Temp & Volts

File Name: Airspan Communications Ltd.14011-2 Issue 01

RF Parameters: Band 1710-1780 MHz, Power 22 dBm, Channel Spacing 10 MHz, Modulation QPSK, Channel Middle Channel



Plot for 99 % Bandwidth (MHz) Nominal Temp & Volts

RF Parameters: Band 1710-1780 MHz, Power 22 dBm, Channel Spacing 10 MHz, Modulation QPSK, Channel High Channel

Plot for 99 % Bandwidth (MHz) Nominal Temp & Volts

File Name: Airspan Communications Ltd.14011-2 Issue 01

RF Parameters: Band 1710-1780 MHz, Power 23 dBm, Channel Spacing 15 MHz, Modulation QPSK, Channel Low Channel

Plot for 99 % Bandwidth (MHz) Nominal Temp & Volts

RF Parameters: Band 1710-1780 MHz, Power 23 dBm, Channel Spacing 15 MHz, Modulation QPSK, Channel Middle Channel

Plot for 99 % Bandwidth (MHz) Nominal Temp & Volts

File Name: Airspan Communications Ltd.14011-2 Issue 01

RF Parameters: Band 1710-1780 MHz, Power 23 dBm, Channel Spacing 15 MHz, Modulation QPSK, Channel High Channel

Plot for 99 % Bandwidth (MHz) Nominal Temp & Volts

RF Parameters: Band 1710-1780 MHz, Power 23 dBm, Channel Spacing 20 MHz, Modulation QPSK, Channel Low Channel

Plot for 99 % Bandwidth (MHz) Nominal Temp & Volts

File Name: Airspan Communications Ltd.14011-2 Issue 01

RF Parameters: Band 1710-1780 MHz, Power 23 dBm, Channel Spacing 20 MHz, Modulation QPSK, Channel Middle Channel

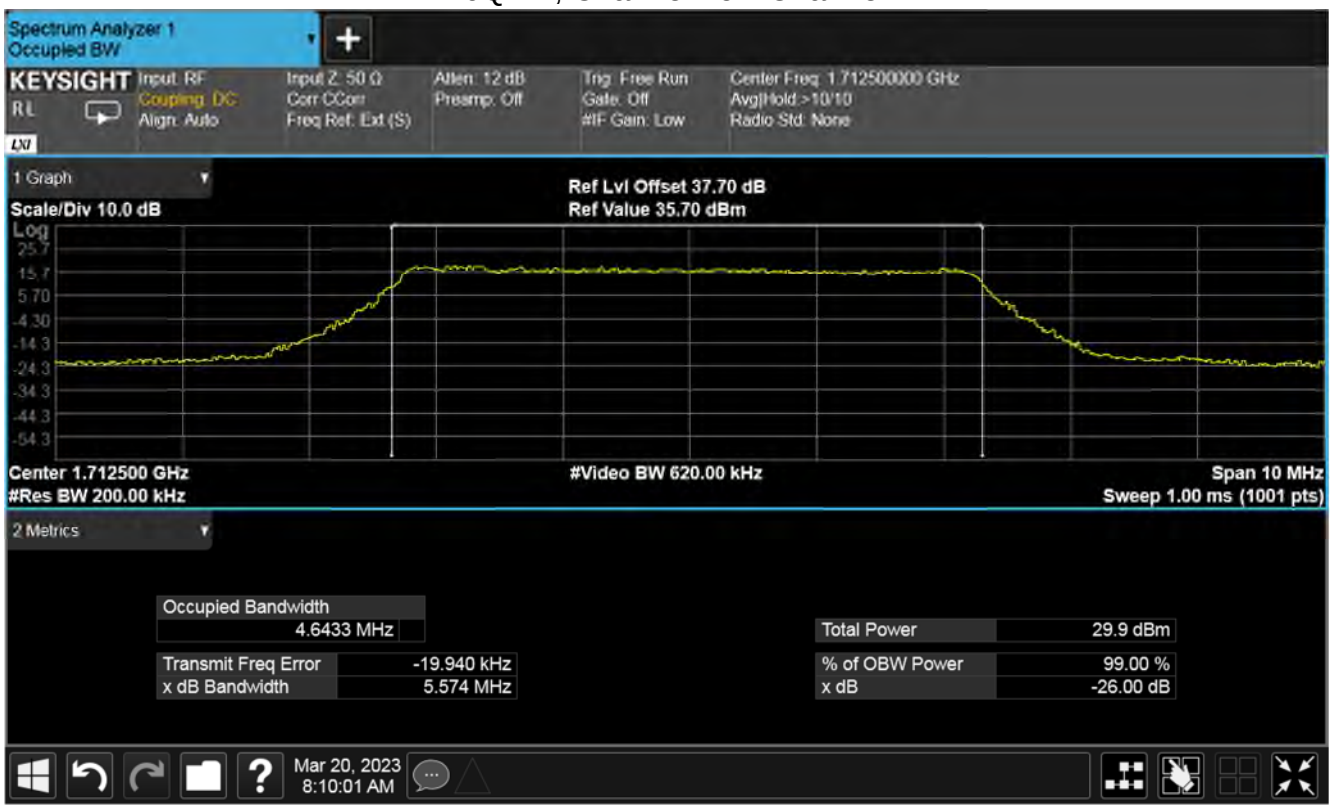
Plot for 99 % Bandwidth (MHz) Nominal Temp & Volts

RF Parameters: Band 1710-1780 MHz, Power 23 dBm, Channel Spacing 20 MHz, Modulation QPSK, Channel High Channel

Plot for 99 % Bandwidth (MHz) Nominal Temp & Volts

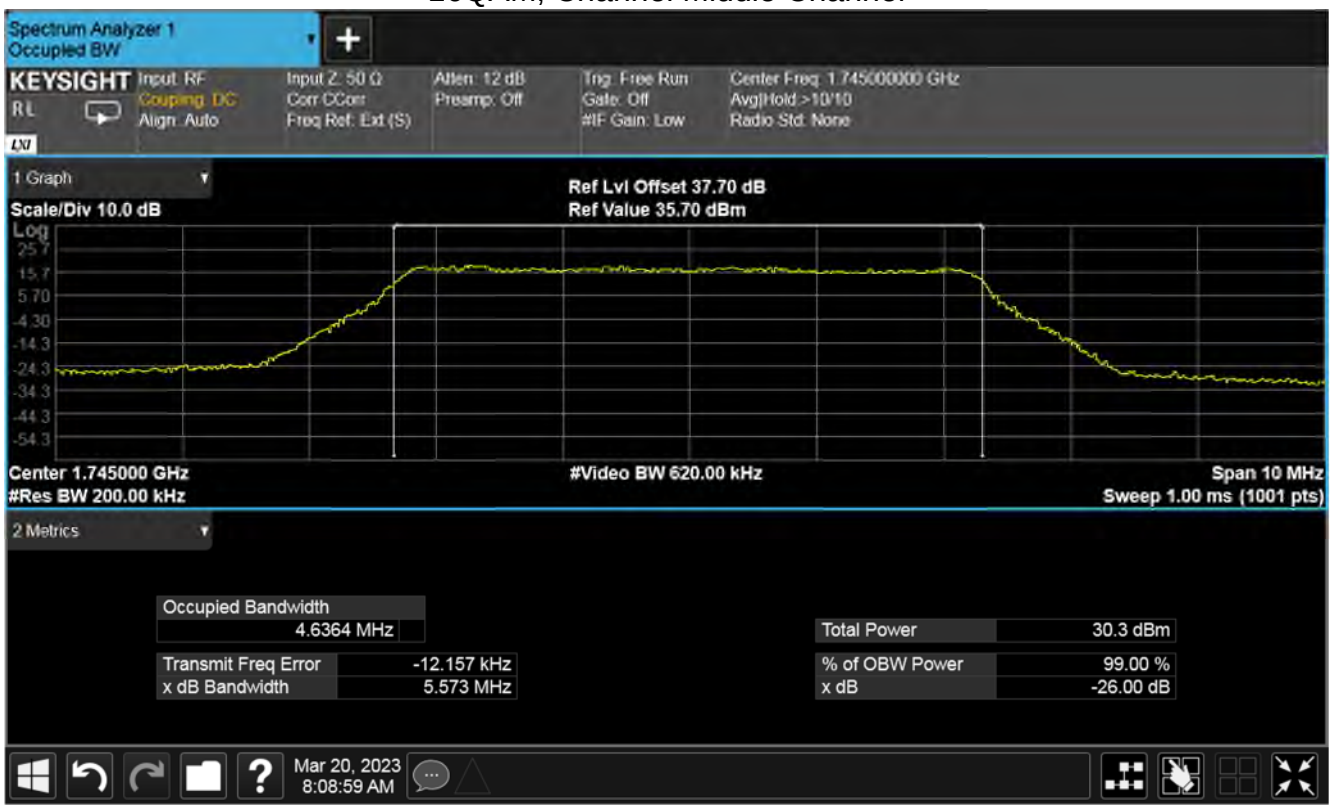
File Name: Airspan Communications Ltd.14011-2 Issue 01

RF Parameters: Band 1710-1780 MHz, Power 17 dBm, Channel Spacing 5 MHz, Modulation 16QAM, Channel Low Channel



Plot for 99 % Bandwidth (MHz) Nominal Temp & Volts

RF Parameters: Band 1710-1780 MHz, Power 17 dBm, Channel Spacing 5 MHz, Modulation 16QAM, Channel Middle Channel



Plot for 99 % Bandwidth (MHz) Nominal Temp & Volts

File Name: Airspan Communications Ltd.14011-2 Issue 01

RF Parameters: Band 1710-1780 MHz, Power 17 dBm, Channel Spacing 5 MHz, Modulation 16QAM, Channel High Channel

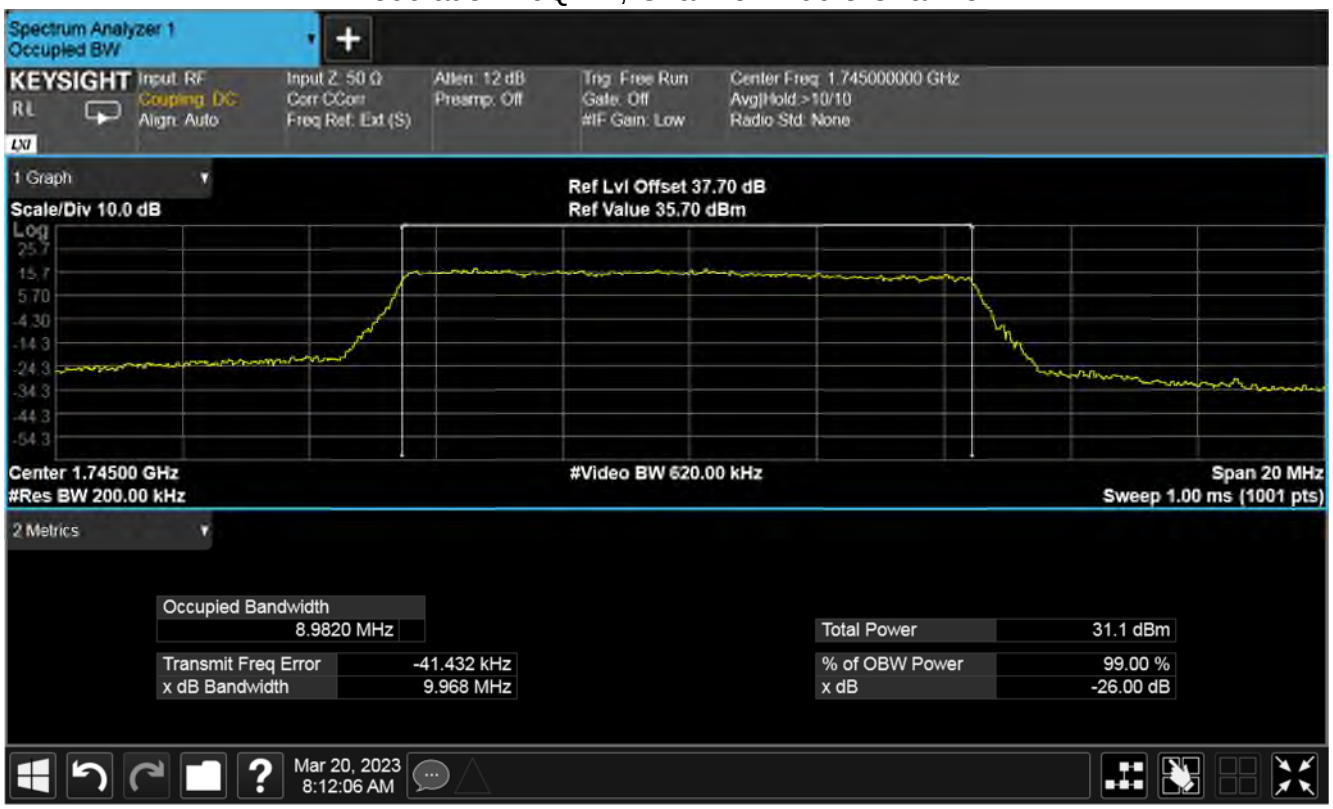
Plot for 99 % Bandwidth (MHz) Nominal Temp & Volts

RF Parameters: Band 1710-1780 MHz, Power 22 dBm, Channel Spacing 10 MHz, Modulation 16QAM, Channel Low Channel

Plot for 99 % Bandwidth (MHz) Nominal Temp & Volts

File Name: Airspan Communications Ltd.14011-2 Issue 01

RF Parameters: Band 1710-1780 MHz, Power 22 dBm, Channel Spacing 10 MHz, Modulation 16QAM, Channel Middle Channel



Plot for 99 % Bandwidth (MHz) Nominal Temp & Volts

RF Parameters: Band 1710-1780 MHz, Power 22 dBm, Channel Spacing 10 MHz, Modulation 16QAM, Channel High Channel

Plot for 99 % Bandwidth (MHz) Nominal Temp & Volts

File Name: Airspan Communications Ltd.14011-2 Issue 01

RF Parameters: Band 1710-1780 MHz, Power 23 dBm, Channel Spacing 15 MHz, Modulation 16QAM, Channel Low Channel

Plot for 99 % Bandwidth (MHz) Nominal Temp & Volts

RF Parameters: Band 1710-1780 MHz, Power 23 dBm, Channel Spacing 15 MHz, Modulation 16QAM, Channel Middle Channel

Plot for 99 % Bandwidth (MHz) Nominal Temp & Volts

File Name: Airspan Communications Ltd.14011-2 Issue 01

RF Parameters: Band 1710-1780 MHz, Power 23 dBm, Channel Spacing 15 MHz, Modulation 16QAM, Channel High Channel

Plot for 99 % Bandwidth (MHz) Nominal Temp & Volts

RF Parameters: Band 1710-1780 MHz, Power 23 dBm, Channel Spacing 20 MHz, Modulation 16QAM, Channel Low Channel

Plot for 99 % Bandwidth (MHz) Nominal Temp & Volts

File Name: Airspan Communications Ltd.14011-2 Issue 01

RF Parameters: Band 1710-1780 MHz, Power 23 dBm, Channel Spacing 20 MHz, Modulation 16QAM, Channel Middle Channel

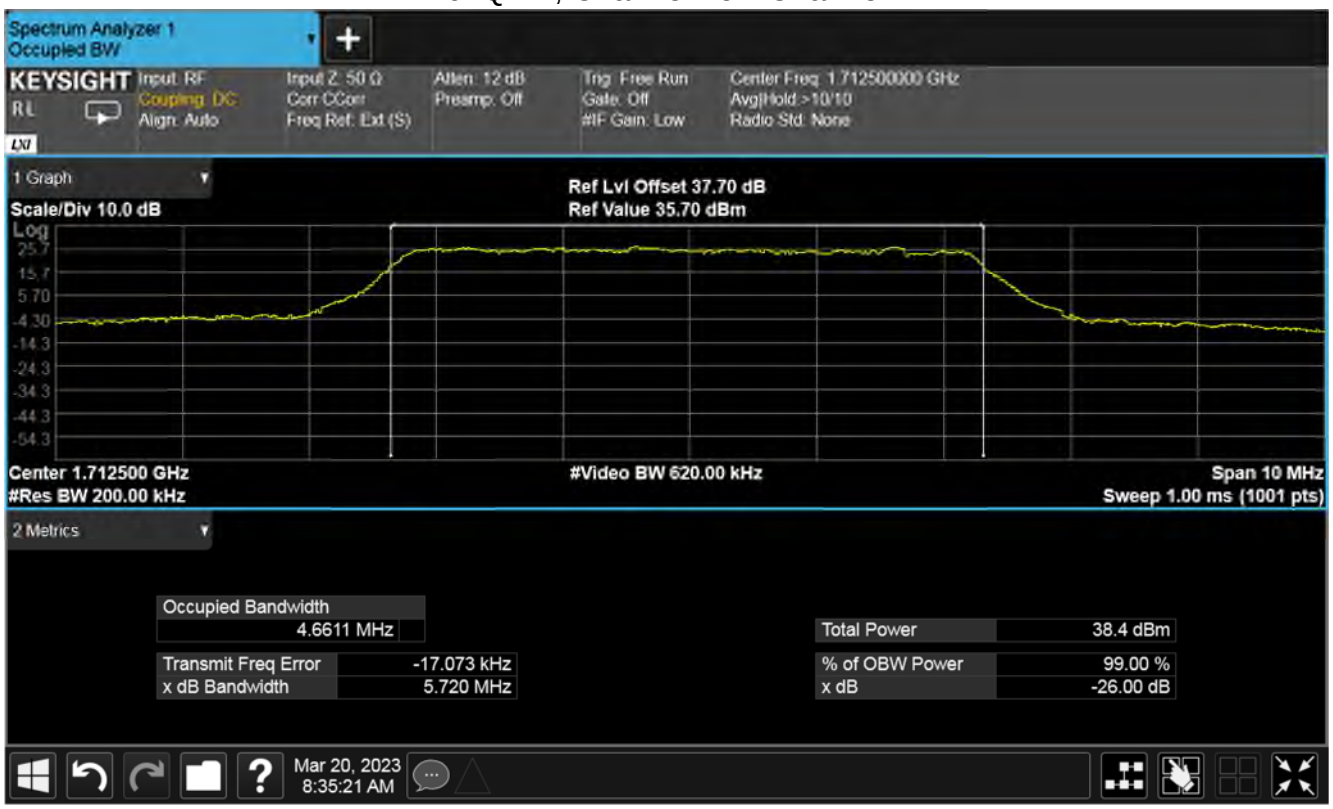
Plot for 99 % Bandwidth (MHz) Nominal Temp & Volts

RF Parameters: Band 1710-1780 MHz, Power 23 dBm, Channel Spacing 20 MHz, Modulation 16QAM, Channel High Channel

Plot for 99 % Bandwidth (MHz) Nominal Temp & Volts

File Name: Airspan Communications Ltd.14011-2 Issue 01

RF Parameters: Band 1710-1780 MHz, Power 17 dBm, Channel Spacing 5 MHz, Modulation 64QAM, Channel Low Channel



Plot for 99 % Bandwidth (MHz) Nominal Temp & Volts

RF Parameters: Band 1710-1780 MHz, Power 17 dBm, Channel Spacing 5 MHz, Modulation 64QAM, Channel Middle Channel

Plot for 99 % Bandwidth (MHz) Nominal Temp & Volts

File Name: Airspan Communications Ltd.14011-2 Issue 01

RF Parameters: Band 1710-1780 MHz, Power 17 dBm, Channel Spacing 5 MHz, Modulation 64QAM, Channel High Channel

Plot for 99 % Bandwidth (MHz) Nominal Temp & Volts

RF Parameters: Band 1710-1780 MHz, Power 22 dBm, Channel Spacing 10 MHz, Modulation 64QAM, Channel Low Channel

Plot for 99 % Bandwidth (MHz) Nominal Temp & Volts

File Name: Airspan Communications Ltd.14011-2 Issue 01

RF Parameters: Band 1710-1780 MHz, Power 22 dBm, Channel Spacing 10 MHz, Modulation 64QAM, Channel Middle Channel

Plot for 99 % Bandwidth (MHz) Nominal Temp & Volts

RF Parameters: Band 1710-1780 MHz, Power 22 dBm, Channel Spacing 10 MHz, Modulation 64QAM, Channel High Channel

Plot for 99 % Bandwidth (MHz) Nominal Temp & Volts

File Name: Airspan Communications Ltd.14011-2 Issue 01

RF Parameters: Band 1710-1780 MHz, Power 23 dBm, Channel Spacing 15 MHz, Modulation 64QAM, Channel Low Channel

Plot for 99 % Bandwidth (MHz) Nominal Temp & Volts

RF Parameters: Band 1710-1780 MHz, Power 23 dBm, Channel Spacing 15 MHz, Modulation 64QAM, Channel Middle Channel

Plot for 99 % Bandwidth (MHz) Nominal Temp & Volts

File Name: Airspan Communications Ltd.14011-2 Issue 01

RF Parameters: Band 1710-1780 MHz, Power 23 dBm, Channel Spacing 15 MHz, Modulation 64QAM, Channel High Channel

Plot for 99 % Bandwidth (MHz) Nominal Temp & Volts

RF Parameters: Band 1710-1780 MHz, Power 23 dBm, Channel Spacing 20 MHz, Modulation 64QAM, Channel Low Channel

Plot for 99 % Bandwidth (MHz) Nominal Temp & Volts

File Name: Airspan Communications Ltd.14011-2 Issue 01

RF Parameters: Band 1710-1780 MHz, Power 23 dBm, Channel Spacing 20 MHz, Modulation 64QAM, Channel Middle Channel

Plot for 99 % Bandwidth (MHz) Nominal Temp & Volts

RF Parameters: Band 1710-1780 MHz, Power 23 dBm, Channel Spacing 20 MHz, Modulation 64QAM, Channel High Channel

Plot for 99 % Bandwidth (MHz) Nominal Temp & Volts

File Name: Airspan Communications Ltd.14011-2 Issue 01

6.4 Band Edge emissions

NOTE: Only QPSK 5MHz and 10MHz plots are included in report for Band Edge to minimise report size.

RF Parameters: Band 1710-1780 MHz, Power 17 dBm, Channel Spacing 5 MHz, Modulation QPSK, Low Channel

			Lower				Upper				
			ACP		Ref Carrier		ACP		Ref Carrier		
	Offs Freq	Integ BW	dBc	dBm	dBm	Car #	dBc	dBm	dBm	Car #	Filter
A	1.000 MHz	1.000 MHz	-59.37	-41.47	17.91	1	---	---	---	---,---	-3 dB
B	2.000 MHz	1.000 MHz	-63.10	-45.19	17.91	1	---	---	---	---,---	-3 dB

Plot of Lower Band Edge 1RB Low

			Lower				Upper				
			ACP		Ref Carrier		ACP		Ref Carrier		
	Offs Freq	Integ BW	dBc	dBm	dBm	Car #	dBc	dBm	dBm	Car #	Filter
A	1.000 MHz	1.000 MHz	-43.73	-26.82	16.91	1	---	---	---	---,---	-3 dB
B	2.000 MHz	1.000 MHz	-53.26	-36.36	16.91	1	---	---	---	---,---	-3 dB

Plot of Lower Band Edge 50%RB Low

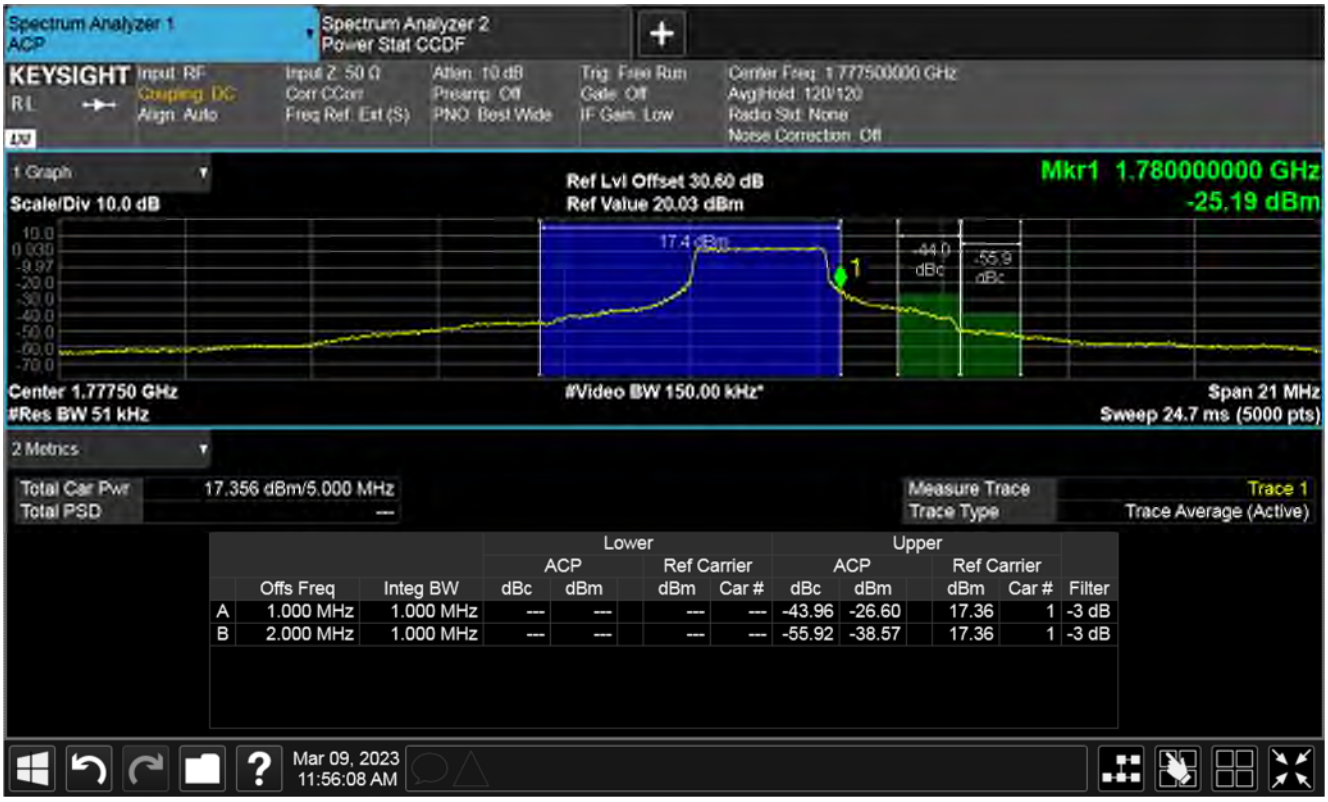
			Lower				Upper				
			ACP		Ref Carrier		ACP		Ref Carrier		
	Offs Freq	Integ BW	dBc	dBm	dBm	Car #	dBc	dBm	dBm	Car #	Filter
A	1.000 MHz	1.000 MHz	-42.31	-25.90	16.41	1	---	---	---	---,---	-3 dB
B	2.000 MHz	1.000 MHz	-43.63	-27.22	16.41	1	---	---	---	---,---	-3 dB

Plot of Lower Band Edge 100%RB Low

RF Parameters: Band 1710-1780 MHz, Power 17 dBm, Channel Spacing 5 MHz, Modulation QPSK, High Channel

			Lower ACP dBc	Lower ACP dBm	Lower Ref Carrier dBm	Lower Ref Carrier Car #	Upper ACP dBc	Upper ACP dBm	Upper Ref Carrier dBm	Upper Ref Carrier Car #	Filter
	Offs Freq	Integ BW									
A	1.000 MHz	1.000 MHz	---	---	---	---	-57.72	-40.49	17.22	1	-3 dB
B	2.000 MHz	1.000 MHz	---	---	---	---	-62.45	-45.23	17.22	1	-3 dB

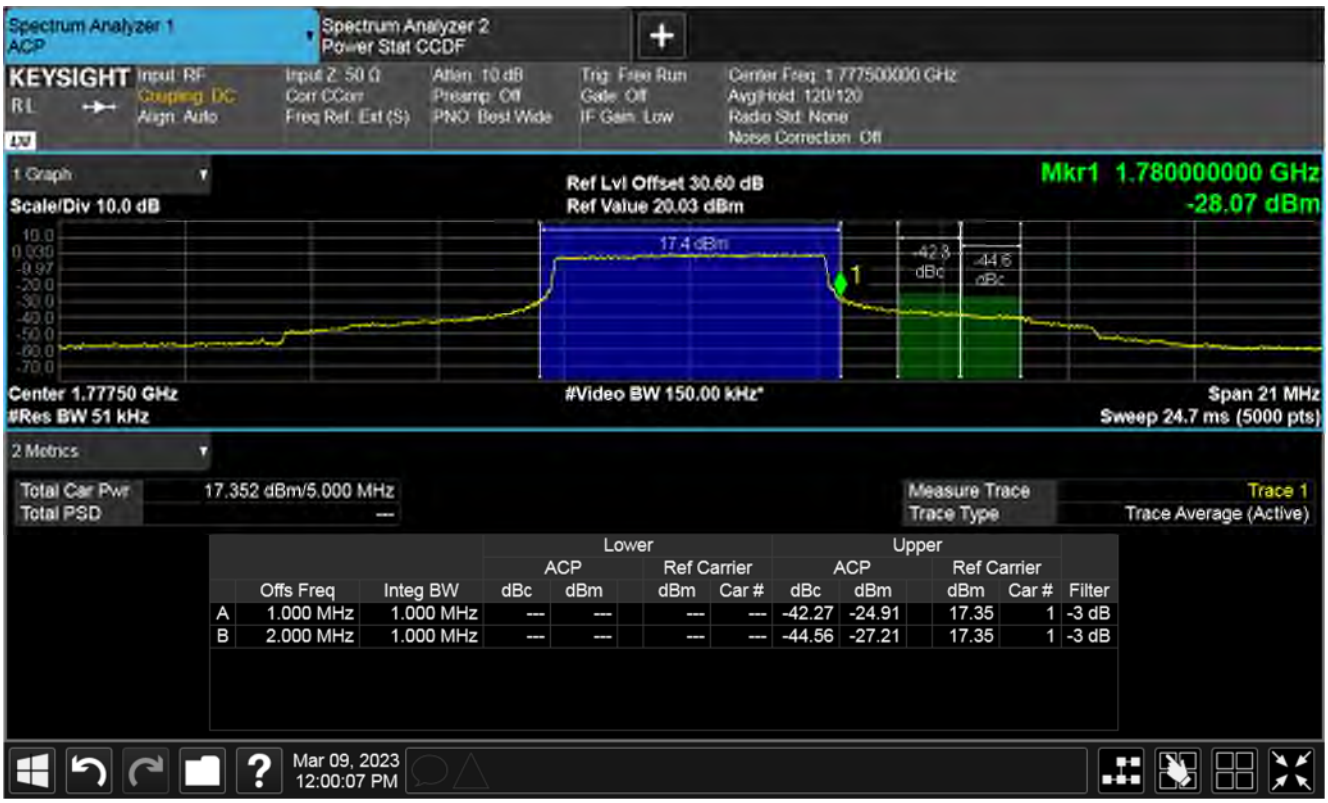
Plot of Upper Band Edge 1RB High



			Lower ACP dBc	Lower ACP dBm	Lower Ref Carrier dBm	Lower Ref Carrier Car #	Upper ACP dBc	Upper ACP dBm	Upper Ref Carrier dBm	Upper Ref Carrier Car #	Filter
	Offs Freq	Integ BW									
A	1.000 MHz	1.000 MHz	---	---	---	---	-43.96	-26.60	17.36	1	-3 dB
B	2.000 MHz	1.000 MHz	---	---	---	---	-55.92	-38.57	17.36	1	-3 dB

Plot of Upper Band Edge 50%RB High

File Name: Airspan Communications Ltd.14011-2 Issue 01



			Lower				Upper				
			ACP		Ref Carrier		ACP		Ref Carrier		
	Offs Freq	Integ BW	dBc	dBm	dBm	Car #	dBc	dBm	dBm	Car #	Filter
A	1.000 MHz	1.000 MHz	---	---	---	---	-42.27	-24.91	17.35	1	-3 dB
B	2.000 MHz	1.000 MHz	---	---	---	---	-44.56	-27.21	17.35	1	-3 dB

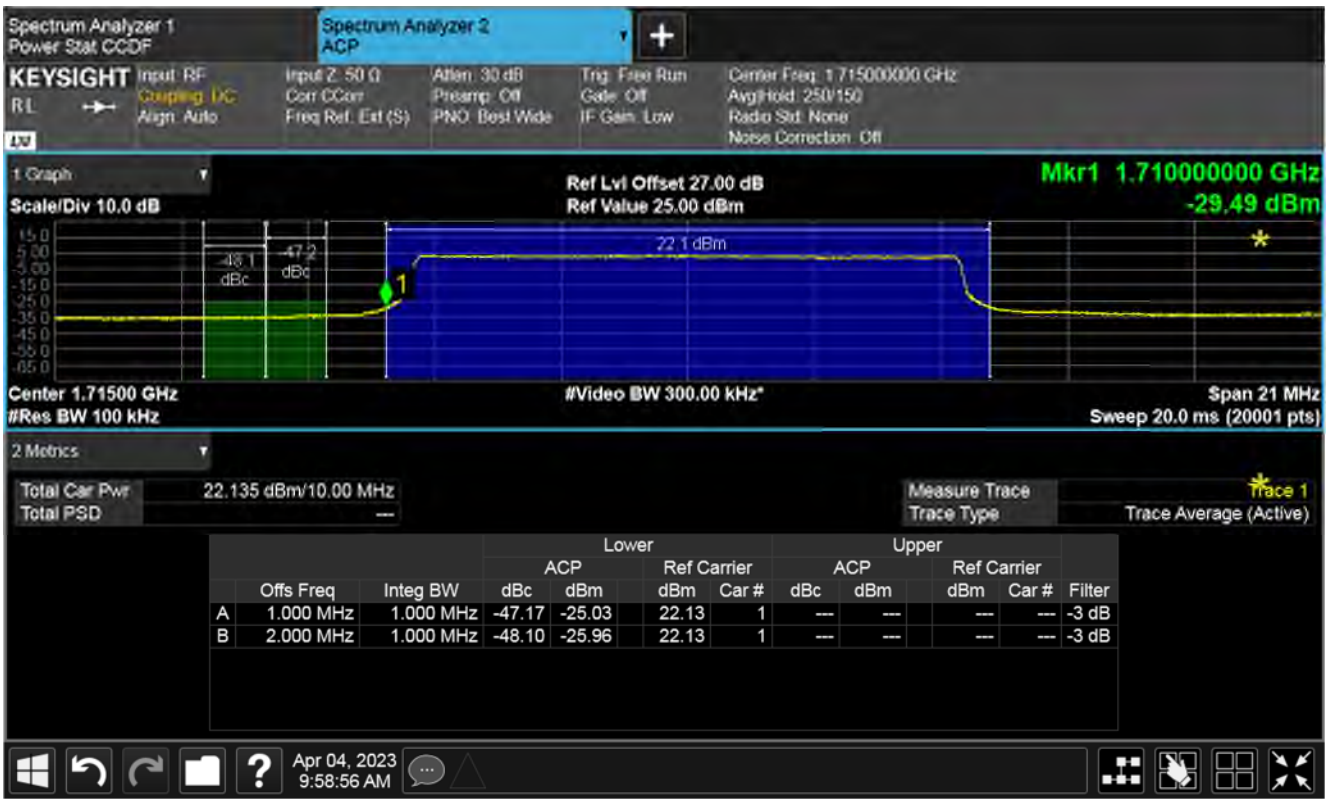
Plot of Upper Band Edge 100%RB

RF Parameters: Band 1710-1780 MHz, Power 22 dBm, Channel Spacing 10 MHz, Modulation QPSK, Low Channel

Plot of Lower Band Edge 1RB Low

Plot of Lower Band Edge 50%RB Low

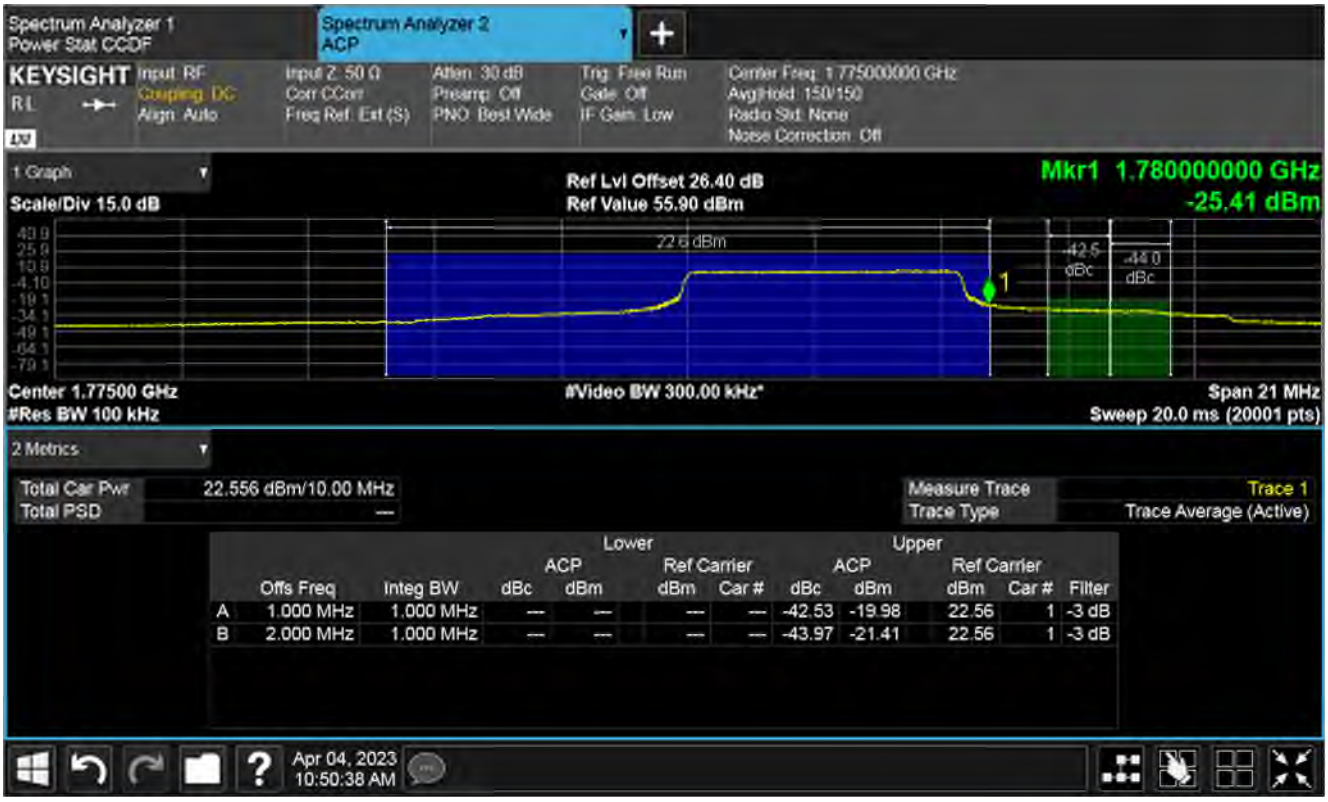
File Name: Airspan Communications Ltd.14011-2 Issue 01



Plot of Lower Band Edge 100%RB Low

RF Parameters: Band 1710-1780 MHz, Power 22 dBm, Channel Spacing 10 MHz, Modulation QPSK, High Channel

Plot of Upper Band Edge 1RB High



Plot of Upper Band Edge 50%RB High

File Name: Airspan Communications Ltd.14011-2 Issue 01

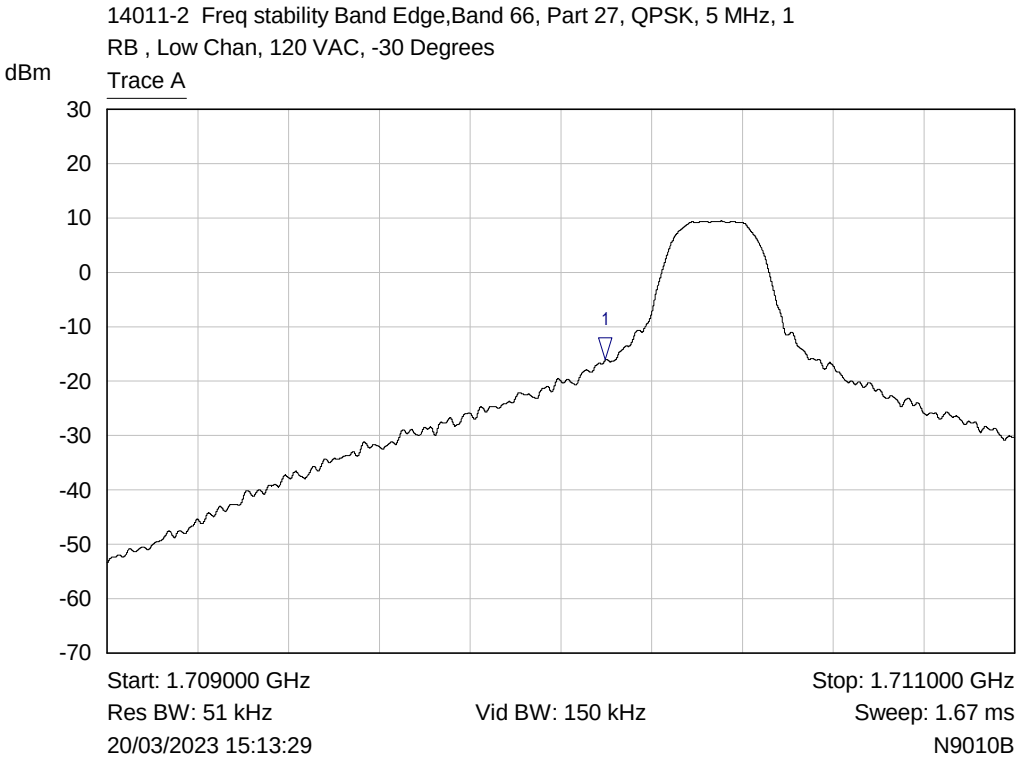
Plot of Upper Band Edge 100%RB

6.5 Frequency stability Band Edge emissions plots

NOTE: Only QPSK 5MHz plots are included in report for Band Edge to minimise report size.

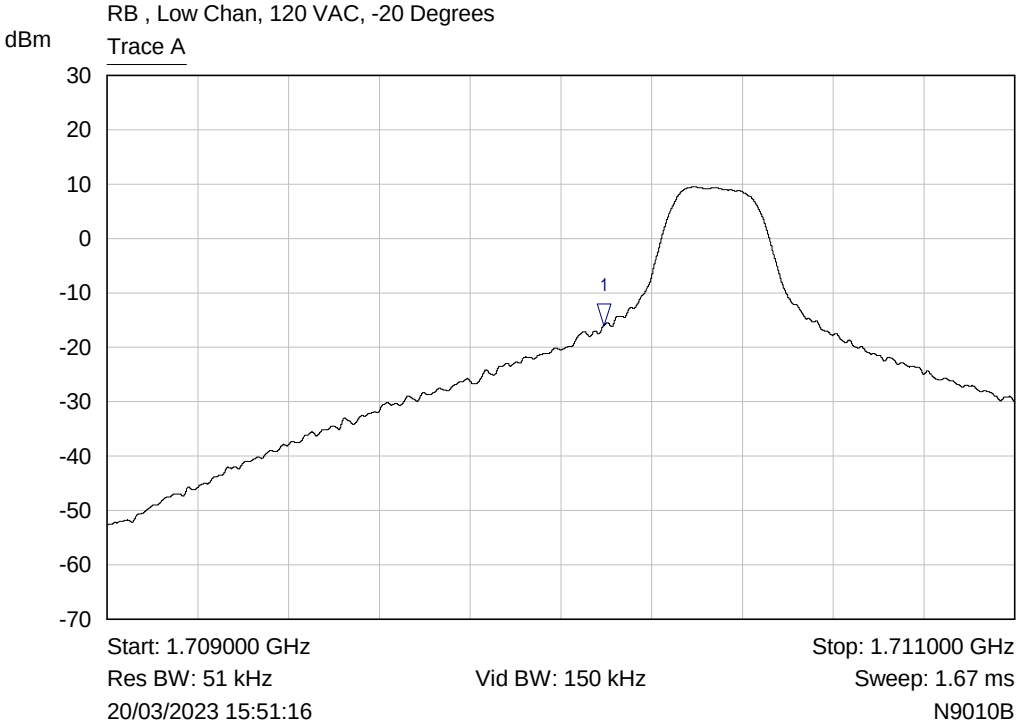
RF Parameters: Band 1710-1780 MHz, Power 17 dBm, Channel Spacing 5 MHz, Modulation QPSK, Low Channel

Plot of Lower Band Edge 1RB Low



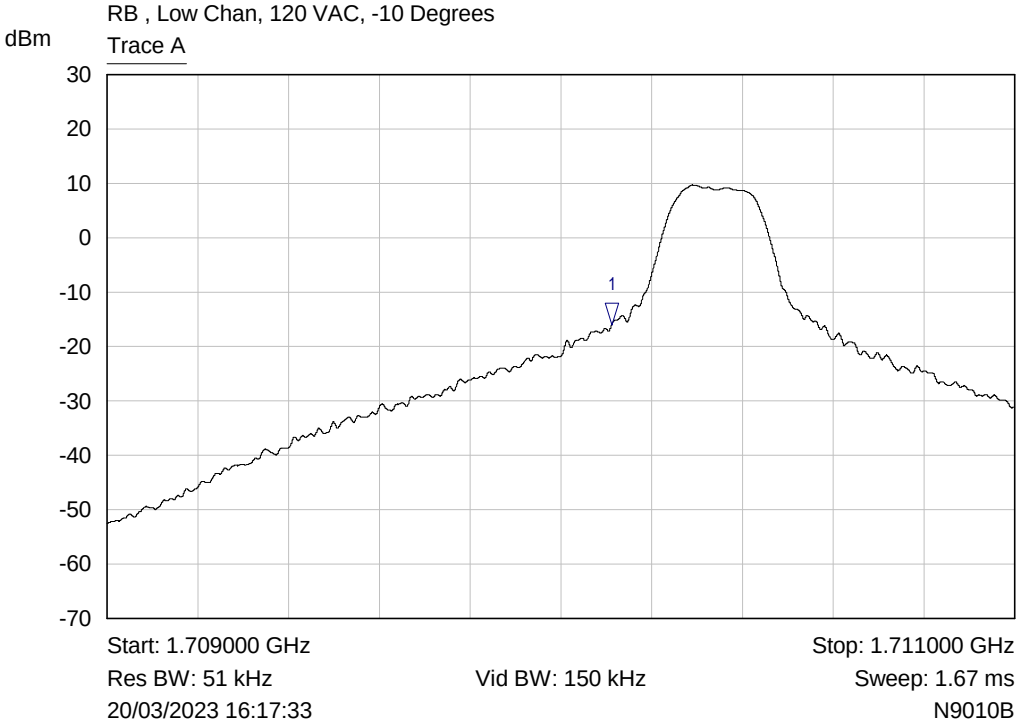
Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	1.710098 GHz	-16.00 dBm	

14011-2 Freq stability Band Edge,Band 66, Part 27, QPSK, 5 MHz, 1 RB , Low Chan, 120 VAC, -20 Degrees



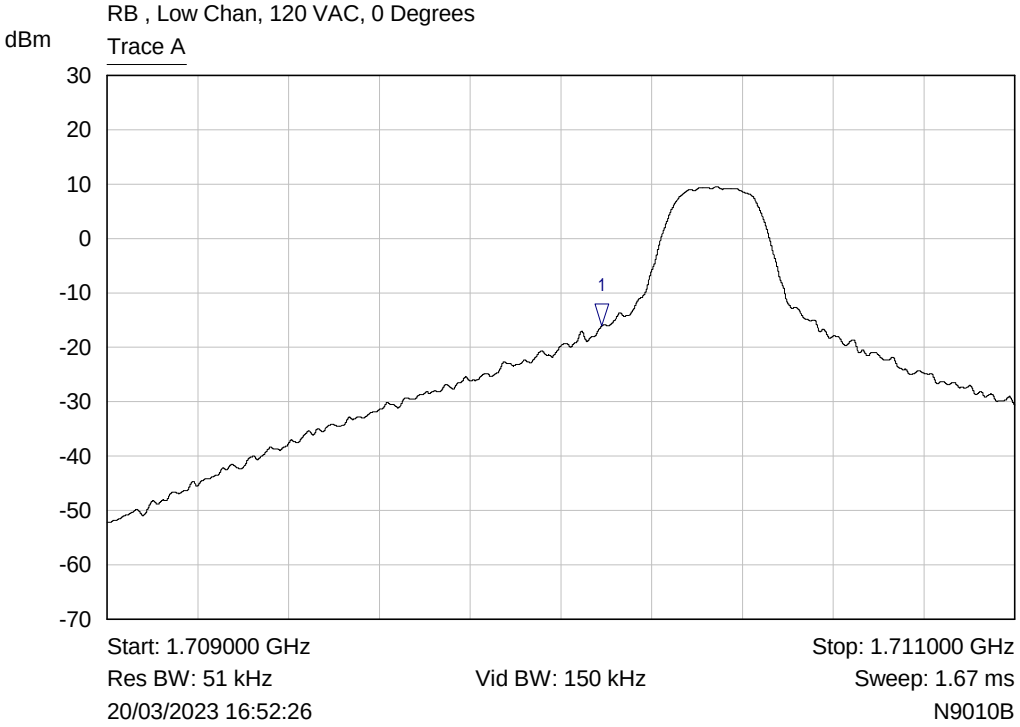
Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	1.710094 GHz	-16.00 dBm	

14011-2 Freq stability Band Edge,Band 66, Part 27, QPSK, 5 MHz, 1 RB , Low Chan, 120 VAC, -10 Degrees



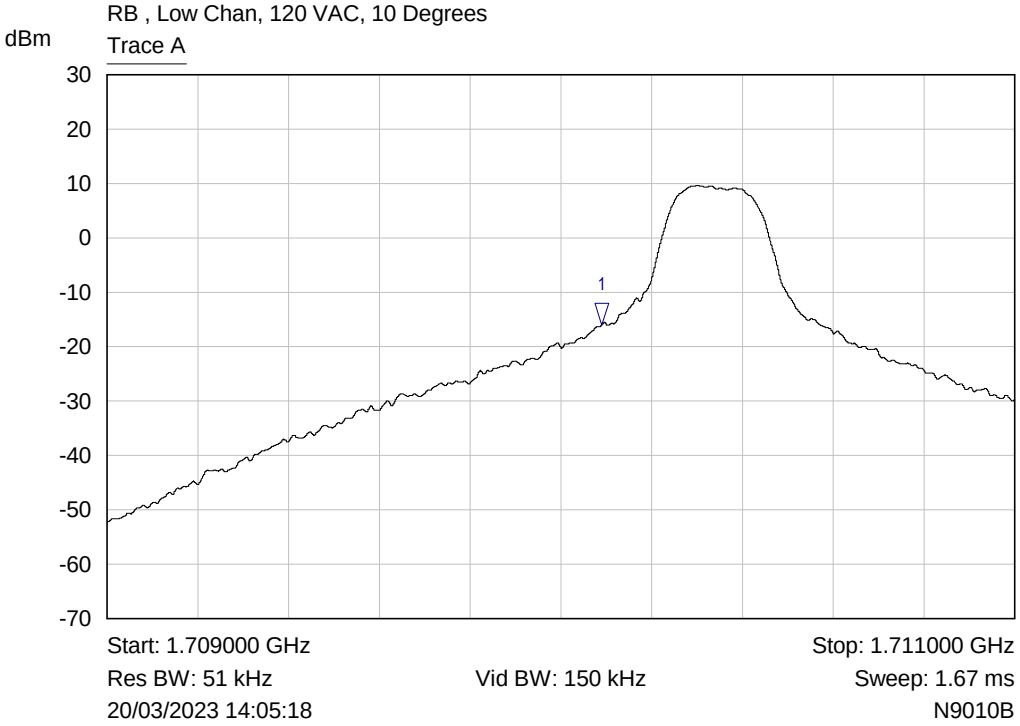
Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	1.710112 GHz	-16.00 dBm	

14011-2 Freq stability Band Edge,Band 25, Part 24, QPSK, 5 MHz, 1 RB , Low Chan, 120 VAC, 0 Degrees



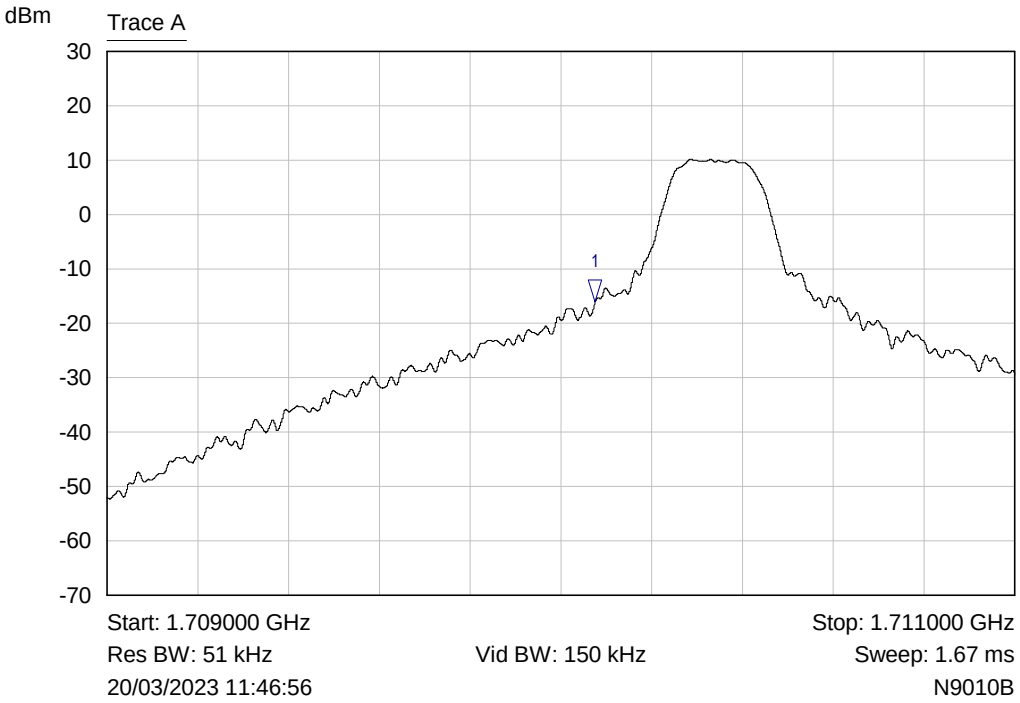
Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	1.710091 GHz	-16.00 dBm	

14011-2 Freq stability Band Edge,Band 66, Part 27, QPSK, 5 MHz, 1 RB , Low Chan, 120 VAC, 10 Degrees



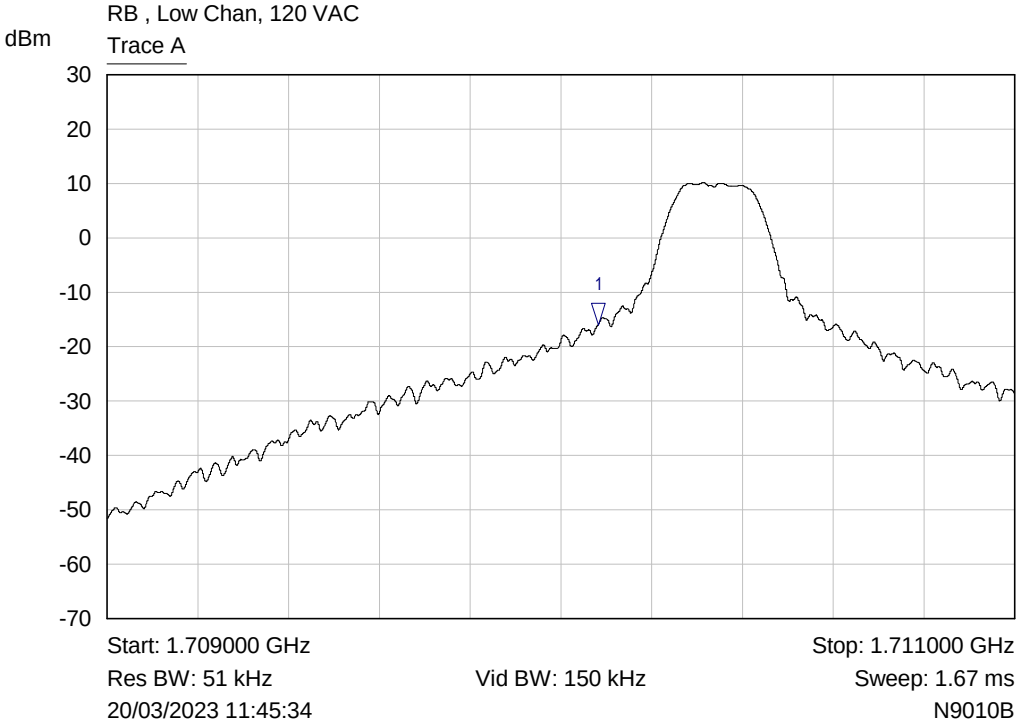
Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	1.710090 GHz	-16.00 dBm	

14011-2 Freq stability Band Edge,Band 66, Part 27, QPSK, 5 MHz, 1 RB , Low Chan, 102 VAC



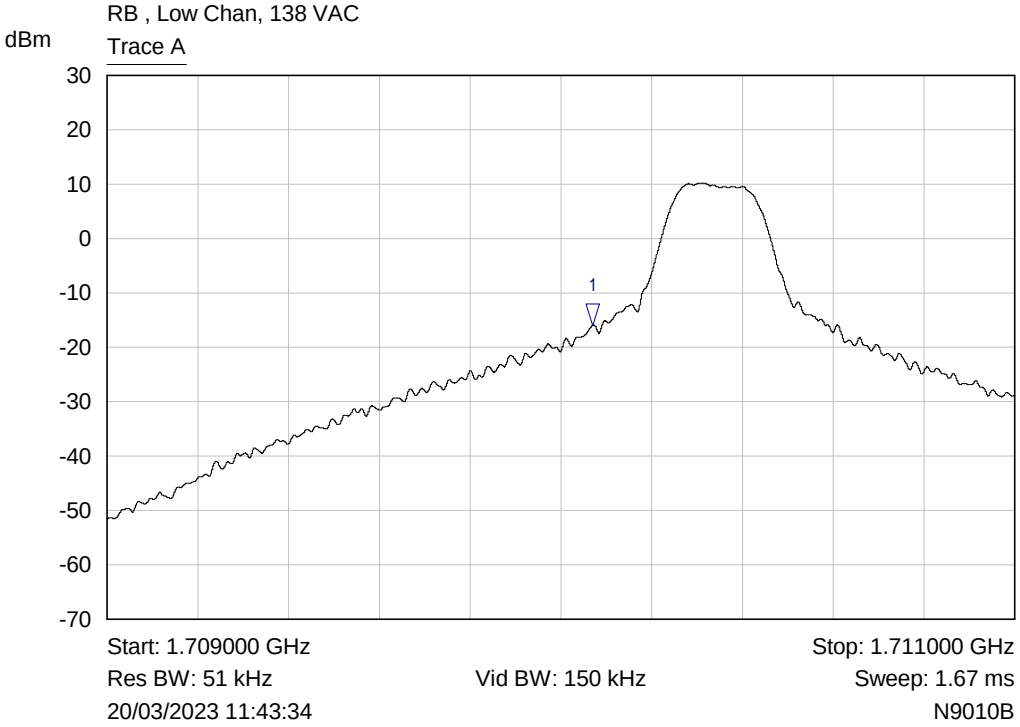
Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	1.710076 GHz	-15.99 dBm	

14011-2 Freq stability Band Edge,Band 66, Part 27, QPSK, 5 MHz, 1 RB , Low Chan, 120 VAC



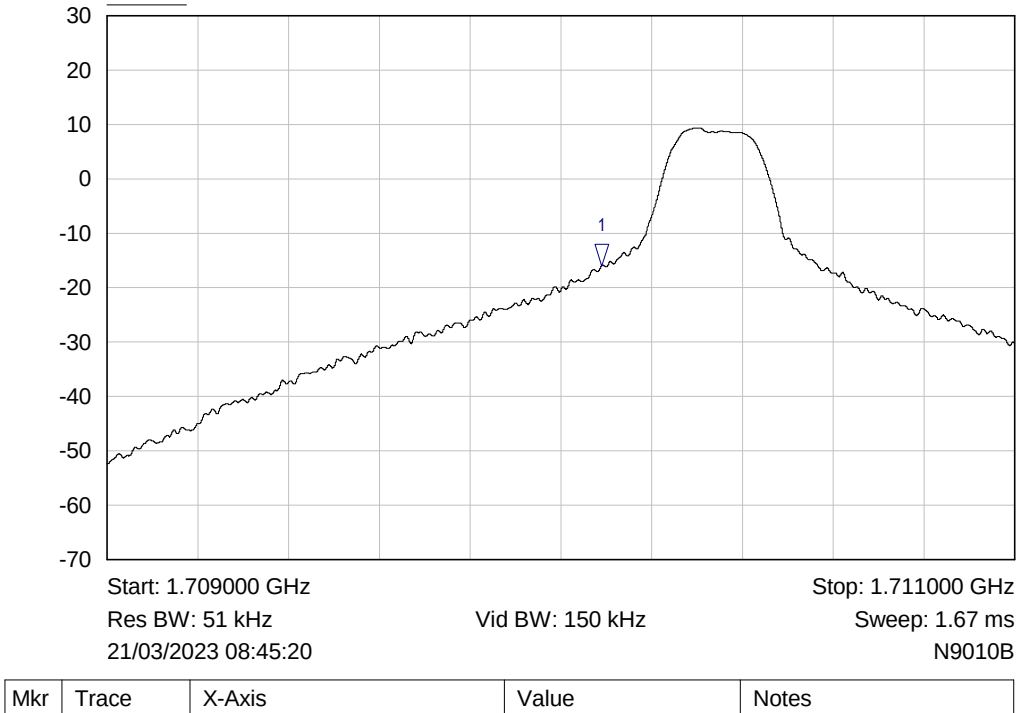
Mkr	Trace	X-Axis	Value
1 ▽	Trace A	1.710082 GHz	-16.00 dBm

14011-2 Freq stability Band Edge,Band 66, Part 27, QPSK, 5 MHz, 1 RB , Low Chan, 138 VAC



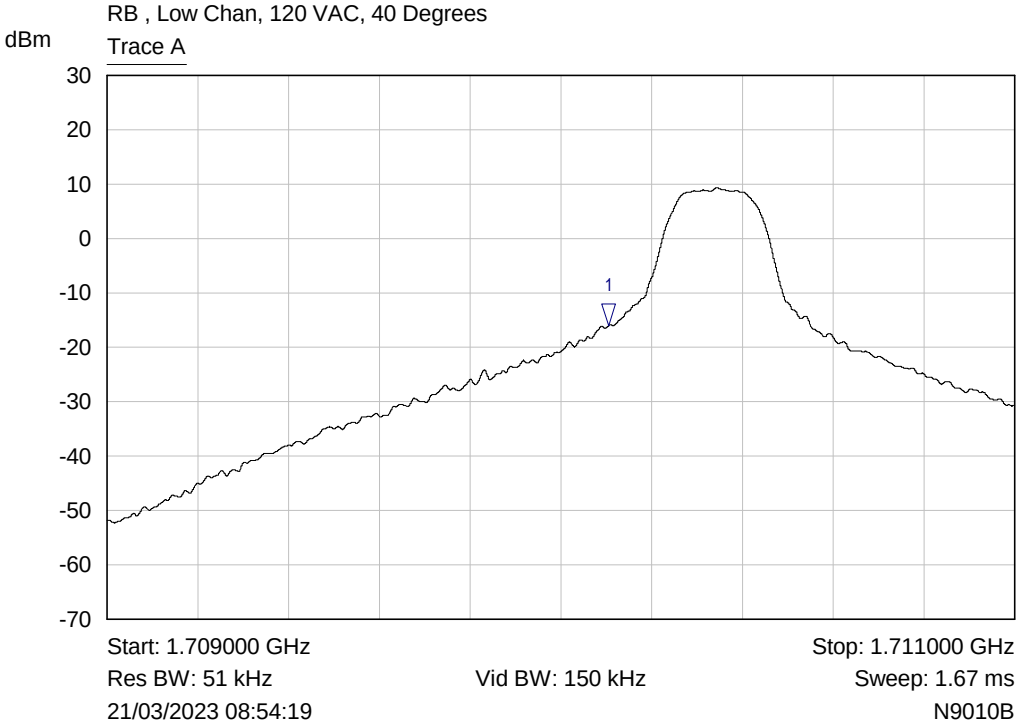
Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	1.710069 GHz	-16.00 dBm	

14011-2 Freq stability Band Edge,Band 66, Part 27, QPSK, 5 MHz, 1 RB , Low Chan, 120 VAC, 30 Degrees



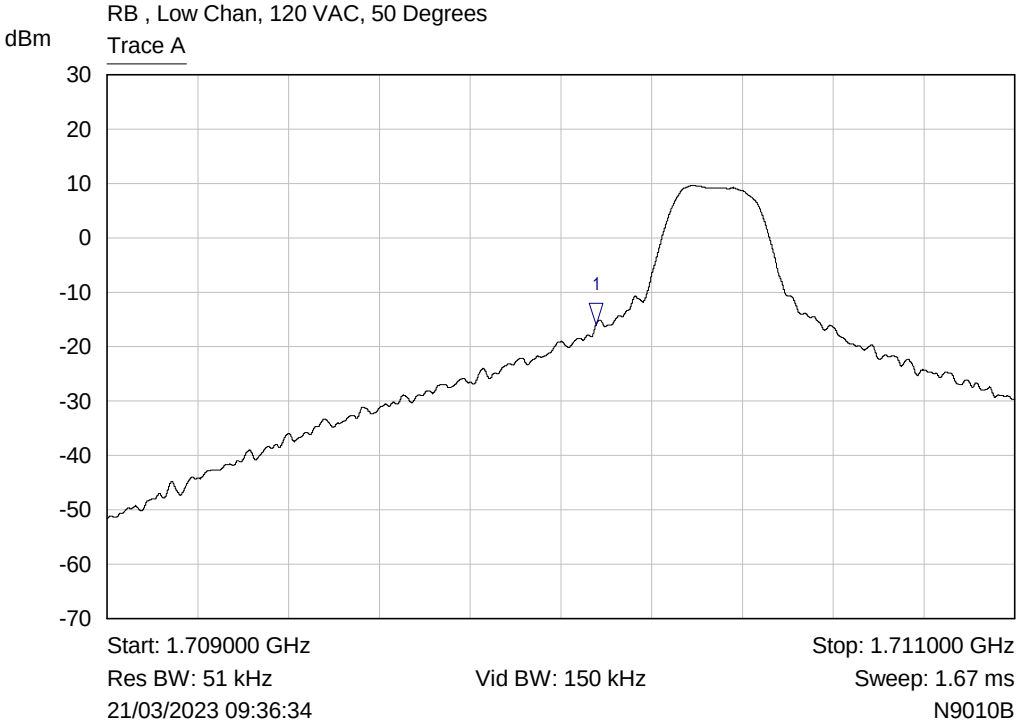
Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	1.710089 GHz	-16.00 dBm	

14011-2 Freq stability Band Edge,Band 66, Part 27, QPSK, 5 MHz, 1 RB , Low Chan, 120 VAC, 40 Degrees



Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	1.710105 GHz	-16.00 dBm	

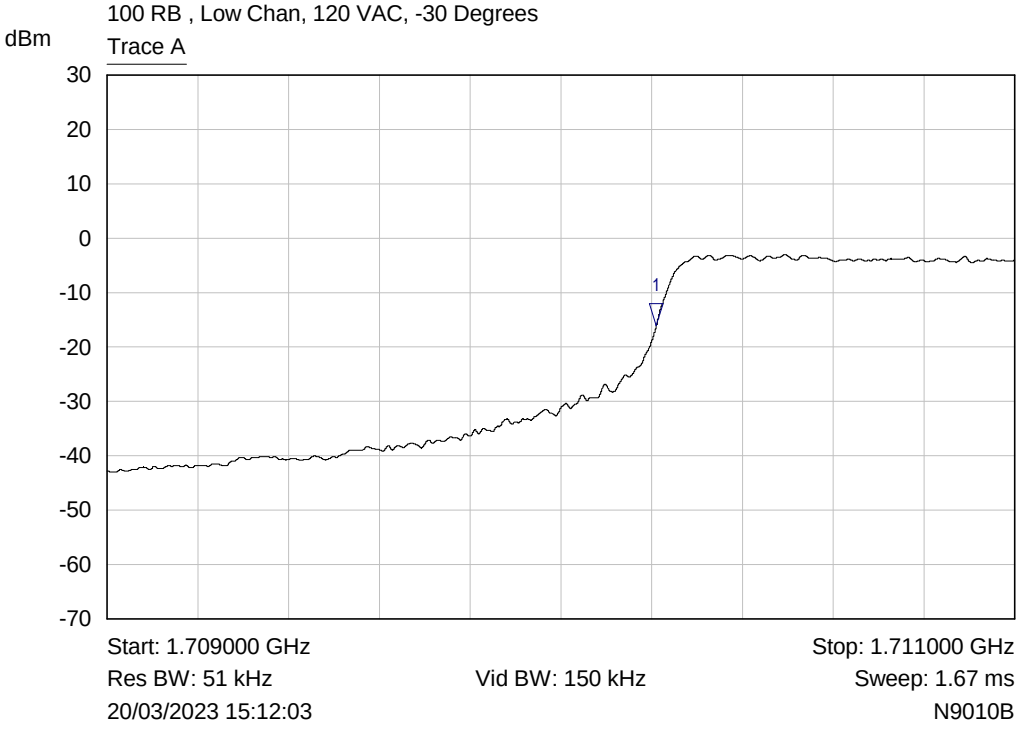
14011-2 Freq stability Band Edge,Band 66, Part 27, QPSK, 5 MHz, 1 RB , Low Chan, 120 VAC, 50 Degrees



Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	1.710077 GHz	-16.00 dBm	

Plot of Lower Band Edge 100%RB

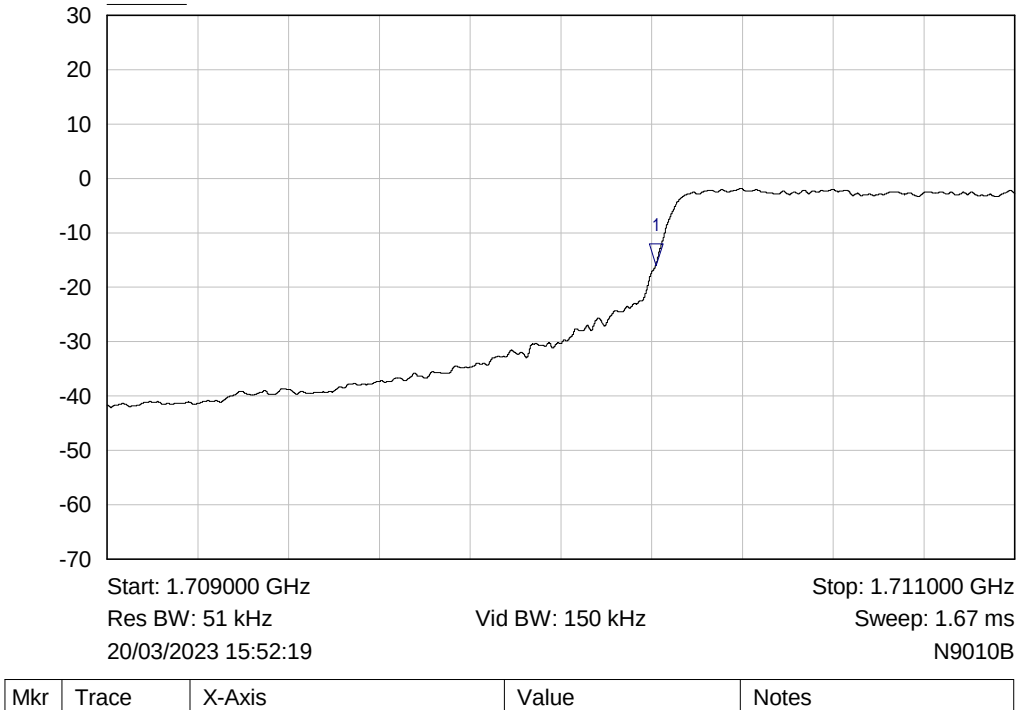
14011-2 Freq stability Band Edge,Band 66, Part 27, QPSK, 5 MHz,
100 RB , Low Chan, 120 VAC, -30 Degrees



Start: 1.709000 GHz Stop: 1.711000 GHz
Res BW: 51 kHz Vid BW: 150 kHz Sweep: 1.67 ms
20/03/2023 15:12:03 N9010B

Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	1.710211 GHz	-16.00 dBm	

14011-2 Freq stability Band Edge,Band 66, Part 27, QPSK, 5 MHz,
100 RB , Low Chan, 120 VAC, -20 Degrees

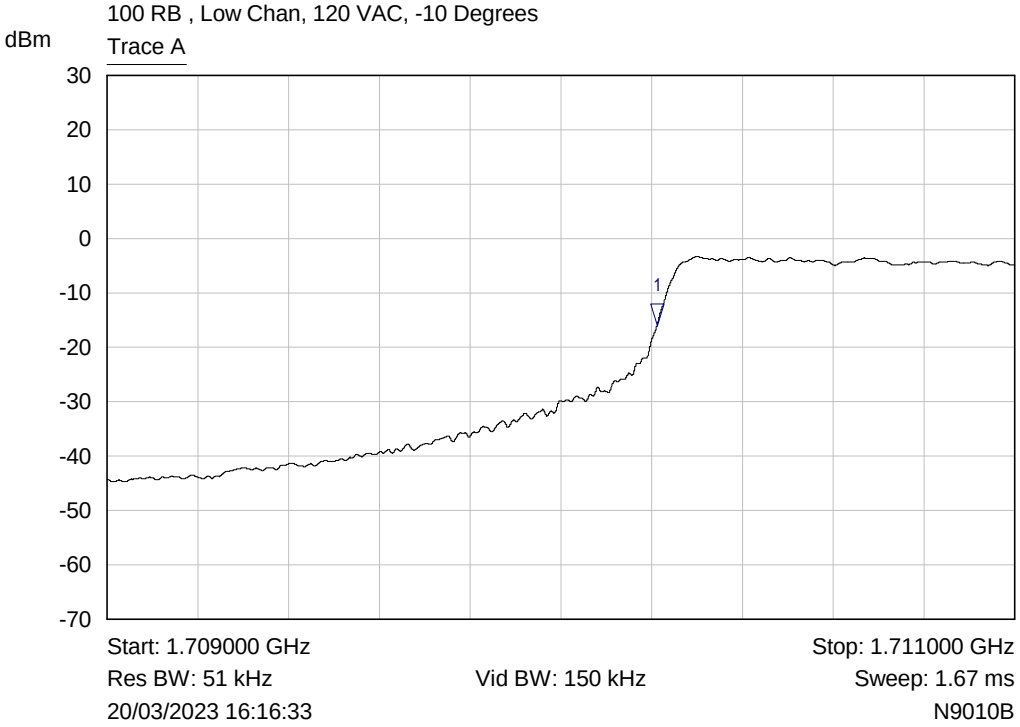


Start: 1.709000 GHz Stop: 1.711000 GHz
Res BW: 51 kHz Vid BW: 150 kHz Sweep: 1.67 ms
20/03/2023 15:52:19 N9010B

Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	1.710209 GHz	-16.00 dBm	

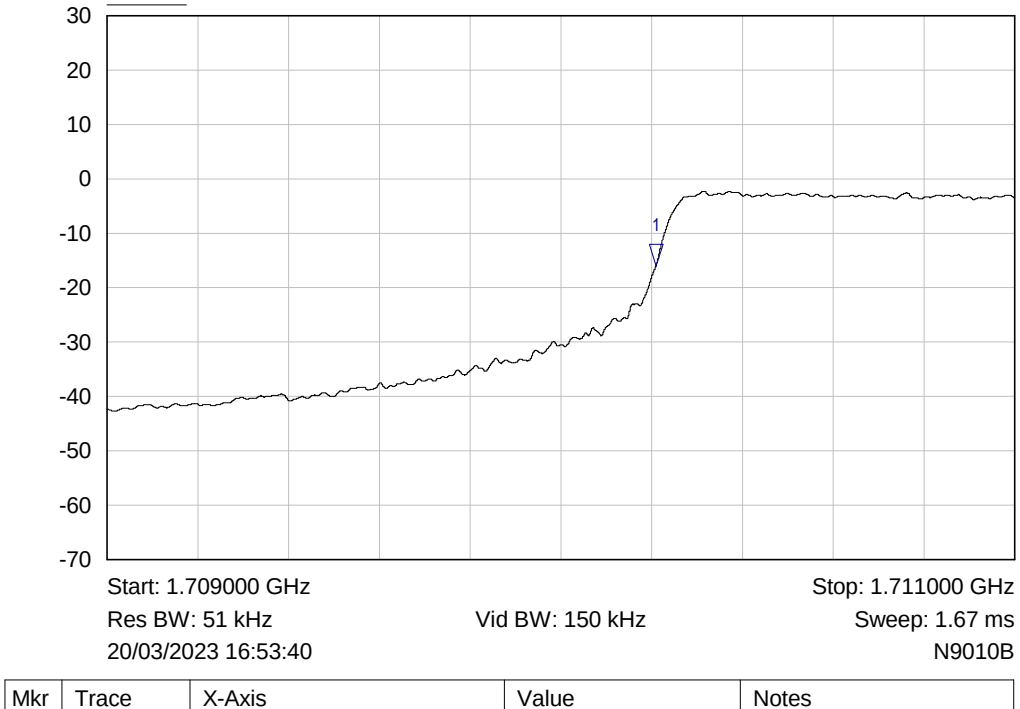
File Name: Airspan Communications Ltd.14011-2 Issue 01

14011-2 Freq stability Band Edge,Band 66, Part 27, QPSK, 5 MHz,
100 RB , Low Chan, 120 VAC, -10 Degrees



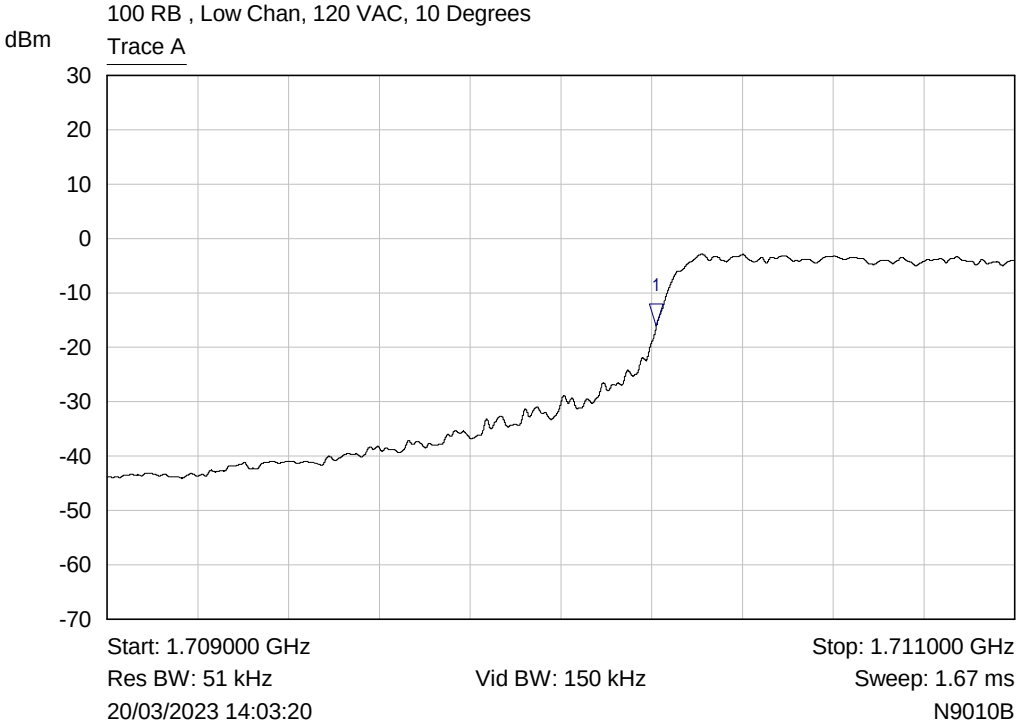
Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	1.710212 GHz	-16.00 dBm	

14011-2 Freq stability Band Edge,Band 25, Part 24, QPSK, 5 MHz,
100 RB , Low Chan, 120 VAC, 0 Degrees



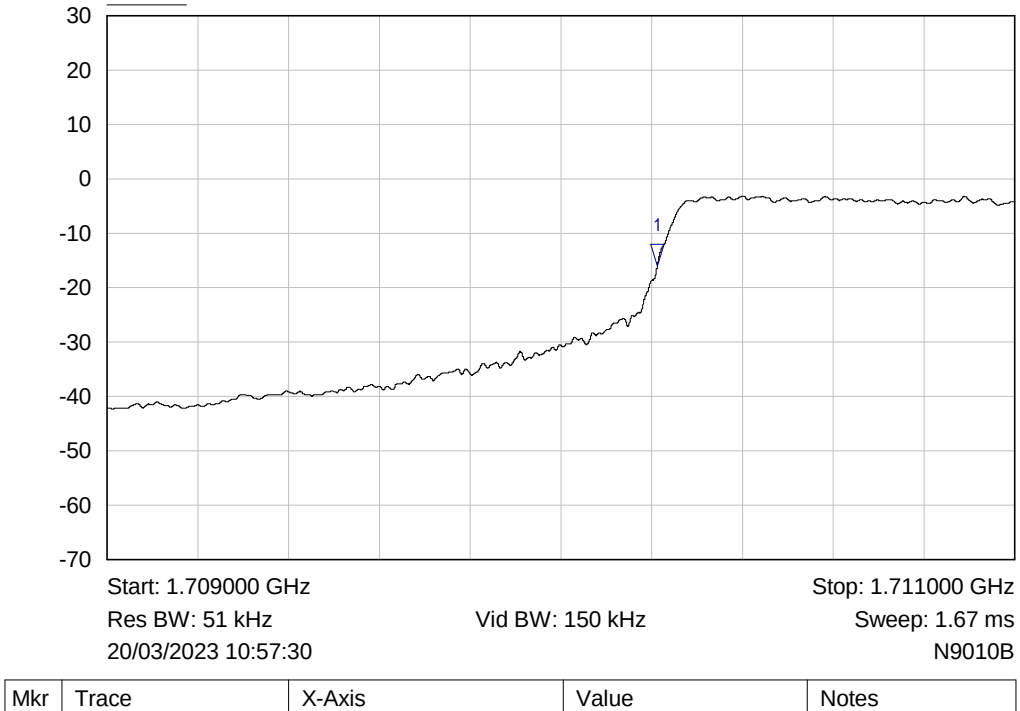
Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	1.710209 GHz	-16.00 dBm	

14011-2 Freq stability Band Edge,Band 66, Part 27, QPSK, 5 MHz,
100 RB , Low Chan, 120 VAC, 10 Degrees



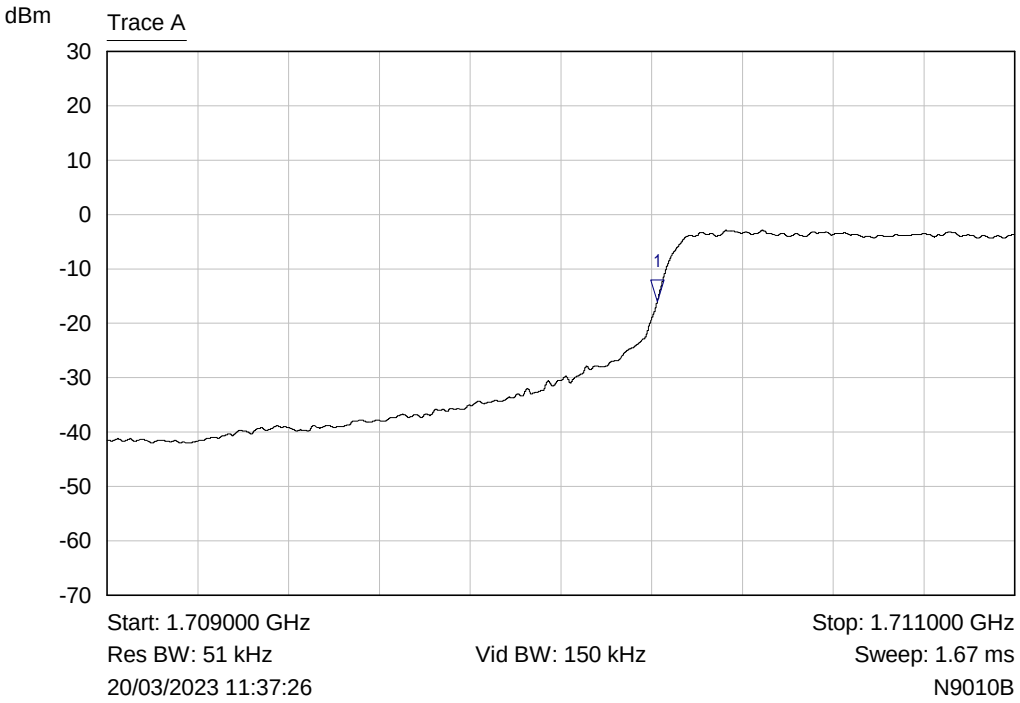
Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	1.710211 GHz	-16.00 dBm	

14011-2 Freq stability Band Edge,Band 66, Part 27, QPSK, 5 MHz,
100 RB , Low Chan, 102 VAC



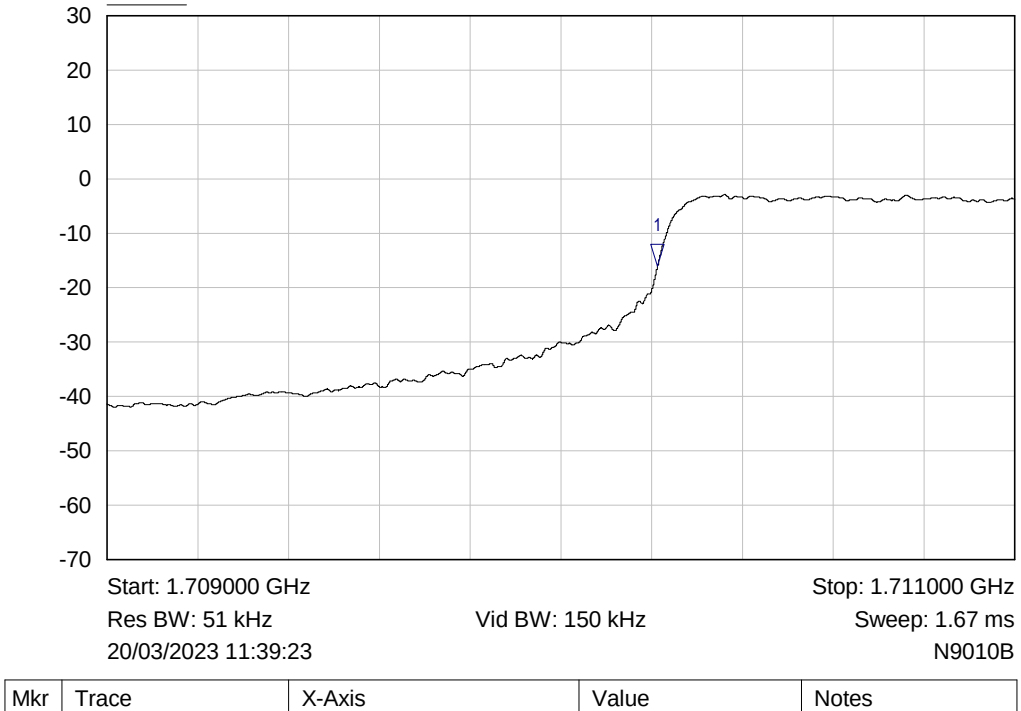
Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	1.710212 GHz	-15.98 dBm	

14011-2 Freq stability Band Edge,Band 66, Part 27, QPSK, 5 MHz,
100 RB , Low Chan, 120 VAC



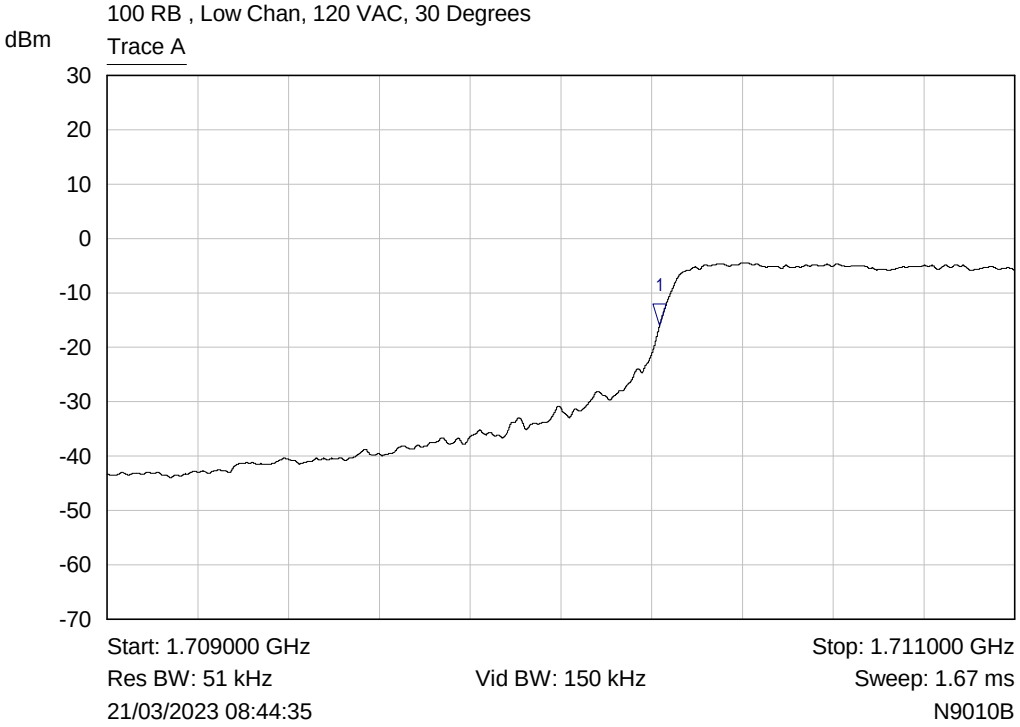
Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	1.710212 GHz	-16.01 dBm	

14011-2 Freq stability Band Edge,Band 66, Part 27, QPSK, 5 MHz,
100 RB , Low Chan, 138 VAC



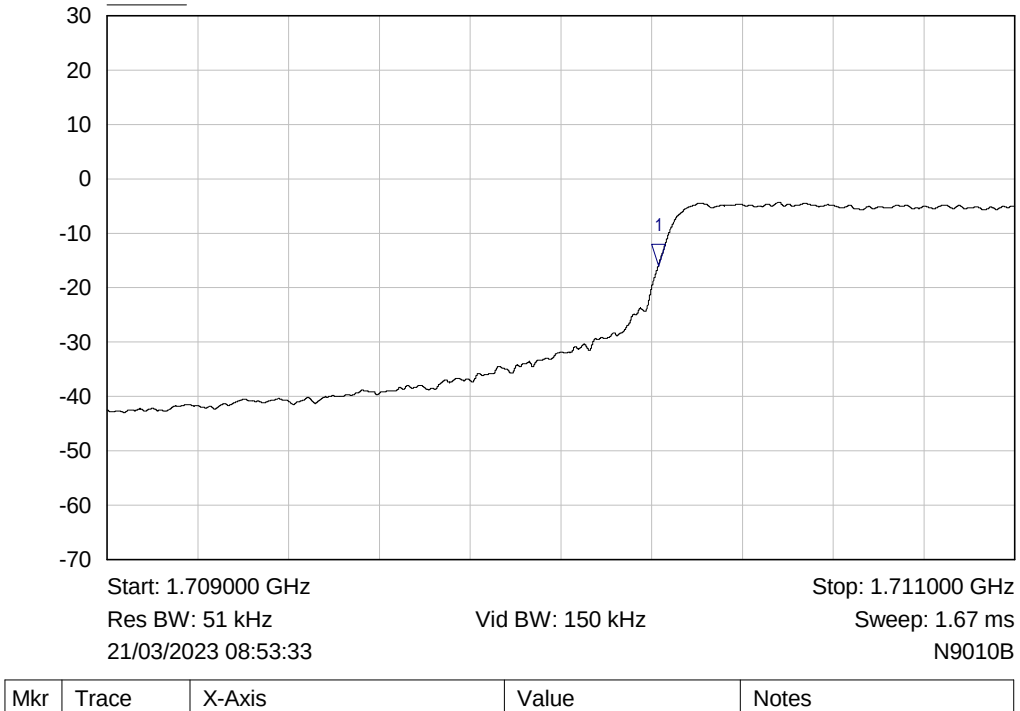
Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	1.710213 GHz	-16.01 dBm	

14011-2 Freq stability Band Edge,Band 66, Part 27, QPSK, 5 MHz,
100 RB , Low Chan, 120 VAC, 30 Degrees



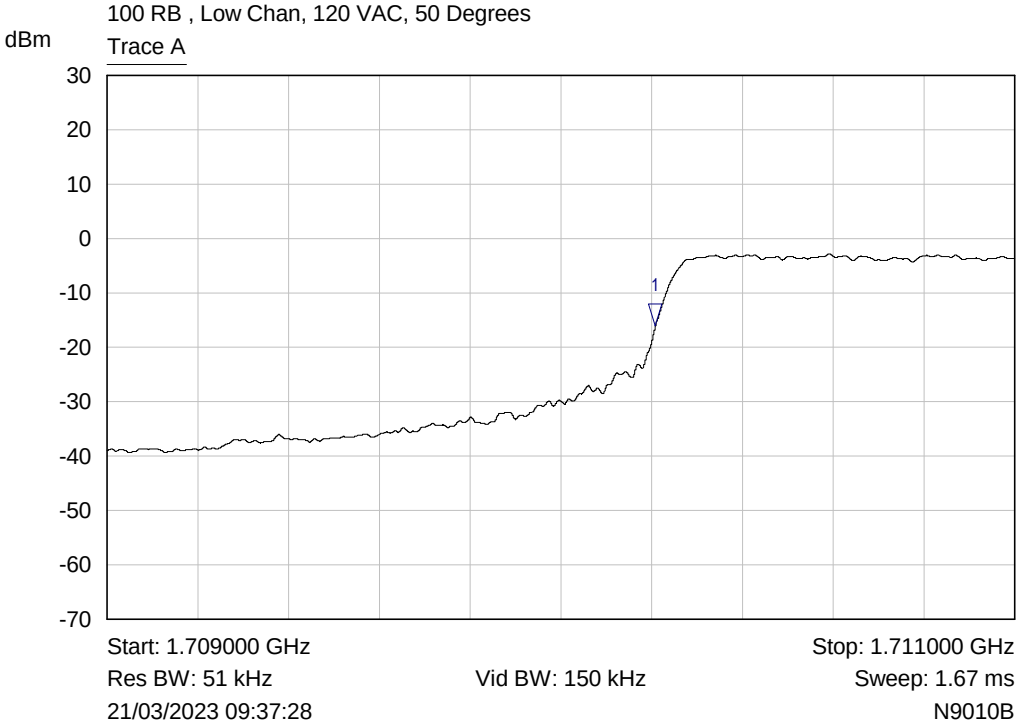
Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	1.710217 GHz	-16.00 dBm	

14011-2 Freq stability Band Edge,Band 66, Part 27, QPSK, 5 MHz,
100 RB , Low Chan, 120 VAC, 40 Degrees



Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	1.710214 GHz	-16.00 dBm	

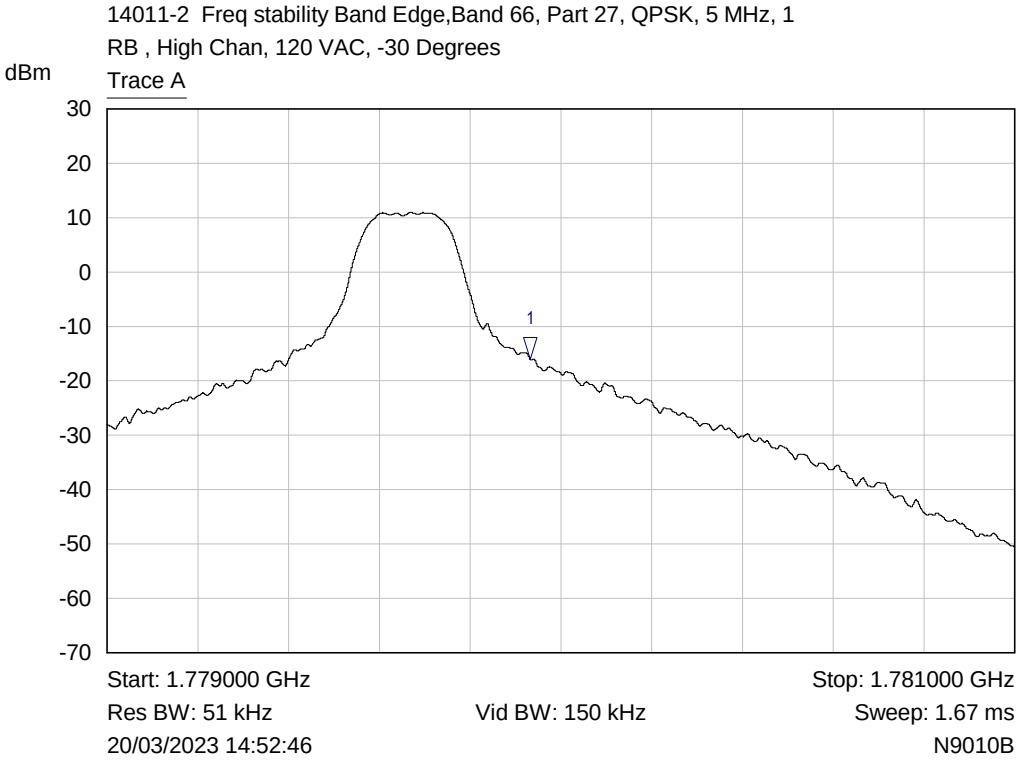
14011-2 Freq stability Band Edge,Band 66, Part 27, QPSK, 5 MHz,
100 RB , Low Chan, 120 VAC, 50 Degrees



Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	1.710209 GHz	-16.00 dBm	

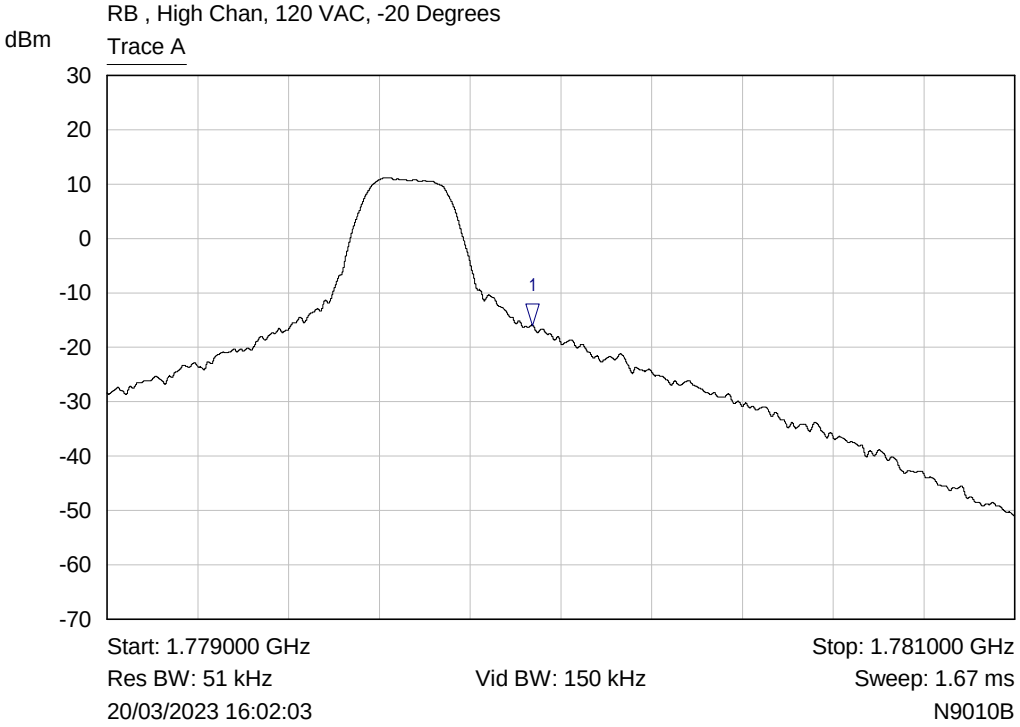
RF Parameters: Band 1710-1780 MHz, Power 17 dBm, Channel Spacing 5 MHz, Modulation QPSK, High Channel

Plot of Upper Band Edge 1RB High



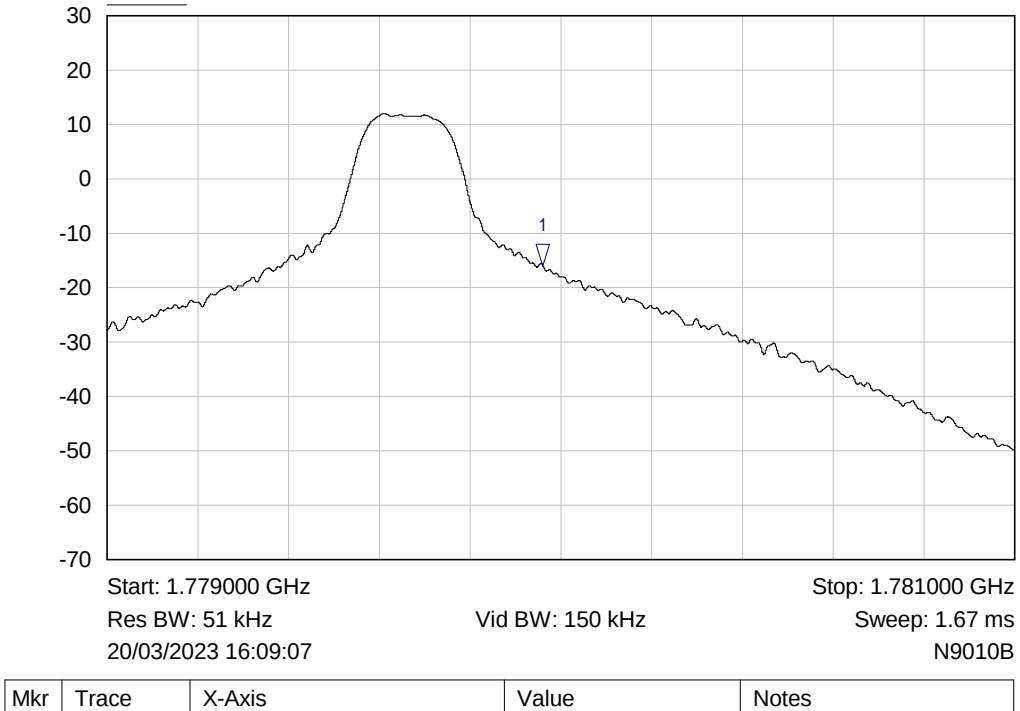
Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	1.779932 GHz	-16.00 dBm	

14011-2 Freq stability Band Edge,Band 66, Part 27, QPSK, 5 MHz, 1 RB , High Chan, 120 VAC, -20 Degrees



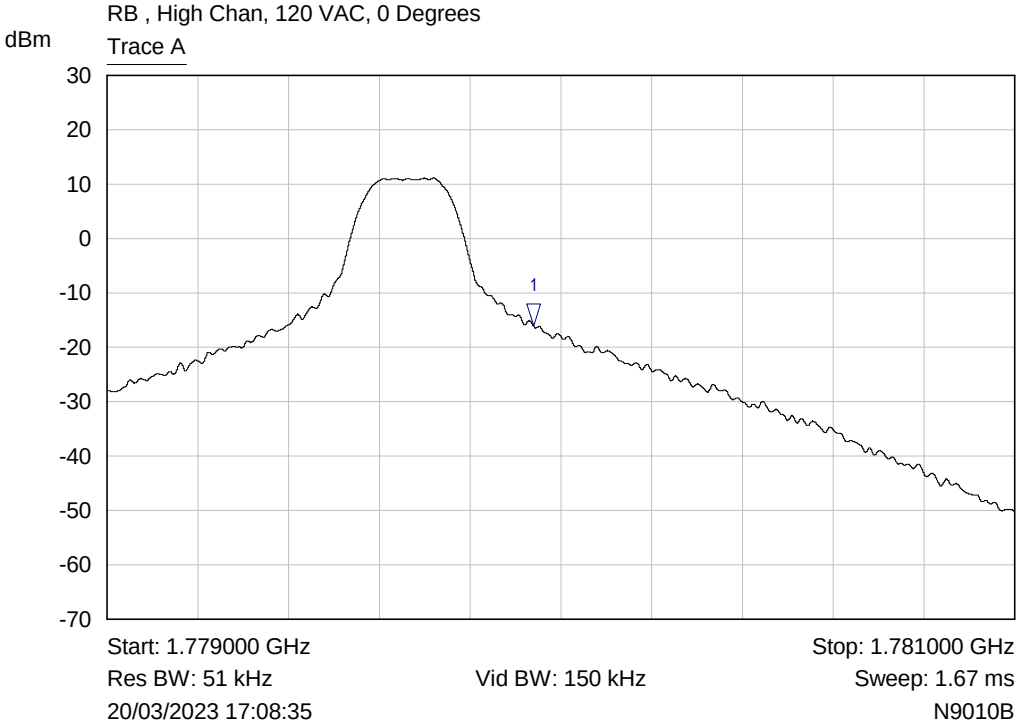
Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	1.779938 GHz	-16.00 dBm	

14011-2 Freq stability Band Edge,Band 66, Part 27, QPSK, 5 MHz, 1 RB , High Chan, 120 VAC, -10 Degrees



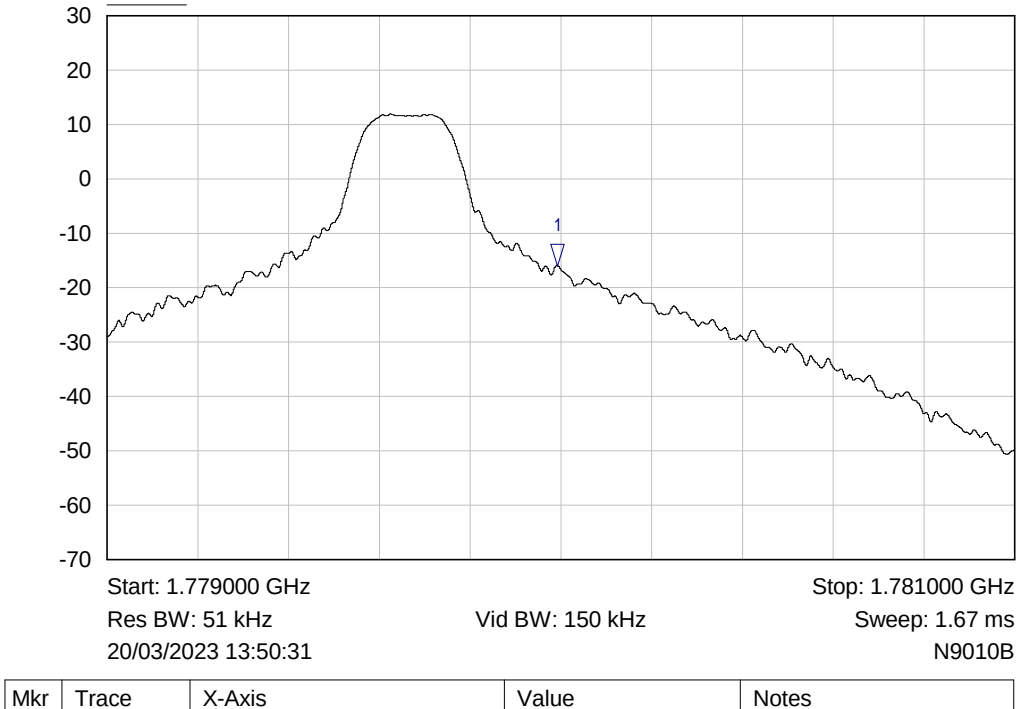
Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	1.779960 GHz	-16.00 dBm	

14011-2 Freq stability Band Edge,Band 25, Part 24, QPSK, 5 MHz, 1 RB , High Chan, 120 VAC, 0 Degrees



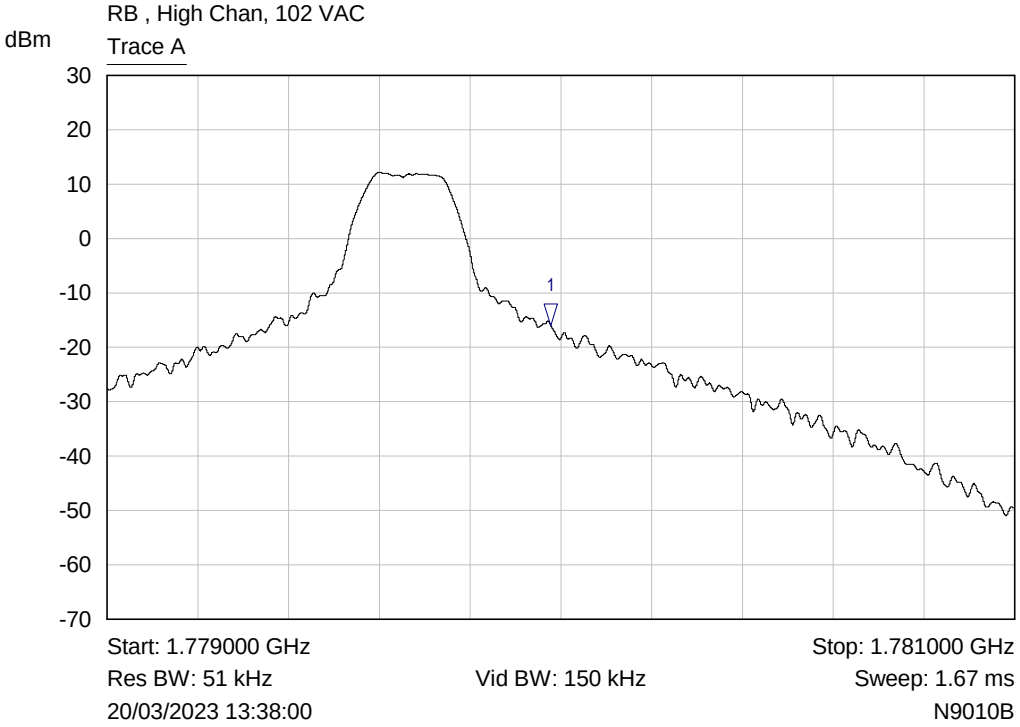
Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	1.779939 GHz	-16.00 dBm	

14011-2 Freq stability Band Edge,Band 66, Part 27, QPSK, 5 MHz, 1 RB , High Chan, 120 VAC, 10 Degrees



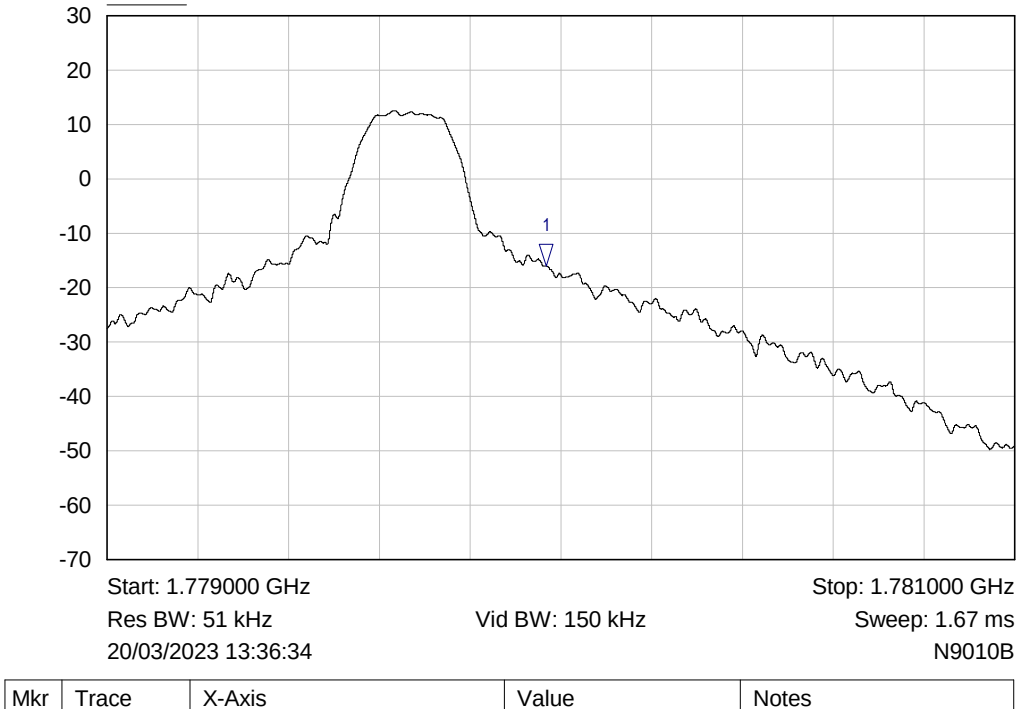
Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	1.779994 GHz	-16.00 dBm	

14011-2 Freq stability Band Edge,Band 66, Part 27, QPSK, 5 MHz, 1 RB , High Chan, 102 VAC



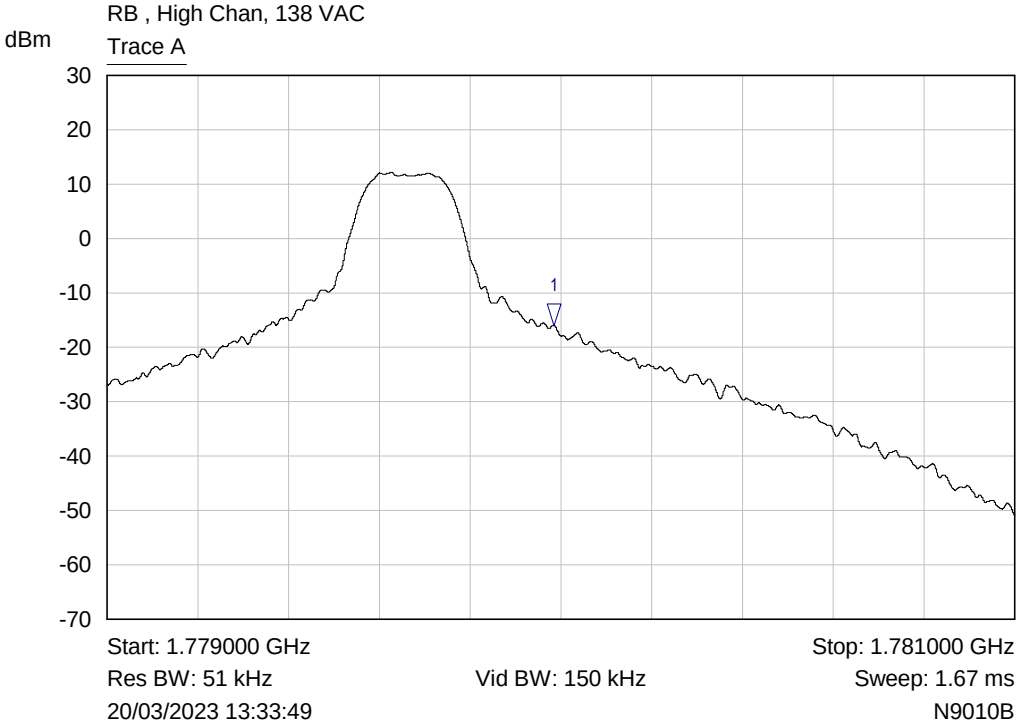
Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	1.779978 GHz	-16.00 dBm	

14011-2 Freq stability Band Edge,Band 66, Part 27, QPSK, 5 MHz, 1 RB , High Chan, 120 VAC



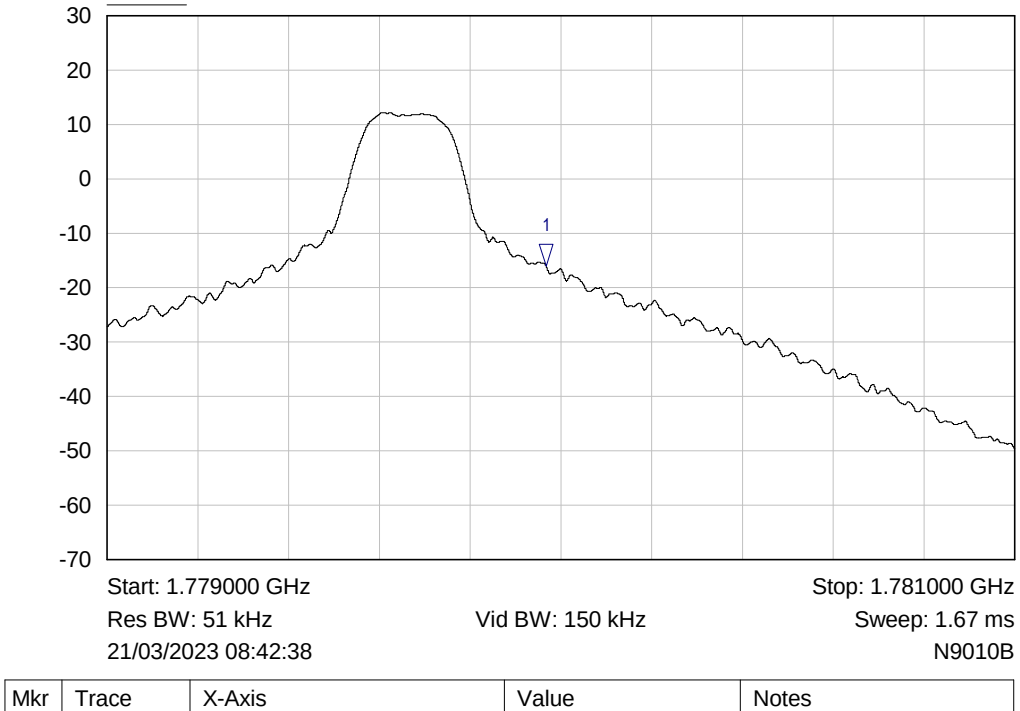
Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	1.779968 GHz	-16.00 dBm	

14011-2 Freq stability Band Edge,Band 66, Part 27, QPSK, 5 MHz, 1 RB , High Chan, 138 VAC



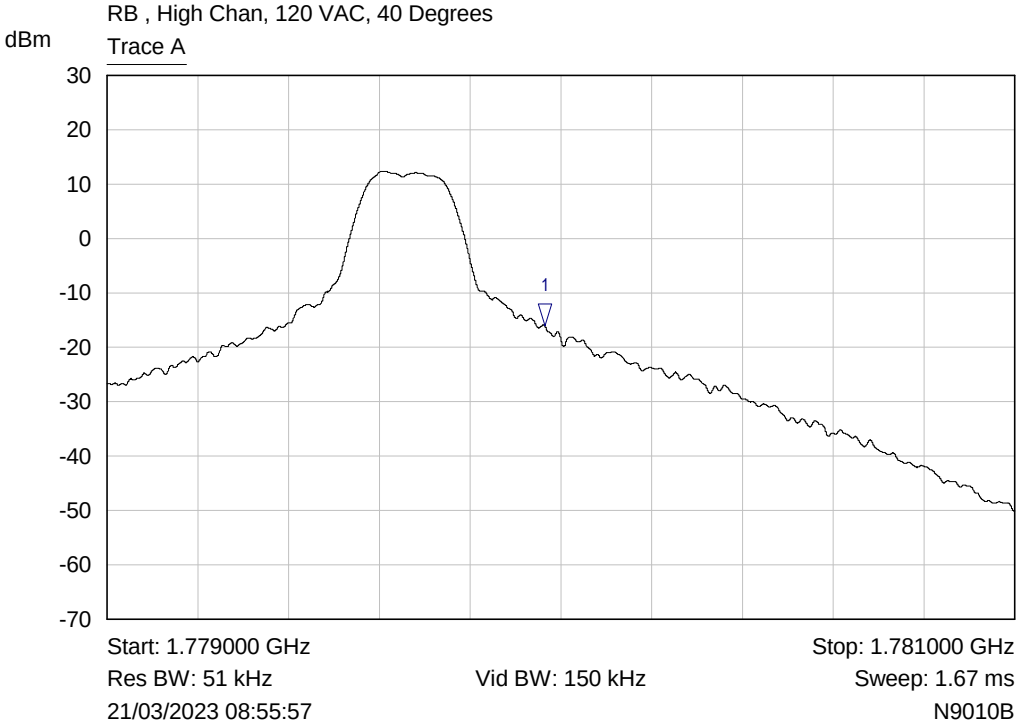
Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	1.779986 GHz	-16.00 dBm	

14011-2 Freq stability Band Edge,Band 66, Part 27, QPSK, 5 MHz, 1 RB , High Chan, 120 VAC, 30 Degrees



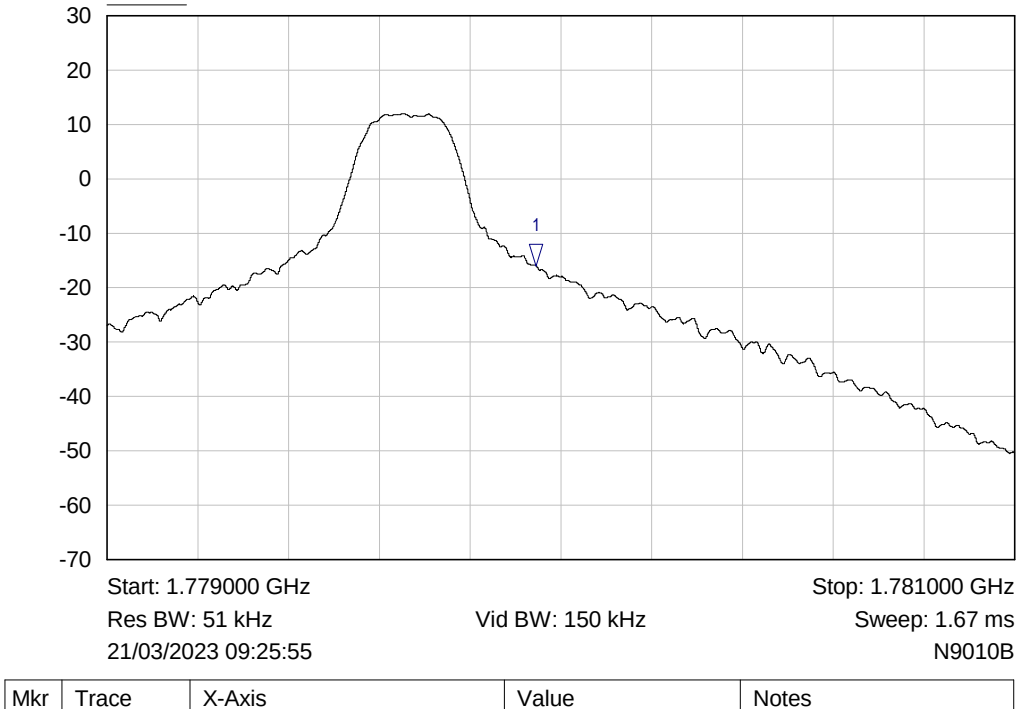
Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	1.779967 GHz	-16.00 dBm	

14011-2 Freq stability Band Edge,Band 66, Part 27, QPSK, 5 MHz, 1 RB , High Chan, 120 VAC, 40 Degrees



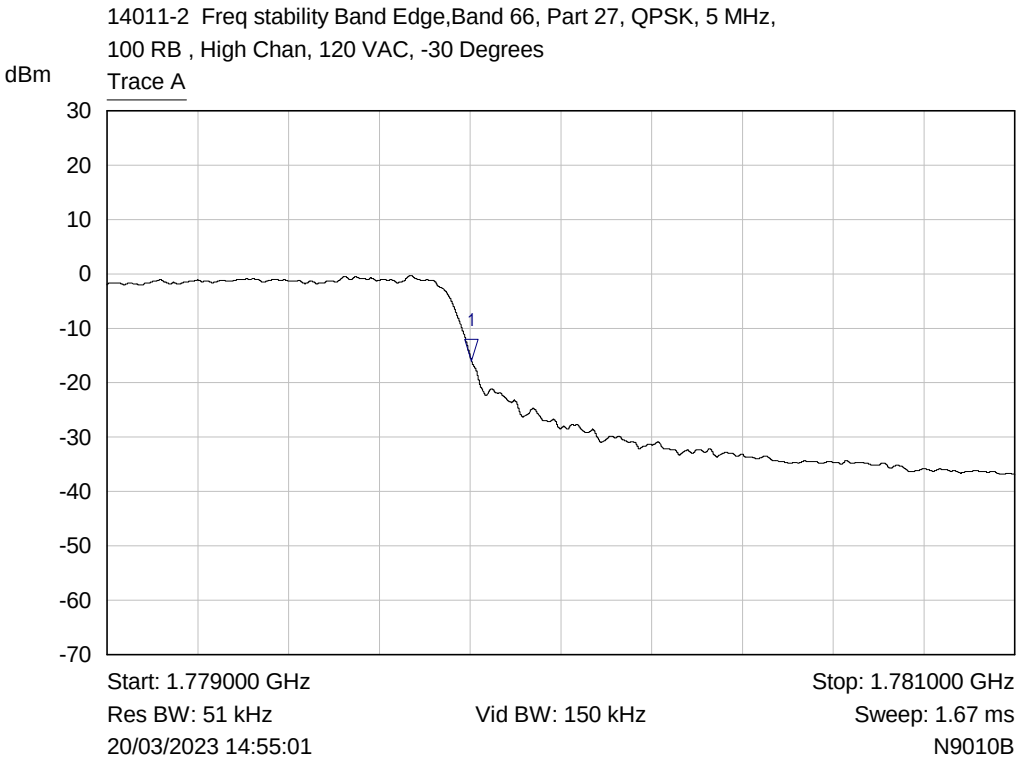
Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	1.779964 GHz	-16.00 dBm	

14011-2 Freq stability Band Edge,Band 66, Part 27, QPSK, 5 MHz, 1 RB , High Chan, 120 VAC, 50 Degrees



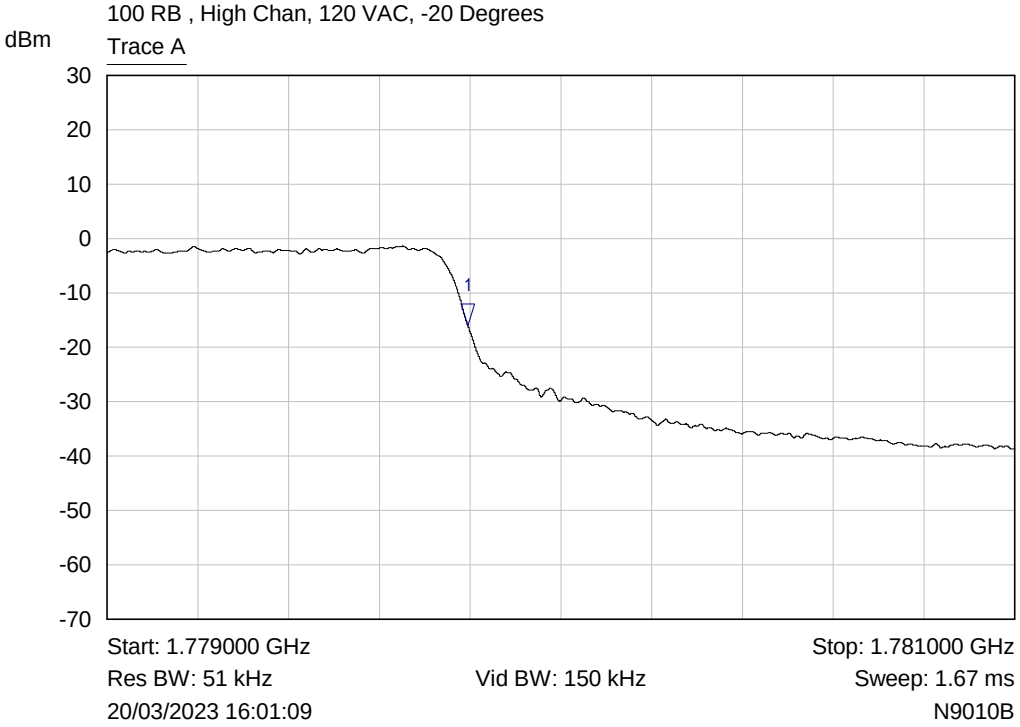
Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	1.779946 GHz	-16.00 dBm	

Plot of Upper Band Edge 100%RB



Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	1.779803 GHz	-16.00 dBm	

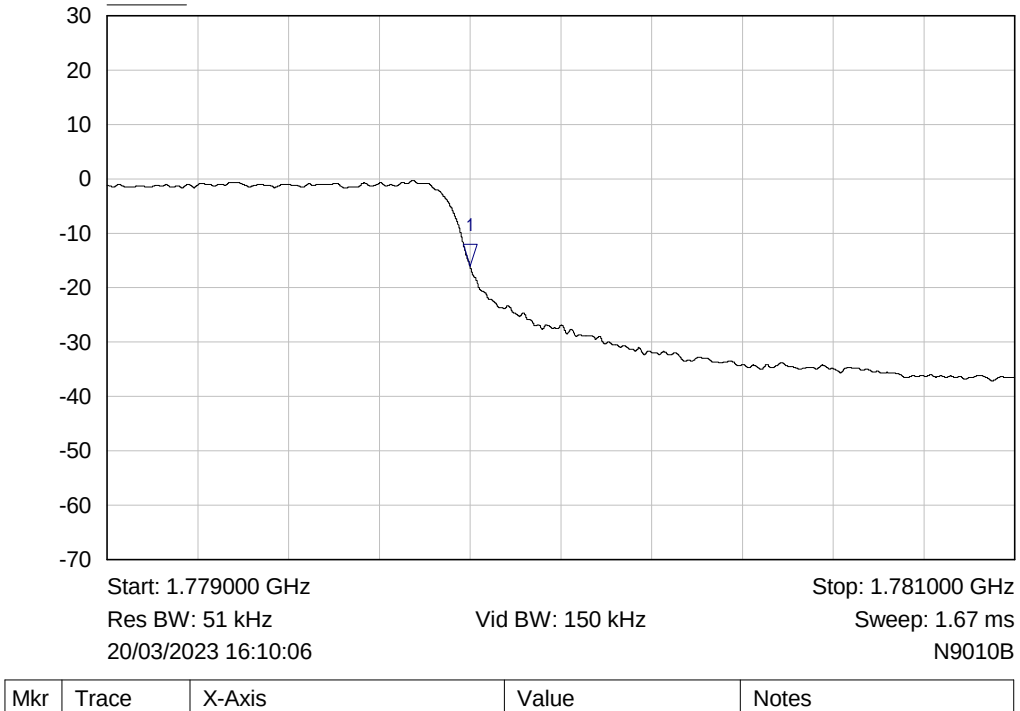
14011-2 Freq stability Band Edge,Band 66, Part 27, QPSK, 5 MHz,
100 RB , High Chan, 120 VAC, -20 Degrees



Start: 1.779000 GHz Stop: 1.781000 GHz
Res BW: 51 kHz Vid BW: 150 kHz Sweep: 1.67 ms
20/03/2023 16:01:09 N9010B

Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	1.779795 GHz	-16.00 dBm	

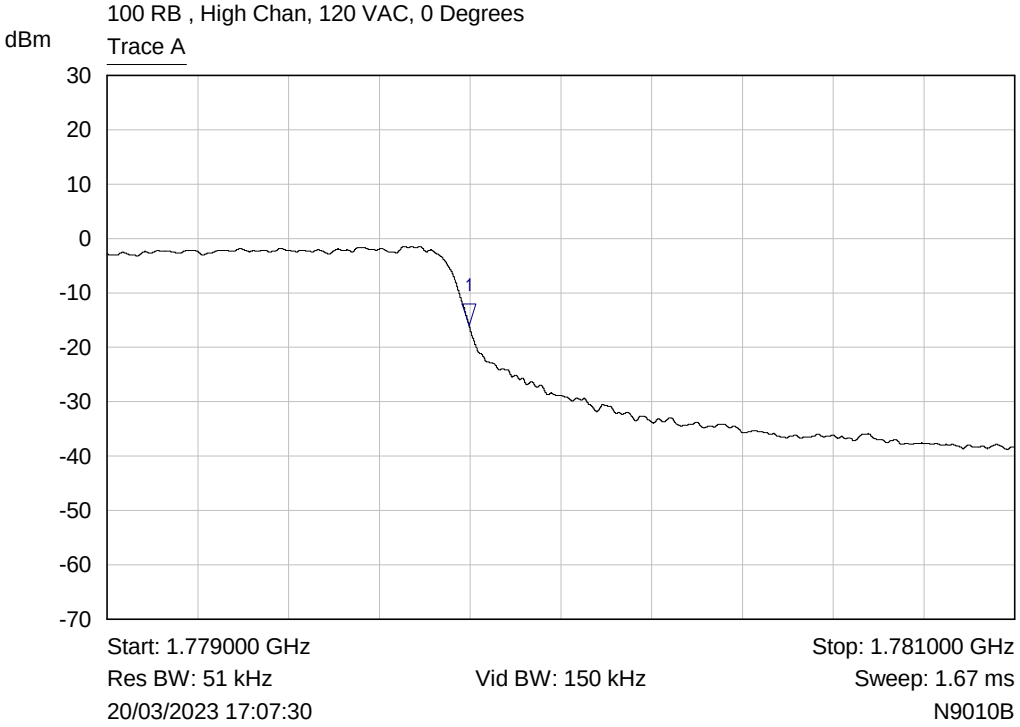
14011-2 Freq stability Band Edge,Band 66, Part 27, QPSK, 5 MHz,
100 RB , High Chan, 120 VAC, -10 Degrees



Start: 1.779000 GHz Stop: 1.781000 GHz
Res BW: 51 kHz Vid BW: 150 kHz Sweep: 1.67 ms
20/03/2023 16:10:06 N9010B

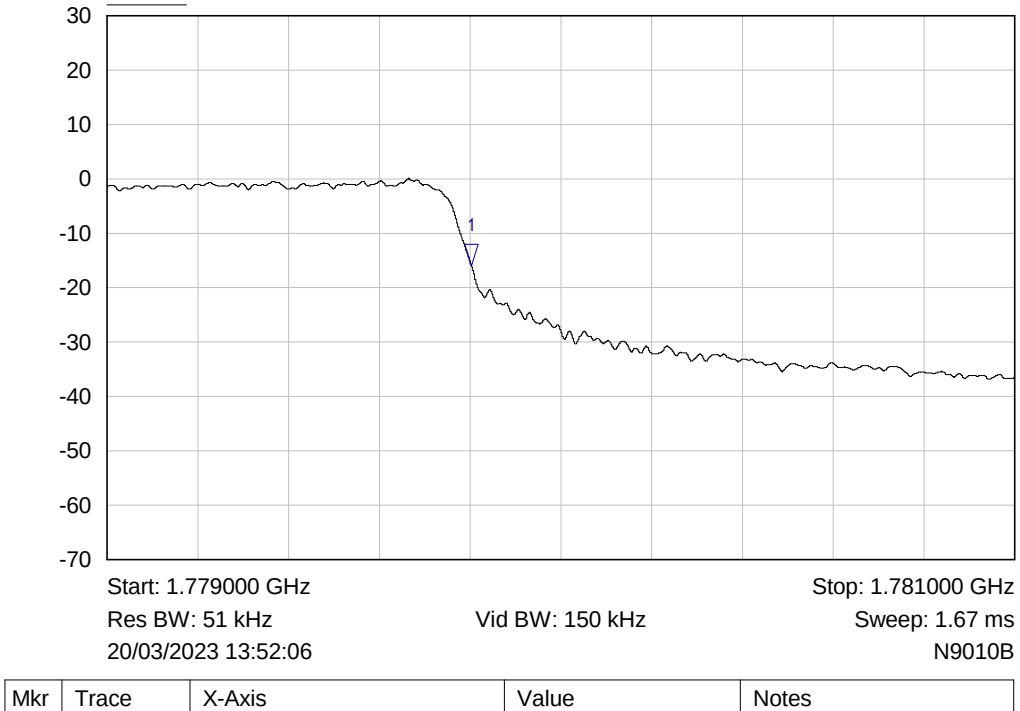
Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	1.779799 GHz	-16.00 dBm	

14011-2 Freq stability Band Edge,Band 66, Part 27, QPSK, 5 MHz,
100 RB , High Chan, 120 VAC, 0 Degrees



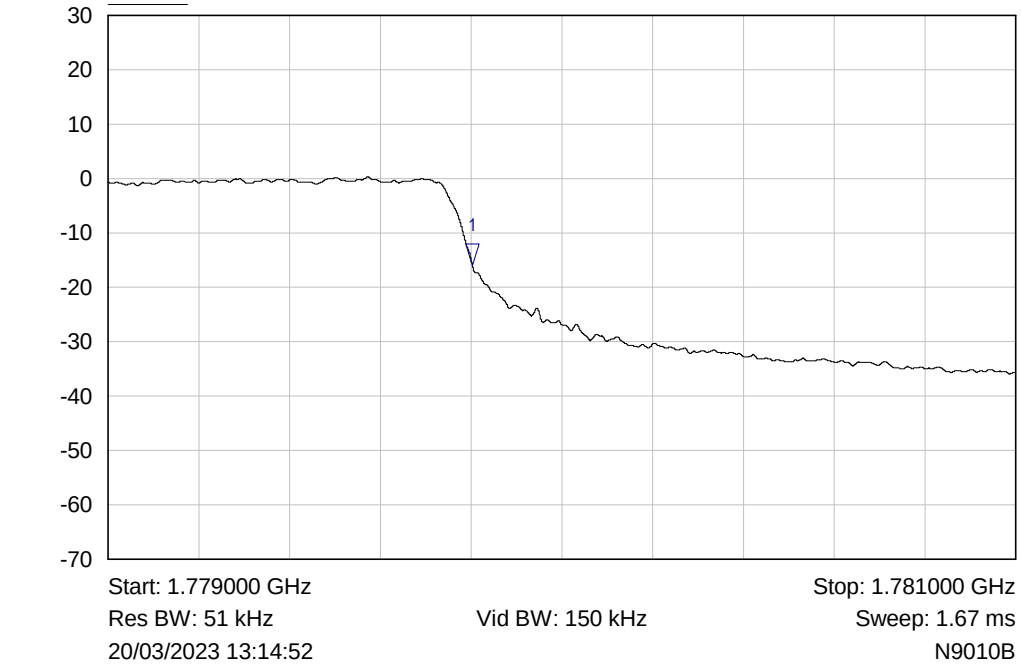
Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	1.779798 GHz	-16.00 dBm	

14011-2 Freq stability Band Edge,Band 66, Part 27, QPSK, 5 MHz,
100 RB , High Chan, 120 VAC, 10 Degrees



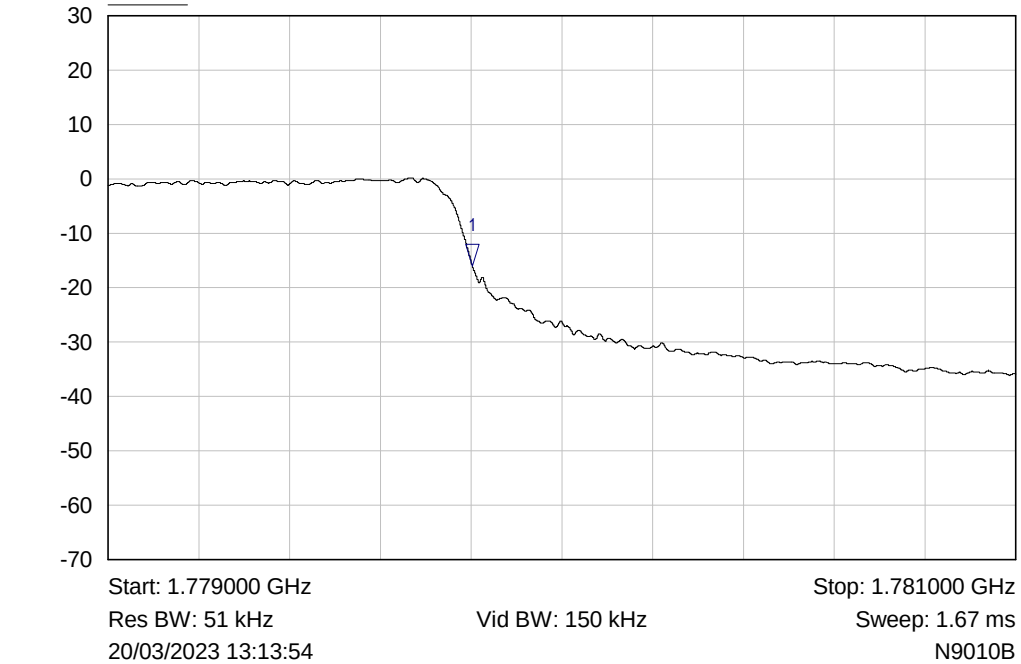
Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	1.779803 GHz	-16.00 dBm	

14011-2 Freq stability Band Edge,Band 66, Part 27, QPSK, 5 MHz,
100 RB , High Chan, 102 VAC
Trace A



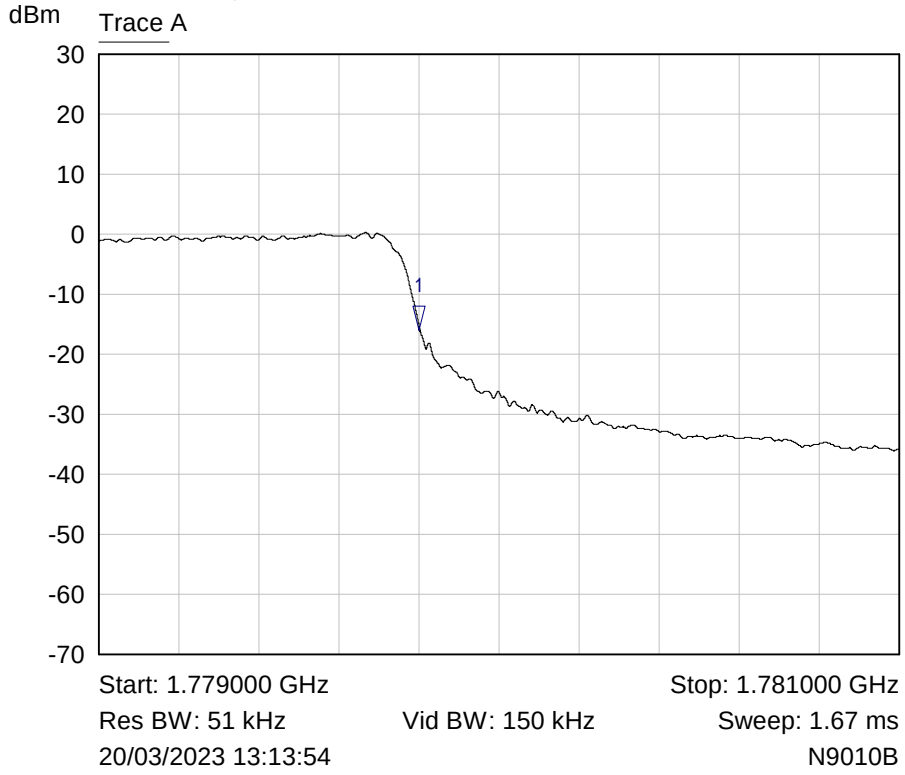
Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	1.779803 GHz	-15.99 dBm	

14011-2 Freq stability Band Edge,Band 66, Part 27, QPSK, 5 MHz,
100 RB , High Chan, 120 VAC
Trace A



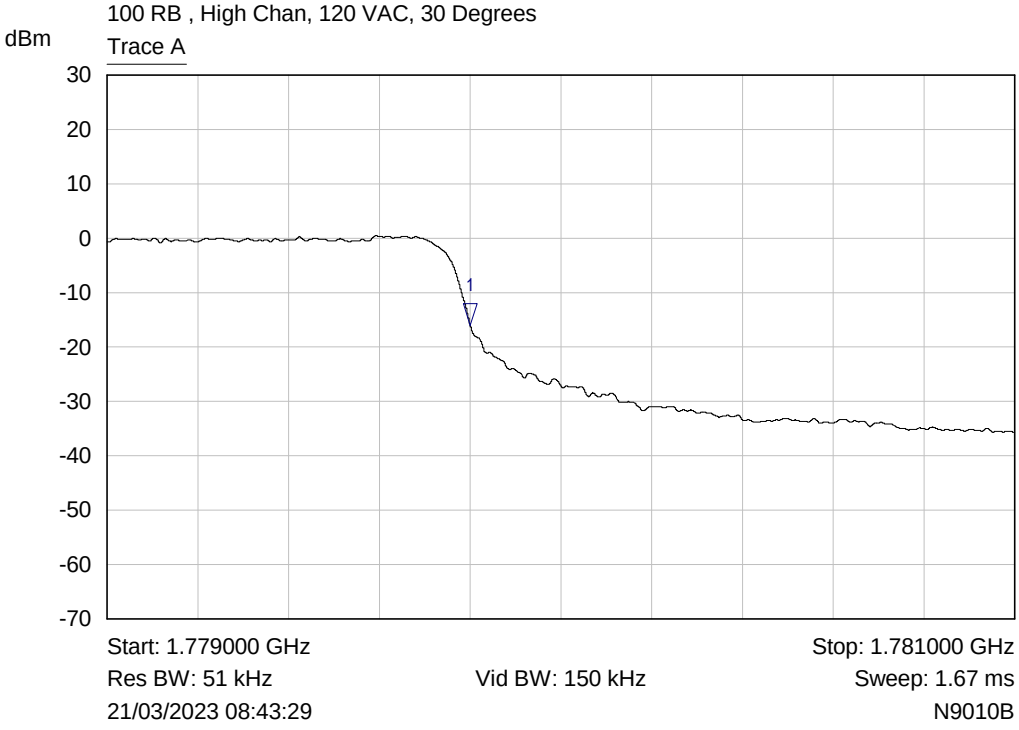
Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	1.779803 GHz	-16.00 dBm	

14011-2 Freq stability Band Edge,Band 66, Part 27, QPSK, 5 MHz,
100 RB , High Chan, 138 VAC



Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	1.779800 GHz	-16.00 dBm	

14011-2 Freq stability Band Edge,Band 66, Part 27, QPSK, 5 MHz,
100 RB , High Chan, 120 VAC, 30 Degrees



Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	1.779800 GHz	-16.00 dBm	

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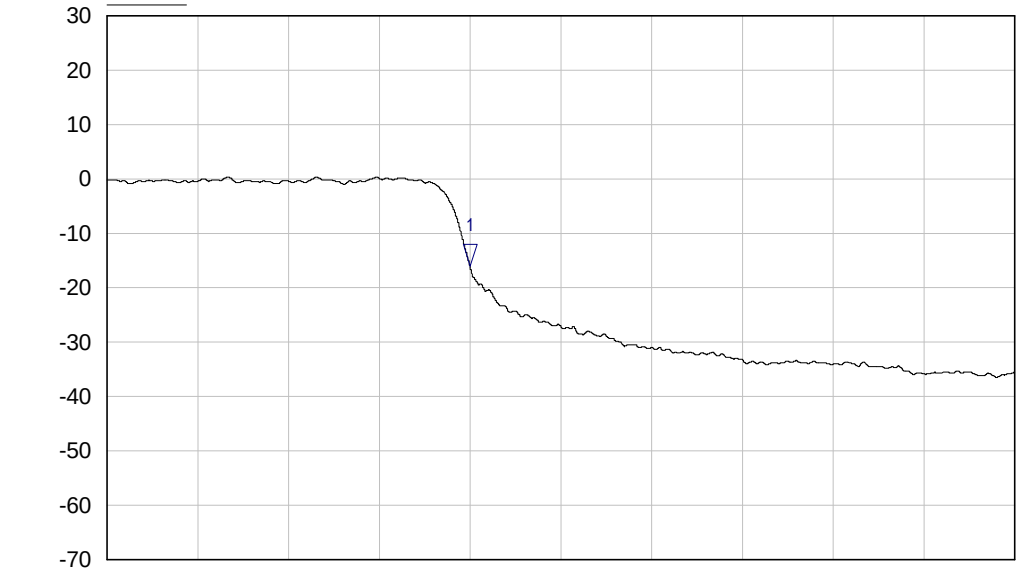
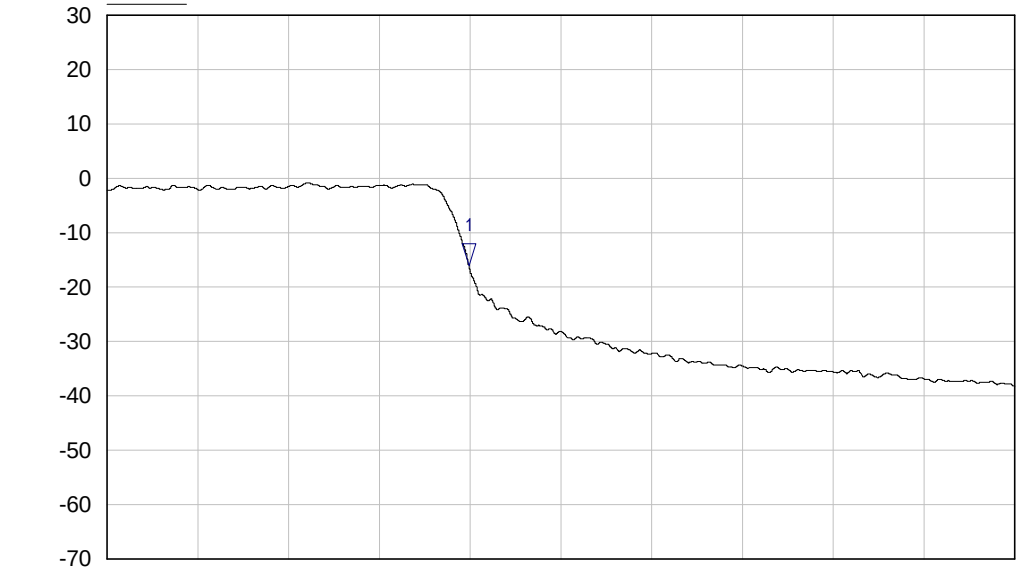
14011-2 Freq stability Band Edge,Band 66, Part 27, QPSK, 5 MHz,
100 RB , High Chan, 120 VAC, 40 Degrees
Trace A



Start: 1.779000 GHz Stop: 1.781000 GHz
Res BW: 51 kHz Vid BW: 150 kHz Sweep: 1.67 ms
21/03/2023 08:56:44 N9010B

Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	1.779799 GHz	-16.00 dBm	

14011-2 Freq stability Band Edge,Band 66, Part 27, QPSK, 5 MHz,
100 RB , High Chan, 120 VAC, 50 Degrees
Trace A



Start: 1.779000 GHz Stop: 1.781000 GHz
Res BW: 51 kHz Vid BW: 150 kHz Sweep: 1.67 ms
21/03/2023 09:25:09 N9010B

Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	1.779797 GHz	-16.00 dBm	

File Name: Airspan Communications Ltd.14011-2 Issue 01

7 Photographs

No photographs included in report at client's request.

7.1 Radiated emission diagrams

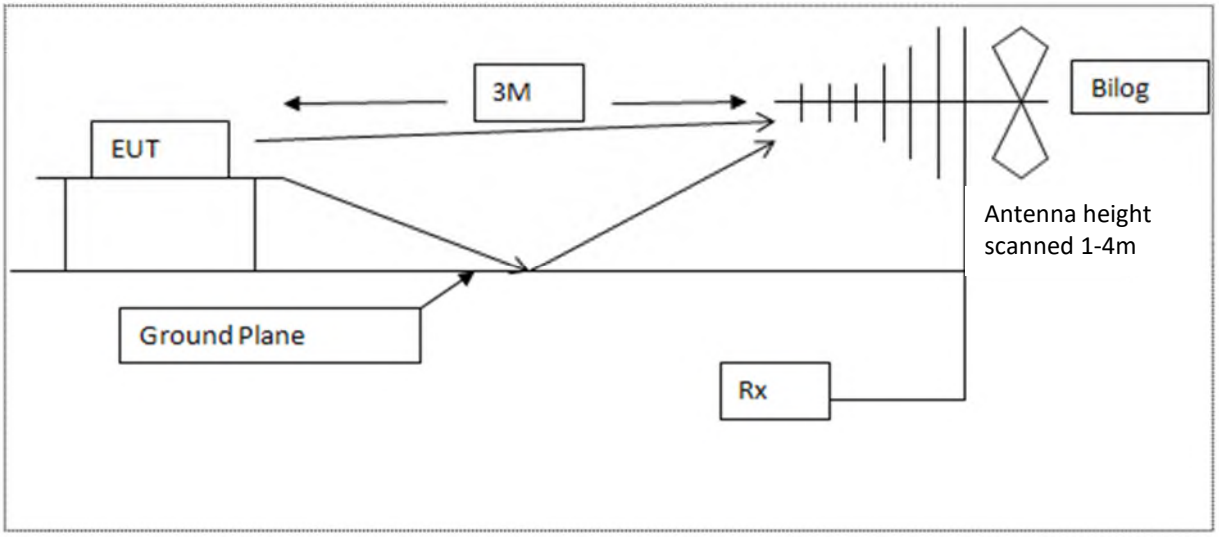


Diagram of the radiated emissions test setup 30 - 1000 MHz

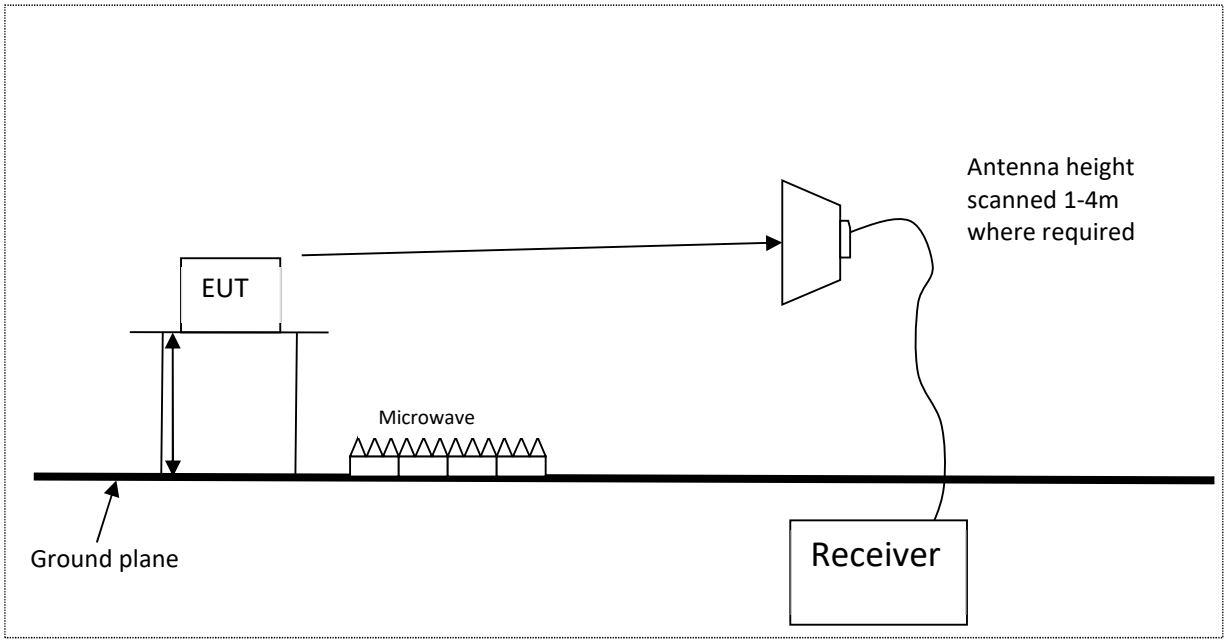


Diagram of the radiated emissions test setup above 1GHz

8 Test equipment calibration list

The following is a list of the test equipment used by R.N. Electronics Ltd to test the unit detailed within this report. In line with our procedures, the equipment was within calibration for the period during which testing was carried out.

RN No.	Model No.	Description	Manufacturer	Calibration date	Cal period
E268	BHA9118	Horn Antenna 1 – 18 GHz	Schaffner	02-Apr-2022	12 months
E291-2	6960B	RF Power Meter	Marconi Instruments	30-Nov-2022	24 months
E428	HF906	Horn Antenna 1 – 18 GHz	Rohde & Schwarz	02-Apr 2022	12 months
E533	N5182A	Signal Generator 6 GHz MXG	Agilent Technologies	07-Dec-2022	36 months
E555	CMV 5E-1	Variac 5A	Carroll & Meynell Ltd	19-Dec-2022	12 months
E622	2610	Directional Coupler 1 - 26.5GHz	Krytar	07-Jul-2022	12 months
E623	72-7715	Thermometer	Tenma	05-Apr 2022	12 months
E632	6934	Power Sensor 10MHz - 40GHz	IFR	15-Dec-2021	24 months
E642	E440A	PSA 3 Hz – 26.5 GHz	Agilent Technologies	09-Dec 2022	24 months
E654	MW221	Cable N Type to SMA Blue 2m (B)	Junflon	11-Oct 2022	12 months
E743	2017 4/2dB	Attenuator 4/2dB 30-1000MHz	RN Electronics Ltd	#15-Mar-2023	12 months
E856	N9039A	9 kHz – 1 GHz RF Filter Section	Agilent Technologies	06-Dec 2022	12 months
E904	5086-7805	Pre-Amplifier 1GHz – 26.5GHz	Hewlett Packard	04-Mar 2022	12 months
F072-2	794-2891	UFL to SMA cable set	RS Components	13-Dec 2022	12 months
F072-3	794-2891	UFL to SMA cable set	RS Components	13-Dec 2022	12 months
F075	AA18-10H	Attenuator SMA 10dB 18GHz	AtlanTecRF	19-Aug-2022	12 months
F081	AA18-20H	Attenuator SMA 20dB 18GHz	AtlanTecRF	19-Aug-2022	12 months
F391	R404131000	Termination N type 4GHz	Radiall	11-Nov 2022	12 months
H071	N9010B	EXA Signal Analyser 10 Hz to 44 GHz	Keysight Technologies	12-Dec-2022	24 months
LPE364	CBL6112A	Antenna BiLog 30MHz – 2GHz	Chase Electronics Ltd	28-Mar-2022	24 months
N607	HSGDW-50B	Environmental Oven	Shanghai Hasuc Instrument Manufacture Co., Ltd	-	-
TMS78	3160-08	Horn Std Gain 12.4 – 18 GHz	ETS Systems	30-Sep 2022	12 months
TMS79	3160-09	Horn Std Gain 18 – 26.5 GHz	ETS Systems	25-May 2022	12 months

Equipment was within calibration dates for tests and has been re-calibrated since/during date of tests.

9 Auxiliary and peripheral equipment

9 .1 Customer supplied equipment

Item No.	Model No.	Description	Manufacturer	Serial No.
1	CMW500	CMW500 communications Tester	Rhode & Schwarz	Airspan 007157

9 .2 RN Electronics supplied equipment

RN No.	Model No.	Description	Manufacturer	Serial No
F391	R404131000	Termination N type 4GHz	Radiall	
I257	R830-13C	Laptop Toshiba Portege	Toshiba	9C086680H

10 Condition of the equipment tested

In order for the EUT to produce the results shown within this report the following modifications, if any, were implemented.

10.1 Modifications before test

No modifications were made before test by RN Electronics Ltd.

10.2 Modifications during test

Conducted and radiated spurious emissions testing was carried out with an RF output power of +23 dBm (single port) for all modulation schemes. After these tests it was determined that to comply with Band edge/block edge emissions requirements for some Bandwidths/schemes and RB settings the power had to be reduced. For 5MHz Bandwidths this was found to be 17dBm output power using the setting in the provided software control of between 17% and 19% to achieve this power output. For 10, 15 and 20 MHz Bandwidth settings this was found to be 22dBm output power using the setting in the provided software control of between 20% and 22% to achieve this power output.

Additionally, to then comply with RF power EIRP limit requirements in 2 port MIMO mode for 10, 15 and 20 MHz Bandwidths/schemes and RB settings, the percentage/power setting in the software had to be further reduced. RF output target power for all 10 MHz, 15MHz and 20MHz bandwidths and all modulation schemes, was reduced from +22 dBm to +20 dBm (single port), by reducing the percentage software settings to between 18% and 20%.

11 Description of test sites

Site A Radio Laboratory and Anechoic Chamber

Site B Semi-Anechoic Chamber and Control Room
FCC Registration No. 293246, ISED Registration No. 5612A-4

Site C Transient Laboratory

Site D Screened Room (Conducted Immunity)

Site E Screened Room (Control Room for Site D)

Site F Screened Room (Conducted Emissions)

Site G Screened Room (Control Room for Site H)

Site H 3m Semi-Anechoic Chamber (indoor OATS)
FCC Registration No. 293246, ISED Registration No. 5612A-2, VCCI Registration No. 4065

Site J Transient Laboratory

Site K Screened Room (Control Room for Site M)

Site M 3m Semi-Anechoic Chamber (indoor OATS)
FCC Registration No. 293246, ISED Registration No. 5612A-3

Site N Radio Laboratory

Site Q Fully-Anechoic Chamber

Site OATS 3m and 10m Open Area Test Site
FCC Registration No. 293246, ISED Registration No. 5612A-1

Site R Screened Room (Conducted Immunity)

Site S Safety Laboratory

Site T Transient Laboratory

RN Electronics CAB identifier as issued by Innovation, Science and Economic Development Canada is UK0002
RN Electronics CAB identifier as issued by FCC is UK0015

12 Abbreviations and units

%	Percent
λ	Wavelength
µA/m	microAmps per metre
µV	microVolts
µW	microWatts
AC	Alternating Current
ACK	ACKnowledgement
ACP	Adjacent Channel Power
AFA	Adaptive Frequency Agility
ALSE	Absorber Lined Screened Enclosure
AM	Amplitude Modulation
Amb	Ambient
ANSI	American National Standards Institute
ATPC	Automatic Transmit Power Control
AVG	Average
AWGN	Additive White Gaussian Noise
BER	Bit Error Rate
BPSK	Binary Phase Shift Keying
BT	BlueTooth
BLE	BlueTooth Low Energy
BW	Bandwidth
ºC	Degrees Celsius
C/I	Carrier / Interferer
CAC	Channel Availability Check
CCA	Clear Channel Assessment
CEPT	European Conference of Postal and Telecommunications Administrations
CFR	Code of Federal Regulations
CISPR	Comité International Spécial des Perturbations Radioélectriques
cm	centimetre
COFDM	Coherent OFDM
COT	Channel Occupancy Time
CS	Channel Spacing
CW	Continuous Wave
DAA	Detect And Avoid
dB	deciBels
dBµA/m	deciBels relative to 1µA/m
dBµV	deciBels relative to 1µV
dBµV/m	deciBels relative to 1µV/m
dBc	deciBels relative to Carrier
dBd	deciBels relative to dipole gain
dBi	deciBels relative to isotropic gain
dBm	deciBels relative to 1mW
dBr	deciBels relative to a maximum value
dBW	deciBels relative to 1W
DC	Direct Current
DFS	Dynamic Frequency Selection
DMO	Dynamic Modulation Order
DSSS	Direct Sequence Spread Spectrum
DTA	Digital Transmission Analyser
EIRP	Equivalent Isotropic Radiated Power
emf	electromotive force
ERC	European Radiocommunications Committee
ERP	Effective Radiated Power
ETSI	European Telecommunications Standards Institute
EU	European Union
EUT	Equipment Under Test
FCC	Federal Communications Commission
FER	Frame Error Rate
FHSS	Frequency Hopping Spread Spectrum
FM	Frequency Modulation
FSK	Frequency Shift Keying
FSS	Fixed Satellite Service
g	Grams
GHz	GigaHertz
GNSS	Global Navigation Satellite System
GPS	Global Positioning System
Hz	Hertz
IEEE	Institute of Electrical and Electronics Engineers
IF	Intermediate Frequency
ISED	Innovation Science and Economic Development
ITU	International Telecommunications Union
KDB	Knowledge DataBase

kg	kilogram	pW	picoWatts
kHz	kiloHertz	QAM	Quadrature Amplitude Modulation
kPa	Kilopascal	QP	Quasi Peak
LBT	Listen Before Talk	QPSK	Quadrature Phase Shift Keying
LISN	Line Impedance Stabilisation Network	RBW	Resoution Band Width
LNA	Low Noise Amplifier	RED	Radio Equipment Directive
LNB	Low Noise Block	R&TTE	Radio and Telecommunication Terminal Equipment
LO	Local Oscillator	Ref	Reference
m	metre	RF	Radio Frequency
mA	milliAmps	RFC	Remote Frequency Control
max	maximum	RFID	Radio Frequency IDentification
Mbit/s	MegaBits per second	RLAN	Radio Local Area Network
MCS	Modulation and Coding Scheme	RMS	Root Mean Square
MHz	MegaHertz	RNSS	Radio Navigation Satellite Service
mic	Microphone	RSL	Received Signal Level
MIMO	Multiple Input, Multiple Output	RSSI	Received Signal Strength Indicator
min	minimum	RTP	Room Temperature and Pressure
mm	millimetres	RTPC	Remote Transmit Power Control
ms	milliseconds	Rx	Receiver
mW	milliWatts	s	Seconds
NA	Not Applicable	SINAD	Signal to Noise And Distortion
NFC	Near Field Communications	SRD	Short Range Device
nom	Nominal	Tx	Transmitter
nW	nanoWatt	UKAS	United Kingdom Accreditation Service
OATS	Open Area Test Site	UKCA	United Kingdom Conformity Assessed
OBW	Occupied Band Width	UKRER	United Kingdom Radio Equipment Regulations
OCW	Occupied Channel Width	UHF	Ultra High Frequency
OFDM	Orthogonal Frequency Division Multiplexing	U-NII	Unlicensed National Information Infrastructure
OOB	Out Of Band	USB	Universal Serial Bus
ppm	Parts per million	UWB	Ultra Wide Band
PER	Packet Error Rate	V	Volts
PK	Peak	V/m	Volts per metre
PMR	Private Mobile Radio	VBW	Video Band Width
PRBS	Pseudo Random Bit Sequence	VHF	Very High Frequency
PRF	Pulse Repitition Frequency	VSAT	Very Small Aperture Terminal
PSD	Power Spectral Density	W	Watts
PSU	Power Supply Unit		

====== END OF TEST REPORT ======