CommScope Technologies, LLC

TEST REPORT

SCOPE OF WORK
EMISSIONS TESTING – Band 5 Radio Module, Model: RPM-A5A11-B05

REPORT NUMBER
104326151MPK-010

ISSUE DATE
August 25, 2020

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DOCUMENT CONTROL NUMBER
Non-Specific Radio Report Shell Rev. December 2017

TEST REPORT

(FULL COMPLIANCE)

Report Number: 104326151MPK-010
Project Number: G104326151

Report Issue Date: August 25, 2020

Product Designation: Band 5 Radio Module
Model Tested: RPM-A5A11-B05

Standards: CFR47 FCC Part 22

FCC ID: QHYRPM-A5A11-B05

Tested by:	**Client:**
Intertek Testing Services NA, Inc.	CommScope Technologies LLC
1365 Adams Court	250 Apollo Drive
Menlo Park, CA 94025	Chelmsford, MA 01824
USA	USA

Report prepared by	**Report reviewed by**
Minh Ly / EMC Project Engineer	**Krishna Vemuri/ EMC Manager**

Table of Contents

1 Introduction and Conclusion

The tests indicated in section 2.0 were performed on the product constructed as described in section 4.0. The remaining test sections are the verbatim text from the actual data sheets used during the investigation. These test sections include the test name, the specified test Method, a list of the actual Test Equipment Used, documentation Photos, Results and raw Data. No additions, deviations, or exclusions have been made from the standard(s) unless specifically noted.

Based on the results of our investigation, we have concluded the product tested **complies** with the requirements of the standard(s) indicated. The results obtained in this test report pertain only to the item(s) tested. Intertek does not make any claims of compliance for samples or variants which were not tested.

2 Test Summary

Section	Test full name	Result
3	Client Information	--
4	Description of Equipment Under Test and Variant Models	--
5	System Setup and Method	--
6	Effective Radiated Power CFR47 FCC Parts 2.1046 and 22.913 (a)	Pass
7	Peak-to-Average Power Ratio (PARR) CFR47 FCC 22.913 (d)	Pass
8	26 dB Bandwidth and Occupied Bandwidth CFR47 FCC Parts 2.1049	Pass
9	Band Edge Compliance CFR47 FCC 22.917	Pass
10	Frequency Stability CFR47 FCC Parts 2.1055 and 22.355	Pass
11	Transmitter Spurious Emissions CFR47 Parts 2.1051, 2.1053, 2.1057, and 22.917	Pass
12	List of Test Equipment	-
13	Revision History	-

3 Client Information

This EUT was tested at the request of:

Client: CommScope Technologies LLC
250 Apollo Drive
Chelmsford, MA 01824
USA

Contact: Elowra Khan
Telephone: (972) 952-9846
Fax: None
Email: Elowra.khan@commscope.com

4 Description of Equipment Under Test and Variant Models

Manufacturer: CommScope Telecommunications (China) Ltd.
68 Su Hong Xi Lu, Suzhou Industrial Park.
Suzhou, Jiangsu, 215021, China

Equipment Under Test			
Description	**Manufacturer**	**Model Number**	**Serial Number**
Band 5 Radio Module	CommScope Technologies LLC	RPM-A5A11-B05	20093000033

Received Date:	08/03/2020	**Test Started:**	08/03/2020
Received Condition:	Good	**Test Completed:**	08/14/2020
Type:	Production		

Description of Equipment Under Test (provided by client)

The Radio Module is band specific using the Analog devices RF Agile Transceiver IC, AD936x. The device combines an RF front end with a flexible mixed-signal baseband section and integrated frequency synthesizers providing a configurable digital interface to the processor. The Radio Module also contains a band specific front end, band specific antenna and required power rails. All power rails required are derived from the 12 VDC bus supplied by the Baseband card. The reference frequency for the radio IC is 38.4 MHz is derived from an OCXO which is disciplined from a 1588 reference clock.
It supports bandwidths of 5 and 10MHz with four modulations; TM1.1-QPSK, TM3.2-16QAM, TM3.1-64QAM, and TM3.1a-256QAM. The radio is fixed.
Per manufacturer, the lowest clock frequency generated in the equipment is 30.72MHz.

Description of Radio Host (provided by client)

The OneCell® RP5000 family is a 2x2 MIMO, Single band radio operating in LTE band 5. The RP5000 supports bandwidths of 5 MHz & 10 MHz. The frequencies supported are shown in the table below:

LTE Band	Downlink	Uplink	Bandwidth DL/UL MHz	Duplex Spacing MHz	Band Gap MHz
5	869 – 894	824 – 849	70	45	20

The lowest clock frequency generated in the host is 33.33MHz.

Equipment Under Test Power Configuration			
Rated Voltage	**Rated Current**	**Rated Frequency**	**Number of Phases**
56 VDC	0.8 mA per pair max	DC	N/A

Operating modes of the EUT:

No.	Descriptions of EUT Exercising
1	Pre-programmed to transmit at Low, Mid, and High channels at four different modulations, TM1.1-QPSK, TM3.2-16QAM, TM3.1-64QAM, and TM3.1a-256QAM.

Radio/Receiver Characteristics	
Frequency Band(s)	869-894 MHz
Modulation Type(s)	TM1.1-QPSK, TM3.2-16QAM, TM3.1-64 QAM, TM3.1a-256QAM
Maximum Output Power (conducted)	21.58 dBm (Conducted) 22.43 dBd (ERP)
Test Channels	Low, Middle, High Channels of 5 MHz and 10 MHz Bandwidths, Single Channel operation only
Occupied Bandwidth	9.95 MHz (Worst-case)
MIMO Information (# of Transmit and Receive antenna ports)	2x2 MIMO using cross polarized antennas and uncorrelated data streams
Equipment Type	Module in a host
Antenna Type and Gain	Detachable Antenna: +3 dBi (as provided by the client. Intertek takes no responsibility for the accuracy of this information. Actual antenna gain will be determined at the time of licensing)

Variant Models:

The following variant models were not tested as part of this evaluation, but have been identified by the manufacturer as being electrically identical models, depopulated models, or with reasonable similarity to the model(s) tested. Intertek does not make any claims of compliance for samples or variants which were not tested.

None

5 System Setup and Method

Cables					
ID	**Description**	**Length (m)**	**Shielding**	**Ferrites**	**Termination**
--	LAN (POE Power Cable)	3.0	Unshielded	None	POE P/S
--	LAN (Communication)	3.0	Unshielded	None	Laptop

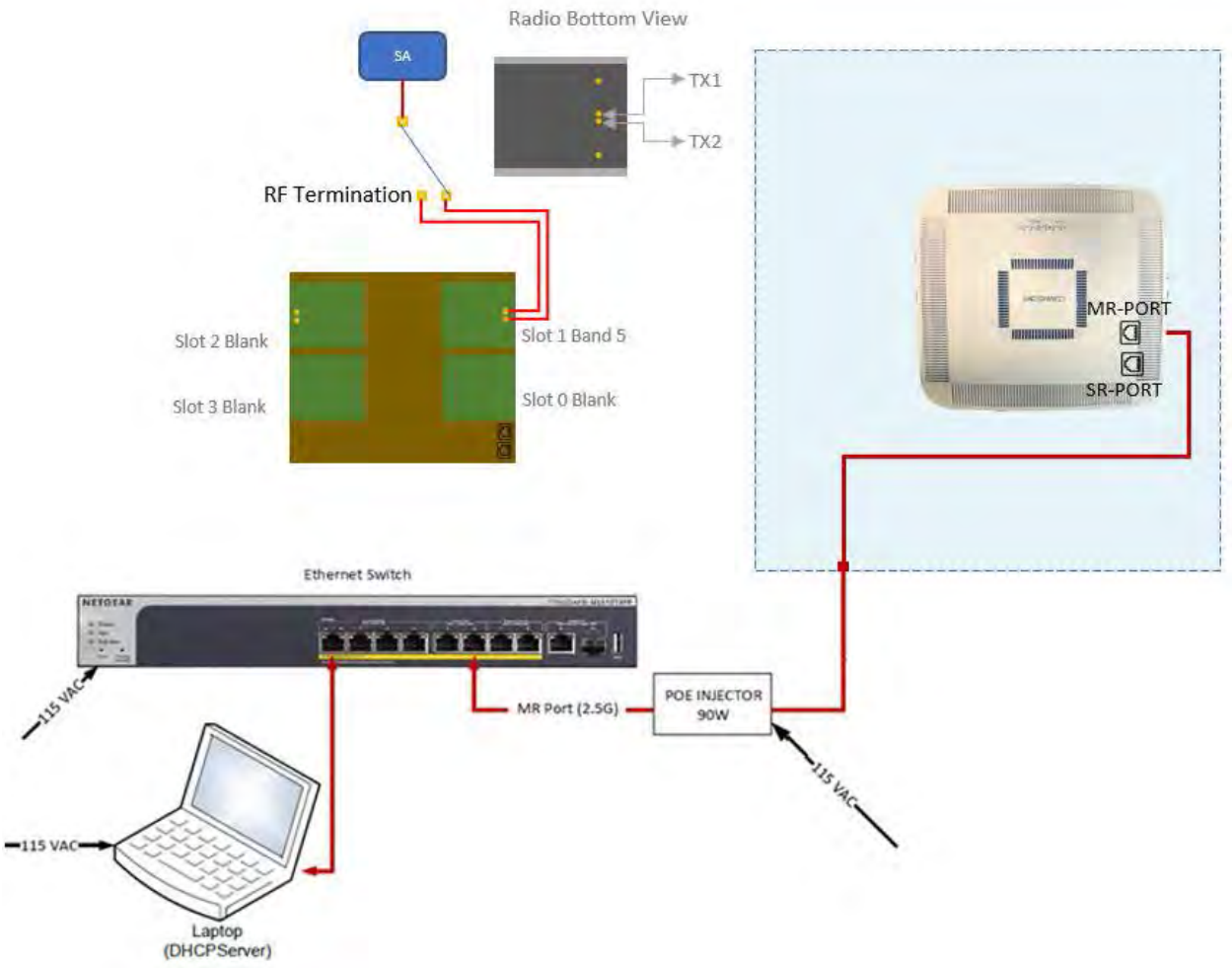
Support Equipment			
Description	**Manufacturer**	**Model Number**	**Serial Number**
POE Injector	Phihong	POE90U-18T	N/A
Laptop	Dell	LATITUDE E6440	None
Smart switch	Netgear	ProSafe MS510TX	50A17A7H8024A
Power Device Analzyer	Sifos Technologies	PDA-604A	604A0033
OneCell® RP5000*	CommScope Technologies LLC	RP-A51xxi	None

*Radio host used for testing

5.1 Method:

Configuration as required by ANSI C63.26-2015, and CFR47 FCC Part 22 (06/2020).

5.2 EUT Block Diagram:



6 Effective Radiated Power

6.1 Requirement:

The ERP of base stations and repeaters must not exceed:
- 500 watts per emission; or
- 400 watts/MHz (PSD) per section.

6.2 Procedure:

The procedure described in FCC Publication 971168 D01 Power Meas License Digital Systems v03r01 was used. Tests are performed in accordance with ANSI C63.26 Section 5.2.4.4.1 and CFR47 FCC Parts 2.1046.

A spectrum analyzer was connected to the antenna port of the transmitter and the average power was measured using the average power function. Output power from the two antenna ports was not summed since the data streams are uncorrelated and the antennas are cross polarized.

E.R.P Power = Conducted Output Power (dBm) + Antenna gain (dBi) -2.15 (dBi)

6.3 Results:

The maximum conducted output power was measured to be 21.58 dBm, which is much less than the ERP limit. The sample tested was found to Comply.

Band 5, Bandwidth: 5 MHz, Modulation: TM1.1-QPSK

Channel	Frequency (MHz)	Antenna Port	Output Power (dBm)	ERP (dBm)
Low	871.5	ANT0	20.36	21.21
		ANT1	20.01	20.86
Mid	881.5	ANT0	21.26	22.11
		ANT1	21.58	22.43
High	891.5	ANT0	21.49	22.34
		ANT1	21.57	22.42

Band 5, Bandwidth: 5 MHz, Modulation: TM3.2-16QAM

Channel	Frequency (MHz)	Antenna Port	Output Power (dBm)	ERP (dBm)
Low	871.5	ANT0	21.08	21.93
		ANT1	20.67	21.52
Mid	881.5	ANT0	21.07	21.92
		ANT1	21.31	22.16
High	891.5	ANT0	21.55	22.40
		ANT1	21.29	22.14

Band 5, Bandwidth: 5 MHz, Modulation: TM3.1-64QAM

Channel	Frequency (MHz)	Antenna Port	Output Power (dBm)	ERP (dBm)
Low	871.5	ANT0	20.96	21.81
		ANT1	20.57	21.42
Mid	881.5	ANT0	21.08	21.93
		ANT1	21.46	22.31
High	891.5	ANT0	21.30	22.15
		ANT1	21.28	22.13

Band 5, Bandwidth: 5 MHz, Modulation: TM3.1a-256QAM

Channel	Frequency (MHz)	Antenna Port	Output Power (dBm)	ERP (dBm)
Low	871.5	ANT0	20.87	21.72
		ANT1	20.69	21.54
Mid	881.5	ANT0	21.14	21.99
		ANT1	21.44	22.29
High	891.5	ANT0	21.33	22.18
		ANT1	21.34	22.19

*Worst case E.R.P (highest level) = 21.58 + 3.0 – 2.15 = 22.43 dBm

Band 5, Bandwidth: 10 MHz, Modulation: TM1.1-QPSK

Channel	Frequency (MHz)	Antenna Port	Output Power (dBm)	ERP (dBm)
Low	874.0	ANT0	21.22	22.07
		ANT1	21.01	21.86
Mid	881.5	ANT0	21.13	21.98
		ANT1	21.46	22.31
High	889.0	ANT0	21.48	22.33
		ANT1	21.28	22.13

Band 5, Bandwidth: 10 MHz, Modulation: TM3.2-16QAM

Channel	Frequency (MHz)	Antenna Port	Output Power (dBm)	ERP (dBm)
Low	874.0	ANT0	21.15	22.0
		ANT1	21.07	21.92
Mid	881.5	ANT0	21.16	22.01
		ANT1	21.40	22.25
High	889.0	ANT0	21.15	22.0
		ANT1	21.20	22.05

Band 5, Bandwidth: 10 MHz, Modulation: TM3.1-64QAM

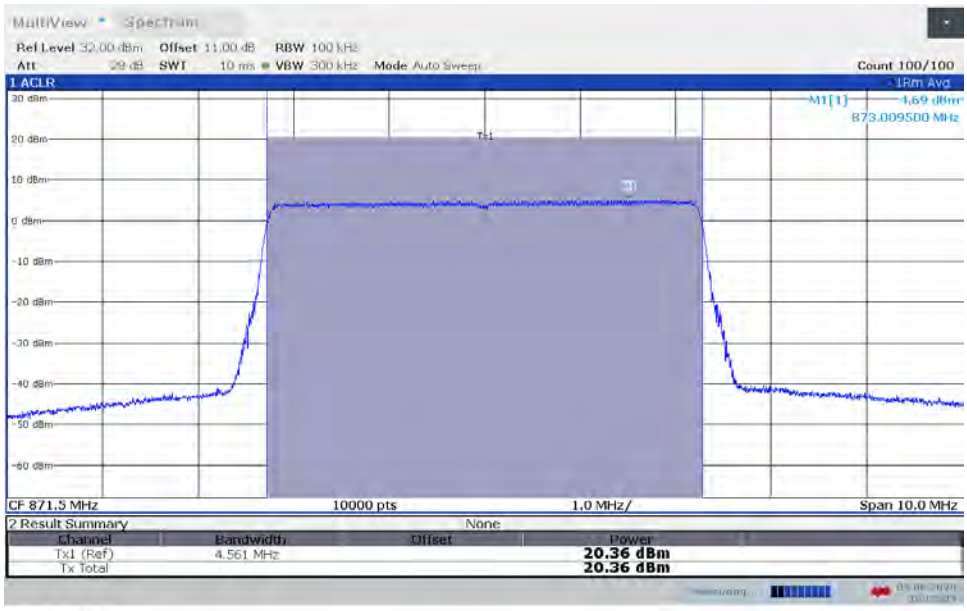
Channel	Frequency (MHz)	Antenna Port	Output Power (dBm)	ERP (dBm)
Low	874.0	ANT0	21.17	22.02
		ANT1	20.98	21.83
Mid	881.5	ANT0	21.12	21.97
		ANT1	21.43	22.28
High	889.0	ANT0	21.25	22.10
		ANT1	21.26	22.11

Band 5, Bandwidth: 10 MHz, Modulation: TM3.1a-256QAM

Channel	Frequency (MHz)	Antenna Port	Output Power (dBm)	ERP (dBm)
Low	874.0	ANT0	21.45	22.30
		ANT1	21.10	21.95
Mid	881.5	ANT0	21.16	22.01
		ANT1	21.45	22.30
High	889.0	ANT0	21.25	22.10
		ANT1	21.33	22.18

*Worst case E.R.P (highest level) = 21.48 + 3.0 – 2.15 = 22.33 dBm

TM1.1-QPSK_5 MHz Bandwidth
Band 5, ANT0, Low Channel



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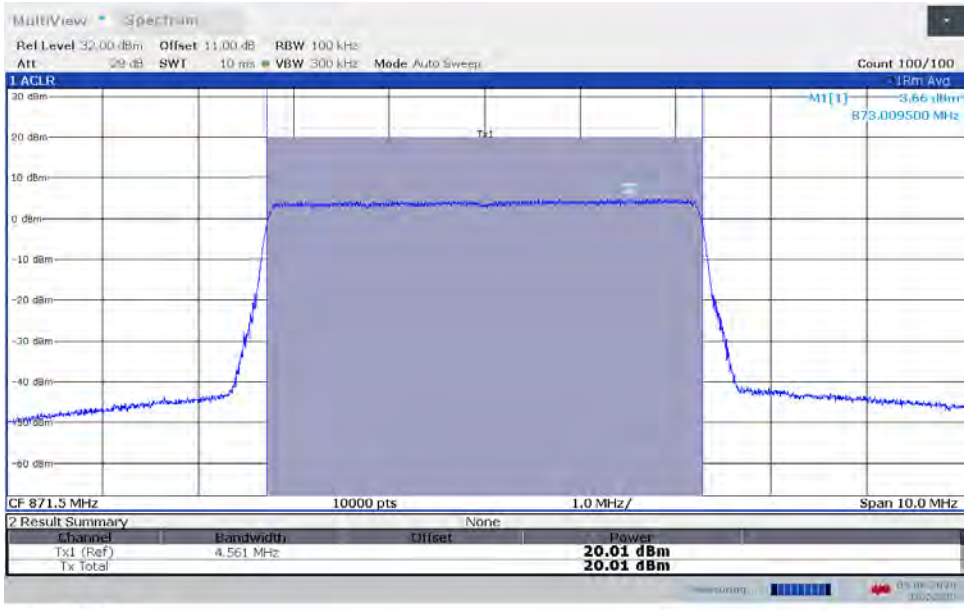
TM1.1-QPSK_5 MHz Bandwidth
Band 5, ANT1, Low Channel



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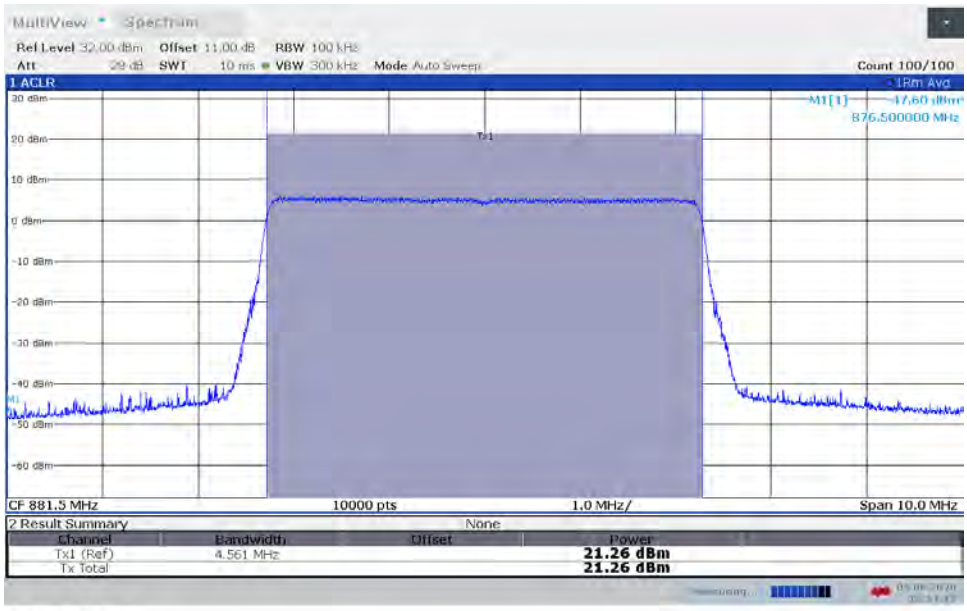
Band 5, ANT0, Mid Channel



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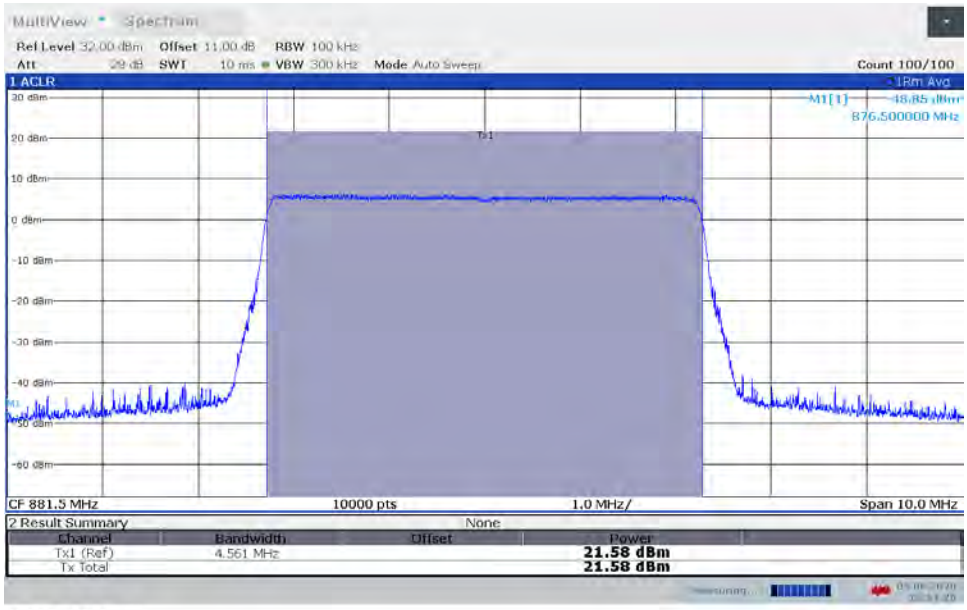
Band 5, ANT1, Mid Channel



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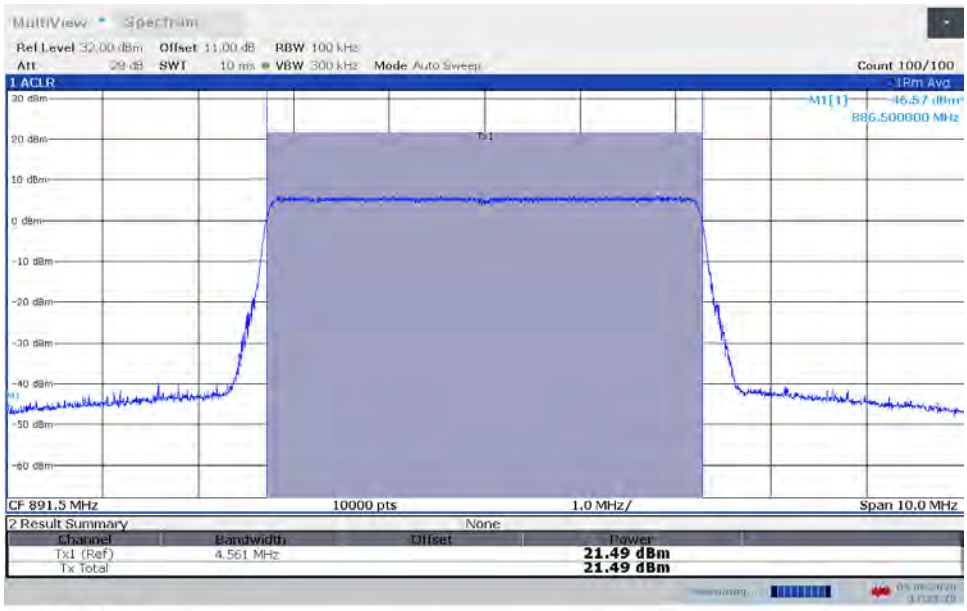
Band 5, ANT0, High Channel



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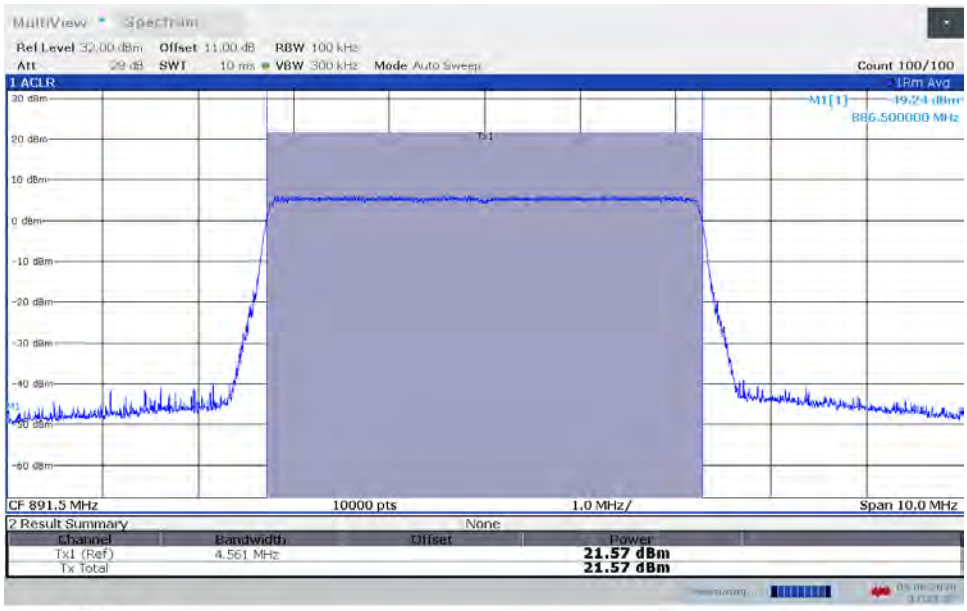
TM1.1-QPSK_5 MHz Bandwidth
Band 5, ANT1, High Channel



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TM3.2-16QAM_5 MHz Bandwidth
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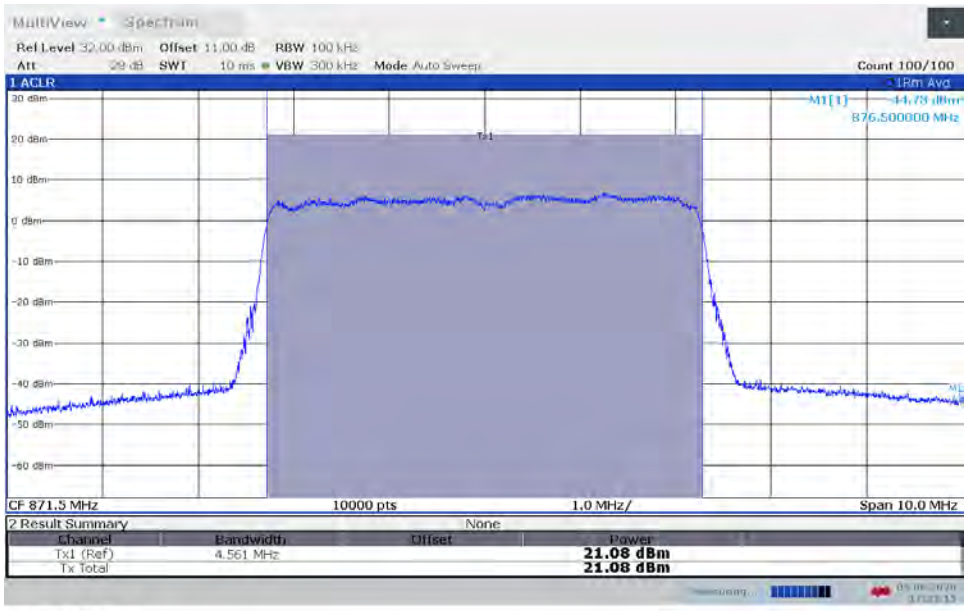

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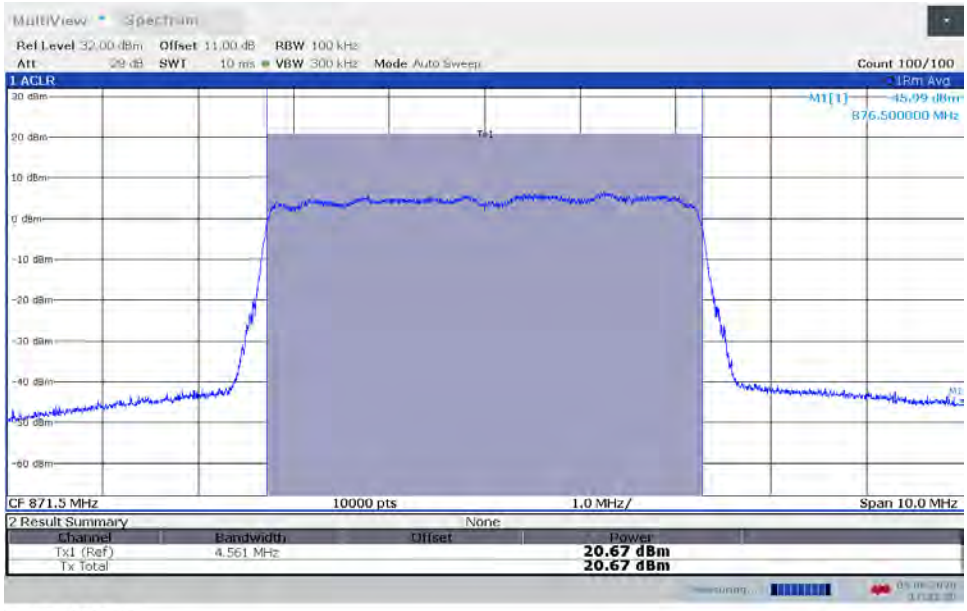
TM3.2-16QAM_5 MHz Bandwidth
Band 5, ANT1, Low Channel



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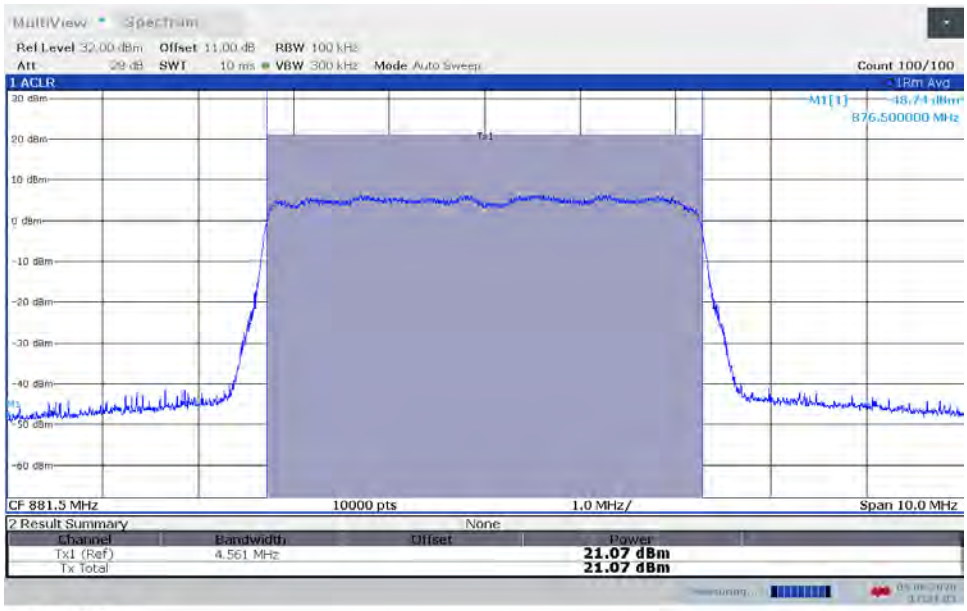
TM3.2-16QAM_5 MHz Bandwidth
Band 5, ANT0, Mid Channel



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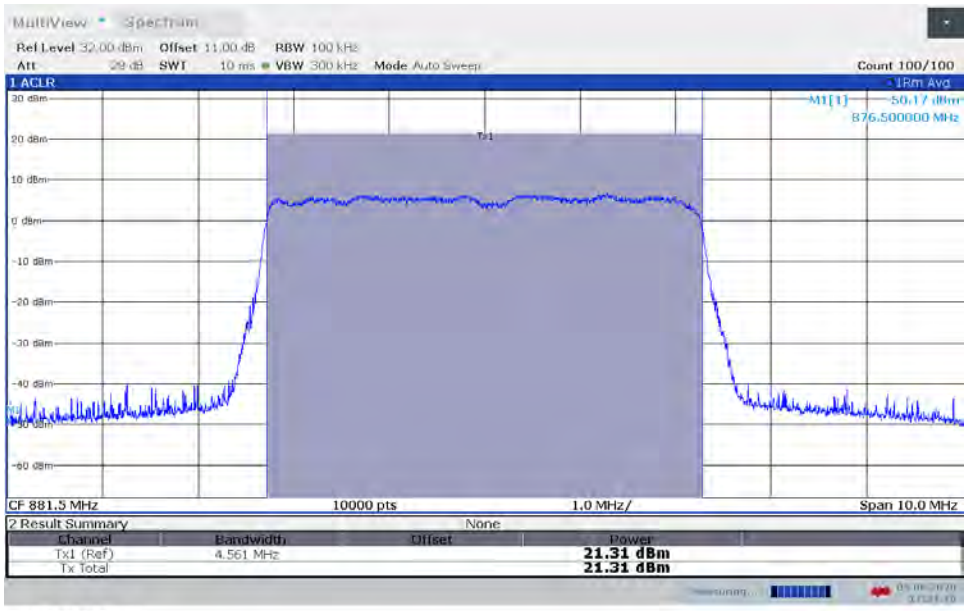
TM3.2-16QAM_5 MHz Bandwidth
Band 5, ANT1, Mid Channel



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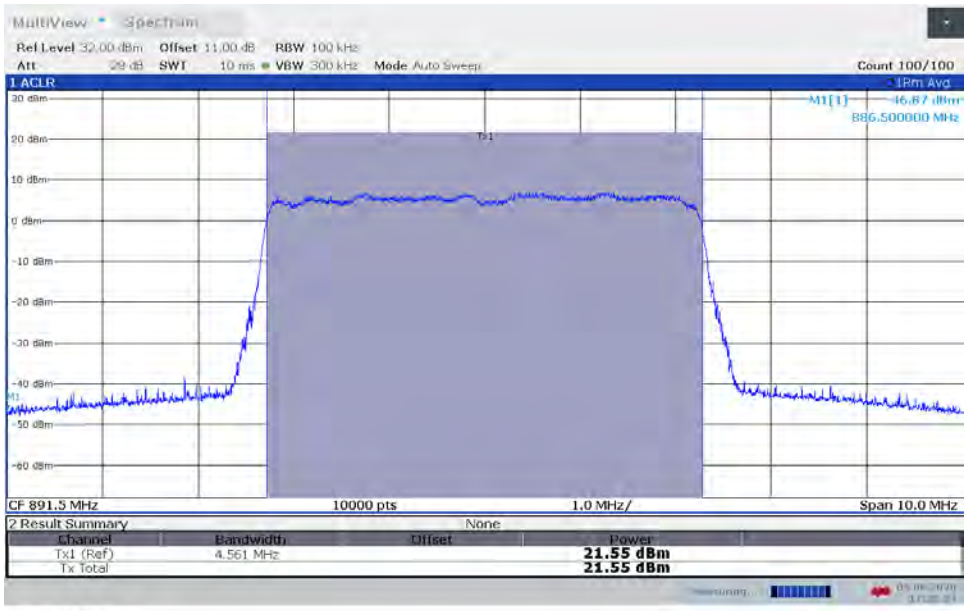
TM3.2-16QAM_5 MHz Bandwidth
Band 5, ANT0, High Channel



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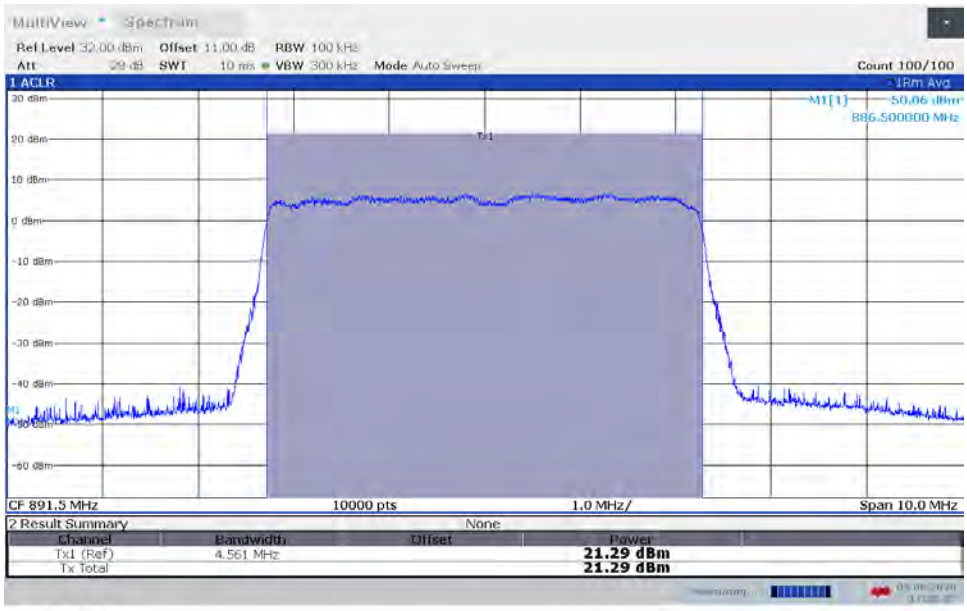
TM3.2-16QAM_5 MHz Bandwidth
Band 5, ANT1, High Channel



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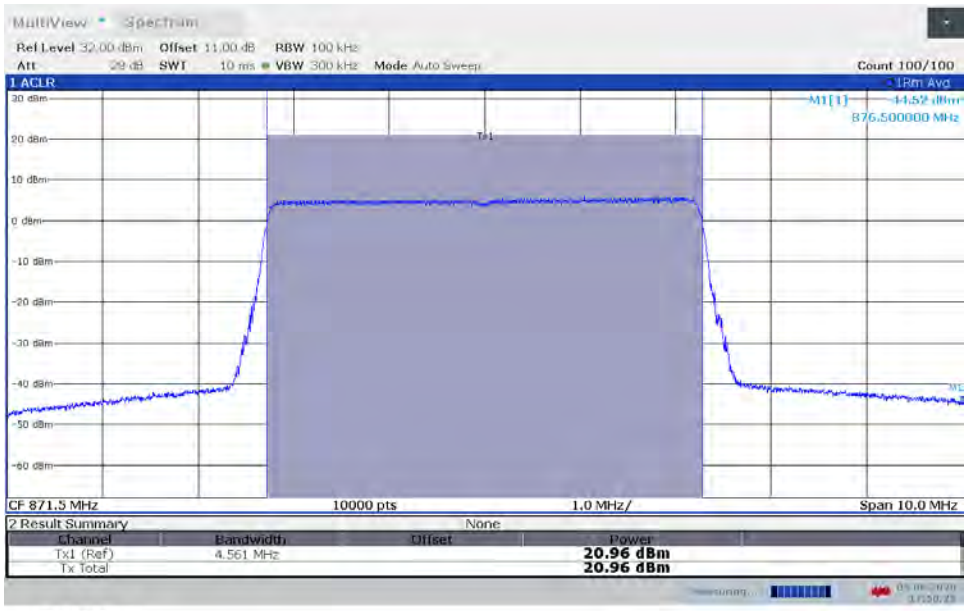
TM3.1-64QAM_5 MHz Bandwidth
Band 5, ANT0, Low Channel



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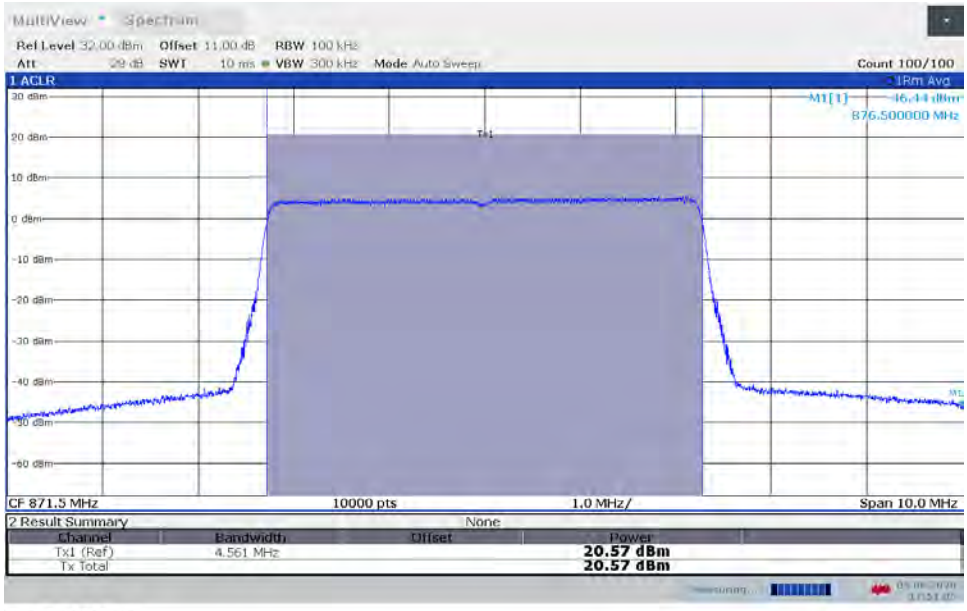
TM3.1-64QAM_5 MHz Bandwidth
Band 5, ANT1, Low Channel



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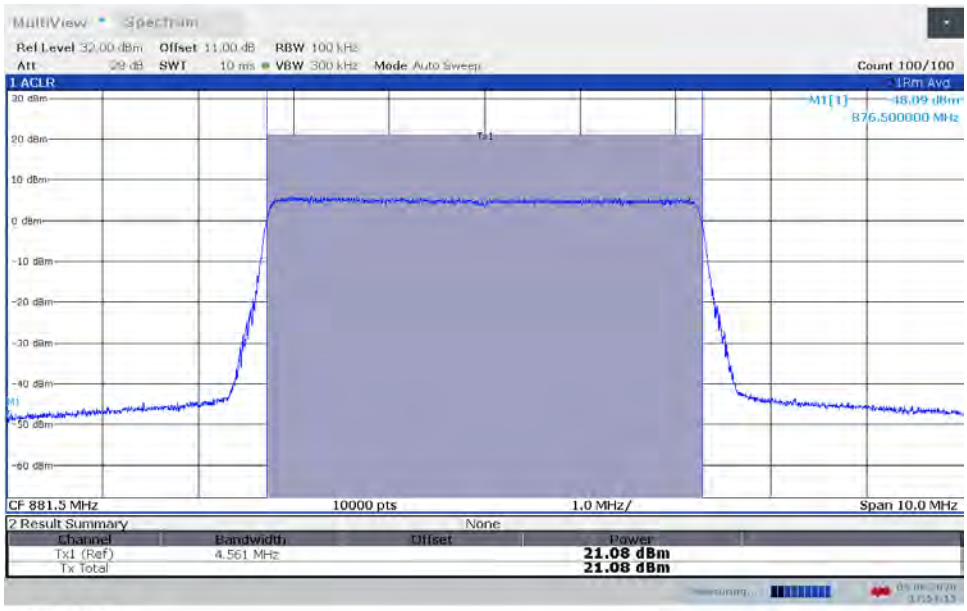
TM3.1-64QAM_5 MHz Bandwidth
Band 5, ANT0, Mid Channel



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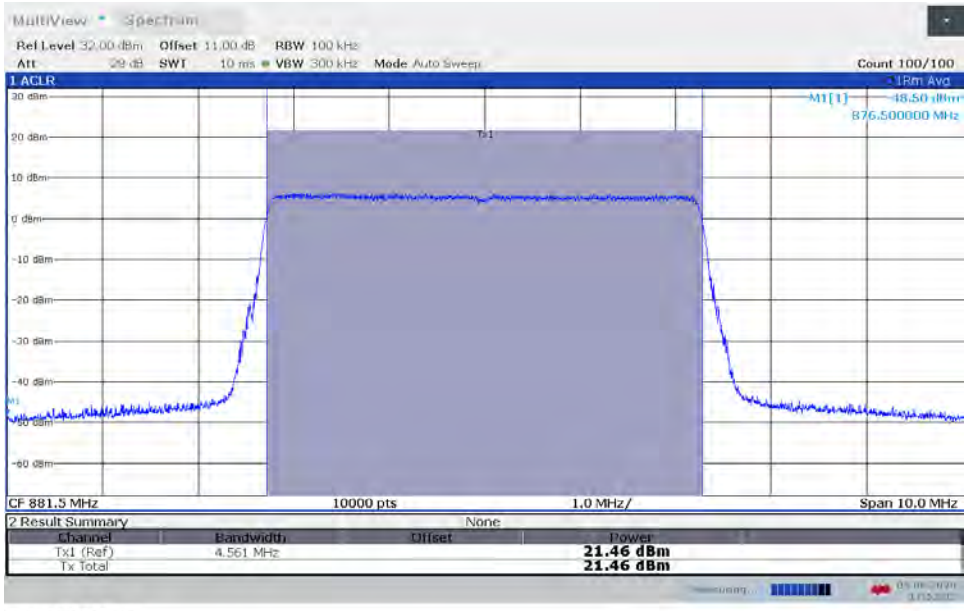
TM3.1-64QAM_5 MHz Bandwidth
Band 5, ANT1, Mid Channel



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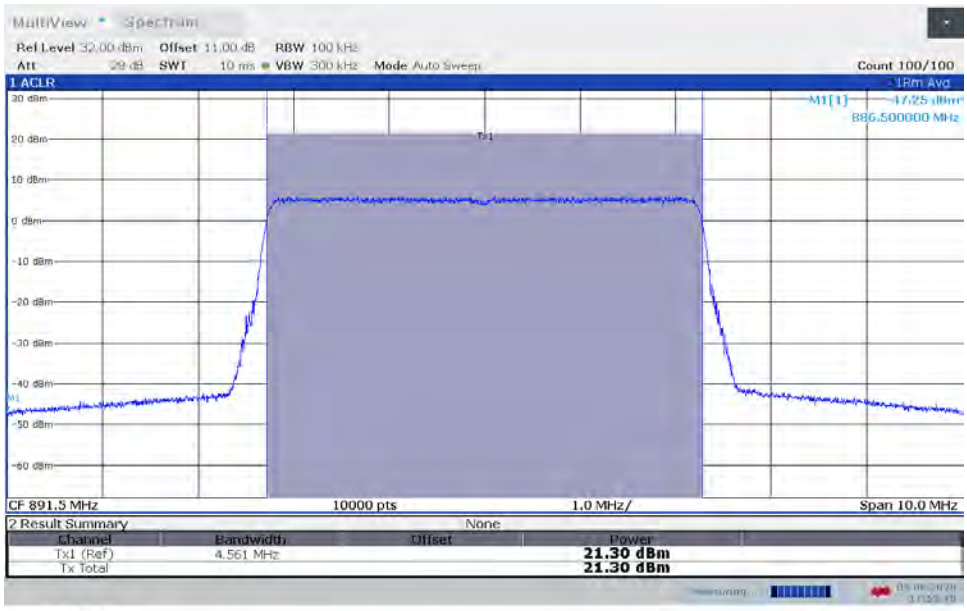
TM3.1-64QAM_5 MHz Bandwidth
Band 5, ANT0, High Channel



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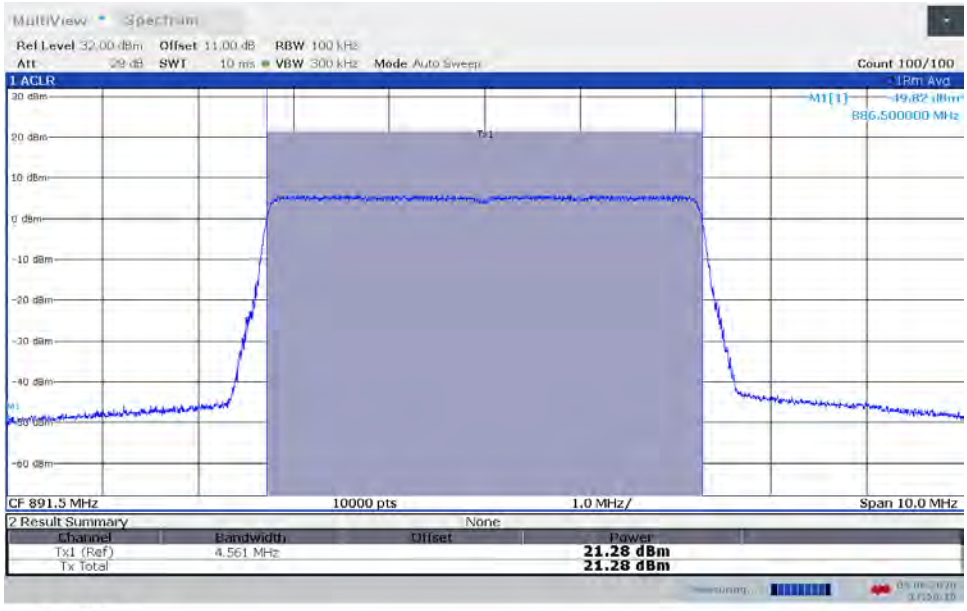
TM3.1-64QAM_5 MHz Bandwidth
Band 5, ANT1, High Channel



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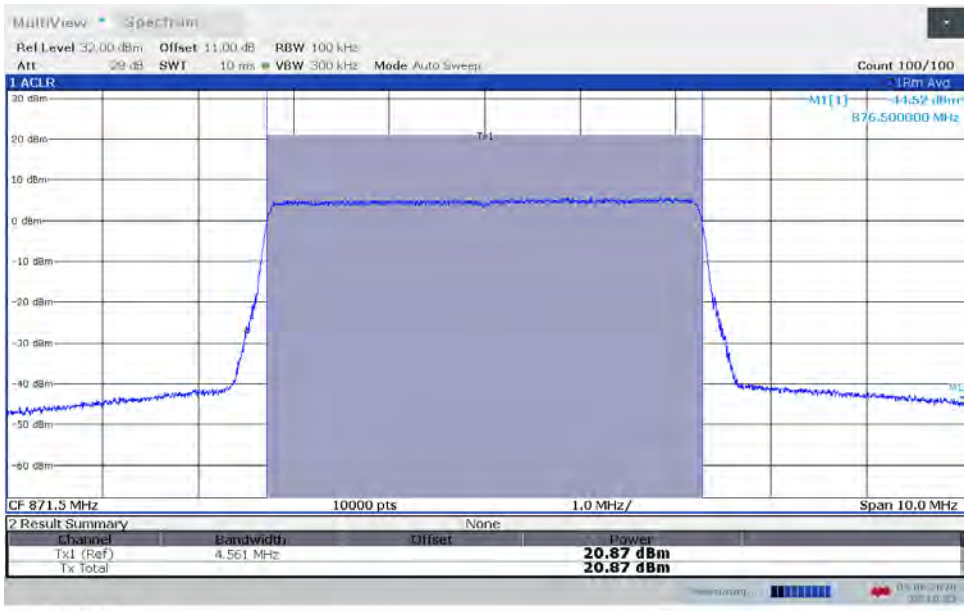
TM3.1a-256QAM_5 MHz Bandwidth
Band 5, ANT0, Low Channel



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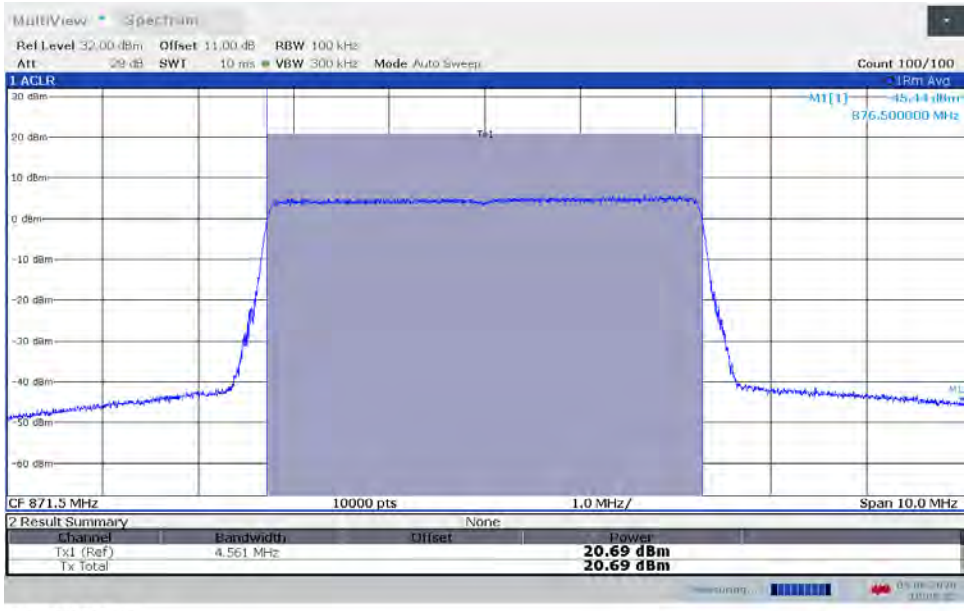
TM3.1a-256QAM_5 MHz Bandwidth
Band 5, ANT1, Low Channel



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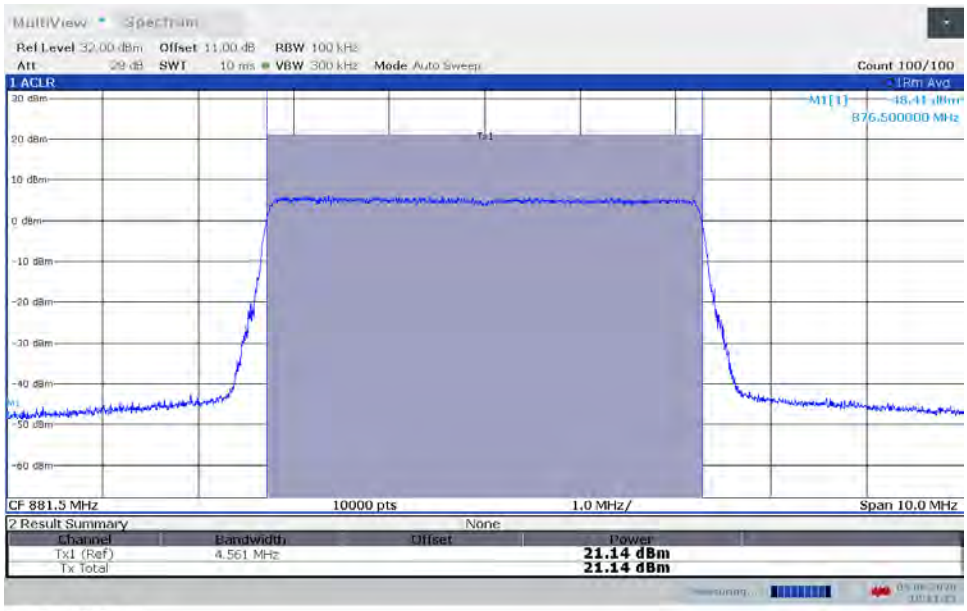

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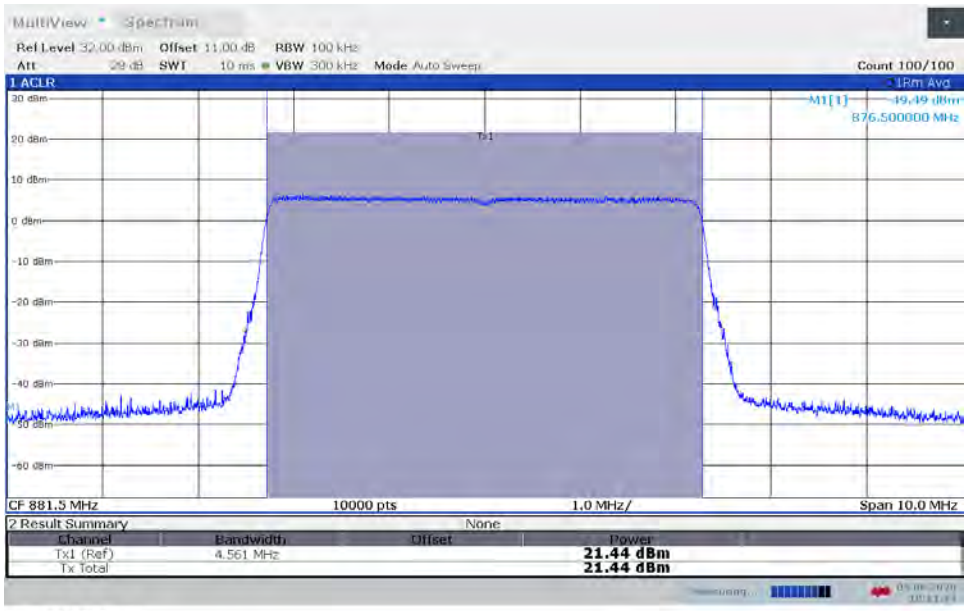
TM3.1a-256QAM_5 MHz Bandwidth
Band 5, ANT1, Mid Channel



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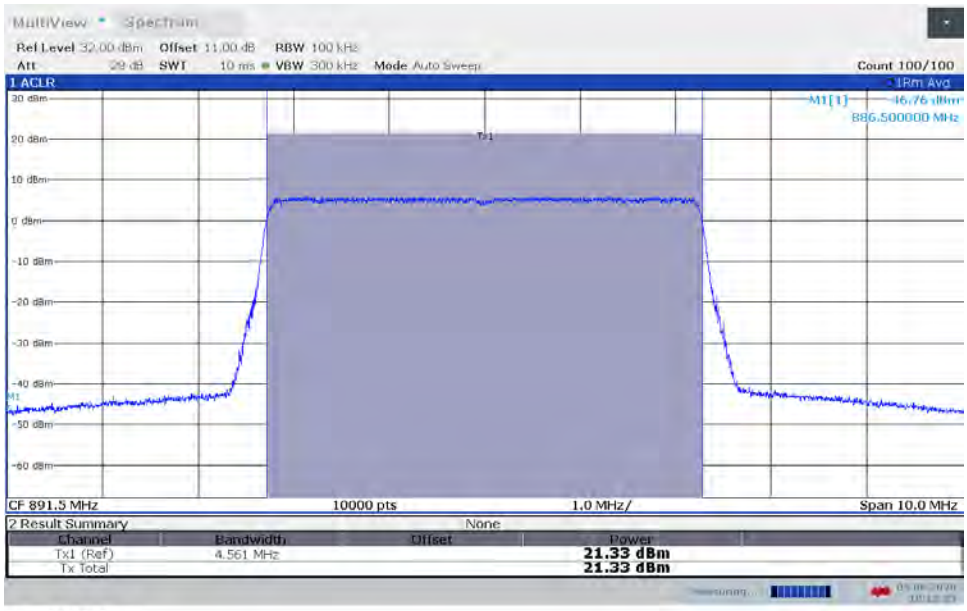

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TM3.1a-256QAM_5 MHz Bandwidth
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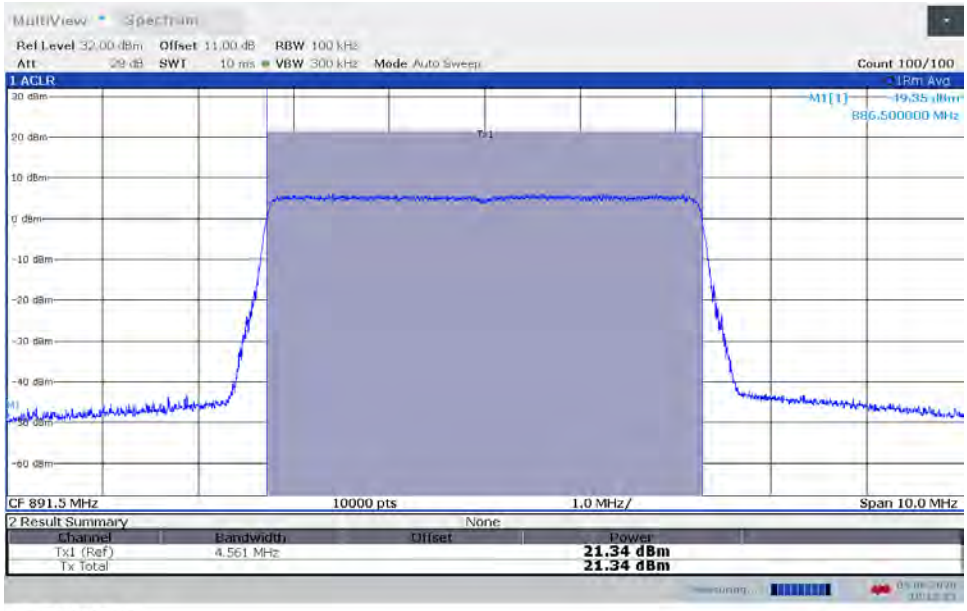

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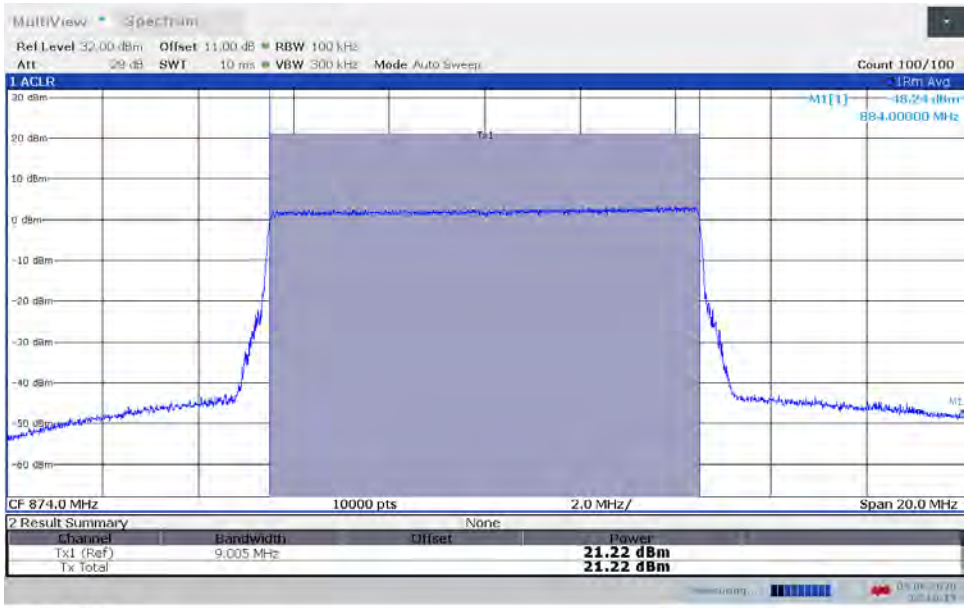

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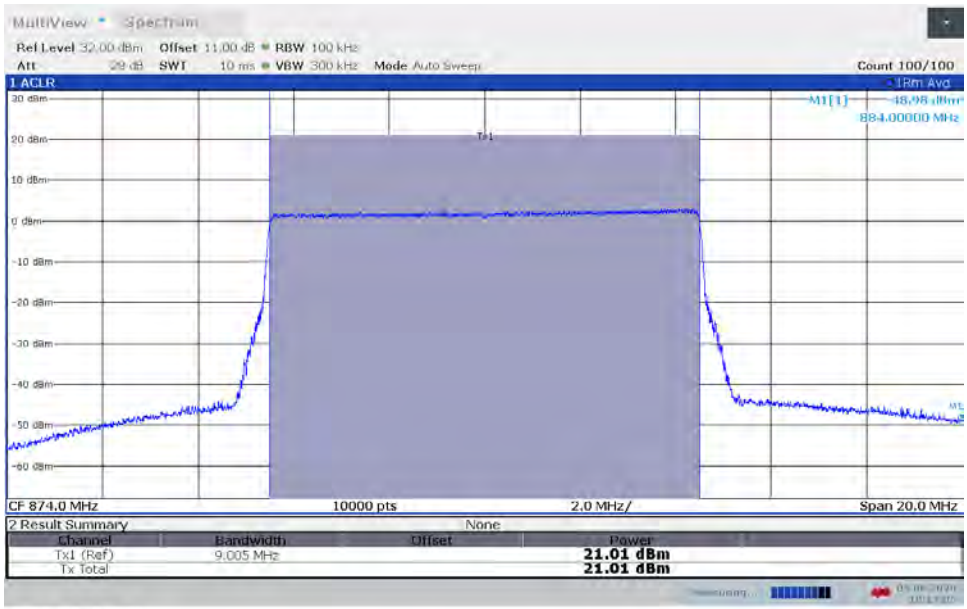

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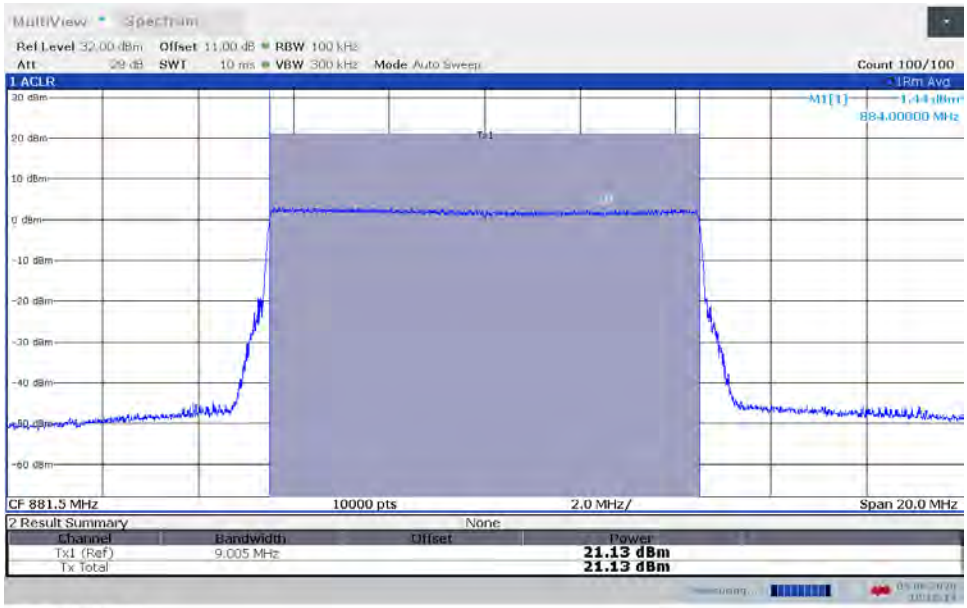
TM1.1-QPSK_10 MHz Bandwidth
Band 5, ANT0, Mid Channel



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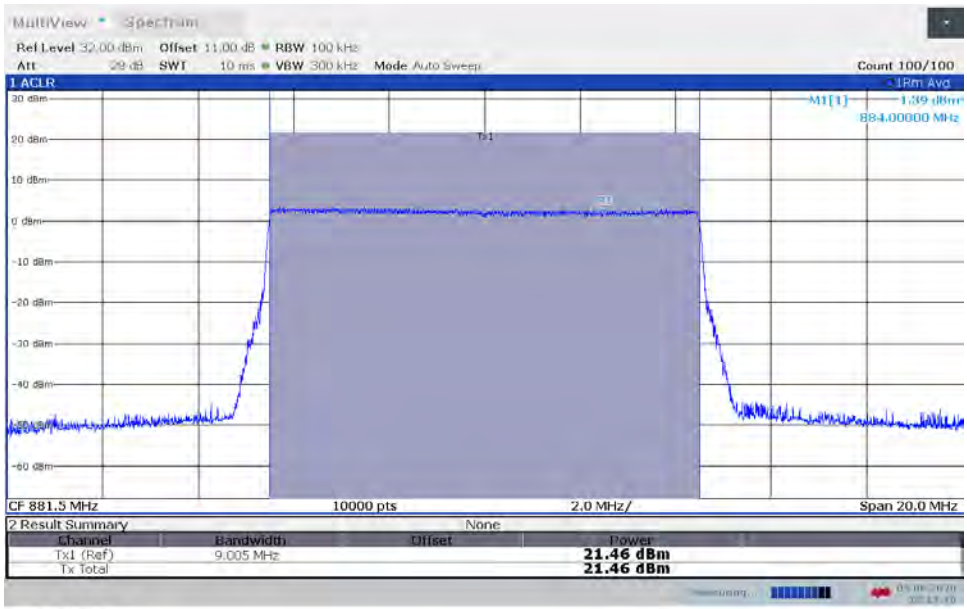
TM1.1-QPSK_10 MHz Bandwidth
Band 5, ANT1, Mid Channel



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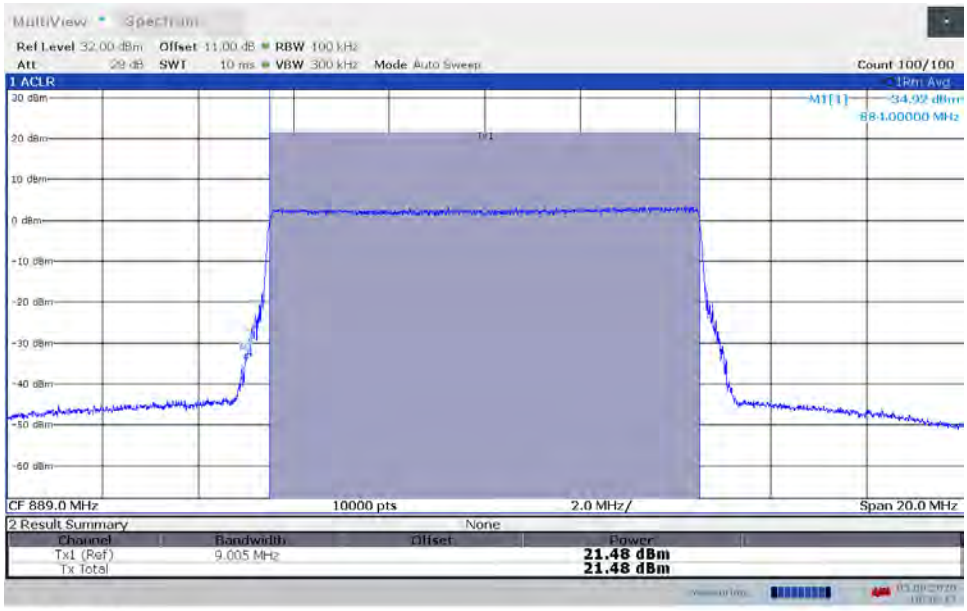
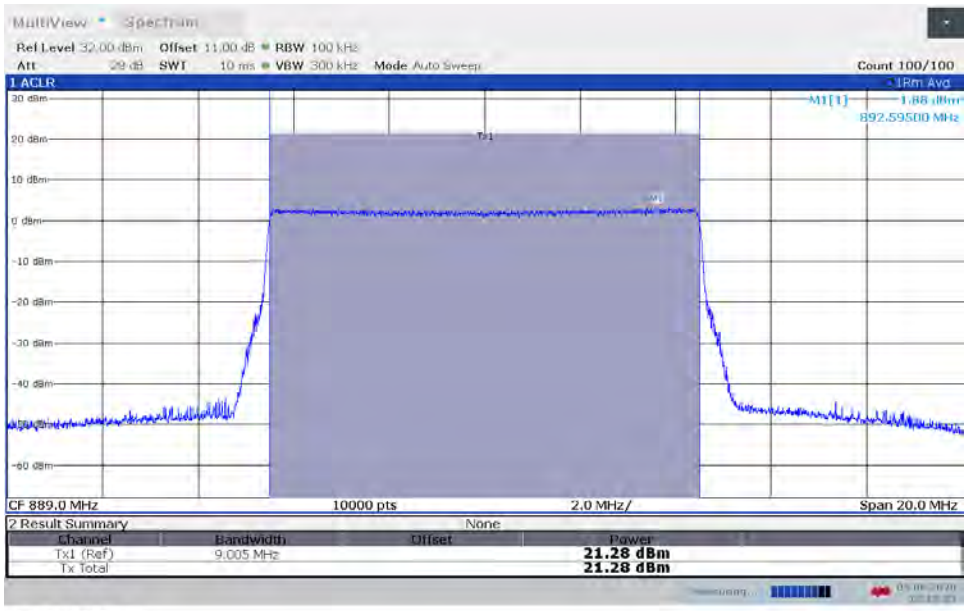
TM1.1-QPSK_10 MHz Bandwidth
Band 5, ANT0, High Channel



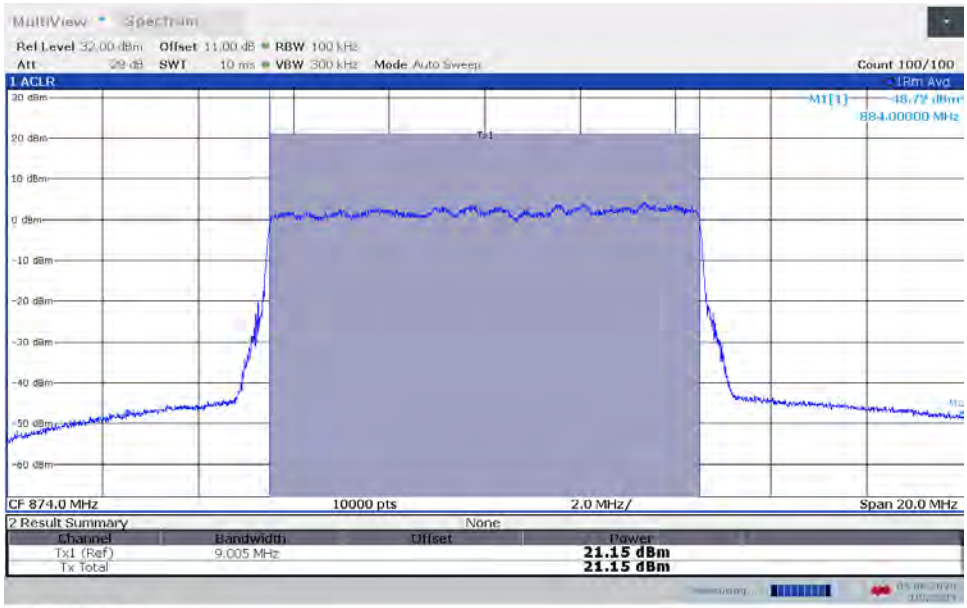
18:36:47 05.08.2020

TM1.1-QPSK_10 MHz Bandwidth
Band 5, ANT1, High Channel



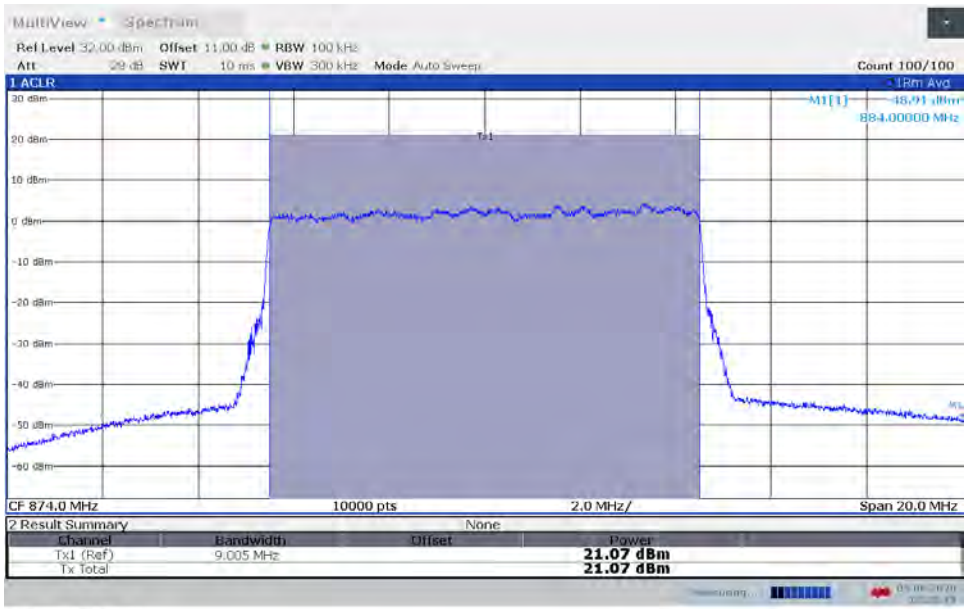
18:19:32 05.08.2020

TM3.2-16QAM_10 MHz Bandwidth
Band 5, ANT0, Low Channel



18:23:10 05.08.2020

TM3.2-16QAM_10 MHz Bandwidth
Band 5, ANT1, Low Channel



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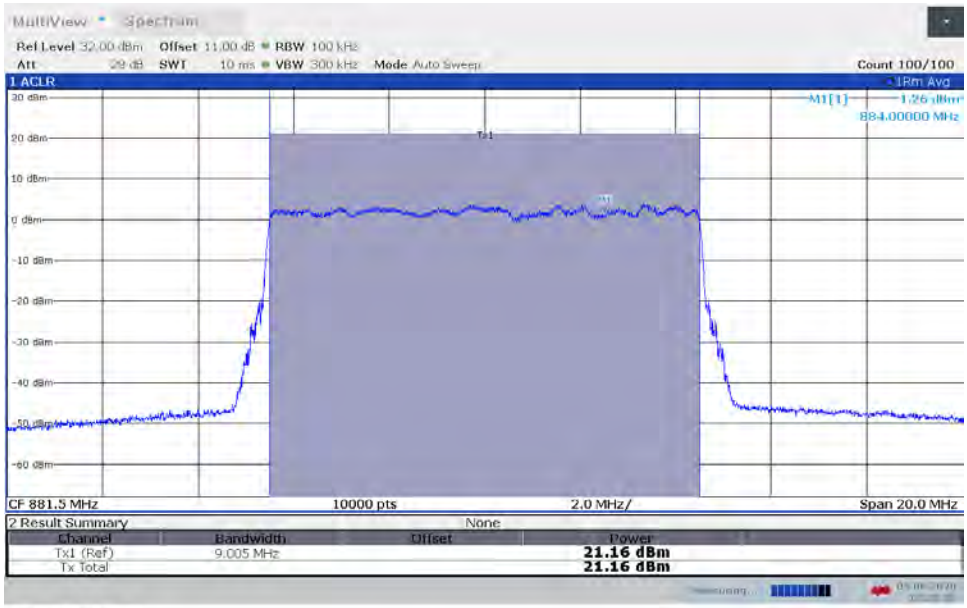
TM3.2-16QAM_10 MHz Bandwidth
Band 5, ANT0, Mid Channel



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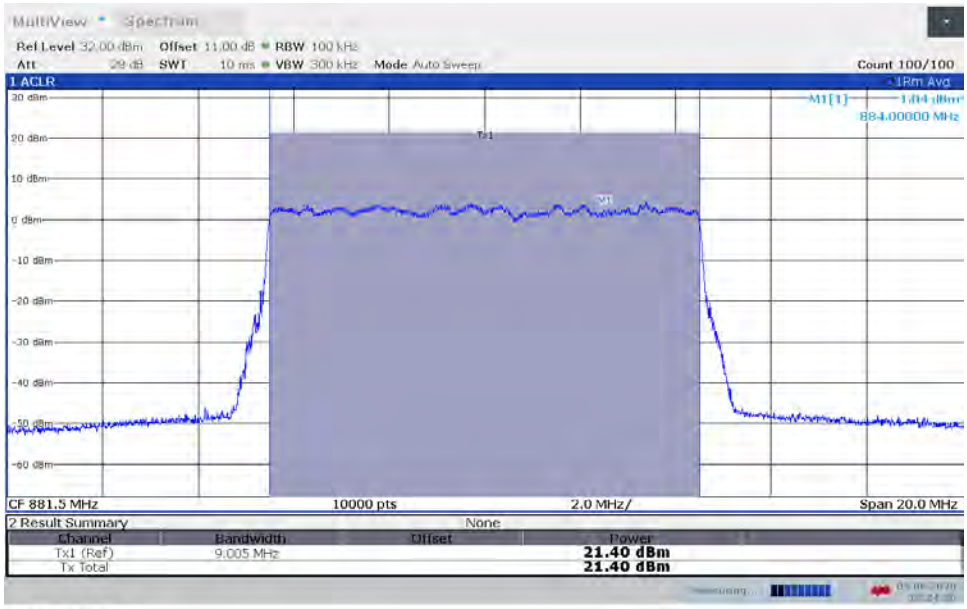
TM3.2-16QAM_10 MHz Bandwidth
Band 5, ANT1, Mid Channel



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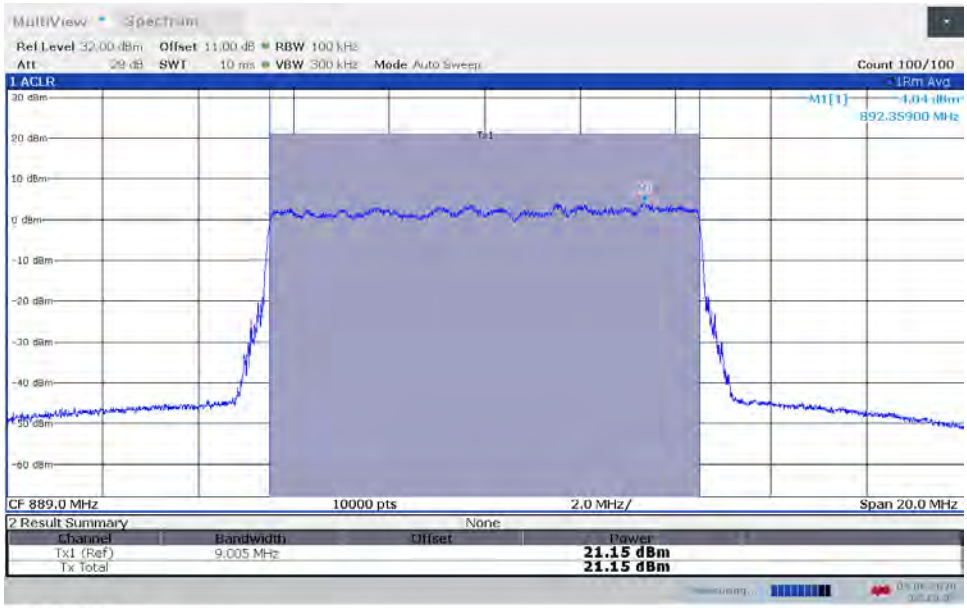
TM3.2-16QAM_10 MHz Bandwidth
Band 5, ANT0, High Channel



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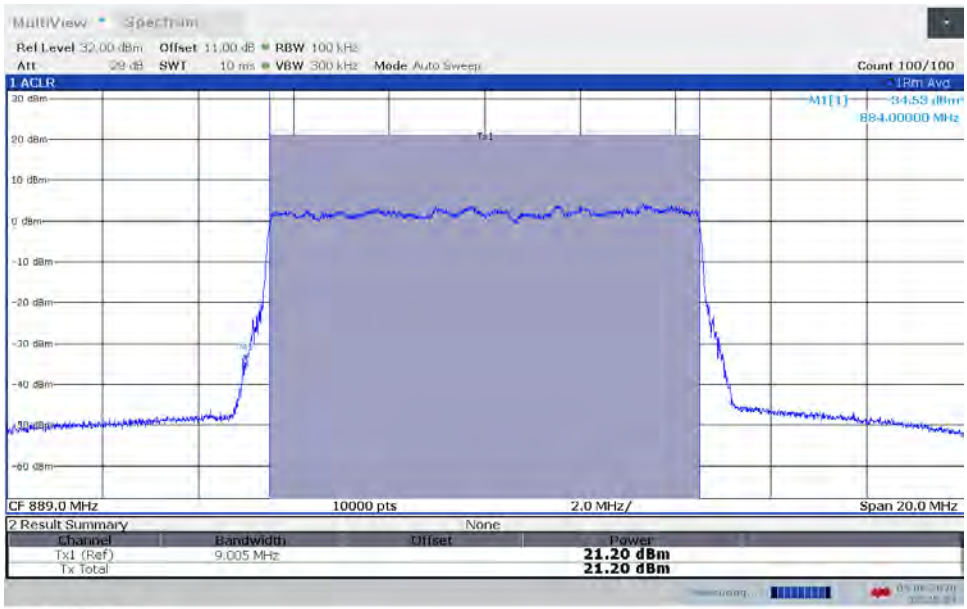
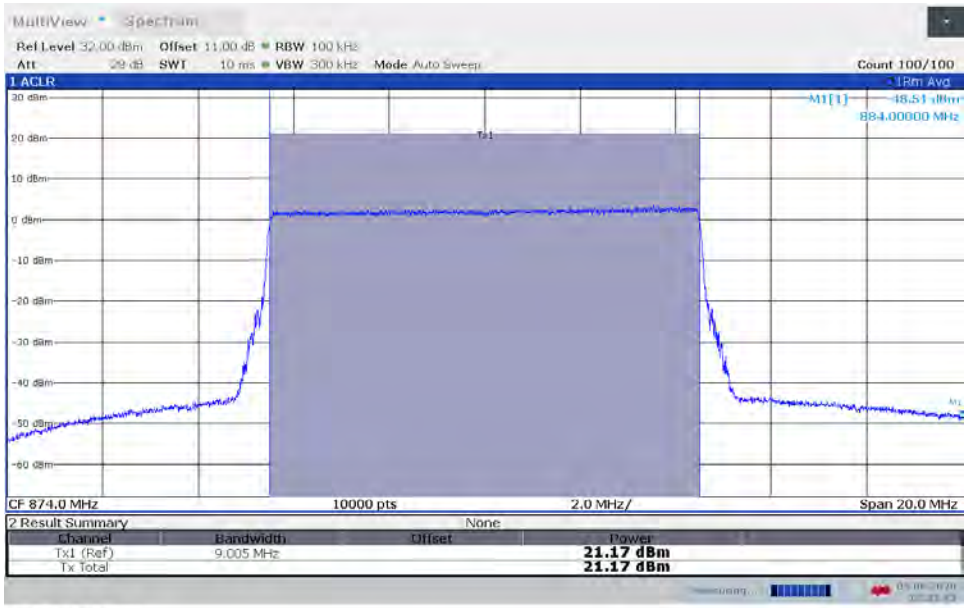
TM3.2-16QAM_10 MHz Bandwidth
Band 5, ANT1, High Channel



18:25:35 05.08.2020

TM3.1-64QAM_10 MHz Bandwidth
Band 5, ANT0, Low Channel



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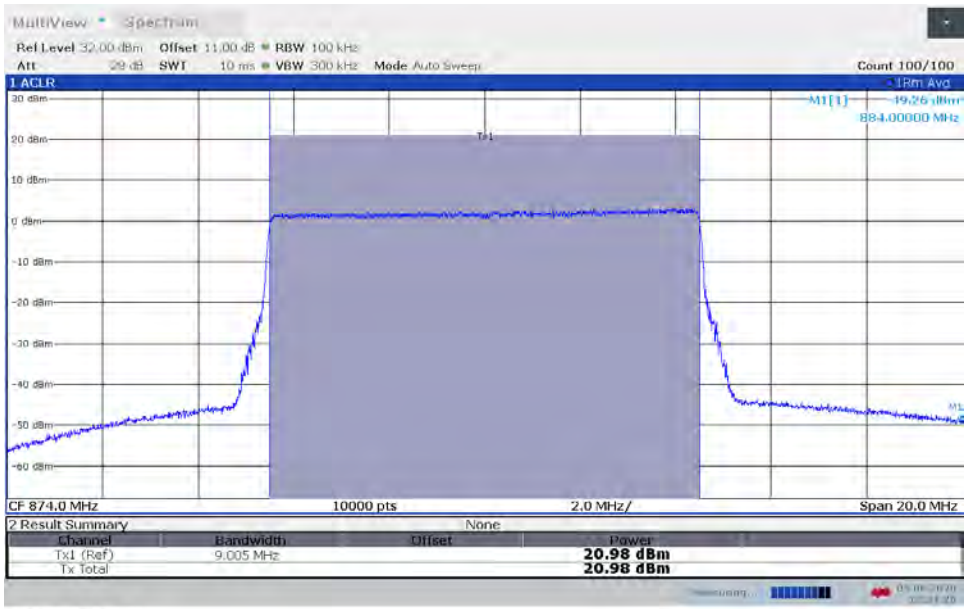
TM3.1-64QAM_10 MHz Bandwidth
Band 5, ANT1, Low Channel



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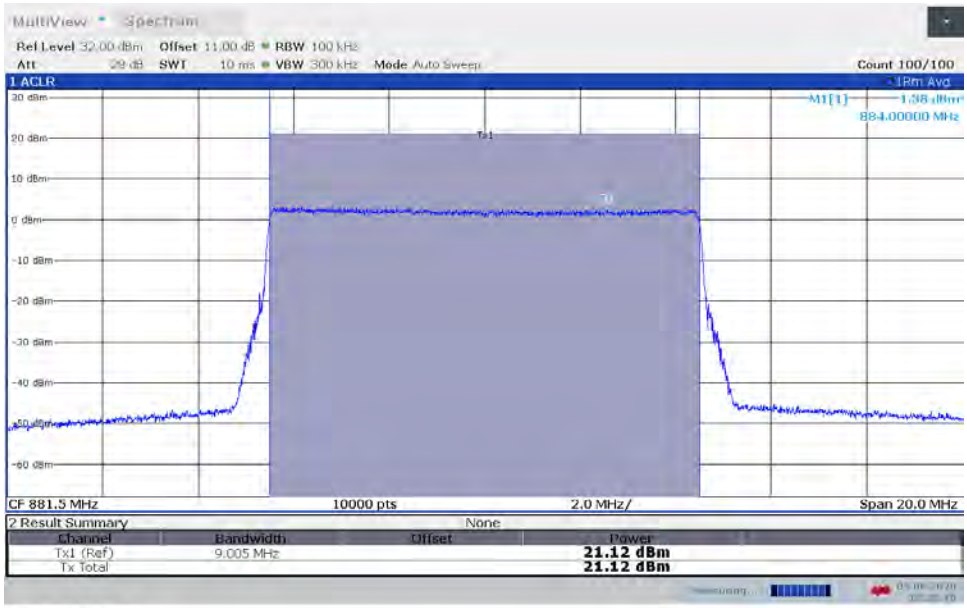
TM3.1-64QAM_10 MHz Bandwidth
Band 5, ANT0, Mid Channel



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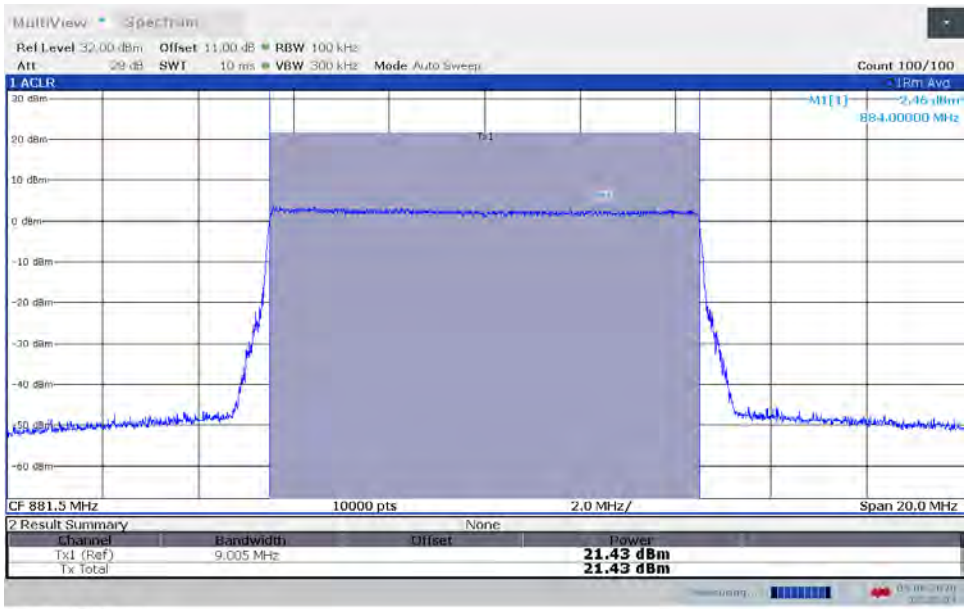
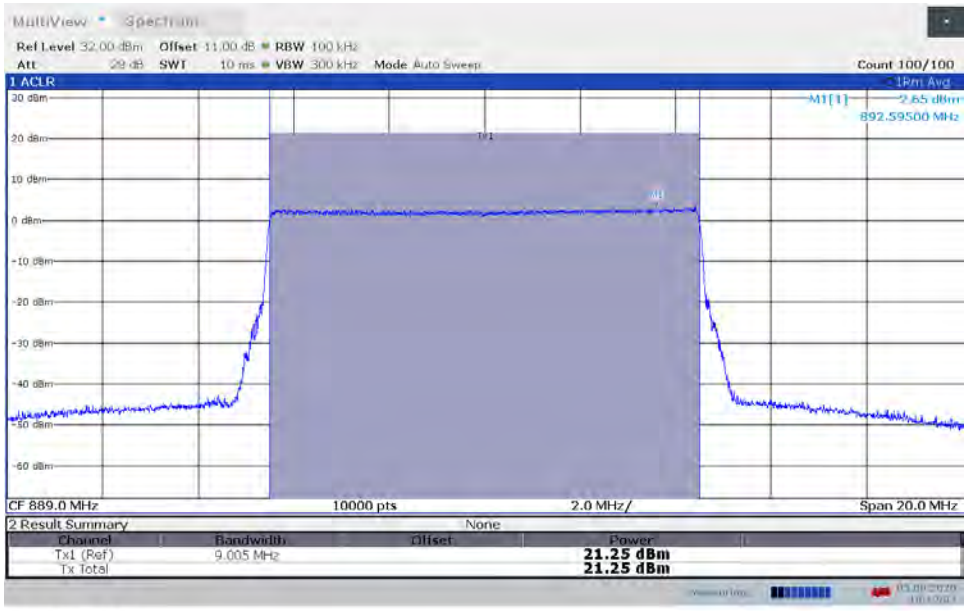
TM3.1-64QAM_10 MHz Bandwidth
Band 5, ANT1, Mid Channel



18:35:05 05.08.2020

TM3.1-64QAM_10 MHz Bandwidth
Band 5, ANT0, High Channel



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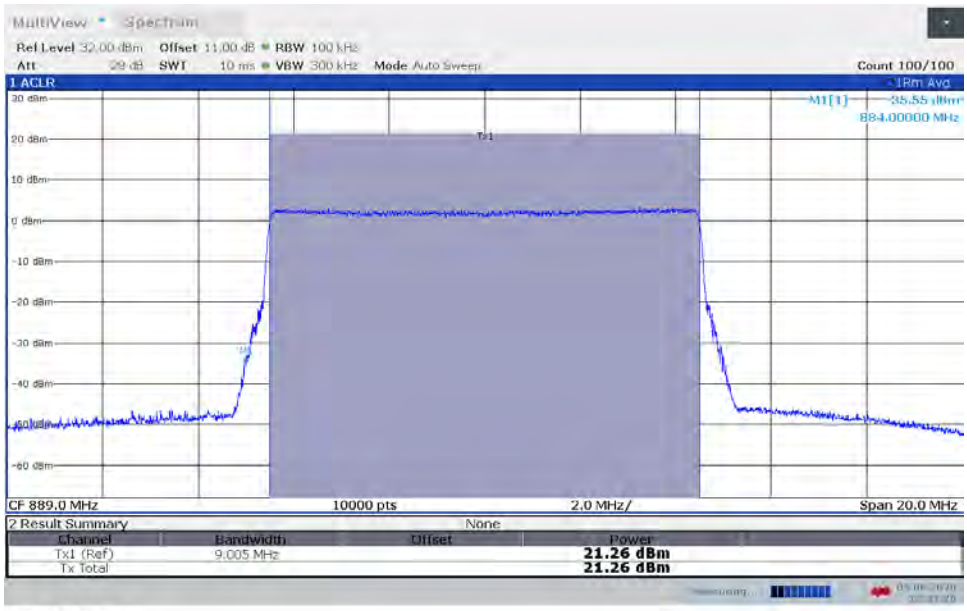
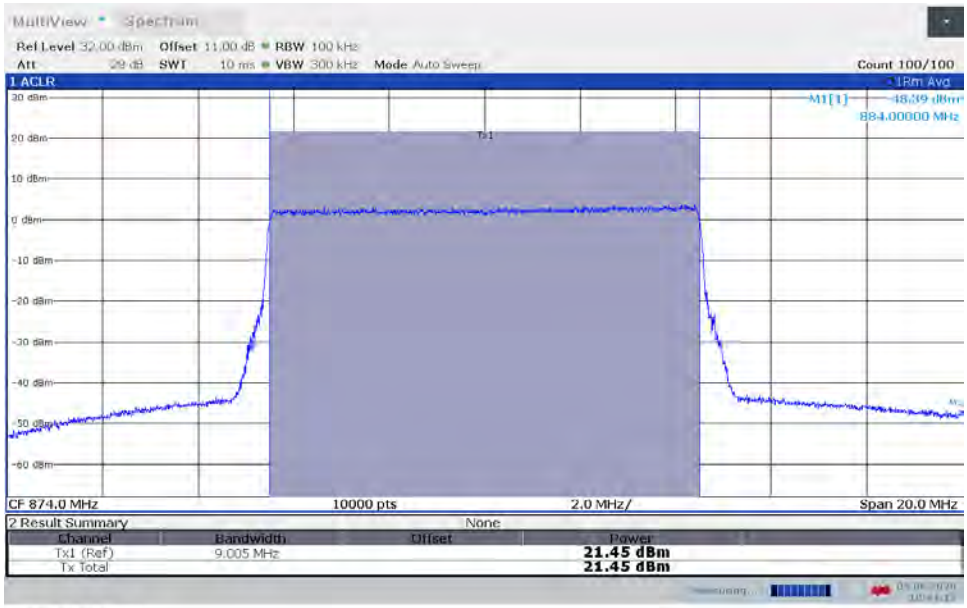
TM3.1-64QAM_10 MHz Bandwidth
Band 5, ANT1, High Channel



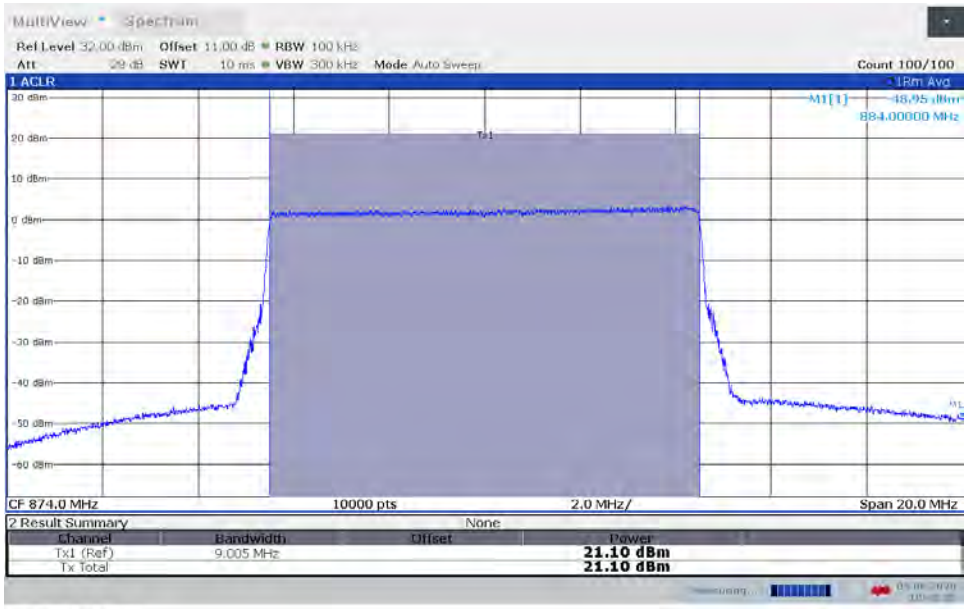
18:37:27 05.08.2020

TM3.1a-256QAM_10 MHz Bandwidth
Band 5, ANT0, Low Channel



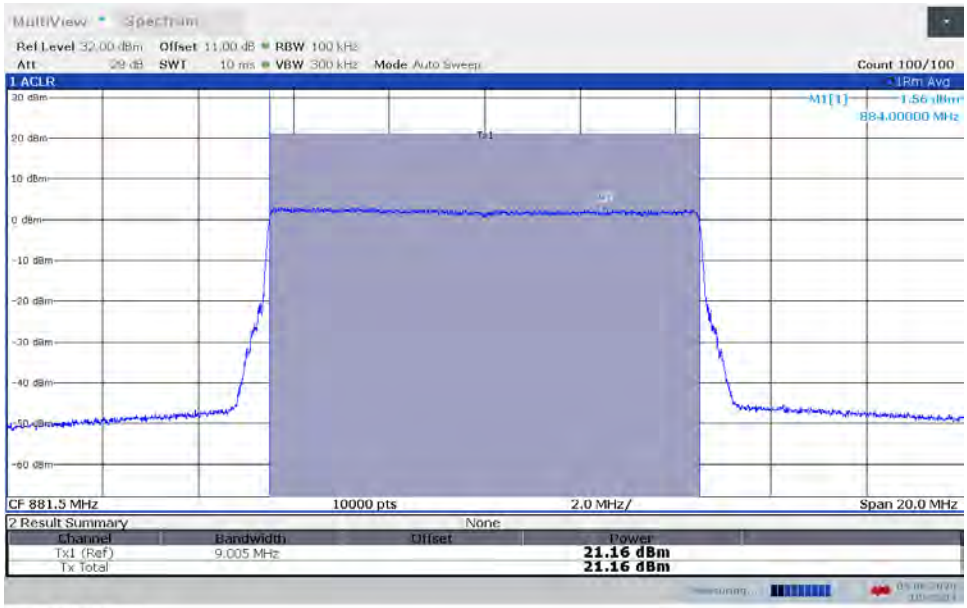
18:44:17 05.08.2020

TM3.1a-256QAM_10 MHz Bandwidth
Band 5, ANT1, Low Channel



18:43:39 05.08.2020

TM3.1a-256QAM_10 MHz Bandwidth
Band 5, ANT0, Mid Channel



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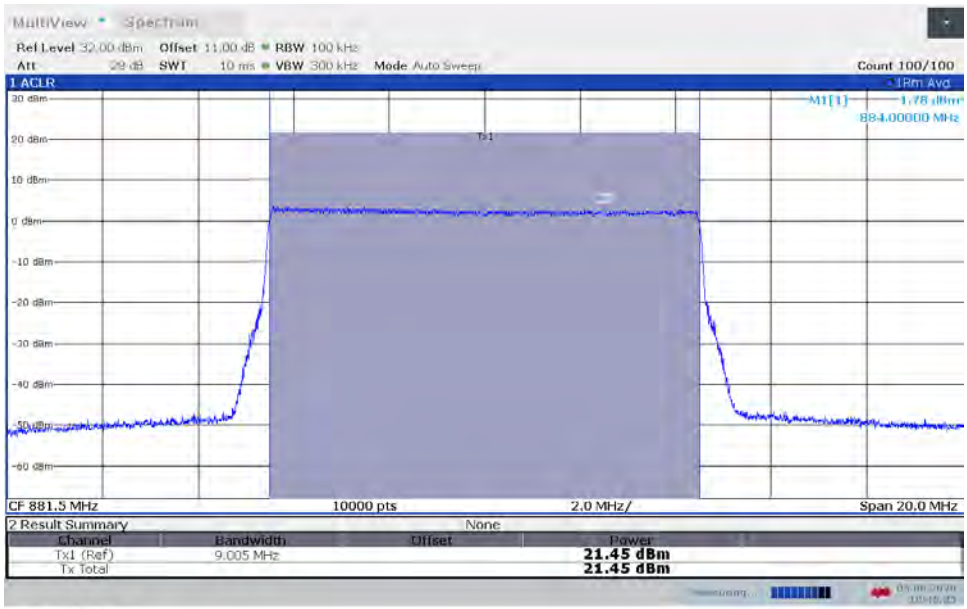
TM3.1a-256QAM_10 MHz Bandwidth
Band 5, ANT1, Mid Channel



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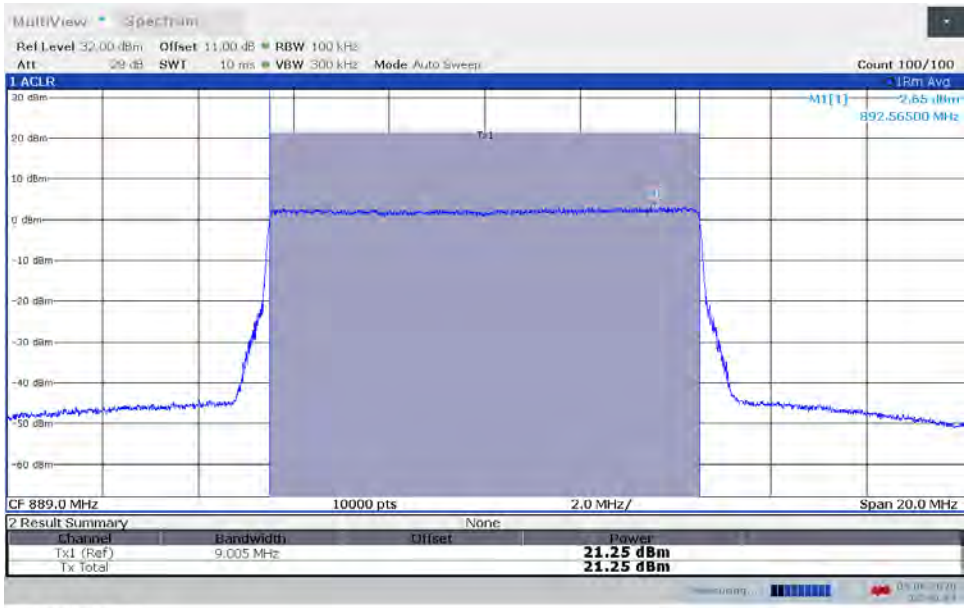
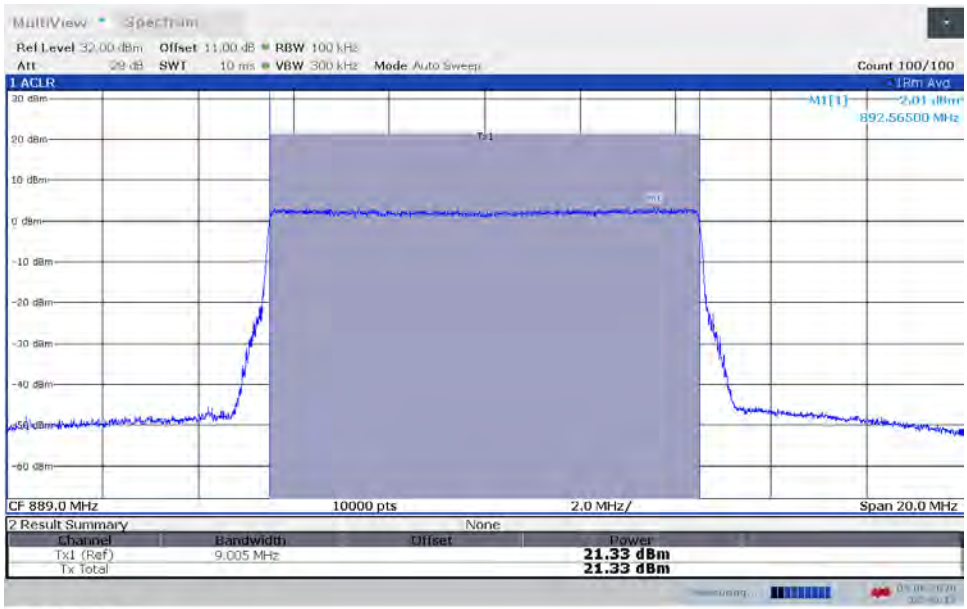
TM3.1a-256QAM_10 MHz Bandwidth
Band 5, ANT0, High Channel



18:46:44 05.08.2020

TM3.1a-256QAM_10 MHz Bandwidth
Band 5, ANT1, High Channel



18:46:17 05.08.2020

Test Personnel:	Minh Ly	Test Date:	08/05/2020
Supervising/Reviewing Engineer: (Where Applicable)			
Product Standard:	FCC Part 22	Limit Applied:	See report section 6.1
Input Voltage:	56 VDC (POE)		
Pretest Verification w/ Ambient Signals or BB Source:	N/A	Ambient Temperature:	28 ºC
		Relative Humidity:	41%
		Atmospheric Pressure:	30 in Hg

Deviations, Additions, or Exclusions: None

7 Peak-to-Average Power Ratio (PAPR)

7.1 Requirement:

The peak-to-average ratio (PAR) of the transmission may not exceed 13dB.

7.2 Procedure:

The procedure described in FCC Publication 971168 D01 Power Meas License Digital Systems v03r01 was used. Tests are performed in accordance with ANSI C63.26 Section 5.2.3.4.

Tests are performed using the CCDF function of the spectrum analyzer.

- Set the analyzer bandwidth ≥ occupied bandwidth.
- Set the count enough to stabilize the curve.
- The crest factor is recorded

7.3 Test Result:

The sample tested was found to Comply.

Band 5, Bandwidth: 5 MHz, Modulation: TM1.1-QPSK

Channel	Frequency (MHz)	Antenna Port	PAPR (dB)
Low	871.5	ANT0	10.66
		ANT1	10.88
Mid	881.5	ANT0	10.66
		ANT1	10.25
High	891.5	ANT0	10.66
		ANT1	10.57

Band 5, Bandwidth: 5 MHz, Modulation: TM3.2-16QAM

Channel	Frequency (MHz)	Antenna Port	PAPR (dB)
Low	871.5	ANT0	10.83
		ANT1	10.90
Mid	881.5	ANT0	10.56
		ANT1	10.45
High	891.5	ANT0	10.86
		ANT1	10.66

Band 5, Bandwidth: 5 MHz, Modulation: TM3.1-64QAM

Channel	Frequency (MHz)	Antenna Port	PAPR (dB)
Low	871.5	ANT0	10.20
		ANT1	10.29
Mid	881.5	ANT0	10.00
		ANT1	9.91
High	891.5	ANT0	10.12
		ANT1	9.98

Band 5, Bandwidth: 5 MHz, Modulation: TM3.1a-256QAM

Channel	Frequency (MHz)	Antenna Port	PAPR (dB)
Low	871.5	ANT0	10.39
		ANT1	10.54
Mid	881.5	ANT0	10.37
		ANT1	10.18
High	891.5	ANT0	10.26
		ANT1	10.26

Band 5, Bandwidth: 10 MHz, Modulation: TM1.1-QPSK

Channel	Frequency (MHz)	Antenna Port	PAPR (dB)
Low	874.0	ANT0	10.86
		ANT1	10.83
Mid	881.5	ANT0	10.79
		ANT1	10.85
High	889.0	ANT0	10.74
		ANT1	10.63

Band 5, Bandwidth: 10 MHz, Modulation: TM3.2-16QAM

Channel	Frequency (MHz)	Antenna Port	PAPR (dB)
Low	874.0	ANT0	10.41
		ANT1	10.45
Mid	881.5	ANT0	10.11
		ANT1	10.27
High	889.0	ANT0	10.20
		ANT1	10.46

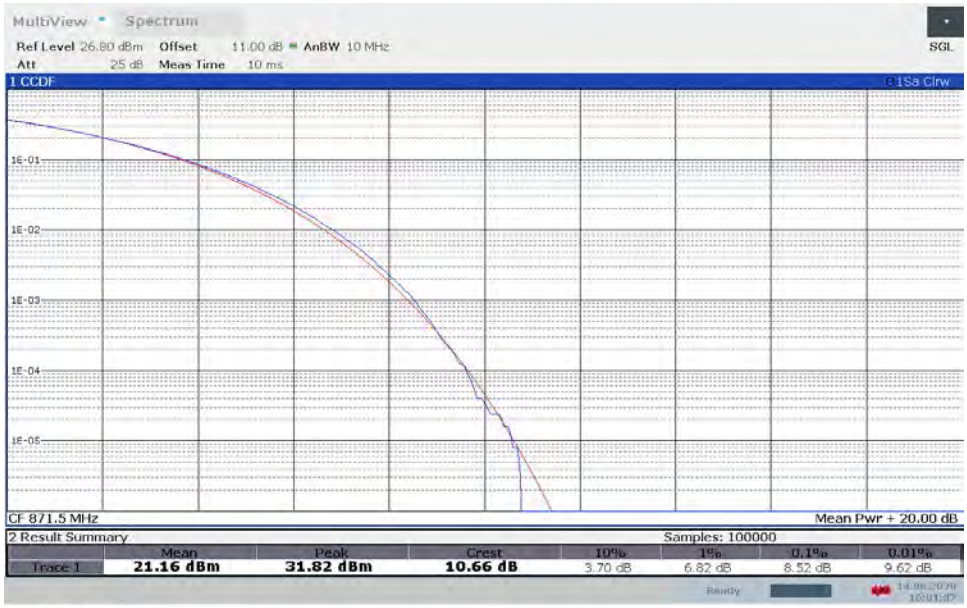
Band 5, Bandwidth: 10 MHz, Modulation: TM3.1-64QAM

Channel	Frequency (MHz)	Antenna Port	PAPR (dB)
Low	874.0	ANT0	10.24
		ANT1	10.29
Mid	881.5	ANT0	10.45
		ANT1	10.36
High	889.0	ANT0	10.36
		ANT1	10.10

Band 5, Bandwidth: 10 MHz, Modulation: TM3.1a-256QAM

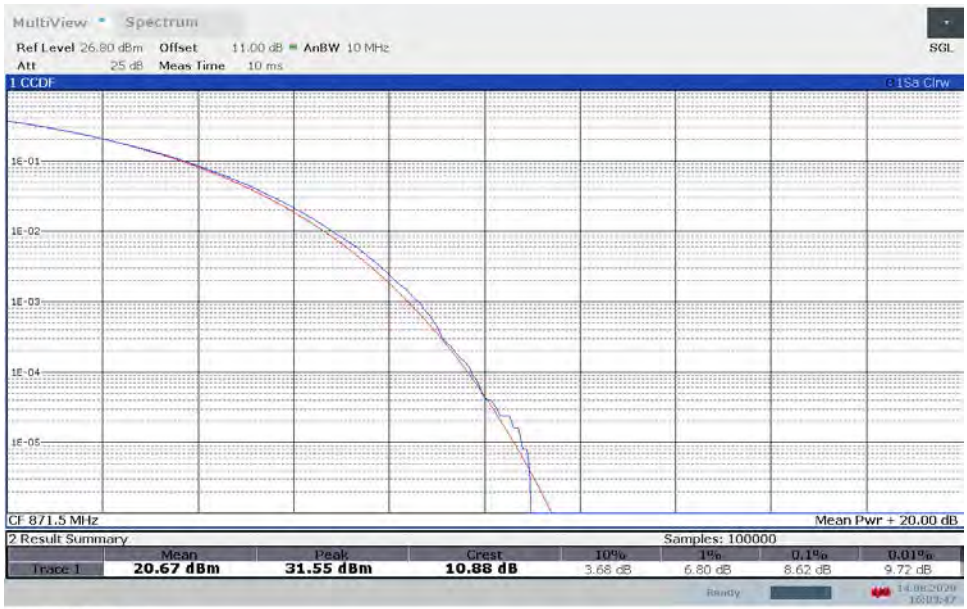
Channel	Frequency (MHz)	Antenna Port	PAPR (dB)
Low	874.0	ANT0	10.19
		ANT1	10.31
Mid	881.5	ANT0	10.33
		ANT1	10.05
High	889.0	ANT0	10.11
		ANT1	10.36

TM1.1-QPSK_5 MHz Bandwidth
Band 5, ANT0, Low Channel



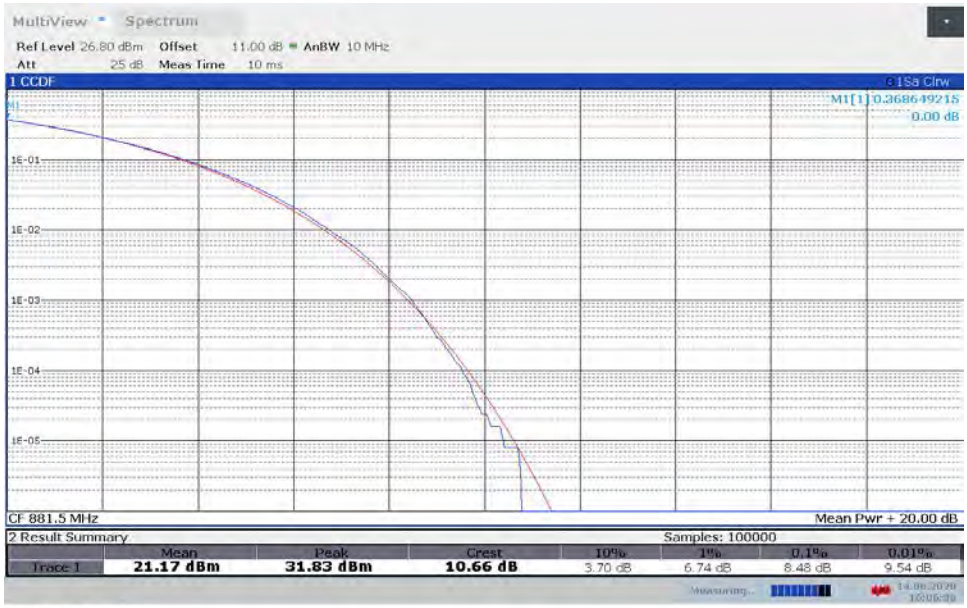
16:01:37 14.08.2020

TM1.1-QPSK_5 MHz Bandwidth
Band 5, ANT1, Low Channel



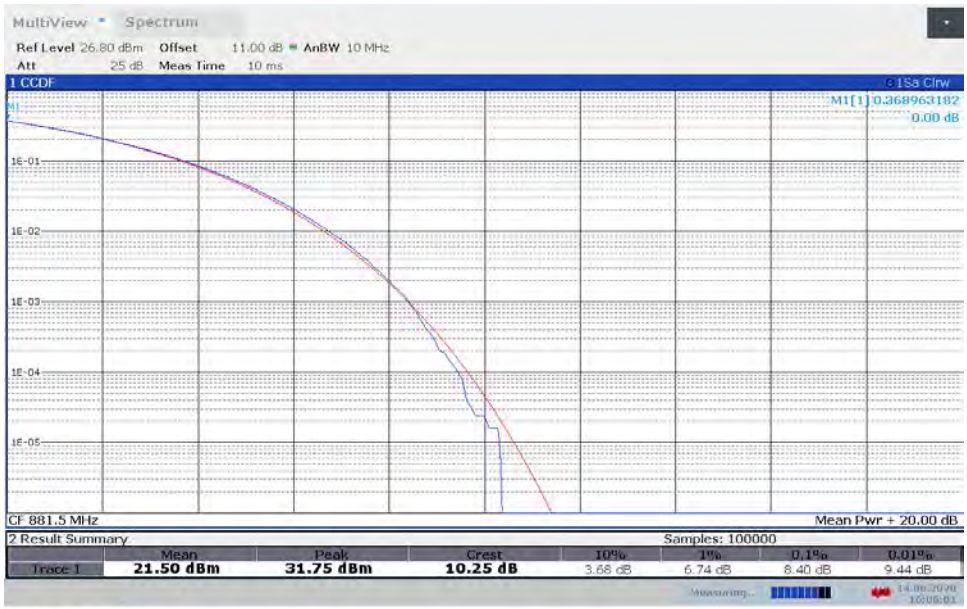
16:03:47 14.08.2020

TM1.1-QPSK_5 MHz Bandwidth
Band 5, ANT0, Mid Channel



16:06:37 14.08.2020

TM1.1-QPSK_5 MHz Bandwidth
Band 5, ANT1, Mid Channel



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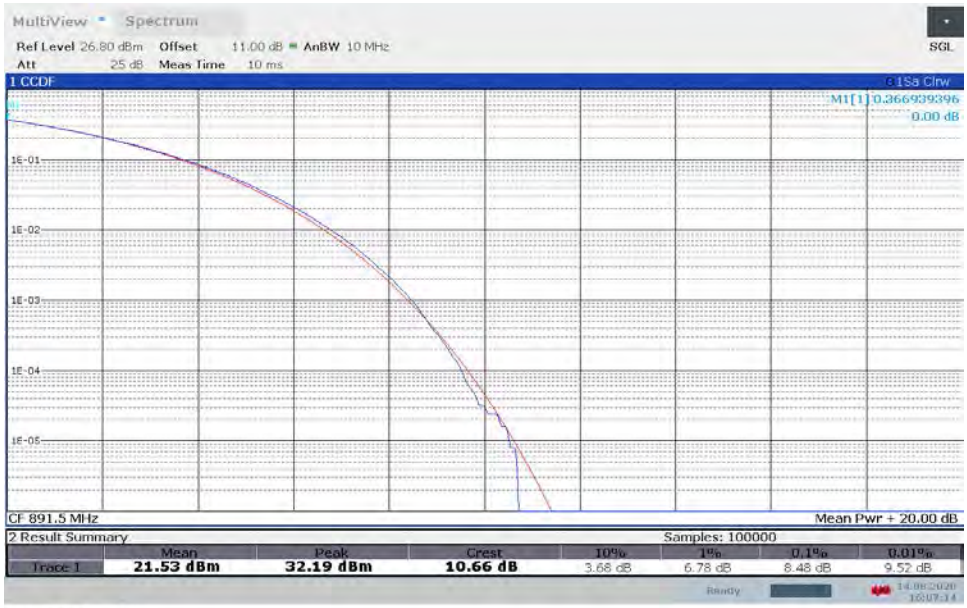
TM1.1-QPSK_5 MHz Bandwidth
Band 5, ANT0, High Channel

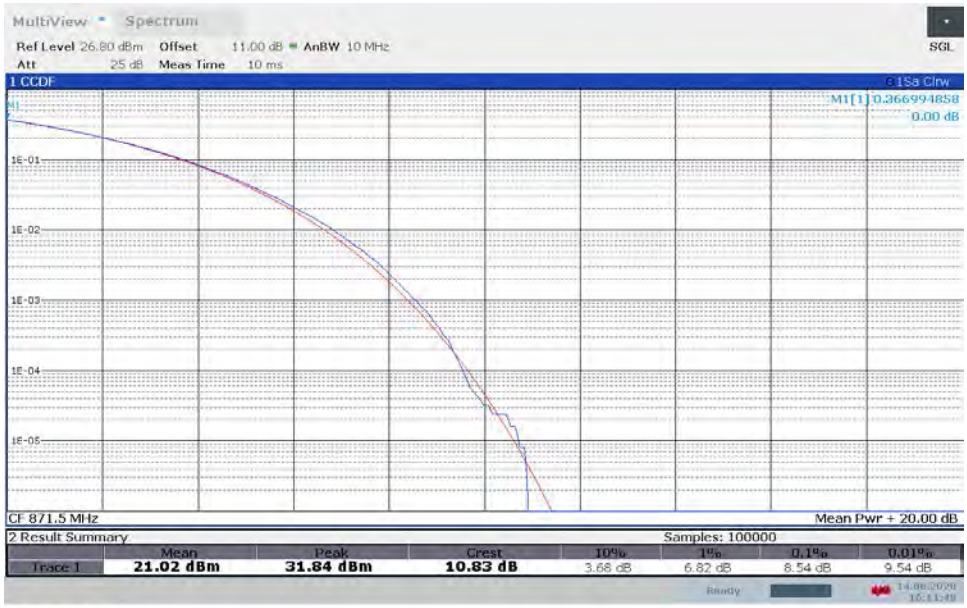


16:07:14 14.08.2020

TM1.1-QPSK_5 MHz Bandwidth
Band 5, ANT1, High Channel

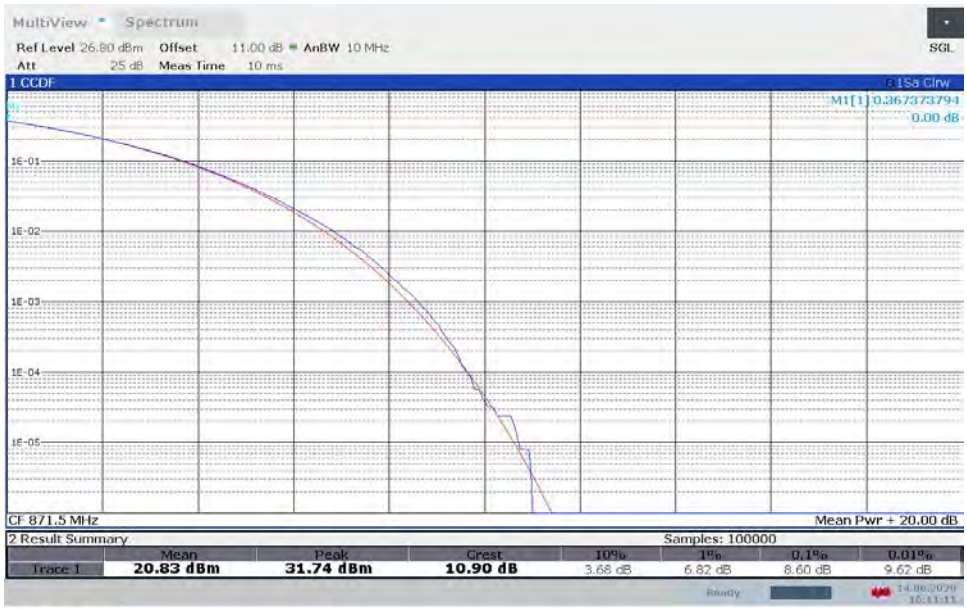
16:07:44 14.08.2020

TM3.2-16QAM_5 MHz Bandwidth
Band 5, ANT0, Low Channel



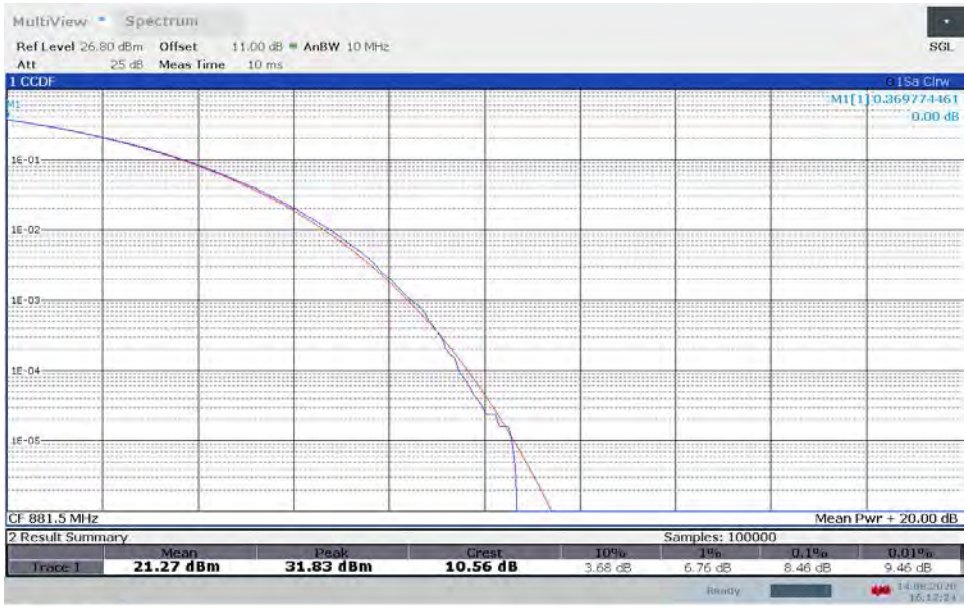
16:11:49 14.08.2020

TM3.2-16QAM_5 MHz Bandwidth
Band 5, ANT1, Low Channel



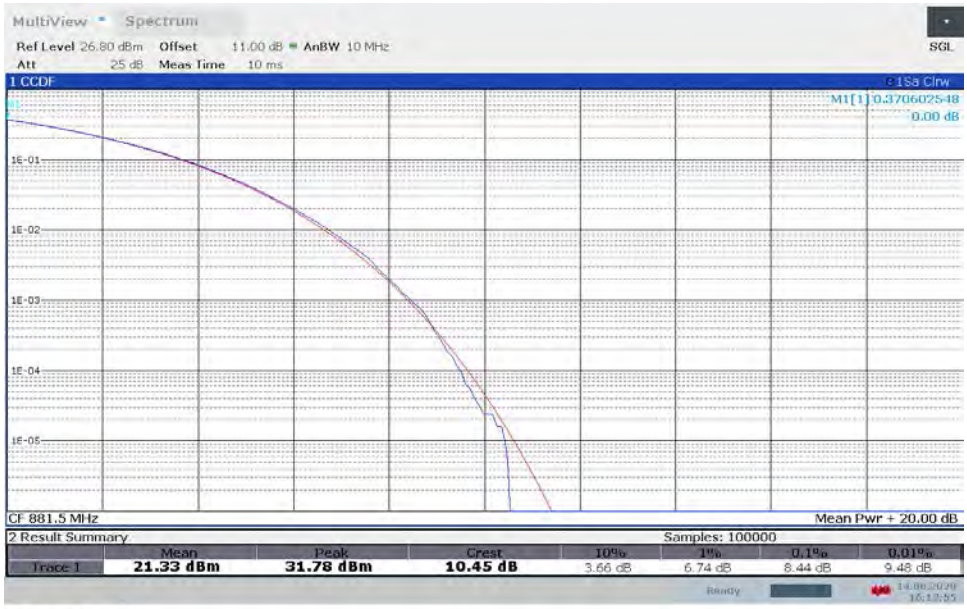
16:11:11 14.08.2020

TM3.2-16QAM_5 MHz Bandwidth
Band 5, ANT0, Mid Channel



16:12:25 14.08.2020

TM3.2-16QAM_5 MHz Bandwidth
Band 5, ANT1, Mid Channel



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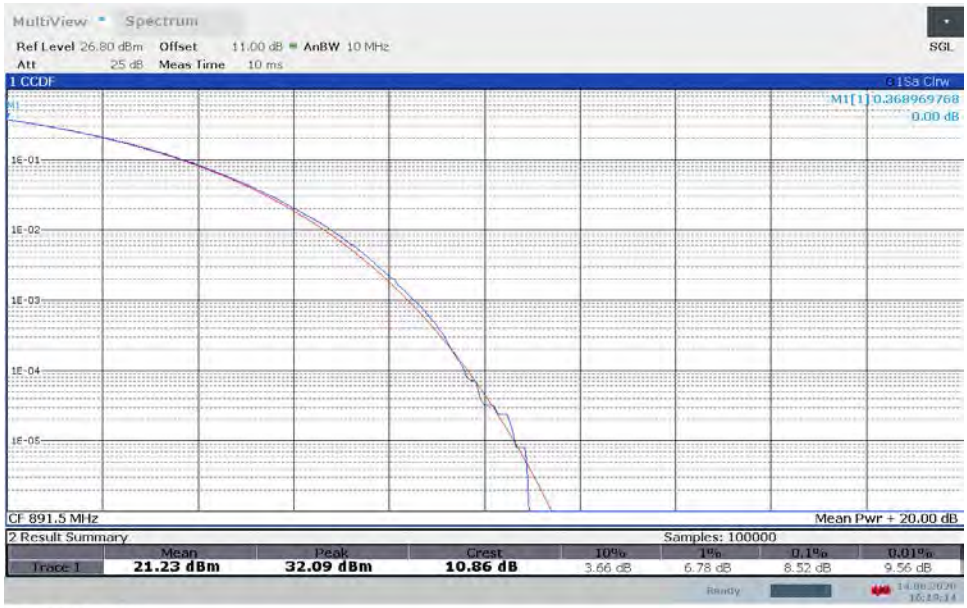
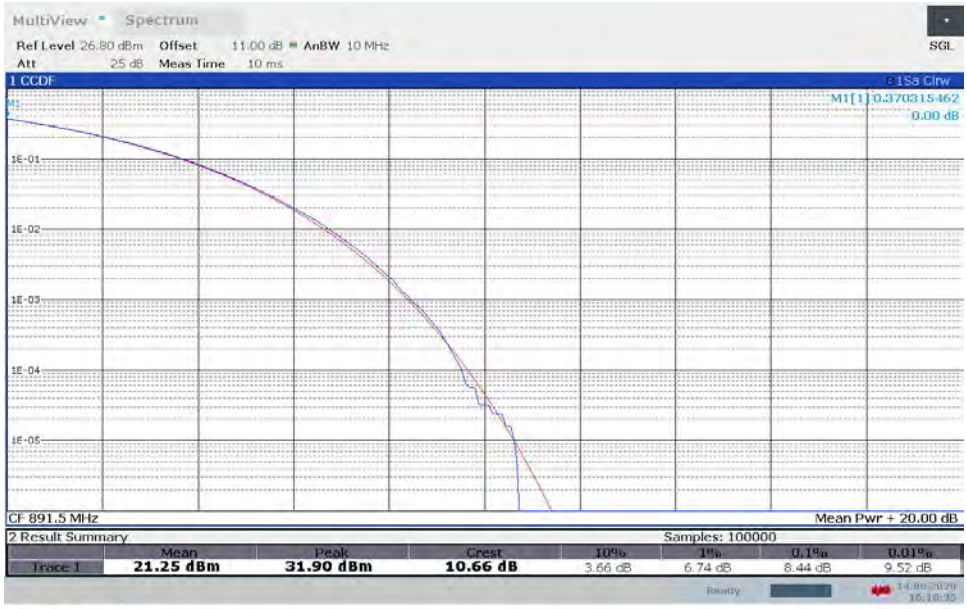
TM3.2-16QAM_5 MHz Bandwidth
Band 5, ANT0, High Channel



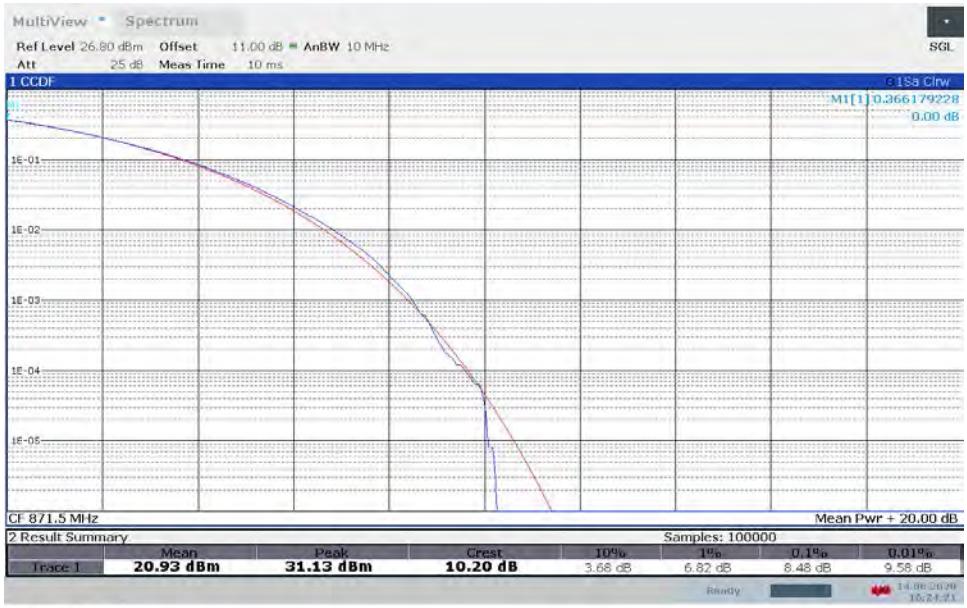
16:19:14 14.08.2020

TM3.2-16QAM_5 MHz Bandwidth
Band 5, ANT1, High Channel



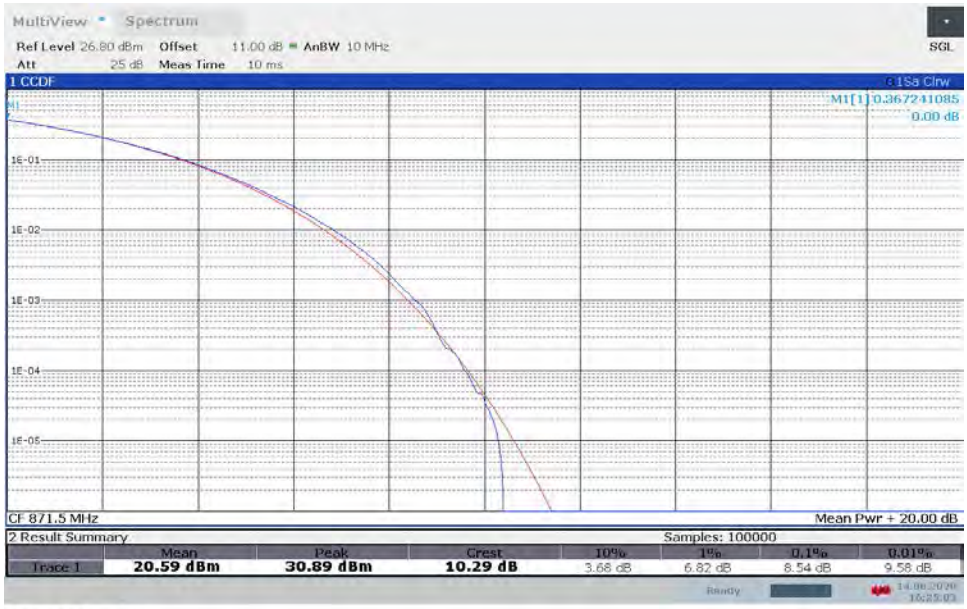
16:18:36 14.08.2020

TM3.1-64QAM_5 MHz Bandwidth
Band 5, ANT0, Low Channel



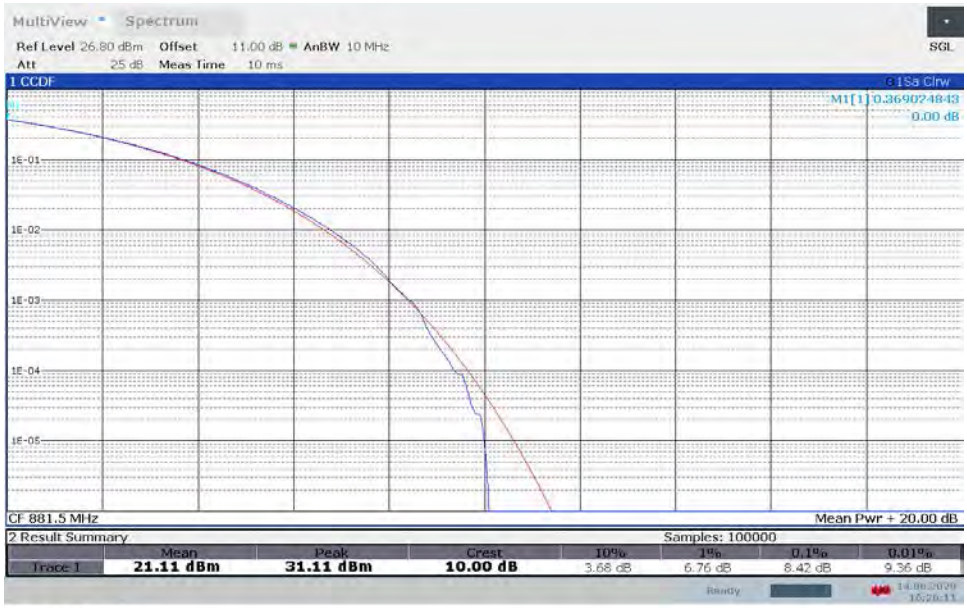
16:24:21 14.08.2020

TM3.1-64QAM_5 MHz Bandwidth
Band 5, ANT1, Low Channel



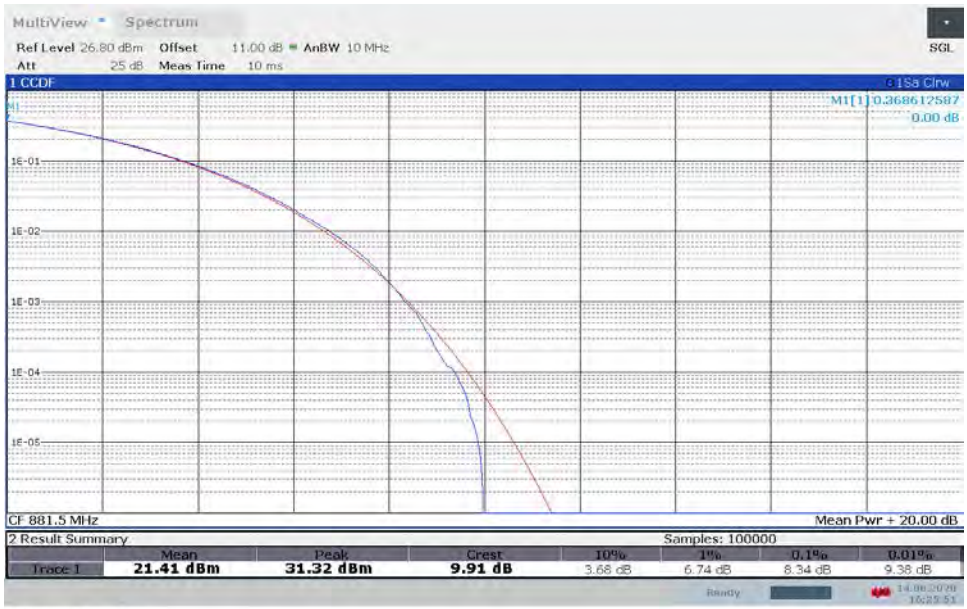
16:25:04 14.08.2020

TM3.1-64QAM_5 MHz Bandwidth
Band 5, ANT0, Mid Channel



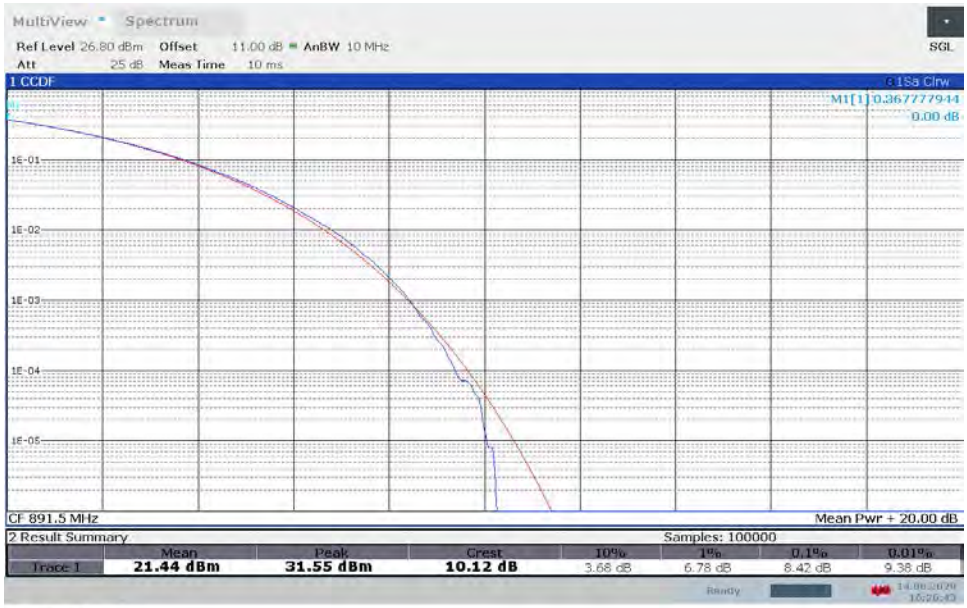
16:26:12 14.08.2020

TM3.1-64QAM_5 MHz Bandwidth
Band 5, ANT1, Mid Channel



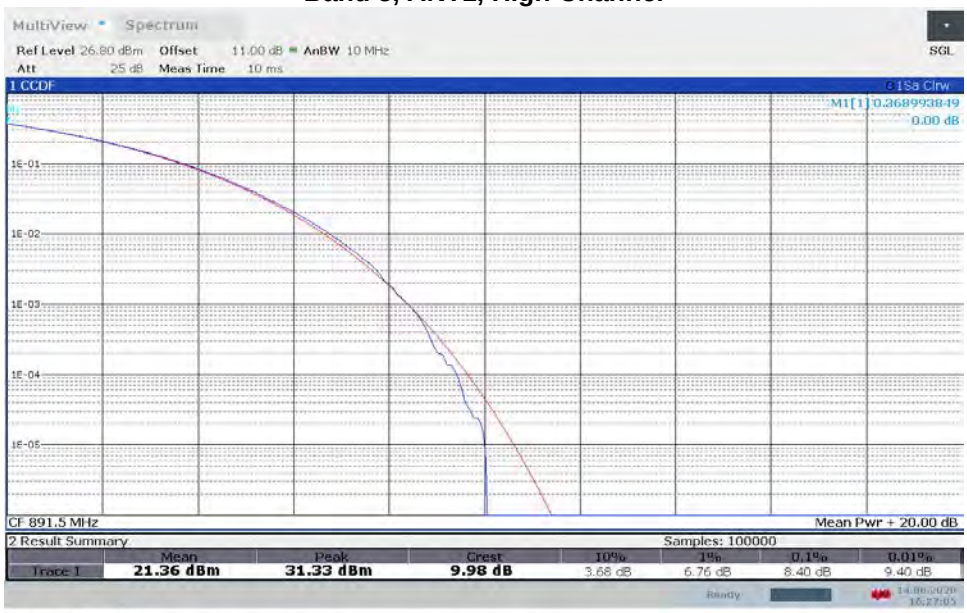
16:25:51 14.08.2020

TM3.1-64QAM_5 MHz Bandwidth
Band 5, ANT0, High Channel



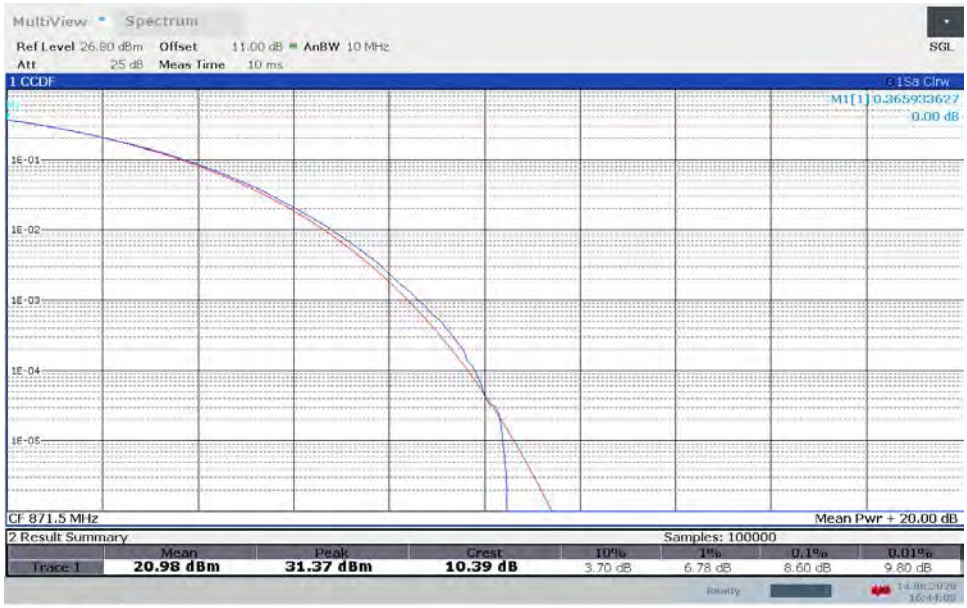
16:26:43 14.08.2020

TM3.1-64QAM_5 MHz Bandwidth
Band 5, ANT1, High Channel



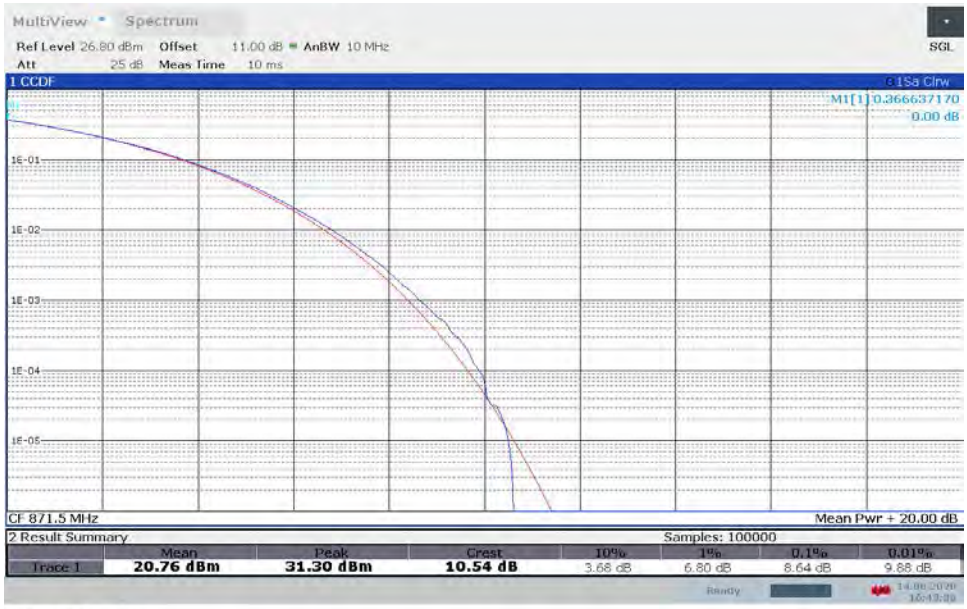
16:27:06 14.08.2020

TM3.1a-256QAM_5 MHz Bandwidth
Band 5, ANT0, Low Channel



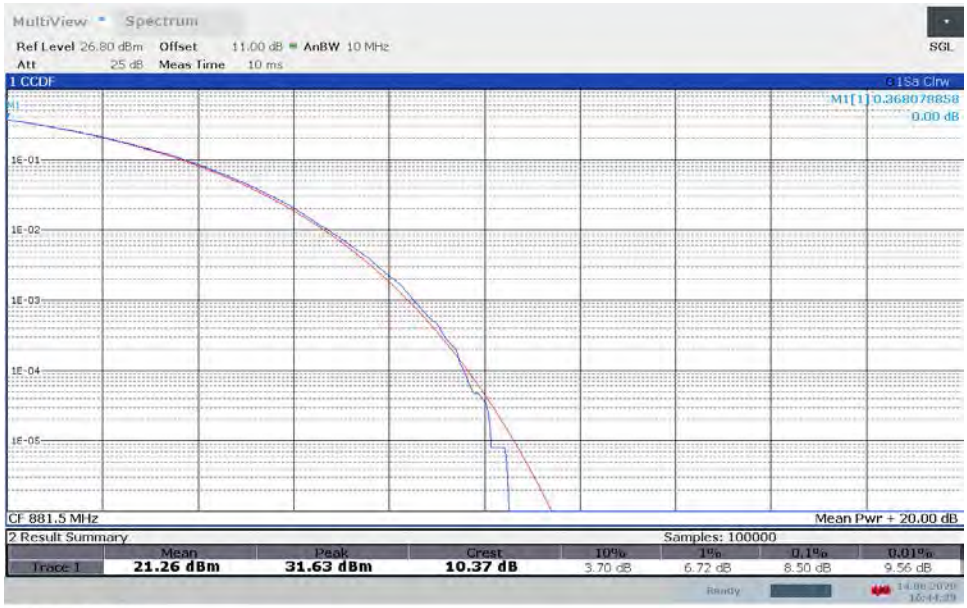
16:44:09 14.08.2020

TM3.1a-256QAM_5 MHz Bandwidth
Band 5, ANT1, Low Channel



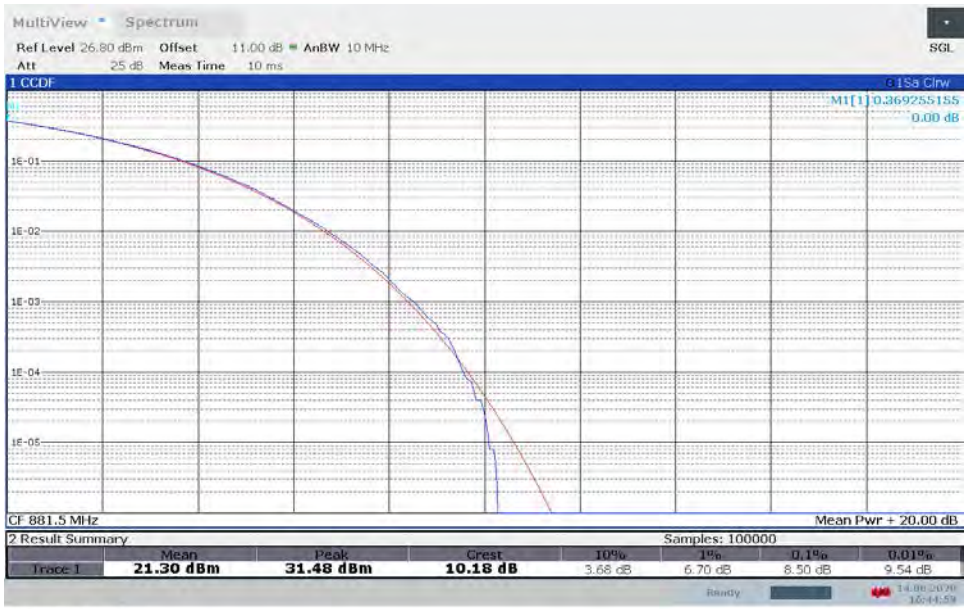
16:43:36 14.08.2020

TM3.1a-256QAM_5 MHz Bandwidth
Band 5, ANT0, Mid Channel



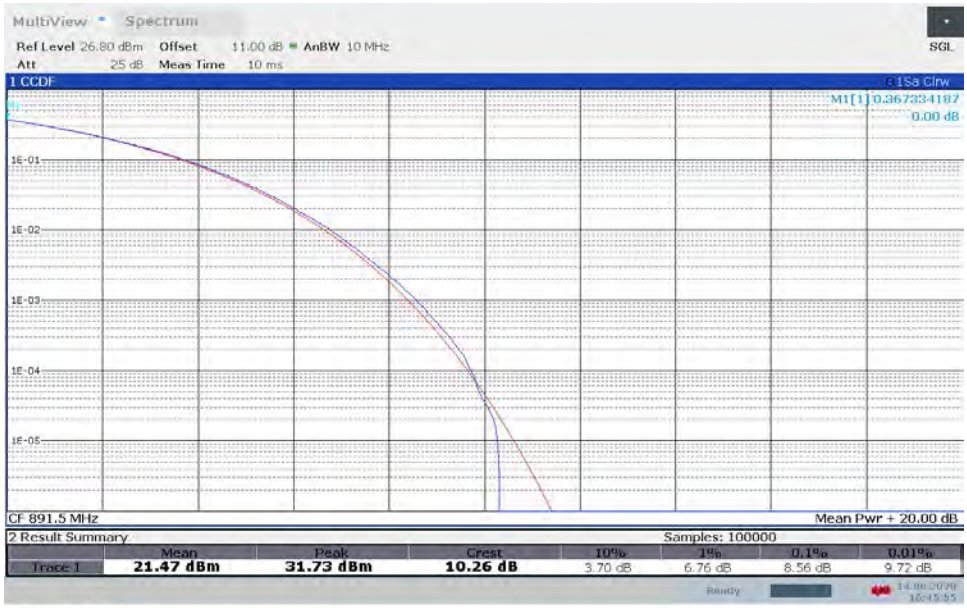
16:44:40 14.08.2020

TM3.1a-256QAM_5 MHz Bandwidth
Band 5, ANT1, Mid Channel



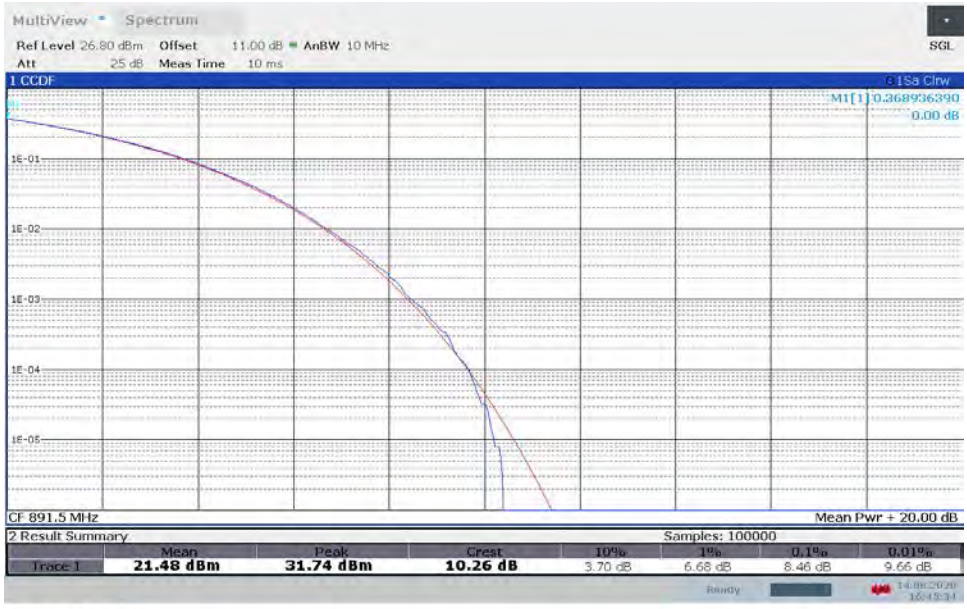
16:45:00 14.08.2020

TM3.1a-256QAM_5 MHz Bandwidth
Band 5, ANT0, High Channel



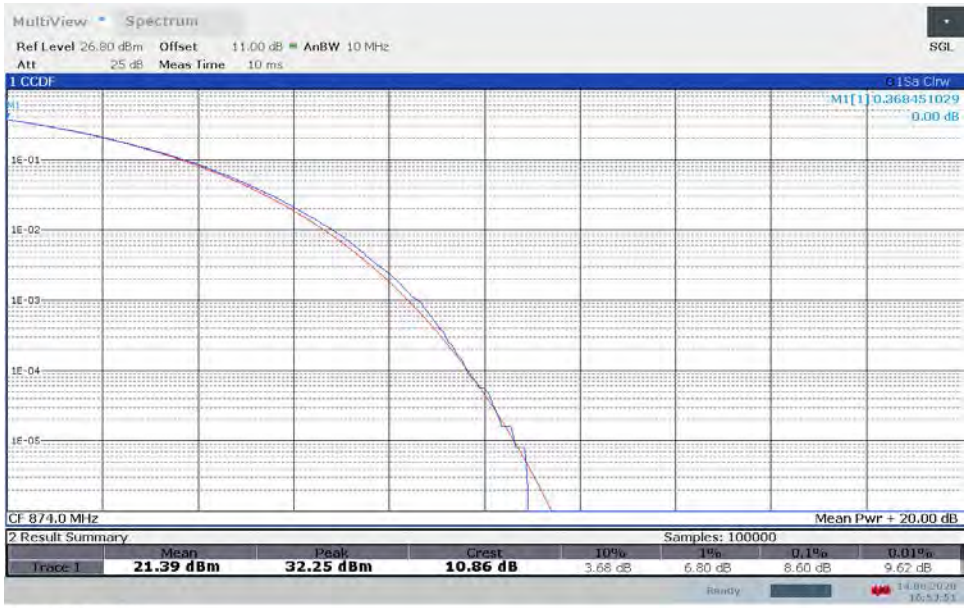
16:45:55 14.08.2020

TM3.1a-256QAM_5 MHz Bandwidth
Band 5, ANT1, High Channel



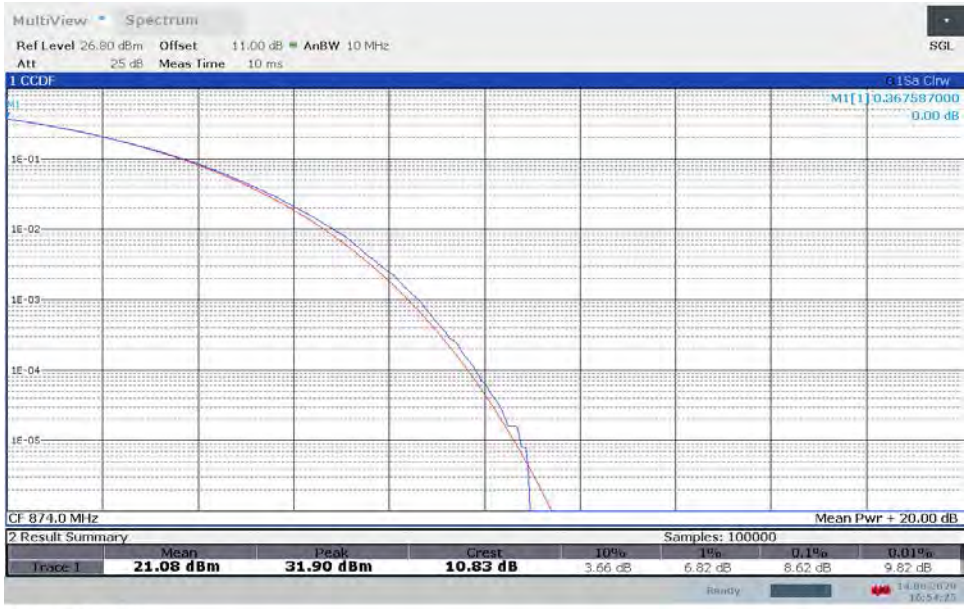
16:45:35 14.08.2020

TM1.1-QPSK_10 MHz Bandwidth
Band 5, ANT0, Low Channel



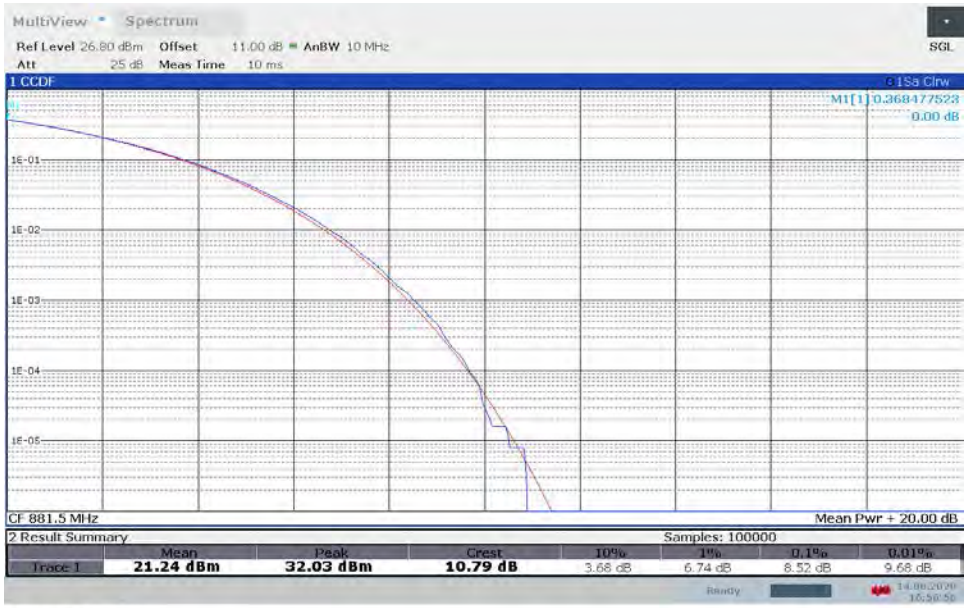
16:53:52 14.08.2020

TM1.1-QPSK_10 MHz Bandwidth
Band 5, ANT1, Low Channel



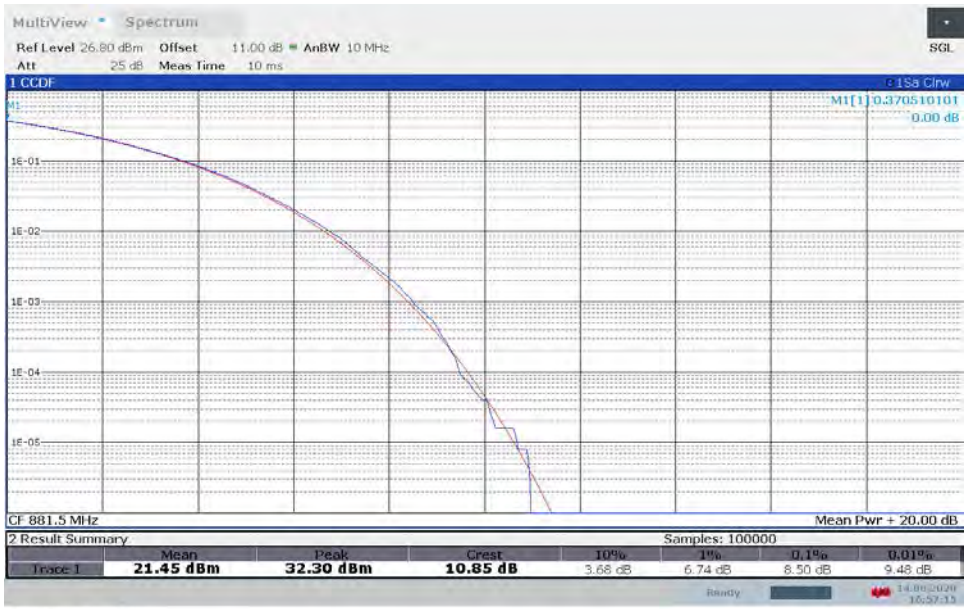
16:54:26 14.08.2020

TM1.1-QPSK_10 MHz Bandwidth
Band 5, ANT0, Mid Channel



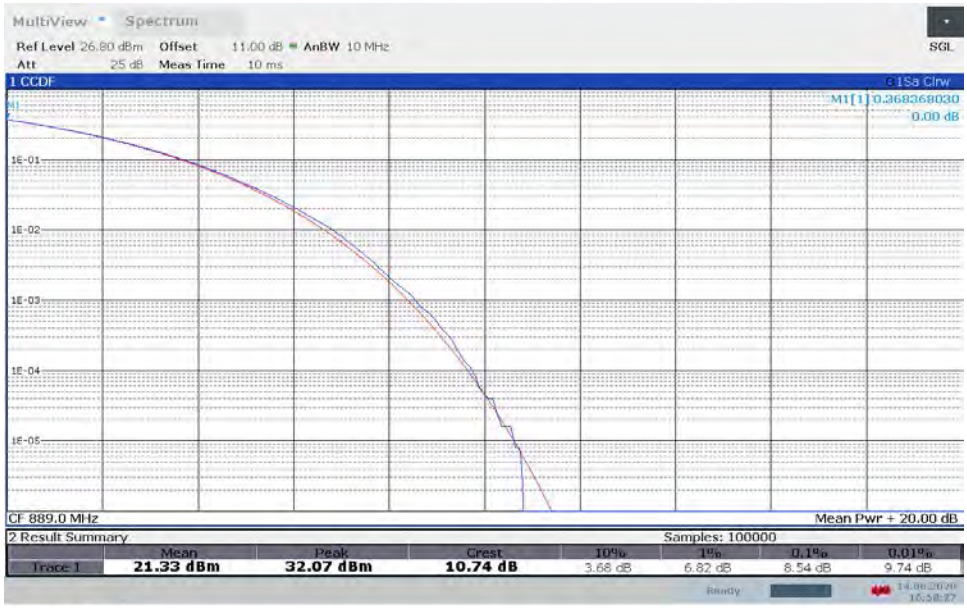
16:56:56 14.08.2020

TM1.1-QPSK_10 MHz Bandwidth
Band 5, ANT1, Mid Channel



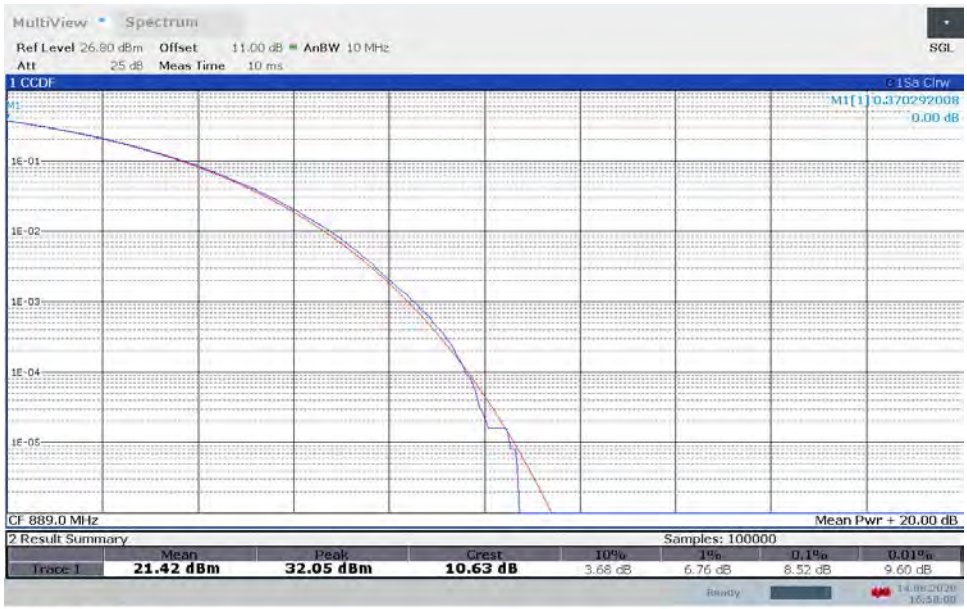
16:57:16 14.08.2020

TM1.1-QPSK_10 MHz Bandwidth
Band 5, ANT0, High Channel



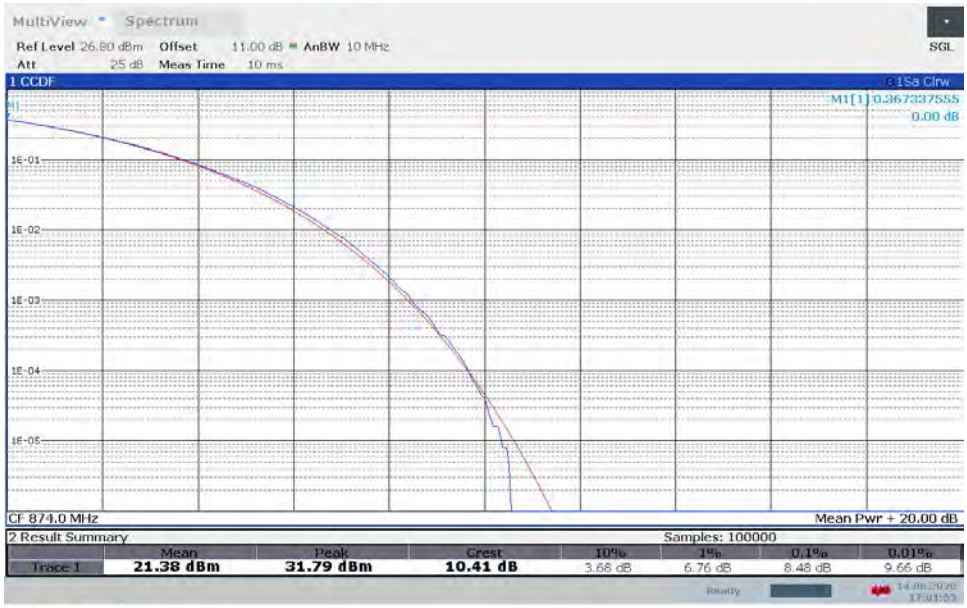
16:58:28 14.08.2020

TM1.1-QPSK_10 MHz Bandwidth
Band 5, ANT1, High Channel



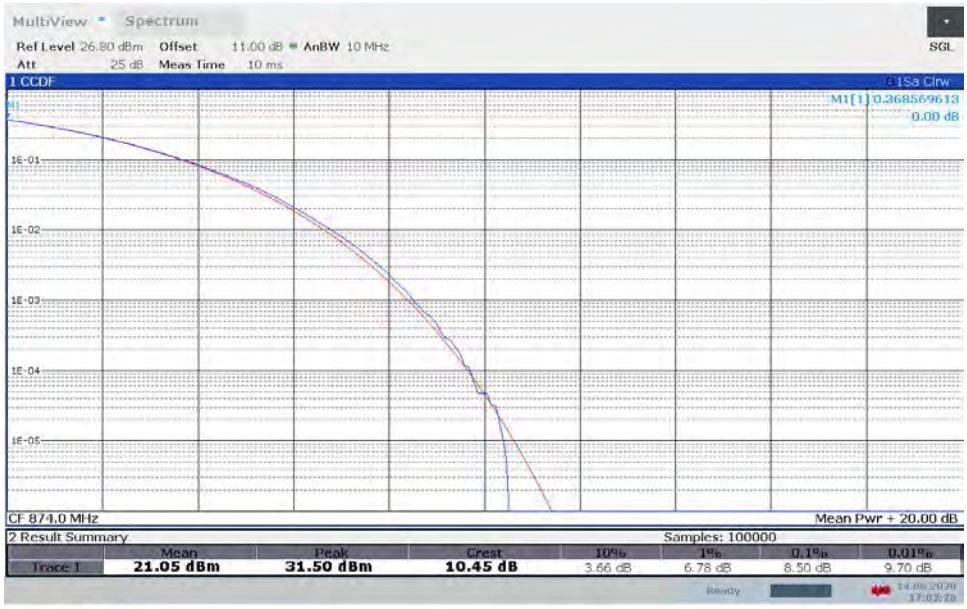
16:58:00 14.08.2020

TM3.2-16QAM_10 MHz Bandwidth
Band 5, ANT0, Low Channel



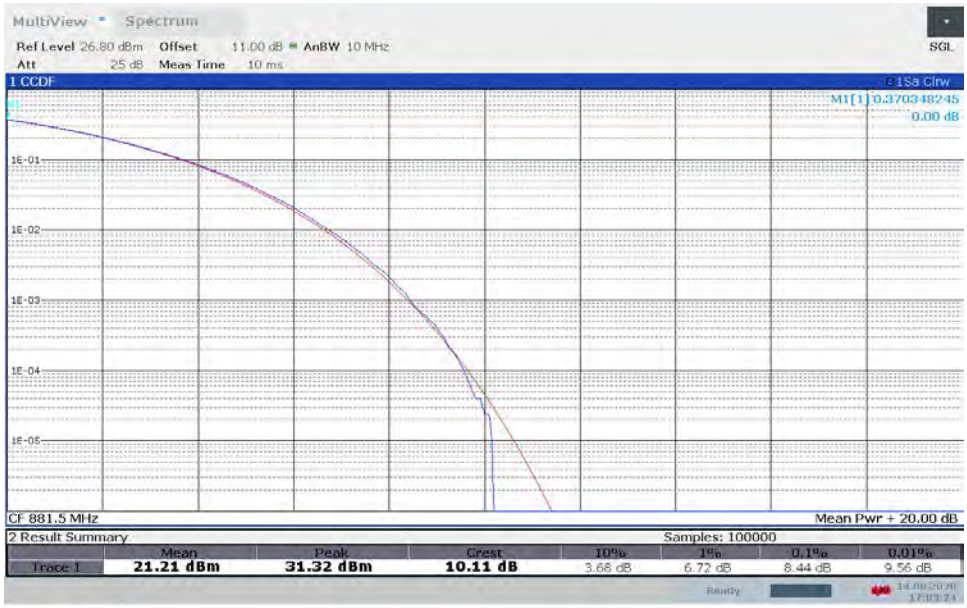
17:01:53 14.08.2020

TM3.2-16QAM_10 MHz Bandwidth
Band 5, ANT1, Low Channel



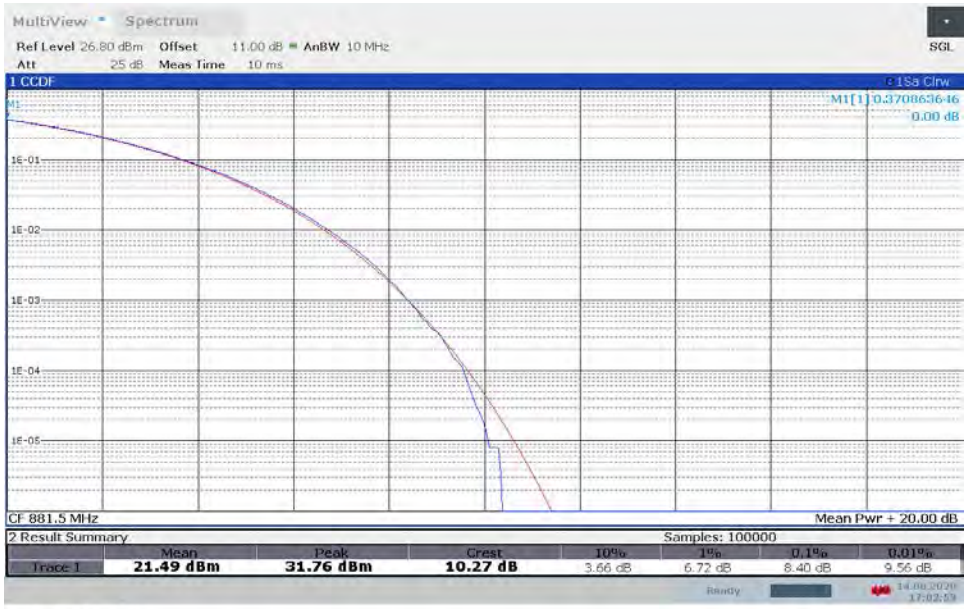
17:02:27 14.08.2020

TM3.2-16QAM_10 MHz Bandwidth
Band 5, ANT0, Mid Channel



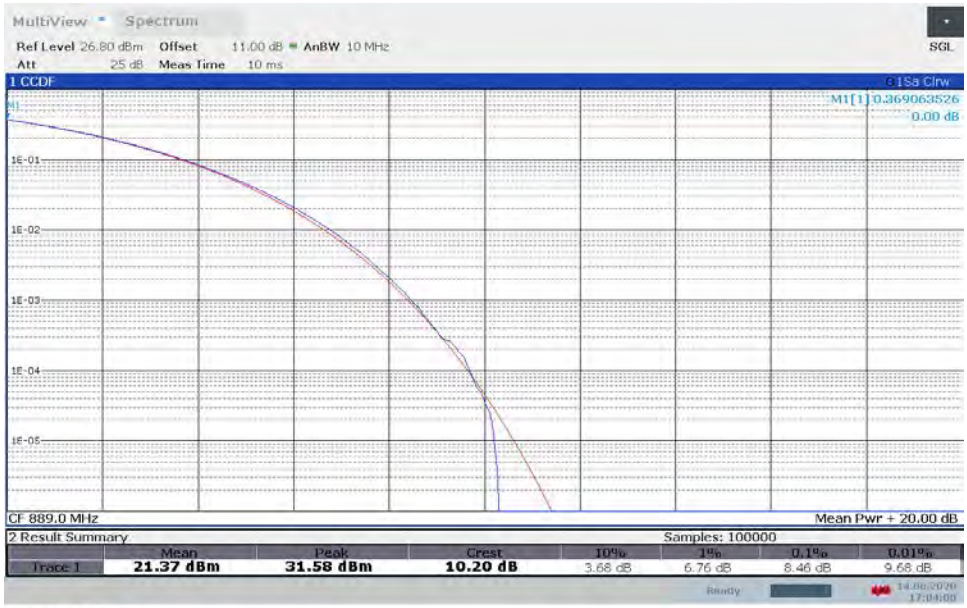
17:03:25 14.08.2020

TM3.2-16QAM_10 MHz Bandwidth
Band 5, ANT1, Mid Channel



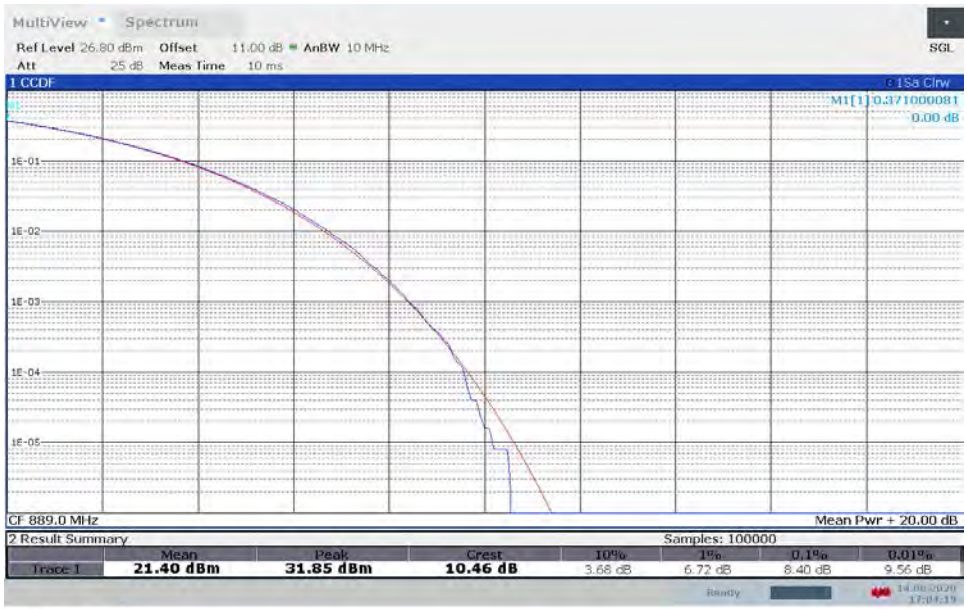
17:03:00 14.08.2020

TM3.2-16QAM_10 MHz Bandwidth
Band 5, ANT0, High Channel



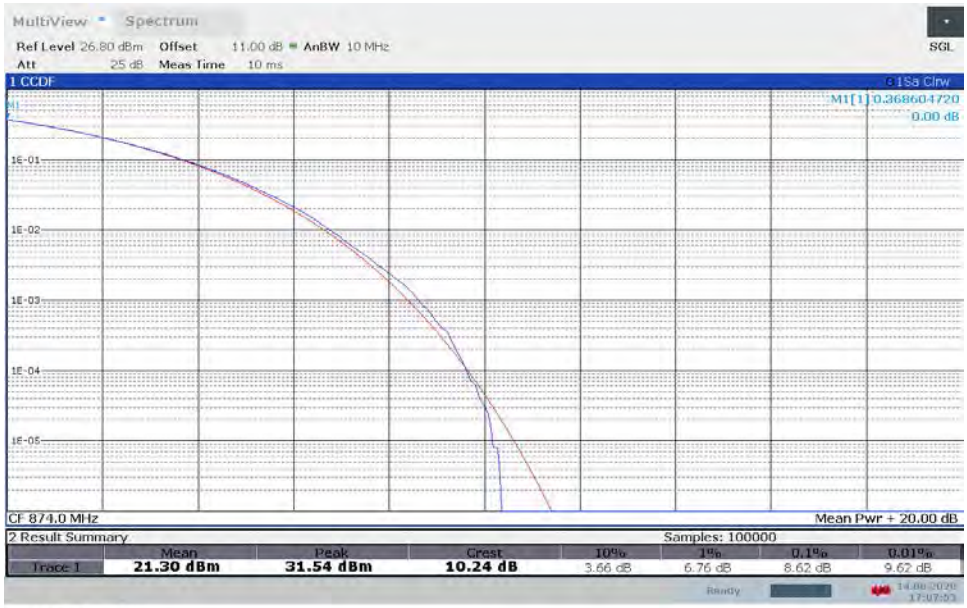
17:04:00 14.08.2020

TM3.2-16QAM_10 MHz Bandwidth
Band 5, ANT1, High Channel



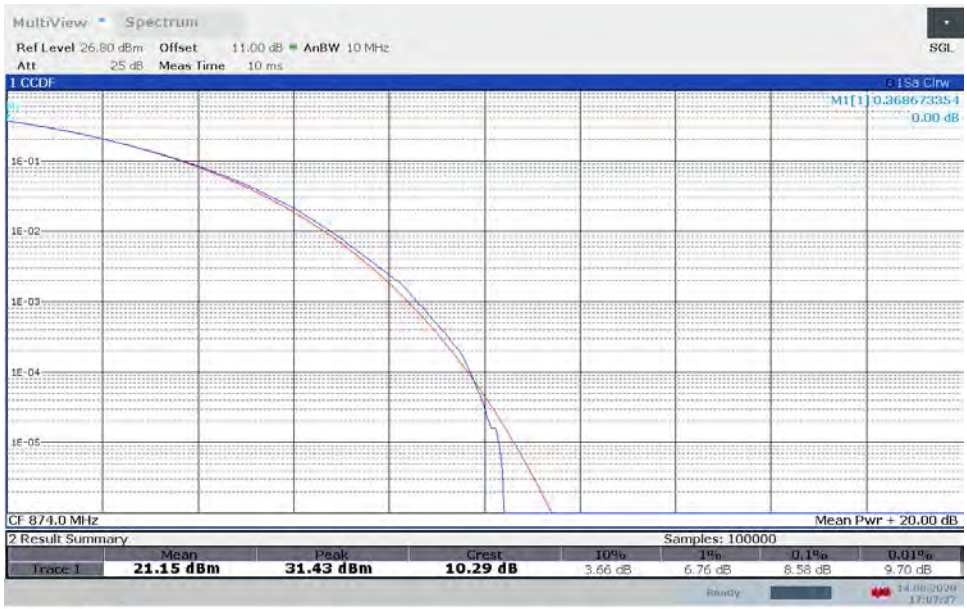
17:04:19 14.08.2020

TM3.1-64QAM_10 MHz Bandwidth
Band 5, ANT0, Low Channel



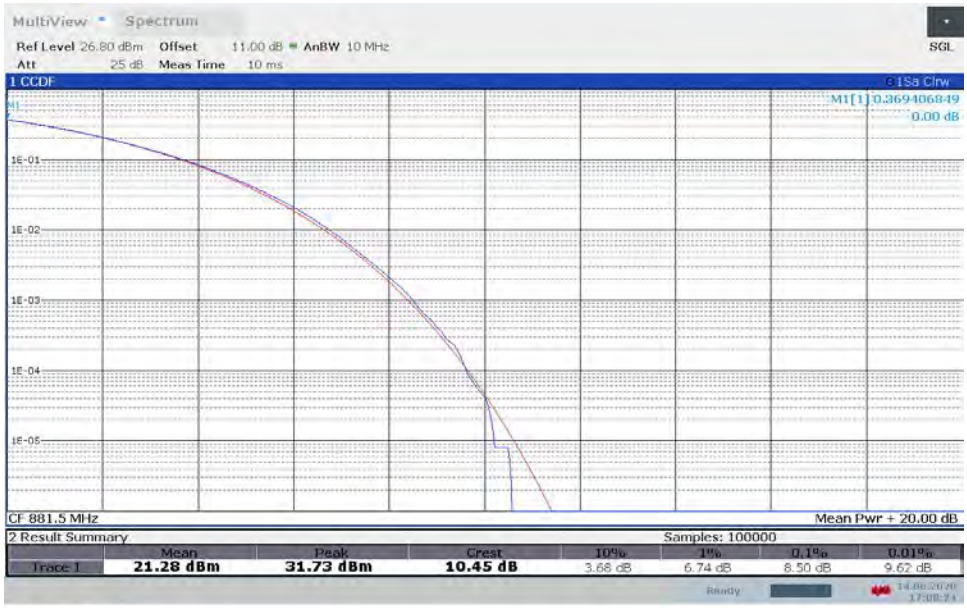
17:07:54 14.08.2020

TM3.1-64QAM_10 MHz Bandwidth
Band 5, ANT1, Low Channel



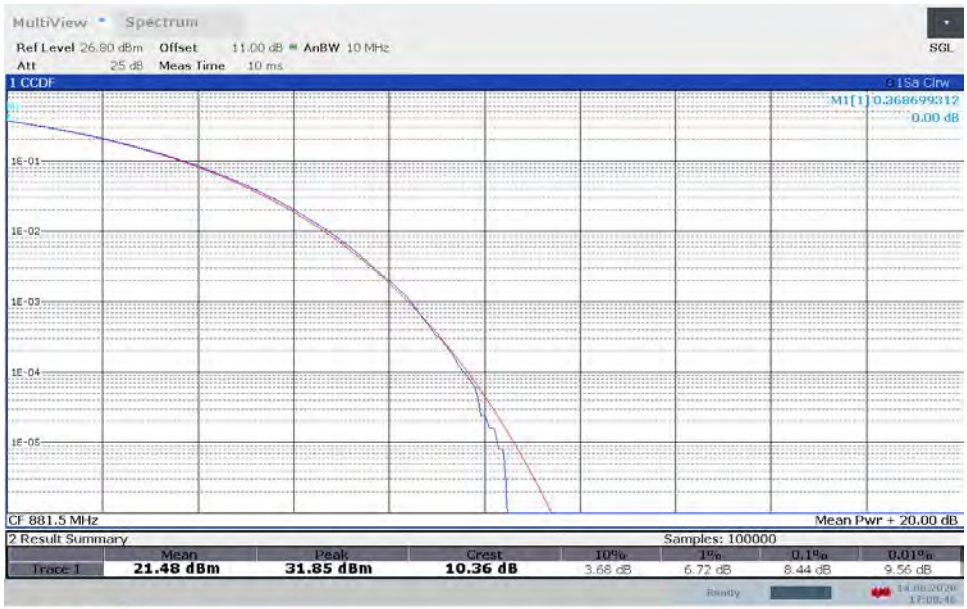
17:07:37 14.08.2020

TM3.1-64QAM_10 MHz Bandwidth
Band 5, ANT0, Mid Channel



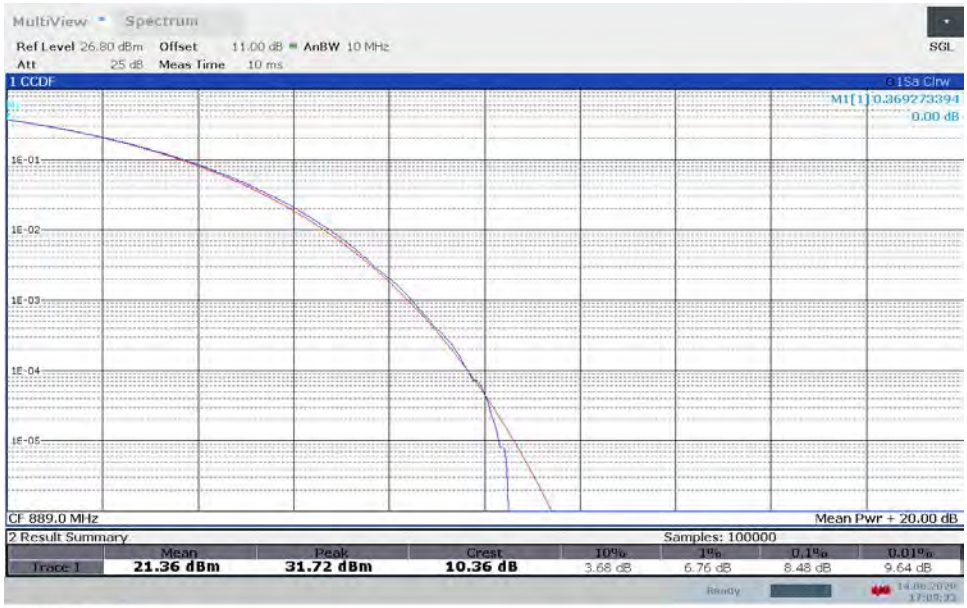
17:08:24 14.08.2020

TM3.1-64QAM_10 MHz Bandwidth
Band 5, ANT1, Mid Channel



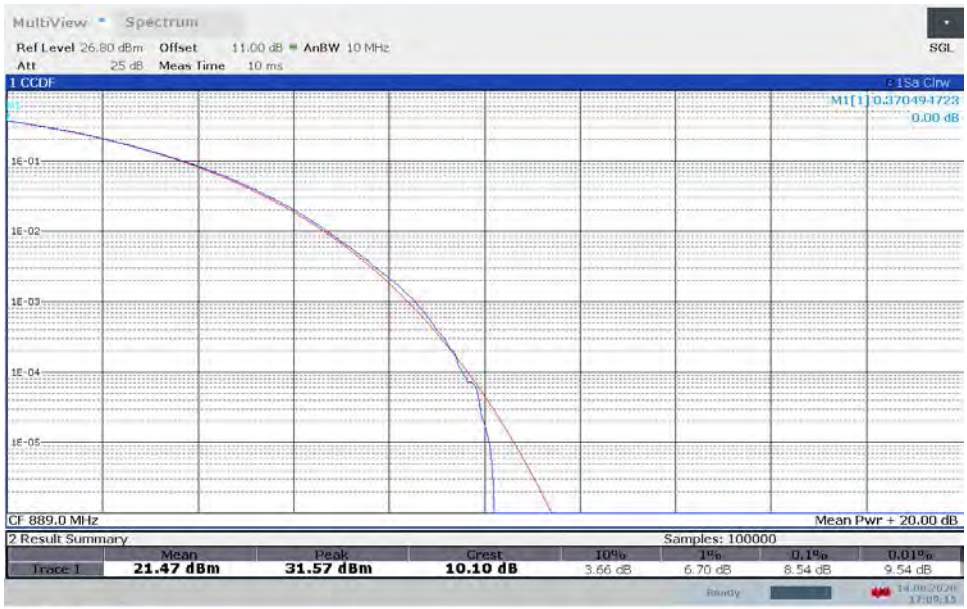
17:08:46 14.08.2020

TM3.1-64QAM_10 MHz Bandwidth
Band 5, ANT0, High Channel



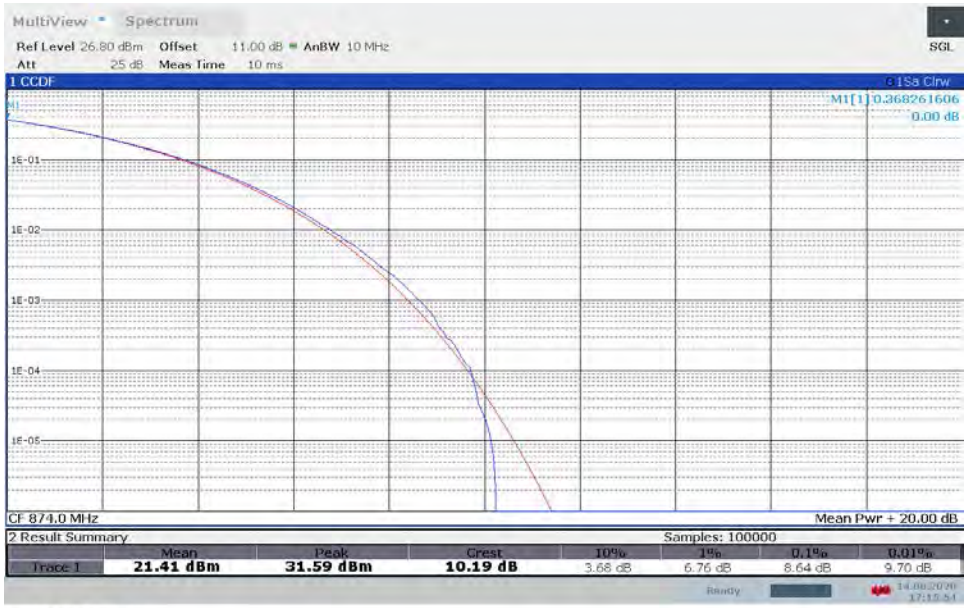
17:09:34 14.08.2020

TM3.1-64QAM_10 MHz Bandwidth
Band 5, ANT1, High Channel



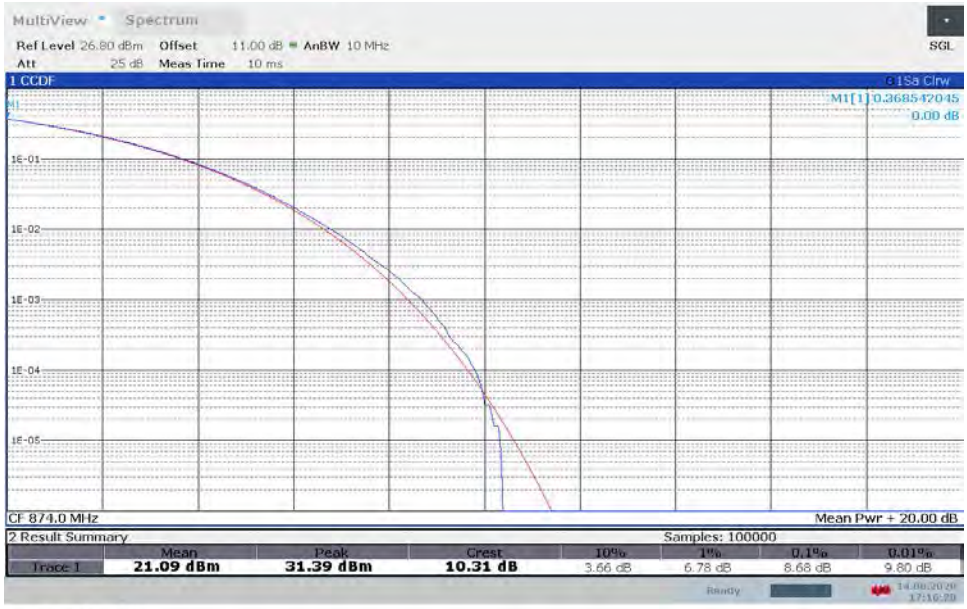
17:09:16 14.08.2020

TM3.1a-256QAM_10 MHz Bandwidth
Band 5, ANT0, Low Channel



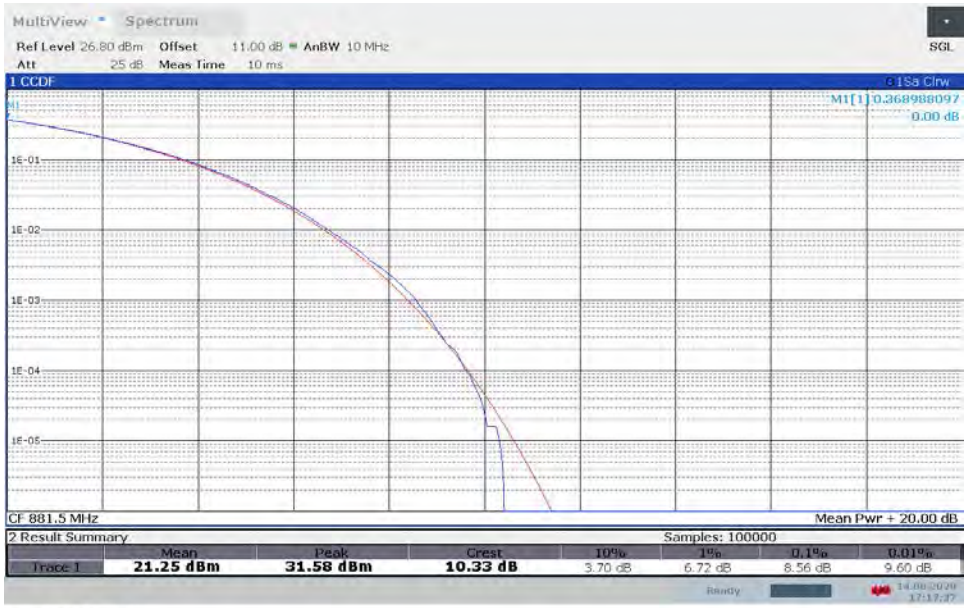
17:15:54 14.08.2020

TM3.1a-256QAM_10 MHz Bandwidth
Band 5, ANT1, Low Channel



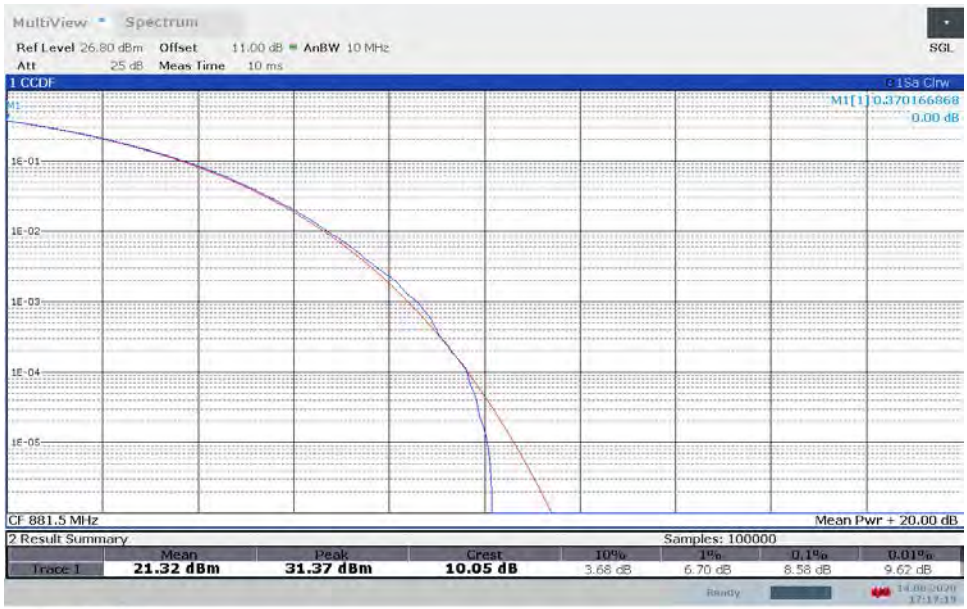
17:16:20 14.08.2020

TM3.1a-256QAM_10 MHz Bandwidth
Band 5, ANT0, Mid Channel



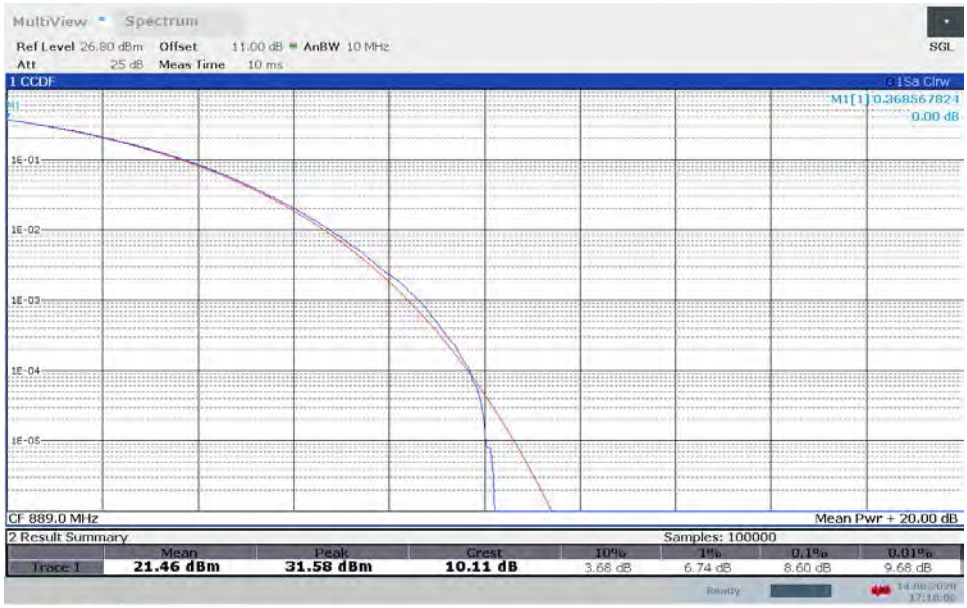
17:17:37 14.08.2020

TM3.1a-256QAM_10 MHz Bandwidth
Band 5, ANT1, Mid Channel



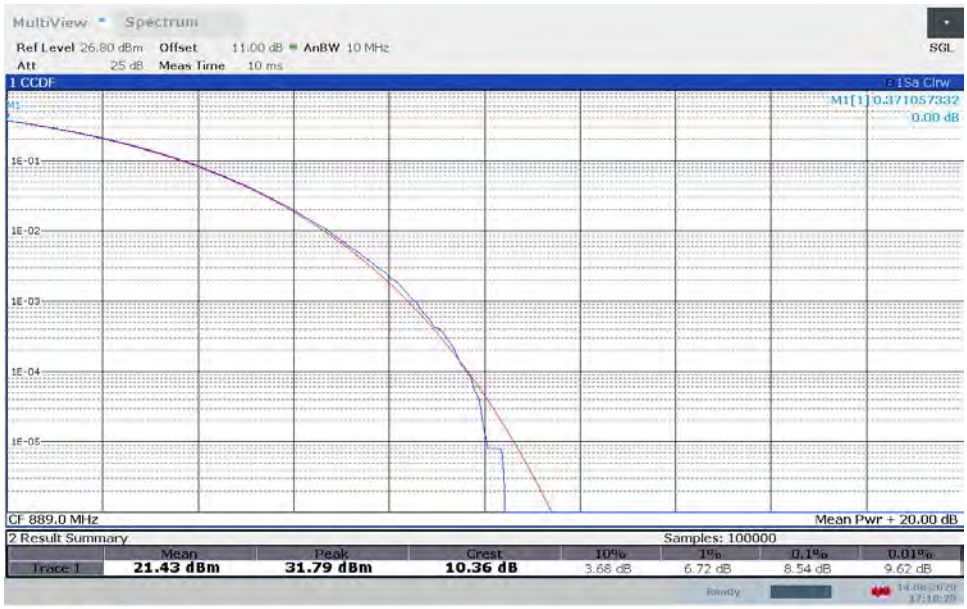
17:17:19 14.08.2020

TM3.1a-256QAM_10 MHz Bandwidth
Band 5, ANT0, High Channel



17:18:07 14.08.2020

TM3.1a-256QAM_10 MHz Bandwidth
Band 5, ANT1, High Channel



17:18:29 14.08.2020

Test Personnel:	Minh Ly	Test Date:	08/14/2020
Supervising/Reviewing Engineer: (Where Applicable)			
Product Standard:	FCC Part 22	Limit Applied:	See report section 6.1
Input Voltage:	56 VDC (POE)		
Pretest Verification w/ Ambient Signals or BB Source:	N/A	Ambient Temperature:	27 ºC
		Relative Humidity:	40 %
		Atmospheric Pressure:	29.9 in Hg

Deviations, Additions, or Exclusions: None