



FCC LISTED, REGISTRATION
NUMBER: 2764.01

ISED LISTED REGISTRATION
NUMBER: 23595-1

Test report No:
2747ERM.002A1

Partial Test report

USA FCC Part 96 CITIZENS BROADBAND RADIO SERVICE DEVICES OPERATING WITHIN THE BAND 3550-3700 MHz

(*) Identification of item tested	LTE Module
(*) Trademark	TELIT
(*) Model and /or type reference	LM960A9-P
(*) Other identification of the product	FCC ID: RI7LM960A9P IMEI TAC: 35558311
(*) Features	PCI Express Mini Card, LTE CAT.9
(*) Manufacturer	TELIT WIRELESS SOLUTIONS CO., LTD. 8th Fl.,V Bld, 6, Gukjegeumyung-ro 8-gil, Yeongdeungpo-gu, Seoul, 07330, South Korea.
Test method requested, standard	USA FCC Part 96 CITIZENS BROADBAND RADIO SERVICE DEVICES OPERATING WITHIN THE BAND 3550-3700 MHz FCC KDB 940660 D01 Part 96 CBSD v01: Certification and Test Procedures for Citizens Broadband Radio Service Devices Authorized Under Part 96 of the Rules FCC KDB 662911 D01 Multiple Transmitter Output v02r01: Emissions Testing of Transmitters with Multiple Outputs in the Same Band ANSI TIA-603D: Land Mobile FM or PM Communications Equipment Measurement and Performance Standards
Summary	IN COMPLIANCE
Approved by (name / position & signature)	Domingo Galvez EMC&RF Lab Manager
Date of issue	08-13-2020
Report template No	FDT08_21 (*) Declared by the manufacturer

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Competences and guarantees

DEKRA Certification Inc. is a testing laboratory accredited by A2LA (The American Association for Laboratory Accreditation), to perform the tests indicated in the Certificate 2764.01

DEKRA Certification Inc. is a testing laboratory competent to carry out the tests described in this report.

To assure the traceability to other national and international laboratories, DEKRA Certification Inc. has a calibration and maintenance program for its measurement equipment.

DEKRA Certification Inc. guarantees the reliability of the data presented in this report, which is the result of the measurements and the tests performed to the item under test on the date and under the conditions stated on the report and, it is based on the knowledge and technical facilities available at DEKRA Certification at the time of performance of the test.

DEKRA Certification Inc. is liable to the client for the maintenance of the confidentiality of all information related to the item under test and the results of the test.

The results presented in this Test Report apply only to the item under test established in this document.

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General conditions

1. This report is only referred to the item that has undergone the test.
2. This report does not constitute or imply on its own an approval of the product by the Certification Bodies or competent Authorities.
3. This document is only valid if complete; no partial reproduction can be made without previous written permission of DEKRA Certification Inc.
4. This test report cannot be used partially or in full for publicity and/or promotional purposes without previous written permission of DEKRA Certification Inc. and the Accreditation Bodies.

Uncertainty

Uncertainty (factor $k=2$) was calculated according to the DEKRA Certification internal document PODT000.

Frequency (MHz)	U(k=2)	Units
30-180	3.82	dB
180-1000	2.61	dB
1000-18000	2.92	dB
18000-40000	2.15	dB

Data provided by the client

The device consists of Mini-PCle type LTE module.

DEKRA declines any responsibility with respect to the information provided by the client and that may affect the validity of results.

Usage of samples

Samples undergoing test have been selected by: The client.

Sample S/01 is composed of the following elements:

Control N°	Description	Model	Serial N°	Date of reception
2747.01	Telit Module 1	LM960A9-P	IMEI:355583110000359	06/11/2020
2747.05	Power Cable 1	--	--	06/11/2020
2747.09	USB Cable 1	--	--	06/11/2020


Sample S/0a is composed of the following Accessory elements:

Control N°	Description	Model	Serial N°	Date of reception
2747.04	Cradle Demo Kit 2	--	--	06/11/2020

1. Sample S/01 has undergone following test(s):

All conducted tests indicated in appendix A.

Test sample description

Ports..... :	Port name and description	Cable					
		Specified max length [m]	Attached during test	Shielded	Coupled to patient ⁽³⁾		
	Primary port 0 for LB/MB	38 mm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	Primary port 1 for HB/UHB	38 mm	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	Secondary port for LB/MB/GNSS	38 mm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	Primary port 1 for HB/UHB	38 mm	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	GNSS port	50 mm	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Supplementary information to the ports..... :	MHF4 type connectors on LM960 board, SMA type connectors on test board (Refer to attached doc.)  Telit LM960A9-P QUICK START GUID						
Rated power supply	Voltage and Frequency		Reference poles				
			L1	L2	L3	N	PE
	<input type="checkbox"/>	AC:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	AC:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	DC: 3.1 ~ 3.6 V, typ 3.3 V					
<input type="checkbox"/>	DC:						
Rated Power	0.151 W						
Clock frequencies	38.4 MHz						
Other parameters.....	<i>Data not provided</i>						
Software version	32.00.260-B001						
Hardware version.....	1.00						

Dimensions in cm (W x H x D).....:	51.0 x 30.0 x 2.7 mm		
Mounting position.....:	<input type="checkbox"/>	Table top equipment	
	<input type="checkbox"/>	Wall/Ceiling mounted equipment	
	<input type="checkbox"/>	Floor standing equipment	
	<input type="checkbox"/>	Hand-held equipment	
	<input checked="" type="checkbox"/>	Other: Variable equipment	
Modules/parts	Module/parts of test item	Type	Manufacturer
	<i>Data not provided</i>		
Accessories (not part of the test item)	Description	Type	Manufacturer
	<i>Data not provided</i>		
Documents as provided by the applicant.....:	Description	File name	Issue date
	LM960_HW_Use_Guide_r13	1VV030148 5_LM960_H W_User_Gu ide_r13	2020-06-09

Copy of marking plate:



Identification of the client

TELIT WIRELESS SOLUTIONS CO., LTD.

8th Fl.,V Bld, 6, Gukjegeumyung-ro 8-gil, Yeongdeungpo-gu, Seoul, 07330, South Korea.

Testing period and place

Test Location	DEKRA Certification Inc.
Date (start)	06-11-2020
Date (finish)	06-15-2020

Document history

Report number	Date	Description
2747ERM.002	07-23-2020	First release
2747ERM.002A1	08-13-2020	Second release

Modifications to the reference test report

It was introduced the following modifications in respect to the test report number 2747ERM.002 related with the same samples, in the next clauses and sub-clauses:

Clauses/ Sub-Clauses	Modification	Justification
PRODUCT INFORMATION/ Page 12	Base station class has been updated.	To show the correct base station category for the device due to a typo.
TEST A.1 & A.2: MAXIMUM EFFECTIVE ISOTOPIC RADIATED POWER (EIRP)/ Page 20-53	Tables for 15MHz and 20MHz integration for 16-QAM have been added.	To show the output power values in 15MHz and 20MHz integration for 16-QAM modulation 15/20 MHz bandwidths.

This modification test report cancels and replaces the test report 2747ERM.002.

Environmental conditions

In the control chamber, the following limits were not exceeded during the test:

Temperature	Min. = 15 °C Max. = 35 °C
Relative humidity	Min. = 30 % Max. = 75 %
Air pressure	Min. = 860 mbar Max. = 1060 mbar

In the semi anechoic chamber, the following limits were not exceeded during the test.

Temperature	Min. = 15 °C Max. = 35 °C
Relative humidity	Min. = 30 % Max. = 75 %
Air pressure	Min. = 860 mbar Max. = 1060 mbar

In the chamber for conducted measurements, the following limits were not exceeded during the test:

Temperature	Min. = 15 °C Max. = 35 °C
Relative humidity	Min. = 30 % Max. = 60 %
Air pressure	Min. = 860 mbar Max. = 1060 mbar

Remarks and comments

The tests have been performed by the technical personnel: Sravani Gollamudi and Koji Nishimoto.

Testing verdicts

Not applicable :	N/A
Pass :	P
Fail :	F
Not measured :	N/M

Summary

FCC Part 96 Paragraph				
Section	Part 96. Spec Clause	Test Description	Verdict	Remark
A.1	§ 96.41 (b)	Maximum Effective Isotropic Radiated Power (EIRP)	P	N/A
A.2	§ 2.1046	Conducted Output Power	P	N/A
A.3	§ 2.1049	99% OBW and -26db Bandwidth	N/A	Refer Note 1
A.4	§ 96.41 (b)	Maximum Power Spectral Density (PSD)	N/A	Refer Note 1
A.5	§ 96.41 (g)	Peak to Average Power Ratio (PAPR)	N/A	Refer Note 1
A.6	§ 2.1051, 96.41 (e)	3.5 GHz Emission and Interference limits	N/A	Refer Note 1
A.7	§ 2.1051, 96.41 (e)	Spurious Emissions at Antenna Terminals	N/A	Refer Note 1
A.8	§ 2.1053	Radiated Spurious Emission	N/A	Refer Note 1
A.9	§ 2.1055	Frequency Stability	N/A	Refer Note 1

Note:

1. The customer requested only Conducted power spot check testing for device.

List of equipment used during the test

Conducted Measurements

CONTROL NUMBER	DESCRIPTION	MANUFACTURER	MODEL	LAST CALIBRATION	NEXT CALIBRATION
1149	Wideband Radio Communication Tester	Rohde & Schwarz	CMW 500	2019/09	2021/09
1010	EMI Test Receiver	Rohde & Schwarz	ESR 7	2019/08	2021/08

Appendix A: Test results

Appendix A Content

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PRODUCT INFORMATION

The following information is provided by the client

Product specification	Description	Yes/No
Base Station Class	Wide area Base Station (Macro Cell)	No
	Medium Range Base Stations (Micro Cell)	No
	Local area Base Station (Picocell)	No
	Home Base Station (Femtocell)	No
Category of CBSD	Category A	No
	Category B	No
	End User	Yes
Type of Installation	Professional Installation	
DC Power supply voltage (V)	3.1 to 3.6 V, Typ 3.3V	
RF Test Tool Software of CBS	N/A	
TX Frequency	5 MHz: 3552.2MHz — 3697.5 MHz 10 MHz: 3555 MHz — 3695 MHz 15 MHz: 3557.5 MHz — 3692.5 MHz 20 MHz: 3560 MHz — 3690 MHz	
RX Frequency	5 MHz: 3552.2MHz — 3697.5 MHz 10 MHz: 3555 MHz — 3695 MHz 15 MHz: 3557.5 MHz — 3692.5 MHz 20 MHz: 3560 MHz — 3690 MHz	
Maximum Output Power to Antenna (dBm)	22 dBm	
Maximum 99% Occupied Bandwidth (MHz)	5 MHz, 10 MHz, 15 MHz, 20 MHz	
Type of Modulation	QPSK	Yes
	16QAM	Yes
	64QAM	Yes
	256QAM	No
Antenna Information	Gain: 1 dBi	

Test modes available:

1. **Band 48:**

- 5 MHz Bandwidth (25 RB):
 - . Lowest Channel (3552.5 MHz) / Middle Channel (3625 MHz) / Highest Channel (3697.5 MHz)
- 10 MHz Bandwidth (50 RB):
 - . Lowest Channel (3555 MHz) / Middle Channel (3625 MHz) / Highest Channel (3695 MHz)
- 15 MHz Bandwidth (75 RB):
 - . Lowest Channel (3557.5 MHz) / Middle Channel (3625 MHz) / Highest Channel (3692.5 MHz)
- 20 MHz Bandwidth (100 RB):
 - . Lowest Channel (3560 MHz) / Middle Channel (3625 MHz) / Highest Channel (3690 MHz)

2. **Band 42:**

- 5 MHz Bandwidth (25 RB):
 - . Lowest Channel (3552.5 MHz) / Middle Channel (3575 MHz) / Highest Channel (3597.5 MHz)
- 10 MHz Bandwidth (50 RB):
 - . Lowest Channel (3555 MHz) / Middle Channel (3575 MHz) / Highest Channel (3595 MHz)
- 15 MHz Bandwidth (75 RB):
 - . Lowest Channel (3557.5 MHz) / Middle Channel (3575 MHz) / Highest Channel (3592.5 MHz)
- 20 MHz Bandwidth (100 RB):
 - . Lowest Channel (3560 MHz) / Middle Channel (3575 MHz) / Highest Channel (3590 MHz)

3. **Band 43:**

- 5 MHz Bandwidth (25 RB):
 - . Lowest Channel (3602.5 MHz) / Middle Channel (3650 MHz) / Highest Channel (3697.5 MHz)
- 10 MHz Bandwidth (50 RB):
 - . Lowest Channel (3605 MHz) / Middle Channel (3650 MHz) / Highest Channel (3695 MHz)
- 15 MHz Bandwidth (75 RB):
 - . Lowest Channel (3607.5 MHz) / Middle Channel (3650 MHz) / Highest Channel (3692.5 MHz)
- 20 MHz Bandwidth (100 RB):
 - . Lowest Channel (3610 MHz) / Middle Channel (3650 MHz) / Highest Channel (3690 MHz)

DESCRIPTION OF TEST CONDITIONS

TEST CONDITIONS	DESCRIPTION
<p>TC#01 LTE Band 48</p>	<p><u>Power supply (V):</u> $V_{\text{nominal}} = 3.3 \text{ Vdc}$</p> <p><u>Type of power supply:</u> DC voltage from AC/DC power supply.</p> <p><u>Temperature (°C):</u> $T_{\text{nom}} = +15 \text{ to } +35$ $T_{\text{min}} = -40 (*)$ $T_{\text{max}} = +55 (*)$</p> <p>The subscript nom indicates normal test conditions. The subscripts min and max indicate extreme test conditions (minimum and maximum respectively). N/A: Not Applicable. (*) Declared by applicant.</p> <p>The minimum, half, and maximum numbers of RBs for all BWs were evaluated, and full RB configuration was identified as worst case. All the tests were performed by using the full RB configuration.</p> <p>All supported modulations were evaluated and QPSK was identified as worst case. All the test results and plots are shown for QPSK modulation only.</p> <p><u>Test Frequencies for Conducted tests:</u></p> <p>-5 MHz Bandwidth (25 RB):</p> <p>Lowest Channel (3552.5 MHz) Middle Channel (3625 MHz) Highest Channel (3697.5 MHz)</p> <p>-10 MHz Bandwidth (50 RB):</p> <p>Lowest Channel (3555 MHz) Middle Channel (3625 MHz) Highest Channel (3695 MHz)</p>

TEST CONDITIONS	DESCRIPTION
	<p>-15 MHz Bandwidth (75 RB):</p> <p style="padding-left: 40px;">Lowest Channel (3557.5 MHz)</p> <p style="padding-left: 40px;">Middle Channel (3625 MHz)</p> <p style="padding-left: 40px;">Highest Channel (3692.5 MHz)</p> <p>-20 MHz Bandwidth (100 RB):</p> <p style="padding-left: 40px;">Lowest Channel (3560 MHz)</p> <p style="padding-left: 40px;">Middle Channel (3625 MHz)</p> <p style="padding-left: 40px;">Highest Channel (3690 MHz)</p> <p><u>Test Frequencies for Radiated tests:</u></p> <p>5 MHz Bandwidth (25 RB):</p> <p style="padding-left: 40px;">Lowest Channel (3552.5 MHz)</p> <p style="padding-left: 40px;">Middle Channel (3625 MHz)</p> <p style="padding-left: 40px;">Highest Channel (3697.5 MHz)</p> <p>-10 MHz Bandwidth (50 RB):</p> <p style="padding-left: 40px;">Lowest Channel (3555 MHz)</p> <p style="padding-left: 40px;">Middle Channel (3625 MHz)</p> <p style="padding-left: 40px;">Highest Channel (3695 MHz)</p> <p>-15 MHz Bandwidth (75 RB):</p> <p style="padding-left: 40px;">Lowest Channel (3557.5 MHz)</p> <p style="padding-left: 40px;">Middle Channel (3625 MHz)</p> <p style="padding-left: 40px;">Highest Channel (3692.5 MHz)</p> <p>-20 MHz Bandwidth (100 RB):</p> <p style="padding-left: 40px;">Lowest Channel (3560 MHz)</p> <p style="padding-left: 40px;">Middle Channel (3625 MHz)</p> <p style="padding-left: 40px;">Highest Channel (3690 MHz)</p>

TEST CONDITIONS	DESCRIPTION
<p>TC#02 LTE Band 42</p>	<p><u>Power supply (V):</u> $V_{\text{nominal}} = 3.3 \text{ Vdc}$</p> <p><u>Type of power supply:</u> DC voltage from AC/DC power supply.</p> <p><u>Temperature (°C):</u> $T_{\text{nom}} = +15 \text{ to } +35$ $T_{\text{min}} = -40 (*)$ $T_{\text{max}} = +55 (*)$</p> <p>The subscript nom indicates normal test conditions. The subscripts min and max indicate extreme test conditions (minimum and maximum respectively). N/A: Not Applicable. (*) Declared by applicant.</p> <p>The minimum, half, and maximum numbers of RBs for all BWs were tested in conducted output power, and full RB configuration was identified as worst case. All the tests were performed by using the full RB configuration.</p> <p>All supported modulations were evaluated and QPSK was identified as worst case. All the test results and plots are shown for QPSK modulation only.</p> <p><u>Test Frequencies for Conducted tests:</u></p> <p>-5 MHz Bandwidth (25 RB): Lowest Channel (3552.5 MHz) Middle Channel (3575 MHz) Highest Channel (3597.5 MHz)</p> <p>-10 MHz Bandwidth (50 RB): Lowest Channel (3555 MHz) Middle Channel (3575 MHz) Highest Channel (3595 MHz)</p>

TEST CONDITIONS	DESCRIPTION
	<p>-15 MHz Bandwidth (75 RB):</p> <p style="padding-left: 40px;">Lowest Channel (3557.5 MHz)</p> <p style="padding-left: 40px;">Middle Channel (3575 MHz)</p> <p style="padding-left: 40px;">Highest Channel (3592.5 MHz)</p> <p>-20 MHz Bandwidth (100 RB):</p> <p style="padding-left: 40px;">Lowest Channel (3560 MHz)</p> <p style="padding-left: 40px;">Middle Channel (3575 MHz)</p> <p style="padding-left: 40px;">Highest Channel (3590 MHz)</p> <p><u>Test Frequencies for Radiated tests:</u></p> <p>-5 MHz Bandwidth (25 RB):</p> <p style="padding-left: 40px;">Lowest Channel (3552.5 MHz)</p> <p style="padding-left: 40px;">Middle Channel (3575 MHz)</p> <p style="padding-left: 40px;">Highest Channel (3597.5 MHz)</p> <p>-10 MHz Bandwidth (50 RB):</p> <p style="padding-left: 40px;">Lowest Channel (3555 MHz)</p> <p style="padding-left: 40px;">Middle Channel (3575 MHz)</p> <p style="padding-left: 40px;">Highest Channel (3595 MHz)</p> <p>-15 MHz Bandwidth (75 RB):</p> <p style="padding-left: 40px;">Lowest Channel (3557.5 MHz)</p> <p style="padding-left: 40px;">Middle Channel (3575 MHz)</p> <p style="padding-left: 40px;">Highest Channel (3592.5 MHz)</p> <p>-20 MHz Bandwidth (100 RB):</p> <p style="padding-left: 40px;">Lowest Channel (3560 MHz)</p> <p style="padding-left: 40px;">Middle Channel (3575 MHz)</p> <p style="padding-left: 40px;">Highest Channel (3590 MHz)</p>

TEST CONDITIONS	DESCRIPTION
<p>TC#03 LTE Band 43</p>	<p><u>Power supply (V):</u> $V_{\text{nominal}} = 3.3 \text{ Vdc}$</p> <p><u>Type of power supply:</u> DC voltage from AC/DC power supply.</p> <p><u>Temperature (°C):</u> $T_{\text{nom}} = +15 \text{ to } +35$ $T_{\text{min}} = -40 (*)$ $T_{\text{max}} = +55 (*)$</p> <p>The subscript nom indicates normal test conditions. The subscripts min and max indicate extreme test conditions (minimum and maximum respectively). N/A: Not Applicable. (*) Declared by applicant.</p> <p>The minimum, half, and maximum numbers of RBs for all BWs were tested in conducted output power, and full RB configuration was identified as worst case. All the tests were performed by using the full RB configuration.</p> <p>All supported modulations were evaluated and QPSK was identified as worst case. All the test results and plots are shown for QPSK modulation only.</p> <p><u>Test Frequencies for Conducted tests:</u> -5 MHz Bandwidth (25 RB): Lowest Channel (3602.5 MHz) Middle Channel (3650 MHz) Highest Channel (3697.5 MHz) -10 MHz Bandwidth (50 RB): Lowest Channel (3605 MHz) Middle Channel (3650 MHz) Highest Channel (3695 MHz)</p>

TEST CONDITIONS	DESCRIPTION
	<p>-15 MHz Bandwidth (75 RB):</p> <p style="padding-left: 40px;">Lowest Channel (3607.5 MHz)</p> <p style="padding-left: 40px;">Middle Channel (3650 MHz)</p> <p style="padding-left: 40px;">Highest Channel (3692.5 MHz)</p> <p>-20 MHz Bandwidth (100 RB):</p> <p style="padding-left: 40px;">Lowest Channel (3610 MHz)</p> <p style="padding-left: 40px;">Middle Channel (3650 MHz)</p> <p style="padding-left: 40px;">Highest Channel (3690 MHz)</p> <p><u>Test Frequencies for Radiated tests:</u></p> <p>- 5 MHz Bandwidth (25 RB):</p> <p style="padding-left: 40px;">Lowest Channel (3602.5 MHz)</p> <p style="padding-left: 40px;">Middle Channel (3650 MHz)</p> <p style="padding-left: 40px;">Highest Channel (3697.5 MHz)</p> <p>- 10 MHz Bandwidth (50 RB):</p> <p style="padding-left: 40px;">Lowest Channel (3605 MHz)</p> <p style="padding-left: 40px;">Middle Channel (3650 MHz)</p> <p style="padding-left: 40px;">Highest Channel (3695 MHz)</p> <p>- 15 MHz Bandwidth (75 RB):</p> <p style="padding-left: 40px;">Lowest Channel (3607.5 MHz)</p> <p style="padding-left: 40px;">Middle Channel (3650 MHz)</p> <p style="padding-left: 40px;">Highest Channel (3692.5 MHz)</p> <p>- 20 MHz Bandwidth (100 RB):</p> <p style="padding-left: 40px;">Lowest Channel (3610 MHz)</p> <p style="padding-left: 40px;">Middle Channel (3650 MHz)</p> <p style="padding-left: 40px;">Highest Channel (3690 MHz)</p>

**TEST A.1: MAXIMUM EFFECTIVE ISOTROPIC RADIATED POWER (EIRP)
 TEST A.2: CONDUCTED OUTPUT POWER**

LIMITS:	Product standard:	Part 96.41 Subclause (b)
	Test standard:	ANSI C63.26-2015

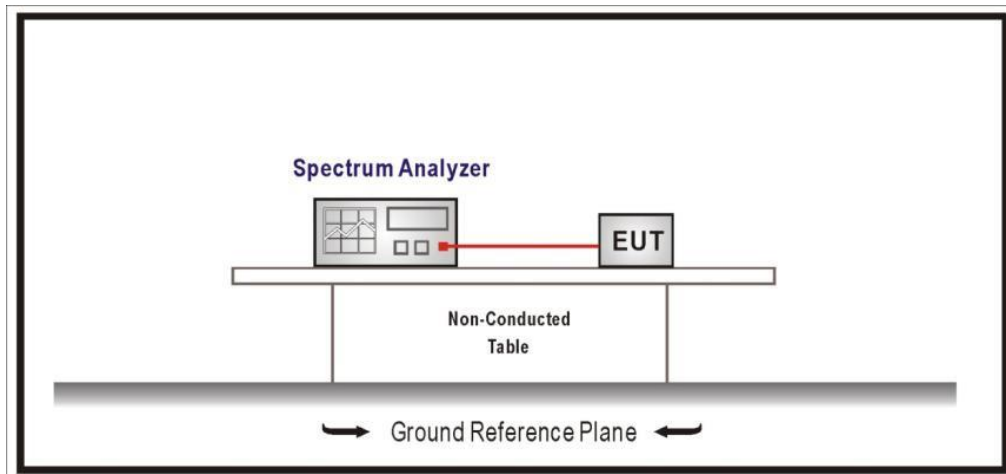
LIMITS

The maximum effective isotropic radiated power (EIRP) and maximum Power Spectral Density (PSD) of any CBSD and End User Device must comply with the limits shown in the following table.

Device	Maximum EIRP (dBm/ 10 MHz)	Maximum PSD (dBm/MHz)
End User Device	23	n/a
Category A CBSD	30	20
Category B CBSD	47	37

TEST SETUP:

The procedure in Section 5.2 of ANSI C63.26-2015 is acceptable for performing power measurements. Measurements can be made using either a peak or average (RMS) detector, if the appropriate procedure is followed. The RMS detector was used for the measurement at each frequency with following the procedure stated in the Section 5.2.4.4.2 of ANSI C63.26-2015.



EIRP was tested with a minimum, half, and maximum number of RBs for all the BWs and identified that the worst case is using full RBs. All the tests were performed by using the full RBs.

The maximum equivalent isotropically radiated power (e.i.r.p.) is calculated by adding the declared maximum antenna gain (dBi) and 10 log (1/duty cycle) was added in RF level offset to get the accurate measured power level in the average power measurement.

The duty cycle correction = $10 \log (1/0.40) = 4.01 \text{ (dB)}$

TESTED SAMPLES:	S/01
TESTED CONDITIONS MODES:	TC#01 (Band 48)
TEST RESULTS:	PASS

Results:

5 MHz BW

QPSK

	Lowest frequency 3552.5 MHz	Middle frequency 3625 MHz	Highest frequency 3697.5 MHz
Measured Power (dBm/10 MHz)	21.80	21.26	21.43
Maximum declared Antenna gain (dBi)	1.00	1.00	1.00
Maximum EIRP (dBm/10 MHz)	22.80	22.26	22.43
Measurement uncertainty (kHz)	<± 0.95		

16QAM

	Lowest frequency 3552.5 MHz	Middle frequency 3625 MHz	Highest frequency 3697.5 MHz
Measured Power (dBm/10 MHz)	20.84	20.30	20.51
Maximum declared Antenna gain (dBi)	1.00	1.00	1.00
Maximum EIRP (dBm/10 MHz)	21.84	21.30	21.51
Measurement uncertainty (kHz)	<± 0.95		

10 MHz BW

QPSK

	Lowest frequency 3555 MHz	Middle frequency 3625 MHz	Highest frequency 3695 MHz
Measured Power (dBm/10 MHz)	21.80	21.30	21.50
Maximum declared Antenna gain (dBi)	1.00	1.00	1.00
Maximum EIRP (dBm/10 MHz)	22.80	22.30	22.50
Measurement uncertainty (kHz)	<± 0.95		

TEST RESULTS (Cont.):			
16QAM			
	Lowest frequency 3555 MHz	Middle frequency 3625 MHz	Highest frequency 3695 MHz
Measured Power (dBm/10 MHz)	20.30	20.21	21.07
Maximum declared Antenna gain (dBi)	1.00	1.00	1.00
Maximum EIRP (dBm/10 MHz)	21.30	21.21	22.07
Measurement uncertainty (kHz)	<± 0.95		
15 MHz BW			
QPSK			
	Lowest frequency 3557.5 MHz	Middle frequency 3625 MHz	Highest frequency 3692.5 MHz
Measured Power (dBm/10 MHz)	20.57	20.08	20.36
Maximum declared Antenna gain (dBi)	1.00	1.00	1.00
Maximum EIRP (dBm/10 MHz)	21.57	21.08	21.36
Measurement uncertainty (kHz)	<± 0.95		
16QAM			
	Lowest frequency 3557.5 MHz	Middle frequency 3625 MHz	Highest frequency 3692.5 MHz
Measured Power (dBm/10 MHz)	19.65	19.20	19.42
Maximum declared Antenna gain (dBi)	1.00	1.00	1.00
Maximum EIRP (dBm/10 MHz)	20.65	20.20	20.42
Measurement uncertainty (kHz)	<± 0.95		

TEST RESULTS (Cont.):

20 MHz BW

QPSK

	Lowest frequency 3560 MHz	Middle frequency 3625 MHz	Highest frequency 3690 MHz
Measured Power (dBm/10 MHz)	19.32	18.99	19.22
Maximum declared Antenna gain (dBi)	1.00	1.00	1.00
Maximum EIRP (dBm/10 MHz)	20.32	19.99	20.22
Measurement uncertainty (kHz)	<± 0.95		

16QAM

	Lowest frequency 3560 MHz	Middle frequency 3625 MHz	Highest frequency 3690 MHz
Measured Power (dBm/10 MHz)	18.45	18.03	18.29
Maximum declared Antenna gain (dBi)	1.00	1.00	1.00
Maximum EIRP (dBm/10 MHz)	19.45	19.03	19.29
Measurement uncertainty (kHz)	<± 0.95		

Verdict: PASS

(See next plots)

TEST RESULTS (Cont.):	Reference Only		
<u>15 MHz BW</u>			
QPSK			
	Lowest frequency 3557.5 MHz	Middle frequency 3625 MHz	Highest frequency 3692.5 MHz
Measured Power (dBm/15 MHz)	21.84	21.33	21.59
Maximum declared Antenna gain (dBi)	1.00	1.00	1.00
Maximum EIRP (dBm/15 MHz)	22.84	22.33	22.59
Measurement uncertainty (kHz)	<± 0.95		
16-QAM			
	Lowest frequency 3557.5 MHz	Middle frequency 3625 MHz	Highest frequency 3692.5 MHz
Measured Power (dBm/15 MHz)	20.57	20.17	20.52
Maximum declared Antenna gain (dBi)	1.00	1.00	1.00
Maximum EIRP (dBm/15 MHz)	21.57	21.17	21.52
Measurement uncertainty (kHz)	<± 0.95		

TEST RESULTS (Cont.):	Reference Only
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20 MHz BW

QPSK

	Lowest frequency 3560 MHz	Middle frequency 3625 MHz	Highest frequency 3690 MHz
Measured Power (dBm/20 MHz)	21.84	21.33	21.59
Maximum declared Antenna gain (dBi)	1.00	1.00	1.00
Maximum EIRP (dBm/20 MHz)	22.84	22.33	22.59
Measurement uncertainty (kHz)	<± 0.95		

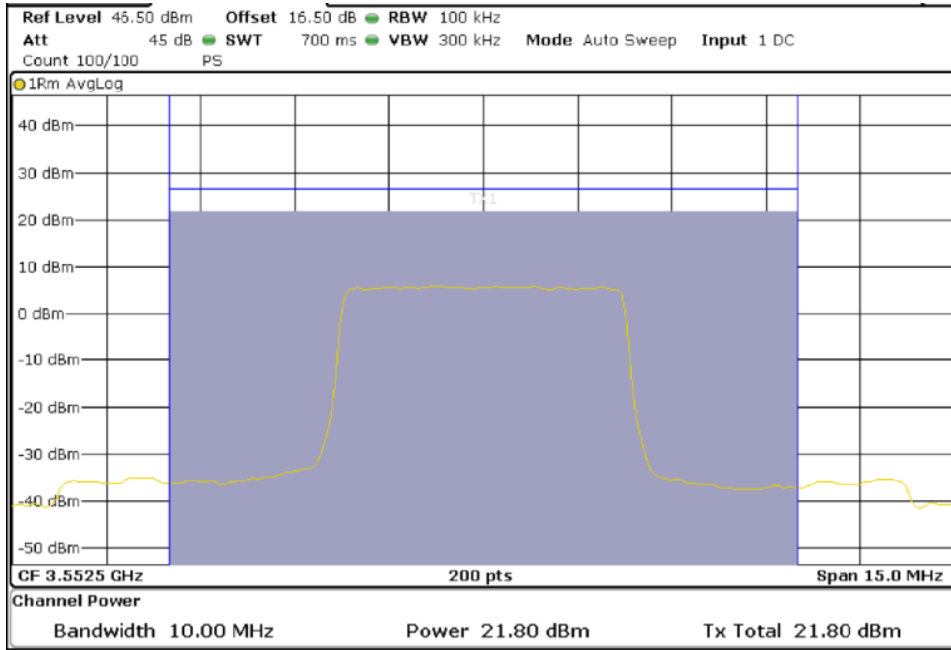
16-QAM

	Lowest frequency 3560 MHz	Middle frequency 3625 MHz	Highest frequency 3690 MHz
Measured Power (dBm/20 MHz)	19.52	18.98	19.20
Maximum declared Antenna gain (dBi)	1.00	1.00	1.00
Maximum EIRP (dBm/20 MHz)	20.52	19.98	20.20
Measurement uncertainty (kHz)	<± 0.95		

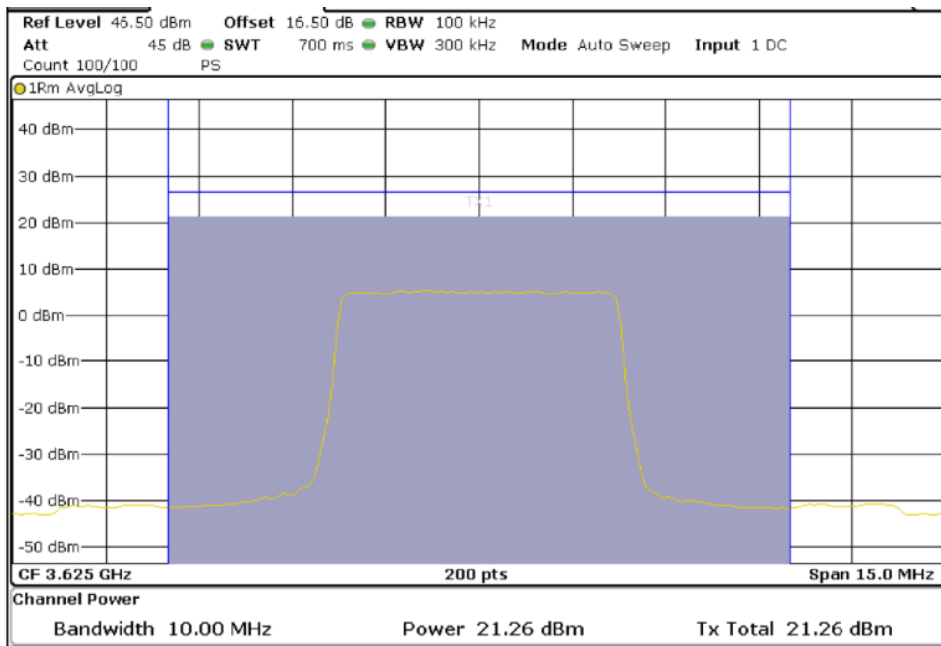
TEST RESULTS (Cont.):

5 MHz BW (QPSK only)

Lowest Channel (3552.5 MHz)

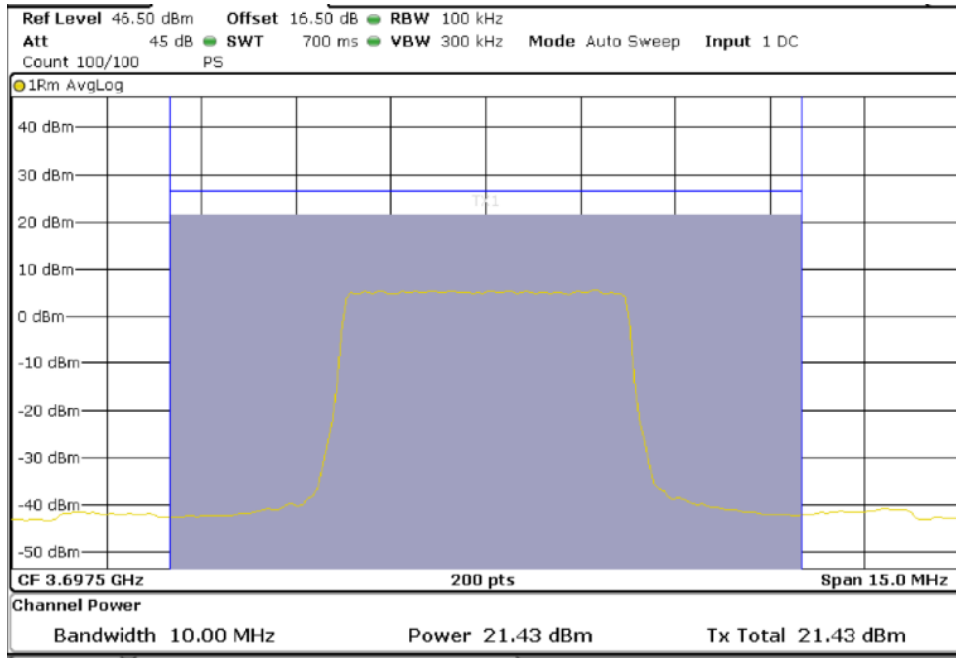


Middle Channel (3625 MHz)



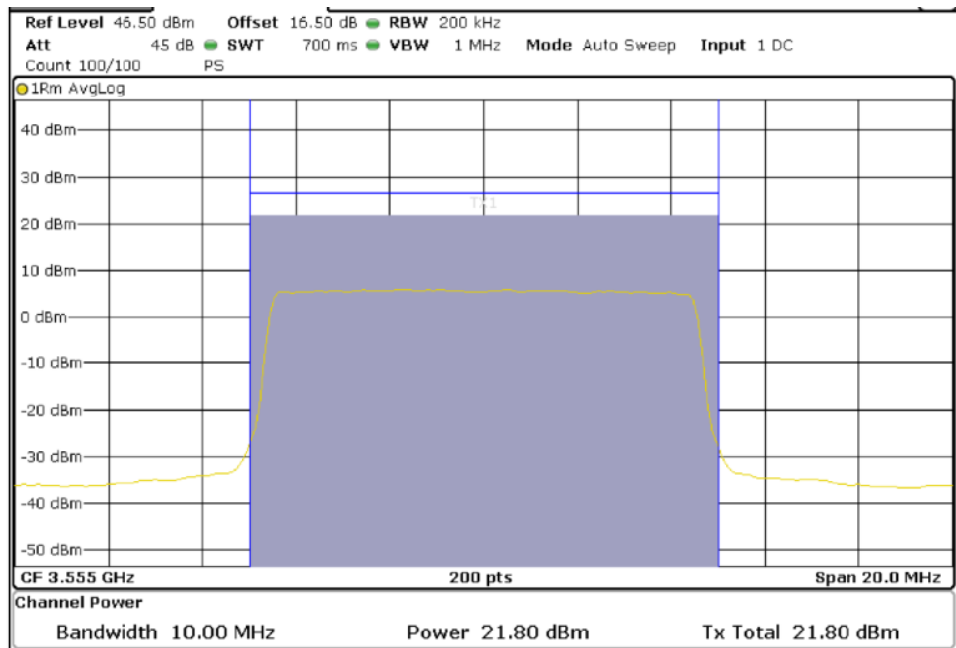
TEST RESULTS (Cont.):

Highest Channel (3697.5 MHz)



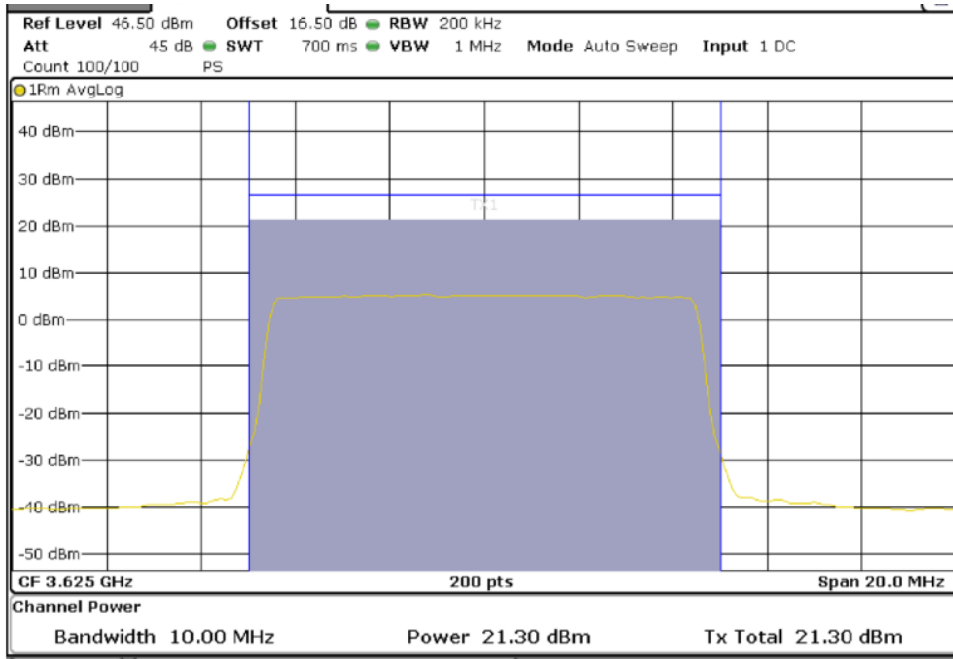
10 MHz BW(QPSK only)

Lowest Channel (3555 MHz)

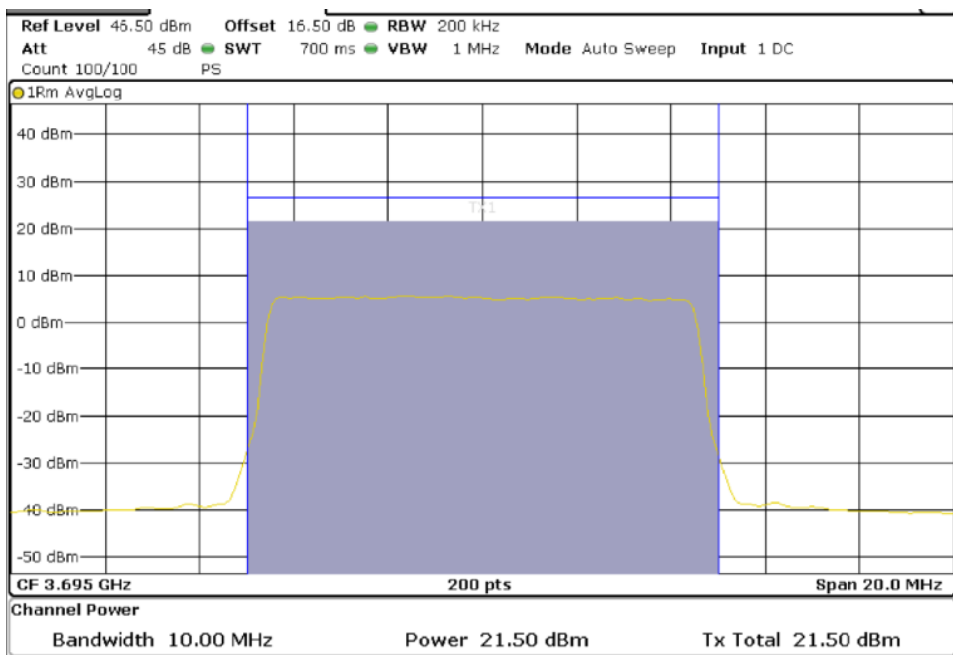


TEST RESULTS (Cont.):

Middle Channel (3625 MHz)



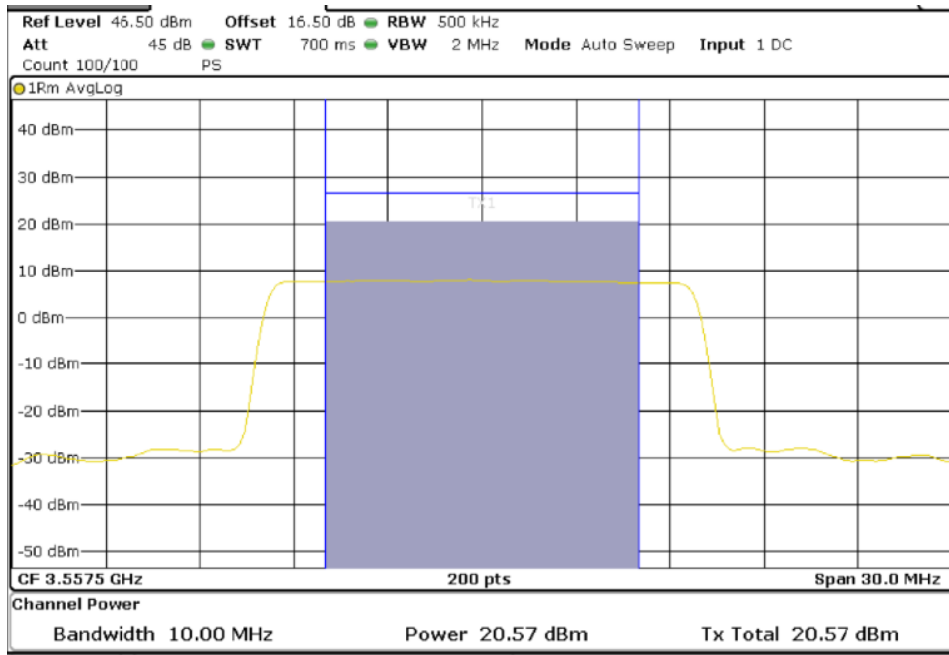
Highest Channel (3695 MHz)



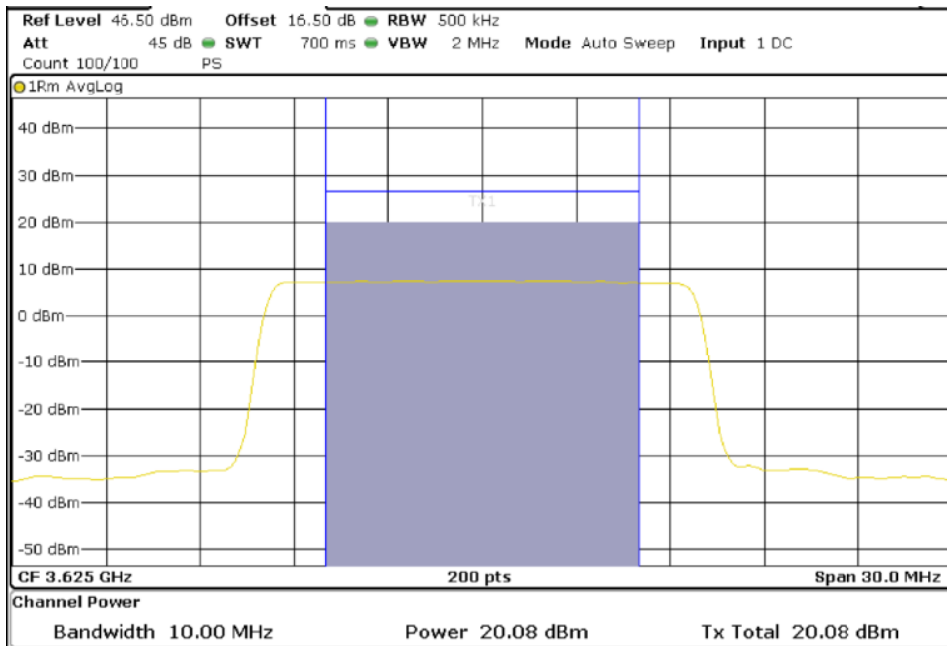
TEST RESULTS (Cont.):

15 MHz BW (QPSK only)

Lowest Channel (3557.5 MHz)

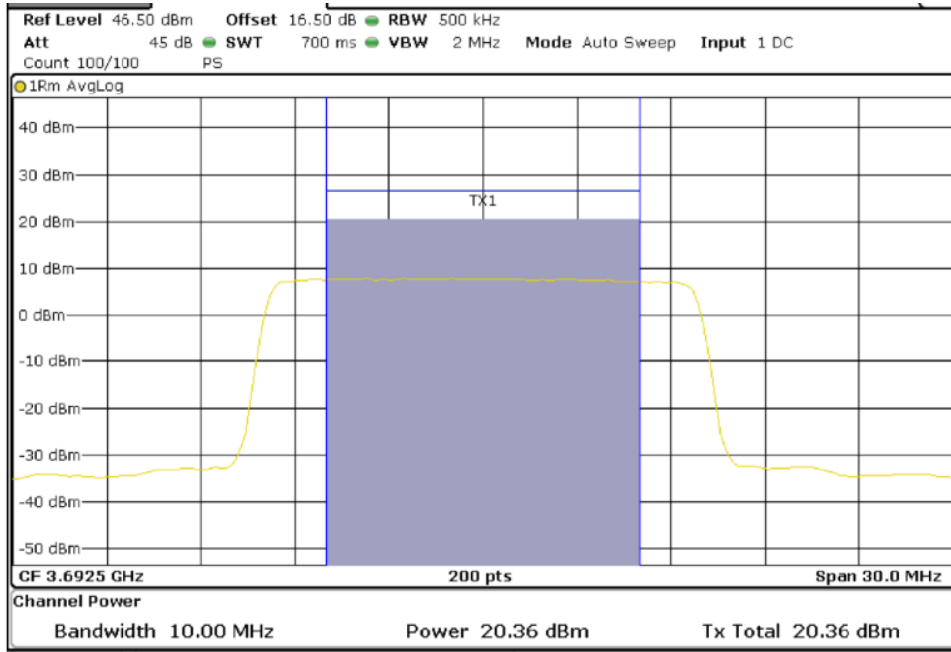


Middle Channel (3625 MHz)



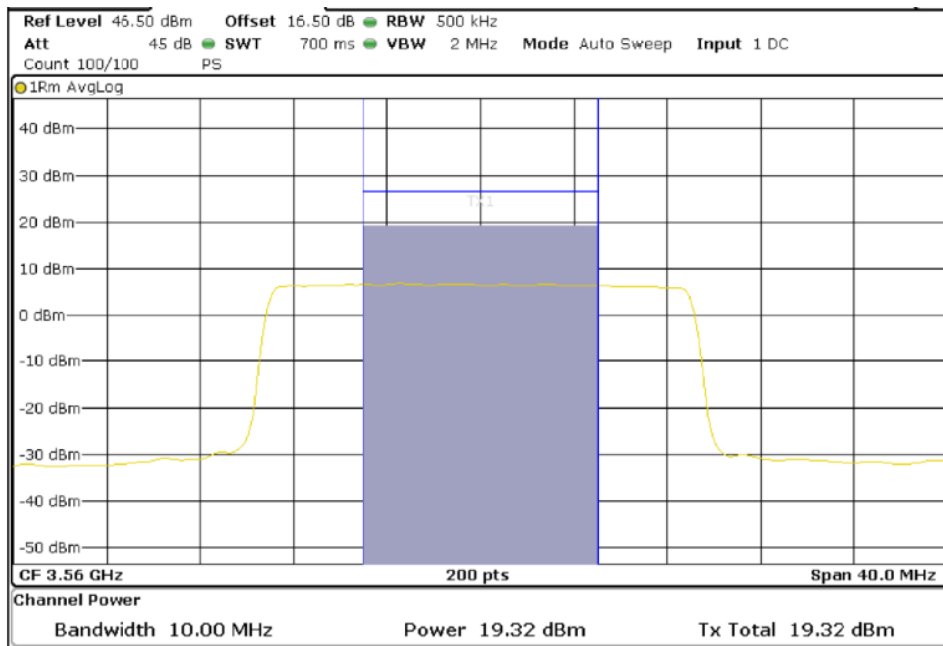
TEST RESULTS (Cont.):

Highest Channel (3692.5 MHz)



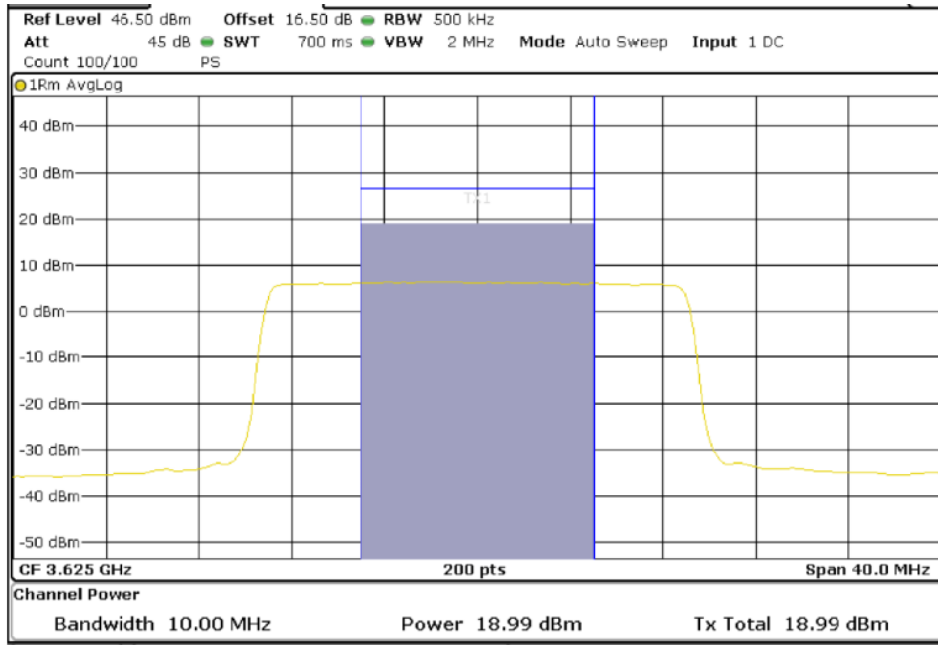
20 MHz BW (QPSK only)

Lowest Channel (3560 MHz)

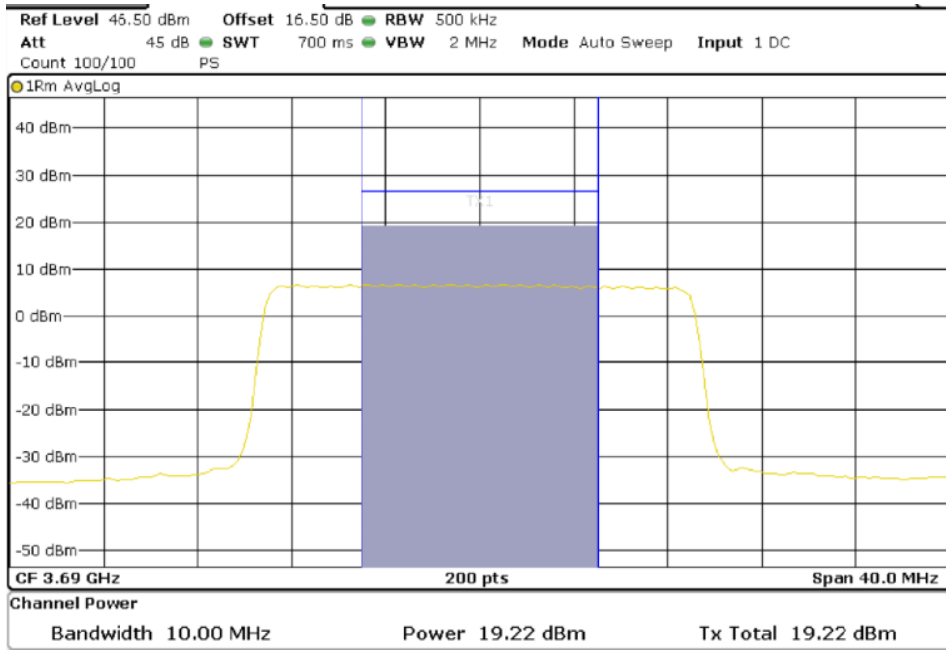


TEST RESULTS (Cont.):

Middle Channel (3625 MHz)



Highest Channel (3690 MHz)



TESTED SAMPLES:	S/01
TESTED CONDITIONS MODES:	TC#02 (Band 42)
TEST RESULTS:	PASS

Results:

5 MHz BW

QPSK

	Lowest frequency 3552.5 MHz	Middle frequency 3575 MHz	Highest frequency 3597.5 MHz
Measured Power (dBm/10 MHz)	21.76	21.49	21.37
Maximum declared Antenna gain (dBi)	1.00	1.00	1.00
Maximum EIRP (dBm/10 MHz)	22.76	22.49	22.37
Measurement uncertainty (kHz)	<± 0.95		

16QAM

	Lowest frequency 3552.5 MHz	Middle frequency 3625 MHz	Highest frequency 3697.5 MHz
Measured Power (dBm/10 MHz)	20.85	20.50	20.41
Maximum declared Antenna gain (dBi)	1.00	1.00	1.00
Maximum EIRP (dBm/10 MHz)	21.85	21.50	21.41
Measurement uncertainty (kHz)	<± 0.95		

10 MHz BW

QPSK

	Lowest frequency 3555 MHz	Middle frequency 3575 MHz	Highest frequency 3595 MHz
Measured Power (dBm/10 MHz)	21.79	21.59	21.55
Maximum declared Antenna gain (dBi)	1.00	1.00	1.00
Maximum EIRP (dBm/10 MHz)	22.79	22.59	22.55
Measurement uncertainty (kHz)	<± 0.95		

TEST RESULTS (Cont.):			
16QAM			
	Lowest frequency 3555 MHz	Middle frequency 3575 MHz	Highest frequency 3595 MHz
Measured Power (dBm/10 MHz)	20.79	20.62	20.59
Maximum declared Antenna gain (dBi)	1.00	1.00	1.00
Maximum EIRP (dBm/10 MHz)	21.79	21.62	21.59
Measurement uncertainty (kHz)	<± 0.95		
15 MHz BW			
QPSK			
	Lowest frequency 3557.5 MHz	Middle frequency 3575 MHz	Highest frequency 3592.5 MHz
Measured Power (dBm/10 MHz)	20.66	20.49	20.37
Maximum declared Antenna gain (dBi)	1.00	1.00	1.00
Maximum EIRP (dBm/10 MHz)	21.66	21.49	21.37
Measurement uncertainty (kHz)	<± 0.95		
16QAM			
	Lowest frequency 3557.5 MHz	Middle frequency 3575 MHz	Highest frequency 3592.5 MHz
Measured Power (dBm/10 MHz)	19.72	19.54	19.43
Maximum declared Antenna gain (dBi)	1.00	1.00	1.00
Maximum EIRP (dBm/10 MHz)	20.72	20.54	20.43
Measurement uncertainty (kHz)	<± 0.95		

TEST RESULTS (Cont.):

20 MHz BW

QPSK

	Lowest frequency 3560 MHz	Middle frequency 3575 MHz	Highest frequency 3590 MHz
Measured Power (dBm/10 MHz)	19.47	19.35	19.21
Maximum declared Antenna gain (dBi)	1.00	1.00	1.00
Maximum EIRP (dBm/10 MHz)	20.47	20.35	20.21
Measurement uncertainty (kHz)	<± 0.95		

16QAM

	Lowest frequency 3560 MHz	Middle frequency 3575 MHz	Highest frequency 3590 MHz
Measured Power (dBm/10 MHz)	18.58	18.42	18.28
Maximum declared Antenna gain (dBi)	1.00	1.00	1.00
Maximum EIRP (dBm/10 MHz)	19.58	19.42	19.28
Measurement uncertainty (kHz)	<± 0.95		

Verdict: PASS

(See next plots)

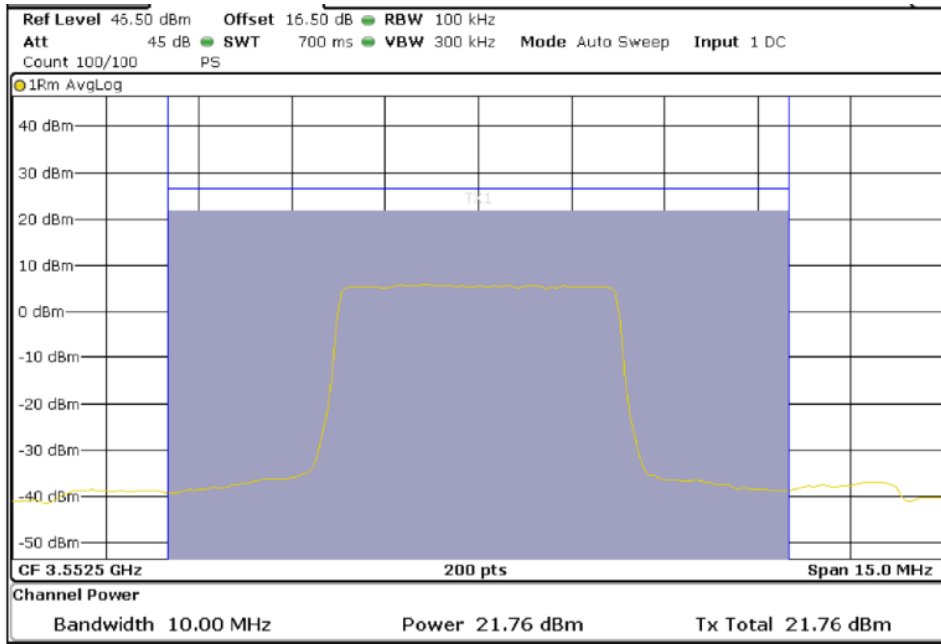
TEST RESULTS (Cont.):	Reference Only		
<u>15 MHz BW</u>			
QPSK			
	Lowest frequency 3557.5 MHz	Middle frequency 3575 MHz	Highest frequency 3592.5 MHz
Measured Power (dBm/15 MHz)	21.90	21.74	21.60
Maximum declared Antenna gain (dBi)	1.00	1.00	1.00
Maximum EIRP (dBm/15 MHz)	22.90	22.74	22.60
Measurement uncertainty (kHz)	<± 0.95		
16-QAM			
	Lowest frequency 3557.5 MHz	Middle frequency 3575 MHz	Highest frequency 3592.5 MHz
Measured Power (dBm/15 MHz)	20.57	20.32	20.25
Maximum declared Antenna gain (dBi)	1.00	1.00	1.00
Maximum EIRP (dBm/15 MHz)	21.57	21.32	21.25
Measurement uncertainty (kHz)	<± 0.95		

TEST RESULTS (Cont.):	Reference Only		
<u>20 MHz BW</u>			
QPSK			
	Lowest frequency 3560 MHz	Middle frequency 3575 MHz	Highest frequency 3590 MHz
Measured Power (dBm/20 MHz)	21.89	21.78	21.65
Maximum declared Antenna gain (dBi)	1.00	1.00	1.00
Maximum EIRP (dBm/20 MHz)	22.89	22.78	22.65
Measurement uncertainty (kHz)	<± 0.95		
16-QAM			
	Lowest frequency 3560 MHz	Middle frequency 3575 MHz	Highest frequency 3590 MHz
Measured Power (dBm/20 MHz)	19.57	19.23	19.10
Maximum declared Antenna gain (dBi)	1.00	1.00	1.00
Maximum EIRP (dBm/20 MHz)	20.57	20.23	20.10
Measurement uncertainty (kHz)	<± 0.95		

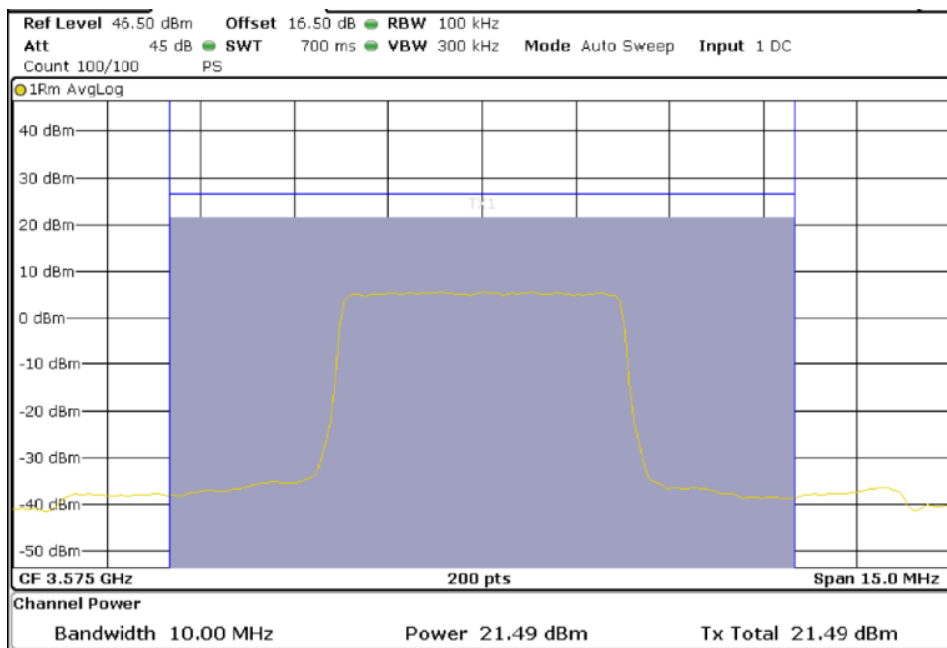
TEST RESULTS (Cont.):

5 MHz BW (QPSK only)

Lowest Channel (3552.5 MHz)

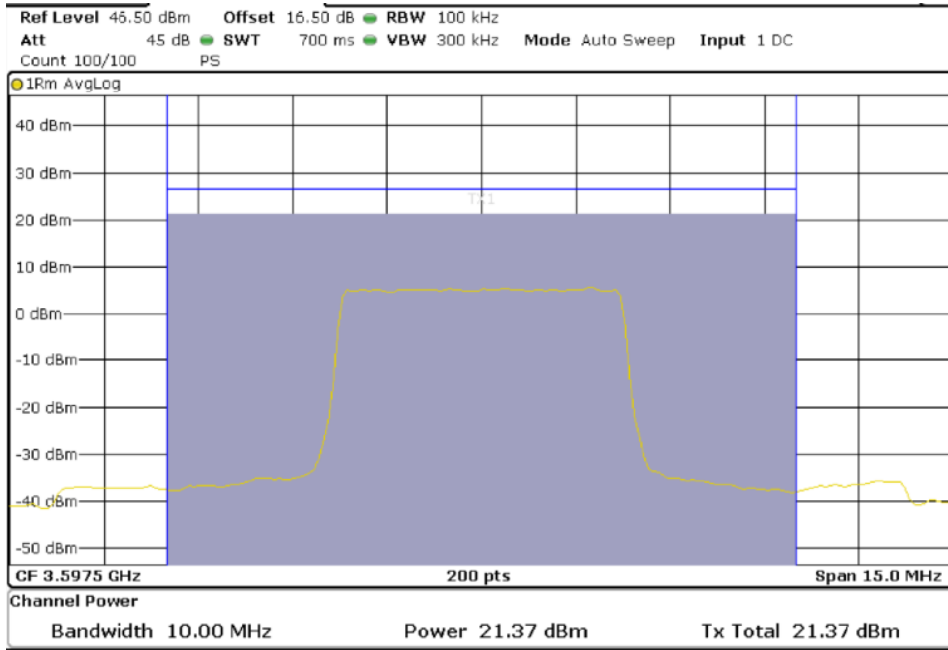


Middle Channel (3575 MHz)



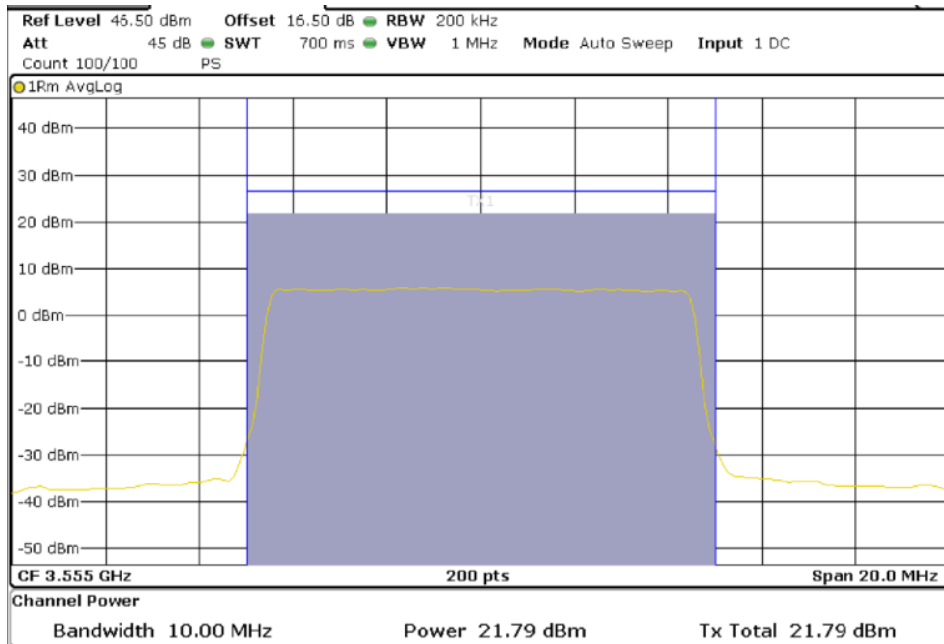
TEST RESULTS (Cont.):

Highest Channel (3597.5 MHz)



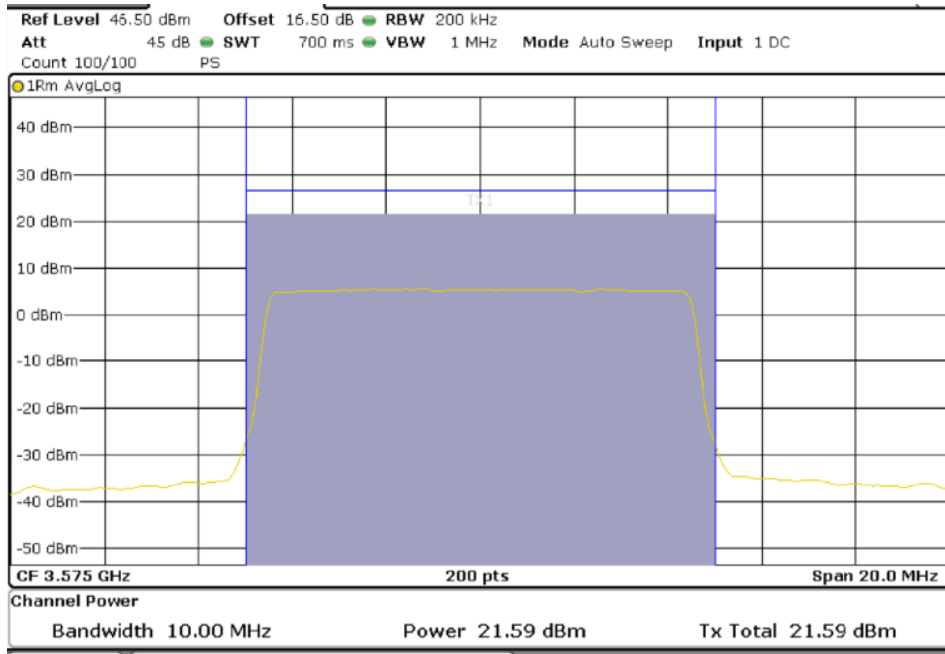
10 MHz BW (QPSK only)

Lowest Channel (3555 MHz)

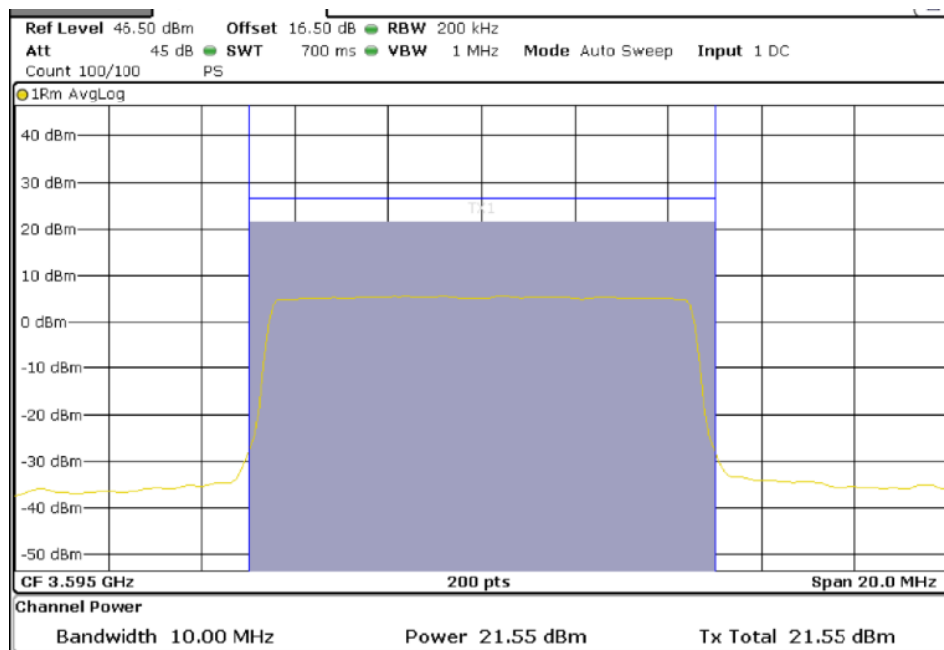


TEST RESULTS (Cont.):

Middle Channel (3575 MHz)



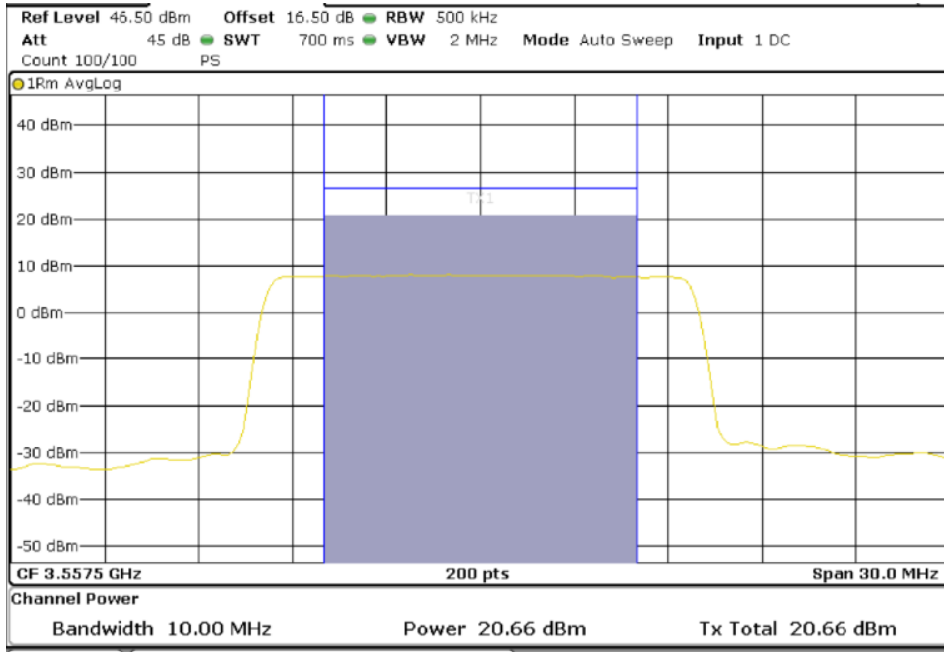
Highest Channel (3595 MHz)



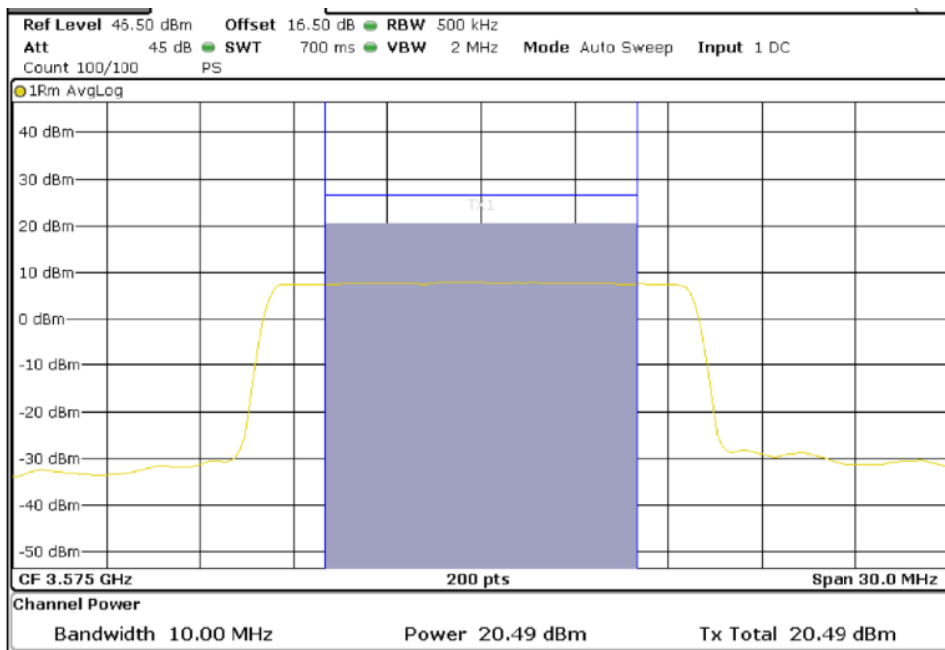
TEST RESULTS (Cont.):

15 MHz BW (QPSK only)

Lowest Channel (3557.5 MHz)

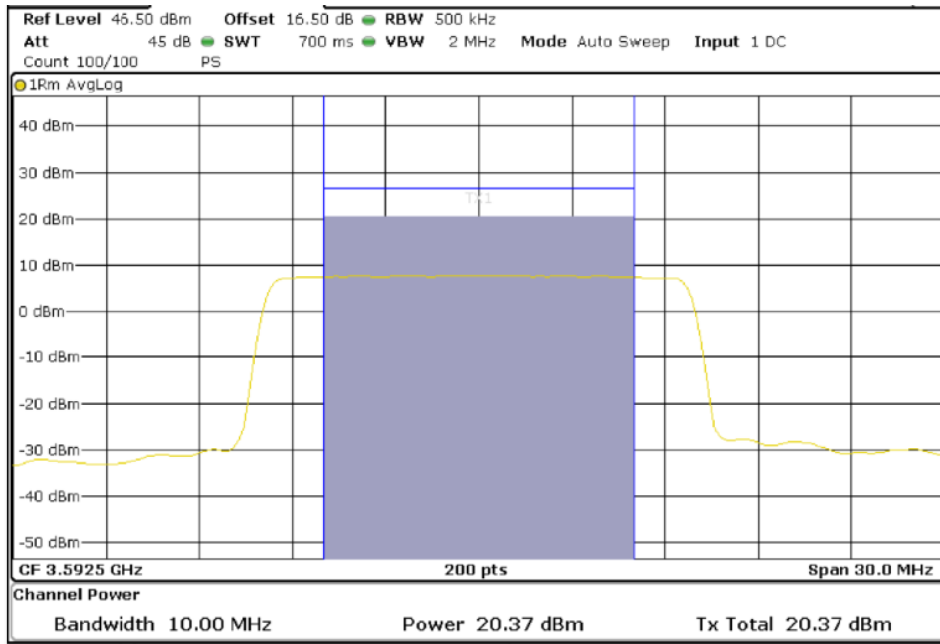


Middle Channel (3575 MHz)



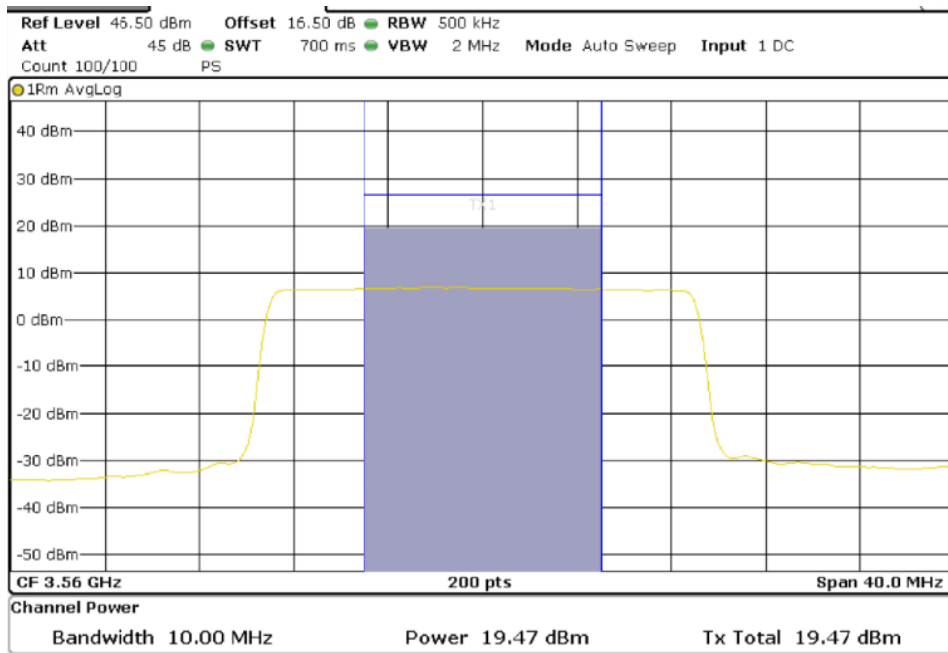
TEST RESULTS (Cont.):

Highest Channel (3592.5 MHz)



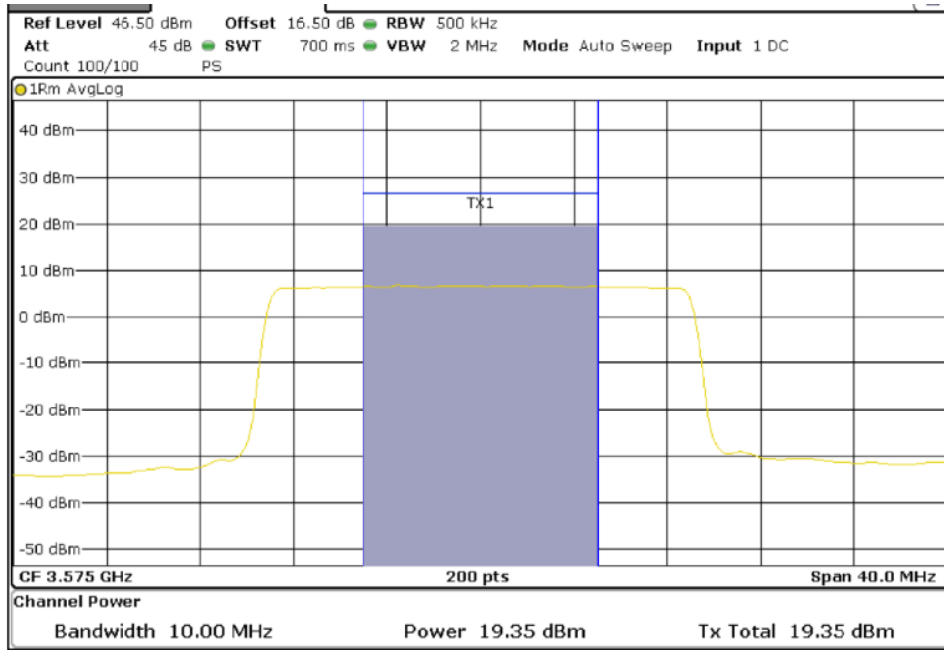
20 MHz BW (QPSK only)

Lowest Channel (3560 MHz)

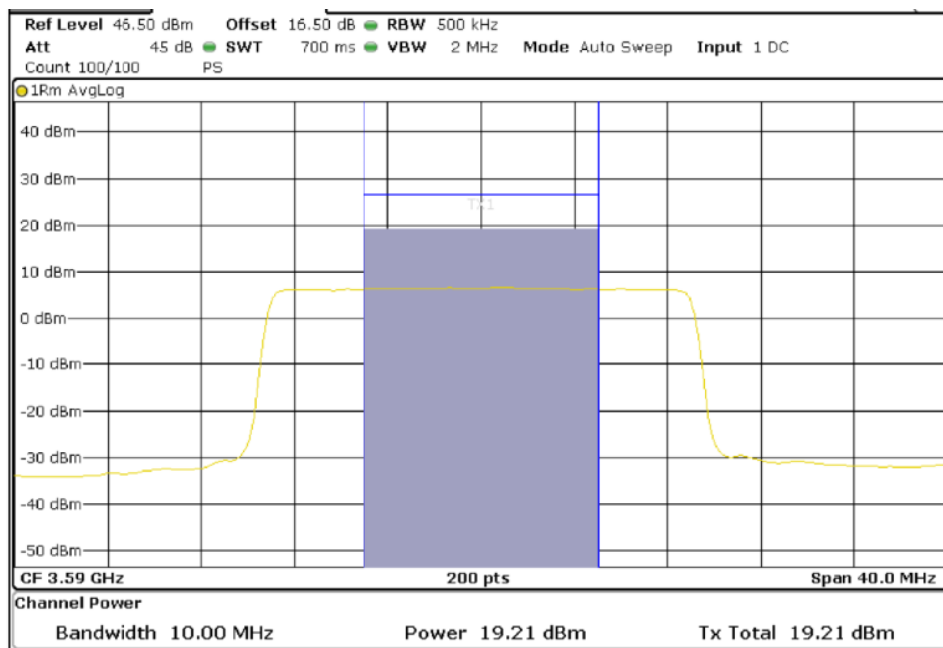


TEST RESULTS (Cont.):

Middle Channel (3575 MHz)



Highest Channel (3590 MHz)



TESTED SAMPLES:	S/01
TESTED CONDITIONS MODES:	TC#03 (Band 43)
TEST RESULTS:	PASS

Results:

5 MHz BW

QPSK

	Lowest frequency 3602.5 MHz	Middle frequency 3650 MHz	Highest frequency 3697.5 MHz
Measured Power (dBm/10 MHz)	21.47	21.48	21.56
Maximum declared Antenna gain (dBi)	1.00	1.00	1.00
Maximum EIRP (dBm/10 MHz)	22.47	22.48	22.74
Measurement uncertainty (kHz)	<± 0.95		

16QAM

	Lowest frequency 3602.5 MHz	Middle frequency 3650 MHz	Highest frequency 3697.5 MHz
Measured Power (dBm/10 MHz)	20.54	20.53	20.54
Maximum declared Antenna gain (dBi)	1.00	1.00	1.00
Maximum EIRP (dBm/10 MHz)	21.54	21.53	22.74
Measurement uncertainty (kHz)	<± 0.95		

10 MHz BW

QPSK

	Lowest frequency 3605 MHz	Middle frequency 3650 MHz	Highest frequency 3695 MHz
Measured Power (dBm/10 MHz)	21.54	21.52	21.58
Maximum declared Antenna gain (dBi)	1.00	1.00	1.00
Maximum EIRP (dBm/10 MHz)	22.54	22.52	22.58
Measurement uncertainty (kHz)	<± 0.95		

TEST RESULTS (Cont.):			
16QAM			
	Lowest frequency 3605 MHz	Middle frequency 3650 MHz	Highest frequency 3695 MHz
Measured Power (dBm/10 MHz)	20.58	20.57	20.61
Maximum declared Antenna gain (dBi)	1.00	1.00	1.00
Maximum EIRP (dBm/10 MHz)	21.58	21.57	21.61
Measurement uncertainty (kHz)	<± 0.95		
15 MHz BW			
QPSK			
	Lowest frequency 3607.5 MHz	Middle frequency 3650 MHz	Highest frequency 3692.5 MHz
Measured Power (dBm/10 MHz)	20.33	20.30	20.24
Maximum declared Antenna gain (dBi)	1.00	1.00	1.00
Maximum EIRP (dBm/10 MHz)	21.33	21.30	21.24
Measurement uncertainty (kHz)	<± 0.95		
16QAM			
	Lowest frequency 3607.5 MHz	Middle frequency 3650 MHz	Highest frequency 3692.5 MHz
Measured Power (dBm/10 MHz)	19.39	19.37	19.30
Maximum declared Antenna gain (dBi)	1.00	1.00	1.00
Maximum EIRP (dBm/10 MHz)	20.39	20.37	20.30
Measurement uncertainty (kHz)	<± 0.95		

TEST RESULTS (Cont.):

20 MHz BW

QPSK

	Lowest frequency 3610 MHz	Middle frequency 3650 MHz	Highest frequency 3690 MHz
Measured Power (dBm/10 MHz)	19.14	19.18	19.23
Maximum declared Antenna gain (dBi)	1.00	1.00	1.00
Maximum EIRP (dBm/10 MHz)	20.14	20.18	20.23
Measurement uncertainty (kHz)	<± 0.95		

16QAM

	Lowest frequency 3610 MHz	Middle frequency 3650 MHz	Highest frequency 3690 MHz
Measured Power (dBm/10 MHz)	18.15	18.30	18.34
Maximum declared Antenna gain (dBi)	1.00	1.00	1.00
Maximum EIRP (dBm/10 MHz)	19.15	19.30	19.34
Measurement uncertainty (kHz)	<± 0.95		

Verdict: PASS

(See next plots)

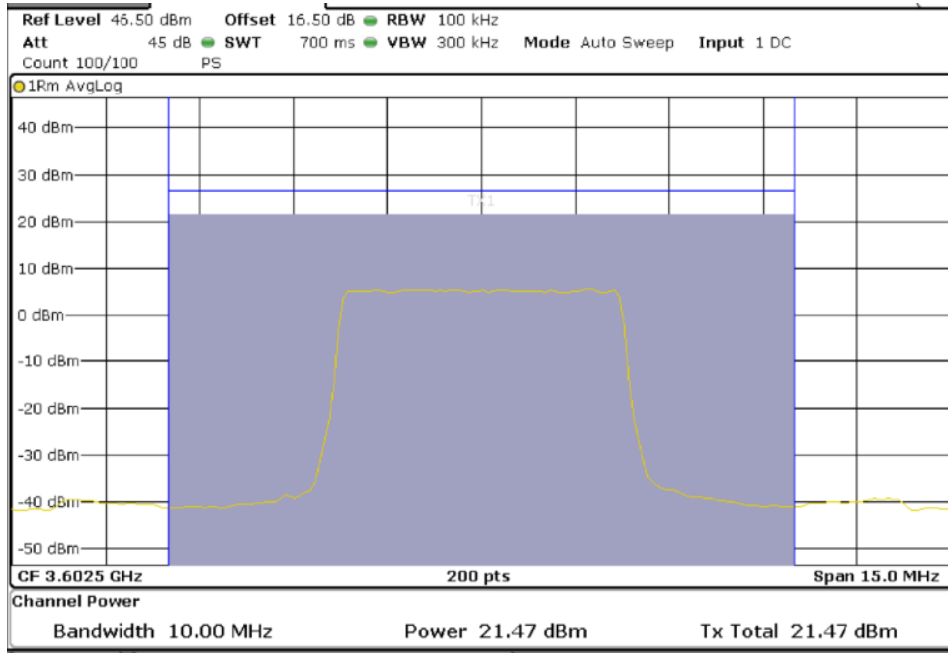
TEST RESULTS (Cont.):	Reference Only		
<u>15 MHz BW</u>			
QPSK			
	Lowest frequency 3607.5 MHz	Middle frequency 3650 MHz	Highest frequency 3692.5 MHz
Measured Power (dBm/15 MHz)	21.57	21.55	21.42
Maximum declared Antenna gain (dBi)	1.00	1.00	1.00
Maximum EIRP (dBm/15 MHz)	22.57	22.55	22.42
Measurement uncertainty (kHz)	<± 0.95		
16-QAM			
	Lowest frequency 3607.5 MHz	Middle frequency 3650 MHz	Highest frequency 3692.5 MHz
Measured Power (dBm/15 MHz)	20.41	20.27	20.19
Maximum declared Antenna gain (dBi)	1.00	1.00	1.00
Maximum EIRP (dBm/15 MHz)	21.41	21.27	21.19
Measurement uncertainty (kHz)	<± 0.95		

TEST RESULTS (Cont.):	Reference Only		
<u>20 MHz BW</u>			
QPSK			
	Lowest frequency 3610 MHz	Middle frequency 3650 MHz	Highest frequency 3690 MHz
Measured Power (dBm/20 MHz)	21.52	21.63	21.65
Maximum declared Antenna gain (dBi)	1.00	1.00	1.00
Maximum EIRP (dBm/20 MHz)	22.52	22.63	22.65
Measurement uncertainty (kHz)	<± 0.95		
16-QAM			
	Lowest frequency 3610 MHz	Middle frequency 3650 MHz	Highest frequency 3690 MHz
Measured Power (dBm/20 MHz)	19.12	19.17	19.25
Maximum declared Antenna gain (dBi)	1.00	1.00	1.00
Maximum EIRP (dBm/20 MHz)	20.12	20.17	20.25
Measurement uncertainty (kHz)	<± 0.95		

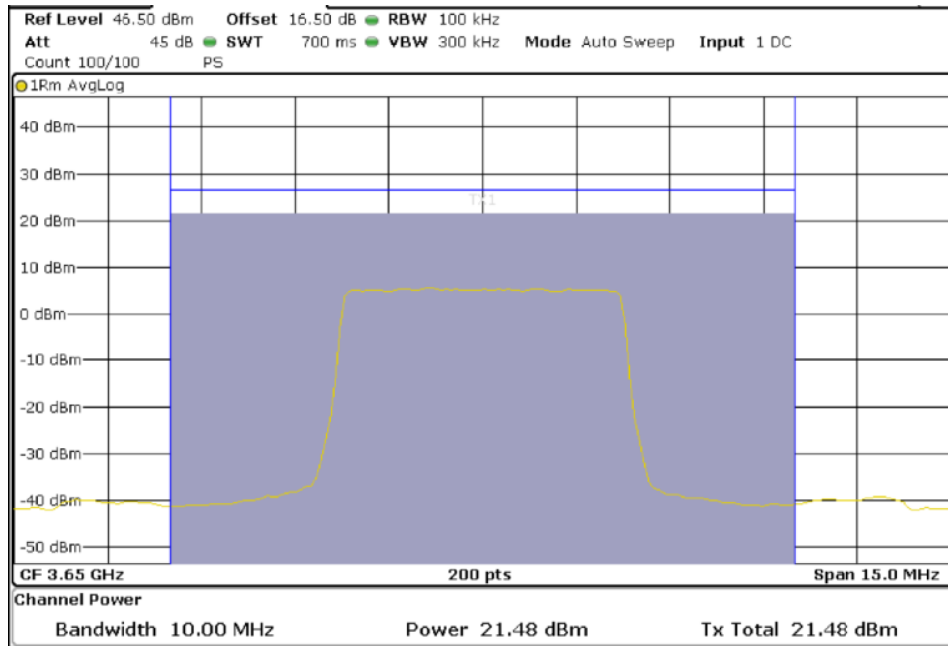
TEST RESULTS (Cont.):

5 MHz BW (QPSK only)

Lowest Channel (3602.5 MHz)

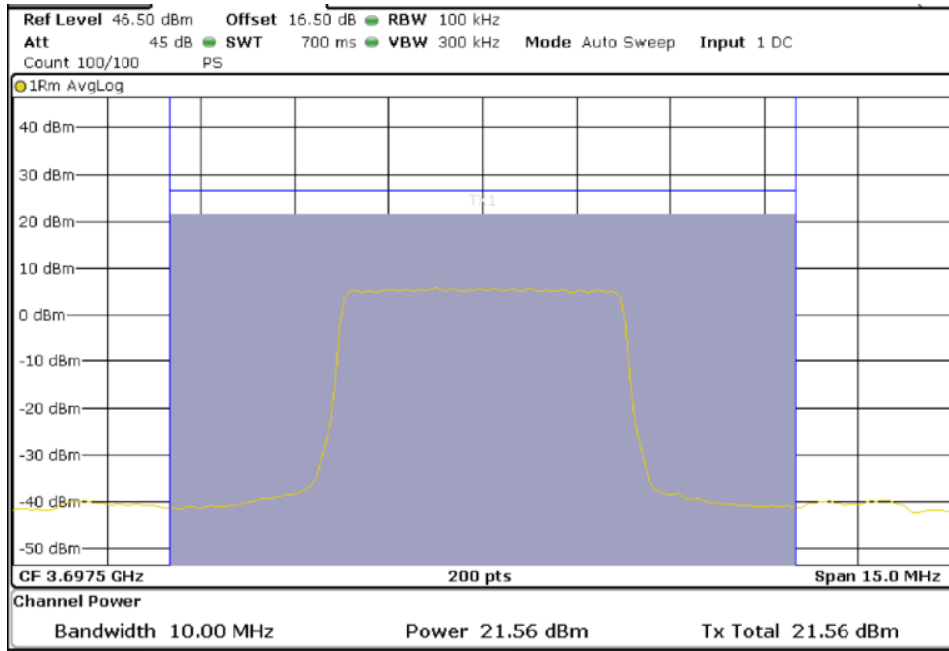


Middle Channel (3650 MHz)



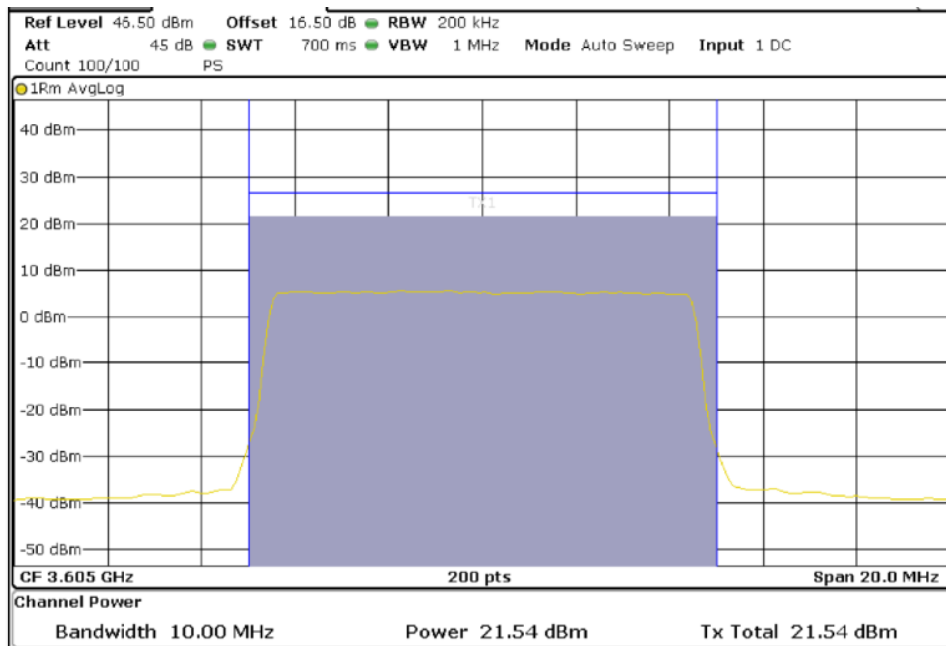
TEST RESULTS (Cont.):

Highest Channel (3697.5 MHz)



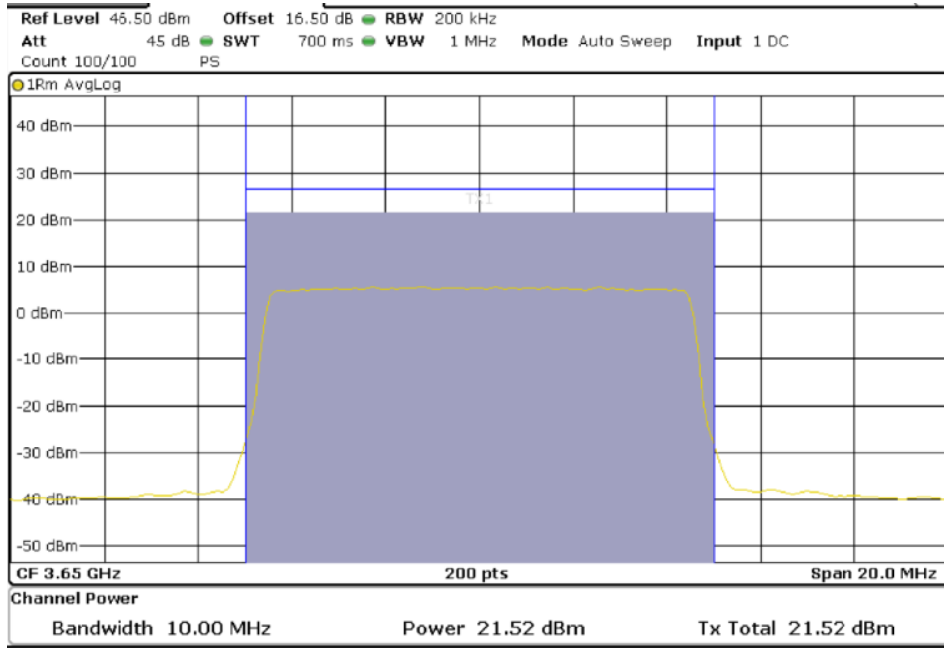
10 MHz BW (QPSK only)

Lowest Channel (3605 MHz)

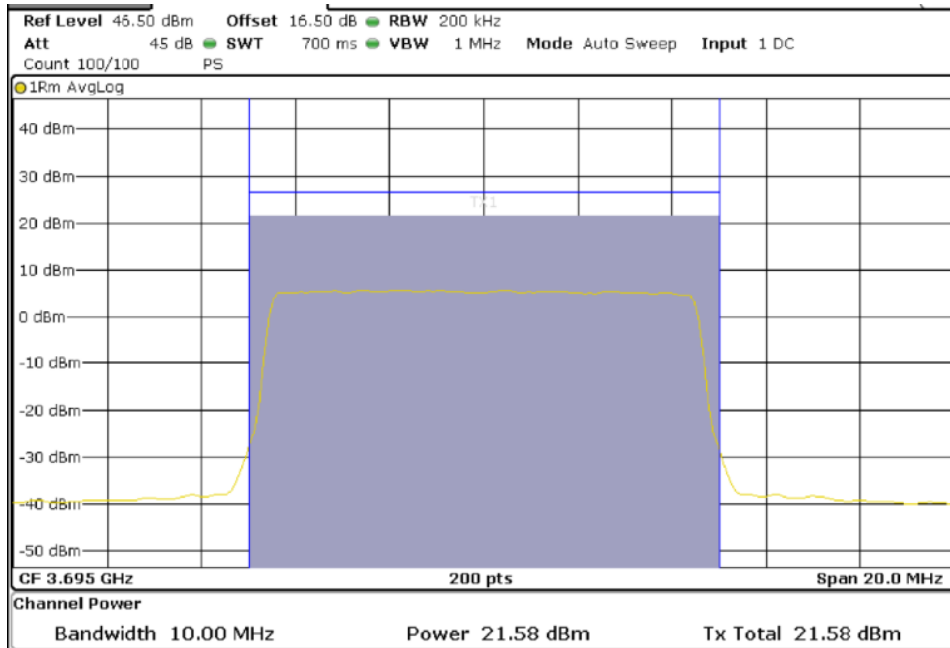


TEST RESULTS (Cont.):

Middle Channel (3650 MHz)



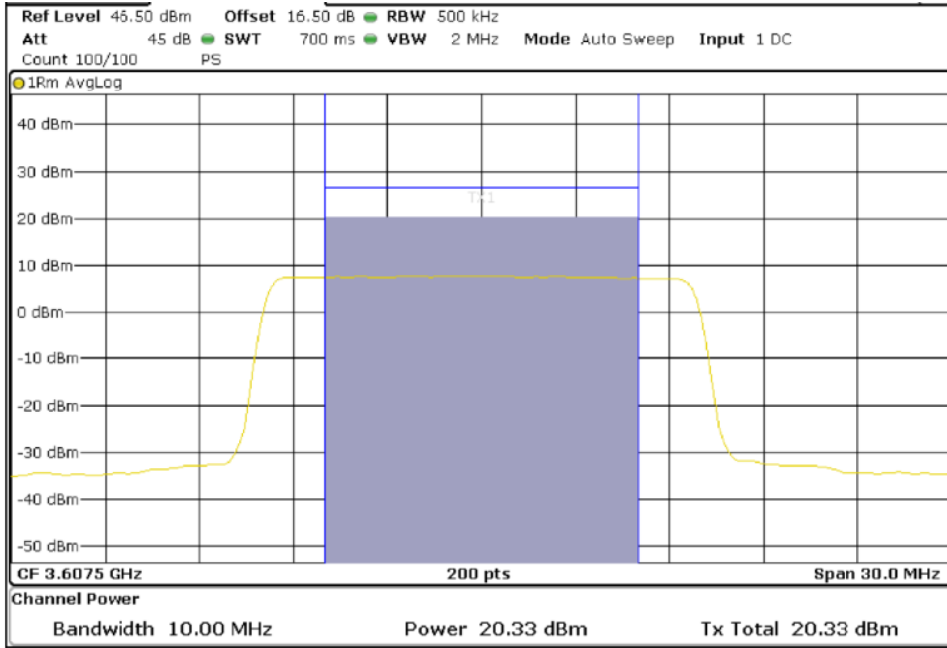
Highest Channel (3695 MHz)



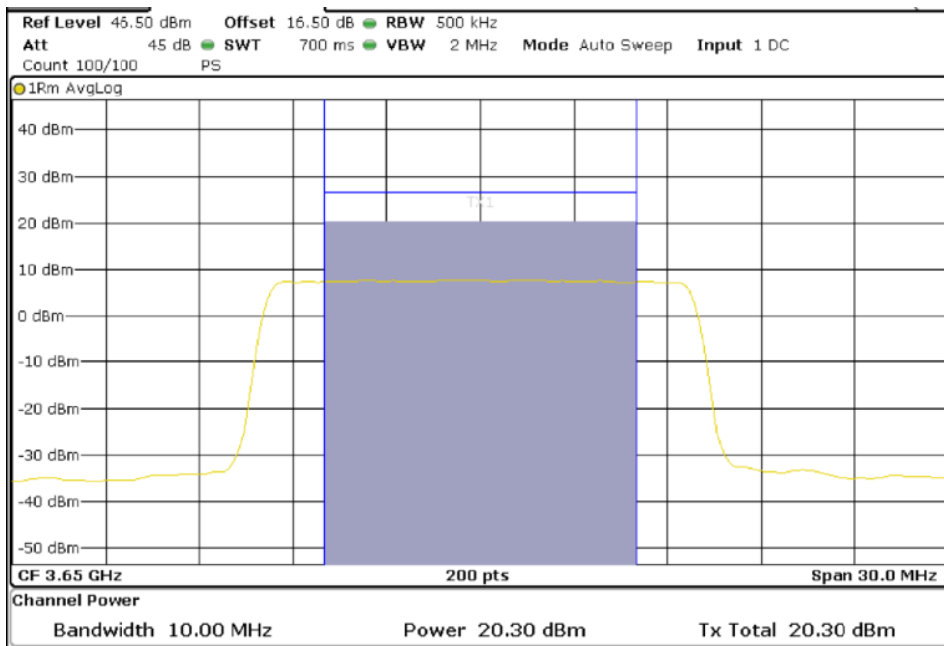
TEST RESULTS (Cont.):

15 MHz BW (QPSK only)

Lowest Channel (3607.5 MHz)

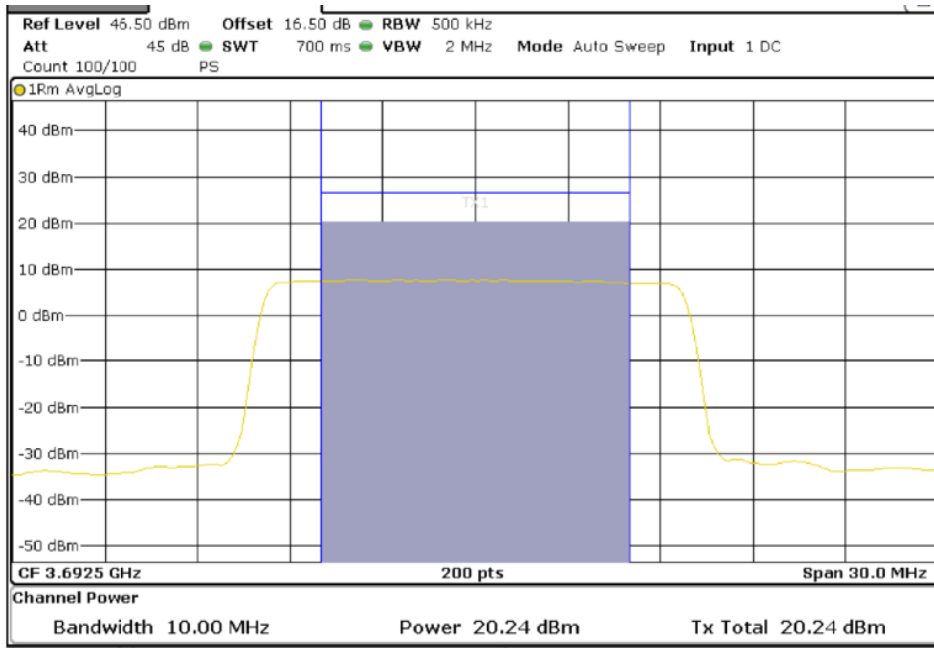


Middle Channel (3650 MHz)



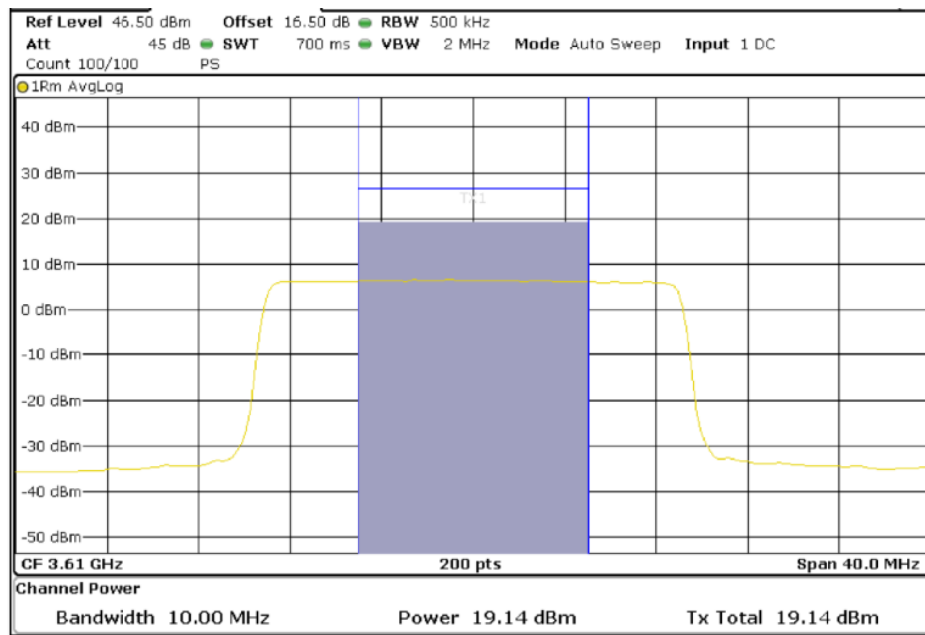
TEST RESULTS (Cont.):

Highest Channel (3692.5 MHz)



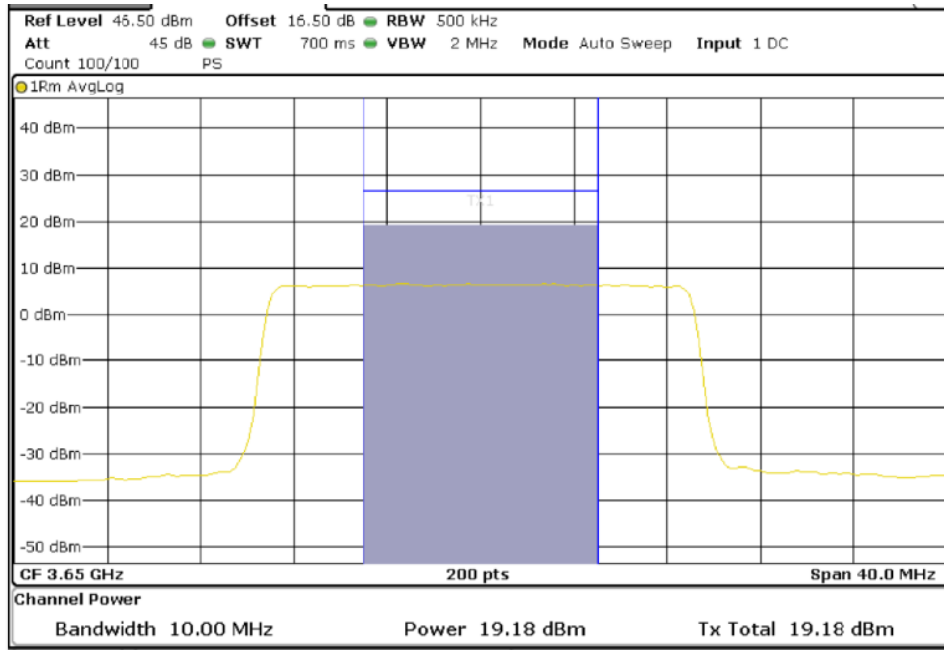
20 MHz BW (QPSK only)

Lowest Channel (3610 MHz)



TEST RESULTS (Cont.):

Middle Channel (3650 MHz)



Highest Channel (3690 MHz)

