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Report On

Application for Grant of Equipment Authorization of the
Inseego Corp.

MIFI8000 Wireless Hotspot Modem

FCC CFR 47 Part 2, 24 and 27: 2018

RSS-132 Issue 3 January 2013

RSS-133 Issue 6 January 2018

RSS-139 Issue 3 July 2015

RSS-199 Issue 3 December 2016

RSS-130 Issue 2 February 2019

Report No. 72152860C

October 2019



REPORT ON Radio Testing of the
Inseego Corp.
MIFI8000 Wireless Hotspot Modem

TEST REPORT NUMBER 72152860C

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Revision History

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SECTION 1

REPORT SUMMARY

Radio Testing of the
Insego Corp.
MIFI8000 Wireless Hotspot Modem



1.1 INTRODUCTION

The information contained in this report is intended to show verification of the Inseego Corp. MIFI8000 Wireless Hotspot Modem to the requirements of the following:

- FCC CFR 47 Part 2, 24 and 27: 2018
- RSS-Gen Issue 5 April 2018
- RSS-132 Issue 3 January 2013
- RSS-133 Issue 6 January 2018
- RSS-139 Issue 3 July 2015
- RSS-130 Issue 2 February 2019
- RSS-199 Issue 3 December 2016

Objective	To perform Radio Testing to determine the Equipment Under Test's (EUT's) compliance with the Test Specification, for the series of tests carried out.
Manufacturer	Inseego Corp.
Product Marketing Name	MiFi 8000
Model Number(s)	MIFI8000
FCC ID Number	PKRISGMIFI8000
IC Number	3229A-MIFI8000
Serial Number(s)	FJ220819C00006 (Model MIFI8000) AZ280418A00044 (Model MIFI8800L)
Number of Samples Tested	2



Test Specification/Issue/Date	<ul style="list-style-type: none">• FCC CFR 47 Part 2, 24 and 27 (October 1, 2018)• RSS-132 Issue 3 January 2013 – Cellular Telephone Systems Operating in the Bands 824-849 MHz and 869-894 MHz• RSS-133 Issue 6 January 2018 – 2 GHz Personal Communications Services• RSS-139 Issue 3 July 2015 – Advanced Wireless Services (AWS) Equipment Operating in the Bands 1710-1780 MHz and 2110-2180 MHz• RSS-130 Issue 2 February 2019 – Equipment Operating in the Frequency Bands 617-652 MHz, 663-698 MHz, 698-756 MHz and 777-787 MHz• RSS-199 Issue 3 December 2016 – Broadband Radio Service (BRS) Equipment Operating in the Band 2500–2690 MHz• RSS-Gen Issue 5: April 2018 - General Requirements for Compliance of Radio Apparatus• ANSI C63.26-2015: American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services
Start of Test	June 25, 2018
Finish of Test	October 23, 2019
Name of Engineer(s)	Xiaoying Zhang
Related Document(s)	<ul style="list-style-type: none">• 3GPP TS 36.521 Version 14.4.0 Release 14: Evolved Universal Terrestrial Radio Access (E-UTRA); User Equipment (UE) Conformance Specification Radio Transmission and Reception; Part 1: Conformance Testing• 3GPP TS 36.508 Version 15.3.0 Release 15: Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Packet Core (EPC); Common Test Environments for User Equipment (UE) Conformance Testing• 72145947C_ MIFI8800L_FCC Part 24 27_CA_Test Report.pdf• Supporting documents for EUT certification are separate exhibits.



1.2 BRIEF SUMMARY OF RESULTS

A brief summary of the tests carried out in accordance with FCC CFR 47 Part 2, 24 and 27: 2018 with cross-reference to the corresponding ISSED RSS standard is shown below.

Section	FCC Part Sections(s)	RSS Section(s)	Test Description	Result
2.1	2.1046	-	Transmitter Conducted Output Power	Compliant
2.2	2.1046 22.913(a)(5) 24.232(c) 27.50(c)(10) 27.50(b)(10) 27.50 (h)(2)	RSS-132 (5.4) RSS-133 (6.4) RSS-139 (6.5) RSS-130 (4.6) RSS-199 (4.4)	Effective Radiated Power and Effective Isotropic Radiated Power	Compliant
2.3	27.50 (b)(10)	RSS-133 (6.4) RSS-139 (6.5) RSS-130 (4.6)	Peak-Average Ratio	Compliant
2.4	2.1049 24.238(b) 27.53(h)(3)	RSS-Gen (6.7)	Occupied Bandwidth	Compliant
2.5	2.1051 24.238(a)(b) 27.53(h)(1)(3) 27.53(c)(2)(5)	RSS-133 (6.5) RSS-139 (6.6) RSS-130 (4.7)	Band Edge	Compliant
2.6	2.1051 22.917(a) 24.238(a)(b) 27.53(h)(1)(3) 27.53(m)(4)(6) 27.53(g) 27.53(c)(2)(4)(5)(f)	RSS-132 (5.5) RSS-133 (6.5) RSS-139 (6.6) RSS-130 (4.7) RSS-199 (4.5)	Conducted Spurious Emissions	Compliant
2.7	2.1053 22.917(a) 24.238(a) 27.53(h) 27.53(m) 27.53(g) 27.53(c)	RSS-132 (5.5) RSS-133 (6.5) RSS-139 (6.6) RSS-130 (4.7) RSS-199 (4.5)	Field Strength of Spurious Radiation	Compliant
2.8	2.1055 24.235 27.54	RSS-133 (6.3) RSS-139 (6.4) RSS-130 (4.5)	Frequency Stability	Compliant
-	-	RSS-Gen 7.4	Receiver Spurious Emissions	N/A*

N/A*: Not required as per RSS-GEN 5.2. EUT is not a Stand-Alone receiver.

Note: Among all the Carrier Aggregation combinations CA_2A-13A, CA_4A-13A, CA_13A-66A, CA_2A-5A, CA_2A-12A, CA_4A-5A, CA_4A-7A, CA_4A-12A, CA_5A-66A, CA_12A-66A, CA_5B, CA_7C, CA_38C, CA_66B, CA_66C, Carrier Aggregation combinations CA_2A-13A, CA_4A-13A, CA_13A-66A were tested on another model MIFI8800L under test report 72145947C_MIFI8800L_FCC Part 24 27_CA_Test Report.pdf. MIFI8800 shares the same board and architecture with the only exception of different cell bands support. Original testing was test according to RSS-130 Issue 1. However, all the test results still comply with the new version of RSS-130 Issue 2.



1.3 PRODUCT INFORMATION

1.3.1 EUT General Description

The Equipment Under Test (EUT) was a Inseego Corp. MIFI8000 Wireless Hotspot Modem. The EUT is a Wireless Hotspot Modem supporting 2G/3G/4G Technologies. The EUT comes with a USB Port.

1.3.2 Technical Description

EUT Description Wireless Hotspot Modem

Product Marketing Name MiFi 8000

Model Number(s) MIFI8000

Rated Voltage Input 100-240VAC, Output 5V (External AC-DC Power Adapter)

Mode Verified UL Carrier Aggregation: CA_2A-13A, CA_4A-13A, CA_13A-66A, CA_2A-5A, CA_2A-12A, CA_4A-5A, CA_4A-7A, CA_4A-12A, CA_5A-66A, CA_12A-66A, CA_5B, CA_7C, CA_38C, CA_66B, CA_66C

Capability WCDMA Band 2, 4, 5, LTE Band 2, 4, 5, 7, 12, 13, 14, 17, 25, 26, 30, 38, 40, 41, 42, 48, 66 and 802.11 a/b/g/n/ac

Primary Unit (EUT) Production
 Pre-Production
 Engineering

Manufacturer declared Rated Power 23 dBm

(Client declaration, max. antenna gain covered under this test report)

LTE Bands	Frequency Range	Antenna Gains
Band 2	1850 – 1910 MHz	0.5 dBi
Band 4	1710 – 1755 MHz	0.0 dBi
Band 5	824 – 869 MHz	-0.5 dBi
Band 7	2500 – 2570 MHz	2.3 dBi
Band 12	699 – 716 MHz	-2.0 dBi
Band 13	777 – 787 MHz	-0.6 dBi
Band 38	2570 – 2620 MHz	-1.5 dBi
Band 66	1710 – 1780 MHz	0.0 dBi



1.3.3 Transmit Frequency Table

Carrier Aggregation					
Mode	Modulation	Bandwidth (MHz)	Tx Frequency (MHz)	EIRP	
				Max Power (dBm)	Max Power (Watts)
CA_2A-13A	QPSK	10 + 10	1880 + 782	23.66	0.23
	16QAM		782 + 1880	23.85	0.24
CA_4A-13A	QPSK	10 + 10	782 + 1750	23.64	0.23
	16QAM		782 + 1732.5	23.82	0.24
CA_13A-66A	QPSK	10 + 20	1755 + 782	23.04	0.20
	16QAM	20 + 10	1770 + 782	23.32	0.21



Carrier Aggregation					
Mode	Modulation	Bandwidth (MHz)	Tx Frequency (MHz)	EIRP/ERP	
				Max Power (dBm)	Max Power (Watts)
CA_2A-5A	QPSK	10 + 10	1880 + 829	24.28	0.27
	16QAM		829 + 1880	23.65	0.23
CA_2A-12A	QPSK	10 + 10	704 + 1880	24.49	0.28
	16QAM		1880 + 704	24.46	0.28
CA_4A-5A	QPSK	10 + 10	829 + 1732.5	23.91	0.28
	16QAM		1750 + 844	23.99	0.25
CA_4A-7A	QPSK	10 + 10	1750 + 2565	26.28	0.42
	16QAM		1732.5 + 2535	26.26	0.42
CA_4A-12A	QPSK	10 + 10	1732.5 + 711	23.79	0.24
	16QAM		1732.5 + 711	23.98	0.25
CA_5A-66A	QPSK	10 + 20	836.5 + 1755	23.91	0.25
	16QAM		836.5 + 1755	23.98	0.25
CA_12A-66A	QPSK	10 + 20	1755 + 704	23.99	0.25
	16QAM	20 + 10	704 + 1770	23.98	0.25
CA_5B	QPSK	5 + 10	836.8 + 844	21.35	0.14
	16QAM		836.8 + 844	20.63	0.12
CA_7C	QPSK	20 + 10	2550.1 + 2564.5	26.21	0.42
	16QAM		2550.1 + 2564.5	25.56	0.36
CA_38C	QPSK	20 + 20	2580 + 2599.8	21.82	0.15
	16QAM		2580 + 2599.8	20.99	0.13
CA_66B	QPSK	5 + 5	1752.6 + 1757.4	24.0	0.25
	16QAM	5 + 15	1713 + 1722.3	23.08	0.20
CA_66C	QPSK	20 + 5	1752.5 + 1764.2	24.0	0.25
	16QAM	5 + 20	1713.3 + 1725	23.36	0.20



1.4 EUT TEST CONFIGURATION

1.4.1 Test Configuration Description

Test Configuration	Description
A	Conducted antenna port measurement. EUT is powered via AC Adapter and controlled by a call box to transmit at max power.
B	Radiated test setup / case spurious emissions. The EUT is mounted on a mini ground plane for the ease of testing and powered via AC Adaptor. The Antenna port is terminated by the call box.

1.4.2 EUT Exercise Software

EUT is controlled by a CMW 500 Wideband Radio Communication Tester or a Keysight E7515A UXM Wireless Test Set. There are no other test software used during verification.

1.4.3 Support Equipment and I/O cables

Manufacturer	Equipment/Cable	Description
Inseego Corp.	USB Cable	Type A to Type C USB Cable. M/N: NOV7000USB
Inseego Corp.	External AC-DC Power Adapter	Model: SSW-2783, PN: 40123126.01 Input: 100-240VAC, 50/60Hz, 0.5A Output: 5VDC, max. 2A
Mini-Circuits	Power Splitter	Model: ZN2PD2-50-S+ S/N: S UU27701207



1.4.4 Mode of Operation for Inter-Band Carrier Aggregation

The Test frequencies for E-UTRA PCell and SCell for CA inter-band operation during the test is set according to 3GPP TS 36.508 Version 15.3.0 Release 15 as follows:

E-UTRA CA Configuration	CC Combinations / N _{RB_agg}	Test Frequency	CC N _{RB}	N _{UL}	Frequency of Uplink (MHz)
CA_2A-13A	50 + 50	f ₁	CC 50	18900	1880
	50 + 50	f ₂	CC 50	19150	1905
	50 + 50	f ₅	CC 50	23230	782
	50 + 50	f ₆	CC 50	N/A	N/A
CA_4A-13A	50 + 50	f ₁	CC 50	20175	1732.5
	50 + 50	f ₂	CC 50	20350	1750
	50 + 50	f ₅	CC 50	23230	782
	50 + 50	f ₆	CC 50	N/A	N/A
CA_13A-66A	50 + 50	f ₁	CC 50	23230	782
	50 + 50	f ₂	CC 50	N/A	N/A
	50 + 50	f ₅	CC 50	132422	1755
	50 + 50	f ₆	CC 50	132572	1770



E-UTRA CA Configuration	CC Combinations / N _{RB_agg}	Test Frequency	CC N _{RB}	N _{UL}	Frequency of Uplink (MHz)
CA_2A-5A	50 + 50	f ₁	CC 50	18900	1880
	50 + 50	f ₂	CC 50	19150	1905
	50 + 50	f ₅	CC 50	20450	829
	50 + 50	f ₆	CC 50	20600	844
CA_2A-12A	50 + 50	f ₁	CC 50	18900	1880
	50 + 50	f ₂	CC 50	19150	1905
	50 + 50	f ₅	CC 50	23060	704
	50 + 50	f ₆	CC 50	N/A	N/A
CA_4A-5A	50 + 100	f ₁	CC 50	20175	1732.5
	50 + 100	f ₂	CC 50	20350	1750
	50 + 100	f ₅	CC 100	20450	829
	50 + 100	f ₆	CC 100	20600	844
CA_4A-7A	50 + 100	f ₁	CC 50	20175	1732.5
	50 + 100	f ₂	CC 50	20350	1750
	50 + 100	f ₅	CC 100	21100	2535
	50 + 100	f ₆	CC 100	21400	2565
CA_4A-12A	50 + 100	f ₁	CC 50	20175	1732.5
	50 + 100	f ₂	CC 50	20350	1750
	50 + 100	f ₅	CC 100	23130	711
	50 + 100	f ₆	CC 100	N/A	N/A
CA_5A-66A	50 + 100	f ₁	CC 50	20525	836.5
	50 + 100	f ₂	CC 50	20600	844
	50 + 100	f ₅	CC 100	132422	1755
	50 + 100	f ₆	CC 100	132572	1770
CA_12A-66A	50 + 100	f ₁	CC 50	23060	704
	50 + 100	f ₂	CC 50	N/A	N/A
	50 + 100	f ₅	CC 100	132422	1755
	50 + 100	f ₆	CC 100	132572	1770



E-UTRA CA Configuration CA_5B							
Range	CC Combinations / N _{RB_agg}	CC1			CC2		
		BW (RB)	N _{UL}	Frequency of Uplink (MHz)	BW (RB)	N _{UL}	Frequency of Uplink (MHz)
Low	15+25*	15	20416	825.6	25	20455	829.5
		25	20425	826.5	15	20464	830.4
	25+50	25	20428	826.8	50	20500	834
	50+25	50	20450	829	25	20522	836.2
	50+50	50	20450	829	50	20549	838.9
Mid	15+25*	15	20501	834.1	25	20540	838.0
		25	20510	835.0	15	20549	838.9
	25+50	25	20478	831.8	50	20550	839
	50+25	50	20500	834	25	20572	841.2
	50+50	50	20476	831.6	50	20575	841.5
High	15+25*	15	20586	842.6	25	20625	846.5
		25	20595	843.5	15	20634	847.4
	25+50	25	20528	836.8	50	20600	844
	50+25	50	20550	839	25	20622	846.2
	50+50	50	20501	834.1	50	20600	844

* EUT does not support the UL CA Combos that include the narrow BW's (i.e. 1.4 Mhz & 3 MHz)



E-UTRA CA Configuration CA_7C							
Range	CC Combinations / N _{RB_agg}	CC1			CC2		
		BW (RB)	N _{UL}	Frequency of Uplink (MHz)	BW (RB)	N _{UL}	Frequency of Uplink (MHz)
Low	50+100	50	20805	2505.5	100	20949	2519.9
		100	20805	2510	50	20994	2524.4
	75+50	75	20825	2507.5	50	20945	2519.5
	75+75	75	20825	2507.5	50	20975	2522.5
	75+100	75	20828	2507.8	100	20999	2524.9
		100	20850	2510	75	21021	2527.1
100+100	100	20850	2510	75	21048	2529.8	
Low	50+100	50	21006	2525.6	100	21150	2540
		100	21051	2530.1	50	21195	2544.5
	75+50	75	21051	2530.1	50	21171	2542.1
	75+75	75	21025	2527.5	50	21175	2542.5
	75+100	75	21003	2525.3	100	21174	2542.4
		100	21026	2527.6	75	21197	2544.7
100+100	100	21001	2525.1	75	21199	2544.9	
Low	50+100	50	21206	2545.6	100	21350	2560
		100	21251	2550.1	50	21395	2564.5
	75+50	75	21277	2552.7	50	21397	2564.7
	75+75	75	21225	2547.5	50	21375	2562.5
	75+100	75	21179	2542.9	100	21350	2560
		100	21201	2545.1	75	21372	2562.2
100+100	100	21152	2540.2	75	21350	2560	

E-UTRA CA Configuration CA_38C							
Range	CC Combinations / N _{RB_agg}	CC1			CC2		
		BW (RB)	N _{UL}	Frequency of Uplink (MHz)	BW (RB)	N _{UL}	Frequency of Uplink (MHz)
Low	75+75	75	37825	2577.5	75	37975	2592.5
	100+100	100	37850	2580	100	38048	2599.8
Mid	75+75	75	37925	2587.5	75	38075	2602.5
	100+100	100	37901	2585.1	100	38099	2604.9
High	75+75	75	38025	2597.5	75	38175	2612.5
	100+100	100	37952	2590.2	100	38150	2610



E-UTRA CA Configuration CA_66B							
Range	CC Combinations / N _{RB_agg}	CC1			CC2		
		BW (RB)	N _{UL}	Frequency of Uplink (MHz)	BW (RB)	N _{UL}	Frequency of Uplink (MHz)
Low	25+25	25	131997	1712.5	25	132045	1717.3
	25+50	25	132000	1712.8	50	132072	1720
		50	132022	1715	25	132094	1722.2
	25+75	25	132002	1713	75	132095	1722.3
		75	132047	1717.5	25	132140	1726.8
50+50	50	132022	1715	50	132121	1724.9	
Mid	25+25	25	132398	1752.6	25	132446	1757.4
	25+50	25	132375	1750.3	50	132447	1757.5
		50	132397	1752.5	25	132469	1759.7
	25+75	25	132353	1748.1	75	132446	1757.4
		75	132398	1752.6	25	132491	1761.9
50+50	50	132373	1750.1	50	132472	1760	
High	25+25	25	132599	1772.7	25	132647	1777.5
	25+50	25	132550	1767.8	50	132622	1775
		50	132572	1770	25	132644	1777.2
	25+75	25	132504	1763.2	75	132597	1772.5
		75	132549	1767.7	25	132642	1777
50+50	50	132523	1765.1	50	132622	1775	



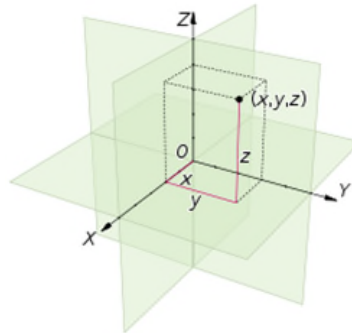
E-UTRA CA Configuration CA_66C							
Range	CC Combinations / N _{RB_agg}	CC1			CC2		
		BW (RB)	N _{UL}	Frequency of Uplink (MHz)	BW (RB)	N _{UL}	Frequency of Uplink (MHz)
Low	50+75	50	132025	1715.3	75	132145	1727.3
		75	132047	1717.5	50	132167	1729.5
	50+100	50	132027	1715.5	100	132171	1729.9
		100	132072	1720	50	132216	1734.4
	75+75	75	132047	1717.5	75	132197	1732.5
	75+100	75	132050	1717.8	100	132221	1734.9
		100	132072	1720	75	132243	1737.1
	100+25	100	132072	1720	25	132189	1731.7
		25	132005	1713.3	100	132122	1725.0
	100+100	100	132072	1720	100	132270	1739.8
Mid	50+75	50	132351	1747.9	75	132471	1759.9
		75	132373	1750.1	50	132493	1762.1
	50+100	50	132328	1745.6	100	132472	1760
		100	132373	1750.1	50	132517	1764.5
	75+75	75	132347	1747.5	75	132497	1762.5
	75+100	75	132325	1745.3	100	132496	1762.4
		100	132348	1747.6	75	132519	1764.7
	100+25	100	132397	1752.5	25	132514	1764.2
		25	132330	1745.8	100	132447	1757.5
	100+100	100	132323	1745.1	100	132521	1764.9
High	50+75	50	132477	1760.5	75	132597	1772.5
		75	132499	1762.7	50	132619	1774.7
	50+100	50	132428	1755.6	100	132572	1770
		100	132473	1760.1	50	132617	1774.5
	75+75	75	132447	1757.5	75	132597	1772.5
	75+100	75	132401	1752.9	100	132572	1770
		100	132423	1755.1	75	132594	1772.2
	100+25	100	132522	1765	25	132639	1776.7
		25	132455	1758.3	100	132572	1770.0
	100+100	100	132374	1750.2	100	132572	1770

1.4.5 Worst Case Configuration

Worst-case configuration used in this test report as per output power measurements:

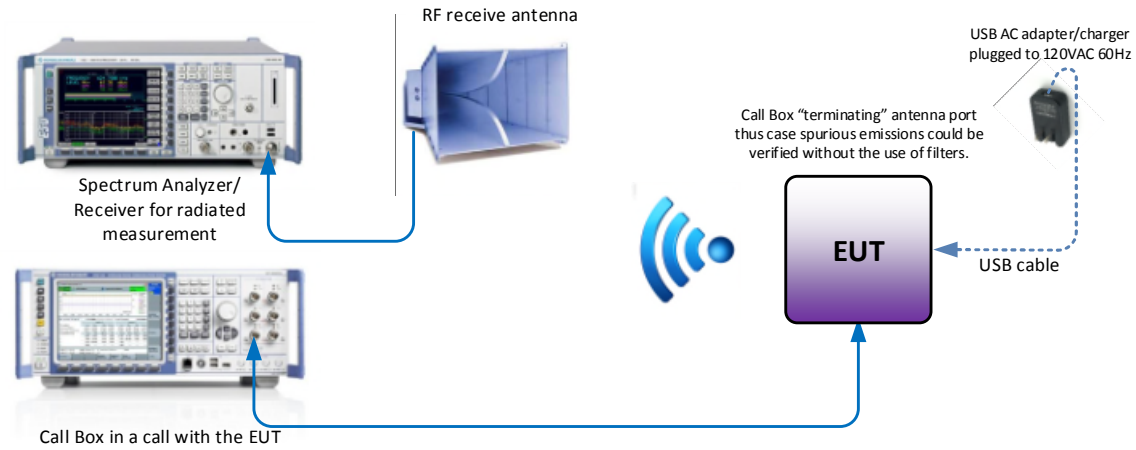
Band	Channel BW	Frequency (MHz)	Modulation	RB Size/Offset
CA_2A-13A	10 + 10 MHz	782 + 1880	16QAM	1/49 & 1/0
CA_4A-13A	10 + 10 MHz	782 + 1732.5	16QAM	1/49 & 1/0
CA_13A-66A	10 + 20 MHz	1770 + 782	16QAM	100/0 & 50/0
CA_2A-5A	10 + 10 MHz	829 + 1880	QPSK	1/49 & 1/0
CA_12A-66A	10 + 20 MHz	1755 + 704	QPSK	1/99 & 1/0
CA_4A-7A	10 + 10 MHz	1750 + 2565	QPSK	1/99 & 1/0
CA_38C	20 + 20 MHz	2580 + 2599.8	QPSK	1/99 & 1/0

For radiated measurements X, Y, and Z orientations were verified. The verification was determined “X” as worst case configuration.

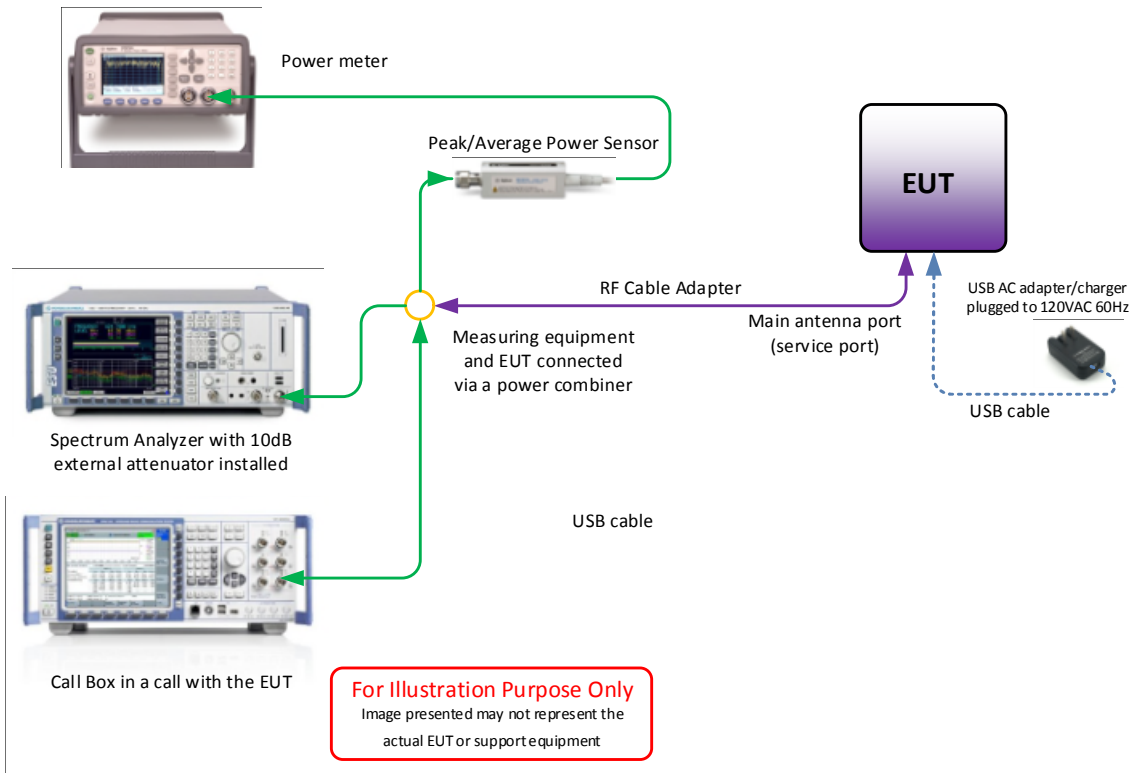


1.4.6 Simplified Test Configuration Diagram

Radiated Test Configuration/Conducted Emissions Test Configuration



Conducted (Antenna Port) Test Configuration





1.5 DEVIATIONS FROM THE STANDARD

No deviations from the applicable test standards or test plan were made during testing.

1.6 MODIFICATION RECORD

Description of Modification	Modification Fitted By	Date Modification Fitted
Serial Number: FJ220819C00006 (Model MIFI8000 serial number), AZ280418A00044 (Model MIFI8800L serial number)		
None	—	—

The table above details modifications made to the EUT during the test programme. The modifications incorporated during each test (if relevant) are recorded on the appropriate test pages.

1.7 TEST METHODOLOGY

All measurements contained in this report were conducted with ANSI C63.26-2015, American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services.

For conducted and radiated emissions the equipment under test (EUT) was configured to measure its highest possible emission level. The test modes were adapted according to the Operating Instructions provided by the manufacturer/client.

1.8 TEST FACILITY LOCATION

1.8.1 TÜV SÜD America Inc. (Mira Mesa)

10040 Mesa Rim Road, San Diego, CA 92121-2912 (32.901268,-117.177681). Phone: (858) 678-1400 Fax: (858) 546-0364.

1.8.2 TÜV SÜD America Inc. (Rancho Bernardo)

16936 Via Del Campo, San Diego, CA 92127-1708 (33.018644,-117.092409). Phone: (858) 678-1400 Fax: (858) 546-0364.

1.9 TEST FACILITY REGISTRATION

1.9.1 FCC – Designation No.: US1146

TUV SUD America Inc. (San Diego), is an accredited test facility with the site description report on file and has met all the requirements specified in §2.948 of the FCC rules. The acceptance letter from the FCC is maintained in our files and the Designation is US1146.



1.9.2 Innovation, Science and Economic Development Canada (IC) Registration No.: 3067A-1 & 22806-1

The 10m Semi-anechoic chamber of TUV SUD America Inc. (San Diego Rancho Bernardo) has been registered by Certification and Engineering Bureau of Innovation, Science and Economic Development Canada for radio equipment testing with Registration No. 3067A-1.

The 3m Semi-anechoic chamber of TUV SUD America Inc. (San Diego Mira Mesa) has been registered by Certification and Engineering Bureau of Innovation, Science and Economic Development Canada for radio equipment testing with Registration No. 22806-1.

1.9.3 BSMI – Laboratory Code: SL2-IN-E-028R (US0102)

TUV Product Service Inc. (San Diego) is a recognized EMC testing laboratory by the BSMI under the MRA (Mutual Recognition Arrangement) with the United States. Accreditation includes CNS 13438 up to 6GHz.

1.9.4 NCC (National Communications Commission - US0102)

TUV SUD America Inc. (San Diego) is listed as a Foreign Recognized Telecommunication Equipment Testing Laboratory and is accredited to ISO/IEC 17025 (A2LA Certificate No.2955.13) which under APEC TEL MRA Phase 1 was designated as a Conformity Assessment Body competent to perform testing of equipment subject to the Technical Regulations covered under its scope of accreditation including RTTE01, PLMN01 and PLMN08 for TTE type of testing and LP002 for Low-Power RF Device type of testing.

1.9.5 VCCI – Registration No. A-0280 and A-0281

TUV SUD America Inc. (San Diego) is a VCCI registered measurement facility which includes radiated field strength measurement, radiated field strength measurement above 1GHz, mains port interference measurement and telecommunication port interference measurement.

1.9.6 RRA – Identification No. US0102

TUV SUD America Inc. (San Diego) is National Radio Research Agency (RRA) recognized laboratory under Phase I of the APEC Tel MRA.

1.9.7 OFCA – U.S. Identification No. US0102

TUV SUD America Inc. (San Diego) is recognized by Office of the Communications Authority (OFCA) under Appendix B, Phase I of the APEC Tel MRA.



1.10 SAMPLE CALCULATIONS

1.10.1 LTE Emission Designator (QPSK)

Emission Designator = 4M51G7D
 G = Phase Modulation
 7= Quantized/Digital Info
 D = Data Transmission, telemetry, telecommand

1.10.2 LTE Emission Designator (16QAM)

Emission Designator = 4M50W7D
 W = Frequency Modulation
 7= Quantized/Digital Info
 D = Data Transmission, telemetry, telecommand

1.10.3 Spurious Radiated Emission (below 1GHz)

Measuring equipment raw measurement (dbµV) @ 30 MHz			24.4
Correction Factor (dB)	Asset# 1066 (cable)	0.3	-12.6
	Asset# 1172 (cable)	0.3	
	Asset# 1016 (preamplifier)	-30.7	
	Asset# 1175(cable)	0.3	
	Asset# 1002 (antenna)	17.2	
Reported QuasiPeak Final Measurement (dbµV/m) @ 30MHz			11.8

1.10.4 Spurious Radiated Emission – Substitution Method

Example = 84dBµV/m @ 1413 MHz (numerical sample only)

The field strength reading of 84dBµV/m @ 1413 MHz (2nd Harmonic of 706.5 MHz) is the maximized measurement when the EUT is on the turntable measured at 3 meters. The gain of the substituted antenna is 7.8dBi while the transmit cable loss is 1.0 dB (cable between signal generator and the substituted antenna). The signal generator level is adjusted until the 84dBµV/m level at the receiving end is replicated (identical test setup, i.e. same antenna, cable/s and preamp). If the adjusted signal generator level is -18dBm, then we have the following for both EIRP and ERP as required:

$$\begin{aligned}
 P_{EIRP} &= -18 \text{ dBm} + 7.8 \text{ dBi} - 1 \text{ dB} \\
 &= 11.2 \text{ dBm} \\
 P_{ERP} &= P_{EIRP} - 2.15 \text{ dB} \\
 &= 11.2 \text{ dBm} - 2.15 \text{ dB} \\
 &= 9.05 \text{ dBm}
 \end{aligned}$$



SECTION 2

TEST DETAILS

Radio Testing of the
Inseego Corp.
MIFI8000 Wireless Hotspot Modem



2.1 TRANSMITTER CONDUCTED POWER MEASUREMENTS

2.1.1 Specification Reference

FCC 47 CFR Part 2, Clause 2.1046

2.1.2 Standard Applicable

The conducted power measurements were made in accordance to FCC Part 2 Clause 2.1046.

FCC 47 CFR Part 2.1046:

(a) For transmitters other than single sideband, independent sideband and controlled carrier radiotelephone, power output shall be measured at the RF output terminals when the transmitter is adjusted in accordance with the tune-up procedure to give the values of current and voltage on the circuit elements specified in § 2.1033(c)(8). The electrical characteristics of the radio frequency load attached to the output terminals when this test is made shall be stated.

(c) For measurements conducted pursuant to paragraphs (a) and (b) of this section, all calculations and methods used by the applicant for determining carrier power or peak envelope power, as appropriate, on the basis of measured power in the radio frequency load attached to the transmitter output terminals shall be shown. Under the test conditions specified, no components of the emission spectrum shall exceed the limits specified in the applicable rule parts as necessary for meeting occupied bandwidth or emission limitations.

2.1.3 Equipment Under Test and Modification State

Serial No: FJ220819C00006, AZ280418A00044 / Test Configuration A

2.1.4 Date of Test/Initial of test personnel who performed the test

July 02, 2018 and October 18 to 22, 2019 / XYZ

2.1.5 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

2.1.6 Environmental Conditions/ Test Location

Test performed at TÜV SÜD America Inc. Rancho Bernardo facility

Ambient Temperature	25.0 - 25.2 °C
Relative Humidity	25.8 - 52.1 %
ATM Pressure	98.8 - 99.0 kPa

2.1.7 Additional Observations

- This is a conducted test using Power Meter.
- The path loss were measured and entered as a level offset.
- Low, Middle and High channels for all bandwidths with different RB size and RB offset and modulations were verified and reported.

2.1.8 Test Results

CA_2A-13A									
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Peak Power (dBm)
10+10	QPSK	1880	1	49	782	1	0	22.79	26.26
			50	0		50	0	23.66	27.68
	16QAM		1	49		1	0	23.12	27.81
			50	0		50	0	23.79	28.85
	64QAM		1	49		1	0	23.2	28.21
			50	0		50	0	23.6	28.96
10+10	QPSK	782	1	49	1880	1	0	23.3	26.66
			50	0		50	0	23.47	28.06
	16QAM		1	49		1	0	23.85	28.61
			50	0		50	0	23.42	28.65
	64QAM		1	49		1	0	23.63	29.43
			50	0		50	0	23.23	29.32

CA_2A-13A									
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Peak Power (dBm)
10+10	QPSK	1905	1	49	782	1	0	22.18	26.25
			50	0		50	0	23.36	27.6
	16QAM		1	49		1	0	22.6	27.83
			50	0		50	0	23.53	28.4
	64QAM		1	49		1	0	23.09	28.11
			50	0		50	0	23.37	28.69
10+10	QPSK	782	1	49	1905	1	0	22.96	26.33
			50	0		50	0	23.2	27.56
	16QAM		1	49		1	0	23.36	28.34
			50	0		50	0	23.23	28.27
	64QAM		1	49		1	0	23.42	28.87
			50	0		50	0	23.04	28.92



CA_4A-13A									
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Peak Power (dBm)
10+10	QPSK	1732.5	1	49	782	1	0	22.99	26.8
			50	0		50	0	23.46	27.68
	16QAM		1	49		1	0	23.13	27.89
			50	0		50	0	23.58	28.46
	64QAM		1	49		1	0	23.28	28.55
			50	0		50	0	23.15	29.23
10+10	QPSK	782	1	49	1732.5	1	0	23.76	27.04
			50	0		50	0	23.36	27.64
	16QAM		1	49		1	0	23.82	28.47
			50	0		50	0	23.36	28.78
	64QAM		1	49		1	0	23.7	29.33
			50	0		50	0	22.89	28.28

CA_4A-13A									
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Peak Power (dBm)
10+10	QPSK	1750	1	49	782	1	0	23.55	27.29
			50	0		50	0	23.25	26.8
	16QAM		1	49		1	0	23.65	28.24
			50	0		50	0	23.39	28.14
	64QAM		1	49		1	0	23.62	28.4
			50	0		50	0	23.05	29.03
10+10	QPSK	782	1	49	1750	1	0	23.64	26.93
			50	0		50	0	23.29	27.89
	16QAM		1	49		1	0	23.72	28.36
			50	0		50	0	23.25	28.66
	64QAM		1	49		1	0	23.59	29.26
			50	0		50	0	22.81	28.69



CA_13A-66A									
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Peak Power (dBm)
10+20	QPSK	782	1	49	1755	1	0	22.65	26.02
			50	0		100	0	22.86	27.22
	16QAM		1	49		1	0	23.27	28.14
			50	0		100	0	22.91	28.23
	64QAM		1	49		1	0	23.16	28.90
			50	0		100	0	22.45	27.96
10+20	QPSK	1755	1	99	782	1	0	21.75	26.19
			100	0		50	0	23.04	27.07
	16QAM		1	99		1	0	22.33	28.09
			100	0		50	0	23.26	28.12
	64QAM		1	99		1	0	22.63	28.1
			100	0		50	0	22.81	28.69

CA_13A-66A									
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Peak Power (dBm)
10+20	QPSK	782	1	49	1770	1	0	22.64	26.01
			50	0		100	0	22.61	26.97
	16QAM		1	49		1	0	23.23	28.15
			50	0		100	0	22.66	27.99
	64QAM		1	49		1	0	23.09	28.79
			50	0		100	0	22.27	28.02
10+20	QPSK	1770	1	99	782	1	0	21.67	26.37
			100	0		50	0	23.0	26.78
	16QAM		1	99		1	0	22.29	27.71
			100	0		50	0	23.32	29.1
	64QAM		1	99		1	0	21.63	26.35
			100	0		50	0	22.96	28.93



CA_2A-5A									
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Peak Power (dBm)
10+10	QPSK	1880	1	49	829	1	0	23.78	27.45
			50	0		50	0	22.78	27.88
	16QAM		1	49		1	0	22.98	27.87
			50	0		50	0	21.80	28.18
10+10	QPSK	829	1	49	1880	1	0	24.0	29.55
			50	0		50	0	22.43	28.09
	16QAM		1	49		1	0	23.15	29.34
			50	0		50	0	21.98	28.41

CA_2A-5A									
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Peak Power (dBm)
10+10	QPSK	1905	1	49	844	1	0	23.68	27.05
			50	0		50	0	23.28	27.0
	16QAM		1	49		1	0	22.97	26.67
			50	0		50	0	21.53	25.92
10+10	QPSK	844	1	49	1905	1	0	23.96	27.56
			50	0		50	0	22.31	26.96
	16QAM		1	49		1	0	22.94	27.12
			50	0		50	0	21.95	27.47



CA_2A-12A									
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Peak Power (dBm)
10+10	QPSK	1880	1	49	704	1	0	22.46	26.71
			50	0		50	0	23.71	27.98
	16QAM		1	49		1	0	22.75	28.55
			50	0		50	0	23.96	28.85
10+10	QPSK	704	1	49	1880	1	0	23.99	28.70
			50	0		50	0	23.98	28.53
	16QAM		1	49		1	0	23.93	28.69
			50	0		50	0	23.82	29.17

CA_2A-12A									
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Peak Power (dBm)
10+10	QPSK	1905	1	49	704	1	0	22.79	26.78
			50	0		50	0	22.64	26.54
	16QAM		1	49		1	0	22.91	23.86
			50	0		50	0	23.05	27.93
10+10	QPSK	704	1	49	1905	1	0	23.51	26.75
			50	0		50	0	23.99	27.25
	16QAM		1	49		1	0	23.69	28.41
			50	0		50	0	23.66	29.52



CA_4A-5A									
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Peak Power (dBm)
10+10	QPSK	1732.5	1	49	829	1	0	22.30	26.23
			50	0		50	0	22.94	27.08
	16QAM		1	49		1	0	22.81	28.04
			50	0		50	0	23.34	28.41
10+10	QPSK	829	1	49	1732.5	1	0	23.59	26.98
			50	0		50	0	23.91	27.29
	16QAM		1	49		1	0	23.96	28.63
			50	0		50	0	23.93	29.34

CA_4A-5A									
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Peak Power (dBm)
10+10	QPSK	1750	1	49	844	1	0	23.03	26.64
			50	0		50	0	23.08	27.14
	16QAM		1	49		1	0	23.99	28.11
			50	0		50	0	23.53	28.39
10+10	QPSK	844	1	49	1750	1	0	22.93	26.06
			50	0		50	0	23.60	28.43
	16QAM		1	49		1	0	23.47	28.81
			50	0		50	0	22.84	27.83



CA_4A-7A									
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Peak Power (dBm)
10+10	QPSK	1732.5	1	49	2535	1	0	23.81	27.39
			50	0		50	0	23.75	28.0
	16QAM		1	49		1	0	23.93	28.89
			50	0		50	0	23.96	28.64
10+10	QPSK	2535	1	49	1732.5	1	0	23.27	27.30
			50	0		50	0	23.54	27.73
	16QAM		1	49		1	0	22.85	28.10
			50	0		50	0	23.74	29.02

CA_4A-7A									
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Peak Power (dBm)
10+10	QPSK	1750	1	49	2565	1	0	23.98	27.38
			50	0		50	0	22.16	27.35
	16QAM		1	49		1	0	23.30	27.85
			50	0		50	0	23.11	27.20
10+10	QPSK	2565	1	49	1750	1	0	22.96	27.13
			50	0		50	0	23.59	27.94
	16QAM		1	49		1	0	22.77	29.08
			50	0		50	0	23.64	28.39



CA_4A-12A									
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Peak Power (dBm)
10+10	QPSK	1732.5	1	49	711	1	0	23.25	26.58
			50	0		50	0	23.79	28.08
	16QAM		1	49		1	0	23.98	28.57
			50	0		50	0	23.68	28.75
10+10	QPSK	711	1	49	1732.5	1	0	22.24	25.88
			50	0		50	0	22.99	26.80
	16QAM		1	49		1	0	22.67	27.23
			50	0		50	0	23.24	28.20

CA_4A-12A									
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Peak Power (dBm)
10+10	QPSK	1750	1	49	711	1	0	23.34	26.53
			50	0		50	0	22.09	26.45
	16QAM		1	49		1	0	23.35	27.80
			50	0		50	0	22.92	28.08
10+10	QPSK	711	1	49	1750	1	0	23.13	26.34
			50	0		50	0	23.74	27.95
	16QAM		1	49		1	0	23.60	28.19
			50	0		50	0	23.70	28.52



CA_5A-66A									
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Peak Power (dBm)
10+20	QPSK	836.5	1	49	1755	1	0	23.26	26.79
			50	0		100	0	23.91	28.36
	16QAM		1	49		1	0	23.98	28.75
			50	0		100	0	23.78	29.08
10+20	QPSK	1755	1	99	836.5	1	0	23.31	25.94
			100	0		50	0	23.81	27.61
	16QAM		1	99		1	0	22.40	26.35
			100	0		50	0	23.89	28.66

CA_5A-66A									
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Peak Power (dBm)
10+20	QPSK	844	1	49	1770	1	0	22.25	27.24
			50	0		100	0	23.82	27.63
	16QAM		1	49		1	0	22.78	26.79
			50	0		100	0	23.82	28.57
10+20	QPSK	1770	1	99	844	1	0	22.16	26.05
			100	0		50	0	23.57	27.39
	16QAM		1	99		1	0	22.48	26.82
			100	0		50	0	23.68	28.38



CA_12A-66A									
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Peak Power (dBm)
10+20	QPSK	704	1	49	1755	1	0	23.93	27.39
			50	0		100	0	23.77	28.44
	16QAM		1	49		1	0	23.98	28.86
			50	0		100	0	23.63	28.95
10+20	QPSK	1755	1	99	704	1	0	23.99	25.51
			100	0		50	0	23.96	27.89
	16QAM		1	99		1	0	23.94	26.74
			100	0		50	0	23.87	28.44

CA_12A-66A									
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Peak Power (dBm)
10+20	QPSK	704	1	49	1770	1	0	23.96	27.39
			50	0		100	0	23.88	28.34
	16QAM		1	49		1	0	23.98	28.90
			50	0		100	0	23.67	29.29
10+20	QPSK	1770	1	99	704	1	0	23.96	26.66
			100	0		50	0	23.85	27.58
	16QAM		1	99		1	0	23.95	28.44
			100	0		50	0	23.95	27.0



CA_5B									
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Peak Power (dBm)
25+50	QPSK	826.8	1	24	834	1	0	23.99	29.10
			25	0		50	0	22.16	28.22
		831.8	1	24	839	1	0	23.98	29.34
			25	0		50	0	22.11	28.10
		836.8	1	24	844	1	0	24.0	28.47
			25	0		50	0	22.12	28.04
	16QAM	826.8	1	24	834	1	0	23.10	29.26
			25	0		50	0	21.28	27.98
		831.8	1	24	839	1	0	23.15	29.36
			25	0		50	0	21.25	28.15
		836.8	1	24	844	1	0	23.28	28.44
			25	0		50	0	21.17	28.04
50+25	QPSK	829	1	49	836.2	1	0	23.93	29.10
			50	0		25	0	22.06	27.86
		834	1	49	841.2	1	0	23.98	28.64
			50	0		25	0	22.07	28.21
		839	1	49	846.2	1	0	23.90	27.02
			50	0		25	0	22.85	27.45
	16QAM	829	1	49	836.2	1	0	23.15	29.32
			50	0		25	0	21.15	28.10
		834	1	49	841.2	1	0	23.05	28.57
			50	0		25	0	21.11	28.34
		839	1	49	846.2	1	0	22.99	27.69
			50	0		25	0	21.89	27.39



CA_5B									
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Peak Power (dBm)
50+50	QPSK	829	1	49	838.9	1	0	23.96	29.24
			50	0		50	0	22.36	28.41
		831.6	1	49	841.5	1	0	23.95	28.17
			50	0		50	0	22.25	28.38
		834.1	1	49	844	1	0	23.99	28.55
			50	0		50	0	22.26	28.26
	16QAM	829	1	49	838.9	1	0	23.19	29.33
			50	0		50	0	21.42	28.32
		831.6	1	49	841.5	1	0	23.07	28.20
			50	0		50	0	21.33	28.37
		834.1	1	49	844	1	0	23.07	28.57
			50	0		50	0	21.37	28.36



CA_7C									
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Peak Power (dBm)
50+100	QPSK	2505.5	1	49	2519.9	1	0	23.11	28.60
			50	0		100	0	21.44	27.71
		2525.6	1	49	2540	1	0	22.83	27.82
			50	0		100	0	20.97	27.62
		2545.6	1	49	2560	1	0	23.23	27.90
			50	0		100	0	21.09	27.49
	16QAM	2505.5	1	49	2519.9	1	0	22.27	28.81
			50	0		100	0	20.45	27.98
		2525.6	1	49	2540	1	0	22.16	28.29
			50	0		100	0	20.03	27.89
		2545.6	1	49	2560	1	0	22.57	28.17
			50	0		100	0	20.09	27.78
100+50	QPSK	2510	1	99	2524.4	1	0	23.40	28.81
			100	0		50	0	21.23	27.47
		2530.1	1	99	2544.5	1	0	23.83	28.89
			100	0		50	0	21.75	27.70
		2550.1	1	99	2564.5	1	0	23.91	28.38
			100	0		50	0	21.92	27.66
	16QAM	2510	1	99	2524.4	1	0	22.83	29.02
			100	0		50	0	20.36	28.11
		2530.1	1	99	2544.5	1	0	23.04	28.93
			100	0		50	0	20.69	28.03
		2550.1	1	99	2564.5	1	0	23.26	28.55
			100	0		50	0	21.01	27.67



CA_7C									
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Peak Power (dBm)
75+50	QPSK	2507.5	1	74	2519.5	1	0	22.40	28.02
			75	0		50	0	20.68	27.80
		2530.1	1	74	2542.1	1	0	22.91	27.96
			75	0		50	0	21.03	27.84
		2552.7	1	74	2564.7	1	0	22.97	27.65
			75	0		50	0	21.29	27.55
	16QAM	2507.5	1	74	2519.5	1	0	21.78	28.16
			75	0		50	0	20.12	27.97
		2530.1	1	74	2542.1	1	0	22.09	28.33
			75	0		50	0	20.10	27.60
		2552.7	1	74	2564.7	1	0	22.40	27.70
			75	0		50	0	20.40	27.73

CA_7C									
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Peak Power (dBm)
75+75	QPSK	2507.5	1	74	2522.5	1	0	22.29	27.96
			75	0		75	0	20.64	27.88
		2527.5	1	74	2542.5	1	0	22.92	27.98
			75	0		75	0	21.08	27.31
		2547.5	1	74	2562.5	1	0	23.11	27.70
			75	0		75	0	20.82	27.70
	16QAM	2507.5	1	74	2522.5	1	0	21.47	28.13
			75	0		75	0	20.69	27.75
		2527.5	1	74	2542.5	1	0	22.15	28.03
			75	0		75	0	20.11	27.28
		2547.5	1	74	2562.5	1	0	22.41	27.76
			75	0		75	0	20.01	27.58



CA_7C									
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Peak Power (dBm)
75+100	QPSK	2507.8	1	74	2524.9	1	0	22.50	28.05
			75	0		100	0	20.46	26.68
		2525.3	1	74	2542.4	1	0	22.90	28.01
			75	0		100	0	20.96	27.57
		2542.9	1	74	2560	1	0	23.37	28.11
			75	0		100	0	20.84	27.12
	16QAM	2507.8	1	74	2524.9	1	0	21.90	28.10
			75	0		100	0	20.17	26.76
		2525.3	1	74	2542.4	1	0	21.91	28.15
			75	0		100	0	19.02	27.68
		2542.9	1	74	2560	1	0	22.74	28.19
			75	0		100	0	20.31	27.09
100+75	QPSK	2510	1	99	2527.1	1	0	22.50	28.04
			100	0		75	0	20.94	27.62
		2527.6	1	99	2544.7	1	0	22.86	27.98
			100	0		75	0	20.93	27.94
		2545.1	1	99	2562.2	1	0	23.12	27.76
			100	0		75	0	21.11	27.57
	16QAM	2510	1	99	2527.1	1	0	21.61	28.02
			100	0		75	0	20.23	27.58
		2527.6	1	99	2544.7	1	0	22.33	28.01
			100	0		75	0	20.25	27.24
		2545.1	1	99	2562.2	1	0	22.32	27.87
			100	0		75	0	19.21	27.74



CA_7C									
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Peak Power (dBm)
100+100	QPSK	2510	1	99	2529.8	1	0	22.56	28.02
			100	0		100	0	19.84	27.57
		2525.1	1	99	2544.9	1	0	22.95	28.0
			100	0		100	0	19.78	27.01
		2540.2	1	99	2560	1	0	23.07	28.0
			100	0		100	0	20.84	27.44
	16QAM	2510	1	99	2529.8	1	0	21.78	28.03
			100	0		100	0	20.13	27.78
		2525.1	1	99	2544.9	1	0	22.26	28.15
			100	0		100	0	19.93	27.10
		2540.2	1	99	2560	1	0	22.26	28.11
			100	0		100	0	19.91	27.70



CA_38C									
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Peak Power (dBm)
75+75	QPSK	2577.5	1	74	2592.5	1	0	20.06	28.81
			75	0		75	0	18.16	28.38
		2587.5	1	74	2602.5	1	0	20.08	28.75
			75	0		75	0	18.14	29.06
		2597.5	1	74	2612.5	1	0	19.17	28.24
			75	0		75	0	18.95	28.50
	16QAM	2577.5	1	74	2592.5	1	0	19.17	29.08
			75	0		75	0	17.20	28.96
		2587.5	1	74	2602.5	1	0	19.17	28.82
			75	0		75	0	17.17	28.32
		2597.5	1	74	2612.5	1	0	18.17	28.85
			75	0		75	0	18.16	28.39
100+100	QPSK	2580	1	99	2599.8	1	0	20.32	29.12
			100	0		100	0	18.31	28.77
		2585.1	1	99	2604.9	1	0	20.10	28.94
			100	0		100	0	18.20	28.36
		2590.2	1	99	2610	1	0	20.13	29.12
			100	0		100	0	18.35	28.57
	16QAM	2580	1	99	2599.8	1	0	19.49	28.93
			100	0		100	0	17.44	28.25
		2585.1	1	99	2604.9	1	0	19.29	29.05
			100	0		100	0	17.21	28.0
		2590.2	1	99	2610	1	0	19.27	29.08
			100	0		100	0	17.22	28.76



CA_66B									
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Peak Power (dBm)
25+25	QPSK	1712.5	1	24	1717.3	1	0	23.98	27.16
			25	0		25	0	22.92	27.20
		1752.6	1	24	1757.4	1	0	24.0	27.61
			25	0		25	0	22.87	27.27
		1772.7	1	24	1777.5	1	0	23.88	26.72
			25	0		25	0	22.82	26.98
	16QAM	1712.5	1	24	1717.3	1	0	22.98	27.39
			25	0		25	0	21.88	27.33
		1752.6	1	24	1757.4	1	0	22.95	27.63
			25	0		25	0	21.82	27.44
		1772.7	1	24	1777.5	1	0	22.79	26.93
			25	0		25	0	21.39	27.24



CA_66B									
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Peak Power (dBm)
25+50	QPSK	1712.8	1	24	1720	1	0	23.88	27.50
			25	0		50	0	21.73	27.12
		1750.3	1	24	1757.5	1	0	23.82	27.31
			25	0		50	0	21.69	26.68
		1767.8	1	24	1775	1	0	23.84	27.78
			25	0		50	0	21.76	27.25
	16QAM	1712.8	1	24	1720	1	0	22.93	27.63
			25	0		50	0	20.80	26.97
		1750.3	1	24	1757.5	1	0	22.95	27.28
			25	0		50	0	20.74	26.88
		1767.8	1	24	1775	1	0	22.90	27.65
			25	0		50	0	20.78	27.11
50+25	QPSK	1715	1	49	1722.2	1	0	23.77	28.27
			50	0		25	0	21.78	27.16
		1752.5	1	49	1759.7	1	0	23.68	27.91
			50	0		25	0	21.68	27.21
		1770	1	49	1777.2	1	0	23.79	27.04
			50	0		25	0	21.72	27.25
	16QAM	1715	1	49	1722.2	1	0	22.83	28.37
			50	0		25	0	20.89	27.31
		1752.5	1	49	1759.7	1	0	22.77	27.96
			50	0		25	0	20.72	26.69
		1770	1	49	1777.2	1	0	22.82	27.33
			50	0		25	0	20.75	27.33



CA_66B									
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Peak Power (dBm)
25+75	QPSK	1713	1	24	1722.3	1	0	23.99	27.43
			25	0		75	0	21.81	26.98
		1748.1	1	24	1757.4	1	0	23.95	26.97
			25	0		75	0	21.90	26.97
		1763.2	1	24	1772.5	1	0	23.98	26.95
			25	0		75	0	21.75	27.39
	16QAM	1713	1	24	1722.3	1	0	23.08	27.45
			25	0		75	0	20.86	27.02
		1748.1	1	24	1757.4	1	0	23.07	27.39
			25	0		75	0	20.91	26.96
		1763.2	1	24	1772.5	1	0	22.96	27.01
			25	0		75	0	20.83	27.65
75+25	QPSK	1717.5	1	74	1726.8	1	0	23.73	28.20
			75	0		25	0	21.84	27.39
		1752.6	1	74	1761.9	1	0	23.65	27.97
			75	0		25	0	21.70	27.43
		1767.7	1	74	1777	1	0	23.74	27.29
			75	0		25	0	21.62	27.34
	16QAM	1717.5	1	74	1726.8	1	0	22.83	27.34
			75	0		25	0	20.87	27.76
		1752.6	1	74	1761.9	1	0	22.70	27.93
			75	0		25	0	20.78	27.44
		1767.7	1	74	1777	1	0	22.79	27.35
			75	0		25	0	20.73	27.41



CA_66B									
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Peak Power (dBm)
50+50	QPSK	1715	1	49	1724.9	1	0	23.63	28.19
			50	0		50	0	21.68	27.39
		1750.1	1	49	1760	1	0	23.89	27.81
			50	0		50	0	21.86	27.33
		1765.1	1	49	1775	1	0	23.94	27.62
			50	0		50	0	21.81	27.77
	16QAM	1715	1	49	1724.9	1	0	22.67	28.27
			50	0		50	0	20.71	27.18
		1750.1	1	49	1760	1	0	22.90	27.89
			50	0		50	0	20.94	27.16
		1765.1	1	49	1775	1	0	23.02	27.61
			50	0		50	0	20.92	27.68



CA_66C										
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Peak Power (dBm)	
50+75	QPSK	1715.3	1	49	1727.3	1	0	23.88	28.19	
			50	0		75	0	21.92	27.13	
		1747.9	1	49	1759.9	1	0	23.92	27.08	
			50	0		75	0	21.75	27.07	
		1760.5	1	49	1772.5	1	0	23.70	26.82	
			50	0		75	0	21.67	27.36	
	16QAM	1715.3	1	49	1727.3	1	0	22.88	28.21	
			50	0		75	0	20.99	27.21	
		1747.9	1	49	1759.9	1	0	22.84	27.26	
			50	0		75	0	20.86	26.85	
		1760.5	1	49	1772.5	1	0	22.82	26.75	
			50	0		75	0	20.71	27.49	
75+50	QPSK	1717.5	1	74	1729.5	1	0	23.84	27.91	
			75	0		50	0	21.85	27.26	
		1750.1	1	74	1762.1	1	0	23.70	27.75	
			75	0		50	0	21.75	27.22	
		1762.7	1	74	1774.7	1	0	23.69	27.48	
			75	0		50	0	21.60	27.49	
		16QAM	1717.5	1	74	1729.5	1	0	22.84	27.49
				75	0		50	0	20.94	27.54
			1750.1	1	74	1762.1	1	0	22.68	27.85
	75			0	50		0	20.85	27.11	
	1762.7		1	74	1774.7	1	0	22.74	27.46	
			75	0		50	0	20.71	27.47	



CA_66C									
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Peak Power (dBm)
50+100	QPSK	1715.5	1	49	1729.9	1	0	23.93	28.19
			50	0		100	0	22.23	27.73
		1745.6	1	49	1760	1	0	23.98	26.91
			50	0		100	0	21.88	26.80
		1755.6	1	49	1770	1	0	23.87	27.50
			50	0		100	0	21.84	27.49
	16QAM	1715.5	1	49	1729.9	1	0	23.08	28.26
			50	0		100	0	21.31	27.54
		1745.6	1	49	1760	1	0	22.95	26.99
			50	0		100	0	20.86	26.88
		1755.6	1	49	1770	1	0	22.96	27.87
			50	0		100	0	20.91	27.60
100+50	QPSK	1720	1	99	1734.4	1	0	23.80	27.07
			100	0		50	0	21.86	27.38
		1750.1	1	99	1764.5	1	0	23.74	27.70
			100	0		50	0	21.74	27.42
		1760.1	1	99	1774.5	1	0	23.88	27.44
			100	0		50	0	21.83	27.60
	16QAM	1720	1	99	1734.4	1	0	22.88	27.08
			100	0		50	0	20.94	27.38
		1750.1	1	99	1764.5	1	0	22.82	27.70
			100	0		50	0	20.80	27.02
		1760.1	1	99	1774.5	1	0	22.81	27.28
			100	0		50	0	20.73	27.51



CA_66C									
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Peak Power (dBm)
75+75	QPSK	1717.5	1	74	1732.5	1	0	23.94	28.10
			75	0		75	0	22.23	27.93
		1747.5	1	74	1762.5	1	0	23.99	27.79
			75	0		75	0	22.10	27.12
		1757.5	1	74	1772.5	1	0	24.0	27.14
			75	0		75	0	22.13	27.97
	16QAM	1717.5	1	74	1732.5	1	0	23.01	27.09
			75	0		75	0	21.29	27.87
		1747.5	1	74	1762.5	1	0	23.08	27.75
			75	0		75	0	21.17	27.40
		1757.5	1	74	1772.5	1	0	23.10	27.17
			75	0		75	0	21.27	27.78



CA_66C									
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Peak Power (dBm)
75+100	QPSK	1717.8	1	74	1734.9	1	0	23.97	27.72
			75	0		100	0	21.34	26.98
		1745.3	1	74	1762.4	1	0	23.98	26.72
			75	0		100	0	21.52	27.23
		1752.9	1	74	1770	1	0	23.86	27.44
			75	0		100	0	20.86	26.83
	16QAM	1717.8	1	74	1734.9	1	0	23.22	27.06
			75	0		100	0	20.54	27.08
		1745.3	1	74	1762.4	1	0	22.97	26.93
			75	0		100	0	20.84	27.22
		1752.9	1	74	1770	1	0	23.07	27.55
			75	0		100	0	20.01	26.92
100+75	QPSK	1720	1	99	1737.1	1	0	23.94	27.86
			100	0		75	0	20.90	26.43
		1747.6	1	99	1764.7	1	0	23.87	27.84
			100	0		75	0	21.07	27.35
		1755.1	1	99	1772.2	1	0	23.96	26.81
			100	0		75	0	22.16	27.90
	16QAM	1720	1	99	1737.1	1	0	23.21	27.21
			100	0		75	0	20.06	26.45
		1747.6	1	99	1764.7	1	0	22.86	27.88
			100	0		75	0	20.16	27.55
		1755.1	1	99	1772.2	1	0	22.39	26.60
			100	0		75	0	21.20	27.66

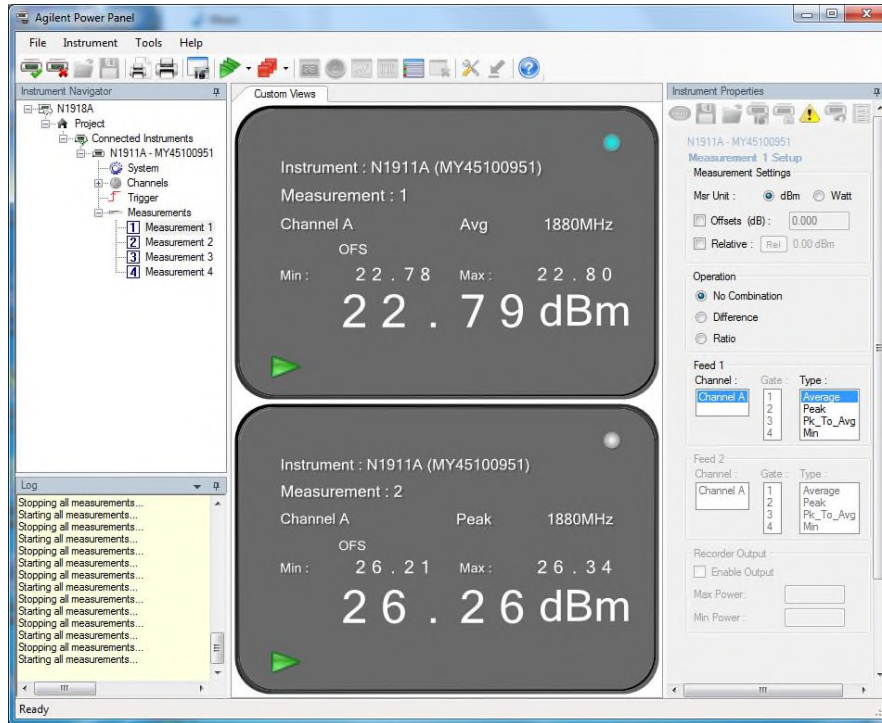


CA_66C									
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Peak Power (dBm)
100+25	QPSK	1720	1	99	1731.7	1	0	24.0	27.72
			100	0		25	0	22.07	27.36
		1752.5	1	99	1764.2	1	0	24.0	27.76
			100	0		25	0	21.93	27.47
		1765	1	99	1776.7	1	0	23.85	27.33
			100	0		25	0	21.75	27.81
	16QAM	1720	1	99	1731.7	1	0	23.08	27.51
			100	0		25	0	21.12	27.99
		1752.5	1	99	1764.2	1	0	22.99	26.67
			100	0		25	0	20.06	26.69
		1765	1	99	1776.7	1	0	22.80	27.51
			100	0		25	0	20.91	27.56
25+100	QPSK	1713.3	1	24	1725	1	0	23.97	27.16
			25	0		100	0	22.06	26.99
		1745.8	1	24	1757.5	1	0	27.97	26.24
			25	0		100	0	21.90	26.84
		1758.3	1	24	1770	1	0	23.74	27.55
			25	0		100	0	21.67	27.38
	16QAM	1713.3	1	24	1725	1	0	23.36	27.64
			25	0		100	0	21.14	27.46
		1745.8	1	24	1757.5	1	0	23.22	26.37
			25	0		100	0	20.91	26.49
		1758.3	1	24	1770	1	0	22.83	27.55
			25	0		100	0	20.81	27.48

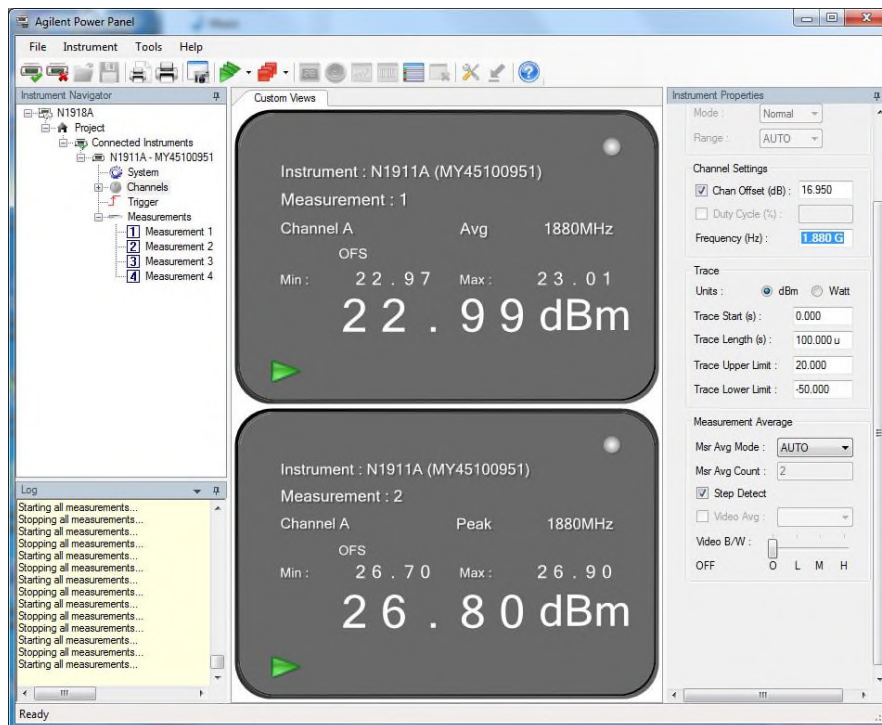


CA_66C									
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Peak Power (dBm)
100+100	QPSK	1720	1	99	1739.8	1	0	23.95	27.99
			100	0		100	0	22.16	27.84
		1745.1	1	99	1764.9	1	0	23.90	27.28
			100	0		100	0	22.04	27.47
		1750.2	1	99	1770	1	0	23.95	28.09
			100	0		100	0	22.01	27.39
	16QAM	1720	1	99	1739.8	1	0	22.94	26.84
			100	0		100	0	21.19	27.63
		1745.1	1	99	1764.9	1	0	22.93	28.03
			100	0		100	0	21.11	27.35
		1750.2	1	99	1770	1	0	22.95	27.23
			100	0		100	0	21.04	27.51

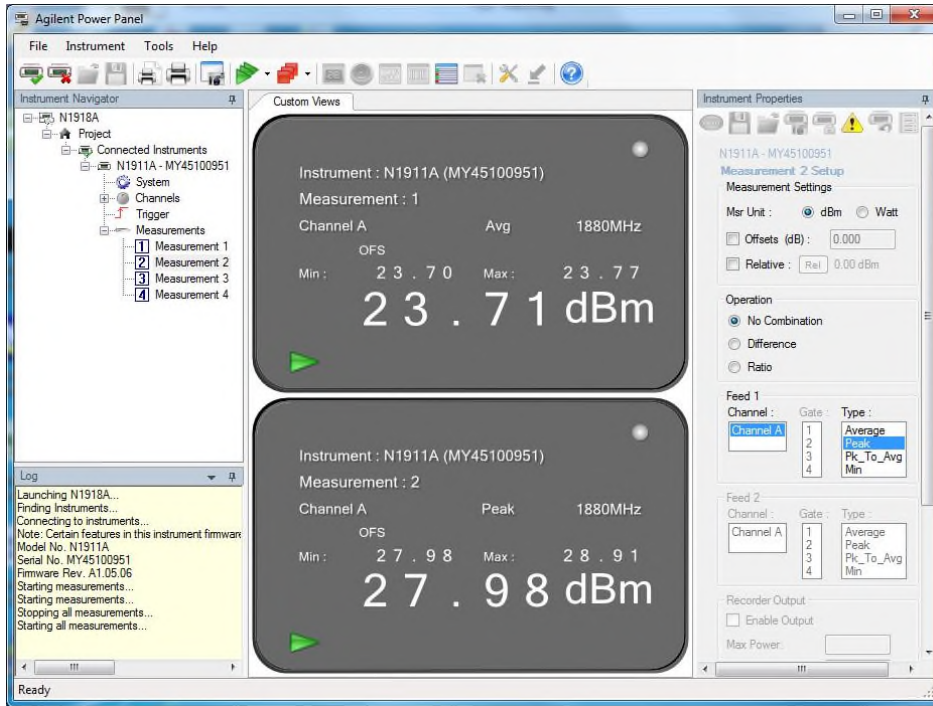
2.1.9 Sample Test Measurement Screen



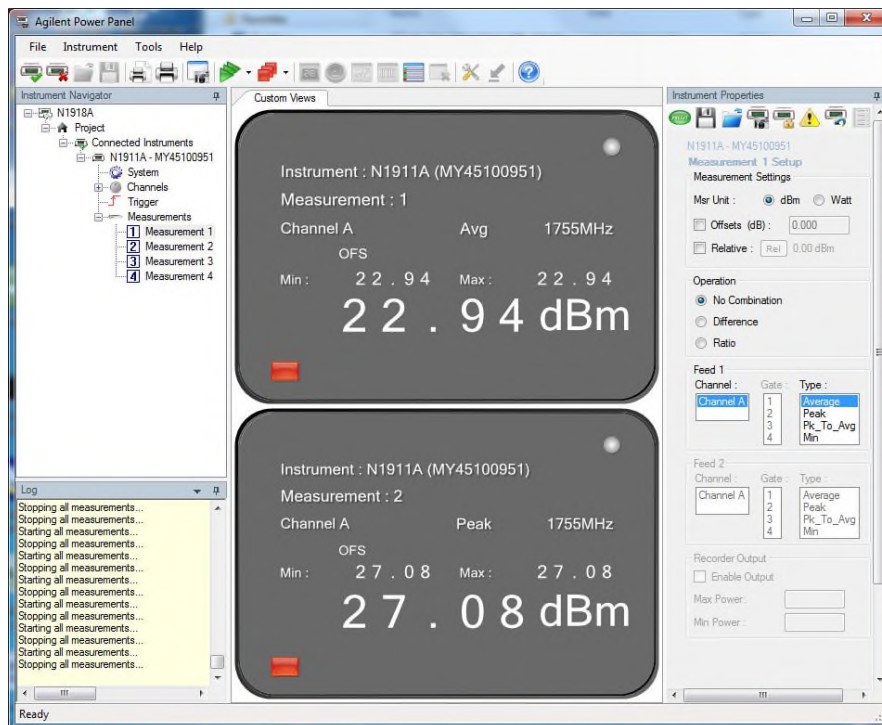
CA_2A-13A_10+10 MHz Bandwidth_1880 MHz 1-49 RB & 782 MHz 1-0 RB_QPSK



CA_4A-13A_10+10 MHz Bandwidth_1732.5 MHz 1-49 RB & 782 MHz 1-0 RB_QPSK



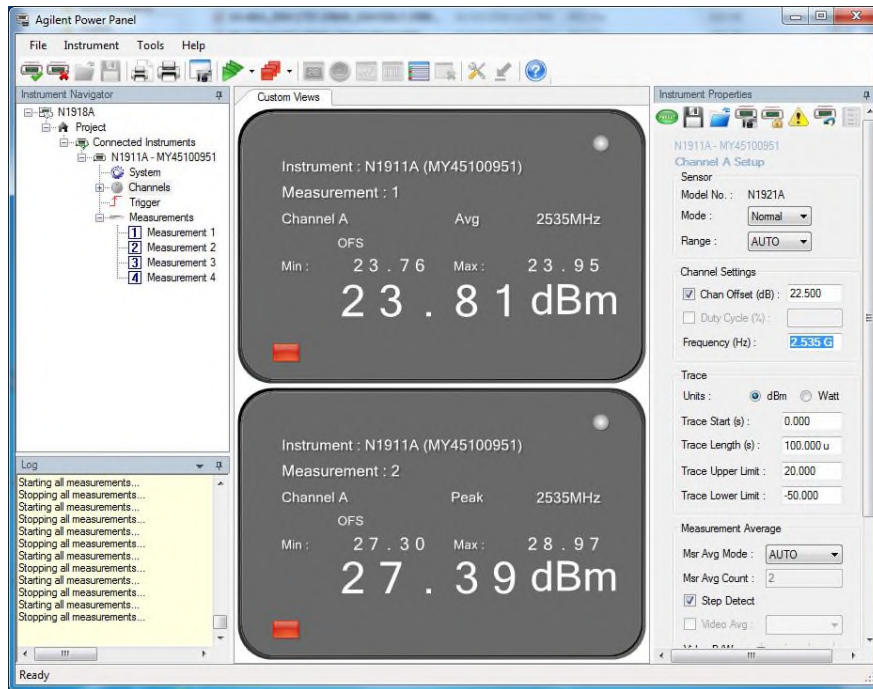
CA_2A-12A_10+10 MHz Bandwidth_1880 MHz Full RB & 704 MHz Full RB_QPSK



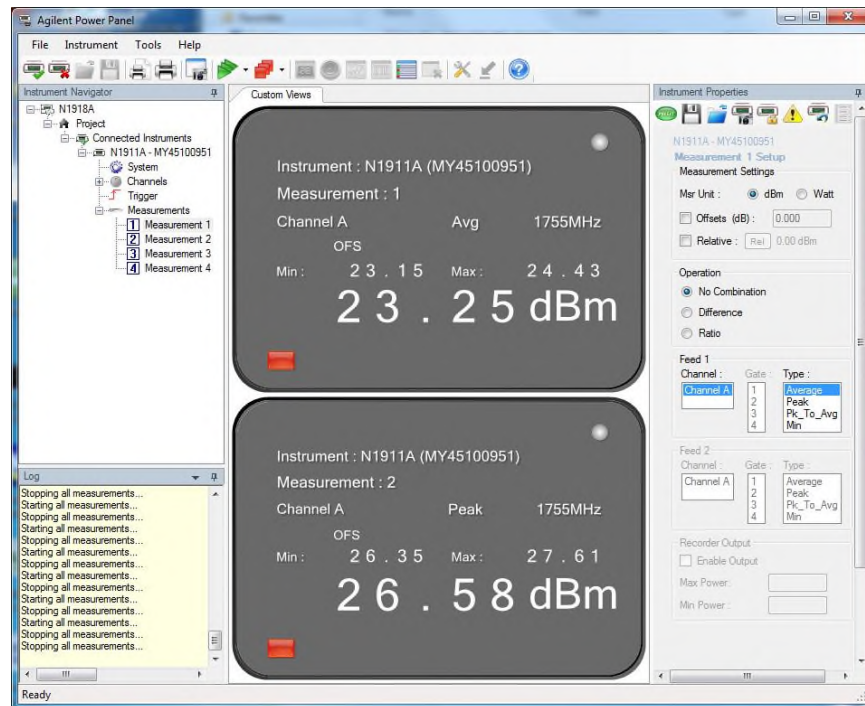
CA_4A_5A_10+10 MHz Bandwidth_1732.5 MHz Full RB & 829 MHz Full RB_QPSK

FCC ID PKRISGMIFI8000
IC: 3229A-MIFI8000
Report No. 72152860C

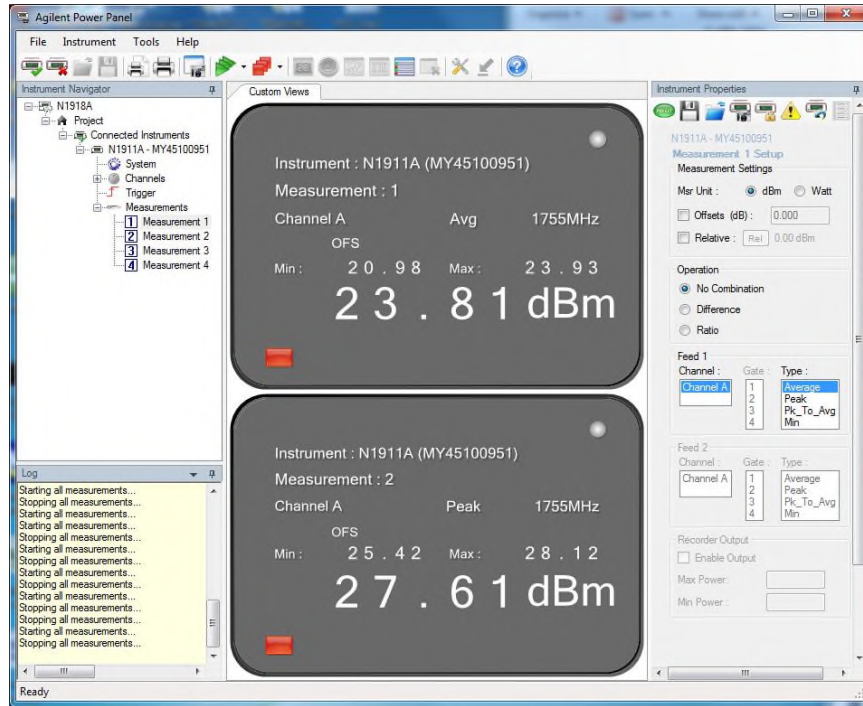




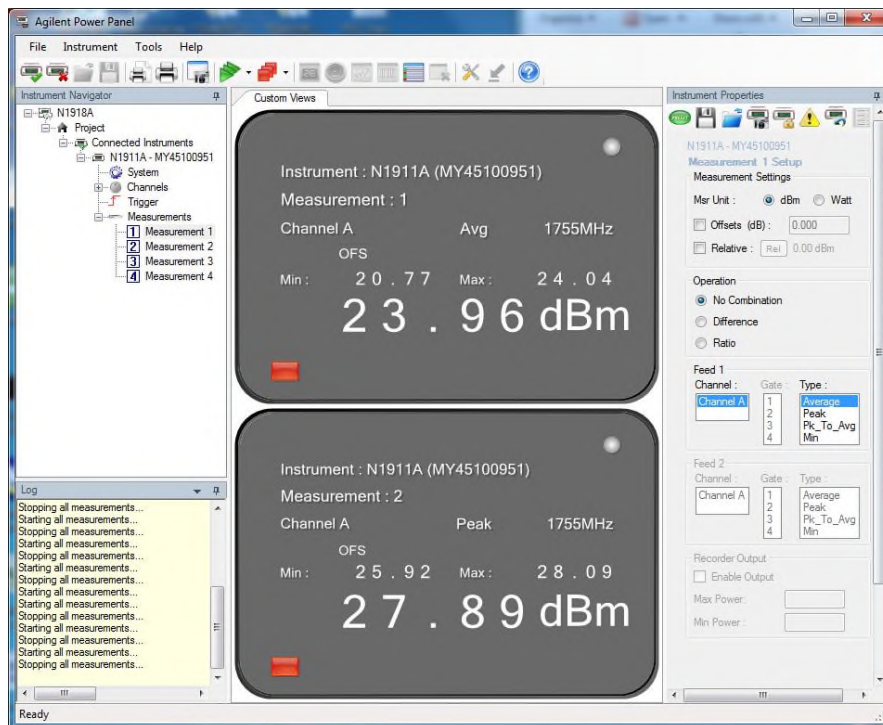
CA_4A_7A_10+10 MHz Bandwidth_1732.5 MHz 1-49 RB & 2535 MHz 1-0 RB & _QPSK



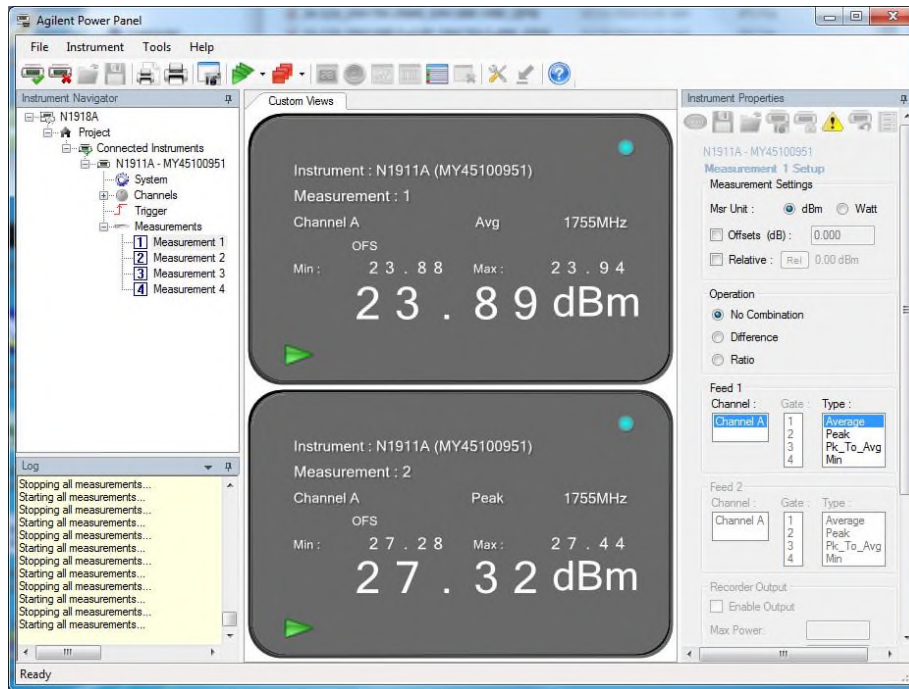
CA_4A_12A_10+10 MHz Bandwidth_1732.5 MHz 1-49 RB & 711 MHz 1-0 RB & _QPSK



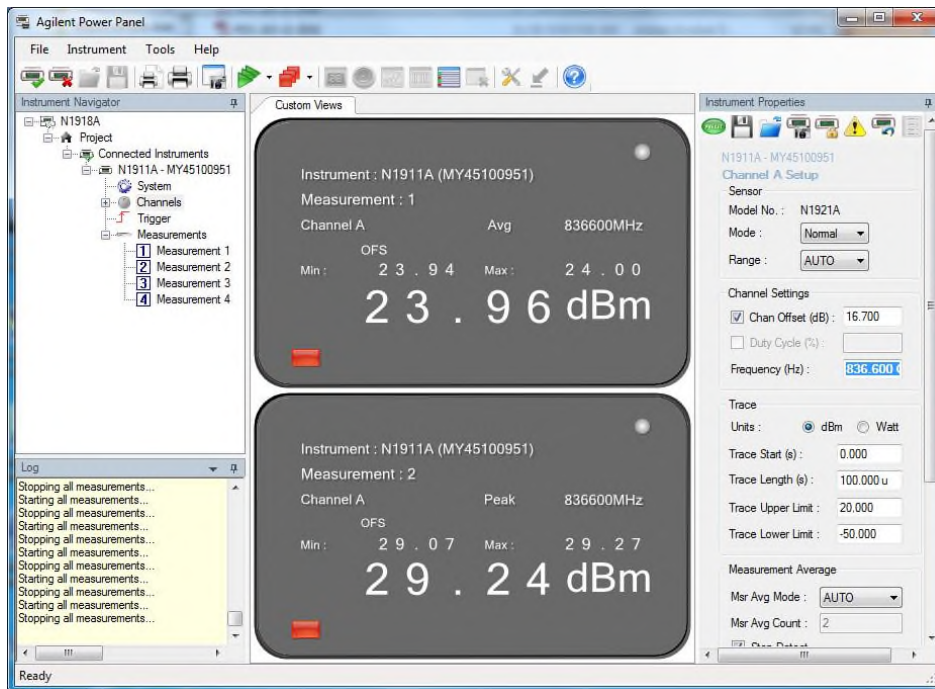
CA_5A_66A_10+20 MHz Bandwidth_1755 MHz Full RB & 836.5 MHz Full RB & _QPSK



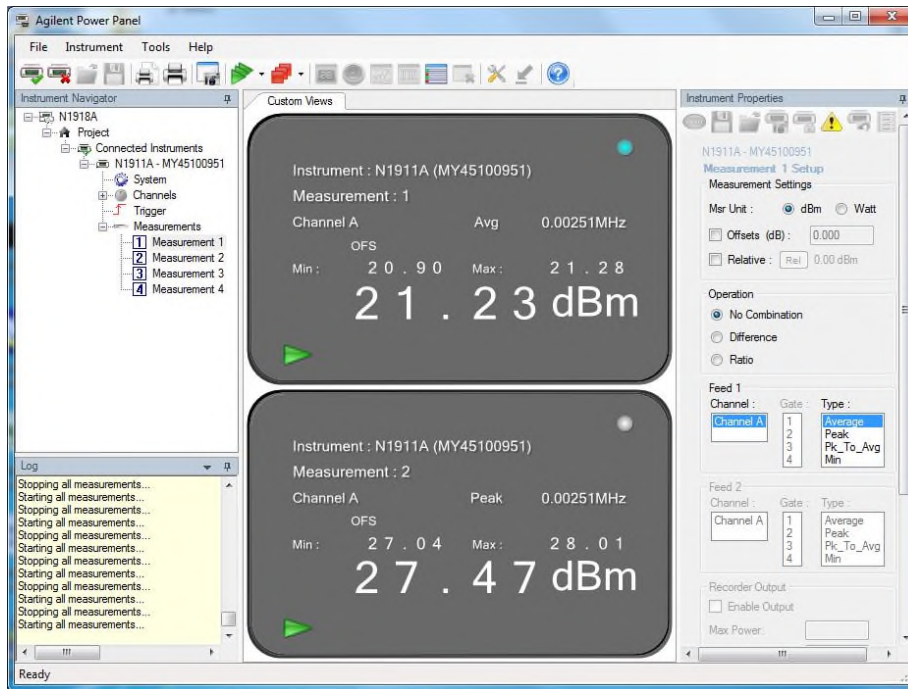
CA_12A_66A_10+20 MHz Bandwidth_1755 MHz Full RB & 704 MHz Full RB & _QPSK



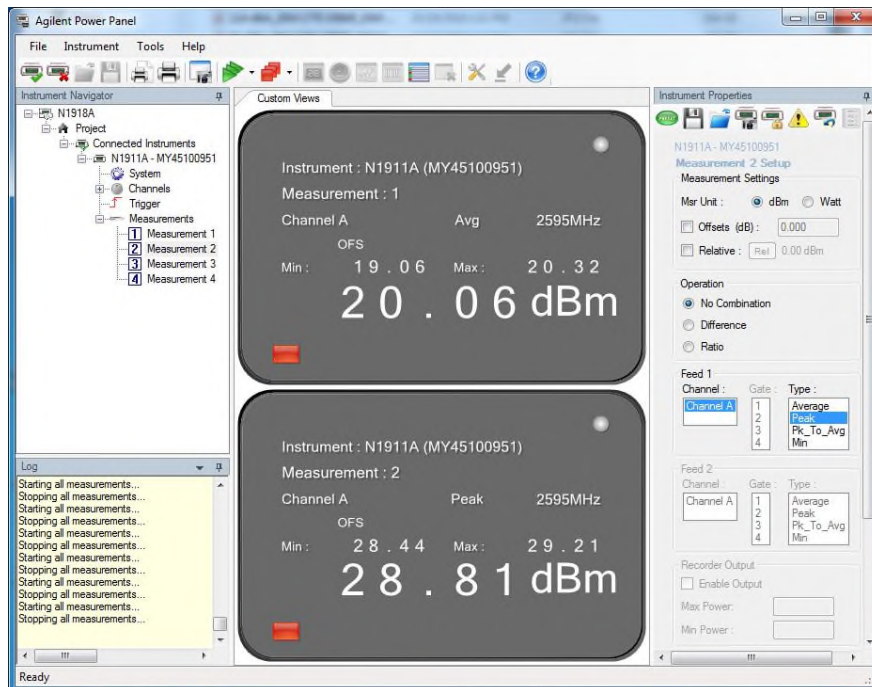
CA_13A_66A_10+20 MHz Bandwidth_782 MHz 1-49 RB & 1770 MHz 1-0 RB & _QPSK



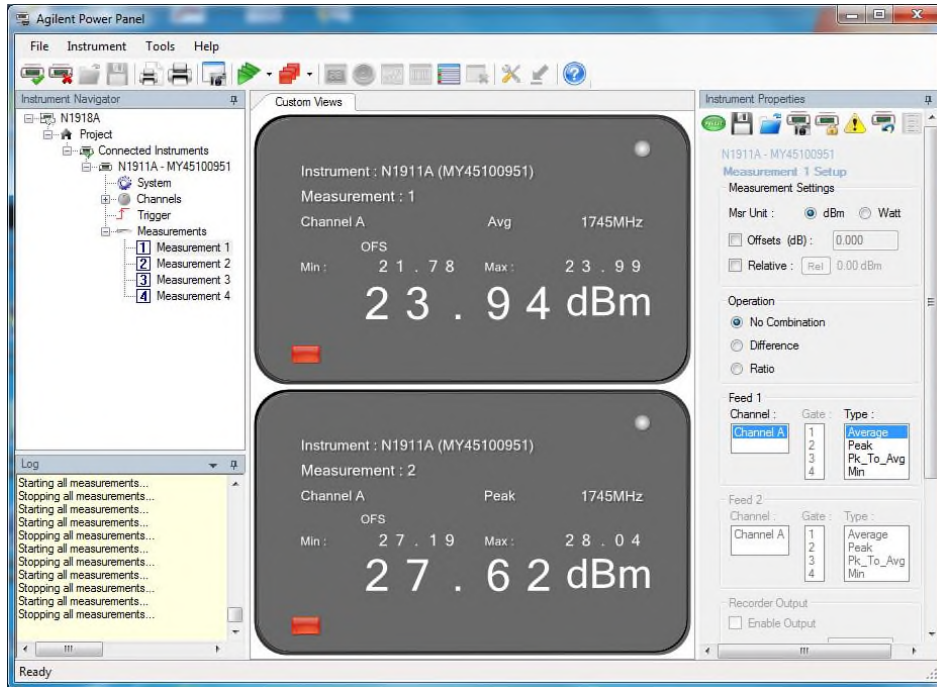
CA_5B_10+10 MHz Bandwidth_829 MHz 1-49 RB & 838.9 MHz 1-0 RB & _QPSK



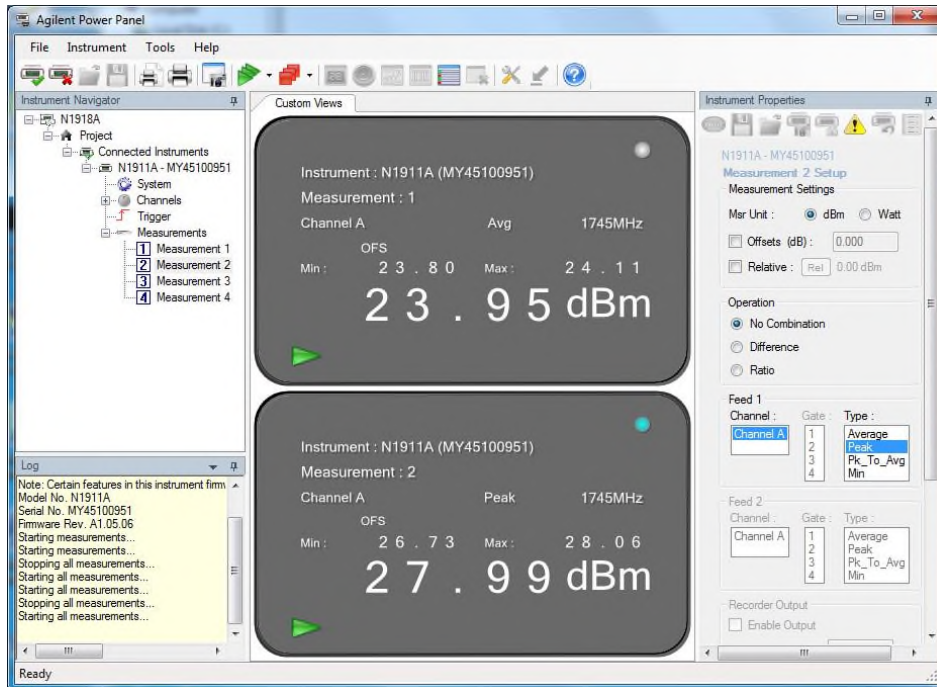
CA_7C_20+10 MHz Bandwidth_2510 MHz 1-99 RB & 2524.4 MHz 1-0 RB & _QPSK



CA_38C_15+15 MHz Bandwidth_2577.5 MHz 1-74 RB & 2592.5 MHz 1-0 RB & _QPSK



CA_66B_10+10 MHz Bandwidth_1765.1 MHz 1-49 RB & 1775 MHz 1-0 RB & _QPSK



CA_66C_20+20 MHz Bandwidth_1720 MHz 1-99 RB & 1739.8 MHz 1-0 RB & _QPSK



2.2 EFFECTIVE ISOTROPIC RADIATED POWER AND EFFECTIVE RADIATED POWER

2.2.1 Specification Reference

FCC 47 CFR Part 2, Clause 2.1046
FCC 47 CFR Part 22, Clause 22.913(a)(5)
FCC 47 CFR Part 24, Clause 24.232(c)
FCC 47 CFR Part 27, Clause 27.50(b)(10)
FCC 47 CFR Part 27, Clause 27.50(c)(10)
FCC 47 CFR Part 27, Clause 27.50(h)(2)
RSS-132, Clause 1.4
RSS-133, Clause 6.4
RSS-139, Clause 6.5
RSS-130, Clause 4.6
RSS-199, Clause 4.4

2.2.2 Standard Applicable

FCC Part 22.913 (a)(5):

The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 watts.

RSS-132, Clause 5.4:

The transmitter output power shall be measured in terms of average power. The equivalent Isotropically radiated power (e.i.r.p.) for mobile equipment shall not exceed 11.5 watts.

FCC Part 24.232:

(c) Mobile and portable stations are limited to 2 watts EIRP and the equipment must employ a means for limiting power to the minimum necessary for successful communications.

RSS-133, Clause 6.4:

The equivalent isotropically radiated power (e.i.r.p.) for Mobile stations and hand-held portables are limited to 2 watts maximum e.i.r.p.

FCC Part 27.50 (b)(10):

Portable stations (hand-held devices) transmitting in the 746–757 MHz, 776–788 MHz, and 805–806 MHz bands are limited to 3 watts ERP.

FCC Part 27.50(c)(10):

Portable stations (hand-held devices) in the 600 MHz uplink band and the 698–746 MHz band, and fixed and mobile stations in the 600 MHz uplink band are limited to 3 watts ERP.

RSS-130, Clause 4.6:

Frequency bands 617-652 MHz and 663-698 MHz: The e.r.p. shall not exceed 3 watts for mobile equipment, fixed subscriber equipment and portable equipment.

Frequency bands 698-756 MHz and 777-787 MHz: The e.r.p. shall not exceed 3 watts for portable equipment and indoor fixed subscriber equipment.

FCC Part 27.50(h):

(2) Mobile and other user stations: Mobile stations are limited to 2 watts EIRP. All user stations are limited to 2.0 watts transmitter output power.

RSS-139, Clause 6.5:



The equivalent isotropically radiated power (e.i.r.p.) for Mobile and portable transmitters shall not exceed one watt.

RSS-199, Clause 4.4:

For mobile subscriber equipment, the e.i.r.p. shall not exceed 2 W.

2.2.3 Equipment Under Test and Modification State

Serial No: FJ220819C00006, AZ280418A00044 / Test Configuration (N/A, calculation only)

2.2.4 Date of Test/Initial of test personnel who performed the test

July 02, 2018 and October 18 to 21, 2019 / XYZ

2.2.5 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.



2.2.6 Additional Observations

- EIRP was calculated as per Section 1.2 and 1.3 of KDB412172 D01 (Determining ERP and EIRP v01r01).
- Calculation formula in logarithmic terms:

ERP or EIRP = P_T + G_T - L_c

Where:

P_T = transmitter conducted output power dBm (Section 2.1 of this test report)

G_T = gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP); G_T (dBd) = G_T (dBi) – 2.15 dB.

L_c = signal attenuation in the connecting cable between the transmitter and antenna, in dB (EUT poses an internal Antenna. The loss between the EUT and the antenna port is considered negligible).

2.2.7 Test Results

CA_2A-13A												
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Antenna Gain (dBm)	EIRP (dBm)	Limit (dBm)	Margin (dB)
10+10	QPSK	1880	1	49	782	1	0	22.79	0.5	23.29	33	9.71
			50	0		50	0	23.66	0.5	24.16	33	8.84
	16QAM		1	49		1	0	23.12	0.5	23.62	33	9.38
			50	0		50	0	23.79	0.5	24.29	33	8.71
10+10	QPSK	782	1	49	1880	1	0	23.3	0.5	23.8	33	9.2
			50	0		50	0	23.47	0.5	23.97	33	9.03
	16QAM		1	49		1	0	23.85	0.5	24.35	33	8.65
			50	0		50	0	23.42	0.5	23.92	33	9.08

CA_2A-13A												
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Antenna Gain (dBm)	EIRP (dBm)	Limit (dBm)	Margin (dB)
10+10	QPSK	1905	1	49	782	1	0	22.18	0.5	22.68	33	10.32
			50	0		50	0	23.36	0.5	23.86	33	9.14
	16QAM		1	49		1	0	22.6	0.5	23.1	33	9.9
			50	0		50	0	23.53	0.5	24.03	33	8.97
10+10	QPSK	782	1	49	1905	1	0	22.96	0.5	23.46	33	9.54
			50	0		50	0	23.2	0.5	23.7	33	9.3
	16QAM		1	49		1	0	23.36	0.5	23.86	33	9.14
			50	0		50	0	23.23	0.5	23.73	33	9.27



CA_4A-13A												
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Antenna Gain (dBm)	EIRP (dBm)	Limit (dBm)	Margin (dB)
10+10	QPSK	1732.5	1	49	782	1	0	22.99	0.0	22.99	30	7.01
			50	0		50	0	23.46	0.0	23.46	30	6.54
	16QAM		1	49		1	0	23.13	0.0	23.13	30	6.87
			50	0		50	0	23.58	0.0	23.58	30	6.42
10+10	QPSK	782	1	49	1732.5	1	0	23.76	0.0	23.76	30	6.24
			50	0		50	0	23.36	0.0	23.36	30	6.64
	16QAM		1	49		1	0	23.82	0.0	23.82	30	6.18
			50	0		50	0	23.36	0.0	23.36	30	6.64

CA_4A-13A												
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Antenna Gain (dBm)	EIRP (dBm)	Limit (dBm)	Margin (dB)
10+10	QPSK	1750	1	49	782	1	0	23.55	0.0	23.55	30	6.45
			50	0		50	0	23.25	0.0	23.25	30	6.75
	16QAM		1	49		1	0	23.65	0.0	23.65	30	6.35
			50	0		50	0	23.39	0.0	23.39	30	6.61
10+10	QPSK	782	1	49	1750	1	0	23.64	0.0	23.64	30	6.36
			50	0		50	0	23.29	0.0	23.29	30	6.71
	16QAM		1	49		1	0	23.72	0.0	23.72	30	6.28
			50	0		50	0	23.25	0.0	23.25	30	6.75



CA_13A-66A												
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Antenna Gain (dBm)	EIRP (dBm)	Limit (dBm)	Margin (dB)
10+20	QPSK	782	1	49	1755	1	0	22.65	0.0	22.65	30	7.35
			50	0		100	0	22.86	0.0	22.86	30	7.14
	16QAM		1	49		1	0	23.27	0.0	23.27	30	6.73
			50	0		100	0	22.91	0.0	22.91	30	7.09
10+20	QPSK	1755	1	0	782	1	0	21.75	0.0	21.75	30	8.25
			100	0		50	0	23.04	0.0	23.04	30	6.96
	16QAM		1	0		1	0	22.33	0.0	22.33	30	7.67
			100	0		50	0	23.26	0.0	23.26	30	6.74

CA_13A-66A												
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Antenna Gain (dBm)	EIRP (dBm)	Limit (dBm)	Margin (dB)
10+20	QPSK	782	1	49	1770	1	0	22.64	0.0	22.64	30	7.36
			50	0		100	0	22.61	0.0	22.61	30	7.39
	16QAM		1	49		1	0	23.23	0.0	23.23	30	6.77
			50	0		100	0	22.66	0.0	22.66	30	7.34
10+20	QPSK	1770	1	99	782	1	0	21.67	0.0	21.67	30	8.33
			100	0		50	0	23.0	0.0	23.0	30	7
	16QAM		1	99		1	0	22.29	0.0	22.29	30	7.71
			100	0		50	0	23.32	0.0	23.32	30	6.68



CA_2A-5A												
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Antenna Gain (dBm)	EIRP (dBm)	Limit (dBm)	Margin (dB)
10+10	QPSK	1880	1	49	829	1	0	23.78	0.5	24.28	33	8.72
			50	0		50	0	22.78	0.5	23.28	33	9.72
	16QAM		1	49		1	0	22.98	0.5	23.48	33	9.52
			50	0		50	0	21.80	0.5	22.30	33	10.7
10+10	QPSK	829	1	49	1880	1	0	24.0	0.5	24.50	33	8.50
			50	0		50	0	22.43	0.5	22.93	33	10.07
	16QAM		1	49		1	0	23.15	0.5	23.65	33	9.35
			50	0		50	0	21.98	0.5	22.48	33	10.52

CA_2A-5A												
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Antenna Gain (dBm)	EIRP (dBm)	Limit (dBm)	Margin (dB)
10+10	QPSK	1905	1	49	844	1	0	23.68	0.5	24.18	33	8.82
			50	0		50	0	23.28	0.5	23.78	33	9.22
	16QAM		1	49		1	0	22.97	0.5	23.47	33	9.53
			50	0		50	0	21.53	0.5	22.03	33	10.97
10+10	QPSK	844	1	49	1905	1	0	23.96	0.5	24.46	33	8.54
			50	0		50	0	22.31	0.5	22.81	33	10.19
	16QAM		1	49		1	0	22.94	0.5	23.44	33	9.56
			50	0		50	0	21.95	0.5	22.45	33	10.55



CA_2A-12A												
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Antenna Gain (dBm)	EIRP (dBm)	Limit (dBm)	Margin (dB)
10+10	QPSK	1880	1	49	704	1	0	22.46	0.5	22.96	33	10.04
			50	0		50	0	23.71	0.5	24.21	33	8.79
	16QAM		1	49		1	0	22.75	0.5	23.25	33	9.75
			50	0		50	0	23.96	0.5	24.46	33	8.54
10+10	QPSK	704	1	49	1880	1	0	23.99	0.5	24.49	33	8.51
			50	0		50	0	23.98	0.5	24.48	33	8.52
	16QAM		1	49		1	0	23.93	0.5	24.43	33	8.57
			50	0		50	0	23.82	0.5	24.32	33	8.68

CA_2A-12A												
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Antenna Gain (dBm)	EIRP (dBm)	Limit (dBm)	Margin (dB)
10+10	QPSK	1905	1	49	704	1	0	22.79	0.5	23.29	33	9.71
			50	0		50	0	22.64	0.5	23.14	33	9.86
	16QAM		1	49		1	0	22.91	0.5	23.41	33	9.59
			50	0		50	0	23.05	0.5	23.55	33	9.45
10+10	QPSK	704	1	49	1905	1	0	23.51	0.5	24.01	33	8.99
			50	0		50	0	23.99	0.5	24.49	33	8.51
	16QAM		1	49		1	0	23.69	0.5	24.19	33	8.81
			50	0		50	0	23.66	0.5	24.16	33	8.84



CA_4A-5A												
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Antenna Gain (dBm)	EIRP (dBm)	Limit (dBm)	Margin (dB)
10+10	QPSK	1732.5	1	49	829	1	0	22.30	0	22.30	30	7.7
			50	0		50	0	22.94	0	22.94	30	7.06
	16QAM		1	49		1	0	22.81	0	22.81	30	7.19
			50	0		50	0	23.34	0	23.34	30	6.66
10+10	QPSK	829	1	49	1732.5	1	0	23.59	0	23.59	30	6.41
			50	0		50	0	23.91	0	23.91	30	6.09
	16QAM		1	49		1	0	23.96	0	23.96	30	6.04
			50	0		50	0	23.93	0	23.93	30	6.07

CA_4A-5A												
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Antenna Gain (dBm)	EIRP (dBm)	Limit (dBm)	Margin (dB)
10+10	QPSK	1750	1	49	844	1	0	23.03	0	23.03	30	6.97
			50	0		50	0	23.08	0	23.08	30	6.92
	16QAM		1	49		1	0	23.99	0	23.99	30	6.01
			50	0		50	0	23.53	0	23.53	30	6.47
10+10	QPSK	844	1	49	1750	1	0	22.93	0	22.93	30	7.07
			50	0		50	0	23.60	0	23.60	30	6.40
	16QAM		1	49		1	0	23.47	0	23.47	30	6.53
			50	0		50	0	22.84	0	22.84	30	7.16



CA_4A-7A												
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Antenna Gain (dBm)	EIRP (dBm)	Limit (dBm)	Margin (dB)
10+10	QPSK	1732.5	1	49	2535	1	0	23.81	2.3	26.11	30	3.89
			50	0		50	0	23.75	2.3	26.05	30	3.95
	16QAM		1	49		1	0	23.93	2.3	26.23	30	3.77
			50	0		50	0	23.96	2.3	26.26	30	3.74
10+10	QPSK	2535	1	49	1732.5	1	0	23.27	2.3	25.57	30	4.43
			50	0		50	0	23.54	2.3	25.84	30	4.16
	16QAM		1	49		1	0	22.85	2.3	25.15	30	4.85
			50	0		50	0	23.74	2.3	26.04	30	3.96

CA_4A-7A												
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Antenna Gain (dBm)	EIRP (dBm)	Limit (dBm)	Margin (dB)
10+10	QPSK	1750	1	49	2565	1	0	23.98	2.3	26.28	30	3.72
			50	0		50	0	22.16	2.3	24.46	30	5.54
	16QAM		1	49		1	0	23.30	2.3	25.6	30	4.40
			50	0		50	0	23.11	2.3	25.41	30	4.59
10+10	QPSK	2565	1	49	1750	1	0	22.96	2.3	25.26	30	4.74
			50	0		50	0	23.59	2.3	25.89	30	4.11
	16QAM		1	49		1	0	22.77	2.3	25.07	30	4.93
			50	0		50	0	23.64	2.3	25.94	30	4.06



CA_4A-12A												
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Antenna Gain (dBm)	EIRP (dBm)	Limit (dBm)	Margin (dB)
10+10	QPSK	1732.5	1	49	711	1	0	23.25	0	23.25	30	6.75
			50	0		50	0	23.79	0	23.79	30	6.21
	16QAM		1	49		1	0	23.98	0	23.98	30	6.02
			50	0		50	0	23.68	0	23.68	30	6.32
10+10	QPSK	711	1	49	1732.5	1	0	22.24	0	22.24	30	7.76
			50	0		50	0	22.99	0	22.99	30	7.01
	16QAM		1	49		1	0	22.67	0	22.67	30	7.33
			50	0		50	0	23.24	0	23.24	30	6.76

CA_4A-12A												
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Antenna Gain (dBm)	EIRP (dBm)	Limit (dBm)	Margin (dB)
10+10	QPSK	1750	1	49	711	1	0	23.34	0	23.34	30	6.66
			50	0		50	0	22.09	0	22.09	30	7.91
	16QAM		1	49		1	0	23.35	0	23.35	30	6.65
			50	0		50	0	22.92	0	22.92	30	7.08
10+10	QPSK	711	1	49	1750	1	0	23.13	0	23.13	30	6.87
			50	0		50	0	23.74	0	23.74	30	6.26
	16QAM		1	49		1	0	23.60	0	23.60	30	6.40
			50	0		50	0	23.70	0	23.70	30	6.30



CA_5A-66A												
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Antenna Gain (dBm)	EIRP (dBm)	Limit (dBm)	Margin (dB)
10+20	QPSK	836.5	1	49	1755	1	0	23.26	0	23.26	30	6.74
			50	0		100	0	23.91	0	23.91	30	6.09
	16QAM		1	49		1	0	23.98	0	23.98	30	6.02
			50	0		100	0	23.78	0	23.78	30	6.22
10+20	QPSK	1755	1	99	836.5	1	0	23.31	0	23.31	30	6.69
			100	0		50	0	23.81	0	23.81	30	6.19
	16QAM		1	99		1	0	22.40	0	22.40	30	7.60
			100	0		50	0	23.89	0	23.89	30	6.11

CA_5A-66A												
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Antenna Gain (dBm)	EIRP (dBm)	Limit (dBm)	Margin (dB)
10+20	QPSK	844	1	49	1770	1	0	22.25	0	22.25	30	7.75
			50	0		100	0	23.82	0	23.82	30	6.18
	16QAM		1	49		1	0	22.78	0	22.78	30	7.22
			50	0		100	0	23.82	0	23.82	30	6.18
10+20	QPSK	1770	1	99	844	1	0	22.16	0	22.16	30	7.84
			100	0		50	0	23.57	0	23.57	30	6.43
	16QAM		1	99		1	0	22.48	0	22.48	30	7.52
			100	0		50	0	23.68	0	23.68	30	6.32



CA_12A-66A												
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Antenna Gain (dBm)	EIRP (dBm)	Limit (dBm)	Margin (dB)
10+20	QPSK	704	1	49	1755	1	0	23.93	0	23.93	30	6.07
			50	0		100	0	23.77	0	23.77	30	6.23
	1		49	1		0	23.98	0	23.98	30	6.02	
	50		0	100		0	23.63	0	23.63	30	6.37	
10+20	QPSK	1755	1	99	704	1	0	23.99	0	23.99	30	6.01
			100	0		50	0	23.96	0	23.96	30	6.04
	1		99	1		0	23.94	0	23.94	30	6.06	
	100		0	50		0	23.87	0	23.87	30	6.13	

CA_12A-66A												
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Antenna Gain (dBm)	EIRP (dBm)	Limit (dBm)	Margin (dB)
10+20	QPSK	704	1	49	1770	1	0	23.96	0	23.96	30	6.04
			50	0		100	0	23.88	0	23.88	30	6.12
	1		49	1		0	23.98	0	23.98	30	6.02	
	50		0	100		0	23.67	0	23.67	30	6.33	
10+20	QPSK	1770	1	99	704	1	0	23.96	0	23.96	30	6.04
			100	0		50	0	23.85	0	23.85	30	6.15
	1		99	1		0	23.95	0	23.95	30	6.05	
	100		0	50		0	23.95	0	23.95	30	6.05	



CA_5B												
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Antenna Gain (dBm)	ERP (dBm)	Limit (dBm)	Margin (dB)
25+50	QPSK	826.8	1	24	834	1	0	23.99	-0.5	21.34	38.45	17.11
			25	0		50	0	22.16	-0.5	19.51	38.45	18.94
		831.8	1	24	839	1	0	23.98	-0.5	21.33	38.45	17.12
			25	0		50	0	22.11	-0.5	19.46	38.45	18.99
		836.8	1	24	844	1	0	24.0	-0.5	21.35	38.45	17.1
			25	0		50	0	22.12	-0.5	19.47	38.45	18.98
	16QAM	826.8	1	24	834	1	0	23.10	-0.5	20.45	38.45	18.0
			25	0		50	0	21.28	-0.5	18.63	38.45	19.82
		831.8	1	24	839	1	0	23.15	-0.5	20.50	38.45	17.95
			25	0		50	0	21.25	-0.5	18.60	38.45	19.85
		836.8	1	24	844	1	0	23.28	-0.5	20.63	38.45	17.82
			25	0		50	0	21.17	-0.5	18.52	38.45	19.93
50+25	QPSK	829	1	49	836.2	1	0	23.93	-0.5	21.28	38.45	17.17
			50	0		25	0	22.06	-0.5	19.41	38.45	19.04
		834	1	49	841.2	1	0	23.98	-0.5	21.33	38.45	17.12
			50	0		25	0	22.07	-0.5	19.42	38.45	19.03
		839	1	49	846.2	1	0	23.90	-0.5	21.25	38.45	17.20
			50	0		25	0	22.85	-0.5	20.20	38.45	18.25
	16QAM	829	1	49	836.2	1	0	23.15	-0.5	20.50	38.45	17.95
			50	0		25	0	21.15	-0.5	18.50	38.45	19.95
		834	1	49	841.2	1	0	23.05	-0.5	20.40	38.45	18.05
			50	0		25	0	21.11	-0.5	18.46	38.45	19.99
		839	1	49	846.2	1	0	22.99	-0.5	20.34	38.45	18.11
			50	0		25	0	21.89	-0.5	19.24	38.45	19.21



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CA_5B												
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Antenna Gain (dBm)	ERP (dBm)	Limit (dBm)	Margin (dB)
50+50	QPSK	829	1	49	838.9	1	0	23.96	-0.5	21.31	38.45	17.14
			50	0		50	0	22.36	-0.5	19.71	38.45	18.74
		831.6	1	49	841.5	1	0	23.95	-0.5	21.30	38.45	17.15
			50	0		50	0	22.25	-0.5	19.60	38.45	18.85
		834.1	1	49	844	1	0	23.99	-0.5	21.34	38.45	17.11
			50	0		50	0	22.26	-0.5	19.61	38.45	18.84
	16QAM	829	1	49	838.9	1	0	23.19	-0.5	20.54	38.45	17.91
			50	0		50	0	21.42	-0.5	18.77	38.45	19.68
		831.6	1	49	841.5	1	0	23.07	-0.5	20.42	38.45	18.03
			50	0		50	0	21.33	-0.5	18.68	38.45	19.77
		834.1	1	49	844	1	0	23.07	-0.5	20.42	38.45	18.03
			50	0		50	0	21.37	-0.5	18.72	38.45	19.73



CA_7C												
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Antenna Gain (dBm)	EIRP (dBm)	Limit (dBm)	Margin (dB)
50+100	QPSK	2505.5	1	49	2519.9	1	0	23.11	2.3	25.41	33	7.59
			50	0		100	0	21.44	2.3	23.74	33	9.26
		2525.6	1	49	2540	1	0	22.83	2.3	25.13	33	7.87
			50	0		100	0	20.97	2.3	23.27	33	9.73
		2545.6	1	49	2560	1	0	23.23	2.3	25.53	33	7.47
			50	0		100	0	21.09	2.3	23.39	33	9.61
	16QAM	2505.5	1	49	2519.9	1	0	22.27	2.3	24.57	33	8.43
			50	0		100	0	20.45	2.3	22.75	33	10.25
		2525.6	1	49	2540	1	0	22.16	2.3	24.46	33	8.54
			50	0		100	0	20.03	2.3	22.33	33	10.67
		2545.6	1	49	2560	1	0	22.57	2.3	24.87	33	8.13
			50	0		100	0	20.09	2.3	22.39	33	10.61
100+50	QPSK	2510	1	99	2524.4	1	0	23.40	2.3	25.70	33	7.30
			100	0		50	0	21.23	2.3	23.53	33	9.47
		2530.1	1	99	2544.5	1	0	23.83	2.3	26.13	33	6.87
			100	0		50	0	21.75	2.3	24.05	33	8.95
		2550.1	1	99	2564.5	1	0	23.91	2.3	26.21	33	6.79
			100	0		50	0	21.92	2.3	24.22	33	8.78
	16QAM	2510	1	99	2524.4	1	0	22.83	2.3	25.13	33	7.87
			100	0		50	0	20.36	2.3	22.66	33	10.34
		2530.1	1	99	2544.5	1	0	23.04	2.3	25.34	33	7.66
			100	0		50	0	20.69	2.3	22.99	33	10.01
		2550.1	1	99	2564.5	1	0	23.26	2.3	25.56	33	7.44
			100	0		50	0	21.01	2.3	23.31	33	9.69



CA_7C												
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Antenna Gain (dBm)	EIRP (dBm)	Limit (dBm)	Margin (dB)
75+50	QPSK	2507.5	1	74	2519.5	1	0	22.40	2.3	24.70	33	8.30
			75	0		50	0	20.68	2.3	22.98	33	10.02
		2530.1	1	74	2542.1	1	0	22.91	2.3	25.21	33	7.79
			75	0		50	0	21.03	2.3	23.33	33	9.67
		2552.7	1	74	2564.7	1	0	22.97	2.3	25.27	33	7.73
			75	0		50	0	21.29	2.3	23.59	33	9.41
	16QAM	2507.5	1	74	2519.5	1	0	21.78	2.3	24.08	33	8.92
			75	0		50	0	20.12	2.3	22.42	33	10.58
		2530.1	1	74	2542.1	1	0	22.09	2.3	24.39	33	8.61
			75	0		50	0	20.10	2.3	22.40	33	10.60
		2552.7	1	74	2564.7	1	0	22.40	2.3	24.70	33	8.30
			75	0		50	0	20.40	2.3	22.70	33	10.30

CA_7C												
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Antenna Gain (dBm)	EIRP (dBm)	Limit (dBm)	Margin (dB)
75+75	QPSK	2507.5	1	74	2522.5	1	0	22.29	2.3	24.59	33	8.41
			75	0		75	0	20.64	2.3	22.94	33	10.06
		2527.5	1	74	2542.5	1	0	22.92	2.3	25.22	33	7.78
			75	0		75	0	21.08	2.3	23.38	33	9.62
		2547.5	1	74	2562.5	1	0	23.11	2.3	25.41	33	7.59
			75	0		75	0	20.82	2.3	23.12	33	9.88
	16QAM	2507.5	1	74	2522.5	1	0	21.47	2.3	23.77	33	9.23
			75	0		75	0	20.69	2.3	22.99	33	10.01
		2527.5	1	74	2542.5	1	0	22.15	2.3	24.45	33	8.55
			75	0		75	0	20.11	2.3	22.41	33	10.59
		2547.5	1	74	2562.5	1	0	22.41	2.3	24.71	33	8.29
			75	0		75	0	20.01	2.3	22.31	33	10.69



CA_7C												
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Antenna Gain (dBm)	EIRP (dBm)	Limit (dBm)	Margin (dB)
75+100	QPSK	2507.8	1	74	2524.9	1	0	22.50	2.3	24.80	33	8.20
			75	0		100	0	20.46	2.3	22.76	33	10.24
		2525.3	1	74	2542.4	1	0	22.90	2.3	25.20	33	7.80
			75	0		100	0	20.96	2.3	23.26	33	9.74
		2542.9	1	74	2560	1	0	23.37	2.3	25.67	33	7.33
			75	0		100	0	20.84	2.3	23.14	33	9.86
	16QAM	2507.8	1	74	2524.9	1	0	21.90	2.3	24.20	33	8.80
			75	0		100	0	20.17	2.3	22.47	33	10.53
		2525.3	1	74	2542.4	1	0	21.91	2.3	24.21	33	8.79
			75	0		100	0	19.02	2.3	21.32	33	11.68
		2542.9	1	74	2560	1	0	22.74	2.3	25.04	33	7.96
			75	0		100	0	20.31	2.3	22.61	33	10.39
100+75	QPSK	2510	1	99	2527.1	1	0	22.50	2.3	24.80	33	8.20
			100	0		75	0	20.94	2.3	23.24	33	9.76
		2527.6	1	99	2544.7	1	0	22.86	2.3	25.16	33	7.84
			100	0		75	0	20.93	2.3	23.23	33	9.77
		2545.1	1	99	2562.2	1	0	23.12	2.3	25.42	33	7.58
			100	0		75	0	21.11	2.3	23.41	33	9.59
	16QAM	2510	1	99	2527.1	1	0	21.61	2.3	23.91	33	9.09
			100	0		75	0	20.23	2.3	22.53	33	10.47
		2527.6	1	99	2544.7	1	0	22.33	2.3	24.63	33	8.37
			100	0		75	0	20.25	2.3	22.55	33	10.45
		2545.1	1	99	2562.2	1	0	22.32	2.3	24.62	33	8.38
			100	0		75	0	19.21	2.3	21.51	33	11.49



CA_7C												
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Antenna Gain (dBm)	EIRP (dBm)	Limit (dBm)	Margin (dB)
100+100	QPSK	2510	1	99	2529.8	1	0	22.56	2.3	24.86	33	8.14
			100	0		100	0	19.84	2.3	22.14	33	10.86
		2525.1	1	99	2544.9	1	0	22.95	2.3	25.25	33	7.75
			100	0		100	0	19.78	2.3	22.08	33	10.92
		2540.2	1	99	2560	1	0	23.07	2.3	25.37	33	7.63
			100	0		100	0	20.84	2.3	23.14	33	9.86
	16QAM	2510	1	99	2529.8	1	0	21.78	2.3	24.08	33	8.92
			100	0		100	0	20.13	2.3	22.43	33	10.57
		2525.1	1	99	2544.9	1	0	22.26	2.3	24.56	33	8.44
			100	0		100	0	19.93	2.3	22.23	33	10.77
		2540.2	1	99	2560	1	0	22.26	2.3	24.56	33	8.44
			100	0		100	0	19.91	2.3	22.21	33	10.79



CA_38C												
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Antenna Gain (dBm)	EIRP (dBm)	Limit (dBm)	Margin (dB)
75+75	QPSK	2577.5	1	74	2592.5	1	0	20.06	1.5	21.56	33	11.44
			75	0		75	0	18.16	1.5	19.66	33	13.34
		2587.5	1	74	2602.5	1	0	20.08	1.5	21.58	33	11.42
			75	0		75	0	18.14	1.5	19.64	33	13.36
		2597.5	1	74	2612.5	1	0	19.17	1.5	20.67	33	12.33
			75	0		75	0	18.95	1.5	20.45	33	12.55
	16QAM	2577.5	1	74	2592.5	1	0	19.17	1.5	20.67	33	12.33
			75	0		75	0	17.20	1.5	18.70	33	14.30
		2587.5	1	74	2602.5	1	0	19.17	1.5	20.67	33	12.33
			75	0		75	0	17.17	1.5	18.67	33	14.33
		2597.5	1	74	2612.5	1	0	18.17	1.5	19.67	33	13.33
			75	0		75	0	18.16	1.5	19.66	33	13.34
100+100	QPSK	2580	1	99	2599.8	1	0	20.32	1.5	21.82	33	11.18
			100	0		100	0	18.31	1.5	19.81	33	13.19
		2585.1	1	99	2604.9	1	0	20.10	1.5	21.60	33	11.40
			100	0		100	0	18.20	1.5	19.7	33	13.3
		2590.2	1	99	2610	1	0	20.13	1.5	21.63	33	11.37
			100	0		100	0	18.35	1.5	19.85	33	13.15
	16QAM	2580	1	99	2599.8	1	0	19.49	1.5	20.99	33	12.01
			100	0		100	0	17.44	1.5	18.94	33	14.06
		2585.1	1	99	2604.9	1	0	19.29	1.5	20.79	33	12.21
			100	0		100	0	17.21	1.5	18.71	33	14.29
		2590.2	1	99	2610	1	0	19.27	1.5	20.77	33	12.23
			100	0		100	0	17.22	1.5	18.72	33	14.28



America

CA_66B												
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Antenna Gain (dBm)	EIRP (dBm)	Limit (dBm)	Margin (dB)
25+25	QPSK	1712.5	1	24	1717.3	1	0	23.98	0	23.98	30	6.02
			25	0		25	0	22.92	0	22.92	30	7.08
		1752.6	1	24	1757.4	1	0	24.0	0	24.0	30	6.0
			25	0		25	0	22.87	0	22.87	30	7.13
		1772.7	1	24	1777.5	1	0	23.88	0	23.88	30	6.12
			25	0		25	0	22.82	0	22.82	30	7.18
	16QAM	1712.5	1	24	1717.3	1	0	22.98	0	22.98	30	7.02
			25	0		25	0	21.88	0	21.88	30	8.12
		1752.6	1	24	1757.4	1	0	22.95	0	22.95	30	7.05
			25	0		25	0	21.82	0	21.82	30	8.18
		1772.7	1	24	1777.5	1	0	22.79	0	22.79	30	7.21
			25	0		25	0	21.39	0	21.39	30	8.61



CA_66B												
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Antenna Gain (dBm)	EIRP (dBm)	Limit (dBm)	Margin (dB)
25+50	QPSK	1712.8	1	24	1720	1	0	23.88	0	23.88	30	6.12
			25	0		50	0	21.73	0	21.73	30	8.27
		1750.3	1	24	1757.5	1	0	23.82	0	23.82	30	6.18
			25	0		50	0	21.69	0	21.69	30	8.31
		1767.8	1	24	1775	1	0	23.84	0	23.84	30	6.16
			25	0		50	0	21.76	0	21.76	30	8.24
	16QAM	1712.8	1	24	1720	1	0	22.93	0	22.93	30	7.07
			25	0		50	0	20.80	0	20.80	30	9.20
		1750.3	1	24	1757.5	1	0	22.95	0	22.95	30	7.05
			25	0		50	0	20.74	0	20.74	30	9.26
		1767.8	1	24	1775	1	0	22.90	0	22.90	30	7.10
			25	0		50	0	20.78	0	20.78	30	9.22
50+25	QPSK	1715	1	49	1722.2	1	0	23.77	0	23.77	30	6.23
			50	0		25	0	21.78	0	21.78	30	8.22
		1752.5	1	49	1759.7	1	0	23.68	0	23.68	30	6.32
			50	0		25	0	21.68	0	21.68	30	8.32
		1770	1	49	1777.2	1	0	23.79	0	23.79	30	6.21
			50	0		25	0	21.72	0	21.72	30	8.28
	16QAM	1715	1	49	1722.2	1	0	22.83	0	22.83	30	7.17
			50	0		25	0	20.89	0	20.89	30	9.11
		1752.5	1	49	1759.7	1	0	22.77	0	22.77	30	7.23
			50	0		25	0	20.72	0	20.72	30	9.28
		1770	1	49	1777.2	1	0	22.82	0	22.82	30	7.18
			50	0		25	0	20.75	0	20.75	30	9.25



CA_66B												
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Antenna Gain (dBm)	EIRP (dBm)	Limit (dBm)	Margin (dB)
25+75	QPSK	1713	1	24	1722.3	1	0	23.99	0	23.99	30	6.01
			25	0		75	0	21.81	0	21.81	30	8.19
		1748.1	1	24	1757.4	1	0	23.95	0	23.95	30	6.05
			25	0		75	0	21.90	0	21.90	30	8.10
		1763.2	1	24	1772.5	1	0	23.98	0	23.98	30	6.02
			25	0		75	0	21.75	0	21.75	30	8.25
	16QAM	1713	1	24	1722.3	1	0	23.08	0	23.08	30	6.92
			25	0		75	0	20.86	0	20.86	30	9.14
		1748.1	1	24	1757.4	1	0	23.07	0	23.07	30	6.93
			25	0		75	0	20.91	0	20.91	30	9.09
		1763.2	1	24	1772.5	1	0	22.96	0	22.96	30	7.04
			25	0		75	0	20.83	0	20.83	30	9.17
75+25	QPSK	1717.5	1	74	1726.8	1	0	23.73	0	23.73	30	6.27
			75	0		25	0	21.84	0	21.84	30	8.16
		1752.6	1	74	1761.9	1	0	23.65	0	23.65	30	6.35
			75	0		25	0	21.70	0	21.70	30	8.30
		1767.7	1	74	1777	1	0	23.74	0	23.74	30	6.26
			75	0		25	0	21.62	0	21.62	30	8.38
	16QAM	1717.5	1	74	1726.8	1	0	22.83	0	22.83	30	7.17
			75	0		25	0	20.87	0	20.87	30	9.13
		1752.6	1	74	1761.9	1	0	22.70	0	22.70	30	7.30
			75	0		25	0	20.78	0	20.78	30	9.22
		1767.7	1	74	1777	1	0	22.79	0	22.79	30	7.21
			75	0		25	0	20.73	0	20.73	30	9.27



America

CA_66B												
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Antenna Gain (dBm)	EIRP (dBm)	Limit (dBm)	Margin (dB)
50+50	QPSK	1715	1	49	1724.9	1	0	23.63	0	23.63	30	6.37
			50	0		50	0	21.68	0	21.68	30	8.32
		1750.1	1	49	1760	1	0	23.89	0	23.89	30	6.11
			50	0		50	0	21.86	0	21.86	30	8.14
		1765.1	1	49	1775	1	0	23.94	0	23.94	30	6.06
			50	0		50	0	21.81	0	21.81	30	8.19
	16QAM	1715	1	49	1724.9	1	0	22.67	0	22.67	30	7.33
			50	0		50	0	20.71	0	20.71	30	9.29
		1750.1	1	49	1760	1	0	22.90	0	22.90	30	7.10
			50	0		50	0	20.94	0	20.94	30	9.06
		1765.1	1	49	1775	1	0	23.02	0	23.02	30	6.98
			50	0		50	0	20.92	0	20.92	30	9.08



CA_66C												
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Antenna Gain (dBm)	EIRP (dBm)	Limit (dBm)	Margin (dB)
50+75	QPSK	1715.3	1	49	1727.3	1	0	23.88	0	23.88	30	6.12
			50	0		75	0	21.92	0	21.92	30	8.08
		1747.9	1	49	1759.9	1	0	23.92	0	23.92	30	6.08
			50	0		75	0	21.75	0	21.75	30	8.25
		1760.5	1	49	1772.5	1	0	23.70	0	23.70	30	6.30
			50	0		75	0	21.67	0	21.67	30	8.33
	16QAM	1715.3	1	49	1727.3	1	0	22.88	0	22.88	30	7.12
			50	0		75	0	20.99	0	20.99	30	9.01
		1747.9	1	49	1759.9	1	0	22.84	0	22.84	30	7.16
			50	0		75	0	20.86	0	20.86	30	9.14
		1760.5	1	49	1772.5	1	0	22.82	0	22.82	30	7.18
			50	0		75	0	20.71	0	20.71	30	9.29
75+50	QPSK	1717.5	1	74	1729.5	1	0	23.84	0	23.84	30	6.16
			75	0		50	0	21.85	0	21.85	30	8.15
		1750.1	1	74	1762.1	1	0	23.70	0	23.70	30	6.30
			75	0		50	0	21.75	0	21.75	30	8.25
		1762.7	1	74	1774.7	1	0	23.69	0	23.69	30	6.31
			75	0		50	0	21.60	0	21.60	30	8.40
	16QAM	1717.5	1	74	1729.5	1	0	22.84	0	22.84	30	7.16
			75	0		50	0	20.94	0	20.94	30	9.06
		1750.1	1	74	1762.1	1	0	22.68	0	22.68	30	7.32
			75	0		50	0	20.85	0	20.85	30	9.15
		1762.7	1	74	1774.7	1	0	22.74	0	22.74	30	7.26
			75	0		50	0	20.71	0	20.71	30	9.29



CA_66C												
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Antenna Gain (dBm)	EIRP (dBm)	Limit (dBm)	Margin (dB)
50+100	QPSK	1715.5	1	49	1729.9	1	0	23.93	0	23.93	30	6.07
			50	0		100	0	22.23	0	22.23	30	7.77
		1745.6	1	49	1760	1	0	23.98	0	23.98	30	6.02
			50	0		100	0	21.88	0	21.88	30	8.12
		1755.6	1	49	1770	1	0	23.87	0	23.87	30	6.13
			50	0		100	0	21.84	0	21.84	30	8.16
	16QAM	1715.5	1	49	1729.9	1	0	23.08	0	23.08	30	6.92
			50	0		100	0	21.31	0	21.31	30	8.69
		1745.6	1	49	1760	1	0	22.95	0	22.95	30	7.05
			50	0		100	0	20.86	0	20.86	30	9.14
		1755.6	1	49	1770	1	0	22.96	0	22.96	30	7.04
			50	0		100	0	20.91	0	20.91	30	9.09
100+50	QPSK	1720	1	99	1734.4	1	0	23.80	0	23.80	30	6.20
			100	0		50	0	21.86	0	21.86	30	8.14
		1750.1	1	99	1764.5	1	0	23.74	0	23.74	30	6.26
			100	0		50	0	21.74	0	21.74	30	8.26
		1760.1	1	99	1774.5	1	0	23.88	0	23.88	30	6.12
			100	0		50	0	21.83	0	21.83	30	8.17
	16QAM	1720	1	99	1734.4	1	0	22.88	0	22.88	30	7.12
			100	0		50	0	20.94	0	20.94	30	9.06
		1750.1	1	99	1764.5	1	0	22.82	0	22.82	30	7.18
			100	0		50	0	20.80	0	20.80	30	9.20
		1760.1	1	99	1774.5	1	0	22.81	0	22.81	30	7.19
			100	0		50	0	20.73	0	20.73	30	9.27



CA_66C												
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Antenna Gain (dBm)	EIRP (dBm)	Limit (dBm)	Margin (dB)
75+75	QPSK	1717.5	1	74	1732.5	1	0	23.94	0	23.94	30	6.06
			75	0		75	0	22.23	0	22.23	30	7.77
		1747.5	1	74	1762.5	1	0	23.99	0	23.99	30	6.01
			75	0		75	0	22.10	0	22.10	30	7.90
		1757.5	1	74	1772.5	1	0	24.0	0	24.0	30	6.0
			75	0		75	0	22.13	0	22.13	30	7.87
	16QAM	1717.5	1	74	1732.5	1	0	23.01	0	23.01	30	6.99
			75	0		75	0	21.29	0	21.29	30	8.71
		1747.5	1	74	1762.5	1	0	23.08	0	23.08	30	6.92
			75	0		75	0	21.17	0	21.17	30	8.83
		1757.5	1	74	1772.5	1	0	23.10	0	23.10	30	6.90
			75	0		75	0	21.27	0	21.27	30	8.73



CA_66C												
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Antenna Gain (dBm)	EIRP (dBm)	Limit (dBm)	Margin (dB)
75+100	QPSK	1717.8	1	74	1734.9	1	0	23.97	0	23.97	30	6.03
			75	0		100	0	21.34	0	21.34	30	8.66
		1745.3	1	74	1762.4	1	0	23.98	0	23.98	30	6.02
			75	0		100	0	21.52	0	21.52	30	8.48
		1752.9	1	74	1770	1	0	23.86	0	23.86	30	6.14
			75	0		100	0	20.86	0	20.86	30	9.14
	16QAM	1717.8	1	74	1734.9	1	0	23.22	0	23.22	30	6.78
			75	0		100	0	20.54	0	20.54	30	9.46
		1745.3	1	74	1762.4	1	0	22.97	0	22.97	30	7.03
			75	0		100	0	20.84	0	20.84	30	9.16
		1752.9	1	74	1770	1	0	23.07	0	23.07	30	6.93
			75	0		100	0	20.01	0	20.01	30	9.99
100+75	QPSK	1720	1	99	1737.1	1	0	23.94	0	23.94	30	6.06
			100	0		75	0	20.90	0	20.90	30	9.10
		1747.6	1	99	1764.7	1	0	23.87	0	23.87	30	6.13
			100	0		75	0	21.07	0	21.07	30	8.93
		1755.1	1	99	1772.2	1	0	23.96	0	23.96	30	6.04
			100	0		75	0	22.16	0	22.16	30	7.84
	16QAM	1720	1	99	1737.1	1	0	23.21	0	23.21	30	6.79
			100	0		75	0	20.06	0	20.06	30	9.94
		1747.6	1	99	1764.7	1	0	22.86	0	22.86	30	7.14
			100	0		75	0	20.16	0	20.16	30	9.84
		1755.1	1	99	1772.2	1	0	22.39	0	22.39	30	7.61
			100	0		75	0	21.20	0	21.20	30	8.80



CA_66C												
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Antenna Gain (dBm)	EIRP (dBm)	Limit (dBm)	Margin (dB)
100+25	QPSK	1720	1	99	1731.7	1	0	24.0	0	24.0	30	6.0
			100	0		25	0	22.07	0	22.07	30	7.93
		1752.5	1	99	1764.2	1	0	24.0	0	24.0	30	6.0
			100	0		25	0	21.93	0	21.93	30	8.07
		1765	1	99	1776.7	1	0	23.85	0	23.85	30	6.15
			100	0		25	0	21.75	0	21.75	30	8.25
	16QAM	1720	1	99	1731.7	1	0	23.08	0	23.08	30	6.92
			100	0		25	0	21.12	0	21.12	30	8.88
		1752.5	1	99	1764.2	1	0	22.99	0	22.99	30	7.01
			100	0		25	0	20.06	0	20.06	30	9.94
		1765	1	99	1776.7	1	0	22.80	0	22.80	30	7.20
			100	0		25	0	20.91	0	20.91	30	9.09
25+100	QPSK	1713.3	1	24	1725	1	0	23.97	0	23.97	30	6.03
			25	0		100	0	22.06	0	22.06	30	7.94
		1745.8	1	24	1757.5	1	0	27.97	0	27.97	30	2.03
			25	0		100	0	21.90	0	21.90	30	8.10
		1758.3	1	24	1770	1	0	23.74	0	23.74	30	6.26
			25	0		100	0	21.67	0	21.67	30	8.33
	16QAM	1713.3	1	24	1725	1	0	23.36	0	23.36	30	6.64
			25	0		100	0	21.14	0	21.14	30	8.86
		1745.8	1	24	1757.5	1	0	23.22	0	23.22	30	6.78
			25	0		100	0	20.91	0	20.91	30	9.09
		1758.3	1	24	1770	1	0	22.83	0	22.83	30	7.17
			25	0		100	0	20.81	0	20.81	30	9.19



CA_66C												
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	No. RB	RB Offset	SCC Freq (MHz)	No. RB	RB Offset	Average Power (dBm)	Antenna Gain (dBm)	EIRP (dBm)	Limit (dBm)	Margin (dB)
100+100	QPSK	1720	1	99	1739.8	1	0	23.95	0	23.95	30	6.05
			100	0		100	0	22.16	0	22.16	30	7.84
		1745.1	1	99	1764.9	1	0	23.90	0	23.90	30	6.10
			100	0		100	0	22.04	0	22.04	30	7.96
		1750.2	1	99	1770	1	0	23.95	0	23.95	30	6.05
			100	0		100	0	22.01	0	22.01	30	7.99
	16QAM	1720	1	99	1739.8	1	0	22.94	0	22.94	30	7.06
			100	0		100	0	21.19	0	21.19	30	8.81
		1745.1	1	99	1764.9	1	0	22.93	0	22.93	30	7.07
			100	0		100	0	21.11	0	21.11	30	8.89
		1750.2	1	99	1770	1	0	22.95	0	22.95	30	7.05
			100	0		100	0	21.04	0	21.04	30	8.96



2.3 PEAK-AVERAGE RATIO

2.3.1 Specification Reference

FCC 47 CFR Part 24, Clause 24.232 (d)
RSS-133, Clause 6.4
RSS-139, Clause 6.5

2.3.2 Standard Applicable

FCC Part 24:

Power measurements for transmissions by stations authorized under this section may be made either in accordance with a Commission-approved average power technique or in compliance with paragraph (e) of this section. In both instances, equipment employed must be authorized in accordance with the provisions of §24.51. In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13dB.

RSS-133 and RSS-139:

The transmitter's peak-to-average power ratio (PAPR) shall not exceed 13 dB for more than 0.1% of the time using a signal corresponding to the highest PAPR during periods of continuous transmission.

2.3.3 Equipment Under Test and Modification State

Serial No: AZ280418A00044 / Test Configuration A

2.3.4 Date of Test/Initial of test personnel who performed the test

July 02, 2018 / XYZ

2.3.5 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

2.3.6 Environmental Conditions/ Test Location

Test performed at TÜV SÜD America Inc. Rancho Bernardo facility

Ambient Temperature	25.1 °C
Relative Humidity	52.1 %
ATM Pressure	99.0 kPa



2.3.7 Additional Observations

- This is a conducted test.
- As per FCC KDB 971168 D01 v03r01 clause 5.7, the PAPR was measured in accordance with ANSI C63.26 clause 5.2.3.4.
- Measurement was done using the Spectrum Analyzer's Complementary Cumulative Distribution Function (CCDF) measurement profile. The built-in function is used to determine the largest deviation between the average and the peak power of the EUT in a given bandwidth (crest factor or peak-to-average ratio) The CCDF curve shows how much time the peak waveform spends at or above a given average power level. The percent of time the signals spends at or above the level defines the probability for that particular power level. For GSM signals, an average and a peak trace are used to determine the largest deviation between the average and the peak power of the EUT in a bandwidth greater than the emission bandwidth.
- Low, Middle and High channels for all bandwidths and modulations were verified.
- The path loss for was measured and entered as a level offset.
- There are no measured PAPR levels greater than 13dB. EUT complies.



2.3.8 Test Results

CA_2A-13A						
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	PCC PAR (dB)	SCC Freq (MHz)	SCC PAR (dB)	Limit (dB)
10+10	QPSK	1880	5.4	782	5.6	13
	16QAM	1880	6.71	782	6.6	13
	64QAM	1880	7.4	782	7.44	13

CA_2A-13A						
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	PCC PAR (dB)	SCC Freq (MHz)	SCC PAR (dB)	Limit (dB)
10+10	QPSK	1905	5.1	782	5.4	13
	16QAM	1905	6.56	782	6.48	13
	64QAM	1905	7.43	782	7.52	13

CA_4A-13A						
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	PCC PAR (dB)	SCC Freq (MHz)	SCC PAR (dB)	Limit (dB)
10+10	QPSK	1732.5	4.74	782	6.77	13
	16QAM	1732.5	5.82	782	7.21	13
	64QAM	1732.5	6.62	782	8.16	13

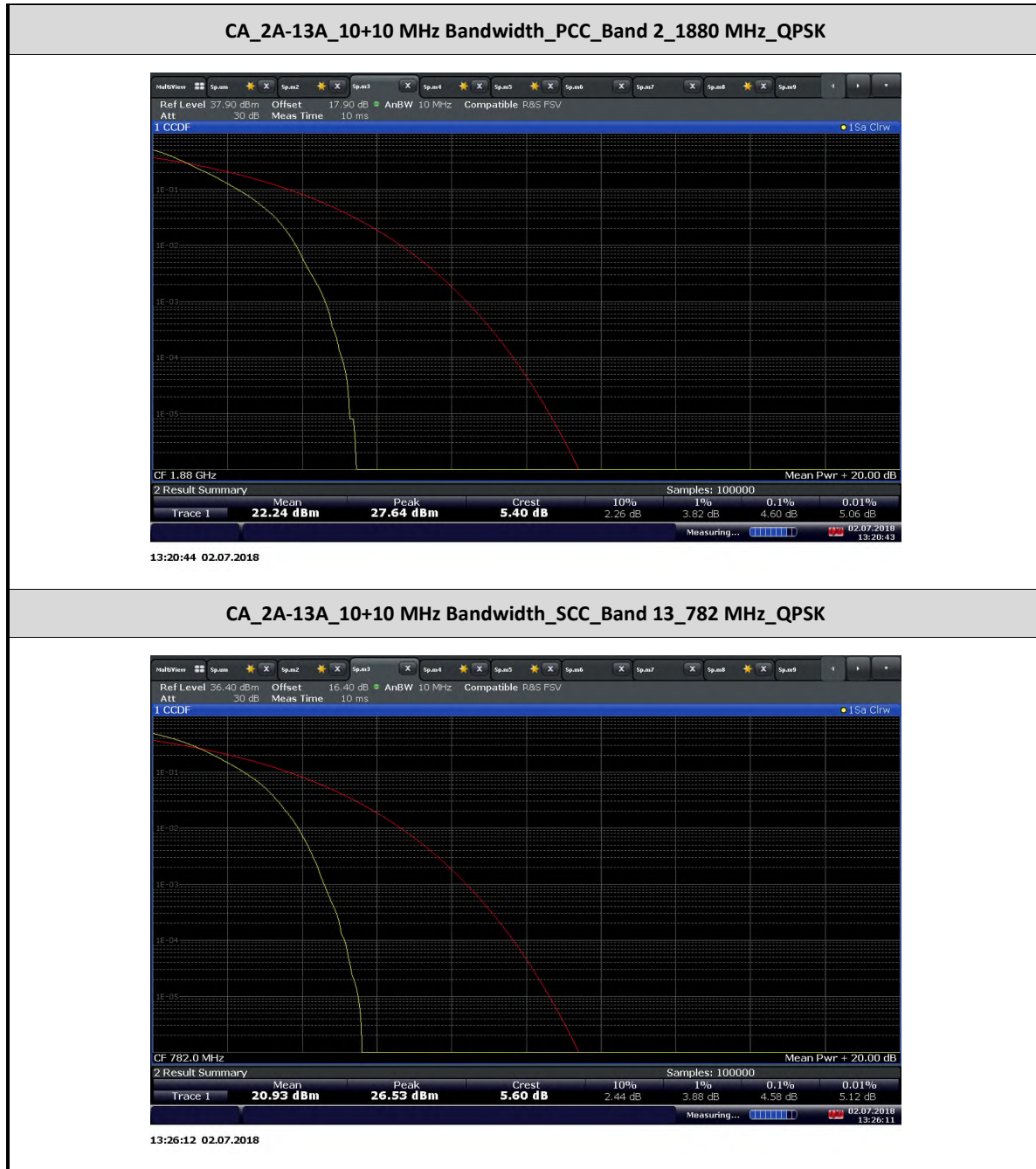
CA_4A-13A						
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	PCC PAR (dB)	SCC Freq (MHz)	SCC PAR (dB)	Limit (dB)
10+10	QPSK	1750	5.11	782	5.23	13
	16QAM	1750	6.31	782	6.49	13
	64QAM	1750	7.18	782	7.33	13



CA_13A-66A						
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	PCC PAR (dB)	SCC Freq (MHz)	SCC PAR (dB)	Limit (dB)
10+20	QPSK	782	5.19	1755	6.74	13
	16QAM	782	6.73	1755	7.69	13
	64QAM	782	7.53	1755	8.21	13

CA_13A-66A						
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	PCC PAR (dB)	SCC Freq (MHz)	SCC PAR (dB)	Limit (dB)
10+20	QPSK	782	5.47	1770	6.75	13
	16QAM	782	6.63	1770	7.89	13
	64QAM	782	7.81	1770	7.91	13

2.3.9 Example Test Plots





CA_4A-13A_10+10 MHz Bandwidth_PCC_Band 4_1732.5 MHz_QPSK



13:11:04 02.07.2018

CA_4A-13A_10+10 MHz Bandwidth_SCC_Band 13_782 MHz_QPSK



13:09:11 02.07.2018



CA_13A-66A_10+20 MHz Bandwidth_PCC_Band 13_782 MHz_QPSK



13:33:14 02.07.2018

CA_13A-66A_10+20 MHz Bandwidth_SCC_Band 66_1755 MHz_QPSK



13:03:50 02.07.2018



2.4 OCCUPIED BANDWIDTH

2.4.1 Specification Reference

FCC 47 CFR Part 2, Clause 2.1049
FCC 47 CFR Part 24, Clause 24.238(b)
FCC 47 CFR Part 27, Clause 27.53(h)(3)
RSS-GEN, Clause 6.7

2.4.2 Standard Applicable

The transmitted signal bandwidth shall be reported as the 99% emission bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission. 26dB Bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated by at least 26 dB below the transmitter power.

Using the occupied bandwidth measurement function in the spectrum analyzer, the 99% occupied bandwidth was measured.

In addition, the 26dB bandwidth was measured in accordance with FCC KDB 971168 D01 v03r01 Clause 4.1 using the ndB measurement function in the spectrum analyzer.

- The transmitter shall be operated at its maximum carrier power measured under normal test conditions.
- The span of the analyzer shall be set to capture all products of the modulation process, including the emission skirts.
- The resolution bandwidth (RBW) shall be in the range of 1% to 5% of the occupied bandwidth (OBW) and video bandwidth (VBW) shall be at least 3x RBW.

2.4.3 Equipment Under Test and Modification State

Serial No: AZ280418A00044 / Test Configuration A

2.4.4 Date of Test/Initial of test personnel who performed the test

July 02, 2018 / XYZ

2.4.5 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

2.4.6 Environmental Conditions/ Test Location

Test performed at TÜV SÜD America Inc. Rancho Bernardo facility

Ambient Temperature	25.1 °C
Relative Humidity	52.1 %
ATM Pressure	99.0 kPa



2.4.7 Additional Observations

- This is a conducted test. Both 26dB bandwidth and 99% bandwidth presented.
- Using the occupied bandwidth measurement function in the spectrum analyzer, the 99% occupied bandwidth was measured.
- The 26dB bandwidth was measured in accordance with ANSI C63.26 clause 5.4.3 using the ndB measurement function in the spectrum analyzer.
- The transmitter shall be operated at its maximum carrier power measured under normal test conditions.
- The span of the analyzer shall be set to capture all products of the modulation process, including the emission skirts.
- The resolution bandwidth (RBW) shall be in the range of 1% of the occupied bandwidth (OBW) and video bandwidth (VBW) shall be at least 3x RBW.
- Low, Mid and High channels for all bandwidths and modulations were verified. Test results of Mid channel were presented as representative.

2.4.8 Test Results

CA_2A-13A							
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	PCC OBW (MHz)	PCC 26 dB BW (MHz)	SCC Freq (MHz)	SCC OBW (MHz)	SCC 26 dB BW (MHz)
10+10	QPSK	1880	8.93	9.64	782	8.93	9.64
	16QAM	1880	8.95	9.68	782	8.89	9.64
	64QAM	1880	8.95	9.64	782	8.88	9.51

CA_2A-13A							
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	PCC OBW (MHz)	PCC 26 dB BW (MHz)	SCC Freq (MHz)	SCC OBW (MHz)	SCC 26 dB BW (MHz)
10+10	QPSK	1905	8.93	9.68	782	8.91	9.55
	16QAM	1905	8.93	9.64	782	8.91	9.64
	64QAM	1905	8.92	9.64	782	8.93	9.64



CA_4A-13A							
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	PCC OBW (MHz)	PCC 26 dB BW (MHz)	SCC Freq (MHz)	SCC OBW (MHz)	SCC 26 dB BW (MHz)
10+10	QPSK	1732.5	8.96	9.72	782	8.91	9.6
	16QAM	1732.5	8.96	9.68	782	8.91	9.64
	64QAM	1732.5	8.97	9.72	782	8.9	9.68

CA_4A-13A							
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	PCC OBW (MHz)	PCC 26 dB BW (MHz)	SCC Freq (MHz)	SCC OBW (MHz)	SCC 26 dB BW (MHz)
10+10	QPSK	1750	8.96	9.77	782	8.91	9.55
	16QAM	1750	8.97	9.68	782	8.88	9.6
	64QAM	1750	8.96	9.77	782	8.9	9.64

CA_13A-66A							
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	PCC OBW (MHz)	PCC 26 dB BW (MHz)	SCC Freq (MHz)	SCC OBW (MHz)	SCC 26 dB BW (MHz)
10+20	QPSK	782	8.92	9.68	1755	17.97	19.36
	16QAM	782	8.91	9.55	1755	17.92	19.28
	64QAM	782	8.88	9.72	1755	17.93	19.19

CA_13A-66A							
Bandwidth (MHz)	Modulation	PCC Freq (MHz)	PCC OBW (MHz)	PCC 26 dB BW (MHz)	SCC Freq (MHz)	SCC OBW (MHz)	SCC 26 dB BW (MHz)
10+20	QPSK	782	8.91	9.68	1770	17.89	19.28
	16QAM	782	8.9	9.6	1770	17.84	19.19
	64QAM	782	8.91	9.51	1770	17.84	19.19

2.4.9 Example Test Plots

CA_2A-13A_10+10 MHz Bandwidth_PCC_Band 2_1880 MHz_QPSK / 99%OBW



15:20:38 02.07.2018

CA_2A-13A_10+10 MHz Bandwidth_PCC_Band 2_1880 MHz_QPSK / 26dB BW



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CA_2A-13A_10+10 MHz Bandwidth_SCC_Band 13_782 MHz_QPSK / 99%OBW



15:04:52 02.07.2018

CA_2A-13A_10+10 MHz Bandwidth_SCC_Band 13_782 MHz_QPSK / 26dB BW



15:04:06 02.07.2018

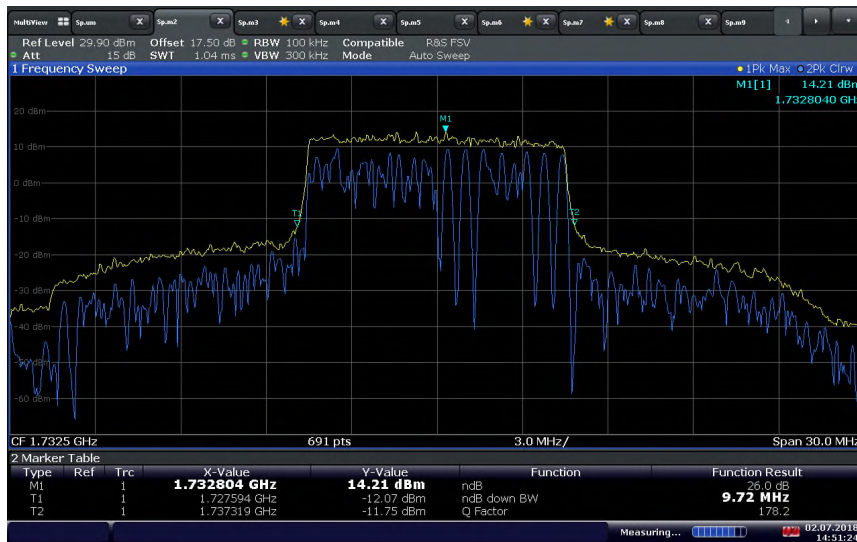


CA_4A-13A_10+10 MHz Bandwidth_PCC_Band 4_1732.5 MHz_QPSK / 99%OBW



14:50:52 02.07.2018

CA_4A-13A_10+10 MHz Bandwidth_PCC_Band 4_1732.5 MHz_QPSK / 26dB BW



14:51:25 02.07.2018



CA_4A-13A_10+10 MHz Bandwidth_SCC_Band 13_782 MHz_QPSK / 99%OBW



14:56:32 02.07.2018

CA_4A-13A_10+10 MHz Bandwidth_SCC_Band 13_782 MHz_QPSK / 26dB BW



14:55:51 02.07.2018



CA_13A-66A_10+20 MHz Bandwidth_PCC_Band 13_782 MHz_QPSK / 99%OBW



14:15:02 02.07.2018

CA_13A-66A_10+20 MHz Bandwidth_PCC_Band 13_782 MHz_QPSK / 26dB BW



14:19:41 02.07.2018

CA_13A-66A_10+20 MHz Bandwidth_SCC_Band 66_1755 MHz_QPSK / 99%OBW



14:32:44 02.07.2018

CA_13A-66A_10+20 MHz Bandwidth_SCC_Band 66_1755 MHz_QPSK / 26dB BW



14:32:12 02.07.2018