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839.01
Electrical

TEST REPORT

ACCORDING TO: FCC CFR 47 PART 90 subpart Z; RSS-197 Issue 1:2010

FOR:

RadWin Ltd.

Outdoor radio unit operating in the 3.65 GHz band

Models: RADWIN 1000 3GHz BAND, RADWIN 2000 3GHz BAND, RADWIN 3000 3GHz BAND

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1 Applicant information

Client name:	RadWin Ltd.
Address:	27 Habarzel street, Tel Aviv 69710, Israel
Telephone:	+972 3766 2988
Fax:	+972 3766 2902
E-mail:	shlomo_weiss@radwin.com
Contact name:	Mr. Shlomo Weiss

2 Equipment under test attributes

Product name:	Outdoor radio unit operating in 3.65 GHz band
Product type:	Point to point or point to multipoint transceiver
Model(s):	RADWIN 2000 3GHz BAND
Serial number:	PCF350E000Z99999
Receipt date	5/31/2010

3 Manufacturer information

Manufacturer name:	RadWin Ltd.
Address:	27 Habarzel street, Tel Aviv 69710, Israel
Telephone:	+972 3766 2988
Fax:	+972 3766 2902
E-Mail:	shlomo_weiss@radwin.com
Contact name:	Mr. Shlomo Weiss

4 Test details

Project ID:	20845
Location:	Hermon Laboratories Ltd. Harakevet Industrial Zone, Binyamina 30500, Israel
Test started:	5/31/2010
Test completed:	11/15/2010
Test specification(s):	47CFR part 90 subpart Z; RSS-197 issue 1:2010

5 Tests summary

Test	Status
Transmitter characteristics	
FCC Section 90.205, 90.1321/ RSS-197 Section 5.6 Maximum output power and peak power spectral density	Pass
FCC Section 90.209/ RSS-197 Section 5.2, Occupied bandwidth	Pass
FCC Section 90.210 (b), Emission mask	Pass
FCC Section 90.1323/ RSS-197 Section 5.7, Conducted spurious emissions	Pass
FCC Section 90.1323/ RSS-197 Section 5.7, Radiated spurious emissions	Pass
FCC Section 90.213/ RSS-197 Section 5.3, Frequency stability	Pass
FCC Section 90.203 (o)/ RSS-197 Section 5.4, Contention based protocol	Pass, exhibit to application for certification attached
FCC Section 90.1335/ RSS-Gen Section 5.5, RF radiation exposure evaluation	Pass, exhibit to application for certification attached
Receiver characteristics	
RSS-197 Section 5.8, Receiver spurious emissions	Pass

Testing was completed against all relevant requirements of the test standard. The results obtained indicate that the product under test complies in full with the requirements tested.
The test results relate only to the items tested. Pass/ fail decision was based on nominal values.

	Name and Title	Date	Signature
Tested by:	Mr. E. Plotnichenko, test engineer	November 15, 2010	
Reviewed by:	Mrs. M. Cherniavsky, certification engineer	November 15, 2010	
Approved by:	Mr. M. Nikishin, EMC and Radio group manager	November 16, 2010	

6 EUT description

6.1 General information

The EUT, “RADWIN 1000 3GHz BAND”, “RADWIN 2000 3GHz BAND”, and “RADWIN 3000 3GHz BAND” is an outdoor radio unit (ODU). The power and Ethernet communication are supplied by an indoor unit (IDU) or PoE device. It has connectorized and integrated antenna configurations that can support dual pole antenna type. The “RADWIN 1000 3GHz BAND” activates one RF port, “RADWIN 2000 3GHz BAND” activates two RF ports and “RADWIN 3000 3GHz BAND” is identifier for software configured Point to Multipoint devices.

6.2 Ports and lines

Port type	Port description	Conn. from	Conn. to	Qty.	Cable type	Cable length	Indoor / outdoor
Power	DC Power+ Ethernet	IDU	EUT	1	Shielded	20	Outdoor
RF1	RF1 (Antenna 1)	EUT	Antenna	1	Coax	x*	Outdoor
RF2	RF2 (Antenna 2)	EUT	Antenna	1	Coax	x*	Outdoor
Power	DC Power	AC/DC adaptor	IDU	1	Unshielded	1.5	Indoor
Power	AC Power	mains	AC/DC adaptor	1	Unshielded	1.5	Indoor
Signal	Ethernet	Laptop	IDU	1	FTP	1.5	Indoor

*- up to length to ensure antenna assembly gain of 13.5 dBi

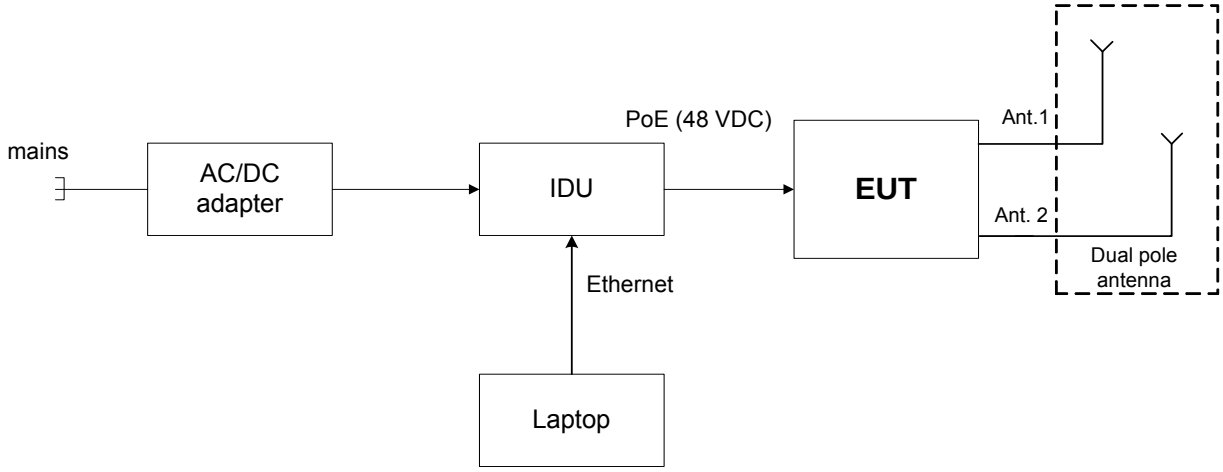
6.3 Support and test equipment

Description	Manufacturer	Model number	Serial number
Laptop	IBM	R50e	99-DYCR3
AC/DC adapter	IBM	08K8202	11S0K8202Z1ZAC755Y4F5
IDU	RadWin Ltd	IDU-E	DE000201267
AC/DC adapter	Hitron	HES51-58007	0135

6.4 Changes made in the EUT

No changes were implemented.

6.5 Test configuration



6.6 Transmitter characteristics

Type of equipment	
X	Stand-alone (Equipment with or without its own control provisions)

Intended use	**Condition of use**	
X	fixed	Always at a distance more than 2 m from all people

Assigned frequency range	3650.0 – 3675.0 MHz
Operating frequency range	3652.5 – 3672.5 MHz (refer to Table 6.6.1)

Maximum rated output power	**Peak (conducted)**	26 dBm

Antenna connection				
unique coupling	X	standard connector, N-type	integral	X with temporary RF connector without temporary RF connector

Antenna/s technical characteristics			
Type	Manufacturer	Model number	Gain
Flat Panel – Dual polarized external	Radwin Ltd.	RW-9612-3001	22 dBi (21 dBi antenna assembly)
Flat Panel – Dual polarized external	Radwin Ltd.	RW-9612-3001	22dBi (13.5 dBi antenna assembly)
Flat Panel – Dual polarized external	Radwin Ltd.	RW-9612-3001	22dBi (17 dBi antenna assembly)
Flat Panel – Dual polarized integrated	Radwin Ltd.	RW-9612-3001INT	21 dBi
Dish – Dual polarized external	Radwin Ltd.	RW-9722-3001	25 dBi (24 dBi antenna assembly)
Dish – Dual polarized external	Radwin Ltd.	RW-9722-3001	25 dBi (13.5 dBi antenna assembly)
Dish – Dual polarized external	Radwin Ltd.	RW-9722-3001	25 dBi (17 dBi antenna assembly)

Nominal channel bandwidth	**Transmitter aggregate data rate/s, MBps**	**Type of modulation**
5 MHz	3.25 32.5	BPSK 64QAM
10 MHz	6.5 65	BPSK 64QAM
20 MHz	13 130	BPSK 64QAM

Maximum transmitter duty cycle in normal use	92%
Transmitter duty cycle supplied for test	100%

Transmitter power source					
		Nominal rated voltage		Battery type	
V	DC (PoE)	**Nominal rated voltage**	48 VDC from IDU unit powered by 120 VAC		
	AC mains	**Nominal rated voltage**		Frequency	Hz

Common power source for transmitter and receiver	**V**	yes	no

Table 6.6.1 Measurement frequencies

Channel bandwidth, MHz	**Channel frequency, MHz**		
	Low	**Mid**	**High**
5	3652.5	3663	3672.5
10	3655	3663	3670
10 (with 13.5 dBi antenna assembly)	3656	3663	3669
20	3660	3663	3665
20 (with 13.5 dBi antenna assembly)	3661	3663	3664

Test specification:	Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	Verdict:	PASS
Date:	11/14/2010		
Temperature: 25 ºC	Air Pressure: 1005 hPa	Relative Humidity: 45 %	Power Supply: -48VDC
Remarks:			

7 Transmitter tests according to 47CFR part 90 and RSS-197 issue 1 requirements

7.1 Maximum output power

7.1.1 General

This test was performed to measure the maximum output power at the transmitter RF antenna connector. Specification test limits are given in Table 7.1.1.

Table 7.1.1 Maximum output power limits

Assigned frequency range, MHz	Occupied bandwidth, MHz	Maximum peak output power, EIRP	
		W	dBm
Base and fixed stations			
3650.0 – 3675.0	25	25	44
Mobile and portable stations			
3650.0 – 3675.0	25	1	30

7.1.2 Test procedure

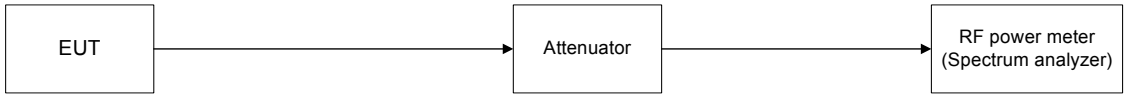
7.1.2.1 The EUT was set up as shown in Figure 7.1.1, energized and its proper operation was checked.

7.1.2.2 The entire emission bandwidth was measured with a spectrum analyzer. The results provided in the associated tables and plots.

7.1.2.3 The EUT was adjusted to produce maximum available for end user RF output power.

7.1.2.4 The peak output power was measured with a power meter as provided in the associated tables and plots.

Figure 7.1.1 Transmitter output power test setup



Test specification:	Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	Verdict:	PASS
Date:	11/14/2010		
Temperature: 25 ºC	Air Pressure: 1005 hPa	Relative Humidity: 45 %	Power Supply: -48VDC
Remarks: with 21 dBi gain antenna assembly			

Table 7.1.2 The 26dB EBW test results

ASSIGNED FREQUENCY RANGE: 3650.0 – 3675.0 MHz
DETECTOR USED: Power meter
MODULATING SIGNAL: PRBS
TRANSMITTER OUTPUT POWER SETTINGS: Maximum (see NOTE1)
ANTENNA ASSEMBLY GAIN: 21dBi
EBW: 5 MHz

Channel, MHz	Modulation	EBW, MHz	Output power limit, W/25MHz	Limit for measured EBW*, dBm	Limit with respect to the antenna assembly gain**, dBm
3652.5	BPSK	6.713	25	38.269	17.269
3663.0	BPSK	6.639	25	38.221	17.221
3672.5	BPSK	6.650	25	38.228	17.228
3652.5	64QAM	6.568	25	38.174	17.174
3663.0	64QAM	6.598	25	38.194	17.194
3672.5	64QAM	6.557	25	38.167	17.167

EBW: 10 MHz

Channel, MHz	Modulation	EBW, MHz	Output power limit, W/25MHz	Limit for measured EBW*, dBm	Limit with respect to the antenna assembly gain**, dBm
3655.0	BPSK	12.182	25	40.857	19.857
3663.0	BPSK	12.406	25	40.936	19.936
3670.0	BPSK	12.703	25	41.039	20.039
3655.0	64QAM	12.171	25	40.853	19.853
3663.0	64QAM	12.375	25	40.925	19.925
3670.0	64QAM	12.412	25	40.938	19.938

EBW: 20 MHz

Channel, MHz	Modulation	EBW, MHz	Output power limit, W/25MHz	Limit for measured EBW*, dBm	Limit with respect to the antenna assembly gain**, dBm
3660.0	BPSK	23.517	25	43.714	22.714
3663.0	BPSK	22.609	25	43.543	22.543
3665.0	BPSK	22.945	25	43.607	22.607
3660.0	64QAM	23.029	25	43.623	22.623
3663.0	64QAM	22.674	25	43.555	22.555
3665.0	64QAM	22.653	25	43.551	22.551

* - Limit for EBW = 10*LOG((1000 * [Output power limit, W] / 25MHz) / (25MHz / EBW, MHz)), dBm
** - Limit for EBW – Antenna assembly gain.

Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power**		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48VDC
Remarks: with 21 dBi gain antenna assembly			

Table 7.1.3 Peak EIRP output power test results

ASSIGNED FREQUENCY RANGE: 3650.0 – 3675.0 MHz
DETECTOR USED: Average (RMS)
MODULATING SIGNAL: PRBS
TRANSMITTER OUTPUT POWER SETTINGS: Maximum (see NOTE1)
EBW: 5 MHz

Channel, MHz	Modulation	Pmeas (RF#1), dBm	Pmeas (RF#2), dBm	P_{meas} *, dBm	Antenna assembly gain, dBi	EIRP, dBm	Limit, dBm	Margin, dB	Verdict
3652.5	BPSK	10.68	11.53	14.14	21.00	35.14	38.27	-3.13	Pass
3663.0	BPSK	11.95	11.77	14.87	21.00	35.87	38.22	-2.35	Pass
3672.5	BPSK	11.59	12.13	14.88	21.00	35.88	38.23	-2.35	Pass
3652.5	64QAM	10.48	11.05	13.78	21.00	34.78	38.17	-3.39	Pass
3663.0	64QAM	11.49	11.33	14.42	21.00	35.42	38.19	-2.77	Pass
3672.5	64QAM	11.54	11.44	14.50	21.00	35.50	38.17	-2.67	Pass
EBW:					**10 MHz**				
3655.0	BPSK	13.52	14.62	17.12	21.00	37.12	40.86	-2.74	Pass
3663.0	BPSK	13.53	13.86	16.71	21.00	37.71	40.94	-3.23	Pass
3670.0	BPSK	14.13	14.01	17.08	21.00	38.08	41.04	-2.96	Pass
3655.0	64QAM	13.97	14.88	17.46	21.00	37.46	40.85	-2.39	Pass
3663.0	64QAM	14.01	13.82	16.93	21.00	37.93	40.93	-3.00	Pass
3670.0	64QAM	14.34	14.33	17.35	21.00	38.35	40.94	-2.59	Pass
EBW:					**20 MHz**				
3660.0	64QAM	16.18	17.96	20.17	21.00	41.17	43.714	-2.54	Pass
3663.0	BPSK	16.40	17.05	19.75	21.00	40.75	43.543	-2.80	Pass
3665.0	BPSK	16.61	17.73	20.22	21.00	41.22	43.607	-2.39	Pass
3660.0	64QAM	15.71	17.95	19.98	21.00	40.98	43.623	-2.64	Pass
3663.0	64QAM	16.43	17.51	20.01	21.00	41.01	43.555	-2.54	Pass
3665.0	64QAM	16.60	17.68	20.18	21.00	41.18	43.551	-2.37	Pass

* - Pmeas, dBm = 10 log {10^[P(dBm,RF#1)/10]+ 10^([P(dBm, RF#2)/10]}

NOTE1: the EUT was configured to produce maximum conducted RF power for minimum declared Antenna gain of 22 dBi. RF output power will vary depending on the antenna assembly gain to ensure that the total EIRP power and power limits comply with EIRP limits. For actual settings of power levels with respect to actual antenna assembly used, please refer to the User's Manual.

Reference numbers of test equipment used

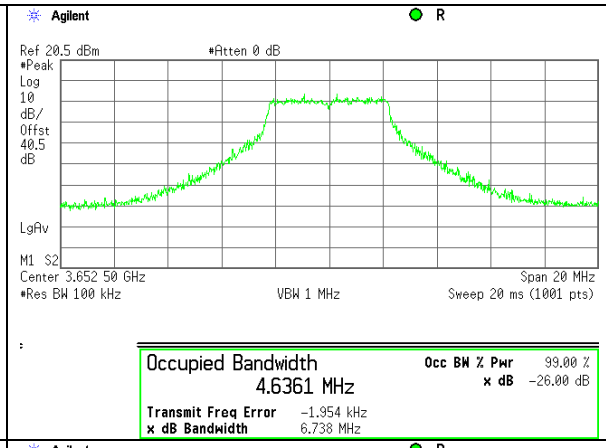
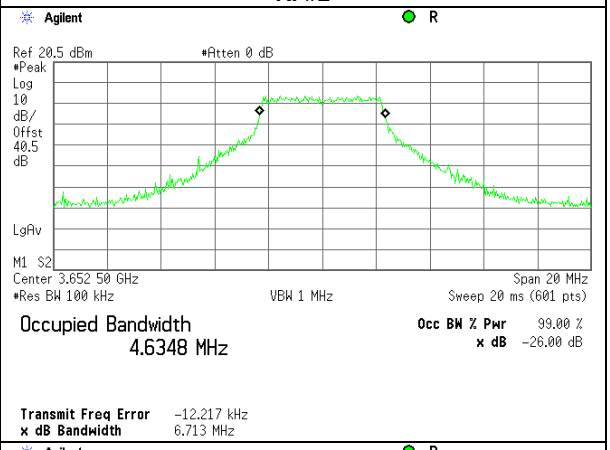
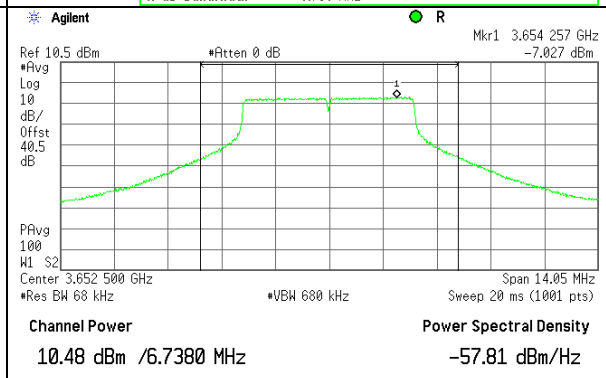
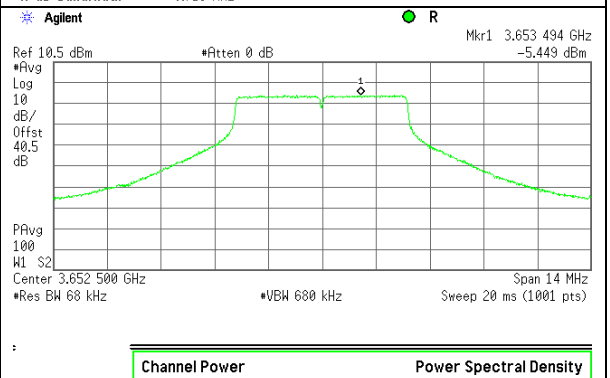
HL 3440	HL 3474	HL 3779	HL 3784	HL 3818			

Full description is given in Appendix A.

Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power**		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48VDC
Remarks: with 21 dBi gain antenna assembly			

Plot 7.1.1 The 26 dB EBW, band power test results at low frequency

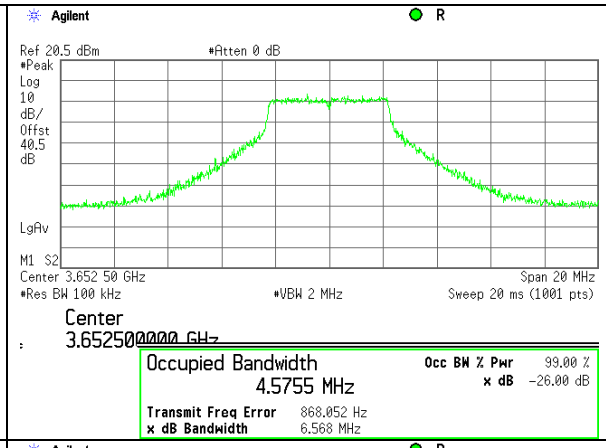
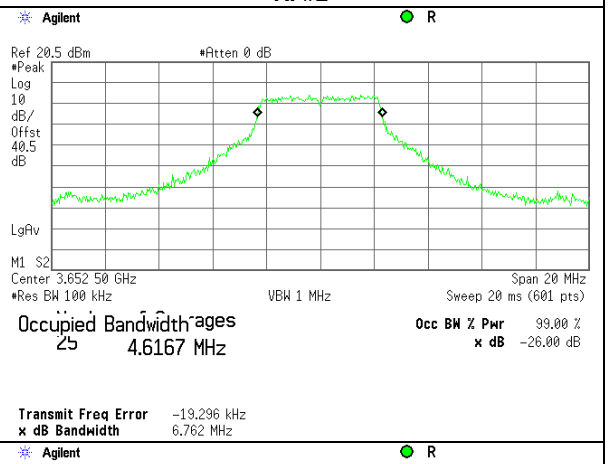
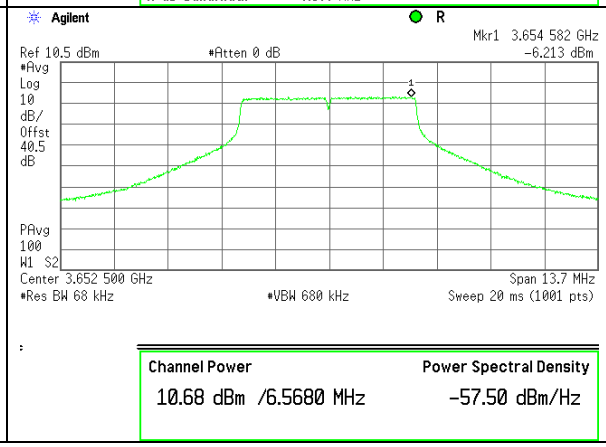
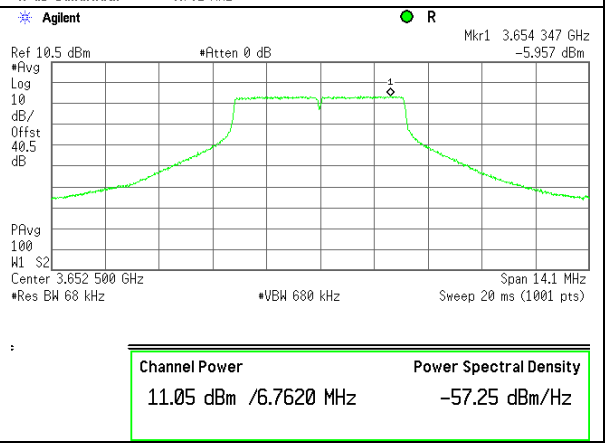
CARRIER FREQUENCY:	3652.5 MHz
EMISSION BANDWIDTH:	5 MHz
MODULATION:	BPSK
ANTENNA ASSEMBLY GAIN:	21.0dBi

	RF#1	**RF#2**
26dB EBW		
Band Power		

Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power**		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48VDC
Remarks: with 21 dBi gain antenna assembly			

Plot 7.1.2 The 26 dB EBW, band power test results at low frequency

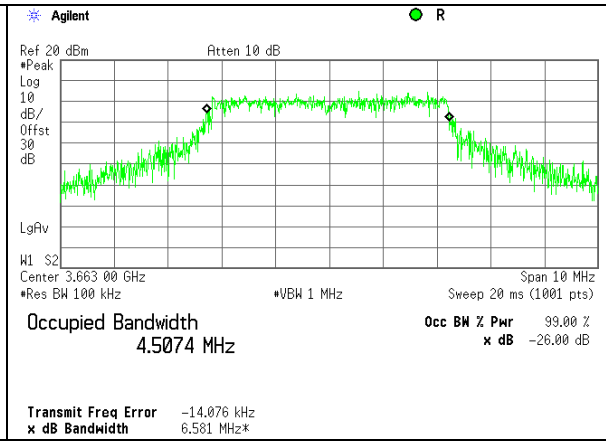
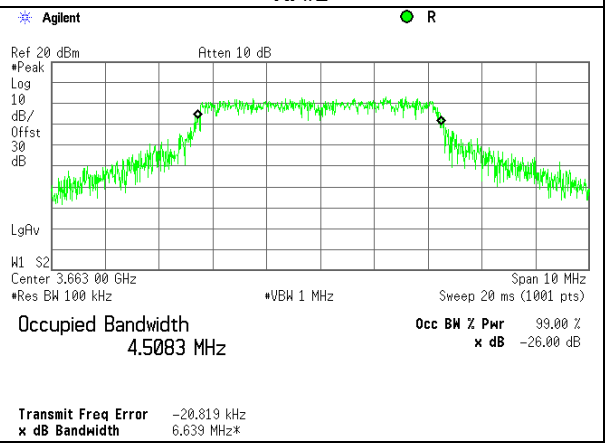
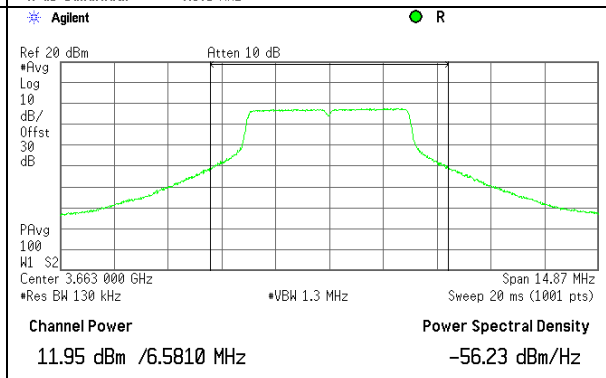
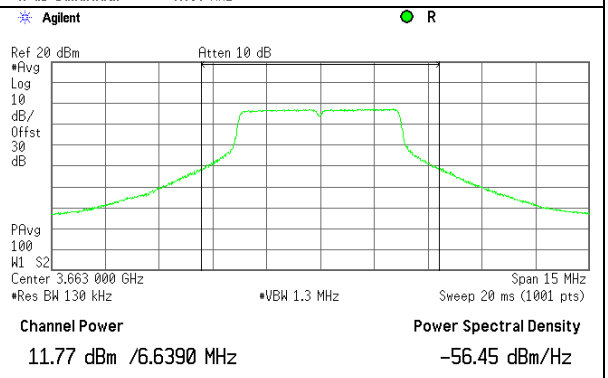
CARRIER FREQUENCY:	3652.5 MHz
EMISSION BANDWIDTH:	5 MHz
MODULATION:	64QAM
ANTENNA ASSEMBLY GAIN:	21.0dBi

	RF#1	**RF#2**
26dB EBW		
Band Power		

Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power**		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48VDC
Remarks: with 21 dBi gain antenna assembly			

Plot 7.1.3 The 26 dB EBW, band power test results at mid frequency

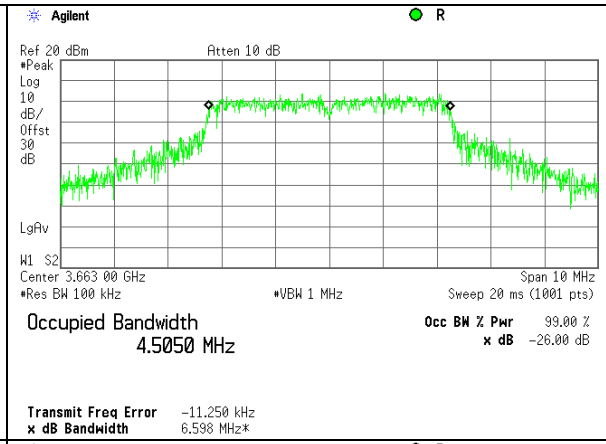
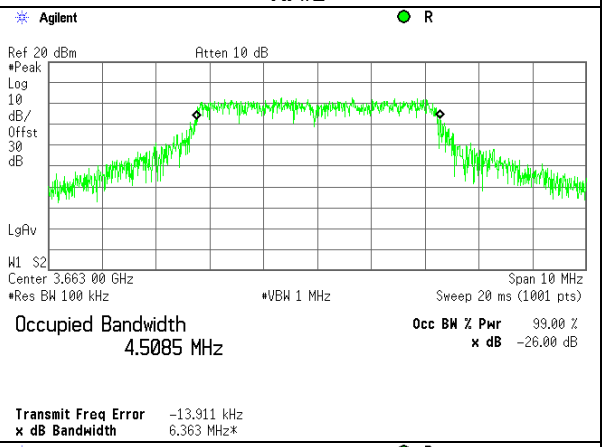
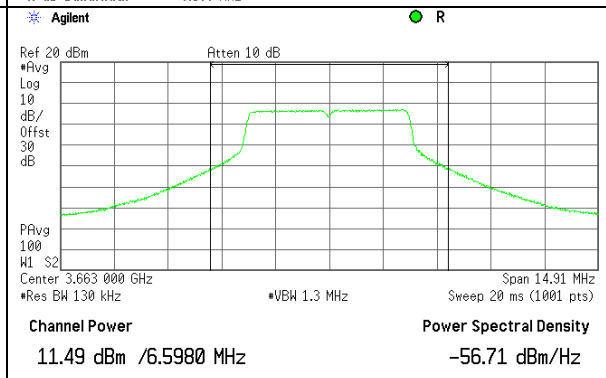
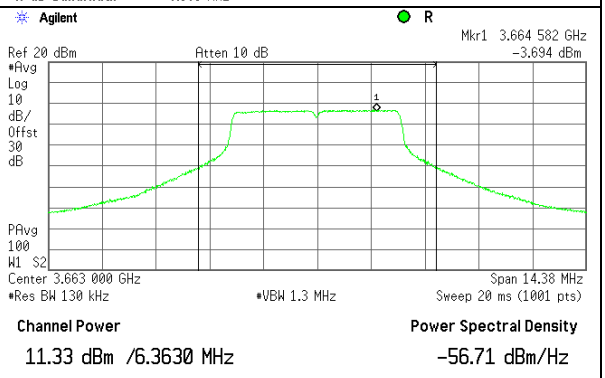
CARRIER FREQUENCY:	3663 MHz
EMISSION BANDWIDTH:	5 MHz
MODULATION:	BPSK
ANTENNA ASSEMBLY GAIN:	21.0dBi

	RF#1	**RF#2**
26dB EBW		
Band Power		

Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power**		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48VDC
Remarks: with 21 dBi gain antenna assembly			

Plot 7.1.4 The 26dB EBW, band power test results at mid frequency

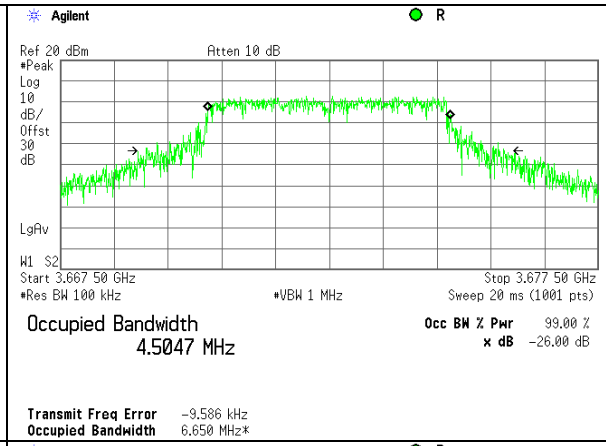
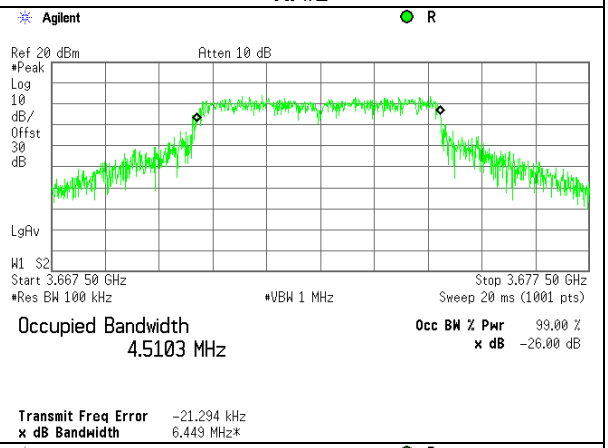
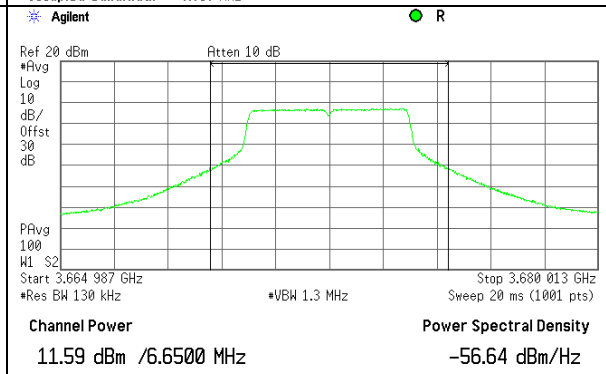
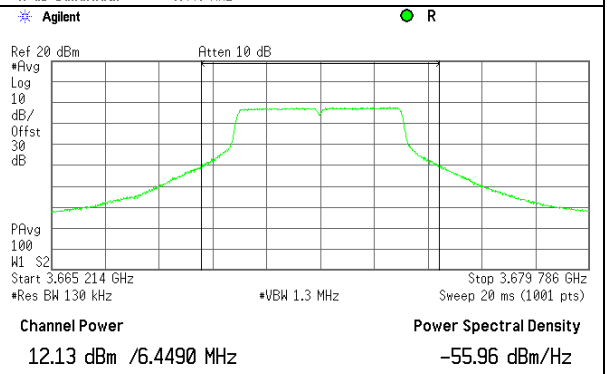
CARRIER FREQUENCY:	3663 MHz
EMISSION BANDWIDTH:	5 MHz
MODULATION:	64QAM
ANTENNA ASSEMBLY GAIN:	21.0dBi

	RF#1	**RF#2**
26dB EBW		
Band Power		

Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power**		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48VDC
Remarks: with 21 dBi gain antenna assembly			

Plot 7.1.5 The 26dB EBW, band power test results at high frequency

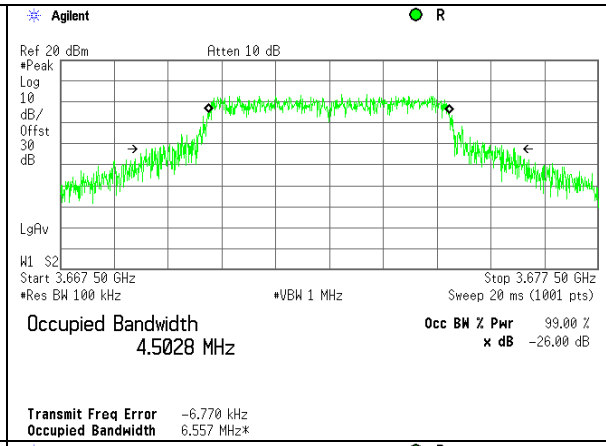
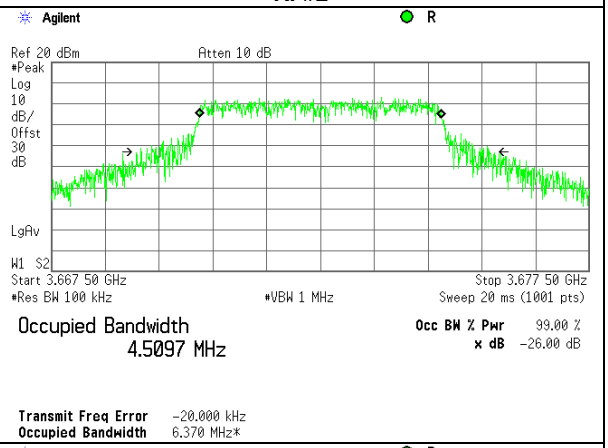
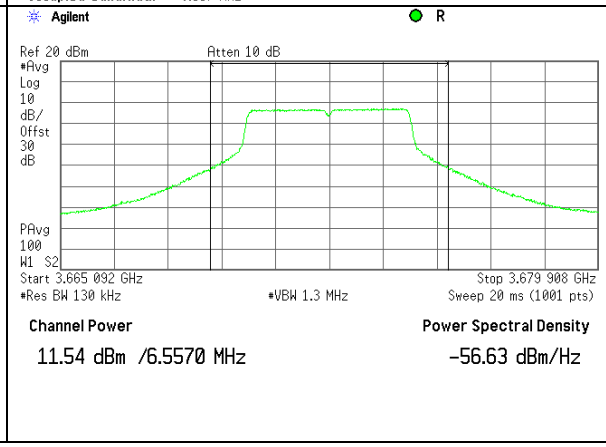
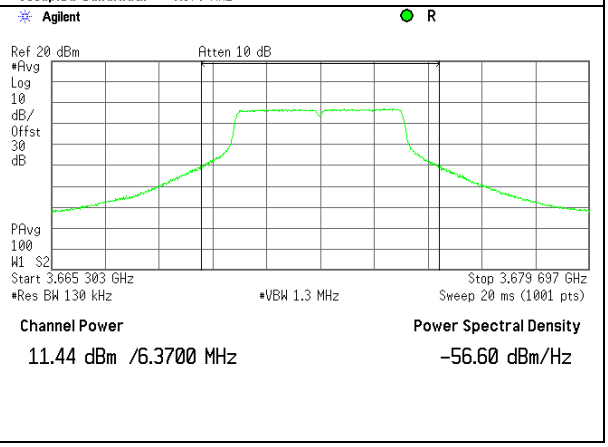
CARRIER FREQUENCY:	3672.5 MHz
EMISSION BANDWIDTH:	5 MHz
MODULATION:	BPSK
ANTENNA ASSEMBLY GAIN:	21.0dBi

	RF#1	**RF#2**
26dB EBW		
Band Power		

Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power**		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48VDC
Remarks: with 21 dBi gain antenna assembly			

Plot 7.1.6 The 26dB EBW, band power test results at high frequency

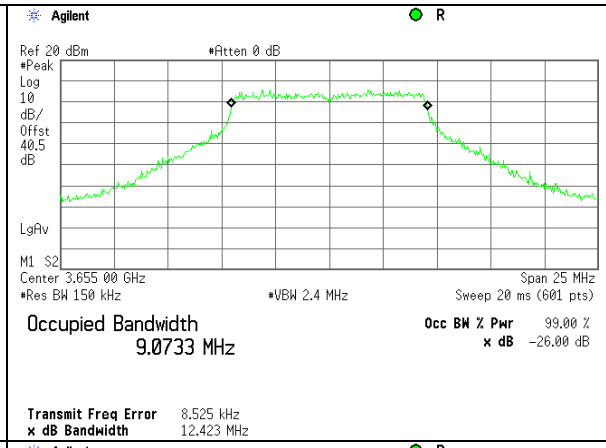
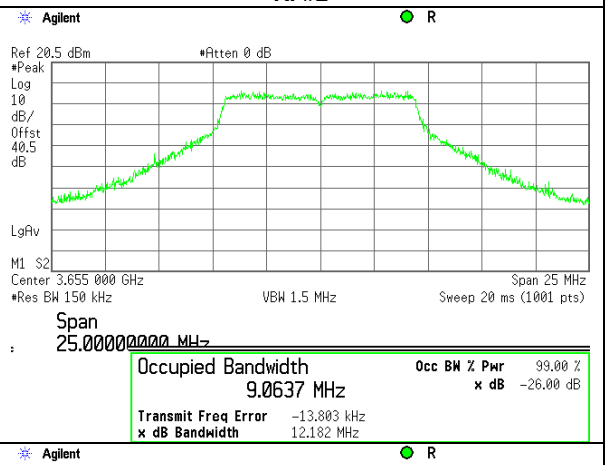
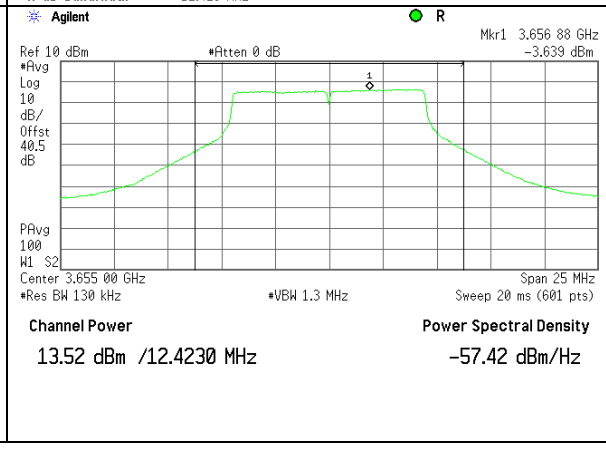
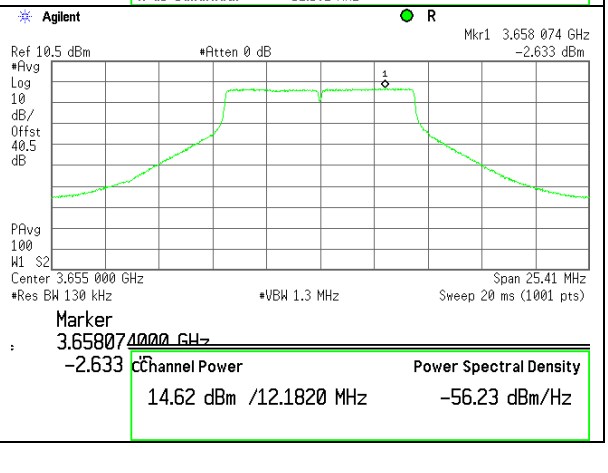
CARRIER FREQUENCY:	3672.5 MHz
EMISSION BANDWIDTH:	5 MHz
MODULATION:	64QAM
ANTENNA ASSEMBLY GAIN:	21.0dBi

	RF#1	RF#2
26dB EBW		
Band Power		

Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power**		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48VDC
Remarks: with 21 dBi gain antenna assembly			

Plot 7.1.7 The 26dB EBW, band power test results at low frequency

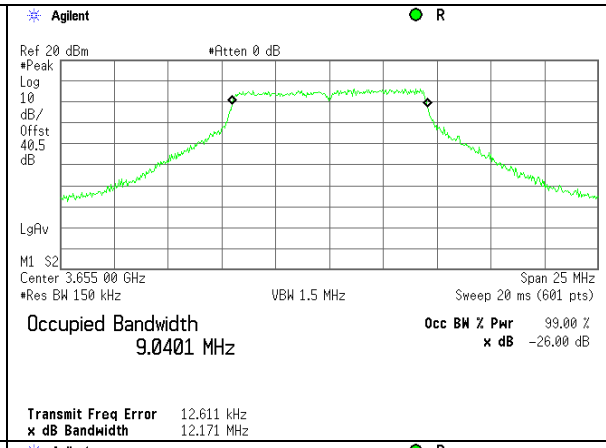
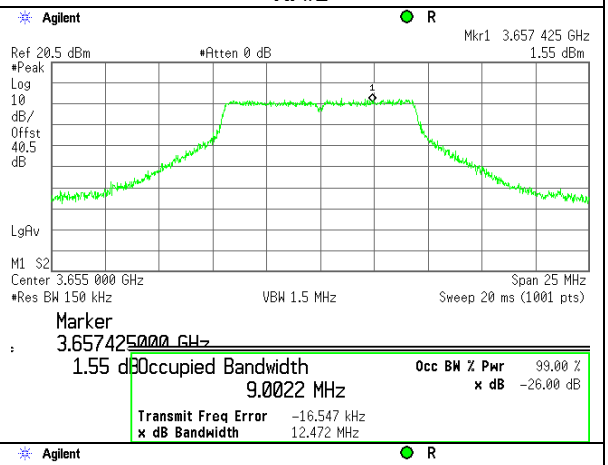
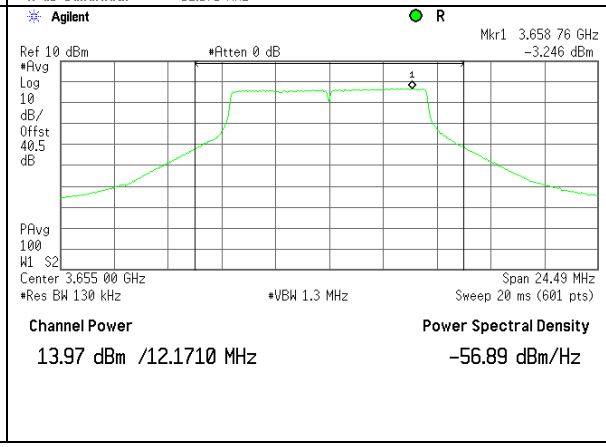
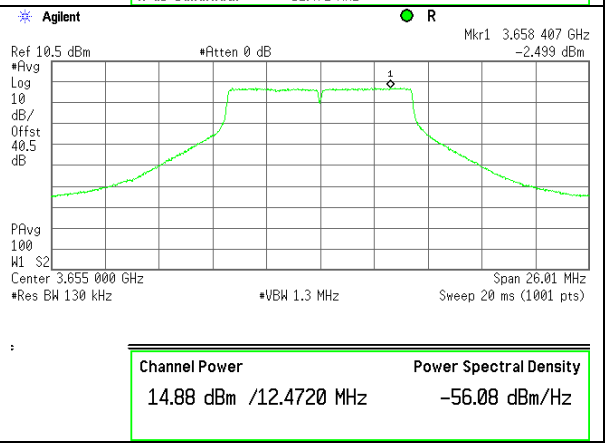
CARRIER FREQUENCY:	3655 MHz
EMISSION BANDWIDTH:	10 MHz
MODULATION:	BPSK
ANTENNA ASSEMBLY GAIN:	21.0dBi

	RF#1	RF#2
26dB EBW		
Band Power		

Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power**		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48VDC
Remarks: with 21 dBi gain antenna assembly			

Plot 7.1.8 The 26dB EBW, band power test results at low frequency

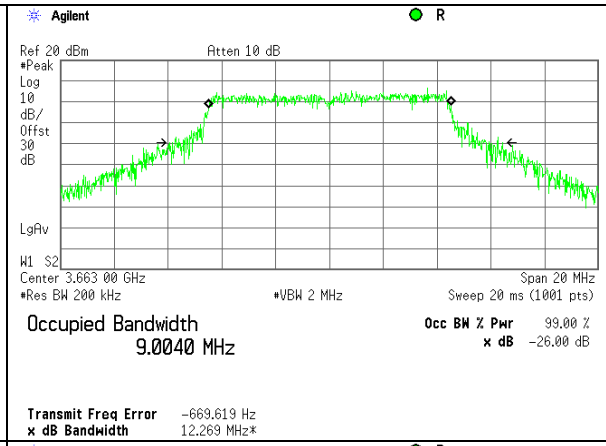
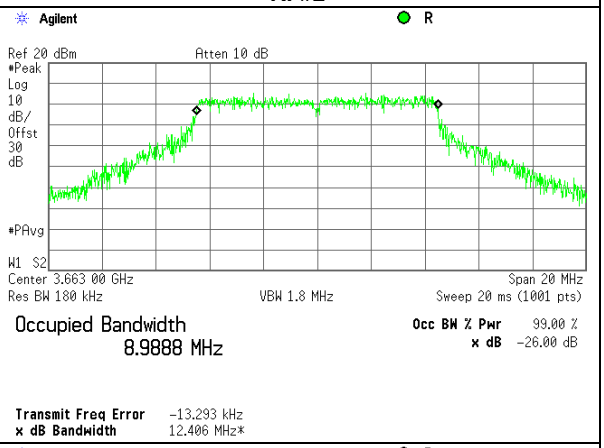
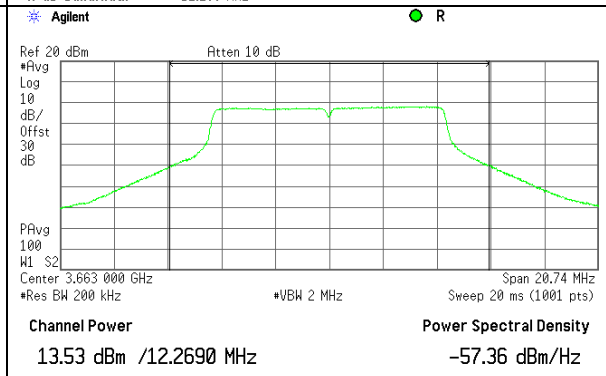
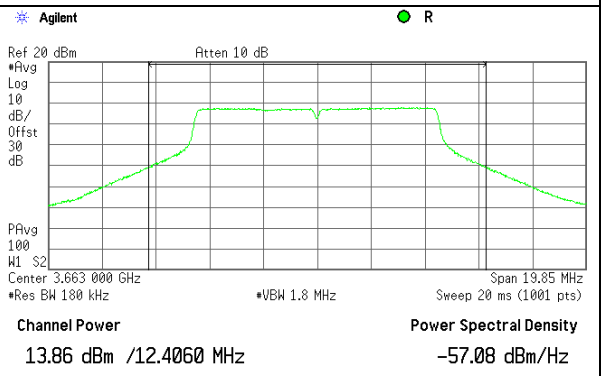
CARRIER FREQUENCY:	3655 MHz
EMISSION BANDWIDTH:	10 MHz
MODULATION:	64QAM
ANTENNA ASSEMBLY GAIN:	21.0dBi

	RF#1	RF#2
26dB EBW		
Band Power		

Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power**		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48VDC
Remarks: with 21 dBi gain antenna assembly			

Plot 7.1.9 The 26dB EBW, band power test results at mid frequency

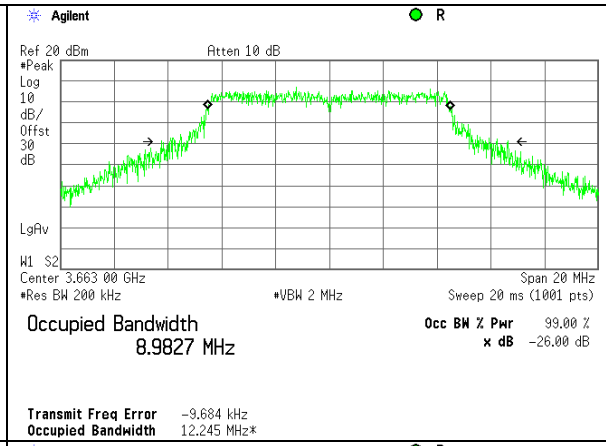
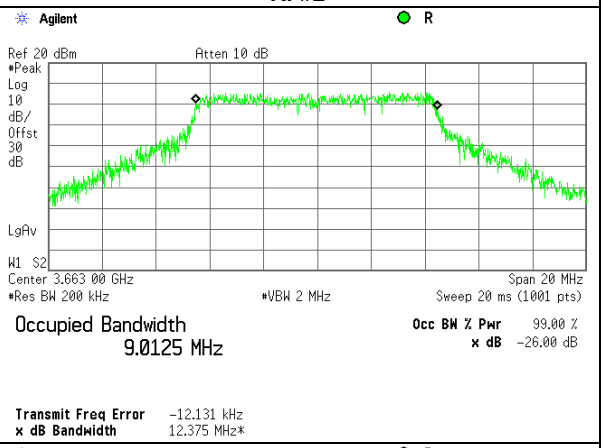
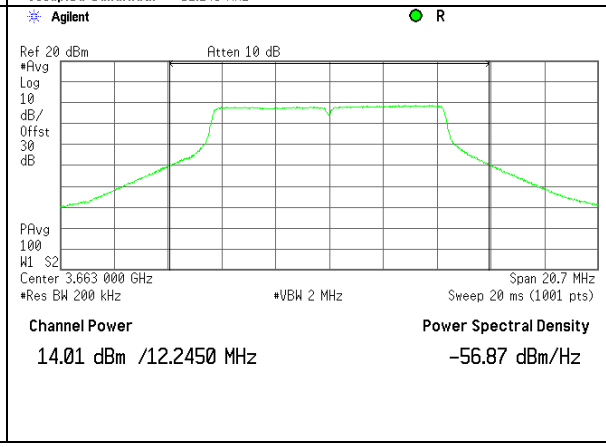
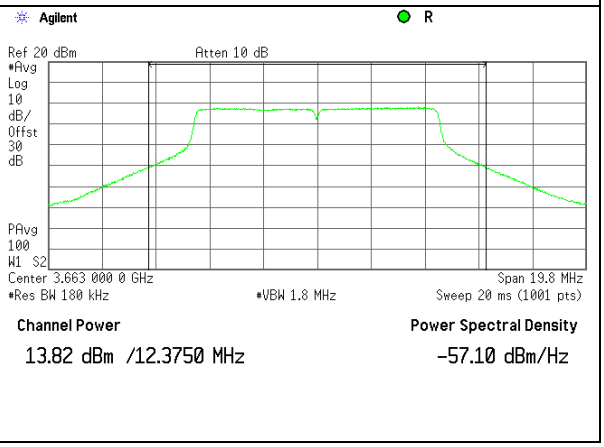
CARRIER FREQUENCY:	3663 MHz
EMISSION BANDWIDTH:	10 MHz
MODULATION:	BPSK
ANTENNA ASSEMBLY GAIN:	21.0dBi

	RF#1	**RF#2**
26dB EBW		
Band Power		

Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power**		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48VDC
Remarks: with 21 dBi gain antenna assembly			

Plot 7.1.10 The 26dB EBW, band power test results at mid frequency

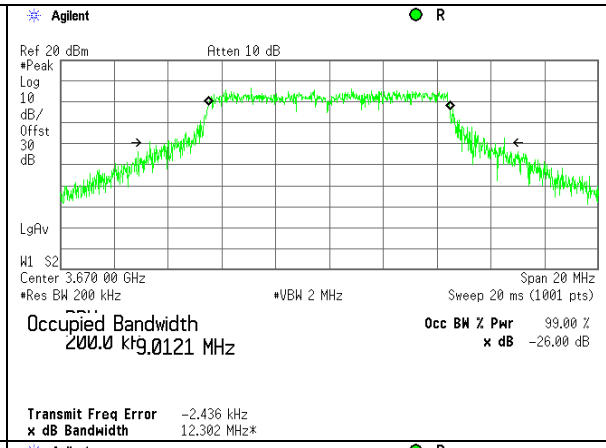
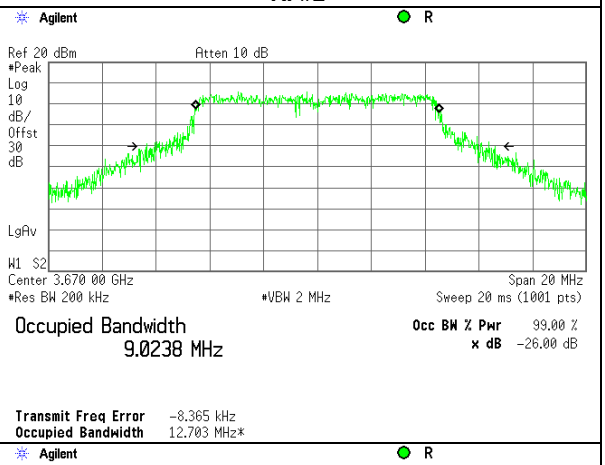
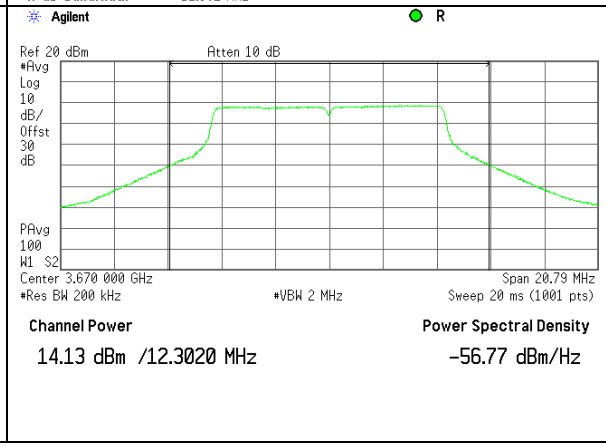
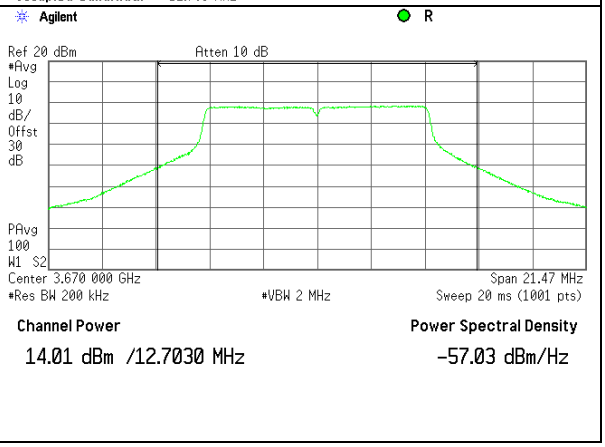
CARRIER FREQUENCY:	3663 MHz
EMISSION BANDWIDTH:	10 MHz
MODULATION:	64QAM
ANTENNA ASSEMBLY GAIN:	21.0dBi

	RF#1	**RF#2**
26dB EBW		
Band Power		

Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power**		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48VDC
Remarks: with 21 dBi gain antenna assembly			

Plot 7.1.11 The 26dB EBW, band power test results at high frequency

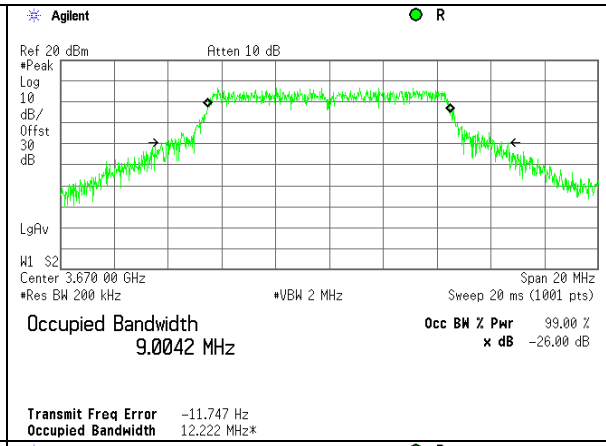
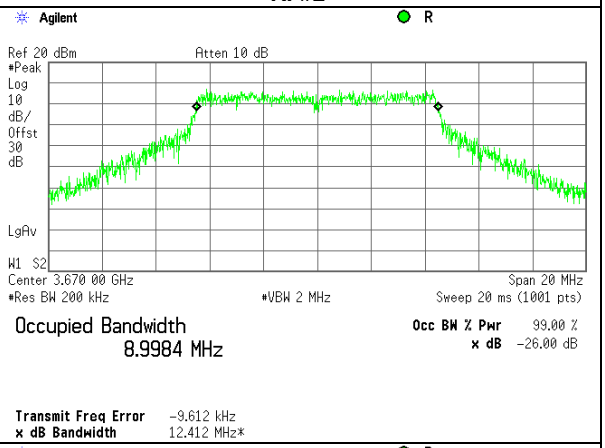
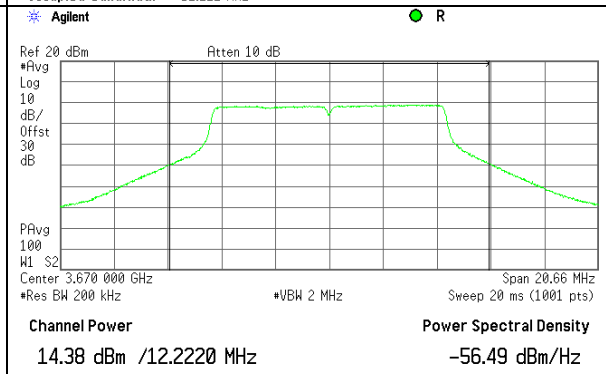
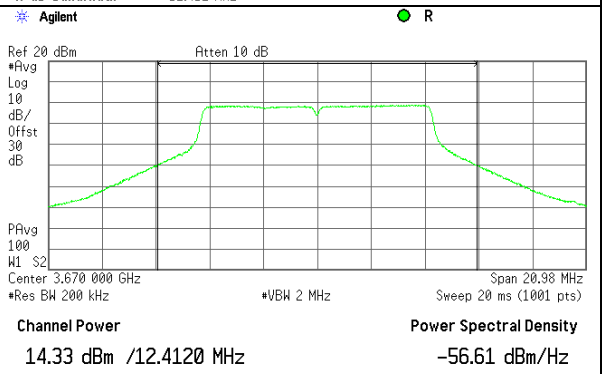
CARRIER FREQUENCY:	3670 MHz
EMISSION BANDWIDTH:	10 MHz
MODULATION:	BPSK
ANTENNA ASSEMBLY GAIN:	21.0dBi

	RF#1	**RF#2**
26dB EBW		
Band Power		

Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power**		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48VDC
Remarks: with 21 dBi gain antenna assembly			

Plot 7.1.12 The 26dB EBW, band power test results at high frequency

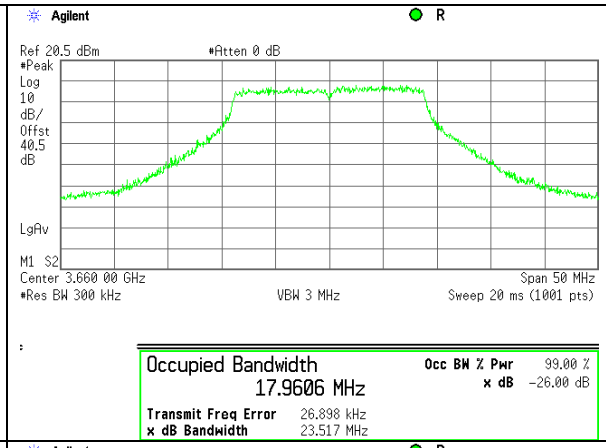
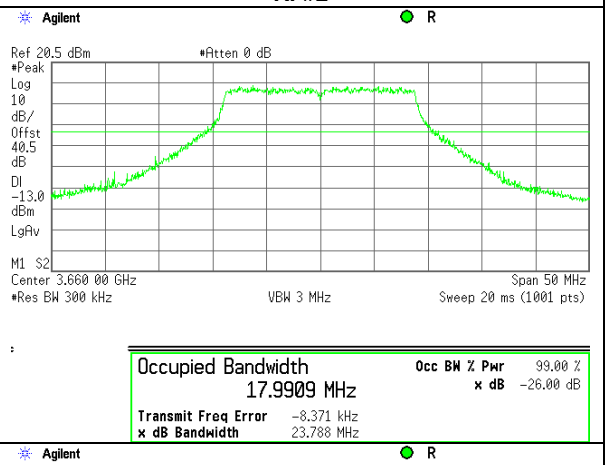
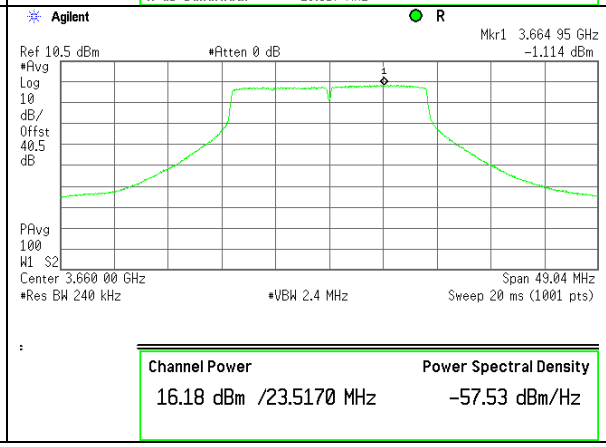
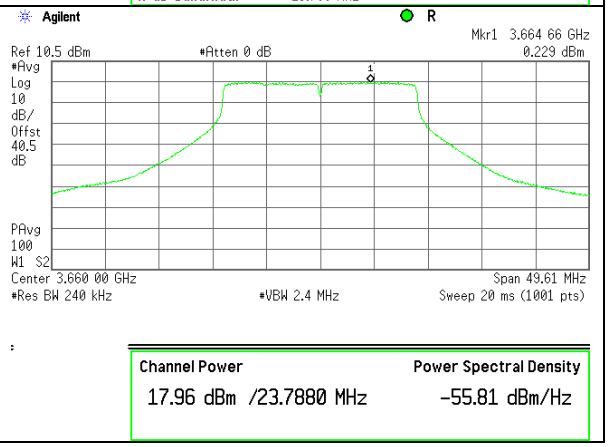
CARRIER FREQUENCY:	3670 MHz
EMISSION BANDWIDTH:	10 MHz
MODULATION:	64QAM
ANTENNA ASSEMBLY GAIN:	21.0dBi

	RF#1	**RF#2**
26dB EBW		
Band Power		

Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power**		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48VDC
Remarks: with 21 dBi gain antenna assembly			

Plot 7.1.13 The 26dB EBW, band power test results at low frequency

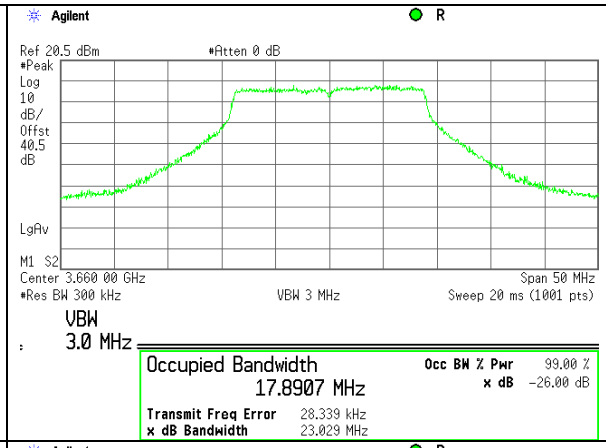
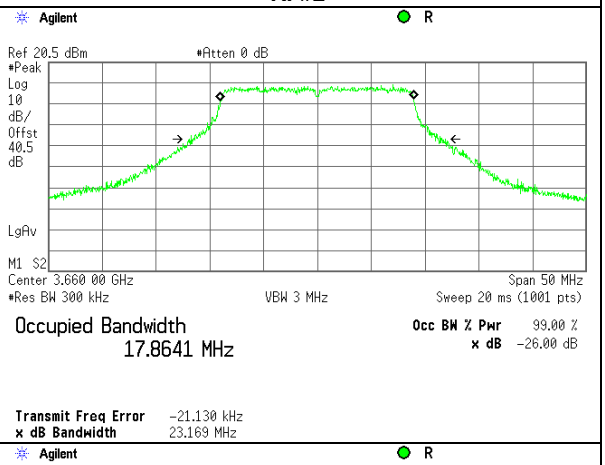
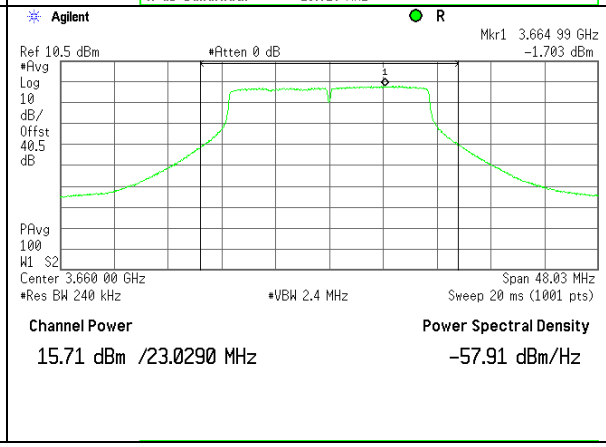
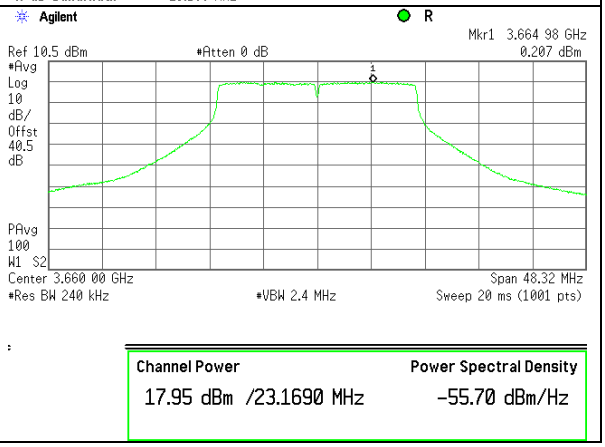
CARRIER FREQUENCY:	3660 MHz
EMISSION BANDWIDTH:	20 MHz
MODULATION:	BPSK
ANTENNA ASSEMBLY GAIN:	21.0dBi

	RF#1	RF#2
26dB EBW		
Band Power		

Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power**		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48VDC
Remarks: with 21 dBi gain antenna assembly			

Plot 7.1.14 The 26dB EBW, band power test results at low frequency

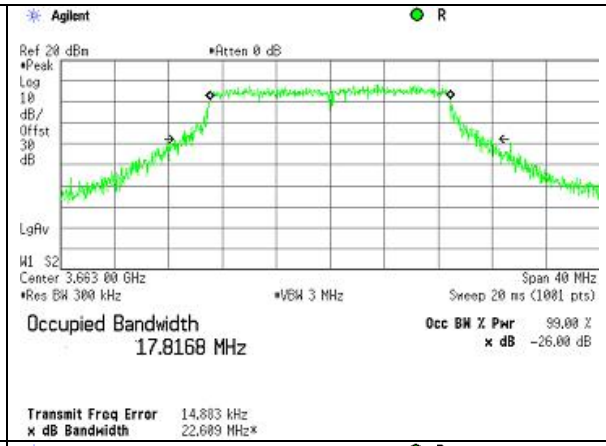
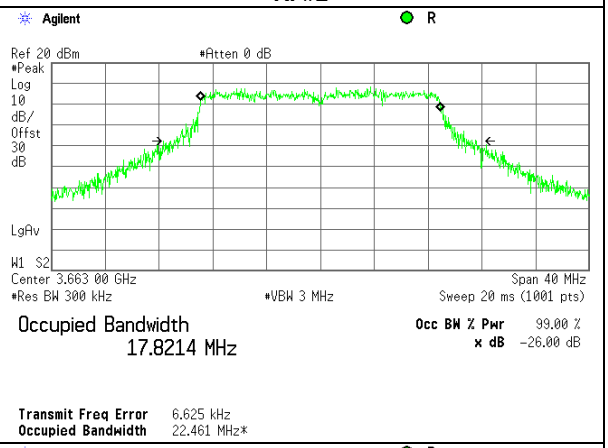
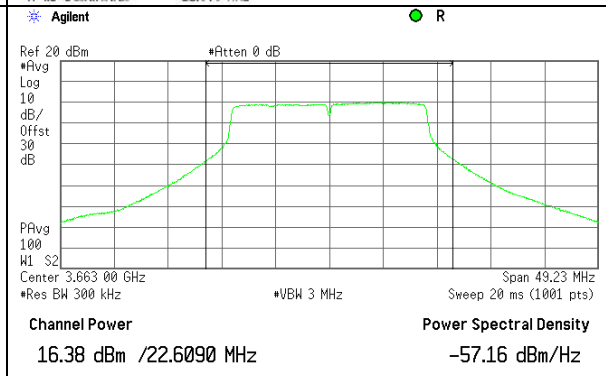
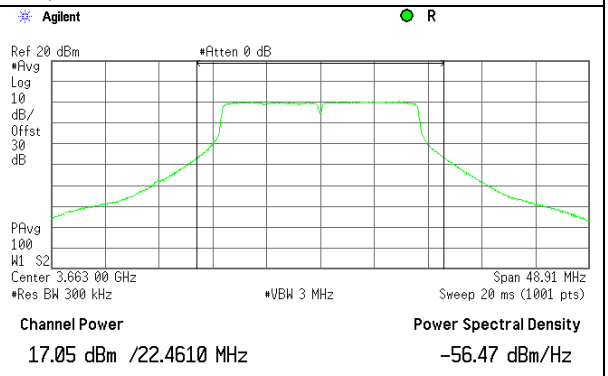
CARRIER FREQUENCY:	3660 MHz
EMISSION BANDWIDTH:	20 MHz
MODULATION:	64QAM
ANTENNA ASSEMBLY GAIN:	21.0dBi

	RF#1	RF#2
26dB EBW		
Band Power		

Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power**		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48VDC
Remarks: with 21 dBi gain antenna assembly			

Plot 7.1.15 The 26dB EBW, band power test results at mid frequency

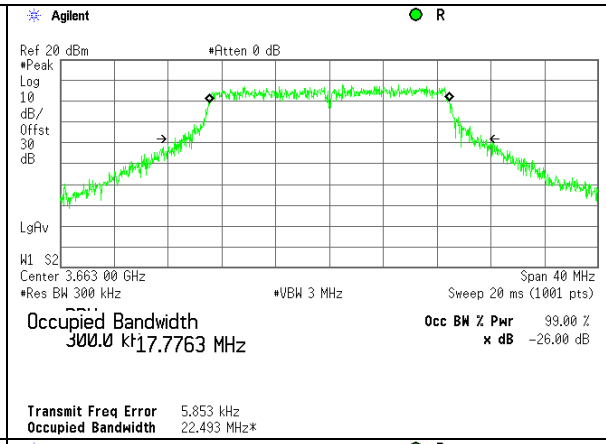
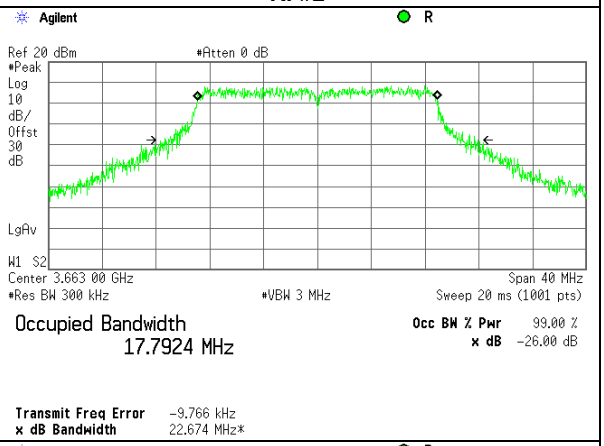
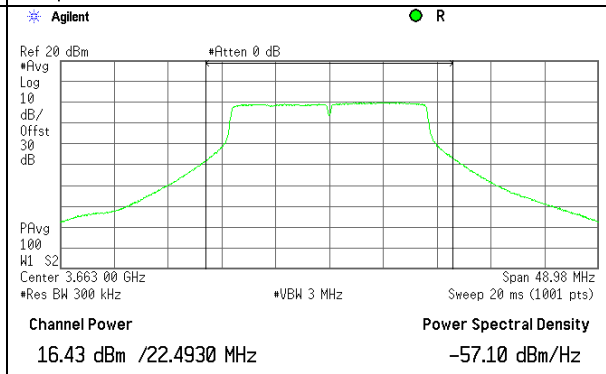
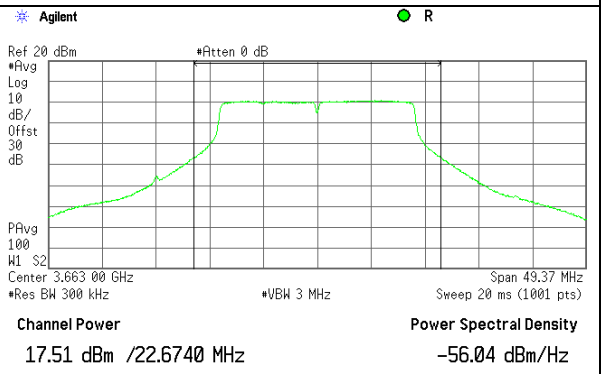
CARRIER FREQUENCY:	3663 MHz
EMISSION BANDWIDTH:	20 MHz
MODULATION:	BPSK
ANTENNA ASSEMBLY GAIN:	21.0dBi

	RF#1	**RF#2**
26dB EBW		
Band Power		

Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power**		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48VDC
Remarks: with 21 dBi gain antenna assembly			

Plot 7.1.16 The 26dB EBW, band power test results at mid frequency

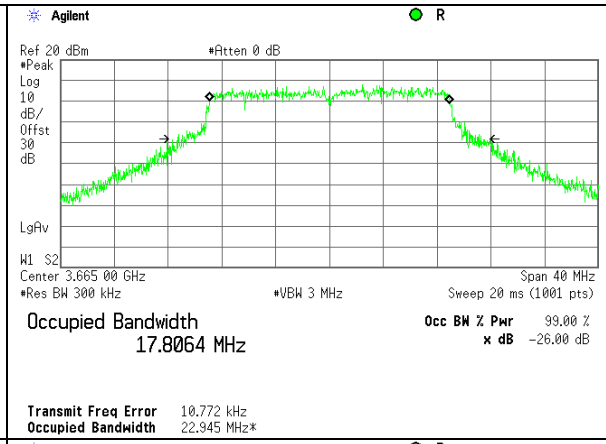
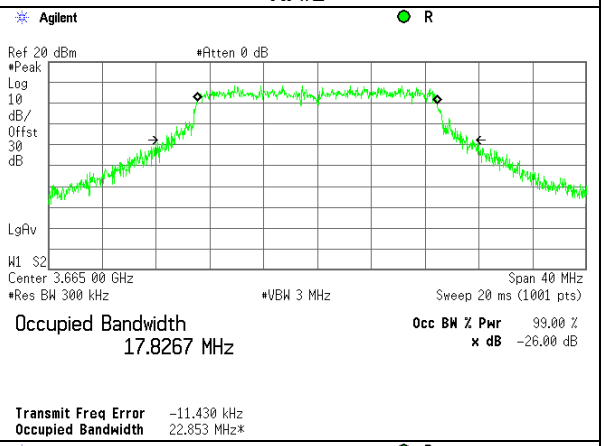
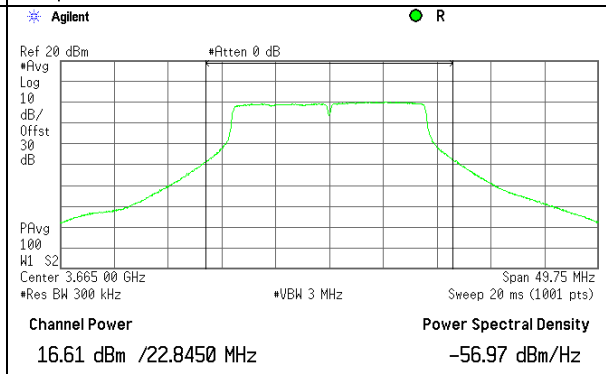
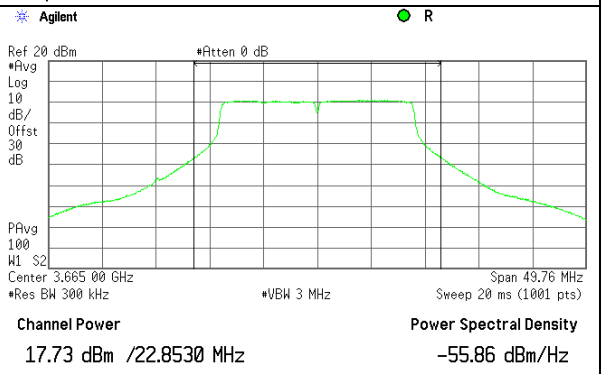
CARRIER FREQUENCY:	3663 MHz
EMISSION BANDWIDTH:	20 MHz
MODULATION:	64QAM
ANTENNA ASSEMBLY GAIN:	21.0dBi

	RF#1	**RF#2**
26dB EBW		
Band Power		

Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power**		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48VDC
Remarks: with 21 dBi gain antenna assembly			

Plot 7.1.17 The 26dB EBW, band power test results at high frequency

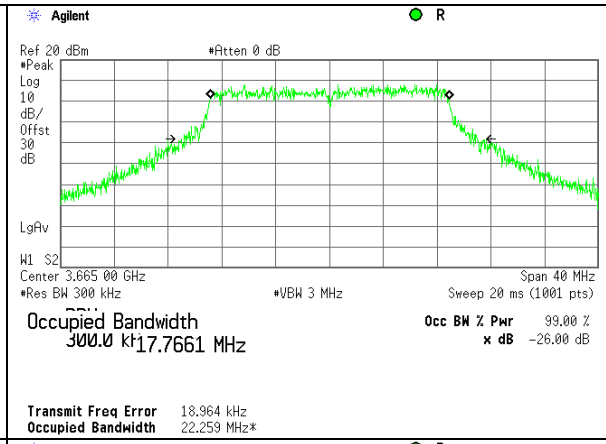
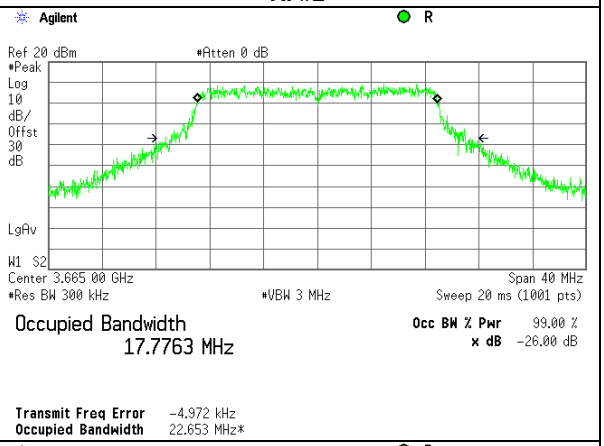
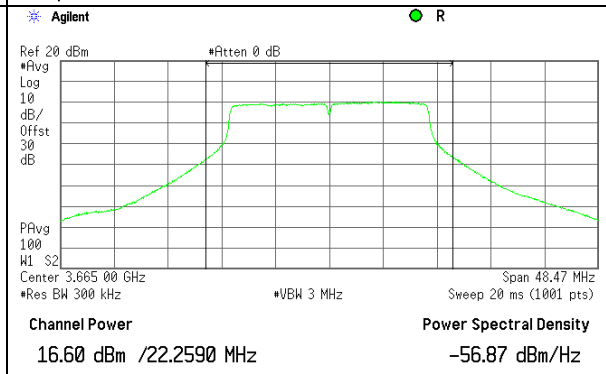
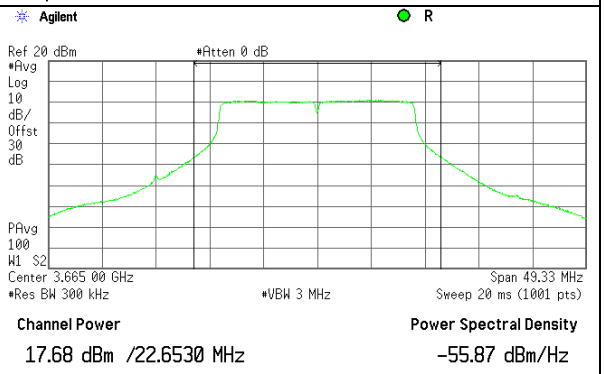
CARRIER FREQUENCY:	3665 MHz
EMISSION BANDWIDTH:	20 MHz
MODULATION:	BPSK
ANTENNA ASSEMBLY GAIN:	21.0dBi

	RF#1	RF#2
26dB EBW		
Band Power		

Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power**		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48VDC
Remarks: with 21 dBi gain antenna assembly			

Plot 7.1.18 The 26dB EBW, band power test results at high frequency

CARRIER FREQUENCY:	3665 MHz
EMISSION BANDWIDTH:	20 MHz
MODULATION:	64QAM
ANTENNA ASSEMBLY GAIN:	21.0dBi

	RF#1	**RF#2**
26dB EBW		
Band Power		

Test specification:	Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	Verdict:	PASS
Date:	11/14/2010		
Temperature: 23 ºC	Air Pressure: 1005 hPa	Relative Humidity: 40 %	Power Supply: -48 VDC
Remarks: with 17dBi gain antenna assembly			

Table 7.1.4 The 26dB EBW test results

ASSIGNED FREQUENCY RANGE: 3650.0 – 3675.0 MHz
DETECTOR USED: Power meter
MODULATING SIGNAL: PRBS
TRANSMITTER OUTPUT POWER SETTINGS: Maximum (see NOTE1)
ANTENNA ASSEMBLY GAIN: 17dBi
EBW: 5 MHz

Channel, MHz	Modulation	EBW, MHz	Output power limit, W/25MHz	Limit for measured EBW*, dBm	Limit with respect to the antenna assembly gain**, dBm
3652.5	BPSK	6.652	25	38.230	21.230
3663.0	BPSK	6.559	25	38.168	21.168
3672.5	BPSK	6.520	25	38.142	21.142
3652.5	64QAM	6.68	25	38.248	21.248
3663.0	64QAM	6.479	25	38.115	21.115
3672.5	64QAM	6.532	25	38.150	21.150

EBW: 10 MHz

Channel, MHz	Modulation	EBW, MHz	Output power limit, W/25MHz	Limit for measured EBW*, dBm	Limit with respect to the antenna assembly gain**, dBm
3655.0	BPSK	12.156	25	40.848	23.848
3663.0	BPSK	12.488	25	40.965	23.965
3670.0	BPSK	12.488	25	40.965	23.965
3655.0	64QAM	12.13	25	40.839	23.839
3663.0	64QAM	12.27	25	40.888	23.888
3670.0	64QAM	12.479	25	40.962	23.962

EBW: 20 MHz

Channel, MHz	Modulation	EBW, MHz	Output power limit, W/25MHz	Limit for measured EBW*, dBm	Limit with respect to the antenna assembly gain**, dBm
3660.0	BPSK	23.091	25	43.634	26.634
3663.0	BPSK	23.262	25	43.666	26.666
3665.0	BPSK	23.205	25	43.656	26.656
3660.0	64QAM	23.19	25	43.653	26.653
3663.0	64QAM	23.601	25	43.729	26.729
3665.0	64QAM	22.45	25	43.512	26.512

* - Limit for EBW = 10*LOG((1000 * [Output power limit, W] / 25MHz) / (25MHz / EBW, MHz)), dBm
** - Limit for EBW – Antenna assembly gain.

Test specification:	Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	Verdict:	PASS
Date:	11/14/2010		
Temperature: 23 ºC	Air Pressure: 1005 hPa	Relative Humidity: 40 %	Power Supply: -48 VDC
Remarks: with 17dBi gain antenna assembly			

Table 7.1.5 Peak EIRP output power test results

ASSIGNED FREQUENCY RANGE: 3650.0 – 3675.0 MHz
DETECTOR USED: Average (RMS)
MODULATING SIGNAL: PRBS
TRANSMITTER OUTPUT POWER SETTINGS: Maximum (see NOTE1)
EBW: 5 MHz

Channel, MHz	Modulation	Pmeas (RF#1), dBm	Pmeas (RF#2), dBm	P_{meas} *, dBm	Antenna assembly gain, dBi	EIRP, dBm	Limit, dBm	Margin, dB	Verdict
3652.5	BPSK	15.07	16.03	18.59	17.00	35.59	38.23	-2.64	Pass
3663.0	BPSK	14.87	14.75	17.82	17.00	34.82	38.17	-3.35	Pass
3672.5	BPSK	15.09	14.92	18.02	17.00	35.02	38.14	-3.13	Pass
3652.5	64QAM	15.11	16.03	18.60	17.00	35.60	38.25	-2.64	Pass
3663.0	64QAM	15.03	15.08	18.07	17.00	35.07	38.12	-3.05	Pass
3672.5	64QAM	15.11	14.90	18.02	17.00	35.02	38.15	-3.13	Pass
EBW:					**10 MHz**				
3655.0	BPSK	17.88	19.23	21.62	17.00	38.62	40.85	-2.64	Pass
3663.0	BPSK	17.97	18.56	21.29	17.00	38.29	40.96	-2.68	Pass
3670.0	BPSK	17.82	18.73	21.31	17.00	38.31	40.96	-2.66	Pass
3655.0	64QAM	18.06	18.98	21.55	17.00	38.55	40.84	-2.64	Pass
3663.0	64QAM	17.23	18.21	20.76	17.00	37.76	40.89	-3.13	Pass
3670.0	64QAM	17.38	18.71	21.11	17.00	38.11	40.96	-2.86	Pass
EBW:					**20 MHz**				
3660.0	BPSK	19.88	21.77	23.94	17.00	40.94	43.634	-2.70	Pass
3663.0	BPSK	20.20	22.14	24.29	17.00	41.29	43.666	-2.38	Pass
3665.0	BPSK	20.32	22.19	24.37	17.00	41.37	43.656	-2.29	Pass
3660.0	64QAM	20.07	21.59	23.91	17.00	40.91	43.653	-2.75	Pass
3663.0	64QAM	20.76	22.28	24.60	17.00	41.60	43.729	-2.13	Pass
3665.0	64QAM	20.94	22.24	24.65	17.00	41.65	43.512	-1.86	Pass

* - Pmeas, dBm = 10 log {10^[P(dBm,RF#1)/10]+ 10^([P(dBm, RF#2)/10]}

NOTE1: the EUT was configured to produce maximum conducted RF power for minimum declared Antenna gain of 22 dBi. RF output power will vary depending on the antenna assembly gain to ensure that the total EIRP power and power limits comply with EIRP limits. For actual settings of power levels with respect to actual antenna assembly used, please refer to the User's Manual.

Reference numbers of test equipment used

HL 3440	HL 3474	HL 3779	HL 3784	HL 3818			

Full description is given in Appendix A.

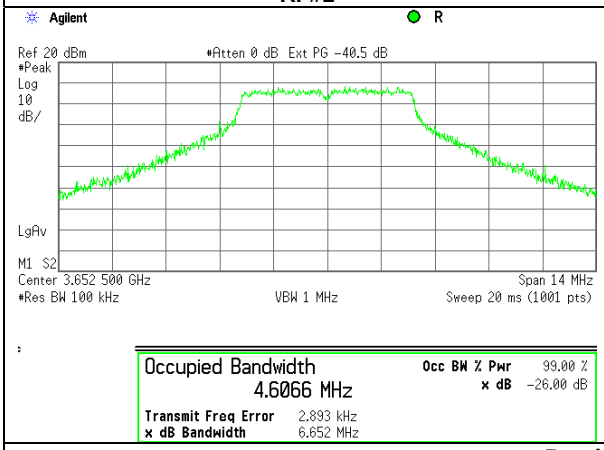
Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power**		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 23 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 40 %	**Power Supply:** -48 VDC
Remarks: with 17dBi gain antenna assembly			

Plot 7.1.19 The 26 dB EBW, band power test results at low frequency

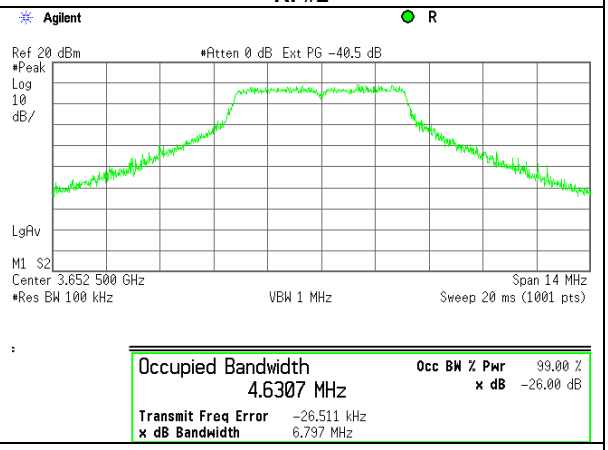
CARRIER FREQUENCY:	3652.5 MHz
EMISSION BANDWIDTH:	5 MHz
MODULATION:	BPSK
ANTENNA ASSEMBLY GAIN:	17 dBi

26dB EBW

RF#1

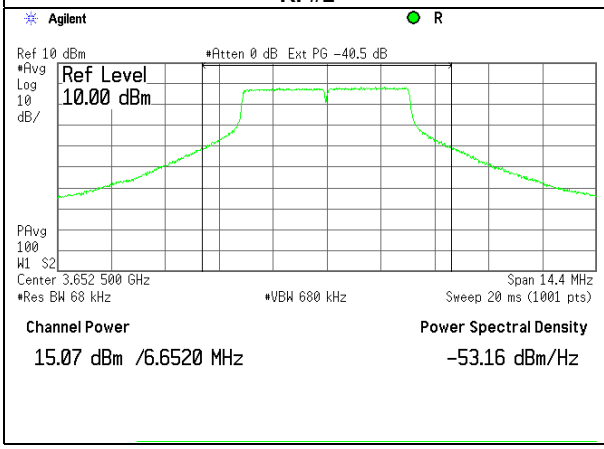


RF#2

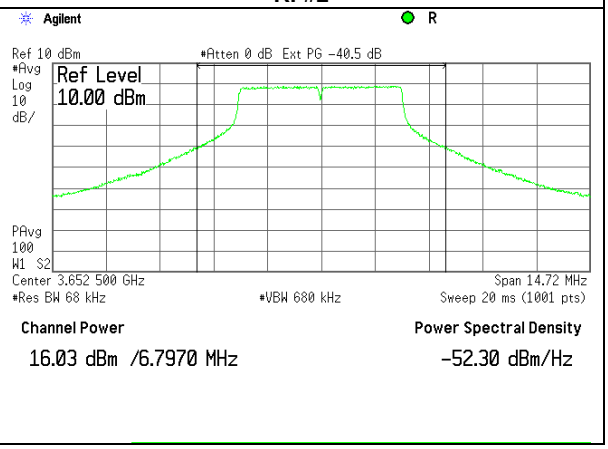


Band power

RF#1



RF#2



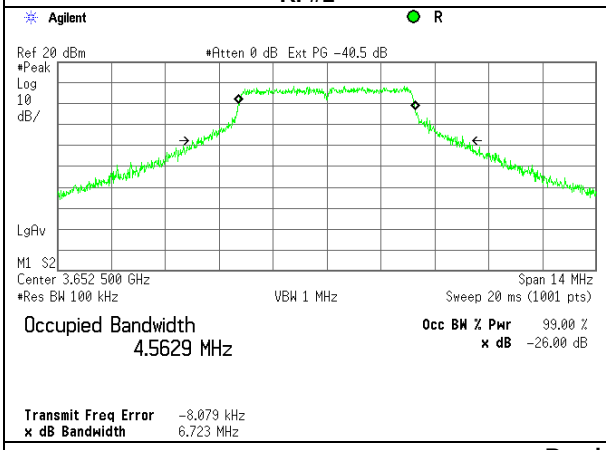
Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power**		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 23 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 40 %	**Power Supply:** -48 VDC
Remarks: with 17dBi gain antenna assembly			

Plot 7.1.20 The 26 dB EBW, band power test results at low frequency

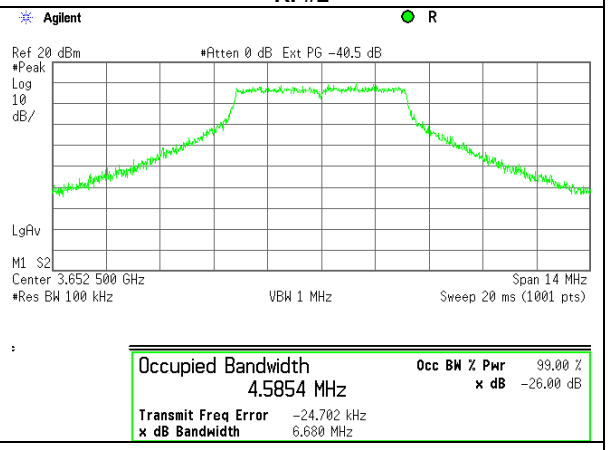
CARRIER FREQUENCY:	3652.5 MHz
EMISSION BANDWIDTH:	5 MHz
MODULATION:	64QAM
ANTENNA ASSEMBLY GAIN:	17 dBi

26dB EBW

RF#1

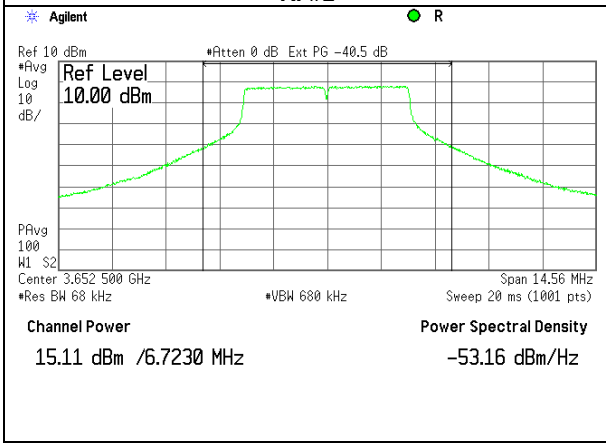


RF#2

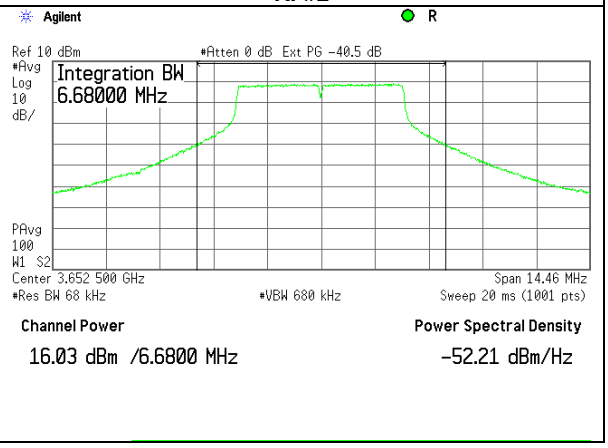


Band power

RF#1



RF#2



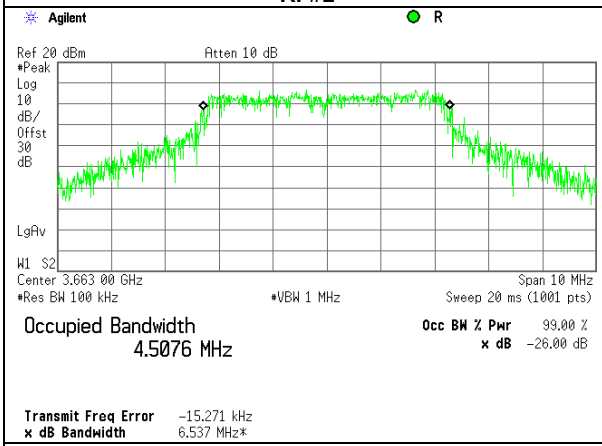
Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power**		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 23 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 40 %	**Power Supply:** -48 VDC
Remarks: with 17dBi gain antenna assembly			

Plot 7.1.21 The 26 dB EBW, band power test results at mid frequency

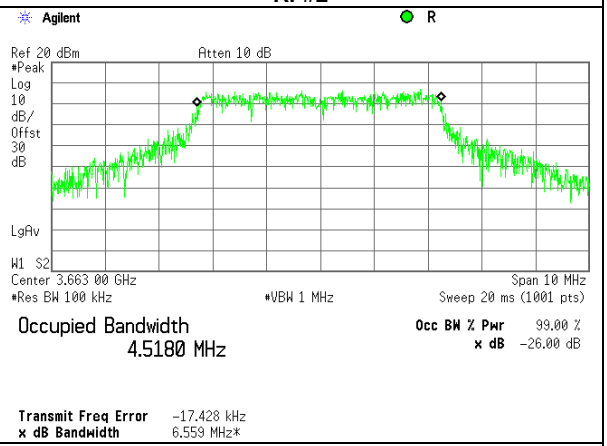
CARRIER FREQUENCY:	3663.0MHz
EMISSION BANDWIDTH:	5 MHz
MODULATION:	BPSK
ANTENNA ASSEMBLY GAIN:	17 dBi

26dB EBW

RF#1

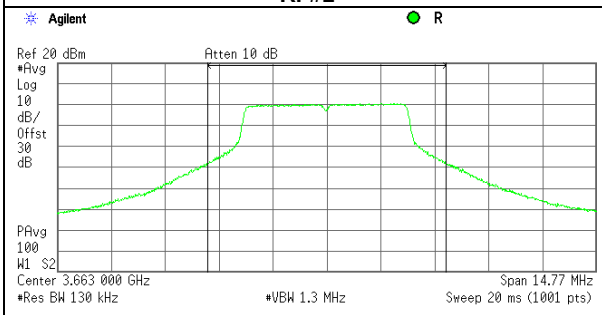


RF#2

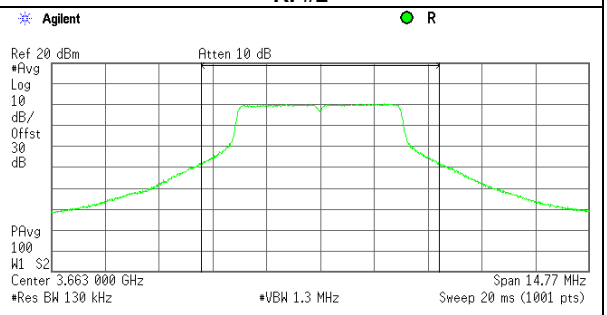


Band power

RF#1



RF#2



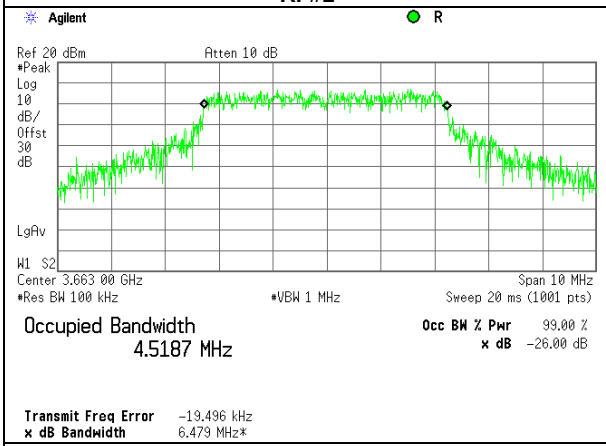
Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power**		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 23 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 40 %	**Power Supply:** -48 VDC
Remarks: with 17dBi gain antenna assembly			

Plot 7.1.22 The 26dB EBW, band power test results at mid frequency

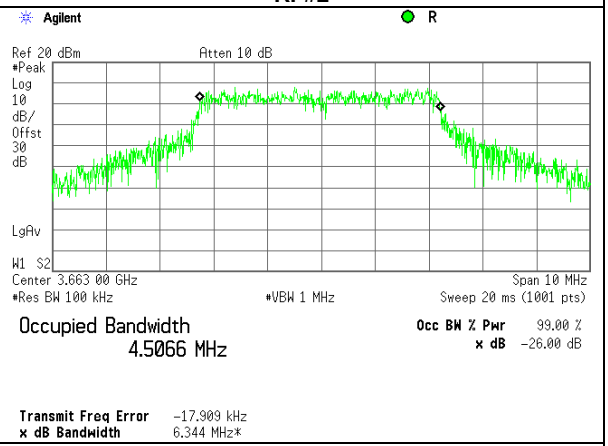
CARRIER FREQUENCY:	3663.0 MHz
EMISSION BANDWIDTH:	5 MHz
MODULATION:	64QAM
ANTENNA ASSEMBLY GAIN:	17 dBi

26dB EBW

RF#1

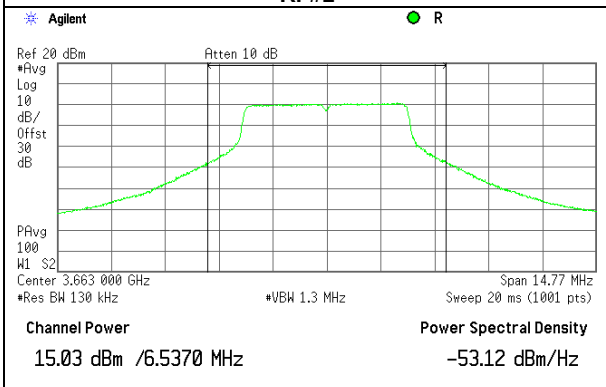


RF#2

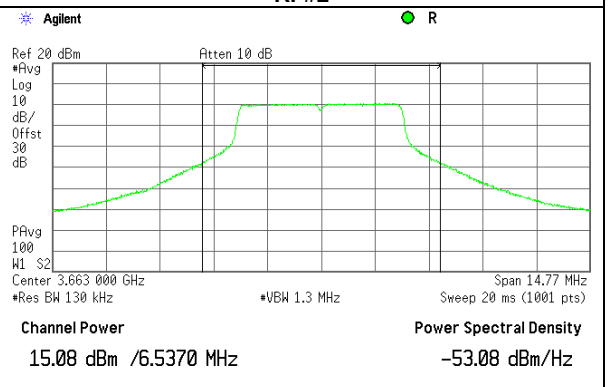


Band power

RF#1



RF#2



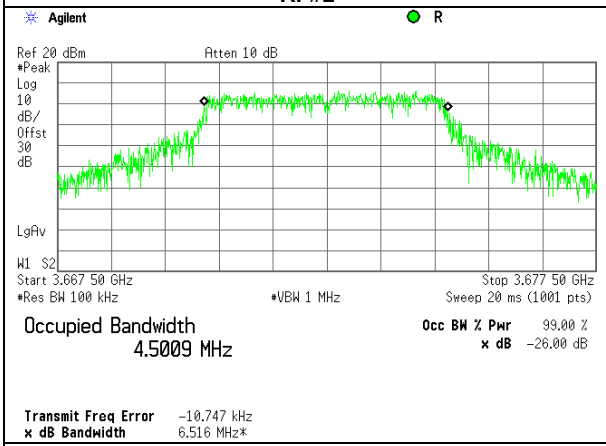
Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power**		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 23 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 40 %	**Power Supply:** -48 VDC
Remarks: with 17dBi gain antenna assembly			

Plot 7.1.23 The 26dB EBW, band power test results at high frequency

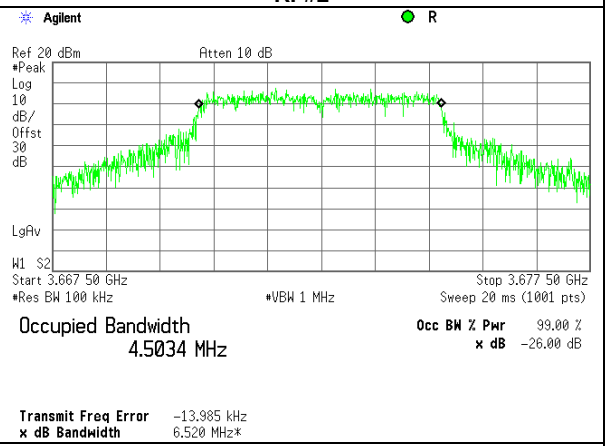
CARRIER FREQUENCY:	3672.5 MHz
EMISSION BANDWIDTH:	5 MHz
MODULATION:	BPSK
ANTENNA ASSEMBLY GAIN:	17 dBi

26dB EBW

RF#1

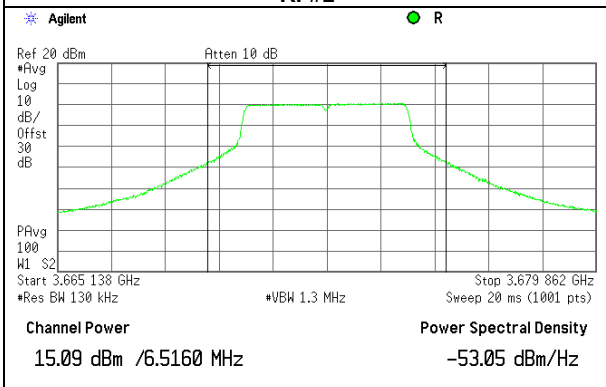


RF#2

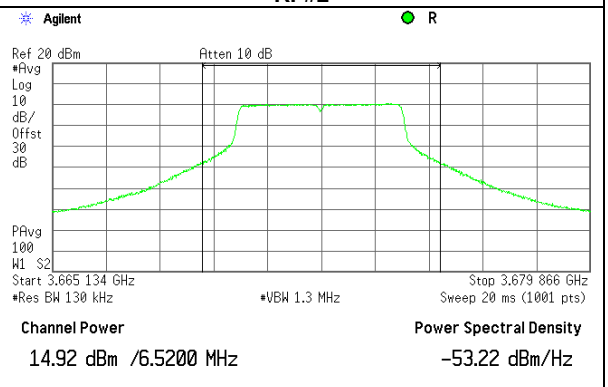


Band power

RF#1



RF#2



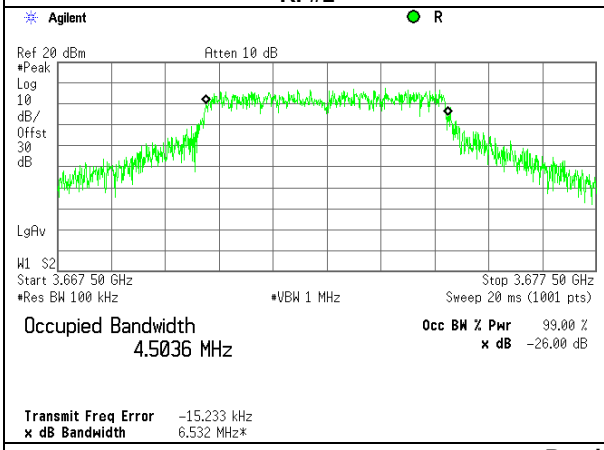
Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power**		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 23 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 40 %	**Power Supply:** -48 VDC
Remarks: with 17dBi gain antenna assembly			

Plot 7.1.24 The 26dB EBW, band power test results at high frequency

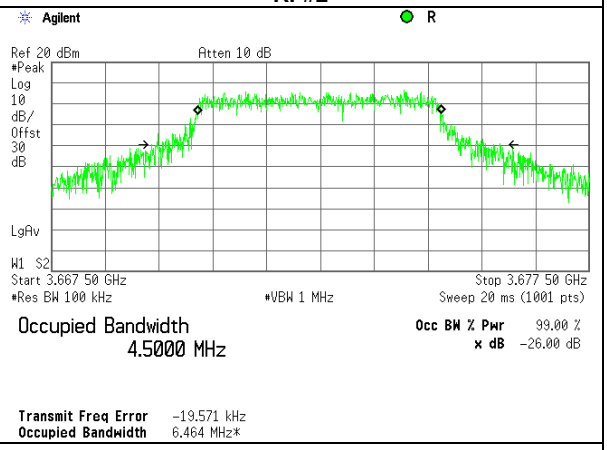
CARRIER FREQUENCY:	3672.5 MHz
EMISSION BANDWIDTH:	5 MHz
MODULATION:	64QAM
ANTENNA ASSEMBLY GAIN:	17 dBi

26dB EBW

RF#1

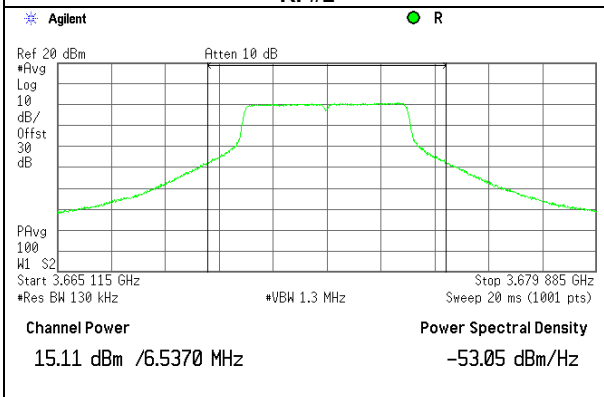


RF#2

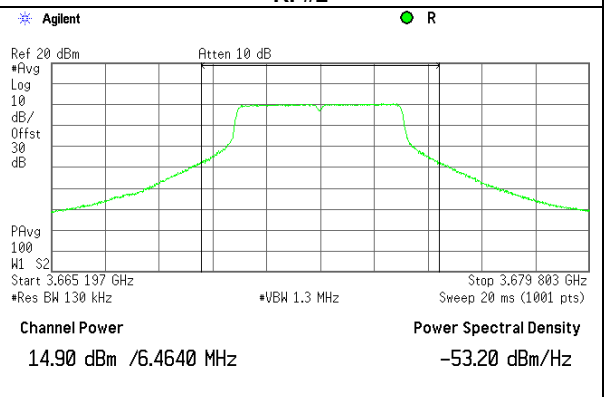


Band power

RF#1



RF#2



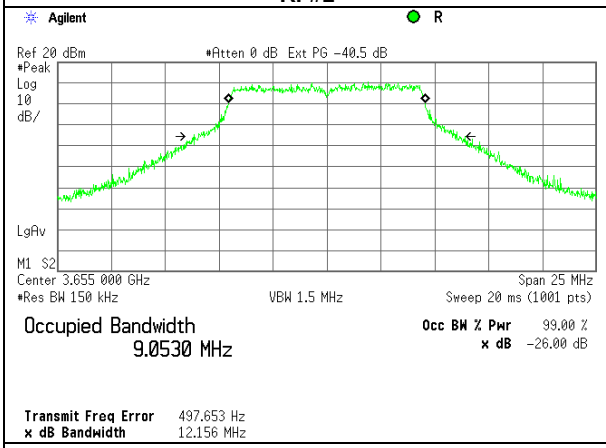
Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power**		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 23 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 40 %	**Power Supply:** -48 VDC
Remarks: with 17dBi gain antenna assembly			

Plot 7.1.25 The 26dB EBW, band power test results at low frequency

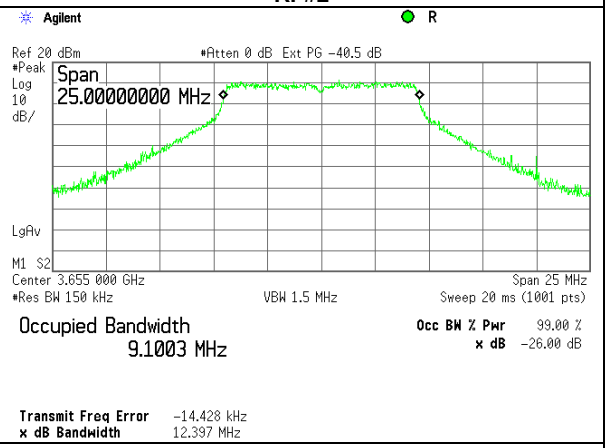
CARRIER FREQUENCY:	3655.0 MHz
EMISSION BANDWIDTH:	10 MHz
MODULATION:	BPSK
ANTENNA ASSEMBLY GAIN:	17 dBi

26dB EBW

RF#1

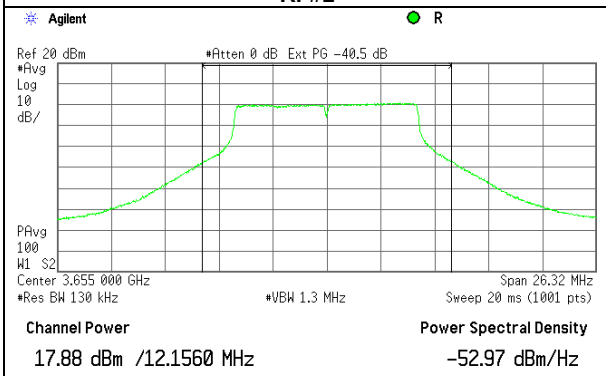


RF#2

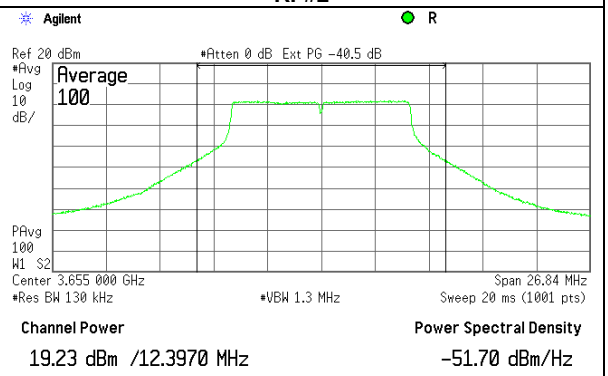


Band power

RF#1



RF#2



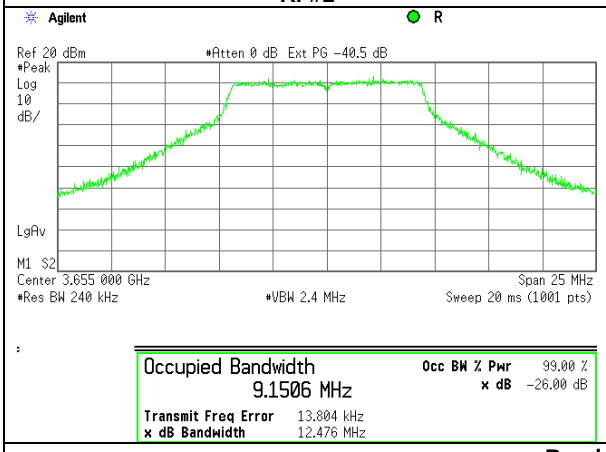
Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power**		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 23 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 40 %	**Power Supply:** -48 VDC
Remarks: with 17dBi gain antenna assembly			

Plot 7.1.26 The 26dB EBW, band power test results at low frequency

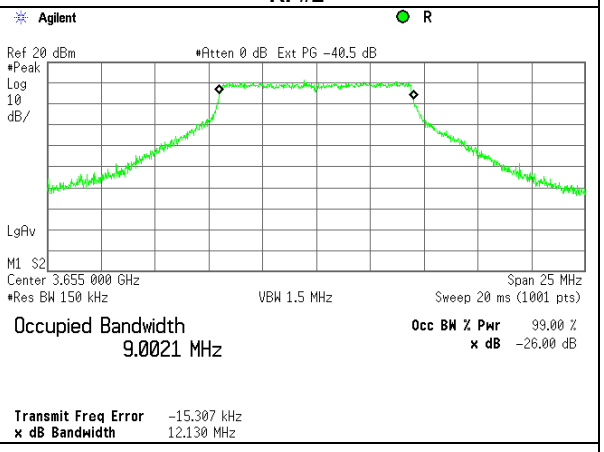
CARRIER FREQUENCY:	3655.0 MHz
EMISSION BANDWIDTH:	10 MHz
MODULATION:	64QAM
ANTENNA ASSEMBLY GAIN:	17 dBi

26dB EBW

RF#1

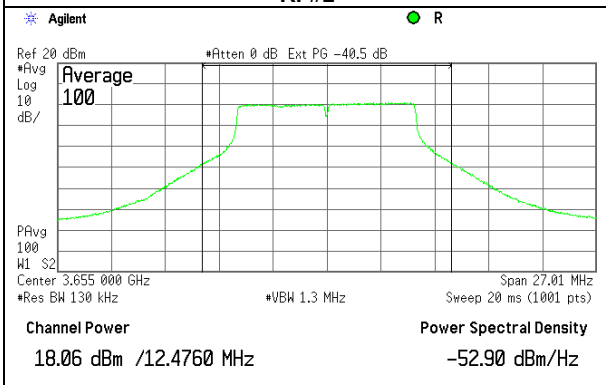


RF#2

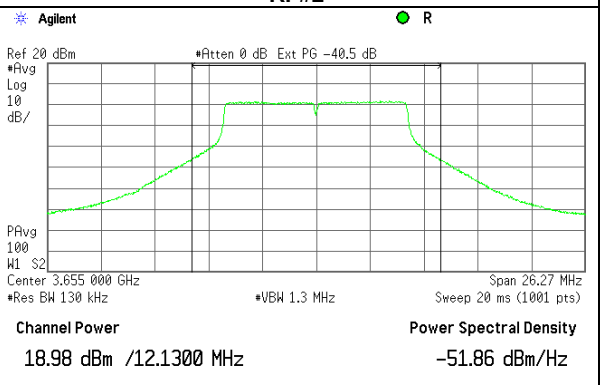


Band power

RF#1



RF#2



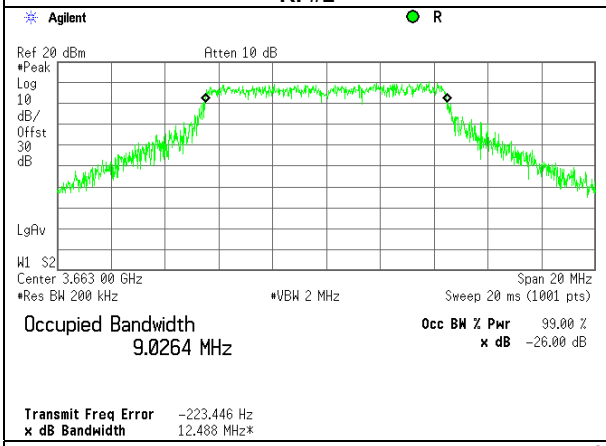
Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power**		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 23 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 40 %	**Power Supply:** -48 VDC
Remarks: with 17dBi gain antenna assembly			

Plot 7.1.27 The 26dB EBW, band power test results at mid frequency

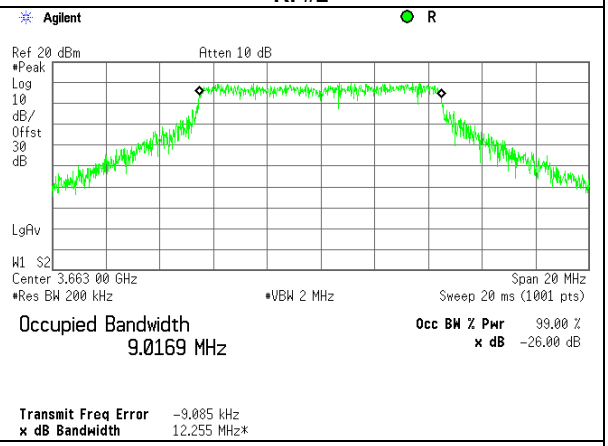
CARRIER FREQUENCY:	3663.0MHz
EMISSION BANDWIDTH:	10 MHz
MODULATION:	BPSK
ANTENNA ASSEMBLY GAIN:	17 dBi

26dB EBW

RF#1

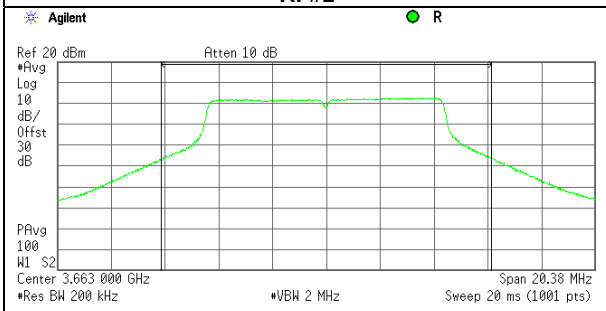


RF#2

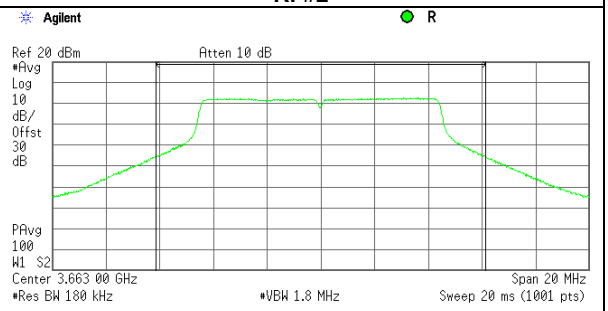


Band power

RF#1



RF#2



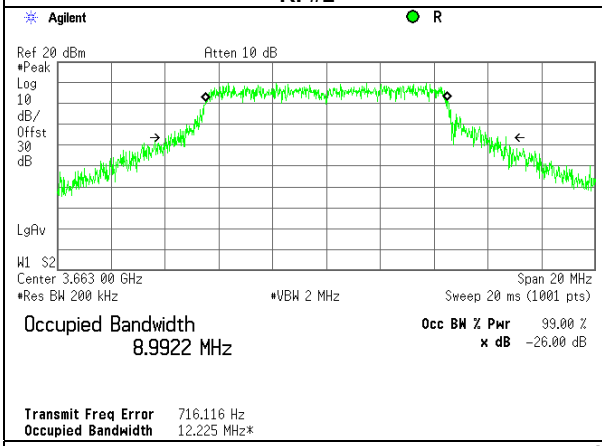
Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power**		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 23 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 40 %	**Power Supply:** -48 VDC
Remarks: with 17dBi gain antenna assembly			

Plot 7.1.28 The 26dB EBW, band power test results at mid frequency

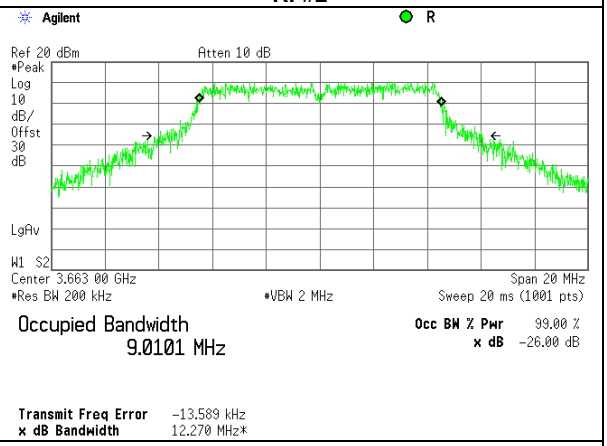
CARRIER FREQUENCY:	3663.0 MHz
EMISSION BANDWIDTH:	10 MHz
MODULATION:	64QAM
ANTENNA ASSEMBLY GAIN:	17 dBi

26dB EBW

RF#1

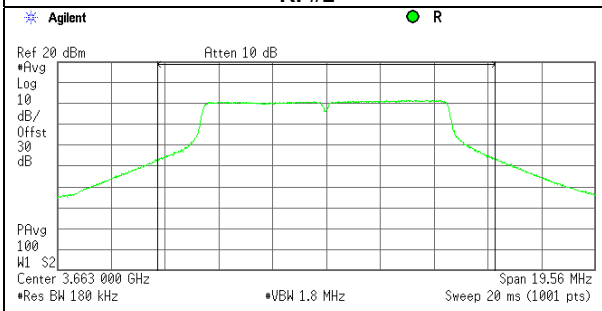


RF#2

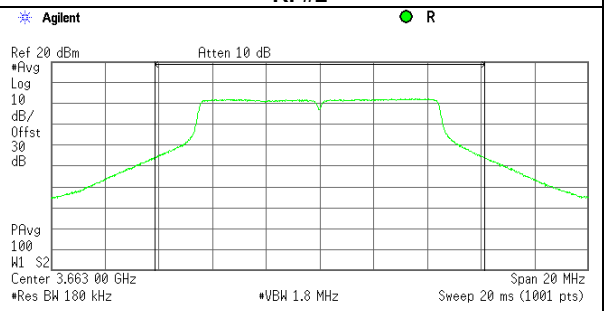


Band power

RF#1



RF#2



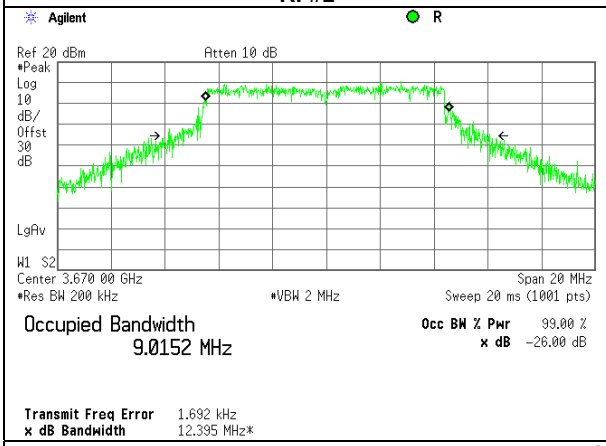
Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power**		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 23 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 40 %	**Power Supply:** -48 VDC
Remarks: with 17dBi gain antenna assembly			

Plot 7.1.29 The 26dB EBW, band power test results at high frequency

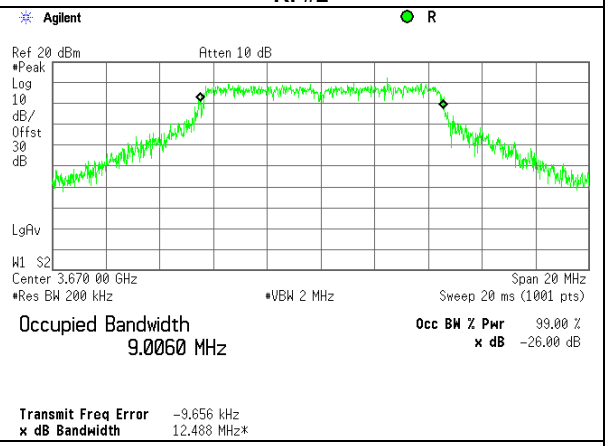
CARRIER FREQUENCY:	3670.0 MHz
EMISSION BANDWIDTH:	10 MHz
MODULATION:	BPSK
ANTENNA ASSEMBLY GAIN:	17 dBi

26dB EBW

RF#1

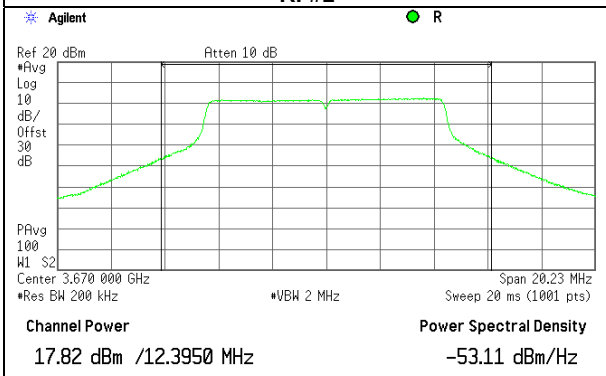


RF#2

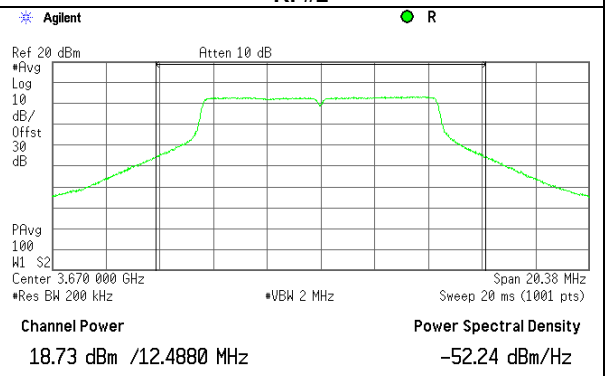


Band power

RF#1



RF#2



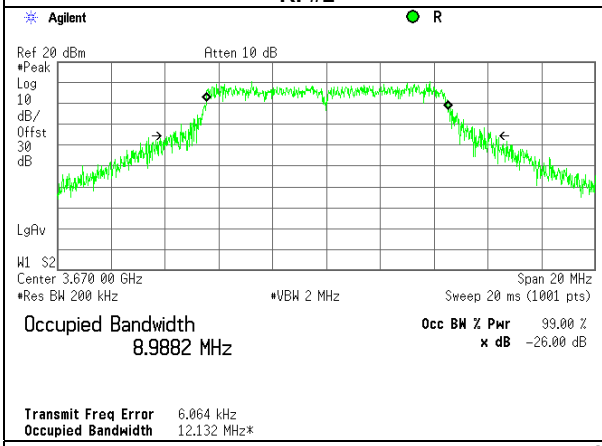
Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power**		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 23 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 40 %	**Power Supply:** -48 VDC
Remarks: with 17dBi gain antenna assembly			

Plot 7.1.30 The 26dB EBW, band power test results at high frequency

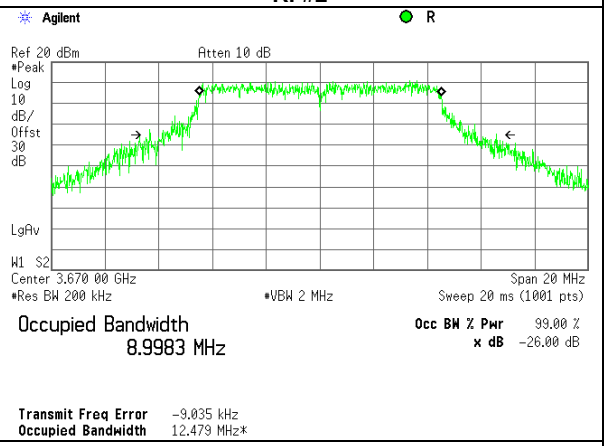
CARRIER FREQUENCY:	3670.0 MHz
EMISSION BANDWIDTH:	10 MHz
MODULATION:	64QAM
ANTENNA ASSEMBLY GAIN:	17 dBi

26dB EBW

RF#1

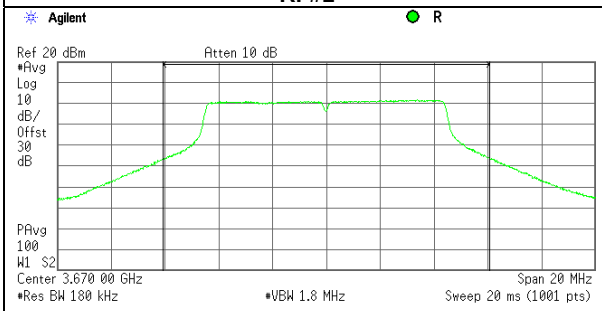


RF#2

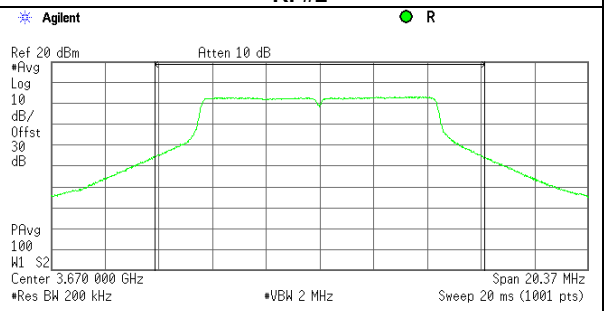


Band power

RF#1



RF#2



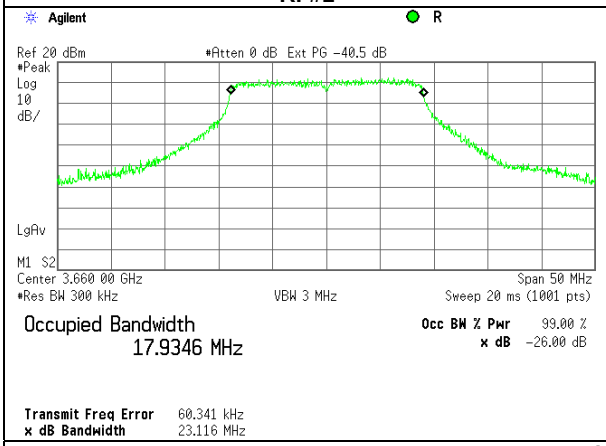
Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power**		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 23 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 40 %	**Power Supply:** -48 VDC
Remarks: with 17dBi gain antenna assembly			

Plot 7.1.31 The 26dB EBW, band power test results at low frequency

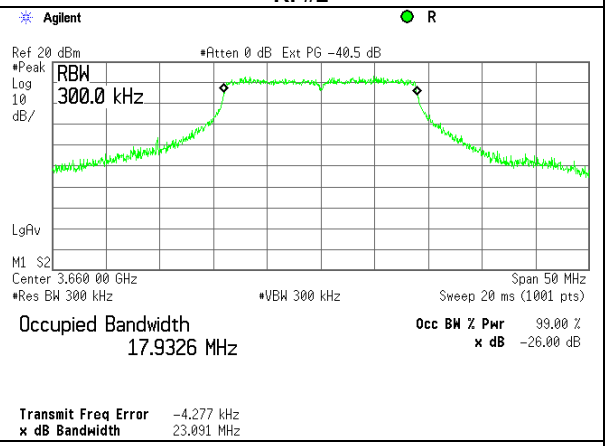
CARRIER FREQUENCY:	3660.0MHz
EMISSION BANDWIDTH:	20 MHz
MODULATION:	BPSK
ANTENNA ASSEMBLY GAIN:	17 dBi

26dB EBW

RF#1

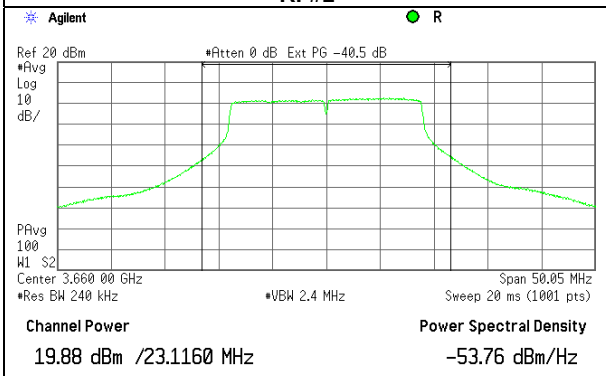


RF#2

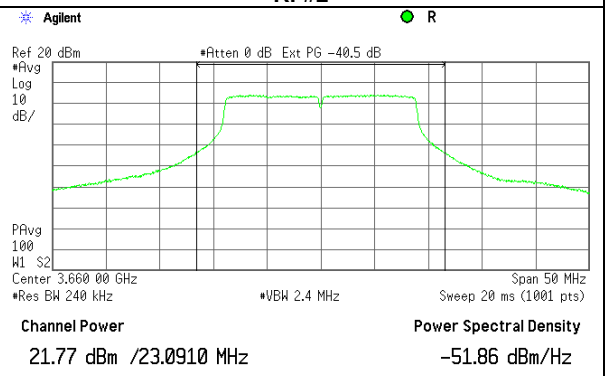


Band power

RF#1



RF#2



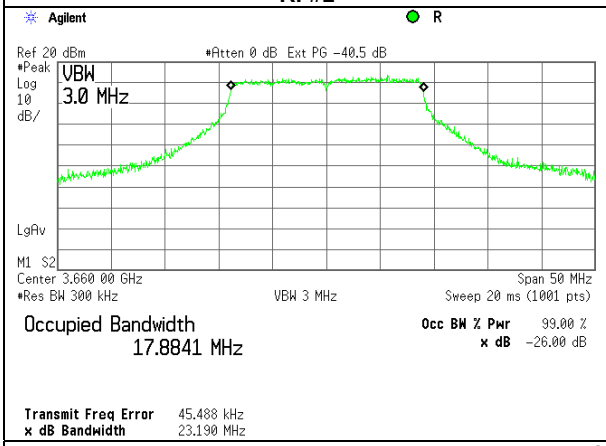
Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power**		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 23 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 40 %	**Power Supply:** -48 VDC
Remarks: with 17dBi gain antenna assembly			

Plot 7.1.32 The 26dB EBW, band power test results at high frequency

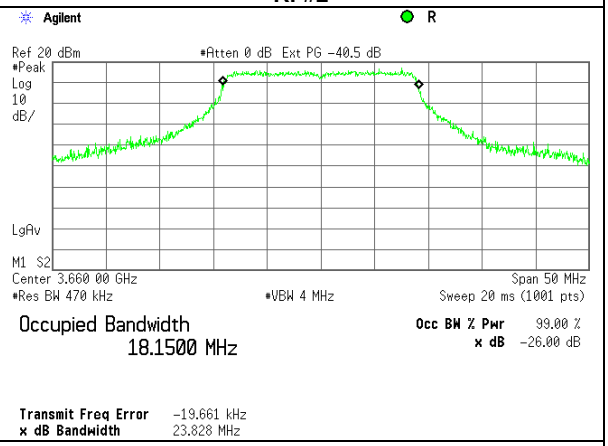
CARRIER FREQUENCY:	3660.0 MHz
EMISSION BANDWIDTH:	20 MHz
MODULATION:	64QAM
ANTENNA ASSEMBLY GAIN:	17 dBi

26dB EBW

RF#1

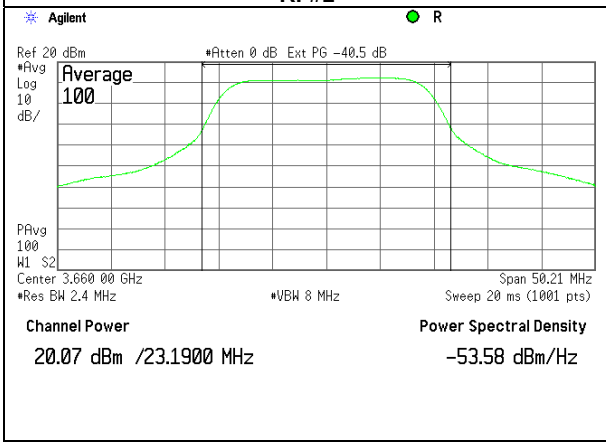


RF#2

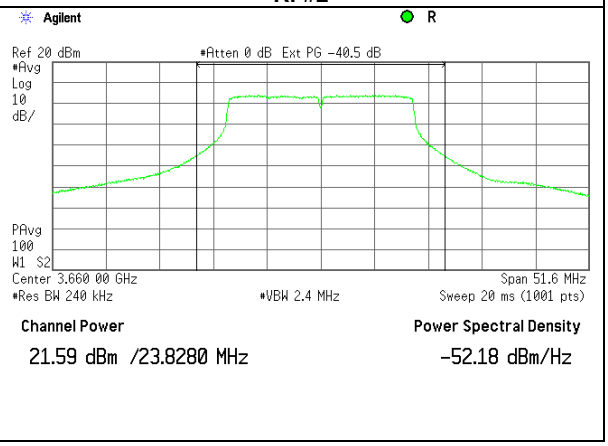


Band power

RF#1



RF#2



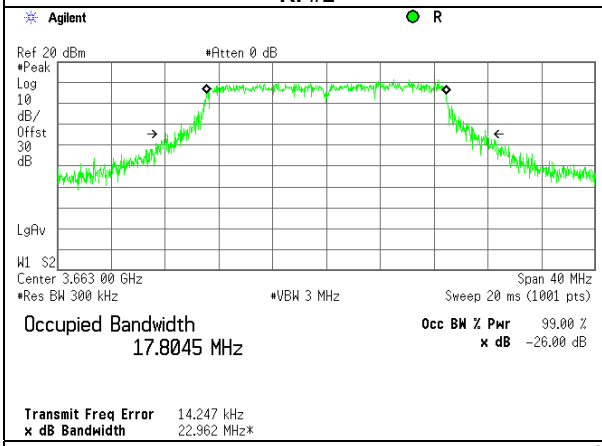
Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power**		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 23 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 40 %	**Power Supply:** -48 VDC
Remarks: with 17dBi gain antenna assembly			

Plot 7.1.33 The 26dB EBW, band power test results at mid frequency

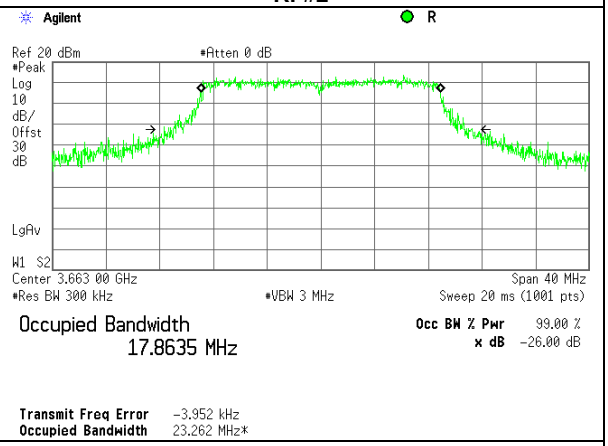
CARRIER FREQUENCY:	3663.0MHz
EMISSION BANDWIDTH:	20 MHz
MODULATION:	BPSK
ANTENNA ASSEMBLY GAIN:	17 dBi

26dB EBW

RF#1

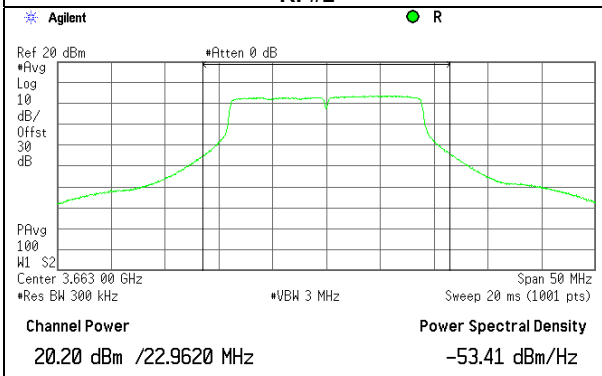


RF#2

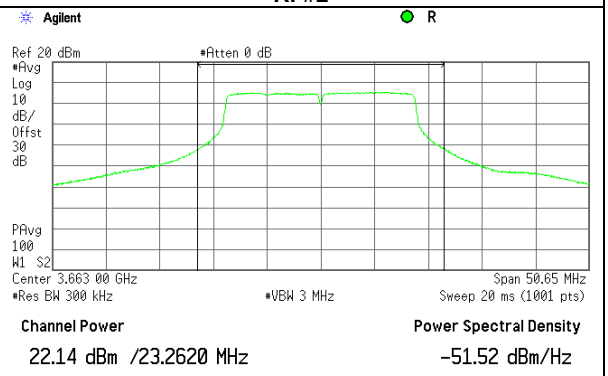


Band power

RF#1



RF#2



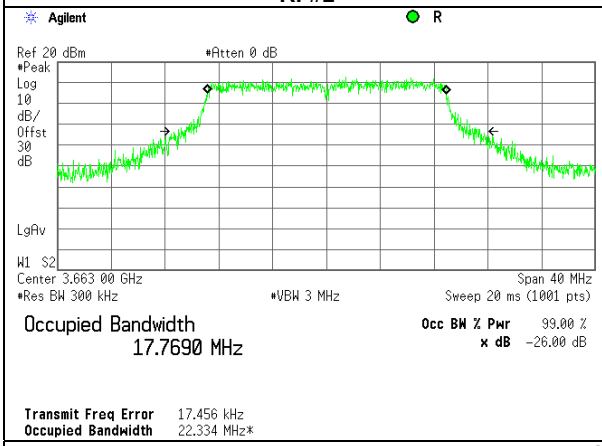
Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power**		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 23 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 40 %	**Power Supply:** -48 VDC
Remarks: with 17dBi gain antenna assembly			

Plot 7.1.34 The 26dB EBW, band power test results at mid frequency

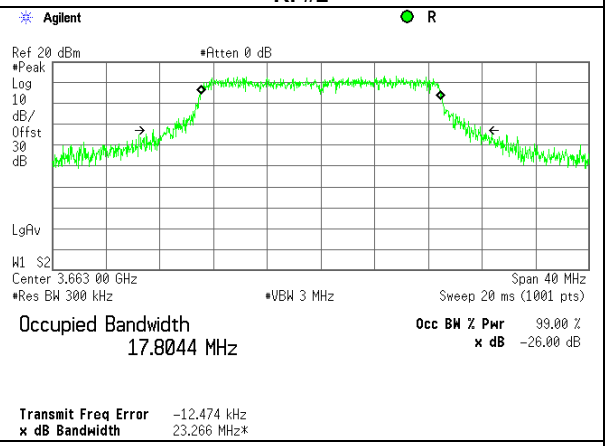
CARRIER FREQUENCY:	3663.0 MHz
EMISSION BANDWIDTH:	20 MHz
MODULATION:	64QAM
ANTENNA ASSEMBLY GAIN:	17 dBi

26dB EBW

RF#1

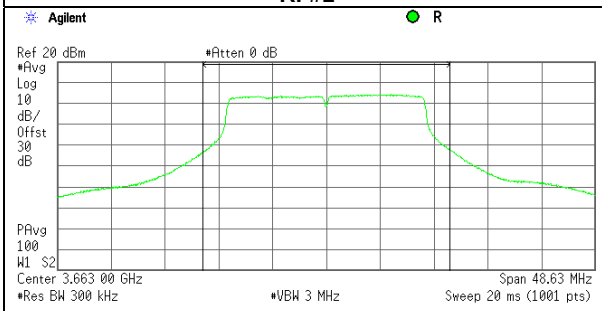


RF#2

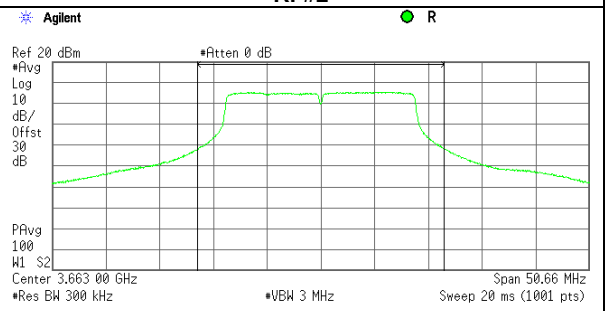


Band power

RF#1



RF#2



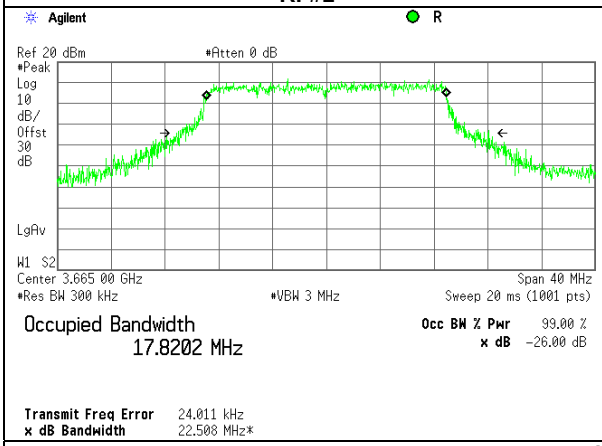
Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power**		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 23 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 40 %	**Power Supply:** -48 VDC
Remarks: with 17dBi gain antenna assembly			

Plot 7.1.35 The 26dB EBW, band power test results at high frequency

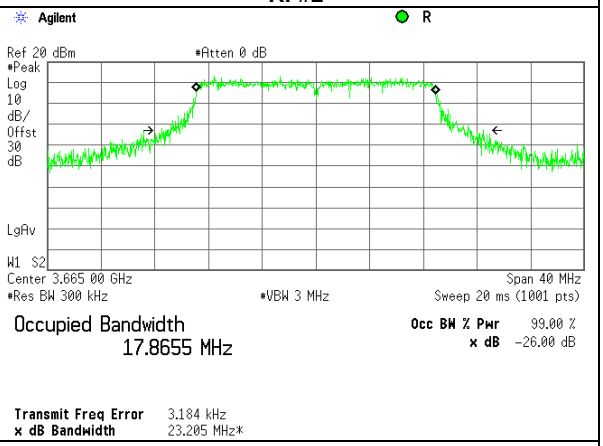
CARRIER FREQUENCY:	3665.0 MHz
EMISSION BANDWIDTH:	20 MHz
MODULATION:	BPSK
ANTENNA ASSEMBLY GAIN:	17 dBi

26dB EBW

RF#1

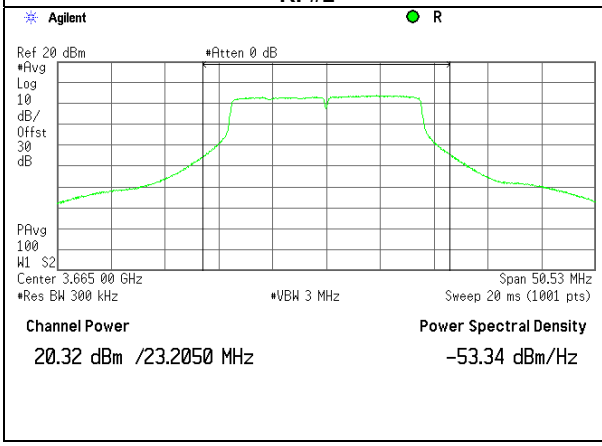


RF#2

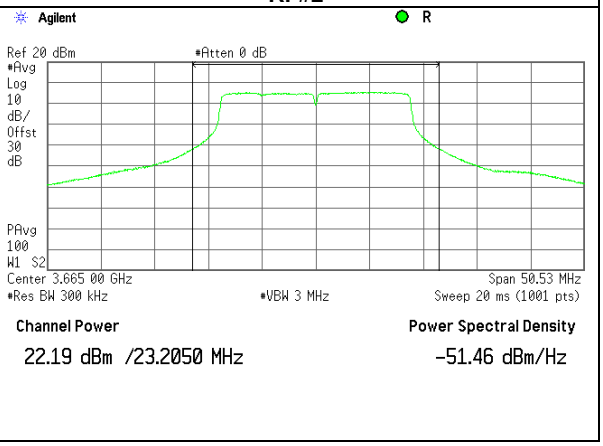


Band power

RF#1



RF#2



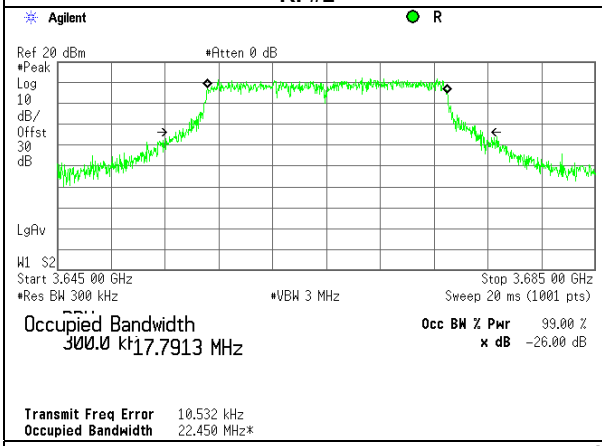
Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power**		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 23 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 40 %	**Power Supply:** -48 VDC
Remarks: with 17dBi gain antenna assembly			

Plot 7.1.36 The 26dB EBW, band power test results at high frequency

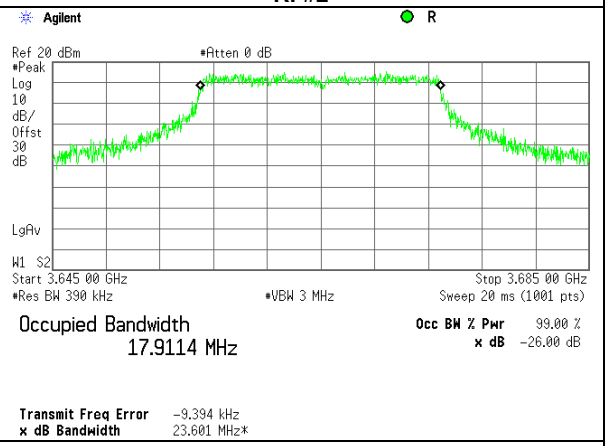
CARRIER FREQUENCY:	3665.0 MHz
EMISSION BANDWIDTH:	20 MHz
MODULATION:	64QAM
ANTENNA ASSEMBLY GAIN:	17 dBi

26dB EBW

RF#1

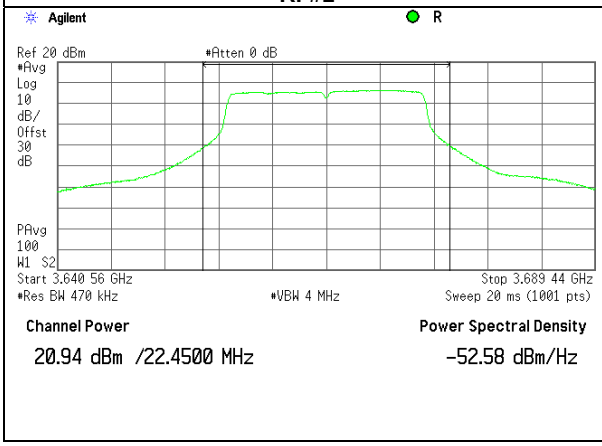


RF#2

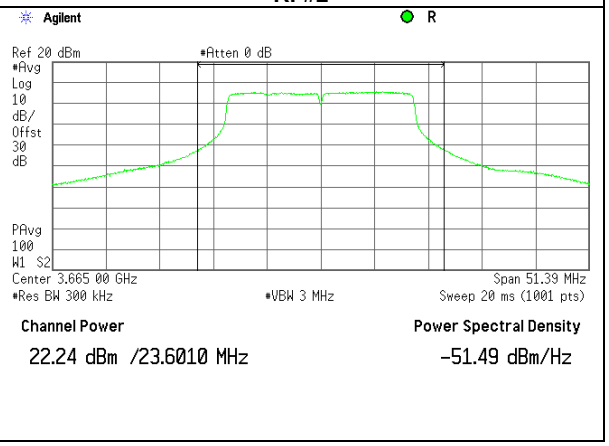


Band power

RF#1



RF#2



Test specification:	Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	Verdict:	PASS
Date:	11/14/2010		
Temperature: 25 ºC	Air Pressure: 1005 hPa	Relative Humidity: 45 %	Power Supply: -48 VDC
Remarks: with 24 dBi gain antenna assembly			

Table 7.1.6 The 26 dB EBW test results

ASSIGNED FREQUENCY RANGE: 3650.0 – 3675.0 MHz
DETECTOR USED: Power meter
MODULATING SIGNAL: PRBS
TRANSMITTER OUTPUT POWER SETTINGS: Maximum (see NOTE1)
ANTENNA ASSEMBLY GAIN: 24 dBi
EBW: 5 MHz

Channel, MHz	Modulation	EBW, MHz	Output power limit, W/25MHz	Limit for measured EBW*, dBm	Limit with respect to the antenna assembly gain**, dBm
3652.5	BPSK	6.583	25	38.184	14.184
3663.0	BPSK	6.553	25	38.164	14.164
3672.5	BPSK	6.549	25	38.162	14.162
3652.5	64QAM	6.549	25	38.162	14.162
3663.0	64QAM	6.486	25	38.120	14.120
3672.5	64QAM	6.619	25	38.208	14.208

EBW: 10 MHz

Channel, MHz	Modulation	EBW, MHz	Output power limit, W/25MHz	Limit for measured EBW*, dBm	Limit with respect to the antenna assembly gain**, dBm
3655.0	BPSK	12.406	25	40.936	16.936
3663.0	BPSK	12.319	25	40.906	16.906
3670.0	BPSK	12.455	25	40.953	16.953
3655.0	64QAM	12.261	25	40.885	16.885
3663.0	64QAM	12.267	25	40.887	16.887
3670.0	64QAM	12.284	25	40.893	16.893

EBW: 20 MHz

Channel, MHz	Modulation	EBW, MHz	Output power limit, W/25MHz	Limit for measured EBW*, dBm	Limit with respect to the antenna assembly gain**, dBm
3660.0	BPSK	23.067	25	43.630	19.630
3663.0	BPSK	22.897	25	43.598	19.598
3665.0	BPSK	22.883	25	43.595	19.595
3660.0	64QAM	23.127	25	43.641	19.641
3663.0	64QAM	24.769	25	43.939	19.939
3665.0	64QAM	23.339	25	43.681	19.681

* - Limit for EBW = 10*LOG((1000 * [Output power limit, W] / 25MHz) / (25MHz / EBW, MHz)), dBm
** - Limit for EBW – Antenna assembly gain.

Test specification:	Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	Verdict:	PASS
Date:	11/14/2010		
Temperature: 25 ºC	Air Pressure: 1005 hPa	Relative Humidity: 45 %	Power Supply: -48 VDC
Remarks: with 24 dBi gain antenna assembly			

Table 7.1.7 Peak EIRP output power test results

ASSIGNED FREQUENCY RANGE: 3650.0 – 3675.0 MHz
DETECTOR USED: Average (RMS)
MODULATING SIGNAL: PRBS
TRANSMITTER OUTPUT POWER SETTINGS: Maximum (see NOTE1)

Channel, MHz	Modulation	Pmeas (RF#1), dBm	Pmeas (RF#2), dBm	P_{meas} *, dBm	Antenna assembly gain, dBi	EIRP, dBm	Limit, dBm	Margin, dB	Verdict
EBW:					**5 MHz**				
3652.5	BPSK	8.58	8.7	11.65	24.00	35.65	38.18	-2.53	Pass
3663.0	BPSK	8.81	8.53	11.68	24.00	35.68	38.16	-2.48	Pass
3672.5	BPSK	8.49	8.67	11.59	24.00	35.59	38.16	-2.57	Pass
3652.5	64QAM	7.85	8.07	10.97	24.00	34.97	38.16	-3.19	Pass
3663.0	64QAM	8.76	8.5	11.64	24.00	35.64	38.12	-2.48	Pass
3672.5	64QAM	8.42	8.5	11.47	24.00	35.47	38.21	-2.74	Pass
EBW:					**10 MHz**				
3655.0	BPSK	10.83	11.28	14.07	24.00	38.07	40.94	-2.87	Pass
3663.0	BPSK	11.43	11.24	14.35	24.00	38.35	40.91	-2.56	Pass
3670.0	BPSK	11.96	10.96	14.50	24.00	38.50	40.95	-2.45	Pass
3655.0	64QAM	10.50	10.86	13.69	24.00	37.69	40.89	-3.19	Pass
3663.0	64QAM	11.43	11.19	14.32	24.00	38.32	40.89	-2.57	Pass
3670.0	64QAM	10.7	11.39	14.07	24.00	38.07	40.89	-2.82	Pass
EBW:					**20 MHz**				
3660.0	BPSK	12.16	13.73	16.03	24.00	40.03	43.63	-3.60	Pass
3663.0	BPSK	14.14	14.33	17.25	24.00	41.25	43.60	-2.35	Pass
3665.0	BPSK	13.89	14.51	17.22	24.00	41.22	43.60	-2.38	Pass
3660.0	64QAM	12.52	14.12	16.40	24.00	40.40	43.641	-3.24	Pass
3663.0	64QAM	14.1	13.84	16.98	24.00	40.98	43.939	-2.95	Pass
3665.0	64QAM	13.87	14.04	16.97	24.00	40.97	43.681	-2.71	Pass

* - Pmeas, dBm = 10 log {10^[P(dBm,RF#1)/10]+ 10^([P(dBm, RF#2)/10]}

NOTE1: the EUT was configured to produce maximum conducted RF power for declared Antenna gain of 25 dBi. RF output power will vary depending on the antenna assembly gain to ensure that the total EIRP power and power limits comply with EIRP limits. For actual settings of power levels with respect to actual antenna assembly used, please refer to the User's Manual.

Reference numbers of test equipment used

HL 3440	HL 3474	HL 3779	HL 3784	HL 3818			

Full description is given in Appendix A.

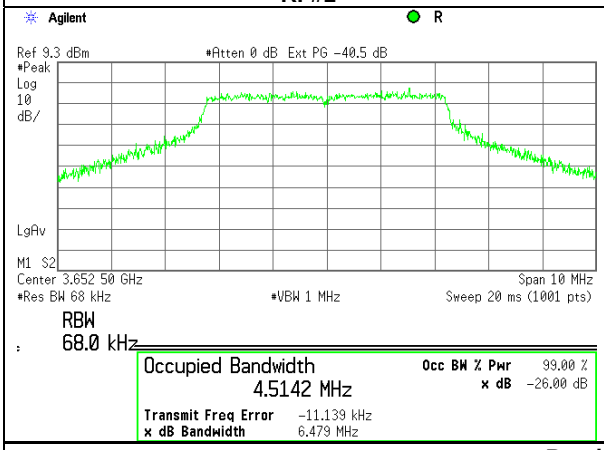
Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power**		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48 VDC
Remarks: with 24 dBi gain antenna assembly			

Plot 7.1.37 The 26 dB EBW, band power test results at low frequency

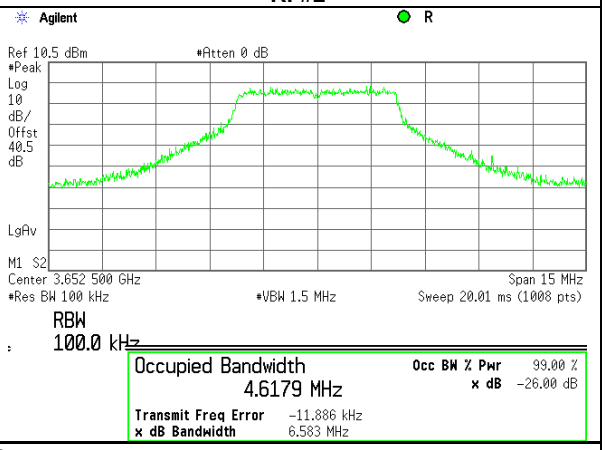
CARRIER FREQUENCY:	3652.5 MHz
EMISSION BANDWIDTH:	5 MHz
MODULATION:	BPSK
ANTENNA ASSEMBLY GAIN:	24.0dBi

26dB EBW

RF#1

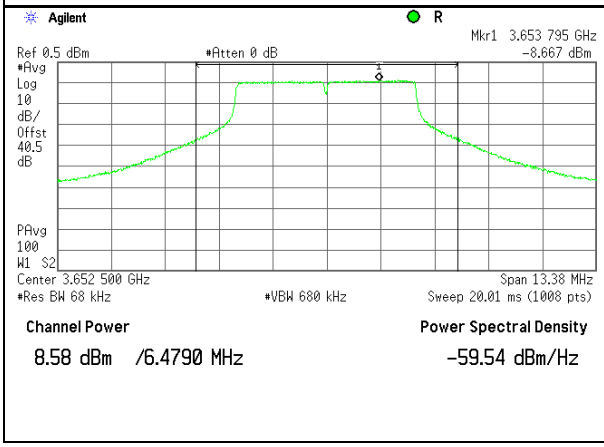


RF#2

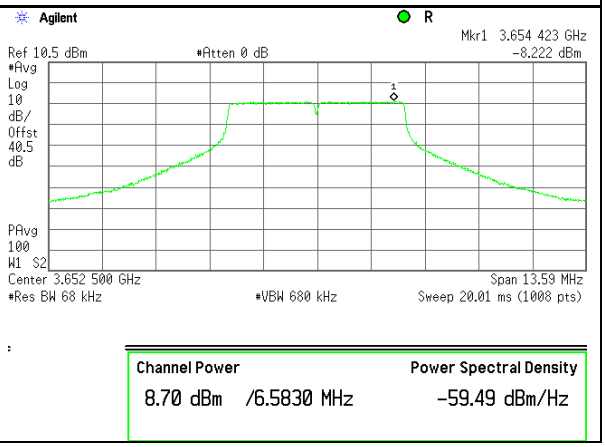


Band Power

RF#1



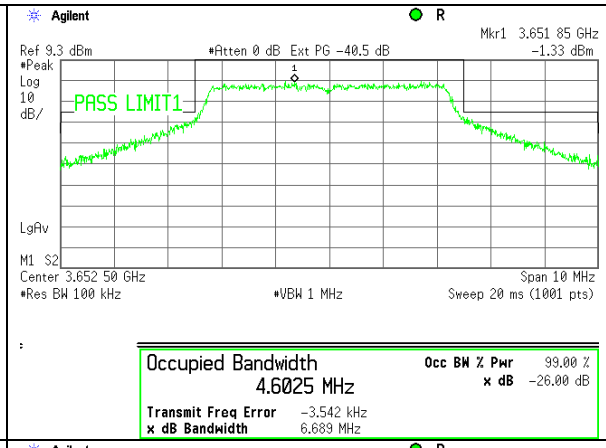
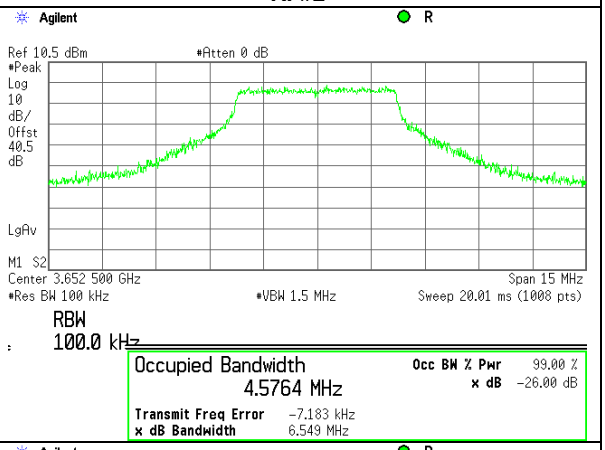
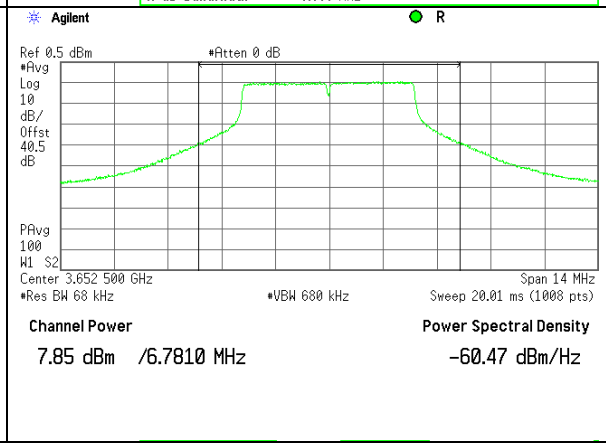
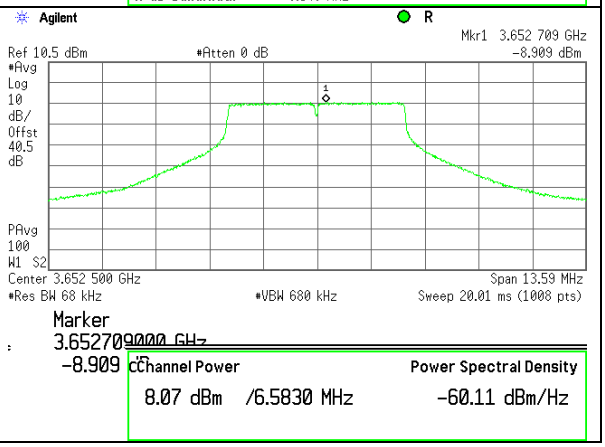
RF#2



Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power**		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48 VDC
Remarks: with 24 dBi gain antenna assembly			

Plot 7.1.38 The 26 dB EBW, band power test results at low frequency

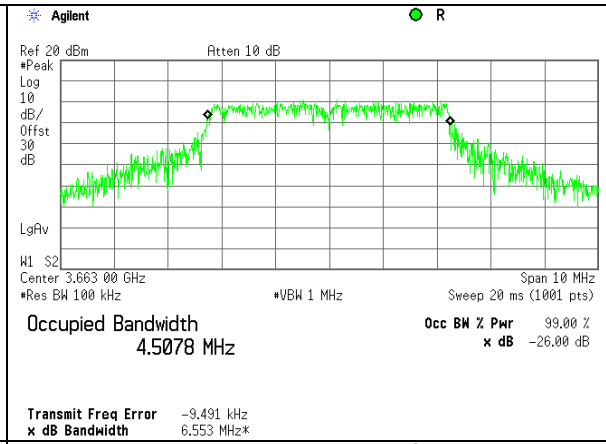
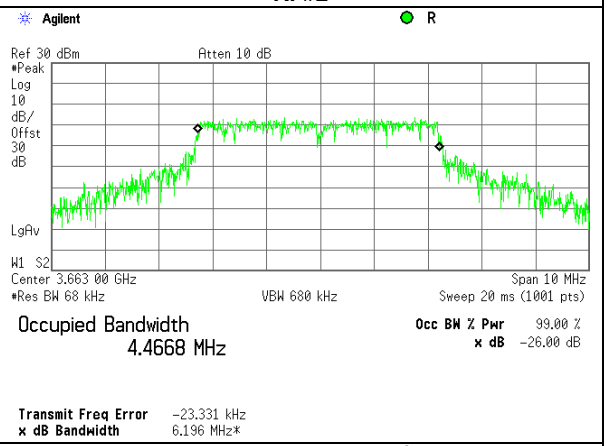
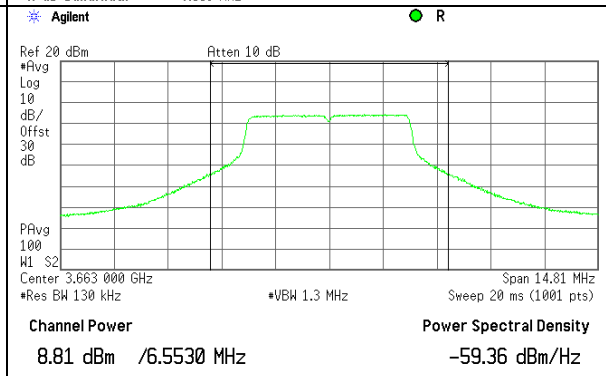
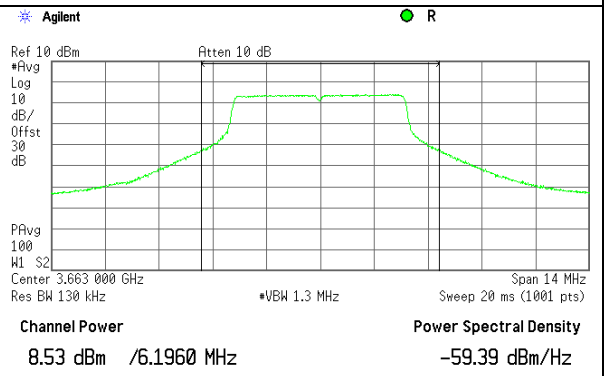
CARRIER FREQUENCY:	3652.5 MHz
EMISSION BANDWIDTH:	5 MHz
MODULATION:	64QAM
ANTENNA ASSEMBLY GAIN:	24.0dBi

	RF#1	**RF#2**
26dB EBW		
Band Power		

Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power**		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48 VDC
Remarks: with 24 dBi gain antenna assembly			

Plot 7.1.39 The 26 dB EBW, band power test results at mid frequency

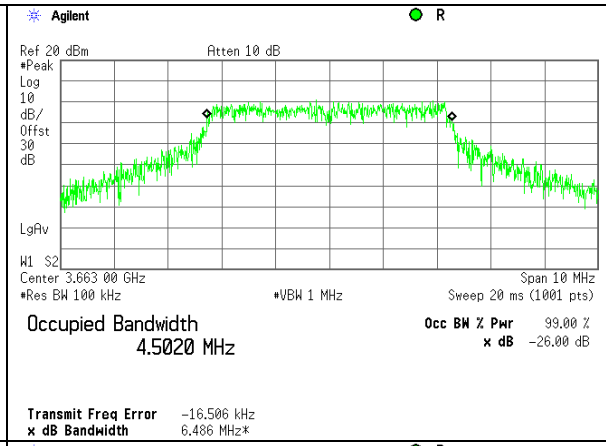
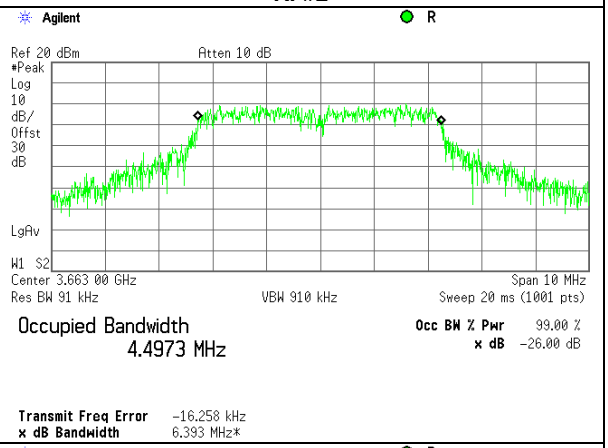
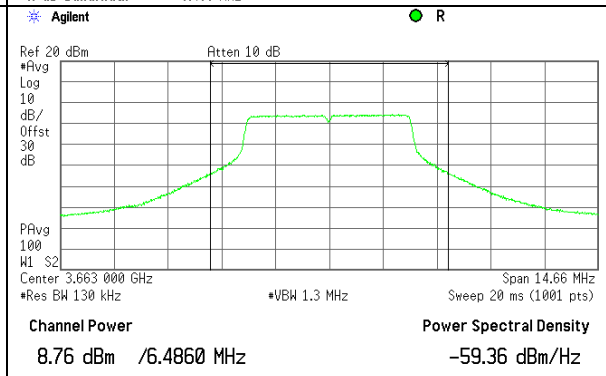
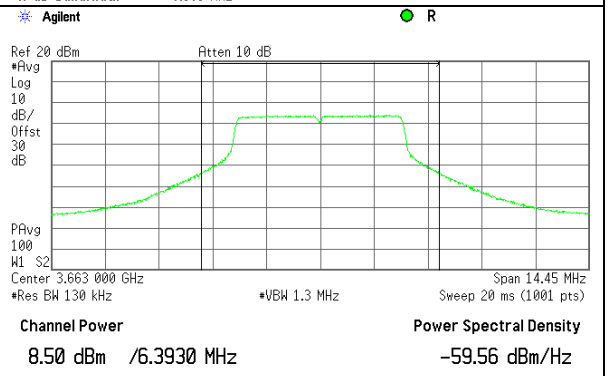
CARRIER FREQUENCY:	3663 MHz
EMISSION BANDWIDTH:	5 MHz
MODULATION:	BPSK
ANTENNA ASSEMBLY GAIN:	24.0dBi

	RF#1	**RF#2**
26dB EBW		
Band Power		

Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power**		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48 VDC
Remarks: with 24 dBi gain antenna assembly			

Plot 7.1.40 The 26dB EBW, band power test results at mid frequency

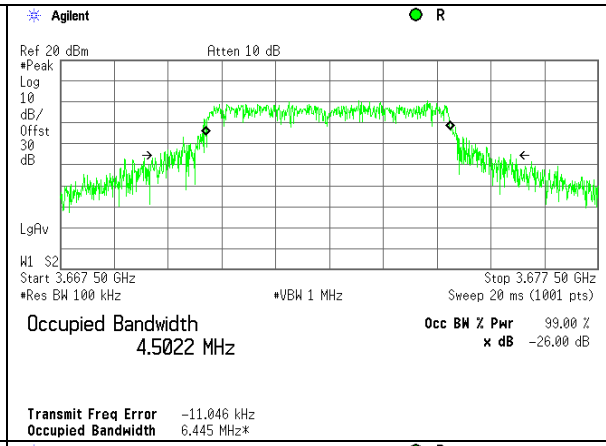
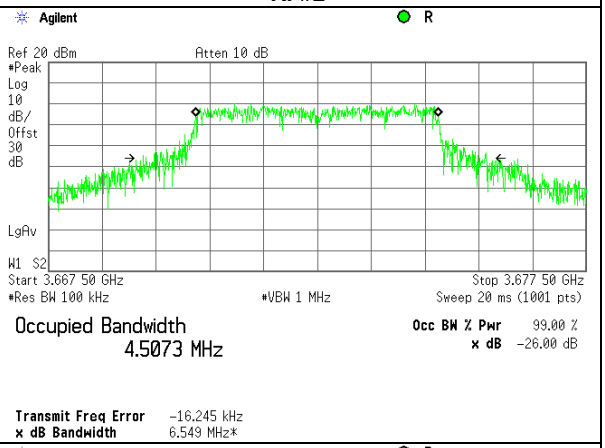
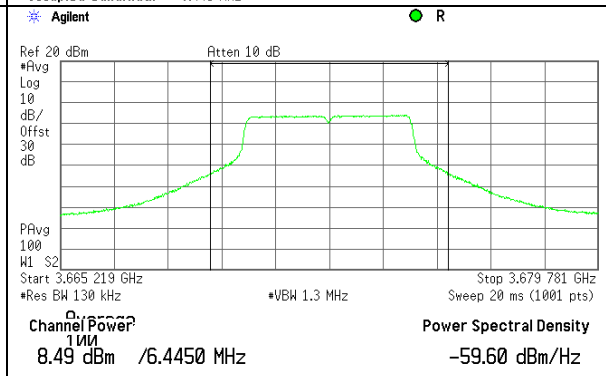
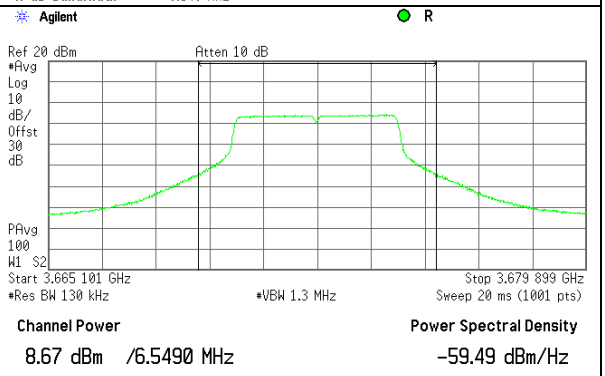
CARRIER FREQUENCY:	3663 MHz
EMISSION BANDWIDTH:	5 MHz
MODULATION:	64QAM
ANTENNA ASSEMBLY GAIN:	24.0dBi

	RF#1	RF#2
26dB EBW		
Band Power		

Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power**		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48 VDC
Remarks: with 24 dBi gain antenna assembly			

Plot 7.1.41 The 26dB EBW, band power test results at high frequency

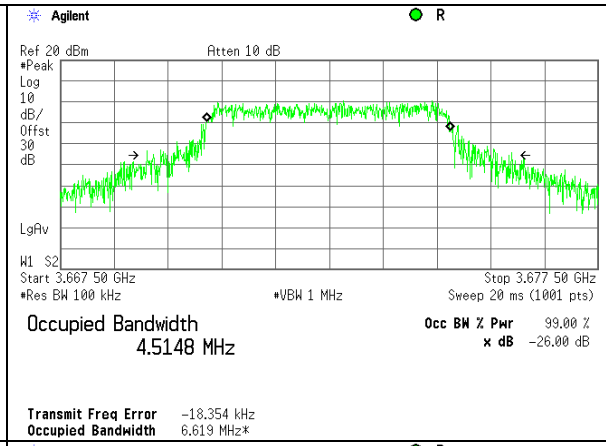
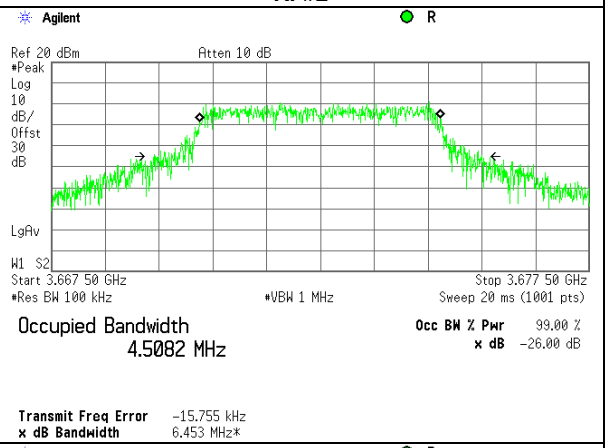
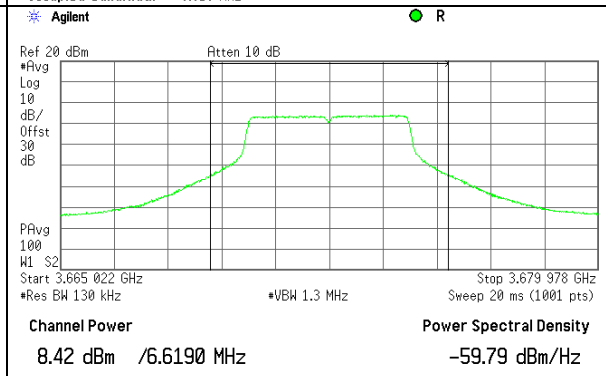
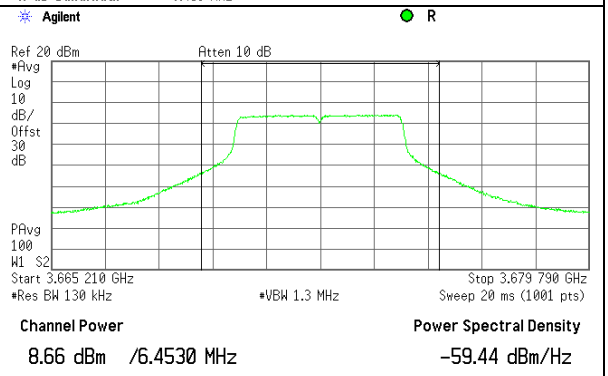
CARRIER FREQUENCY:	3672.5 MHz
EMISSION BANDWIDTH:	5 MHz
MODULATION:	BPSK
ANTENNA ASSEMBLY GAIN:	24.0dBi

	RF#1	RF#2
26dB EBW		
Band Power		

Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power**		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48 VDC
Remarks: with 24 dBi gain antenna assembly			

Plot 7.1.42 The 26dB EBW, band power test results at high frequency

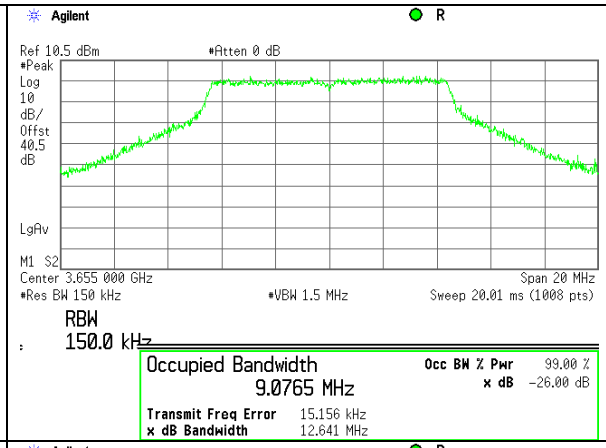
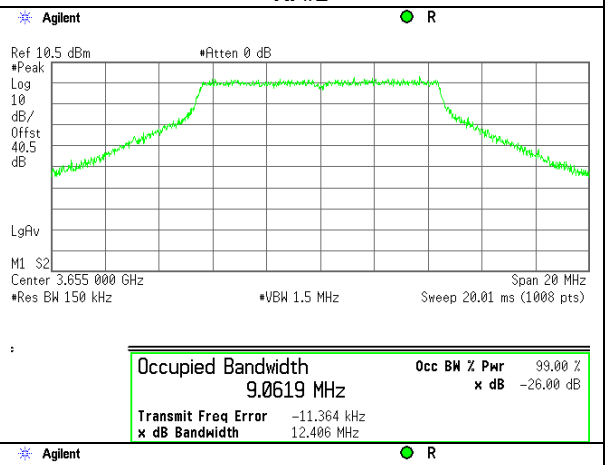
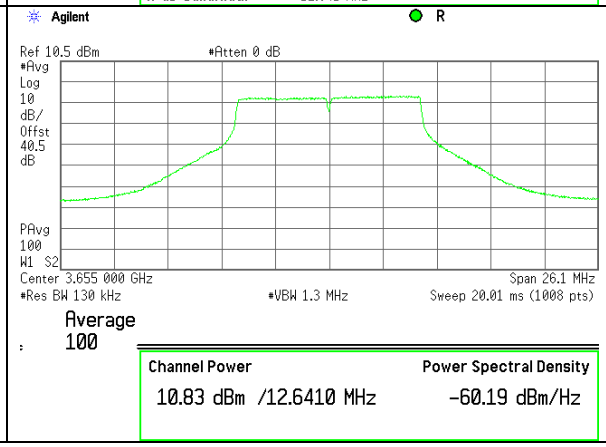
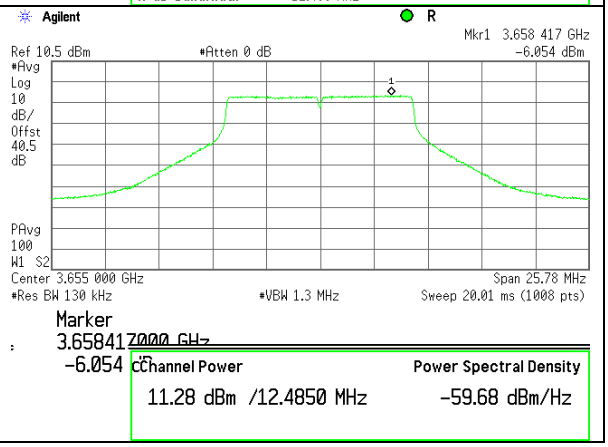
CARRIER FREQUENCY:	3672.5 MHz
EMISSION BANDWIDTH:	5 MHz
MODULATION:	64QAM
ANTENNA ASSEMBLY GAIN:	24.0dBi

	RF#1	RF#2
26dB EBW		
Band Power (P.W. "6.5")		

Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power**		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48 VDC
Remarks: with 24 dBi gain antenna assembly			

Plot 7.1.43 The 26dB EBW, band power test results at low frequency

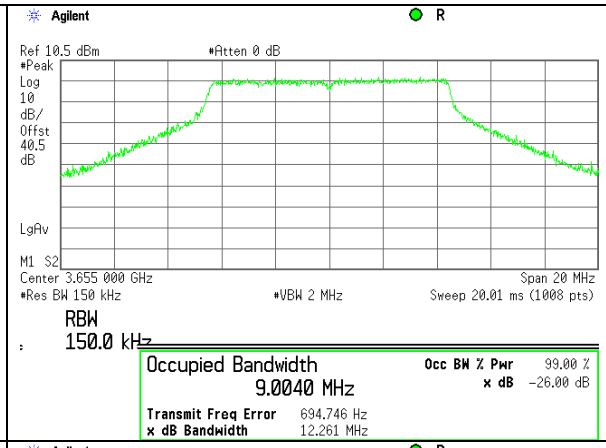
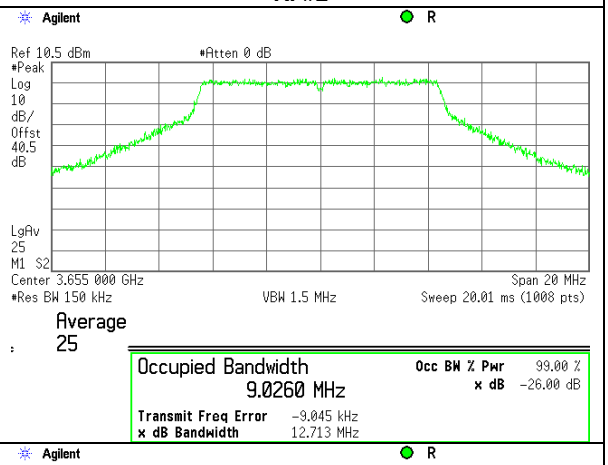
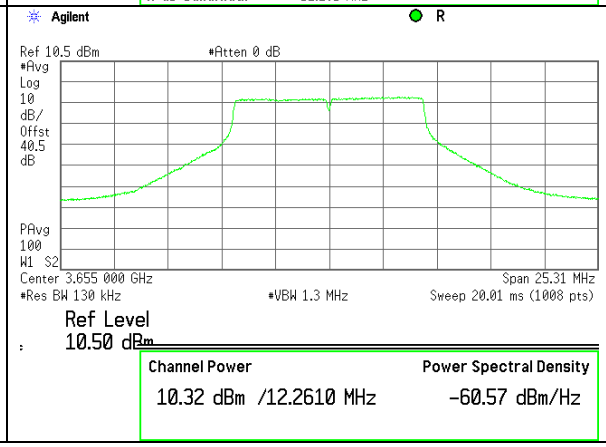
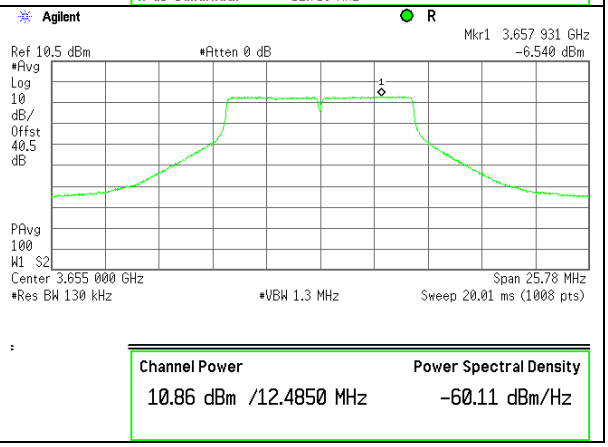
CARRIER FREQUENCY:	3655 MHz
EMISSION BANDWIDTH:	10 MHz
MODULATION:	BPSK
ANTENNA ASSEMBLY GAIN:	24.0dBi

	RF#1	RF#2
26dB EBW		
Band Power		

Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power**		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48 VDC
Remarks: with 24 dBi gain antenna assembly			

Plot 7.1.44 The 26dB EBW, band power test results at low frequency

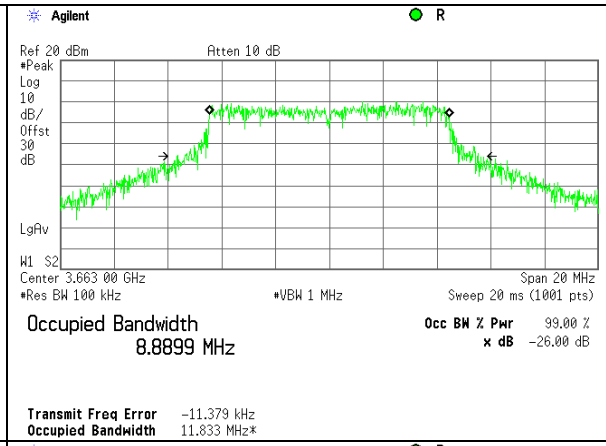
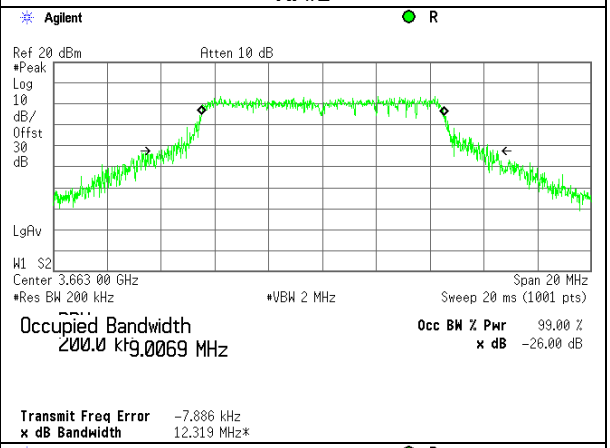
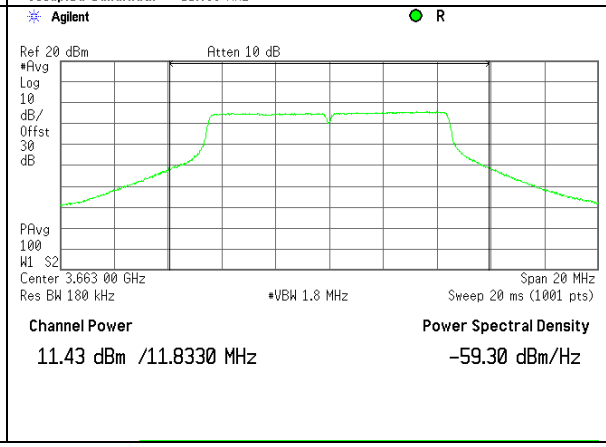
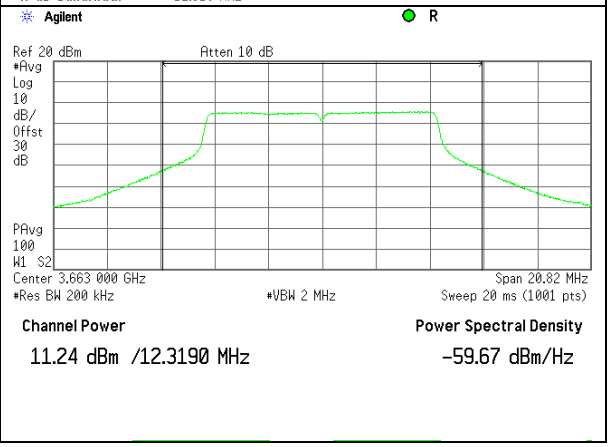
CARRIER FREQUENCY:	3655 MHz
EMISSION BANDWIDTH:	10 MHz
MODULATION:	64QAM
ANTENNA ASSEMBLY GAIN:	24.0dBi

	RF#1	RF#2
26dB EBW		
Band Power		

Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power**		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48 VDC
Remarks: with 24 dBi gain antenna assembly			

Plot 7.1.45 The 26dB EBW, band power test results at mid frequency

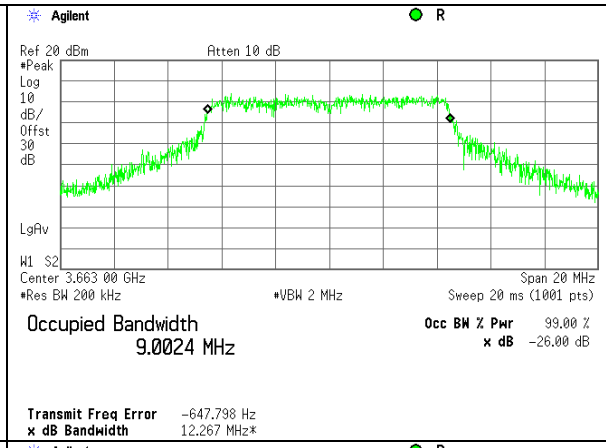
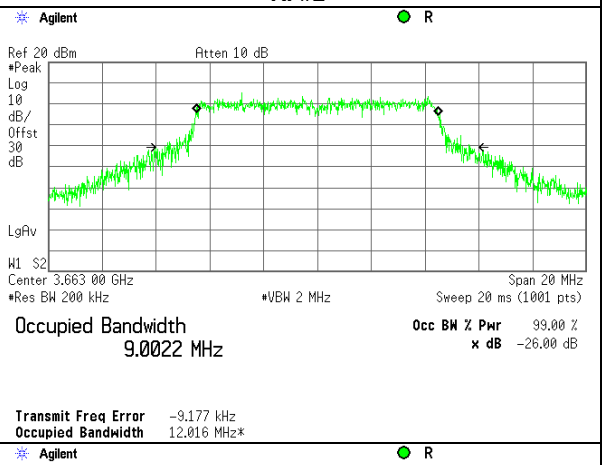
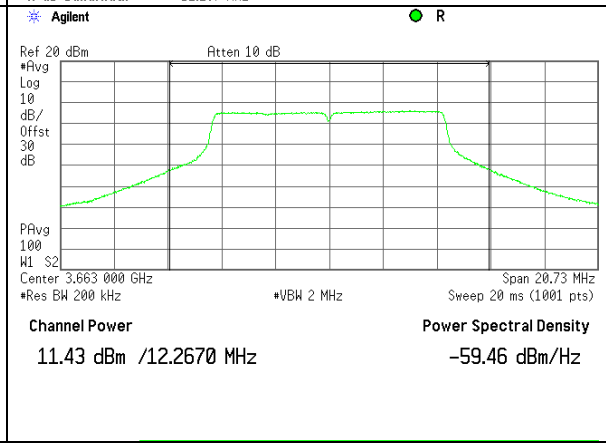
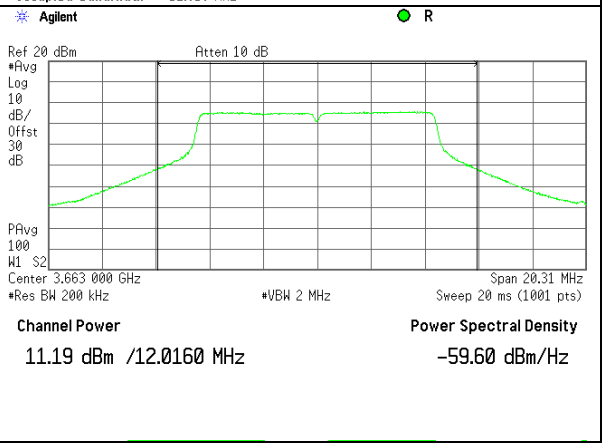
CARRIER FREQUENCY:	3663 MHz
EMISSION BANDWIDTH:	10 MHz
MODULATION:	BPSK
ANTENNA ASSEMBLY GAIN:	24.0dBi

	RF#1	RF#2
26dB EBW		
Band Power		

Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power**		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48 VDC
Remarks: with 24 dBi gain antenna assembly			

Plot 7.1.46 The 26dB EBW, band power test results at mid frequency

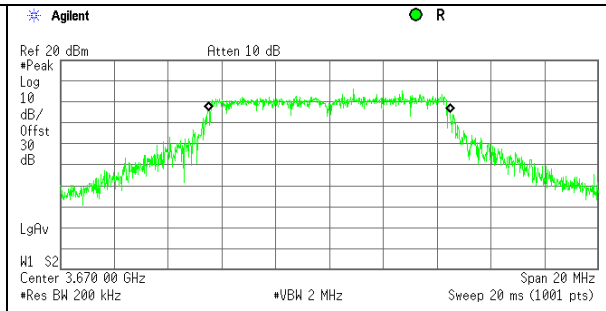
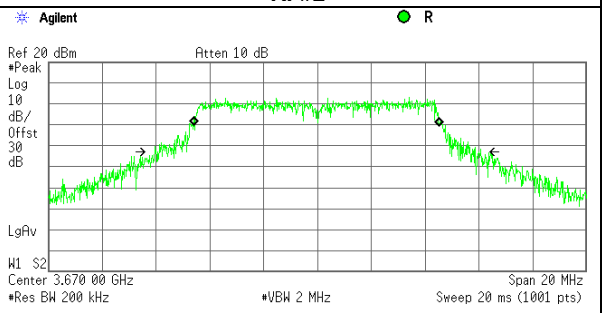
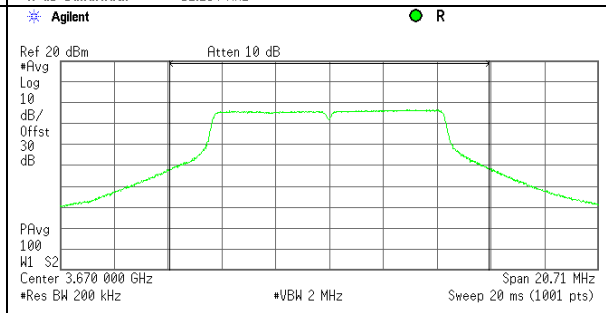
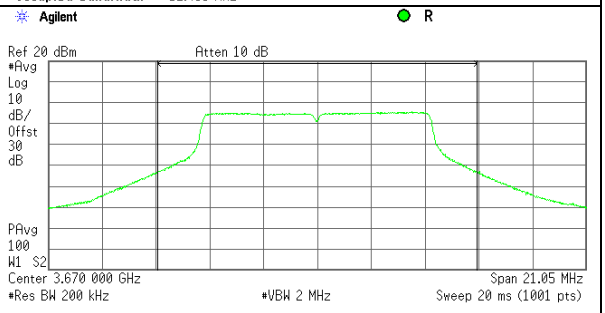
CARRIER FREQUENCY:	3663 MHz
EMISSION BANDWIDTH:	10 MHz
MODULATION:	64QAM
ANTENNA ASSEMBLY GAIN:	24.0dBi

	RF#1	RF#2
26dB EBW		
Band Power		

Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power**		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48 VDC
Remarks: with 24 dBi gain antenna assembly			

Plot 7.1.47 The 26dB EBW, band power test results at high frequency

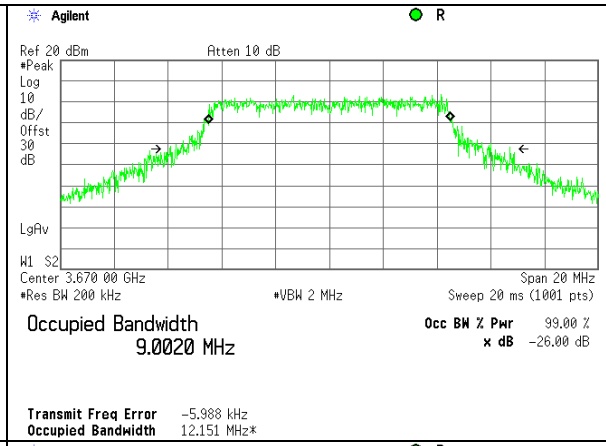
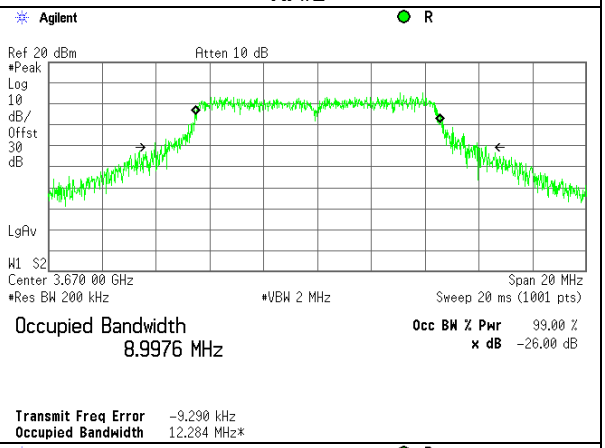
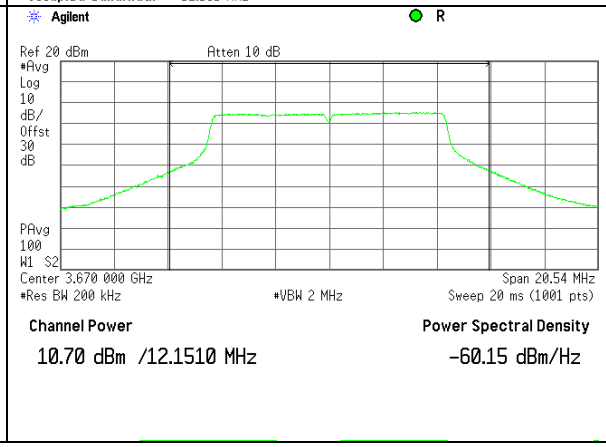
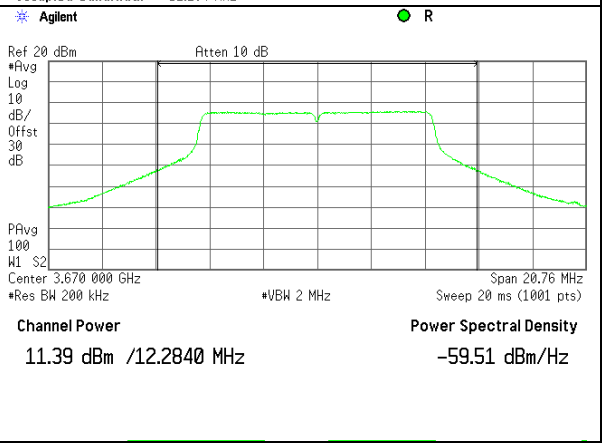
CARRIER FREQUENCY:	3670 MHz
EMISSION BANDWIDTH:	10 MHz
MODULATION:	BPSK
ANTENNA ASSEMBLY GAIN:	24.0dBi

	RF#1	RF#2
26dB EBW		
Band Power		

Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power**		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48 VDC
Remarks: with 24 dBi gain antenna assembly			

Plot 7.1.48 The 26dB EBW, band power test results at high frequency

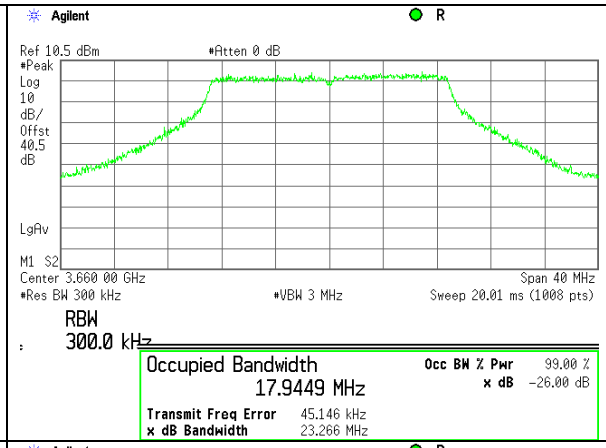
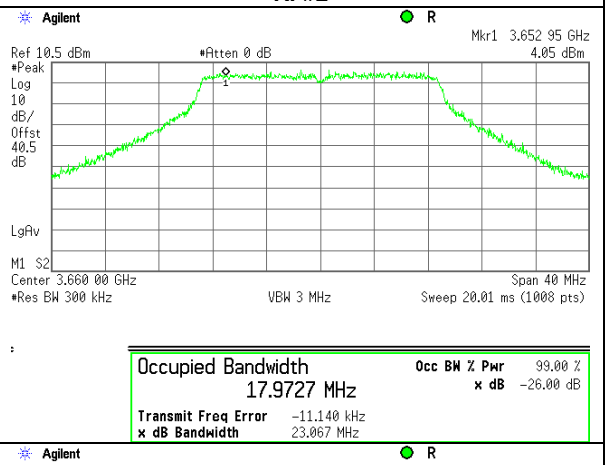
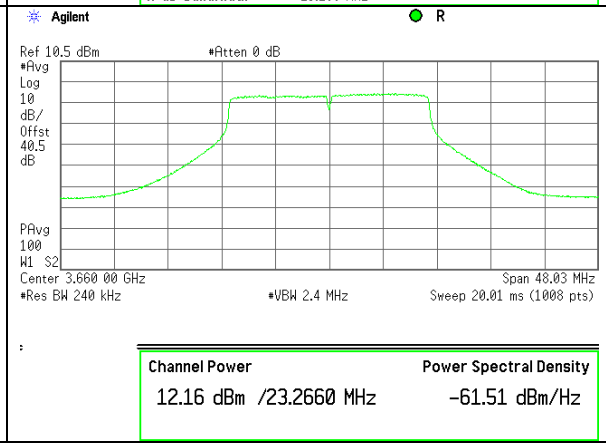
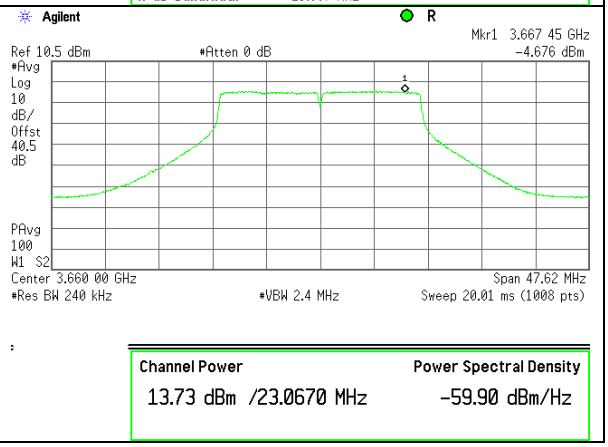
CARRIER FREQUENCY:	3670 MHz
EMISSION BANDWIDTH:	10 MHz
MODULATION:	64QAM
ANTENNA ASSEMBLY GAIN:	24.0dBi

	RF#1	RF#2
26dB EBW		
Band Power		

Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power**		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48 VDC
Remarks: with 24 dBi gain antenna assembly			

Plot 7.1.49 The 26dB EBW, band power test results at low frequency

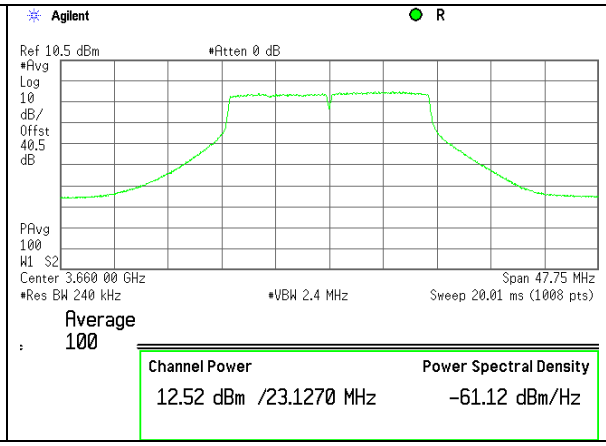
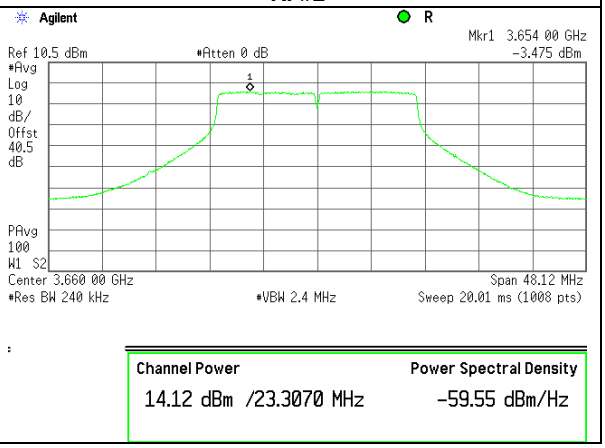
CARRIER FREQUENCY:	3660 MHz
EMISSION BANDWIDTH:	20 MHz
MODULATION:	BPSK
ANTENNA ASSEMBLY GAIN:	24.0dBi

	RF#1	RF#2
26dB EBW		
Band Power		

Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power**		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48 VDC
Remarks: with 24 dBi gain antenna assembly			

Plot 7.1.50 The 26dB EBW, band power test results at low frequency

CARRIER FREQUENCY:	3660 MHz
EMISSION BANDWIDTH:	20 MHz
MODULATION:	64QAM
ANTENNA ASSEMBLY GAIN:	24.0dBi

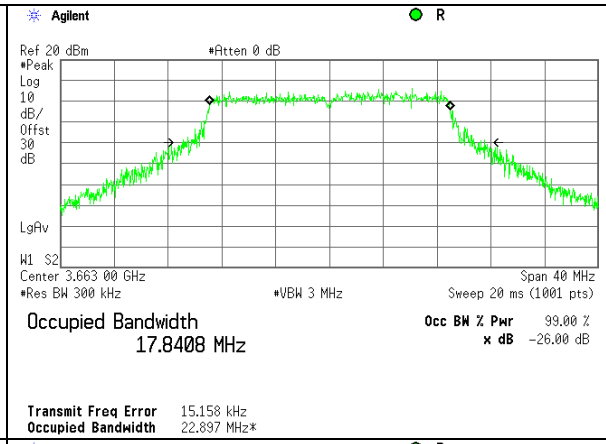
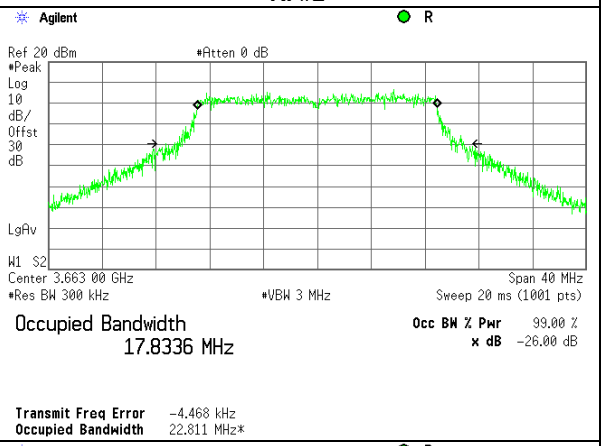
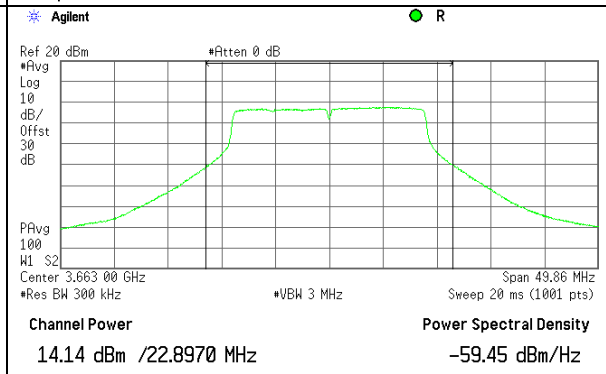
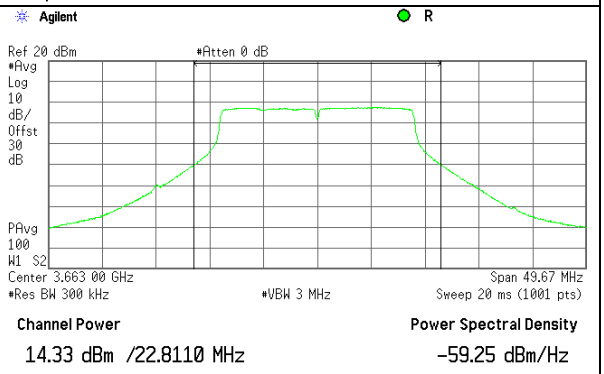
RF#1	**RF#2**
	

Band Power

Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power**		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48 VDC
Remarks: with 24 dBi gain antenna assembly			

Plot 7.1.51 The 26dB EBW, band power test results at mid frequency

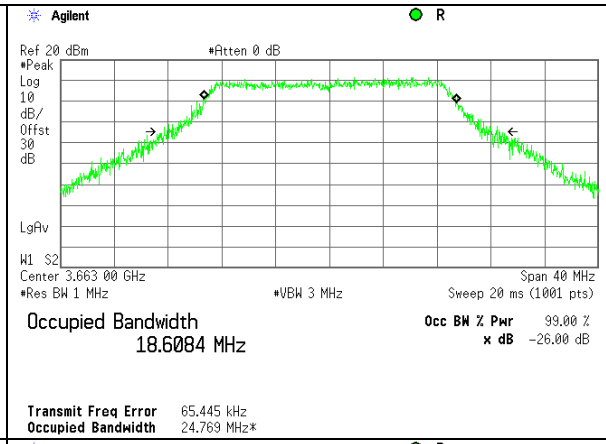
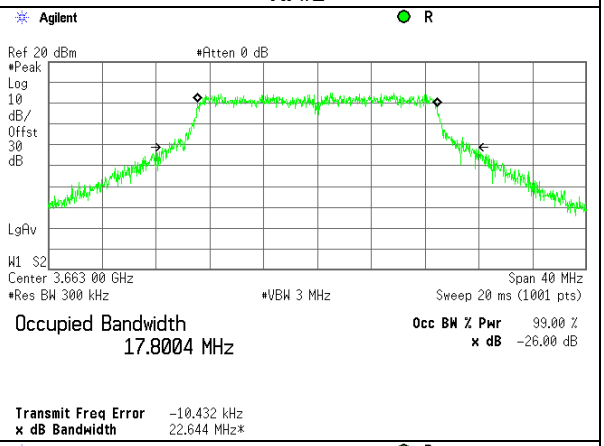
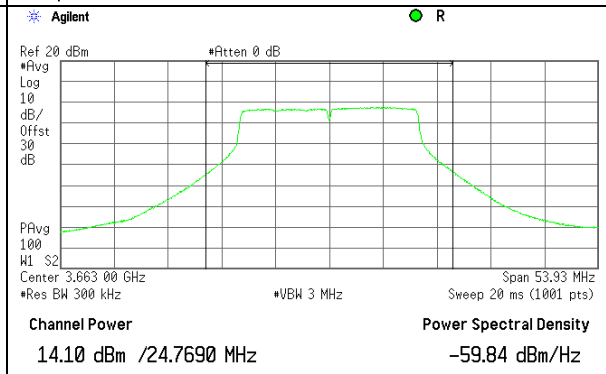
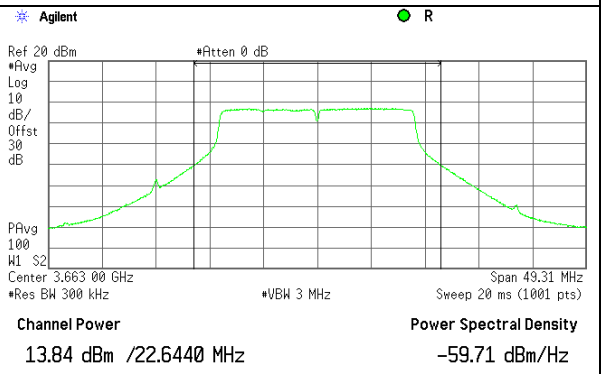
CARRIER FREQUENCY:	3663 MHz
EMISSION BANDWIDTH:	20 MHz
MODULATION:	BPSK
ANTENNA ASSEMBLY GAIN:	24.0dBi

	RF#1	RF#2
26dB EBW		
Band Power		

Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power**		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48 VDC
Remarks: with 24 dBi gain antenna assembly			

Plot 7.1.52 The 26dB EBW, band power test results at mid frequency

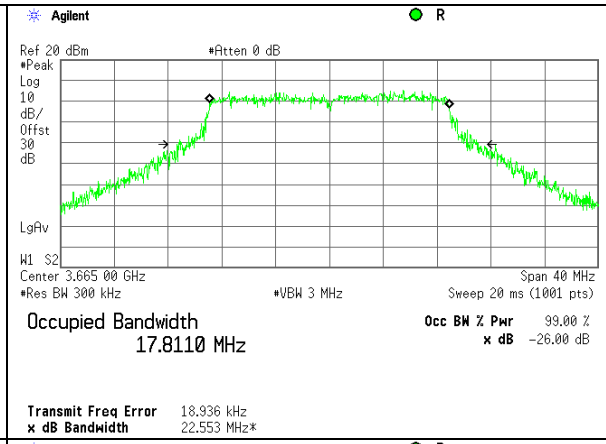
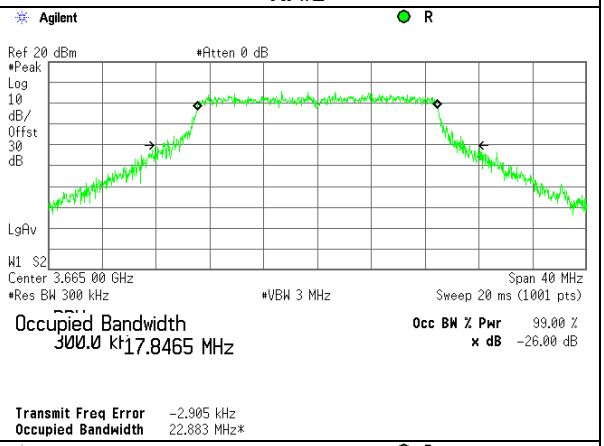
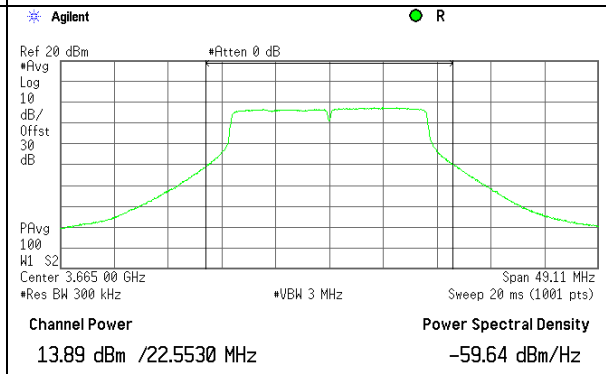
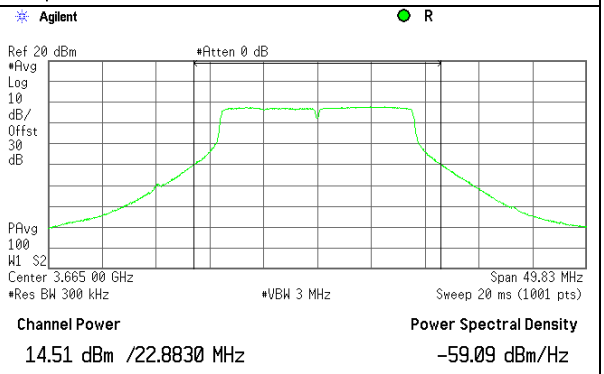
CARRIER FREQUENCY:	3663 MHz
EMISSION BANDWIDTH:	20 MHz
MODULATION:	64QAM
ANTENNA ASSEMBLY GAIN:	24.0dBi

	RF#1	RF#2
26dB EBW		
Band Power		

Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power**		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48 VDC
Remarks: with 24 dBi gain antenna assembly			

Plot 7.1.53 The 26dB EBW, band power test results at high frequency

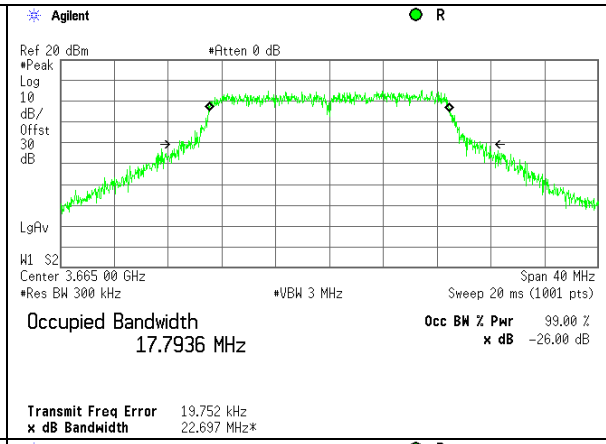
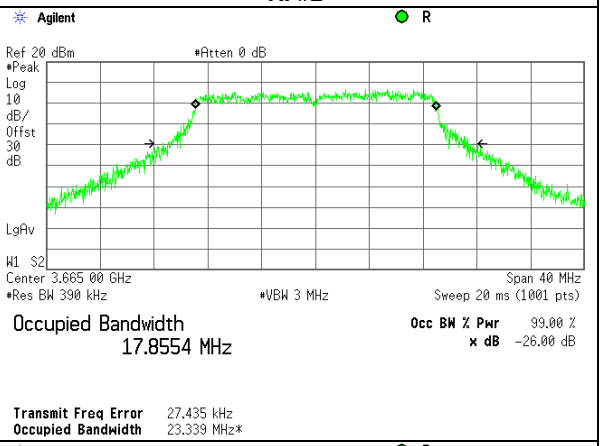
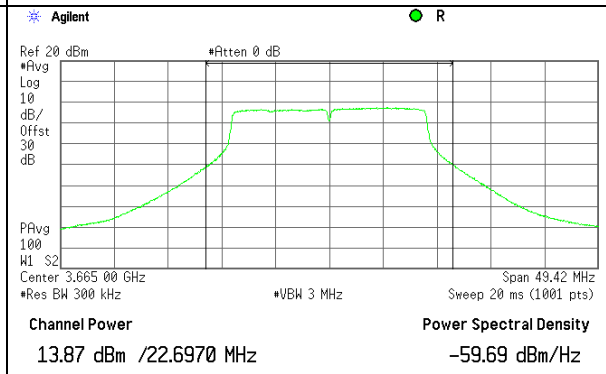
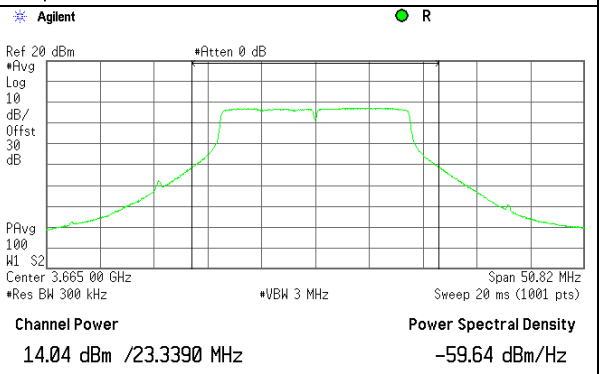
CARRIER FREQUENCY:	3665 MHz
EMISSION BANDWIDTH:	20 MHz
MODULATION:	BPSK
ANTENNA ASSEMBLY GAIN:	24.0dBi

	RF#1	RF#2
26dB EBW		
Band Power		

Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power**		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48 VDC
Remarks: with 24 dBi gain antenna assembly			

Plot 7.1.54 The 26dB EBW, band power test results at high frequency

CARRIER FREQUENCY:	3665 MHz
EMISSION BANDWIDTH:	20 MHz
MODULATION:	64QAM
ANTENNA ASSEMBLY GAIN:	24.0dBi

	RF#1	RF#2
26dB EBW		
Band Power		

Test specification:	Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	Verdict:	PASS
Date:	11/14/2010		
Temperature: 25 ºC	Air Pressure: 1007 hPa	Relative Humidity: 45 %	Power Supply: -48 VDC
Remarks: with 13.5 dBi gain antenna assembly			

Table 7.1.8 The 26 dB EBW test results

ASSIGNED FREQUENCY RANGE: 3650.0 – 3675.0 MHz
DETECTOR USED: Power meter
MODULATING SIGNAL: PRBS
TRANSMITTER OUTPUT POWER SETTINGS: Maximum (see NOTE1)
ANTENNA ASSEMBLY GAIN: 13.5 dBi

EBW: 5 MHz

Channel, MHz	Modulation	EBW, MHz	Output power limit, W/25MHz	Limit for measured EBW*, dBm	Limit with respect to the antenna assembly gain**, dBm
3652.5	BPSK	6.652	25	38.230	24.730
3663.0	BPSK	6.559	25	38.168	21.168
3672.5	BPSK	6.520	25	38.142	21.142
3652.5	64QAM	6.68	25	38.248	24.748
3663.0	64QAM	6.479	25	38.115	21.115
3672.5	64QAM	6.532	25	38.150	21.150

EBW: 10 MHz

Channel, MHz	Modulation	EBW, MHz	Output power limit, W/25MHz	Limit for measured EBW*, dBm	Limit with respect to the antenna assembly gain**, dBm
3656.0	BPSK	12.117	25	40.834	27.334
3663.0	BPSK	12.958	25	41.125	27.625
3669.0	BPSK	12.97	25	41.129	27.629
3656.0	64QAM	11.934	25	40.768	27.268
3663.0	64QAM	12.831	25	41.083	27.583
3669.0	64QAM	12.712	25	41.042	27.542

EBW: 20 MHz

Channel, MHz	Modulation	EBW, MHz	Output power limit, W/25MHz	Limit for measured EBW*, dBm	Limit with respect to the antenna assembly gain**, dBm
3661.0	BPSK	22.561	25	43.534	30.034
3663.0	BPSK	24.29	25	43.854	30.354
3664.0	BPSK	23.742	25	43.755	30.255
3661.0	64QAM	22.418	25	43.506	30.006
3663.0	64QAM	24.108	25	43.822	30.322
3664.0	64QAM	24.733	25	43.933	30.433

* - Limit for EBW = 10*LOG((1000 * [Output power limit, W] / 25MHz) / (25MHz / EBW, MHz)), dBm
** - Limit for EBW – Antenna assembly gain.

Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power**		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1007 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48 VDC
Remarks: with 13.5 dBi gain antenna assembly			

Table 7.1.9 Peak EIRP output power test results

ASSIGNED FREQUENCY RANGE: 3650.0 – 3675.0 MHz
DETECTOR USED: Average (RMS)
MODULATING SIGNAL: PRBS
TRANSMITTER OUTPUT POWER SETTINGS: Maximum (see NOTE1)
EBW: 5 MHz

Channel, MHz	Modulation	Pmeas (RF#1), dBm	Pmeas (RF#2), dBm	P_{meas} *, dBm	Antenna assembly gain, dBi	EIRP, dBm	Limit, dBm	Margin, dB	Verdict
3652.5	BPSK	15.07	16.03	18.59	13.50	32.09	38.230	-6.14	Pass
3663.0	BPSK	14.87	14.75	17.82	13.50	31.32	38.168	-6.85	Pass
3672.5	BPSK	15.09	14.92	18.02	13.50	31.52	38.142	-6.63	Pass
3652.5	64QAM	15.11	16.03	18.60	13.50	32.10	38.25	-6.14	Pass
3663.0	64QAM	15.03	15.08	18.07	13.50	31.57	38.17	-6.60	Pass
3672.5	64QAM	15.11	14.90	18.02	13.50	31.52	38.14	-6.63	Pass
EBW:					**10 MHz**				
3656.0	BPSK	21.39	22.53	25.01	13.50	38.51	40.83	-2.33	Pass
3663.0	BPSK	20.90	22.60	24.84	13.50	38.34	41.13	-2.78	Pass
3670.0	BPSK	21.02	22.64	24.92	13.50	38.42	41.13	-2.71	Pass
3656.0	64QAM	21.43	22.39	24.95	13.50	38.45	40.77	-2.32	Pass
3663.0	64QAM	20.86	22.72	24.90	13.50	38.40	41.08	-2.68	Pass
3670.0	64QAM	21.12	22.59	24.93	13.50	38.43	41.04	-2.61	Pass
EBW:					**20 MHz**				
3661.0	BPSK	21.47	23.32	25.50	13.50	39.00	43.534	-4.53	Pass
3663.0	BPSK	22.05	22.96	25.54	13.50	39.04	43.854	-4.82	Pass
3664.0	BPSK	21.85	23.94	26.03	13.50	39.53	43.755	-4.23	Pass
3661.0	64QAM	21.98	23.23	25.66	13.50	39.16	43.506	-4.35	Pass
3663.0	64QAM	22.38	23.19	25.81	13.50	39.31	43.822	-4.51	Pass
3664.0	64QAM	22.26	23.47	25.92	13.50	39.42	43.933	-4.52	Pass

* - Pmeas, dBm = 10 log {10^[P(dBm,RF#1)/10]+ 10^([P(dBm, RF#2)/10]}

NOTE1: the EUT was configured to produce maximum conducted RF power for minimum declared Antenna gain of 22 dBi. RF output power will vary depending on the antenna assembly gain to ensure that the total EIRP power and power limits comply with EIRP limits. For actual settings of power levels with respect to actual antenna assembly used, please refer to the User's Manual.

Reference numbers of test equipment used

HL 3440	HL 3474	HL 3779	HL 3784	HL 3818			

Full description is given in Appendix A.

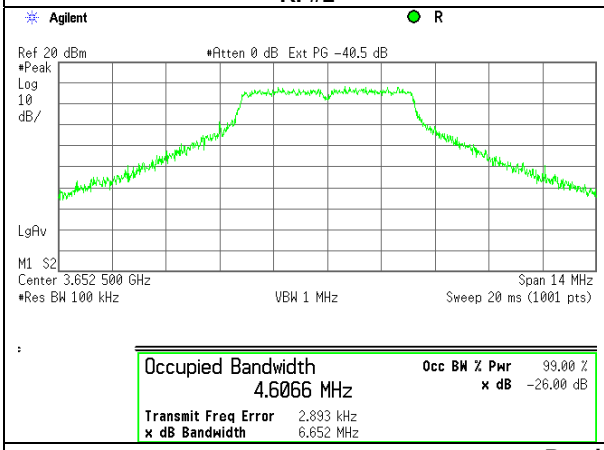
Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power**		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1007 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48 VDC
Remarks: with 13.5 dBi gain antenna assembly			

Plot 7.1.55 The 26 dB EBW, band power test results at low frequency

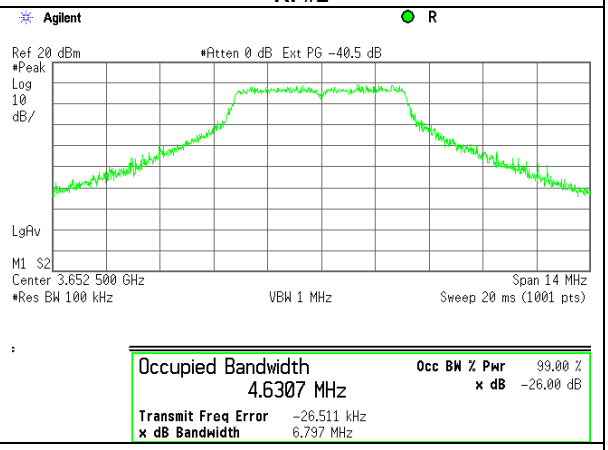
CARRIER FREQUENCY:	3652.5 MHz
EMISSION BANDWIDTH:	5 MHz
MODULATION:	BPSK
ANTENNA ASSEMBLY GAIN:	13.5 dBi

26dB EBW

RF#1

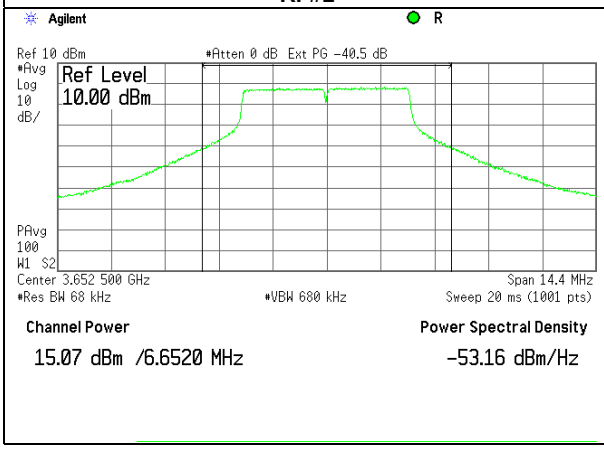


RF#2

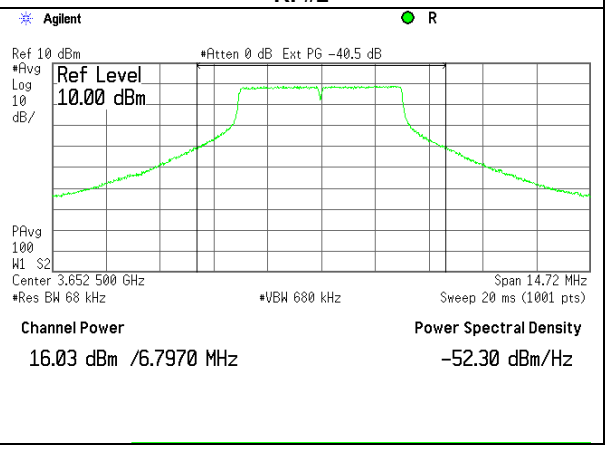


Band power

RF#1



RF#2



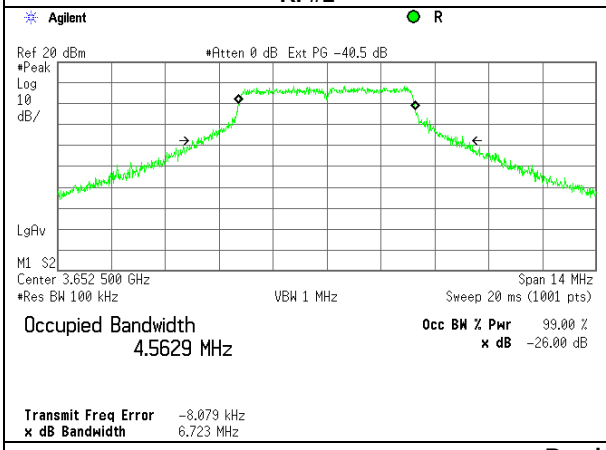
Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power**		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1007 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48 VDC
Remarks: with 13.5 dBi gain antenna assembly			

Plot 7.1.56 The 26 dB EBW, band power test results at low frequency

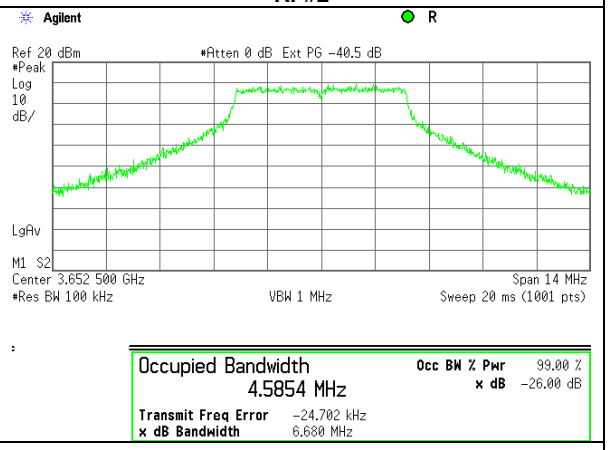
CARRIER FREQUENCY:	3652.5 MHz
EMISSION BANDWIDTH:	5 MHz
MODULATION:	64QAM
ANTENNA ASSEMBLY GAIN:	13.5 dBi

26dB EBW

RF#1

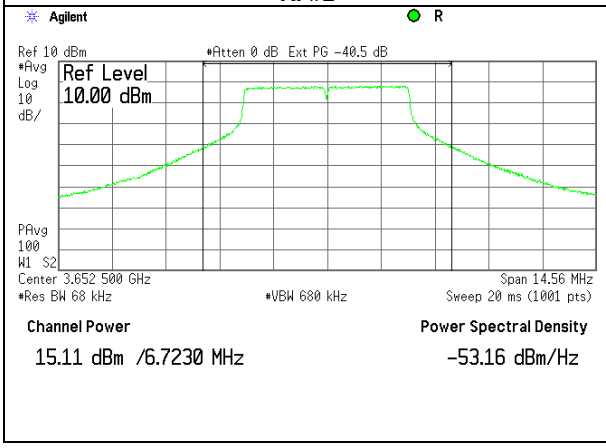


RF#2

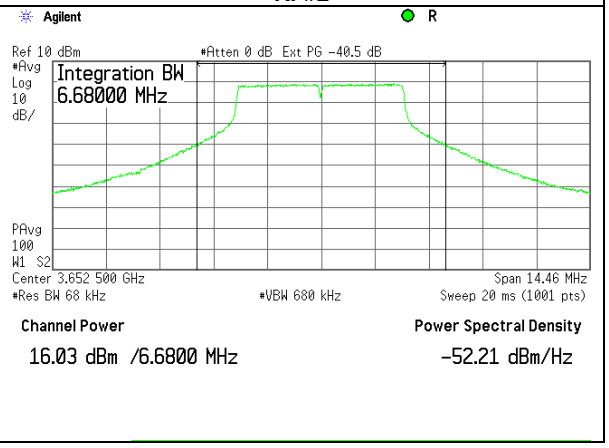


Band power

RF#1



RF#2



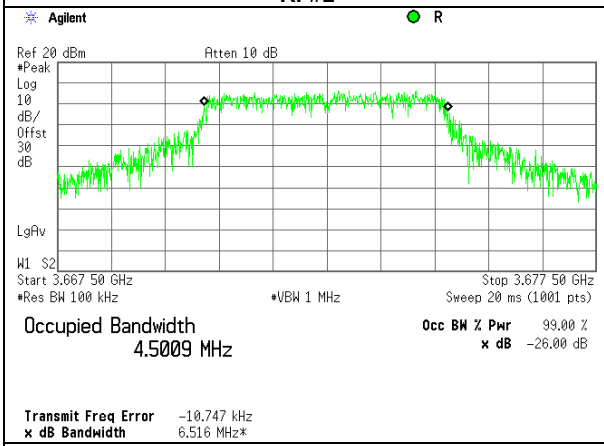
Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power**		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1007 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48 VDC
Remarks: with 13.5 dBi gain antenna assembly			

Plot 7.1.57 The 26 dB EBW, band power test results at mid frequency

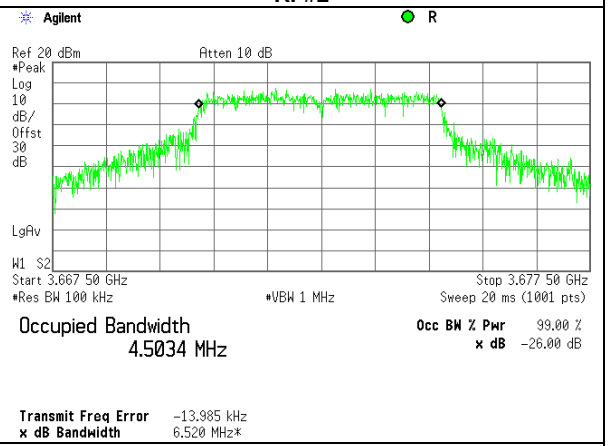
CARRIER FREQUENCY:	3663.0MHz
EMISSION BANDWIDTH:	5 MHz
MODULATION:	BPSK
ANTENNA ASSEMBLY GAIN:	13.5dBi

26dB EBW

RF#1

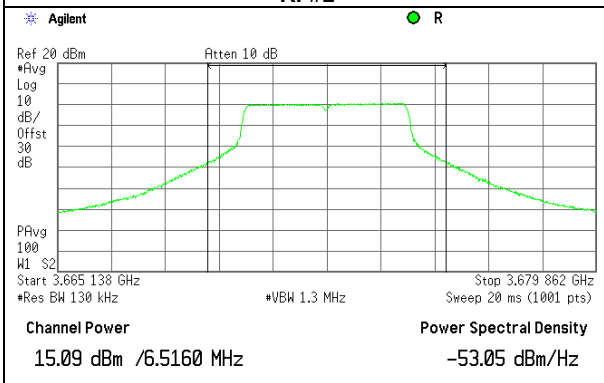


RF#2

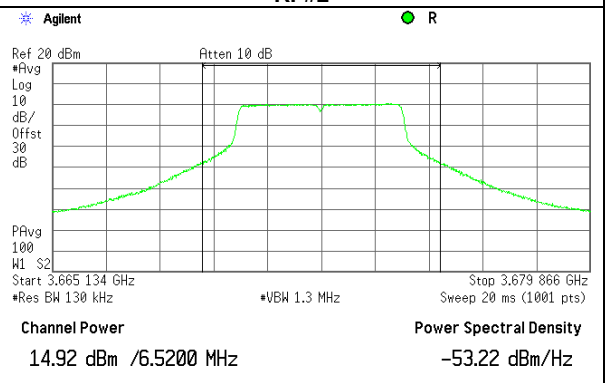


Band power

RF#1



RF#2



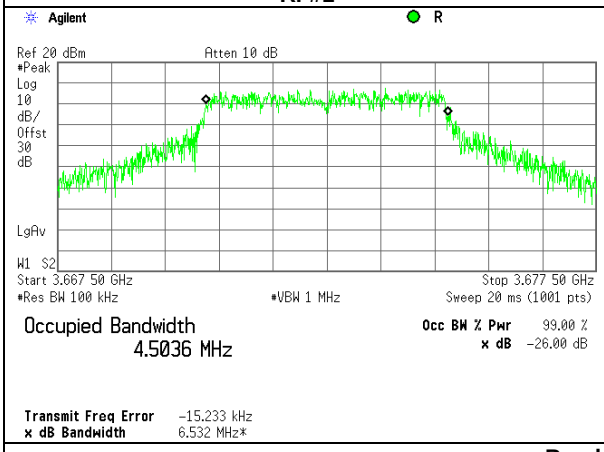
Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power**		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1007 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48 VDC
Remarks: with 13.5 dBi gain antenna assembly			

Plot 7.1.58 The 26dB EBW, band power test results at mid frequency

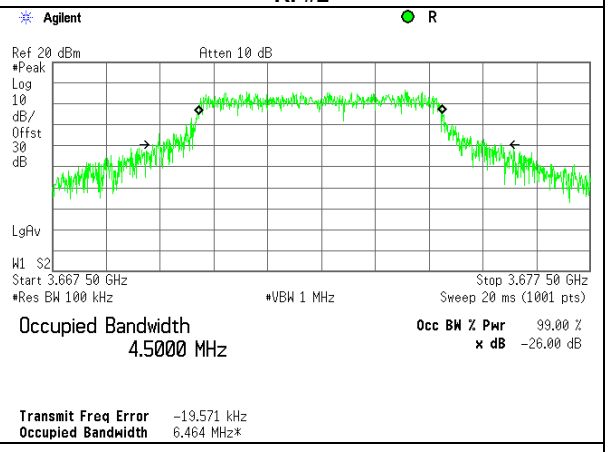
CARRIER FREQUENCY:	3663.0 MHz
EMISSION BANDWIDTH:	5 MHz
MODULATION:	64QAM
ANTENNA ASSEMBLY GAIN:	13.5dBi

26dB EBW

RF#1

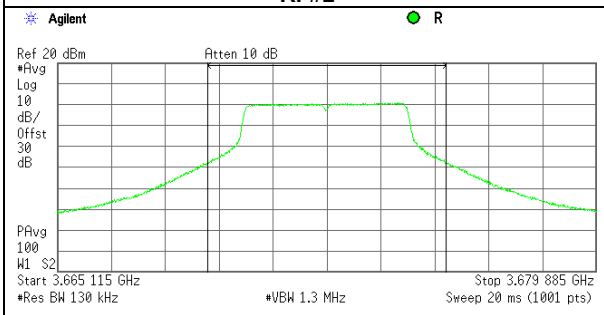


RF#2

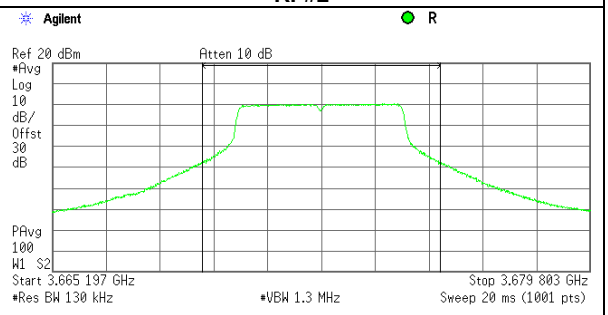


Band power

RF#1



RF#2



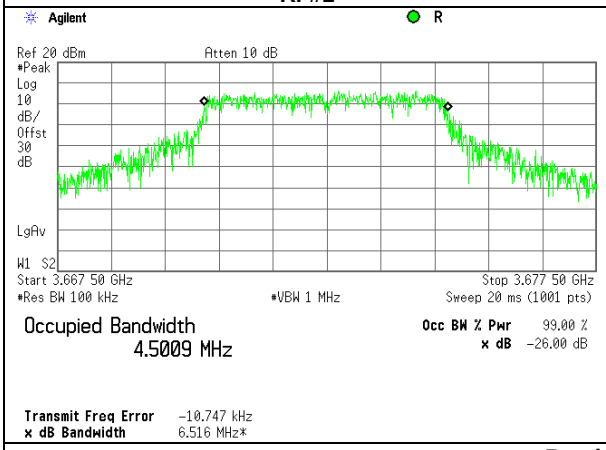
Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power**		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1007 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48 VDC
Remarks: with 13.5 dBi gain antenna assembly			

Plot 7.1.59 The 26dB EBW, band power test results at high frequency

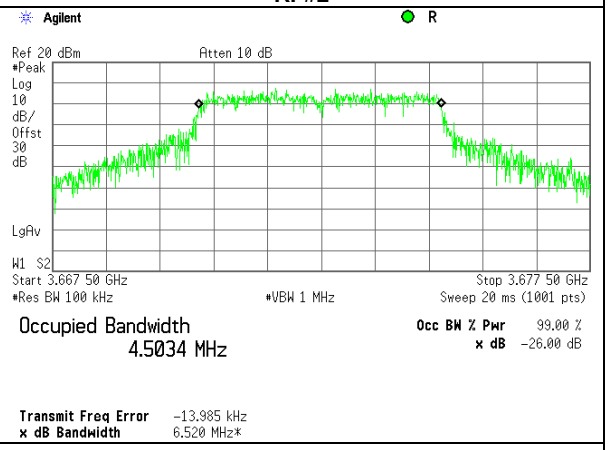
CARRIER FREQUENCY:	3672.5 MHz
EMISSION BANDWIDTH:	5 MHz
MODULATION:	BPSK
ANTENNA ASSEMBLY GAIN:	13.5dBi

26dB EBW

RF#1

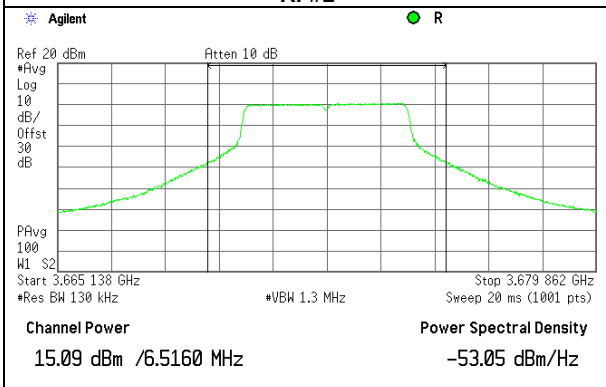


RF#2

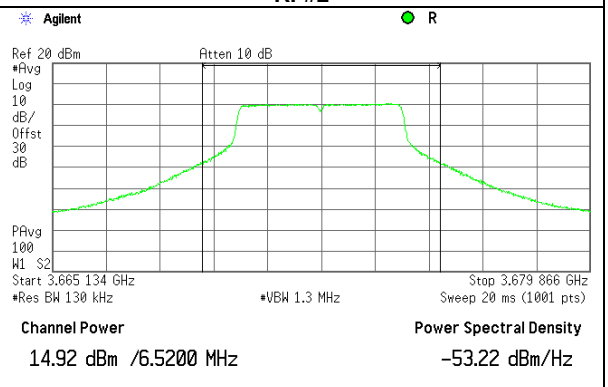


Band power

RF#1



RF#2



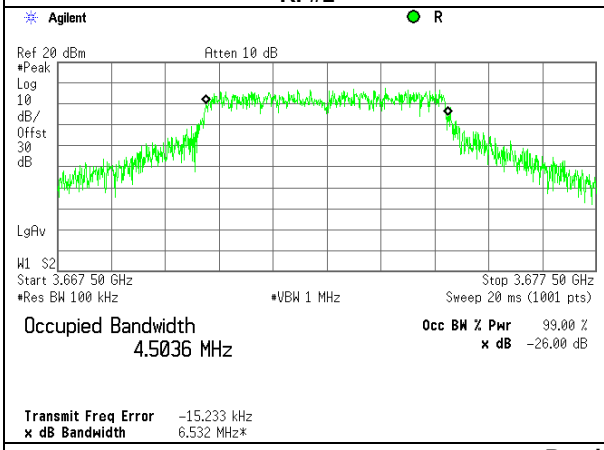
Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power**		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1007 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48 VDC
Remarks: with 13.5 dBi gain antenna assembly			

Plot 7.1.60 The 26dB EBW, band power test results at high frequency

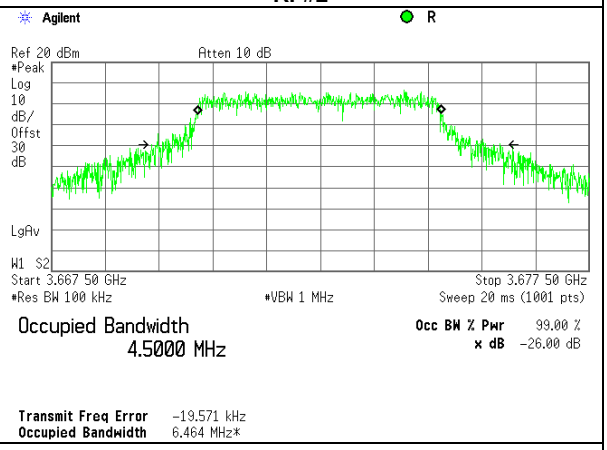
CARRIER FREQUENCY:	3672.5 MHz
EMISSION BANDWIDTH:	5 MHz
MODULATION:	64QAM
ANTENNA ASSEMBLY GAIN:	13.5dBi

26dB EBW

RF#1

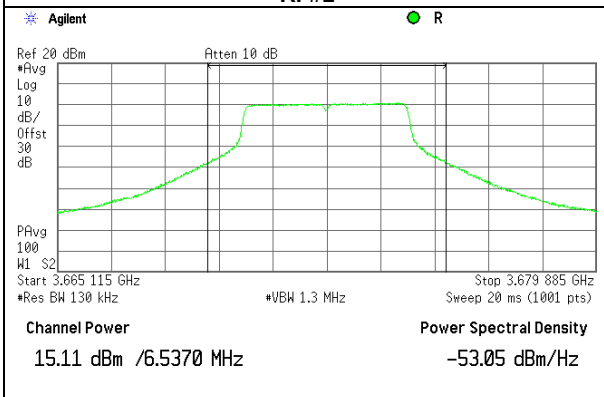


RF#2

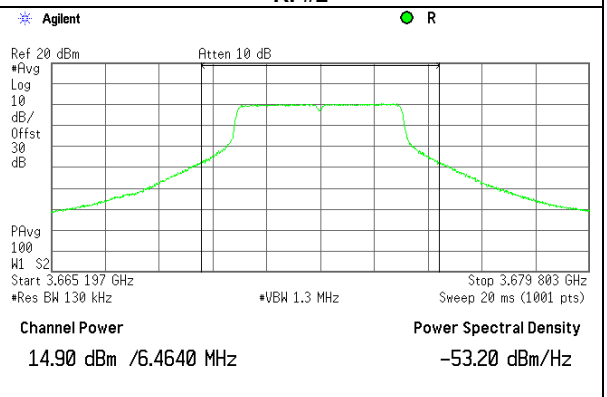


Band power

RF#1



RF#2



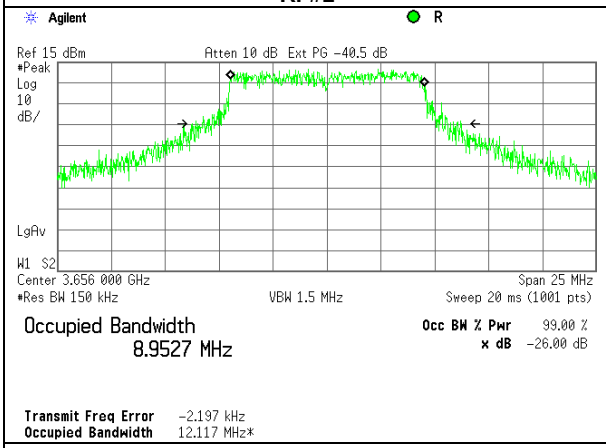
Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power**		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1007 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48 VDC
Remarks: with 13.5 dBi gain antenna assembly			

Plot 7.1.61 The 26dB EBW, band power test results at low frequency

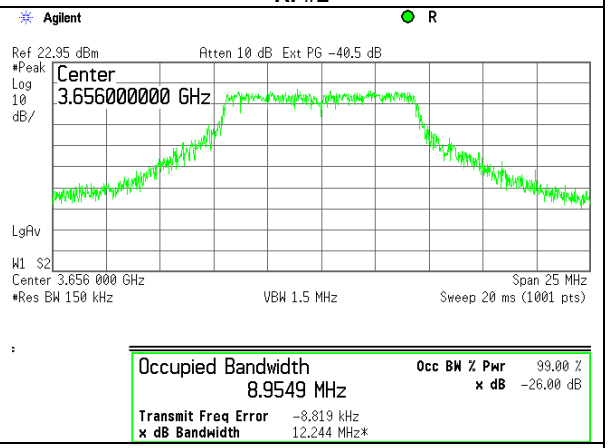
CARRIER FREQUENCY:	3656.0 MHz
EMISSION BANDWIDTH:	10 MHz
MODULATION:	BPSK
ANTENNA ASSEMBLY GAIN:	13.5dBi

26dB EBW

RF#1

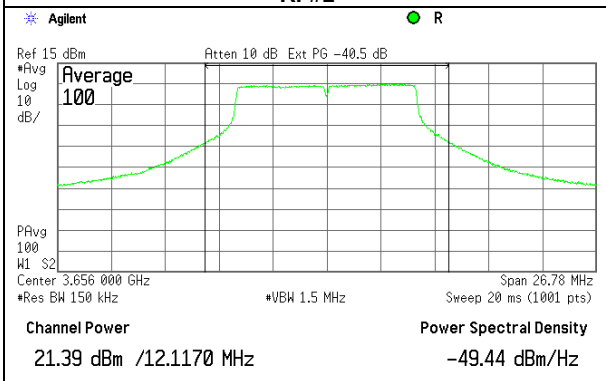


RF#2

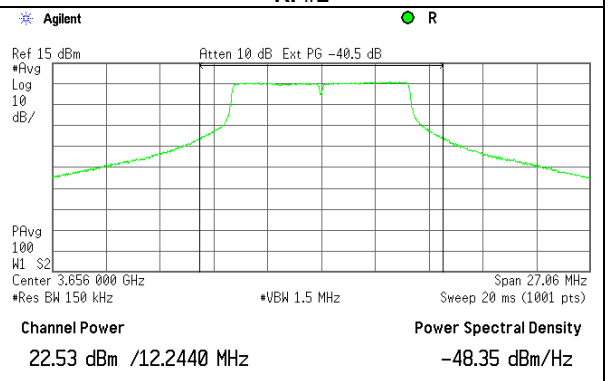


Band power

RF#1



RF#2



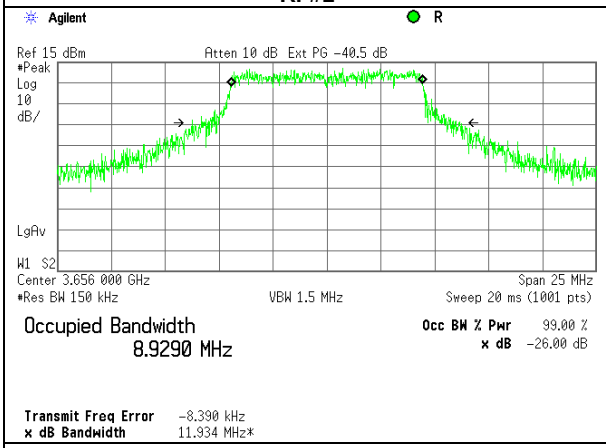
Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power**		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1007 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48 VDC
Remarks: with 13.5 dBi gain antenna assembly			

Plot 7.1.62 The 26dB EBW, band power test results at low frequency

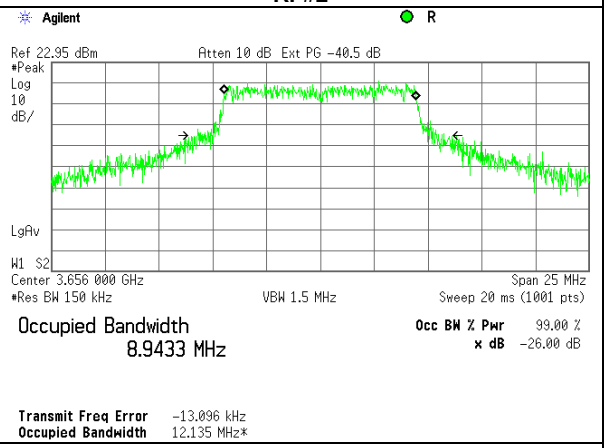
CARRIER FREQUENCY:	3656.0 MHz
EMISSION BANDWIDTH:	10 MHz
MODULATION:	64QAM
ANTENNA ASSEMBLY GAIN:	13.5dBi

26dB EBW

RF#1

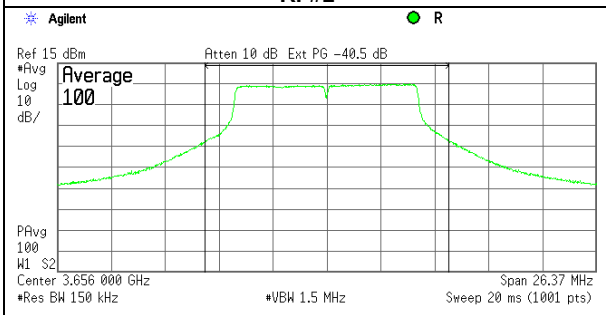


RF#2

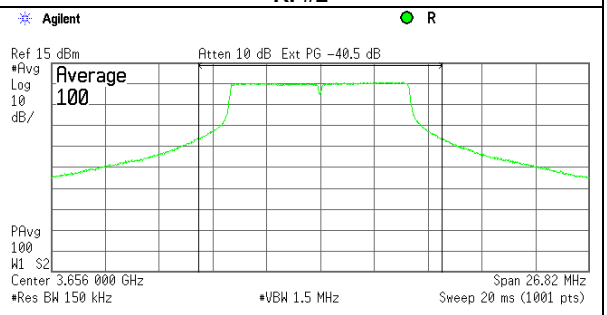


Band power

RF#1



RF#2



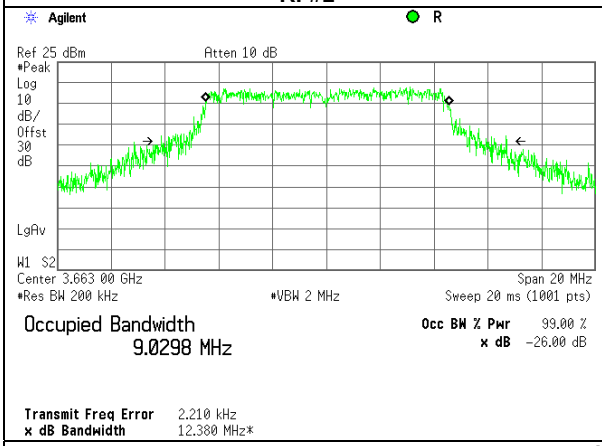
Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power**		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1007 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48 VDC
Remarks: with 13.5 dBi gain antenna assembly			

Plot 7.1.63 The 26dB EBW, band power test results at mid frequency

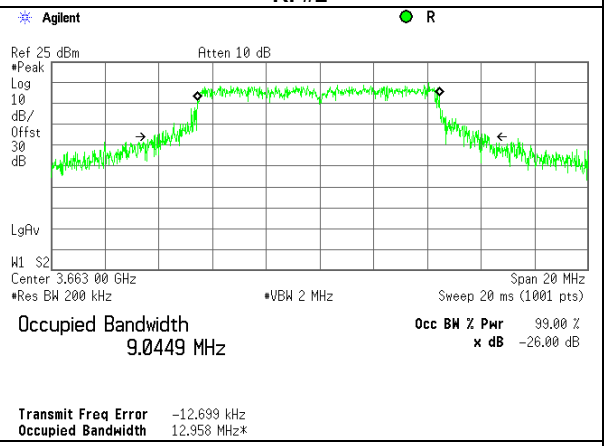
CARRIER FREQUENCY:	3663.0 MHz
EMISSION BANDWIDTH:	10 MHz
MODULATION:	BPSK
ANTENNA ASSEMBLY GAIN:	13.5dBi

26dB EBW

RF#1

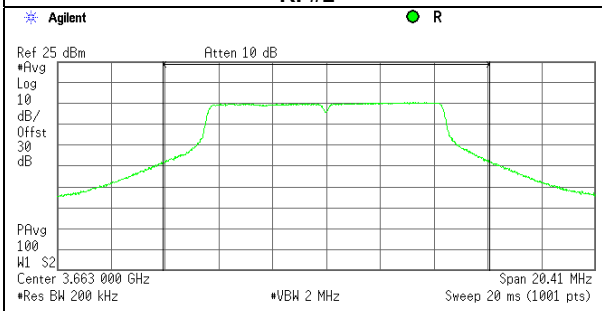


RF#2

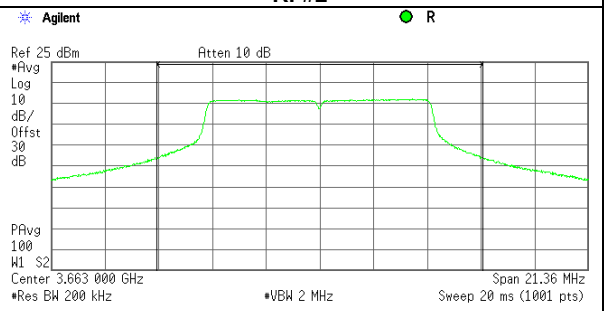


Band power

RF#1



RF#2



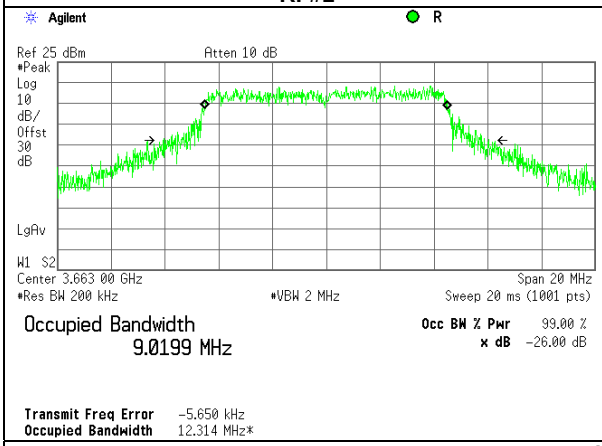
Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power**		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1007 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48 VDC
Remarks: with 13.5 dBi gain antenna assembly			

Plot 7.1.64 The 26dB EBW, band power test results at mid frequency

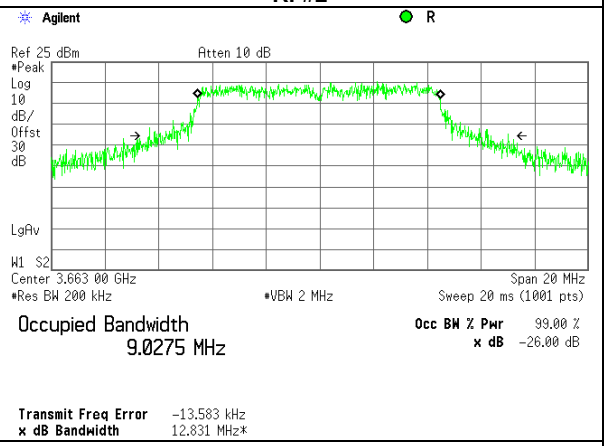
CARRIER FREQUENCY:	3663.0 MHz
EMISSION BANDWIDTH:	10 MHz
MODULATION:	64QAM
ANTENNA ASSEMBLY GAIN:	13.5dBi

26dB EBW

RF#1

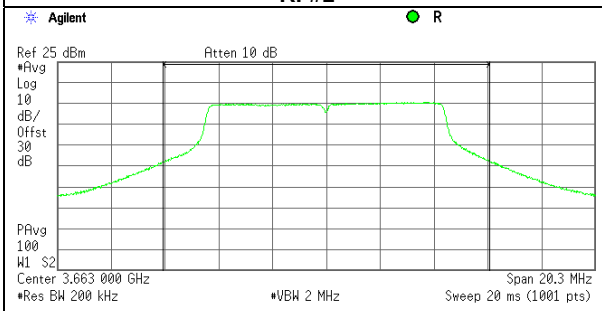


RF#2

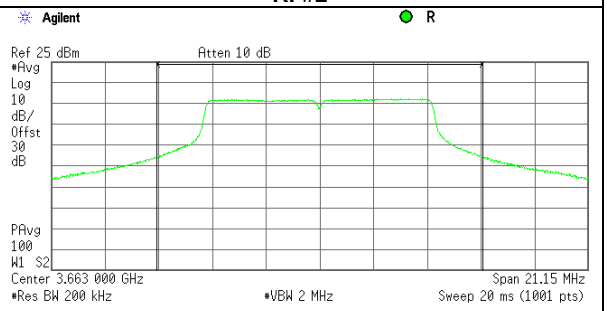


Band power

RF#1



RF#2



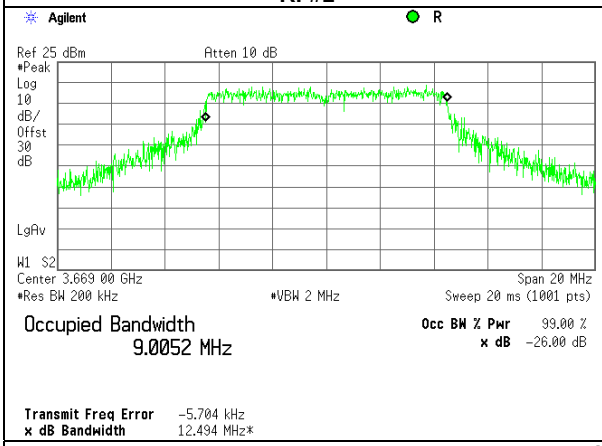
Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power**		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1007 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48 VDC
Remarks: with 13.5 dBi gain antenna assembly			

Plot 7.1.65 The 26dB EBW, band power test results at high frequency

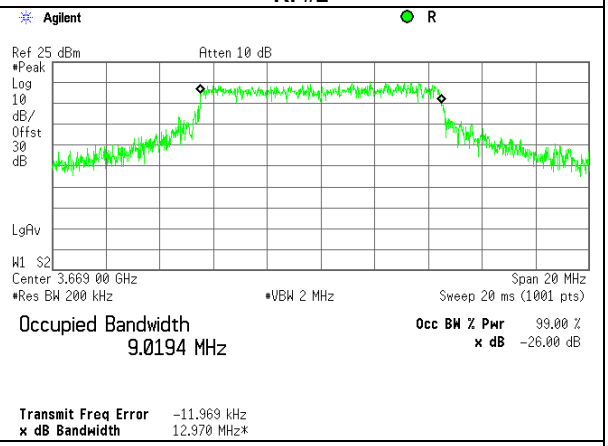
CARRIER FREQUENCY:	3669.0MHz
EMISSION BANDWIDTH:	10 MHz
MODULATION:	BPSK
ANTENNA ASSEMBLY GAIN:	13.5dBi

26dB EBW

RF#1

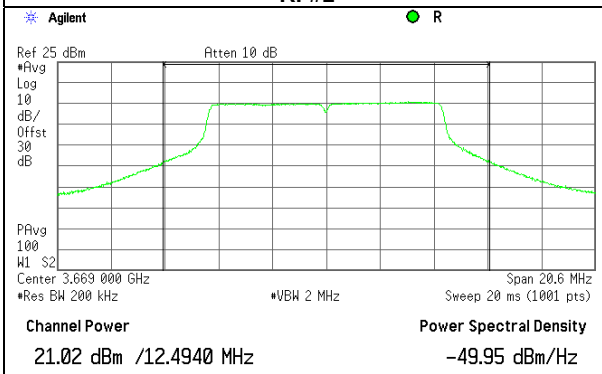


RF#2

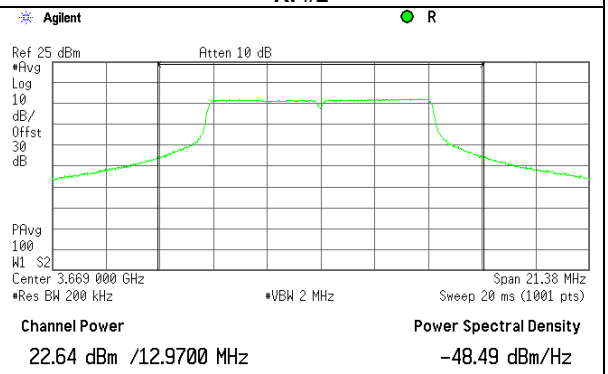


Band power

RF#1



RF#2



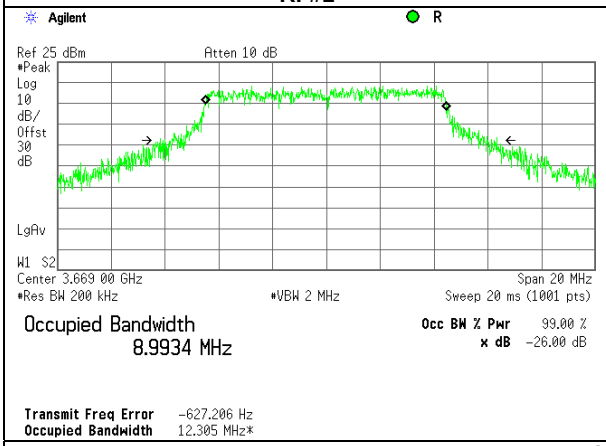
Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power**		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1007 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48 VDC
Remarks: with 13.5 dBi gain antenna assembly			

Plot 7.1.66 The 26dB EBW, band power test results at high frequency

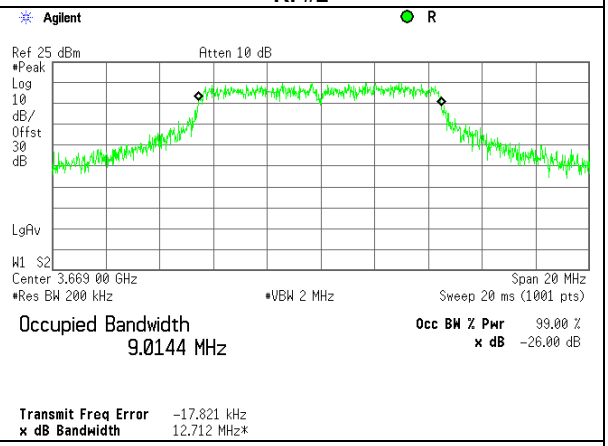
CARRIER FREQUENCY:	3669.0 MHz
EMISSION BANDWIDTH:	10 MHz
MODULATION:	64QAM
ANTENNA ASSEMBLY GAIN:	13.5dBi

26dB EBW

RF#1

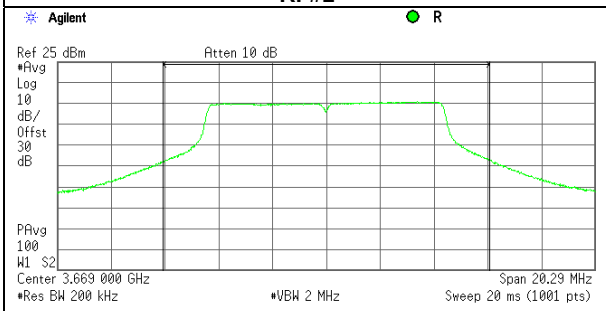


RF#2

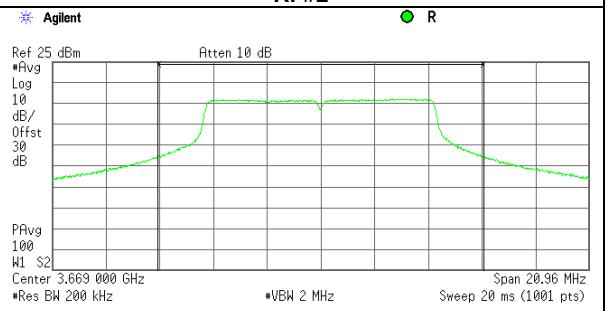


Band power

RF#1



RF#2



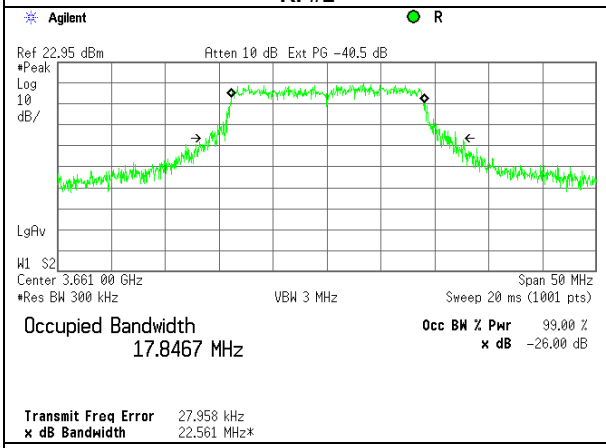
Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power**		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1007 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48 VDC
Remarks: with 13.5 dBi gain antenna assembly			

Plot 7.1.67 The 26dB EBW, band power test results at low frequency

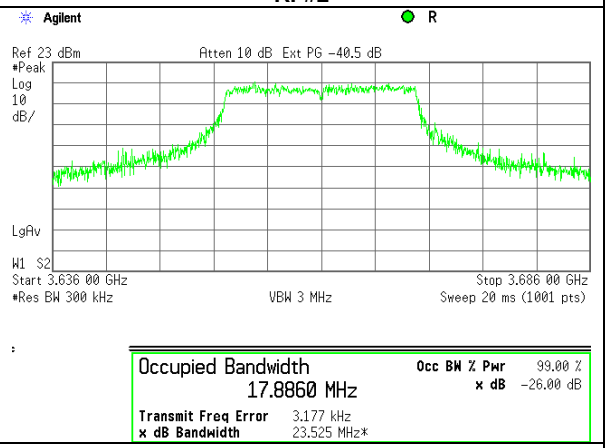
CARRIER FREQUENCY:	3661.0MHz
EMISSION BANDWIDTH:	20 MHz
MODULATION:	BPSK
ANTENNA ASSEMBLY GAIN:	13.5dBi

26dB EBW

RF#1

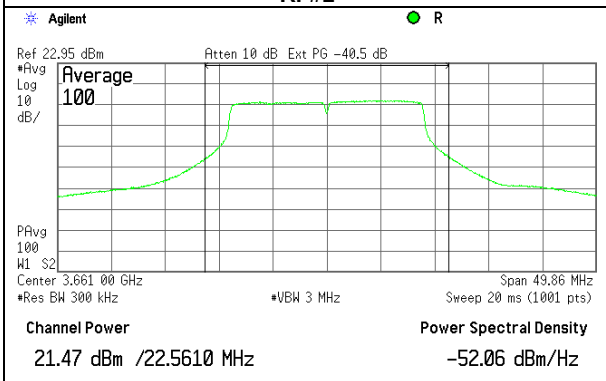


RF#2

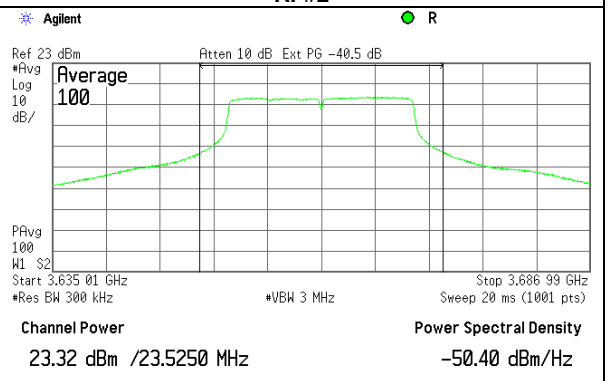


Band power

RF#1



RF#2



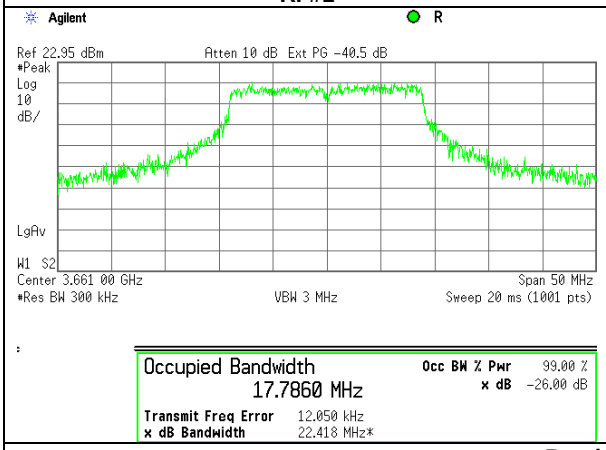
Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power**		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1007 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48 VDC
Remarks: with 13.5 dBi gain antenna assembly			

Plot 7.1.68 The 26dB EBW, band power test results at low frequency

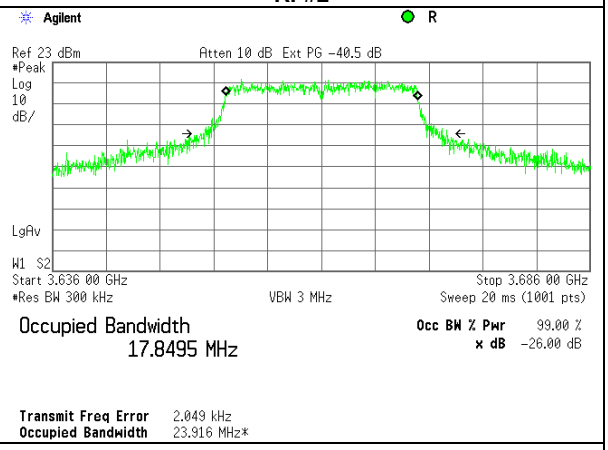
CARRIER FREQUENCY:	3661.0 MHz
EMISSION BANDWIDTH:	20 MHz
MODULATION:	64QAM
ANTENNA ASSEMBLY GAIN:	13.5dBi

26dB EBW

RF#1

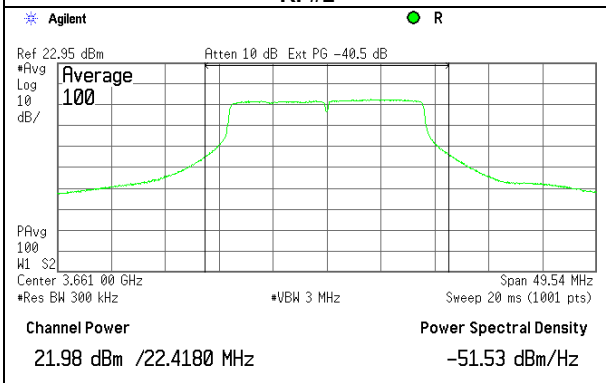


RF#2

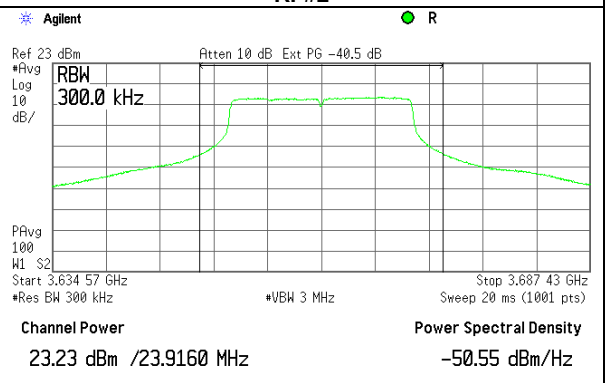


Band power

RF#1



RF#2



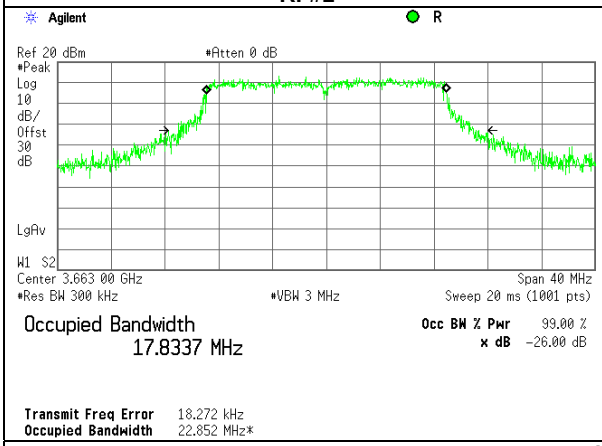
Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power**		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1007 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48 VDC
Remarks: with 13.5 dBi gain antenna assembly			

Plot 7.1.69 The 26dB EBW, band power test results at mid frequency

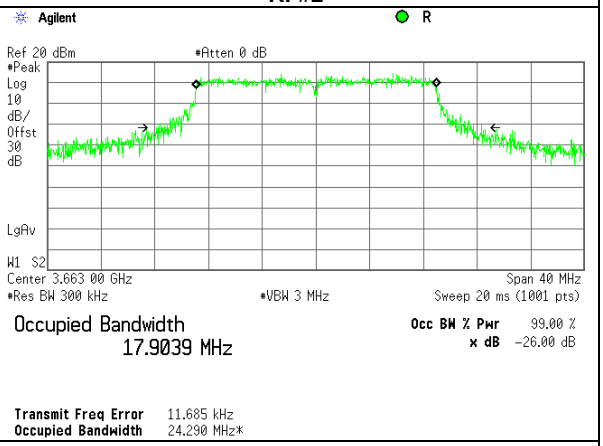
CARRIER FREQUENCY:	3663.0 MHz
EMISSION BANDWIDTH:	20 MHz
MODULATION:	BPSK
ANTENNA ASSEMBLY GAIN:	13.5dBi

26dB EBW

RF#1

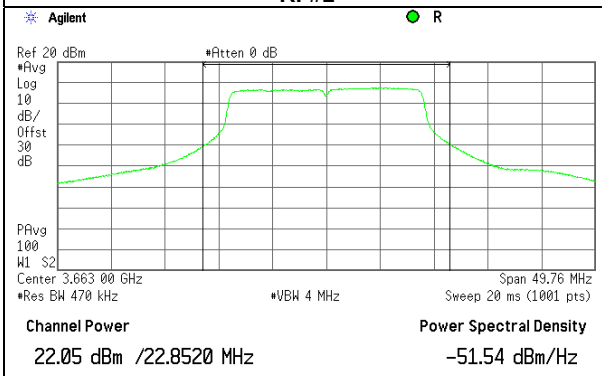


RF#2

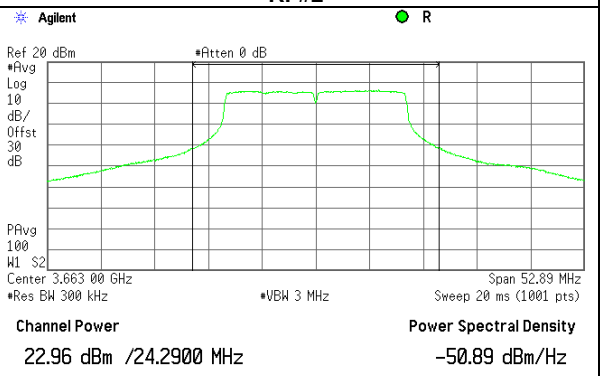


Band power

RF#1



RF#2



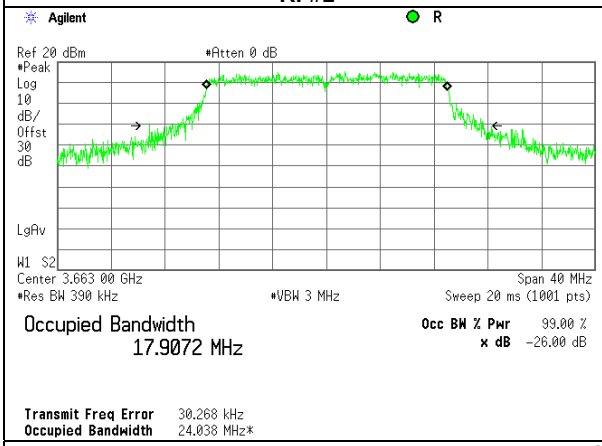
Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power**		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1007 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48 VDC
Remarks: with 13.5 dBi gain antenna assembly			

Plot 7.1.70 The 26dB EBW, band power test results at mid frequency

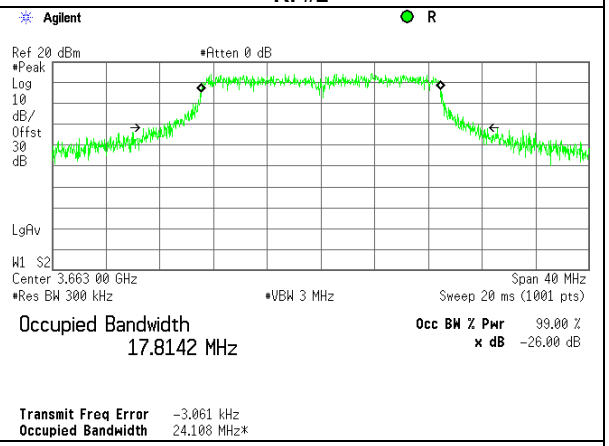
CARRIER FREQUENCY:	3663.0 MHz
EMISSION BANDWIDTH:	20 MHz
MODULATION:	64QAM
ANTENNA ASSEMBLY GAIN:	13.5dBi

26dB EBW

RF#1

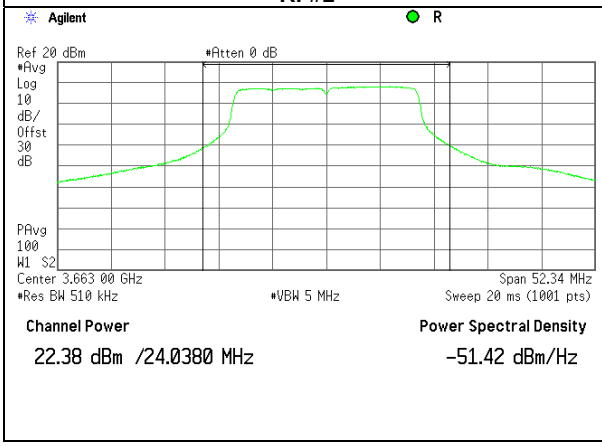


RF#2

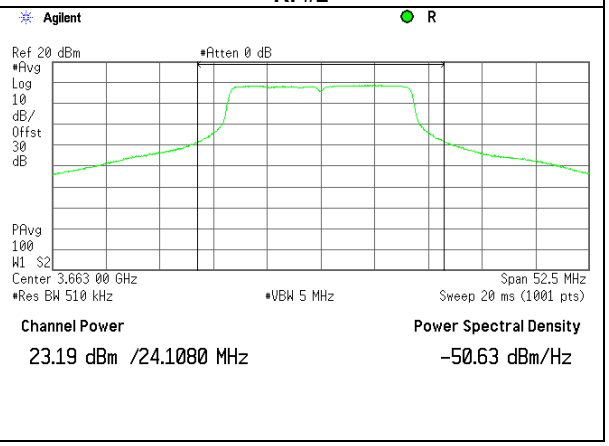


Band power

RF#1



RF#2



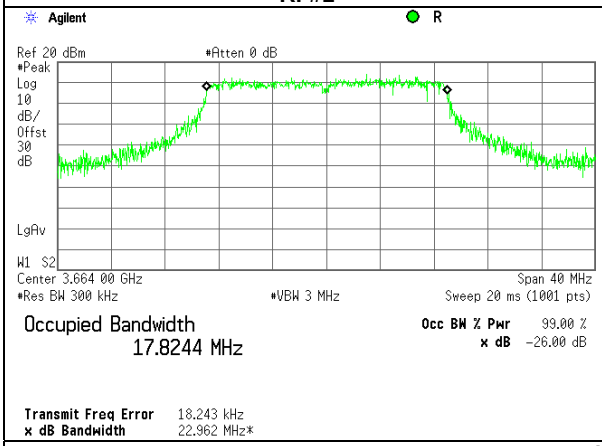
Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power**		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1007 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48 VDC
Remarks: with 13.5 dBi gain antenna assembly			

Plot 7.1.71 The 26dB EBW, band power test results at high frequency

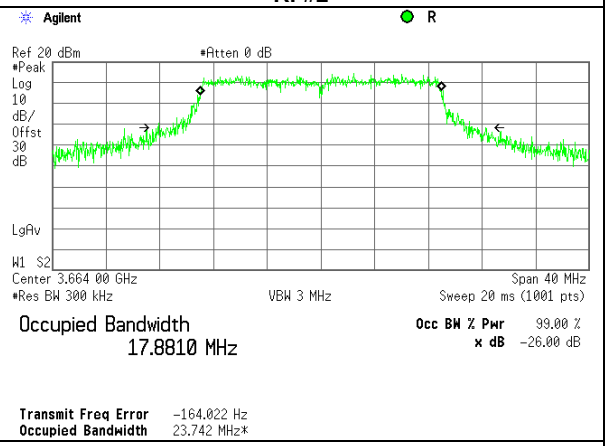
CARRIER FREQUENCY:	3664.0MHz
EMISSION BANDWIDTH:	20 MHz
MODULATION:	BPSK
ANTENNA ASSEMBLY GAIN:	13.5dBi

26dB EBW

RF#1

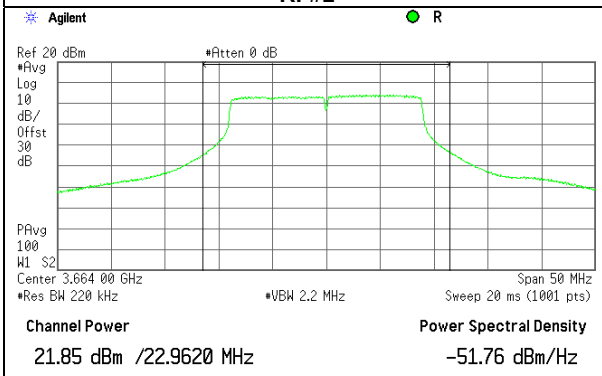


RF#2

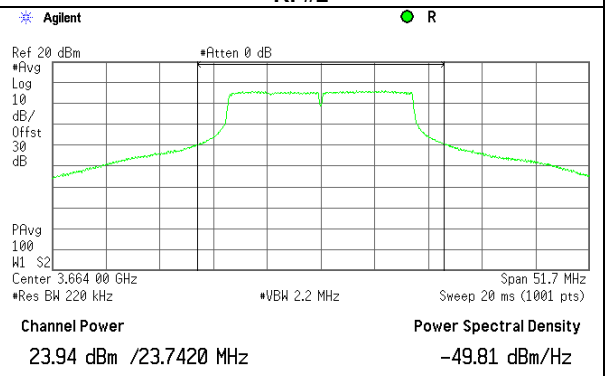


Band power

RF#1



RF#2



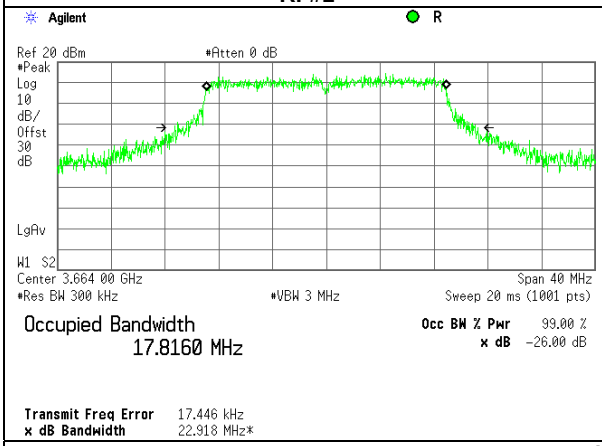
Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Maximum conducted output power**		
Test procedure:	47 CFR, Section 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1007 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48 VDC
Remarks: with 13.5 dBi gain antenna assembly			

Plot 7.1.72 The 26dB EBW, band power test results at high frequency

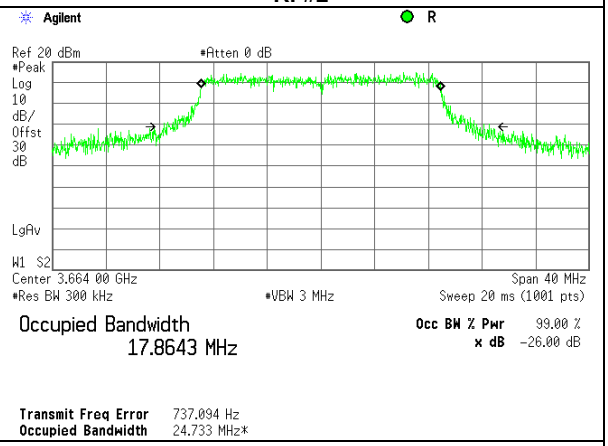
CARRIER FREQUENCY:	3664.0 MHz
EMISSION BANDWIDTH:	20 MHz
MODULATION:	64QAM
ANTENNA ASSEMBLY GAIN:	13.5dBi

26dB EBW

RF#1

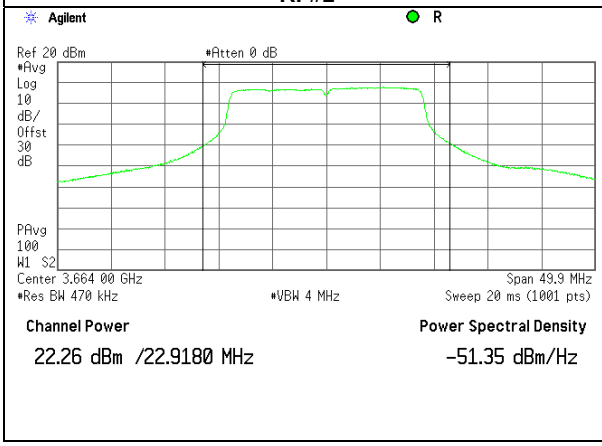


RF#2

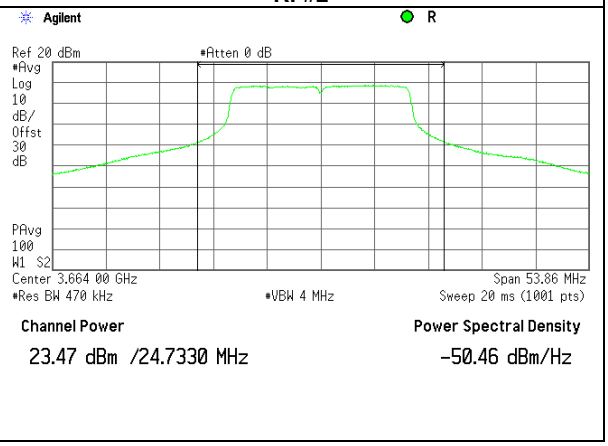


Band power

RF#1



RF#2



Test specification:	Section 90.1321 / RSS-197, Section 5.6, Peak EIRP power density		
Test procedure:	47 CFR, Sections 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	Verdict:	PASS
Date:	11/14/2010		
Temperature: 25 ºC	Air Pressure: 1005 hPa	Relative Humidity: 45 %	Power Supply: -48 VDC
Remarks:			

7.2 Peak EIRP power density

7.2.1 General

This test was performed to measure the peak EIRP density at the transmitter RF antenna connector. Specification test limits are given in Table 7.1.1.

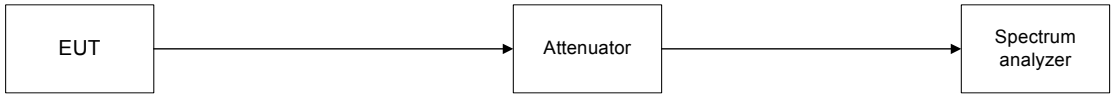
Table 7.2.1 Peak power density limits

Assigned frequency range, MHz	Occupied bandwidth, MHz	Maximum peak power spectral density, EIRP	
		W/MHz	dBm/MHz
Base and fixed stations			
3650.0 – 3675.0	Any	1	30
Mobile and portable stations			
3650.0 – 3675.0	Any	0.04	16

7.2.2 Test procedure

7.2.2.1 The EUT was set up as shown in Figure 7.2.1, energized and its proper operation was checked.
7.2.2.2 The EUT was adjusted to produce maximum available for end user RF output power.
7.2.2.3 The peak output power density was measured with spectrum analyzer as provided in Table 7.2.2 and the associated plots.

Figure 7.2.1 Peak power density test setup



Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Peak EIRP power density**		
Test procedure:	47 CFR, Sections 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48 VDC
Remarks: with 21 dBi gain antenna assembly			

Table 7.2.2 Peak EIRP power density test results

ASSIGNED FREQUENCY RANGE: 3650.0 – 3675.0 MHz
DETECTOR USED: Average (RMS)
RESOLUTION BANDWIDTH: 1000 kHz
VIDEO BANDWIDTH: 3000 kHz
MODULATING SIGNAL: PRBS
TRANSMITTER OUTPUT POWER SETTINGS: Maximum (see NOTE1)
ANTENNA ASSEMBLY GAIN: 21 dBi
EBW: 5 MHz

Channel, MHz	Modulation	Pmeas (RF#1), dBm/MHz	Pmeas (RF#2), dBm/MHz	Power density*, dBm/MHz	EIRP power density**, dBm/MHz	Limit, dBm/MHz	Margin, dB	Verdict
3652.5	BPSK	4.755	5.422	8.11	29.11	30	-0.89	Pass
3663.0	BPSK	5.866	5.767	8.83	29.83	30	-0.17	Pass
3672.5	BPSK	5.568	5.44	8.51	29.51	30	-0.49	Pass
3652.5	64QAM	4.932	5.09	8.02	29.02	30	-0.98	Pass
3663.0	64QAM	6.025	5.091	8.59	29.59	30	-0.41	Pass
3672.5	64QAM	5.573	6.141	8.88	29.88	30	-0.12	Pass

EBW: 10 MHz

Channel, MHz	Modulation	Pmeas (RF#1), dBm/MHz	Pmeas (RF#2), dBm/MHz	Power density*, dBm/MHz	EIRP power density**, dBm/MHz	Limit, dBm/MHz	Margin, dB	Verdict
3655.0	BPSK	4.85	6.091	8.52	29.52	30	-0.48	Pass
3663.0	BPSK	5.101	5.165	8.14	29.14	30	-0.86	Pass
3670.0	BPSK	5.533	5.178	8.37	29.37	30	-0.63	Pass
3655.0	64QAM	4.905	6.126	8.57	29.57	30	-0.43	Pass
3663.0	64QAM	5.488	5.038	8.28	29.28	30	-0.72	Pass
3670.0	64QAM	5.792	5.642	8.73	29.73	30	-0.27	Pass

EBW: 20 MHz

Channel, MHz	Modulation	Pmeas (RF#1), dBm/MHz	Pmeas (RF#2), dBm/MHz	Power density*, dBm/MHz	EIRP power density**, dBm/MHz	Limit, dBm/MHz	Margin, dB	Verdict
3660.0	BPSK	4.892	6.298	8.66	29.66	30	-0.34	Pass
3663.0	BPSK	5.022	5.58	8.32	29.32	30	-0.68	Pass
3665.0	BPSK	5.206	6.053	8.66	29.66	30	-0.34	Pass
3660.0	64QAM	4.367	6.269	8.43	29.43	30	-0.57	Pass
3663.0	64QAM	5.235	5.903	8.59	29.59	30	-0.41	Pass
3665.0	64QAM	5.161	6.221	8.73	29.73	30	-0.27	Pass

* - Power density, dBm/MHz = 10 log{10^[P(dBm/MHz,RF#1)/10]+ 10^[P(dBm/MHz, RF#2)/10]}
** - EIRP power density, dBm/MHz = Power density*, dBm/MHz + Antenna Assembly Gain, dBi
NOTE1: EUT was configured to produce maximum conducted RF power for minimum declared Antenna gain of 22 dBi. RF output power will vary depending on the antenna assembly gain to ensure that the total EIRP power and power limits withstand with EIRP limits. For actual settings of power levels with respect to actual antenna assembly used, please refer to the User's Manual.

Reference numbers of test equipment used

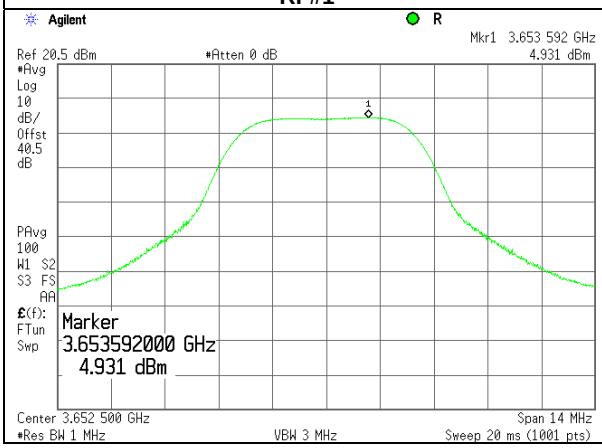
HL 3440	HL 3474	HL 3779	HL 3784	HL 3818			

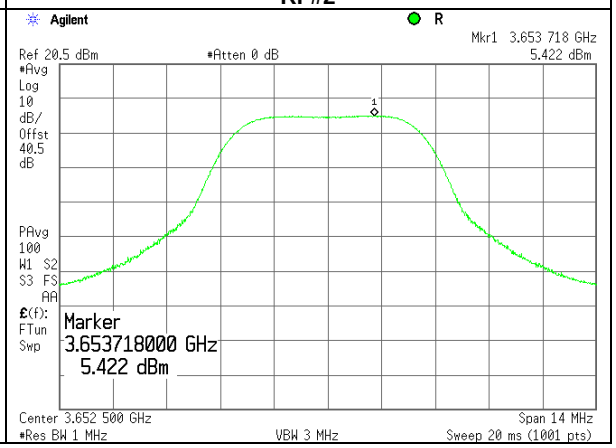
Full description is given in Appendix A.

Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Peak EIRP power density**		
Test procedure:	47 CFR, Sections 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48 VDC
Remarks: with 21 dBi gain antenna assembly			

Plot 7.2.1 Peak output power density test results at low frequency

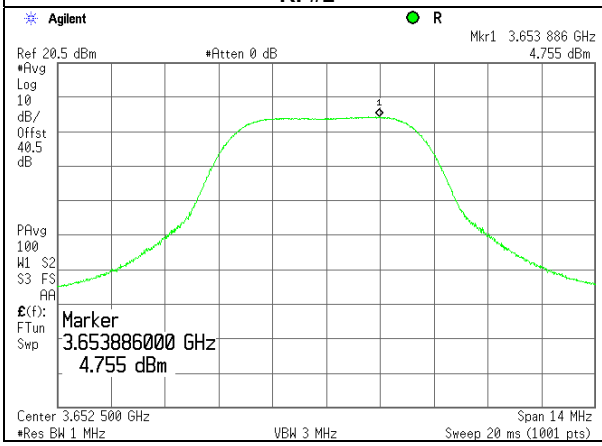
CARRIER FREQUENCY:	3652.5 MHz
EMISSION BANDWIDTH:	5 MHz
MODULATION:	BPSK
ANTENNA ASSEMBLY GAIN:	21.0 dBi
RF#1	**RF#2**

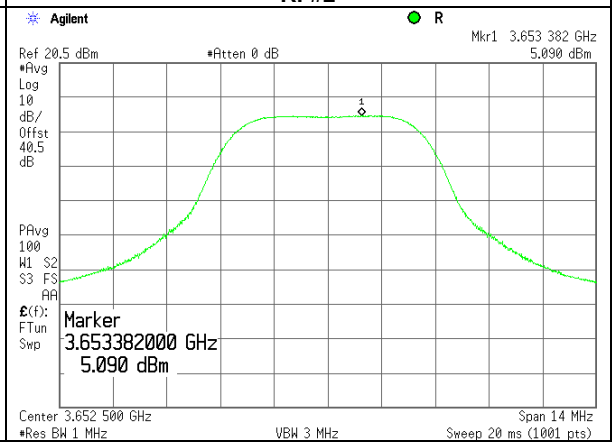




Plot 7.2.2 Peak output power density test results at low frequency

CARRIER FREQUENCY:	3652.5 MHz
EMISSION BANDWIDTH:	5 MHz
MODULATION:	64QAM
ANTENNA ASSEMBLY GAIN:	21.0 dBi
RF#1	**RF#2**

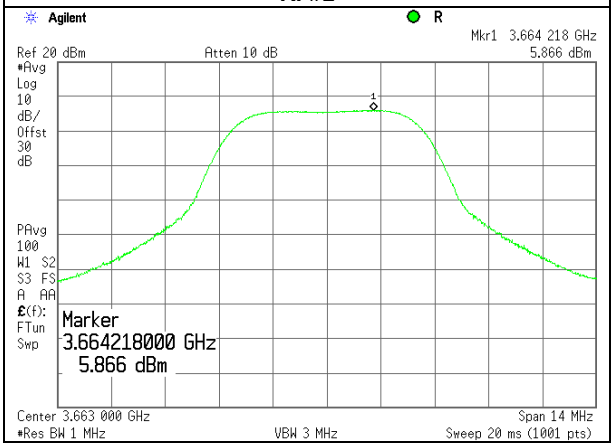


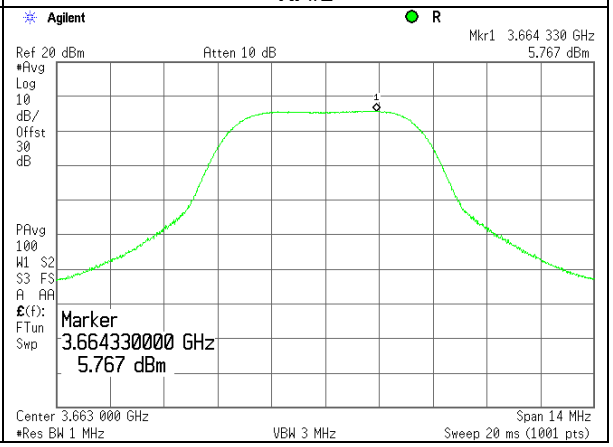


Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Peak EIRP power density**		
Test procedure:	47 CFR, Sections 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48 VDC
Remarks: with 21 dBi gain antenna assembly			

Plot 7.2.3 Peak output power density test results at mid frequency

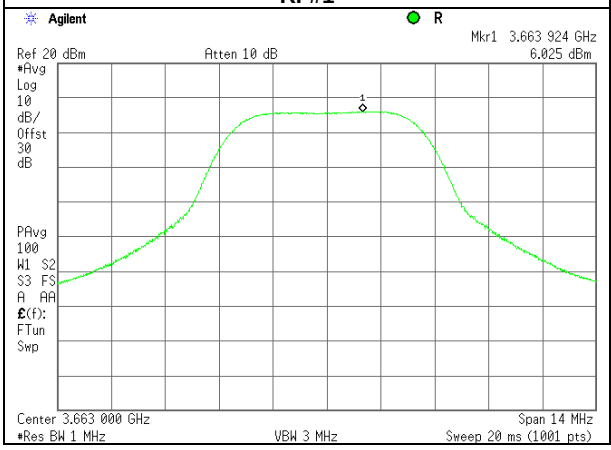
CARRIER FREQUENCY:	3663 MHz
EMISSION BANDWIDTH:	5 MHz
MODULATION:	BPSK
ANTENNA ASSEMBLY GAIN:	21.0dBi
RF#1	**RF#2**

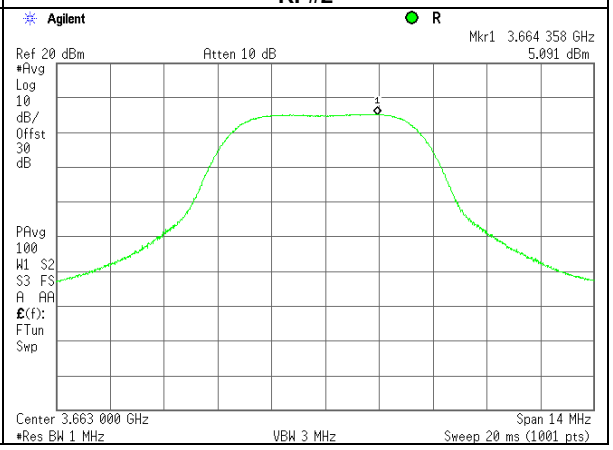




Plot 7.2.4 Peak output power density test results at mid frequency

CARRIER FREQUENCY:	3663 MHz
EMISSION BANDWIDTH:	5 MHz
MODULATION:	64QAM
ANTENNA ASSEMBLY GAIN:	21.0dBi
RF#1	**RF#2**

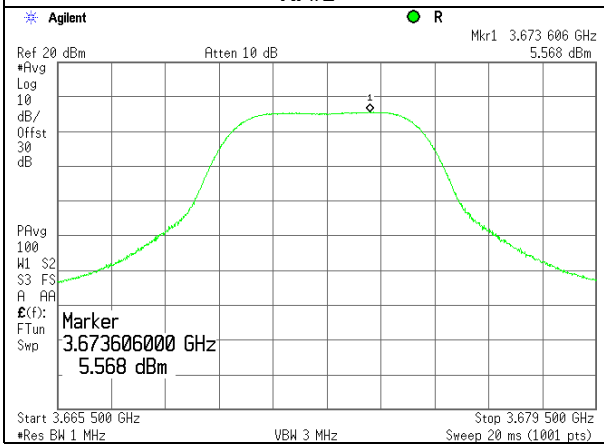


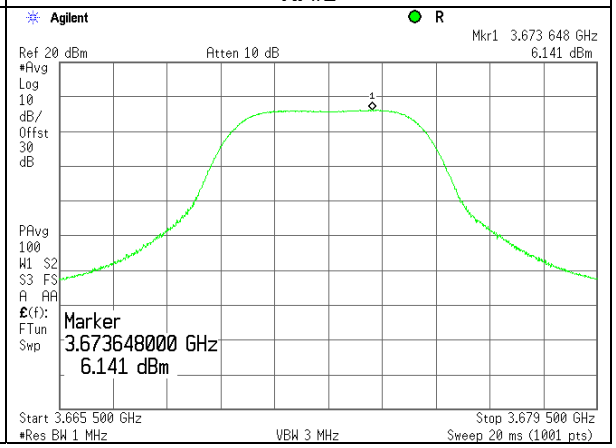


Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Peak EIRP power density**		
Test procedure:	47 CFR, Sections 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48 VDC
Remarks: with 21 dBi gain antenna assembly			

Plot 7.2.5 Peak output power density test results at high frequency

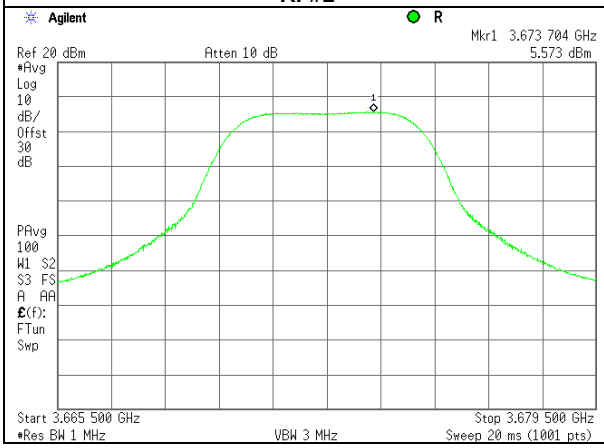
CARRIER FREQUENCY:	3672.5 MHz
EMISSION BANDWIDTH:	5 MHz
MODULATION:	BPSK
ANTENNA ASSEMBLY GAIN:	21.0dBi
RF#1	**RF#2**

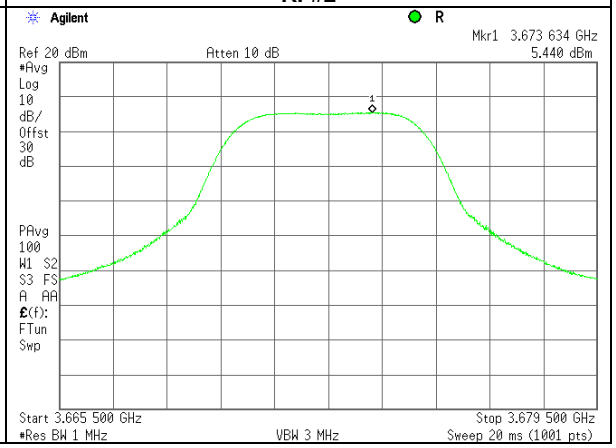




Plot 7.2.6 Peak output power density test results at high frequency

CARRIER FREQUENCY:	3672.5 MHz
EMISSION BANDWIDTH:	5 MHz
MODULATION:	64QAM
ANTENNA ASSEMBLY GAIN:	21.0dBi
RF#1	**RF#2**

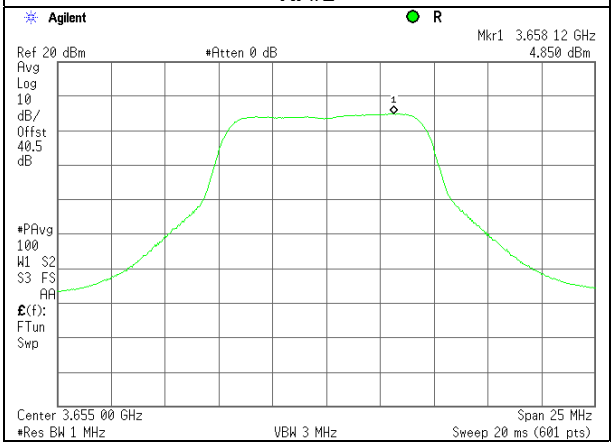


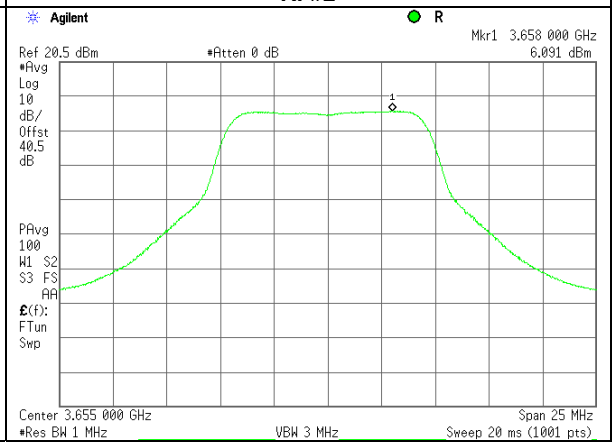


Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Peak EIRP power density**		
Test procedure:	47 CFR, Sections 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48 VDC
Remarks: with 21 dBi gain antenna assembly			

Plot 7.2.7 Peak output power density test results at low frequency

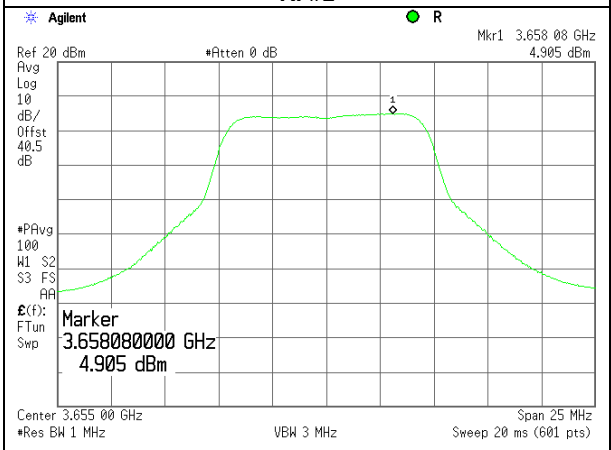
CARRIER FREQUENCY:	3655 MHz
EMISSION BANDWIDTH:	10 MHz
MODULATION:	BPSK
ANTENNA ASSEMBLY GAIN:	21.0dBi
RF#1	**RF#2**

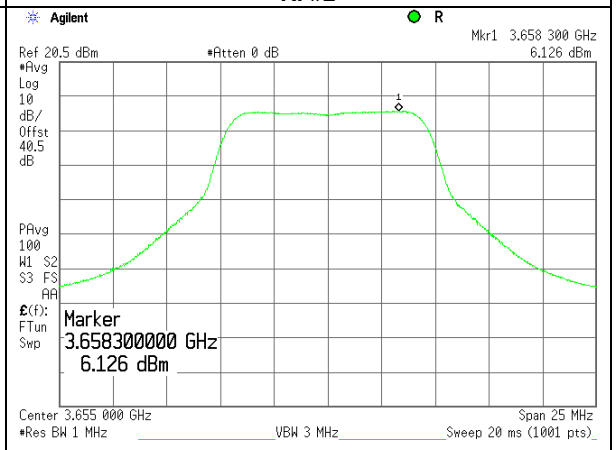




Plot 7.2.8 Peak output power density test results at low frequency

CARRIER FREQUENCY:	3655 MHz
EMISSION BANDWIDTH:	10 MHz
MODULATION:	64QAM
ANTENNA ASSEMBLY GAIN:	21.0dBi
RF#1	**RF#2**

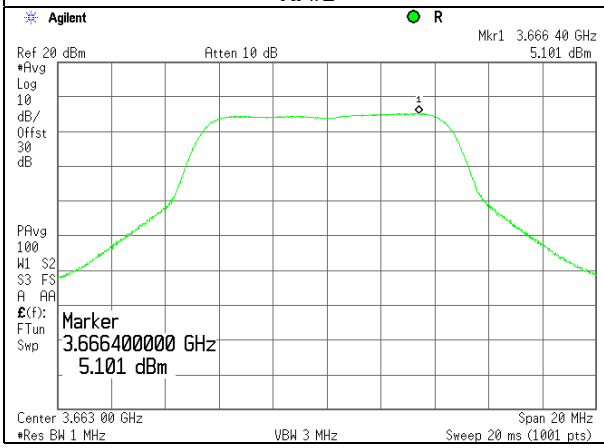


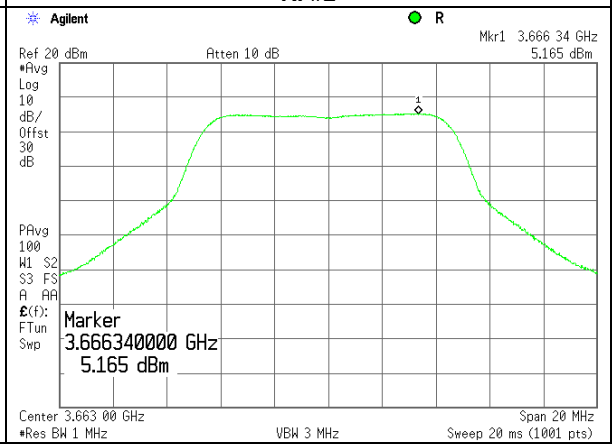


Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Peak EIRP power density**		
Test procedure:	47 CFR, Sections 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48 VDC
Remarks: with 21 dBi gain antenna assembly			

Plot 7.2.9 Peak output power density test results at mid frequency

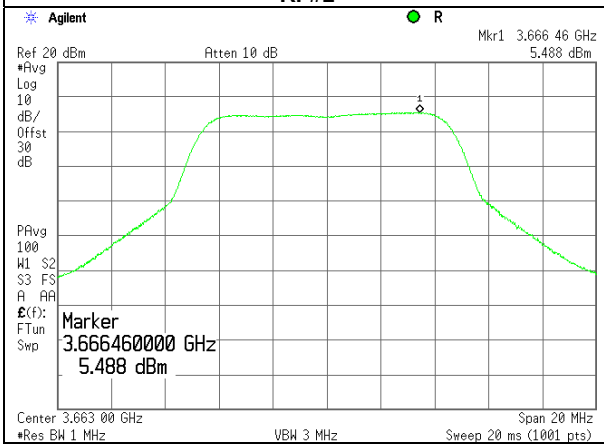
CARRIER FREQUENCY:	3663 MHz
EMISSION BANDWIDTH:	10 MHz
MODULATION:	BPSK
ANTENNA ASSEMBLY GAIN:	21.0dBi
RF#1	**RF#2**

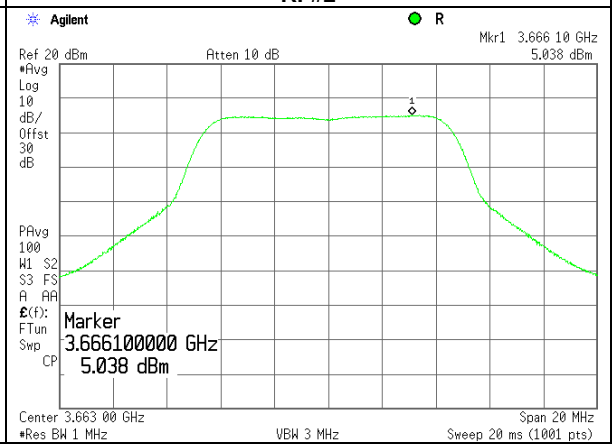




Plot 7.2.10 Peak output power density test results at mid frequency

CARRIER FREQUENCY:	3663 MHz
EMISSION BANDWIDTH:	10 MHz
MODULATION:	64QAM
ANTENNA ASSEMBLY GAIN:	21.0dBi
RF#1	**RF#2**

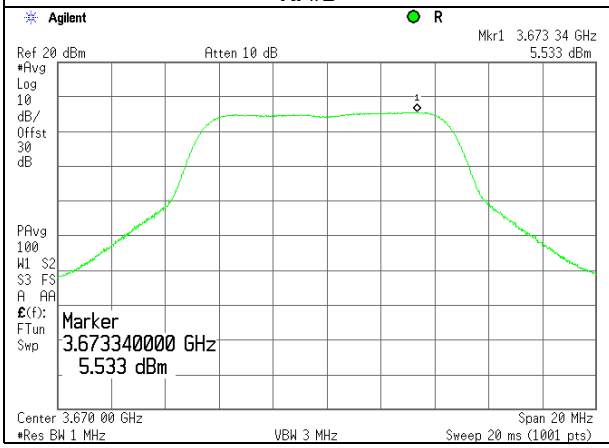


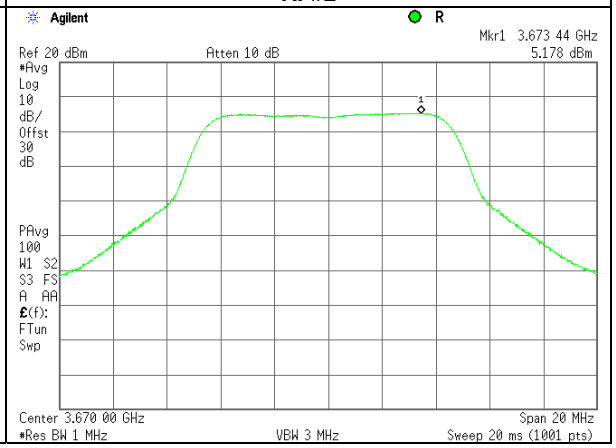


Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Peak EIRP power density**		
Test procedure:	47 CFR, Sections 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48 VDC
Remarks: with 21 dBi gain antenna assembly			

Plot 7.2.11 Peak output power density test results at high frequency

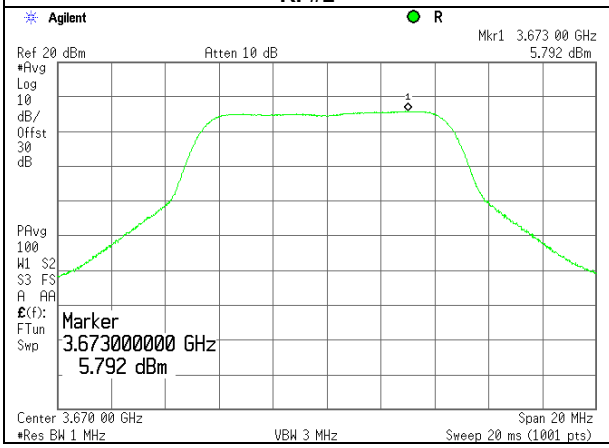
CARRIER FREQUENCY:	3670 MHz
EMISSION BANDWIDTH:	10 MHz
MODULATION:	BPSK
ANTENNA ASSEMBLY GAIN:	21.0dBi
RF#1	**RF#2**

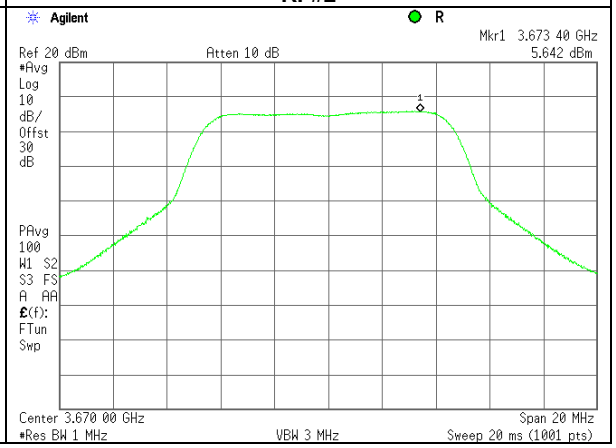




Plot 7.2.12 Peak output power density test results at high frequency

CARRIER FREQUENCY:	3670 MHz
EMISSION BANDWIDTH:	10 MHz
MODULATION:	64QAM
ANTENNA ASSEMBLY GAIN:	21.0dBi
RF#1	**RF#2**

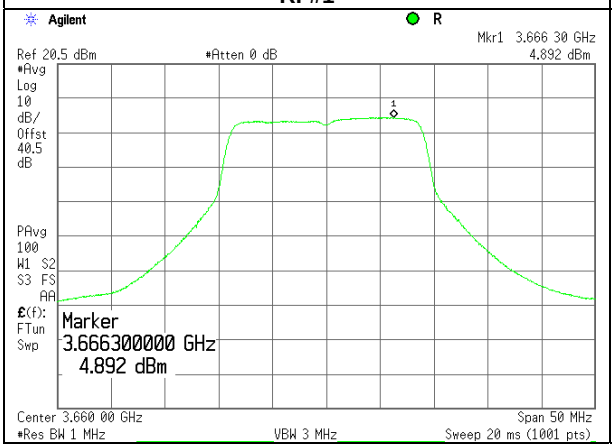


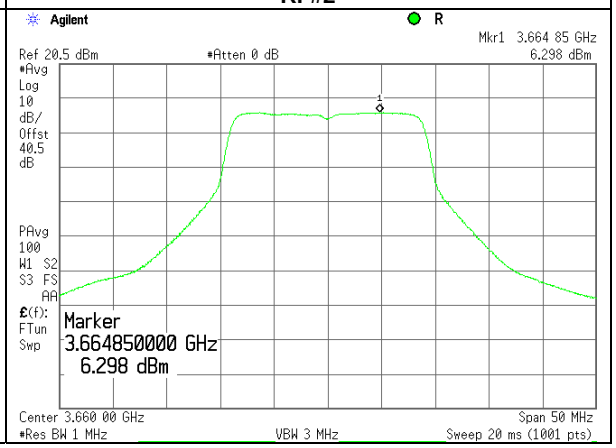


Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Peak EIRP power density**		
Test procedure:	47 CFR, Sections 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48 VDC
Remarks: with 21 dBi gain antenna assembly			

Plot 7.2.13 Peak output power density test results at low frequency

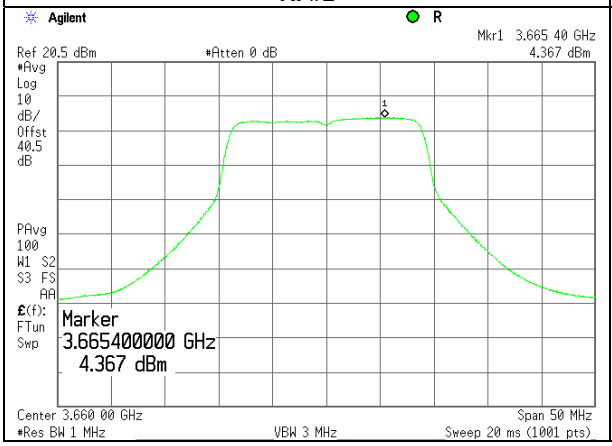
CARRIER FREQUENCY:	3660 MHz
EMISSION BANDWIDTH:	20 MHz
MODULATION:	BPSK
ANTENNA ASSEMBLY GAIN:	21.0dBi
RF#1	**RF#2**

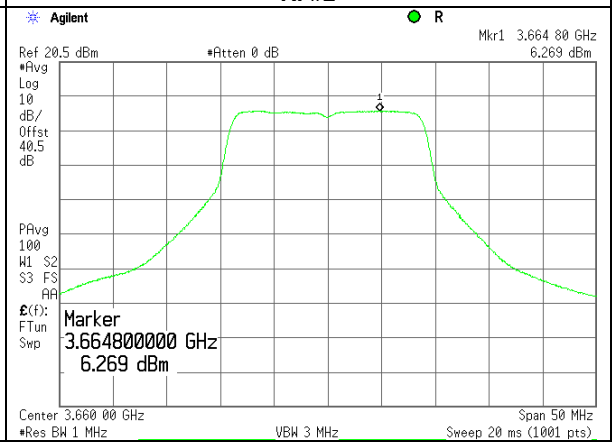




Plot 7.2.14 Peak output power density test results at low frequency

CARRIER FREQUENCY:	3660 MHz
EMISSION BANDWIDTH:	20 MHz
MODULATION:	64QAM
ANTENNA ASSEMBLY GAIN:	21.0dBi
RF#1	**RF#2**

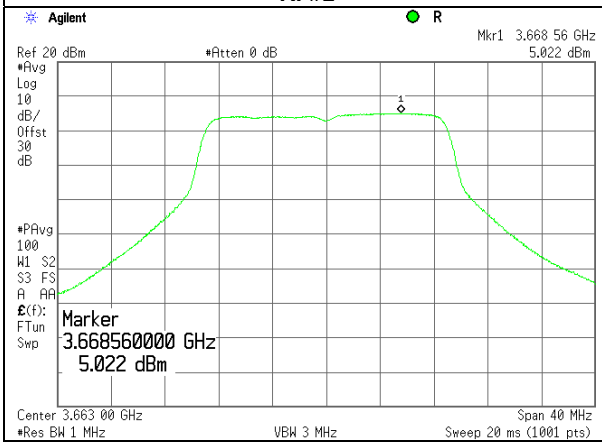


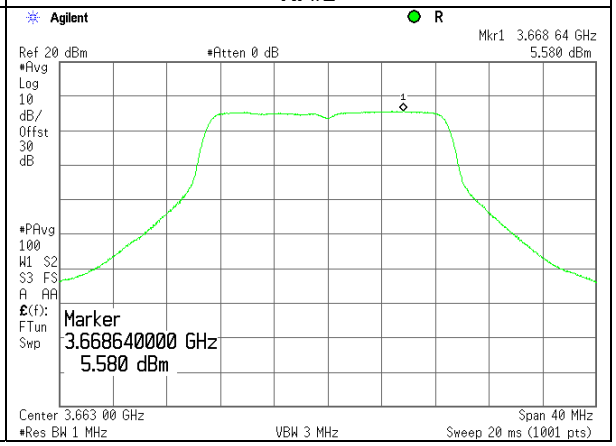


Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Peak EIRP power density**		
Test procedure:	47 CFR, Sections 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48 VDC
Remarks: with 21 dBi gain antenna assembly			

Plot 7.2.15 Peak output power density test results at mid frequency

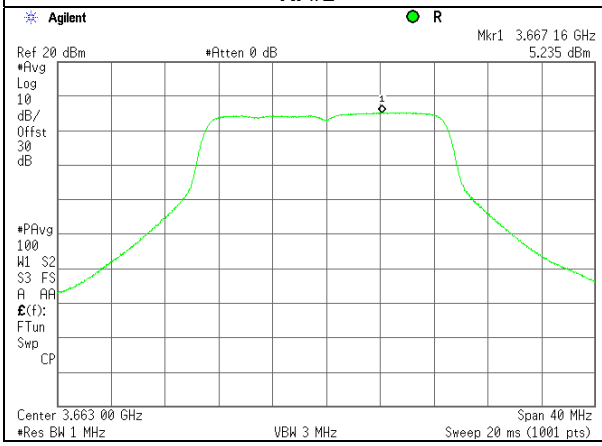
CARRIER FREQUENCY:	3663 MHz
EMISSION BANDWIDTH:	20 MHz
MODULATION:	BPSK
ANTENNA ASSEMBLY GAIN:	21.0dBi
RF#1	**RF#2**

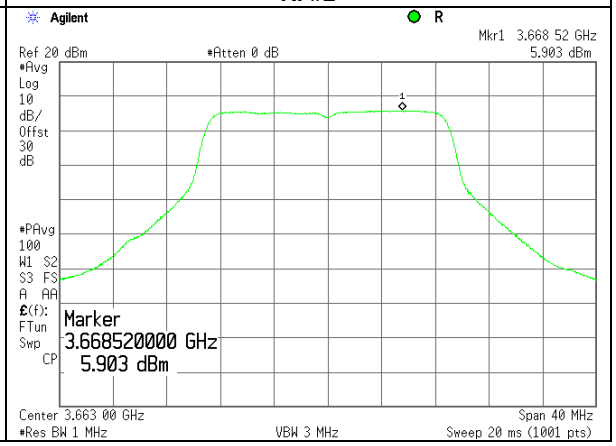




Plot 7.2.16 Peak output power density test results at mid frequency

CARRIER FREQUENCY:	3663 MHz
EMISSION BANDWIDTH:	20 MHz
MODULATION:	64QAM
ANTENNA ASSEMBLY GAIN:	21.0dBi
RF#1	**RF#2**

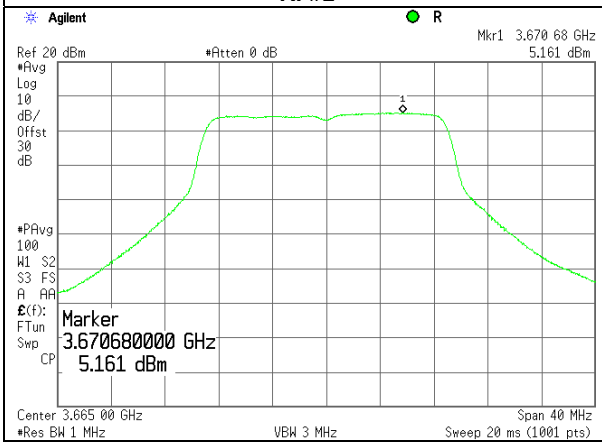


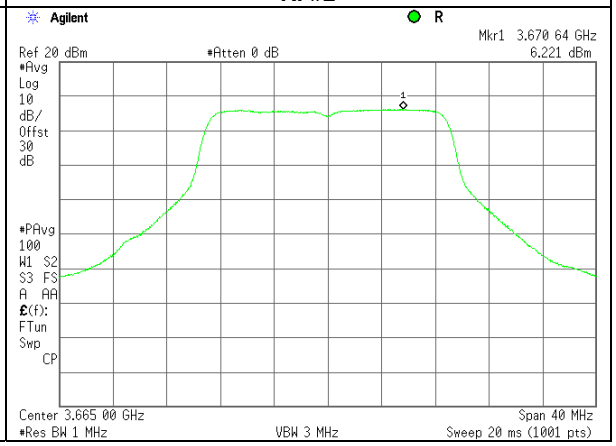


Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Peak EIRP power density**		
Test procedure:	47 CFR, Sections 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48 VDC
Remarks: with 21 dBi gain antenna assembly			

Plot 7.2.17 Peak output power density test results at high frequency

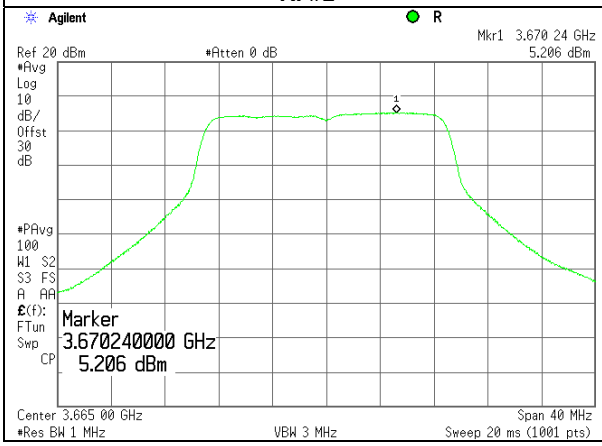
CARRIER FREQUENCY:	3665 MHz
EMISSION BANDWIDTH:	20 MHz
MODULATION:	BPSK
ANTENNA ASSEMBLY GAIN:	21.0dBi
RF#1	**RF#2**

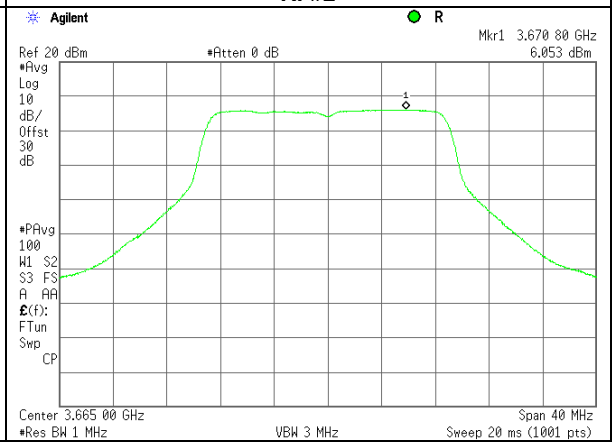




Plot 7.2.18 Peak output power density test results at high frequency

CARRIER FREQUENCY:	3665 MHz
EMISSION BANDWIDTH:	20 MHz
MODULATION:	64QAM
ANTENNA ASSEMBLY GAIN:	21.0dBi
RF#1	**RF#2**





Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Peak EIRP power density**		
Test procedure:	47 CFR, Sections 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 23 ºC	**Air Pressure:** 1009 hPa	**Relative Humidity:** 40 %	**Power Supply:** -48 VDC
Remarks with 17dBi gain antenna assembly			

Table 7.2.3 Peak EIRP power density test results

ASSIGNED FREQUENCY RANGE: 3650.0 – 3675.0 MHz
DETECTOR USED: Average (RMS)
RESOLUTION BANDWIDTH: 1000 kHz
VIDEO BANDWIDTH: 3000 kHz
MODULATING SIGNAL: PRBS
TRANSMITTER OUTPUT POWER SETTINGS: Maximum (see NOTE1)
ANTENNA ASSEMBLY GAIN: 17.0dBi
EBW: 5 MHz

Channel, MHz	Modulation	Pmeas (RF#1), dBm/MHz	Pmeas (RF#2), dBm/MHz	Power density*, dBm/MHz	EIRP power density**, dBm/MHz	Limit, dBm/MHz	Margin, dB	Verdict
3652.5	BPSK	8.898	9.512	12.23	29.23	30	-0.77	Pass
3663.0	BPSK	9.33	9.201	12.28	29.28	30	-0.72	Pass
3672.5	BPSK	9.119	8.9	12.02	29.02	30	-0.98	Pass
3652.5	64QAM	8.794	9.557	12.20	29.20	30	-0.80	Pass
3663.0	64QAM	9.335	8.894	12.13	29.13	30	-0.87	Pass
3672.5	64QAM	9.252	8.702	12.00	29.00	30	-1.00	Pass

EBW: 10 MHz

Channel, MHz	Modulation	Pmeas (RF#1), dBm/MHz	Pmeas (RF#2), dBm/MHz	Power density*, dBm/MHz	EIRP power density**, dBm/MHz	Limit, dBm/MHz	Margin, dB	Verdict
3655.0	BPSK	9.19	10.104	12.68	29.68	30	-0.32	Pass
3663.0	BPSK	9.286	9.813	12.57	29.57	30	-0.43	Pass
3670.0	BPSK	9.537	9.961	12.76	29.76	30	-0.24	Pass
3655.0	64QAM	9.239	10.151	12.73	29.73	30	-0.27	Pass
3663.0	64QAM	9.097	9.41	12.27	29.27	30	-0.73	Pass
3670.0	64QAM	8.971	9.969	12.51	29.51	30	-0.49	Pass

EBW: 20 MHz

Channel, MHz	Modulation	Pmeas (RF#1), dBm/MHz	Pmeas (RF#2), dBm/MHz	Power density*, dBm/MHz	EIRP power density**, dBm/MHz	Limit, dBm/MHz	Margin, dB	Verdict
3660.0	BPSK	8.876	10.252	12.63	29.63	30	-0.37	Pass
3663.0	BPSK	8.961	10.423	12.76	29.76	30	-0.24	Pass
3665.0	BPSK	8.963	10.46	12.79	29.79	30	-0.21	Pass
3660.0	64QAM	9.26	10.178	12.75	29.75	30	-0.25	Pass
3663.0	64QAM	9.141	10.568	12.92	29.92	30	-0.08	Pass
3665.0	64QAM	9.269	10.472	12.92	29.92	30	-0.08	Pass

* - Power density, dBm/MHz = 10 log{10^[P(dBm/MHz,RF#1)/10]+ 10^[P(dBm/MHz, RF#2)/10]}
** - EIRP power density, dBm/MHz = Power density*, dBm/MHz + Antenna Assembly Gain, dBi
NOTE1: EUT was configured to produce maximum conducted RF power for minimum declared Antenna gain of 22 dBi. RF output power will vary depending on the antenna assembly gain to ensure that the total EIRP power and power limits withstand with EIRP limits. For actual settings of power levels with respect to actual antenna assembly used, please refer to the User's Manual.

Reference numbers of test equipment used

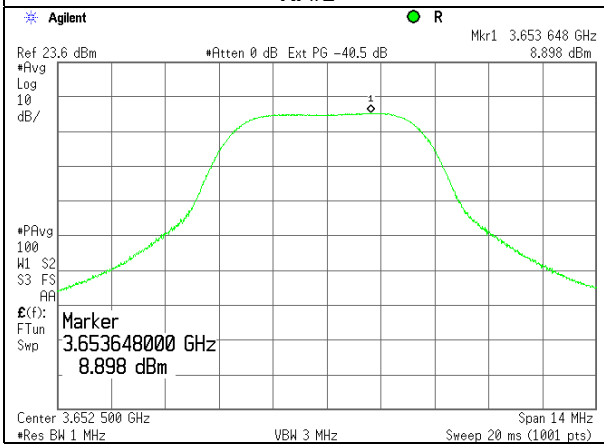
HL 3440	HL 3474	HL 3779	HL 3784	HL 3818			

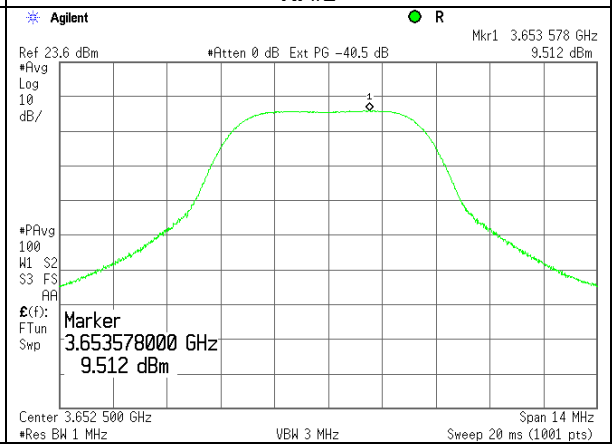
Full description is given in Appendix A.

Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Peak EIRP power density**		
Test procedure:	47 CFR, Sections 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 23 ºC	**Air Pressure:** 1009 hPa	**Relative Humidity:** 40 %	**Power Supply:** -48 VDC
Remarks with 17dBi gain antenna assembly			

Plot 7.2.19 Peak output power density test results at low frequency

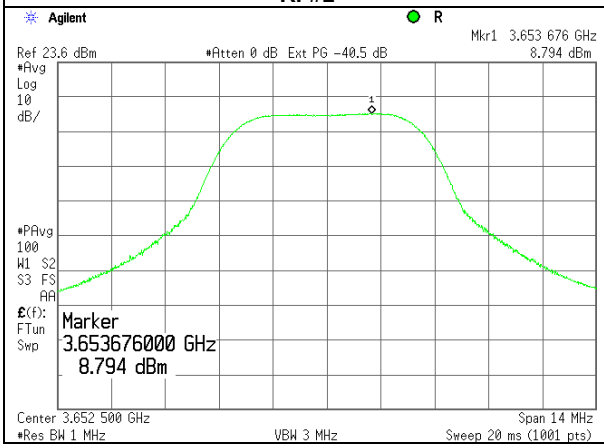
CARRIER FREQUENCY:	3652.5 MHz
EMISSION BANDWIDTH:	5 MHz
MODULATION:	BPSK
ANTENNA ASSEMBLY GAIN:	17.0dBi
RF#1	**RF#2**

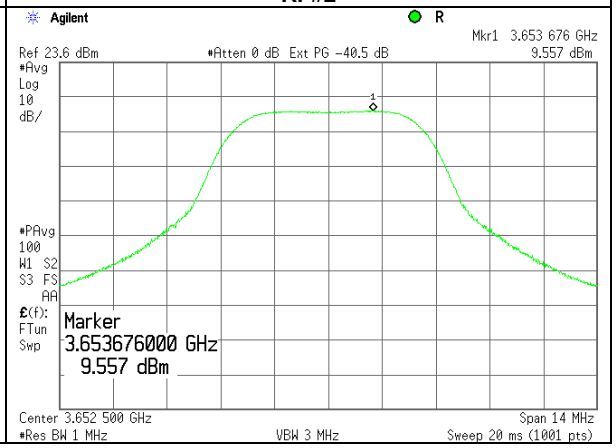




Plot 7.2.20 Peak output power density test results at low frequency

CARRIER FREQUENCY:	3652.5 MHz
EMISSION BANDWIDTH:	5 MHz
MODULATION:	64QAM
ANTENNA ASSEMBLY GAIN:	17.0dBi
RF#1	**RF#2**

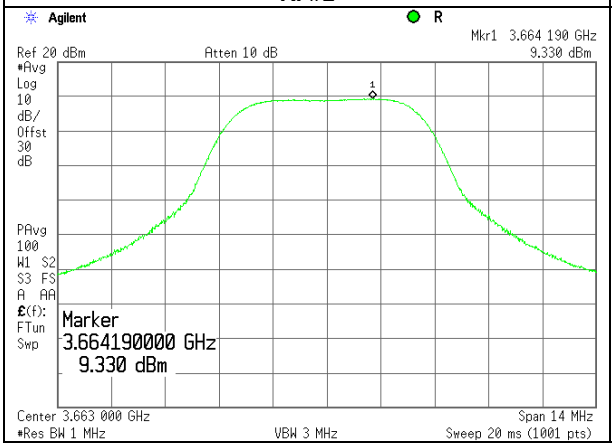


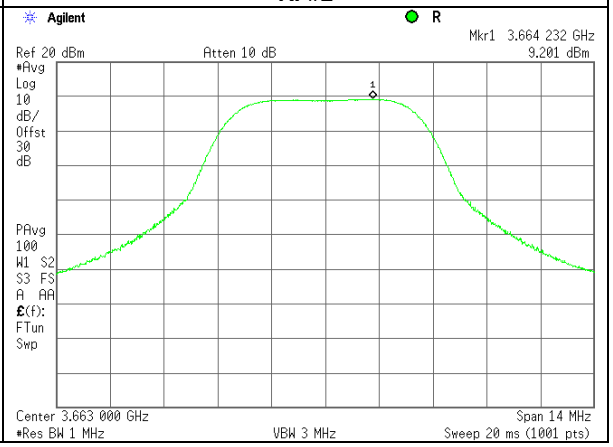


Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Peak EIRP power density**		
Test procedure:	47 CFR, Sections 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 23 ºC	**Air Pressure:** 1009 hPa	**Relative Humidity:** 40 %	**Power Supply:** -48 VDC
Remarks with 17dBi gain antenna assembly			

Plot 7.2.21 Peak output power density test results at mid frequency

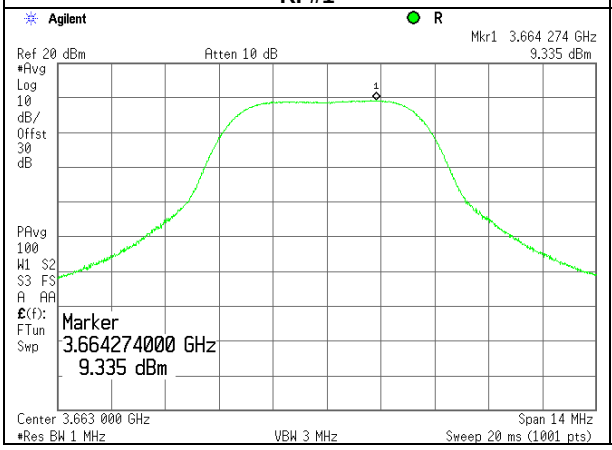
CARRIER FREQUENCY:	3663 MHz
EMISSION BANDWIDTH:	5 MHz
MODULATION:	BPSK
ANTENNA ASSEMBLY GAIN:	17.0dBi
RF#1	**RF#2**

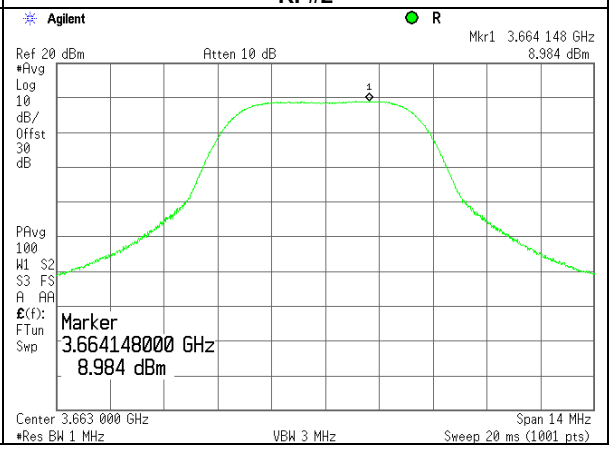




Plot 7.2.22 Peak output power density test results at mid frequency

CARRIER FREQUENCY:	3663 MHz
EMISSION BANDWIDTH:	5 MHz
MODULATION:	64QAM
ANTENNA ASSEMBLY GAIN:	17.0dBi
RF#1	**RF#2**

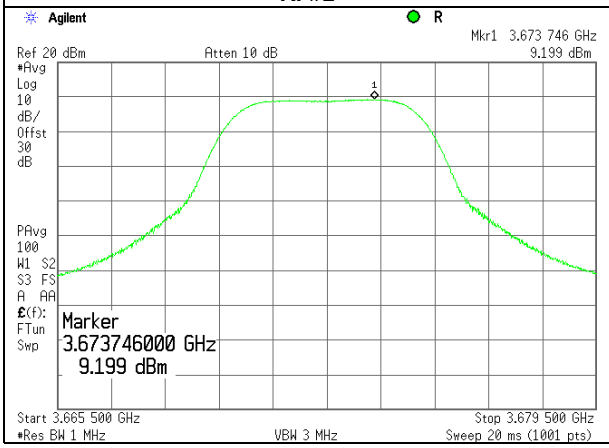


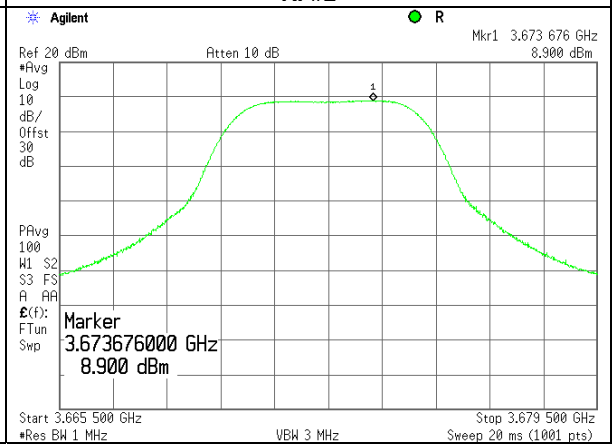


Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Peak EIRP power density**		
Test procedure:	47 CFR, Sections 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 23 ºC	**Air Pressure:** 1009 hPa	**Relative Humidity:** 40 %	**Power Supply:** -48 VDC
Remarks with 17dBi gain antenna assembly			

Plot 7.2.23 Peak output power density test results at high frequency

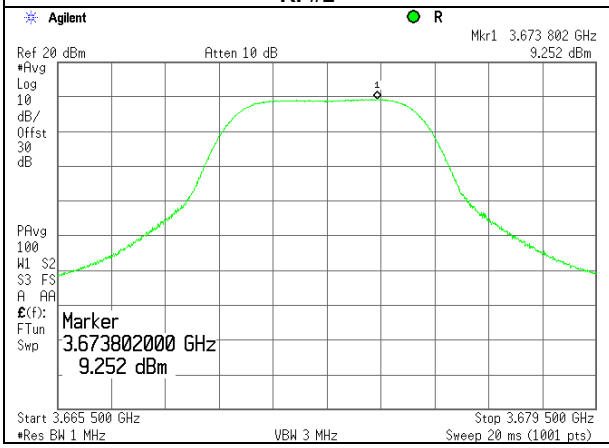
CARRIER FREQUENCY:	3672.5 MHz
EMISSION BANDWIDTH:	5 MHz
MODULATION:	BPSK
ANTENNA ASSEMBLY GAIN:	17.0dBi
RF#1	**RF#2**

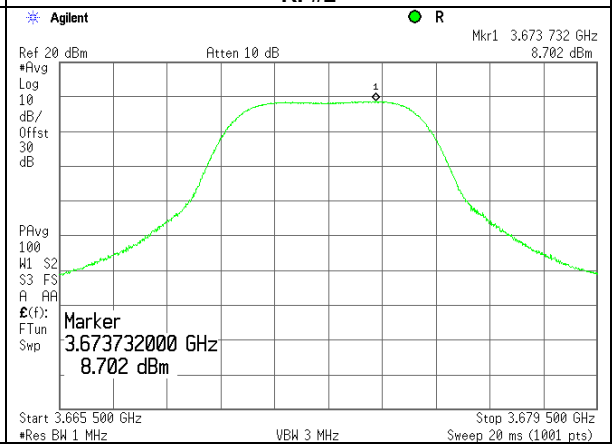




Plot 7.2.24 Peak output power density test results at high frequency

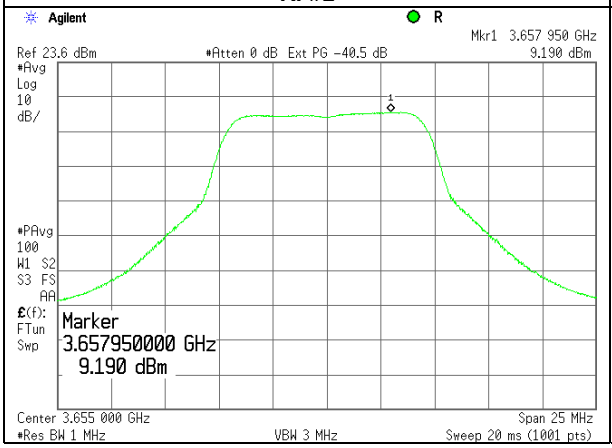
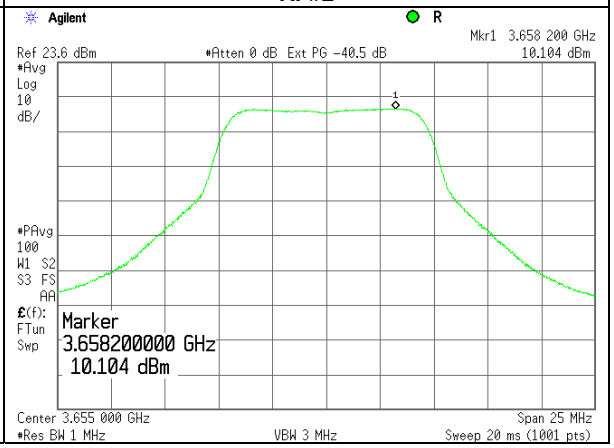
CARRIER FREQUENCY:	3672.5 MHz
EMISSION BANDWIDTH:	5 MHz
MODULATION:	64QAM
ANTENNA ASSEMBLY GAIN:	17.0dBi
RF#1	**RF#2**



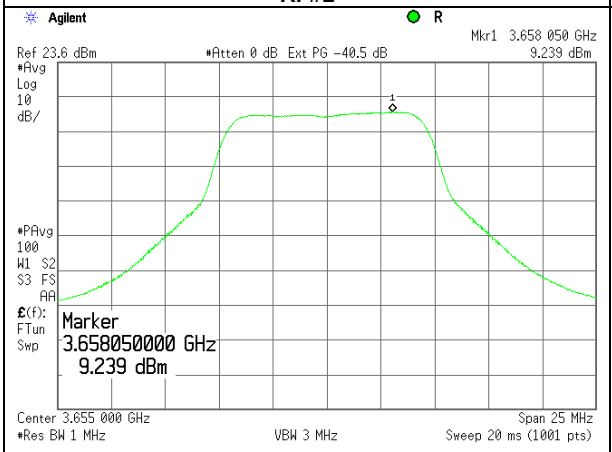
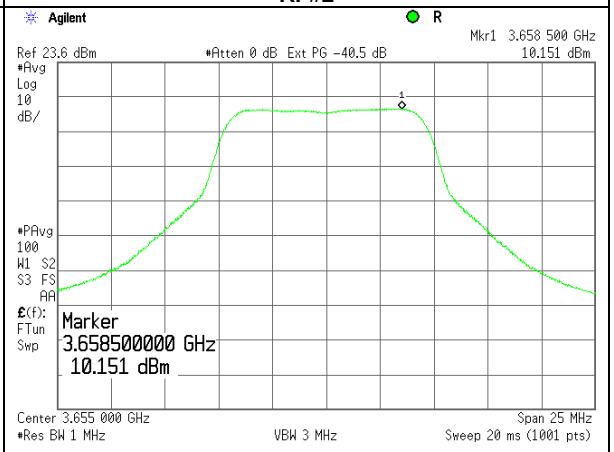


Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Peak EIRP power density**		
Test procedure:	47 CFR, Sections 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 23 ºC	**Air Pressure:** 1009 hPa	**Relative Humidity:** 40 %	**Power Supply:** -48 VDC
Remarks with 17dBi gain antenna assembly			

Plot 7.2.25 Peak output power density test results at low frequency

CARRIER FREQUENCY:	3655 MHz
EMISSION BANDWIDTH:	10 MHz
MODULATION:	BPSK
ANTENNA ASSEMBLY GAIN:	17.0dBi
RF#1	**RF#2**
	

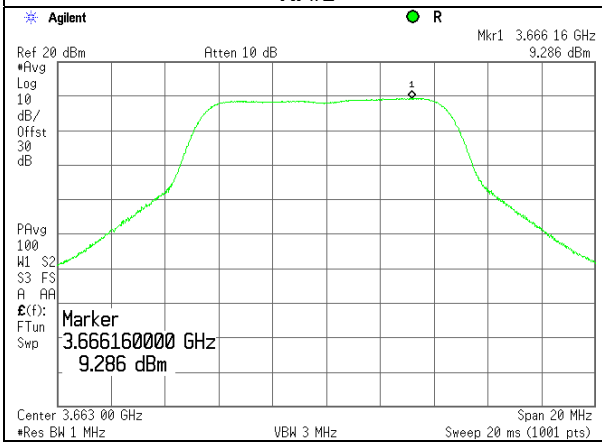
Plot 7.2.26 Peak output power density test results at low frequency

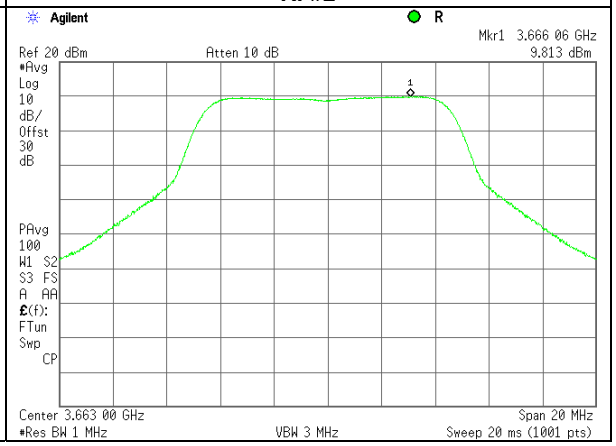
CARRIER FREQUENCY:	3655 MHz
EMISSION BANDWIDTH:	10 MHz
MODULATION:	64QAM
ANTENNA ASSEMBLY GAIN:	17.0dBi
RF#1	**RF#2**
	

Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Peak EIRP power density**		
Test procedure:	47 CFR, Sections 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 23 ºC	**Air Pressure:** 1009 hPa	**Relative Humidity:** 40 %	**Power Supply:** -48 VDC
Remarks with 17dBi gain antenna assembly			

Plot 7.2.27 Peak output power density test results at mid frequency

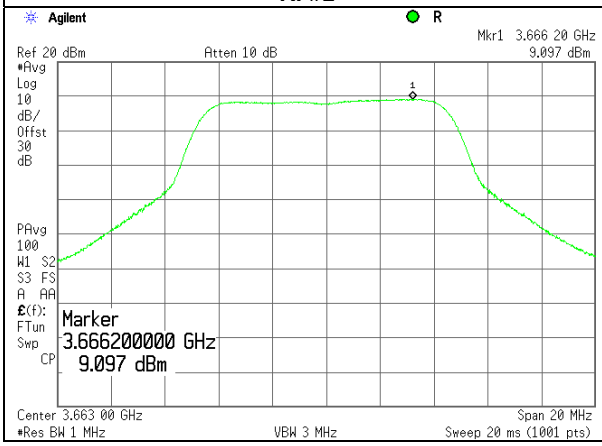
CARRIER FREQUENCY:	3663 MHz
EMISSION BANDWIDTH:	10 MHz
MODULATION:	BPSK
ANTENNA ASSEMBLY GAIN:	17.0dBi
RF#1	**RF#2**

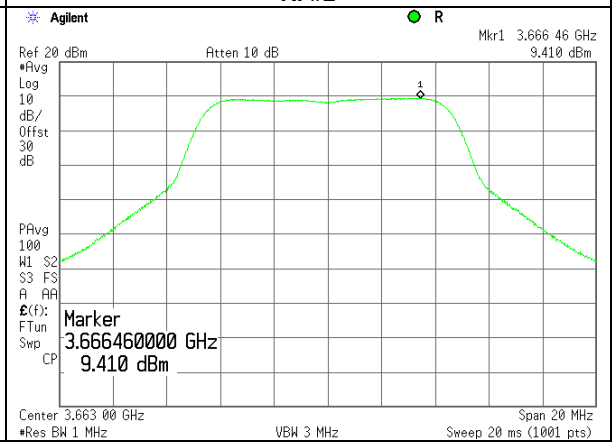




Plot 7.2.28 Peak output power density test results at mid frequency

CARRIER FREQUENCY:	3663 MHz
EMISSION BANDWIDTH:	10 MHz
MODULATION:	64QAM
ANTENNA ASSEMBLY GAIN:	17.0dBi
RF#1	**RF#2**

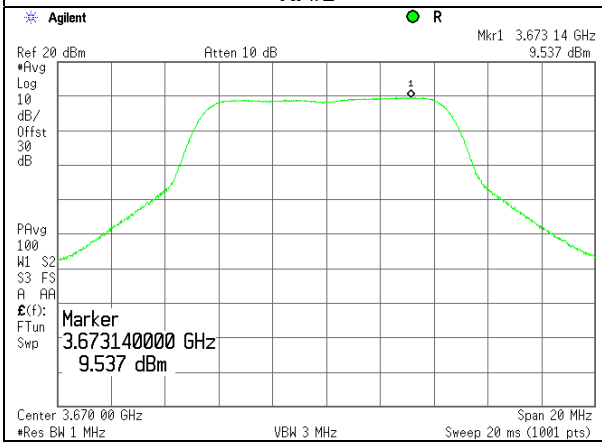


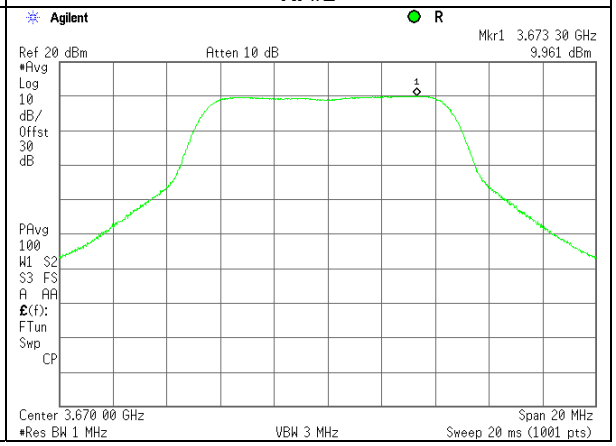


Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Peak EIRP power density**		
Test procedure:	47 CFR, Sections 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 23 ºC	**Air Pressure:** 1009 hPa	**Relative Humidity:** 40 %	**Power Supply:** -48 VDC
Remarks with 17dBi gain antenna assembly			

Plot 7.2.29 Peak output power density test results at high frequency

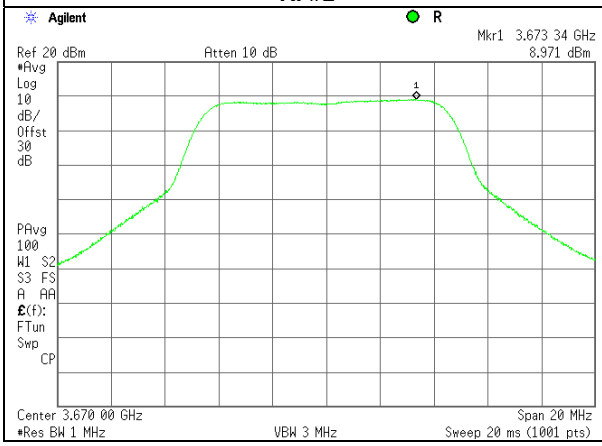
CARRIER FREQUENCY:	3670 MHz
EMISSION BANDWIDTH:	10 MHz
MODULATION:	BPSK
ANTENNA ASSEMBLY GAIN:	17.0dBi
RF#1	**RF#2**

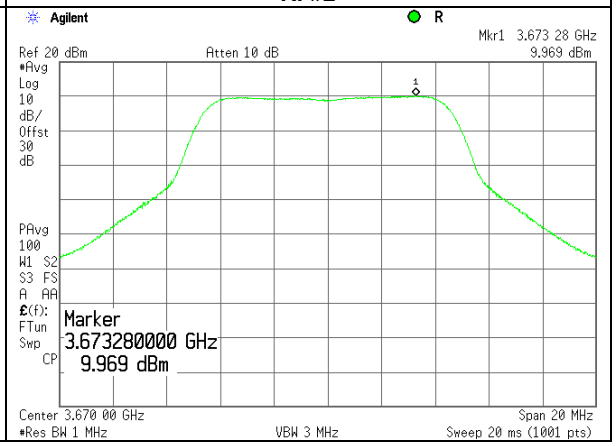




Plot 7.2.30 Peak output power density test results at high frequency

CARRIER FREQUENCY:	3670 MHz
EMISSION BANDWIDTH:	10 MHz
MODULATION:	64QAM
ANTENNA ASSEMBLY GAIN:	17.0dBi
RF#1	**RF#2**

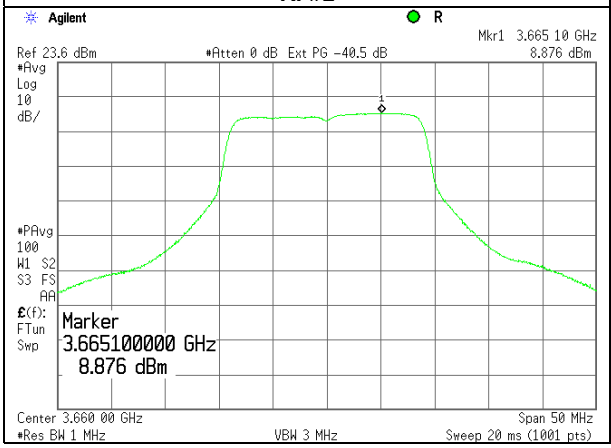


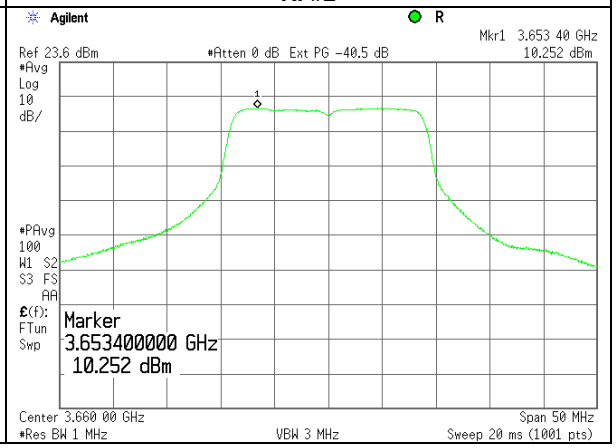


Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Peak EIRP power density**		
Test procedure:	47 CFR, Sections 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 23 ºC	**Air Pressure:** 1009 hPa	**Relative Humidity:** 40 %	**Power Supply:** -48 VDC
Remarks with 17dBi gain antenna assembly			

Plot 7.2.31 Peak output power density test results at low frequency

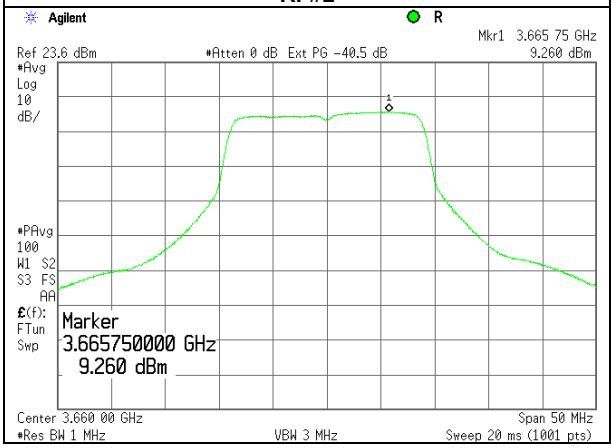
CARRIER FREQUENCY:	3660 MHz
EMISSION BANDWIDTH:	20 MHz
MODULATION:	BPSK
ANTENNA ASSEMBLY GAIN:	17.0dBi
RF#1	**RF#2**

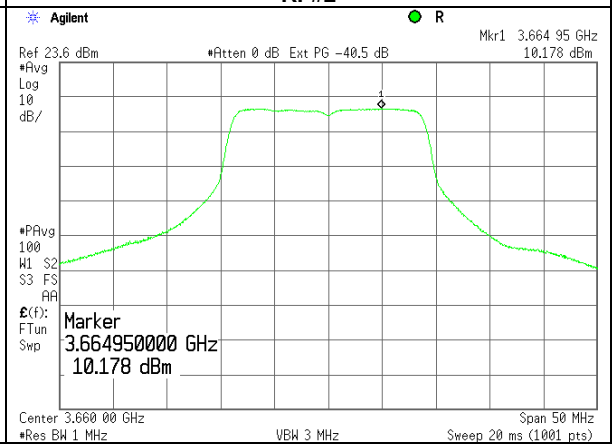




Plot 7.2.32 Peak output power density test results at low frequency

CARRIER FREQUENCY:	3660 MHz
EMISSION BANDWIDTH:	20 MHz
MODULATION:	64QAM
ANTENNA ASSEMBLY GAIN:	17.0dBi
RF#1	**RF#2**

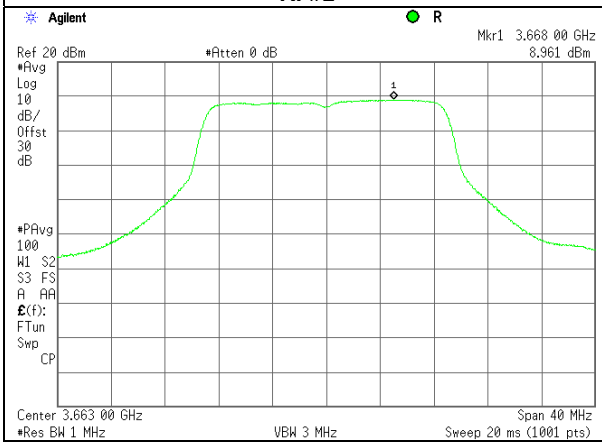


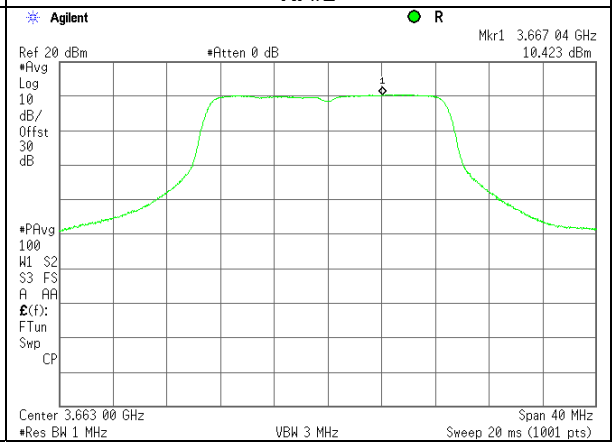


Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Peak EIRP power density**		
Test procedure:	47 CFR, Sections 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 23 ºC	**Air Pressure:** 1009 hPa	**Relative Humidity:** 40 %	**Power Supply:** -48 VDC
Remarks with 17dBi gain antenna assembly			

Plot 7.2.33 Peak output power density test results at mid frequency

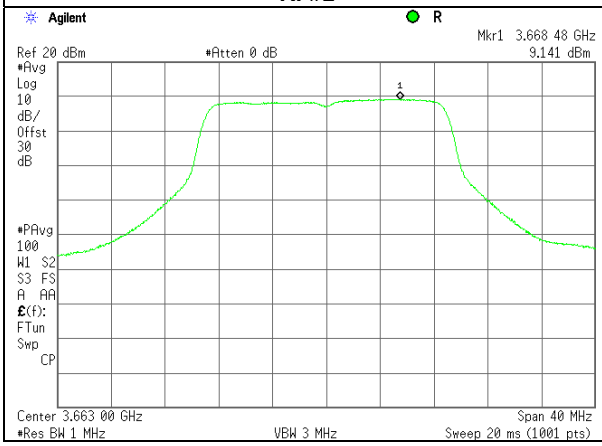
CARRIER FREQUENCY:	3663 MHz
EMISSION BANDWIDTH:	20 MHz
MODULATION:	BPSK
ANTENNA ASSEMBLY GAIN:	17.0dBi
RF#1	**RF#2**

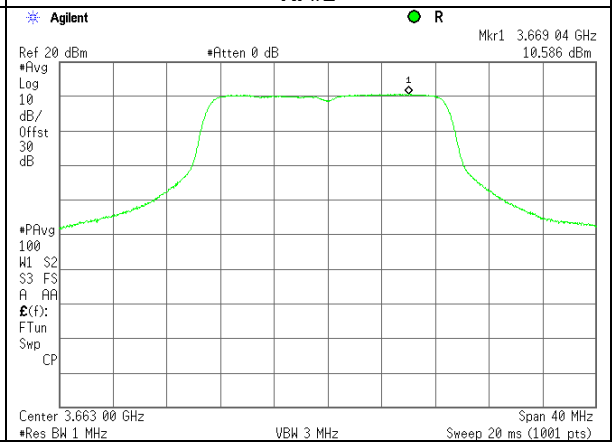




Plot 7.2.34 Peak output power density test results at mid frequency

CARRIER FREQUENCY:	3663 MHz
EMISSION BANDWIDTH:	20 MHz
MODULATION:	64QAM
ANTENNA ASSEMBLY GAIN:	17.0dBi
RF#1	**RF#2**

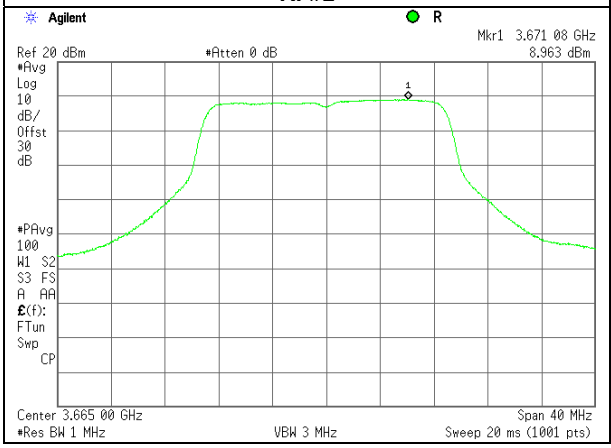


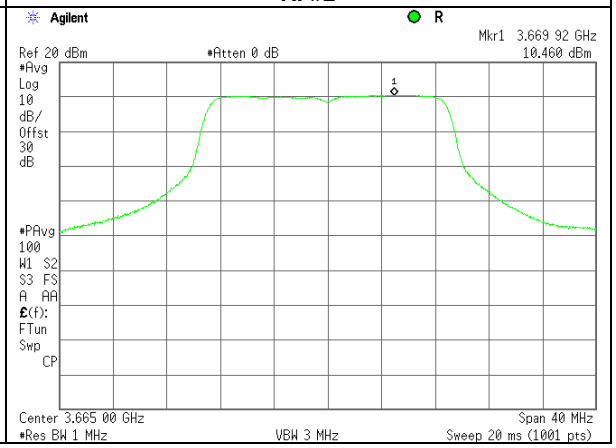


Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Peak EIRP power density**		
Test procedure:	47 CFR, Sections 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 23 ºC	**Air Pressure:** 1009 hPa	**Relative Humidity:** 40 %	**Power Supply:** -48 VDC
Remarks with 17dBi gain antenna assembly			

Plot 7.2.35 Peak output power density test results at high frequency

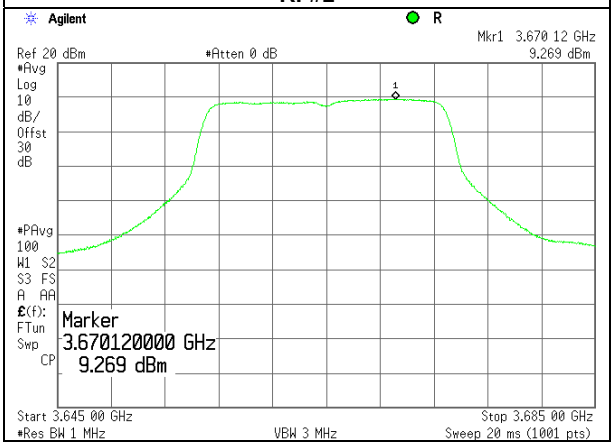
CARRIER FREQUENCY:	3665 MHz
EMISSION BANDWIDTH:	20 MHz
MODULATION:	BPSK
ANTENNA ASSEMBLY GAIN:	17.0dBi
RF#1	**RF#2**

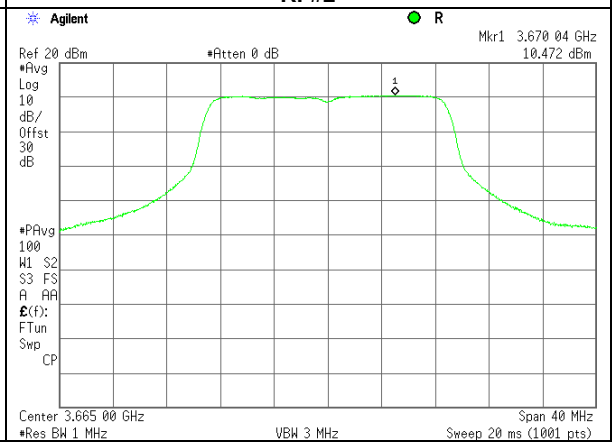




Plot 7.2.36 Peak output power density test results at high frequency

CARRIER FREQUENCY:	3665 MHz
EMISSION BANDWIDTH:	20 MHz
MODULATION:	64QAM
ANTENNA ASSEMBLY GAIN:	17.0dBi
RF#1	**RF#2**





Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Peak EIRP power density**		
Test procedure:	47 CFR, Sections 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48 VDC
Remarks: with 24 dBi gain antenna assembly			

Table 7.2.4 Peak EIRP power density test results

ASSIGNED FREQUENCY RANGE:	3650.0 – 3675.0 MHz
DETECTOR USED:	Average (RMS)
RESOLUTION BANDWIDTH:	1000 kHz
VIDEO BANDWIDTH:	3000 kHz
MODULATING SIGNAL:	PRBS
TRANSMITTER OUTPUT POWER SETTINGS:	Maximum (see NOTE1)
ANTENNA ASSEMBLY GAIN:	24 dBi
EBW:	**5 MHz**

Channel, MHz	Modulation	Pmeas (RF#1), dBm/MHz	Pmeas (RF#2), dBm/MHz	Power density*, dBm/MHz	EIRP power density**, dBm/MHz	Limit, dBm/MHz	Margin, dB	Verdict
3652.5	BPSK	2.664	2.774	5.73	29.73	30.00	-0.27	Pass
3663.0	BPSK	2.98	2.455	5.74	29.74	30.00	-0.26	Pass
3672.5	BPSK	2.634	2.663	5.66	29.66	30.00	-0.34	Pass
3652.5	64QAM	1.953	2.361	5.17	29.17	30.00	-0.83	Pass
3663.0	64QAM	2.862	2.438	5.67	29.67	30.00	-0.33	Pass
3672.5	64QAM	2.449	2.709	5.59	29.59	30.00	-0.41	Pass

EBW: 10 MHz

Channel, MHz	Modulation	Pmeas (RF#1), dBm/MHz	Pmeas (RF#2), dBm/MHz	Power density*, dBm/MHz	EIRP power density**, dBm/MHz	Limit, dBm/MHz	Margin, dB	Verdict
3655.0	BPSK	2.435	2.603	5.53	29.53	30.00	-0.47	Pass
3663.0	BPSK	2.888	2.509	5.71	29.71	30.00	-0.29	Pass
3670.0	BPSK	3.182	2.316	5.78	29.78	30.00	-0.22	Pass
3655.0	64QAM	1.785	2.921	5.40	29.40	30.00	-0.60	Pass
3663.0	64QAM	2.823	2.489	5.67	29.67	30.00	-0.33	Pass
3670.0	64QAM	2.029	2.579	5.32	29.32	30.00	-0.68	Pass

EBW: 20 MHz

Channel, MHz	Modulation	Pmeas (RF#1), dBm/MHz	Pmeas (RF#2), dBm/MHz	Power density*, dBm/MHz	EIRP power density**, dBm/MHz	Limit, dBm/MHz	Margin, dB	Verdict
3660.0	BPSK	0.994	2.45	4.79	28.79	30.00	-1.21	Pass
3663.0	BPSK	2.595	2.569	5.59	29.59	30.00	-0.41	Pass
3665.0	BPSK	2.48	2.37	5.44	29.44	30.00	-0.56	Pass
3660.0	64QAM	1.362	2.426	4.94	28.94	30.00	-1.06	Pass
3663.0	64QAM	2.64	2.202	5.44	29.44	30.00	-0.56	Pass
3665.0	64QAM	2.401	2.387	5.40	29.40	30.00	-0.60	Pass

* - Power density, dBm/MHz = 10 log{10^[P(dBm/MHz,RF#1)/10]+ 10^[P(dBm/MHz, RF#2)/10]}
** - EIRP power density, dBm/MHz = Power density*, dBm/MHz + Antenna Assembly Gain, dBi
NOTE1: EUT was configured to produce maximum conducted RF power for declared Antenna gain of 25 dBi. RF output power will vary depending on the antenna assembly gain to ensure that the total EIRP power and power limits withstand with EIRP limits. For actual settings of power levels with respect to actual antenna assembly used, please refer to the User's Manual.

Reference numbers of test equipment used

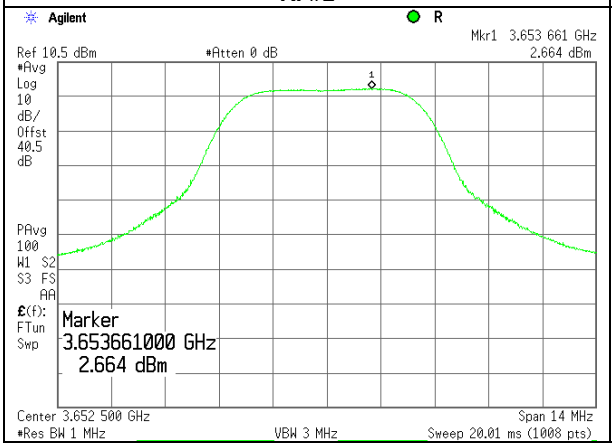
HL 3440	HL 3474	HL 3779	HL 3784	HL 3818			

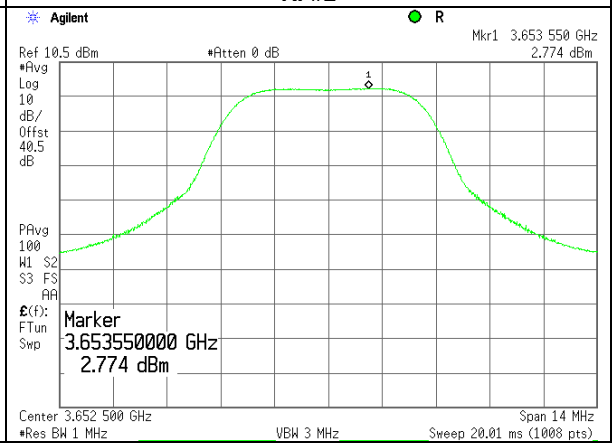
Full description is given in Appendix A.

Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Peak EIRP power density**		
Test procedure:	47 CFR, Sections 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48 VDC
Remarks: with 24 dBi gain antenna assembly			

Plot 7.2.37 Peak output power density test results at low frequency

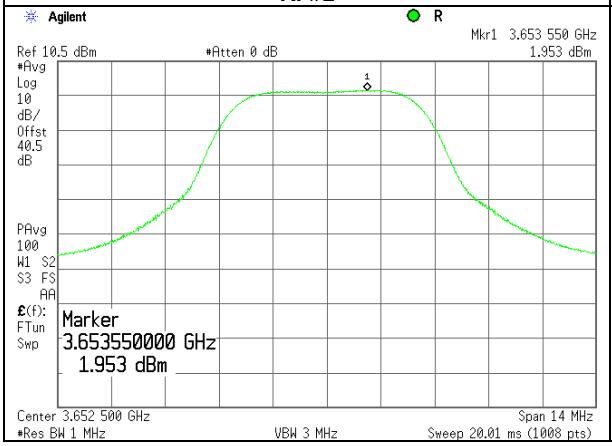
CARRIER FREQUENCY:	3652.5 MHz
EMISSION BANDWIDTH:	5 MHz
MODULATION:	BPSK
ANTENNA ASSEMBLY GAIN:	24.0dBi
RF#1	**RF#2**

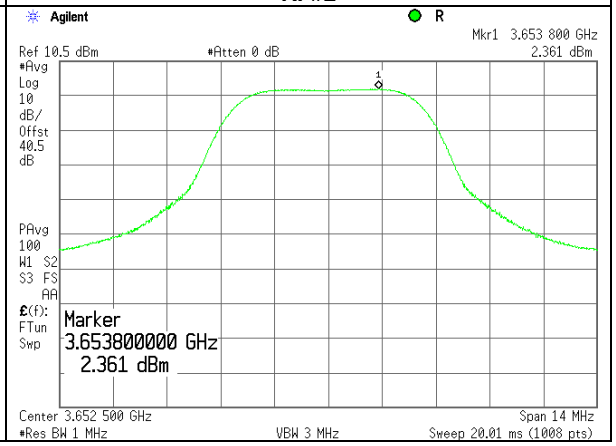




Plot 7.2.38 Peak output power density test results at low frequency

CARRIER FREQUENCY:	3652.5 MHz
EMISSION BANDWIDTH:	5 MHz
MODULATION:	64QAM
ANTENNA ASSEMBLY GAIN:	24.0dBi
RF#1	**RF#2**

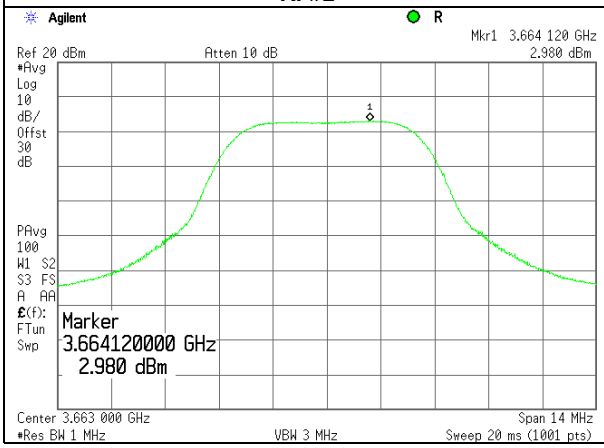


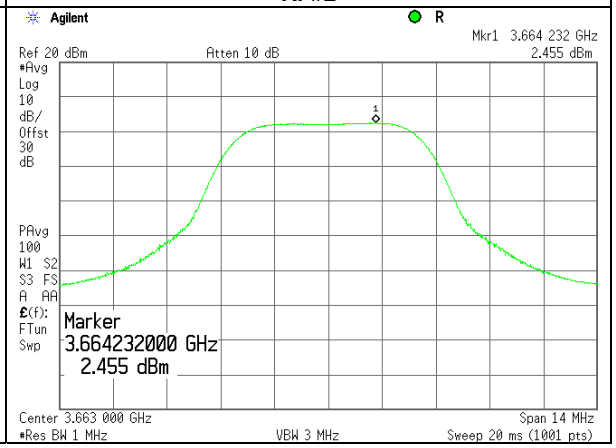


Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Peak EIRP power density**		
Test procedure:	47 CFR, Sections 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48 VDC
Remarks: with 24 dBi gain antenna assembly			

Plot 7.2.39 Peak output power density test results at mid frequency

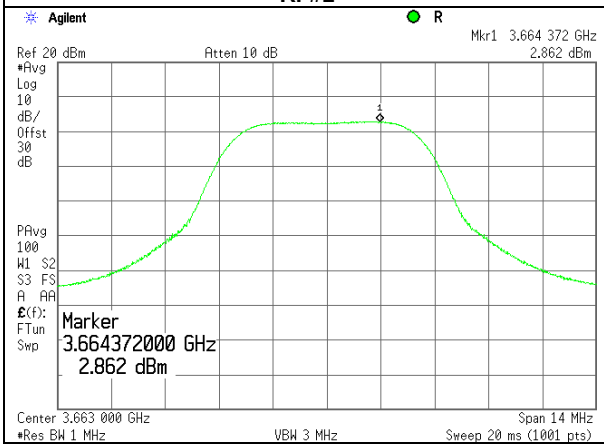
CARRIER FREQUENCY:	3663 MHz
EMISSION BANDWIDTH:	5 MHz
MODULATION:	BPSK
ANTENNA ASSEMBLY GAIN:	24.0dBi
RF#1	**RF#2**

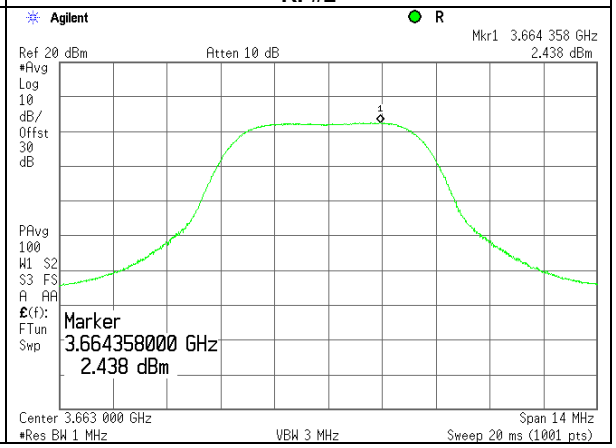




Plot 7.2.40 Peak output power density test results at mid frequency

CARRIER FREQUENCY:	3663 MHz
EMISSION BANDWIDTH:	5 MHz
MODULATION:	64QAM
ANTENNA ASSEMBLY GAIN:	24.0dBi
RF#1	**RF#2**

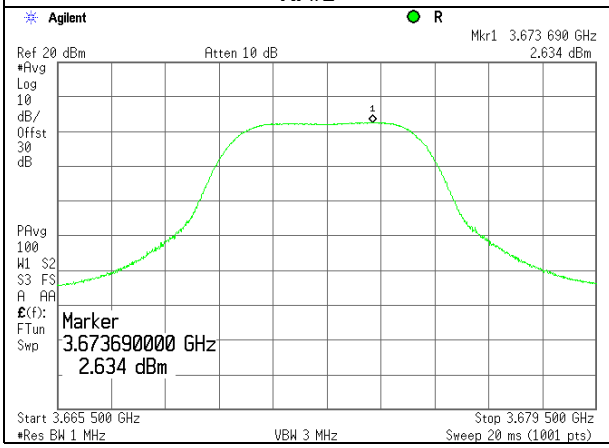


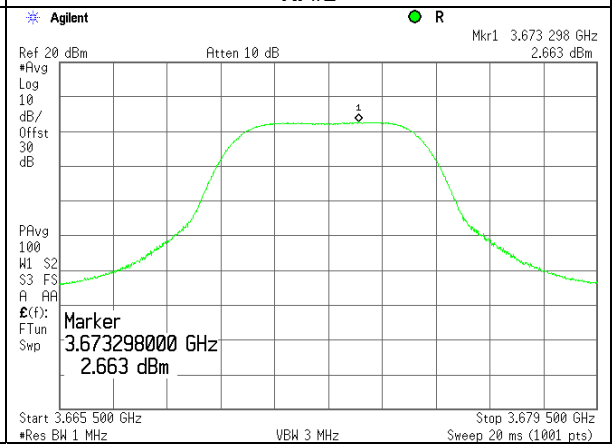


Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Peak EIRP power density**		
Test procedure:	47 CFR, Sections 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48 VDC
Remarks: with 24 dBi gain antenna assembly			

Plot 7.2.41 Peak output power density test results at high frequency

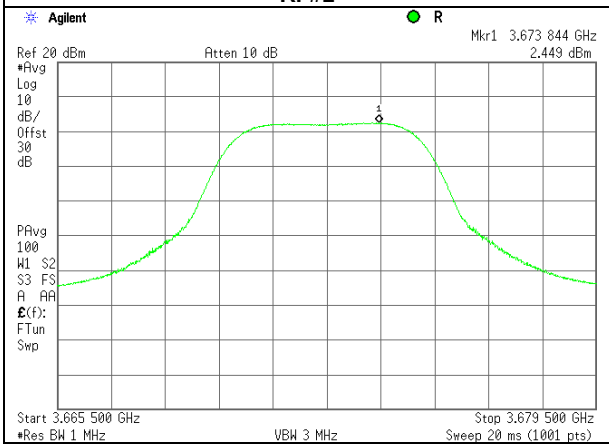
CARRIER FREQUENCY:	3672.5 MHz
EMISSION BANDWIDTH:	5 MHz
MODULATION:	BPSK
ANTENNA ASSEMBLY GAIN:	24.0dBi
RF#1	**RF#2**

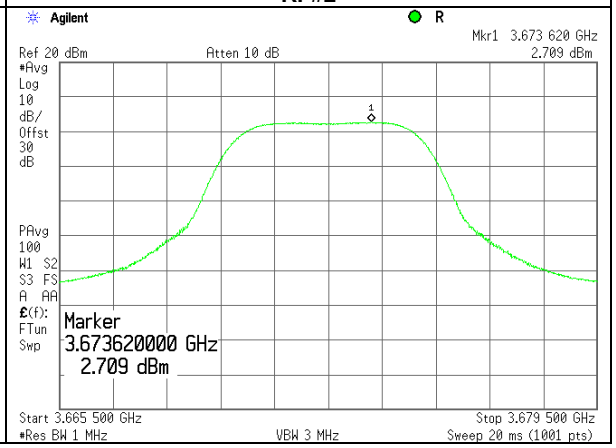




Plot 7.2.42 Peak output power density test results at high frequency

CARRIER FREQUENCY:	3672.5 MHz
EMISSION BANDWIDTH:	5 MHz
MODULATION:	64QAM
ANTENNA ASSEMBLY GAIN:	24.0dBi
RF#1	**RF#2**

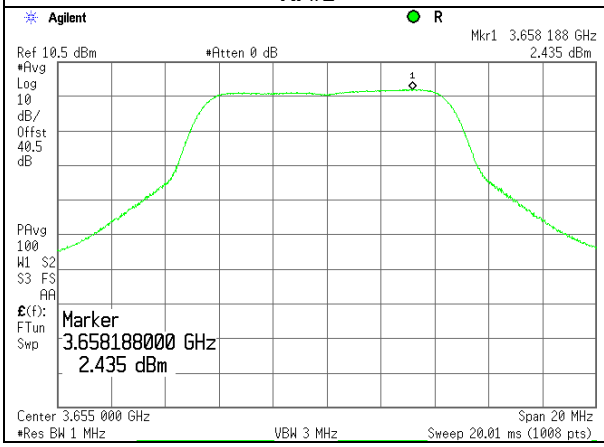


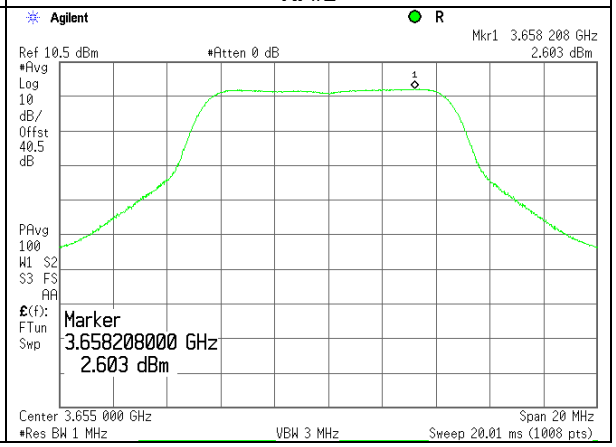


Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Peak EIRP power density**		
Test procedure:	47 CFR, Sections 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48 VDC
Remarks: with 24 dBi gain antenna assembly			

Plot 7.2.43 Peak output power density test results at low frequency

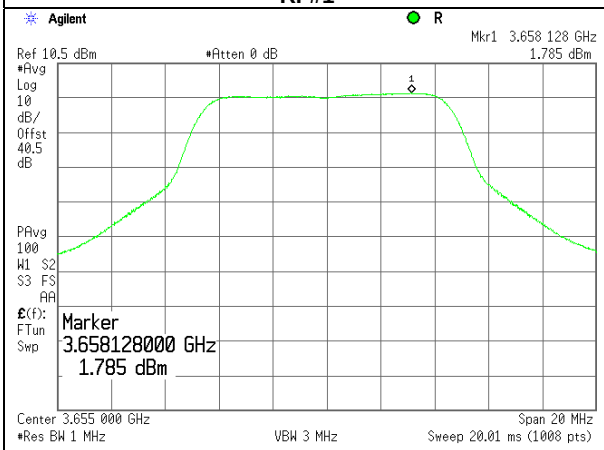
CARRIER FREQUENCY:	3655 MHz
EMISSION BANDWIDTH:	10 MHz
MODULATION:	BPSK
ANTENNA ASSEMBLY GAIN:	24.0dBi
RF#1	**RF#2**

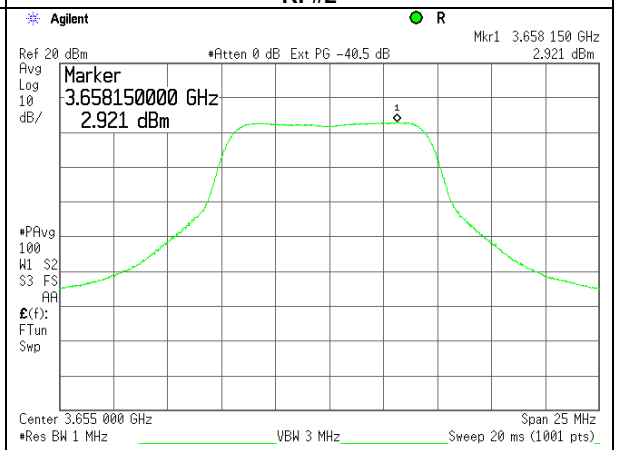




Plot 7.2.44 Peak output power density test results at low frequency

CARRIER FREQUENCY:	3655 MHz
EMISSION BANDWIDTH:	10 MHz
MODULATION:	64QAM
ANTENNA ASSEMBLY GAIN:	24.0dBi
RF#1	**RF#2**

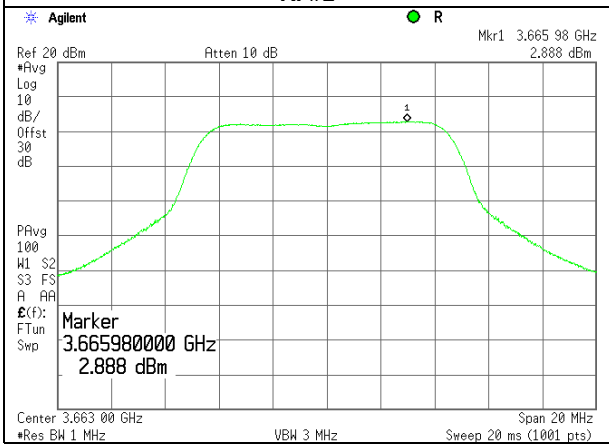


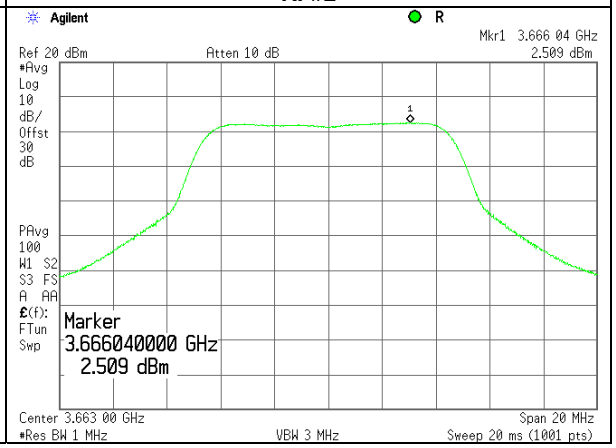


Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Peak EIRP power density**		
Test procedure:	47 CFR, Sections 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48 VDC
Remarks: with 24 dBi gain antenna assembly			

Plot 7.2.45 Peak output power density test results at mid frequency

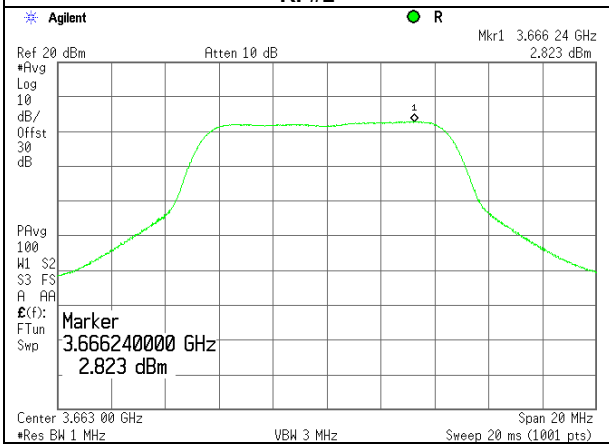
CARRIER FREQUENCY:	3663 MHz
EMISSION BANDWIDTH:	10 MHz
MODULATION:	BPSK
ANTENNA ASSEMBLY GAIN:	24.0dBi
RF#1	**RF#2**

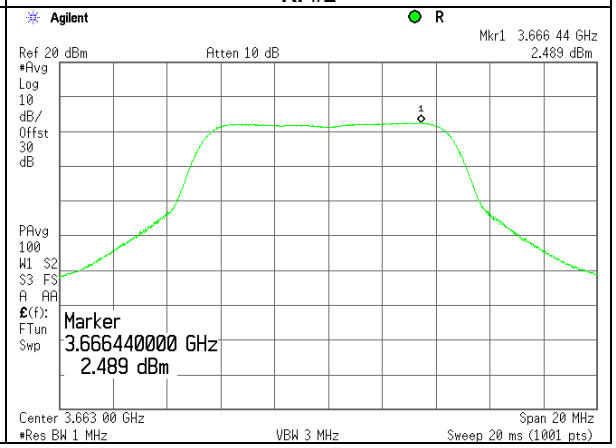




Plot 7.2.46 Peak output power density test results at mid frequency

CARRIER FREQUENCY:	3663 MHz
EMISSION BANDWIDTH:	10 MHz
MODULATION:	64QAM
ANTENNA ASSEMBLY GAIN:	24.0dBi
RF#1	**RF#2**

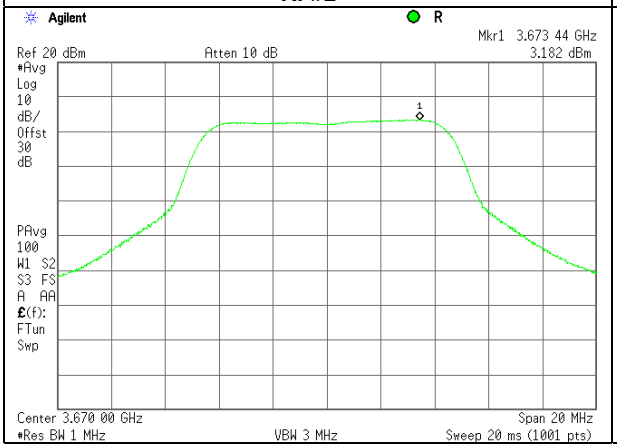


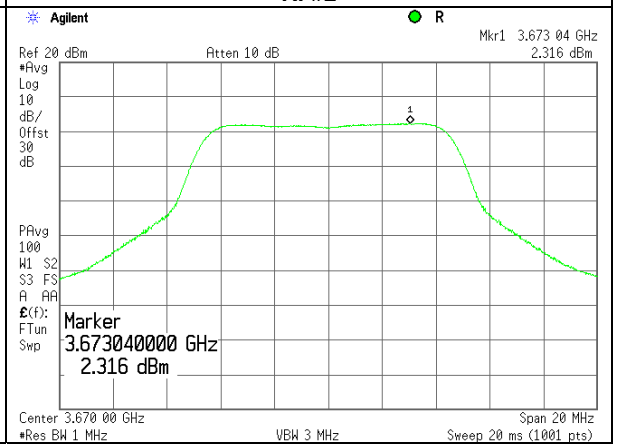


Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Peak EIRP power density**		
Test procedure:	47 CFR, Sections 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48 VDC
Remarks: with 24 dBi gain antenna assembly			

Plot 7.2.47 Peak output power density test results at high frequency

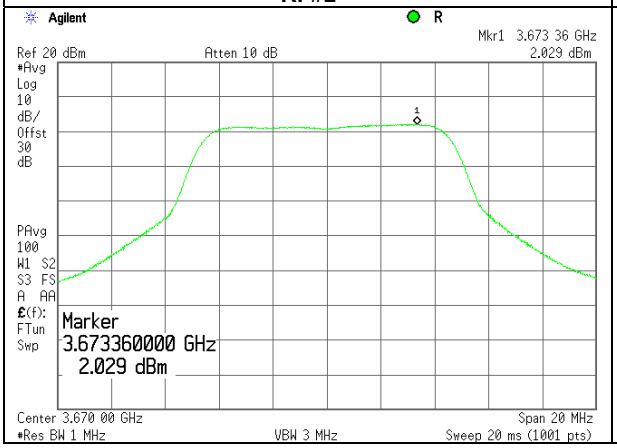
CARRIER FREQUENCY:	3670 MHz
EMISSION BANDWIDTH:	10 MHz
MODULATION:	BPSK
ANTENNA ASSEMBLY GAIN:	24.0dBi
RF#1	**RF#2**

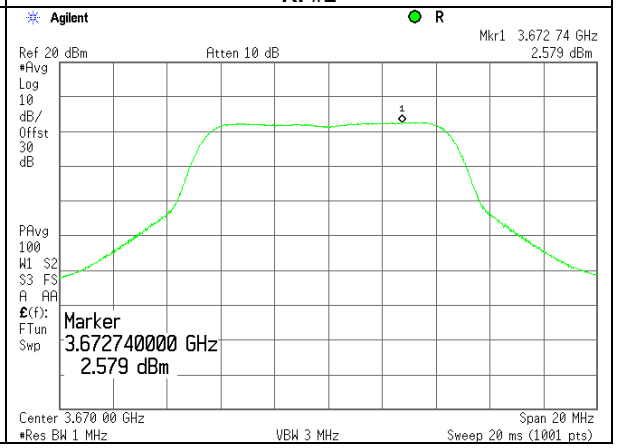




Plot 7.2.48 Peak output power density test results at high frequency

CARRIER FREQUENCY:	3670 MHz
EMISSION BANDWIDTH:	10 MHz
MODULATION:	64QAM
ANTENNA ASSEMBLY GAIN:	24.0dBi
RF#1	**RF#2**

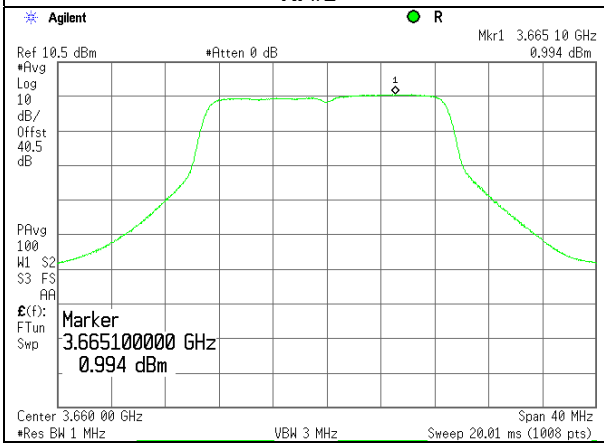


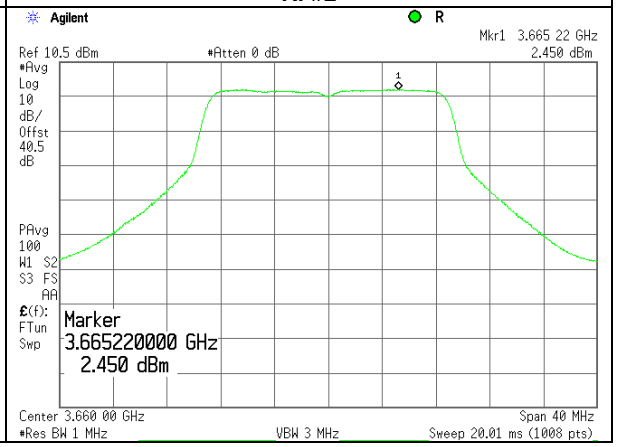


Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Peak EIRP power density**		
Test procedure:	47 CFR, Sections 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48 VDC
Remarks: with 24 dBi gain antenna assembly			

Plot 7.2.49 Peak output power density test results at low frequency

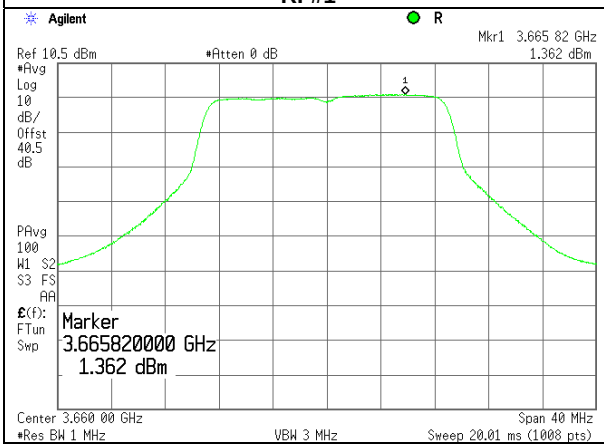
CARRIER FREQUENCY:	3660 MHz
EMISSION BANDWIDTH:	20 MHz
MODULATION:	BPSK
ANTENNA ASSEMBLY GAIN:	24.0dBi
RF#1	**RF#2**

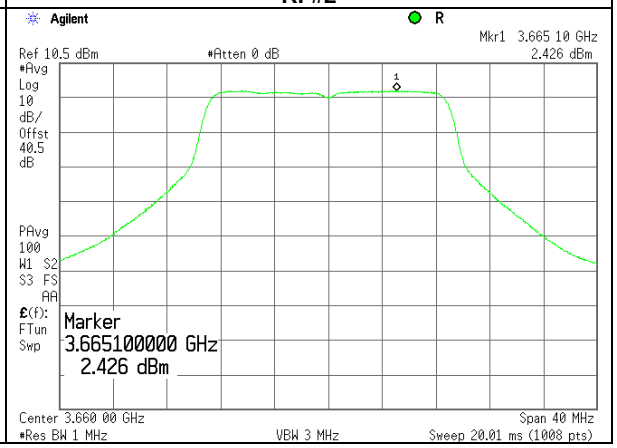




Plot 7.2.50 Peak output power density test results at low frequency

CARRIER FREQUENCY:	3660 MHz
EMISSION BANDWIDTH:	20 MHz
MODULATION:	64QAM
ANTENNA ASSEMBLY GAIN:	24.0dBi
RF#1	**RF#2**

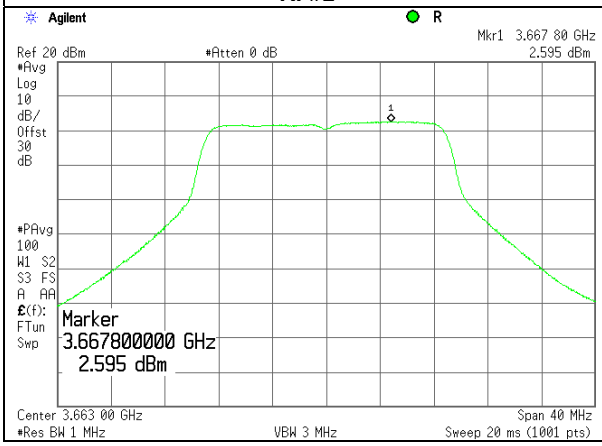


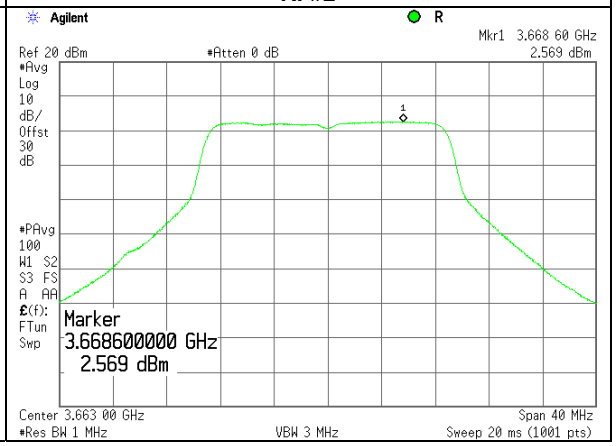


Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Peak EIRP power density**		
Test procedure:	47 CFR, Sections 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48 VDC
Remarks: with 24 dBi gain antenna assembly			

Plot 7.2.51 Peak output power density test results at mid frequency

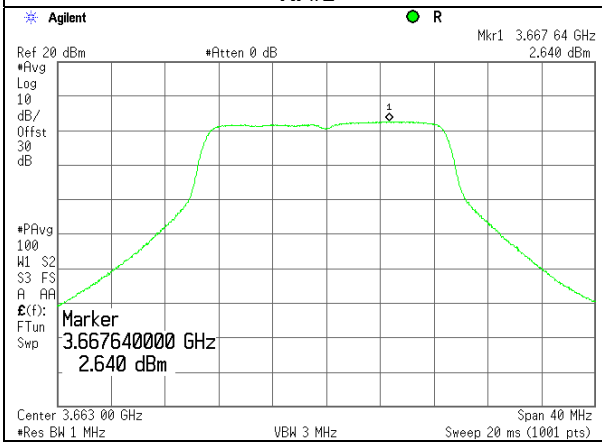
CARRIER FREQUENCY:	3663 MHz
EMISSION BANDWIDTH:	20 MHz
MODULATION:	BPSK
ANTENNA ASSEMBLY GAIN:	24.0dBi
RF#1	**RF#2**

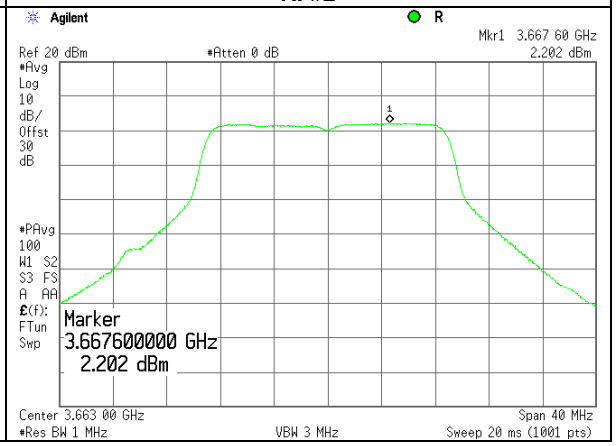




Plot 7.2.52 Peak output power density test results at mid frequency

CARRIER FREQUENCY:	3663 MHz
EMISSION BANDWIDTH:	20 MHz
MODULATION:	64QAM
ANTENNA ASSEMBLY GAIN:	24.0dBi
RF#1	**RF#2**

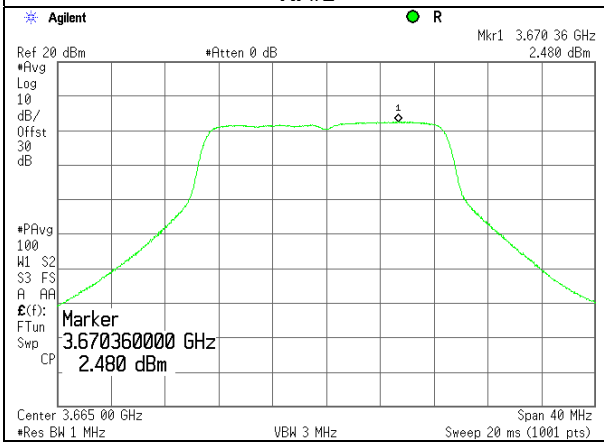


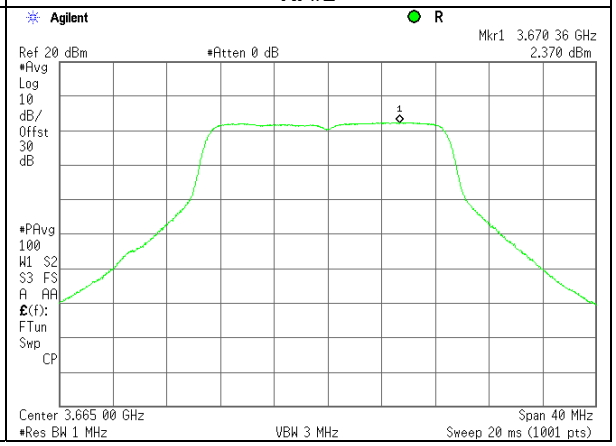


Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Peak EIRP power density**		
Test procedure:	47 CFR, Sections 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1005 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48 VDC
Remarks: with 24 dBi gain antenna assembly			

Plot 7.2.53 Peak output power density test results at high frequency

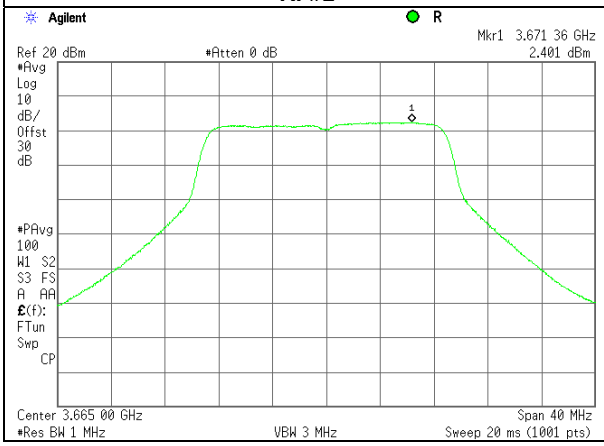
CARRIER FREQUENCY:	3665 MHz
EMISSION BANDWIDTH:	20 MHz
MODULATION:	BPSK
ANTENNA ASSEMBLY GAIN:	24.0dBi
RF#1	**RF#2**

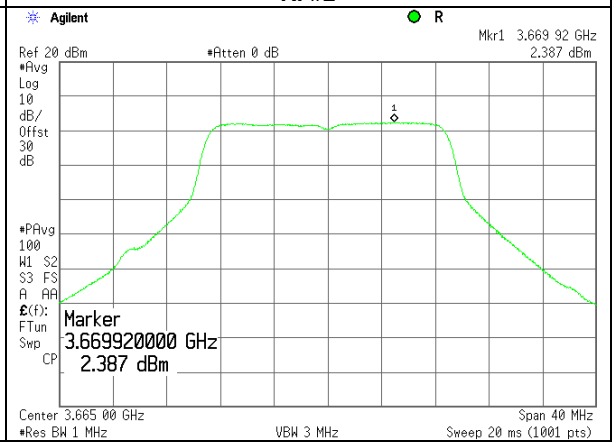




Plot 7.2.54 Peak output power density test results at high frequency

CARRIER FREQUENCY:	3665 MHz
EMISSION BANDWIDTH:	20 MHz
MODULATION:	64QAM
ANTENNA ASSEMBLY GAIN:	24.0dBi
RF#1	**RF#2**





Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Peak EIRP power density**		
Test procedure:	47 CFR, Sections 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1007 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48 VDC
Remarks: with 13.5 dBi gain antenna assembly			

Table 7.2.5 Peak EIRP power density test results

ASSIGNED FREQUENCY RANGE:	3650.0 – 3700.0 MHz
DETECTOR USED:	Average (RMS)
RESOLUTION BANDWIDTH:	1000 kHz
VIDEO BANDWIDTH:	3000 kHz
MODULATING SIGNAL:	PRBS
TRANSMITTER OUTPUT POWER SETTINGS:	Maximum (see NOTE1)
ANTENNA ASSEMBLY GAIN:	13.5dBi
EBW:	**5 MHz**

Channel, MHz	Modulation	Pmeas (RF#1), dBm/MHz	Pmeas (RF#2), dBm/MHz	Power density*, dBm/MHz	EIRP power density**, dBm/MHz	Limit, dBm/MHz	Margin, dB	Verdict
3652.5	BPSK	8.898	9.512	12.23	25.73	30	-4.27	Pass
3663.0	BPSK	9.33	9.201	12.28	25.78	30	-4.22	Pass
3672.5	BPSK	9.119	8.9	12.02	25.52	30	-4.48	Pass
3652.5	64QAM	8.794	9.557	12.20	25.70	30	-4.30	Pass
3663.0	64QAM	9.335	8.894	12.13	25.63	30	-4.37	Pass
3672.5	64QAM	9.252	8.702	12.00	25.50	30	-4.50	Pass

EBW: 10 MHz

Channel, MHz	Modulation	Pmeas (RF#1), dBm/MHz	Pmeas (RF#2), dBm/MHz	Power density*, dBm/MHz	EIRP power density**, dBm/MHz	Limit, dBm/MHz	Margin, dB	Verdict
3656.0	BPSK	13.033	13.519	16.29	29.79	30	-0.21	Pass
3663.0	BPSK	12.624	13.717	16.22	29.72	30	-0.28	Pass
3669.0	BPSK	12.524	13.828	16.24	29.74	30	-0.26	Pass
3656.0	64QAM	12.657	13.354	16.03	29.53	30	-0.47	Pass
3663.0	64QAM	12.294	13.914	16.19	29.69	30	-0.31	Pass
3669.0	64QAM	12.478	13.849	16.23	29.73	30	-0.27	Pass

EBW: 20 MHz

Channel, MHz	Modulation	Pmeas (RF#1), dBm/MHz	Pmeas (RF#2), dBm/MHz	Power density*, dBm/MHz	EIRP power density**, dBm/MHz	Limit, dBm/MHz	Margin, dB	Verdict
3661.0	BPSK	10.354	11.34	13.89	27.39	30	-2.61	Pass
3663.0	BPSK	10.979	11.251	14.13	27.63	30	-2.37	Pass
3664.0	BPSK	10.405	11.689	14.10	27.60	30	-2.40	Pass
3661.0	64QAM	10.546	11.789	14.22	27.72	30	-2.28	Pass
3663.0	64QAM	10.864	11.764	14.35	27.85	30	-2.15	Pass
3664.0	64QAM	11.176	11.707	14.46	27.96	30	-2.04	Pass

* - Power density, dBm/MHz = 10 log{10^[P(dBm/MHz,RF#1)/10]+ 10^[P(dBm/MHz, RF#2)/10]}
** - EIRP power density, dBm/MHz = Power density*, dBm/MHz + Antenna Assembly Gain, dBi
NOTE1: EUT was configured to produce maximum conducted RF power for minimum declared Antenna gain of 22 dBi. RF output power will vary depending on the antenna assembly gain to ensure that the total EIRP power and power limits withstand with EIRP limits. For actual settings of power levels with respect to actual antenna assembly used, please refer to the User's Manual.

Reference numbers of test equipment used

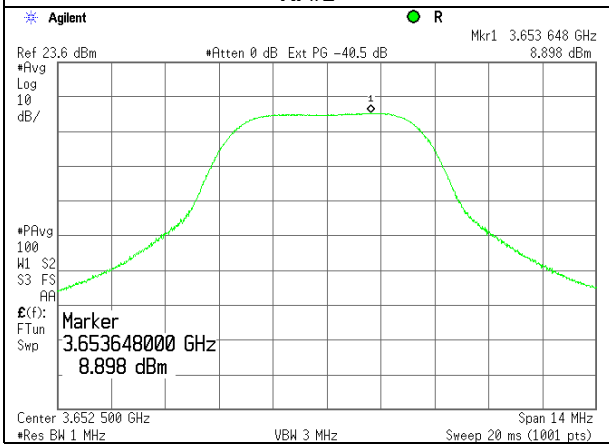
HL 3440	HL 3474	HL 3779	HL 3784	HL 3818			

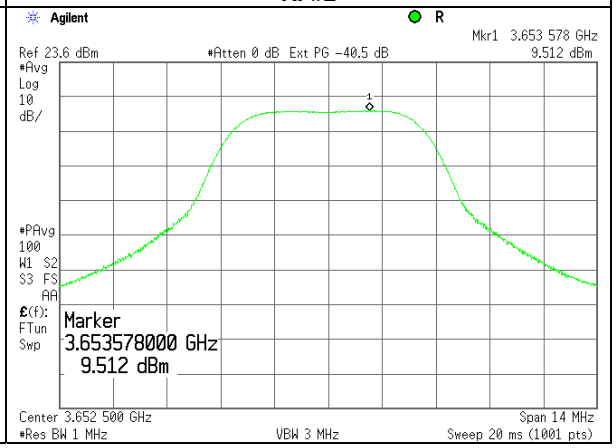
Full description is given in Appendix A.

Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Peak EIRP power density**		
Test procedure:	47 CFR, Sections 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1007 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48 VDC
Remarks: with 13.5 dBi gain antenna assembly			

Plot 7.2.55 Peak output power density test results at low frequency

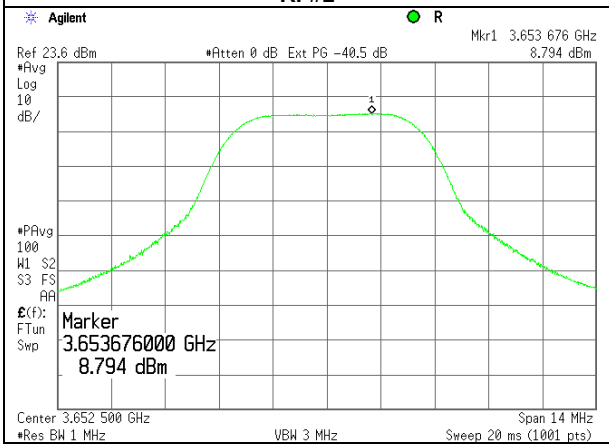
CARRIER FREQUENCY:	3652.5 MHz
EMISSION BANDWIDTH:	5 MHz
MODULATION:	BPSK
ANTENNA ASSEMBLY GAIN:	13.5dBi
RF#1	**RF#2**

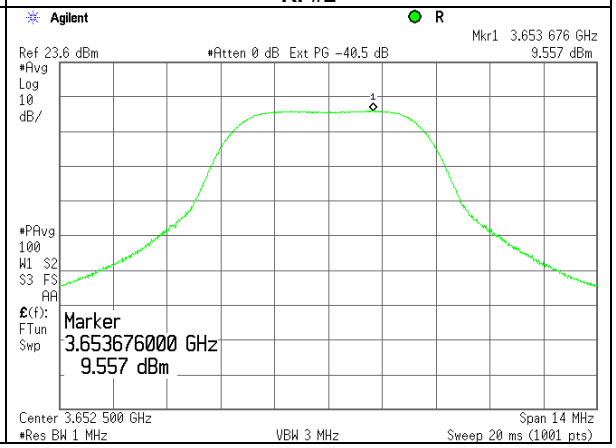




Plot 7.2.56 Peak output power density test results at low frequency

CARRIER FREQUENCY:	3652.5 MHz
EMISSION BANDWIDTH:	5 MHz
MODULATION:	64QAM
ANTENNA ASSEMBLY GAIN:	13.5dBi
RF#1	**RF#2**

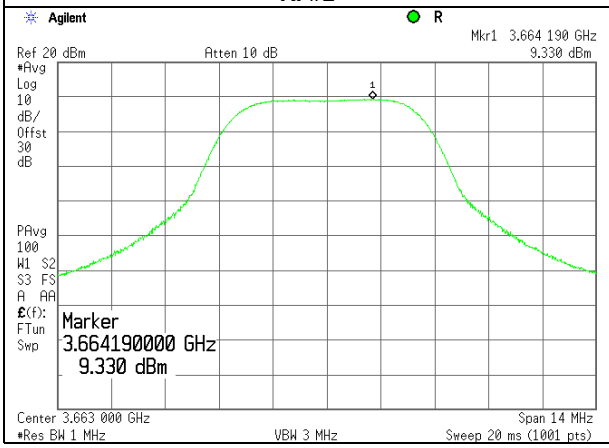


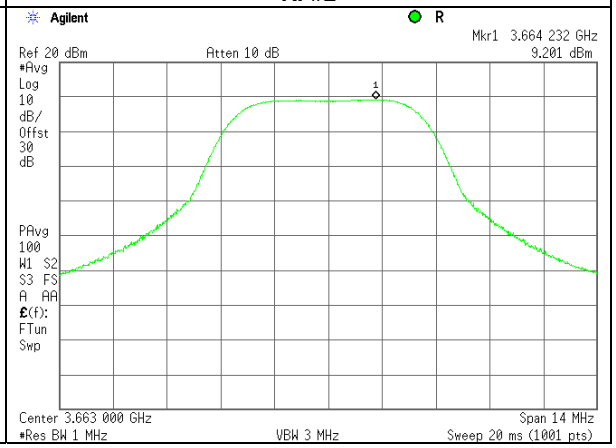


Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Peak EIRP power density**		
Test procedure:	47 CFR, Sections 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1007 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48 VDC
Remarks: with 13.5 dBi gain antenna assembly			

Plot 7.2.57 Peak output power density test results at mid frequency

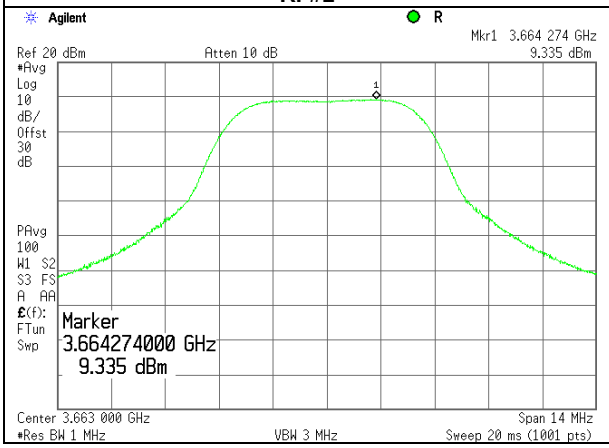
CARRIER FREQUENCY:	3663 MHz
EMISSION BANDWIDTH:	5 MHz
MODULATION:	BPSK
ANTENNA ASSEMBLY GAIN:	13.5dBi
RF#1	**RF#2**

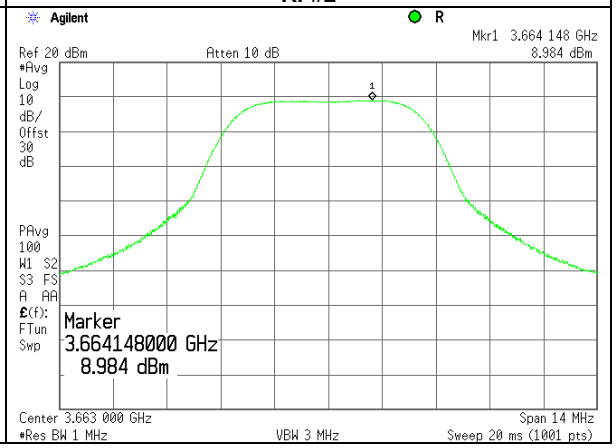




Plot 7.2.58 Peak output power density test results at mid frequency

CARRIER FREQUENCY:	3663 MHz
EMISSION BANDWIDTH:	5 MHz
MODULATION:	64QAM
ANTENNA ASSEMBLY GAIN:	13.5dBi
RF#1	**RF#2**

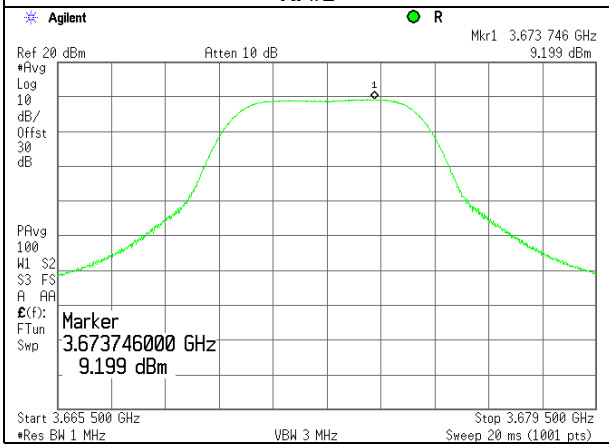


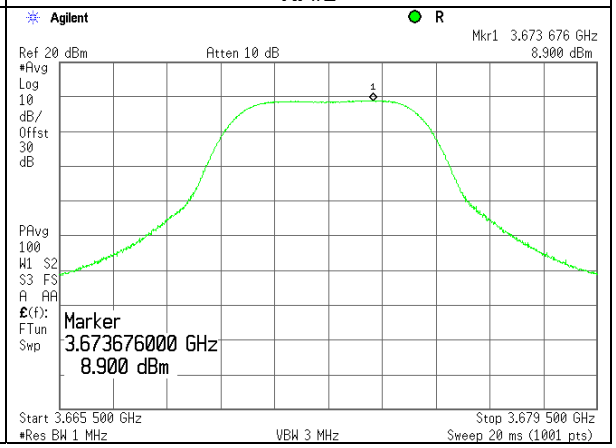


Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Peak EIRP power density**		
Test procedure:	47 CFR, Sections 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1007 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48 VDC
Remarks: with 13.5 dBi gain antenna assembly			

Plot 7.2.59 Peak output power density test results at high frequency

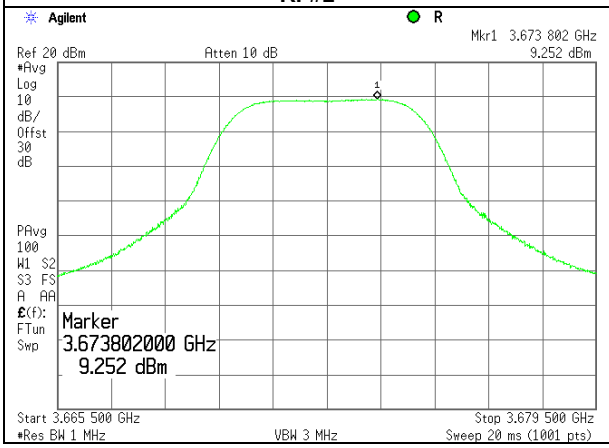
CARRIER FREQUENCY:	3672.5 MHz
EMISSION BANDWIDTH:	5 MHz
MODULATION:	BPSK
ANTENNA ASSEMBLY GAIN:	13.5dBi
RF#1	**RF#2**

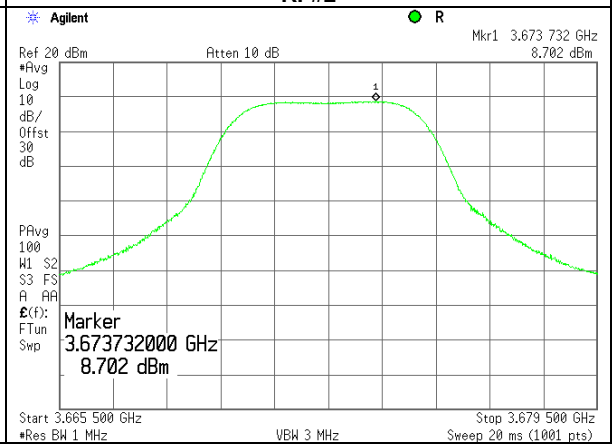




Plot 7.2.60 Peak output power density test results at high frequency

CARRIER FREQUENCY:	3672.5 MHz
EMISSION BANDWIDTH:	5 MHz
MODULATION:	64QAM
ANTENNA ASSEMBLY GAIN:	13.5dBi
RF#1	**RF#2**

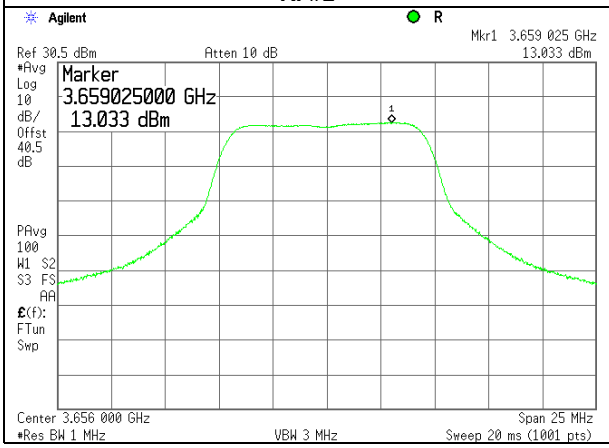


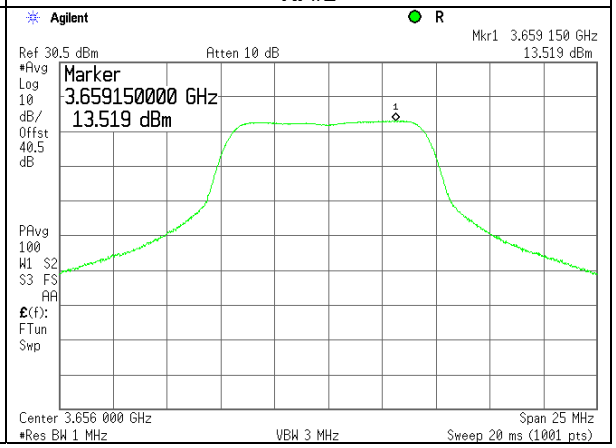


Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Peak EIRP power density**		
Test procedure:	47 CFR, Sections 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1007 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48 VDC
Remarks: with 13.5 dBi gain antenna assembly			

Plot 7.2.61 Peak output power density test results at low frequency

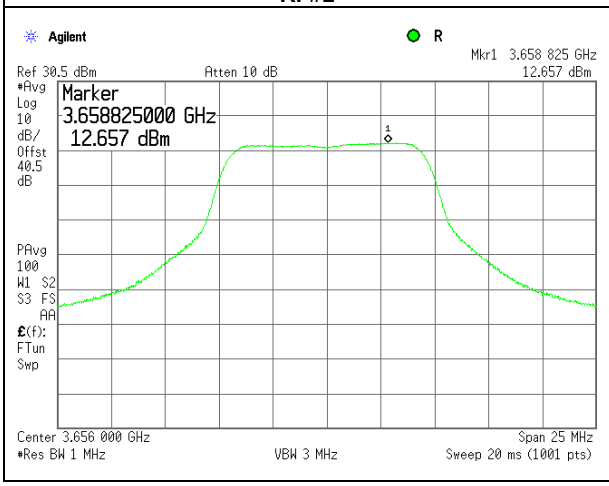
CARRIER FREQUENCY:	3656 MHz
EMISSION BANDWIDTH:	10 MHz
MODULATION:	BPSK
ANTENNA ASSEMBLY GAIN:	13.5dBi
RF#1	**RF#2**

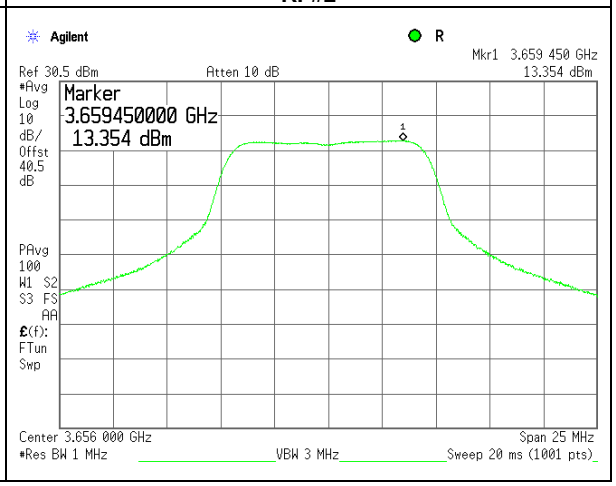




Plot 7.2.62 Peak output power density test results at low frequency

CARRIER FREQUENCY:	3656 MHz
EMISSION BANDWIDTH:	10 MHz
MODULATION:	64QAM
ANTENNA ASSEMBLY GAIN:	13.5dBi
RF#1	**RF#2**

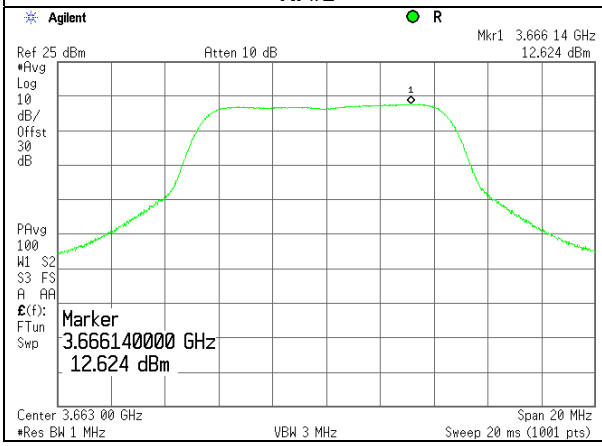


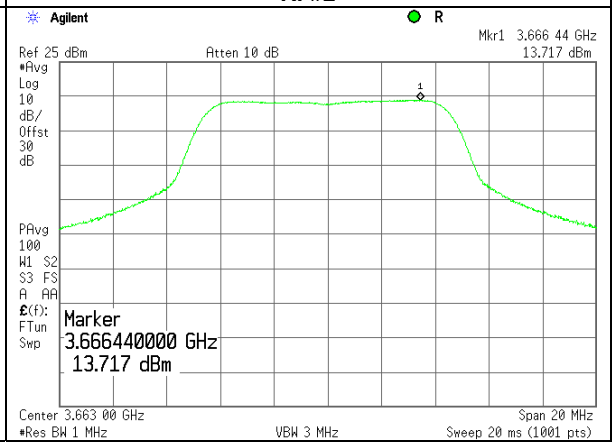


Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Peak EIRP power density**		
Test procedure:	47 CFR, Sections 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1007 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48 VDC
Remarks: with 13.5 dBi gain antenna assembly			

Plot 7.2.63 Peak output power density test results at mid frequency

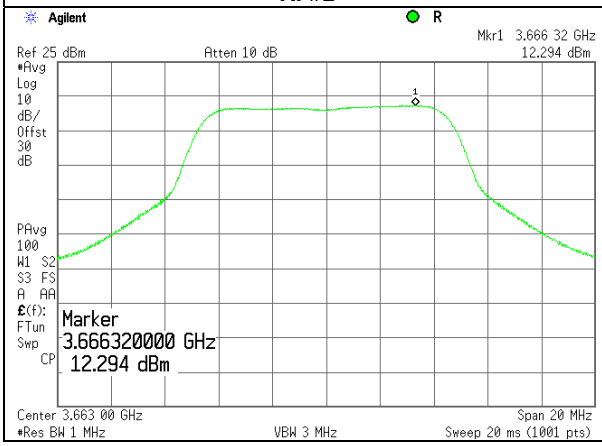
CARRIER FREQUENCY:	3663 MHz
EMISSION BANDWIDTH:	10 MHz
MODULATION:	BPSK
ANTENNA ASSEMBLY GAIN:	13.5dBi
RF#1	**RF#2**

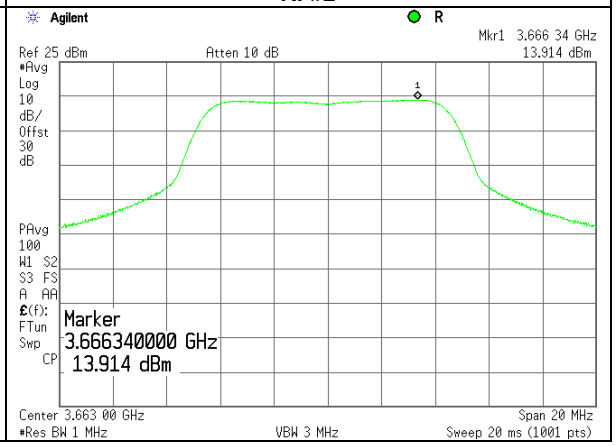




Plot 7.2.64 Peak output power density test results at mid frequency

CARRIER FREQUENCY:	3663 MHz
EMISSION BANDWIDTH:	10 MHz
MODULATION:	64QAM
ANTENNA ASSEMBLY GAIN:	13.5dBi
RF#1	**RF#2**

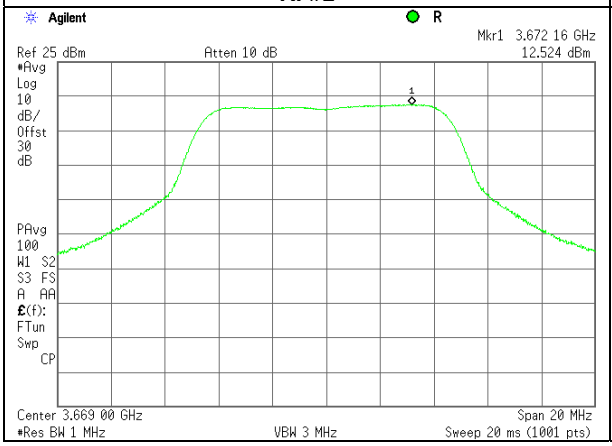


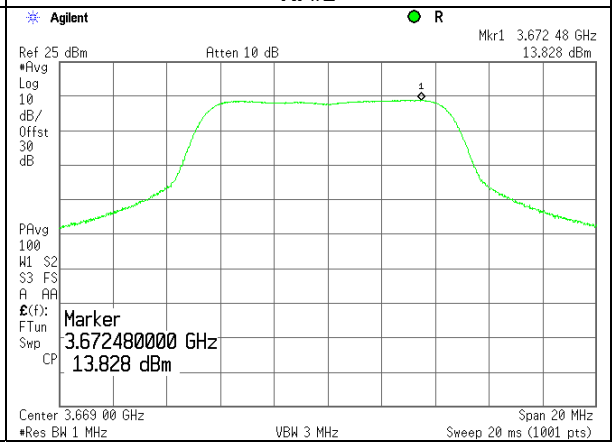


Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Peak EIRP power density**		
Test procedure:	47 CFR, Sections 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1007 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48 VDC
Remarks: with 13.5 dBi gain antenna assembly			

Plot 7.2.65 Peak output power density test results at high frequency

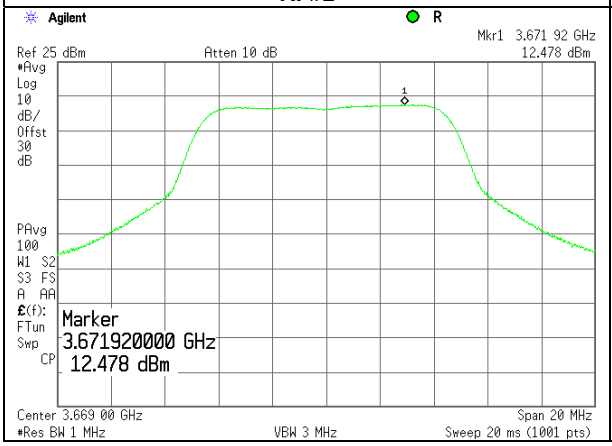
CARRIER FREQUENCY:	3669 MHz
EMISSION BANDWIDTH:	10 MHz
MODULATION:	BPSK
ANTENNA ASSEMBLY GAIN:	13.5dBi
RF#1	**RF#2**

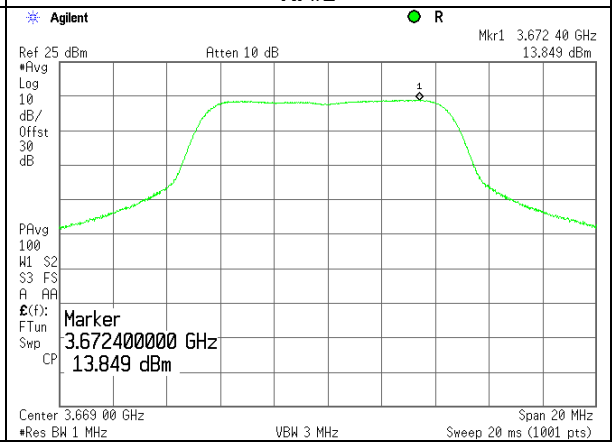




Plot 7.2.66 Peak output power density test results at high frequency

CARRIER FREQUENCY:	3669 MHz
EMISSION BANDWIDTH:	10 MHz
MODULATION:	64QAM
ANTENNA ASSEMBLY GAIN:	13.5dBi
RF#1	**RF#2**

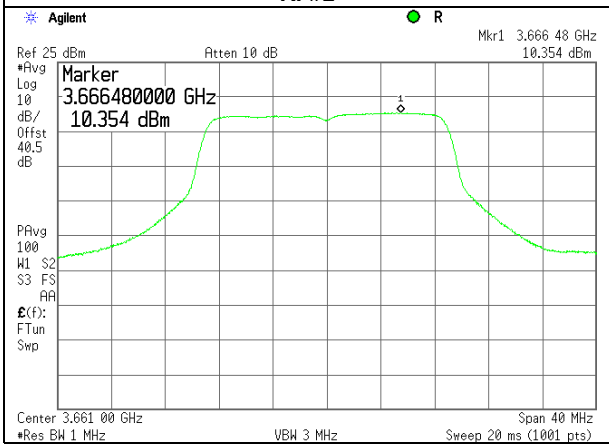


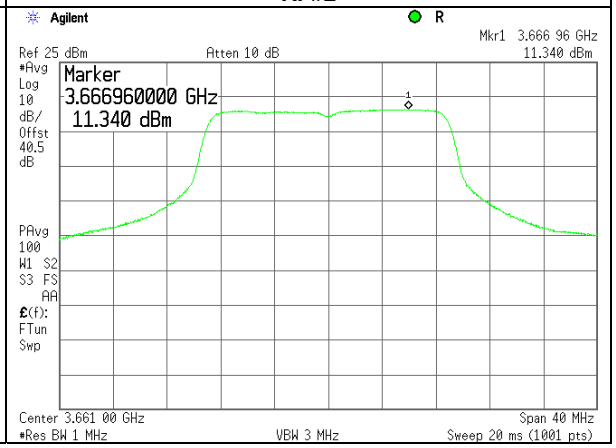


Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Peak EIRP power density**		
Test procedure:	47 CFR, Sections 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1007 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48 VDC
Remarks: with 13.5 dBi gain antenna assembly			

Plot 7.2.67 Peak output power density test results at low frequency

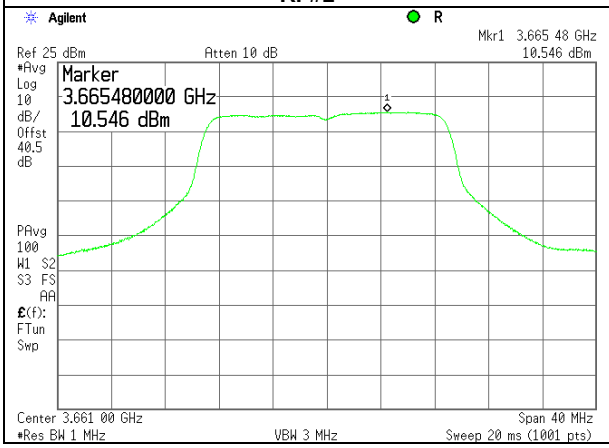
CARRIER FREQUENCY:	3661 MHz
EMISSION BANDWIDTH:	20 MHz
MODULATION:	BPSK
ANTENNA ASSEMBLY GAIN:	13.5dBi
RF#1	**RF#2**

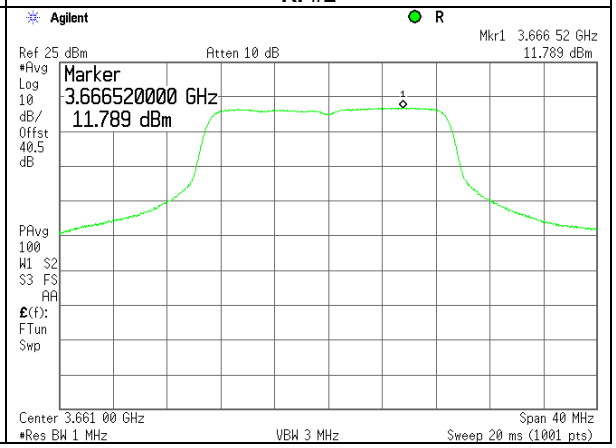




Plot 7.2.68 Peak output power density test results at low frequency

CARRIER FREQUENCY:	3661 MHz
EMISSION BANDWIDTH:	20 MHz
MODULATION:	64QAM
ANTENNA ASSEMBLY GAIN:	13.5dBi
RF#1	**RF#2**

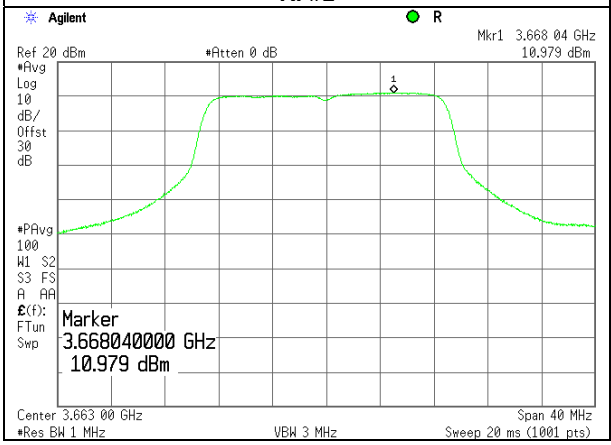


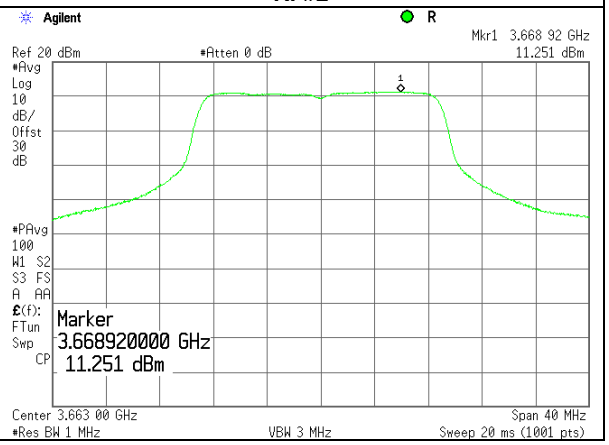


Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Peak EIRP power density**		
Test procedure:	47 CFR, Sections 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1007 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48 VDC
Remarks: with 13.5 dBi gain antenna assembly			

Plot 7.2.69 Peak output power density test results at mid frequency

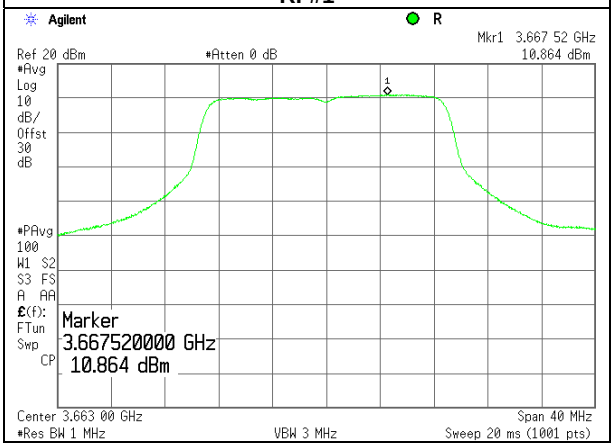
CARRIER FREQUENCY:	3663 MHz
EMISSION BANDWIDTH:	20 MHz
MODULATION:	BPSK
ANTENNA ASSEMBLY GAIN:	13.5dBi
RF#1	**RF#2**

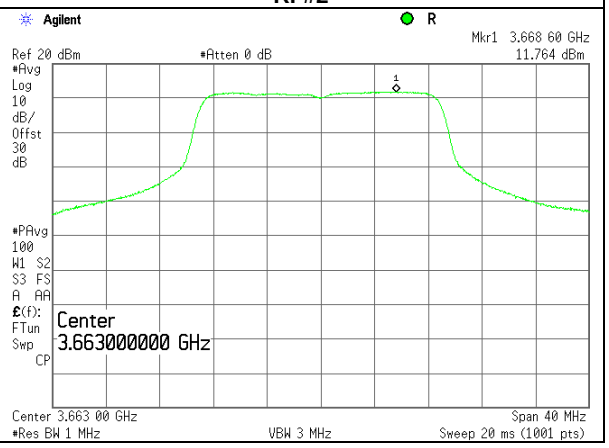




Plot 7.2.70 Peak output power density test results at mid frequency

CARRIER FREQUENCY:	3663 MHz
EMISSION BANDWIDTH:	20 MHz
MODULATION:	64QAM
ANTENNA ASSEMBLY GAIN:	13.5dBi
RF#1	**RF#2**

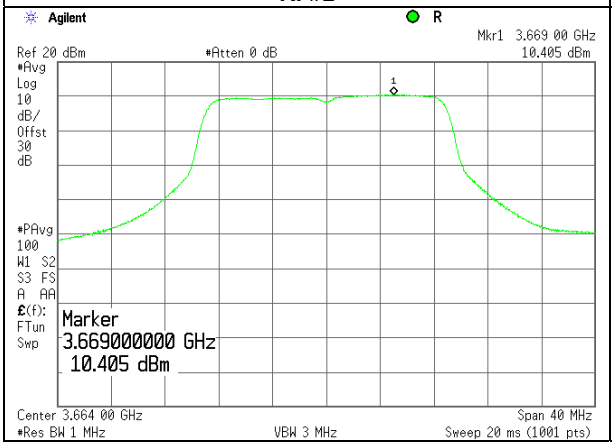


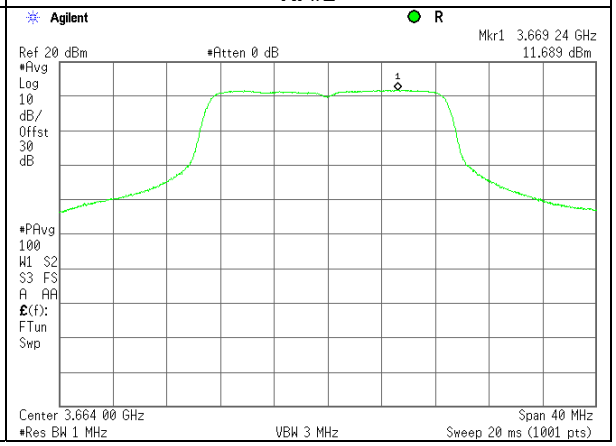


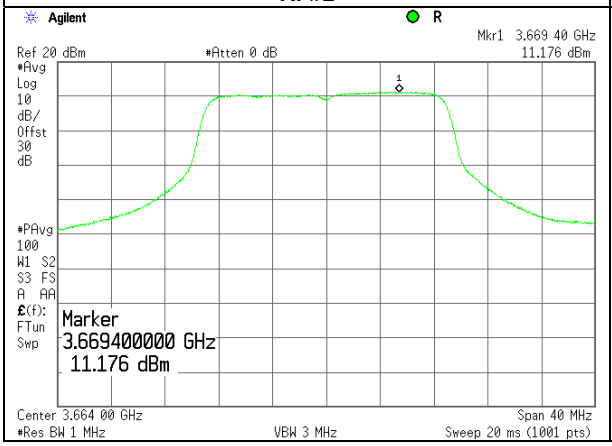
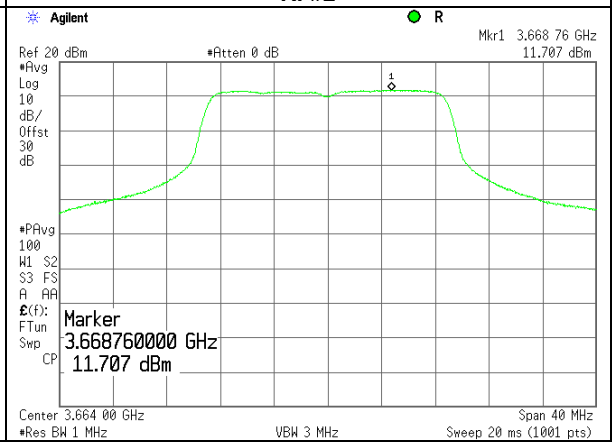
Test specification:	**Section 90.1321 / RSS-197, Section 5.6, Peak EIRP power density**		
Test procedure:	47 CFR, Sections 2.1046; TIA/EIA-603-C, Section 2.2.1		
Test mode:	Compliance	**Verdict:**	PASS
Date:	11/14/2010		
Temperature: 25 ºC	**Air Pressure:** 1007 hPa	**Relative Humidity:** 45 %	**Power Supply:** -48 VDC
Remarks: with 13.5 dBi gain antenna assembly			

Plot 7.2.71 Peak output power density test results at high frequency

CARRIER FREQUENCY:	3664 MHz
EMISSION BANDWIDTH:	20 MHz
MODULATION:	BPSK
ANTENNA ASSEMBLY GAIN:	13.5dBi
RF#1	**RF#2**





Plot 7.2.72 Peak output power density test results at high frequency

CARRIER FREQUENCY:	3664 MHz
EMISSION BANDWIDTH:	20 MHz
MODULATION:	64QAM
ANTENNA ASSEMBLY GAIN:	13.5dBi
RF#1	**RF#2**