TEST REPORT
FROM
RFI GLOBAL SERVICES LTD

Test of: Stream Magic 6

FCC ID: YKB651N001

IC Certification Number: 9095A-651N01

To: FCC Part 15.247(b)(3), Industry Canada RSS-Gen 4.8 & RSS-210 A8.4(4)

Test Report Serial No:
RFI-RPT-RP82868JD02A

This Test Report Is Issued Under The Authority Of Chris Guy, Head of Global Approvals:	I. M. Watch
Checked By:	Ian Watch
Signature:	I. M. Watch
Date of Issue:	28 October 2011

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Registered in England and Wales. Company number:2117901

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1. Customer Information

Company Name:	Audio Partnership PLC
Address:	Gallery Court Hankey Place London SE1 4BB United Kingdom

2. Summary of Testing

2.1. General Information

Specification Reference:	47CFR15.247
Specification Title:	Code of Federal Regulations Volume 47 (Telecommunications) 2011: Part 15 Subpart C (Intentional Radiators) - Section 15.247
Specification Reference:	RSS-Gen Issue 3 December 2010
Specification Title:	General Requirements and Information for the Certification of Radio Apparatus
Specification Reference:	RSS-210 Issue 8 December 2010
Specification Title:	Licence-exempt Radio Apparatus (All Frequency Bands): Category I Equipment.
Site Registration:	FCC: 209735; Industry Canada: 3245B-2
Location of Testing:	RFI Global Services Ltd, Wade Road, Basingstoke, Hampshire, RG24 8AH.
Test Dates:	25 October 2011 to 26 October 2011

2.2. Summary of Test Results

FCC Reference (47CFR)	IC Reference	Measurement	Result
Part 15.247(b)(3)	RSS-Gen 4.8 RSS-210 A8.4(4)	Transmitter Maximum Peak Output Power	✓

Key to Results

✓ = Complied ✗ = Did not comply

2.3. Methods and Procedures

Reference:	ANSI C63.4 (2009)
Title:	American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz
Reference:	ANSI C63.10 (2009)
Title:	American National Standard for Testing Unlicensed Wireless Devices

2.4. Deviations from the Test Specification

For the measurements contained within this test report, there were no deviations from, additions to, or exclusions from the test specification identified above.

3. Equipment Under Test (EUT)

3.1. Identification of Equipment Under Test (EUT)

Brand Name:	Cambridge Audio
Model Name or Number:	Stream Magic 6
Serial Number:	Not marked or stated
Hardware Version Number:	Not stated
Software Version Number:	Not stated
FCC ID:	YKB651N001
IC Certification Number:	9095A-651N01

3.2. Description of EUT

The equipment under test was a Network player. Contains NDD9577110815.

3.3. Modifications Incorporated in the EUT

No modifications were applied to the EUT during testing.

3.4. Additional Information Related to Testing

<table>
<tr><td>Technology Tested:</td><td colspan="3">Digital Transmission System</td></tr>
<tr><td>Type of Unit:</td><td colspan="3">Transceiver</td></tr>
<tr><td>Modulation:</td><td colspan="3">BPSK, QPSK, 16QAM and 64QAM</td></tr>
<tr><td>Data Rate:</td><td colspan="3">1, 11, 9, 48, 21.7, 72.2, 15, 45, 90 and 150 Mbps</td></tr>
<tr><td>Power Supply Requirement(s):</td><td>Nominal</td><td colspan="2">120 VAC</td></tr>
<tr><td>Maximum Peak Output Power:</td><td colspan="3">18.1 dBm</td></tr>
<tr><td>Channel Spacing :</td><td colspan="3">20 MHz</td></tr>
<tr><td>Transmit Frequency Range:</td><td colspan="3">2412 MHz to 2462 MHz</td></tr>
<tr><td rowspan="4">Transmit Channels Tested:</td><td>Channel ID</td><td>Channel Number</td><td>Channel Frequency (MHz)</td></tr>
<tr><td>Bottom</td><td>1</td><td>2412</td></tr>
<tr><td>Middle</td><td>6</td><td>2437</td></tr>
<tr><td>Top</td><td>11</td><td>2462</td></tr>
<tr><td>Channel Spacing :</td><td colspan="3">40 MHz</td></tr>
<tr><td>Transmit Channels Tested:</td><td colspan="3">2422 MHz to 2452 MHz</td></tr>
<tr><td rowspan="4">Transmit Channels Tested:</td><td>Channel ID</td><td>Channel Number</td><td>Channel Frequency (MHz)</td></tr>
<tr><td>Bottom</td><td>3</td><td>2422</td></tr>
<tr><td>Middle</td><td>6</td><td>2437</td></tr>
<tr><td>Top</td><td>9</td><td>2452</td></tr>
</table>

3.5. Support Equipment

No support equipment was used to exercise the EUT during testing.

4. Operation and Monitoring of the EUT during Testing

4.1. Operating Modes

The EUT was tested in the following operating mode(s):

- Continuously transmitting at maximum power on the bottom, middle and top channels as required.

4.2. Configuration and Peripherals

The EUT was tested in the following configuration(s):

- Controlled using a bespoke application built into the EUT. It was operated by pressing a sequence of buttons. The application was used to enable continuous transmission and to select the test channels, data rates and modulation schemes as required.
- The EUT was set to power setting 1.

5. Measurements, Examinations and Derived Results

5.1. General Comments

Measurement uncertainties are evaluated in accordance with current best practice. Our reported expanded uncertainties are based on standard uncertainties, which are multiplied by an appropriate coverage factor to provide a statistical confidence level of approximately 95%. Please refer to *Section 6. Measurement Uncertainty* for details.

5.2. Test Results

5.2.1. Transmitter Maximum Peak Output Power

Test Summary:

Test Engineer:	Andrew Edwards	**Test Date:**	25 October 2011 & 26 October 2011
Test Sample Serial No:	Not marked or stated		

FCC Part:	15.247(b)(3)
Test Method Used:	As detailed in ANSI C63.10 Section 6.10.2

Environmental Conditions:

Temperature (°C):	27
Relative Humidity (%):	28

Results: 1 Mbps / 20 MHz channel bandwidth

Channel	Conducted Peak Power (dBm)	Conducted Peak Power Limit (dBm)	Margin (dB)	Result
Bottom	12.5	30.0	17.5	Complied
Middle	11.7	30.0	18.3	Complied
Top	11.5	30.0	18.5	Complied

Channel	Conducted Peak Power (dBm)	Declared Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Bottom	12.5	3.0	15.5	36.0	20.5	Complied
Middle	11.7	3.0	14.7	36.0	21.3	Complied
Top	11.5	3.0	14.5	36.0	21.5	Complied

Transmitter Maximum Peak Output Power (continued)

Results: 9 Mbps / 20 MHz channel bandwidth

Channel	Conducted Peak Power (dBm)	Conducted Peak Power Limit (dBm)	Margin (dB)	Result
Bottom	15.1	30.0	14.9	Complied
Middle	14.5	30.0	15.5	Complied
Top	14.2	30.0	15.8	Complied

Channel	Conducted Peak Power (dBm)	Declared Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Bottom	15.1	3.0	18.1	36.0	17.9	Complied
Middle	14.5	3.0	17.5	36.0	18.5	Complied
Top	14.2	3.0	17.2	36.0	18.8	Complied

Results: 11 Mbps / 20 MHz channel bandwidth

Channel	Conducted Peak Power (dBm)	Conducted Peak Power Limit (dBm)	Margin (dB)	Result
Bottom	15.1	30.0	14.9	Complied
Middle	14.8	30.0	15.2	Complied
Top	14.5	30.0	15.5	Complied

Channel	Conducted Peak Power (dBm)	Declared Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Bottom	15.1	3.0	18.1	36.0	17.9	Complied
Middle	14.8	3.0	17.8	36.0	18.2	Complied
Top	14.5	3.0	17.5	36.0	18.5	Complied

Transmitter Maximum Peak Output Power (continued)

Results: 21.7 Mbps / 20 MHz channel bandwidth

Channel	Conducted Peak Power (dBm)	Conducted Peak Power Limit (dBm)	Margin (dB)	Result
Bottom	14.4	30.0	15.6	Complied
Middle	13.7	30.0	16.3	Complied
Top	13.4	30.0	16.6	Complied

Channel	Conducted Peak Power (dBm)	Declared Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Bottom	14.4	3.0	17.4	36.0	18.6	Complied
Middle	13.7	3.0	16.7	36.0	19.3	Complied
Top	13.4	3.0	16.4	36.0	19.6	Complied

Results: 48 Mbps / 20 MHz channel bandwidth

Channel	Conducted Peak Power (dBm)	Conducted Peak Power Limit (dBm)	Margin (dB)	Result
Bottom	15.1	30.0	14.9	Complied
Middle	14.5	30.0	15.5	Complied
Top	14.2	30.0	15.8	Complied

Channel	Conducted Peak Power (dBm)	Declared Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Bottom	15.1	3.0	18.1	36.0	17.9	Complied
Middle	14.5	3.0	17.5	36.0	18.5	Complied
Top	14.2	3.0	17.2	36.0	18.8	Complied

Transmitter Maximum Peak Output Power (continued)

Results: 72.2 Mbps / 20 MHz channel bandwidth

Channel	Conducted Peak Power (dBm)	Conducted Peak Power Limit (dBm)	Margin (dB)	Result
Bottom	14.2	30.0	15.8	Complied
Middle	13.5	30.0	16.5	Complied
Top	13.3	30.0	16.7	Complied

Channel	Conducted Peak Power (dBm)	Declared Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Bottom	14.2	3.0	17.2	36.0	18.8	Complied
Middle	13.5	3.0	16.5	36.0	19.5	Complied
Top	13.3	3.0	16.3	36.0	19.7	Complied

Results: 15 Mbps / 40 MHz channel bandwidth

Channel	Conducted Peak Power (dBm)	Conducted Peak Power Limit (dBm)	Margin (dB)	Result
Bottom	14.2	30.0	15.8	Complied
Middle	13.7	30.0	16.3	Complied
Top	13.4	30.0	16.6	Complied

Channel	Conducted Peak Power (dBm)	Declared Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Bottom	14.2	3.0	17.2	36.0	18.8	Complied
Middle	13.7	3.0	16.7	36.0	19.3	Complied
Top	13.4	3.0	16.4	36.0	19.6	Complied

Transmitter Maximum Peak Output Power (continued)

Results: 45 Mbps / 40 MHz channel bandwidth

Channel	Conducted Peak Power (dBm)	Conducted Peak Power Limit (dBm)	Margin (dB)	Result
Bottom	14.8	30.0	15.2	Complied
Middle	14.2	30.0	15.8	Complied
Top	13.9	30.0	16.1	Complied

Channel	Conducted Peak Power (dBm)	Declared Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Bottom	14.8	3.0	17.8	36.0	18.2	Complied
Middle	14.2	3.0	17.2	36.0	18.8	Complied
Top	13.9	3.0	16.9	36.0	19.1	Complied

Results: 90 Mbps / 40 MHz channel bandwidth

Channel	Conducted Peak Power (dBm)	Conducted Peak Power Limit (dBm)	Margin (dB)	Result
Bottom	14.0	30.0	16.0	Complied
Middle	13.7	30.0	16.3	Complied
Top	13.8	30.0	16.2	Complied

Channel	Conducted Peak Power (dBm)	Declared Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Bottom	14.0	3.0	17.0	36.0	19.0	Complied
Middle	13.7	3.0	16.7	36.0	19.3	Complied
Top	13.8	3.0	16.8	36.0	19.2	Complied

Transmitter Maximum Peak Output Power (continued)

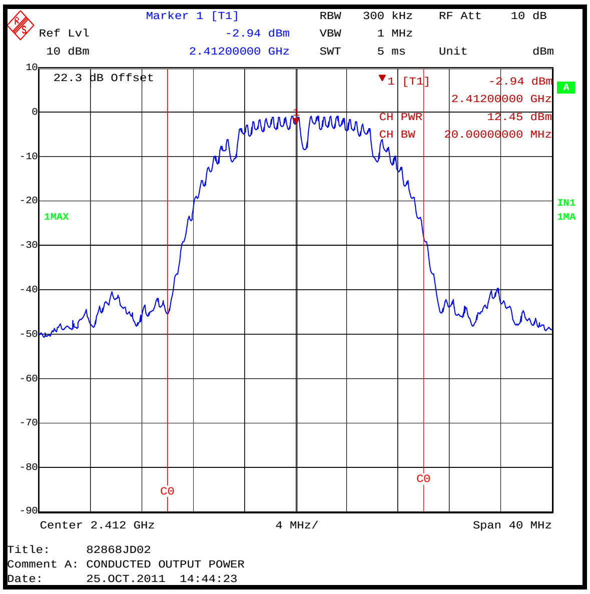
Results: 150 Mbps / 40 MHz channel bandwidth

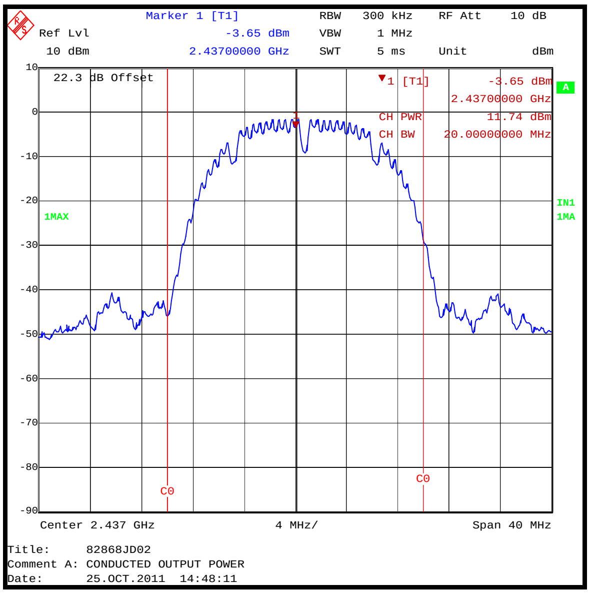
Channel	Conducted Peak Power (dBm)	Conducted Peak Power Limit (dBm)	Margin (dB)	Result
Bottom	14.1	30.0	15.9	Complied
Middle	13.7	30.0	16.3	Complied
Top	13.6	30.0	16.4	Complied

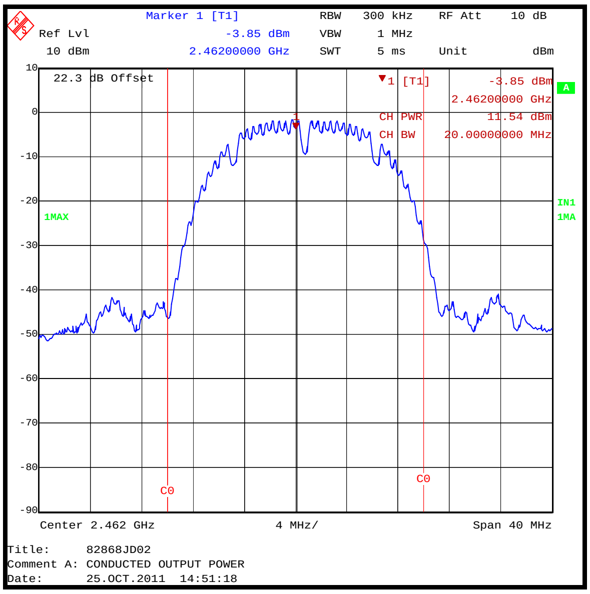
Channel	Conducted Peak Power (dBm)	Declared Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Bottom	14.1	3.0	17.1	36.0	18.9	Complied
Middle	13.7	3.0	16.7	36.0	19.3	Complied
Top	13.6	3.0	16.6	36.0	19.4	Complied

Transmitter Maximum Peak Output Power (continued)

Results: 1 Mbps / 20 MHz channel bandwidth

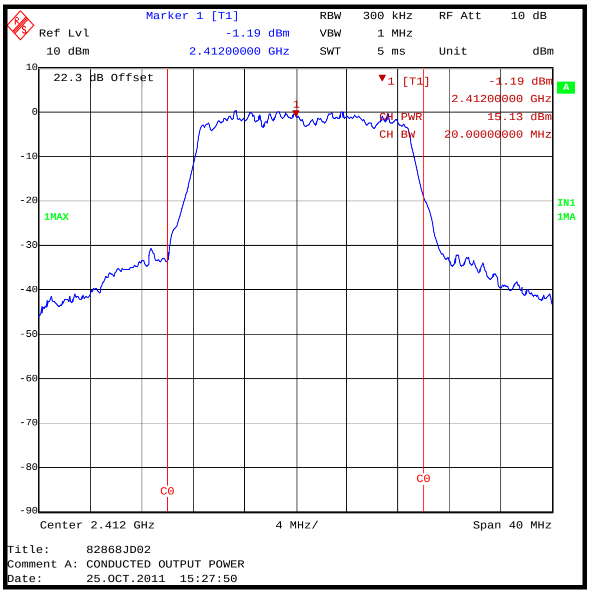


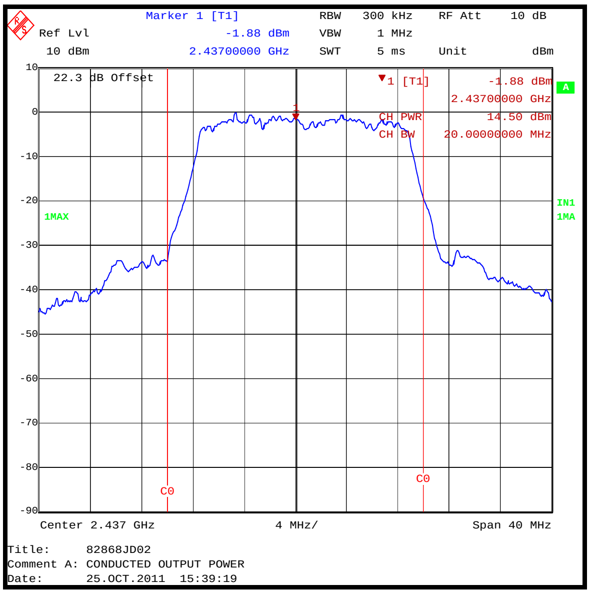


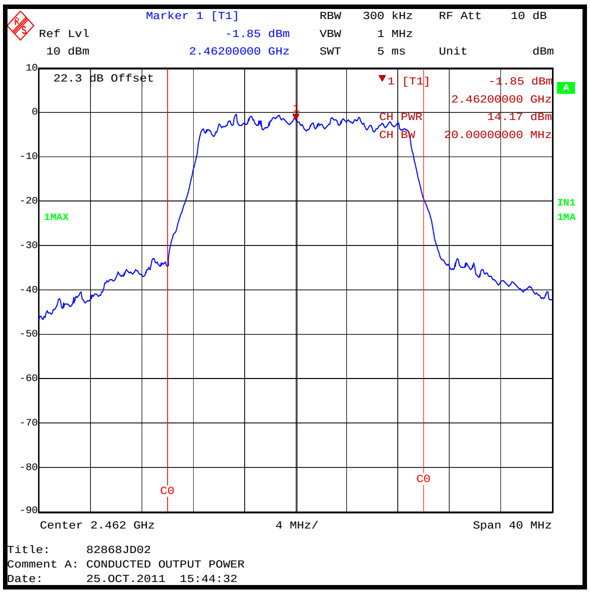


Transmitter Maximum Peak Output Power (continued)

Results: 9 Mbps / 20 MHz channel bandwidth

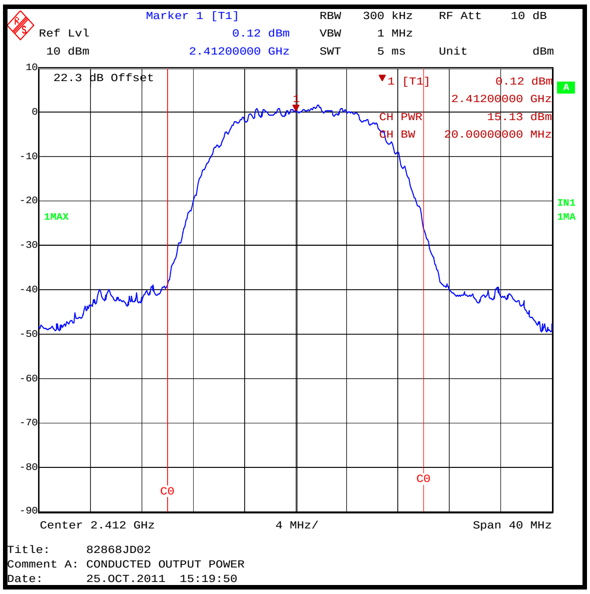


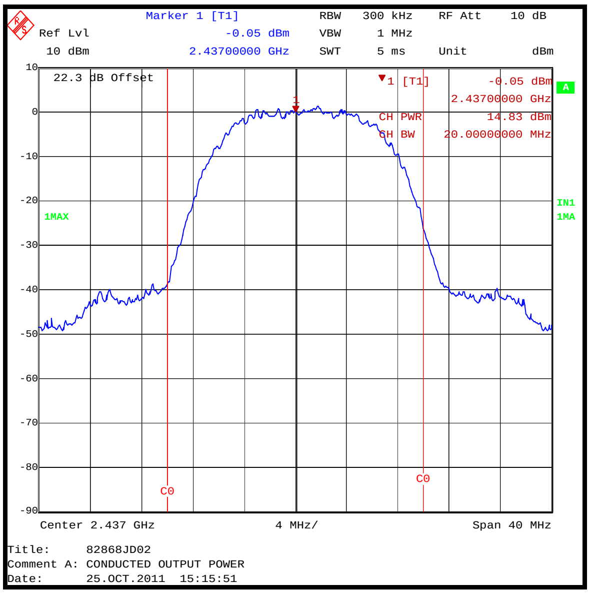


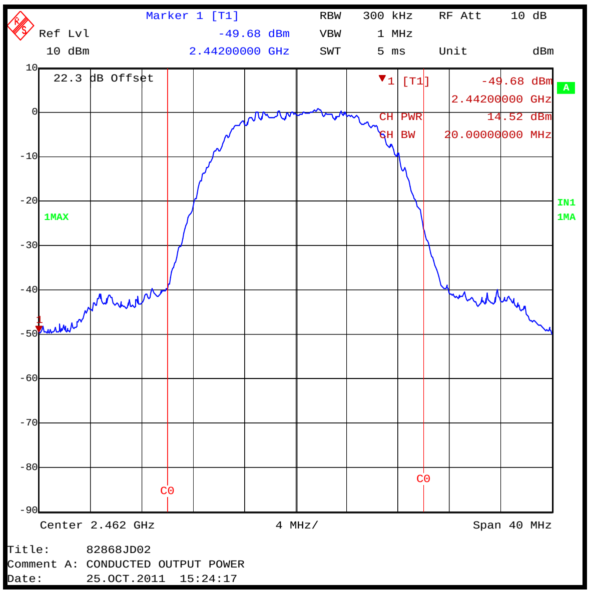


Transmitter Maximum Peak Output Power (continued)

Results: 11 Mbps / 20 MHz channel bandwidth

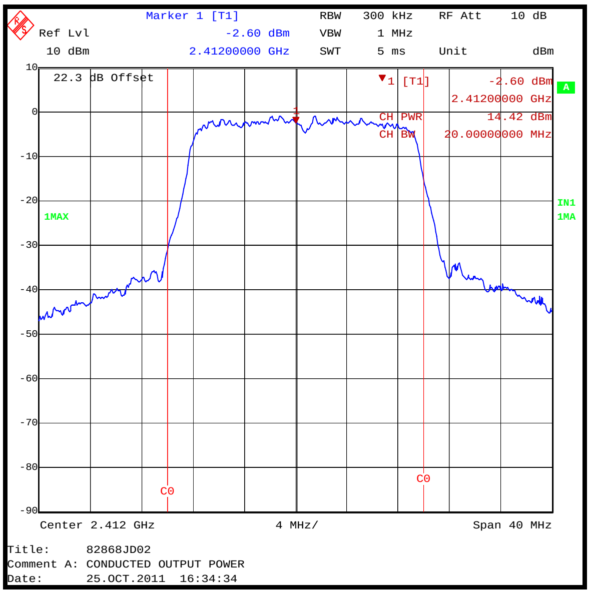


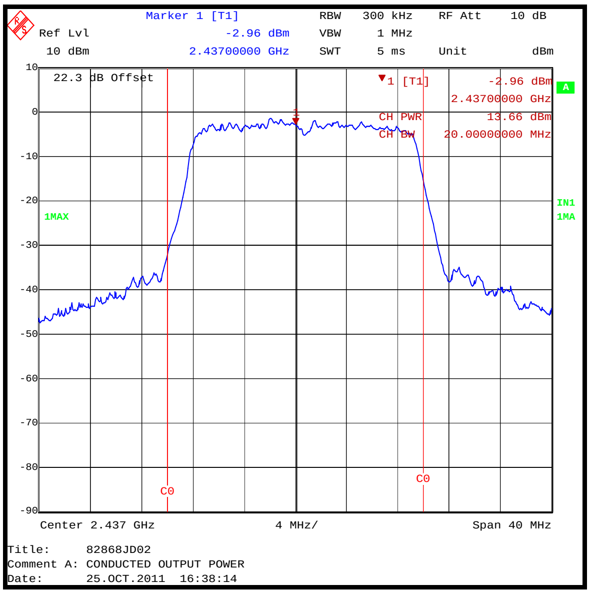


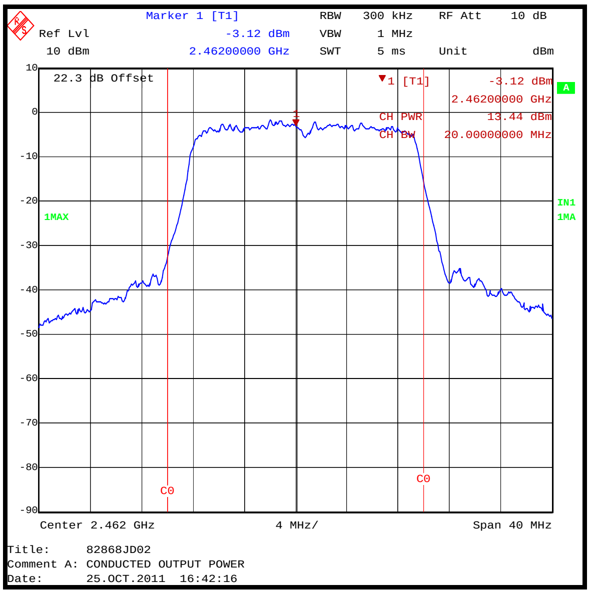


Transmitter Maximum Peak Output Power (continued)

Results: 21.7 Mbps / 20 MHz channel bandwidth

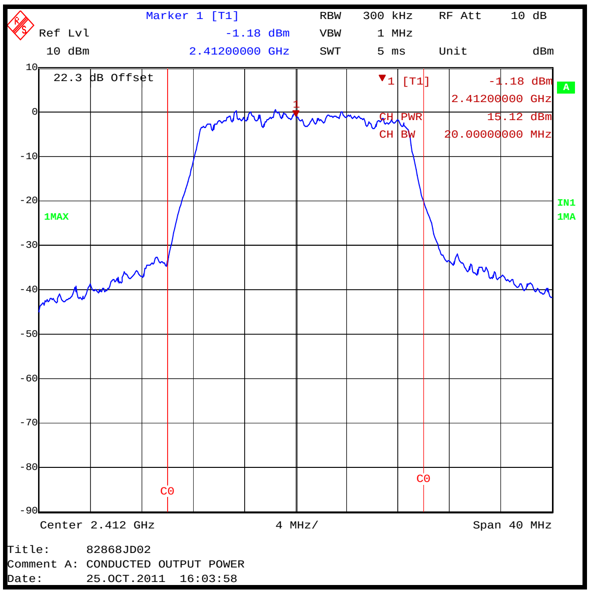


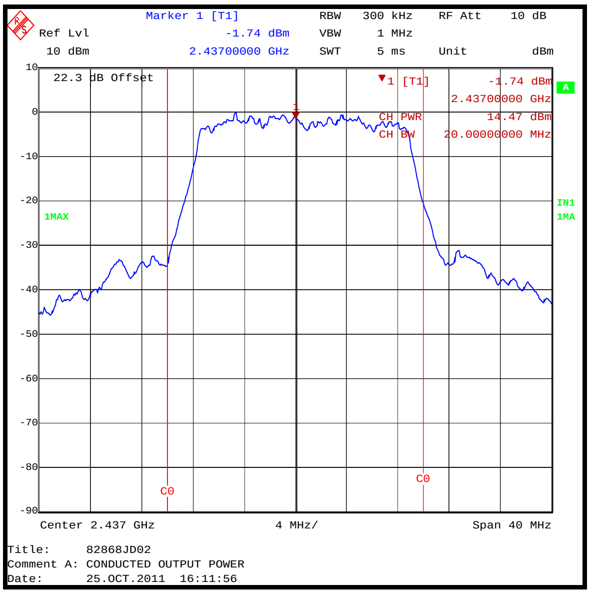


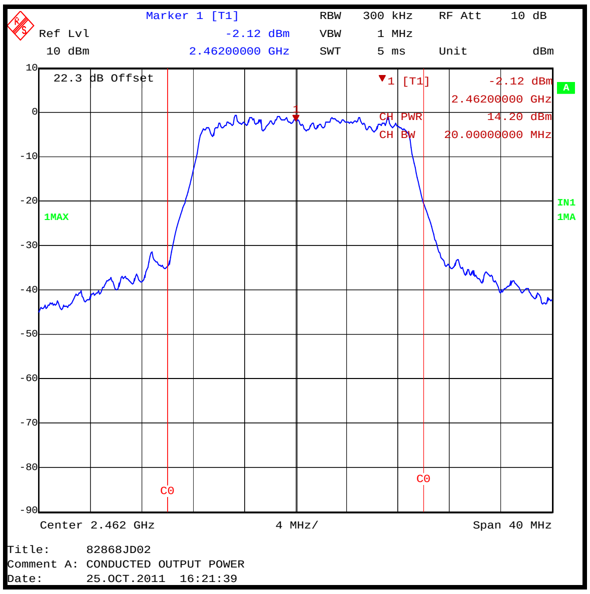


Transmitter Maximum Peak Output Power (continued)

Results: 48 Mbps / 20 MHz channel bandwidth

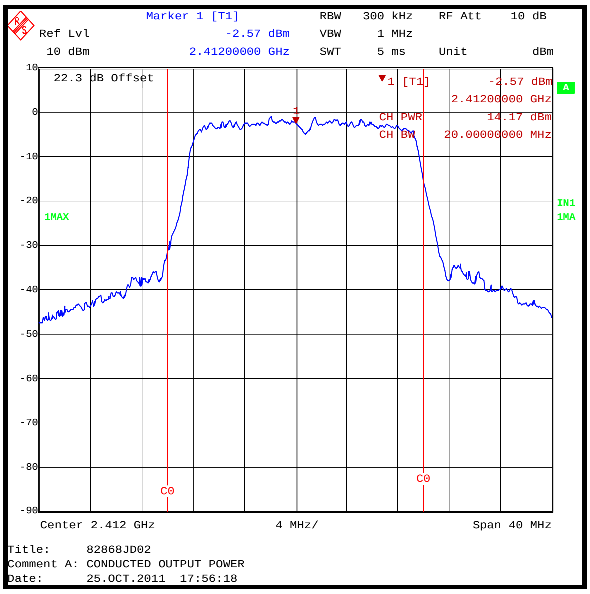


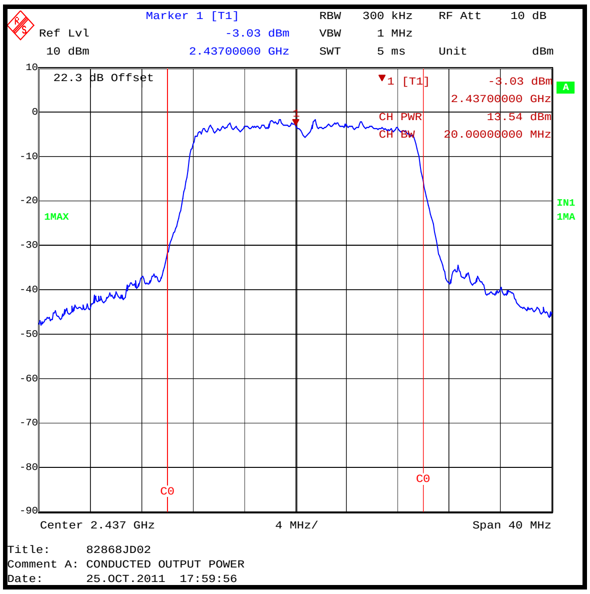


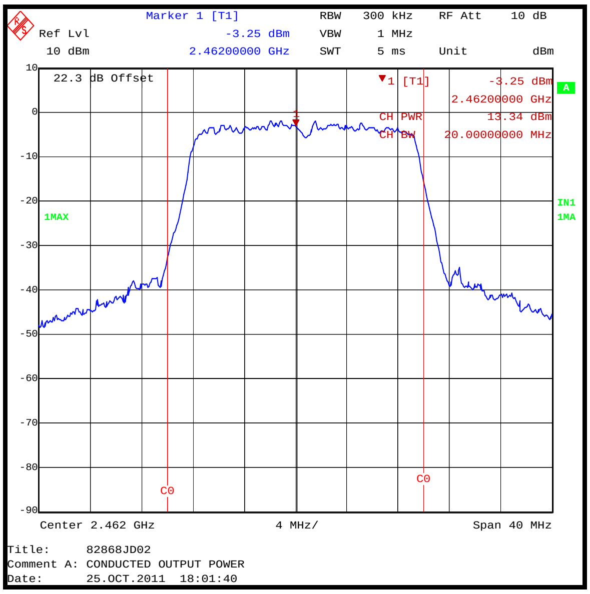


Transmitter Maximum Peak Output Power (continued)

Results: 72.2 Mbps / 20 MHz channel bandwidth

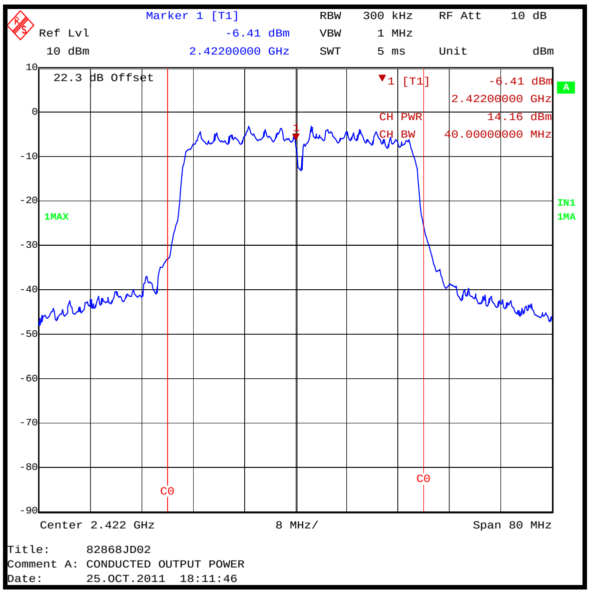


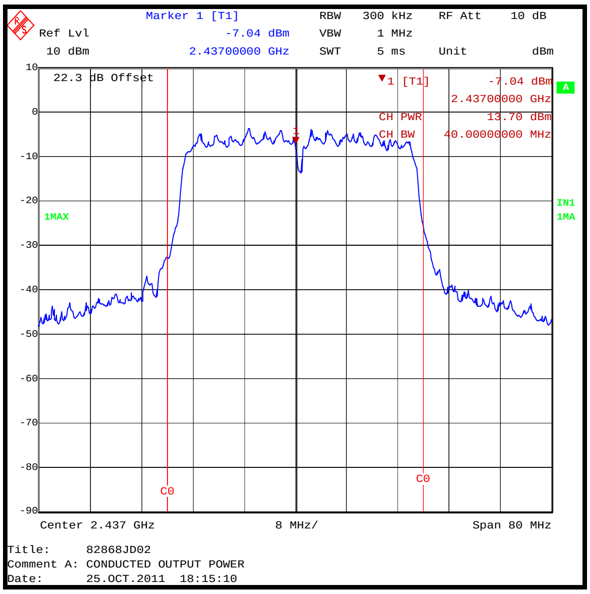


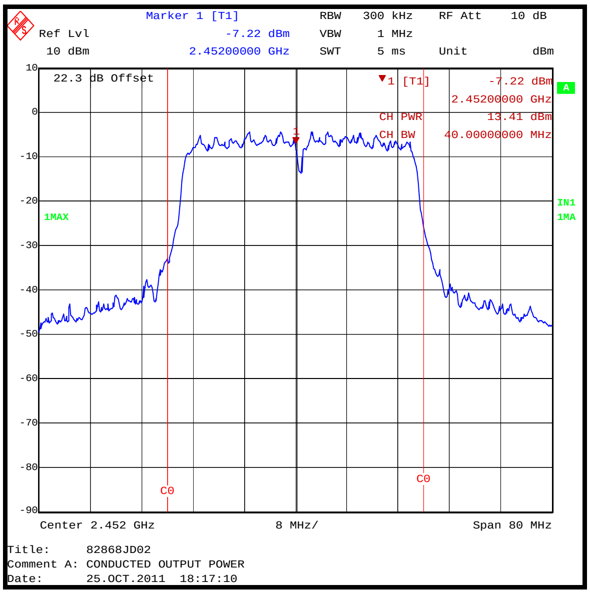


Transmitter Maximum Peak Output Power (continued)

Results: 15 Mbps / 40 MHz channel bandwidth

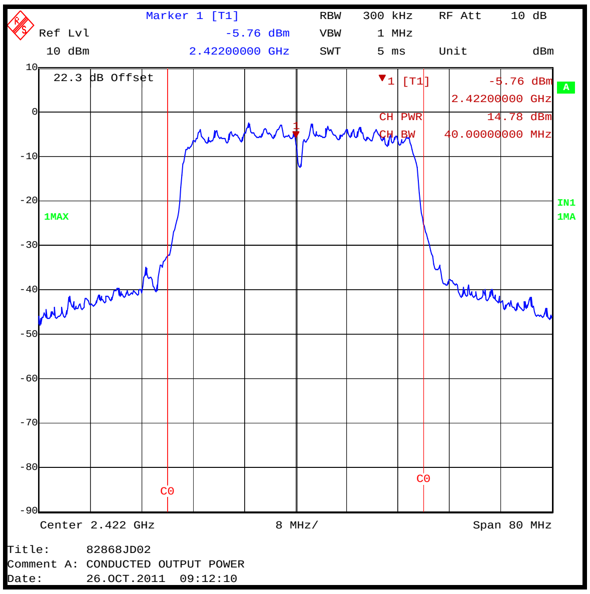


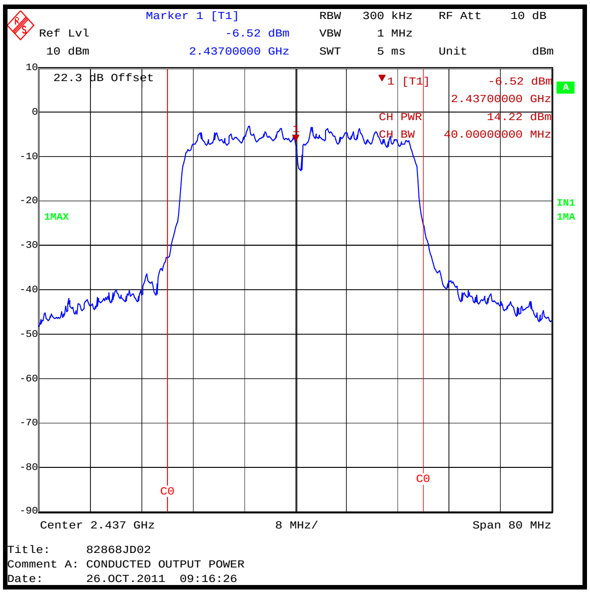


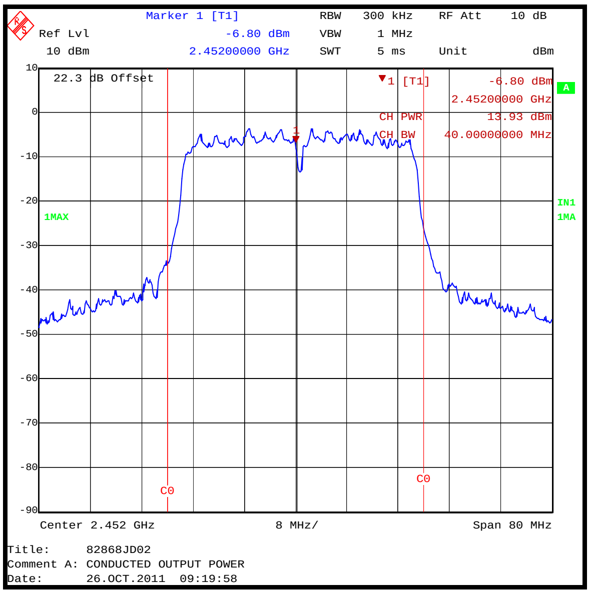


Transmitter Maximum Peak Output Power (continued)

Results: 45 Mbps / 40 MHz channel bandwidth

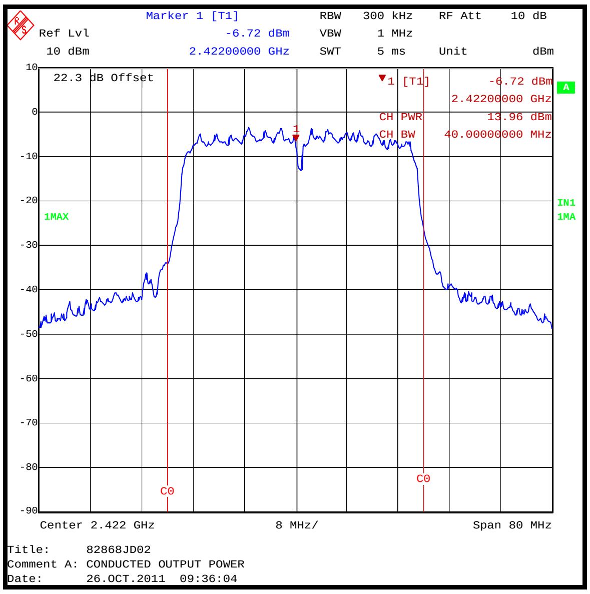


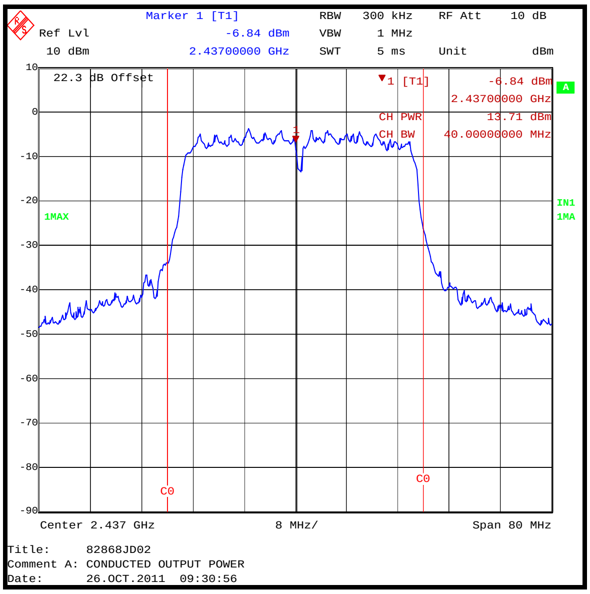


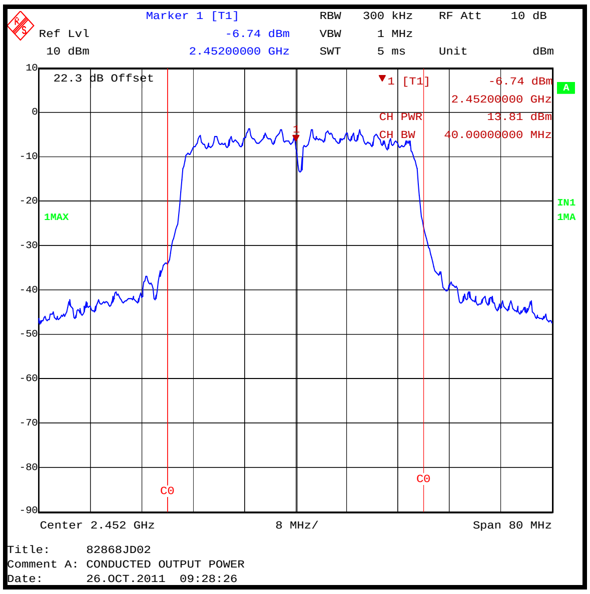


Transmitter Maximum Peak Output Power (continued)

Results: 90 Mbps / 40 MHz channel bandwidth

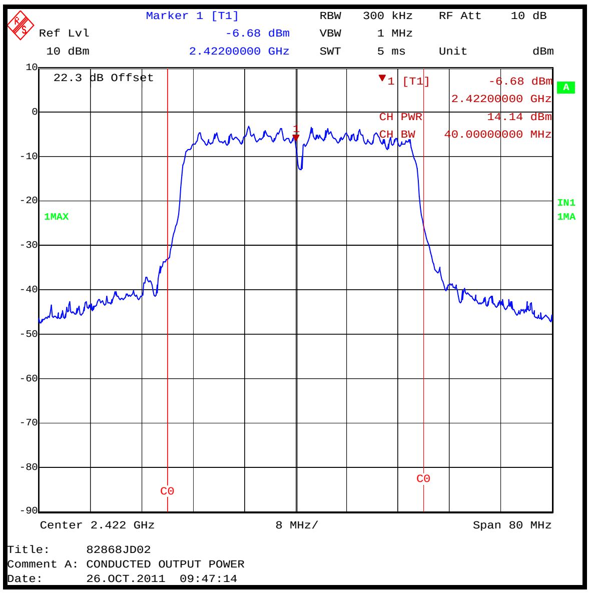


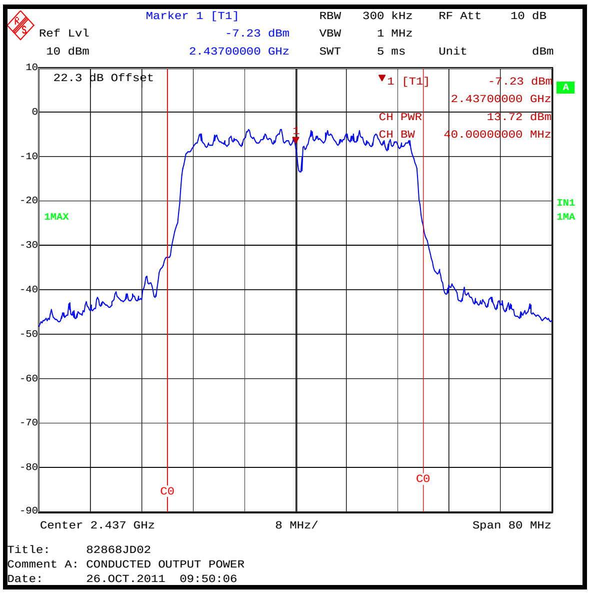


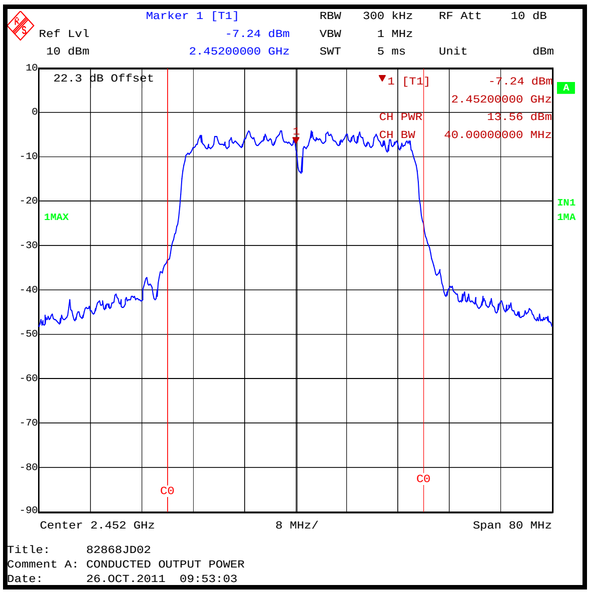


Transmitter Maximum Peak Output Power (continued)

Results: 150 Mbps / 40 MHz channel bandwidth







6. Measurement Uncertainty

No measurement or test can ever be perfect and the imperfections give rise to error of measurement in the results. Consequently the result of a measurement is only an approximation to the value of the measurand (the specific quantity subject to measurement) and is only complete when accompanied by a statement of the uncertainty of the approximation.

The expression of uncertainty of a measurement result allows realistic comparison of results with reference values and limits given in specifications and standards.

The uncertainty of the result may need to be taken into account when interpreting the measurement results.

The reported expanded uncertainties below are based on a standard uncertainty multiplied by an appropriate coverage factor such that a confidence level of approximately 95% is maintained. For the purposes of this document “approximately” is interpreted as meaning “effectively” or “for most practical purposes”.

Measurement Type	Range	Confidence Level (%)	Calculated Uncertainty
Conducted Maximum Peak Output Power	2.4 GHz to 2.4835 GHz	95%	±0.27 dB

The methods used to calculate the above uncertainties are in line with those recommended within the various measurement specifications. Where measurement specifications do not include guidelines for the evaluation of measurement uncertainty the published guidance of the appropriate accreditation body is followed.

Appendix 1. Test Equipment Used

RFI No.	Instrument	Manufacturer	Type No.	Serial No.	Date Calibration Due	Cal. Interval (months)
A1998	Attenuator	Huber & Suhner	6820.17.B	07101	09 Feb 2012	12
L1041	Test Receiver	Rohde & Schwarz	ESIB-26	100087.7490	27 Sep 2012	24

NB In accordance with UKAS requirements all the measurement equipment is on a calibration schedule.