

Huawei Technologies Co.,Ltd

Application
For
Certification

FCC ID: QISM210

OTT HDMI Dongle

Model: MediaQ M210

Bluetooth 4.0 Transceiver

Report No.: 130401027SZN-002

We hereby certify that the sample of the above item is considered to comply with the requirements of FCC Part 15, Subpart C for Intentional Radiator, mention 47 CFR [10-1-12]

Prepared and Checked by:

Approved by:

Sign on file

Lin Lin
Project Engineer

Billy Li
Supervisor
Date: April 8, 2013

- The test results reported in this test report shall refer only to the sample actually tested and shall not refer or be deemed to refer to bulk from which such a sample may be said to have been obtained.
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TRF no.: FCC 15C_Tx_b

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MEASUREMENT/TECHNICAL REPORT

Huawei Technologies Co.,Ltd - MODEL: MediaQ M210

FCC ID: QISM210

This report concerns (check one) Original Grant Class II Change

Equipment Type: DTS - Part 15 Digital Transmission Systems (Bluetooth 4.0 transmitter portion)

Deferred grant requested per 47 CFR 0.457(d)(1)(ii)? Yes No

If yes, defer until : _____
date

Company Name agrees to notify the Commission by: _____
date

of the intended date of announcement of the product so that the grant can be issued on that date.

Transition Rules Request per 15.37? Yes No

If no, assumed Part 15, Subpart C for intentional radiator - the new 47 CFR [10-01-12 Edition] provision.

Report prepared by:

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List of attached file

Exhibit type	File Description	Filename
Test Report	Test Report	report.pdf
Test Setup Photo	Radiated Emission	radiated photos.pdf
Test Setup Photo	Conducted Emission	conducted photos.pdf
External Photo	External Photo	external photos.pdf
Internal Photo	Internal Photo	internal photos.pdf
Block Diagram	Block Diagram	block.pdf
Schematics	Circuit Diagram	circuit.pdf
Operation Description	Technical Description	descri.pdf
ID Label/Location	Label Artwork and Location	label.pdf
User Manual	User Manual	manual.pdf / safety info.pdf
Cover Letter	Confidentiality Letter	request.pdf
RF Exposure report	RF exposure	RF exposure.pdf
Cover Letter	Letter of Agency	agency.pdf

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EXHIBIT 1

SUMMARY OF TEST RESULTS

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1.0 Summary of Test

Huawei Technologies Co.,Ltd - MODEL: MediaQ M210

FCC ID: QISM210

TEST	REFERENCE	RESULTS
Max. Output power	15.247(b)(3)	Pass
6 dB Bandwidth	15.247(a)(2)	Pass
Max. Power Density	15.247(e)	Pass
Out of Band Antenna Conducted Emission	15.247(d)	Pass
Radiated Emission in Restricted Bands	15.247(d)	Pass
AC Conducted Emission	15.207	Pass
Antenna Requirement	15.203	Pass (See Notes)

Notes: The EUT uses Integral Antenna which in accordance to Section 15.203 is considered sufficient to comply with the provisions of this section.

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EXHIBIT 2

GENERAL DESCRIPTION

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2.0 General Description

2.1 Product Description

The Equipment Under Test (EUT) is a OTT HDMI Dongle, Model: MediaQ M210 (OS version: Smart operating system) with internal Bluetooth 4.0 function operating at 2402-2480MHz, 40 channels with 2MHz channel spacing. The EUT was powered by AC/DC Adapter (input: 120Vac, 60Hz; output: 5Vdc, 1A). For more detailed features description, please refer to the user's manual.

Type of Modulation: GFSK.

Antenna Type: Integral Antenna.

For electronic filing, the brief circuit description is saved with filename: descri.pdf.

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2.2 Related Submittal(s) Grants

This is an application for certification of:

DTS- Part 15 Digital Transmission Systems (Bluetooth 4.0 transmitter portion)

Remaining portions are subject to the following procedures:

Host:

1. WiFi Transceiver: (130401027SZN-001).
2. OTT HDMI Dongle (Version: Smart operating system): (130401027SZN-003).

Remote controller:

3. Bluetooth 4.0 remote controller (130401027SZN-004)

2.3 Test Methodology

Both AC mains line-conducted and radiated emission measurements were performed according to the procedures in ANSI C63.4 (2009) and KDB 558074. Radiated emission measurement was performed in semi-anechoic chamber and conducted emission measurement was performed in shield room. For radiated emission measurement, preliminary scans were performed in the semi-anechoic chamber only to determine the worst case modes. All radiated tests were performed at an antenna to EUT distance of 3 meters, unless stated otherwise in the “Justification Section” of this Application. All other measurements were made in accordance with the procedures in part 2 of CFR 47.

2.4 Test Facility

The Semi-Anechoic chamber and shield room used to collect the radiated data and conducted data are **Intertek Testing Services Shenzhen Ltd. Kejiyuan Branch** and located at 6F, Block D, Huahan Building, Langshan Road, Nanshan District, Shenzhen, P. R. China. This test facility and site measurement data have been fully placed on file with the FCC (Registration Number: 242492).

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EXHIBIT 3

SYSTEM TEST CONFIGURATION

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3.0 System Test Configuration

3.1 Justification

For emissions testing, the equipment under test (EUT) setup to transmit continuously to simplify the measurement methodology. Care was taken to ensure proper power supply voltages during testing. During testing, all cables were manipulated to produce worst case emissions. The EUT was powered by AC/DC Adapter (input: 120Vac, 60Hz; output: 5Vdc, 1A) during the test. Only the worst case data was reported.

The signal is maximized through rotation and placement in the three orthogonal axes. The antenna height and polarization are varied during the search for maximum signal level. The antenna height is varied from 1 to 4 meters. Radiated emissions are taken at three meters unless the signal level is too low for measurement at that distance. If necessary, a pre-amplifier is used and/or the test is conducted at a closer distance.

All readings are extrapolated back to the equivalent three meter reading using inverse scaling with distance. Analyzer resolution is 100 kHz or greater for frequencies below 1000 MHz. The resolution is 1 MHz or greater for frequencies above 1000 MHz. The spurious emissions more than 20 dB below the permissible value are not reported.

Radiated emission measurement were performed the lowest radio frequency signal generated in the device which is greater than 9 kHz to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.

3.2 EUT Exercising Software

The EUT exercise program (provided by client) used during radiated and conducted testing was designed to exercise the various system components in a manner similar to a typical use. The worst case configuration is used in all specified testing.

The parameters of test software setting:

During the test, Channel and power controlling software provided by the applicant was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the application and is going to be fixed on the firmware of the end product.

Power Parameters of Bluetooth 4.0

Channel No.	Output Power (dBm)	Data rate	Modulation type
0	0	1Mbps	GFSK
20	0	1Mbps	GFSK
39	0	1Mbps	GFSK

Note: only one antenna is used for transmission.

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3.3 Special Accessories

Shielded USB cable & shielded HDMI extension cable were attached with the EUT.

3.4 Measurement Uncertainty

When determining of the test conclusion, the Measurement Uncertainty of test has been considered.

Uncertainty and Compliance – Unless the standard specifically states that measured values are to be extended by the measurement uncertainty in determining compliance, all compliance determinations are based on the actual measured value.

3.5 Equipment Modification

Any modifications installed previous to testing by Huawei Technologies Co.,Ltd will be incorporated in each production model sold / leased in the United States.

No modifications were installed by Intertek Testing Services Shenzhen Ltd. Kejiyuan Branch.

3.6 Support Equipment List and Description

This product was tested in the following configuration:

Refer List:

Description	Manufacturer	Model No.
TV	Sony	KDL-24EX520
HDMI extension cable	Huawei	Shielded, Length: 32cm
USB Cable	Huawei	Shielded, Length: 120cm
AC/DC Adapter (Huawei)	Huntkey	HW-050100U1W Input: 100-240Vac, 50/60Hz; Output: 5Vdc, 1A
	Tech-Power	

Note: The Model: M210 have two different AC/DC Adapter power suppliers, which have already arranged the test accordingly, and the worst case data was record in this report.

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EXHIBIT 4

MEASUREMENT RESULTS

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Applicant: Huawei Technologies Co.,Ltd
Model: MediaQ M210

Date of Test: April 7, 2013

4.0 **Measurement Results**

4.1 Maximum Conducted Output Power at Antenna Terminals, FCC Rules 15.247(b)(3):

- The antenna power of the EUT was connected to the input of a spectrum analyzer. Power was read directly and cable loss correction was added to the reading to obtain power at the EUT antenna terminals.
- The antenna port of the EUT was connected to the input of a spectrum analyzer. The analyzer was set according to the FCC KDB 558074 spectrum analyzer's integrated band power measurement function with band limits set equal to the EBW band edges and power was read directly in dBm. External attenuation and cable loss were compensated from the measured value.

For antennas with gains of 6 dBi or less, maximum allowed Transmitter output is 1 watt (+30 dBm).

Bluetooth 4.0 (Antenna Gain < 3.0dBi) (GFSK, 1Mbps)		
Frequency (MHz)	Output in dBm	Output in mWatt
Low Channel: 2402	-0.15	0.97
Middle Channel: 2442	0.14	1.03
High Channel: 2480	0.30	1.07

Cable loss: 0.6 dB External Attenuation: 0 dB

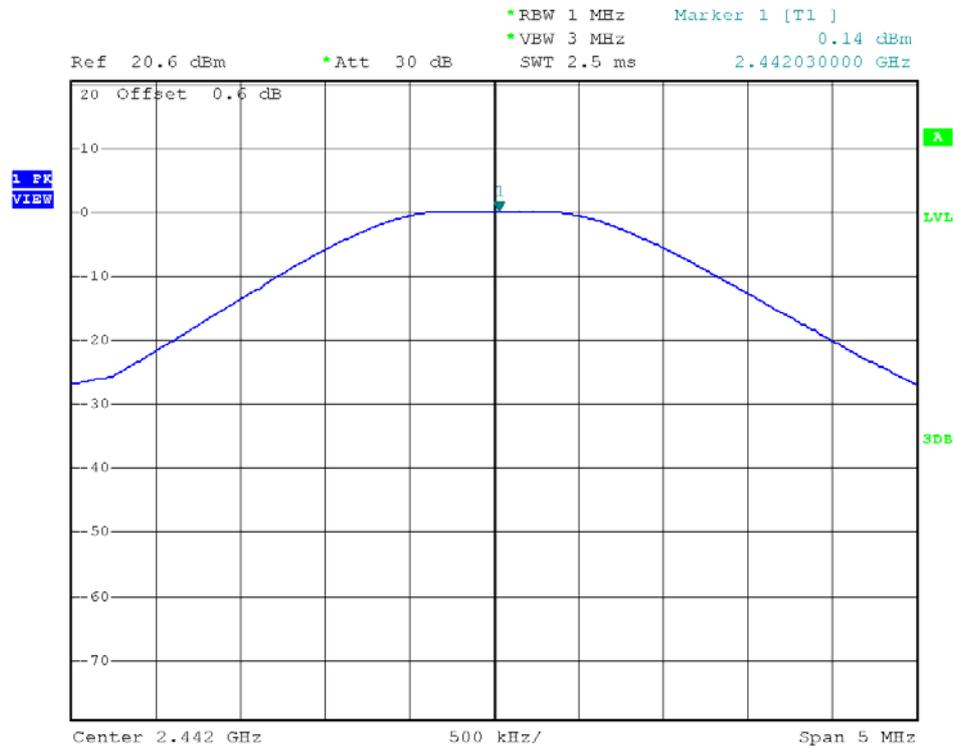
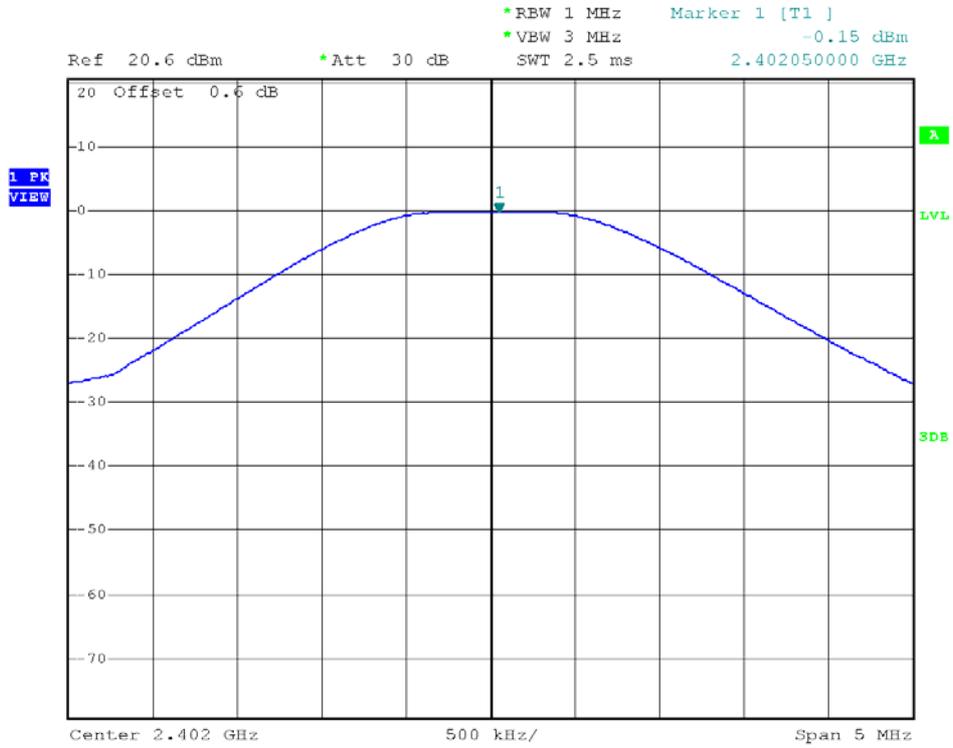
Cable loss, external attenuation has been included in OFFSET function

EUT max. output level = 0.30dBm

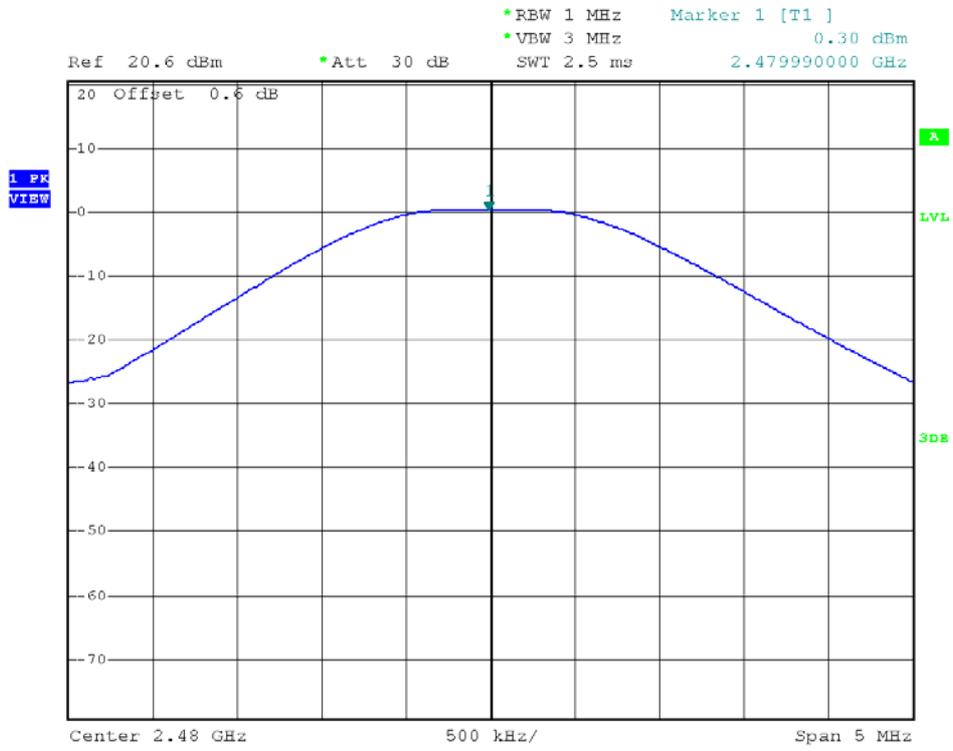
For RF Exposure, the information is saved with filename: RF exposure.pdf.

The test plots are attached as below.

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Applicant: Huawei Technologies Co.,Ltd
Model: MediaQ M210

Date of Test: April 7, 2013

4.2 Minimum 6 dB RF Bandwidth, FCC Rule 15.247(a)(2):

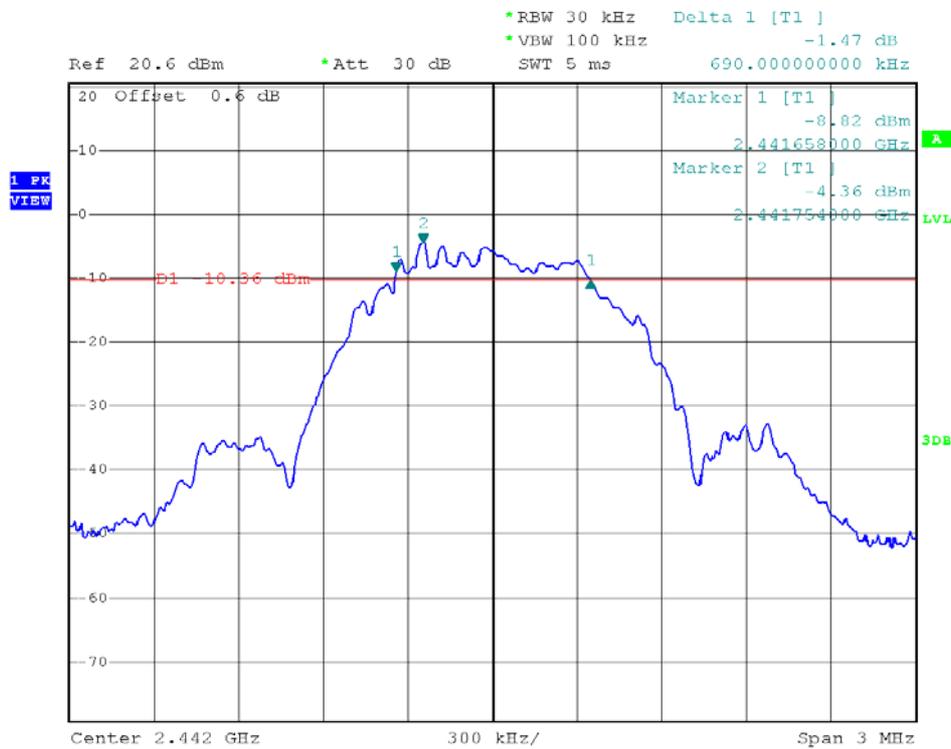
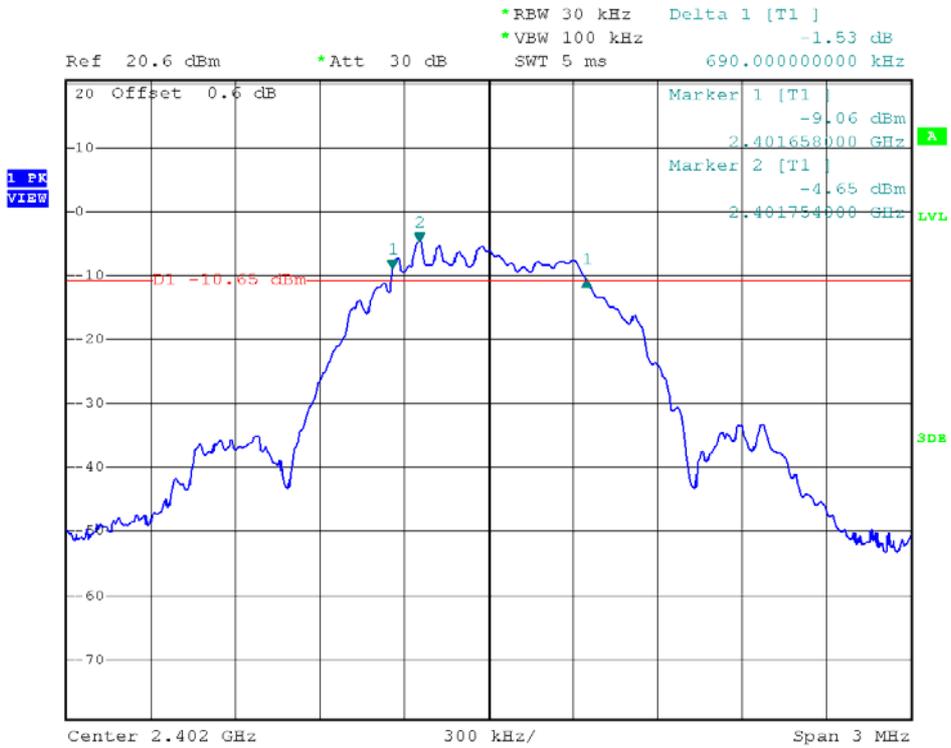
The antenna port of the EUT was connected to the input of a spectrum analyzer. Analyzer RES BW was set to 1-5 % of the emission bandwidth and not to exceed 100 KHz according to FCC KDB 558074. For each RF output channel investigated, the spectrum analyzer center frequency was set to the channel carrier. A PEAK output reading was taken, a DISPLAY line was drawn 6 dB lower than PEAK level. The 6dB bandwidth was determined from where the channel output spectrum intersected the display line.

Limit: The 6 dB Bandwidth is at least 500 kHz.

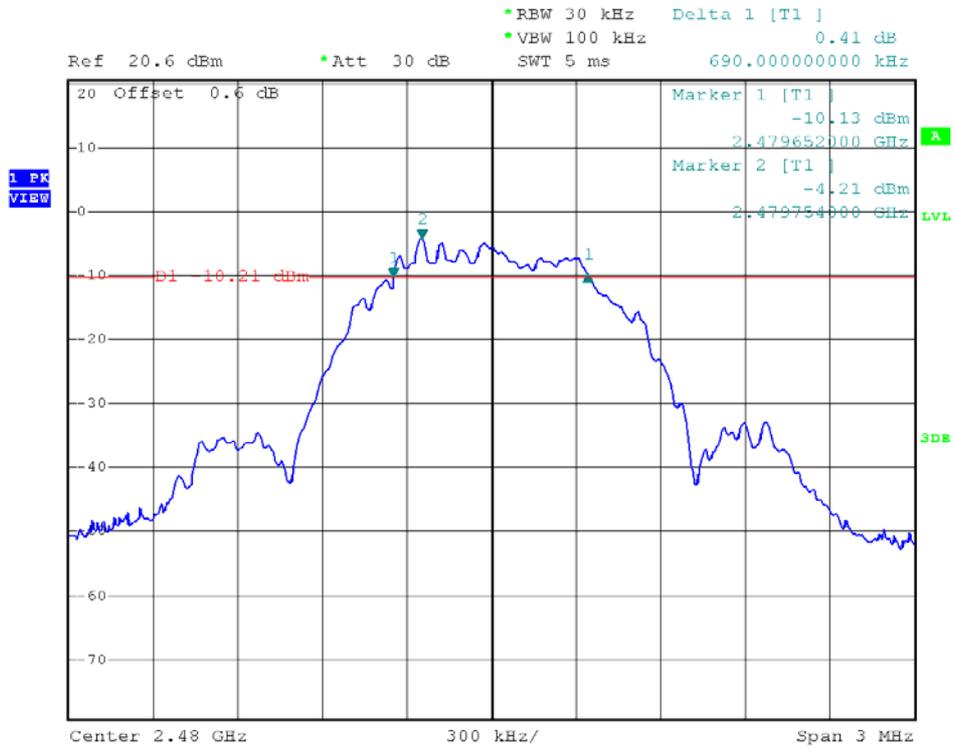
Bluetooth 4.0 (GFSK, 1Mbps)	
Frequency (MHz)	6 dB Bandwidth (MHz)
Low Channel: 2402	0.69
Middle Channel: 2442	0.69
High Channel: 2480	0.69

The test plots are attached as below.

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Applicant: Huawei Technologies Co.,Ltd
Model: MediaQ M210

Date of Test: April 7, 2013

4.3 Maximum Power Density Reading, FCC Rule 15.247(e):

The Measurement Procedure PKPSD was set according to the FCC KDB 558074.

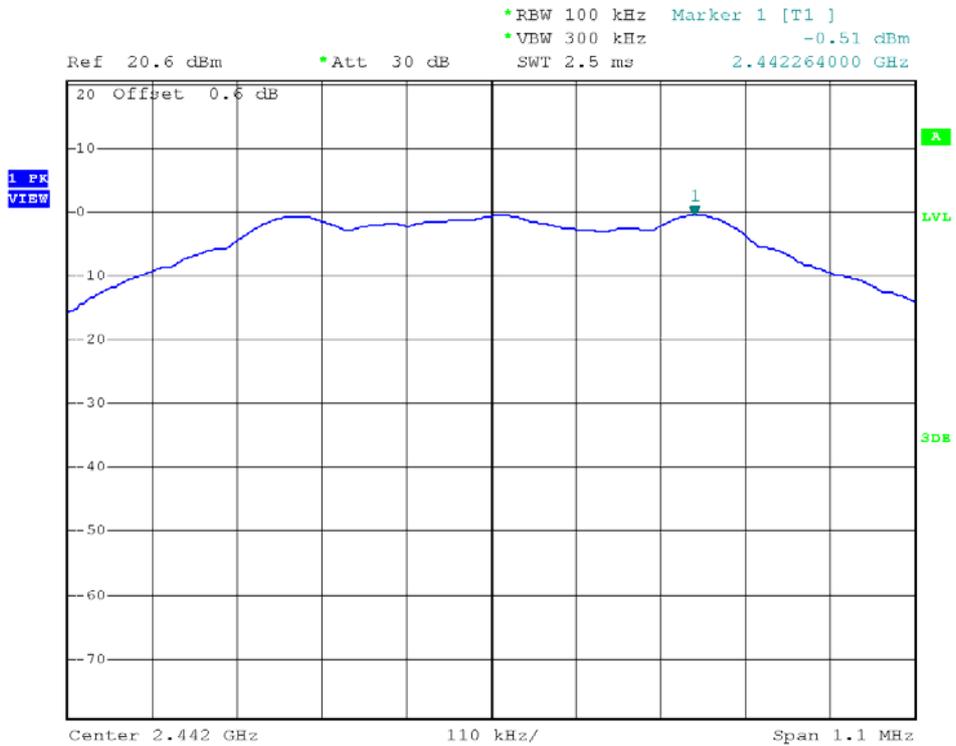
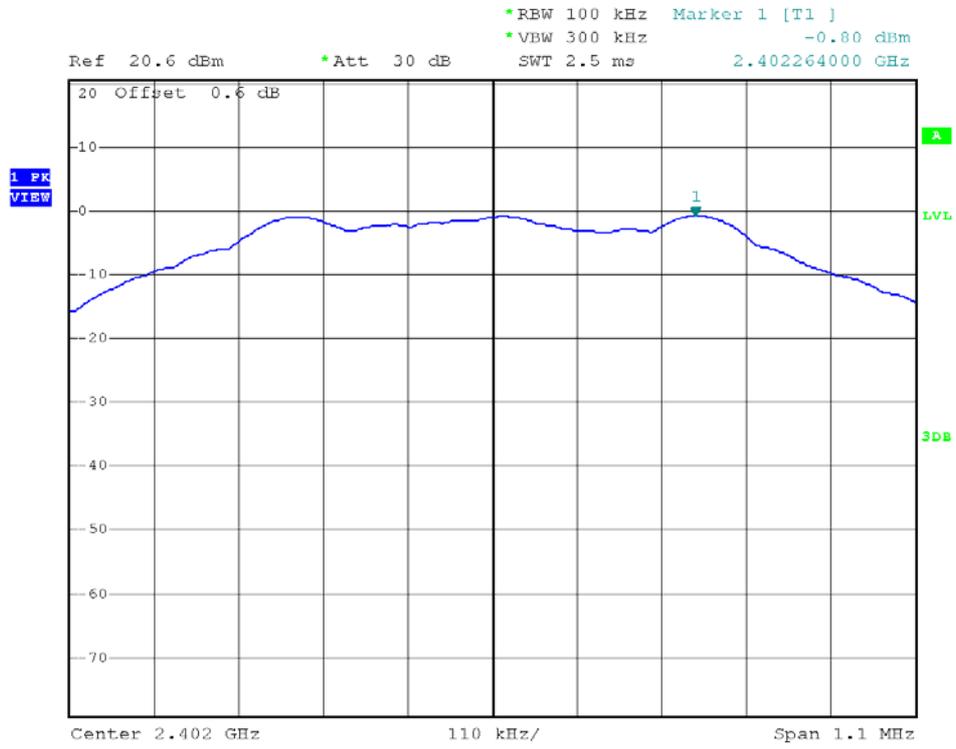
Antenna output of the EUT was coupled directly to spectrum analyzer; if an external attenuator and/or cable was used, these losses are compensated for with the analyzer OFFSET function.

Limit: The Power Density does not exceed 8dBm/ 3 kHz.

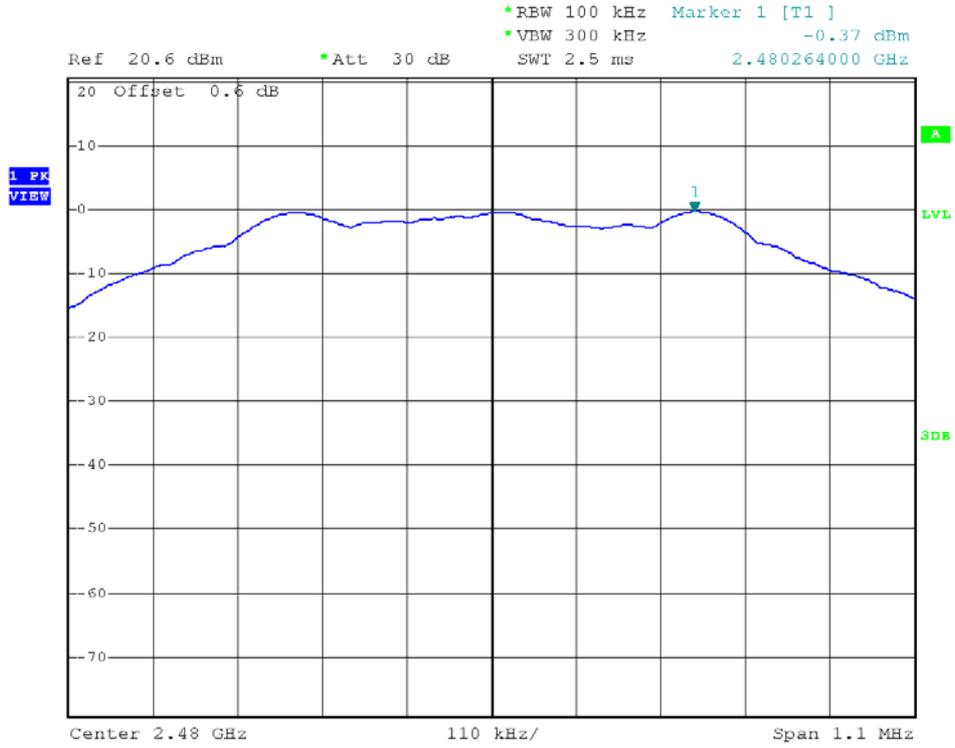
Bluetooth 4.0 (GFSK, 1Mbps)	
Frequency (MHz)	Power Density with RBW 100KHz (dBm)
Low Channel: 2402	-0.80
Middle Channel: 2442	-0.51
High Channel: 2480	-0.37

The test plots are attached as below.

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Applicant: Huawei Technologies Co.,Ltd
Model: MediaQ M210

Date of Test: April 7, 2013

4.4 Out of Band Conducted Emissions, FCC Rule 15.247(d)

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. The Measurement Procedure was set according to the FCC KDB 558074.

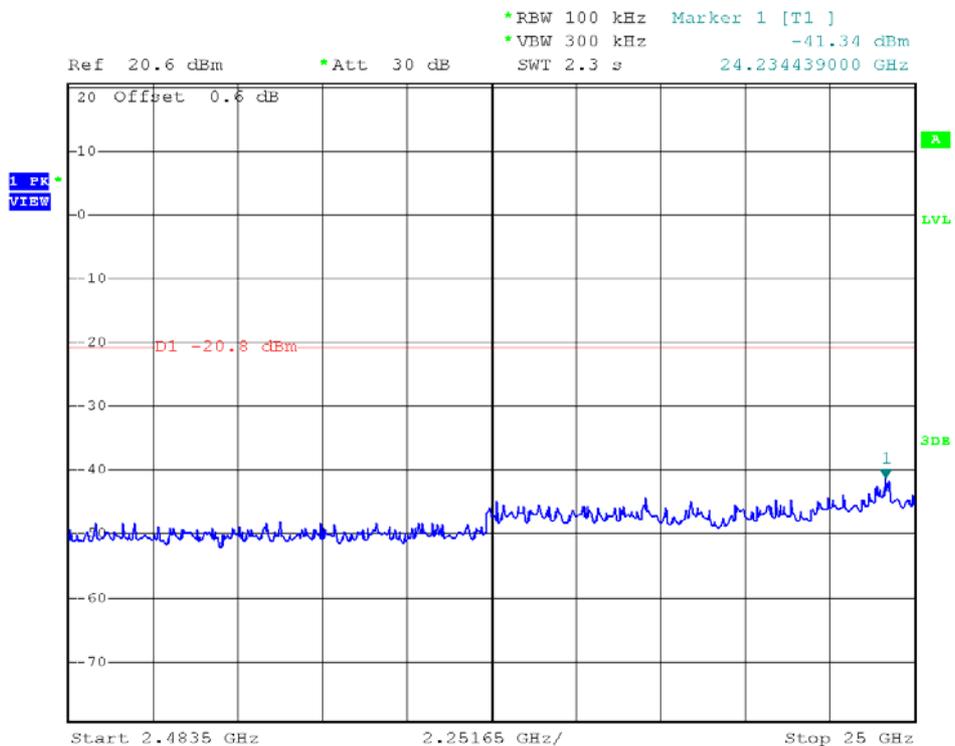
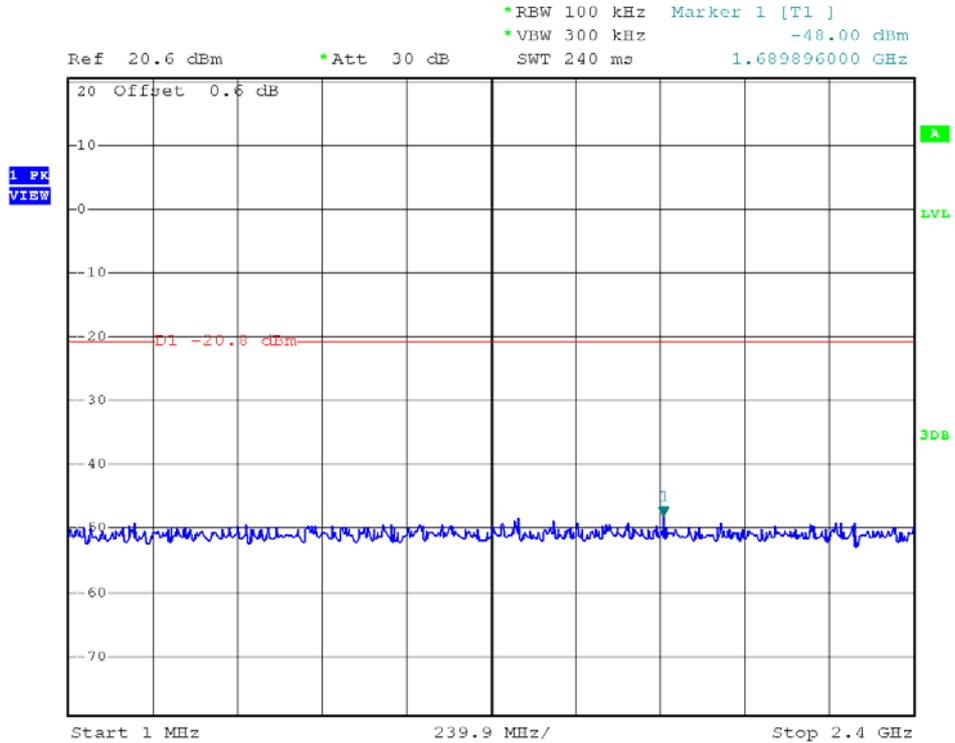
Refer to the attached test plots for out of band conducted emissions data with rate of 1Mbps for Bluetooth 4.0.

The test plots showed all spurious emission up to the tenth harmonic was measured and they were found to be at least 20 dB below the highest level of the desired power in the passband.

The test plots are attached as below.

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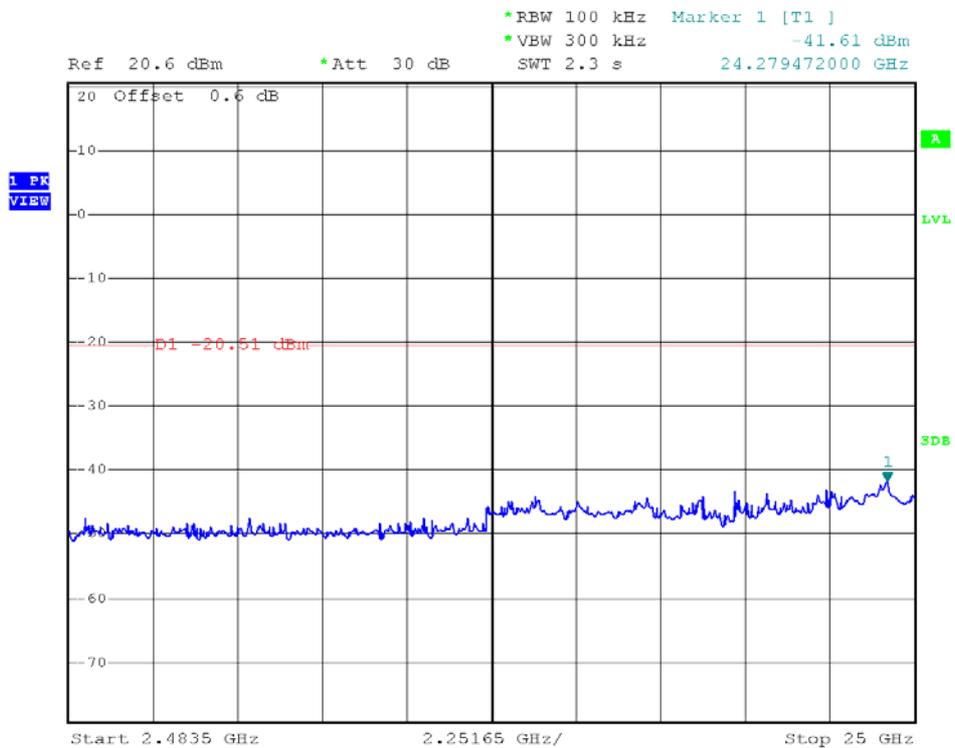
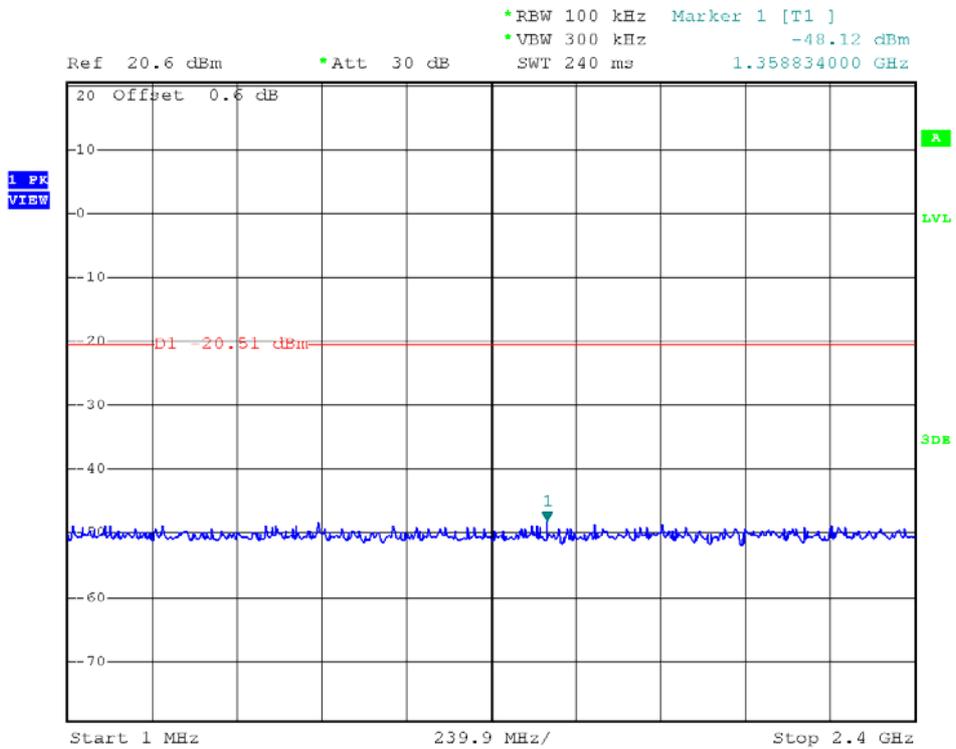
Channel 0 (2402MHz) Reference Level: -0.80dBm



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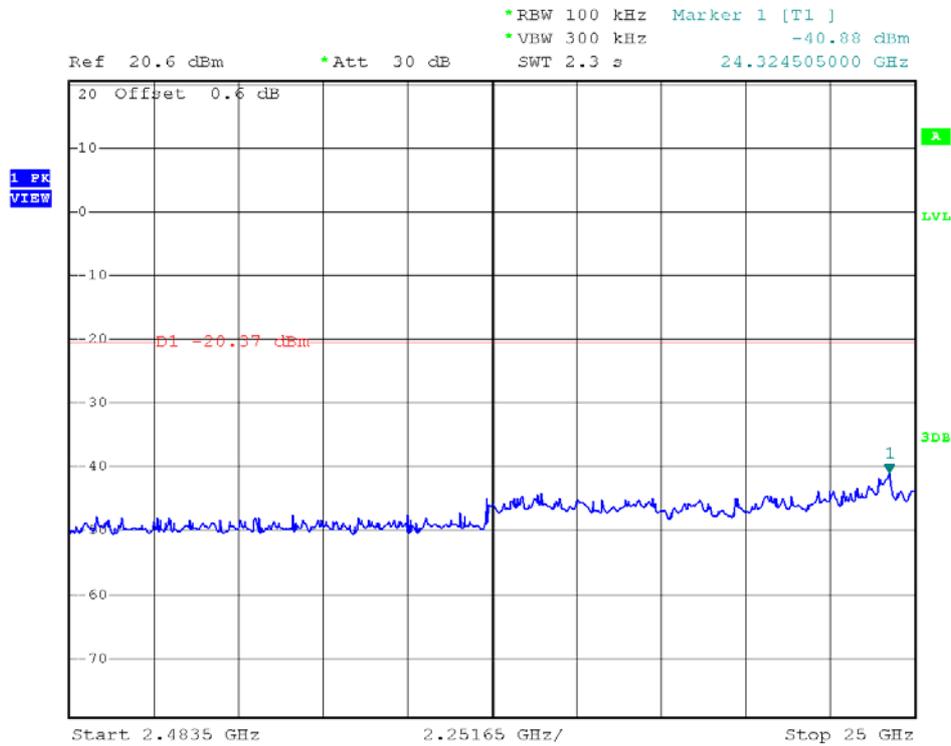
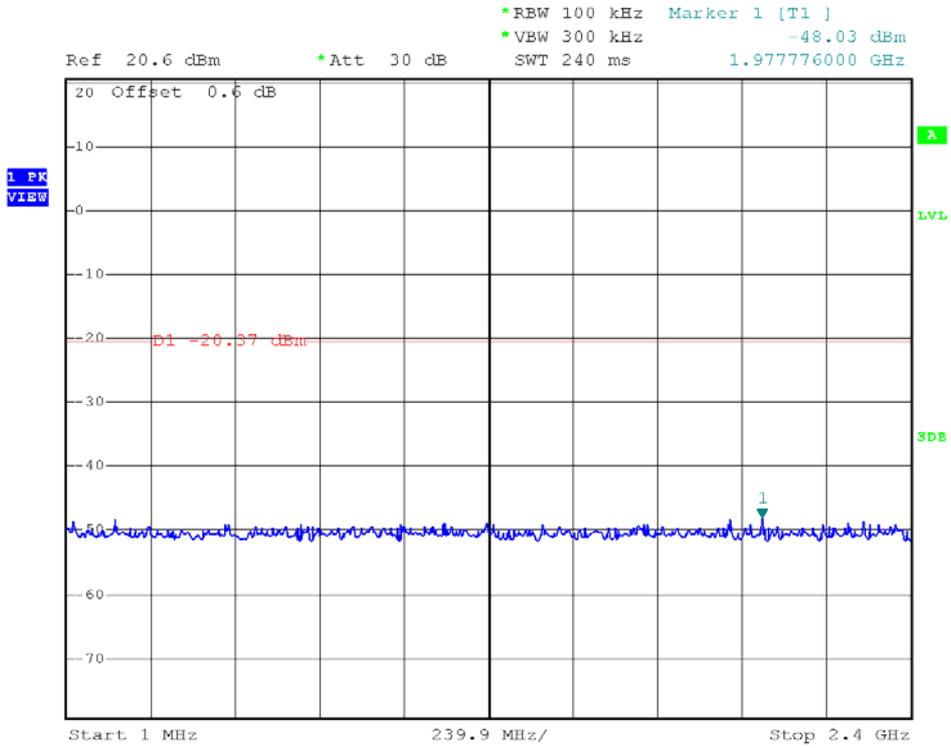
Channel 20 (2442MHz) Reference Level: -0.51dBm



TRF no.: FCC 15C_TX_b
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Channel 39 (2480MHz) Reference Level: -0.37dBm



TRF no.: FCC 15C_TX_b
FCC ID: QISM210
Report No.: 130401027SZN-002

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Applicant: Huawei Technologies Co.,Ltd
Model: MediaQ M210

Date of Test: April 7, 2013

4.5 Out of Band Radiated Emissions (for emissions in 4.4 above that are less than 20dB below carrier), FCC Rule 15.247(d):

For out of band emissions that are close to or that exceed the 20dB attenuation requirement described in the specification, radiated measurements were performed at a 3m separation distance to determine whether these emissions complied with the general radiated emission requirement.

- Not required, since all emissions are more than 20dB below fundamental
- See attached data sheet

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Applicant: Huawei Technologies Co.,Ltd
Model: MediaQ M210

Date of Test: April 7, 2013

4.6 Transmitter Radiated Emissions in Restricted Bands, FCC Rule 15.35(b), (c):

Data is included of the worst case configuration (the configuration which resulted in the highest emission levels). A sample calculation, configuration photographs and data tables of the emissions are included. All measurements were performed with peak detection unless otherwise specified.

The data on the following pages list the significant emission frequencies, the limit and the margin of compliance.

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Applicant: Huawei Technologies Co.,Ltd
Model: MediaQ M210

Date of Test: April 7, 2013

4.7 Field Strength Calculation

The field strength is calculated by adding the reading on the Spectrum Analyzer to the factors associated with preamplifiers (if any), antennas, cables, pulse desensitization and average factors (when specified limit is in average and measurements are made with peak detectors). A sample calculation is included below.

$$FS = RA + AF + CF - AG + PD$$

Where

- FS = Field Strength in dB μ V/m
- RA = Receiver Amplitude (including preamplifier) in dB μ V
- CF = Cable Attenuation Factor in dB
- AF = Antenna Factor in dB
- AG = Amplifier Gain in dB
- PD = Pulse Desensitization in dB

In the radiated emission table which follows, the reading shown on the data table may reflect the preamplifier gain. An example of the calculations, where the reading does not reflect the preamplifier gain, follows:

$$FS = RA + AF + CF - AG + PD$$

Example

Assume a receiver reading of 62.0 dB μ V is obtained. The antenna factor of 7.4 dB and cable factor of 1.6 dB is added. The amplifier gain of 29 dB is subtracted. The pulse desensitization factor of the spectrum analyzer was 0 dB. The net field strength for comparison to the appropriate emission limit is 32 dB μ V/m. This value in dB μ V/m was converted to its corresponding level in μ V/m.

$$\begin{aligned} RA &= 62.0 \text{ dB}\mu\text{V} \\ AF &= 7.4 \text{ dB} \\ CF &= 1.6 \text{ dB} \\ AG &= 29.0 \text{ dB} \\ PD &= 0 \text{ dB} \\ FS &= 62 + 7.4 + 1.6 - 29 + 0 = 42 \text{ dB}\mu\text{V/m} \end{aligned}$$

$$\text{Level in mV/m} = \text{Common Antilogarithm} [(42 \text{ dB}\mu\text{V/m})/20] = 125.9 \mu\text{V/m}$$

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Applicant: Huawei Technologies Co.,Ltd
Model: MediaQ M210

Date of Test: April 7, 2013

4.8 Radiated Spurious Emission

Worst Case Radiated Spurious Emission TX-Channel 0 at 2389.293MHz is passed by 5.0 dB margin.

For the electronic filing, the worst case radiated emission configuration photographs are saved with filename: radiated photos.pdf.

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Applicant: Huawei Technologies Co.,Ltd
Model: MediaQ M210
Worst Case Operating Mode: Tx (Channel 0)

Date of Test: April 7, 2013

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dB μ V/m)	Limit at 3m (dB μ V/m)	Margin (dB)
Horizontal	143.345	31.8	20.0	11.6	23.4	43.5	-20.1
Horizontal	445.645	39.2	20.0	13.2	32.4	46.0	-13.6
Horizontal	850.135	33.8	20.0	22.6	36.4	46.0	-9.6
Vertical	63.465	38.9	20.0	13.2	32.1	40.0	-7.9
Vertical	148.345	34.9	20.0	16.9	31.8	43.5	-11.7
Vertical	936.465	36.8	20.0	22.6	39.4	46.0	-6.6

- NOTES:
1. Quasi-Peak detector is used except for others stated.
 2. All measurements were made at 3 meters. Harmonic emissions not detected at the 3-meter distances were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other harmonic emissions than those reported were detected at a test distance of 0.3-meter.
 3. Negative value in the margin column shows emission below limit.
 4. All emissions are below the QP limit.

INTERTEK TESTING SERVICES

Applicant: Huawei Technologies Co.,Ltd
 Model: MediaQ M210
 Mode: Tx (Channel 0)

Date of Test: April 7, 2013

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dB μ V/m)	Peak Limit at 3m (dB μ V/m)	Margin (dB)
Horizontal	*4804.000	56.2	36.1	35.5	55.6	74.0	-18.4
Horizontal	*2389.293	66.8	36.7	28.1	58.2	74.0	-15.8

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dB μ V/m)	Average Limit at 3m (dB μ V/m)	Margin (dB)
Horizontal	*4804.000	46.9	36.1	35.5	46.3	54.0	-7.7
Horizontal	*2389.293	57.6	36.7	28.1	49.0	54.0	-5.0

- NOTES:
1. Peak detector is used for the emission measurement (RBW=1MHz, VBW=3MHz for Peak data, RBW=1MHz, VBW=10Hz for Average data).
 2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
 3. Negative value in the margin column shows emission below limit.
 4. Horn antenna used for the emission over 1000MHz.
- * Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

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Applicant: Huawei Technologies Co.,Ltd
 Model: MediaQ M210
 Mode: Tx (Channel 20)

Date of Test: April 7, 2013

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dB μ V/m)	Peak Limit at 3m (dB μ V/m)	Margin (dB)
Horizontal	*4884.000	56.5	36.1	35.5	55.9	74.0	-18.1
Horizontal	*7326.000	57.2	36.2	36.5	57.5	74.0	-16.5

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dB μ V/m)	Average Limit at 3m (dB μ V/m)	Margin (dB)
Horizontal	*4884.000	47.5	36.1	35.5	46.9	54.0	-7.1
Horizontal	*7326.000	47.9	36.2	36.5	48.2	54.0	-5.8

- NOTES:
1. Peak detector is used for the emission measurement (RBW=1MHz, VBW=3MHz for Peak data, RBW=1MHz, VBW=10Hz for Average data).
 2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
 3. Negative value in the margin column shows emission below limit.
 4. Horn antenna used for the emission over 1000MHz.
- * Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

INTERTEK TESTING SERVICES

Applicant: Huawei Technologies Co.,Ltd
 Model: MediaQ M210
 Mode: Tx (Channel 39)

Date of Test: April 7, 2013

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dB μ V/m)	Peak Limit at 3m (dB μ V/m)	Margin (dB)
Horizontal	*4960.000	56.8	36.1	35.5	56.2	74.0	-17.8
Horizontal	*2484.566	67.5	36.7	28.1	58.9	74.0	-15.1

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dB μ V/m)	Average Limit at 3m (dB μ V/m)	Margin (dB)
Horizontal	*4960.000	47.9	36.1	35.5	47.3	54.0	-6.7
Horizontal	*2484.566	57.1	36.7	28.1	48.5	54.0	-5.5

- NOTES:
1. Peak detector is used for the emission measurement (RBW=1MHz, VBW=3MHz for Peak data, RBW=1MHz, VBW=10Hz for Average data).
 2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
 3. Negative value in the margin column shows emission below limit.
 4. Horn antenna used for the emission over 1000MHz.
- * Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

INTERTEK TESTING SERVICES

4.9 Conducted Emission

Worst Case Live-Conducted emission at 0.636MHz is Passed by 8.2 dB margin

For electronic filing, the worst case conducted emission configuration photograph is saved with filename: conducted photos.pdf.

INTERTEK TESTING SERVICES

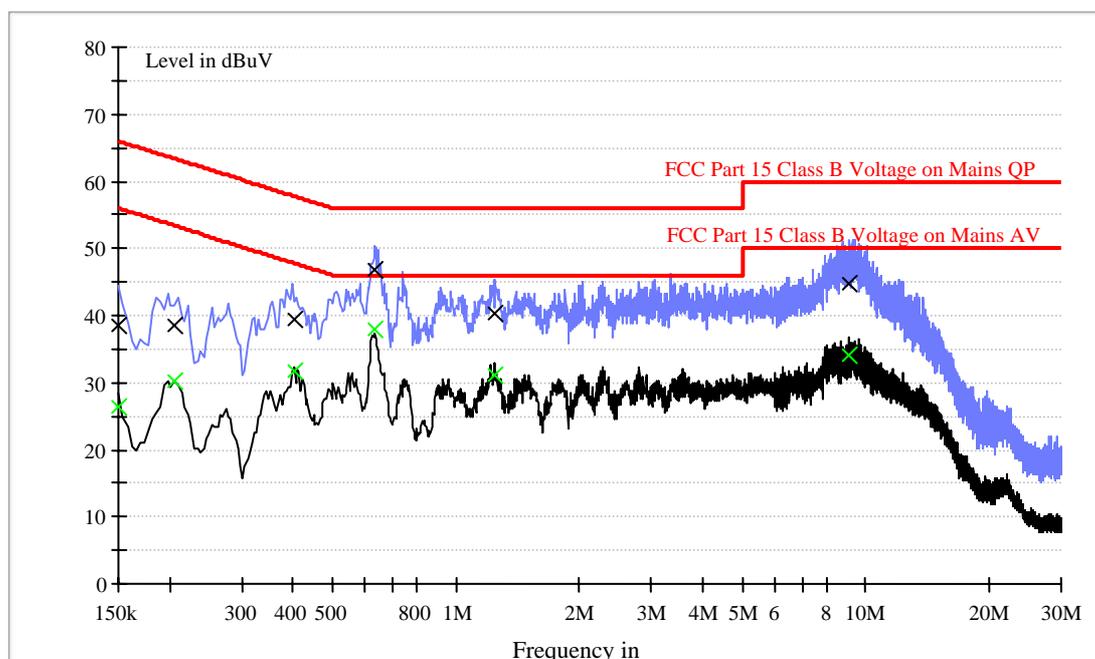
Applicant: Huawei Technologies Co.,Ltd

Date of Test: April 7, 2013

Model: MediaQ M210

Worst Case Operating Mode: Tx Channel 0 (AC/DC Adapter: Huntkey)

Conducted Emission Test - FCC



Result Table QP

Frequency (MHz)	QuasiPeak (dB μ V)	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)
0.150	38.5	L1	9.7	27.5	66.0
0.206	38.4	L1	9.6	25.0	63.4
0.402	39.3	L1	9.6	18.5	57.8
0.636	46.9	L1	9.6	9.1	56.0
1.242	40.2	L1	9.7	15.8	56.0
9.078	44.9	L1	10.0	15.1	60.0

Result Table AV

Frequency (MHz)	Average (dB μ V)	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)
0.150	26.3	L1	9.7	29.7	56.0
0.206	30.3	L1	9.6	23.1	53.4
0.402	31.6	L1	9.6	16.2	47.8
0.636	37.8	L1	9.6	8.2	46.0
1.242	31.0	L1	9.7	15.0	46.0
9.078	34.1	L1	10.0	15.9	50.0

TRF no.: FCC 15C_TX_b

FCC ID: QISM210

Report No.: 130401027SZN-002

INTERTEK TESTING SERVICES

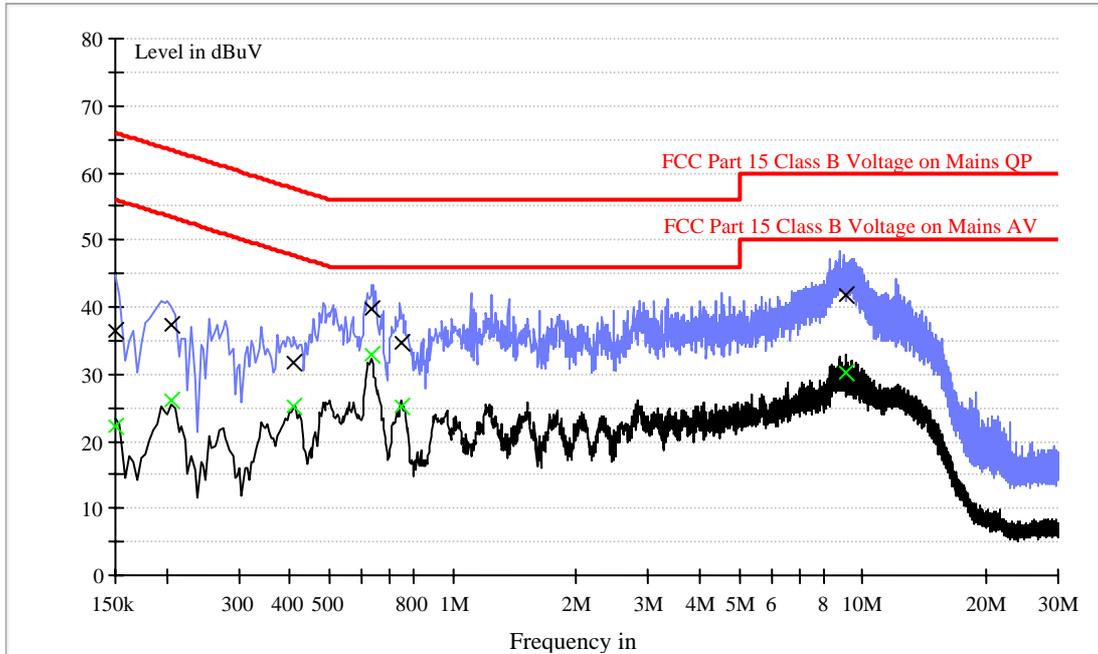
Applicant: Huawei Technologies Co.,Ltd

Date of Test: April 7, 2013

Model: MediaQ M210

Worst Case Operating Mode: Tx Channel 0 (AC/DC Adapter: Huntkey)

Conducted Emission Test - FCC



Result Table QP

Frequency (MHz)	QuasiPeak (dB μ V)	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)
0.150	36.6	N	9.7	29.4	66.0
0.206	37.2	N	9.6	26.2	63.4
0.410	31.8	N	9.6	25.8	57.6
0.634	39.6	N	9.6	16.4	56.0
0.746	34.5	N	9.7	21.5	56.0
9.058	41.8	N	10.0	18.2	60.0

Result Table AV

Frequency (MHz)	Average (dB μ V)	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)
0.150	22.1	N	9.7	33.9	56.0
0.206	25.9	N	9.6	27.5	53.4
0.410	25.3	N	9.6	22.3	47.6
0.634	32.9	N	9.6	13.1	46.0
0.746	25.2	N	9.7	20.8	46.0
9.058	30.2	N	10.0	19.8	50.0

TRF no.: FCC 15C_TX_b

FCC ID: QISM210

Report No.: 130401027SZN-002

INTERTEK TESTING SERVICES

Applicant: Huawei Technologies Co.,Ltd
Model: MediaQ M210

Date of Test: April 7, 2013

4.10 Radiated Emissions from Digital Section of Transceiver, FCC Ref: 15.109

Not required - No digital part

Test results are attached

Included in the separated report.

INTERTEK TESTING SERVICES

Applicant: Huawei Technologies Co.,Ltd
Model: MediaQ M210

Date of Test: April 7, 2013

4.11 Transmitter Duty Cycle Calculation and Measurements, FCC Rule 15.35(b), (c)

The EUT antenna output port was connected to the input of the spectrum analyzer. The analyzer center frequency was set to EUT RF channel carrier. The SWEP function on the analyzer was set to ZERO SPAN. The Transmitter ON time was determined from the resultant time-amplitude display:

	See attached spectrum analyzer chart (s) for Transmitter timing
	See Transmitter timing diagram provided by manufacturer
x	Not applicable, duty cycle was not used.

INTERTEK TESTING SERVICES

EXHIBIT 5

EQUIPMENT PHOTOGRAPHS

INTERTEK TESTING SERVICES

5.0 Equipment Photographs

For electronic filing, the photographs are saved with filename: external photos.doc & internal photos.pdf.

INTERTEK TESTING SERVICES

EXHIBIT 6

PRODUCT LABELLING

INTERTEK TESTING SERVICES

6.0 Product Labeling

For electronic filing, the FCC ID label artwork and location is saved with filename: label.pdf.

INTERTEK TESTING SERVICES

EXHIBIT 7

TECHNICAL SPECIFICATIONS

INTERTEK TESTING SERVICES

7.0 Technical Specifications

For electronic filing, the block diagram and circuit diagram are saved with filename: block.pdf and circuit.pdf respectively.

INTERTEK TESTING SERVICES

EXHIBIT 8

INSTRUCTION MANUAL

INTERTEK TESTING SERVICES

8.0 Instruction Manual

For electronic filing, a preliminary copy of the Instruction Manual is saved with filename: manual.pdf.

This manual will be provided to the end-user with each unit sold/leased in the United States.

INTERTEK TESTING SERVICES

EXHIBIT 9

CONFIDENTIALITY REQUEST

INTERTEK TESTING SERVICES

9.0 **Confidentiality Request**

For electronic filing, the confidentiality request of the tested EUT is saved with filename: request.pdf.

INTERTEK TESTING SERVICES

EXHIBIT 10

MISCELLANEOUS INFORMATION

INTERTEK TESTING SERVICES

10.0 Discussion of Pulse Desensitization

The determination of pulse desensitivity was made in accordance with Hewlett Packard Application Note 150-2, *Spectrum Analysis ... Pulsed RF*.

Pulse desensitivity is not applicable for this device since the transmitter transmits the RF signal continuously.

INTERTEK TESTING SERVICES

EXHIBIT 11

TEST EQUIPMENT LIST

INTERTEK TESTING SERVICES

11.0 Test Equipment List

Equipment No.	Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Due Date
SZ061-03	BiConiLog Antenna	ETS	3142C	00066460	30-Jun-12	30-Jun-13
SZ185-01	EMI Receiver	R&S	ESCI	100547	22-Sep-12	22-Jun-13
SZ061-09	Horn Antenna	ETS	3115	00092346	28-Nov-12	28-Nov-13
SZ061-07	Pyramidal Horn Antenna	ETS	3160-09	00083067	8-Sep-12	22-Jun-13
SZ061-06	Active Loop Antenna	Electro-Metrics	EM-6876	217	8-Dec-12	8-Jun-13
SZ056-03	Spectrum Analyzer	R&S	FSP 30	101148	22-Sep-12	22-Jun-13
SZ181-04	Preamplifier	Agilent	8449B	3008A02474	17-Nov-12	17-May-13
SZ188-01	Anechoic Chamber	ETS	RFD-F/A-100	4102	3-Dec-12	08-Jun-13
SZ062-02	RF Cable	RADIALL	RG 213U	--	17-Mar-12	17-Sep-13
SZ062-05	RF Cable	RADIALL	0.04-26.5GHz	--	29-Dec-12	29-Jun-13
SZ062-12	RF Cable	RADIALL	0.04-26.5GHz	--	29-Dec-12	29-Jun-13
SZ067-04	Notch Filter	Micro-Tronics	BRM5070 2-02	--	11-Jun-12	11-Jun-13
SZ185-02	EMI Test Receiver	R&S	ESCI	100692	5-Nov-12	5-Nov-13
SZ187-01	Two-Line V-Network	R&S	ENV216	100072	5-Nov-12	5-Nov-13
SZ187-02	Two-Line V-Network	R&S	ENV216	100073	5-Nov-12	5-Nov-13
SZ188-03	Shielding Room	ETS	RFD-100	4100	10-Sep-12	10-Sep-13