

# FCC REPORT

**Applicant:** Teleepoch Ltd.

**Address of Applicant:** RM308-315, 3/F, Block A, Tsinghua Unis Inforport No.13  
Langshan Road, HiTech Park(North), Nanshan District,  
Shenzhen, PRC, 518057

**Equipment Under Test (EUT)**

Product Name: Smart Phone

Model No.: U671C

**FCC ID:** U46-U671C

**Applicable standards:** FCC CFR Title 47 Part 2  
FCC CFR Title 47 Part 22 Subpart H  
FCC CFR Title 47 Part 24 Subpart E

**Date of sample receipt:** 20 Jun., 2014

**Date of Test:** 20 Jun., to 07 Jul., 2014

**Date of report issued:** 07 Jul., 2014

**Test Result:** PASS \*

\* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:



Bruce Zhang  
Laboratory Manager

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product and does not permit the use of the CCIS product certification mark. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

This report may only be reproduced and distributed in full. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards.

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## 2. Version

Version No.	Date	Description
00	07 Jul., 2014	Original

Prepared by:

*Sera Xiang*

Date:

07 Jul., 2014

**Report Clerk**

Reviewed by:

*Abanb Yang*

Date:

07 Jul., 2014

**Project Engineer**

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## 4. Test Summary

Test Item	Section in CFR 47	Result
RF Exposure (SAR)	Part 1.1307 Part 2.1093	Passed* (Please refer to SAR Report)
RF Output Power	Part 2.1046 Part 22.913 (a)(2) Part 24.232 (c)	Pass
Modulation Characteristics	Part 2.1047	Pass
99% & -26 dB Occupied Bandwidth	Part 2.1049 Part 22.917 Part 24.238	Pass
Spurious Emissions at Antenna Terminal	Part 2.1051 Part 22.917 (a) Part 24.238 (a)	Pass
Field Strength of Spurious Radiation	Part 2.1053 Part 22.917 (a) Part 24.238 (a)	Pass
Out of band emission, Band Edge	Part 22.917 (a) Part 24.238 (a)	Pass
Frequency stability vs. temperature	Part 2.1055(a)(1)(b)	Pass
Frequency stability vs. voltage	Part 2.1055(d)(1)(2)	Pass

*Pass: The EUT complies with the essential requirements in the standard.*

## 5. General Information

### 5.1 Client Information

Applicant:	Teleepoch Ltd.
Address of Applicant:	RM308-315, 3/F, Block A, Tsinghua Unis Inforport No.13 Langshan Road, HiTech Park(North), Nanshan District, Shenzhen, PRC, 518057
Manufacturer :	Teleepoch Ltd.
Address of Manufacturer:	RM308-315,3/F, Block A, Tsinghua Unis Inforport No.13 Langshan Road, HiTech Park(North), Nanshan District, Shenzhen, PRC, 518057

### 5.2 General Description of E.U.T.

Product Name:	Smart Phone
Model No.:	U671C
Operation Frequency range:	BC 0: 824.70MHz-848.31MHz BC 1: 1851.25MHz-1908.75MHz
Modulation type:	1xRTT: BPSK, QPSK, OQPSK, HPSK 1xEVDO: BPSK, QPSK, 8PSK, 16-QAM
Antenna type:	Internal Antenna
Antenna gain:	BC 0: -3.7 dBi BC 1: -1.6 dBi
AC adapter:	Model: WTA0501000USA1 Input: AC 100-240V 50/60Hz 0.3A Output: DC 5V, 1000mA
Power supply:	Rechargeable Li-ion Battery DC3.8V-1900mAh

**Operation Frequency List:**

BC 0		BC 1	
Channel:	Frequency (MHz)	Channel:	Frequency (MHz)
1013	824.70	25	1851.25
1014	824.73	26	1851.28
....	....	....	....
383	836.49	599	1879.97
384	836.52	600	1880
385	836.55	601	1880.03
...	...	...	...
776	848.28	1174	1908.72
777	848.31	1175	1908.75

Regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

BC 0			BC 1		
Channel No.		Frequency(MHz)	Channel No.		Frequency(MHz)
Lowest channel	1013	824.70	Lowest channel	25	1851.25
Middle channel	384	836.52	Middle channel	600	1880.00
Highest channel	777	848.31	Highest channel	1175	1908.75

## 5.3 Test modes

Communicate mode (BC 0 1xRTT)	Keep the EUT in communicating mode on BC 0 (RC1~RC5).
Data mode (BC 0 1xEV-DO Rev.0)	Keep the EUT in data communicating mode on BC 0 Rev.0 mode.
Data mode (BC 01xEV-DO Rev. A)	Keep the EUT in data communicating mode on BC 0 Rev.A mode.
Communicate mode (BC 1 1xRTT)	Keep the EUT in communicating mode on BC 1(RC1~RC5).
Data mode (BC 1 1xEV-DO Rev. 0)	Keep the EUT in data communicating mode on BC 1 Rev.0 mode.
Data mode (BC 1 1xEV-DO Rev. A)	Keep the EUT in data communicating mode on BC 1 Rev.A mode.
Remark:	Pre-scan all test modes, and found the RC1, SO2 for Cell band, RC2, SO9 for PCS band were the worst case for 1xRTT, Rev.0 for BC 0 and BC 1 were the worst case for 1xEVDO. Details refer to section 6.5.

## 5.4 Related Submittal(s) / Grant (s)

This submittal(s) (test report) is filing to comply with Section Part 22 subpart H and Part 24 subpart E of the FCC CFR 47 Rules.

## 5.5 Test Methodology

Both conducted and radiated testing were performed according to the procedures document on TIA/EIA 603 and FCC CFR 47 2.1046, 2.1047, 2.1049, 2.1051, 2.1053, 2.1055 and 2.1057

## 5.6 Laboratory Facility

The test facility is recognized, certified, or accredited by the following organizations:

● **FCC - Registration No.: 817957**

Shenzhen Zhongjian Nanfang Testing Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 817957, February 27, 2012.

● **IC - Registration No.: 10106A-1**

The 3m Semi-anechoic chamber of Shenzhen Zhongjian Nanfang Testing Co., Ltd. has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 10106A-1.

● **CNAS - Registration No.: CNAS L6048**

Shenzhen Zhongjian Nanfang Testing Co., Ltd. is accredited to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration laboratories for the competence of testing. The Registration No. is CNAS L6048.

## 5.7 Laboratory Location

Shenzhen Zhongjian Nanfang Testing Co., Ltd.  
Address: No.B-C, 1/F., Building 2, Laodong No.2 Industrial Park, Xixiang Road,  
Bao'an District, Shenzhen, Guangdong, China  
Tel: +86-755-23118282  
Fax: +86-755-23116366

## 5.8 Test Instruments list

Radiated Emission:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)
1	3m Semi- Anechoic Chamber	SAEMC	9(L)*6(W)* 6(H)	CCIS0001	June 09 2014	June 08 2015
2	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	CCIS0005	June 04 2014	June 03 2015
3	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	BBHA9120D	CCIS0006	June 30 2014	June 29 2015
4	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
5	Amplifier (10kHz-1.3GHz)	HP	8447D	CCIS0003	Apr. 01 2014	Mar. 31 2015
6	Amplifier (1GHz-18GHz)	Compliance Direction Systems Inc.	PAP-1G18	CCIS0011	June 09 2014	June 08 2015
7	Pre-amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	Apr. 01 2014	Mar. 31 2015
8	Horn Antenna	ETS-LINDGREN	3160	GTS217	Mar. 30 2014	Mar. 29 2015
9	Printer	HP	HP LaserJet P1007	N/A	N/A	N/A
10	Positioning Controller	UC	UC3000	CCIS0015	N/A	N/A
11	Spectrum analyzer 9k-30GHz	Rohde & Schwarz	FSP	CCIS0023	June. 29 2014	June. 28 2015
11	EMI Test Receiver	Rohde & Schwarz	ESPI	CCIS0022	Apr 01 2014	Mar. 31 2015
12	Loop antenna	Laplace instrument	RF300	EMC0701	Aug. 12 2013	Aug. 11 2014
13	Universal radio communication tester	Rhode & Schwarz	CMU200	CCIS0069	June. 29 2014	June. 28 2015
14	Signal Analyzer	Rohde & Schwarz	FSIQ3	CCIS0088	June. 29 2014	June. 28 2015



## 6. System test configuration

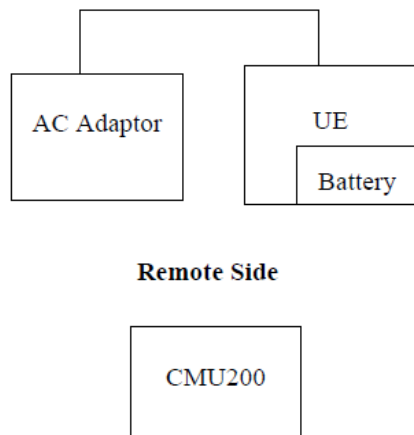
### 6.1 EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the commission's requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

### 6.2 EUT Exercise

The EUT (Transmitter) was operated in the engineering mode to fix the Tx frequency which was for the purpose of the measurements.

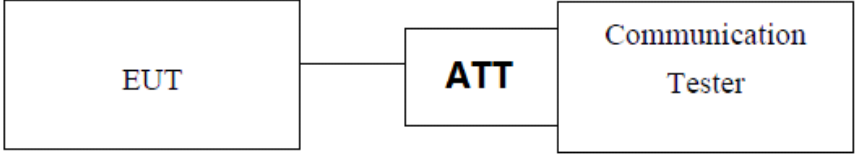
### 6.3 Configuration of Tested System



### 6.4 Description of Test Modes

The EUT has been tested under operating condition.  
 EUT staying in continuous transmitting mode. Channel Low, Mid and High for each type band with rated data rate were chosen for full testing.  
 The field strength of spurious radiation emission was measured as EUT stand-up position (H mode) and lie down position (E1, E2 mode) for two modes (1×RTT and 1×EV-DO Rev. 0) with power adaptor, earphone and Data cable.

## 6.5 Conducted Output Power

Test Requirement:	FCC part 22.913(a) and FCC part 24.232(b)
Test Method:	FCC part 2.1046
Limit:	BC 0: 7W BC 1: 2W
Test setup:	 <p><i>Note: Measurement setup for testing on Antenna connector</i></p>
Test Procedure:	The transmitter output was connected to a calibrated attenuator, the other end of which was connected to the CMU200. Transmitter output power was read off in dBm.
Test Instruments:	Refer to section 5.8 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed

Measurement Data

## RF OUTPUT POWER FOR 1xRTT

### Cell BAND

Radio Configuration (RC)	Service Option (SO)	Conducted Output Power(dBm)			Limit (dBm)
		Ch.1013	Ch.384	Ch.777	
		824.70MHz	836.52MHz	848.31MHz	
RC1	2(Loopback)	23.62	23.82	23.62	38.45
	55(Loopback)	23.61	23.76	23.61	
RC2	9(Loopback)	23.57	23.80	23.59	
	55(Loopback)	23.58	23.74	23.57	
RC3	2(Loopback)	23.54	23.71	23.61	
	55(Loopback)	23.52	23.70	23.60	
	32(+F-SCH)	23.61	23.80	23.59	
	32(+SCH)	23.57	23.82	23.53	
RC4	2(Loopback)	23.60	23.80	23.56	
	55(Loopback)	23.69	23.73	23.53	
	32(+F-SCH)	23.62	23.81	23.51	
	32(+SCH)	23.59	23.80	23.54	
RC5	9(Loopback)	23.65	23.80	23.53	
	55(Loopback)	23.54	23.70	23.50	

## PCS BAND

Radio Configuration (RC)	Service Option (SO)	Conducted Output Power(dBm)			Limit(dBm)
		Ch.25	Ch.600	Ch.1175	
		1851.25MHz	1880MHz	1908.75MHz	
RC1	2(Loopback)	23.41	23.06	23.51	33.00
	55(Loopback)	23.38	23.02	23.49	
RC2	9(Loopback)	23.40	23.06	23.55	
	55(Loopback)	23.39	23.04	23.52	
RC3	2(Loopback)	23.43	22.94	23.35	
	55(Loopback)	23.44	22.87	23.33	
	32(+F-SCH)	23.40	22.97	23.34	
	32(+SCH)	23.43	22.98	23.36	
RC4	2(Loopback)	23.41	22.98	23.42	
	55(Loopback)	23.40	22.97	23.40	
	32(+F-SCH)	23.42	22.96	23.48	
	32(+SCH)	23.46	23.02	23.52	
RC5	9(Loopback)	23.46	22.97	23.33	
	55(Loopback)	23.42	22.96	23.31	

## RF OUTPUT POWER FOR CDMA2000 1xEV-DO Rev.0

### Cell Band

FTAP Rate	RTAP Rate	Channel	Frequency (MHz)	Conducted Output Power(dBm)	Limit(dBm)
307.2kbps (2slot,QPSK)	153.6kbps	1013	824.70	23.56	38.45
		384	836.52	<b>23.70</b>	
		777	848.31	23.63	

### PCS Band

FTAP Rate	RTAP Rate	Channel	Frequency (MHz)	Conducted Output Power(dBm)	Limit(dBm)
307.2kbps (2slot,QPSK)	153.6kbps	25	1851.25	23.30	33.00
		600	1880.00	23.06	
		1175	1908.75	<b>23.63</b>	

## RF OUTPUT POWER FOR CDMA2000 1xEV-DO Rev.A

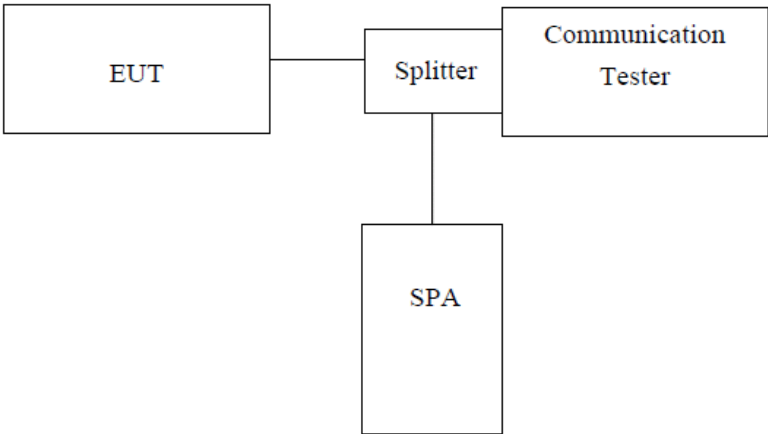
### Cell Band

FETAP-Traffic Format	RETAP-Data Payload Size	Channel	Frequency (MHz)	Conducted Output Power(dBm)	Limit (dBm)
307.2k,QPSK/ACK Channel is transmitted at all the slots	4096	1013	824.70	23.43	38.45
		384	836.52	<b>23.59</b>	
		777	848.31	23.42	

### PCS Band

FETAP-Traffic Format	RETAP-Data Payload Size	Channel	Frequency (MHz)	Conducted Output Power(dBm)	Limit (dBm)
307.2k,QPSK/ACK Channel is transmitted at all the slots	4096	25	1851.25	23.26	33.00
		600	1880.00	22.91	
		1175	1908.75	<b>23.36</b>	

## 6.6 Occupy Bandwidth

Test Requirement:	FCC part 22.913(a) and FCC part 24.232(b)
Test Method:	FCC part 2.1049
Test setup:	 <p><i>Note: Measurement setup for testing on Antenna connector</i></p>
Test Procedure:	<ol style="list-style-type: none"> <li>1. The EUT's output RF connector was connected with a short cable to the spectrum analyzer</li> <li>2. RBW was set to about 1% of emission BW, VBW= 3 times RBW.</li> <li>3. -26dBc display line was placed on the screen (or 99% bandwidth), the occupied bandwidth is the delta frequency between the two points where the display line intersects the signal trace.</li> </ol>
Test Instruments:	Refer to section 5.8 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed

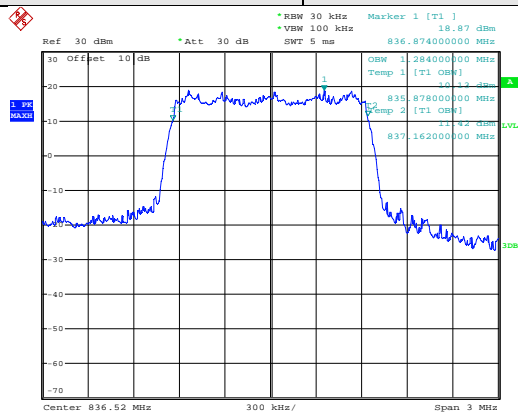
### Measurement Data

EUT Mode	Channel	Frequency (MHz)	99% Occupy bandwidth (kHz)	-26dB bandwidth (kHz)
BC 0 1xRTT	1013	824.70	1284	1434
	384	836.52	1284	1428
	777	848.31	1284	1440
BC 1 1xRTT	25	1851.25	1290	1446
	600	1880.00	1284	1446
	1175	1908.75	1296	1452
BC 0 1xEV-DO Rev.0	1013	824.70	1284	1440
	384	836.52	1284	1440
	777	848.31	1284	1440
BC 1 1xEV-DO Rev.0	25	1851.25	1284	1434
	600	1880.00	1290	1440
	1175	1908.75	1290	1440

Test plot as follows:

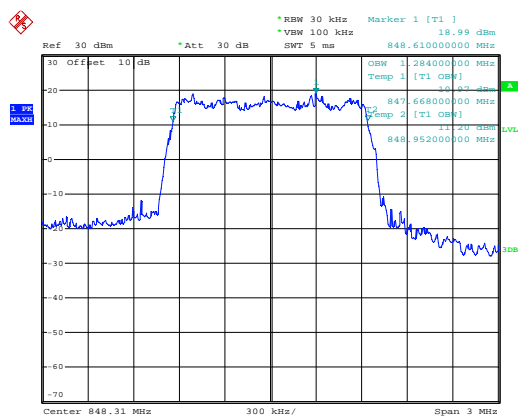


Test Item:	99% Occupy bandwidth	Test Mode:	BC 0 (1×RTT)
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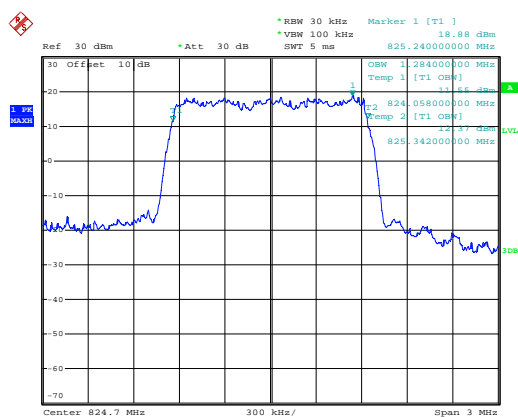
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Lowest channel



Date: 3.JUN.2014 17:58:26

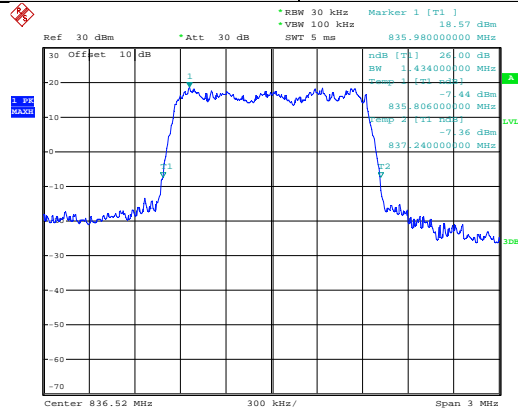
Middle channel



Date: 3.JUN.2014 17:56:11

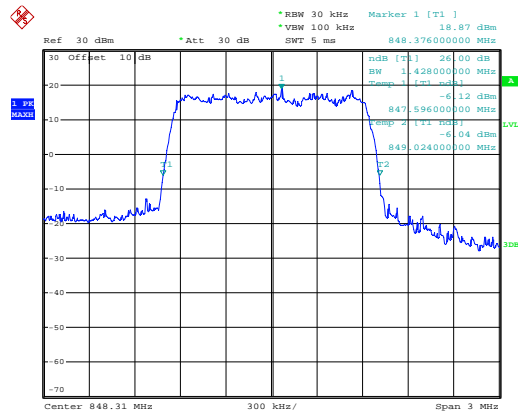
## Highest channel

Test Item:	-26dB bandwidth	Test Mode:	BC 0 (1xRTT)
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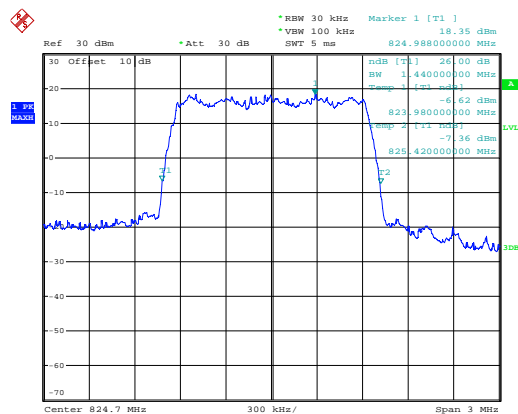
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## Lowest channel



Date: 3.JUN.2014 17:58:52

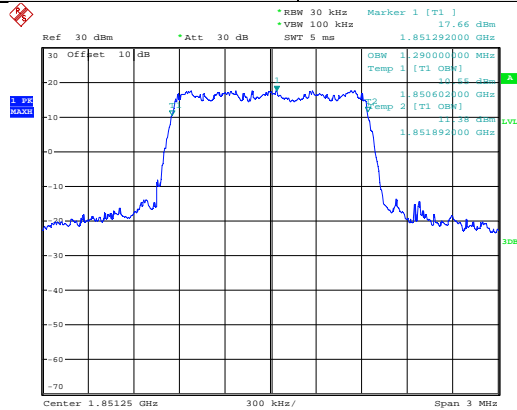
## Middle channel



Date: 3.JUN.2014 17:56:38

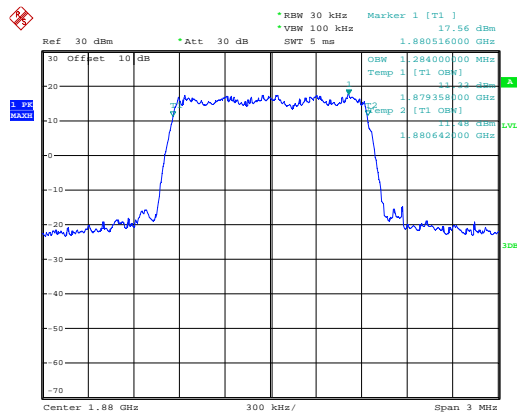
## Highest channel

Test Item:	99% Occupancy bandwidth	Test Mode:	BC 1 (1xRTT)
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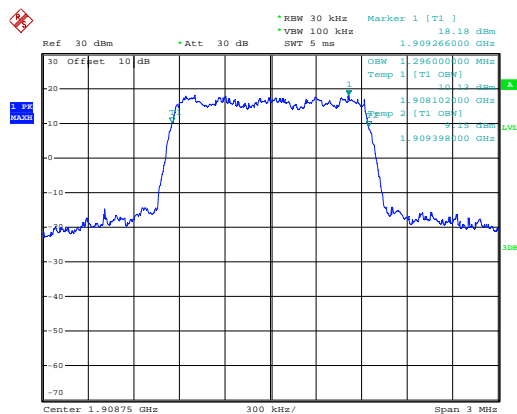
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## Lowest channel



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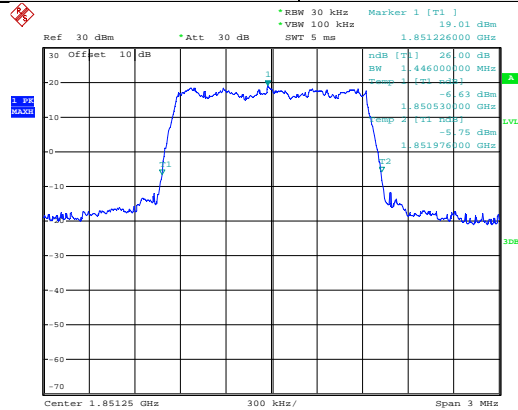
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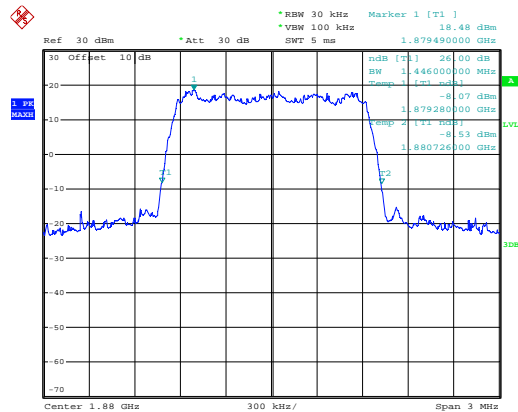
## Highest channel

Test Item:	-26dB bandwidth	Test Mode:	BC 1 (1xRTT)
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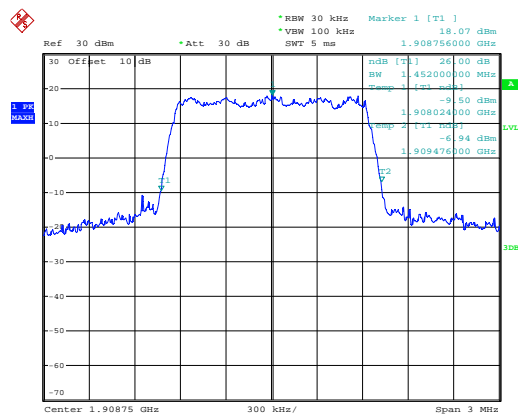
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## Lowest channel



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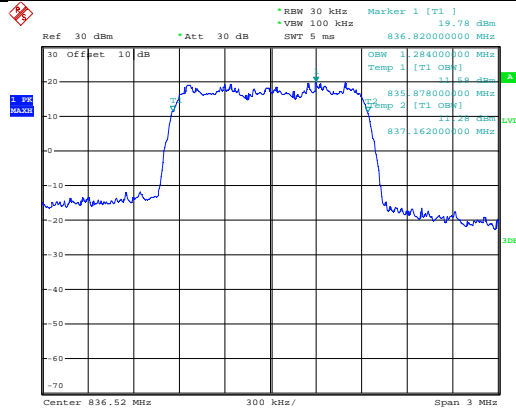
## Middle channel



Date: 3.JUN.2014 18:58:40

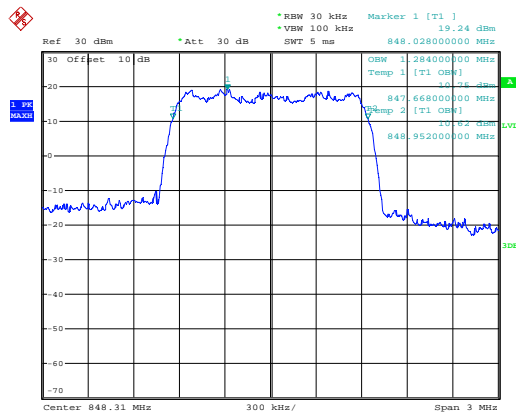
## Highest channel

Test Item:	99% Occupy bandwidth	Test Mode:	BC 0 1xEV-DO Rev.0
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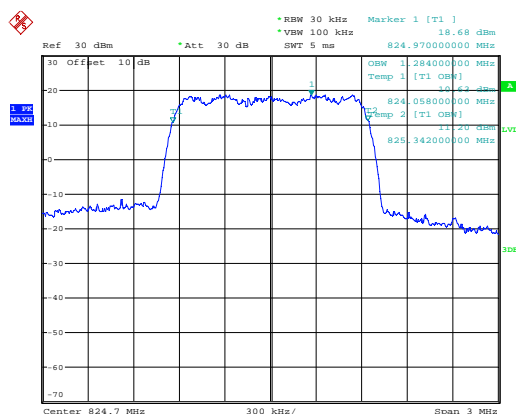
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## Lowest channel



Date: 3.JUN.2014 20:33:14

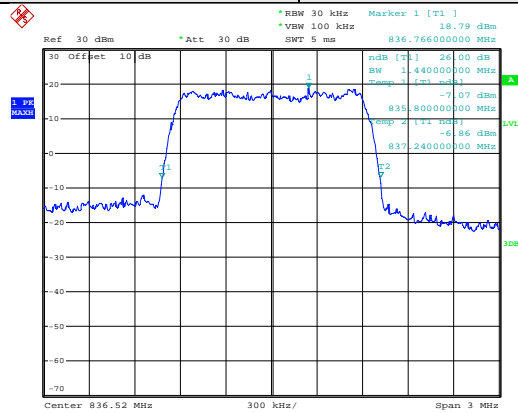
## Middle channel



Date: 3.JUN.2014 20:31:07

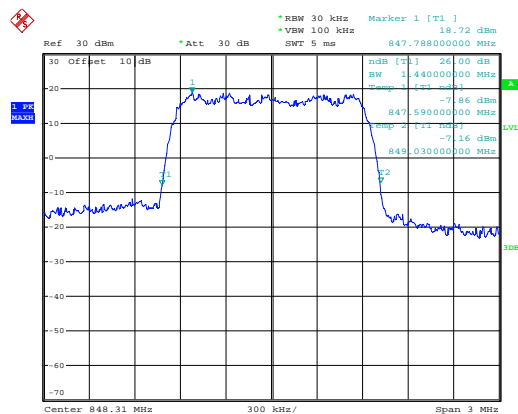
## Highest channel

Test Item:	-26dB bandwidth	Test Mode:	BC 0 1xEV-DO Rev.0
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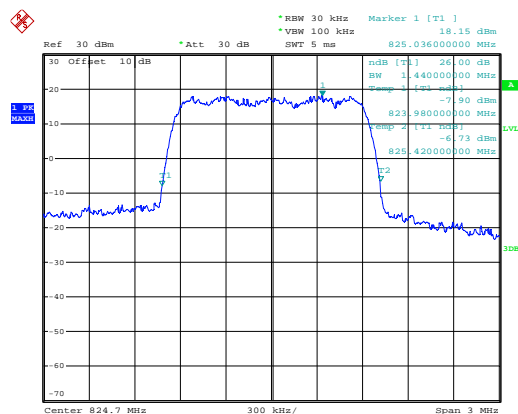
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### Lowest channel



Date: 3.JUN.2014 20:33:31

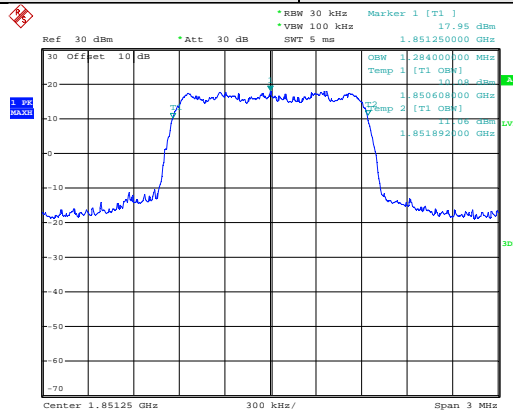
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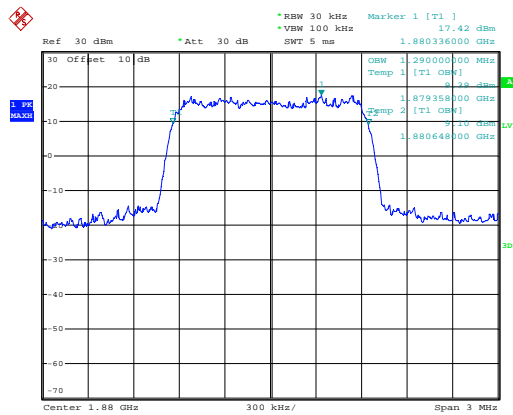
### Highest channel

Test Item:	99% Occupy bandwidth	Test Mode:	BC 1 1xEV-DO Rev.0
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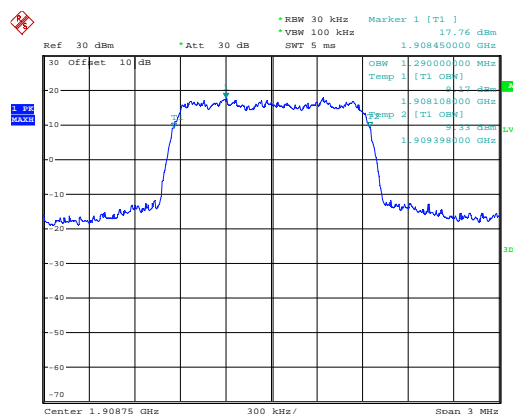
Date: 3.JUN.2014 21:19:42

### Lowest channel



Date: 3.JUN.2014 21:21:06

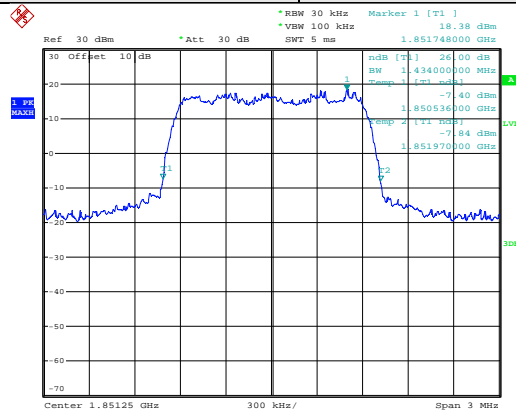
### Middle channel



Date: 3.JUN.2014 21:21:54

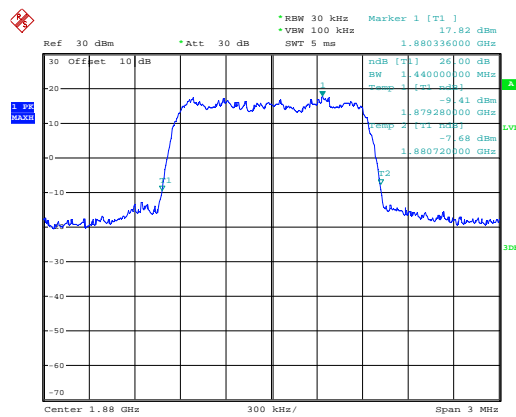
### Highest channel

Test Item:	-26dB bandwidth	Test Mode:	BC 1 1xEV-DO Rev.0
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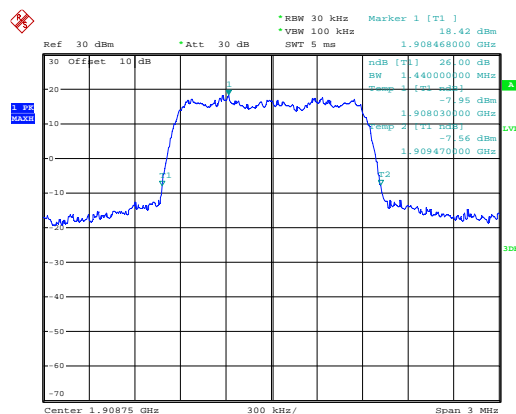
Date: 3.JUN.2014 21:20:00

## Lowest channel



Date: 3.JUN.2014 21:20:40

## Middle channel



Date: 3.JUN.2014 21:22:15

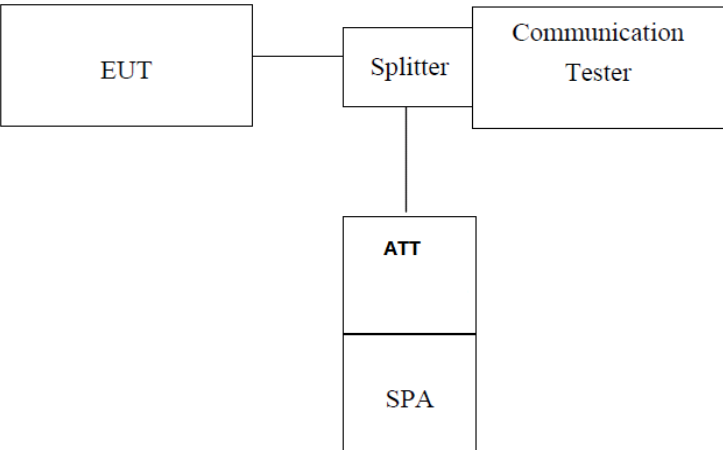
## Highest channel



## 6.7 Modulation Characteristic

According to FCC § 2.1047(d), Part 22H & 24E there is no specific requirement for digital modulation, therefore modulation characteristic is not presented.

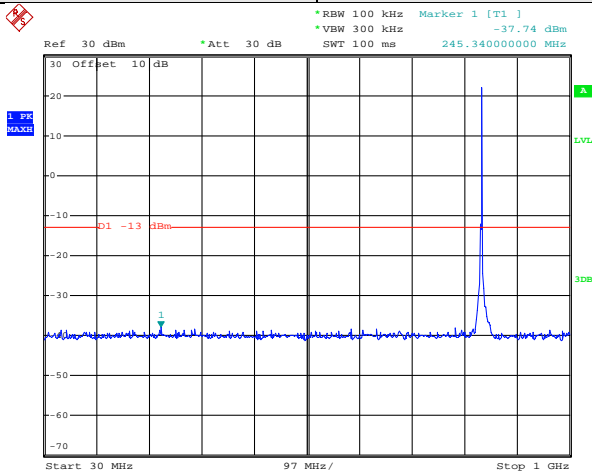
## 6.8 Out of band emission at antenna terminals

Test Requirement:	FCC part22.917(a) and FCC part24.238(a)
Test Method:	FCC part2.1051
Limit:	-13dBm
Test setup:	 <p><i>Note: Measurement setup for testing on Antenna connector</i></p>
Test Procedure:	<ol style="list-style-type: none"> <li>1 The RF output of the transceiver was connected to a spectrum analyzer through appropriate attenuation.</li> <li>2 The resolution bandwidth of the spectrum analyzer was set at 100 kHz when below 1GHz, 1MHz when above 1 GHz; sufficient scans were taken to show the out of band Emissions if any up to 10th harmonic.</li> <li>3 For the out of band: Set the RBW=100 kHz, VBW=300 kHz when below 1 GHz, RBW =1 MHz, VBW=3 MHz when above 1 GHz, Start=30MHz, Stop= 10th harmonic.</li> <li>4 Band Edge Requirements: In the 1 MHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 1 percent of the emission bandwidth of the fundamental emission of the transmitter may be employed to measure the out of band Emissions.</li> </ol>
Test Instruments:	Refer to section 5.8 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed

Test plots as follows:

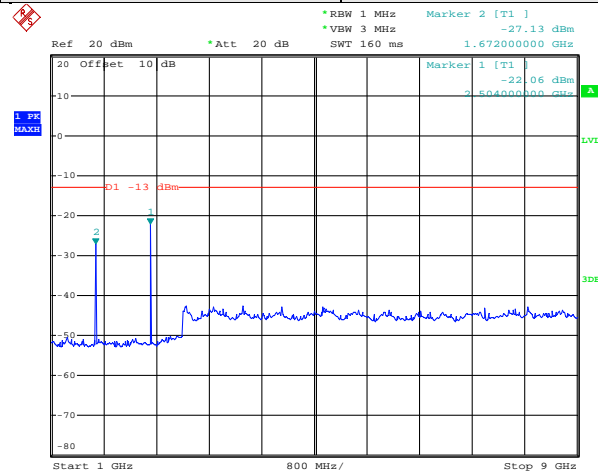
## Spurious emission

Test Mode:	BC 0 (1×RTT)	Test Channel:	Lowest channel
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Date: 3.JUN.2014 18:43:18

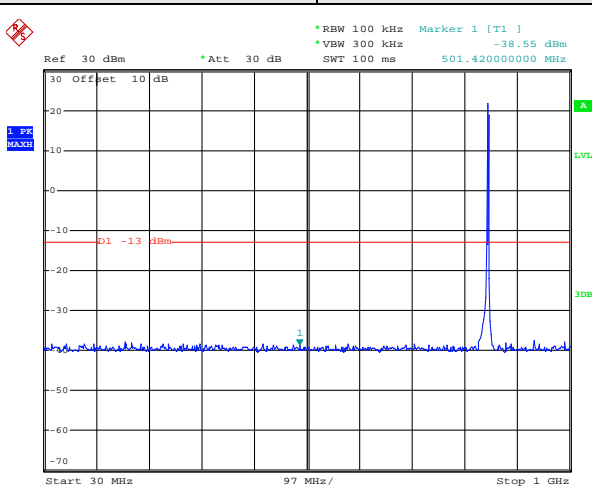
30MHz~1GHz



Date: 3.JUN.2014 18:47:59

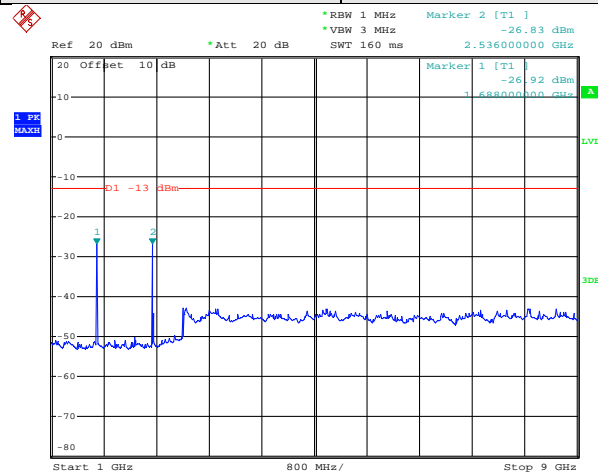
1GHz~9GHz

Test Mode:	BC 0 (1×RTT)	Test Channel:	Middle channel
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Date: 3.JUN.2014 18:42:23

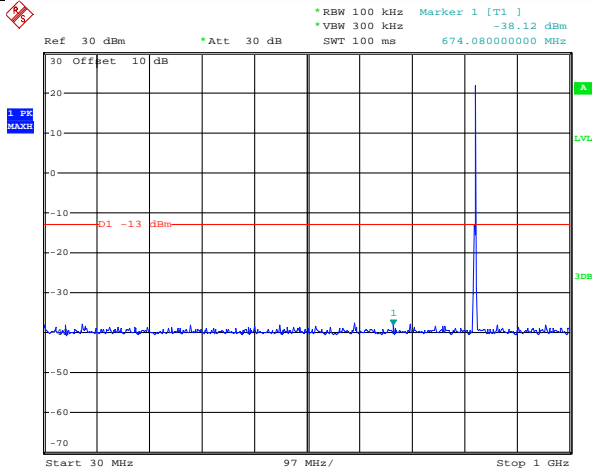
30MHz~1GHz



Date: 3.JUN.2014 18:48:53

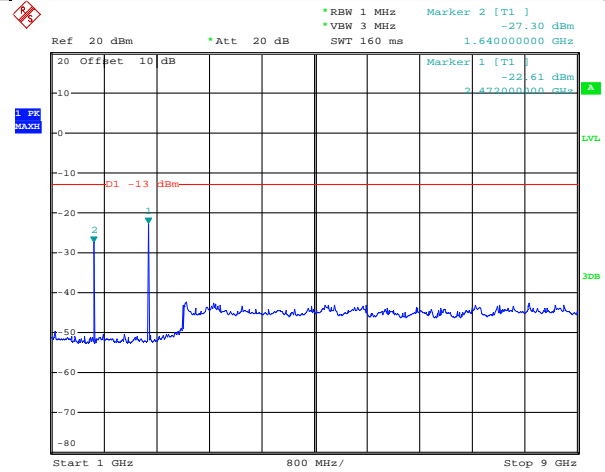
1GHz~9GHz

Test Mode:	BC 0 (1xRTT)	Test Channel:	Highest channel
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Date: 3.JUN.2014 18:45:23

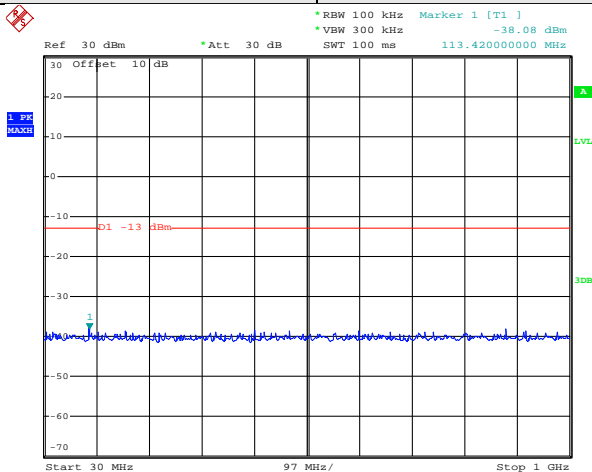
30MHz~1GHz



Date: 3.JUN.2014 18:47:09

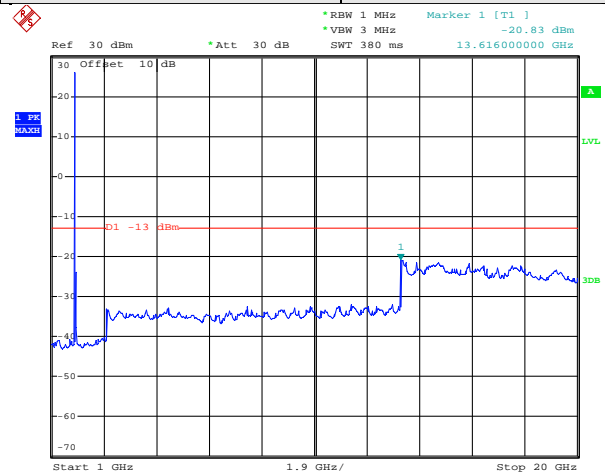
1GHz~9GHz

Test Mode:	BC 1 (1xRTT)	Test Channel:	Lowest channel
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Date: 3.JUN.2014 19:08:04

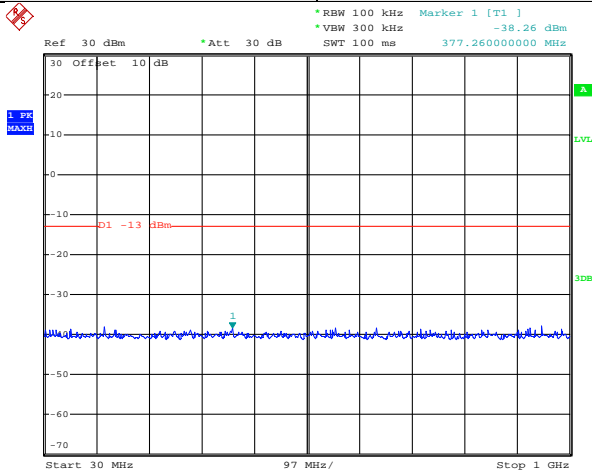
30MHz~1GHz



Date: 3.JUN.2014 19:09:11

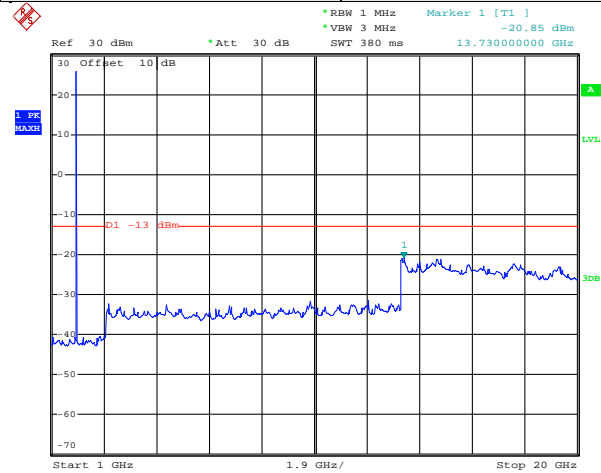
1GHz~20GHz

Test Mode:	BC 1 (1×RTT)	Test Channel:	Middle channel
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Date: 3.JUN.2014 19:07:23

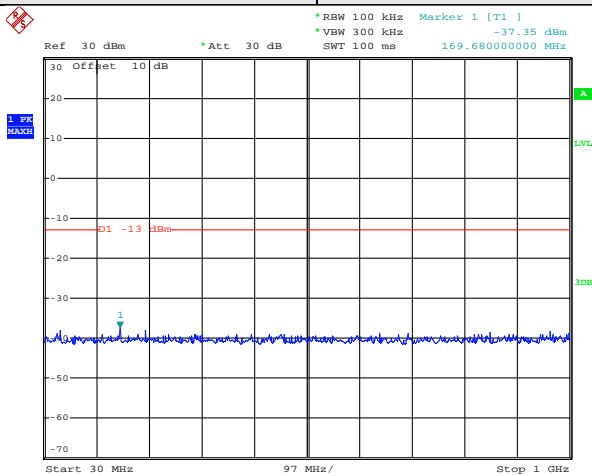
30MHz~1GHz



Date: 3.JUN.2014 19:09:58

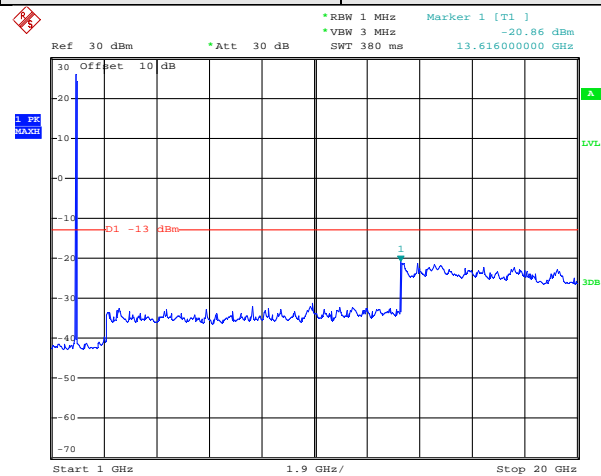
1GHz~20GHz

Test Mode:	BC 1 (1×RTT)	Test Channel:	Highest channel
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Date: 3.JUN.2014 19:06:37

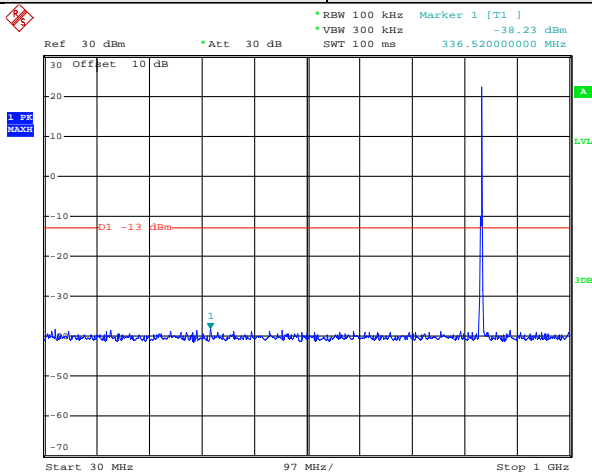
30MHz~1GHz



Date: 3.JUN.2014 19:11:03

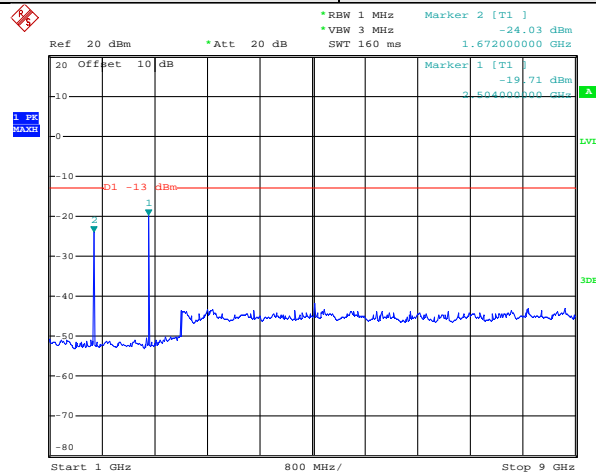
1GHz~20GHz

Test Mode:	BC 0 1xEV-DO Rev.0	Test Channel:	Lowest channel
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Date: 3.JUN.2014 20:40:38

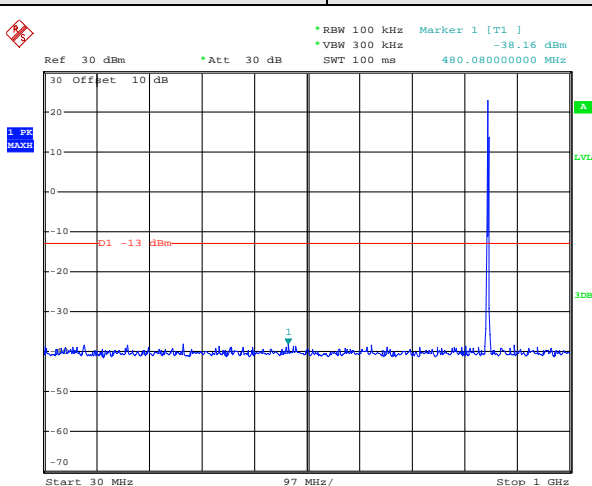
30MHz~1GHz



Date: 3.JUN.2014 20:45:07

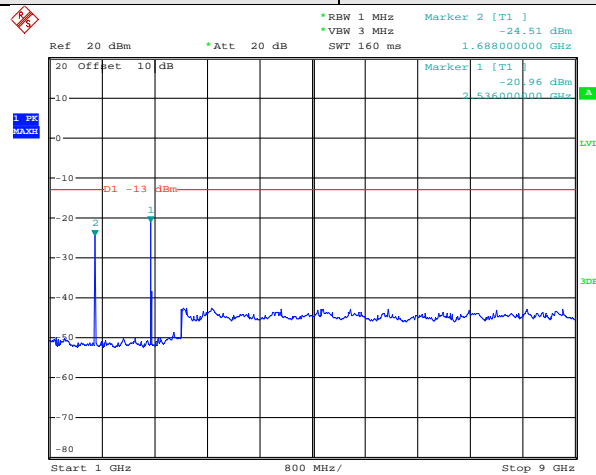
1GHz~9GHz

Test Mode:	BC 0 1xEV-DO Rev.0	Test Channel:	Middle channel
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Date: 3.JUN.2014 20:41:17

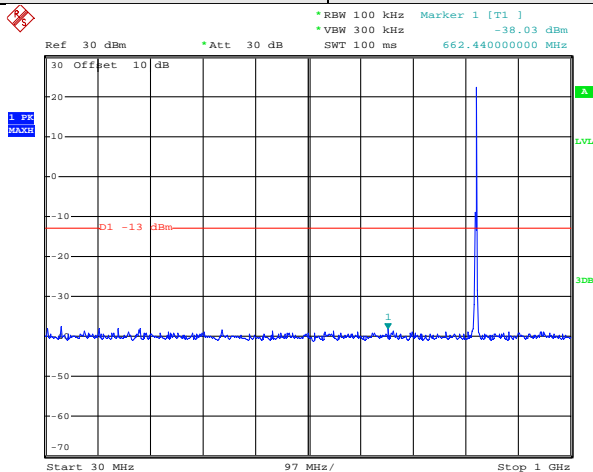
30MHz~1GHz



Date: 3.JUN.2014 20:43:50

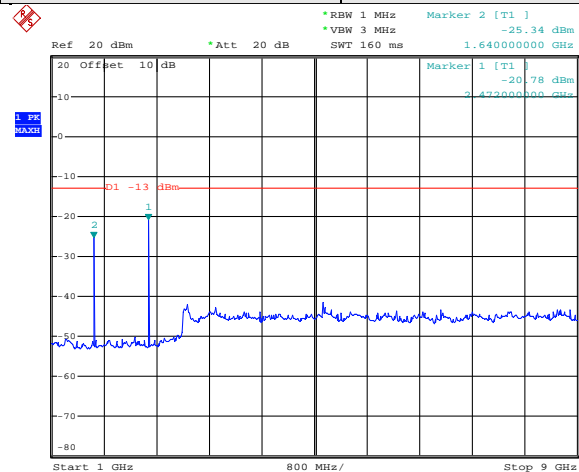
1GHz~9GHz

Test Mode:	BC 0 1xEV-DO Rev.0	Test Channel:	Highest channel
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Date: 3.JUN.2014 20:39:58

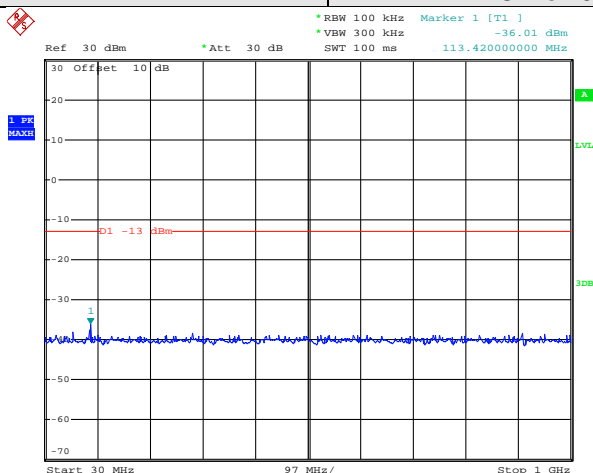
30MHz~1GHz



Date: 3.JUN.2014 20:45:54

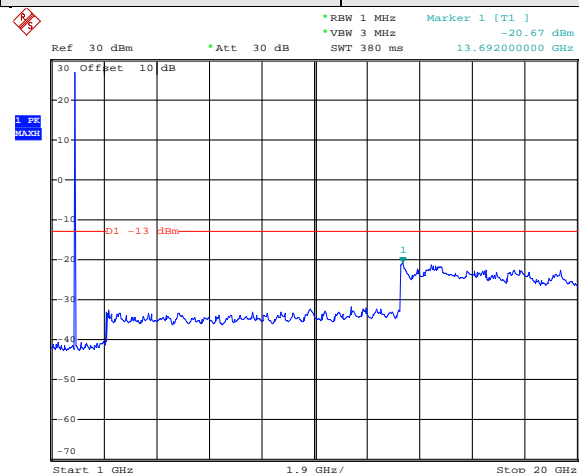
1GHz~9GHz

Test Mode:	BC 1 1xEV-DO Rev.0	Test Channel:	Lowest channel
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Date: 3.JUN.2014 21:16:43

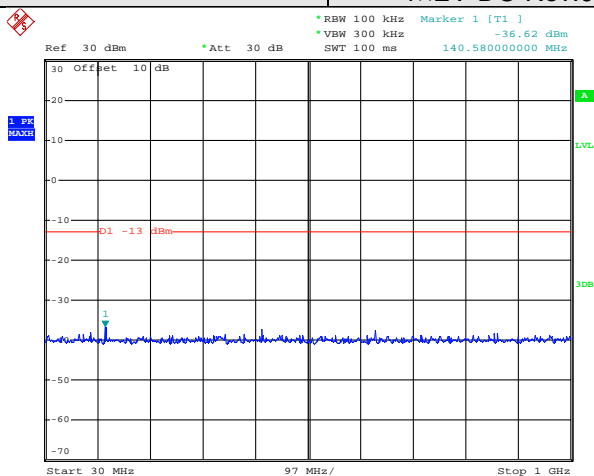
30MHz~1GHz



Date: 3.JUN.2014 21:12:02

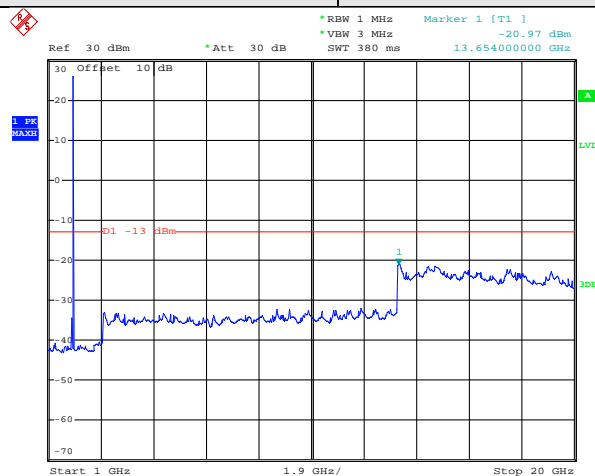
1GHz~20GHz

Test Mode:	BC 1 1xEV-DO Rev.0	Test Channel:	Middle channel
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Date: 3.JUN.2014 21:15:53

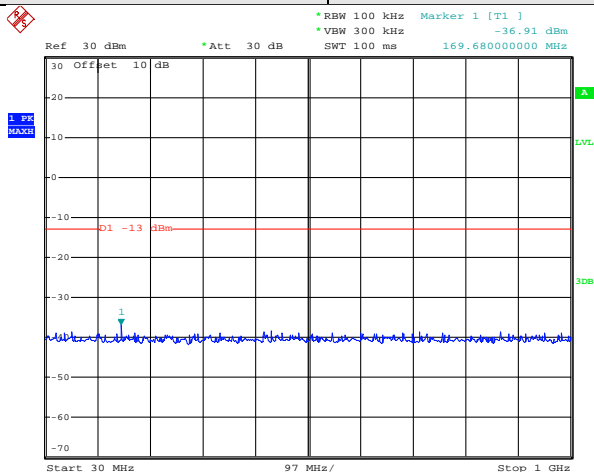
30MHz~1GHz



Date: 3.JUN.2014 21:12:47

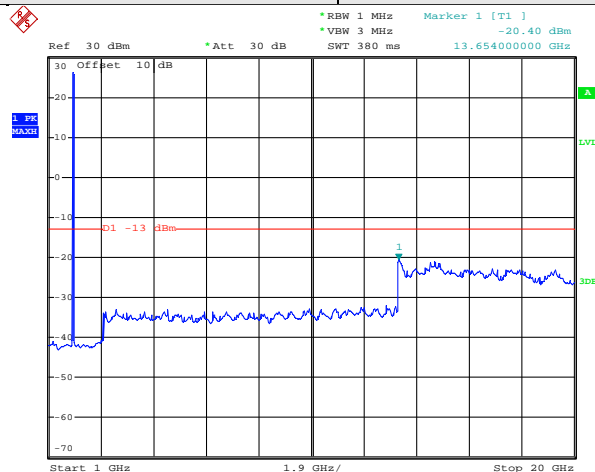
1GHz~20GHz

Test Mode:	BC 1 1xEV-DO Rev.0	Test Channel:	Highest channel
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Date: 3.JUN.2014 21:14:39

30MHz~1GHz

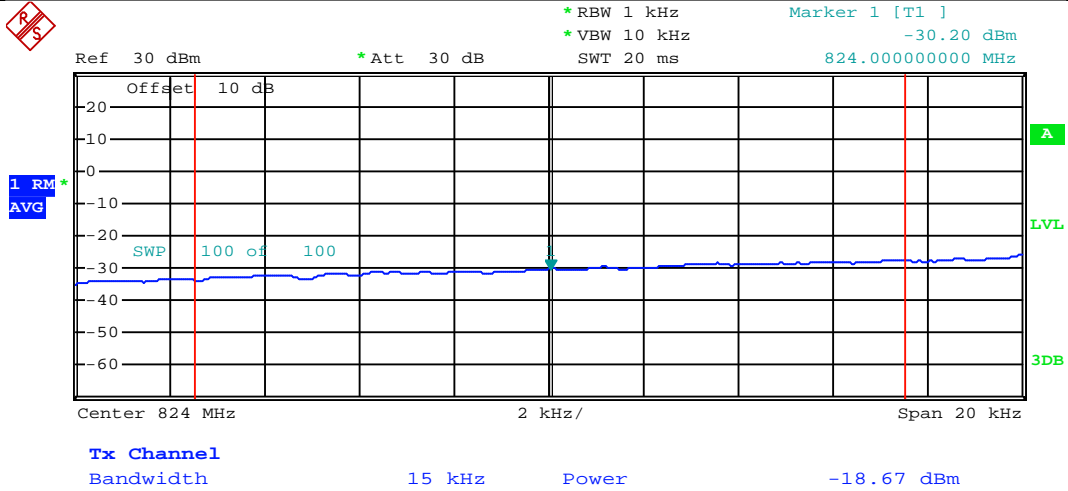


Date: 3.JUN.2014 21:13:43

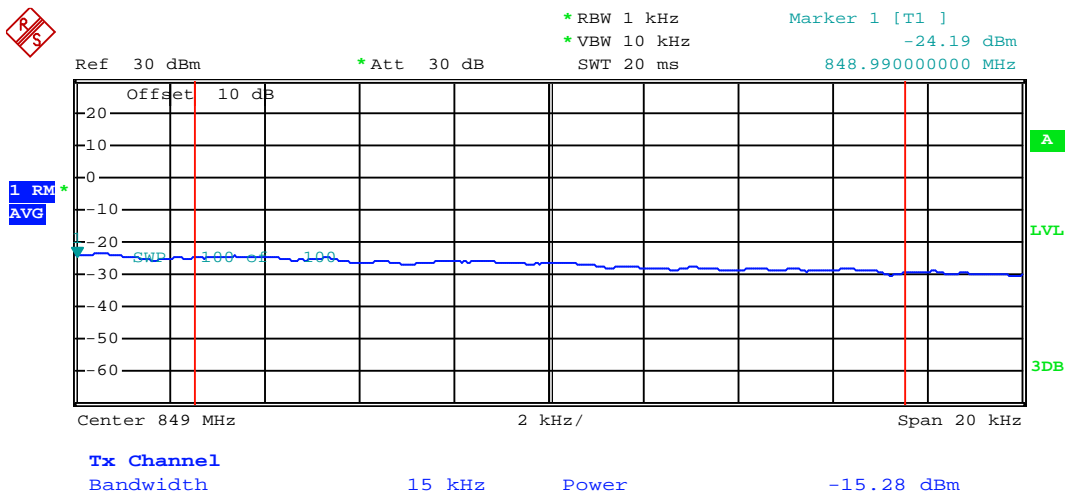
1GHz~20GHz

## Band edge emission:

Test Mode:	BC 0 (1xRTT)
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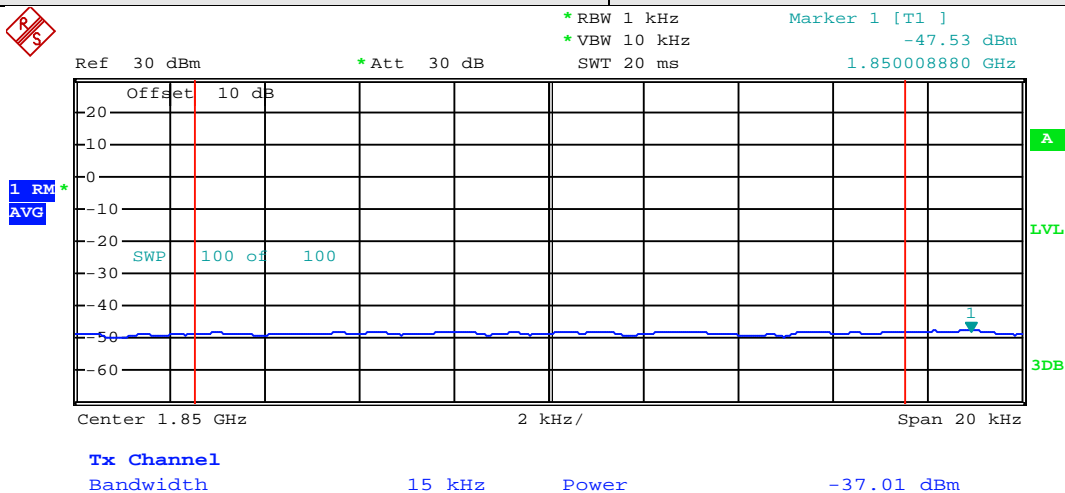
## Lowest channel



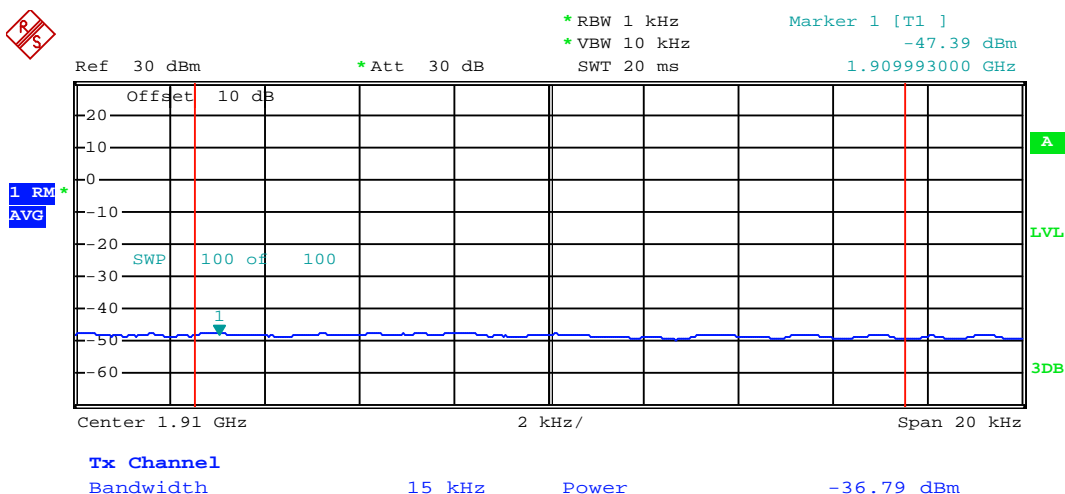
## Highest channel



Test Mode:	BC 1 (1xRTT)
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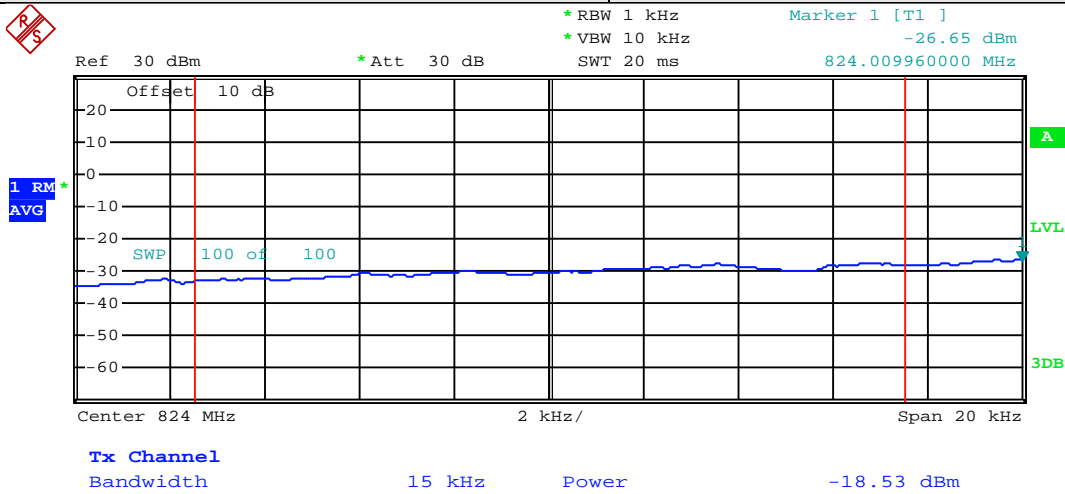


Lowest channel

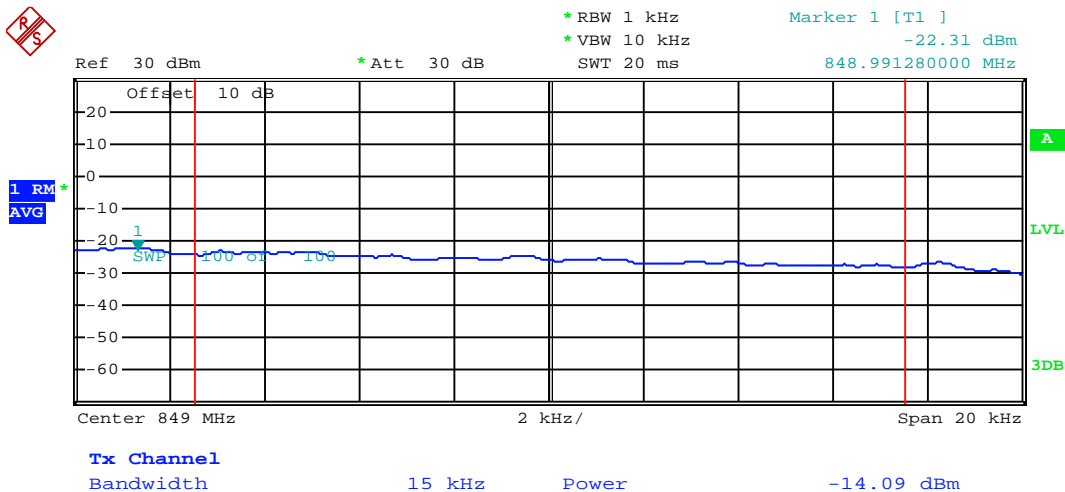


Highest channel

Test Mode:	BC 0 1xEV-DO ReV.0
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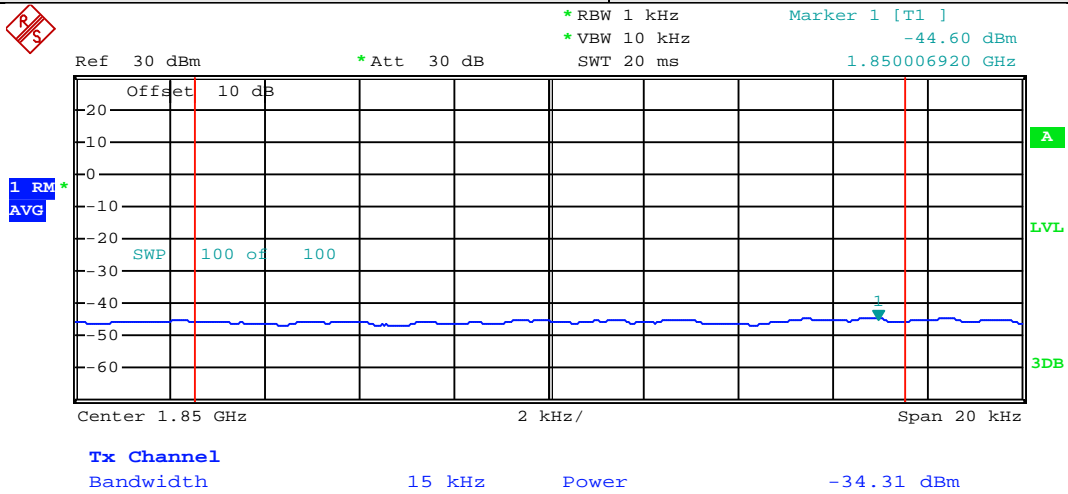


## Lowest channel

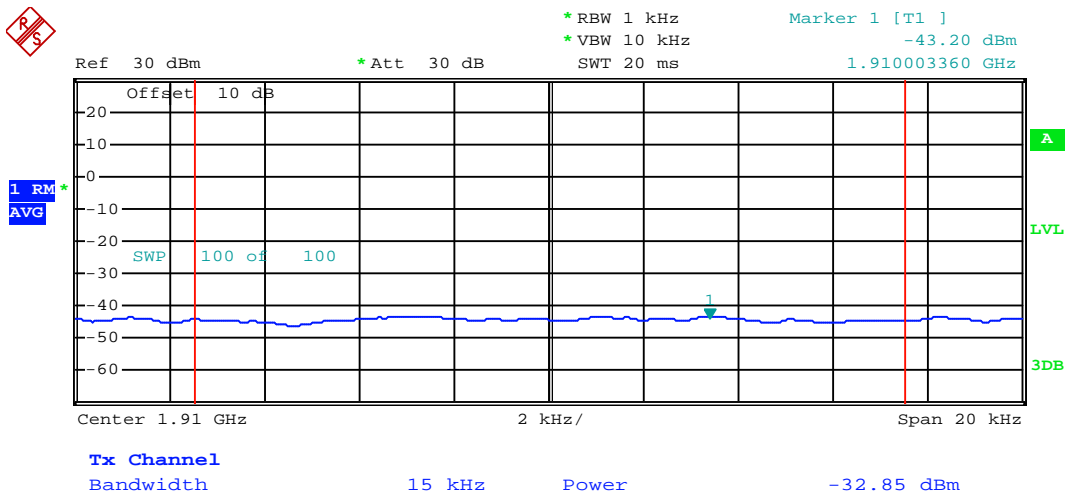


## Highest channel

Test Mode:	BC 1 1xEV-DO Rev.0
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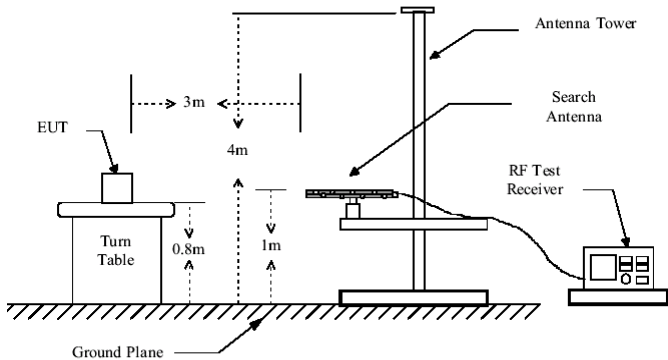
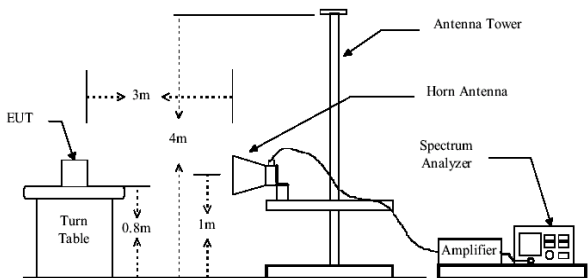
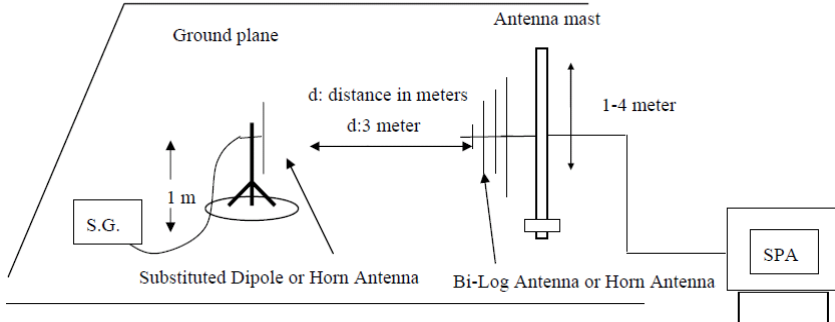


## Lowest channel



## Highest channel

## 6.9 ERP, EIRP Measurement

Test Requirement:	FCC part 22.913(a) and FCC part 24.232(b)
Test Method:	FCC part 2.1046
Limit:	BC 0: 7W ERP BC 1: 2W EIRP
Test setup:	<p>Below 1GHz</p>  <p>Above 1GHz</p>  <p>Substituted method:</p> 

Test Procedure:	<ol style="list-style-type: none"> <li>1. The EUT was placed on an non-conductive turntable using a non-conductive support. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and EMI spectrum analyzer.</li> <li>2. During the measurement, the EUT was communication with the station. The highest emission was recorded with the rotation of the turntable and the lowering of the test antenna from 4m to 1m. The reading was recorded and the field strength (E in dBuV/m) was calculated.</li> <li>3. ERP in frequency band 824.7 –848.31MHz were measured using a substitution method. The EUT was replaced by dipole antenna connected, the S.G. output was recorded and ERP was calculated as follows:  <math display="block">\text{ERP} = \text{S.G. output (dBm)} + \text{Antenna Gain (dBd)} - \text{Cable Loss (dB)}</math> </li> <li>4. EIRP in frequency band 1851.25 –1908.75MHz were measured using a substitution method. The EUT was replaced by or horn antenna connected, the S.G. output was recorded and EIRP was calculated as follows:  <math display="block">\text{EIRP} = \text{S.G. output (dBm)} + \text{Antenna Gain (dBi)} - \text{Cable Loss (dB)}</math> </li> <li>5. The worse case was relating to the conducted output power.</li> </ol>
Test Instruments:	Refer to section 5.8 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed

Measurement Data (worst case)

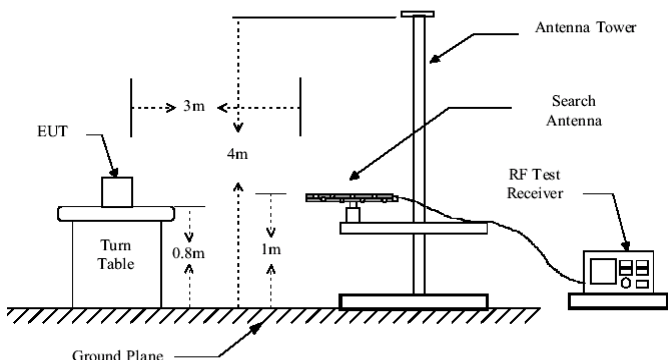
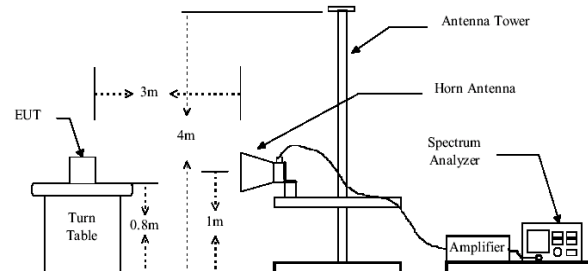
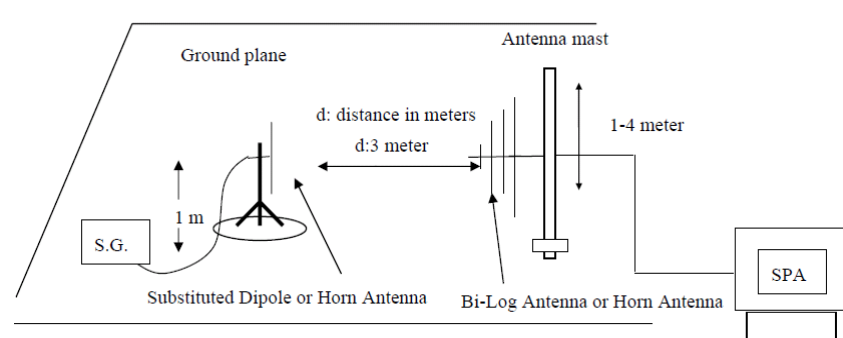
EUT mode	Channel	EUT Pol.	Antenna Pol.	ERP(dBm)	Limit (dBm)	Result
BC 0 1xRTT	384	H	V	28.32	38.45	Pass
			H	23.00		
		E1	V	26.68		
			H	23.20		
		E2	V	26.62		
			H	22.06		

EUT mode	Channel	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result
BC 1 1xRTT	1175	H	V	24.44	33.00	Pass
			H	22.96		
		E1	V	24.23		
			H	22.25		
		E2	V	24.02		
			H	22.45		

EUT mode	Channel	EUT Pol.	Antenna Pol.	ERP(dBm)	Limit (dBm)	Result
BC 0 1xEV-DO Rev.0	384	H	V	27.12	38.45	Pass
			H	22.97		
		E1	V	26.56		
			H	22.51		
		E2	V	26.45		
			H	22.05		

EUT mode	Channel	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result
BC 1 1xEV-DO Rev.0	1175	H	V	24.23	33.00	Pass
			H	22.19		
		E1	V	24.01		
			H	21.98		
		E2	V	23.68		
			H	21.75		

## 6.10 Field strength of spurious radiation measurement

Test Requirement:	FCC part 22.917(a) and FCC part 24.238(a)
Test Method:	FCC part 2.1053
Limit:	-13dBm
Test setup:	<p>Below 1GHz</p>  <p>Above 1GHz</p>  <p>Substituted method:</p> 
Test Procedure:	<ol style="list-style-type: none"> <li>1. The EUT was placed on an non-conductive turntable using a non-conductive support. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and EMI spectrum analyzer.</li> <li>2. During the tests, the antenna height and the EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations.</li> <li>3. The frequency range up to tenth harmonic was investigated for each of three fundamental frequency (low, middle and high channels). Once spurious emission was identified, the power of the emission</li> </ol>

	<p>was determined using the substitution method.</p> <p>4. The spurious emissions attenuation was calculated as the difference between radiated power at the fundamental frequency and the spurious emissions frequency.</p> $\text{ERP / EIRP} = \text{S.G. output (dBm)} + \text{Antenna Gain(dB/dBi)} - \text{Cable Loss (dB)}$
Test Instruments:	Refer to section 5.8 for details
Test mode:	<p>Refer to section 5.3 for details.</p> <p>Based on the ERP/EIRP results, we selected BC 0 1xRTT, BC 1 1xRTT, BC 0 1xEV-DO Rev.0, BC 1 1xEV-DO Rev.0 for Radiated spurious emission test, other modes were not test.</p>
Test results:	Passed



Measurement Data (worst case)

Test mode:	BC 0 1×RTT		Test channel:	Lowest
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
1649.4	Vertical	-53.35	-13.00	Pass
2474.1	V	-36.45		
3298.8	V	-50.22		
4123.5	V	---		
4948.2	V	---		
5772.9	V	---		
1649.4	Horizontal	-51.25	-13.00	Pass
2474.1	H	-37.49		
3298.8	H	-49.91		
4123.5	H	---		
4948.2	H	---		
5772.9	H	---		
Test mode:	BC 0 1×RTT		Test channel:	Middle
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
1673.04	Vertical	-51.79	-13.00	Pass
2509.56	V	-36.35		
3346.08	V	-48.46		
4182.6	V	---		
5019.12	V	---		
5855.64	V	---		
1673.04	Horizontal	-56.74	-13.00	Pass
2509.56	H	-36.41		
3346.08	H	-49.36		
4182.6	H	---		
5019.12	H	---		
5855.64	H	---		

Remark:

1. The emission behavior belongs to narrowband spurious emission.
2. Remark"---" means that the emission level is too low to be measured
3. The emission levels of below 1 GHz are very lower than the limit and not show in test report.

Test mode:	BC 0 1xRTT		Test channel:	Highest
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
1696.62	Vertical	-50.93	-13.00	Pass
2544.93	V	-41.02		
3393.24	V	-49.98		
4241.55	V	---		
5089.86	V	---		
5938.17	V	---		
1696.62	Horizontal	-55.55	-13.00	Pass
2544.93	H	-40.34		
3393.24	H	-48.78		
4241.55	H	---		
5089.86	H	---		
5938.17	H	---		
Test mode:	BC 1 1xRTT		Test channel:	Lowest
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
3702.5	Vertical	-46.26	-13.00	Pass
5553.75	V	-39.87		
7405	V	-34.96		
9256.25	V	---		
11107.5	V	---		
12958.75	V	---		
3702.5	Horizontal	-49.11	-13.00	Pass
5553.75	H	-41.16		
7405	H	-37.86		
9256.25	H	---		
11107.5	H	---		
12958.75	H	---		

Remark:

1. The emission behavior belongs to narrowband spurious emission.
2. Remark"---" means that the emission level is too low to be measured
3. The emission levels of below 1 GHz are very lower than the limit and not show in test report.

Test mode:	BC 1 1×RTT		Test channel:	Middle
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
3760.00	Vertical	-49.33	-13.00	Pass
5640.00	V	-35.36		
7520.00	V	-38.13		
9400.00	V	---		
11280.00	V	---		
13160.00	V	---		
3760.00	Horizontal	-46.37	-13.00	Pass
5640.00	H	-36.16		
7520.00	H	-38.07		
9400.00	H	---		
11280.00	H	---		
13160.00	H	---		
Test mode:	BC 1 1×RTT		Test channel:	Highest
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
3817.5	Vertical	-49.58	-13.00	Pass
5726.25	V	-36.13		
7635	V	-38.42		
9543.75	V	---		
11452.5	V	---		
13361.25	V	---		
3817.5	Horizontal	-49.59	-13.00	Pass
5726.25	H	-38.89		
7635	H	-37.48		
9543.75	H	---		
11452.5	H	---		
13361.25	H	---		

Remark:

1. The emission behavior belongs to narrowband spurious emission.
2. Remark"---" means that the emission level is too low to be measured
3. The emission levels of below 1 GHz are very lower than the limit and not show in test report.

Test mode:	BC 0 1xEV-DO Rev.0		Test channel:	Lowest
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
1649.4	Vertical	-59.66	-13.00	Pass
2474.1	V	-51.17		
3298.8	V	-51.35		
4123.5	V	---		
4948.2	V	---		
5772.9	V	---		
1649.4	Horizontal	-59.99	-13.00	Pass
2474.1	H	-52.11		
3298.8	H	-51.88		
4123.5	H	---		
4948.2	H	---		
5772.9	H	---		
Test mode:	BC 0 1xEV-DO Rev.0		Test channel:	Middle
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
1673.04	Vertical	-60.46	-13.00	Pass
2509.56	V	-53.65		
3346.08	V	-50.93		
4182.6	V	---		
5019.12	V	---		
5855.64	V	---		
1673.04	Horizontal	-59.77	-13.00	Pass
2509.56	H	-52.76		
3346.08	H	-49.89		
4182.6	H	---		
5019.12	H	---		
5855.64	H	---		

Remark:

1. The emission behavior belongs to narrowband spurious emission.
2. Remark"---" means that the emission level is too low to be measured
3. The emission levels of below 1 GHz are very lower than the limit and not show in test report.

Test mode:	BC 0 1xEV-DO Rev.0		Test channel:	Highest
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
1696.62	Vertical	-59.87	-13.00	Pass
2544.93	V	-53.90		
3393.24	V	-49.36		
4241.55	V	---		
5089.86	V	---		
5938.17	V	---		
1696.62	Horizontal	-60.08	-13.00	Pass
2544.93	H	-53.78		
3393.24	H	-50.53		
4241.55	H	---		
5089.86	H	---		
5938.17	H	---		
Test mode:	BC 1 1xEV-DO Rev.0		Test channel:	Lowest
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
3702.5	Vertical	-50.39	-13.00	Pass
5553.75	V	-43.48		
7405	V	-39.44		
9256.25	V	---		
11107.5	V	---		
12958.75	V	---		
3702.5	Horizontal	-49.81	-13.00	Pass
5553.75	H	-42.71		
7405	H	-39.71		
9256.25	H	---		
11107.5	H	---		
12958.75	H	---		

Remark:

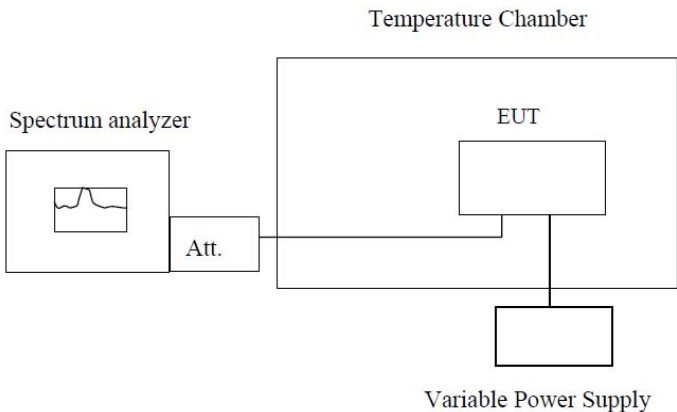
1. The emission behavior belongs to narrowband spurious emission.
2. Remark"---" means that the emission level is too low to be measured
3. The emission levels of below 1 GHz are very lower than the limit and not show in test report.

Test mode:	BC 1 1xEV-DO Rev.0		Test channel:	Middle
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
3760.00	Vertical	-51.59	-13.00	Pass
5640.00	V	-39.39		
7520.00	V	-41.42		
9400.00	V	---		
11280.00	V	---		
13160.00	V	---		
3760.00	Horizontal	-50.01	-13.00	Pass
5640.00	H	-43.40		
7520.00	H	-40.41		
9400.00	H	---		
11280.00	H	---		
13160.00	H	---		
Test mode:	BC 1 1xEV-DO Rev.0		Test channel:	Highest
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
3817.5	Vertical	-50.39	-13.00	Pass
5726.25	V	-40.63		
7635	V	-41.40		
9543.75	V	---		
11452.5	V	---		
13361.25	V	---		
3817.5	Horizontal	-50.44	-13.00	Pass
5726.25	H	-39.64		
7635	H	-39.41		
9543.75	H	---		
11452.5	H	---		
13361.25	H	---		

Remark:

1. The emission behavior belongs to narrowband spurious emission.
2. Remark"---" means that the emission level is too low to be measured
3. The emission levels of below 1 GHz are very lower than the limit and not show in test report.

## 6.11 Frequency stability V.S. Temperature measurement

Test Requirement:	FCC Part 2.1055(a)(1)(b)
Test Method:	FCC Part 2.1055(a)(1)(b)
Limit:	2.5 ppm
Test setup:	 <p><b>Note :</b> Measurement setup for testing on Antenna connector</p>
Test procedure:	<ol style="list-style-type: none"> <li>1. The equipment under test was connected to an external DC power supply and input rated voltage.</li> <li>2. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators.</li> <li>3. The EUT was placed inside the temperature chamber.</li> <li>4. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 25°C operating frequency as reference frequency.</li> <li>5. Turn EUT off and set the chamber temperature to -30°C. After the temperature stabilized for approximately 30 minutes recorded the frequency.</li> <li>6. Repeat step measure with 10°C increased per stage until the highest temperature of +50°C reached</li> </ol>
Test Instruments:	Refer to section 5.8 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed
Remark:	All three channels of all modulations have been tested, but only the worst channel and the worst modulation show in this test item.

Measurement Data:

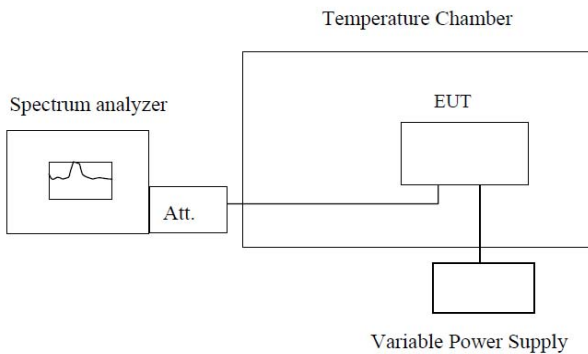
Measurement Data:

Reference Frequency: BC 0 1×RTT Middle channel=384 channel=836.52MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.70	-30	170	0.203223	2.5	Pass
	-20	106	0.126715		
	-10	124	0.148233		
	0	96	0.114761		
	10	85	0.101611		
	20	103	0.123129		
	30	114	0.136279		
	40	97	0.115957		
	50	93	0.111175		
Reference Frequency: BC 1 1×RTT Middle channel=600 channel=1880MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.70	-30	150	0.079787	2.5	Pass
	-20	130	0.069149		
	-10	87	0.046277		
	0	64	0.034043		
	10	103	0.054787		
	20	108	0.057447		
	30	96	0.051064		
	40	97	0.051596		
	50	75	0.039894		



Reference Frequency: BC 0 1×EV-DO Rev.0 Middle channel=384 channel=836.52MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.70	-30	165	0.197246	2.5	Pass
	-20	150	0.179314		
	-10	134	0.160187		
	0	120	0.143451		
	10	85	0.101611		
	20	67	0.080094		
	30	103	0.123129		
	40	95	0.113566		
	50	89	0.106393		
Reference Frequency: BC 1 1×EV-DO Rev.0 Middle channel=600 channel=1880MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.70	-30	145	0.077128	2.5	Pass
	-20	136	0.072340		
	-10	85	0.045213		
	0	63	0.033511		
	10	105	0.055851		
	20	101	0.053723		
	30	95	0.050532		
	40	78	0.041489		
	50	68	0.036170		

## 6.12 Frequency stability V.S. Voltage measurement

Test Requirement:	FCC Part 2.1055(d)(1)(2)
Test Method:	FCC Part 2.1055(d)(1)(2)
Limit:	2.5ppm
Test setup:	 <p><b>Note :</b> Measurement setup for testing on Antenna connector</p>
Test procedure:	<ol style="list-style-type: none"> <li>1. Set chamber temperature to 25°C. Use a variable DC power source to power the EUT and set the voltage to rated voltage.</li> <li>2. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and recorded the frequency.</li> <li>3. Reduce the input voltage to specify extreme voltage variation (+/- 15%) and endpoint, record the maximum frequency change.</li> </ol>
Test Instruments:	Refer to section 5.8 for details
Test mode:	Refer to section 5.3 for details, and all channels have been tested, only shows the worst channel data in this report.
Test results:	Passed

Measurement Data (the worst channel):

Reference Frequency: BC 0 1×RTT Middle channel=384 channel=836.52MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.25	130	0.155406	2.5	Pass
	3.70	74	0.088462		
	3.40	89	0.106393		

Reference Frequency: BC 1 1×RTT Middle channel=600 channel=1880MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.25	96	0.051064	2.5	Pass
	3.70	94	0.050000		
	3.40	85	0.045213		

Reference Frequency: BC 0 1×EV-DO Rev.0 Middle channel=384 channel=836.52MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.25	126	0.150624	2.5	Pass
	3.70	74	0.088462		
	3.40	68	0.081289		

Reference Frequency: BC 1 1×EV-DO Rev.0 Middle channel=600 channel=1880MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.25	90	0.047872	2.5	Pass
	3.70	68	0.036170		
	3.40	75	0.039894		