Full

TEST REPORT

No. I18D00022-SRD05

For

Client : Datalogic S.r.l.

Production : Smartphone

Model Name : MEMOR 10

FCC ID: U4GDL35US

IC ID: 3862E-DL35US

Hardware Version: V00 (US)

Software Version: 0.02.06D.20180716-userdebug-customer1

Issued date: 2018-11-14

Note:

The test results in this test report relate only to the devices specified in this report. This report shall not be reproduced except in full without the written approval of ECIT Shanghai.

Test Laboratory:

ECIT Shanghai, East China Institute of Telecommunications

Add: 7-8F, G Area, No.668, Beijing East Road, Huangpu District, Shanghai, P. R. China

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Revision Version

Report Number	Revision	Date	Memo
I18D00022-SRD05	00	2018-10-22	Initial creation of test report
I18D00022-SRD05	01	2018-11-14	Second creation of test report

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1. Test Laboratory

1.1. Testing Location

Company Name:	ECIT Shanghai, East China Institute of Telecommunications
Address:	7-8F, G Area, No. 668, Beijing East Road, Huangpu District, Shanghai, P. R. China
Postal Code:	200001
Telephone:	(+86)-021-63843300
Fax:	(+86)-021-63843301
FCC registration No	489729

1.2. Testing Environment

Normal Temperature:	15-35℃
Extreme Temperature:	-30/+50℃
Relative Humidity:	20-75%

1.3. Project data

Project Leader:	Yu Anlu
Testing Start Date:	2018-07-20
Testing End Date:	2018-10-22

1.4. Signature

Yang Dejun
(Prepared this test report)

Shi Hongqi
(Reviewed this test report)

Zheng Zhongbin
(Approved this test report)

2. Client Information

2.1. Applicant Information

Company Name:	Datalogic S.r.l.
Address:	Via San Vitalino no. 13, Calderara di Reno – 40012 (BO) - Italy
Telephone:	+39 051 314 72 16
Postcode:	/

2.2. Manufacturer Information

Company Name:	Datalogic S.r.l.
Address:	Via San Vitalino no. 13, Calderara di Reno – 40012 (BO) - Italy
Telephone:	+39 051 314 72 16
Postcode:	/

3. Equipment Under Test (EUT) and Ancillary Equipment (AE)

3.1. About EUT

EUT Description	Smartphone
Model name	MEMOR 10
FCC ID	U4GDL35US
IC ID	3862E-DL35US
GSM Frequency Band	GSM850/GSM900/GSM1800/GSM1900
UMTS Frequency Band	Band Ⅰ/Band Ⅱ/BandⅣ/Band Ⅴ/BandⅧ
CDMA Frequency Band	BC0/BC1
LTE Frequency Band	LTE 2/4/5/7/12/13/17/25/26
Additional Communication Function	BT4.2,BLE; WiFi 802.11a,b,g,n,ac;NFC,GPS; GLONASS; WLC, Beidou.
Extreme Temperature	-30/+50℃
Nominal Voltage	3.8V
Extreme High Voltage	4.35V
Extreme Low Voltage	3.6V

Note: Photographs of EUT are shown in ANNEX A of this test report.

3.2. Internal Identification of EUT used during the test

EUT ID*	Model Name	SN or IMEI	HW Version	SW Version	Date of receipt
N14	MEMOR 10	359737090202228	V00 (US)	0.02.06D.20180716-userdebug-customer1	2018-07-04
N10	MEMOR 10	359737090203796	V00 (US)	0.02.06D.20180716-userdebug-customer1	2018-07-04

*EUT ID: is used to identify the test sample in the lab internally.

3.3. Internal Identification of AE used during the test

AE ID*	Description	SN
AE1	RF cable	---
AE2	---	---

*AE ID: is used to identify the test sample in the lab internally.

3.4. Statements

The MEMOR 10, supporting GSM/GPRS/EDGE/WCDMA/LTE/CDMA/BT/BLE/NFC/WLAN, manufactured by Datalogic S.r.l., which is a new product for testing.

ECIT has verified that the compliance of the tested device specified in section 5 of this test report

is successfully evaluated according to the procedure and test methods as defined in type certification requirement listed in section 5 of this test report.

4. Reference Documents

4.1. Reference Documents for testing

The following documents listed in this section are referred for testing.

Reference	Title	Version
FCC Part 2	FREQUENCY ALLOCATIONS AND RADIO TREATY MATTERS; GENERAL RULES AND REGULATIONS	2017/10/1
FCC Part 22	PUBLIC MOBILE SERVICES	2017/10/1
FCC Part 24	PERSONAL COMMUNICATIONS SERVICES	2017/10/1
RSS 133	2 GHz Personal Communications Services	2013/10
RSS 132	Cellular Telephone Systems Operating in the Bands 824-849 MHz and 869-894 MHz	2013/10
RSS-Gen	RSS-Gen —General Requirements for Compliance of Radio Apparatus	2018/4

5. SUMMARY OF TEST RESULTS

Item	Test items	Clause in FCC rules	Clause in IC rules RSS-Gen and RSS- 130	result
1	Output Power	2.1046/22.913(a)/24.232	RSS-132 5.4/ RSS-133 6.4	Pass
2	Peak-to-Average	24.232(d)	RSS-132 5.4/ RSS-133 6.4	Pass
3	99%Occupied	2.1049(h)(i)/ 22.917(b)	RSS-Gen 4.6	Pass
4	-26dB Emission	22.917(b)/§24.238(b)	RSS-Gen 4.6	Pass
5	Band Edge at antenna terminals	22.917(a)/24.238(a)	RSS-132 5.5/ RSS-133 6.5	Pass
6	Frequency stability	2.1055/24.235	RSS-132 5.3/ RSS-133 6.3	Pass
7	Conducted Spurious mission	2.1053/22.917(a)/24.238	RSS-132 5.5/ RSS-133 6.5	Pass
8	Emission Limit	2.1051/22.917/24.238/2	RSS-132 5.5/ RSS-133 6.5	Pass

6. Test Equipment Utilized

Climate chamber

No.	Equipment	Model	Serial Number	Manufacturer	Calibration date	Cal.interval
1	Climate chamber	SH-641	92012011	ESPEC	2017-12-25	2 Year

Radiated emission test system

The test equipment and ancillaries used are as follows.

No.	Equipment	Model	Serial Number	Manufacturer	Calibration date	Cal.interval
1	Universal Radio Communication Tester	CMU200	123123	R&S	2018-05-11	1 Year
2	EMI Test Receiver	ESU40	100307	R&S	2018-05-11	1 Year
3	TRILOG Broadband Antenna	VULB9163	VULB9163-515	Schwarzbeck	2017-02-25	3 Year
4	Double-ridged Waveguide Antenna	ETS-3117	00135890	ETS	2017-01-11	3 Year
5	2-Line V-Network	ENV216	101380	R&S	2018-05-11	1 Year
6	Substitution Antenna	ETS-3117	00135890	ETS	2017-01-11	3 Year
7	RF Signal Generator	SMF100A	102314	R&S	2018-05-11	1 Year
8	Substitution Antenna	VUBA9117	9117-266	Schwarzbeck	2017-11-18	3 Year
9	Amplifier	SCU08	10146	R&S	2018-05-11	1 Year

Conducted test system

No.	Name	Type	SN	Manufacture	Calibration date	Cal.interval
1	Spectrum Analyzer	FSQ26	101096	R&S	2018-05-11	1 Year
2	Universal Radio Communicat	CMU200	123123	R&S	2018-05-11	1 Year
3	DC Power Supply	ZUP60-14	LOC-220Z006-0007	TDL-Lambda	2018-05-11	1 Year

7. Test Environment

Shielding Room1 (6.0 meters×3.0 meters×2.7 meters) did not exceed following limits along the conducted RF performance testing:

Temperature	Min. = 15 ℃, Max. = 35 ℃
Relative humidity	Min. = 20 %, Max. = 75 %
Shielding effectiveness	> 100 dB
Ground system resistance	< 0.5 Ω

Control room did not exceed following limits along the EMC testing:

Temperature	Min. = 15 ℃, Max. = 35 ℃
Relative humidity	Min. =25 %, Max. = 75 %
Shielding effectiveness	> 100 dB
Electrical insulation	> 10 kΩ
Ground system resistance	< 0.5 Ω

Fully-anechoic chamber1 (6.9 meters×10.9 meters×5.4 meters) did not exceed following limits along the EMC testing:

Temperature	Min. = 15 ℃, Max. = 35 ℃
Relative humidity	Min. = 25 %, Max. = 75 %
Shielding effectiveness	> 100 dB
Electrical insulation	> 10 kΩ
Ground system resistance	< 0.5 Ω
VSWR	Between 0 and 6 dB, from 1GHz to 18GHz
Site Attenuation Deviation	Between -4 and 4 dB,30MHz to 1GHz
Uniformity of field strength	Between 0 and 6 dB, from 80MHz to 3000 MHz

8. Measurement Uncertainty

Measurement uncertainty for all the testing in this report are within the limit specified in ECIT documents. The detailed measurement uncertainty to see the column, k=2

Measurement Items	Range	Confidence Level	Calculated Uncertainty
Maximum Peak Output Power	30MHz-3600MHz	95%	±0.88db
EBW and VBW	30MHz-3600MHz	95%	±0.031MHz
Transmitter Spurious Emission-Conducted	9KHz-10000MHz	95%	±4.56db
Transmitter Spurious Emission-Conducted	10000 MHz -40000MHz	95%	±5.34db
Transmitter Spurious Emission-Radiated	9KHz-30MHz	95%	±5.66db
Transmitter Spurious Emission-Radiated	30MHz-1000MHz	95%	±4.98db
Transmitter Spurious Emission-Radiated	1000MHz -18000MHz	95%	±5.06db
Transmitter Spurious Emission-Radiated	18000MHz -40000MHz	95%	±5.20db
Frequency stability	1MHz-16GHz	95%	10KHz

ANNEX A. MEASUREMENT RESULTS

ANNEX A.1. OUTPUT POWER

A.1.1. Summary

During the process of testing, the EUT was controlled Rhode & Schwarz Digital Radio. Communication tester (CMU-200) to ensure max power transmission and proper modulation. This result contains peak output power and EIRP measurements for the EUT. In all cases, output power is within the specified limits.

A.1.2. Conducted

A.1.2.1. Method of Measurements

Method of measurements please refer to CFR47 (FCC) part 2.1046 and part 22.913.
The EUT was set up for the max output power with pseudo random data modulation.
The power was measured with Rhode & Schwarz Spectrum Analyzer FSQ(peak).
These measurements were done at 3 frequencies, 1850.2 MHz, 1880.0MHz and 1909.8MHz for PCS1900 band; 824.2MHz, 836.6MHz and 848.8MHz for GSM850 band. (bottom, middle and top of operational frequency range).
These measurements were done at 3 frequencies, 1852.4 MHz, 1880.0MHz and 1907.6MHz for WCDMA Band II; 826.4MHz, 836.6MHz and 846.6MHz for WCDMA Band V. (bottom, middle and top of operational frequency range).

A.1.2.2 Test procedures:

1. The transmitter output port was connected to base station.
2. Set the EUT at maximum power through base station.
3. Select lowest, middle, and highest channels for each band and different modulation.
4. Measure the maximum burst average power for GSM and maximum average power for other modulation signal.

A.1.2.3 Limit:

22.913(a) Mobile stations are limited to 7watts.
24.232(c) Mobile and portable stations are limited to 2 watts.

A.1.2.4 Test Procedure:

The transmitter output power was connected to calibrated attenuator, the other end of which was connected to signal analyzer. Transmitter output power was read off the power in dBm. The power outputs at the transmitter antenna port was determined by adding the value of attenuator to the signal analyzer reading.

A.1.2.5 CDMA2000 Cellular Test Condition:

RBW	VBW	Sweep time	Span

1MHz	1MHz	300ms	10MHz

A.1.2.7 Measurement results:

CDMA2000 Cellular BC0		
Channel/fc(MHz)	Peak power (dBm)	AV power (dBm)
Mid 777/848.31	24.23	24.13
Low 384/836.52	24.44	24.35
High 1013/824.7	24.68	24.53

CDMA2000 PCS BC1		
Channel/fc(MHz)	Peak power (dBm)	AV power (dBm)
Mid 600/1880.0	24.00	23.91
Low 25/1851.25	23.75	23.67
High 1175/1908.75	24.14	24.05

1xEV-DO BC0 Release 0		
Channel/fc(MHz)	Peak power (dBm)	AV power (dBm)
Mid 777/848.31	24.70	24.58
Low 384/836.52	24.55	24.43
High 1013/824.7	24.42	24.28

1xEV-DO BC1 Release 0		
Channel/fc(MHz)	Peak power (dBm)	AV power (dBm)
Mid 600/1880.0	23.96	23.80
Low 25/1851.25	24.18	24.05
High 1175/1908.75	23.80	23.67

1xEV-DO BC0 Release A

Channel/fc(MHz)	Peak power (dBm)	AV power (dBm)
Mid 777/848.31	23.50	23.38
Low 384/836.52	23.55	23.43
High 1013/824.7	23.23	23.11

1xEV-DO BC1 Release A		
Channel/fc(MHz)	Peak power (dBm)	AV power (dBm)
Mid 600/1880.0	24.01	23.94
Low 25/1851.25	24.23	24.19
High 1175/1908.75	23.88	23.76

Conclusion: PASS

ANNEX A.2. Peak-to-Average Power Ratio

Method of test measurements please refer to CFR47 (FCC) part 2.1046 and part 22.913.

A.2.1 PAPR Limit

The peak-to-average power ratio (PAPR) of the transmission may not exceed 13dB

A.2.2 Test procedures

1. The EUT was connected to the spectrum analyzer and system simulator via a power divider.
2.
   1) Select the spectrum analyzer CCDF function.
   2) Set RBW⩾signal's occupied bandwidth.
   3) Set the number of counts to a value that stabilizes the measured CCDF cure;
   4) Sweep time ⩾ 1s.
3. Record the maximum PAPR level associated with a probability of 0.1%.

A.2.3 Test results:

CDMA2000 Cellular BC0			
Channel	384	777	1013
Frequency (MHz)	836.52	848.31	824.7
PAPR(dB)	5.43	5.37	5.65

CDMA2000 PCS BC1			
Channel	25	600	1175
Frequency (MHz)	1851.25	1880.0	1908.75
PAPR(dB)	5.47	5.65	5.67

1xEV-DO BC0 Release 0			
Channel	384	777	1013
Frequency (MHz)	836.52	848.31	824.7
PAPR(dB)	8.26	8.27	8.87

1xEV-DO BC1 Release 0			
Channel	25	600	1175
Frequency (MHz)	1851.25	1880.0	1908.75
PAPR(dB)	8.56	8.04	8.28

1xEV-DO BC0 Release A			
Channel	384	777	1013
Frequency (MHz)	836.52	848.31	824.7
PAPR(dB)	8.87	8.98	8.98

1xEV-DO BC1 Release A			
Channel	25	600	1175
Frequency (MHz)	1851.25	1880.0	1908.75
PAPR(dB)	8.79	8.89	8.78

Conclusion: PASS

ANNEX A.3. Occupied Bandwidth

Method of test please refer to CFR 47 (FCC) part 2.1049 and part 22 subpart .

A.3.1. Occupied Bandwidth

Similar to conducted emissions; occupied bandwidth measurements are only provided for selected frequencies in order to reduce the amount of submitted data. Data were taken at the extreme and mid frequencies of CDMA2000 Cellular, CDMA2000 PCS.

A.3.2 Test Procedure:

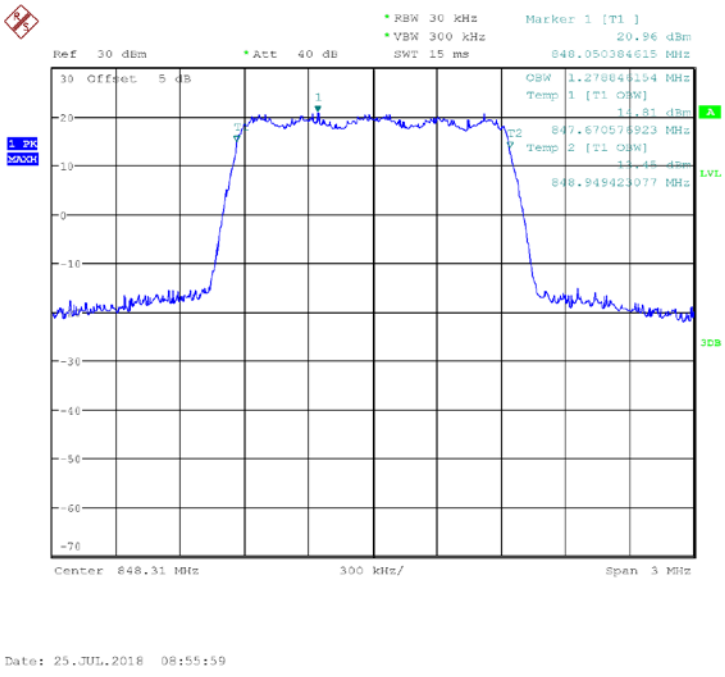
1. The EUT output RF connector was connected with a short cable to the signal analyzer.
2. RBW was set to about 1% of emission BW, VBW >= 3 times RBW,.
3. 99% bandwidth were measured, the occupied bandwidth is delta frequency between the two points where the display line intersects the signal trace.

A.3.3 Test result:

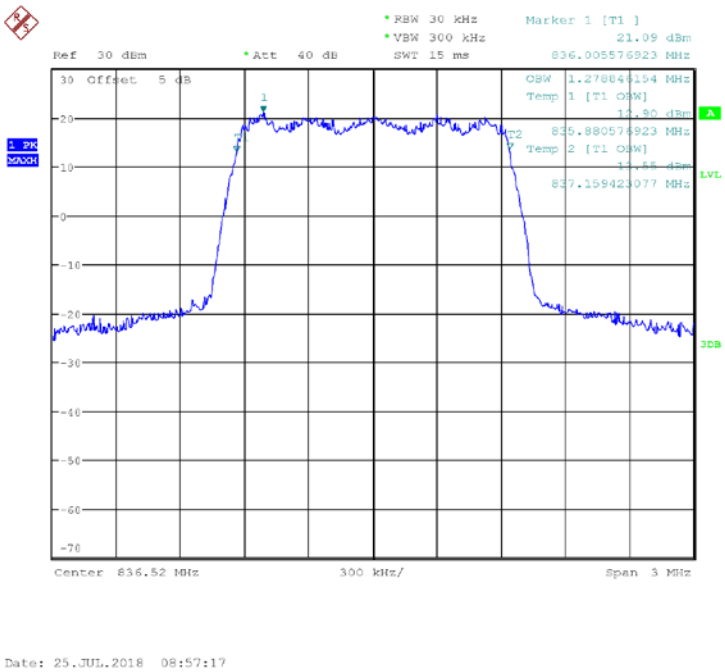
CDMA2000 Cellular BC0		
Test channel	Frequency (MHz)	99% Occupied Bandwidth(MHz)
Mid 777	848.31	1.279
Low 384	836.52	1.279
High 1013	824.7	1.279

Conclusion: PASS

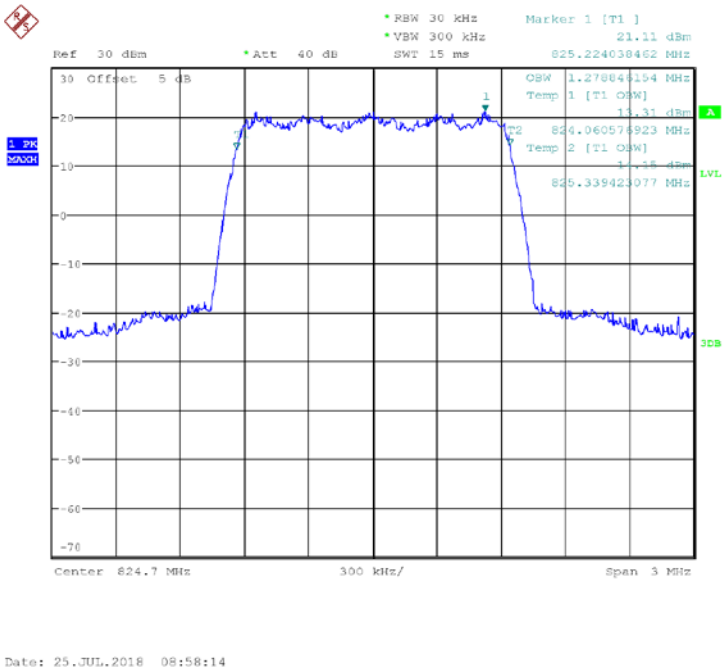
CDMA2000 Cellular



Channel 777-Occupied Bandwidth (99%)



Channel 384-Occupied Bandwidth (99%)



Channel 1013-Occupied Bandwidth (99%)

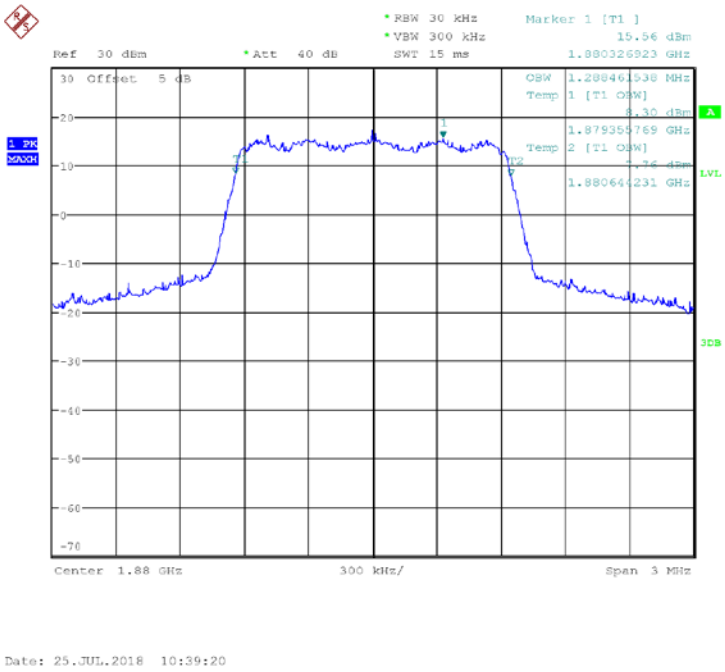
Conclusion: PASS

CDMA2000 PCS BC1		
Test channel	Frequency (MHz)	99% Occupied Bandwidth(MHz)
Mid 600	1880.0	1.288

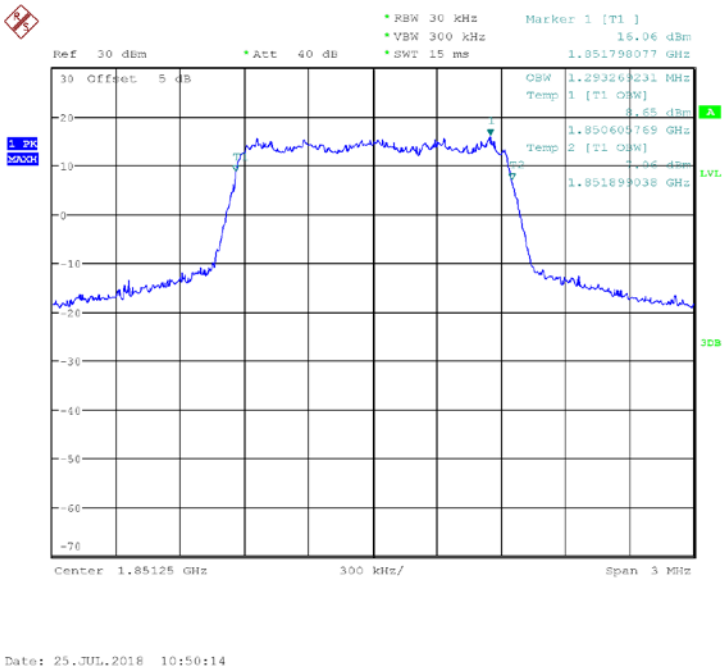
Low 25	1851.25	1.293
High 1175	1908.75	1.293

Conclusion: PASS

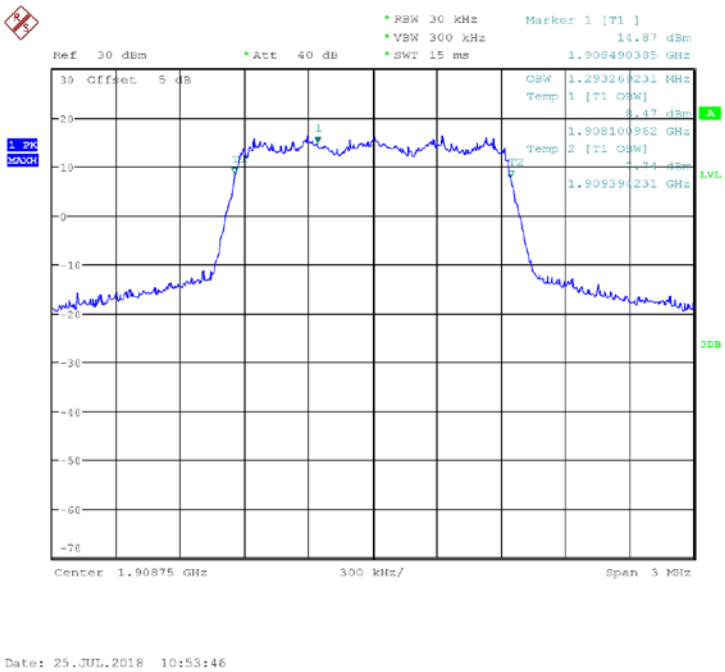
CDMA2000 PCS



Channel 600-Occupied Bandwidth



Channel 25-Occupied Bandwidth

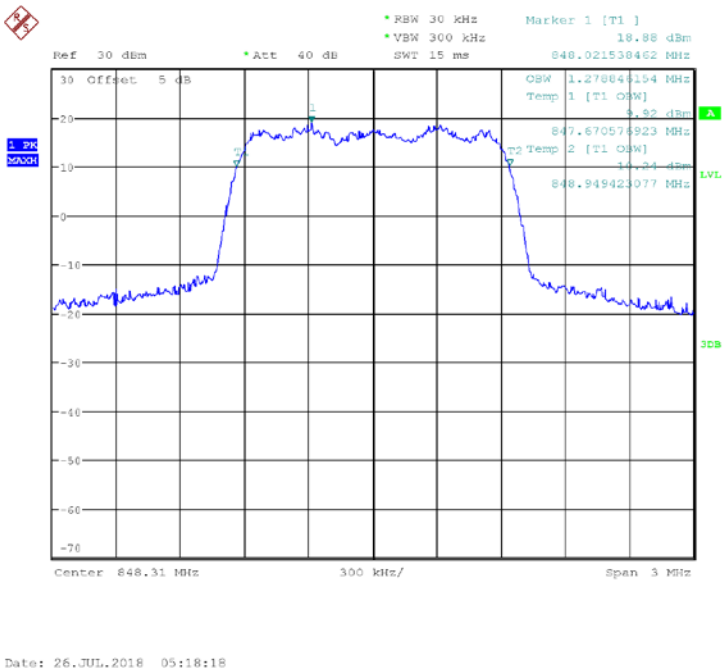


Channel 1175-Occupied Bandwidth

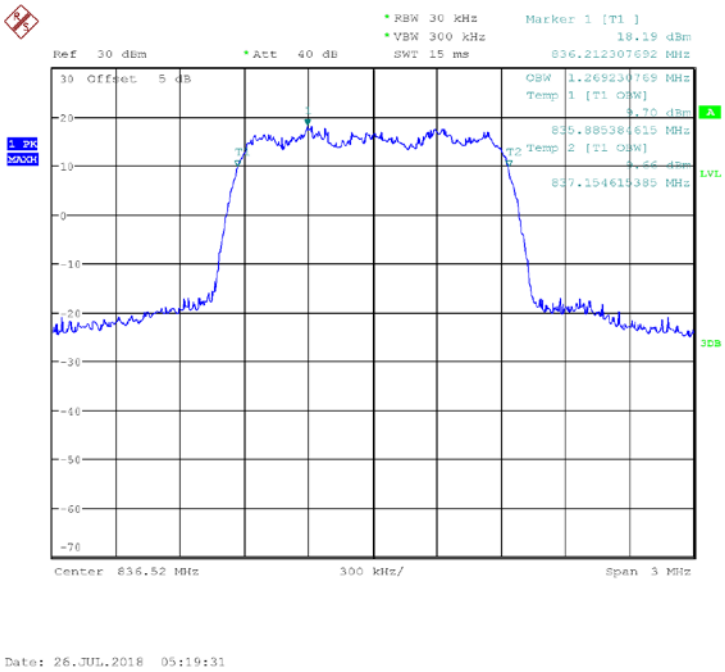
Conclusion: PASS

1xEV-DO BC0 Release 0		
Test channel	Frequency (MHz)	99% Occupied Bandwidth(MHz)
Mid 777	848.31	1.279
Low 384	836.52	1.269
High 1013	824.7	1.269

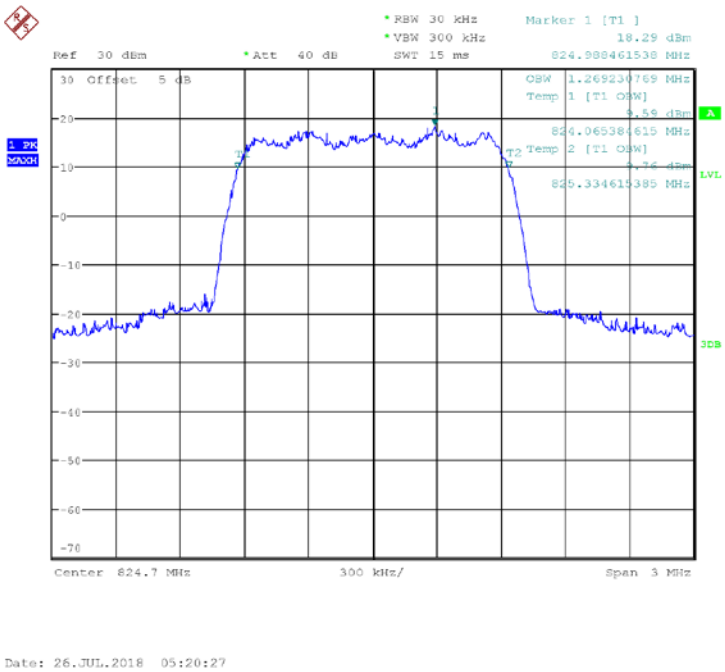
1xEV-DO BC0 Release 0



Channel 777-Occupied Bandwidth (99%)



Channel 384-Occupied Bandwidth (99%)

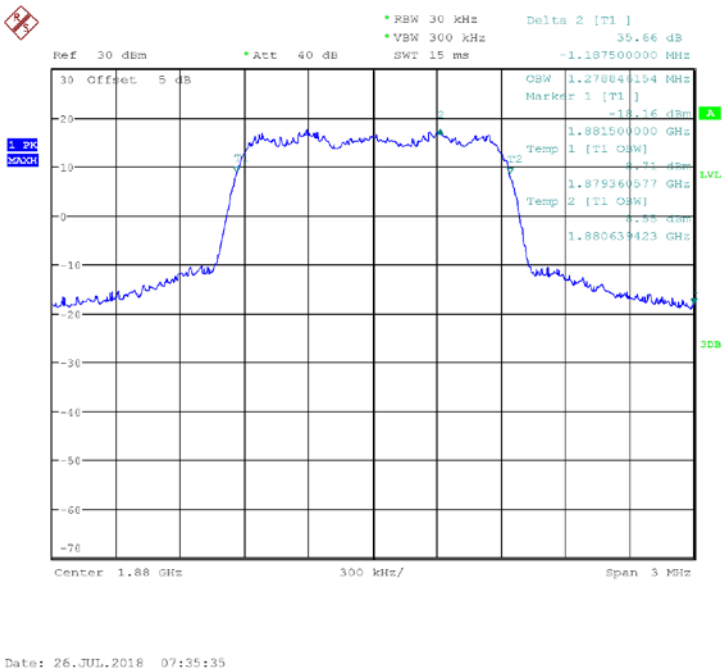


Channel 1013-Occupied Bandwidth (99%)

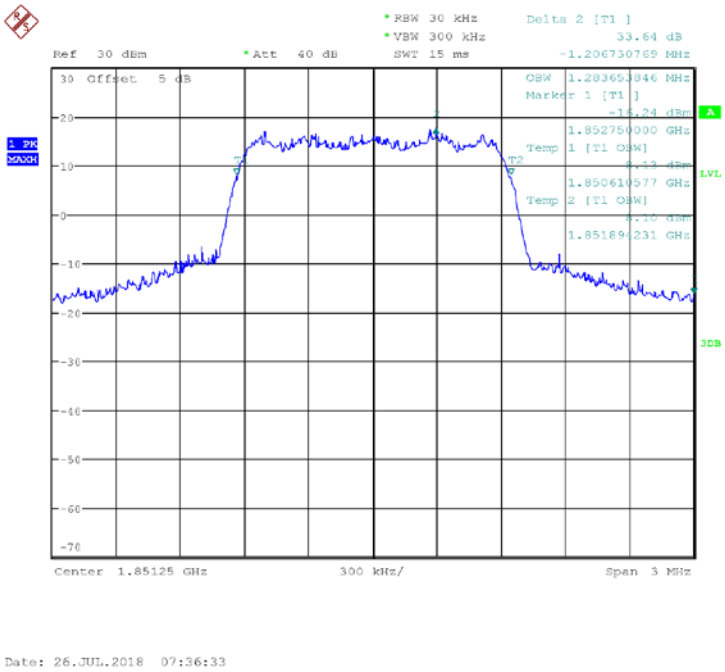
Conclusion: PASS

1xEV-DO BC1 Release 0		
Test channel	Frequency (MHz)	99% Occupied Bandwidth(MHz)
Mid 600	1880.0	1.279
Low 25	1851.25	1.284
High 1175	1908.75	1.279

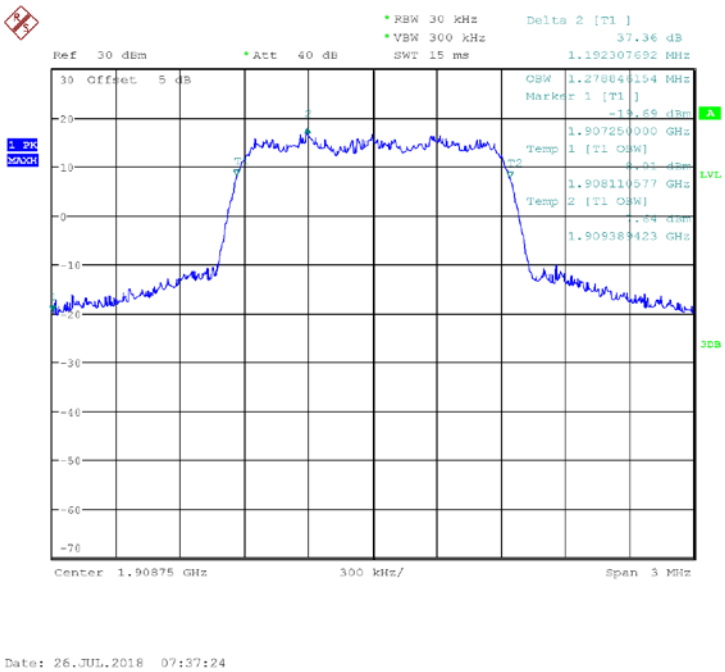
1xEV-DO BC1 Release 0



Channel 600-Occupied Bandwidth



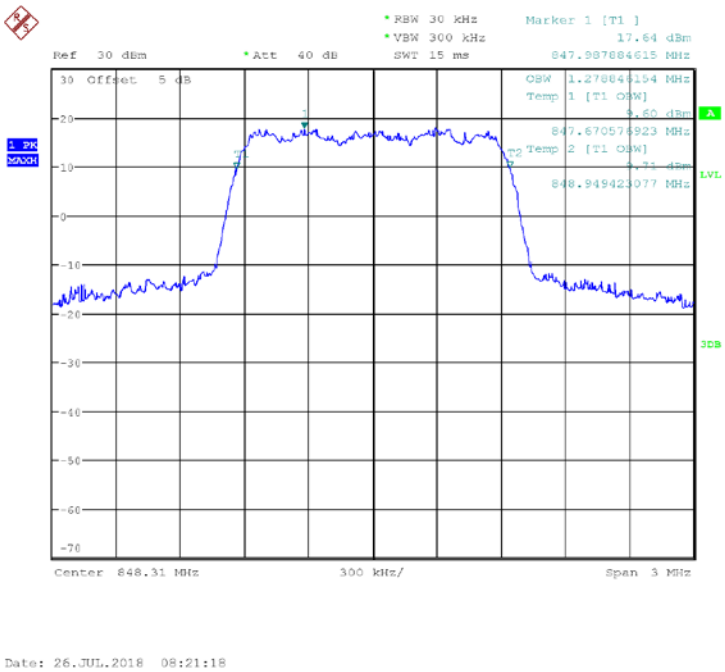
Channel 25-Occupied Bandwidth



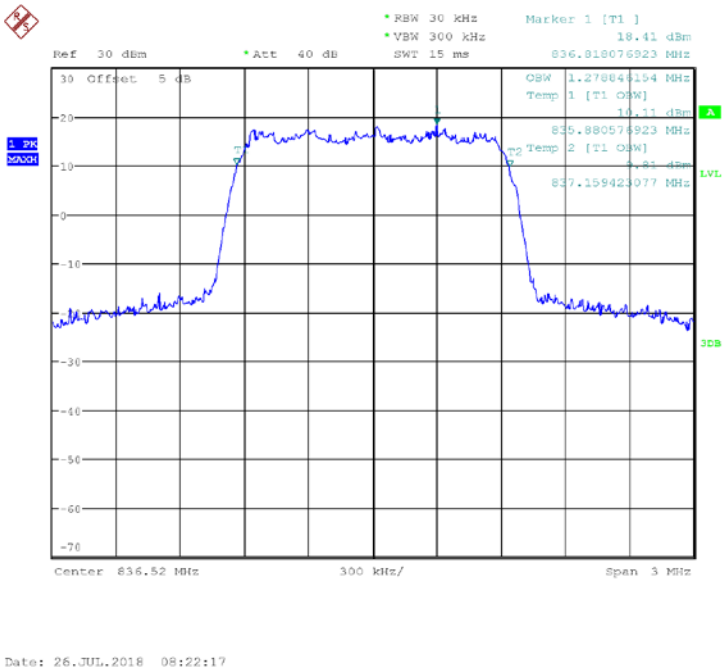
Channel 1175-Occupied Bandwidth

1xEV-DO BC0 Release A		
Test channel	Frequency (MHz)	99% Occupied Bandwidth(MHz)
Mid 777	848.31	1.279
Low 384	836.52	1.279
High 1013	824.7	1.279

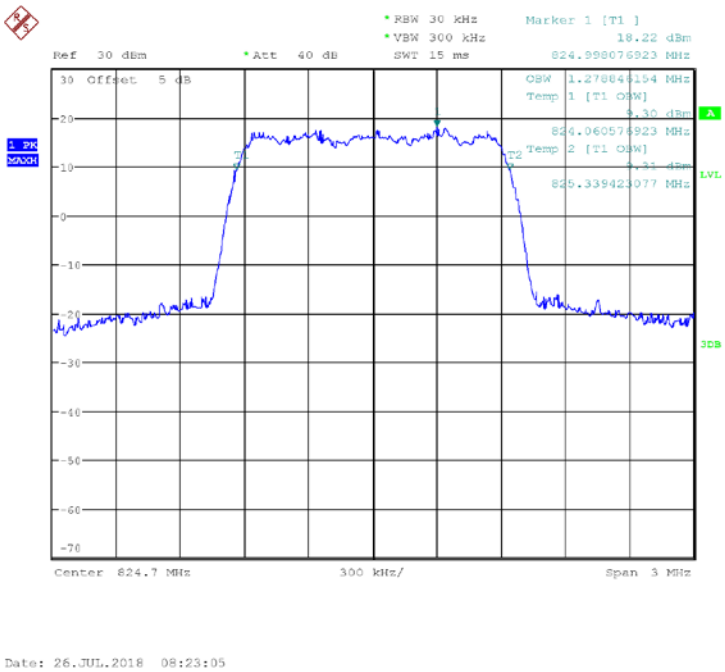
1xEV-DO BC0 Release A



Channel 777-Occupied Bandwidth (99%)



Channel 384-Occupied Bandwidth (99%)

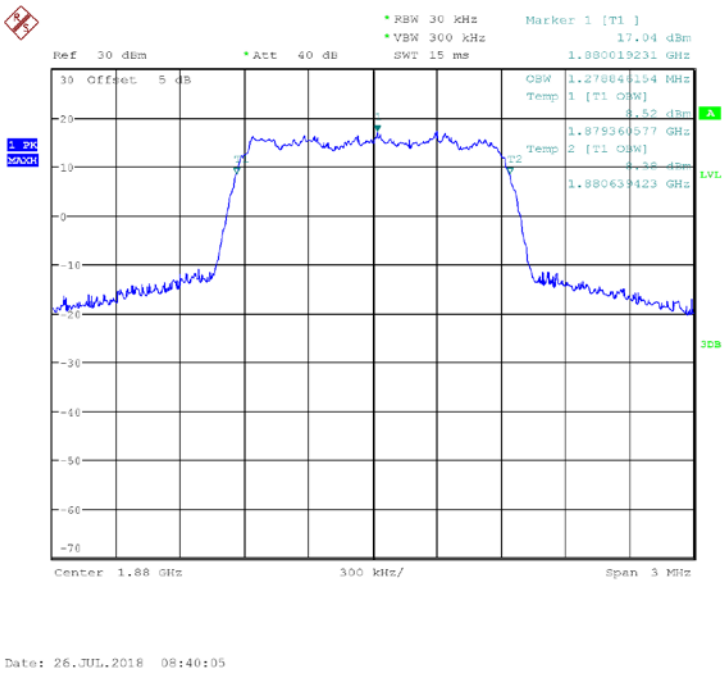


Channel 1013-Occupied Bandwidth (99%)

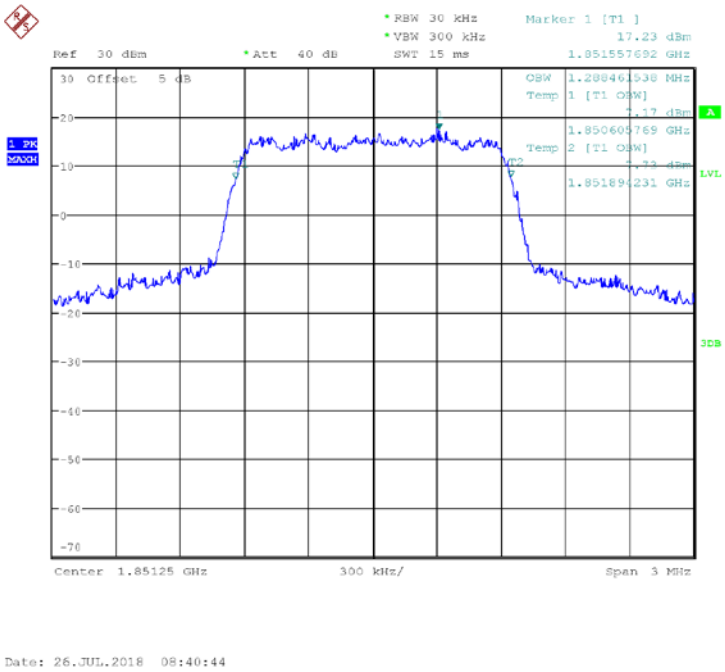
Conclusion: PASS

1xEV-DO BC1 Release A		
Test channel	Frequency (MHz)	99% Occupied Bandwidth(MHz)
Mid 600	1880.0	1.279
Low 25	1851.25	1.288
High 1175	1908.75	1.279

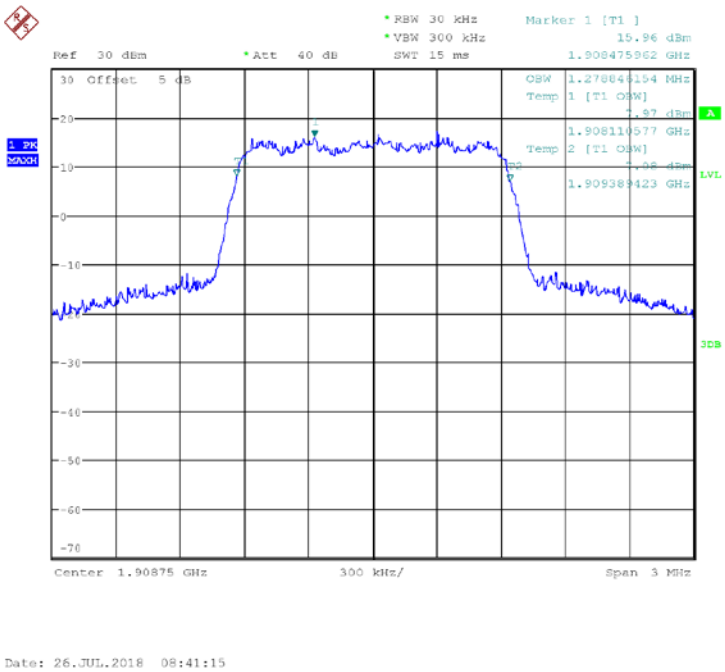
1xEV-DO BC1 Release A



Channel 600-Occupied Bandwidth



Channel 25-Occupied Bandwidth



Channel 1175-Occupied Bandwidth

Conclusion: PASS

ANNEX A.4. -26dB Emission Bandwidth

Method of test please refer to CFR 47 (FCC) part 2.1049 and part 22 subpart.

A.4.1. -26dB Emission Bandwidth

Similar to conducted emissions; occupied bandwidth measurements are only provided for selected frequencies in order to reduce the amount of submitted data. Data were taken at the extreme and mid frequencies of CDMA2000 Cellular, CDMA2000 PCS.

A.4.2 Test Procedure:

1. The EUT output RF connector was connected with a short cable to the signal analyzer.
2. RBW was set to about 1% of emission BW, VBW >= 3 times RBW,.
3. 26dB bandwidth were measured, the occupied bandwidth is delta frequency between the two points where the display line intersects the signal trace.

A.4.3 Measurement methods:

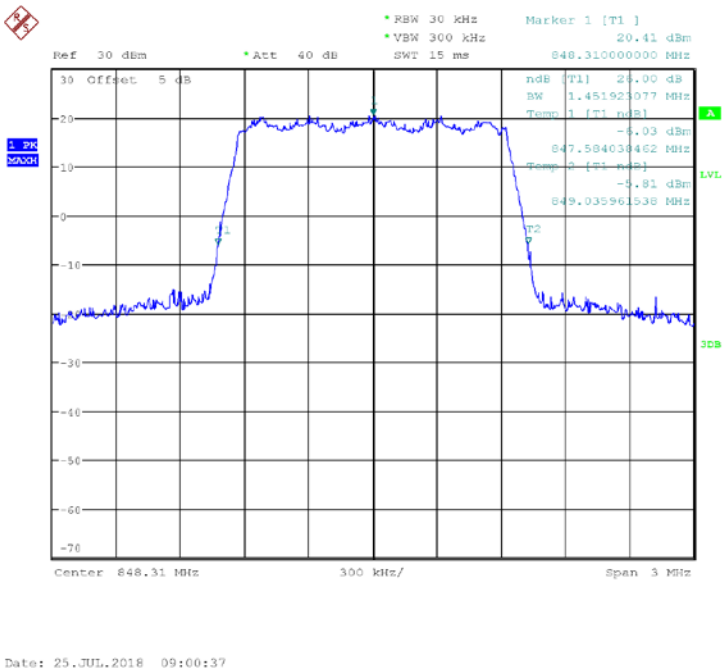
For CDMA: signal analyzer setting as: RBW=20KHz;VBW=200KHz;Span=3MHz.

A.4.4 Test results:

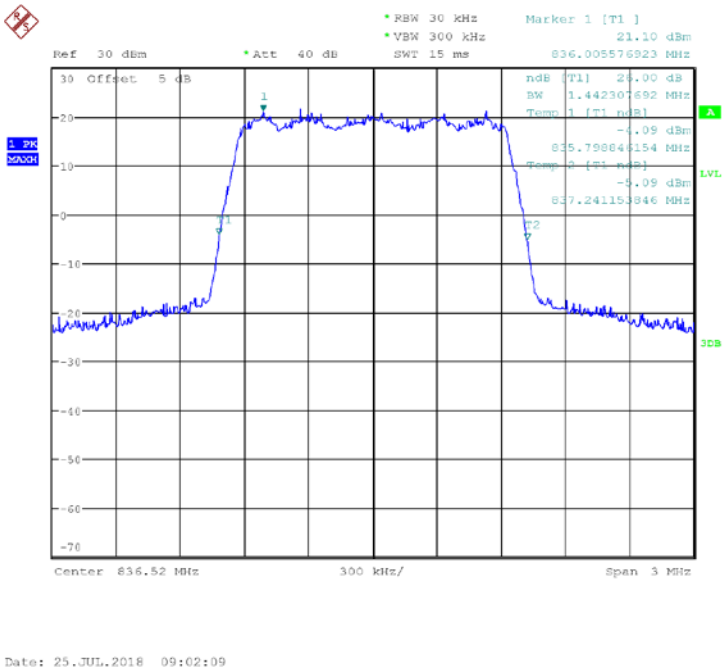
CDMA2000 Cellular BC0		
Test channel	Frequency (MHz)	–26dBc Emission Bandwidth(MHz)
Mid 777	848.31	1.452
Low 384	836.52	1.442
High 1013	824.7	1.442

Conclusion: PASS

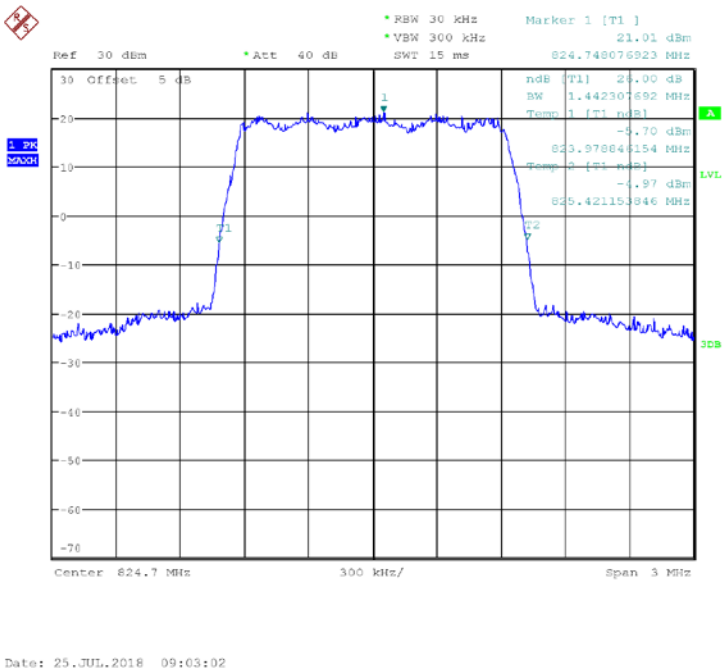
CDMA2000 Cellular



Channel 777- Emission Bandwidth (-26dBc BW)



Channel 384- Emission Bandwidth (-26dBc BW)

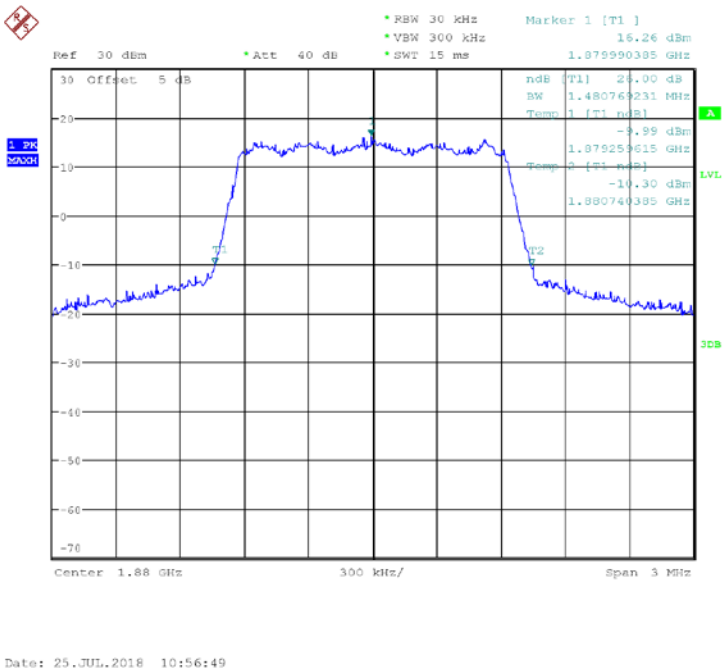


Channel 1013- Emission Bandwidth (-26dBc BW)

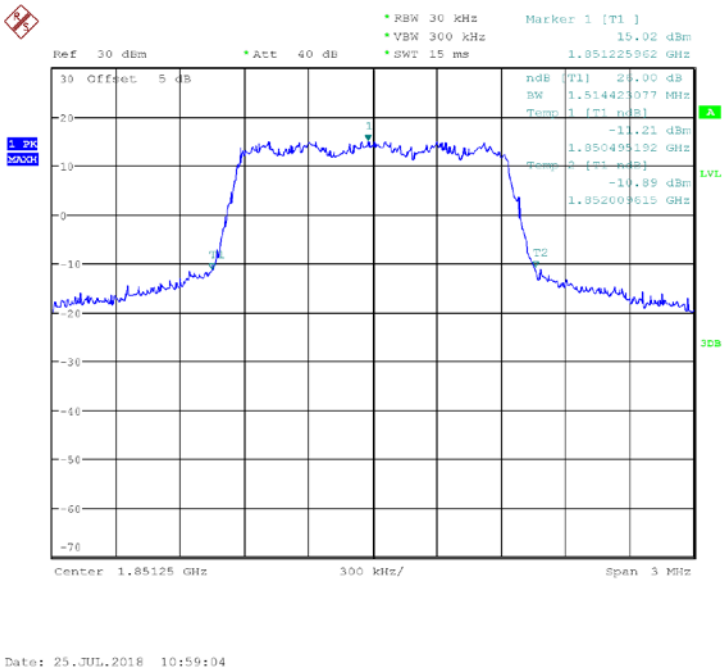
CDMA2000 PCS BC1		
Test channel	Frequency (MHz)	–26dBc Emission Bandwidth(MHz)
Mid 600	1880.0	1.481
Low 25	1851.25	1.514
High 1175	1908.75	1.505

Conclusion: PASS

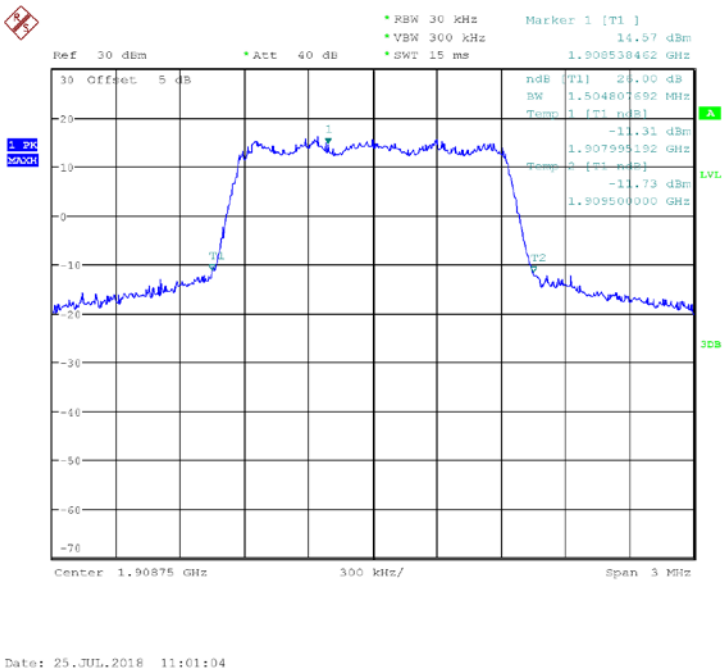
CDMA2000 PCS BC1



Channel 600- Emission Bandwidth (-26dBc BW)



Channel 25- Emission Bandwidth (-26dBc BW)



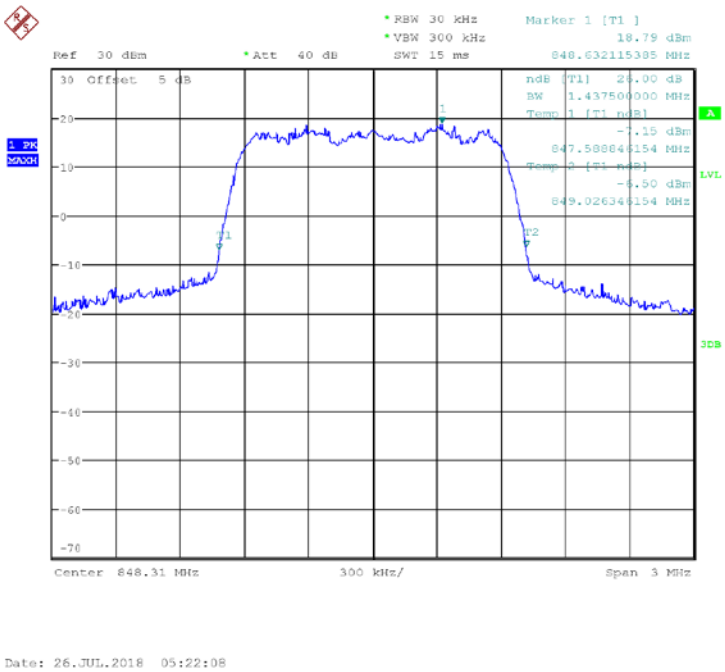
Channel 1175- Emission Bandwidth (-26dBc BW)

Conclusion: PASS

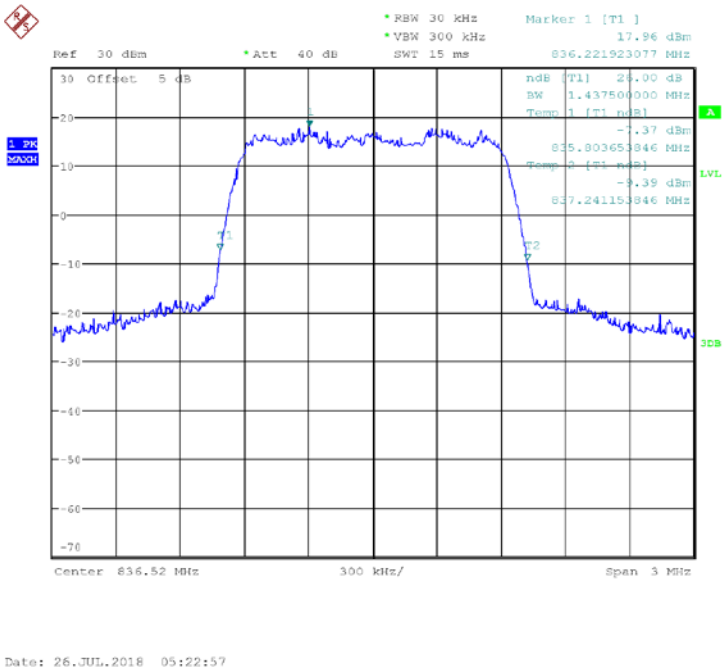
1xEV-DO BC0 Release 0		
Test channel	Frequency (MHz)	–26dBc Emission Bandwidth(MHz)
Mid 777	848.31	1.438
Low 384	836.52	1.438
High 1013	824.7	1.438

Conclusion: PASS

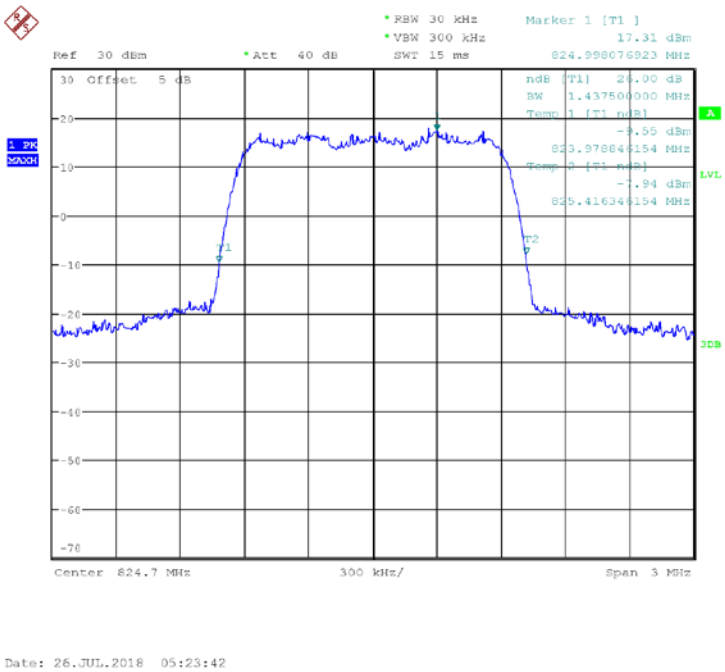
1xEV-DO BC0 Release 0



Channel 777- Emission Bandwidth (-26dBc BW)



Channel 384- Emission Bandwidth (-26dBc BW)

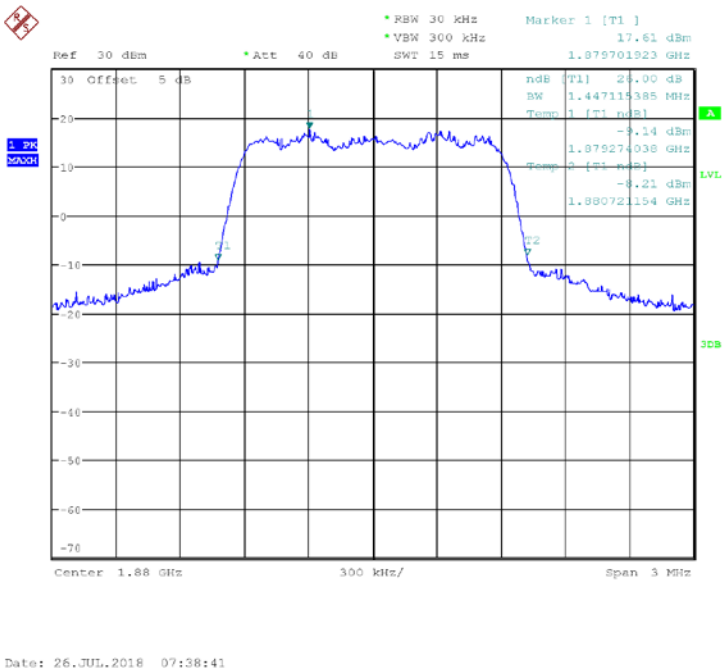


Channel 1013- Emission Bandwidth (-26dBc BW)

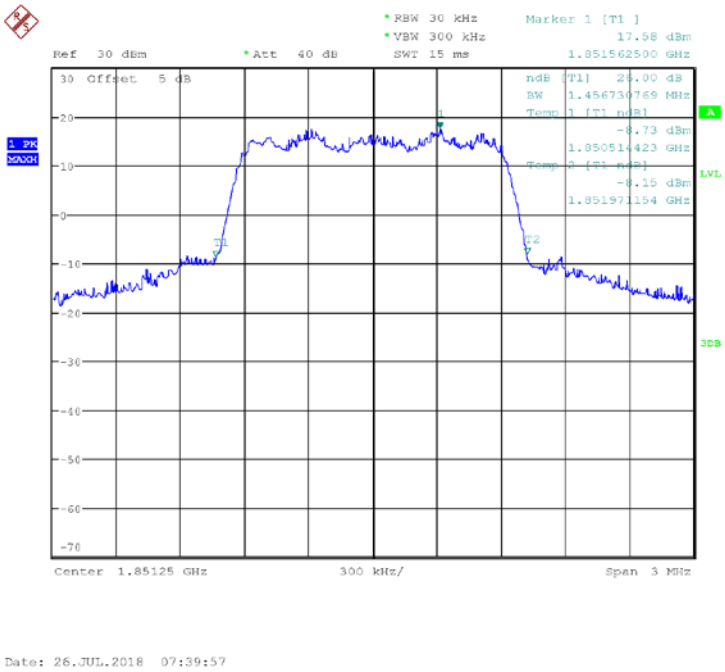
1xEV-DO BC1 Release 0		
Test channel	Frequency (MHz)	–26dBc Emission Bandwidth(MHz)
Mid 600	1880.0	1.447
Low 25	1851.25	1.457
High 1175	1908.75	1.442

Conclusion: PASS

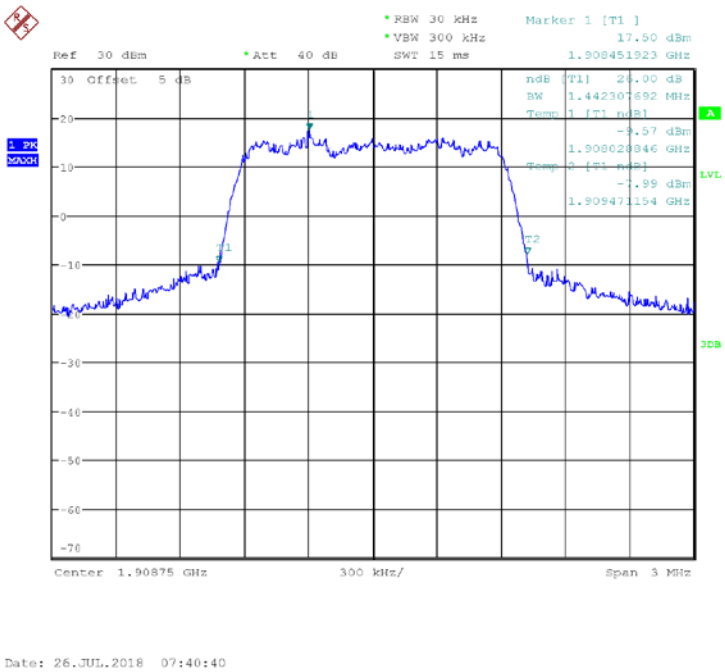
1xEV-DO BC0 Release 0



Channel 600- Emission Bandwidth (-26dBc BW)



Channel 25- Emission Bandwidth (-26dBc BW)

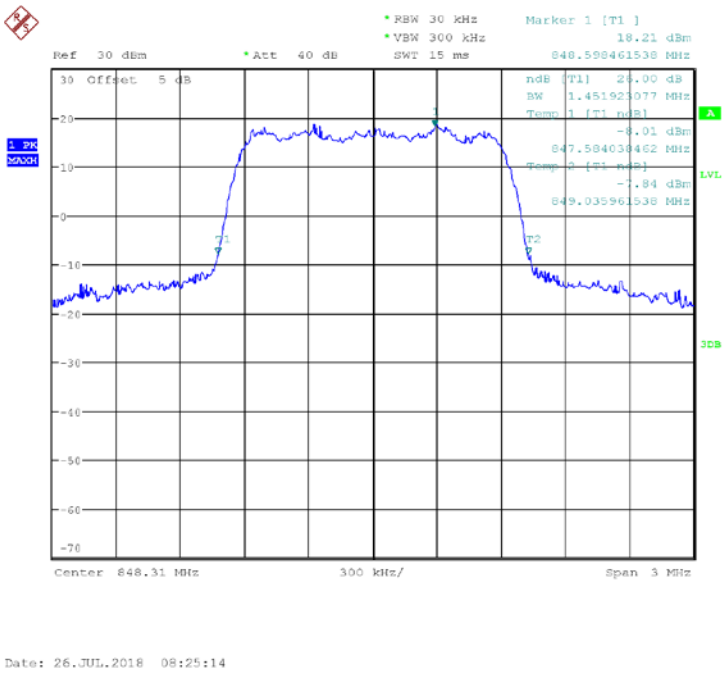


Channel 1175- Emission Bandwidth (-26dBc BW)

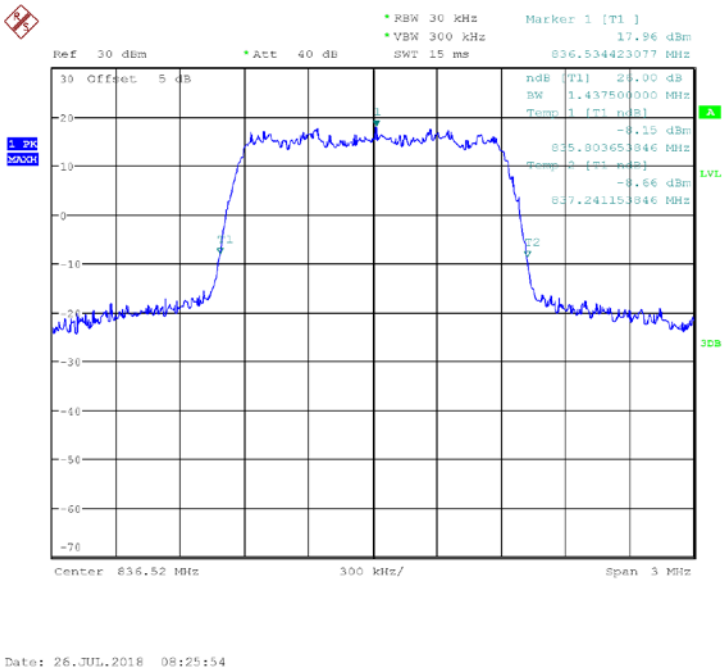
1xEV-DO BC0 Release A		
Test channel	Frequency (MHz)	–26dBc Emission Bandwidth(MHz)
Mid 777	848.31	1.452
Low 384	836.52	1.438
High 1013	824.7	1.433

Conclusion: PASS

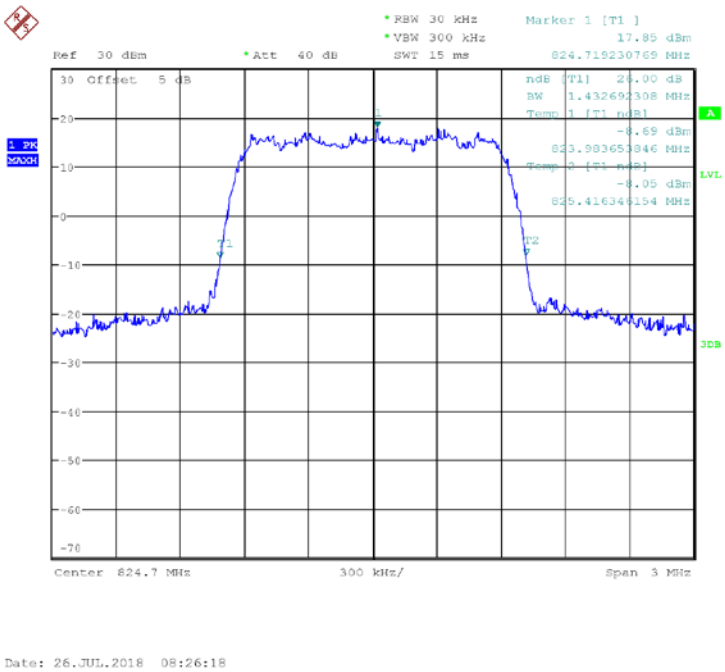
1xEV-DO BC0 Release A



Channel 777- Emission Bandwidth (-26dBc BW)



Channel 384- Emission Bandwidth (-26dBc BW)

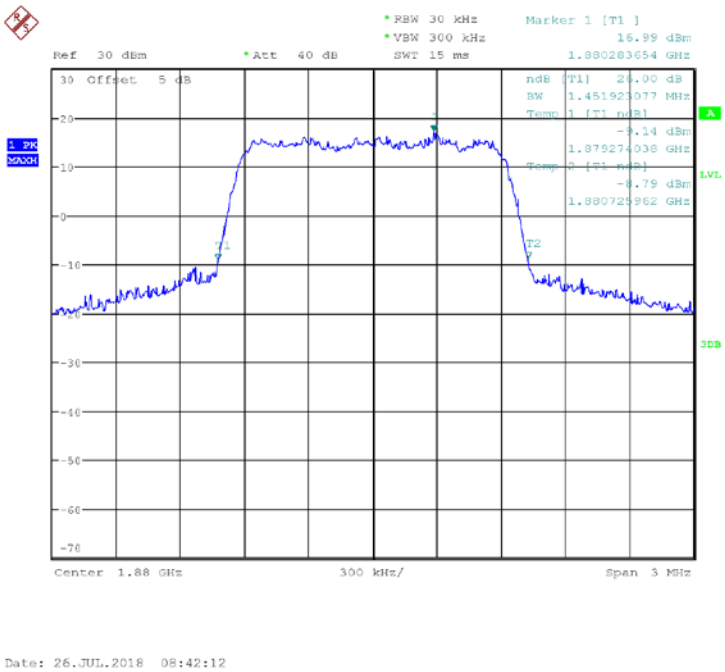


Channel 1013- Emission Bandwidth (-26dBc BW)

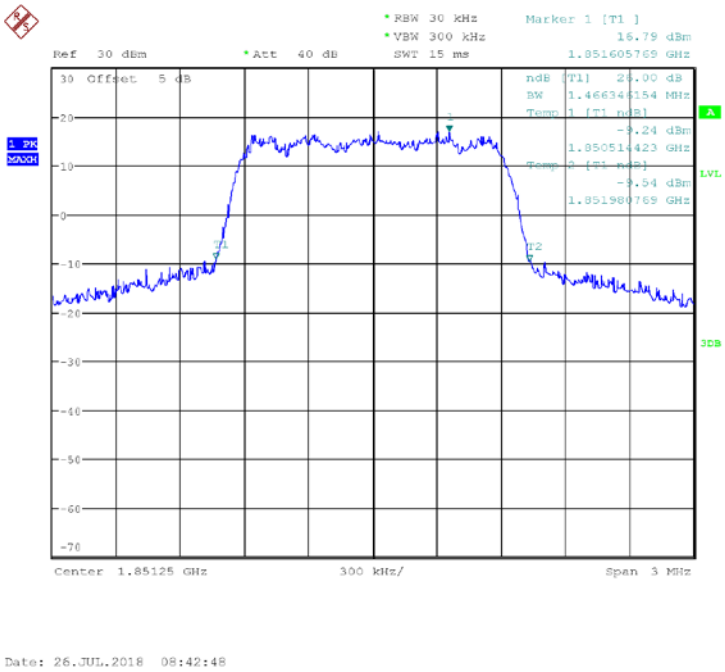
1xEV-DO BC1 Release A		
Test channel	Frequency (MHz)	–26dBc Emission Bandwidth(MHz)
Mid 600	1880.0	1.452
Low 25	1851.25	1.466
High 1175	1908.75	1.458

Conclusion: PASS

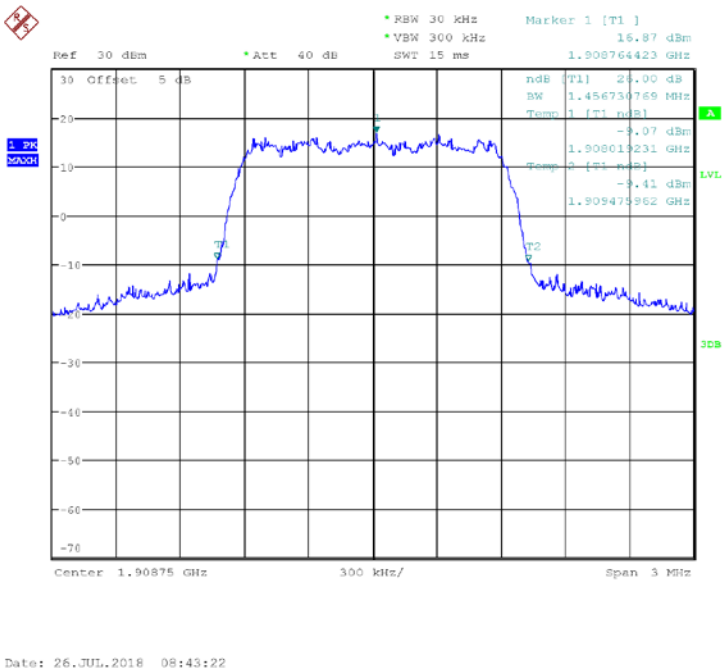
1xEV-DO BC0 Release A



Channel 600- Emission Bandwidth (-26dBc BW)



Channel 25- Emission Bandwidth (-26dBc BW)



Channel 1175- Emission Bandwidth (-26dBc BW)

ANNEX A.5. Band Edge at antenna terminals

Method of test measurements please refer to CFR 47 (FCC) part 2.1051 and part 22.917.

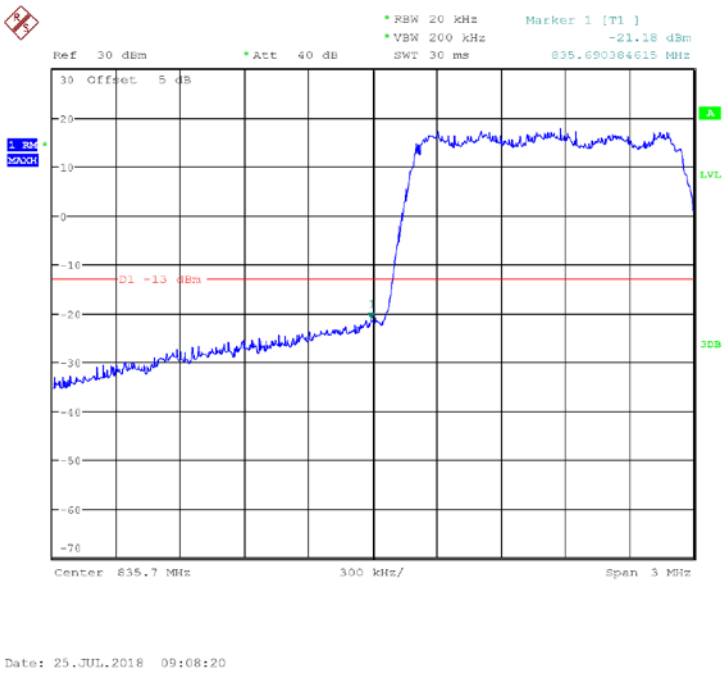
A.5.1 Limit:

The magnitude of each spurious and harmonic emission that can be detected when the equipment is operated under the conditions specification in the instruction manual and/or alignment procedure, shall not be less than 43+10log (Mean power in watts) dBc below the mean power output outside a license's frequency block(-13dBm).

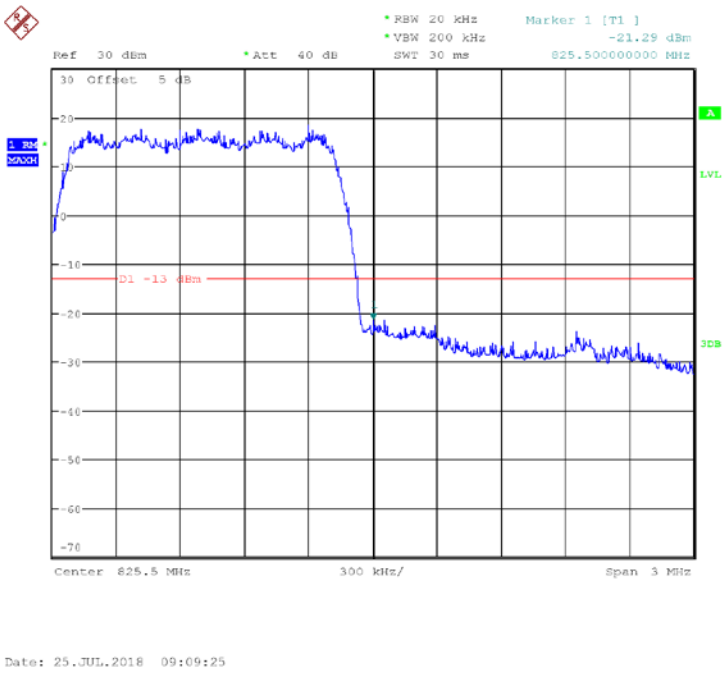
A.5.2 Test procedure:

1. The RF output of the transceiver was connected to a signal analyzer through appropriate attenuation.
2. In the 1MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.
3. The RF fundamental frequency should be excluded against the limit line in the operating frequency band
4. The limit line is derived from 43+10log(P) Db below the transmitter power P(Watts)
   =P(W)-[43+10log(P)](Db)
   =[30+10log(P)](dBm)-[43+10log(P)](Db)
   =-13dBm

CDMA2000 Cellular BC0

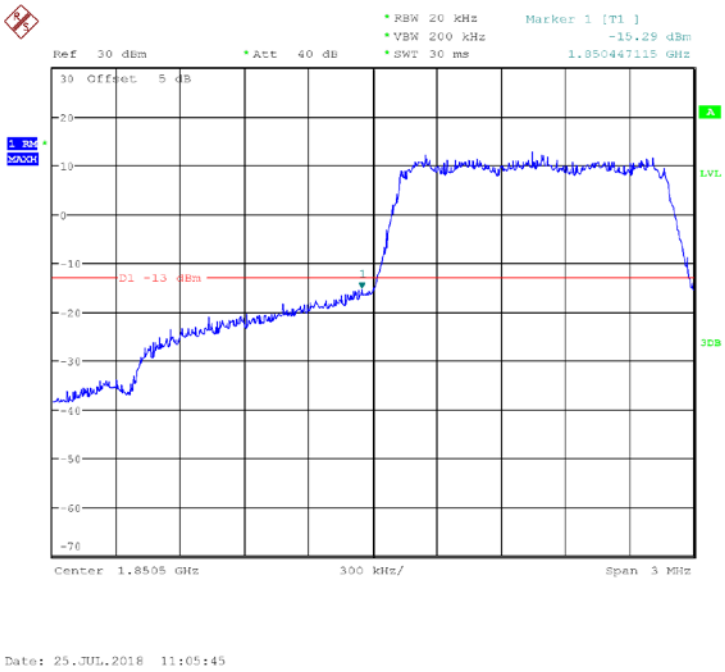


Channel 384- LOW BAND EDGE BLOCK

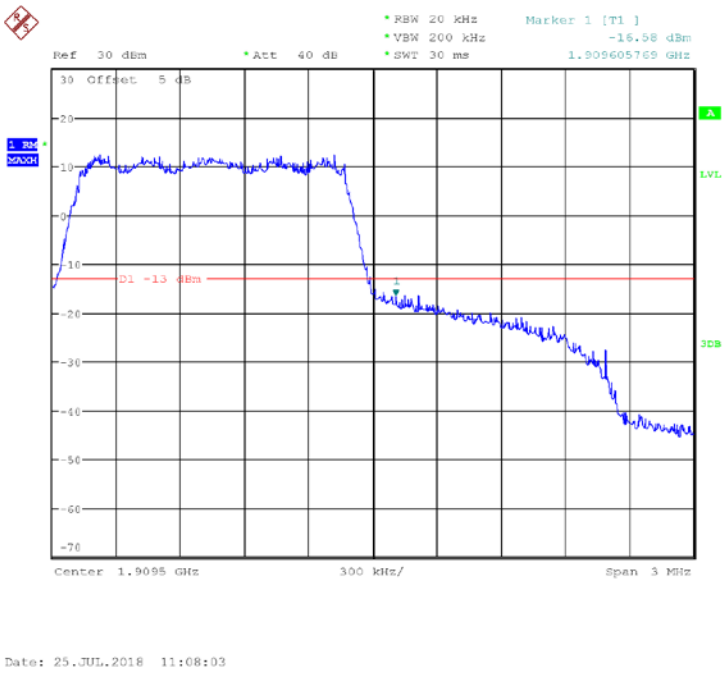


Channel 1013- HIGH BAND EDGE BLOCK

CDMA2000 PCS BC1



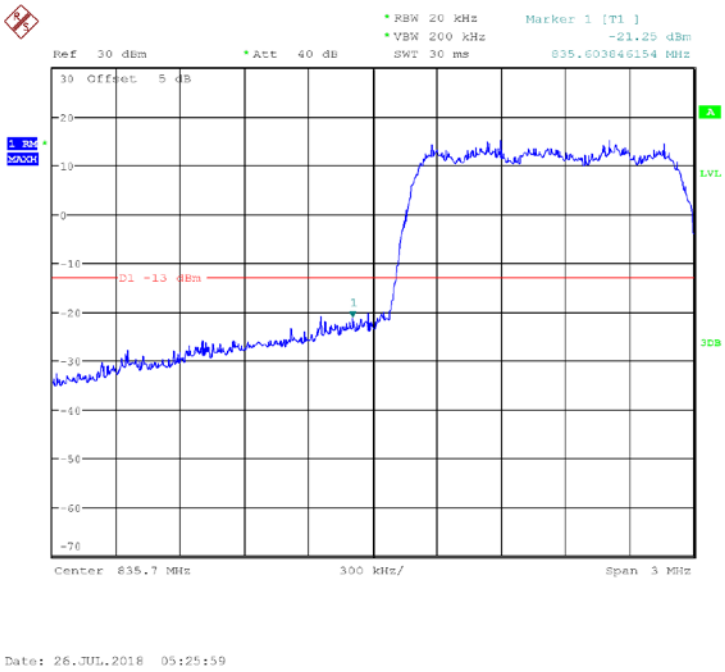
Channel 25- LOW BAND EDGE BLOCK



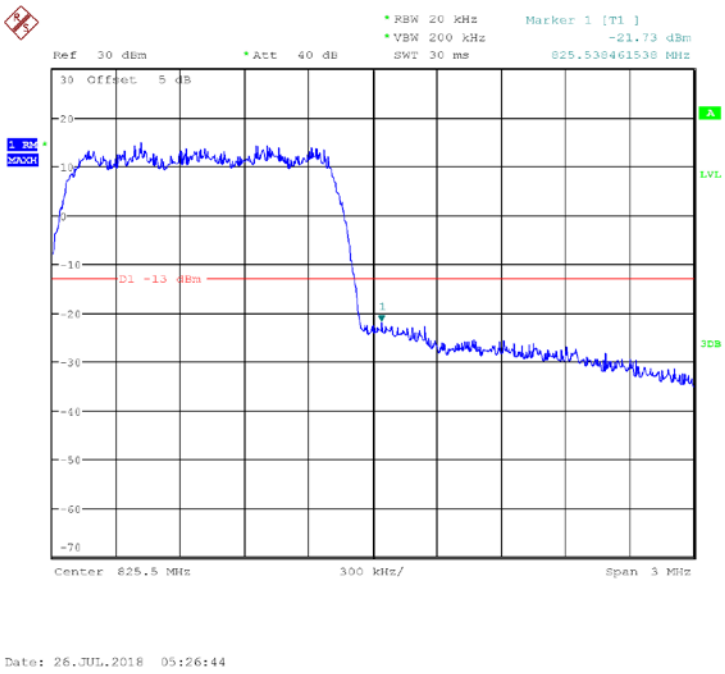
Channel 1175- HIGH BAND EDGE BLOCK

Conclusion: PASS

1xEV-DO BC0 Release 0



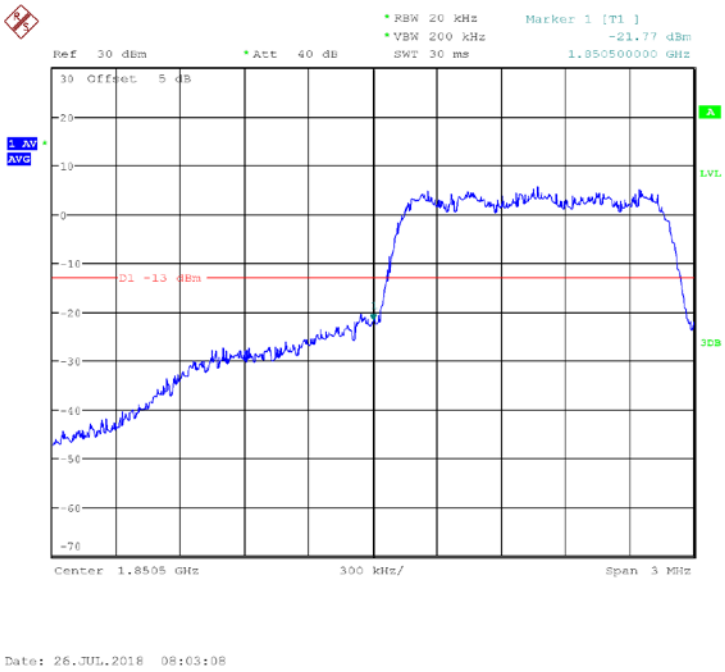
Channel 384- LOW BAND EDGE BLOCK



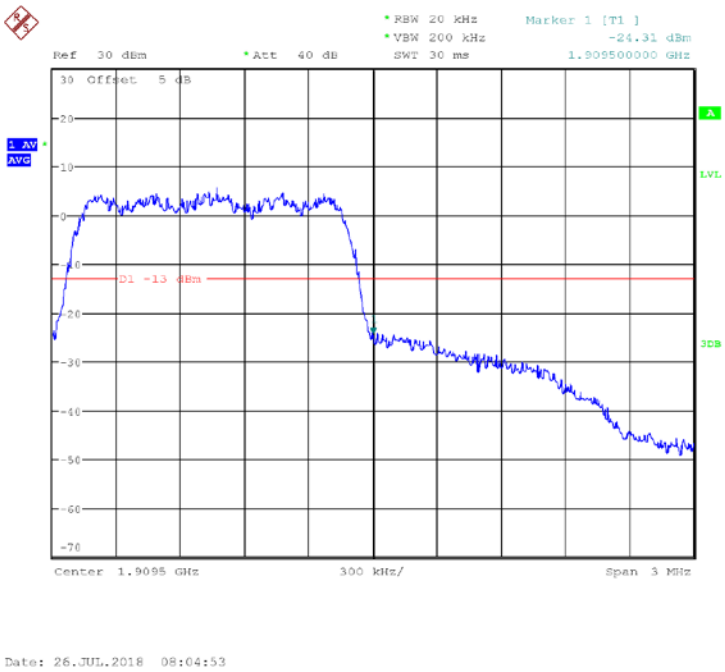
Channel 1013- LOW BAND EDGE BLOCK

Conclusion: PASS

1xEV-DO BC1 Release 0



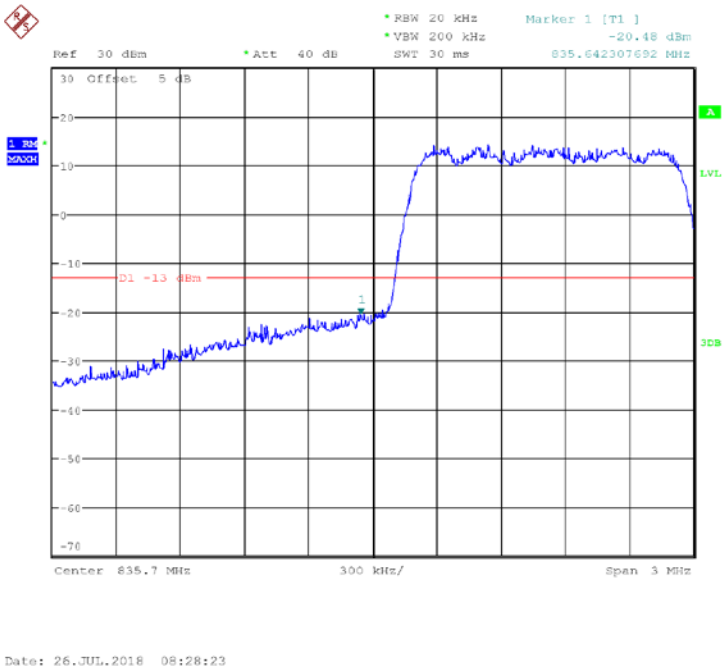
Channel 25- LOW BAND EDGE BLOCK



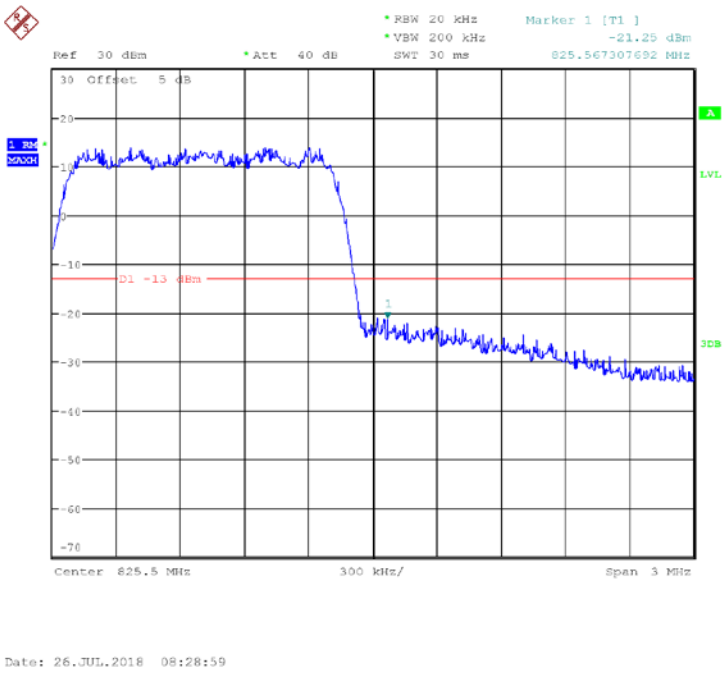
Channel 1175- LOW BAND EDGE BLOCK

Conclusion: PASS

1xEV-DO BC0 Release A



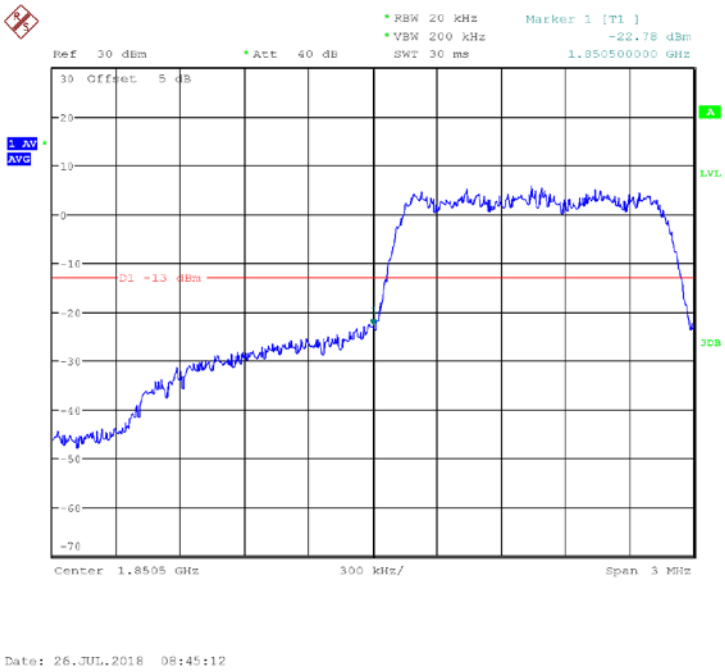
Channel 384- LOW BAND EDGE BLOCK



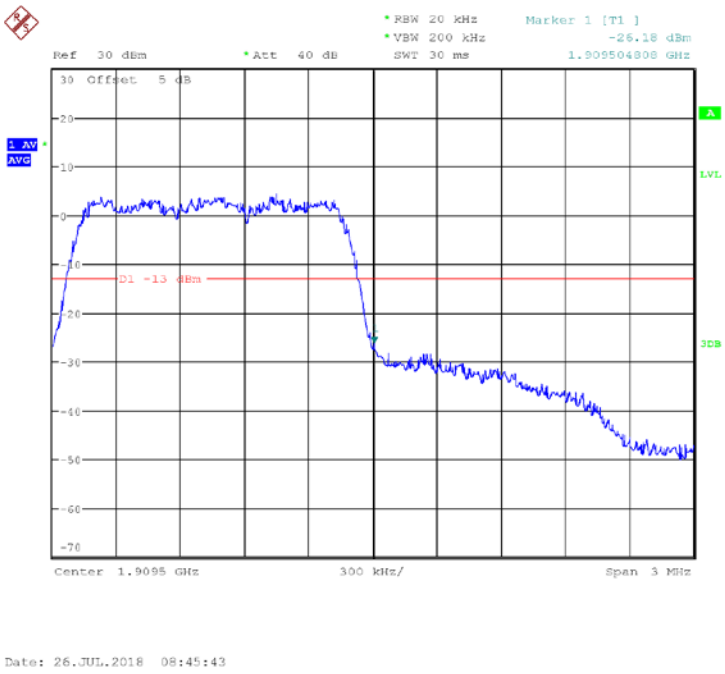
Channel 1013- LOW BAND EDGE BLOCK

Conclusion: PASS

1xEV-DO BC1 Release A



Channel 25- LOW BAND EDGE BLOCK



Channel 1175- LOW BAND EDGE BLOCK

Conclusion: PASS

ANNEX A.6. FREQUENCY STABILITY

Method of test measurements please refer to CFR47 (FCC) part 2.1055 and part 22.355.

A.5.1.Method of Measurement and test procedures

In order to measure the carrier frequency under the condition of AFC lock, it is necessary to make measurements with the EUT in a “call mode”. This is accomplished with the use of R&S CMU200 DIGITAL RADIO COMMUNICATION TESTER.

1. Measure the carrier frequency at room temperature.
2. Subject the EUT to overnight soak at -30℃.
3. With the EUT, powered via nominal voltage, connected to the CMU200 and in a simulated call on mid channel of GSM850, PCS1900, WCDMA BANDII and WCDMA BANDV, measure the carrier frequency. These measurements should be made within 2 minutes of Powering up the EUT, to prevent significant self-warming.
4. Repeat the above measurements at 10℃ increments from -30℃ to +50℃. Allow at least 1 1/2 hours at each temperature, unpowered, before making measurements.
5. Re-measure carrier frequency at room temperature with nominal voltage. Vary supply voltage from minimum voltage to maximum voltage, in 0.1Volt increments re-measuring carrier frequency at each voltage. Pause at nominal voltage for 1 1/2 hours unpowered, to allow any self-heating to stabilize, before continuing.
6. Subject the EUT to overnight soak at +50℃.
7. With the EUT, powered via nominal voltage, connected to the CMU200 and in a simulated call on the centre channel, measure the carrier frequency. These measurements should be made within 2 minutes of Powering up the EUT, to prevent significant self-warming.
8. Repeat the above measurements at 10 C increments from +50℃ to -30℃. Allow at least 1.5 hours at each temperature, unpowered, before making measurements.
9. At all temperature levels hold the temperature to +/- 0.5℃ during the measurement procedure.

A.5.2. Measurement Limit

A.5.2.1. For Hand carried battery powered equipment

According to the JTC standard the GSM frequency stability of the carrier shall be accurate to within 0.1ppm of the received frequency from the base station. And the WCDMA is 2.5ppm. This accuracy is sufficient to meet Sec.24.235, Frequency Stability. The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block. As this transceiver is considered "Hand carried, battery powered equipment" Section 2.1055(d)(2) applies. This requires that the lower voltage for frequency stability testing be specified by the manufacturer. This transceiver is specified to operate with an input voltage of between 3.6VDC and 4.35VDC, with a nominal voltage of 3.8VDC. Operation above or below these voltage limits is prohibited by transceiver software in order to prevent improper operation as well as to protect components from overstress. These voltages was varied from 85% to 115%.

A.5.2.2. For equipment powered by primary supply voltage

According to the JTC standard the CDMA frequency stability of the carrier shall be accurate to within 0.1ppm of the received frequency from the base station. This accuracy is sufficient to meet Sec.24.235, Frequency Stability. The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block. For this EUT section 2.1055(d)(1) applies. This requires varying primary supply voltage from 85 to 115 percent of the nominal value for other than hand carried battery equipment.

A.5.3 Test results

CDMA2000 Cellular BC0 Mid Channel/fc(MHz) 384/836.52

Frequency Error VS Temperature

Power Supply (VDc)	Environment Temperature(℃)	Frequency error(Hz)	Limit (Hz)
3.8	-30	1.6	84
3.8	-20	-0.4	84
3.8	-10	-2.9	84
3.8	0	-0.8	84
3.8	10	7.4	84
3.8	20	-3.0	84
3.8	30	-2.9	84
3.8	40	5.6	84
3.8	50	-1.3	84

Frequency Error VS Voltage

Power Supply (VDc)	Environment Temperature(℃)	Frequency error(Hz)	Limit (Hz)
3.6	25	-0.5	84
3.8	25	3.3	84
4.35	25	2.6	84

CDMA2000 PCS BC1 Mid Channel/fc(MHz) 600/1880

Frequency Error VS Temperature

Power Supply (VDc)	Environment Temperature(℃)	Frequency error(Hz)	Limit (Hz)
3.8	-30	-1.9	196
3.8	-20	0.2	196
3.8	-10	-0.5	196
3.8	0	2.9	196
3.8	10	-1.3	196
3.8	20	8.4	196
3.8	30	1.8	196
3.8	40	-4.5	196
3.8	50	3.5	196

Frequency Error VS Voltage

Power Supply (VDc)	Environment Temperature(℃)	Frequency error(Hz)	Limit (Hz)
3.6	25	0.6	196
3.8	25	3.6	196
4.35	25	4.9	196

Conclusion: PASS

1xEV-DO BC0 Release 0 Mid Channel/fc(MHz) 384/836.52

Frequency Error VS Temperature

Power Supply (VDc)	Environment Temperature(℃)	Frequency error(Hz)	Limit (Hz)
3.8	-30	11.6	84
3.8	-20	12.0	84
3.8	-10	12.9	84
3.8	0	18.2	84
3.8	10	11.8	84

3.8	20	13.6	84
3.8	30	12.1	84
3.8	40	15.4	84
3.8	50	13.2	84

Frequency Error VS Voltage

Power Supply (VDc)	Environment Temperature(℃)	Frequency error(Hz)	Limit (Hz)
3.6	25	11.9	84
3.8	25	15.5	84
4.35	25	14.2	84

Conclusion: PASS

1xEV-DO BC1 Release 0 Mid Channel/fc(MHz) 600/1880

Frequency Error VS Temperature

Power Supply (VDc)	Environment Temperature(℃)	Frequency error(Hz)	Limit (Hz)
3.8	-30	10.9	196
3.8	-20	11.2	196
3.8	-10	15.5	196
3.8	0	17.2	196
3.8	10	14.3	196
3.8	20	11.9	196
3.8	30	12.8	196
3.8	40	18.5	196
3.8	50	13.5	196

Frequency Error VS Voltage

Power Supply (VDc)	Environment Temperature(℃)	Frequency error(Hz)	Limit (Hz)
3.6	25	15.4	196
3.8	25	12.6	196

4.35	25	15.9	196

1xEV-DO BC0 Release A Mid Channel/fc(MHz) 384/836.52

Frequency Error VS Temperature

Power Supply (VDc)	Environment Temperature(℃)	Frequency error(Hz)	Limit (Hz)
3.8	-30	12.6	84
3.8	-20	15.4	84
3.8	-10	12.9	84
3.8	0	15.5	84
3.8	10	13.7	84
3.8	20	13.6	84
3.8	30	15.4	84
3.8	40	15.4	84
3.8	50	16.2	84

Frequency Error VS Voltage

Power Supply (VDc)	Environment Temperature(℃)	Frequency error(Hz)	Limit (Hz)
3.6	25	11.5	84
3.8	25	17.5	84
4.35	25	16.9	84

Conclusion: PASS

1xEV-DO BC1 Release A Mid Channel/fc(MHz) 600/1880

Frequency Error VS Temperature

Power Supply (VDc)	Environment Temperature(℃)	Frequency error(Hz)	Limit (Hz)
3.8	-30	13.9	196
3.8	-20	13.2	196
3.8	-10	15.4	196
3.8	0	15.2	196

3.8	10	14.3	196
3.8	20	16.9	196
3.8	30	17.8	196
3.8	40	13.5	196
3.8	50	13.5	196

Frequency Error VS Voltage

Power Supply (VDc)	Environment Temperature(℃)	Frequency error(Hz)	Limit (Hz)
3.6	25	15.4	196
3.8	25	16.2	196
4.35	25	14.8	196

Conclusion: PASS

ANNEX A.7. CONDUCTED SPURIOUS EMISSION

A.7.1. GSM Measurement Method and test procedures

The following steps outline the procedure used to measure the conducted emissions from the EUT.

1. Determine frequency range for measurements: From CFR 2.1057 the spectrum should be investigated from the lowest radio frequency generated in the equipment up to at least the 10th harmonic of the carrier frequency. For the equipment of PCS1900 band, this equates to a frequency range of 30 MHz to 19.1 GHz, data taken from 30 MHz to 20 GHz. For GSM850, data taken from 30 MHz to 10 GHz.
2. The sweep time is set automatically by instrument itself. That should be the optimal sweep time for the span and the RBW. If the sweep time is too short, that is sweep is too fast, the sweep result is not accurate; If the sweep time is too long, that is sweep is too low, some frequency components may be lost. The instrument will give a optimal sweep time according the selected span and RBW.
3. The procedure to get the conducted spurious emission is as follows:
The trace mode is set to MaxHold to get the highest signal at each frequency;
Wait 25 seconds;Get the result.
4. Determine EUT transmit frequencies: below outlines the band edge frequencies pertinent to conducted emissions testing.

CDMA2000 Cellular Transmitter

Channel	Frequency(MHz)

384	836.52
777	848.31
1013	824.7

CDMA2000 PCS Transmitter

Channel	Frequency(MHz)
25	1851.25
600	1880.0
1175	1908.75

1xEV-DO Cellular Transmitter Release 0

Channel	Frequency(MHz)
384	836.52
777	848.31
1013	824.7

1xEV-DO PCS Transmitter Release 0

Channel	Frequency(MHz)
25	1851.25
600	1880.0
1175	1908.75

1xEV-DO Cellular Transmitter Release A

Channel	Frequency(MHz)
384	836.52
777	848.31
1013	824.7

1xEV-DO PCS Transmitter Release A

Channel	Frequency(MHz)
25	1851.25
600	1880.0
1175	1908.75

A.7.1.1. Measurement Limit

Part 24.238 and Part 22.917 specify that the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.

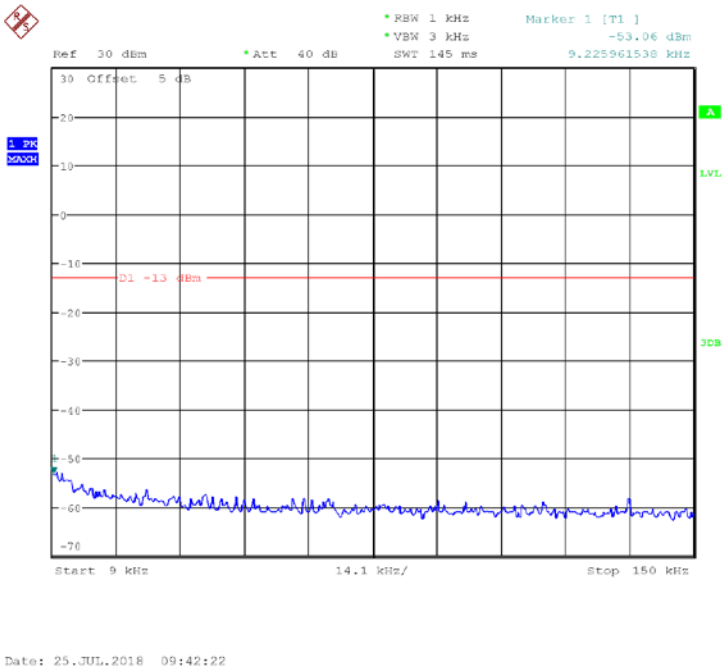
The specification that emissions shall be attenuated below the transmitter power (P) by at least 43 + 10 log (P) dB, translates in the relevant power range (1 to 0.001 W) to -13 dBm. At 1 W the specified minimum attenuation becomes 43 dB and relative to a 30 dBm (1 W) carrier becomes a limit of -13 dBm. At 0.001 W (0 dBm) the minimum attenuation is 13 dB, which again yields a limit of -13 dBm. In this way a translation of the specification from relative to absolute terms is carried out.

A7.1.2. Measurement result

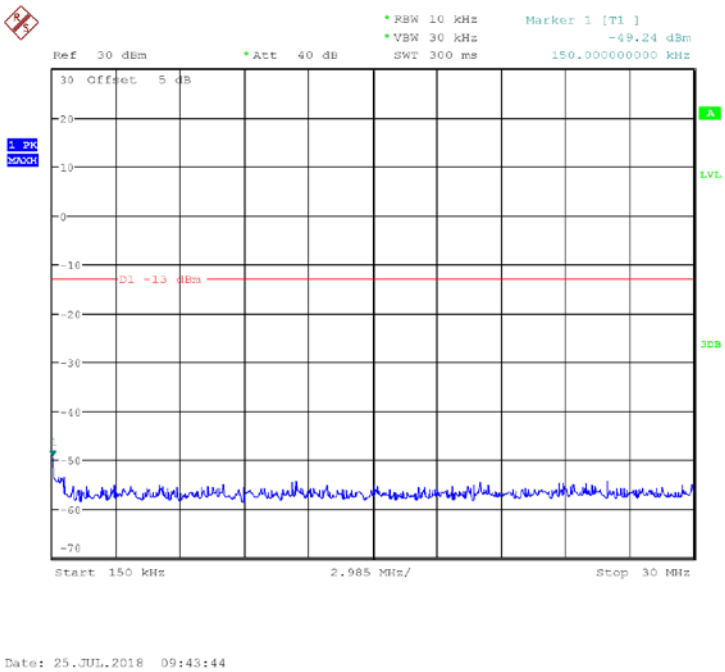
Spurious emission limit -13dBm.

Note: peak above the limit line is the carrier frequency.

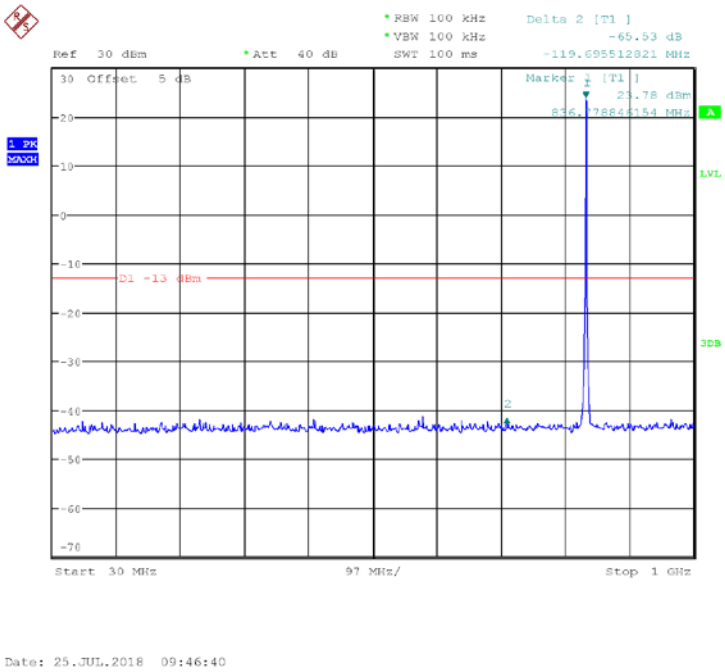
A7.1.2.1. CDMA2000 Cellular BC0



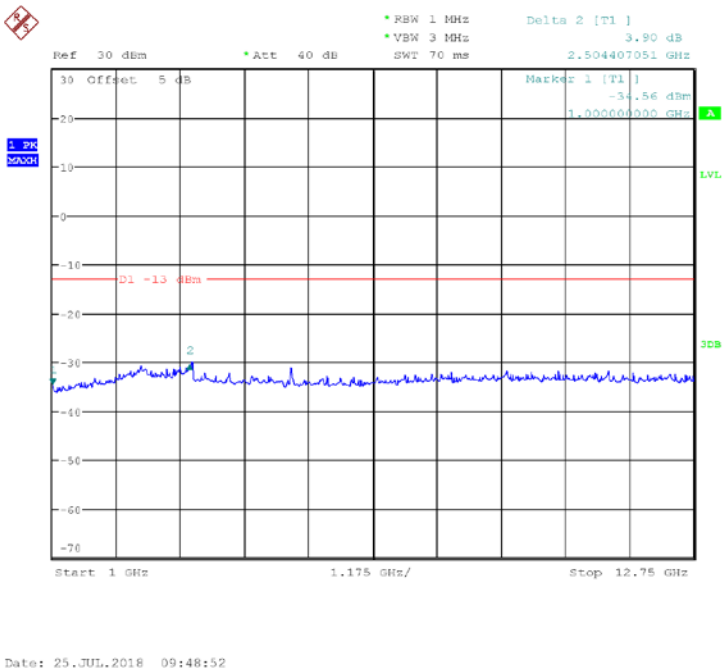
Channel 384: 9KHz~150KHz



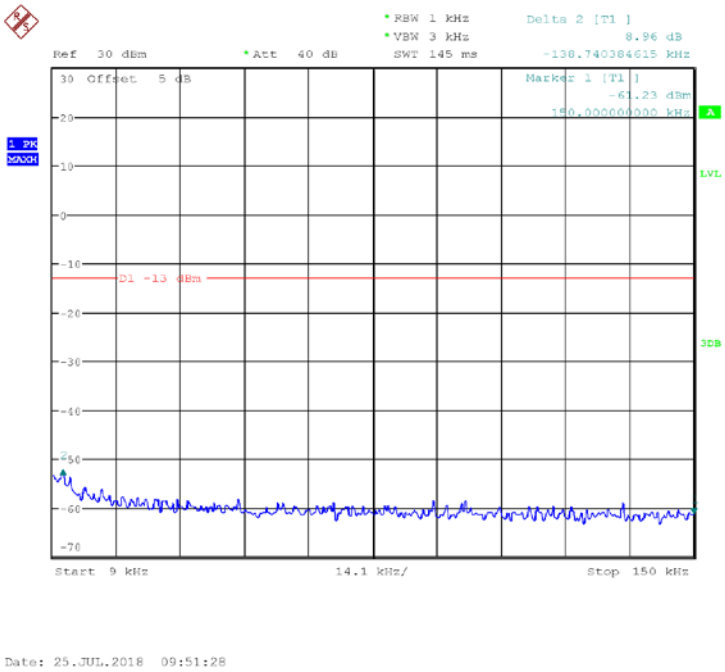
Channel 384: 150KHz~30MHz



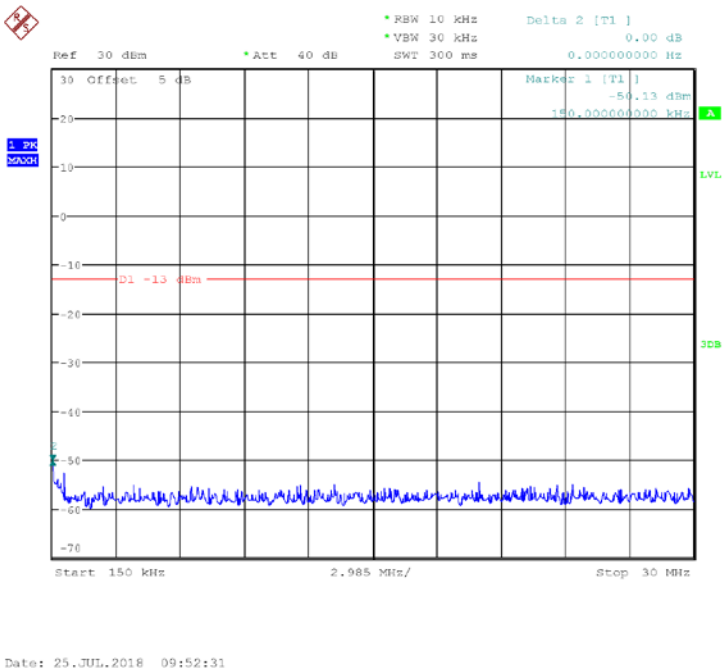
Channel 384: 30MHz~1GHz



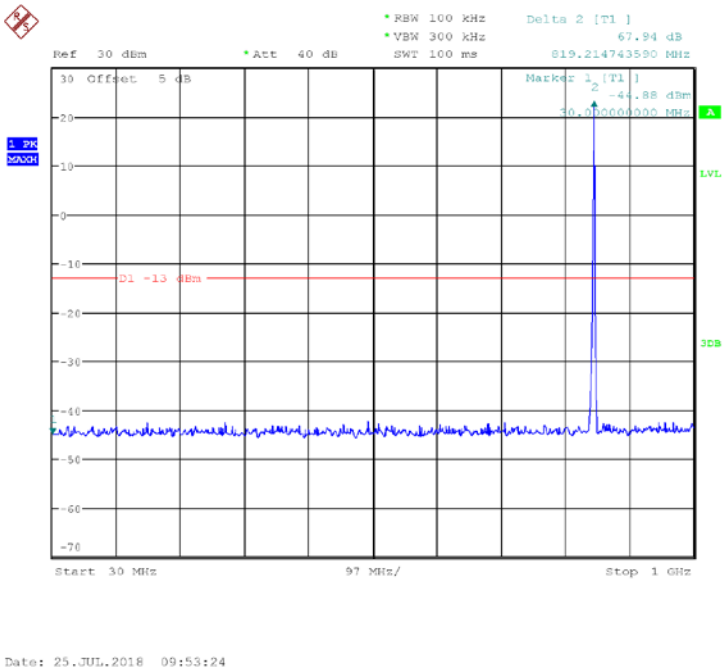
Channel 384: 1GHz~12.75GHz



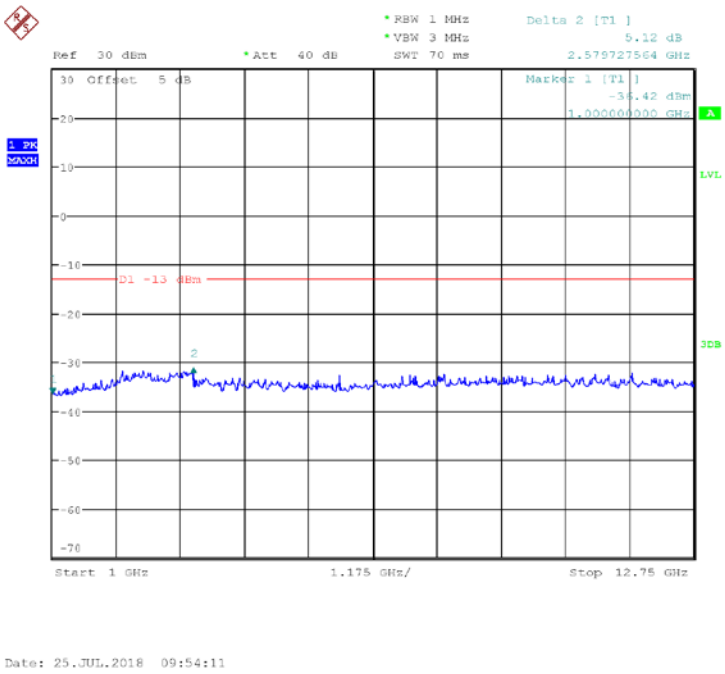
Channel 777: 9KHz~150KHz



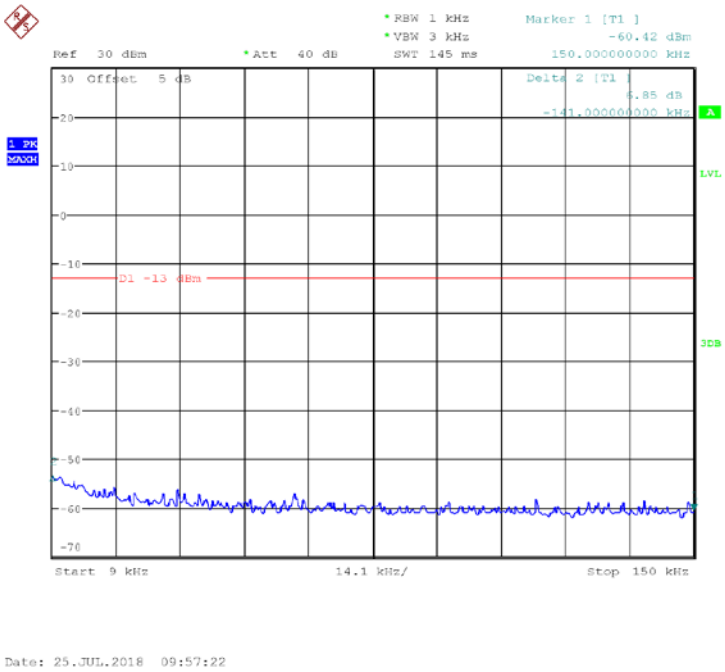
Channel 777: 150KHz~30MHz



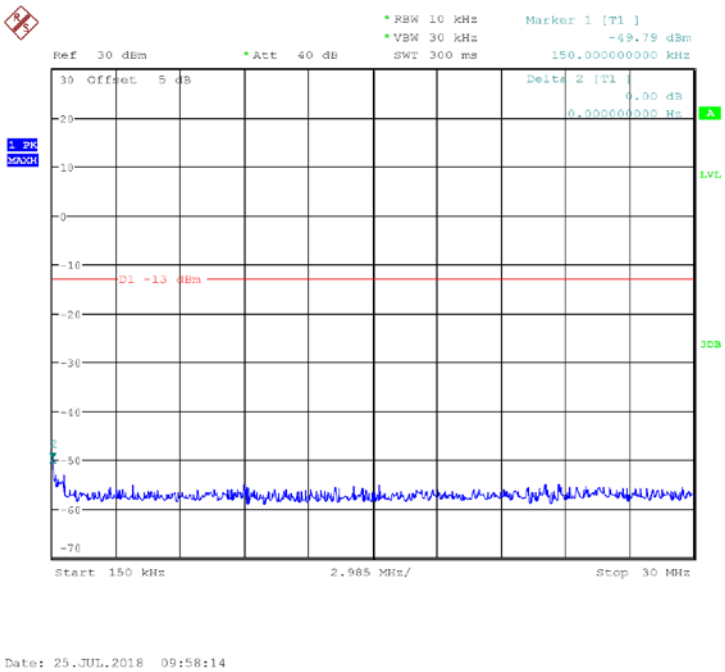
Channel 777: 30MHz~1GHz



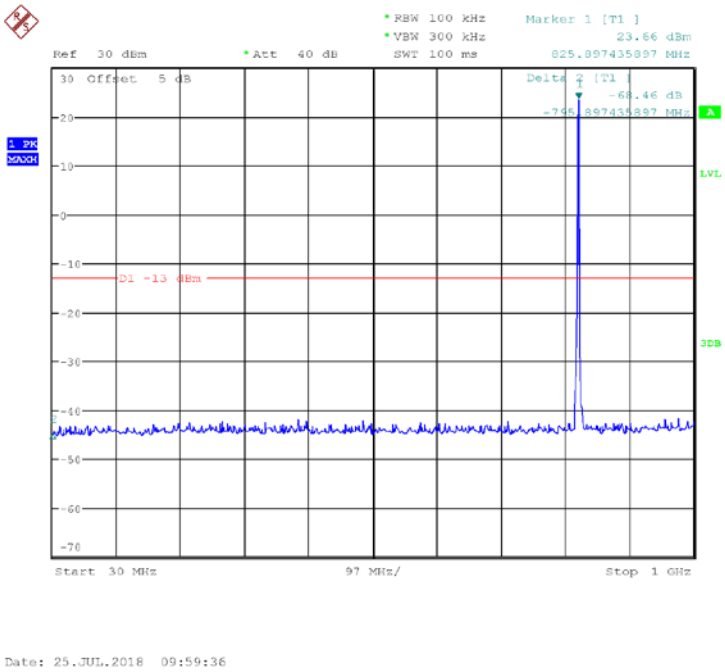
Channel 777: 1GHz~12.75GHz



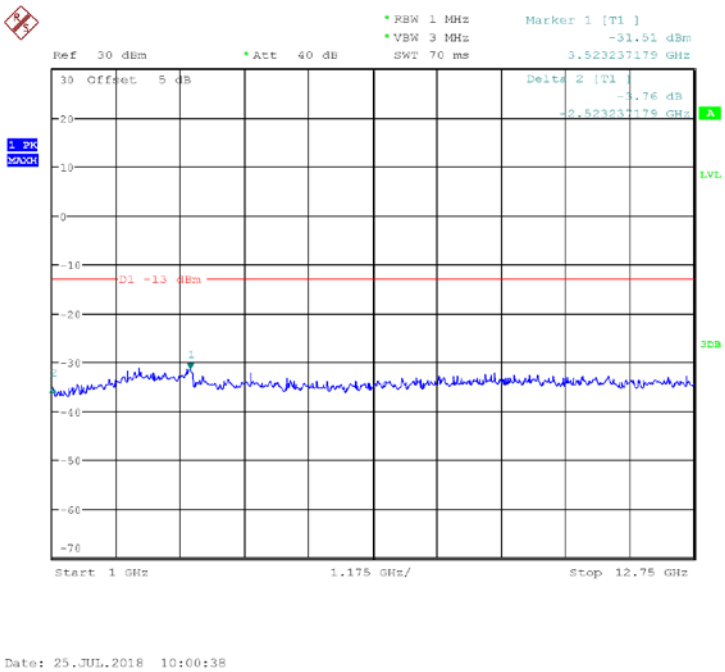
Channel 1013: 9KHz~150KHz



Channel 1013: 150KHz~30MHz

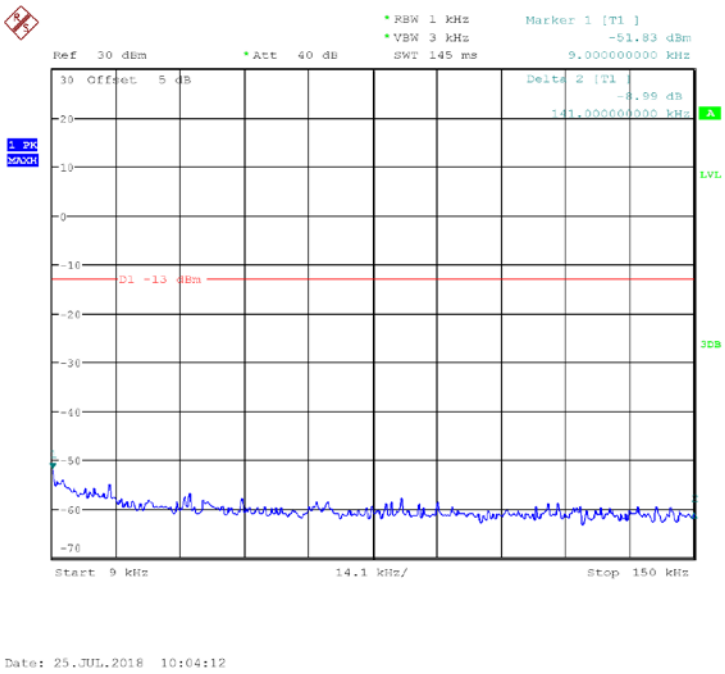


Channel 1013: 30MHz~1GHz

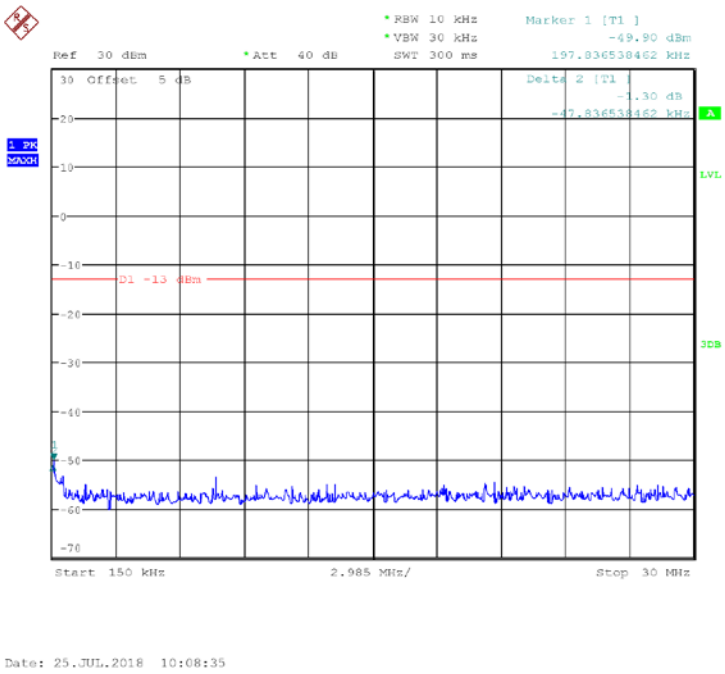


Channel 1013: 1GHz~12.75GHz

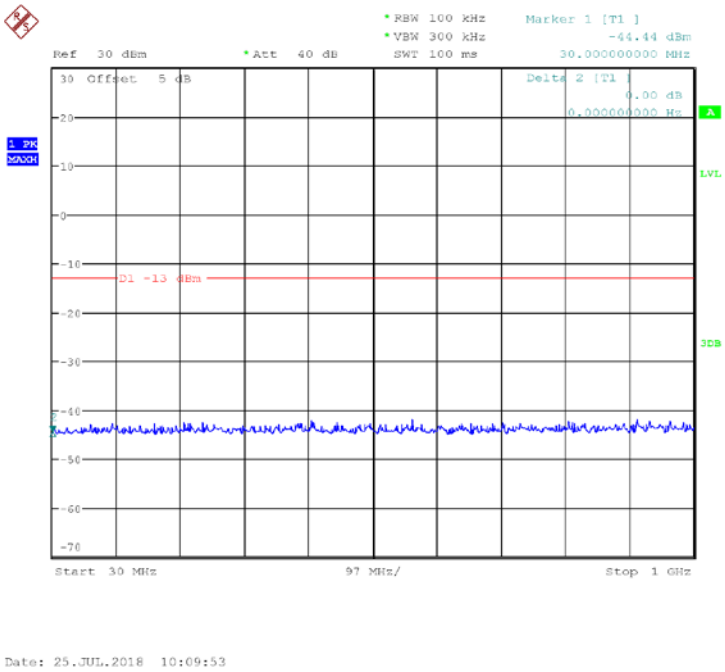
A7.1.2.2. CDMA2000 PCS BC1



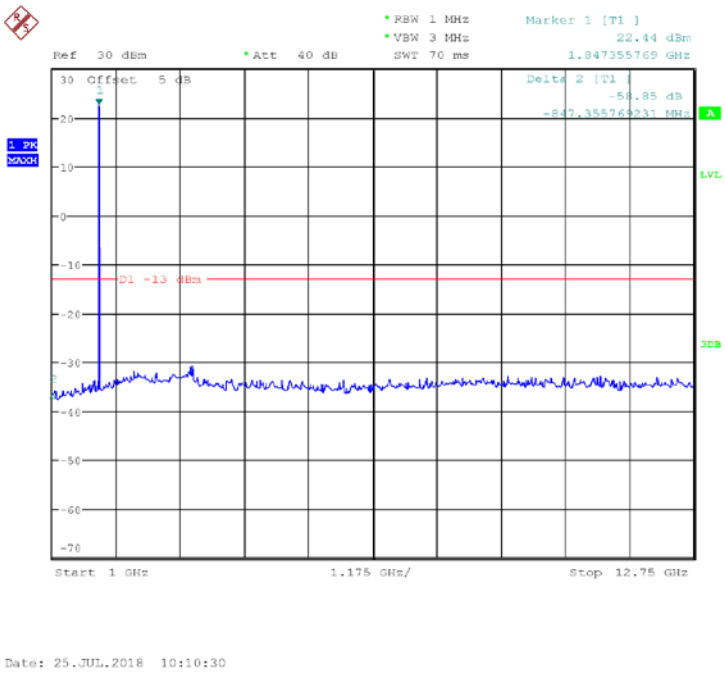
Channel 25: 9KHz~150KHz



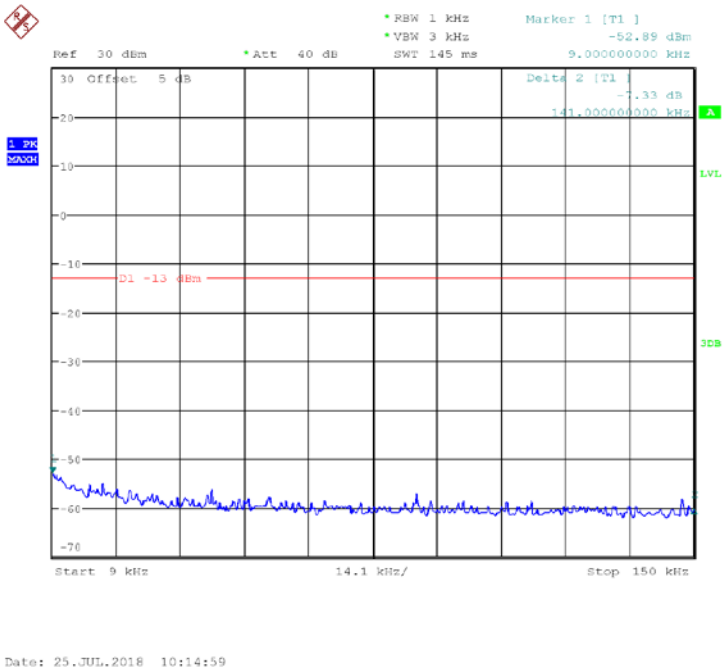
Channel 25: 150KHz~30MHz



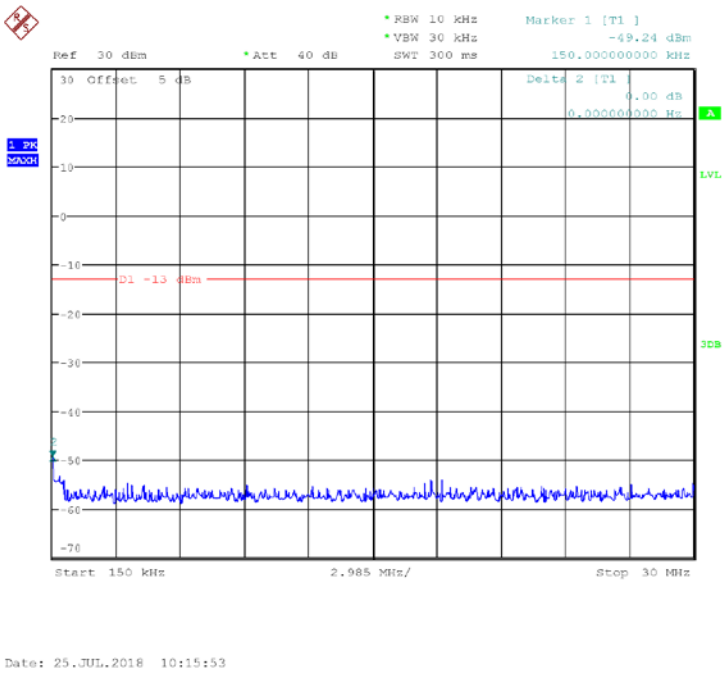
Channel 25: 30MHz~1GHz



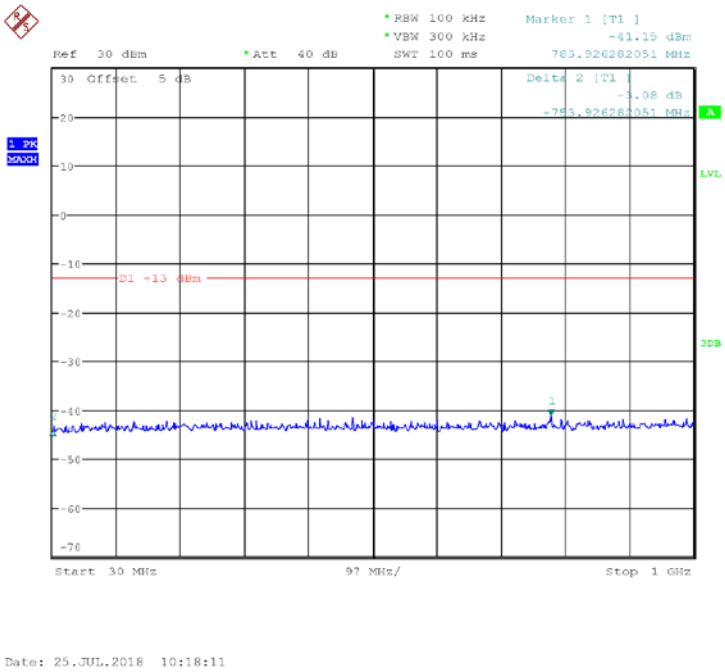
Channel 25: 1GHz~12.75GHz



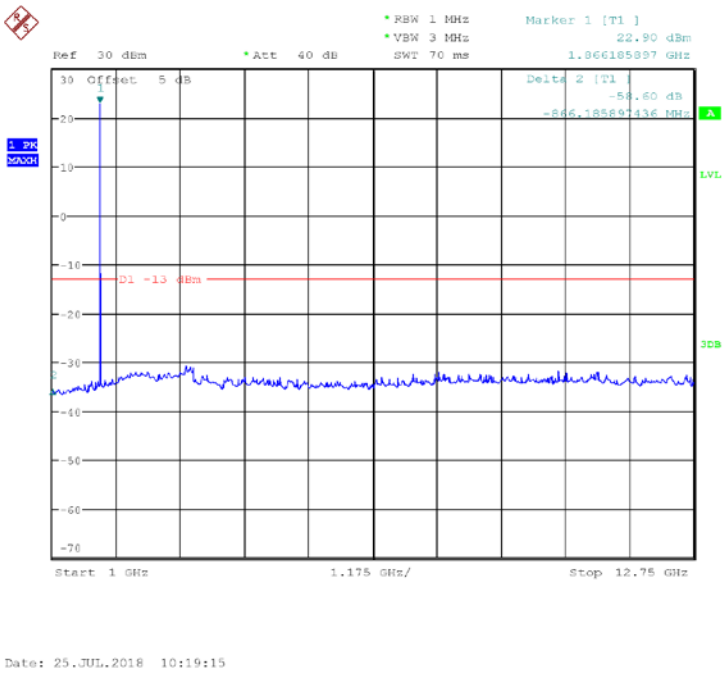
Channel 600: 9KHz~150KHz



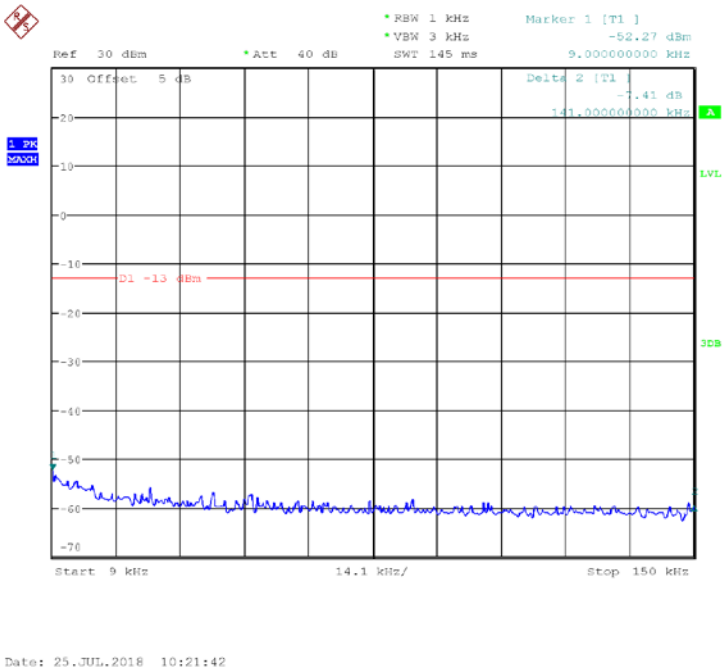
Channel 600: 150KHz~30MHz



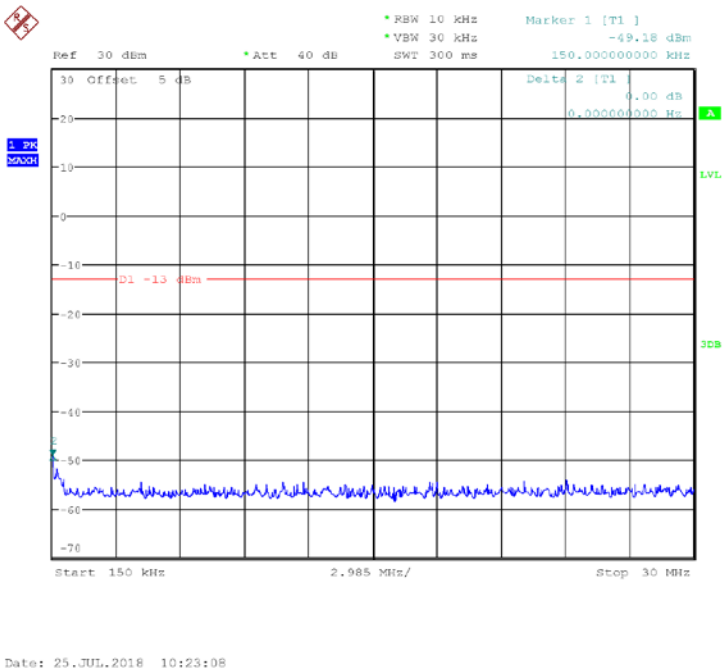
Channel 600: 30MHz~1GHz



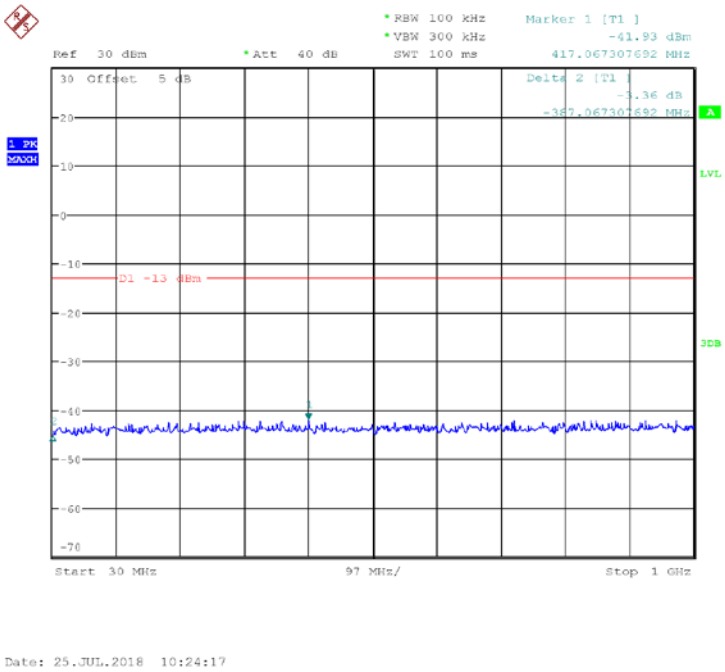
Channel 600: 1GHz~12.75GHz



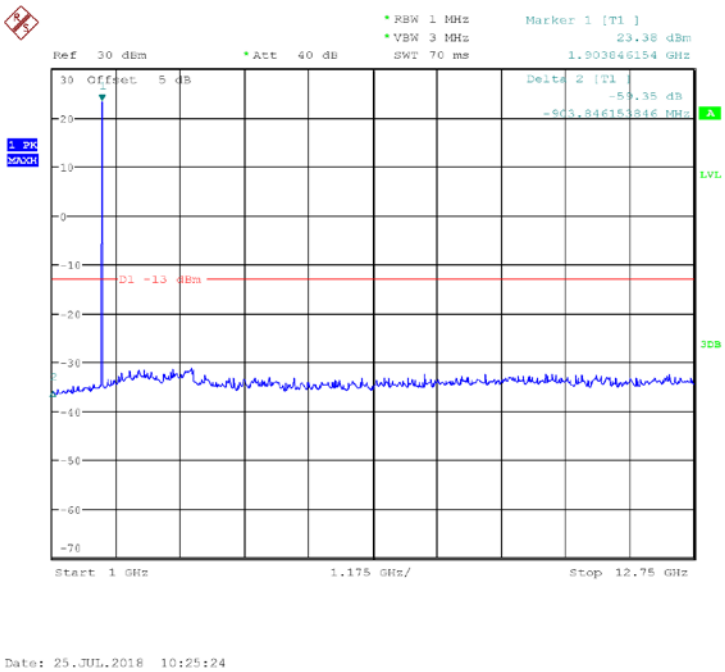
Channel 1175: 9KHz~150KHz



Channel 1175: 150KHz~30MHz



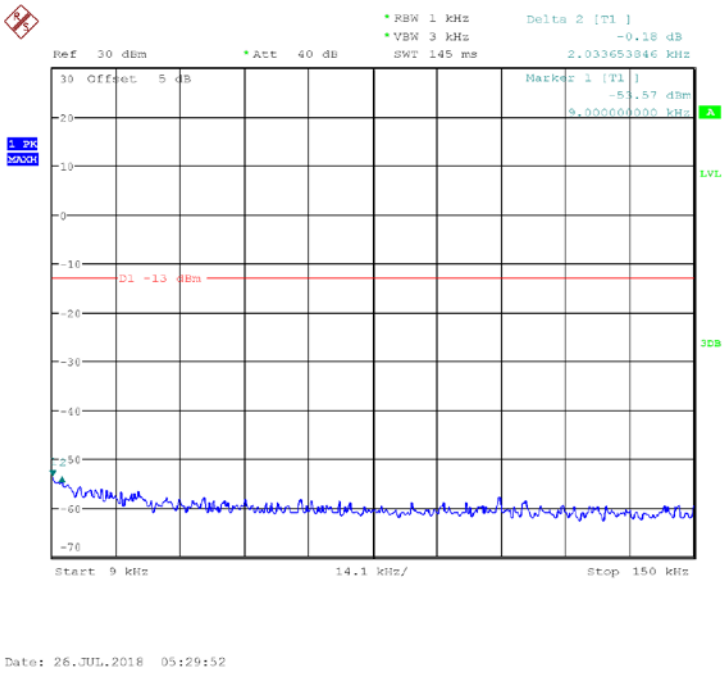
Channel 1175: 30MHz~1GHz



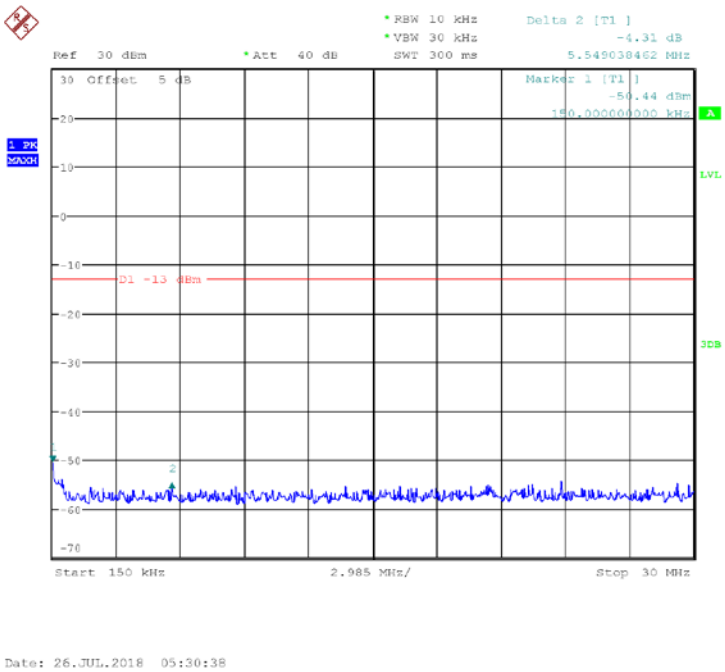
Channel 1175: 1GHz~12.75GHz

Conclusion: PASS

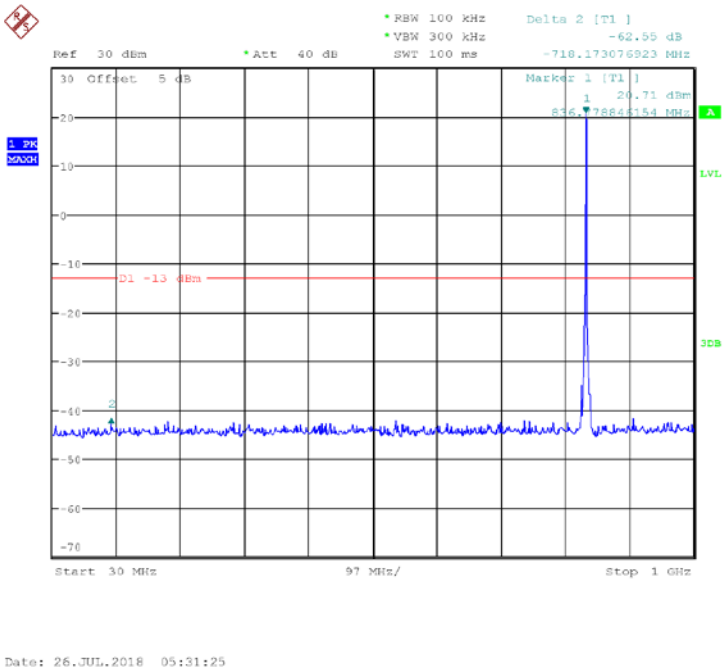
A7.1.2.3. 1xEV-DO PCS Transmitter BC0 Release 0



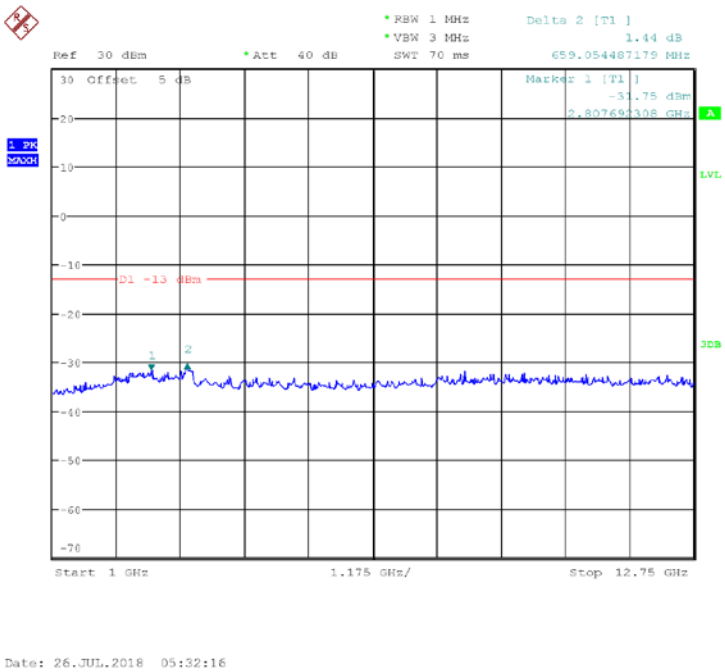
Channel 384: 9KHz~150KHz



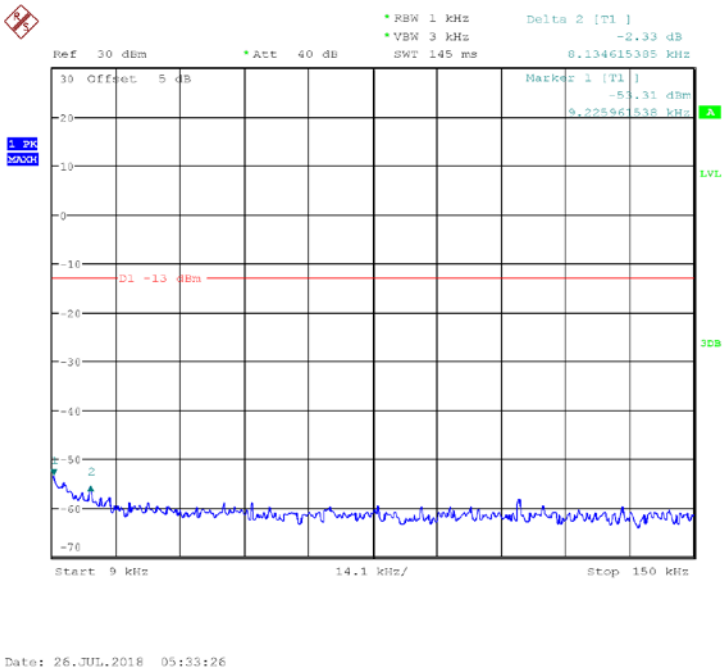
Channel 384: 150KHz~30MHz



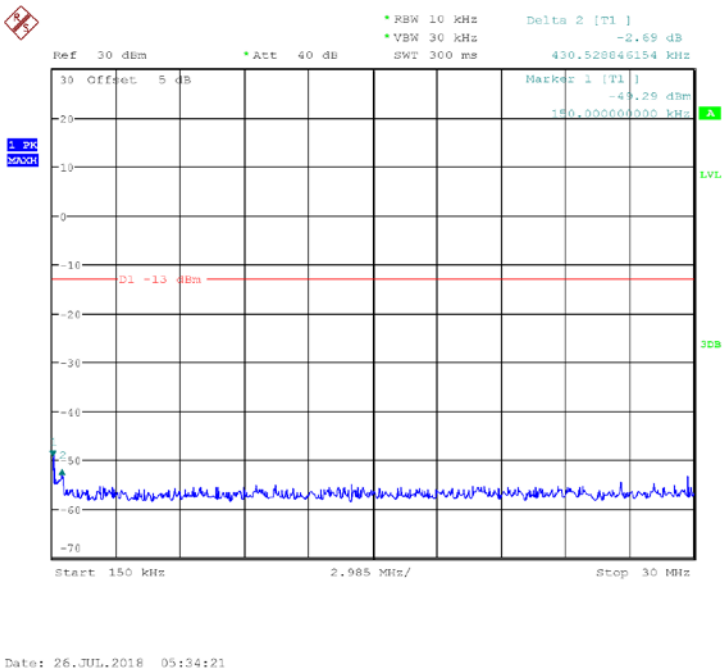
Channel 384: 30MHz~1GHz



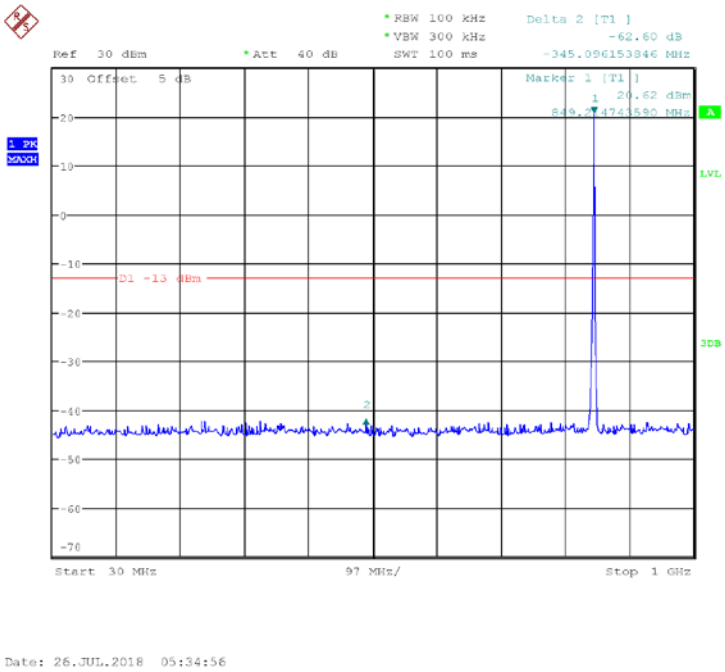
Channel 384: 1GHz~12.75GHz



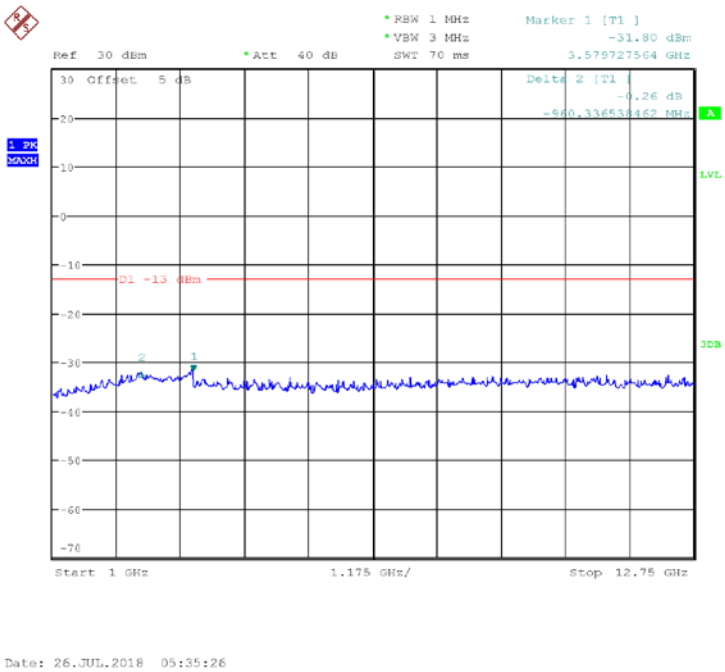
Channel 777: 9KHz~150KHz



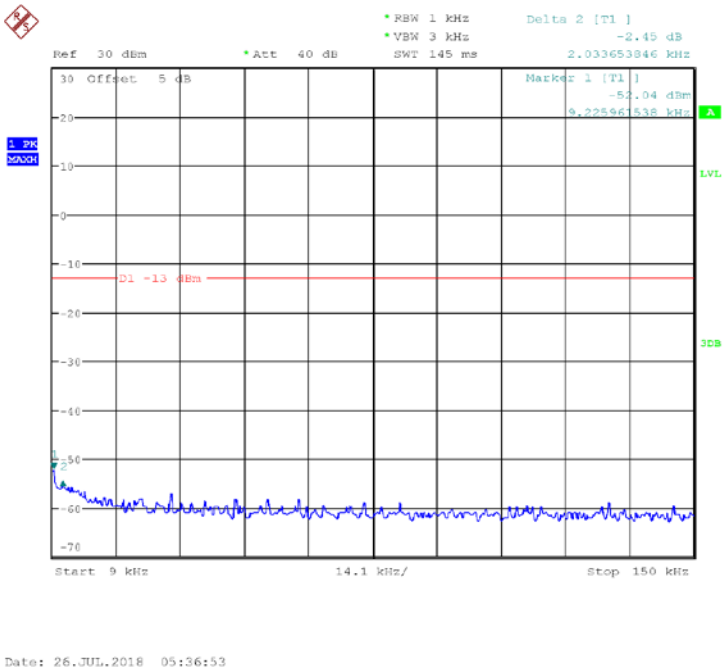
Channel 777: 150KHz~30MHz



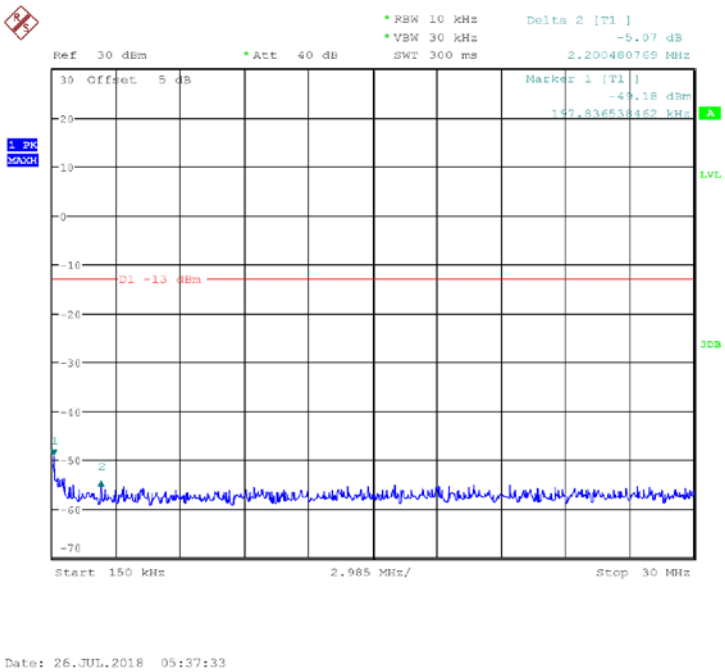
Channel 777: 30MHz~1GHz



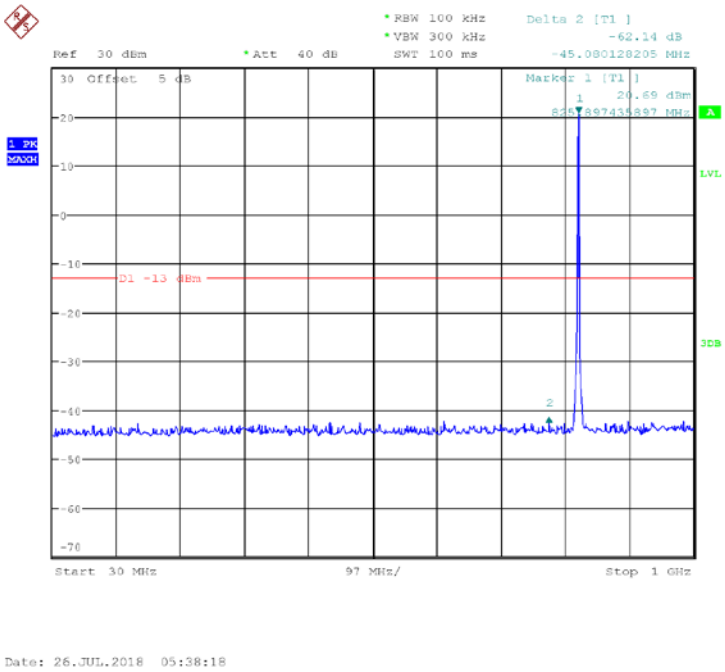
Channel 777: 1GHz~12.75GHz



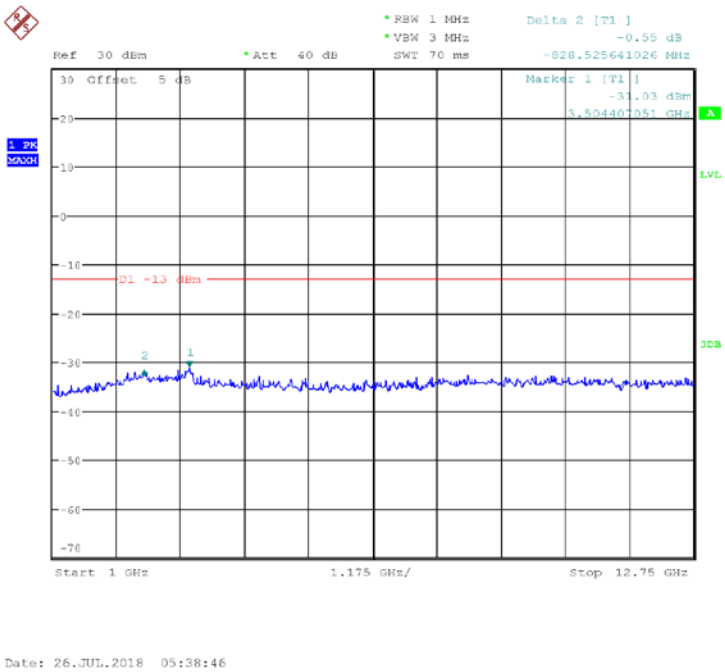
Channel 1013: 9KHz~150KHz



Channel 1013: 150KHz~30MHz



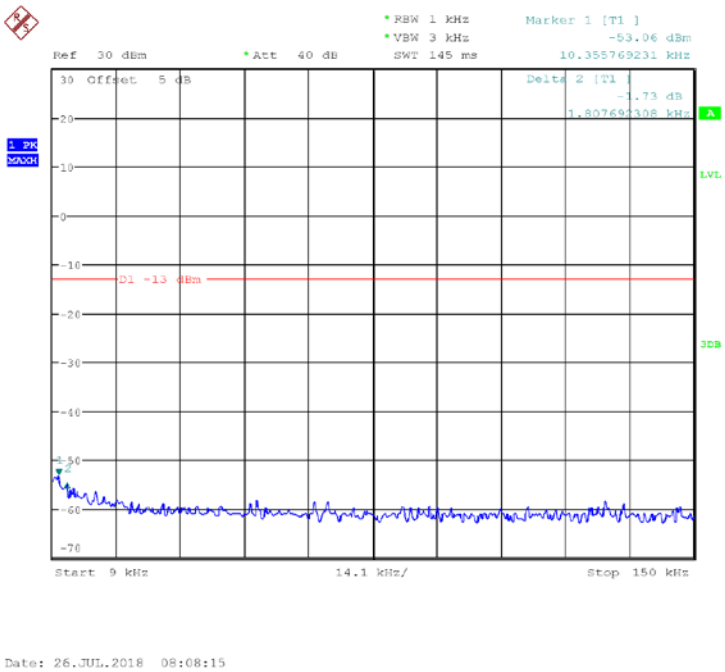
Channel 1013: 30MHz~1GHz



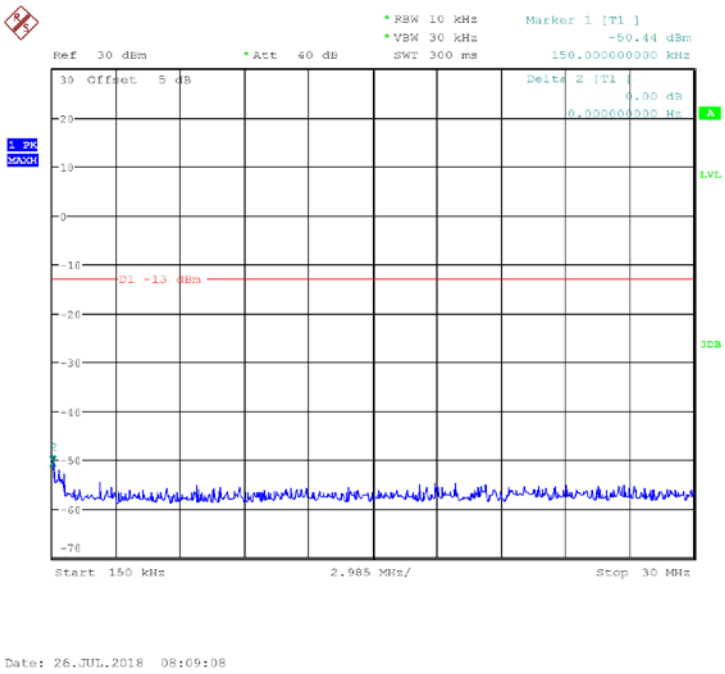
Channel 1013: 1GHz~12.75GHz

Conclusion: PASS

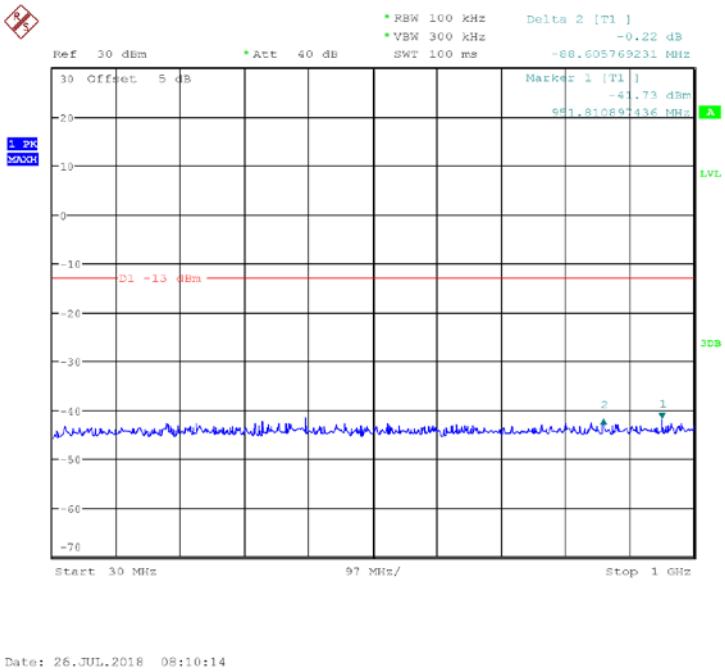
A7.1.2.4. 1xEV-DO PCS Transmitter BC0 Release 0



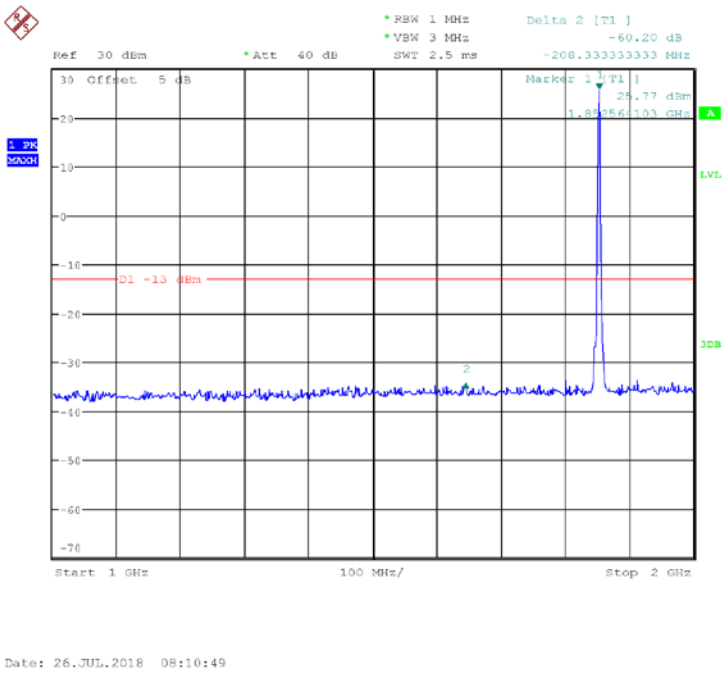
Channel 25: 9KHz~150KHz



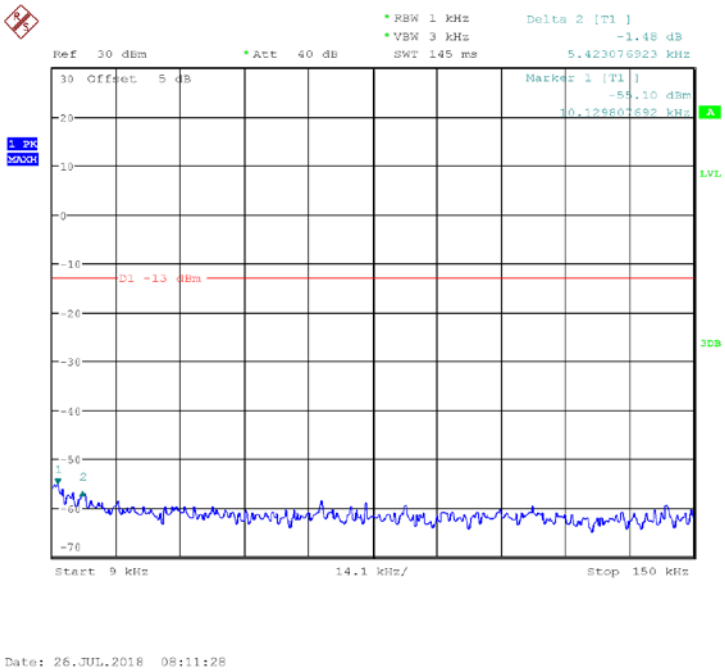
Channel 25: 150KHz~30MHz



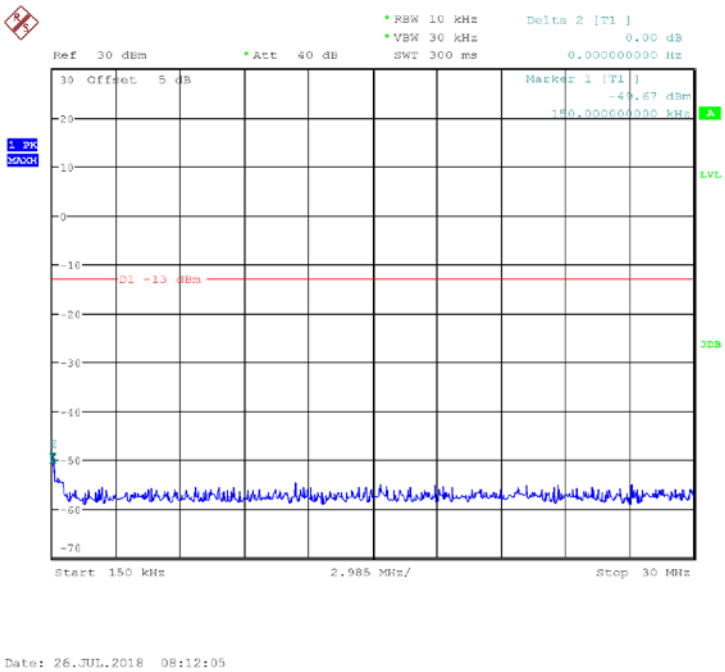
Channel 25: 30MHz~1GHz



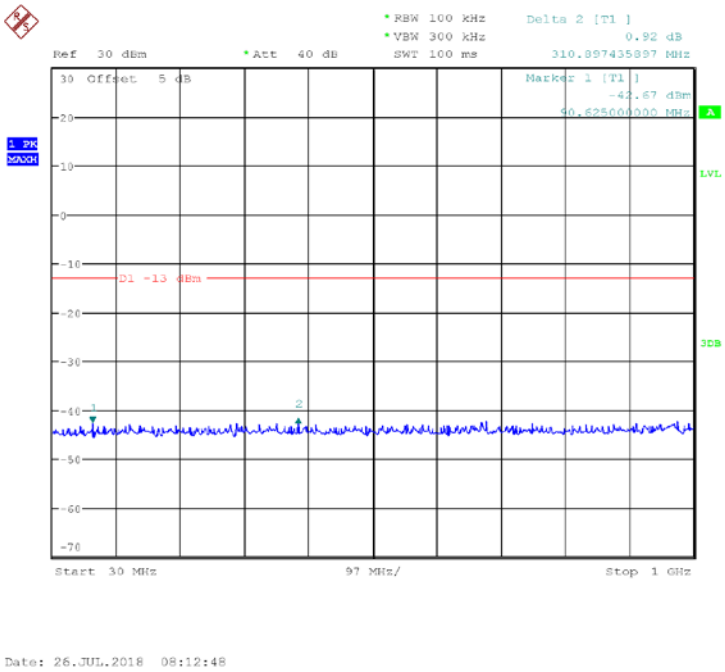
Channel 25: 1GHz~2GHz



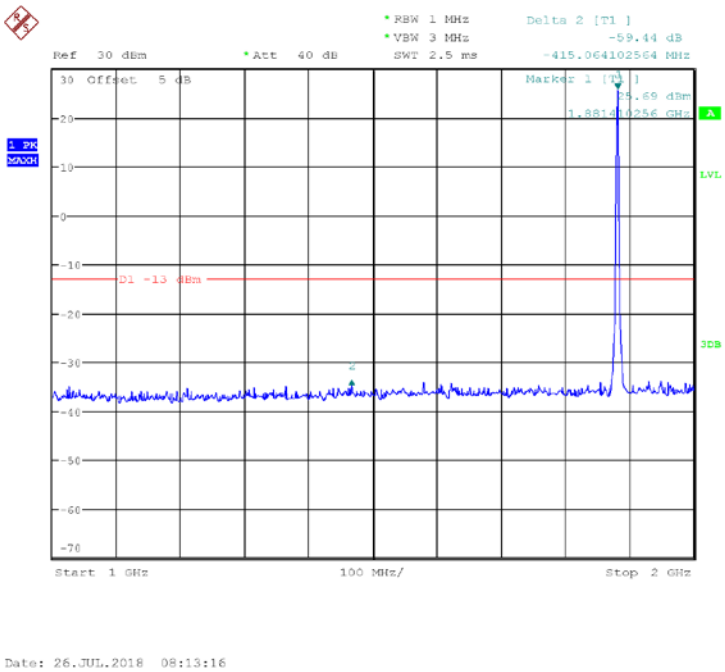
Channel 600: 9KHz~150KHz



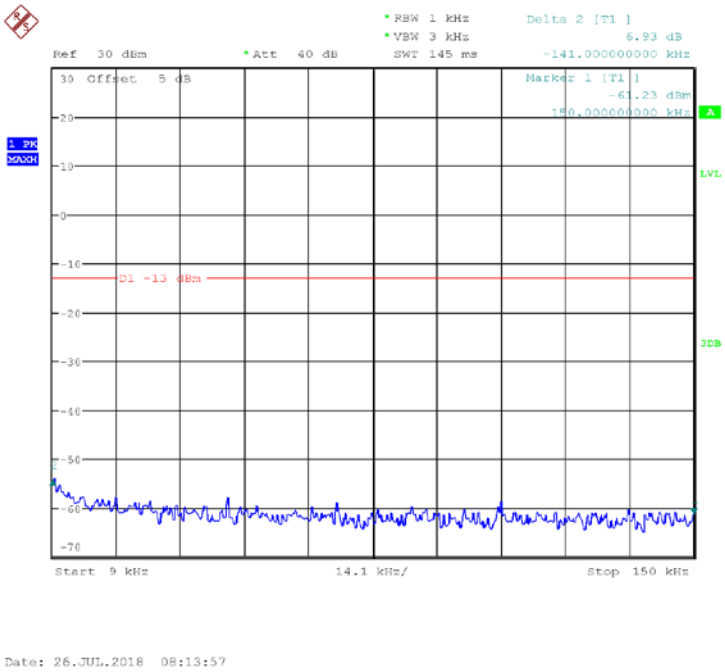
Channel 600: 150KHz~30MHz



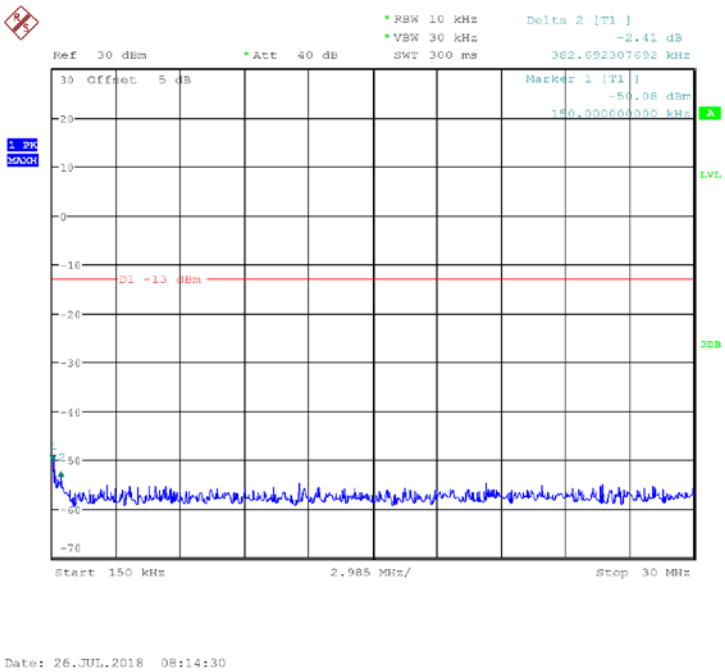
Channel 600: 30MHz~1GHz



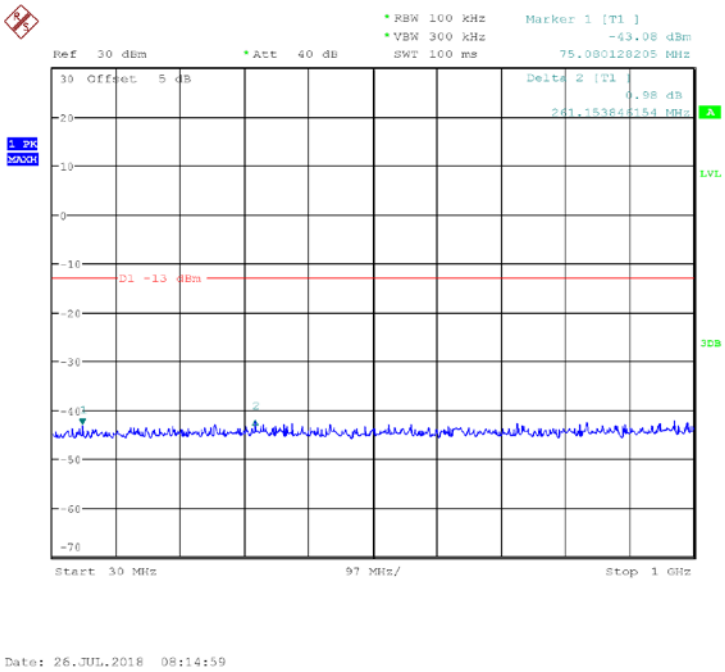
Channel 600: 1GHz~2GHz



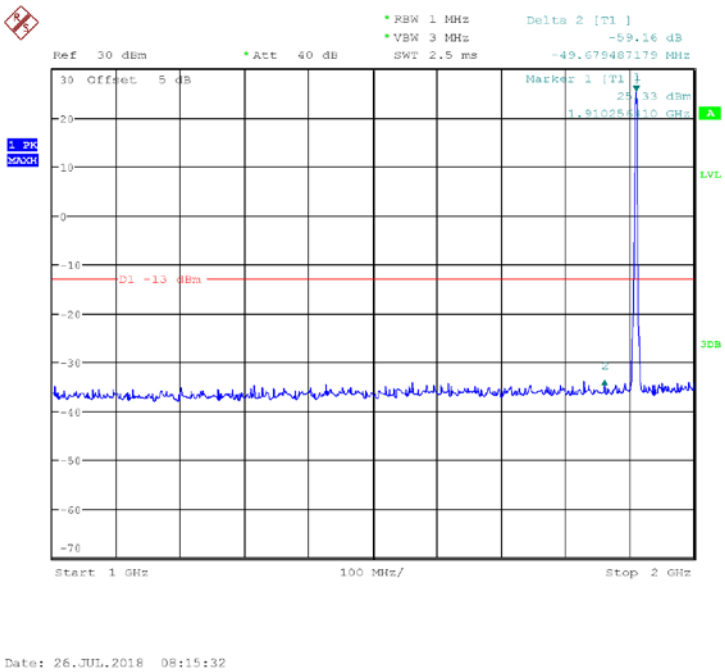
Channel 1175: 9KHz~150KHz



Channel 1175: 150KHz~30MHz

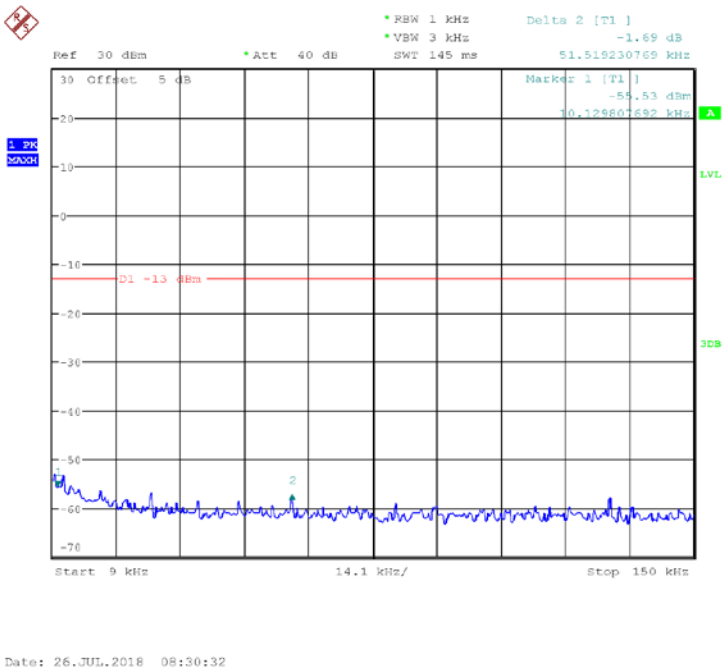


Channel 1175: 30MHz~1GHz

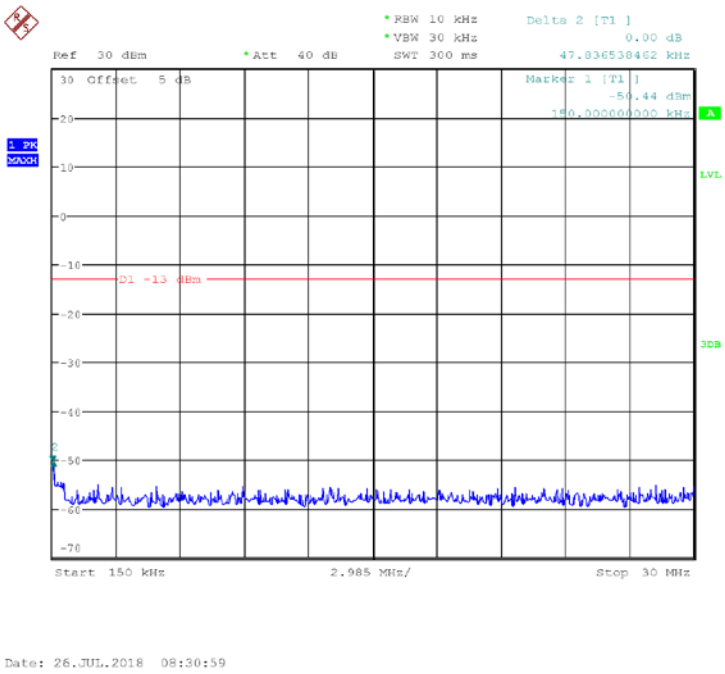


Channel 1175: 1GHz~2GHz

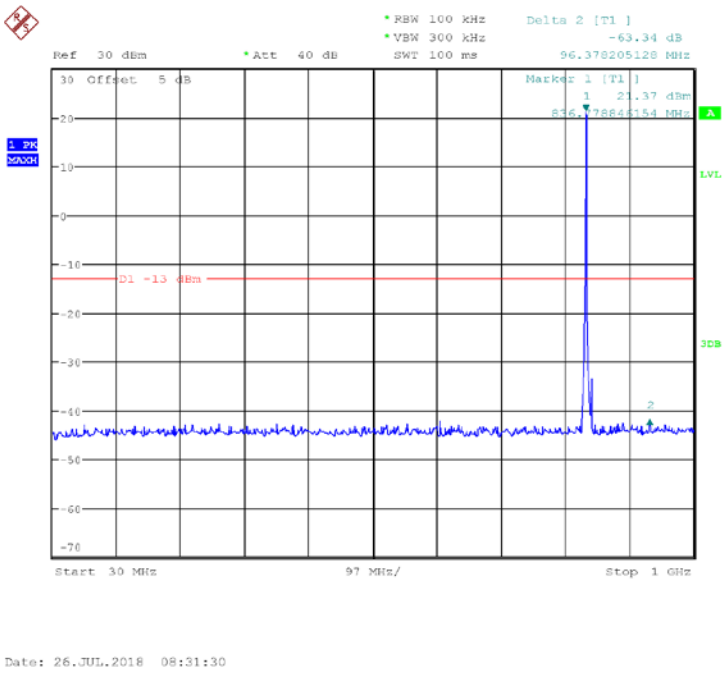
A7.1.2.5. 1xEV-DO PCS Transmitter BC0 Release A



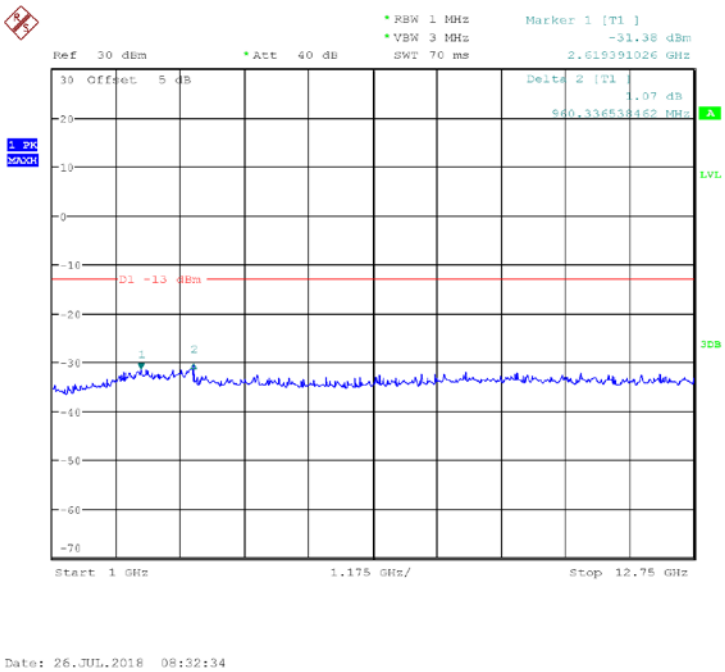
Channel 384: 9KHz~150KHz



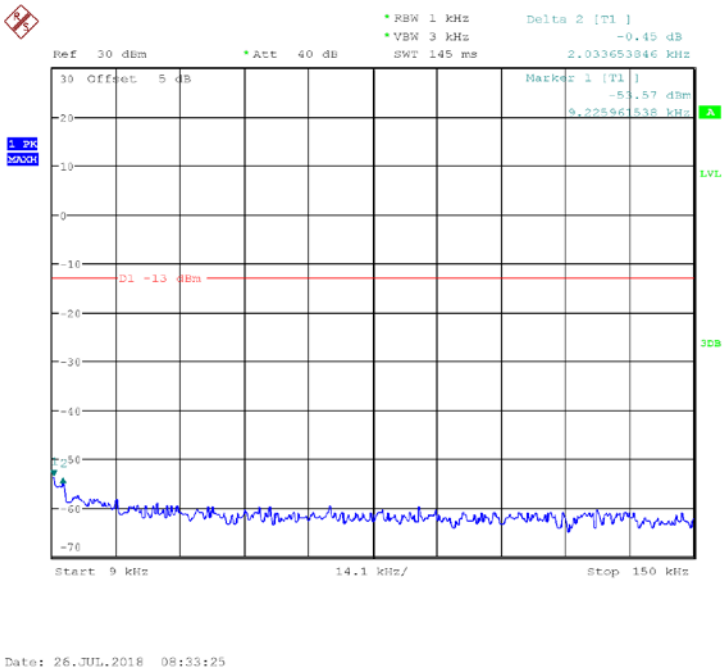
Channel 384: 150KHz~30MHz



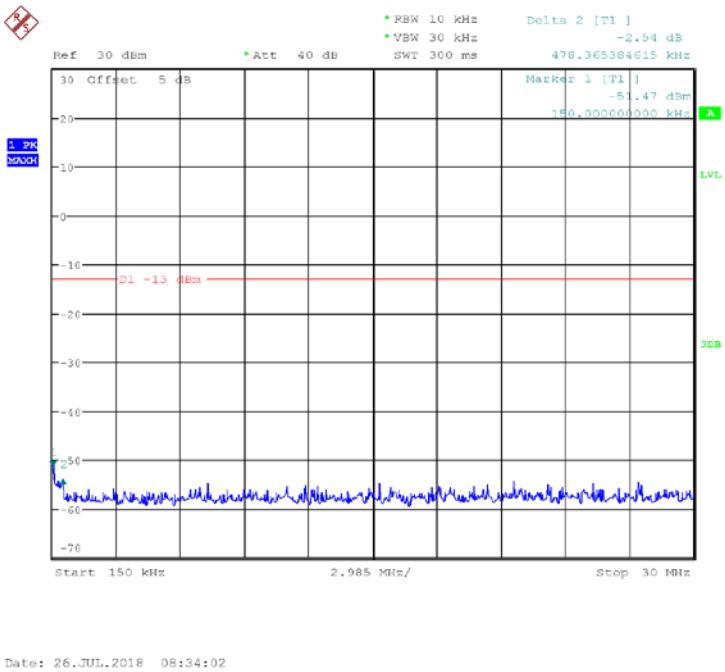
Channel 384: 30MHz~1GHz



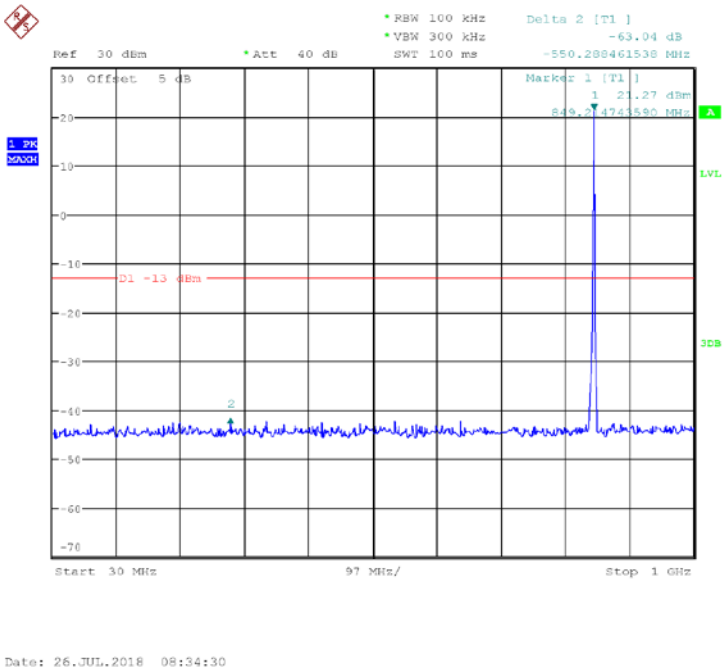
Channel 384: 1GHz~12.75GHz



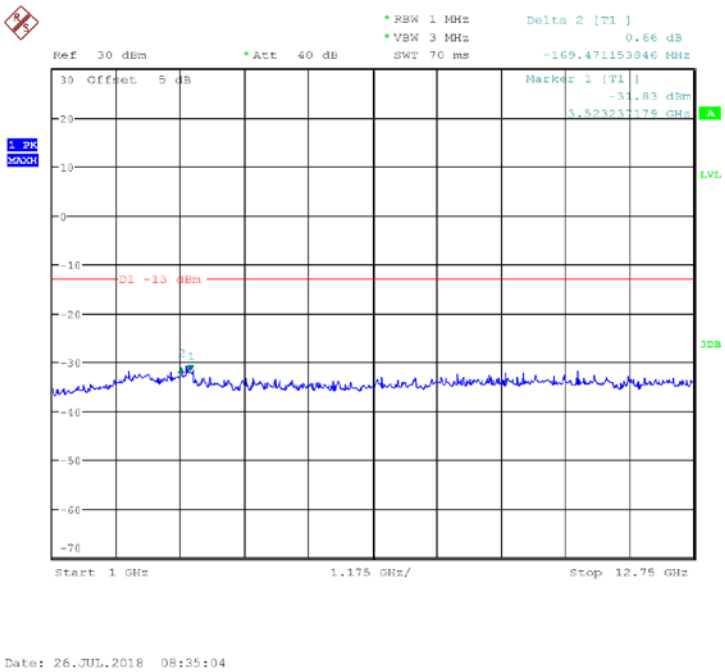
Channel 777: 9KHz~150KHz



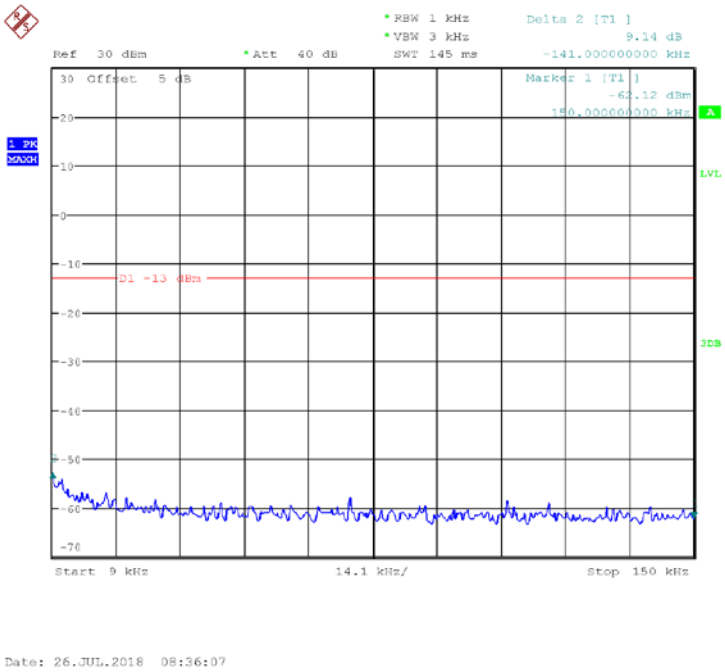
Channel 777: 150KHz~30MHz



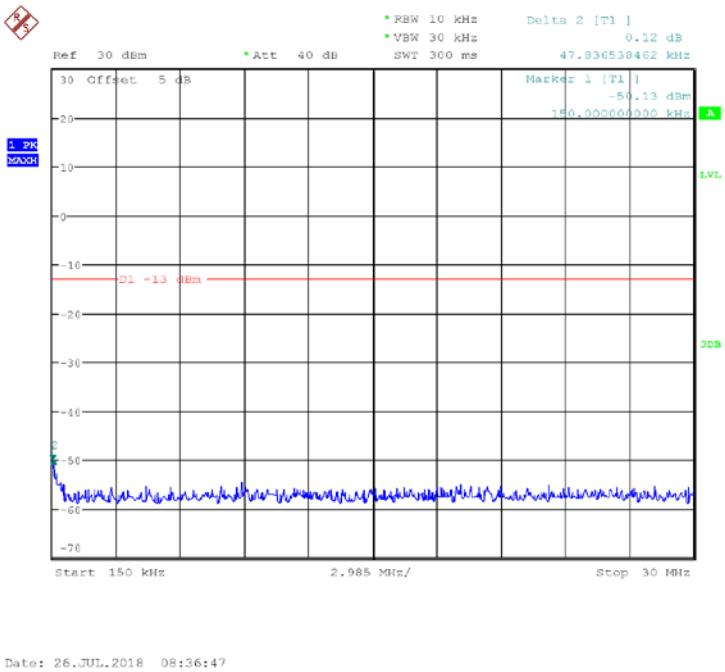
Channel 777: 30MHz~1GHz



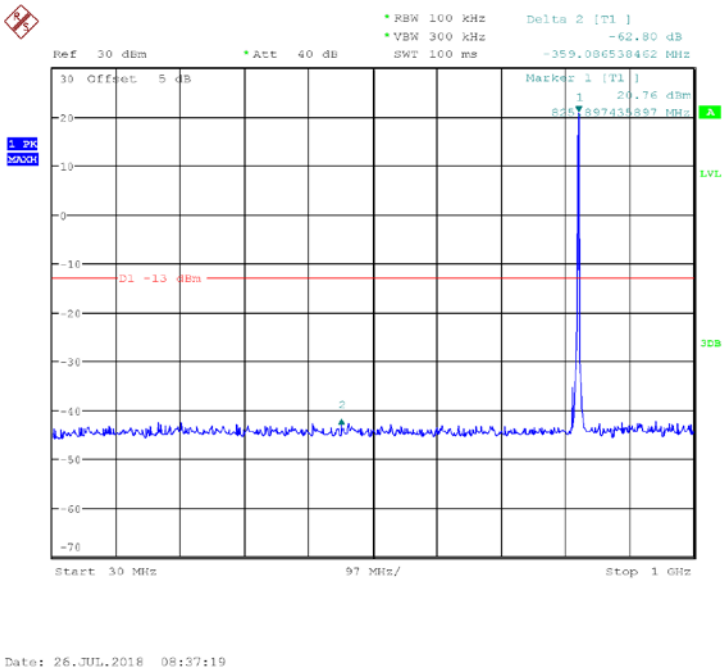
Channel 777: 1GHz~12.75GHz



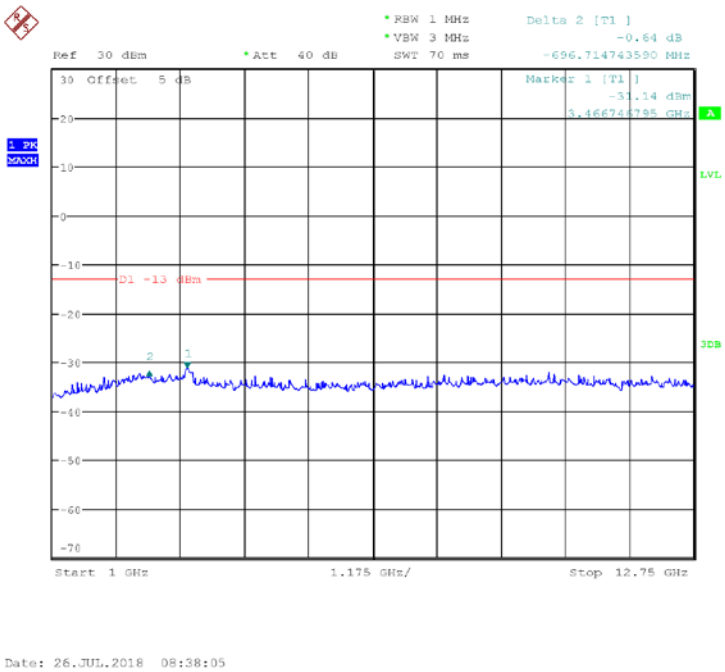
Channel 1013: 9KHz~150KHz



Channel 1013: 150KHz~30MHz



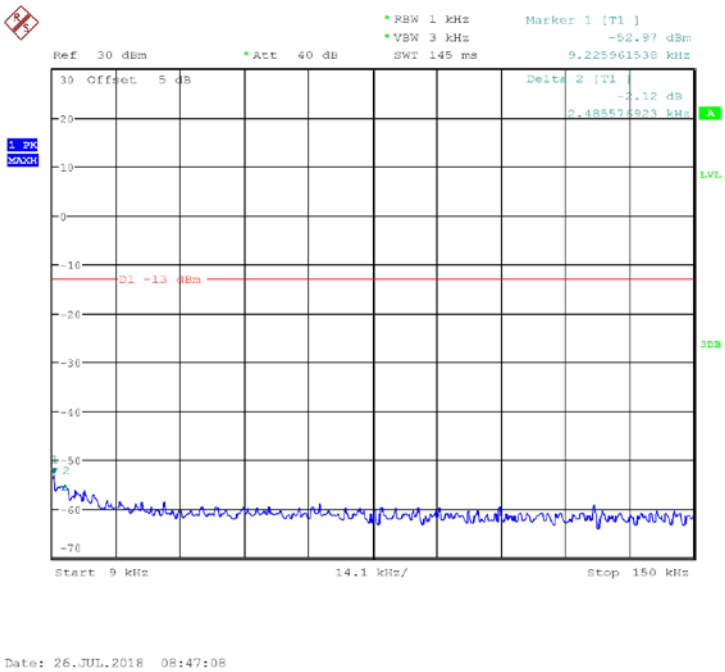
Channel 1013: 30MHz~1GHz



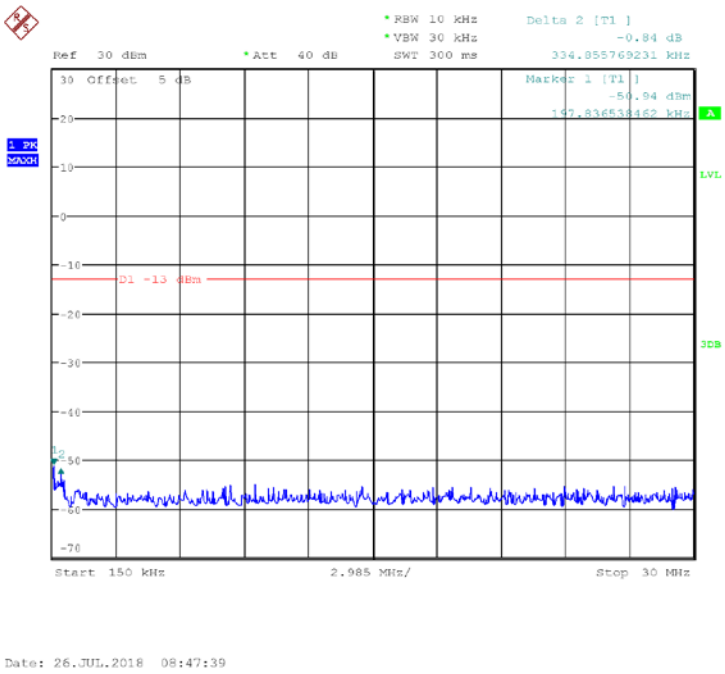
Channel 1013: 1GHz~12.75GHz

Conclusion: PASS

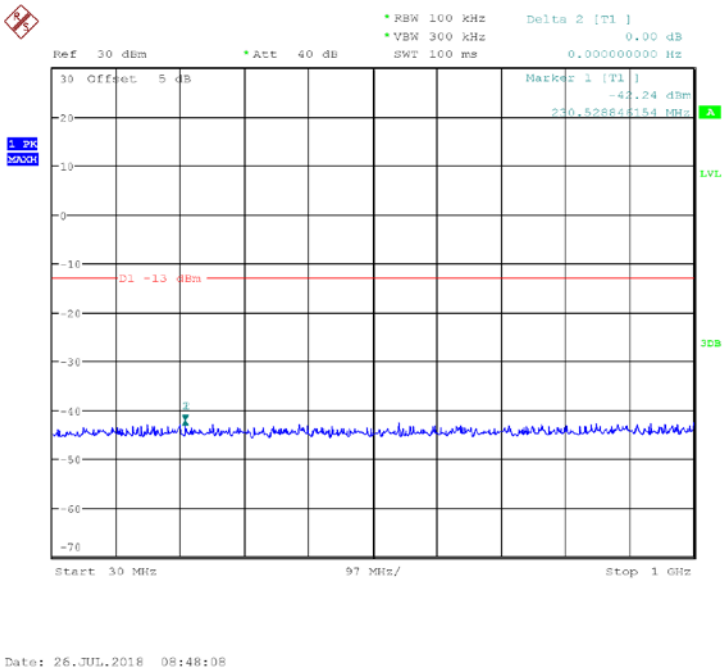
A7.1.2.6. 1xEV-DO PCS Transmitter BC0 Release A



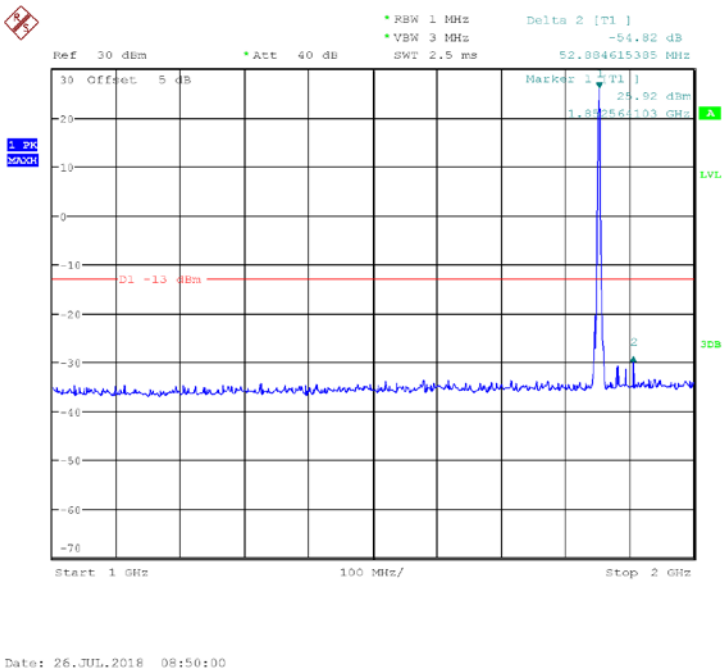
Channel 25: 9KHz~150KHz



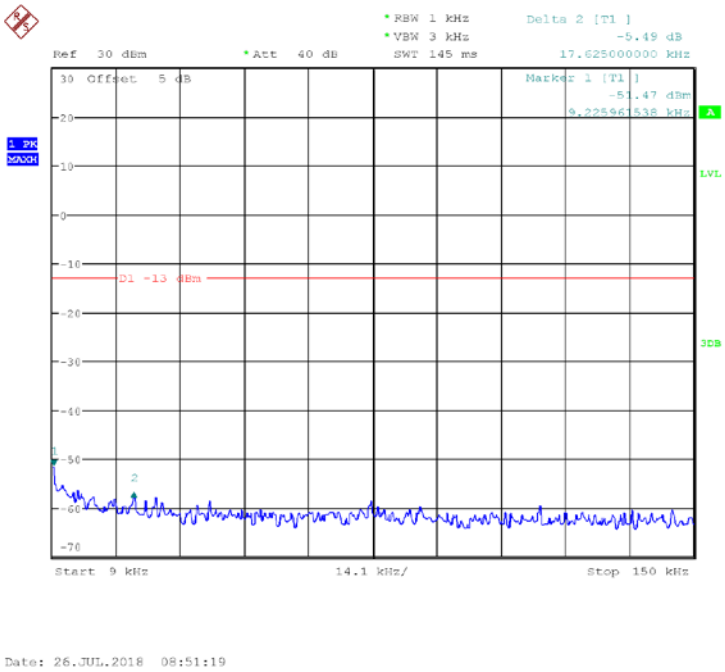
Channel 25: 150KHz~30MHz



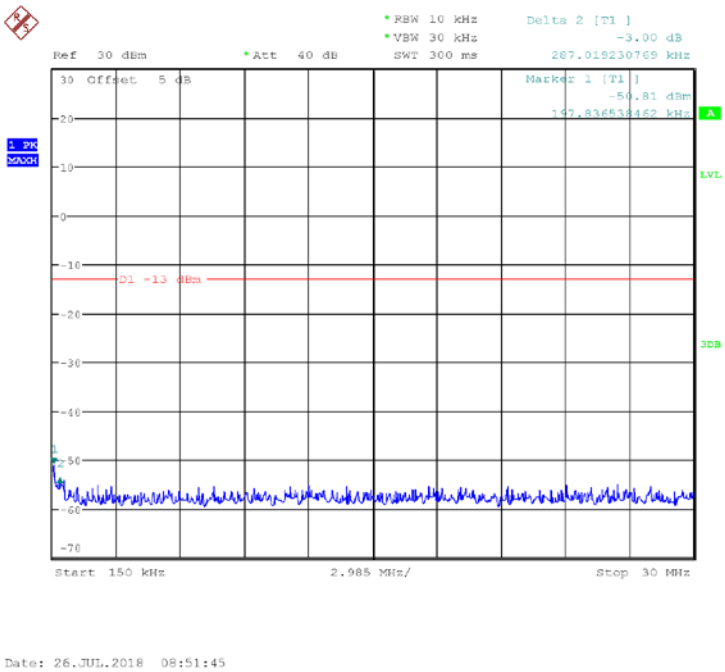
Channel 25: 30MHz~1GHz



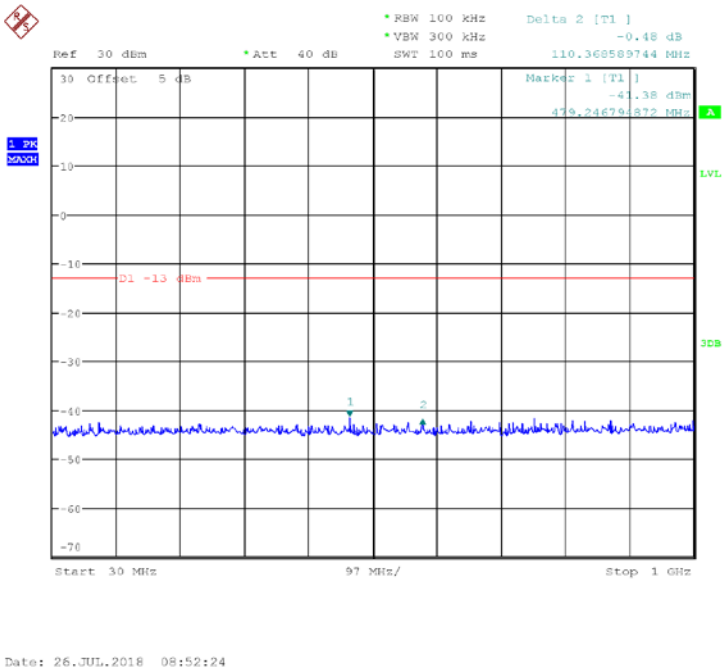
Channel 25: 1GHz~2GHz



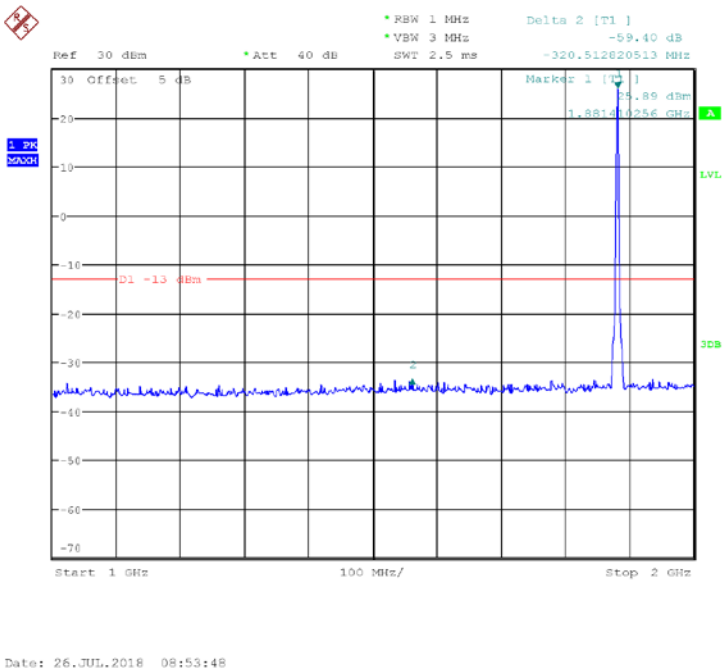
Channel 600: 9KHz~150KHz



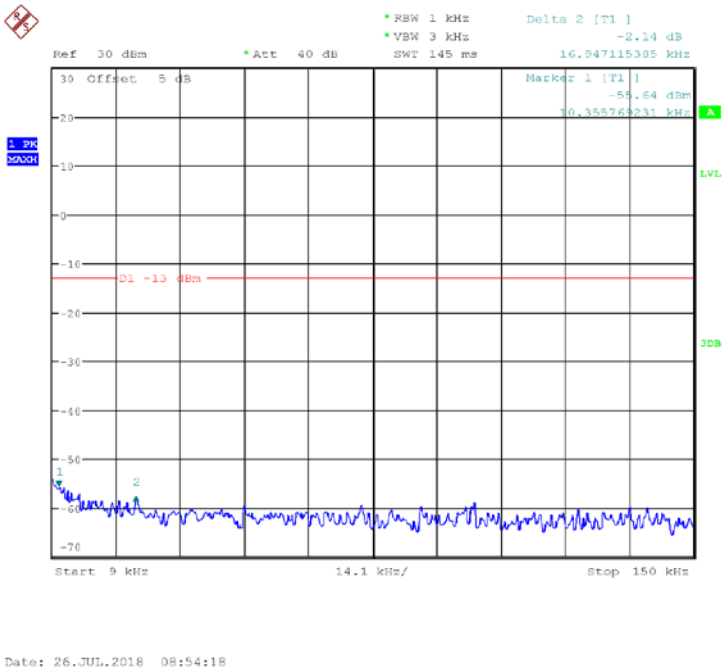
Channel 600: 150KHz~30MHz



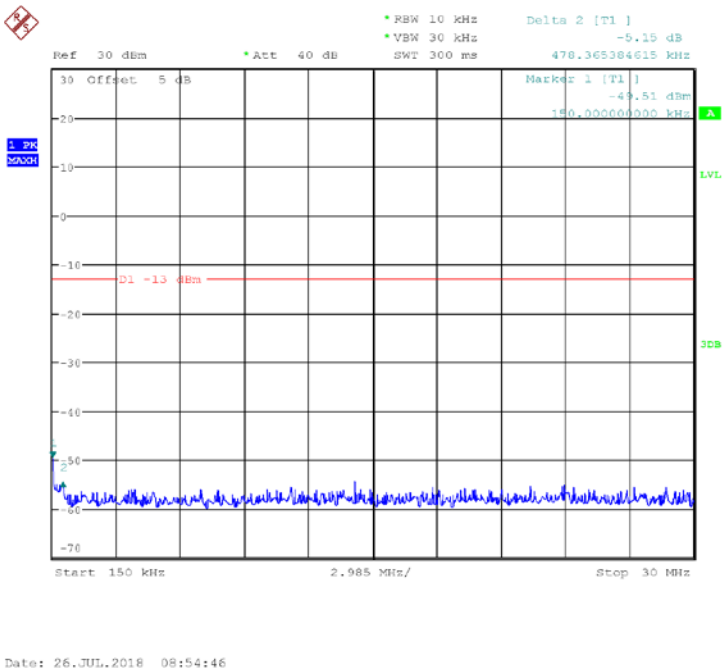
Channel 600: 30MHz~1GHz



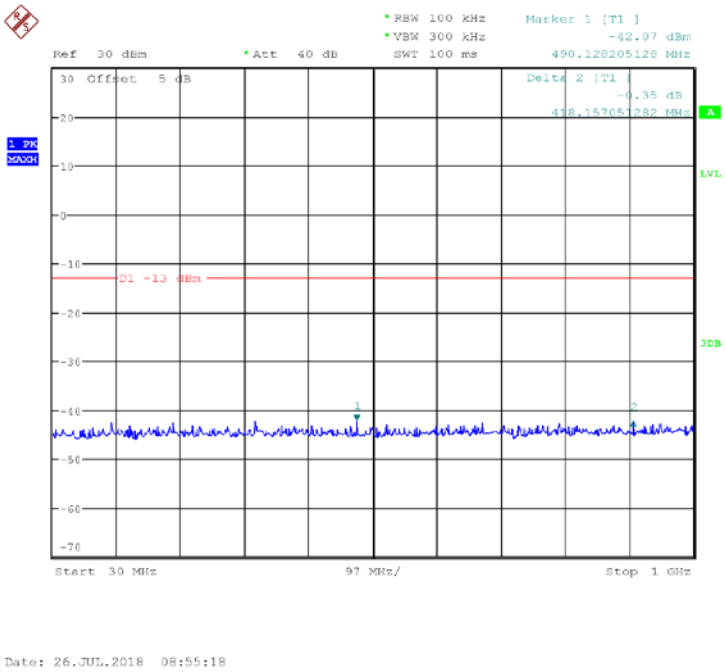
Channel 600: 1GHz~2GHz



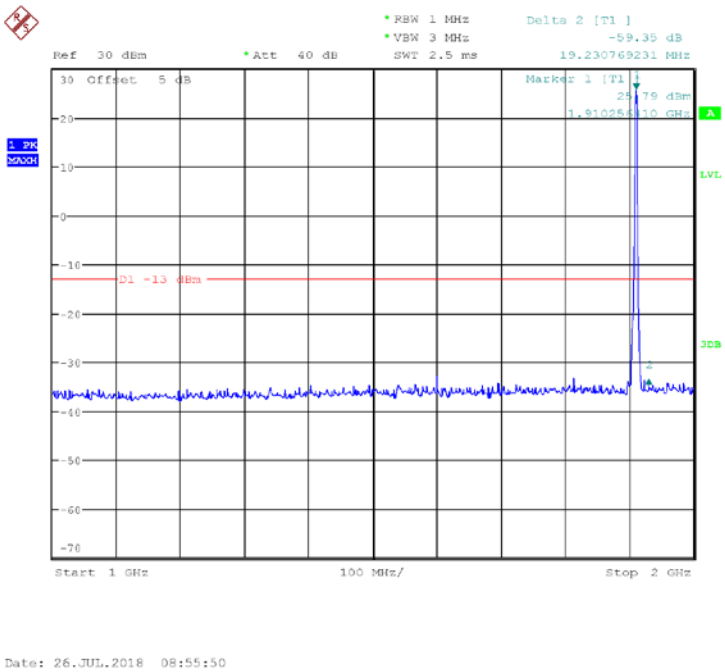
Channel 1175: 9KHz~150KHz



Channel 1175: 150KHz~30MHz



Channel 1175: 30MHz~1GHz



Channel 1175: 1GHz~2GHz

Conclusion: PASS

ANNEX A.8. RADIATED

A.8.1. ERP

A.8.1.1. CDMA/1xEV-DO ERP

A.8.1.1.1. Description

This is the test for the maximum radiated power from the EUT.

Rule Part 24.232(c) specifies, "Mobile/portable stations are limited to 2 watts e.i.r.p. Peak power"and 24.232(c) specifies that "Peak transmit power must be measured over any interval ofcontinuous transmission using instrumentation calibrated in terms of an rms-equivalent voltage."Rule Part 22.913(a) specifies ” The ERP of mobile transmitters and auxiliary test transmitters must

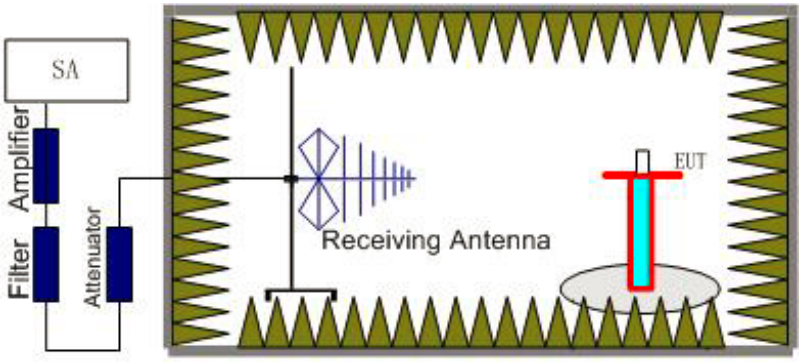
not exceed 7 Watts.”

A.8.1.1.2. Method of Measurement

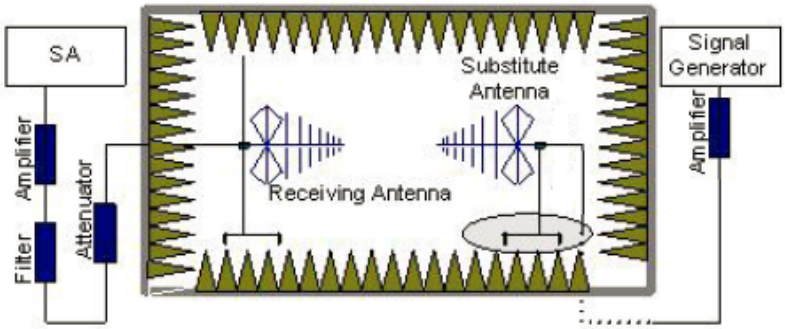
The measurements procedures in TIA-603E-2016 are used.

1. EUT was placed on a 1.5 meter high non-conductive stand at a 3 meter test distance from thereceive antenna. A receiving antenna was placed on the antenna mast 3 meters from the EUTfor emission measurements. The height of receiving antenna is 1.5m. The test setup refers tofigure below. Detected emissions were maximized at each frequency by rotating the EUTthrough

360° and adjusting the receiving antenna polarization. The radiated emissionmeasurements of all transmit frequencies in three channels (High, Middle, Low) weremeasured with peak detector.



2. The EUT is then put into continuously transmitting mode at its maximum power level duringthe test. And the maximum value of the receiver should be recorded as (Pr).
3. The EUT shall be replaced by a substitution antenna. The test setup refers to figure below.



In the chamber, an substitution antenna for the frequency band of interest is placed at thereference point of the chamber. An RF Signal source for the frequency band of interest isconnected to the substitution antenna with a cable that has been constructed to not interferewith the radiation pattern of the antenna. A power (P_{Mea}) is applied to the input of thesubstitution antenna, and adjust the level of the signal generator output until the value of thereceiver reach the previously recorded (P_r). The power of signal source (P_{Mea}) is recorded. Thetest should be performed by rotating the test item and adjusting the receiving antennapolarization.
4. A amplifier should be connected to the Signal Source output port. And the cable should beconnect between the Amplifier and the Substitution Antenna.
The cable loss (P_{cl}) ,the Substitution Antenna Gain (G_a) and the Amplifier Gain (P_{Ag}) should berecorded after test.
The measurement results are obtained as described below:
Power(EIRP)=P_{Mea}+ P_{Ag}- P_{cl}+ G_a
5. This value is EIRP since the measurement is calibrated using an antenna of known gain (2.15dBi) and known input power.
6. ERP can be calculated from EIRP by subtracting the gain of the dipole, ERP = EIRP -2.15dBi.

A.8.1.1.3 CDMA2000 Cellular -ERP 22.913(a)
A.8.1.1.3.1 Measurement result
CDMA2000 Cellular BC0

Frequency (MHz)	P_{Mea}(dBm)	P_{cl}(dB)	P_{Ag}(dB)	G_aAntenna Gain(dBd)	PeakERP(dBm)	Polarization
836.52	-13.97	3.1	37	3.11	23.04	H
848.31	-13.52	3.1	37	3.11	23.49	H
824.7	-14.18	3.1	37	3.11	22.83	H

Frequency: 824.2MHz

Peak ERP(dBm)= P_{Mea}(-14.18dBm) - P_{cl}(3.1dB) +P_{Ag}(37dB) + G_a(3.11dBd)

= 22.83dBm

Note: ANALYZER SETTINGS: RBW = VBW = 3MHz

A.8.1.1.4 CDMA2000 PCS-EIRP 24.232(c)

A.8.1.1.4.1 Measurement result

CDMA2000 PCS BC1

Frequency (MHz)	P_{Mea}(dBm)	P_{cl}(dB)	P_{Ag}(dB)	G_aAntenna Gain(dBi)	PeakEIRP(dBm)	Polarization
1851.25	-9.81	4.6	36	2.8	24.39	V
1880.0	-9.53	4.6	35.6	2.8	24.27	V
1908.75	-10.63	4.7	36	2.8	23.47	H

Frequency: 1880MHz

Peak EIRP(dBm)= P_{Mea}(-10.63dBm) - P_{cl}(4.7dB)+ P_{Ag}(36dB) +G_a(2.8dB)=23.47dBm

ANALYZER SETTINGS: RBW = VBW = 3MHz

A.8.1.1.5 1xEV-DO PCS-EIRP 24.232(c)

A.8.1.1.5.1 Measurement result

1xEV-DO Cellular BC0 Release 0

Frequency (MHz)	P_{Mea}(dBm)	P_{cl}(dB)	P_{Ag}(dB)	G_aAntenna Gain(dBd)	PeakERP(dBm)	Polarization
836.52	-14.46	3.1	37	3.11	22.55	H
848.31	-13.72	3.1	37	3.11	23.29	H
824.7	-13.48	3.1	37	3.11	23.53	H

Frequency: 824.2MHz

Peak ERP(dBm)= P_{Mea}(-13.48dBm) - P_{cl}(3.1dB) +P_{Ag}(37dB) + G_a(3.11dBd)

= 23.53dBm

Note: ANALYZER SETTINGS: RBW = VBW = 3MHz

A.8.1.1.6 1xEV-DO PCS-EIRP 24.232(c)

A.8.1.1.6.1 Measurement result

1xEV-DO PCS BC1 Release 0

Frequency (MHz)	P_{Mea}(dBm)	P_{cl}(dB)	P_{Ag}(dB)	G_aAntenna Gain(dBi)	PeakEIRP(dBm)	Polarization
1851.25	-10.05	4.6	36	2.8	24.15	H
1880.0	-9.78	4.6	35.6	2.8	24.02	H
1908.75	-10.37	4.7	36	2.8	23.73	H

Frequency: 1880MHz

Peak EIRP(dBm)= P_{Mea}(-10.37dBm) - P_{cl}(4.7dB)+ P_{Ag}(36dB) +G_a(2.8dB)=23.73dBm

ANALYZER SETTINGS: RBW = VBW = 3MHz

A.8.1.1.5 1xEV-DO PCS-EIRP 24.232(c)

A.8.1.1.5.1 Measurement result

1xEV-DO Cellular BC0 Release A

Frequency (MHz)	P_{Mea}(dBm)	P_{cl}(dB)	P_{Ag}(dB)	G_aAntenna Gain(dBd)	PeakERP(dBm)	Polarization
836.52	-14.49	3.1	37	3.11	22.52	H
848.31	-13.82	3.1	37	3.11	23.19	H
824.7	-13.58	3.1	37	3.11	23.43	H

Frequency: 824.2MHz

Peak ERP(dBm)= P_{Mea}(-13.58dBm) - P_{cl}(3.1dB) +P_{Ag}(37dB) + G_a(3.11dBd)

= 23.43dBm

Note: ANALYZER SETTINGS: RBW = VBW = 3MHz

A.8.1.1.6 1xEV-DO PCS-EIRP 24.232(c)

A.8.1.1.6.1 Measurement result

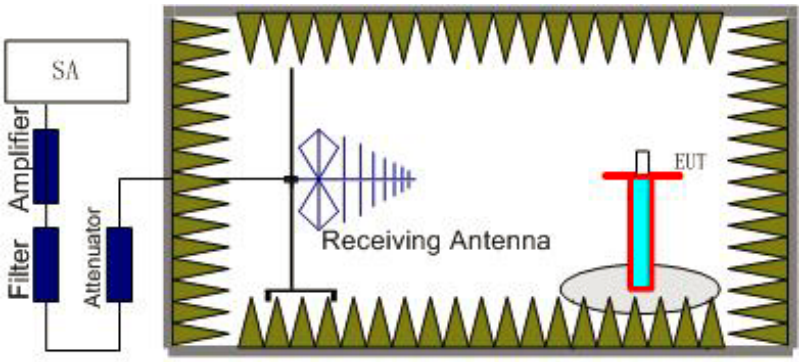
1xEV-DO PCS BC1 Release A

Frequency (MHz)	P_{Mea}(dBm)	P_{cl}(dB)	P_{Ag}(dB)	G_aAntenna Gain(dBi)	PeakEIRP(dBm)	Polarization
1851.25	-9.83	4.6	36	2.8	24.37	H
1880.0	-9.88	4.6	35.6	2.8	23.92	H
1908.75	-10.32	4.7	36	2.8	23.78	H

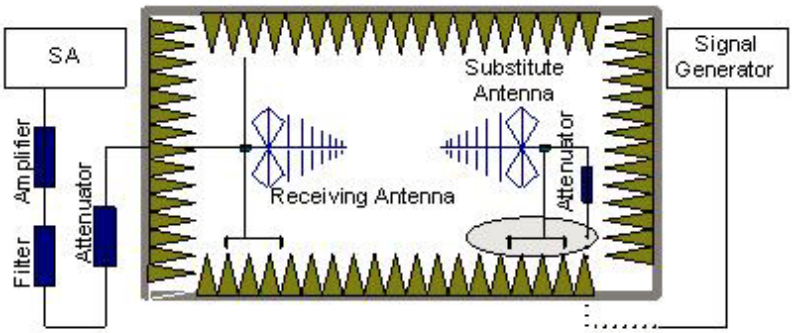
Frequency: 1880MHz
Peak EIRP(dBm)= P_{Mea}(-10.32dBm) - P_{cl}(4.7dB)+ P_{Ag}(36dB) +G_a(2.8dB)=23.78dBm
ANALYZER SETTINGS: RBW = VBW = 3MHz

A.8.2 EMISSION LIMIT (§2.1051/§22.917§24.238)
A.8.2.1 CDMA/1xEV-DO Measurement Method
The measurement procedures in TIA-603E-2016are used.
The spectrum was scanned from 30 MHz to the 10th harmonic of the highest frequency generated within the equipment, which is the transmitted carrier that can be as high as 1910 MHz. The resolution bandwidth is set as outlined in Part 24.238 and Part 22.917. The spectrum is scanned with the mobile station transmitting at carrier frequencies that pertain to low, mid and high channels of PCS1900 and GSM850.

A.8.2.2 The procedure of radiated spurious emissions is as follows:
1. EUT was placed on a 1.5 meter high non-conductive stand at a 3 meter test distance from the receive antenna. A receiving antenna was placed on the antenna mast 3 meters from the EUT for emission measurements. The height of receiving antenna is 1.5m. The test setup refers to figure below. Detected emissions were maximized at each frequency by rotating the EUT through 360° and adjusting the receiving antenna polarization. The radiated emission measurements of all non-harmonic and harmonics of the transmit frequency through the 10thharmonic were measured with peak detector.



2. The EUT is then put into continuously transmitting mode at its maximum power level during the test. And the maximum value of the receiver should be recorded as (Pr).
3. The EUT shall be replaced by a substitution antenna. The test setup refers to figure below.



In the chamber, an substitution antenna for the frequency band of interest is placed at the

reference point of the chamber. An RF Signal source for the frequency band of interest is connected to the substitution antenna with a cable that has been constructed to not interfere with the radiation pattern of the antenna. A power (P_{Mea}) is applied to the input of the substitution antenna, and adjust the level of the signal generator output until the value of the receiver reach the previously recorded (P_r). The power of signal source (P_{Mea}) is recorded. The test should be performed by rotating the test item and adjusting the receiving antenna polarization.

4. The Path loss (P_{pl}) between the Signal Source with the Substitution Antenna and the Substitution Antenna Gain (G_a) should be recorded after test.

A amplifier should be connected in for the test.

The Path loss (P_{pl}) is the summation of the cable loss .

The measurement results are obtained as described below:

Power(EIRP)=P_{Mea}- P_{pl}+ G_a

5. This value is EIRP since the measurement is calibrated using an antenna of known gain (2.15 dBi) and known input power.

6. ERP can be calculated from EIRP by subtracting the gain of the dipole, ERP = EIRP -2.15dBi

A.8.2.3 Measurement Limit

Part 24.238 and Part 22.917 specify that the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.

The specification that emissions shall be attenuated below the transmitter power (P) by at least 43 + 10 log (P) dB, translates in the relevant power range (1 to 0.001 W) to -13 dBm. At 1 W the specified minimum attenuation becomes 43 dB and relative to a 30 dBm (1 W) carrier becomes a limit of -13 dBm. At 0.001 W (0 dBm) the minimum attenuation is 13 dB, which again yields a limit of -13 dBm. In this way a translation of the specification from relative to absolute terms is carried out.

A.8.2.4 Measurement Results

Radiated emissions measurements were made only at the upper, middle, and lower carrier frequencies of the PCS1900 band (1850.2 MHz, 1880 MHz and 1909.8 MHz) and GSM850 band (824.2MHz, 836.6MHz, 848.8MHz) . It was decided that measurements at these three carrier frequencies would be sufficient to demonstrate compliance with emissions limits because it was seen that all the significant spurs occur well outside the band and no radiation was seen from a carrier in one block of the PCS1900 ,GSM850 into any of the other blocks. The equipment must still, however, meet emissions requirements with the carrier at all frequencies over which it is capable of operating and it is the manufacturer's responsibility to verify this.

A.8.2.5 Measurement Results

Measurements results:

Frequency	Channel	Frequency Range	Result
CDMA2000 Cellular BC0	Low	30MHz~10GHz	P
	Middle	30MHz~10GHz	P

	High	30MHz~10GHz	P
CDMA2000 PCS BC1	Low	30MHz~20GHz	P
	Middle	30MHz~20GHz	P
	High	30MHz~20GHz	P
1xEV-DO Cellular BC0	Low	30MHz~10GHz	P
	Middle	30MHz~10GHz	P
	High	30MHz~10GHz	P
1xEV-DO Cellular BC0	Low	30MHz~20GHz	P
	Middle	30MHz~20GHz	P
	High	30MHz~20GHz	P

CDMA2000 Cellular

BC0 Channel 384

Final result:

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBi)	Peak EIRP (dBm)	Limit （dBm）	Polarization
1871.8	-40.31	4.6	2.9	-42.01	-13	H
3575.8	-47.65	6.5	4.7	-49.45	-13	H
4728.5	-48.54	7.5	7.9	-48.14	-13	V
5641.2	-50.93	8.3	10.5	-48.73	-13	H
6926.2	-50.01	9.3	12.9	-46.41	-13	V
7580.0	-50.74	9.7	14.6	-45.84	-13	H

Note:

BC0, CH384

Power(ERP)= Pmea-Pcl+Ga=-50.74-9.7+14.6=-45.84dbm

This method Applicable to the following table.

BC0 Channel 777

Final result:

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBi)	Peak EIRP (dBm)	Limit （dBm）	Polarization
2245.7	-38.31	5.1	3.3	-40.11	-13	H
3596.5	-47.14	6.5	4.7	-48.94	-13	H
4953.5	-49.01	7.7	9.0	-47.71	-13	V
6172.3	-49.7	8.7	10.8	-47.6	-13	H
6973.8	-51.02	9.3	12.9	-47.42	-13	H
7813.8	-51.41	9.9	15.3	-46.01	-13	H

BC0 Cellular Mode Channel 1013

Final result:

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBi)	Peak EIRP (dBm)	Limit （dBm）	Polarization
1828.9	-40.76	4.6	2.9	-42.46	-13	H
3575.8	-46.96	6.5	4.7	-48.76	-13	H
4542.7	-47.76	7.4	7.3	-47.86	-13	H
5410.4	-49.71	8.1	9.5	-48.31	-13	H
6366.2	-49.39	8.8	10.8	-47.39	-13	V
7604.6	-50.58	9.7	14.6	-45.68	-13	V

CDMA2000 PCS

BC1 Mode Channel 25

Final result:

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBi)	Peak EIRP (dBm)	Limit （dBm）	Polarization
3702.6	-46.57	6.6	7.7	-45.47	-13	H
5554.8	-47.35	8.2	9.5	-46.05	-13	H
7618.8	-53.21	9.7	14.6	-48.31	-13	V
9532.8	-54.95	10.7	18.6	-47.05	-13	V
11648.4	-48.61	12.2	17.6	-43.21	-13	V
13292.4	-48.88	13.6	21.8	-40.68	-13	H

BC1 Mode Channel 600

Final result:

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBi)	Peak EIRP (dBm)	Limit （dBm）	Polarization
3760.8	-51.25	6.6	7.7	-50.15	-13	H
5639.4	-51.24	8.3	10.5	-49.04	-13	V
7406.4	-53.83	9.7	14.6	-48.93	-13	H
9394.8	-54.56	10.7	18.6	-46.66	-13	V
11236.8	-49.65	12.1	18.5	-43.25	-13	V
12973.2	-46.59	13.2	20.2	-39.59	-13	V

BC1 Mode Channel 1175

Final result:

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBi)	Peak EIRP (dBm)	Limit （dBm）	Polarization

3835.2	-54.79	6.7	7.7	-53.79	-13	H
5761.8	-53.47	8.5	10.5	-51.47	-13	H
7543.2	-54.07	9.7	14.6	-49.17	-13	V
9212.4	-53.81	10.5	18.5	-45.81	-13	V
11242.8	-50	12.1	18.5	-43.6	-13	V
14300.4	-47.67	13.6	23.5	-37.77	-13	H

BC0, CH1175

Power(ERP)= Pmea-Pcl+Ga=-47.67-13.6+23.5=-37.77dbm

This method Applicable to the following table.

Conclusion: PASS

Note: the EUT was displayed in several different direction, the worst cases were shown.

1xEV-DO Cellular

BC0 Channel 384

Final result:

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBi)	Peak EIRP (dBm)	Limit （dBm）	Polarization
1843.9	-41.61	4.6	2.9	-43.31	-13	H
2451.4	-37.44	5.3	3.7	-39.04	-13	H
3304.6	-47.78	6.2	4.7	-49.28	-13	H
3927.7	-50.29	6.8	7.7	-49.39	-13	H
5358.5	-48.61	8.1	8.7	-48.01	-13	H
6366.2	-49.53	8.8	10.8	-47.53	-13	H

Note:

BC0, CH384

Power(ERP)= Pmea-Pcl+Ga=-49.53-8.8+10.8=-47.53dbm

This method Applicable to the following table.

BC0 Channel 777

Final result:

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBi)	Peak EIRP (dBm)	Limit （dBm）	Polarization
1623.2	-44.9	4.3	3.4	-45.8	-13	H
2445.0	-36.71	5.3	3.7	-38.31	-13	V
3570.0	-46.95	6.4	4.7	-48.65	-13	H
4935.0	-49.43	7.7	9.0	-48.13	-13	V
5627.3	-51.4	8.3	10.5	-49.2	-13	V
6347.7	-49.29	8.8	10.8	-47.29	-13	V

BC0 Cellular Mode Channel 1013

Final result:

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBi)	Peak EIRP (dBm)	Limit （dBm）	Polarization
1854.6	-41.19	4.6	2.9	-42.89	-13	V
2531.8	-36.97	5.4	3.7	-38.67	-13	V
3571.2	-47.23	6.4	4.7	-48.93	-13	H
4122.7	-49.67	7.0	7.7	-48.97	-13	H
5250.0	-49.53	8.0	8.7	-48.83	-13	H
6446.2	-50.36	8.9	11.5	-47.76	-13	V

1xEV-DO PCS

BC1 Mode Channel 25

Final result:

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBi)	Peak EIRP (dBm)	Limit （dBm）	Polarization
3702.0	-45.28	6.6	7.7	-44.18	-13	H

5554.8	-43.3	8.2	9.5	-42	-13	V
7404.0	-50.29	9.7	14.6	-45.39	-13	H
9210.0	-54.78	10.5	18.5	-46.78	-13	V
11317.2	-49.49	12.1	18.5	-43.09	-13	H
12998.4	-46.88	13.2	20.2	-39.88	-13	H

BC1 Mode Channel 600

Final result:

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBi)	Peak EIRP (dBm)	Limit （dBm）	Polarization
3759.0	-48.96	6.6	7.7	-47.86	-13	V
5639.4	-47.45	8.3	10.5	-45.25	-13	V
7519.2	-52.85	9.7	14.6	-47.95	-13	H
9411.6	-55.18	10.7	18.6	-47.28	-13	V
11655.6	-48.11	12.4	17.6	-42.91	-13	V
14281.2	-48.66	13.6	23.5	-38.76	-13	V

BC1 Mode Channel 1175

Final result:

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBi)	Peak EIRP (dBm)	Limit （dBm）	Polarization
3817.2	-49.18	6.7	7.7	-48.18	-13	H
5727.0	-39.83	8.5	10.5	-37.83	-13	H
7634.4	-52.74	9.7	15.3	-47.14	-13	V

9712.8	-53.47	10.9	18.3	-46.07	-13	H
11767.2	-49.05	12.4	17.6	-43.85	-13	H
13796.4	-50.01	13.8	24.8	-39.01	-13	H

BC0, CH1175

Power(ERP)= Pmea-Pcl+Ga=-50.01-13.8+24.8=-39.01dbm

This method Applicable to the following table.

Conclusion: PASS

Note: the EUT was displayed in several different direction, the worst cases were shown.

ANNEX B. Deviations from Prescribed Test Methods

No deviation from Prescribed Test Methods.

************End Of Report************