



TESTING LABORATORY
CERTIFICATE #4820.01



FCC PART 22H, PART 24E MEASUREMENT AND TEST REPORT

For

LUXPAD TABLET

YangGuangGaoErFU Building, No 7008 SHENNAN Road, FuTian SHENZHEN, CHINA

FCC ID: 2ANIRNITRO7Q

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

EUT Name:		TAB
EUT Model:		NITRO 7Q
Operation modes:		GSM Voice, GPRS Data WCDMA(R99 (Voice/Data), HSDPA/HSUPA/HSPA+)
Operation Frequency:		GSM 850: 824-849 MHz(TX), 869-894 MHz(RX) PCS 1900: 1850-1910 MHz(TX), 1930-1990 MHz(RX) WCDMA Band 2: 1850-1910 MHz(TX), 1930-1990 MHz(RX) WCDMA Band 5: 824-849 MHz(TX), 869-894 MHz(RX)
Modulation Type:		GMSK,BPSK,QPSK,16QAM
Antenna GainΔ:		GSM850/WCDMA B5: -2.5 dBi PCS1900/WCDMA B2: -1.1 dBi
Rated Input Voltage:		DC 3.7V from Battery or DC 5V from Adapter
Adapter Information	Model:	NITRO 7Q
	Input:	100-240Vac 50/60Hz 0.3A
	Output:	5.0Vdc 1.5A
Serial Number:		RDG200925004-RF-S1
EUT Received Date:		2020.9.25
EUT Received Status:		Good

Objective

This report is prepared on behalf of **LUXPAD TABLET** in accordance with: Part 2-Subpart J, Part 22-Subpart H, and Part 24-Subpart E of the Federal Communications Commission's rules.

The objective is to determine compliance with FCC Rules for output power, modulation characteristic, occupied bandwidth, spurious emissions at antenna terminal, spurious radiated emission, frequency stability and band edge.

Related Submittal(s)/Grant(s)

FCC Part 15C DTS submissions with FCC ID: 2ANIRNITRO7Q
FCC Part 15C DSS submissions with FCC ID: 2ANIRNITRO7Q

Test Methodology

All tests and measurements indicated in this document were performed in accordance with:

the Code of federal Regulations Title 47, Part 2, Part 22, Part 24

ANSI C63.26-2015, American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services

All emissions measurement was performed at Bay Area Compliance Laboratories Corp. (Dongguan). The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

Measurement Uncertainty

Parameter	Measurement Uncertainty
Occupied Channel Bandwidth	±5 %
RF output power, conducted	±0.61dB
Unwanted Emissions, radiated	±3.62 dB
Unwanted Emissions, conducted	±2.47 dB
Temperature	±1 °C
Humidity	±5%
DC and low frequency voltages	±0.4%
Duty Cycle	1%

Note: Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty. The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval.

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Dongguan) to collect test data is located on the No.69 Pulongcun, Puxinhu Industry Area, Tangxia, Dongguan, Guangdong, China.

The lab has been recognized as the FCC accredited lab under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No. : 897218, the FCC Designation No. : CN1220.

The lab has been recognized by Innovation, Science and Economic Development Canada to test to Canadian radio equipment requirements, the CAB identifier: CN0022.

Declarations

BACL is not responsible for the authenticity of any test data provided by the applicant. Data included from the applicant that may affect test results are marked with a triangle symbol “Δ”. Customer model name, addresses, names, trademarks etc. are not considered data.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

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SYSTEM TEST CONFIGURATION

Justification

The EUT was configured for testing according to ANSI C63.26-2015.

The test items were performed with the EUT operating at testing mode. The device operates on GSM/WCDMA Bands, test was performed with channels as below table:

Frequency Bands	Bandwidth (MHz)	Test Frequency(MHz)		
		Low	Middle	High
GSM/GPRS 850	0.25	824.2	836.6	848.8
GSM/GPRS 1900	0.25	1850.2	1880	1909.8
WCDMA Band 2	4.2	1852.4	1880	1907.6
WCDMA Band 5	4.2	826.4	836.6	846.6

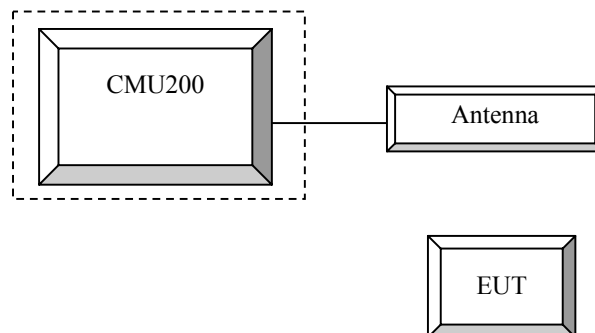
Equipment Modifications

No modification was made to the EUT.

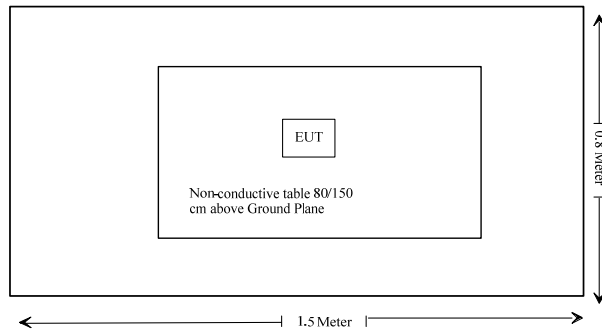
Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
R&S	Universal Radio Communication Tester	CMU200	106 891
Un-Known	ANTENNA	Un-Known	Un-Known

Configuration of Test Setup



Block Diagram of Test Setup



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§1.1310, §2.1093	RF Exposure	Compliance
§2.1046; § 22.913 (a); § 24.232 (c);	RF Output Power	Compliance
§ 2.1047	Modulation Characteristics	Not Applicable
§ 2.1049; § 22.905 § 22.917; § 24.238	Occupied Bandwidth	Compliance
§ 2.1051, § 22.917 (a); § 24.238 (a)	Spurious Emissions at Antenna Terminal	Compliance
§ 2.1053 § 22.917 (a); § 24.238 (a)	Spurious Radiation Emissions	Compliance
§ 22.917 (a); § 24.238 (a)	Out of band emission, Band Edge	Compliance
§ 2.1055 § 22.355; § 24.235	Frequency stability vs. temperature Frequency stability vs. voltage	Compliance

FCC §1.1310 & §2.1093- RF EXPOSURE

Applicable Standard

FCC§1.1310 and §2.1093.

Test Result

Compliance, please refer to the SAR report: RDG200925004-20.

FCC §2.1047 - 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.

FCC § 2.1046, § 22.913 (a) & § 24.232 (c) - RF OUTPUT POWER

Applicable Standard

According to FCC §2.1046 and §22.913 (a), the ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 watts.

According to FCC §2.1046 and §24.232 (C), mobile and portable stations are limited to 2 watts EIRP and the equipment must employ a means for limiting power to the minimum necessary for successful communications.

According to §24.232 (d) Power measurements for transmissions by stations authorized under this section may be made either in accordance with a Commission-approved average power technique or in compliance with paragraph (e) of this section. In both instances, equipment employed must be authorized in accordance with the provisions of §24.51. In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

Test Procedure

GSM/GPRS/EGPRS

Function: Menu select > GSM Mobile Station > GSM 850/1900

Press Connection control to choose the different menus

Press RESET > choose all the reset all settings

Connection Press Signal Off to turn off the signal and change settings

Network Support > GSM + GPRS or GSM + EGSM

Main Service > Packet Data

Service selection > Test Mode A – Auto Slot Config. off

MS Signal Press Slot Config Bottom on the right twice to select and change the number of time slots and power setting

> Slot configuration > Uplink/Gamma

> 33 dBm for GPRS 850

> 30 dBm for GPRS 1900

> 27 dBm for EGPRS 850

> 26 dBm for EGPRS 1900

BS Signal Enter the same channel number for TCH channel (test channel) and BCCH channel

Frequency Offset > + 0 Hz

Mode > BCCH and TCH

BCCH Level > -85 dBm (May need to adjust if link is not stable)

BCCH Channel > choose desire test channel [Enter the same channel number for TCH channel (test channel) and BCCH channel]

Channel Type > Off

P0 > 4 dB

Slot Config > Unchanged (if already set under MS signal)

TCH > choose desired test channel

Hopping > Off

Main Timeslot > 3

Network Coding Scheme > CS4 (GPRS) and MCS5 (EGPRS)

Bit Stream > 2E9-1 PSR Bit Stream

AF/RF Enter appropriate offsets for Ext. Att. Output and Ext. Att. Input

Connection Press Signal on to turn on the signal and change settings

WCDMA-Release 99

The following tests were conducted according to the test requirements outlines in section 5.2 of the 3GPP TS34.121-1 specification. The EUT has a nominal maximum output power of 24dBm (+1.7/-3.7).

WCDMA General Settings	Loopback Mode	Test Mode 1
	Rel99 RMC	12.2kbps RMC
	Power Control Algorithm	Algorithm2
	β_c / β_d	8/15

WCDMA HSDPA

The following tests were conducted according to the test requirements outlines in section 5.2 of the 3GPP TS34.121-1 specification.

	Mode Subset	HSDPA 1	HSDPA 2	HSDPA 3	HSDPA 4
WCDMA General Settings	Loopback Mode	Test Mode 1			
	Rel99 RMC	12.2kbps RMC			
	HSDPA FRC	H-Set1			
	Power Control Algorithm	Algorithm2			
	β_c	2/15	12/15	15/15	15/15
	β_d	15/15	15/15	8/15	4/15
	β_d (SF)	64			
	β_c / β_d	2/15	12/15	15/8	15/4
	β_{hs}	4/15	24/15	30/15	30/15
	MPR(dB)	0	0	0.5	0.5
HSDPA Specific Settings	DACK	8			
	DNAK	8			
	DCQI	8			
	Ack-Nack repetition factor	3			
	CQI Feedback	4ms			
	CQI Repetition Factor	2			
	$A_{hs} = \beta_{hs} / \beta_c$	30/15			

WCDMA HSUPA

The following tests were conducted according to the test requirements outlines in section 5.2 of the 3GPP TS34.121-1 specification.

	Mode	HSUPA	HSUPA	HSUPA	HSUPA	HSUPA
	Subset	1	2	3	4	5
WCDMA General Settings	Loopback Mode	Test Mode 1				
	Rel99 RMC	12.2kbps RMC				
	HSDPA FRC	H-Set1				
	HSUPA Test	HSUPA Loopback				
	Power Control Algorithm	Algorithm2				
	β_c	11/15	6/15	15/15	2/15	15/15
	β_d	15/15	15/15	9/15	15/15	0
	β_{ec}	209/225	12/15	30/15	2/15	5/15
	β_c/β_d	11/15	6/15	15/9	2/15	-
	β_{hs}	22/15	12/15	30/15	4/15	5/15
	CM(dB)	1.0	3.0	2.0	3.0	1.0
	MPR(dB)	0	2	1	2	0
HSDPA Specific Settings	DACK	8				
	DNAK	8				
	DCQI	8				
	Ack-Nack repetition factor	3				
	CQI Feedback	4ms				
	CQI Repetition Factor	2				
	$A_{hs}=\beta_{hs}/\beta_c$	30/15				
HSUPA Specific Settings	DE-DPCCH	6	8	8	5	7
	DHARQ	0	0	0	0	0
	AG Index	20	12	15	17	21
	ETFCI	75	67	92	71	81
	Associated Max UL Data Rate kbps	242.1	174.9	482.8	205.8	308.9
	Reference E_FCI	E-TFCI 11 E E-TFCI PO 4 E-TFCI 67 E-TFCI PO 18 E-TFCI 71 E-TFCI PO23 E-TFCI 75 E-TFCI PO26 E-TFCI 81 E-TFCI PO 27	E-TFCI 11 E-TFCI PO4 E-TFCI 92 E-TFCI PO 18	E-TFCI 11 E-TFCI PO 4 E-TFCI 67 E-TFCI PO 18 E-TFCI 71 E-TFCI PO23 E-TFCI 75 E-TFCI PO26 E-TFCI 81 E-TFCI PO 27	E-TFCI 11 E E-TFCI PO 4 E-TFCI 67 E-TFCI PO 18 E-TFCI 71 E-TFCI PO23 E-TFCI 75 E-TFCI PO26 E-TFCI 81 E-TFCI PO 27	E-TFCI 11 E E-TFCI PO 4 E-TFCI 67 E-TFCI PO 18 E-TFCI 71 E-TFCI PO23 E-TFCI 75 E-TFCI PO26 E-TFCI 81 E-TFCI PO 27

HSPA+

The following tests were conducted according to the test requirements in Table C.11.1.4 of 3GPP TS 34.121-1

Sub-test	β_c (Note 3)	β_d	β_{HS} (Note 1)	β_{ec}	β_{ed} (2xSF2) (Note 4)	β_{ed} (2xSF4) (Note 4)	CM (dB) (Note 2)	MPR (dB) (Note 2)	AG Index (Note 4)	E-TFCI (Note 5)	E-TFCI (boost)
1	1	0	30/15	30/15	β_{ed1} : 30/15 β_{ed2} : 30/15	β_{ed3} : 24/15 β_{ed4} : 24/15	3.5	2.5	14	105	105

Note 1: Δ_{ACK} , Δ_{NACK} and $\Delta_{CQI} = 30/15$ with $\beta_{hs} = 30/15 * \beta_c$.

Note 2: CM = 3.5 and the MPR is based on the relative CM difference, MPR = MAX(CM-1,0).

Note 3: DPDCH is not configured, therefore the β_c is set to 1 and $\beta_d = 0$ by default.

Note 4: β_{ed} can not be set directly; it is set by Absolute Grant Value.

Note 5: All the sub-tests require the UE to transmit 2SF2+2SF4 16QAM EDCH and they apply for UE using E-DPDCH category 7. E-DCH TTI is set to 2ms TTI and E-DCH table index = 2. To support these E-DCH configurations DPDCH is not allocated. The UE is signalled to use the extrapolation algorithm.

DC-HSDPA

The following tests were conducted according to the test requirements in Table C.8.1.12 of 3GPP TS 34.121-1

Table C.8.1.12: Fixed Reference Channel H-Set 12

Parameter	Unit	Value
Nominal Avg. Inf. Bit Rate	kbps	60
Inter-TTI Distance	TTI's	1
Number of HARQ Processes	Processes	6
Information Bit Payload (N_{INF})	Bits	120
Number Code Blocks	Blocks	1
Binary Channel Bits Per TTI	Bits	960
Total Available SML's in UE	SML's	19200
Number of SML's per HARQ Proc.	SML's	3200
Coding Rate		0.15
Number of Physical Channel Codes	Codes	1
Modulation		QPSK
Note 1: The RMC is intended to be used for DC-HSDPA mode and both cells shall transmit with identical parameters as listed in the table.		
Note 2: Maximum number of transmission is limited to 1, i.e., retransmission is not allowed. The redundancy and constellation version 0 shall be used.		

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
yzjingcheng	Coaxial Cable	KTRFBU-141-50	41005011	Each time	N/A
Unknown	Coaxial Cable	C-SJ00-0010	C0010/01	Each time	N/A
E-Microwave	Blocking Control	EMDCB-00036	0E01201047	Each time	N/A
Unknown	Attenuator	UNAT-3+	15529	Each time	N/A
R&S	Universal Radio Communication Tester	CMU200	106 891	2020-09-12	2021-09-12

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Data**Environmental Conditions**

Test Items	Conducted Output Power
Temperature:	25.1°C
Relative Humidity:	63%
ATM Pressure:	100.8kPa
Tester:	Rita Huang
Test Date:	2020-10-19

Test Result: Compliance

GSM/GPRS**Conducted Output Power:**

Band	Channel No.	Conducted Peak Output Power (dBm)				
		GSM	GPRS 1 uplink slot	GPRS 2 uplink slot	GPRS 3 uplink slot	GPRS 4 uplink slot
Cellular	128	31.8	31.84	30.18	28.73	27.15
	190	31.8	31.75	30.12	28.61	27.14
	251	31.7	31.69	30.05	28.54	26.88
PCS	512	28.8	28.81	26.62	25.38	23.61
	661	28.4	28.34	26.23	24.91	23.21
	810	28.1	28.16	25.95	24.59	22.78

ERP/EIRP

Band	Mode	Channel	Conducted Power	Antenna Gain	Cable Loss	Result	Limit
			(dBm)	(dBi/dBd)	(dB)	(dBm)	(dBm)
Cellular	GSM	Low	31.84	-4.65	0.2	26.99	38.45
		Middle	31.8	-4.65	0.2	26.95	38.45
		High	31.7	-4.65	0.2	26.85	38.45
PCS	GSM	Low	28.81	-1.1	0.4	27.31	33
		Middle	28.4	-1.1	0.4	26.9	33
		High	28.16	-1.1	0.4	26.66	33

Note:

- 1) The unit of Antenna Gain is dBd for frequency below 1GHz, and the unit of Antenna Gain is dBi for frequency above 1GHz.
- 2) Result = Conducted Power - Cable loss + Antenna Gain
- 3) Antenna gain(dBd)= Antenna gain(dBi)-2.15

WCDMA Band 2**Conducted Output Power and PAR:**

Mode	3GPP Sub Test	Low Channel		Middle Channel		High Channel	
		Ave. Power (dBm)	PAR (dB)	Ave. Power (dBm)	PAR (dB)	Ave. Power (dBm)	PAR (dB)
Rel 99	1	24.34	2.90	24.31	2.64	23.92	1.88
HSDPA	1	22.69	3.39	22.68	3.33	22.14	2.67
	2	22.13	3.57	22.30	3.21	21.79	2.76
	3	21.69	3.36	21.95	3.48	21.41	2.64
	4	21.19	3.21	21.45	3.51	21.06	2.52
HSUPA	1	22.65	3.71	22.61	3.39	22.34	2.87
	2	22.33	3.77	21.99	3.21	21.75	2.90
	3	21.80	3.86	21.67	3.51	21.13	2.84
	4	21.48	3.80	21.02	3.39	20.57	2.87
	5	21.13	3.83	20.43	3.36	20.25	2.84

EIRP:

Channel	Conducted Power	Antenna Gain	Cable Loss	Result	Limit
	(dBm)	(dBi)	(dB)	(dBm)	(dBm)
Low	24.34	-1.1	0.4	22.84	33
Middle	24.31	-1.1	0.4	22.81	33
High	23.92	-1.1	0.4	22.42	33

WCDMA Band 5**Conducted Output Power and PAR:**

Mode	3GPP Sub Test	Low Channel		Middle Channel		High Channel	
		Ave. Power (dBm)	PAR (dB)	Ave. Power (dBm)	PAR (dB)	Ave. Power (dBm)	PAR (dB)
Rel 99	1	23.48	3.04	23.19	3.28	23.33	2.96
HSDPA	1	21.53	3.48	22.08	3.42	21.37	3.42
	2	21.19	3.60	21.72	3.33	21.16	3.54
	3	20.70	3.45	21.36	3.57	20.98	3.36
	4	20.48	3.39	21.09	3.51	20.71	3.48
HSUPA	1	21.54	3.62	22.13	3.65	21.42	3.54
	2	21.36	3.68	21.92	3.50	21.04	3.63
	3	20.97	3.47	21.53	3.74	21.02	3.69
	4	20.64	3.80	21.26	3.68	20.97	3.60
	5	20.39	3.44	20.87	3.47	20.71	3.63

ERP:

Channel	Conducted Power	Antenna Gain	Cable Loss	Result	Limit
	(dBm)	(dBd)	(dB)	(dBm)	(dBm)
Low	23.48	-4.65	0.2	18.63	38.45
Middle	23.19	-4.65	0.2	18.34	38.45
High	23.33	-4.65	0.2	18.48	38.45

Note:

- 1) The unit of Antenna Gain is dBd for frequency below 1GHz, and the unit of Antenna Gain is dBi for frequency above 1GHz.
- 2) Result = Conducted Power - Cable loss + Antenna Gain
- 3) Antenna gain(dBd)= Antenna gain(dBi)-2.15

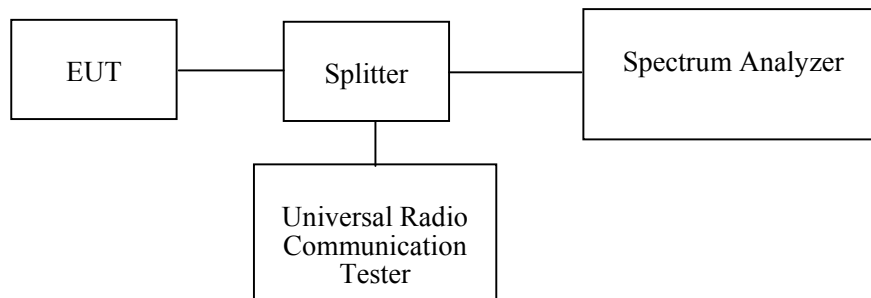
FCC §2.1049, §22.917, §22.905 & §24.238 - OCCUPIED BANDWIDTH**Applicable Standard**

FCC §2.1049, §22.917, §22.905, §24.238

Test Procedure

The RF output of the transmitter was connected to the simulator and the spectrum analyzer through sufficient attenuation.

The 26 dB & 99% bandwidth was recorded.

**Test Equipment List and Details**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101474	2020-07-07	2021-07-07
yzjingcheng	Coaxial Cable	KTRFBU-141-50	41005011	Each time	N/A
Unknown	Coaxial Cable	C-SJ00-0010	C0010/01	Each time	N/A
E-Microwave	Two-way Splitter	ODP-1-6-2S	OE0120142	Each time	N/A
Unknown	Attenuator	UNAT-3+	15529	Each time	N/A

* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Data**Environmental Conditions**

Temperature:	25.1°C
Relative Humidity:	63%
ATM Pressure:	100.8kPa
Tester:	Rita Huang
Test Date:	2020-10-19

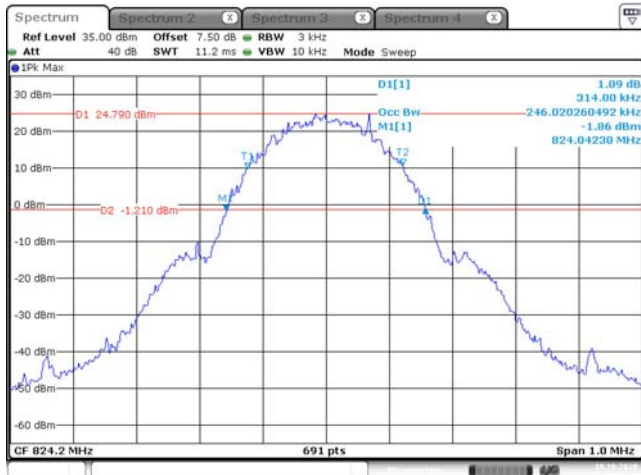
Test Mode: Transmitting**Test Result: Compliance.** Please refer to the following table and plots.**GSM:**

Band	Operation Mode	99% Occupied Bandwidth (MHz)			26 dB Occupied Bandwidth (MHz)		
		Low Channel	Middle Channel	High Channel	Low Channel	Middle Channel	High Channel
Cellular	GSM	0.246	0.243	0.245	0.314	0.313	0.314
PCS	GSM	0.245	0.246	0.247	0.307	0.316	0.316

WCDMA:

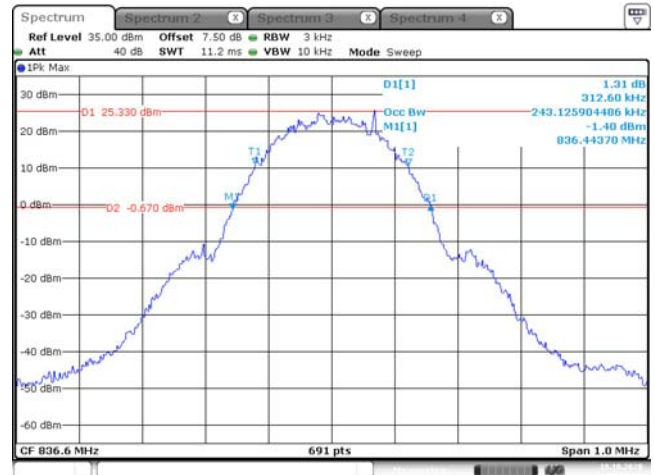
Band	Operation Mode	99% Occupied Bandwidth (MHz)			26 dB Occupied Bandwidth (MHz)		
		Low Channel	Middle Channel	High Channel	Low Channel	Middle Channel	High Channel
PCS	Rel 99	4.168	4.153	4.197	4.689	4.703	4.834
	HSDPA	4.153	4.168	4.197	4.689	4.674	4.718
	HSUPA	4.153	4.153	4.182	4.674	4.703	5.137
Cellular	Rel 99	4.153	4.153	4.096	4.674	4.674	4.631
	HSDPA	4.153	4.168	4.11	4.674	4.674	4.631
	HSUPA	4.153	4.182	4.096	4.674	4.674	4.631

Cellular 850 Band, GSM, Low Channel



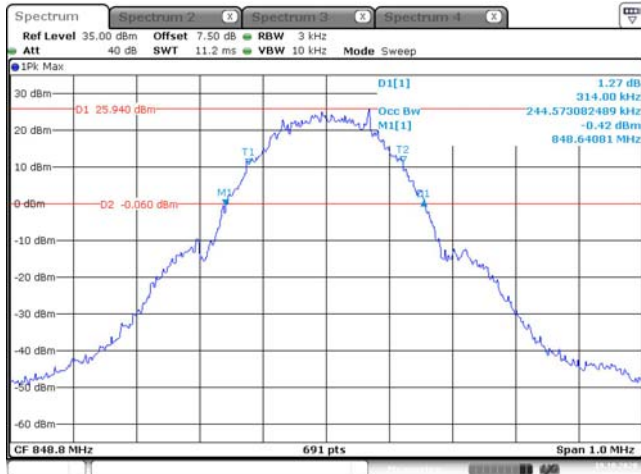
Date: 19.OCT.2020 09:08:23

Cellular 850 Band, GSM, Middle Channel



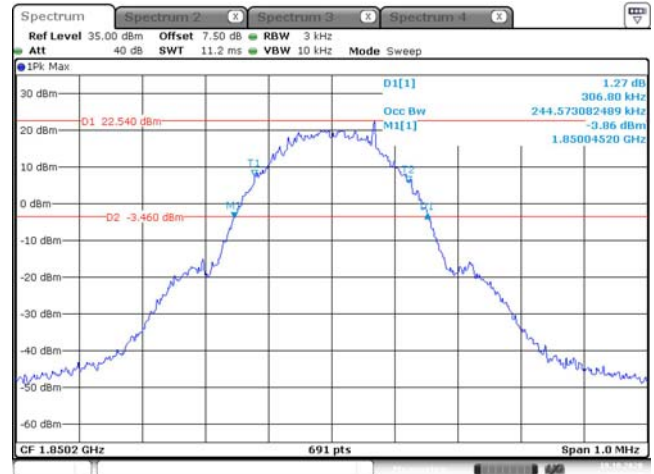
Date: 19.OCT.2020 09:25:28

Cellular 850 Band, GSM, High Channel



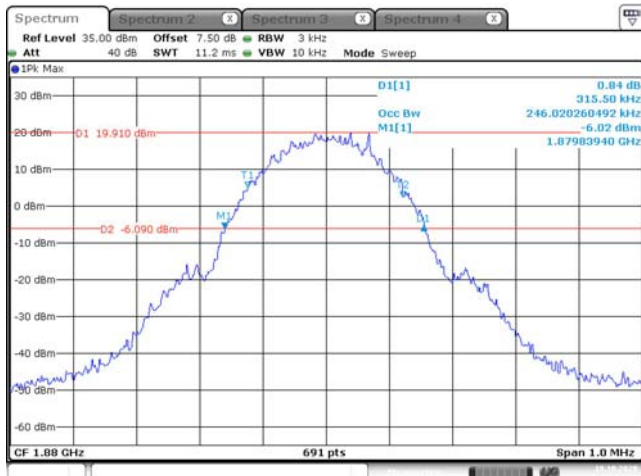
Date: 19.OCT.2020 09:21:12

PCS 1900 Band, GSM, Low Channel



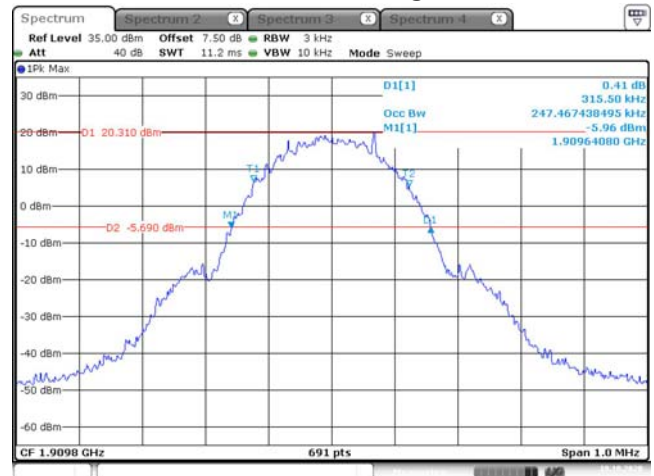
Date: 19.OCT.2020 09:36:40

PCS 1900 Band, GSM, Middle Channel



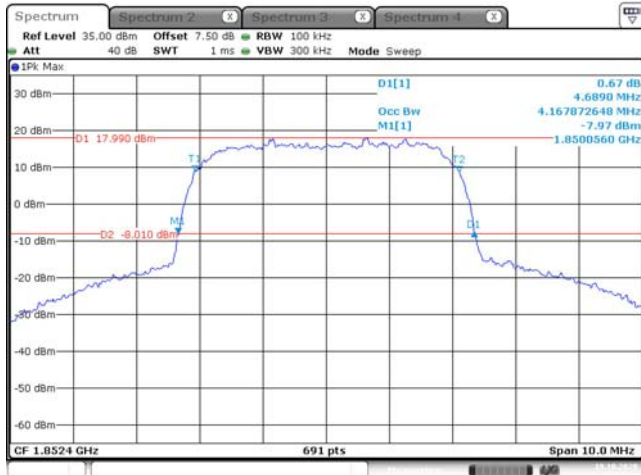
Date: 19.OCT.2020 09:31:28

PCS 1900 Band, GSM, High Channel



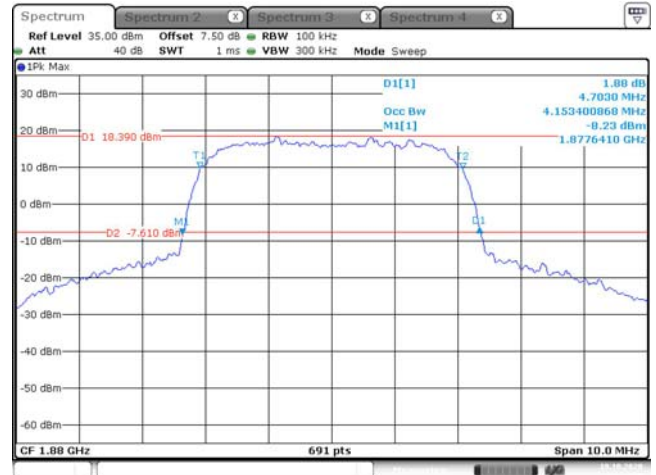
Date: 19.OCT.2020 09:46:13

WCDMA Band II, Rel99, Low Channel



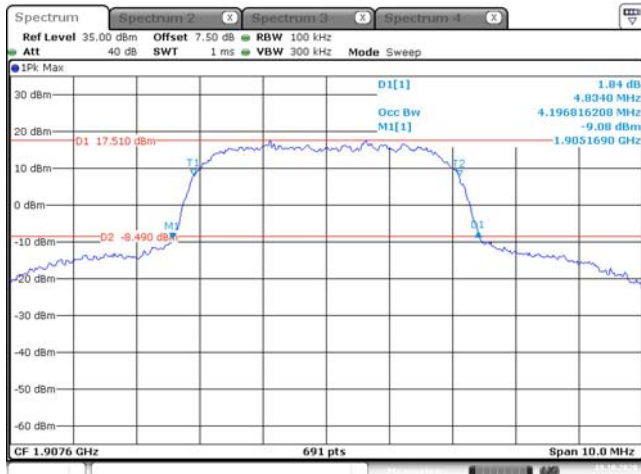
Date: 19.OCT.2020 10:05:09

WCDMA Band II, Rel99, Middle Channel



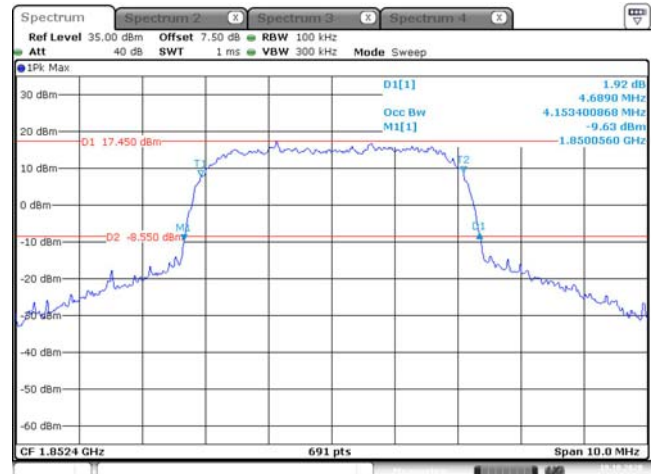
Date: 19.OCT.2020 10:12:24

WCDMA Band II, Rel99, High Channel



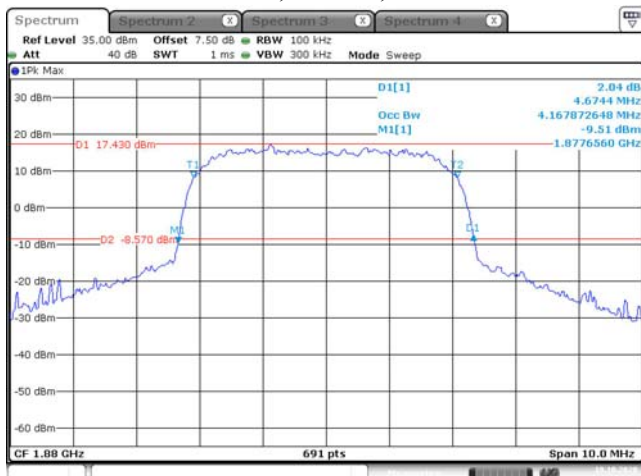
Date: 19.OCT.2020 09:58:17

WCDMA Band II, HSDPA, Low Channel



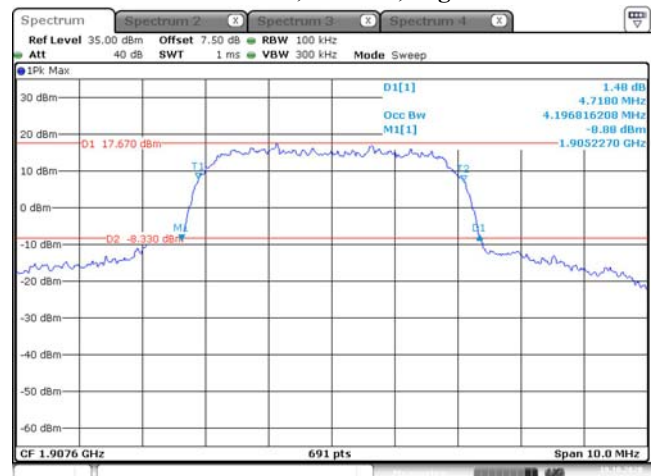
Date: 19.OCT.2020 11:34:00

WCDMA Band II, HSDPA, Middle Channel



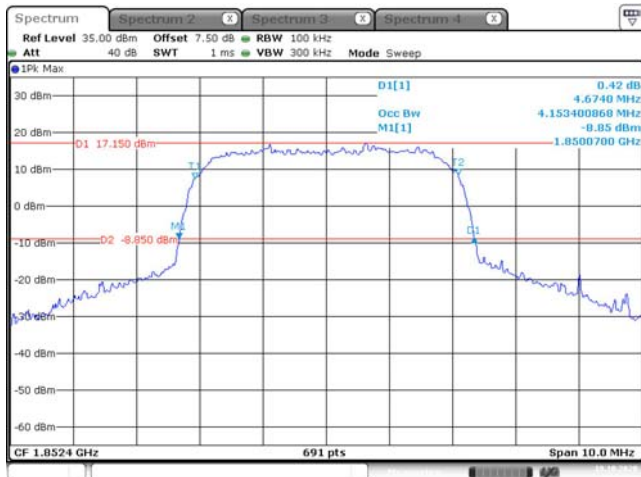
Date: 19.OCT.2020 11:37:29

WCDMA Band II, HSDPA, High Channel



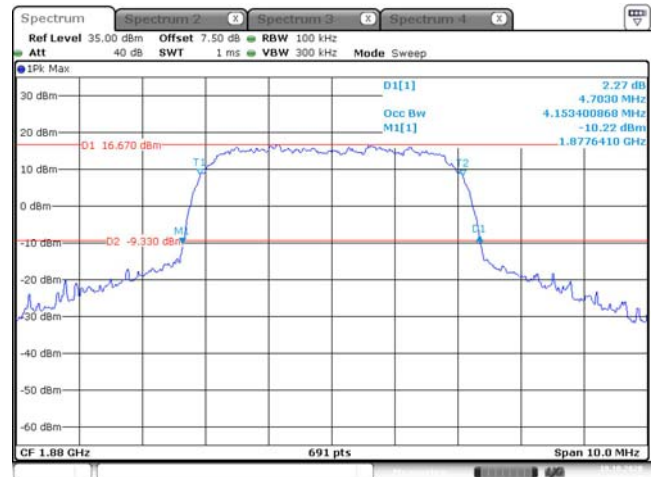
Date: 19.OCT.2020 11:27:49

WCDMA Band II, HSUPA, Low Channel



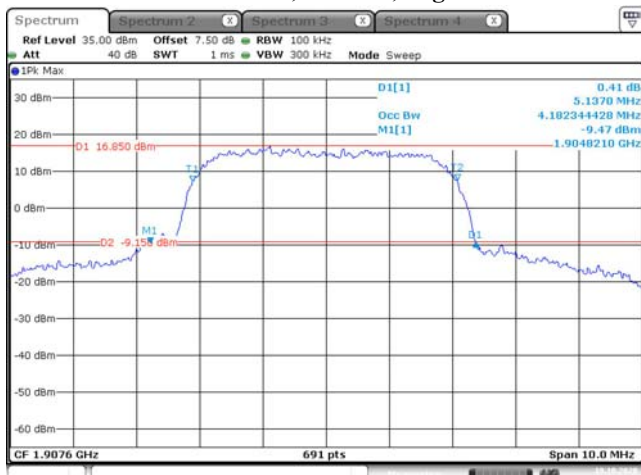
Date: 19.OCT.2020 13:24:12

WCDMA Band II, HSUPA, Middle Channel



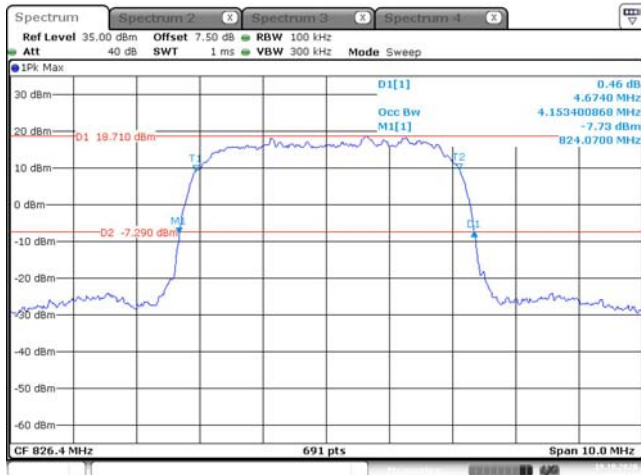
Date: 19.OCT.2020 13:26:36

WCDMA Band II, HSUPA, High Channel



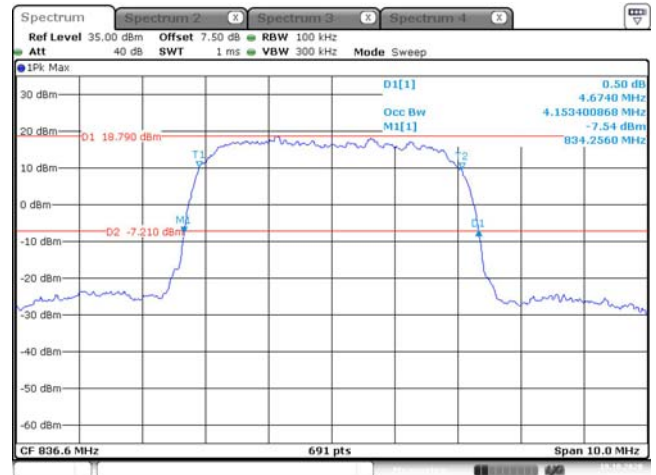
Date: 19.OCT.2020 13:28:59

WCDMA Band V, Rel99, Low Channel



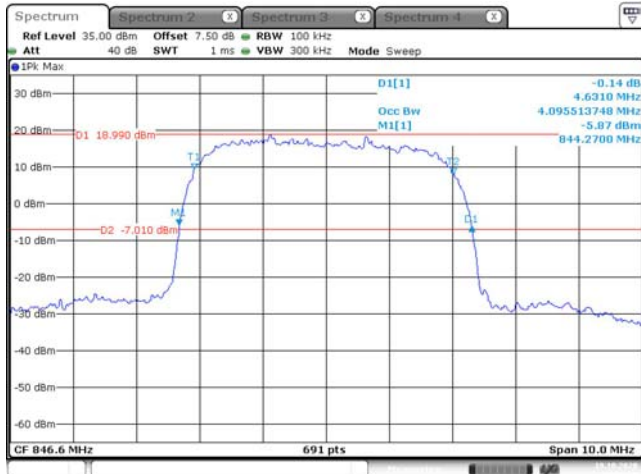
Date: 19.OCT.2020 11:06:57

WCDMA Band V, Rel99, Middle Channel



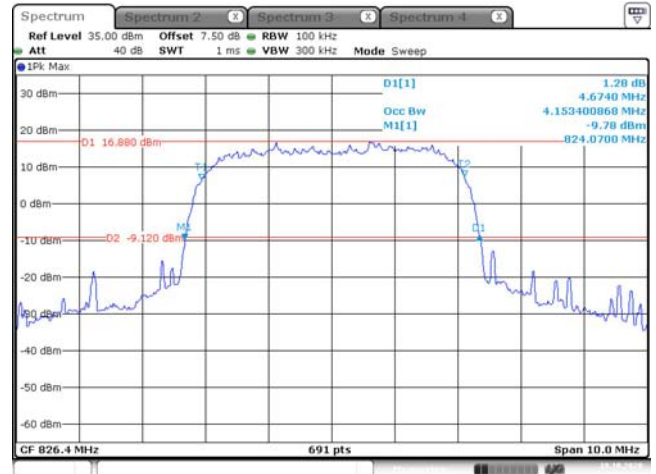
Date: 19.OCT.2020 11:01:42

WCDMA Band V, Rel99, High Channel



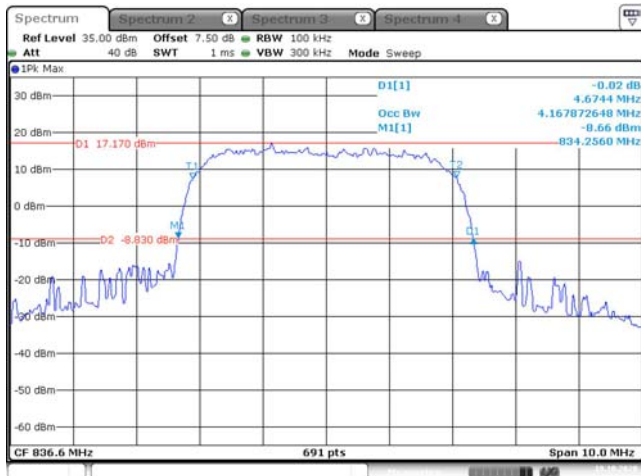
Date: 19.OCT.2020 11:09:50

WCDMA Band V, HSDPA, Low Channel



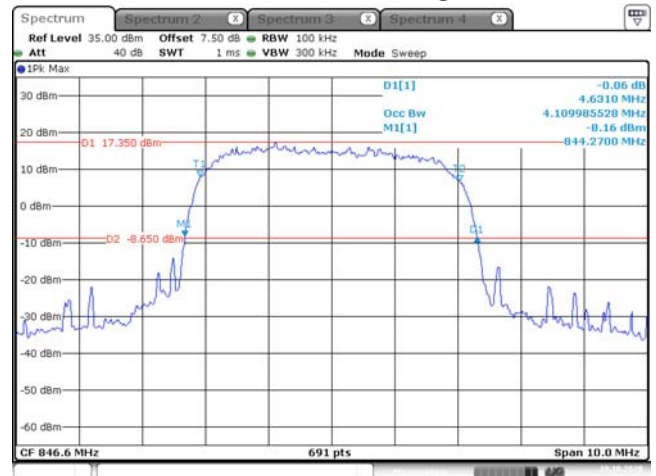
Date: 19.OCT.2020 11:46:31

WCDMA Band V, HSDPA, Middle Channel



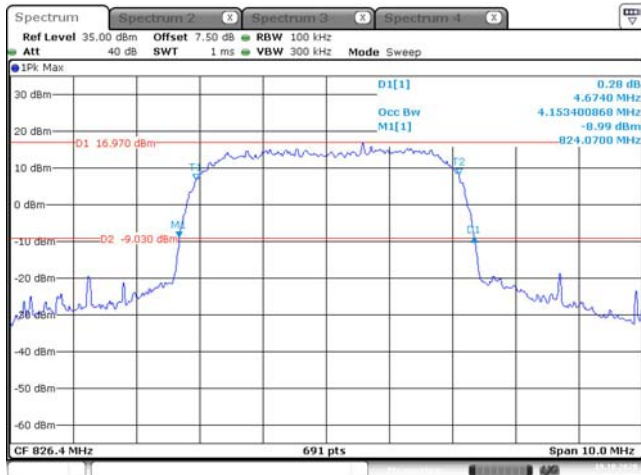
Date: 19.OCT.2020 11:54:38

WCDMA Band V, HSDPA, High Channel



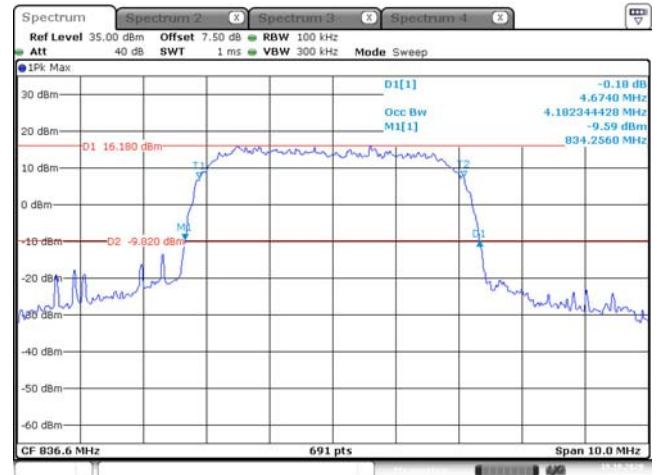
Date: 19.OCT.2020 11:52:55

WCDMA Band V, HSUPA, Low Channel



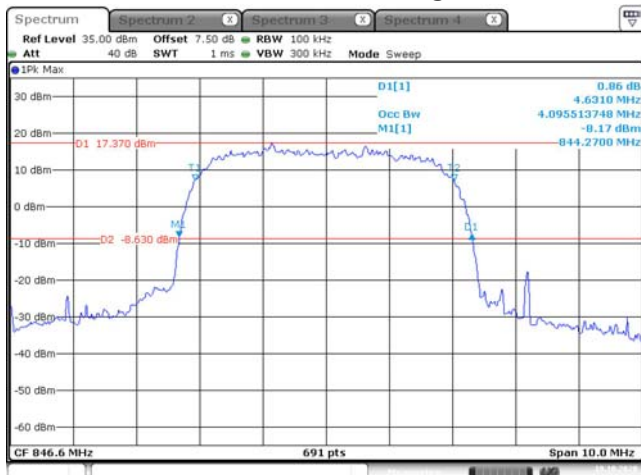
Date: 19.OCT.2020 13:32:25

WCDMA Band V, HSUPA, Middle Channel



Date: 19.OCT.2020 13:44:02

WCDMA Band V, HSUPA, High Channel



Date: 19.OCT.2020 13:38:23

FCC §2.1051, §22.917(a) & §24.238(a) - SPURIOUS EMISSIONS AT ANTENNA TERMINALS

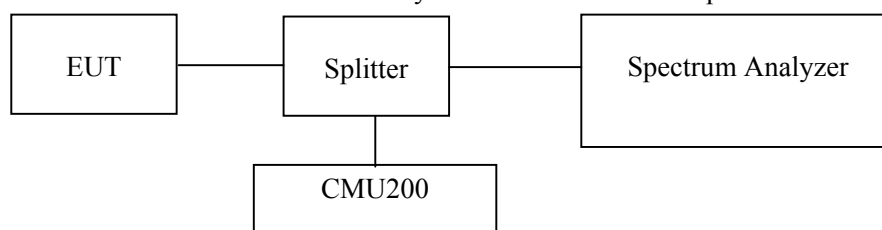
Applicable Standard

FCC §2.1051, §22.917(a) , §24.238(a).

The spectrum was to be investigated to the tenth harmonics of the highest fundamental frequency as specified in § 2.1051.

Test Procedure

The RF output of the transceiver was connected to a spectrum analyzer and simulator through appropriate attenuation. Sufficient scans were taken to show any out of band emissions up to 10th harmonic.



Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101474	2020-07-07	2021-07-07
yzjingcheng	Coaxial Cable	KTRFBU-141-50	41005011	Each time	N/A
Unknown	Coaxial Cable	C-SJ00-0010	C0010/01	Each time	N/A
E-Microwave	Two-way Splitter	ODP-1-6-2S	OE0120142	Each time	N/A
Unknown	Attenuator	UNAT-3+	15529	Each time	N/A

* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Data

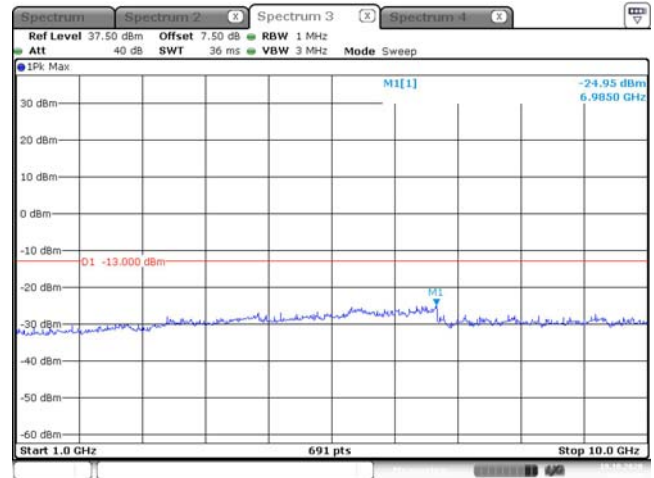
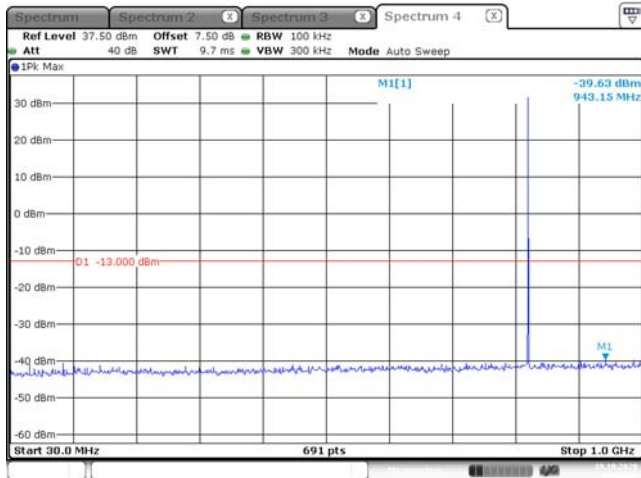
Environmental Conditions

Temperature:	25.1°C
Relative Humidity:	63%
ATM Pressure:	100.8kPa
Tester:	Rita Huang
Test Date:	2020-10-19

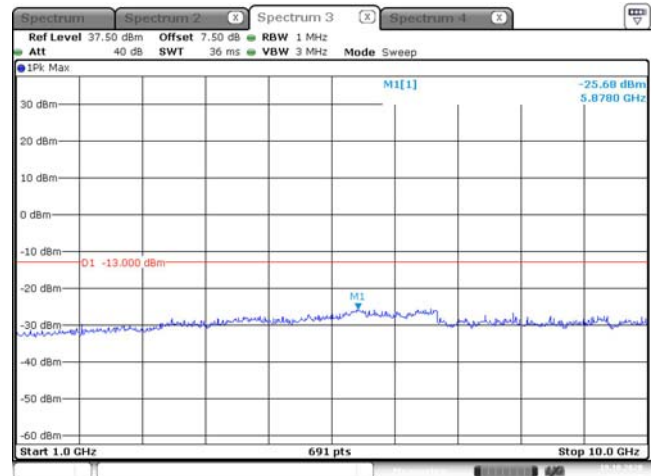
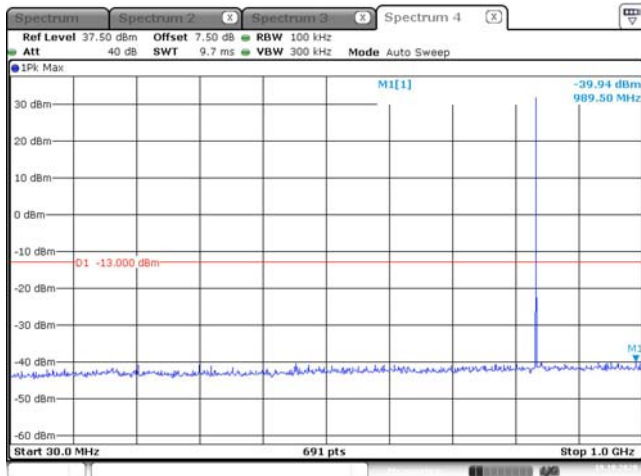
Test mode: Transmitting

Test Result: Compliance. Please refer to the following plots:

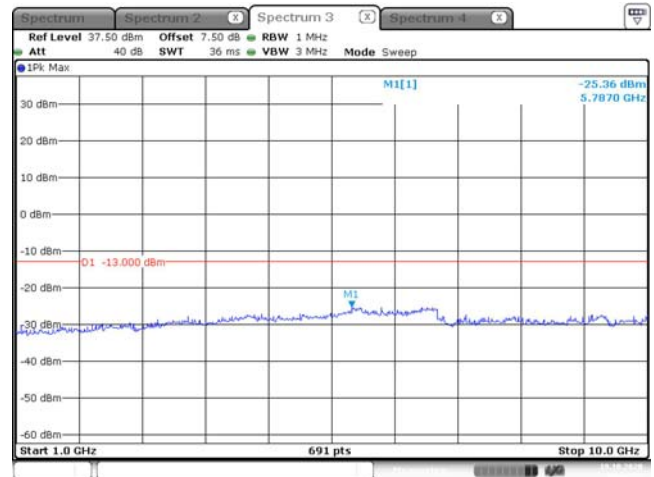
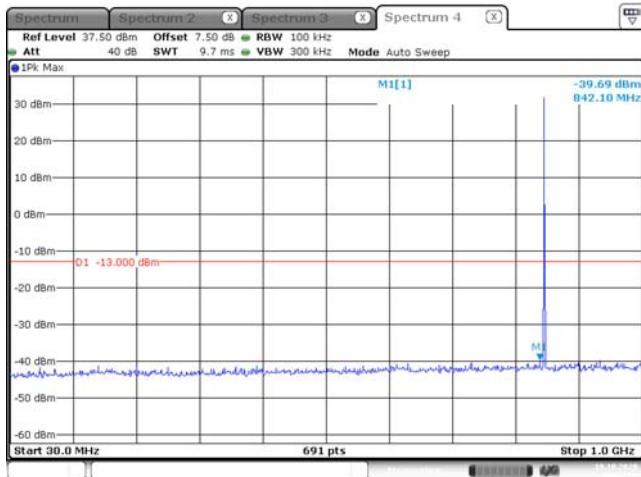
Cellular 850 Band, GSM, Low Channel



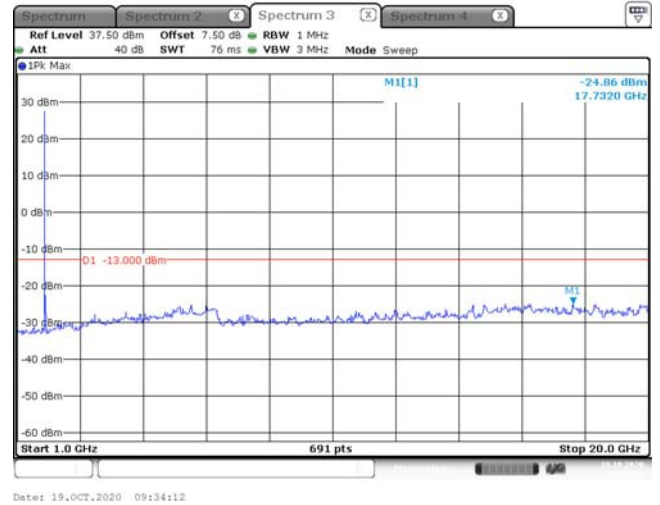
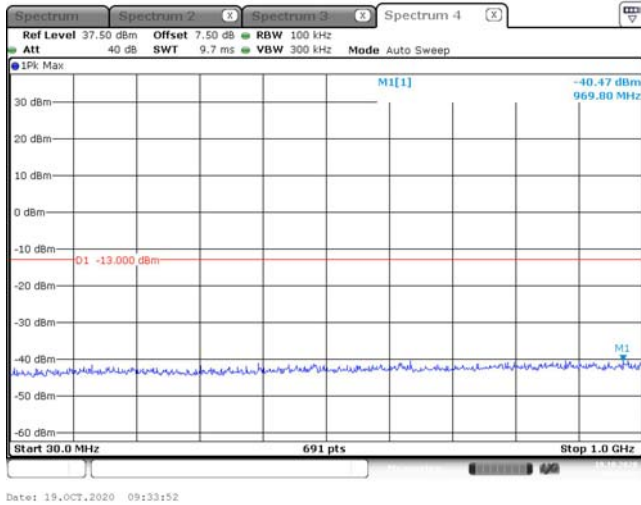
Cellular 850 Band, GSM, Middle Channel



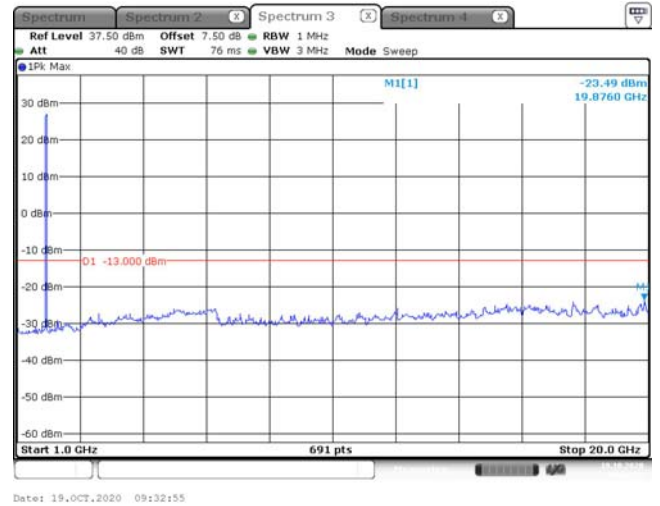
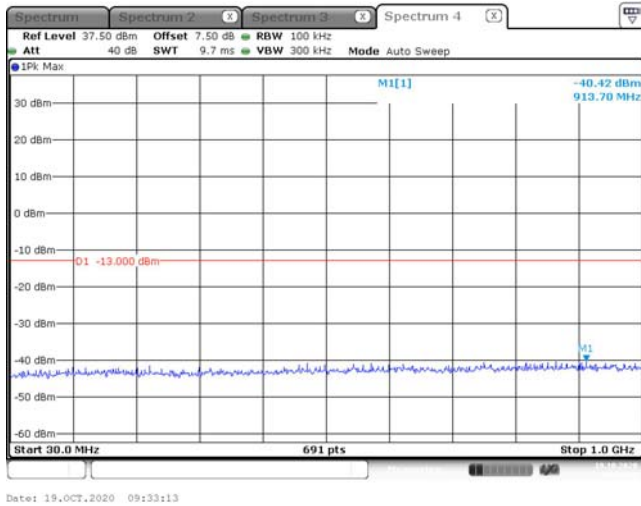
Cellular 850 Band, GSM, High Channel



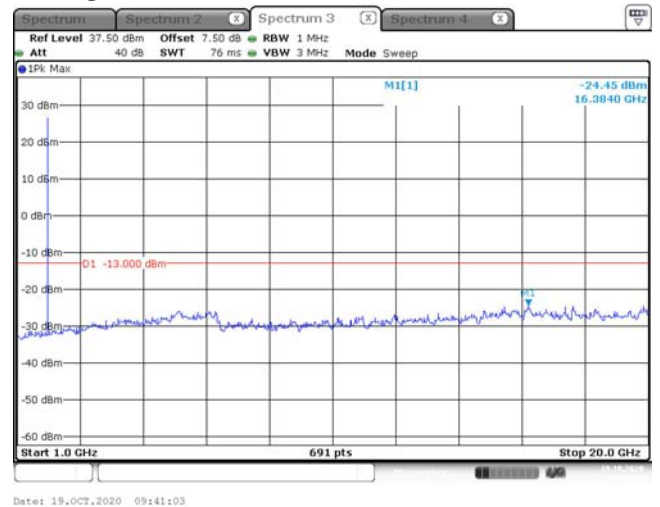
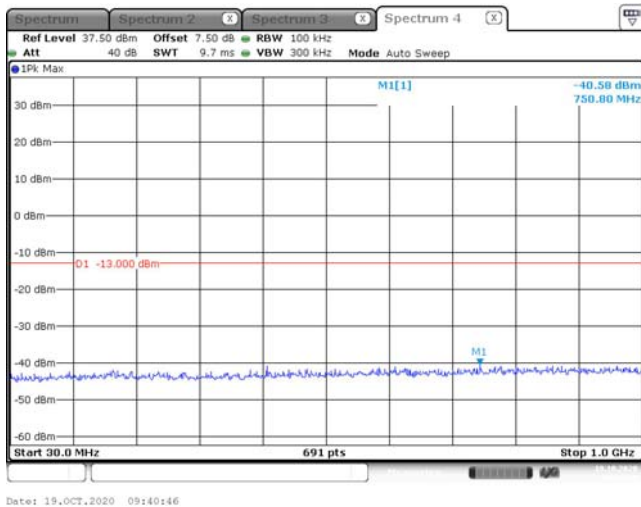
PCS 1900 Band, GSM, Low Channel



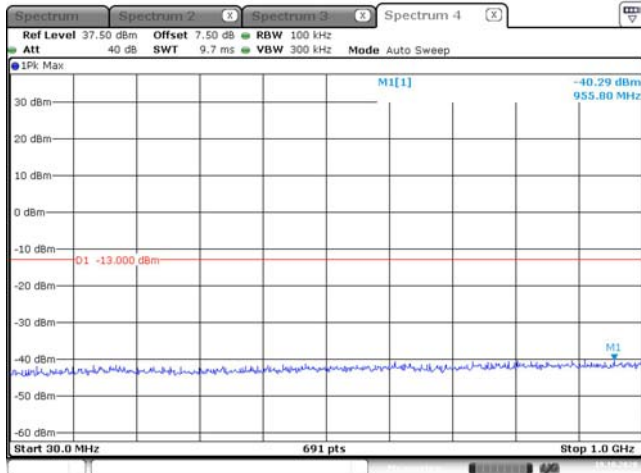
PCS 1900 Band, GSM, Middle Channel



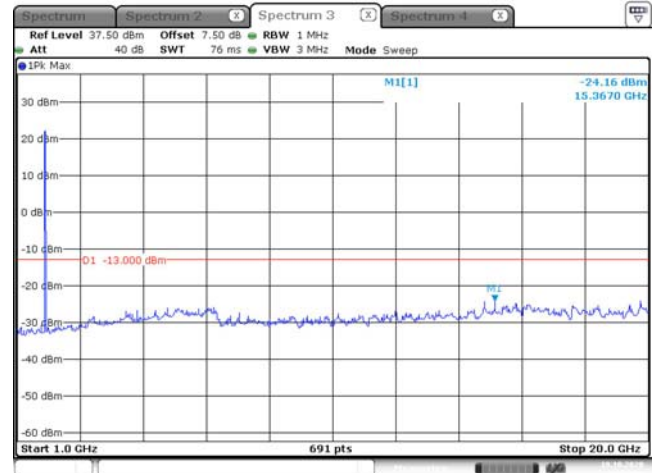
PCS 1900 Band, GSM, High Channel



WCDMA Band II, R99, Low Channel

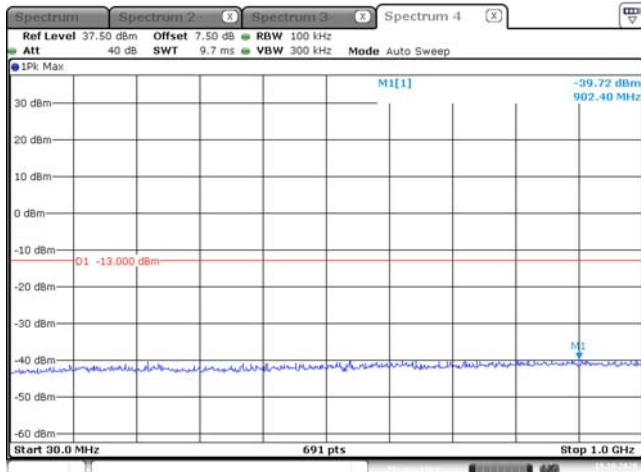


Date: 19.OCT.2020 10:07:43

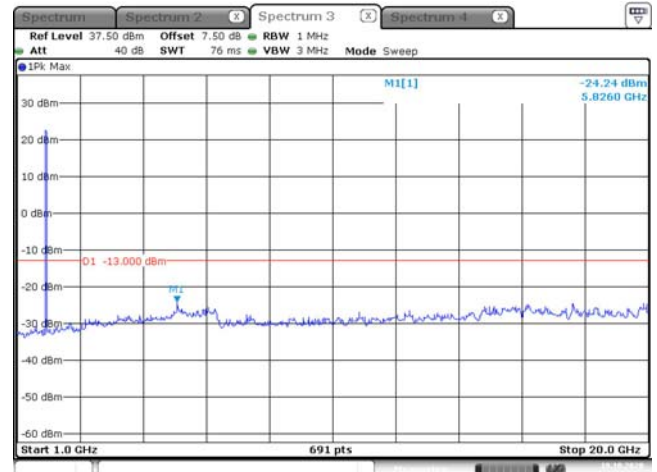


Date: 19.OCT.2020 10:07:12

WCDMA Band II, R99, Middle Channel

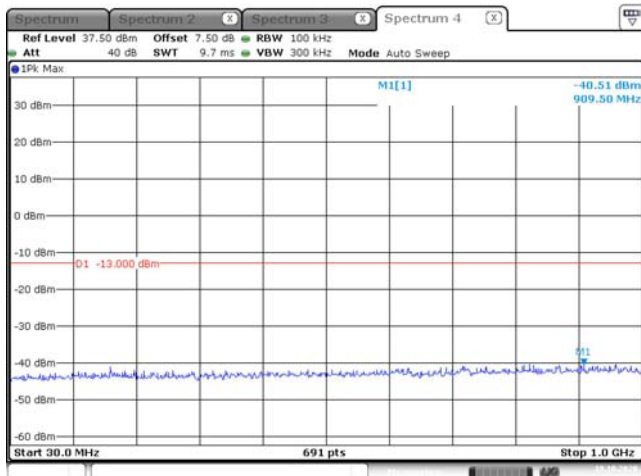


Date: 19.OCT.2020 10:10:15

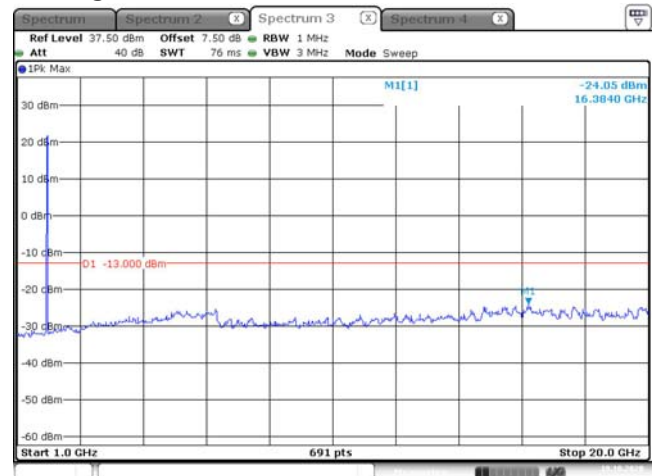


Date: 19.OCT.2020 10:10:30

WCDMA Band II, R99, High Channel

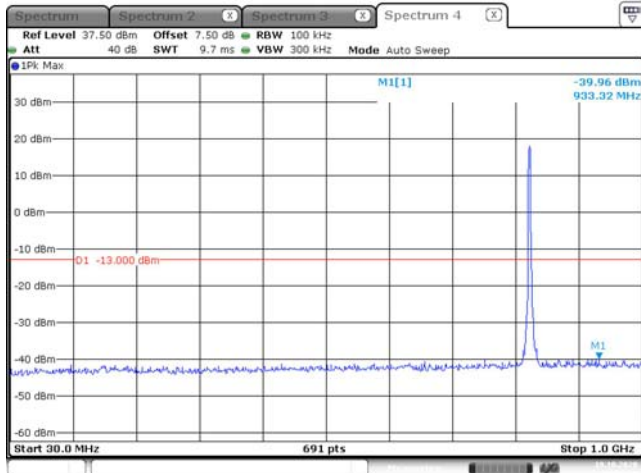


Date: 19.OCT.2020 09:59:17

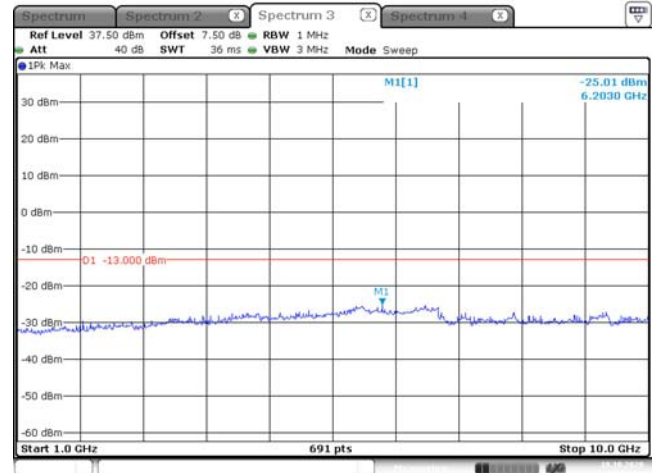


Date: 19.OCT.2020 09:59:02

WCDMA Band V, R99, Low Channel

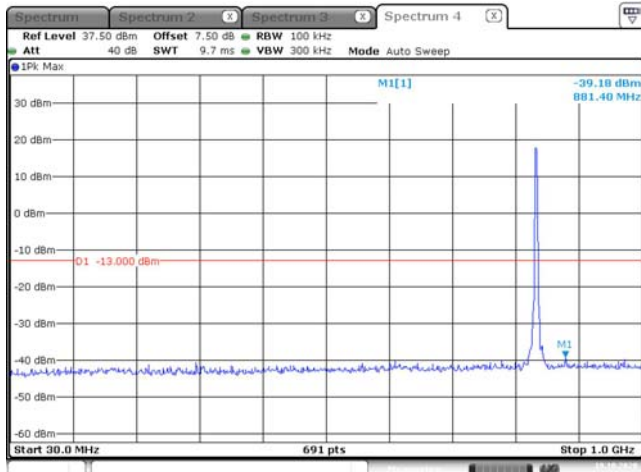


Date: 19.OCT.2020 11:05:30

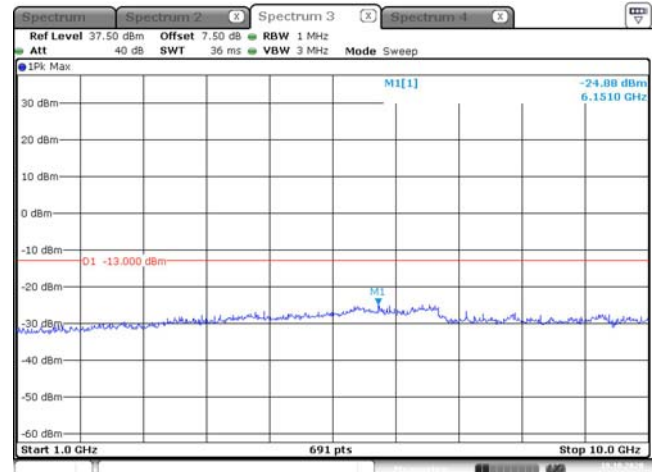


Date: 19.OCT.2020 11:04:51

WCDMA Band V, R99, Middle Channel

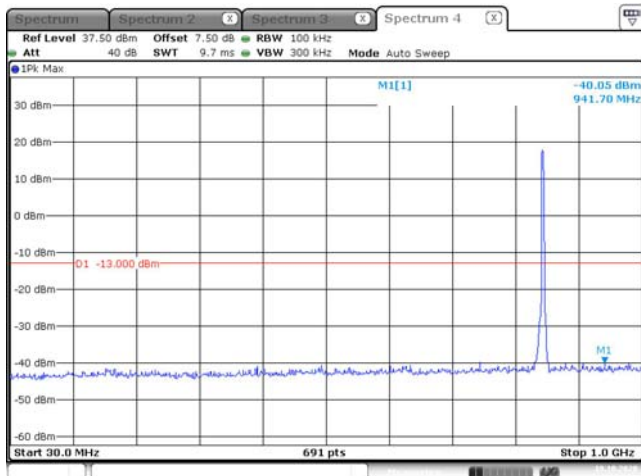


Date: 19.OCT.2020 11:03:19

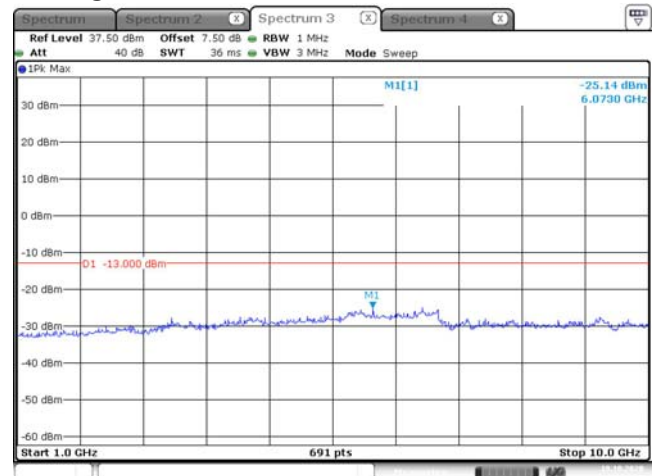


Date: 19.OCT.2020 11:02:45

WCDMA Band V, R99, High Channel



Date: 19.OCT.2020 11:10:59



Date: 19.OCT.2020 11:10:28

FCC §2.1053, §22.917 & §24.238 - SPURIOUS RADIATED EMISSIONS

Applicable Standard

FCC § 2.1053, §22.917, § 24.238

Test Procedure

The transmitter was placed on a wooden turntable, and it was transmitting into a non-radiating load which was also placed on the turntable.

The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. The test was performed by placing the EUT on 3-orthogonal axis.

The frequency range up to tenth harmonic of the fundamental frequency was investigated.

Remove the EUT and replace it with substitution antenna. A signal generator was connected to the substitution antenna by a non-radiating cable. The absolute levels of the spurious emissions were measured by the substitution.

Spurious emissions in dB = $10 \lg (\text{TXpwr in Watts}/0.001)$ – the absolute level

Spurious attenuation limit in dB = $43 + 10 \text{Log}_{10} (\text{power out in Watts})$

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Radiation Below 1G Test					
Sunol Sciences	Antenna	JB3	A060611-2	2020-08-25	2023-08-25
R&S	EMI Test Receiver	ESCI	100224	2020-09-12	2021-09-12
Unknown	Coaxial Cable	C-NJNJ-50	C-1000-01	2020-09-05	2021-09-05
Unknown	Coaxial Cable	C-NJNJ-50	C-0400-02	2020-09-05	2021-09-05
Unknown	Coaxial Cable	C-NJNJ-50	C-0530-01	2020-09-24	2021-09-24
Sonoma	Amplifier	310N	185914	2020-10-13	2021-10-13
EMCO	Adjustable Dipole Antenna	3121C	9109-753	N/A	N/A
ETS-Lindgren	Horn Antenna	3115	000 527 35	2018-10-12	2021-10-12
Agilent	Spectrum Analyzer	E4440A	SG43360054	2020-07-07	2021-07-07
Unknown	Coaxial Cable	C-SJSJ-50	C-0800-01	2020-09-05	2021-09-05
Mini-Circuit	Amplifier	ZVA-213-S+	54201245	2020-09-05	2021-09-05
TDK RF	Horn Antenna	HRN-0118	130 084	2018-10-12	2021-10-12
Unknown	Coaxial Cable	C-NJNJ-50	C-0200-02	2020-09-05	2021-09-05
Agilent	Signal Generator	E8247C	MY43321350	2019-12-10	2020-12-10
Ducommun Technologies	Horn Antenna	ARH-4223-02	1007726-01 1304	2017-12-06	2020-12-05
Ducommun Technologies	Horn Antenna	ARH-4223-02	1007726-02 1304	2017-12-06	2020-12-05
Sinoscite	Band-stop filter	BSF1850- 1910MS-0935V2	0935V2	2020-06-16	2021-06-16
Micro-tronics	High Pass Filter	HPM50111	S/N-G217	2020-06-16	2021-06-16

* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Data**Environmental Conditions**

Test Items:	Radiation Below 1GHz	Radiation Above 1GHz
Temperature:	26.6°C	26.6°C
Relative Humidity:	49%	49%
ATM Pressure:	100.8kPa	100.8kPa
Tester:	Michael Zhang	Bond Qin
Test Date:	2020-10-19	2020-10-19

Test Mode: Transmitting

Test Result: Compliance. Please refer to the following tables:

Cellular Band (PART 22H)**30 MHz-10 GHz:**

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
Cellular 850 Band, GSM, Low Channel								
1648.40	H	52.87	-51.31	10.44	0.71	-41.58	-13.00	28.58
1648.40	V	58.92	-45.86	10.44	0.71	-36.13	-13.00	23.13
2472.60	H	64.91	-37.87	12.88	1.25	-26.24	-13.00	13.24
2472.60	V	66.49	-36.34	12.88	1.25	-24.71	-13.00	11.71
3296.80	H	62.02	-37.76	13.60	1.59	-25.75	-13.00	12.75
3296.80	V	62.45	-37.34	13.60	1.59	-25.33	-13.00	12.33
198.48	H	49.55	-59.18	0.00	0.49	-59.67	-13.00	46.67
95.32	V	47.69	-65.26	0.00	0.31	-65.57	-13.00	52.57
Cellular 850 Band, GSM, Middle Channel								
1673.20	H	53.83	-50.11	10.61	0.73	-40.23	-13.00	27.23
1673.20	V	57.84	-46.70	10.61	0.73	-36.82	-13.00	23.82
2509.80	H	63.67	-39.24	13.11	1.25	-27.38	-13.00	14.38
2509.80	V	66.46	-36.48	13.11	1.25	-24.62	-13.00	11.62
3346.40	H	61.52	-38.16	13.83	1.61	-25.94	-13.00	12.94
3346.40	V	61.82	-37.90	13.83	1.61	-25.68	-13.00	12.68
199.33	H	50.26	-58.42	0.00	0.49	-58.91	-13.00	45.91
94.68	V	48.69	-64.26	0.00	0.31	-64.57	-13.00	51.57
Cellular 850 Band, GSM, High Channel								
1697.60	H	56.08	-47.62	10.78	0.75	-37.59	-13.00	24.59
1697.60	V	60.61	-43.69	10.78	0.75	-33.66	-13.00	20.66
2546.40	H	67.30	-35.65	13.15	1.27	-23.77	-13.00	10.77
2546.40	V	67.94	-35.15	13.15	1.27	-23.27	-13.00	10.27
3395.20	H	62.21	-37.31	14.08	1.64	-24.87	-13.00	11.87
3395.20	V	62.85	-36.77	14.08	1.64	-24.33	-13.00	11.33
198.39	H	48.08	-60.65	0.00	0.49	-61.14	-13.00	48.14
94.22	V	45.68	-67.26	0.00	0.32	-67.58	-13.00	54.58

PCS Band (PART 24E)**30 MHz-20 GHz:**

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
PCS 1900 Band, GSM, Low Channel								
3700.40	H	56.56	-41.43	14.00	1.83	-29.26	-13.00	16.26
3700.40	V	51.37	-46.60	14.00	1.83	-34.43	-13.00	21.43
5550.60	H	54.61	-39.36	13.95	1.27	-26.68	-13.00	13.68
5550.60	V	52.68	-41.14	13.95	1.27	-28.46	-13.00	15.46
196.39	H	48.27	-60.57	0.00	0.48	-61.05	-13.00	48.05
93.55	V	44.66	-68.28	0.00	0.32	-68.60	-13.00	55.60
PCS 1900 Band, GSM, Middle Channel								
3760.00	H	57.82	-39.82	13.76	1.63	-27.69	-13.00	14.69
3760.00	V	54.29	-43.21	13.76	1.63	-31.08	-13.00	18.08
5640.00	H	49.07	-44.52	14.02	1.31	-31.81	-13.00	18.81
5640.00	V	53.00	-40.48	14.02	1.31	-27.77	-13.00	14.77
198.33	H	49.26	-59.47	0.00	0.49	-59.96	-13.00	46.96
93.88	V	46.26	-66.68	0.00	0.32	-67.00	-13.00	54.00
PCS 1900 Band, GSM, High Channel								
3819.60	H	60.48	-36.77	13.56	1.50	-24.71	-13.00	11.71
3819.60	V	55.41	-41.66	13.56	1.50	-29.60	-13.00	16.60
5729.40	H	49.83	-43.88	13.96	1.31	-31.23	-13.00	18.23
5729.40	V	46.93	-46.75	13.96	1.31	-34.10	-13.00	21.10
197.66	H	45.62	-63.15	0.00	0.48	-63.63	-13.00	50.63
94.38	V	47.69	-65.26	0.00	0.32	-65.58	-13.00	52.58

Cellular Band (PART 22H)**30 MHz-10 GHz:**

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
WCDMA Band 5 Frequency:826.4 MHz								
1652.80	H	44.27	-59.86	10.47	0.72	-50.11	-13.00	37.11
1652.80	V	51.37	-53.36	10.47	0.72	-43.61	-13.00	30.61
2479.20	H	49.96	-52.85	12.93	1.25	-41.17	-13.00	28.17
2479.20	V	46.26	-56.59	12.93	1.25	-44.91	-13.00	31.91
3305.60	H	43.40	-56.40	13.63	1.59	-44.36	-13.00	31.36
3305.60	V	40.37	-59.44	13.63	1.59	-47.40	-13.00	34.40
198.46	H	47.65	-61.08	0.00	0.49	-61.57	-13.00	48.57
95.36	V	43.69	-69.26	0.00	0.31	-69.57	-13.00	56.57
WCDMA Band 5 Frequency:836.6MHz								
1673.20	H	41.66	-62.28	10.61	0.73	-52.40	-13.00	39.40
1673.20	V	47.76	-56.78	10.61	0.73	-46.90	-13.00	33.90
2509.80	H	41.98	-60.93	13.11	1.25	-49.07	-13.00	36.07
2509.80	V	45.51	-57.43	13.11	1.25	-45.57	-13.00	32.57
3346.40	H	42.94	-56.74	13.83	1.61	-44.52	-13.00	31.52
3346.40	V	41.94	-57.78	13.83	1.61	-45.56	-13.00	32.56
198.57	H	48.95	-59.77	0.00	0.49	-60.26	-13.00	47.26
95.21	V	42.95	-70.00	0.00	0.31	-70.31	-13.00	57.31
WCDMA Band 5 Frequency:846.6MHz								
1693.20	H	40.73	-63.02	10.75	0.75	-53.02	-13.00	40.02
1693.20	V	48.78	-55.57	10.75	0.75	-45.57	-13.00	32.57
2539.80	H	41.47	-61.47	13.14	1.27	-49.60	-13.00	36.60
2539.80	V	42.76	-60.30	13.14	1.27	-48.43	-13.00	35.43
3386.40	H	42.25	-57.30	14.03	1.63	-44.90	-13.00	31.90
3386.40	V	40.88	-58.76	14.03	1.63	-46.36	-13.00	33.36
196.59	H	49.65	-59.18	0.00	0.48	-59.66	-13.00	46.66
94.33	V	46.56	-66.38	0.00	0.32	-66.70	-13.00	53.70

PCS Band (PART 24E)**30 MHz-20 GHz:**

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
WCDMA Band II, Frequency:1852.4 MHz								
3704.80	H	55.31	-42.65	13.98	1.81	-30.48	-13.00	17.48
3704.80	V	53.92	-44.01	13.98	1.81	-31.84	-13.00	18.84
5557.20	H	52.55	-41.34	13.97	1.27	-28.64	-13.00	15.64
5557.20	V	55.93	-37.81	13.97	1.27	-25.11	-13.00	12.11
197.44	H	43.65	-65.13	0.00	0.48	-65.61	-13.00	52.61
93.65	V	48.23	-64.71	0.00	0.32	-65.03	-13.00	52.03
WCDMA Band II, Frequency:1880 MHz								
3760.00	H	54.84	-42.80	13.76	1.63	-30.67	-13.00	17.67
3760.00	V	53.03	-44.47	13.76	1.63	-32.34	-13.00	19.34
5640.00	H	54.79	-38.80	14.02	1.31	-26.09	-13.00	13.09
5640.00	V	58.00	-35.48	14.02	1.31	-22.77	-13.00	9.77
198.78	H	45.47	-63.24	0.00	0.49	-63.73	-13.00	50.73
94.02	V	44.44	-68.50	0.00	0.32	-68.82	-13.00	55.82
WCDMA Band II, Frequency:1907.6MHz								
3815.20	H	59.46	-37.82	13.57	1.50	-25.75	-13.00	12.75
3815.20	V	56.06	-41.04	13.57	1.50	-28.97	-13.00	15.97
5722.80	H	60.10	-33.66	13.95	1.32	-21.03	-13.00	8.03
5722.80	V	62.88	-30.84	13.95	1.32	-18.21	-13.00	5.21
198.79	H	46.89	-61.82	0.00	0.49	-62.31	-13.00	49.31
95.02	V	44.56	-68.39	0.00	0.31	-68.70	-13.00	55.70

Note:

- 1) The unit of Antenna Gain is dBd for frequency below 1GHz, and the unit of Antenna Gain is dBi for frequency above 1GHz.
- 2) Absolute Level = Substituted Level - Cable loss + Antenna Gain
- 3) Margin = Limit-Absolute Level

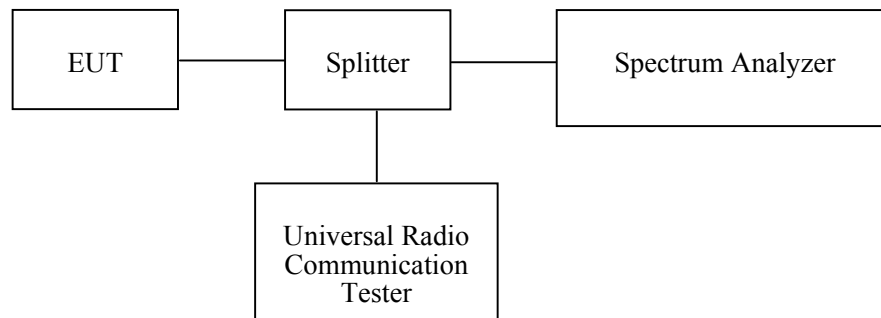
FCC §22.917(a) & §24.238(a)- BAND EDGES**Applicable Standard**

FCC § 2.1053, §22.917, § 24.238.

Test Procedure

The RF output of the transmitter was connected to the input of the spectrum analyzer through sufficient attenuation.

The center of the spectrum analyzer was set to block edge frequency.

**Test Equipment List and Details**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101474	2020-07-07	2021-07-07
yzjingcheng	Coaxial Cable	KTRFBU-141-50	41005011	Each time	N/A
Unknown	Coaxial Cable	C-SJ00-0010	C0010/01	Each time	N/A
E-Microwave	Two-way Splitter	ODP-1-6-2S	OE0120142	Each time	N/A
Unknown	Attenuator	UNAT-3+	15529	Each time	N/A

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

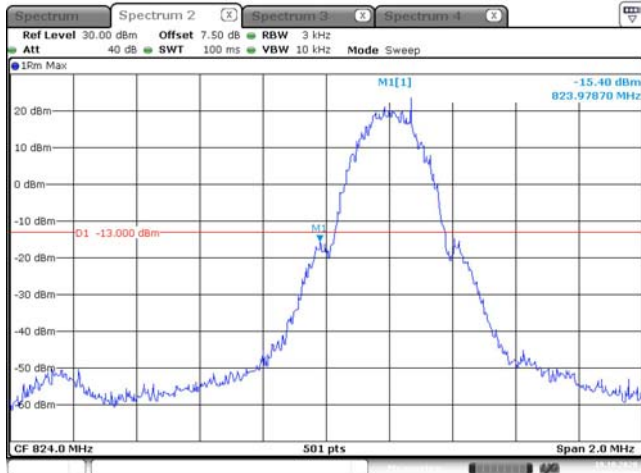
Test Data**Environmental Conditions**

Temperature:	25.1°C
Relative Humidity:	63%
ATM Pressure:	100.8kPa
Tester:	Rita Huang
Test Date:	2020-10-19

Test Mode: Transmitting

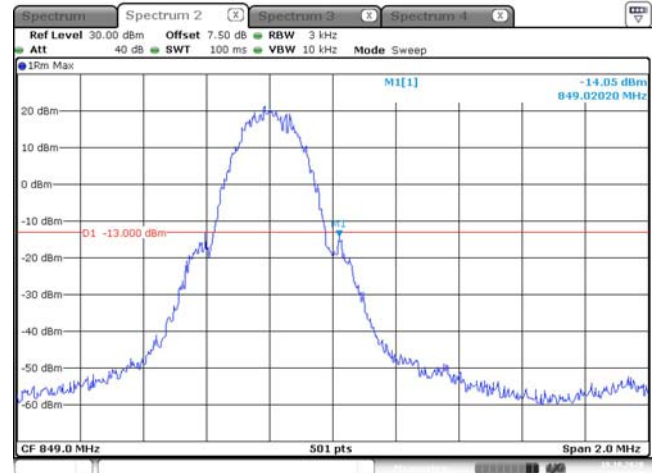
Test Result: Compliance. Please refer to the following plots.

Cellular 850 Band, GSM, Left Band Edge



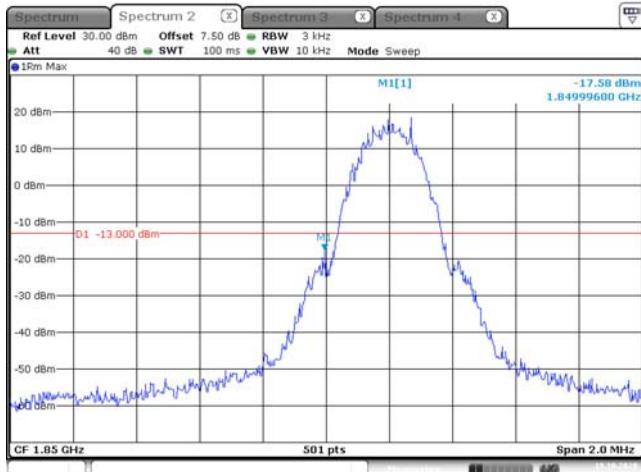
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Cellular 850 Band, GSM, Right Band Edge



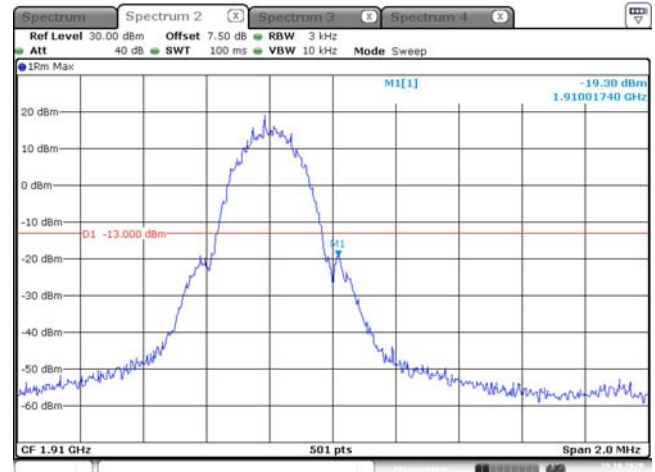
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PCS 1900 Band, GSM, Left Band Edge



Date: 19.OCT.2020 09:37:50

PCS 1900 Band, GSM, Right Band Edge



Date: 19.OCT.2020 09:39:16

WCDMA Band II, Rel99, Left Band Edge



Date: 19.OCT.2020 10:01:44

WCDMA Band II, Rel99, Right Band Edge



Date: 19.OCT.2020 10:00:18

WCDMA Band II,HSDPA, Left Band Edge



Date: 19.OCT.2020 11:31:39

WCDMA Band II,HSDPA,Right Band Edge



Date: 19.OCT.2020 11:30:27

WCDMA Band II,HSUPA, Left Band Edge



Date: 19.OCT.2020 13:21:16

WCDMA Band II,HSUPA, Right Band Edge



Date: 19.OCT.2020 13:20:08

WCDMA Band V,Rel99, Left Band Edge



Date: 19.OCT.2020 11:13:32

WCDMA Band V,Rel99, Right Band Edge



Date: 19.OCT.2020 11:14:22

WCDMA Band V,HSDPA, Left Band Edge



Date: 19.OCT.2020 11:50:25

WCDMA Band V,HSDPA,Right Band Edge



Date: 19.OCT.2020 11:51:16

WCDMA Band V,HSUPA, Left Band Edge



Date: 19.OCT.2020 13:18:19

WCDMA Band V,HSUPA, Right Band Edge



Date: 19.OCT.2020 13:17:29

FCC §2.1055, §22.355 & §24.235 - FREQUENCY STABILITY**Applicable Standard**

FCC § 2.1055 (a), § 2.1055 (d), §22.355, §24.235

According to §22.355, the carrier frequency of each transmitter in the Public Mobile Services must be maintained within the tolerances given in Table below:

Frequency Tolerance for Transmitters in the Public Mobile Services

Frequency Range (MHz)	Base, fixed (ppm)	Mobile > 3 watts (ppm)	Mobile ≤ 3 watts (ppm)
25 to 50	20.0	20.0	50.0
50 to 450	5.0	5.0	50.0
450 to 512	2.5	5.0	5.0
821 to 896	1.5	2.5	2.5
928 to 929.	5.0	N/A	N/A
929 to 960.	1.5	N/A	N/A
2110 to 2220	10.0	N/A	N/A

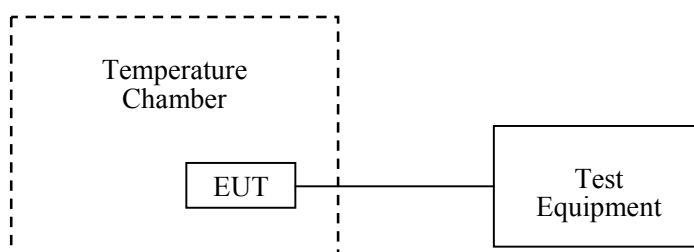
According to §24.235, the frequency stability shall be sufficient to ensure that the fundamental emissions stays within the authorized frequency block.

Test Procedure

Frequency Stability vs. Temperature: The equipment under test was connected to an external DC power supply and the RF output was connected to communication test set via feed-through attenuators. The EUT was placed inside the temperature chamber. The leads and RF output cable exited the chamber through an opening made for the purpose.

After the temperature stabilized for approximately 20 minutes, the frequency output was recorded from the communication test set.

Frequency Stability vs. Voltage: An external variable DC power supply was connected to the battery terminals of the equipment under test. The voltage was set from 85% to 115% of the nominal value and was then decreased until the transmitter light no longer illuminated; i.e., the battery end point. The output frequency was recorded for each battery voltage.



Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
yzjingcheng	Coaxial Cable	KTRFBU-141-50	41005011	Each time	N/A
Unknown	Coaxial Cable	C-SJ00-0010	C0010/01	Each time	N/A
E-Microwave	Blocking Control	EMDCB-00036	0E01201047	Each time	N/A
Unknown	Attenuator	UNAT-3+	15529	Each time	N/A
R&S	Universal Radio Communication Tester	CMU200	106 891	2020-09-12	2021-09-12
ESPEC	Constant temperature and humidity Tester	ESX-4CA	018 463	2020-03-10	2021-03-09
UNI-T	Multimeter	UT39A	M130199938	2020-07-01	2021-07-01
Pro instrument	DC Power Supply	pps3300	3300012	N/A	N/A

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Data**Environmental Conditions**

Temperature:	25.1°C
Relative Humidity:	63%
ATM Pressure:	100.8kPa
Tester:	Rita Huang
Test Date:	2020-10-19

Test Mode: Transmitting

Test Result: Compliance. Please refer to the following tables.

Cellular Band

GMSK, Middle Channel, $f_c = 836.6$ MHz				
Temperature	Voltage	Frequency Error	Frequency Error	Limit
°C	V _{DC}	Hz	ppm	ppm
-30	3.7	6	0.00717	2.5
-20		-11	-0.01315	
-10		-15	-0.01793	
0		-4	-0.00478	
10		-6	-0.00717	
20		21	0.02510	
30		15	0.01793	
40		-18	-0.02152	
50		-14	-0.01673	
20	3.5	11	0.01315	
20	4.2	7	0.00837	

PCS Band

GMSK, Middle Channel, $f_c = 1880.0$ MHz				
Temperature	Voltage	Frequency Error	Frequency Error	Results
°C	V _{DC}	Hz	ppm	
-30	3.7	6	0.00319	Pass
-20		-2	-0.00106	
-10		-5	-0.00266	
0		-8	-0.00426	
10		-4	-0.00213	
20		13	0.00691	
30		11	0.00585	
40		-7	-0.00372	
50		-4	-0.00213	
20	3.5	4	0.00213	
20	4.2	1	0.00053	

WCDMA Band II: R99

Middle Channel, $f_c = 1880.0$ MHz				
Temperature	Voltage	Frequency Error	Frequency Error	Result
°C	V _{DC}	Hz	ppm	
-30	3.7	4	0.00213	Pass
-20		-3	-0.00160	
-10		-6	-0.00319	
0		-5	-0.00266	
10		11	0.00585	
20		2	0.00106	
30		4	0.00213	
40		-9	-0.00479	
50		8	0.00426	
20	3.5	7	0.00372	
20	4.2	-2	-0.00106	

WCDMA Band V: R99

Middle Channel, $f_c = 836.6$ MHz				
Temperature	Voltage	Frequency Error	Frequency Error	Limits (ppm)
°C	V _{DC}	Hz	ppm	
-30	3.7	-4	-0.00478	2.5
-20		2	0.00239	
-10		6	0.00717	
0		9	0.01076	
10		-2	-0.00239	
20		5	0.00598	
30		-8	-0.00956	
40		-4	-0.00478	
50		-4	-0.00478	
20	3.5	3	0.00359	
20	4.2	1	0.00120	

***** END OF REPORT *****