Certificate Number: 5055.02

TEST REPORT FOR WCDMA TESTING

Report No.: SRTC2021-9004(F)-21071402(B)

Product Name: Mobile Phone

Applicant: Sharp Corporation

Manufacturer: Sharp Corporation

Specification: FCC Part 24E, Part 22H, Part 27,Part 2 (2020)

FCC ID: APYHRO00301

The State Radio_monitoring_center Testing Center (SRTC)

15th Building, No.30 Shixing Street, Shijingshan District, Beijing, P.R.China

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1. GENERAL INFORMATION

1.1 Notes of the test report

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1.2 Information about the testing laboratory

Company:	The State Radio_monitoring_center Testing Center (SRTC)
Address:	15th Building, No.30 Shixing Street, Shijingshan District, P.R.China
City:	Beijing
Country or Region:	P.R.China
Contacted person:	Liu Jia
Tel:	+86 10 57996183
Fax:	+86 10 57996388
Email:	liujiaf@srtc.org.cn
Registration number:	239125

1.3 Applicant's details

Company:	Sharp Corporation
Address:	1 Takumi-cho, Sakai-ku, Sakai City, Osaka 590-8522, Japan
City:	Osaka
Country or Region:	Japan
Contacted person:	Mr. Masaaki Nishikawa
Tel:	+81-50-5433-4157

1.4 Manufacturer's details

Company:	Sharp Corporation
Address:	1 Takumi-cho, Sakai-ku, Sakai City, Osaka 590-8522, Japan
City:	Osaka
Country or Region:	Japan
Contacted person:	Mr. Masaaki Nishikawa
Tel:	+81-50-5433-4157

1.5 Factory's details

Company:	Futaijing Precision Electronics (Yantai) Co., Ltd.
Address:	No. 50-50, Beijingzhong Road, Yantai Economic & Technological Development Area, Shandong Province, P.R. China
City:	Shandong
Country or Region:	China
Contacted person:	Tommy Chao
Tel:	+886-2-2268-3466 #5010-10245
Email:	tommy.kp.chao@foxconn.com

1.6 Test Environment

Date of Receipt of test sample at SRTC:	2021-07-20
Testing Start Date:	2021-08-01
Testing End Date:	2021-08-16

Environmental Data:	Temperature (°C)	Humidity (%)
Ambient:	25	40
Maximum Extreme:	50	---
Minimum Extreme:	-10	---

Normal Supply Voltage (V d.c.):	4.0
Maximum Extreme Supply Voltage (V d.c.):	4.0
Minimum Extreme Supply Voltage (V d.c.):	3.7

2 DESCRIPTION OF THE DEVICE UNDER TEST

2.1Final Equipment Build Status

Frequency Range:	WCDMA Band II: Tx:1852.4~1907.6MHz Rx:1932.4~1987.6MHz WCDMA Band V: Tx:826.4~846.6MHz Rx:871.4~891.6MHz
Mode:	HSDPA/HSUPA
Duplex Mode:	FDD
Duplex Spacing:	WCDMA Band II:80MHz WCDMA Band V:45MHz
Antenna Type:	Inverted-F
Antenna Gain:	W2: -1.1dBi/W5: -6.0dBi
Power Supply:	Charger
Hardware Version:	DVT(Remodeled to the equivalent of MP products)
Software Version:	A8060
IMEI:	004401230472066 004401230471084

2.2 Support Equipment

The following support equipment was used to exercise the DUT during testing:
N/A

3 REFERENCE SPECIFICATION

Specification	Version	Title
FCC Part2	2020	Frequency allocations and radio treaty matters; general rules and regulations
FCC Part22	2020	Public mobile services
FCC Part24	2020	Personal communications services
FCC Part27	2020	Miscellaneous wireless communications services
ANSI C63.26	2015	American national standard for compliance testing of transmitters used in licensed radio services
KDB 971168 D01	April 9, 2018	Measurement guidance for certification of licensed digital transmitters
TIA-603-E-2016	March 2016	Land Mobile FM or PM Communications Equipment Measurement and Performance Standards

4 KEY TO NOTES AND RESULT CODES

The following are the definition of the test result.

Code	Meaning
PASS	Test result shows that the requirements of the relevant specification have been met.
FAIL	Test result shows that the requirements of the relevant specification have not been met.
NT	Normal Temperature
NV	Nominal voltage
HV	High voltage
LV	Low voltage

5 RESULT SUMMARY

No.	Test case	FCC reference	Verdict
1	RF Power Output	2.1046	Pass
2	Effective Radiated Power and Effective Isotropic Radiated Power	22.913(a),24.232(c),27.50(d)(4)	Pass
3	Occupied Bandwidth	2.1049	Pass
4	Emission Bandwidth	2.1049	Pass
5	Spurious Emissions at antenna terminal	2.1051,22.917(a),24.238(a),27.53(h)	Pass
6	Band Edges Compliance	2.1051,22.917(a),24.238(b),27.53(h)	Pass
7	Frequency Stability	2.1055,22.355,24.235,27.54	Pass
8	Radiated Spurious Emissions	2.1053,22.917(a),24.238(a),27.53(h)	Pass
9	Peak-Average Ratio	24.232(d),27.50(d) (5)	Pass

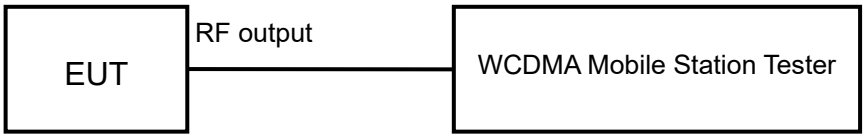
This Test Report Is Issued by: Mr. Peng Zhen	Checked by: Mr. Li Bin
Tested by: Mr. Liu Ce	Issued date: 20210928

6 TEST RESULT

6.1 RF Power Output

Rule Part(s):
2.1046

Test Setup:



Test procedure:
After a radio link has been established between EUT and Tester, the output power of the cell signal of the testing equipment will be decreased until the output power of the EUT reach a maximum value. Then the test data can be read at the tester screen. The loss between RF output port of the EUT and the input port of the tester will be taken into consideration.
The measurement will be conducted at three channels (Low, middle and High channels).

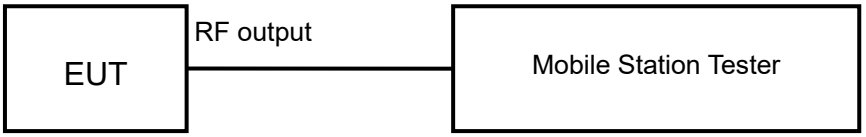
Limits: Limits: No specific conduct power requirements in part 2.1046.

Test result:
The test results are shown in Appendix A.

6.2 Effective Radiated Power and Effective Isotropic Radiated Power

Rule Part(s):
FCC: 22.913(a) (5), 24.232(c), 27.50(d) (4)

Test setup:

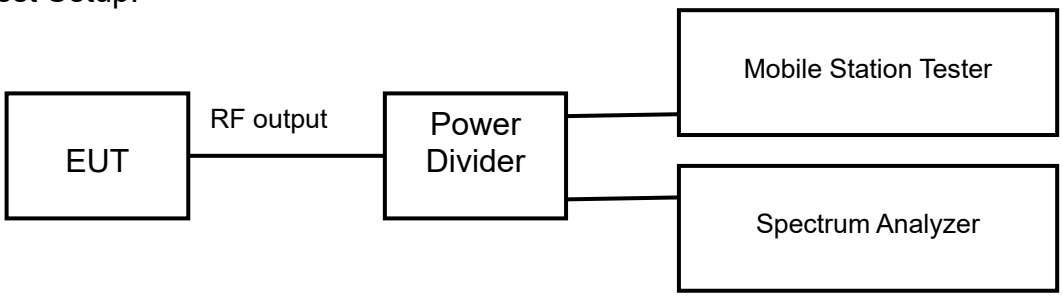


Test procedure:
KDB 971168 D01 v03r01 – Section 5.6
Test Settings
Subclause 5.2.5.5 of ANSI C63.26-2015 is applicable, along with the following provisions. For personal/portable radios utilizing an integral antenna, the factor LC is typically negligible. However, in a fixed station transmit system that utilizes a long cable run between the transmitter and the transmitting antenna, this factor can be significant. The minimum cable loss should be used in this equation.
The relevant equation for determining the ERP or EIRP from the conducted RF output power measured is:
ERP/EIRP = PMeas – LC + GT
Where:
ERP/EIRP = effective or equivalen radiated power, respectively (expressed in the same units as PMeas, typically dBW or dBm)
PMeas = measured transmitter output power or PSD, in dBW or dBm
LC = signal attenuation in the connecting cable between the transmitter and antenna in dB
GT = gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP)
ERP/EIRP LIMIT
This value is EIRP since the measurement is calibrated using an antenna of known gain (2.15dB) and known input power. ERP can be calculated from EIRP by subtracting the gain of the dipole, ERP = EIRP – 2.15 (dB).
22.913(a) (5)
The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 watts.
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.
27.50(d) (4)
Fixed, mobile, and portable (hand-held) stations operating in the 1710-1755 MHz band and mobile and portable stations operating in the 1695-1710 MHz and 1755-1780 MHz bands are limited to 1 watt EIRP. Fixed stations operating in the 1710-1755 MHz band are limited to a maximum antenna height of 10 meters above ground. Mobile and portable stations operating in these bands must employ a means for limiting power to the minimum necessary for successful communications
Test result:
The test results are shown in Appendix A.

6.3 Occupied Bandwidth

Rule Part(s):
FCC: 2.1049

Test Setup:



Test procedure:
KDB 971168 D01 v03r01 – Section 4.2

Test Settings
1. The signal analyzer's automatic bandwidth measurement capability was used to perform the 99% occupied bandwidth and the 26dB bandwidth. The bandwidth measurement was not influenced by any intermediate power nulls in the fundamental emission.
2. RBW = 1 – 5% of the expected OBW
3. VBW ≥ 3 x RBW
4. Detector = Peak
5. Trace mode = max hold
6. Sweep = auto couple
7. The trace was allowed to stabilize
8. If necessary, steps 2 – 7 were repeated after changing the RBW such that it would be within 1 – 5% of the 99% occupied bandwidth observed in Step 7

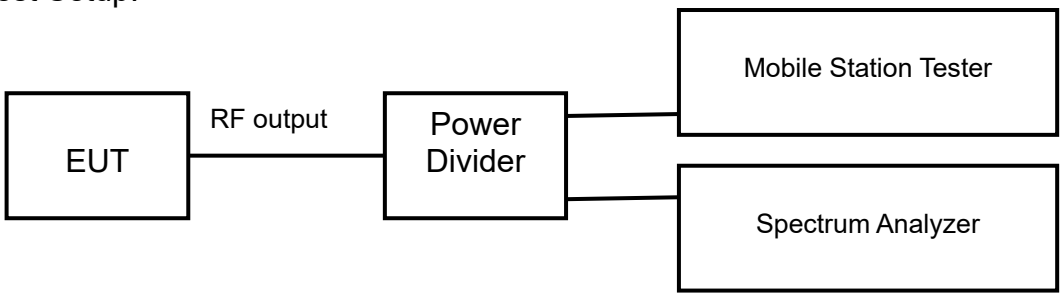
Limits: No specific occupied bandwidth requirements in part 2.1049

Test result:
The test results are shown in Appendix A.

6.4 Emission Bandwidth

Rule Part(s):
FCC: 2.1049

Test Setup:



Test procedure:
KDB 971168 D01 v03r01 – Section 4.2

Test Settings
1. The signal analyzer's automatic bandwidth measurement capability was used to perform the 26dB occupied bandwidth and the 26dB bandwidth. The bandwidth measurement was not influenced by any intermediate power nulls in the fundamental emission.
2. RBW = 1 – 5% of the expected OBW
3. VBW ≥ 3 x RBW
4. Detector = Peak
5. Trace mode = max hold
6. Sweep = auto couple
7. The trace was allowed to stabilize
8. If necessary, steps 2 – 7 were repeated after changing the RBW such that it would be within 1 – 5% of the emission bandwidth observed in Step 7

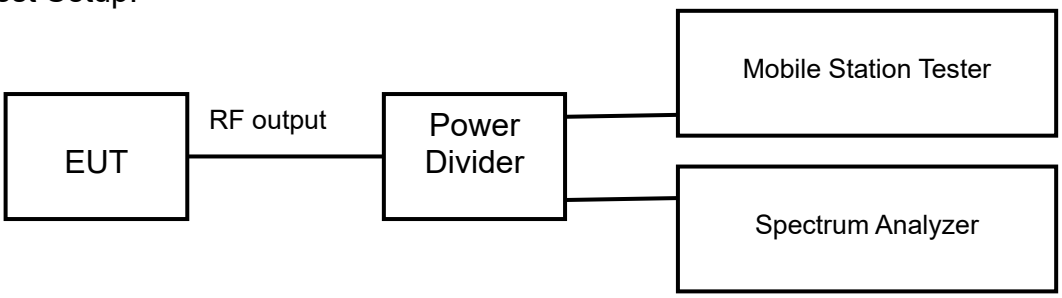
Limits: No specific occupied bandwidth requirements in part 2.1049

Test result:
The test results are shown in Appendix A.

6.5 Spurious Emissions at antenna terminal

Rule Part(s):
FCC: 2.1051, 22.917(a), 24.238(a), 27.53(h)

Test Setup:



Test procedure:
KDB 971168 D01 v03r01 – Section 6.0

Test Settings
1. Start frequency was set to 30MHz and stop frequency was set to 10GHz for Cell, 20GHz for PCS
2. RBW=100 kHz (For below 1GHz), 1MHz (For above 1GHz)
3. VBW ≥ 3 x RBW
4. Detector = RMS
5. Trace mode = trace average for continuous emissions, max hold for pulse emissions
6. Sweep time = auto couple
7. The trace was allowed to stabilize

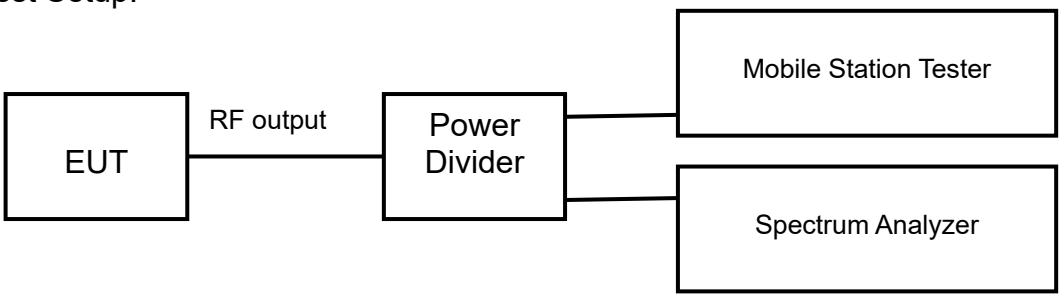
Limits:
The minimum permissible attenuation level of any spurious emission is $43+\log_{10}(P_{[Watts]})$, where P is the transmitter power in Watts.

Test result:
The test results are shown in Appendix A.

6.6 Band Edges Compliance

Rule Part(s)
FCC: 2.1051, 22.917(a), 24.238(a), 27.53(c)

Test Setup:



Test procedure:
KDB 971168 D01 v03r01 – Section 6.0

Test Settings
1. Start and stop frequency were set such that the band edge would be placed in the center of the plot
2. Span=2MHz
3. RBW > 1% of the emission bandwidth
4. VBW > 3 x RBW
5. Detector = RMS
6. Number of sweep points ≥ 2 x Span/RBW
7. Trace mode = trace average for continuous emissions, max hold for pulse emissions
8. Sweep time = auto couple
9. The trace was allowed to stabilize

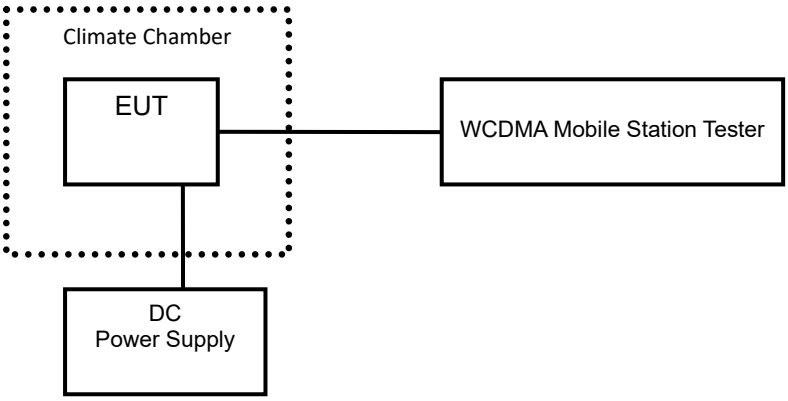
Limit: The minimum permissible attenuation level of any spurious emission is $43+\log_{10}(P_{[Watts]})$, where P is the transmitter power in Watts.

Test result:
The test results are shown in Appendix A.

6.7 Frequency Stability

Rule Part(s)
FCC: 2.1055, 22.355, 24.235, 27.54

Test setup:



Test Procedure:
ANSI/TIA-603-E-2016

Test Settings
1. The carrier frequency of the transmitter is measured at room temperature (20°C to provide a reference).
2. The equipment is turned on in a “standby” condition for fifteen minutes before applying power to the transmitter. Measurement of the carrier frequency of the transmitter is made within one minute after applying power to the transmitter.
3. Frequency measurements are made at 10°C intervals ranging from -30°C to +50°C (The temperature range can be declared by the manufacturer). A period of at least one half-hour is provided to allow stabilization of the equipment at each temperature level.

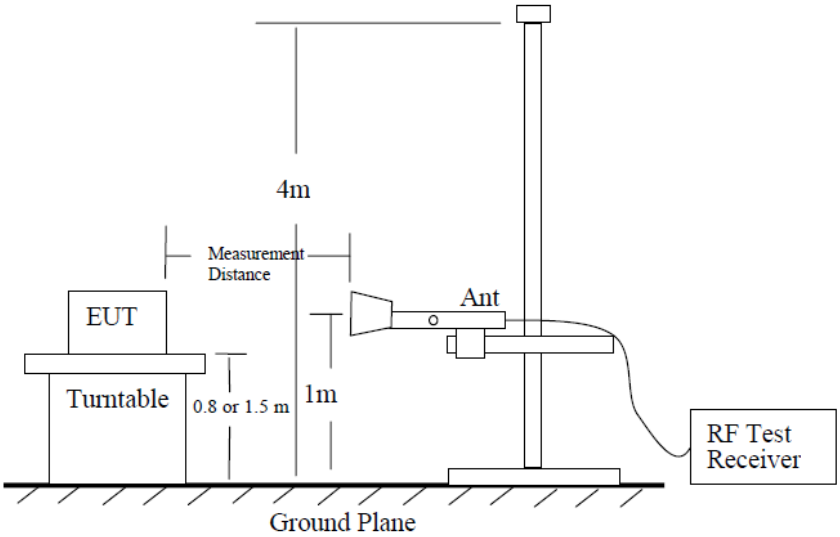
Limits: For Part 22, the frequency stability of the transmitter shall be maintained within±0.00025% (±2.5 ppm) of the center frequency. For Part 24, the frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

Test result:
The test results are shown in Appendix A.

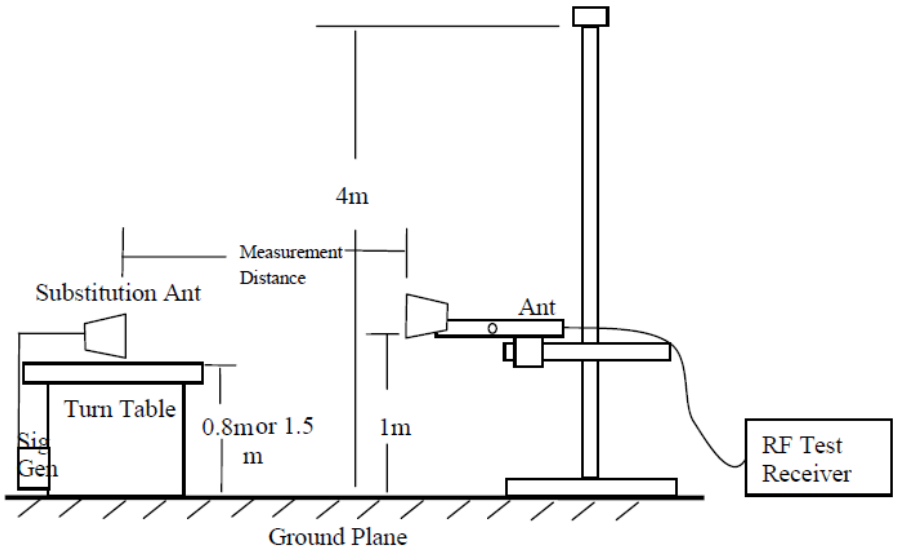
6.8 Radiated Spurious Emissions

Rule Part(s)
FCC: 2.1053, 22.917(a), 24.238(a), 27.53(h)

Test Setup:



Step 1



Step 2

Test procedure:
The measurements procedures in TIA-603-E-2016 are used.
The spectrum was scanned from 30MHz to the 10th harmonic of the highest frequency generated within the equipment.
Step 1:
The measurement is carried out in the chamber. EUT was placed on a 0.8m (f<1GHz)/ 1.5m (f>1GHz) high non-conductive table at a 3 meters test distance from the test receive antenna. A receiving antenna was placed on the antenna mast 3 meters from the EUT. The

height of receiving antenna from 1m to 4m and varies in certain range to find the maximum power value. A radio link shall be established between EUT and Tester. The output power of the cell signal of the tester will be decreased until the output power of the EUT reach a maximum value. A peak detector is used and RBW is set to 100 kHz (f<1GHz)/1MHz (f>1GHz). The antenna shall be performed under horizontal and vertical polarization. The turn table shall be rotated from 0 to 360 degrees for detecting the maximum power value on spectrum analyzer or receiver. The spectrum analyzer scans from 30MHz to 10th harmonic of the carrier. A notch filter is necessary in the band near to the carrier frequency. A high pass filter is needed to avoid the distortion of the testing equipment in the band above the carrier frequency.

Step 2:

A log-periodic antenna or double-ridged waveguide horn antenna shall be substituted in place of the EUT. The log-periodic antenna will be driven by a signal generator and the level will be adjusted till the same power value on the spectrum analyzer or receiver. The level of the spurious emissions can be calculated through the level of the signal generator, cable loss, the gain of the substitution antenna and the reading of the spectrum analyzer or receiver.

A power (Pmea) is applied to the input of the substitution antenna, and adjusts the level of the signal generator output until the value of the receiver reach the previously recorded (Pr). The power of signal source (Pmea) is recorded. The test should be performed by rotating the test item and adjusting the receiving antenna polarization.

A “reference path loss” should be calculated after test. The attenuation of “reference path loss” is the cable loss between the Signal Source with the Substitution Antenna (Pca) and the Substitution Antenna Gain (Ga).

Calculation procedure:

The data of cable loss and antenna gain has been calibrated in full testing frequency range before the testing.

The power of the Radiated Spurious Emissions is calculated by adding the cable loss and antenna gain. The basic equation with a sample calculation is as followed:

Power (EIRP) = Pmea+ Pca + Ga

This value is EIRP since the measurement is calibrated using an antenna of known gain (2.15dB) and known input power. ERP can be calculated from EIRP by subtracting the gain of the dipole, ERP = EIRP – 2.15 (dB).

Assumed the power of signal source record is -20dBm. A cable loss of -30dB, and an antenna gain of 11dB are added.

P=Pmea+Pca+Ga=(-20dBm)+(-30dB)+(11dB)= -39dBm

Note: We tested both horizontal and vertical polarization, but only the largest numerical polarity of the two polarities was recorded in the final report.

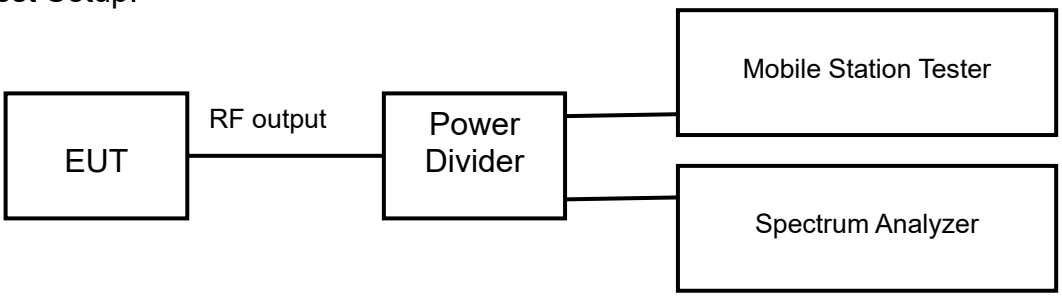
Test result:

The test results are shown in Appendix B.

6.9 Peak-Average Ratio

Rule Part(s)
FCC: 24.232(d), 27.50(d) (5)

Test Setup:



Test procedure:
KDB 971168 D01 v03r01 – Section 5.7.1

Test settings:
1. The signal analyzer's CCDF measurement profile is enabled
2. Frequency = carrier center frequency
3. Measurement BW > Emission bandwidth of signal
4. The signal analyzer was set to collect one million samples to generate the CCDF curve
5. The measurement interval was set depending on the type of signal analyzed. For continuous signals (>98% duty cycle), the measurement interval was set to 1ms. For burst transmissions, the spectrum analyzer is set to use an internal "RF Burst" trigger that is synced with an incoming pulse and the measurement interval is set to less than the duration of the "on time" of one burst to ensure that energy is only captured during a time in which the transmitter is operating at maximum power

Limits: the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.
.
Test result:
The test results are shown in Appendix A

7 MEASUREMENT UNCERTAINTIES

Items	Uncertainty	
RF Power Output	0.6 dB	
Effective Radiated Power and Effective Isotropic Radiated Power	0.6 dB	
Occupied Bandwidth	3kHz	
Emission Bandwidth	3kHz	
Peak-Average Ratio	0.8dB	
Frequency Stability	48Hz	
Band Edges Compliance	1.2dB	
Spurious Emissions at antenna terminal	9kHz~2GHz	1.2dB
	2G~3.6GHz	1.4dB
	3.6G~8GHz	2.2dB
	8G~12.75GHz	2.7dB
Radiated Emission Measurement	30MHz～200MHz	4.88dB
	200MHz～1GHz	4.87dB
	1GHz～18GHz	4.58dB
	18GHz~40GHz	4.35dB

8 TEST EQUIPMENTS

No.	Name/Model	Manufacturer	S/N	Calibration Date	Calibration Due Date
1	MT8820C Mobile Station Tester	Anritsu	6201300660	2020.08.20	2021.08.19
2	CMW500 Radio Communication Station	R&S	161702	2020.08.20	2021.08.19
3	FSV40 Spectrum Analyzer	R&S	101065	2020.08.20	2021.08.19
4	N9020A Spectrum Analyzer	Agilent	MY48010771	2020.08.20	2021.08.19
5	6007 Power Divider	Weinschel	6007-GJ-1	2020.08.20	2021.08.19
6	DC Power Supply E3645A	Agilent	MY40000741	2021.04.22	2022.04.21
7	Temperature chamber SH241	ESPEC	92013758	2020.08.20	2021.08.19
8	12.65m×8.03m×7.50m Fully-Anechoic Chamber	FRANKONIA	-----	-----	-----
9	23.18m×16.88m×9.60m Semi-Anechoic Chamber	FRANKONIA	---	-----	-----
10	Turn table Diameter:1m	FRANKONIA	-----	-----	-----
11	Turn table Diameter:5m	FRANKONIA	-----	-----	-----
12	Antenna master FAC(MA4.0)	MATURO	-----	-----	-----
13	Antenna master SAC(MA4.0)	MATURO	-----	-----	-----
14	9.080m×5.255m×3.525m Shielding room	FRANKONIA	-----	-----	-----
15	HF 907 Double-Ridged Waveguide Horn Antenna	R&S	100512	2020.08.20	2021.08.19
16	HF 907 Double-Ridged Waveguide Horn Antenna	R&S	100513	2020.08.20	2021.08.19
17	HL562 Ultra log antenna	R&S	100016	2020.08.20	2021.08.19
18	3160-09 Receive antenna	SCHWARZ-BECK	002058-002	2020.08.20	2021.08.19
19	ESI 40 EMI test receiver	R&S	100015	2020.08.20	2021.08.19
20	ESCS30 EMI test receiver	R&S	100029	2020.08.20	2021.08.19
21	HL562 Receive antenna	R&S	100167	2020.08.20	2021.08.19
22	ENV216 AMN	R&S	3560.6550.12	2020.08.20	2021.08.19

APPENDIX A – TEST DATA OF CONDUCTED EMISSION

1. RF Power Output

WCDMA band II

Mode		Carrier frequency (MHz)	Channel No.	RF Power Output (dBm)
Release 99	RMC,12.2kbps	1852.4	9262	22.85
		1880	9400	22.6
		1907.6	9538	22.68
HSDPA	Subtest1	1852.4	9262	21.92
		1880	9400	21.61
		1907.6	9538	21.69
	Subtest2	1852.4	9262	21.9
		1880	9400	21.61
		1907.6	9538	21.67
	Subtest3	1852.4	9262	21.37
		1880	9400	21.12
		1907.6	9538	21.19
	Subtest4	1852.4	9262	21.37
		1880	9400	21.11
		1907.6	9538	21.2
HSUPA	Subtest1	1852.4	9262	21.98
		1880	9400	21.68
		1907.6	9538	21.73
	Subtest2	1852.4	9262	21.95
		1880	9400	21.66
		1907.6	9538	21.71
	Subtest3	1852.4	9262	21.46
		1880	9400	21.17
		1907.6	9538	21.23
	Subtest4	1852.4	9262	21.92
		1880	9400	21.65
		1907.6	9538	21.71
	Subtest5	1852.4	9262	21.42
		1880	9400	21.14
		1907.6	9538	21.22

2. Occupied Bandwidth

WCDMA band II

REL99 Mode:

Carrier frequency (MHz)	Channel No.	Bandwidth of 99% Power (MHz)
1852.4	9262	4.17
1880	9400	4.17
1907.6	9538	4.15

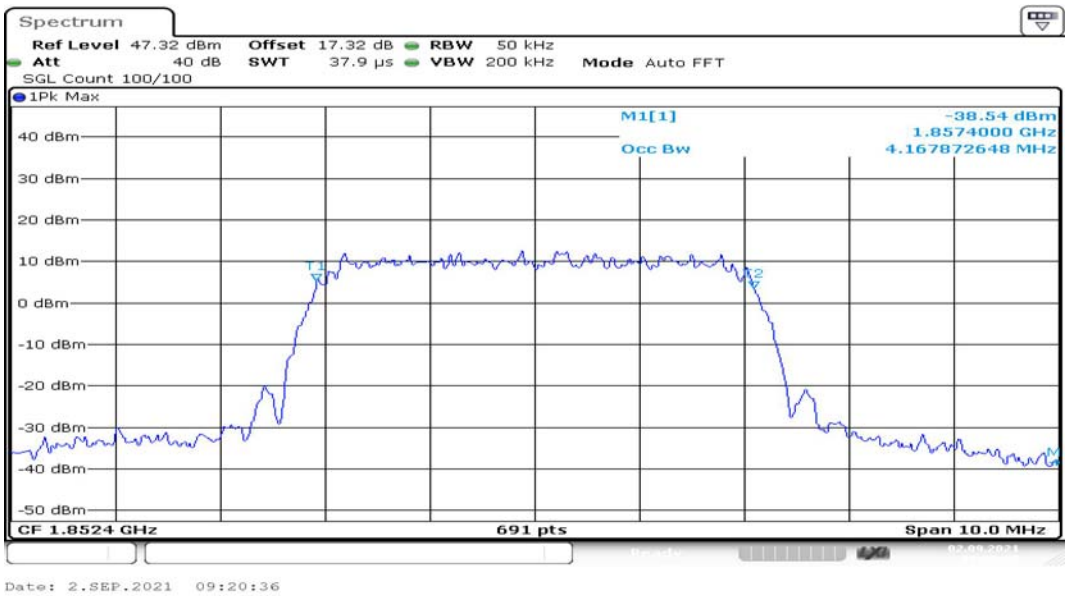
HSDPA Mode:

Carrier frequency (MHz)	Channel No.	Bandwidth of 99% Power (MHz)
1852.4	9262	4.14
1880	9400	4.17
1907.6	9538	4.17

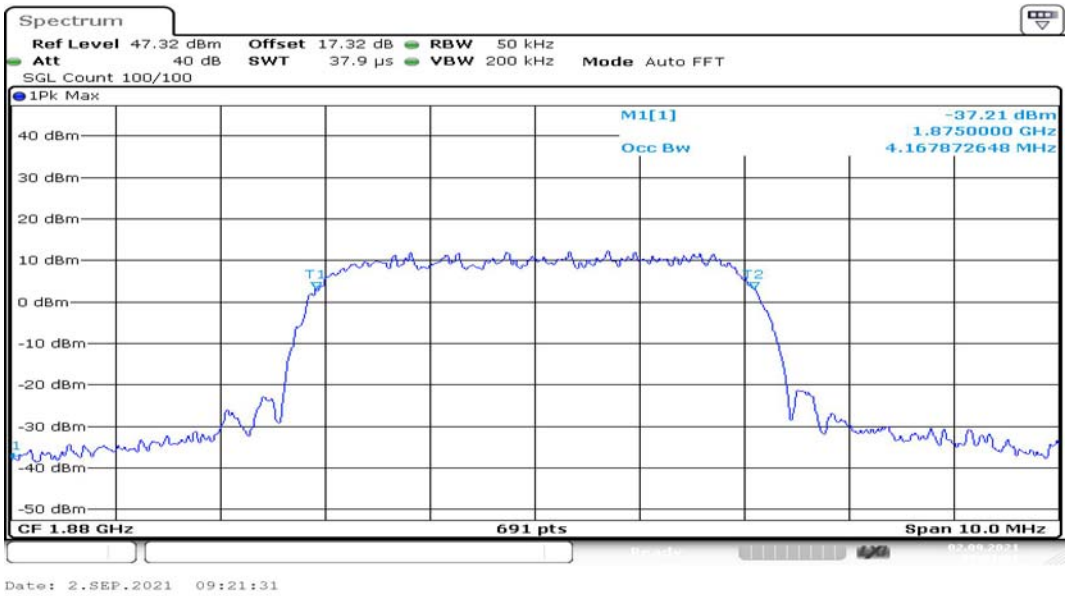
HSUPA Mode:

Carrier frequency (MHz)	Channel No.	Bandwidth of 99% Power (MHz)
1852.4	9262	4.14
1880	9400	4.18
1907.6	9538	4.18

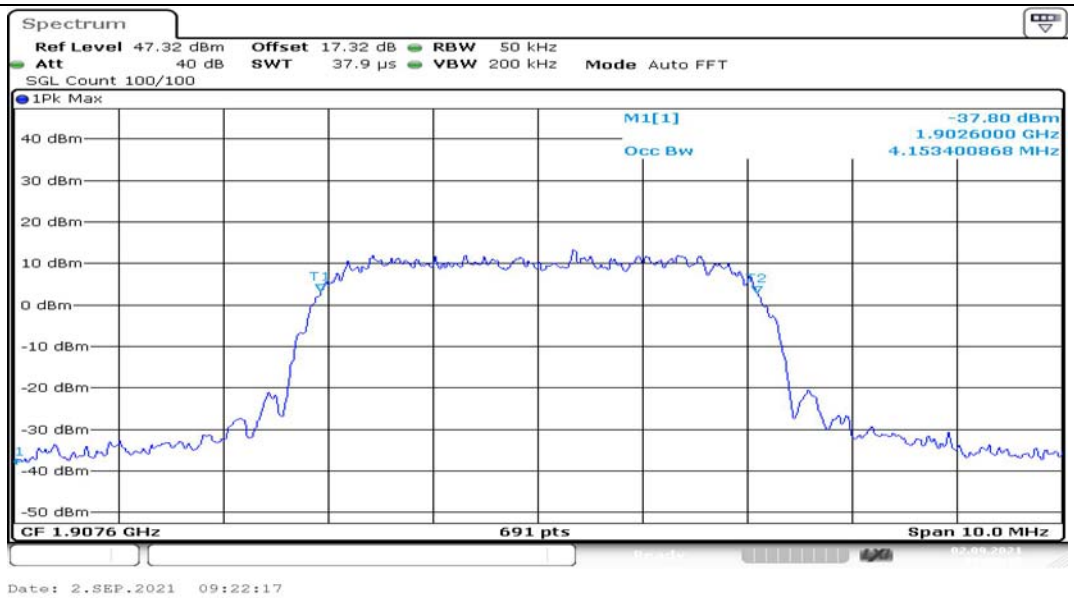
WCDMA band II
REL99 Mode:



Channel 9262



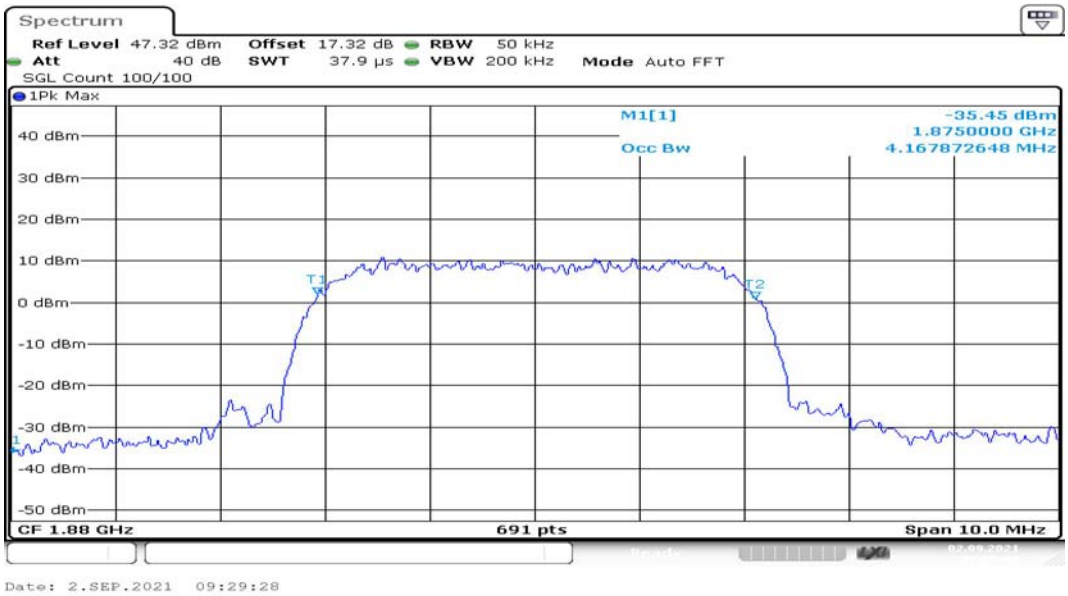
Channel 9400



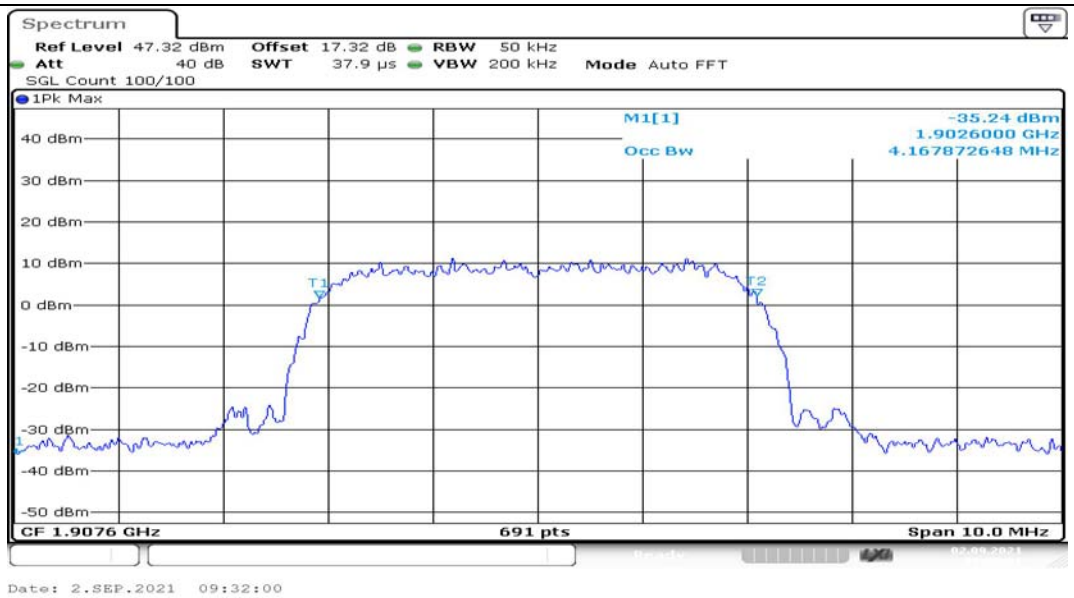
Channel 9538

HSDPA Mode:

Channel 9262

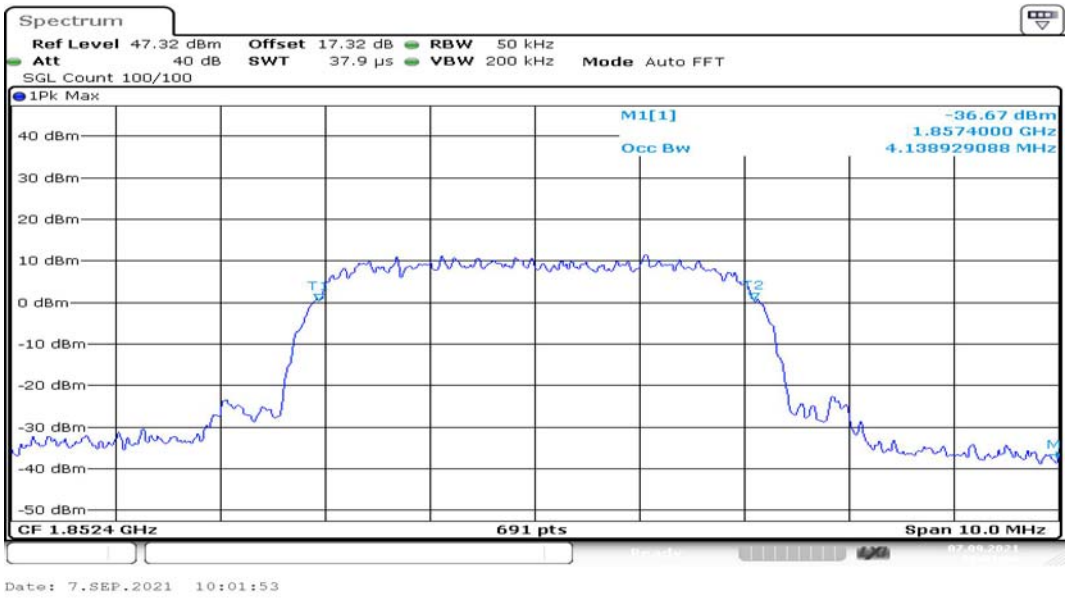


Channel 9400

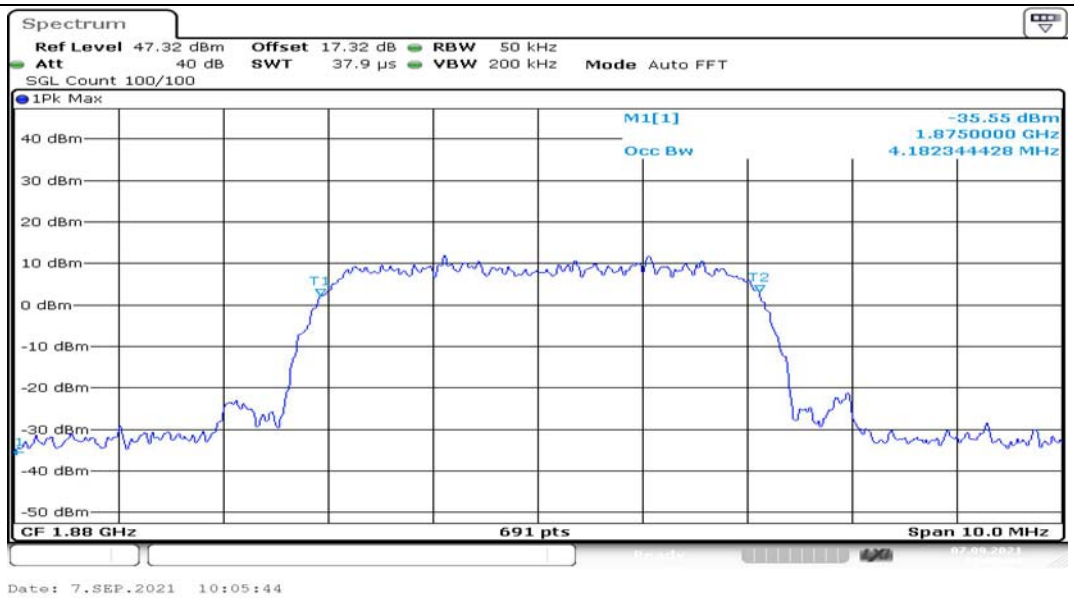


Channel 9538

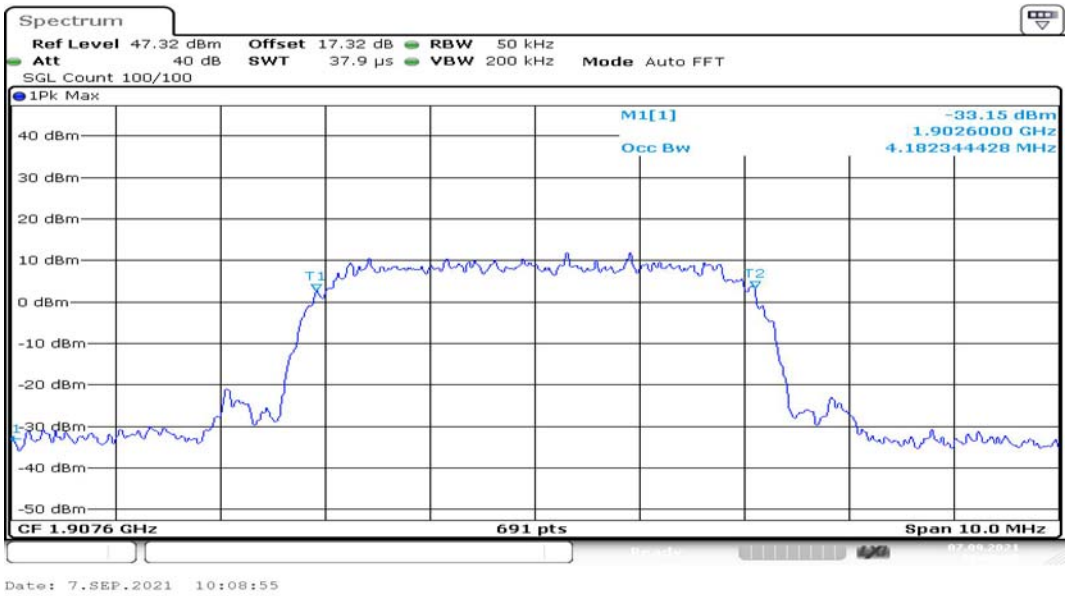
HSUPA Mode:



Channel 9262



Channel 9400



Channel 9538

3. Emission Bandwidth

WCDMA band II

REL99 Mode:

Carrier frequency (MHz)	Channel No.	Bandwidth of -26dBc Power (MHz)
1852.4	9262	4.66
1880	9400	4.72
1907.6	9538	4.66

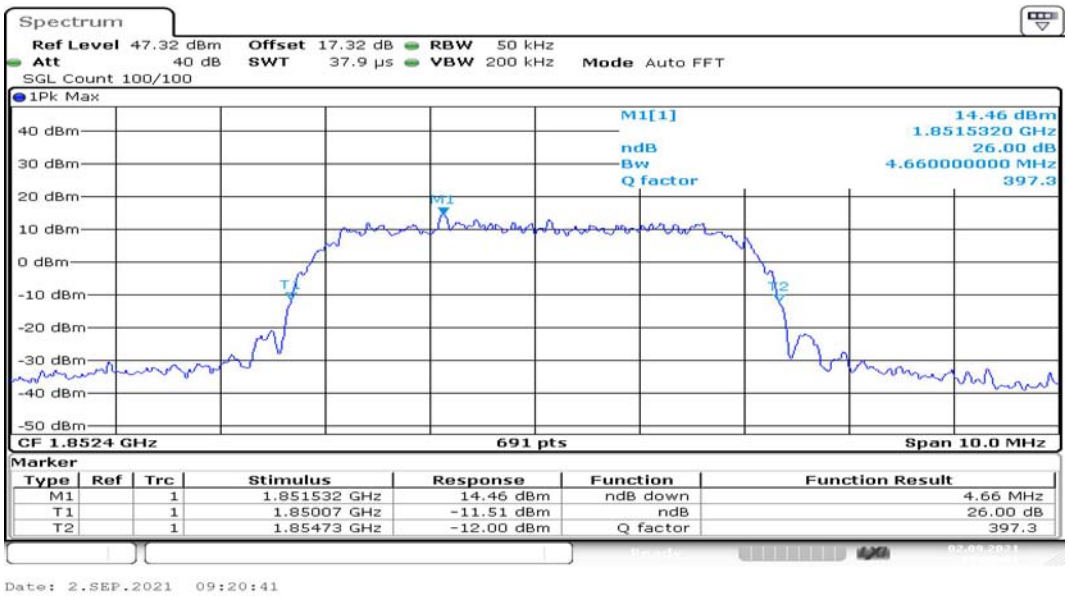
HSDPA Mode:

Carrier frequency (MHz)	Channel No.	Bandwidth of -26dBc Power (MHz)
1852.4	9262	4.69
1880	9400	4.70
1907.6	9538	4.70

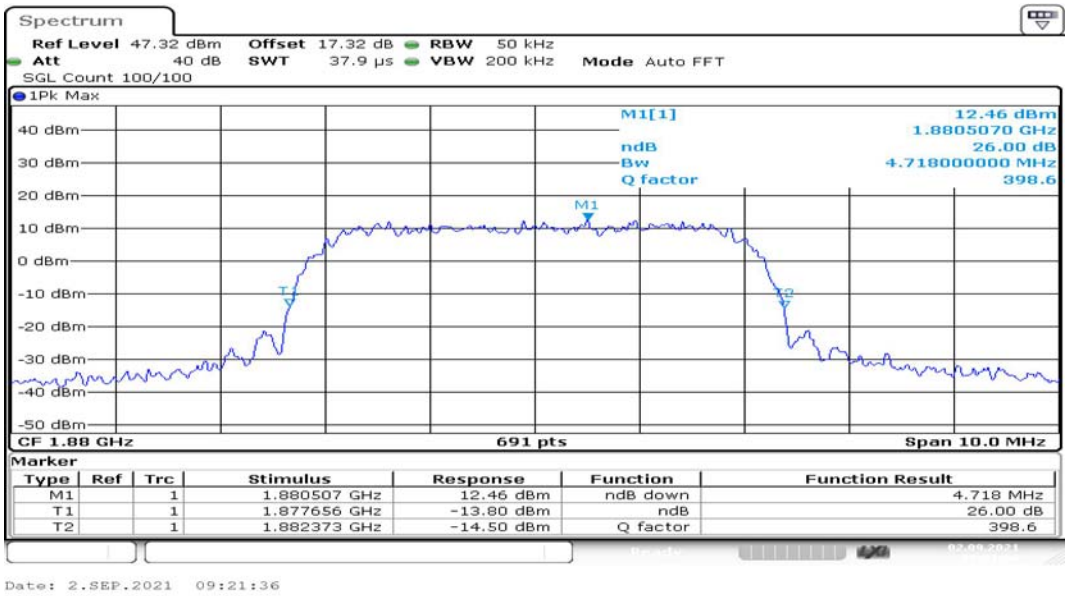
HSUPA Mode:

Carrier frequency (MHz)	Channel No.	Bandwidth of -26dBc Power (MHz)
1852.4	9262	4.70
1880	9400	4.70
1907.6	9538	4.67

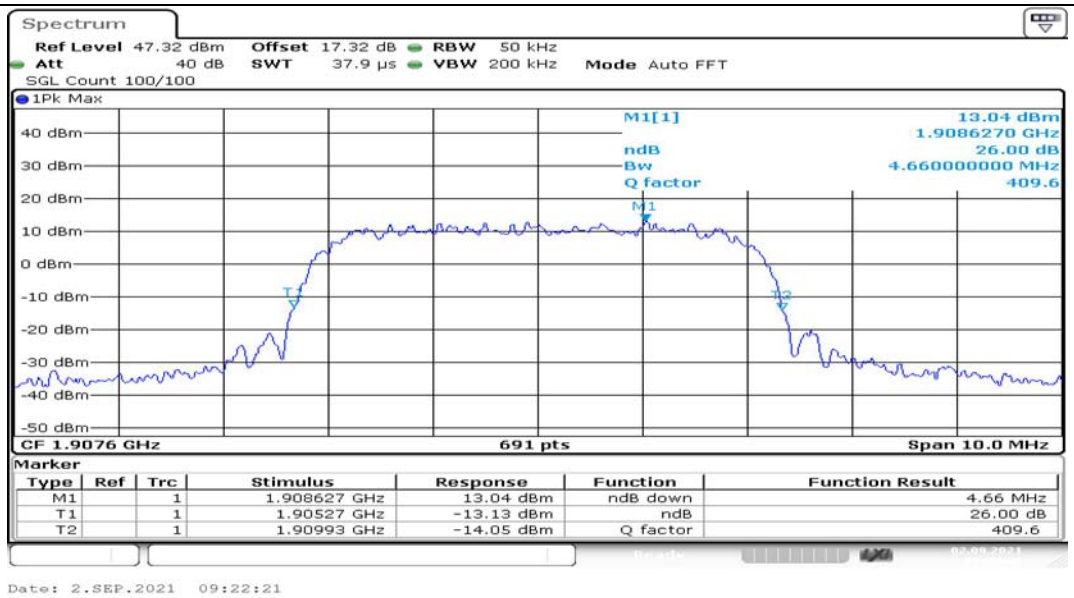
WCDMA band II
REL99 Mode:



Channel 9262

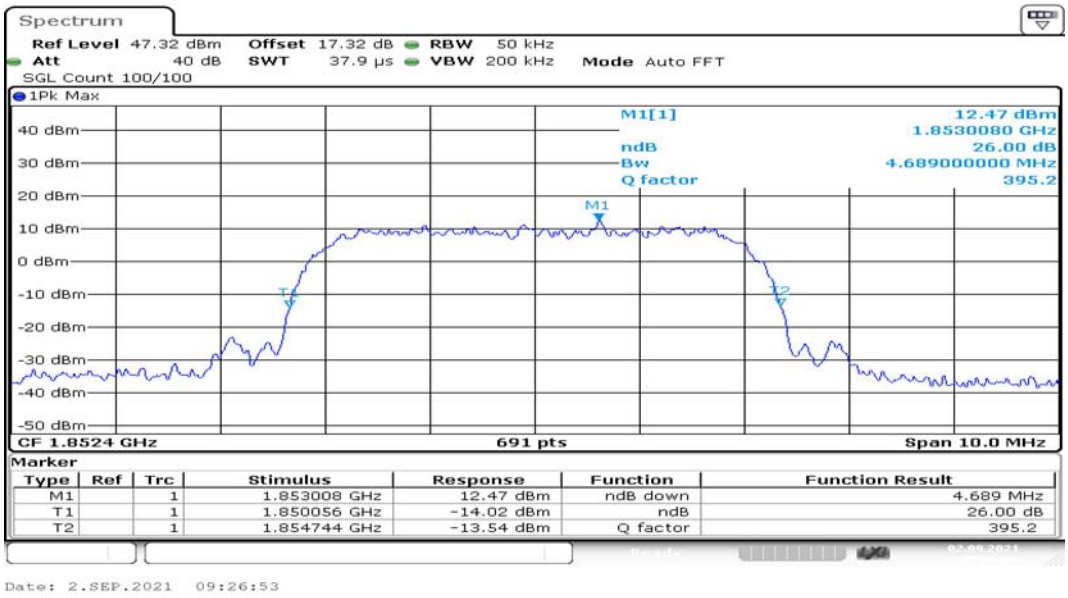


Channel 9400

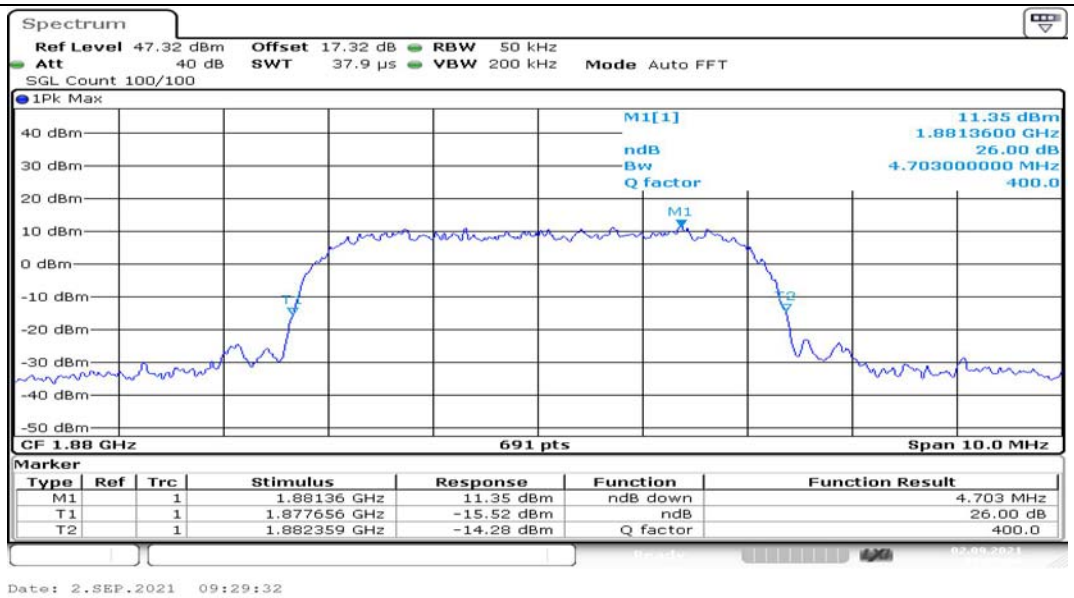


Channel 9538

HSDPA Mode:

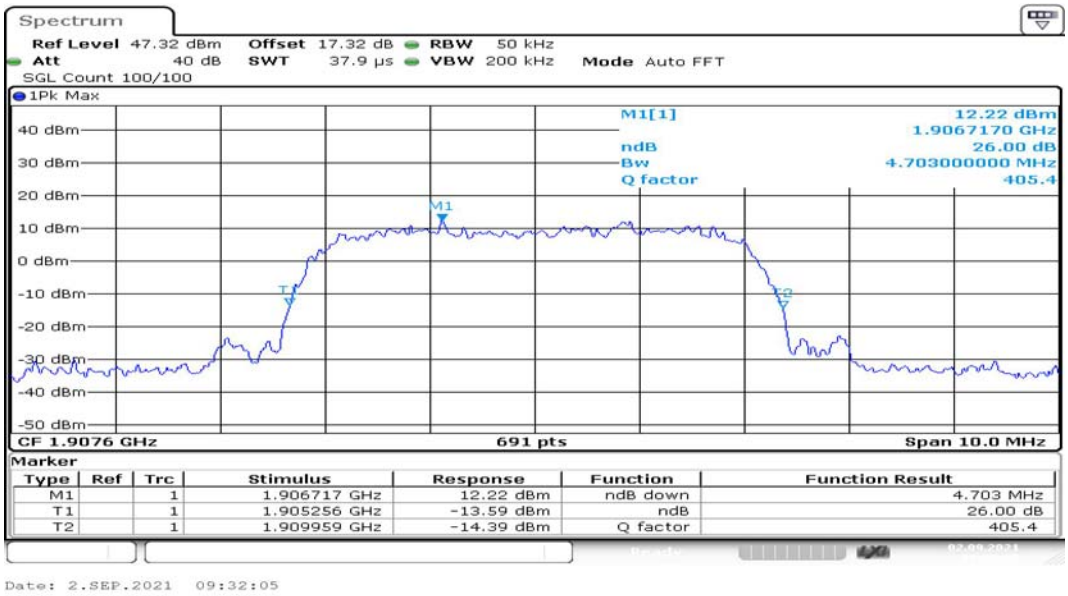


Channel 9262



Date: 2.SEP.2021 09:29:32

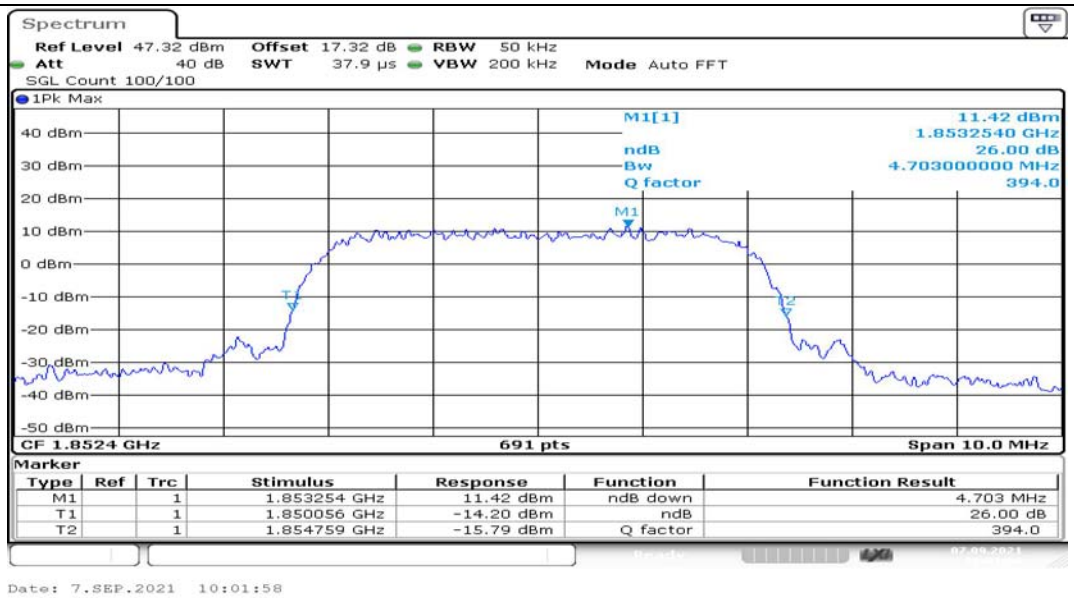
Channel 9400



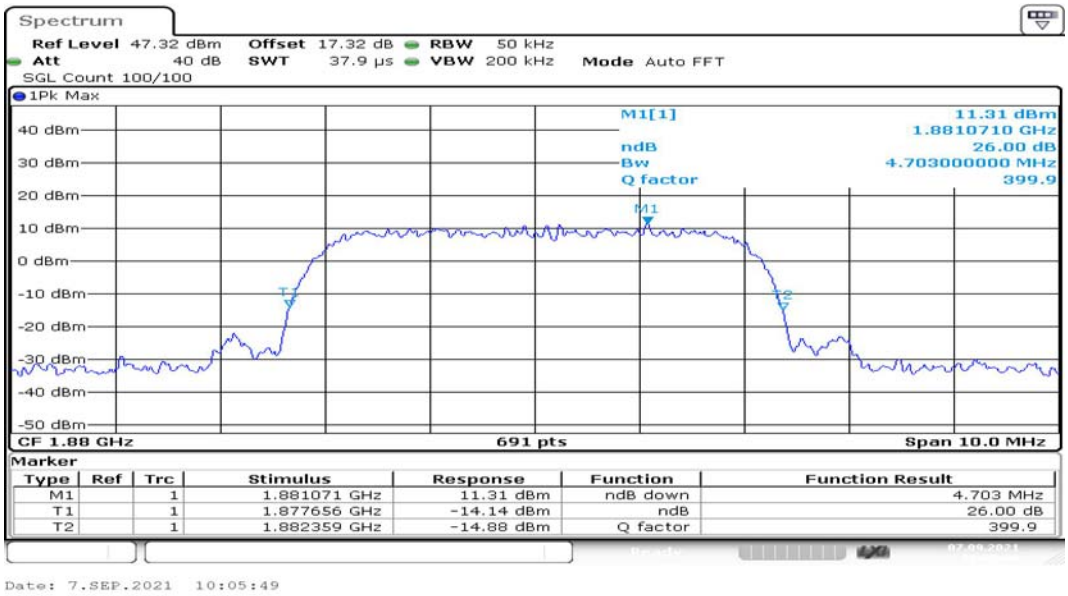
Date: 2.SEP.2021 09:32:05

Channel 9538

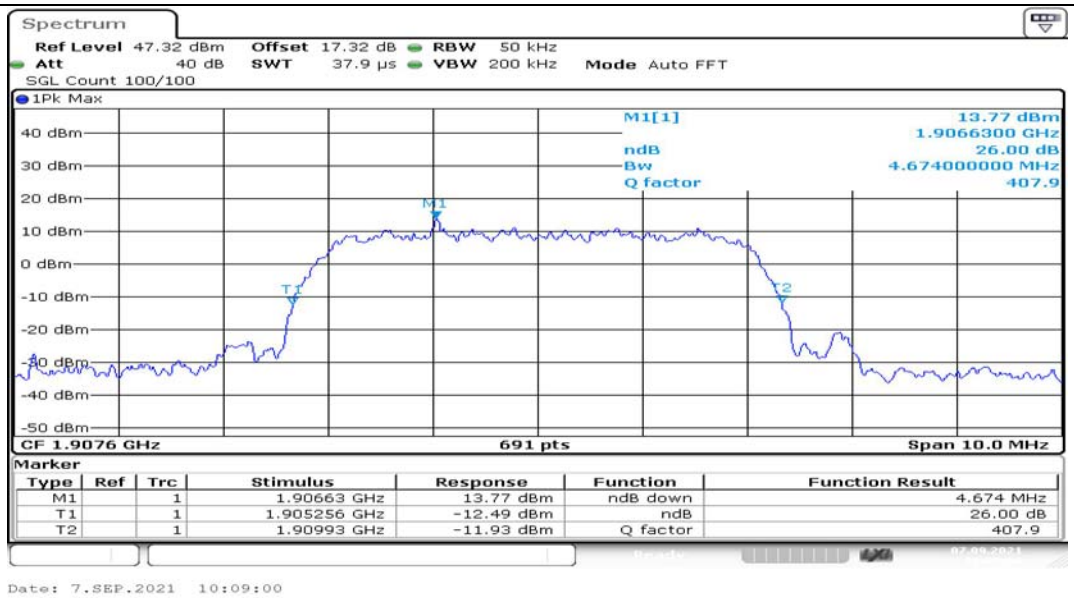
HSUPA Mode:



Channel 9262



Channel 9400

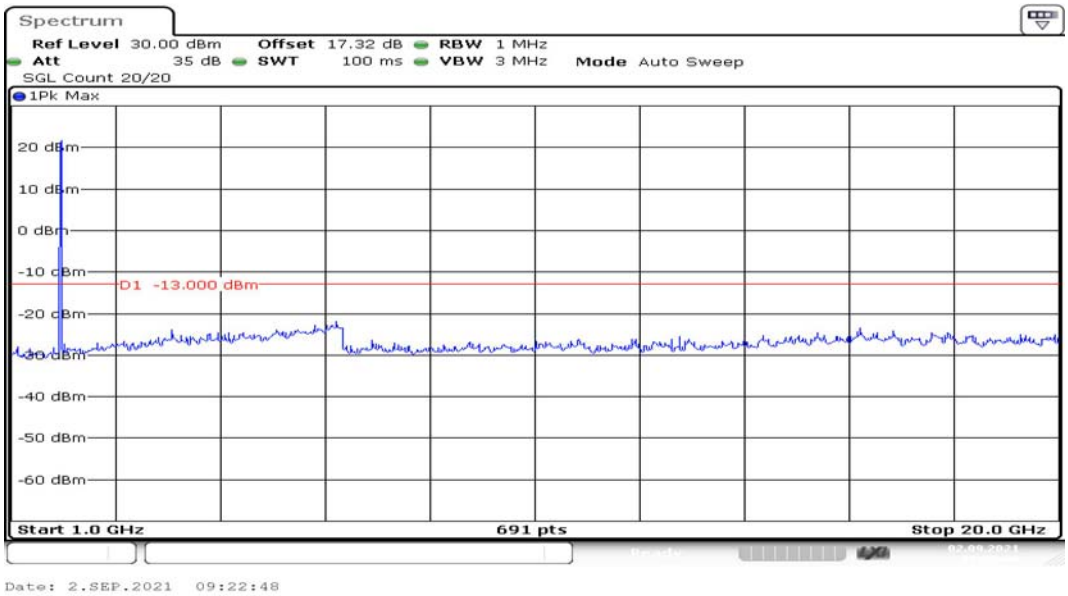


Channel 9538

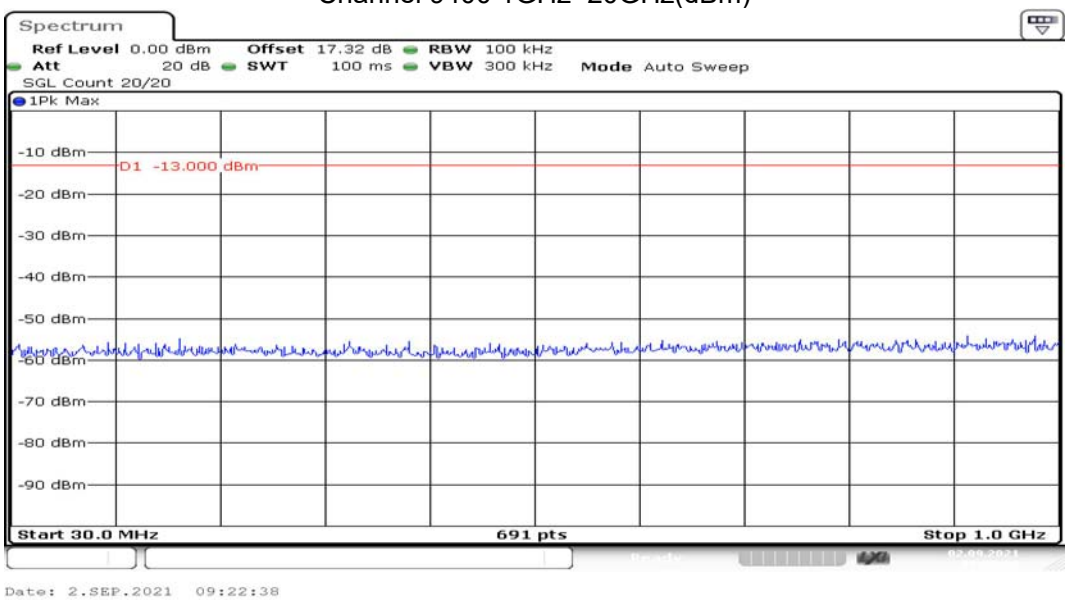
4. Spurious Emissions at antenna terminal

WCDMA band II

REL99 Mode:



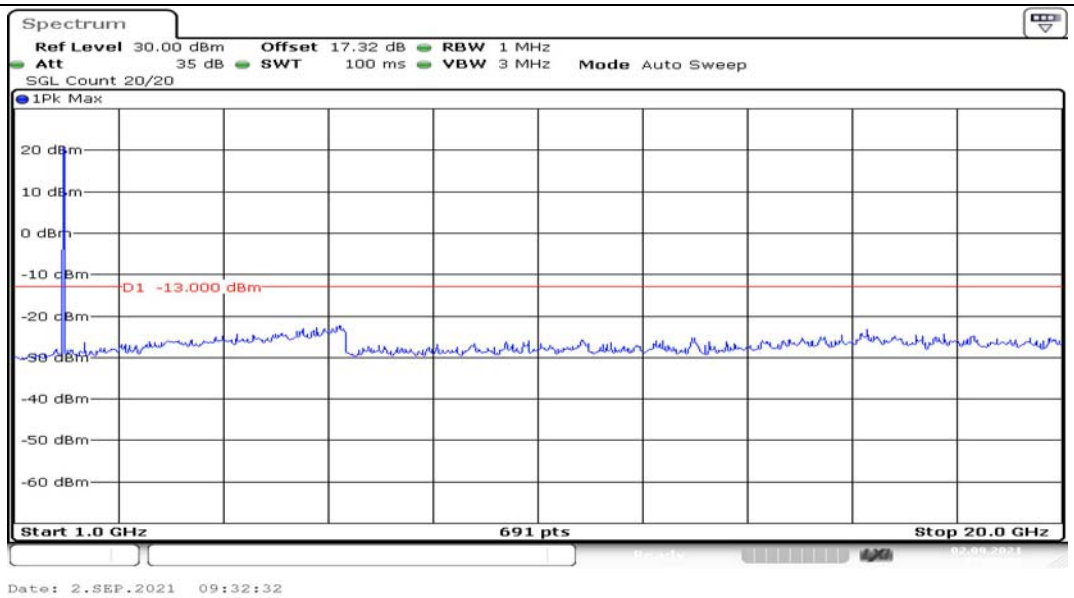
Channel 9400 1GHz~20GHz(dBm)



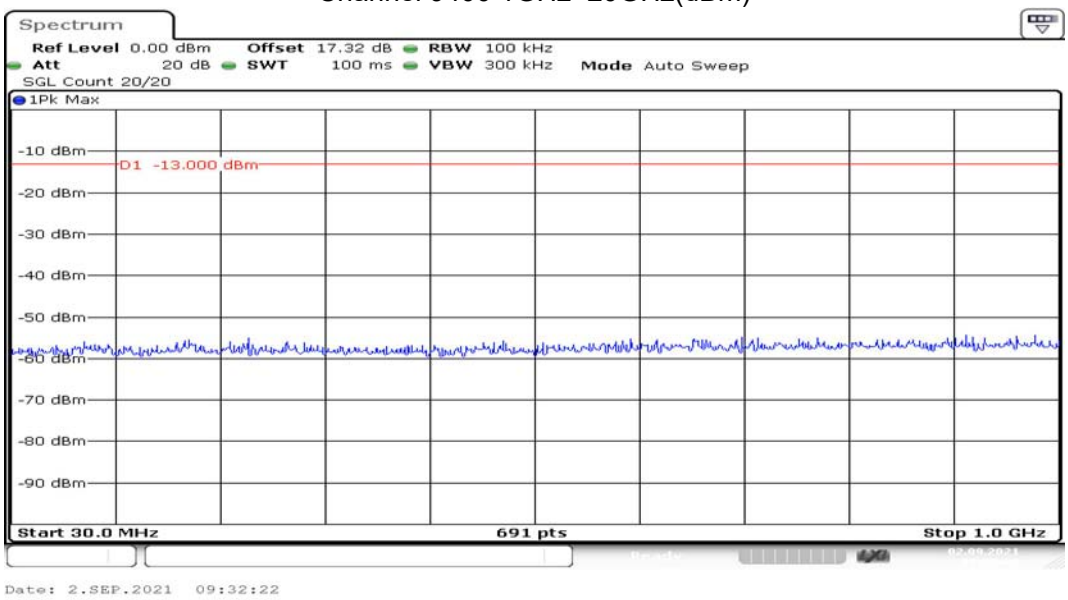
Channel 9400 30MHz~1GHz(dBm)

Note: The signal beyond the limit is the signal transmitted by EUT.

HSDPA Mode:

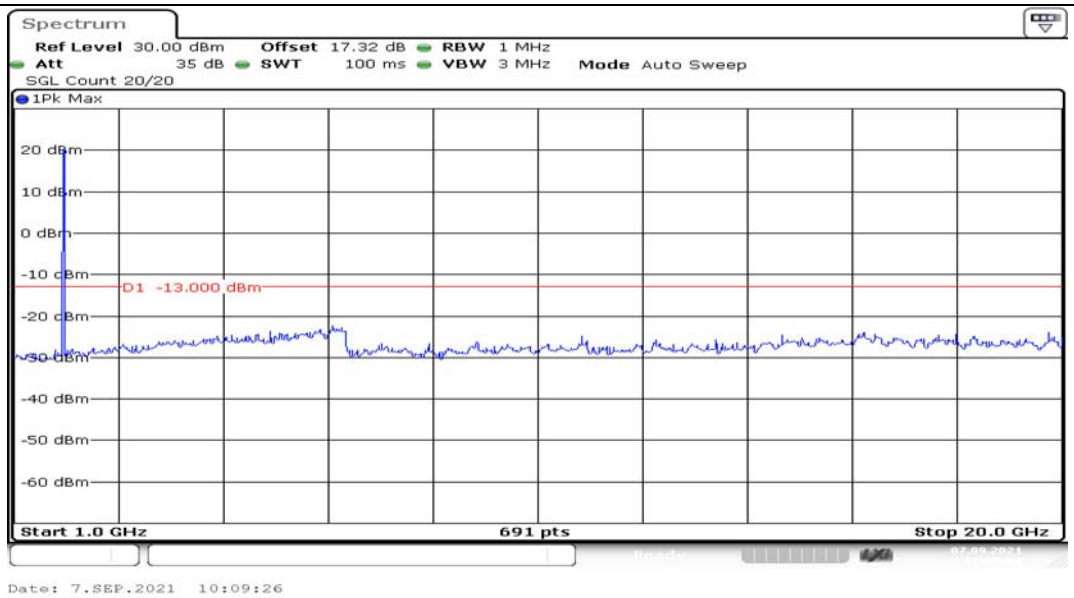


Channel 9400 1GHz~20GHz(dBm)

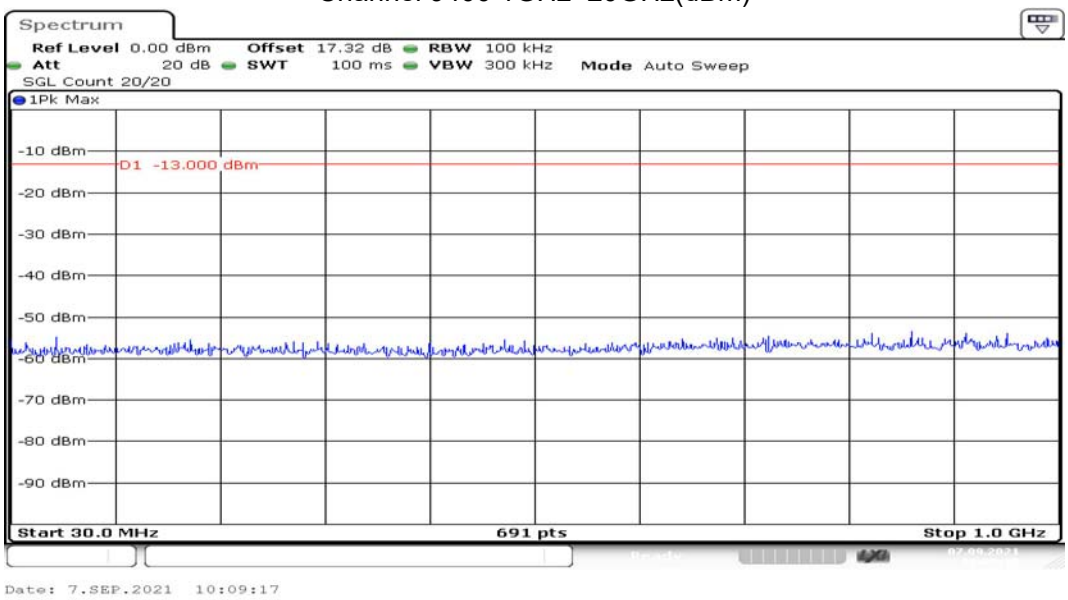


Channel 9400 30MHz~1GHz(dBm)
Note: The signal beyond the limit is the signal transmitted by EUT.

HSUPA Mode:



Channel 9400 1GHz~20GHz(dBm)



Channel 9400 30MHz~1GHz(dBm)

Note: The signal beyond the limit is the signal transmitted by EUT.

5. Band Edges Compliance

WCDMA band II

REL99 Mode:

Channel 9262

Channel 9538

HSDPA Mode:

Channel 9262

Channel 9538

HSUPA Mode:

Channel 9262

Channel 9538

6. Frequency Stability

WCDMA band II

REL99 Mode:

Temperature(°C)	Test Result (ppm)@NV		
	Channel 9262	Channel 9400	Channel 9538
+50	0.004	0.004	0.001
Voltage	Test Result (ppm)@NT		
	Channel 9262	Channel 9400	Channel 9538
LV	0.004	0.004	0.001

HSDPA Mode:

Temperature(°C)	Test Result (ppm)@NV		
	Channel 9262	Channel 9400	Channel 9538
+50	0.003	0.001	0.000
Voltage	Test Result (ppm)@NT		
	Channel 9262	Channel 9400	Channel 9538
LV	0.002	0.003	0.000

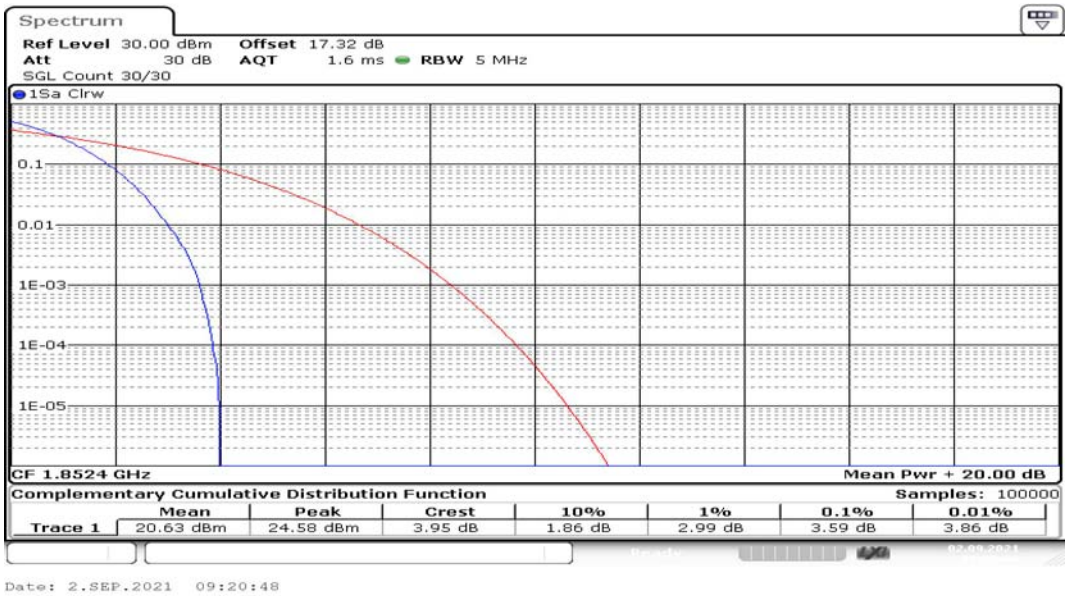
HSUPA Mode:

Temperature(°C)	Test Result (ppm)@NV		
	Channel 9262	Channel 9400	Channel 9538
+50	0.001	0.002	0.000
Voltage	Test Result (ppm)@NT		
	Channel 9262	Channel 9400	Channel 9538
LV	0.002	0.003	0.000

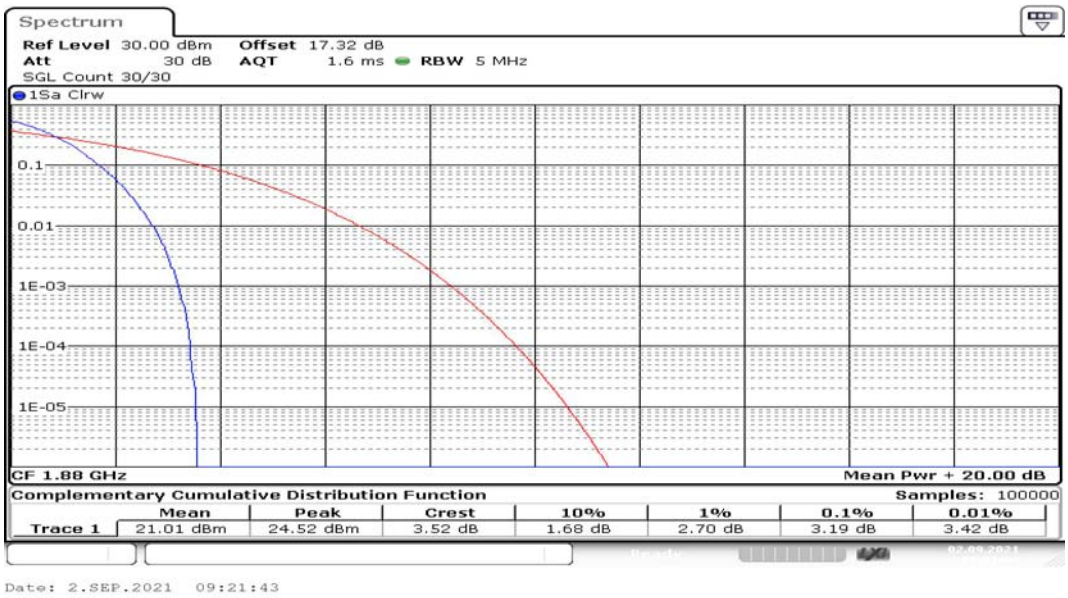
7. Peak-Average Ratio

WCDMA band II

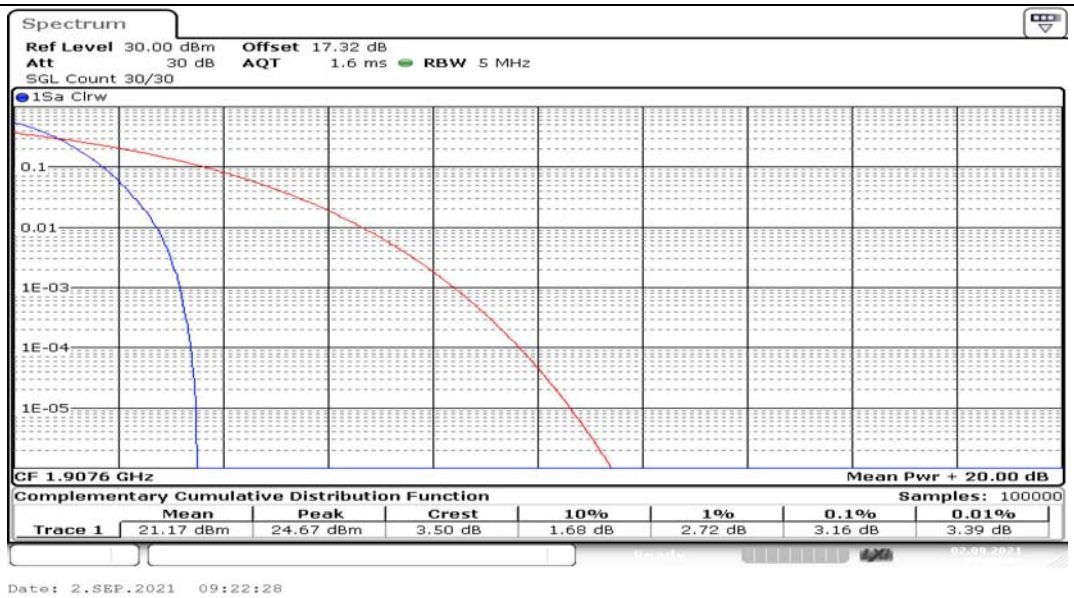
REL99 Mode:



Channel 9262

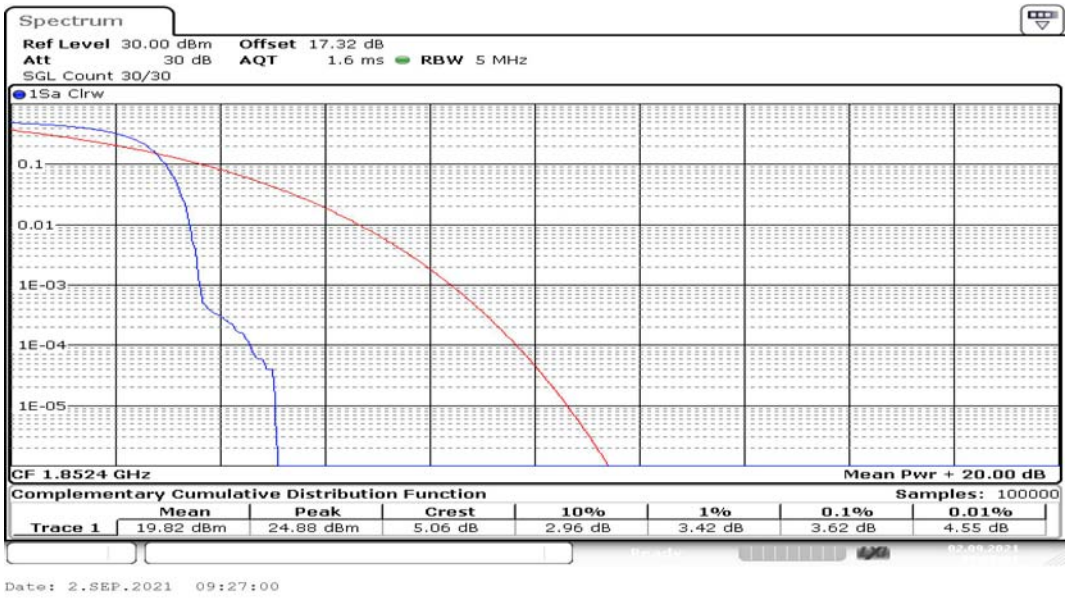


Channel 9400

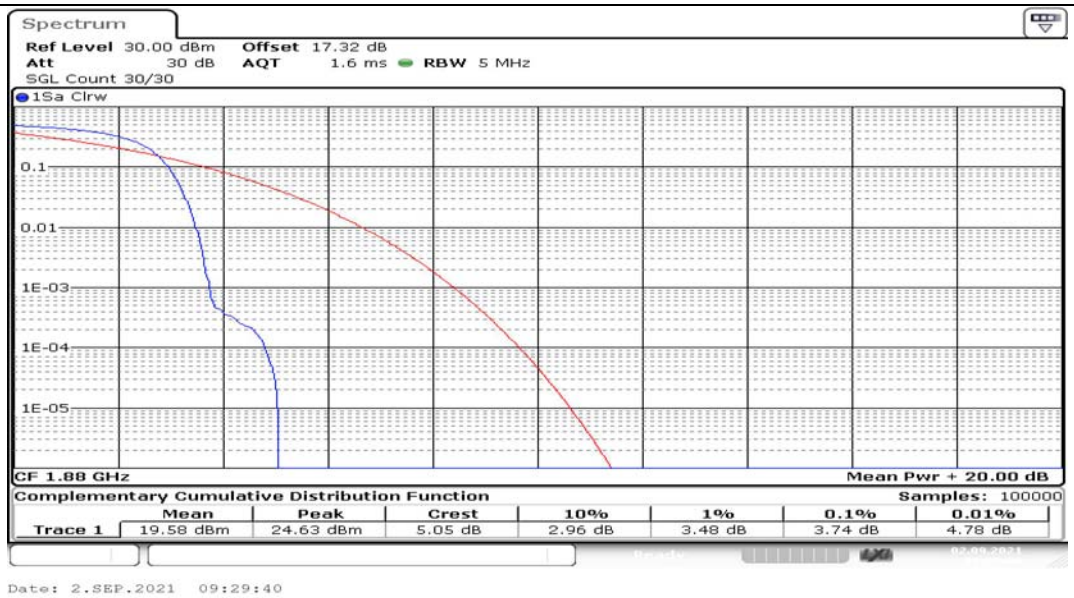


Channel 9538

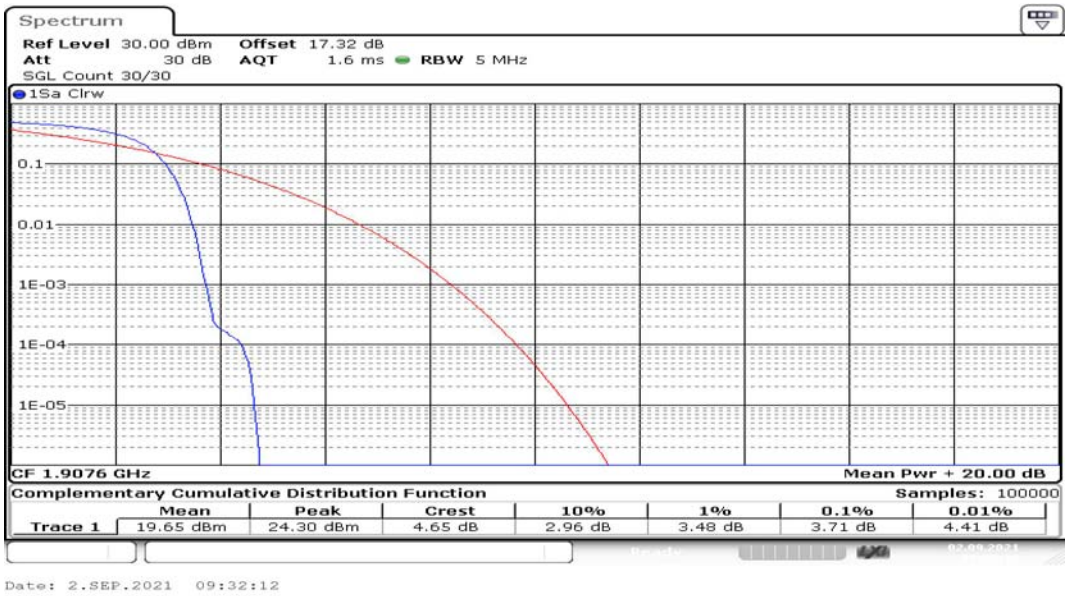
HSDPA Mode:



Channel 9262

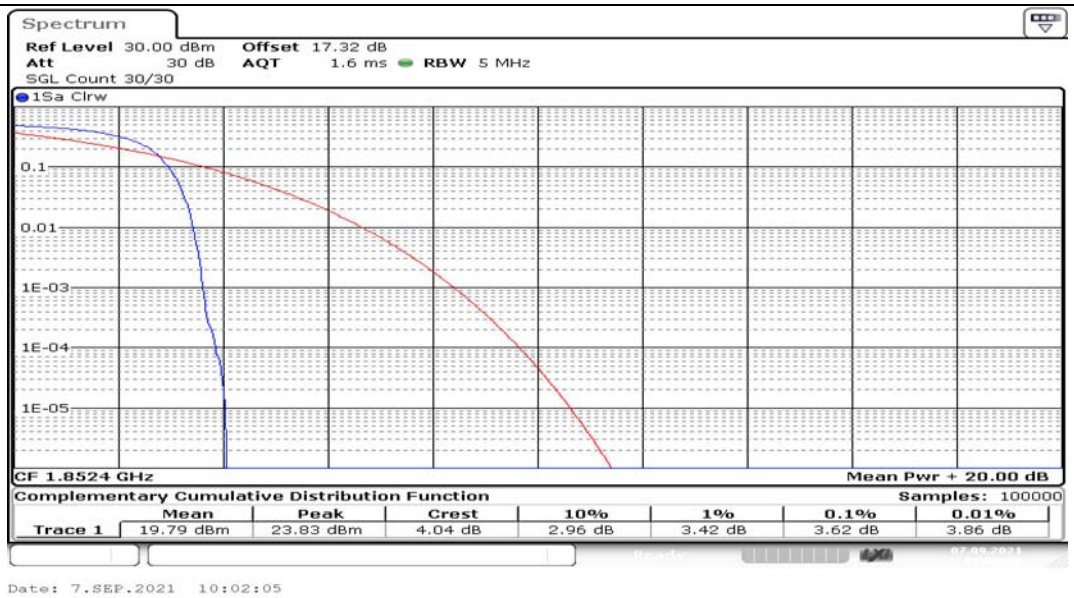


Channel 9400

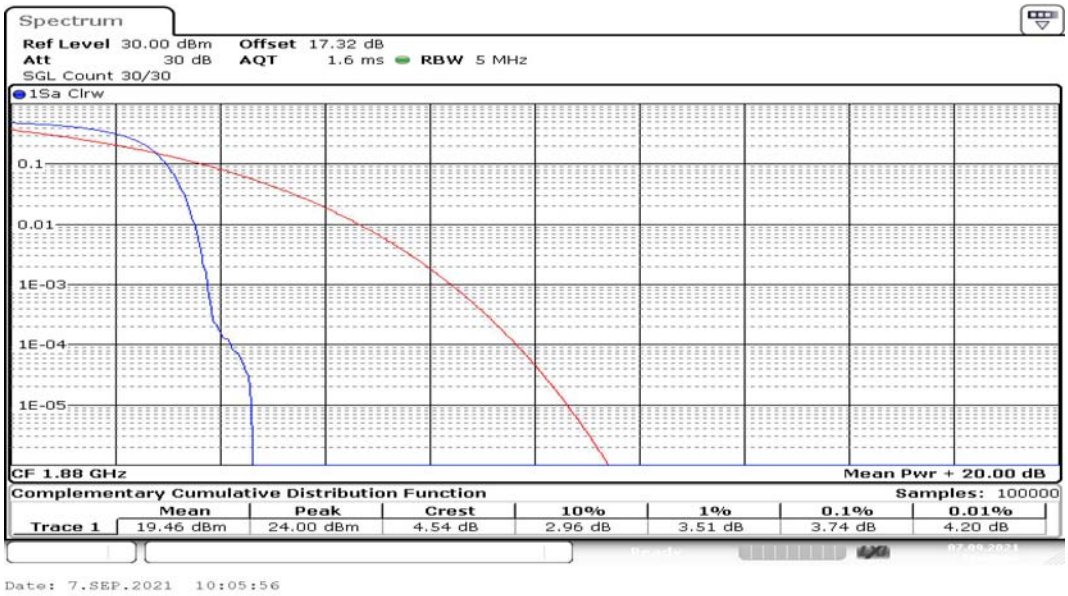


Channel 9538

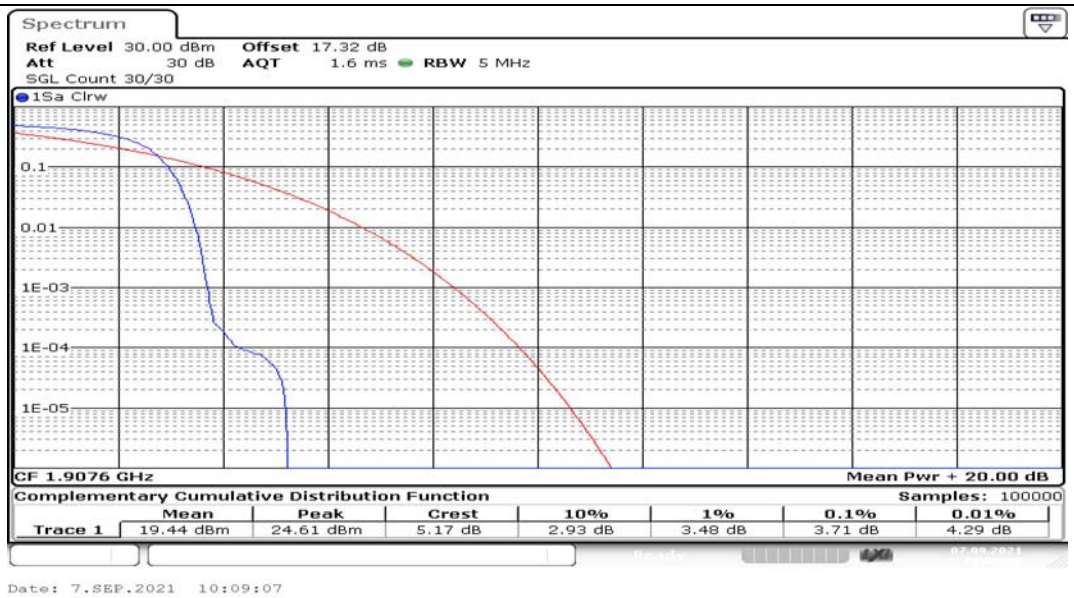
HSUPA Mode:



Channel 9262



Channel 9400



Channel 9538

8. Effective Radiated Power and Effective Isotropic Radiated Power

WCDMA band II

Mode		Carrier frequency (MHz)	Channel No.	Conducted Power (dBm)	ERP/EIRP (dBm)	ERP/EIRP (W)
Release 99	RMC,12.2kbps	1852.4	9262	22.85	21.75	0.150
		1880	9400	22.6	21.50	0.141
		1907.6	9538	22.68	21.58	0.144
HSDPA	Subtest1	1852.4	9262	21.92	20.82	0.121
		1880	9400	21.61	20.51	0.112
		1907.6	9538	21.69	20.59	0.115
	Subtest2	1852.4	9262	21.9	20.80	0.120
		1880	9400	21.61	20.51	0.112
		1907.6	9538	21.67	20.57	0.114
	Subtest3	1852.4	9262	21.37	20.27	0.106
		1880	9400	21.12	20.02	0.100
		1907.6	9538	21.19	20.09	0.102
	Subtest4	1852.4	9262	21.37	20.27	0.106
		1880	9400	21.11	20.01	0.100
		1907.6	9538	21.2	20.10	0.102
HSUPA	Subtest1	1852.4	9262	21.98	20.88	0.122
		1880	9400	21.68	20.58	0.114
		1907.6	9538	21.73	20.63	0.116
	Subtest2	1852.4	9262	21.95	20.85	0.122
		1880	9400	21.66	20.56	0.114
		1907.6	9538	21.71	20.61	0.115
	Subtest3	1852.4	9262	21.46	20.36	0.109
		1880	9400	21.17	20.07	0.102
		1907.6	9538	21.23	20.13	0.103
	Subtest4	1852.4	9262	21.92	20.82	0.121
		1880	9400	21.65	20.55	0.114
		1907.6	9538	21.71	20.61	0.115
	Subtest5	1852.4	9262	21.42	20.32	0.108
		1880	9400	21.14	20.04	0.101
		1907.6	9538	21.22	20.12	0.103

1. RF Power Output

WCDMA band V

Mode		Carrier frequency (MHz)	Channel No.	RF Power Output (dBm)
Release 99	RMC,12.2kbps	826.4	4132	22.86
		836.6	4183	22.85
		846.6	4233	22.85
HSDPA	Subtest1	826.4	4132	21.89
		836.6	4183	22.41
		846.6	4233	22.41
	Subtest2	826.4	4132	22.39
		836.6	4183	22.40
		846.6	4233	22.40
	Subtest3	826.4	4132	21.84
		836.6	4183	21.89
		846.6	4233	21.90
	Subtest4	826.4	4132	21.85
		836.6	4183	21.90
		846.6	4233	21.91
HSUPA	Subtest1	826.4	4132	22.37
		836.6	4183	22.38
		846.6	4233	22.40
	Subtest2	826.4	4132	22.36
		836.6	4183	22.39
		846.6	4233	22.39
	Subtest3	826.4	4132	21.87
		836.6	4183	21.88
		846.6	4233	21.90
	Subtest4	826.4	4132	22.33
		836.6	4183	22.39
		846.6	4233	22.38
	Subtest5	826.4	4132	21.86
		836.6	4183	21.90
		846.6	4233	21.89

2. Occupied Bandwidth

WCDMA band V

REL99 Mode:

Carrier frequency (MHz)	Channel No.	Bandwidth of 99% Power (MHz)
826.4	4132	4.15
836.6	4183	4.17
846.6	4233	4.15

HSDPA Mode:

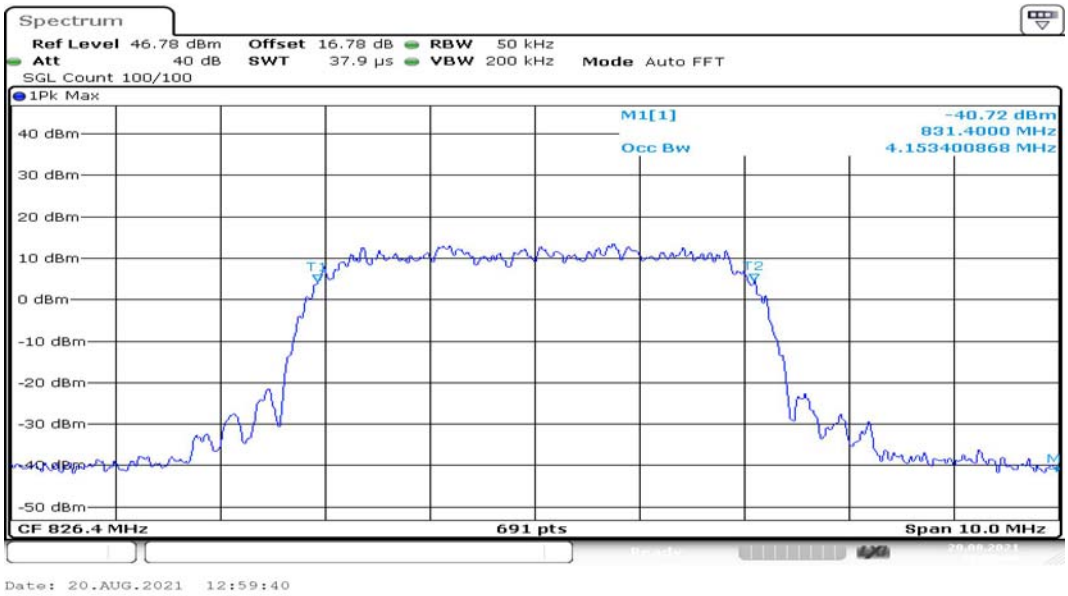
Carrier frequency (MHz)	Channel No.	Bandwidth of 99% Power (MHz)
826.4	4132	4.15
836.6	4183	4.14
846.6	4233	4.14

HSUPA Mode:

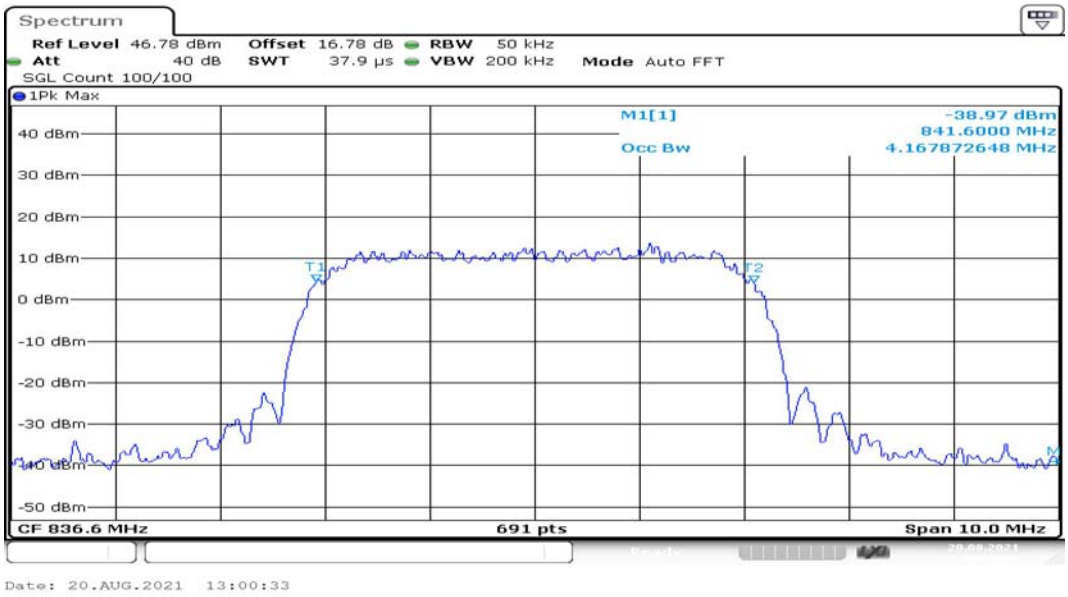
Carrier frequency (MHz)	Channel No.	Bandwidth of 99% Power (MHz)
826.4	4132	4.17
836.6	4183	4.15
846.6	4233	4.12

WCDMA band V

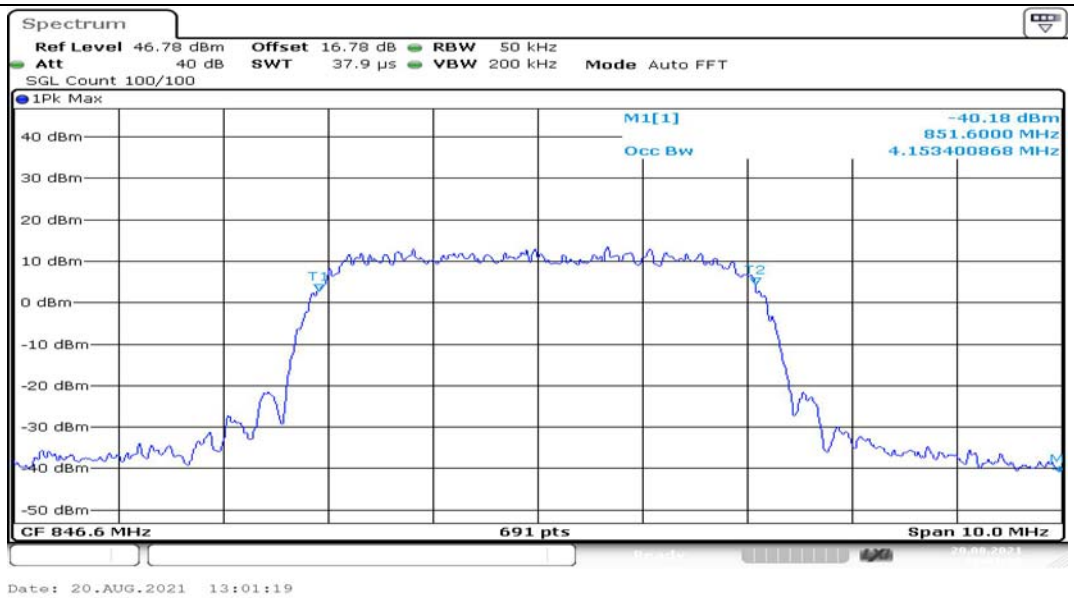
REL99 Mode:



Channel 4132



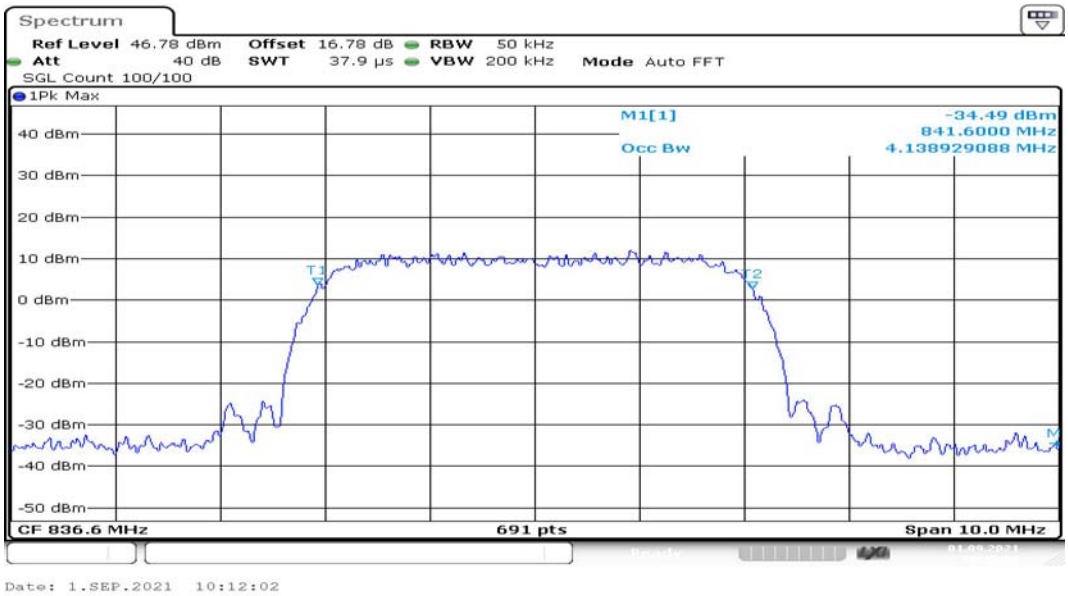
Channel 4183



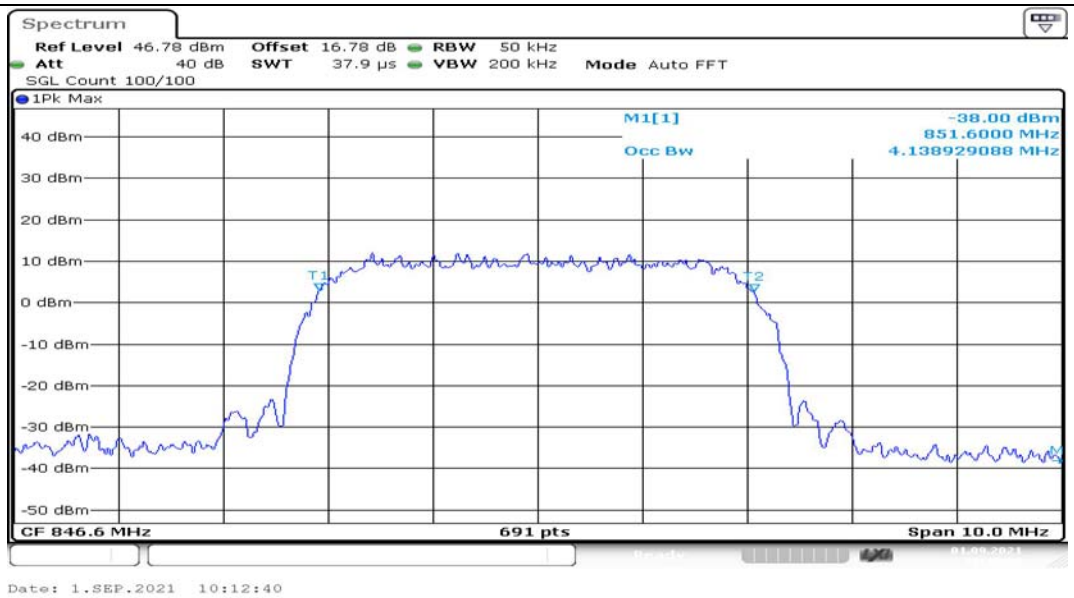
Channel 4233

HSDPA Mode:

Channel 4132

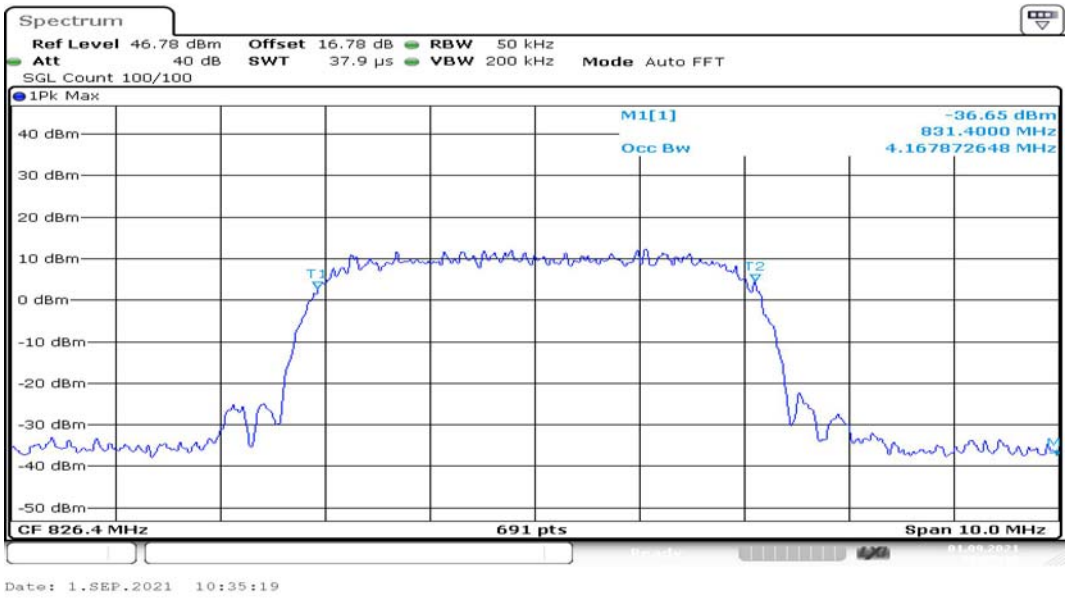


Channel 4183

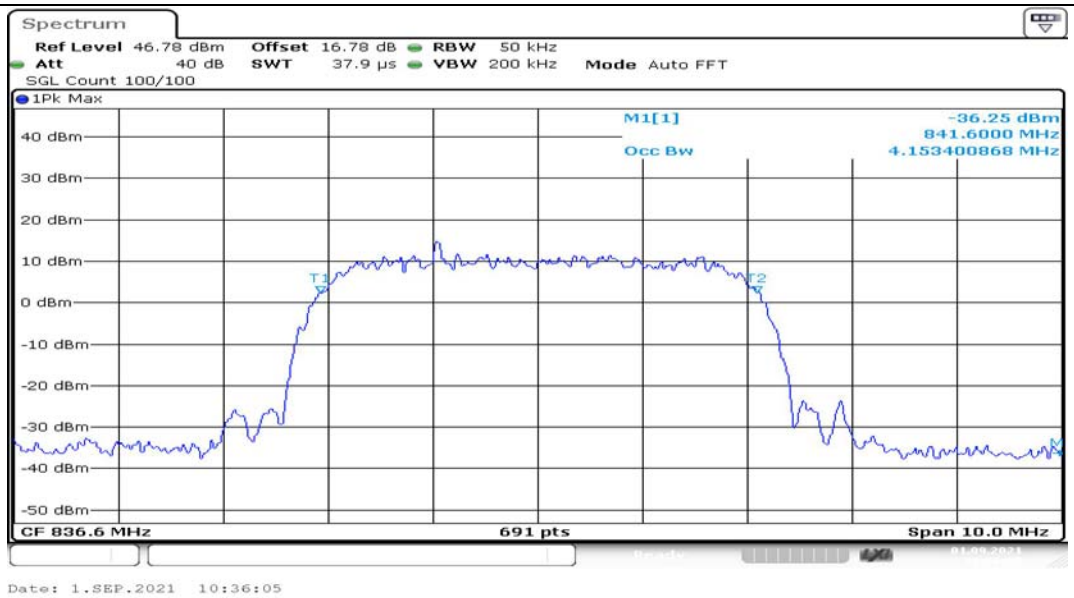


Channel 4233

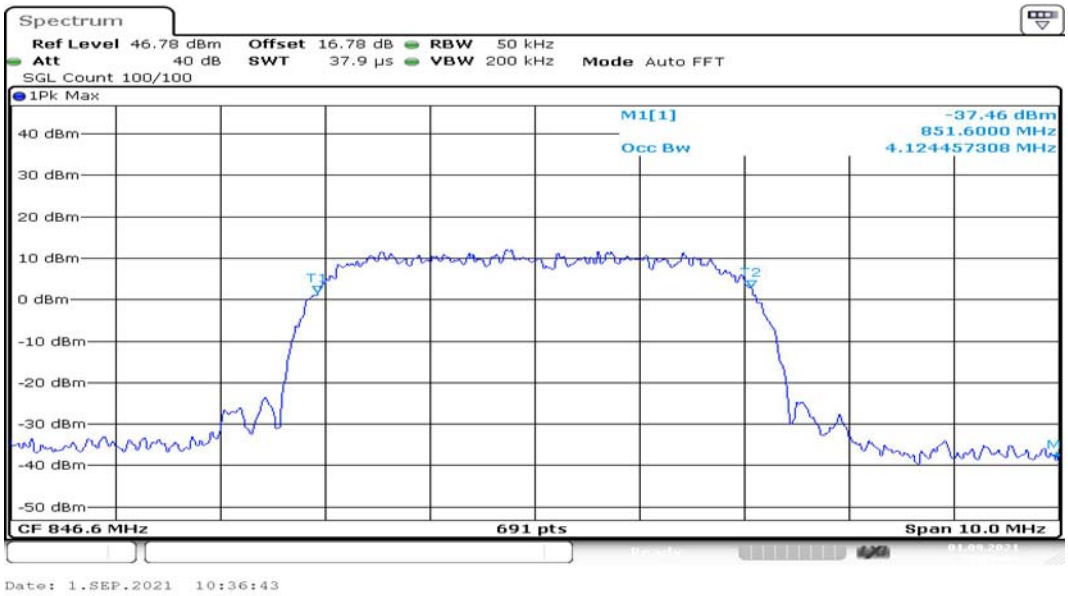
HSUPA Mode:



Channel 4132



Channel 4183



Channel 4233

3. Emission Bandwidth

WCDMA band V

REL99 Mode:

Carrier frequency (MHz)	Channel No.	Bandwidth of -26dBc Power (MHz)
826.4	4132	4.69
836.6	4183	4.67
846.6	4233	4.67

HSDPA Mode:

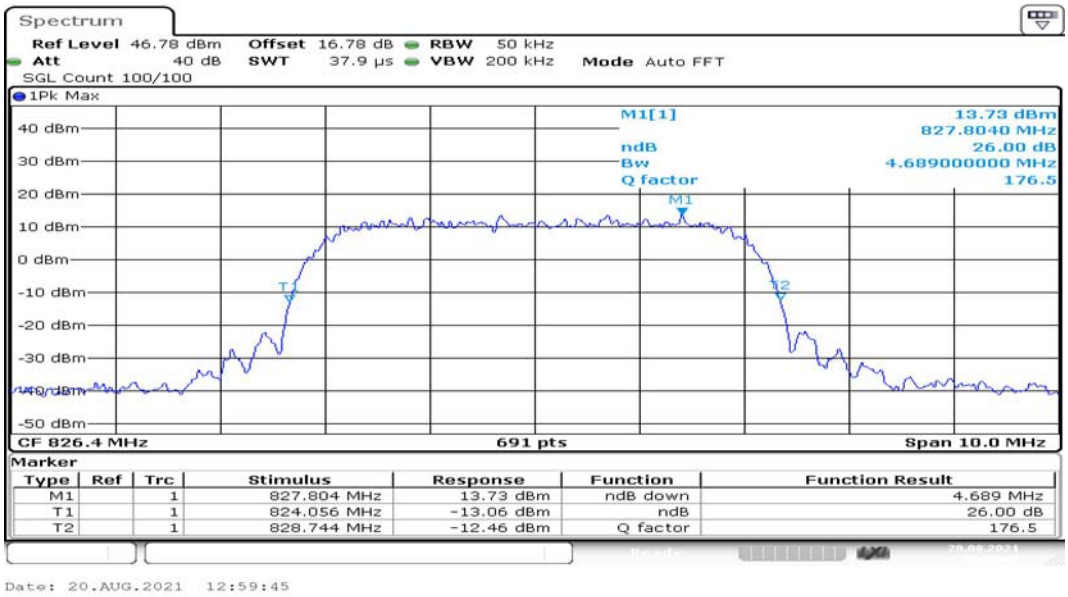
Carrier frequency (MHz)	Channel No.	Bandwidth of -26dBc Power (MHz)
826.4	4132	4.69
836.6	4183	4.72
846.6	4233	4.72

HSUPA Mode:

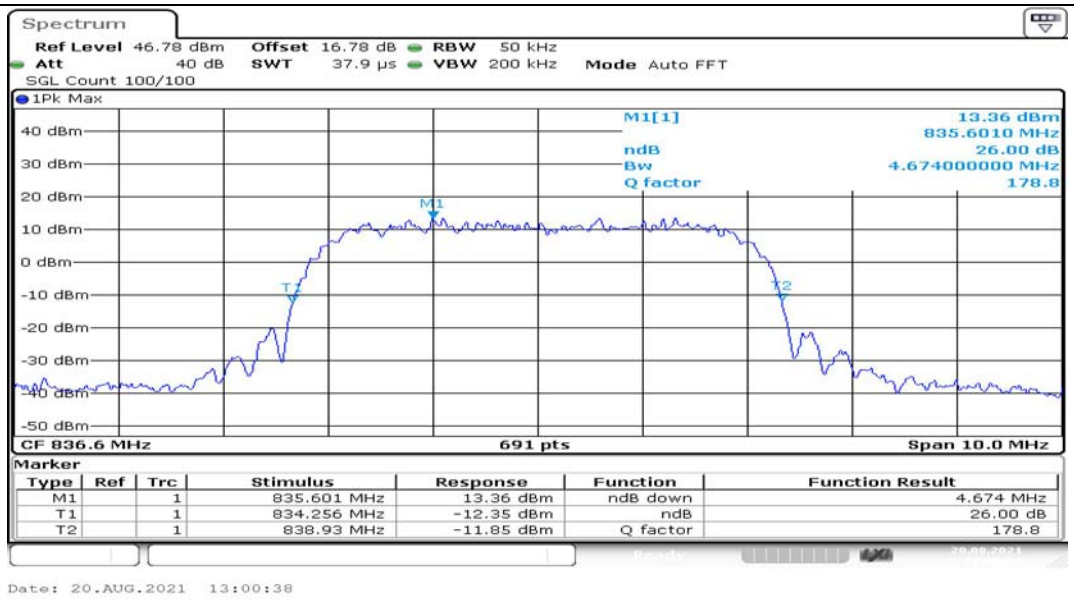
Carrier frequency (MHz)	Channel No.	Bandwidth of -26dBc Power (MHz)
826.4	4132	4.69
836.6	4183	4.72
846.6	4233	4.66

WCDMA band V

REL99 Mode:

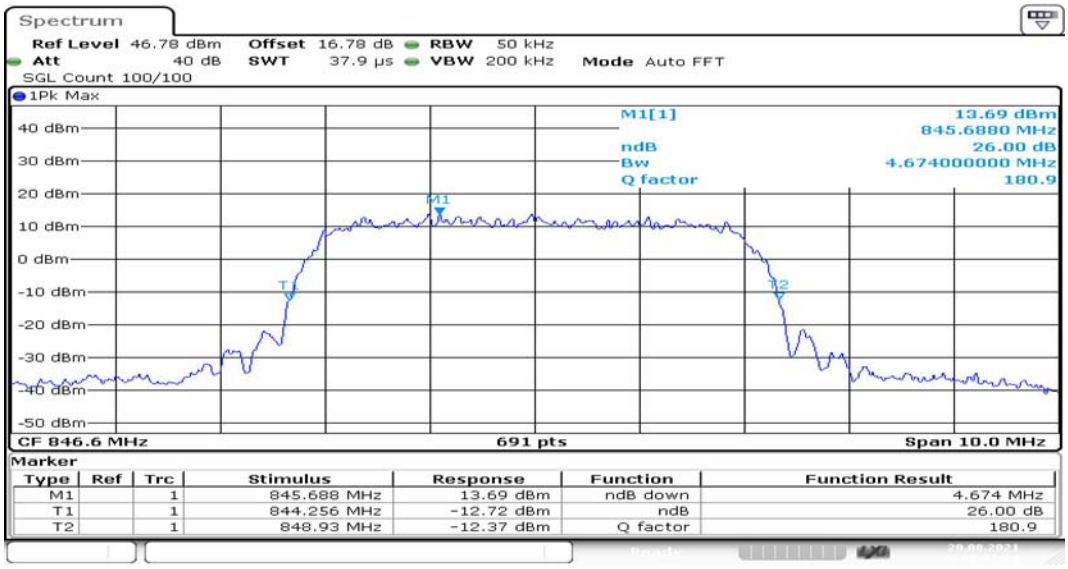


Channel 4132



Date: 20.AUG.2021 13:00:38

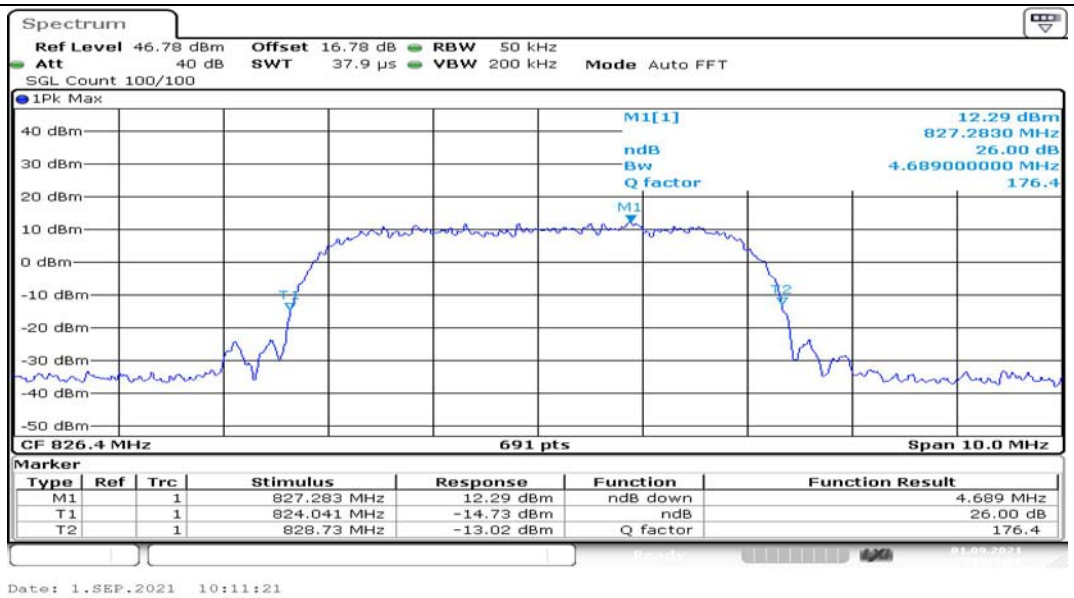
Channel 4183



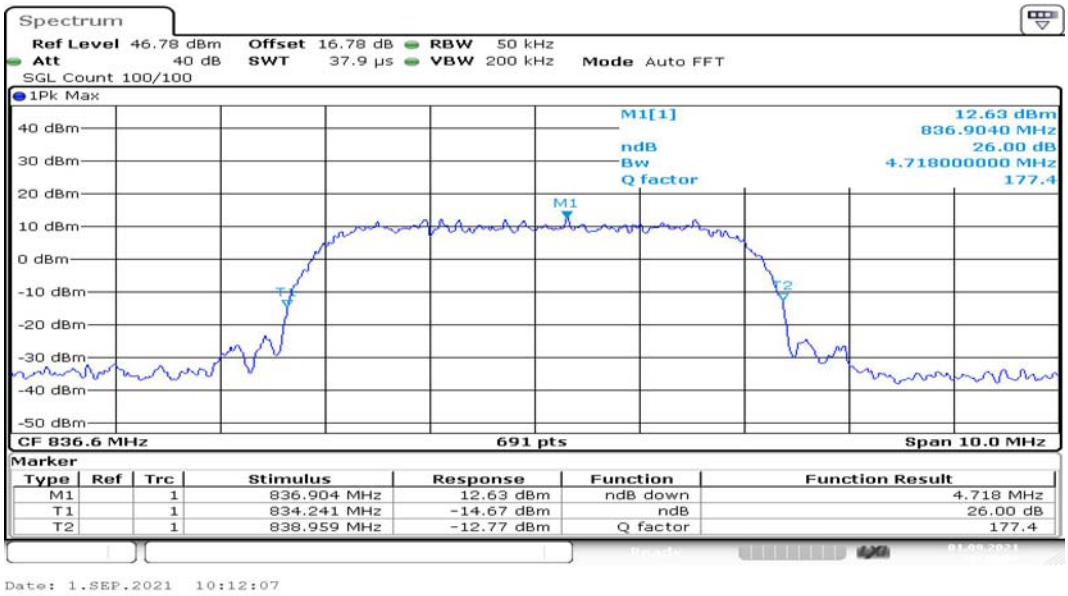
Date: 20.AUG.2021 13:01:23

Channel 4233

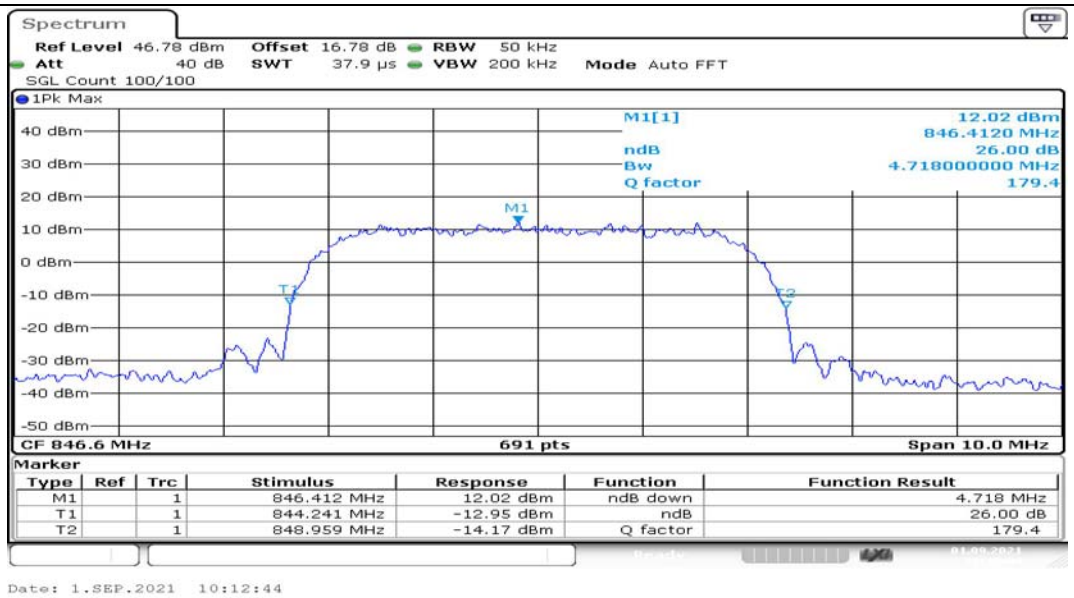
HSDPA Mode:



Channel 4132

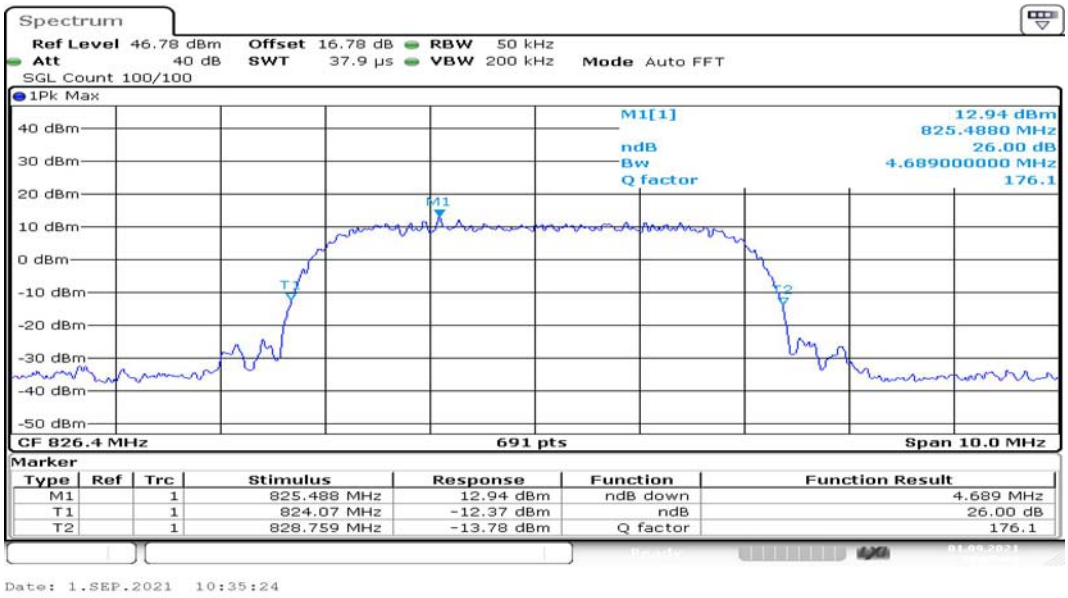


Channel 4183

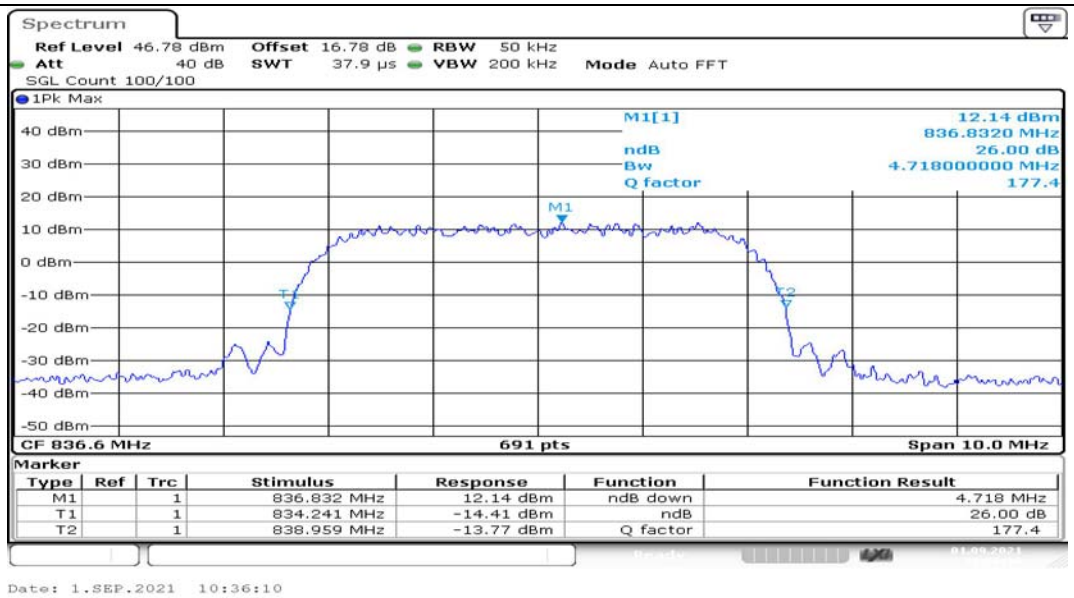


Channel 4233

HSUPA Mode:

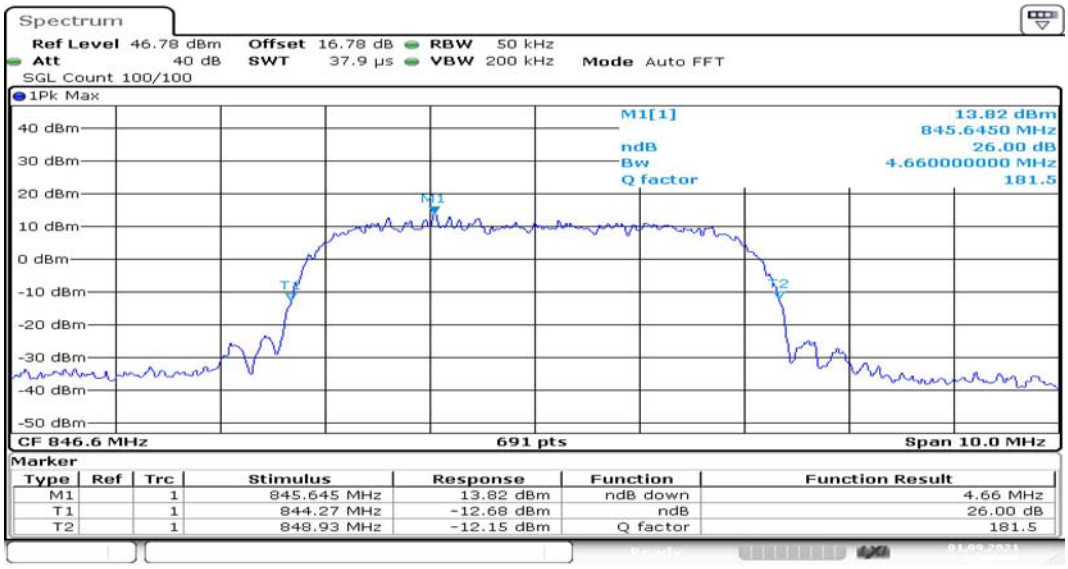


Channel 4132



Date: 1.SEP.2021 10:36:10

Channel 4183



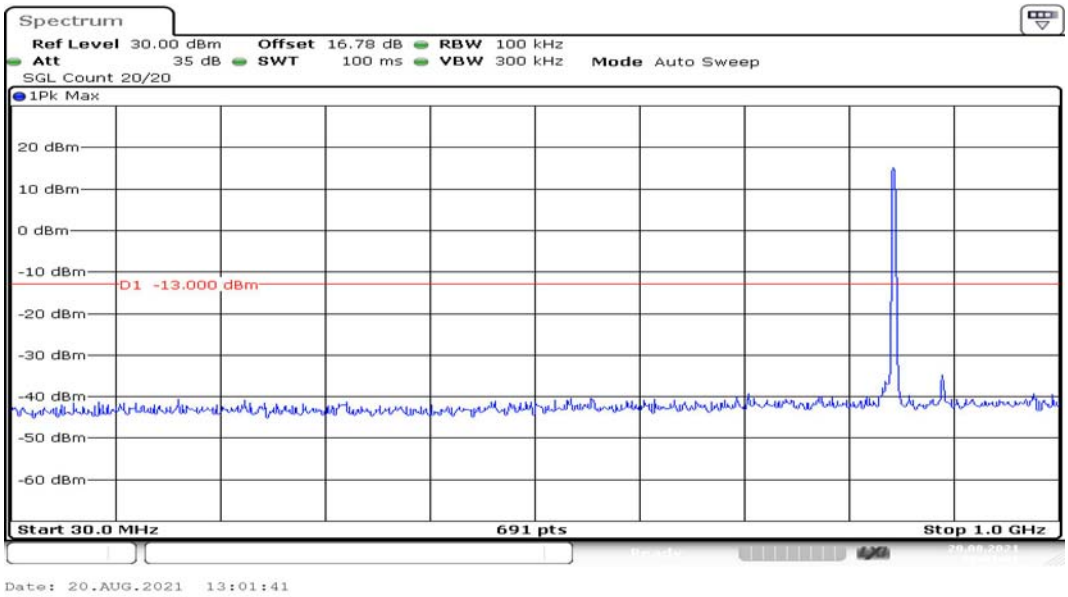
Date: 1.SEP.2021 10:36:47

Channel 4233

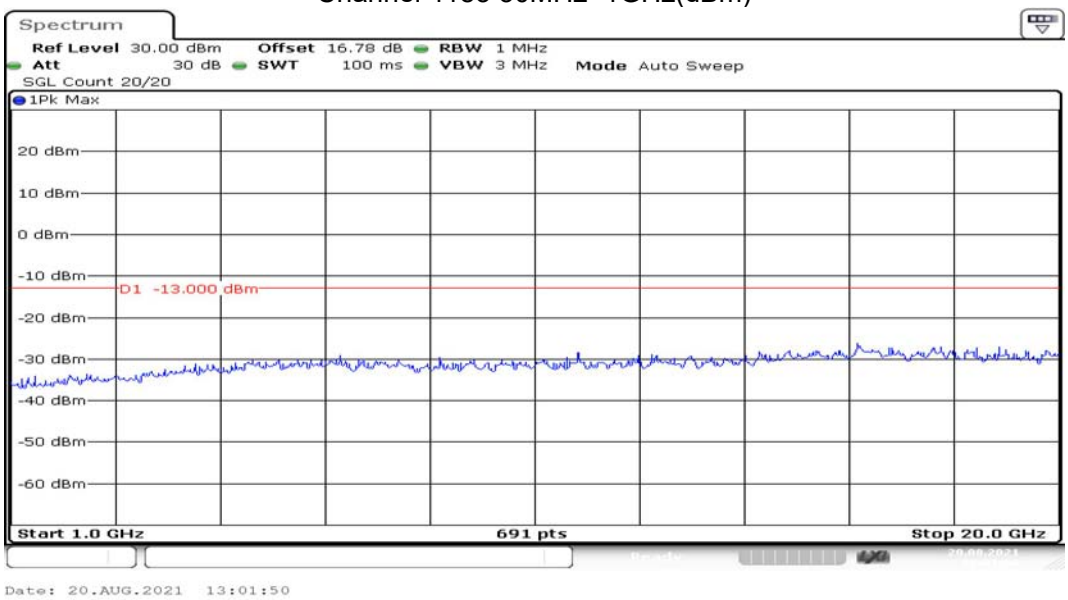
4. Spurious Emissions at antenna terminal

WCDMA band V

REL99 Mode:



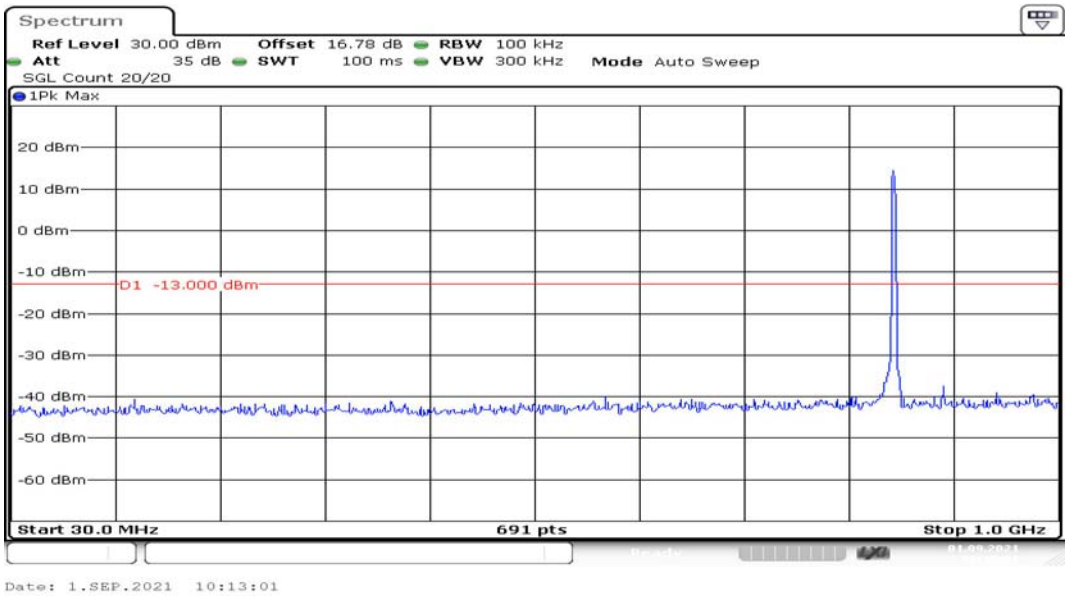
Channel 4183 30MHz~1GHz(dBm)



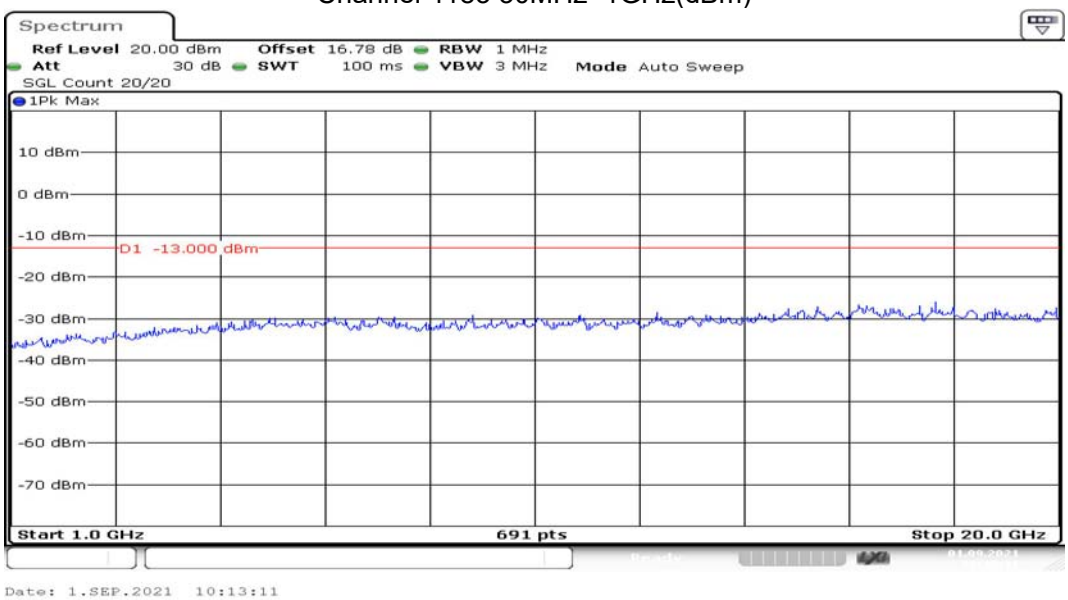
Channel 4183 1GHz~20GHz(dBm)

Note: The signal beyond the limit is the signal transmitted by EUT.

HSDPA Mode:



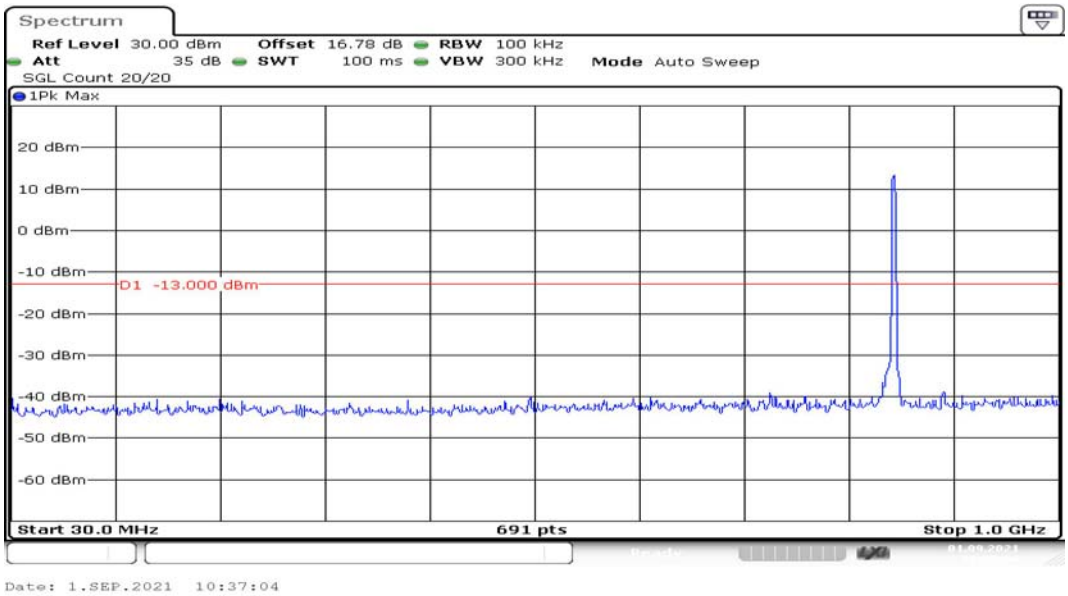
Channel 4183 30MHz~1GHz(dBm)



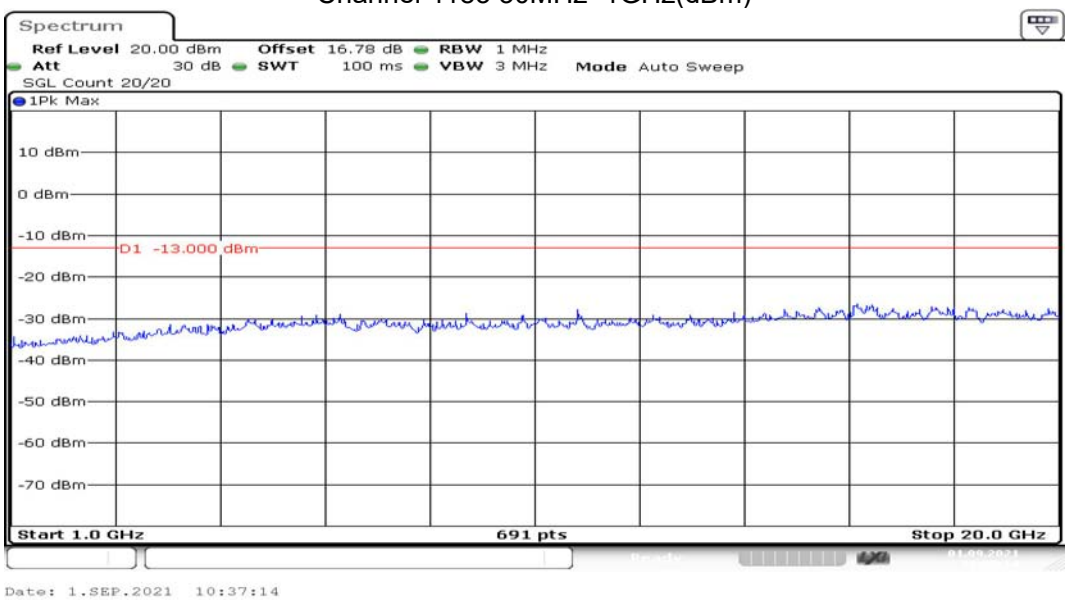
Channel 4183 1GHz~20GHz(dBm)

Note: The signal beyond the limit is the signal transmitted by EUT.

HSUPA Mode:



Channel 4183 30MHz~1GHz(dBm)



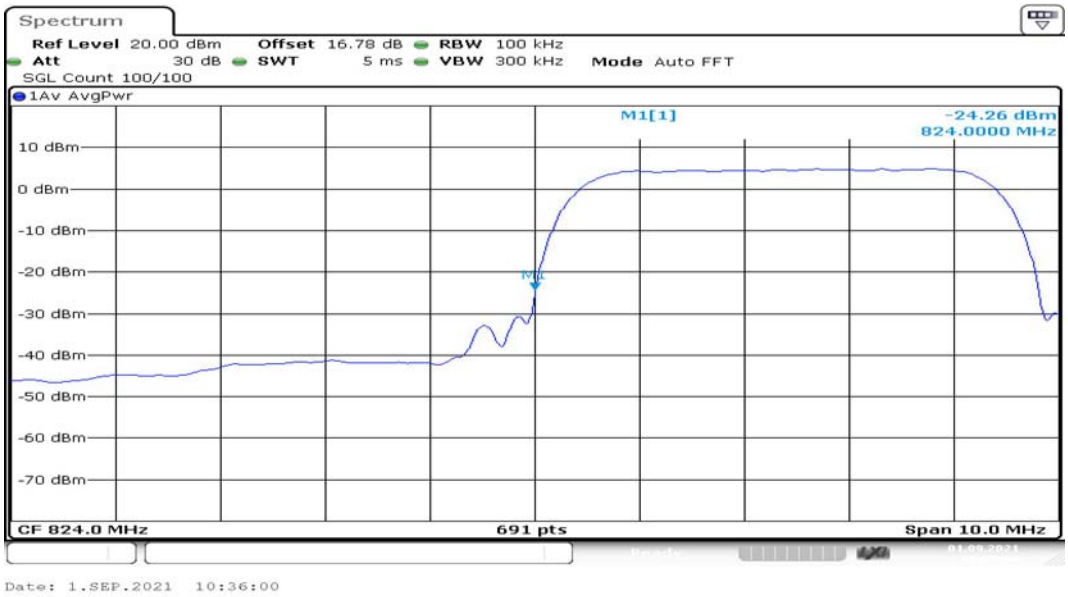
Channel 4183 1GHz~20GHz(dBm)

Note: The signal beyond the limit is the signal transmitted by EUT.

5. Band Edges Compliance

WCDMA band V

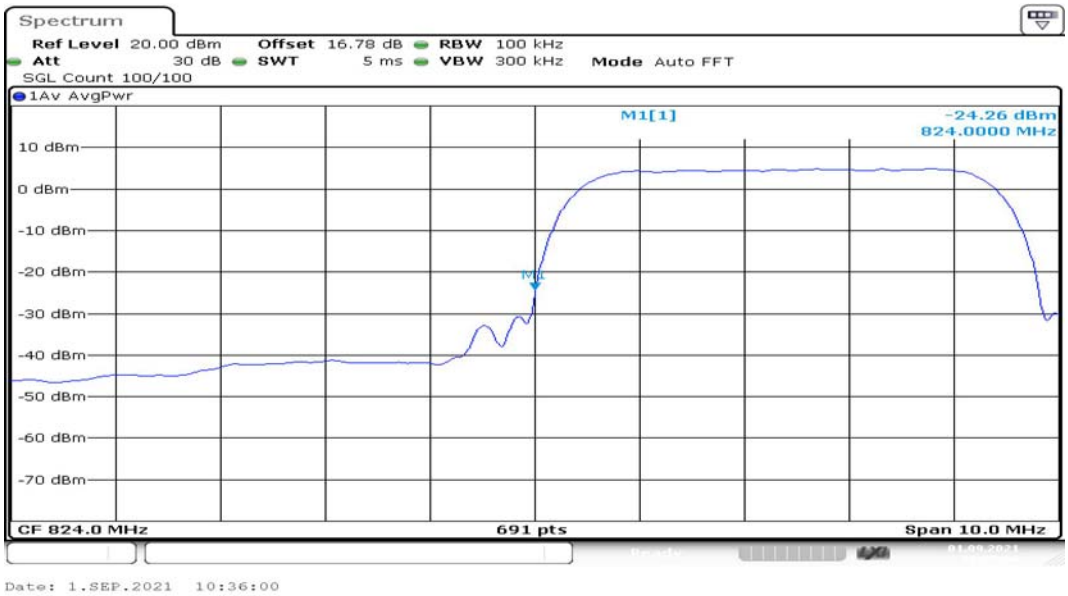
REL99 Mode:



Channel 4132

Channel 4233

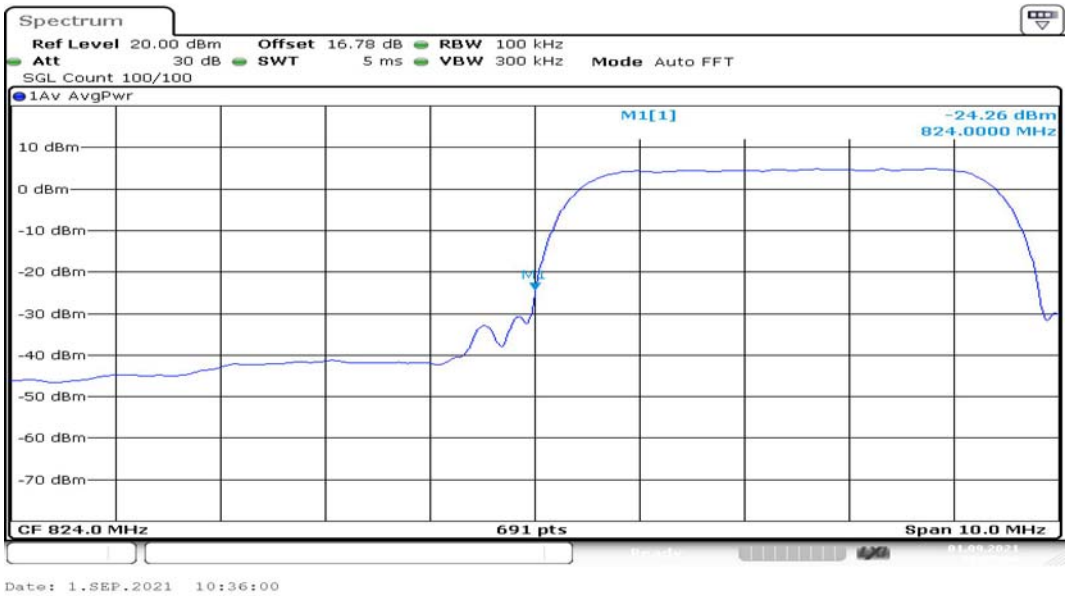
HSDPA Mode:



Channel 4132

Channel 4233

HSUPA Mode:



Channel 4132

Channel 4233

6. Frequency Stability

WCDMA band V

REL99 Mode:

Temperature(°C)	Test Result (ppm)@NV		
	Channel 4132	Channel 4183	Channel 4233
-30	-0.003	-0.004	-0.001
-20	-0.003	-0.004	-0.001
-10	-0.004	-0.005	-0.003
0	-0.003	-0.004	-0.004
+10	-0.003	-0.004	-0.006
+20	0.000	0.000	0.000
+30	-0.005	-0.003	-0.003
+40	-0.006	-0.004	-0.003
+50	-0.004	-0.005	-0.004
Voltage	Test Result (ppm)@NT		
	Channel 4132	Channel 4183	Channel 4233
LV	-0.003	-0.004	-0.001
HV	-0.003	-0.004	-0.001

HSDPA Mode:

Temperature(°C)	Test Result (ppm)@NV		
	Channel 4132	Channel 4183	Channel 4233
-30	0.001	0.000	0.000
-20	0.001	0.001	0.001
-10	0.002	0.000	0.000
0	0.001	0.000	-0.001
+10	0.001	-0.001	0.005
+20	0.000	0.000	0.000
+30	0.000	0.000	-0.001
+40	0.000	0.000	0.000
+50	0.002	0.000	-0.001
Voltage	Test Result (ppm)@NT		
	Channel 4132	Channel 4183	Channel 4233
LV	0.003	0.000	-0.001
HV	0.000	0.001	0.000

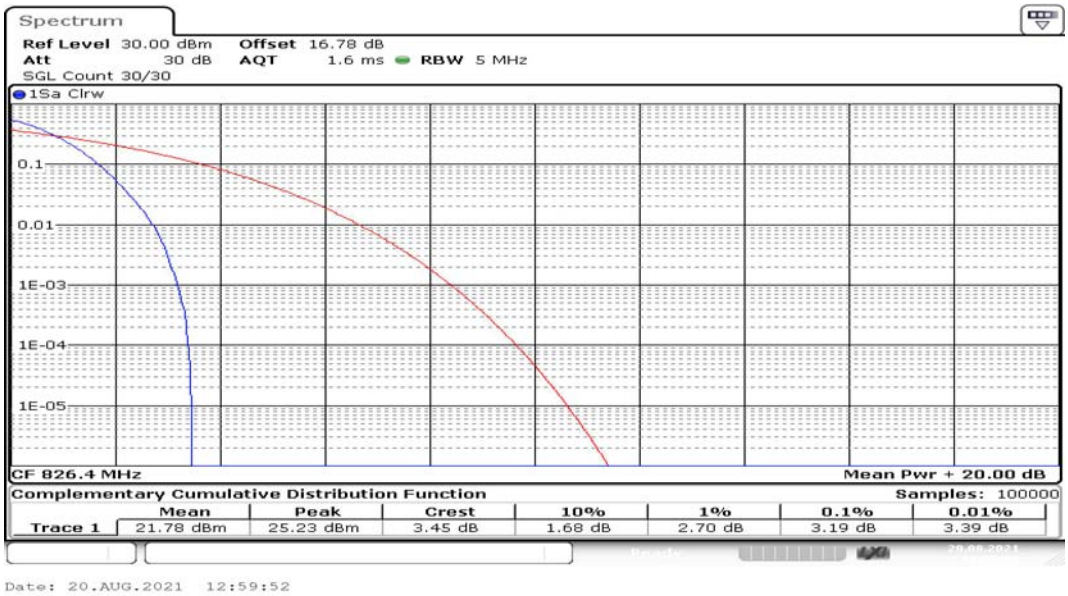
HSUPA Mode:

Temperature(°C)	Test Result (ppm)@NV		
	Channel 4132	Channel 4183	Channel 4233
-30	0.000	-0.008	0.007
-20	0.001	-0.024	-0.003
-10	0.002	-0.013	-0.003
0	-0.002	-0.022	-0.007
+10	-0.001	-0.024	-0.004
+20	0.000	0.000	0.000
+30	-0.004	-0.023	-0.004
+40	-0.003	-0.025	-0.003
+50	-0.003	-0.025	-0.004
Voltage	Test Result (ppm)@NT		
	Channel 4132	Channel 4183	Channel 4233
LV	-0.001	-0.023	-0.005
HV	0.007	-0.025	-0.007

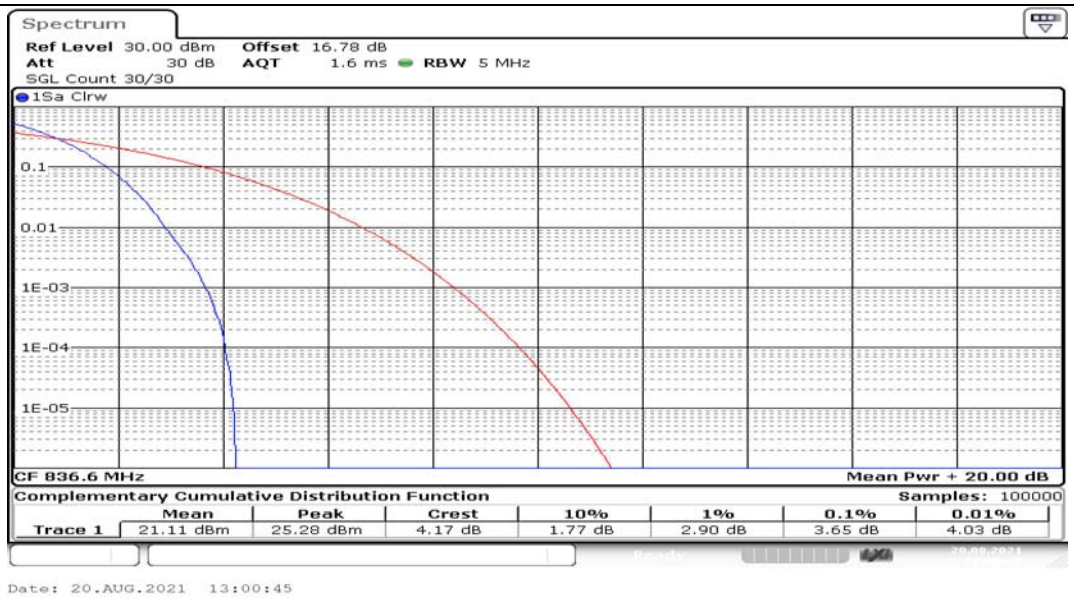
7. Peak-Average Ratio

WCDMA band V

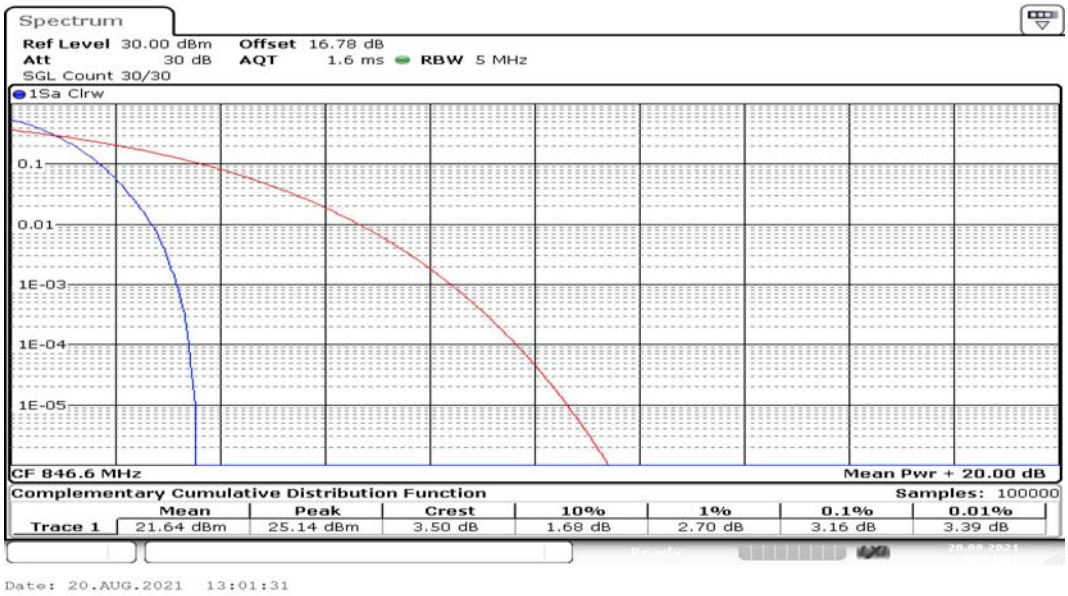
REL99 Mode:



Channel 4132

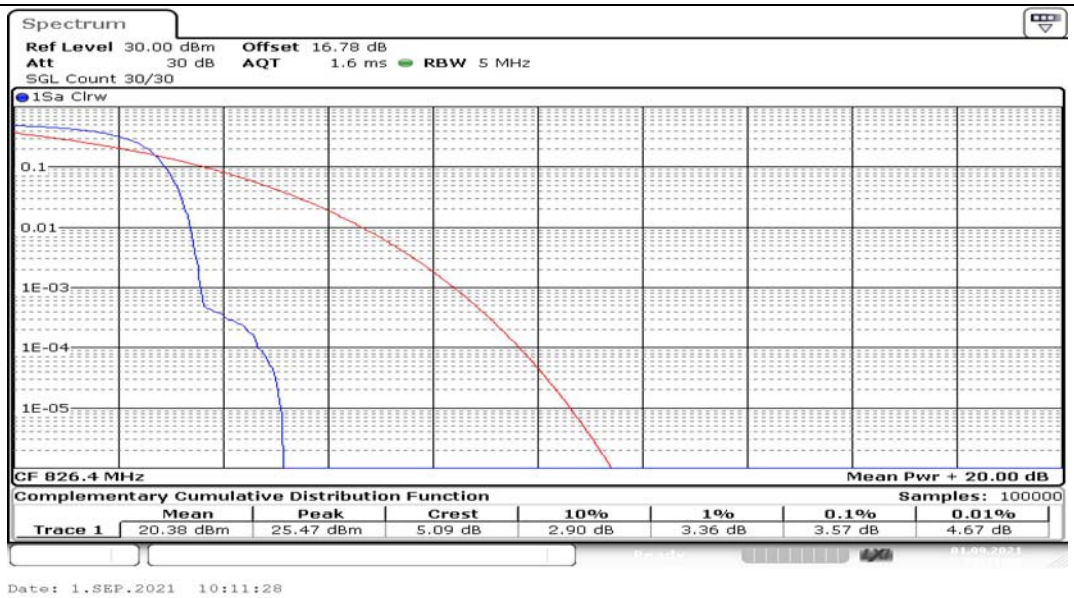


Channel 4183

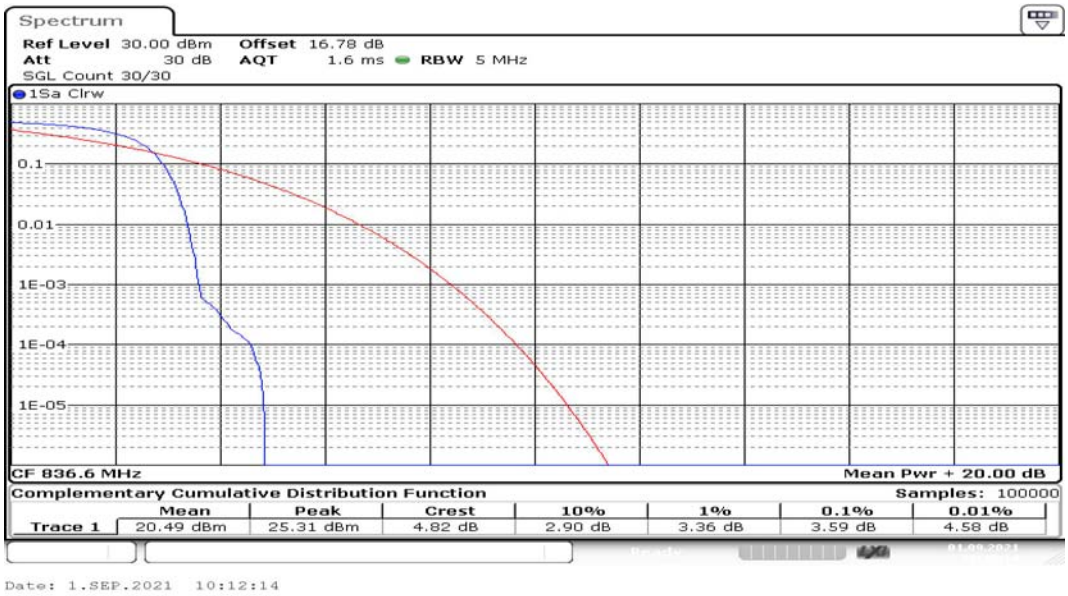


Channel 4233

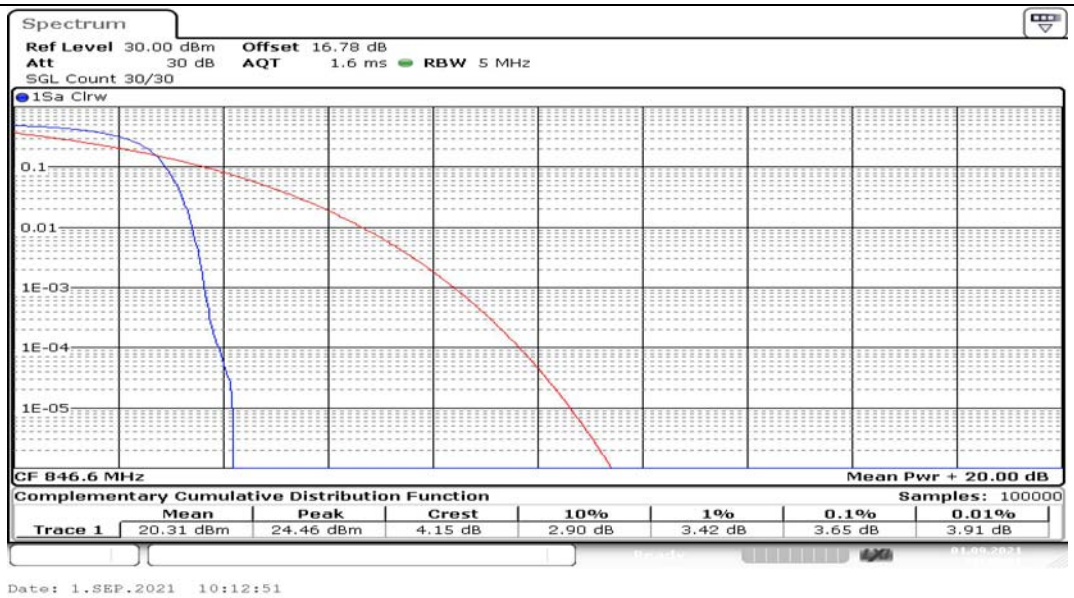
HSDPA Mode:



Channel 4132

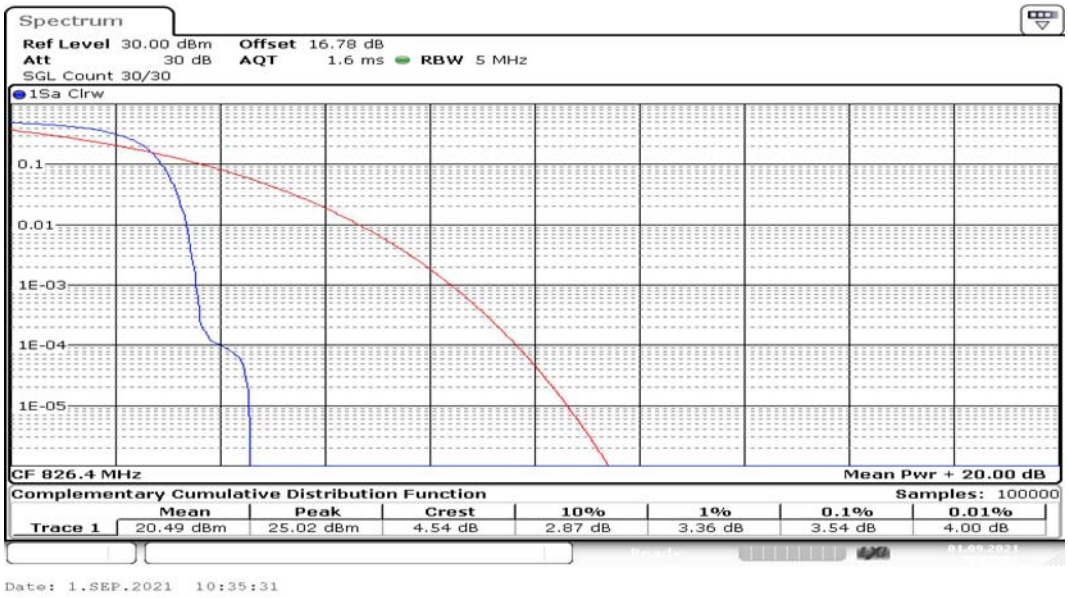


Channel 4183

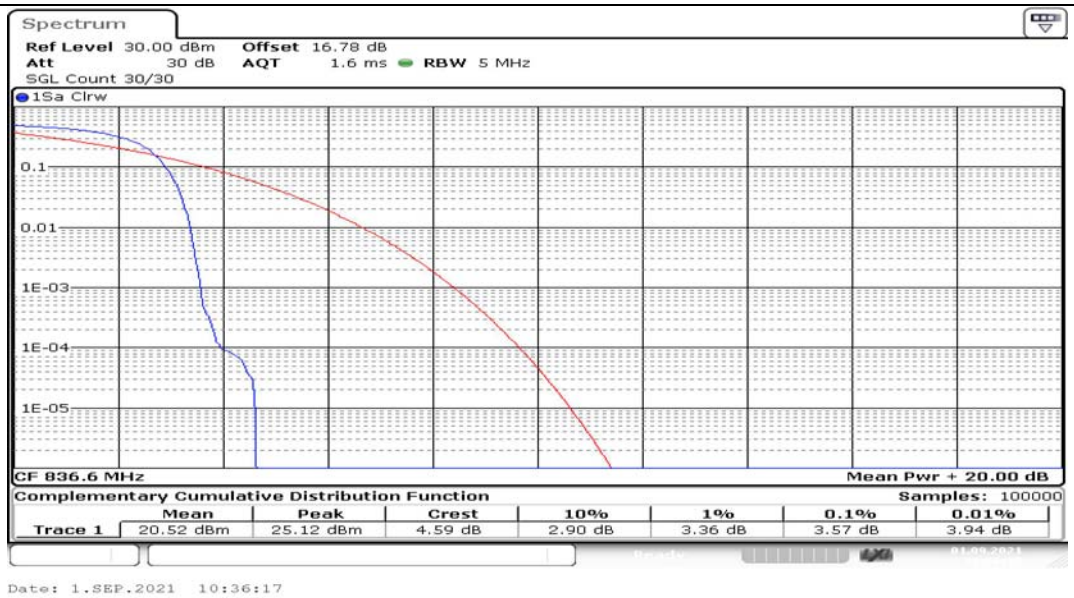


Channel 4233

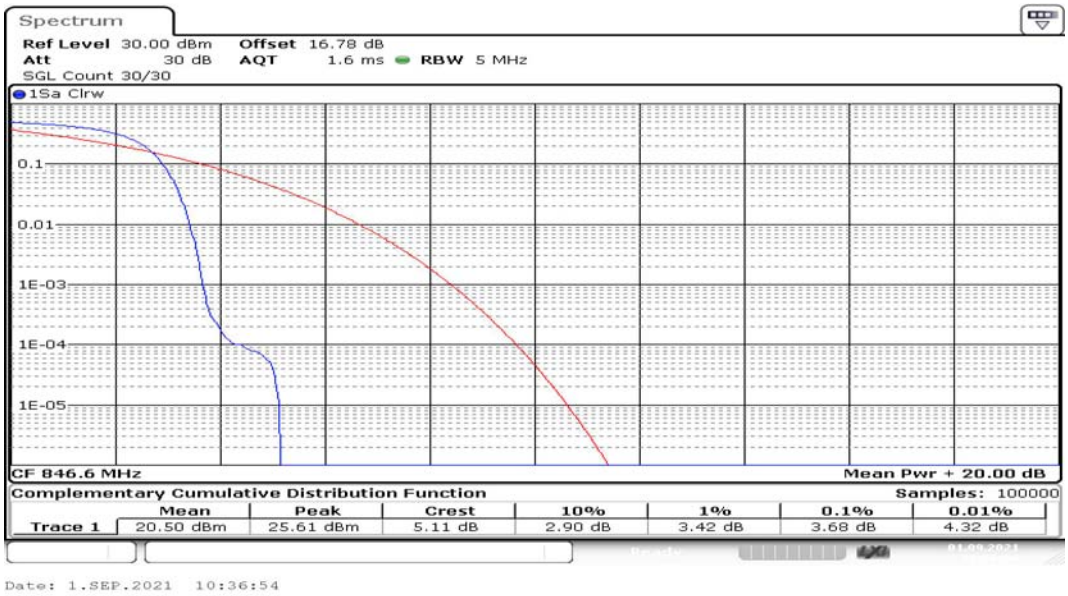
HSUPA Mode:



Channel 4132



Channel 4183



Channel 4233

8. Effective Radiated Power and Effective Isotropic Radiated Power

WCDMA band V

Mode		Carrier frequency (MHz)	Channel No.	Conducted Power (dBm)	ERP/EIRP (dBm)	ERP/EIRP (W)
Release 99	RMC,12.2kbps	826.4	4132	22.86	14.71	0.030
		836.6	4183	22.85	14.70	0.030
		846.6	4233	22.85	14.70	0.030
HSDPA	Subtest1	826.4	4132	21.89	13.74	0.024
		836.6	4183	22.41	14.26	0.027
		846.6	4233	22.41	14.26	0.027
	Subtest2	826.4	4132	22.39	14.24	0.027
		836.6	4183	22.4	14.25	0.027
		846.6	4233	22.4	14.25	0.027
	Subtest3	826.4	4132	21.84	13.69	0.023
		836.6	4183	21.89	13.74	0.024
		846.6	4233	21.9	13.75	0.024
	Subtest4	826.4	4132	21.85	13.7	0.023
		836.6	4183	21.9	13.75	0.024
		846.6	4233	21.91	13.76	0.024
HSUPA	Subtest1	826.4	4132	22.37	14.22	0.026
		836.6	4183	22.38	14.23	0.026
		846.6	4233	22.4	14.25	0.027
	Subtest2	826.4	4132	22.36	14.21	0.026
		836.6	4183	22.39	14.24	0.027
		846.6	4233	22.39	14.24	0.027
	Subtest3	826.4	4132	21.87	13.72	0.024
		836.6	4183	21.88	13.73	0.024
		846.6	4233	21.9	13.75	0.024
	Subtest4	826.4	4132	22.33	14.18	0.026
		836.6	4183	22.39	14.24	0.027
		846.6	4233	22.38	14.23	0.026
	Subtest5	826.4	4132	21.86	13.71	0.023
		836.6	4183	21.9	13.75	0.024
		846.6	4233	21.89	13.74	0.024

APPENDIX B – TEST DATA OF RADIATED EMISSION

Radiated Spurious Emissions

WCDMA band II
Test result:
WCDMA Mode:
Channel 9262

Frequency (MHz)	Power (dBm)	Limited (dBm)	Polarization
2458.13	-48.86	-13	Vertical
2780.31	-47.03	-13	Vertical
3728.12	-40.49	-13	Vertical
6675.40	-39.88	-13	Vertical
9961.67	-36.86	-13	Vertical
17821.33	-34.31	-13	Vertical

Channel 9400

Frequency (MHz)	Power (dBm)	Limited (dBm)	Polarization
2461.38	-48.76	-13	Vertical
2779.53	-47.09	-13	Vertical
3726.60	-41.30	-13	Vertical
6675.96	-39.15	-13	Vertical
9962.57	-37.21	-13	Vertical
17818.49	-34.39	-13	Vertical

Channel 9538

Frequency (MHz)	Power (dBm)	Limited (dBm)	Polarization
2460.39	-48.96	-13	Vertical
2781.81	-47.11	-13	Vertical
3727.47	-40.36	-13	Vertical
6678.84	-39.19	-13	Vertical
9961.13	-37.37	-13	Vertical
17822.03	-34.37	-13	Vertical

HSDPA/HSUPA Mode:
Channel 9262

Frequency (MHz)	Power (dBm)	Limited (dBm)	Polarization
2457.73	-49.44	-13	Vertical
2781.66	-47.67	-13	Vertical
3724.79	-41.14	-13	Vertical
6676.49	-40.10	-13	Vertical
9963.30	-37.45	-13	Vertical
17819.82	-33.72	-13	Vertical

Channel 9400

Frequency (MHz)	Power (dBm)	Limited (dBm)	Polarization
2460.14	-48.94	-13	Vertical
2779.26	-47.67	-13	Vertical
3726.78	-41.19	-13	Vertical
6675.55	-40.02	-13	Vertical
9960.53	-37.09	-13	Vertical
17821.30	-34.32	-13	Vertical

Channel 9538

Frequency (MHz)	Power (dBm)	Limited (dBm)	Polarization
2457.91	-48.74	-13	Vertical
2780.37	-47.28	-13	Vertical
3726.79	-40.95	-13	Vertical
6678.85	-39.53	-13	Vertical
9960.21	-37.03	-13	Vertical
17819.40	-33.71	-13	Vertical

WCDMA band V
Test result:
WCDMA Mode:
Channel 4132

Frequency (MHz)	Power (dBm)	Limited (dBm)	Polarization
1649.19	-52.86	-13	Vertical
1667.51	-51.66	-13	Vertical
2535.06	-44.48	-13	Vertical
2577.48	-44.53	-13	Vertical
8962.12	-39.41	-13	Vertical
9971.18	-36.77	-13	Vertical

Channel 4183

Frequency (MHz)	Power (dBm)	Limited (dBm)	Polarization
1647.81	-52.72	-13	Vertical
1668.04	-50.91	-13	Vertical
2535.71	-44.81	-13	Vertical
2577.26	-43.81	-13	Vertical
8961.99	-39.49	-13	Vertical
9972.67	-36.63	-13	Vertical

Channel 4233

Frequency (MHz)	Power (dBm)	Limited (dBm)	Polarization
1650.01	-53.27	-13	Vertical
1668.16	-51.56	-13	Vertical
2534.32	-44.02	-13	Vertical
2577.34	-43.66	-13	Vertical
8964.39	-39.43	-13	Vertical
9970.33	-36.63	-13	Vertical

HSDPA/HSUPA Mode:
Channel 4132

Frequency (MHz)	Power (dBm)	Limited (dBm)	Polarization
1647.07	-52.67	-13	Vertical
1667.21	-51.60	-13	Vertical
2533.71	-44.80	-13	Vertical
2577.69	-43.79	-13	Vertical
8962.87	-39.96	-13	Vertical
9969.94	-36.68	-13	Vertical

Channel 4183

Frequency (MHz)	Power (dBm)	Limited (dBm)	Polarization
1649.58	-52.89	-13	Vertical
1666.98	-51.03	-13	Vertical
2533.76	-44.47	-13	Vertical
2576.05	-43.89	-13	Vertical
8964.00	-39.23	-13	Vertical
9970.77	-36.69	-13	Vertical

Channel 4233

Frequency (MHz)	Power (dBm)	Limited (dBm)	Polarization
1647.09	-52.88	-13	Vertical
1666.82	-51.59	-13	Vertical
2533.68	-44.65	-13	Vertical
2577.78	-43.80	-13	Vertical
8962.50	-39.49	-13	Vertical
9972.24	-36.82	-13	Vertical

---The end of the test report---