

FCC Test Report (Part 22&24&27)

Product Name : Mobile Computer
Model No : RS35
FCC ID : Q3N-RS35

Applicant : Cipherlab Co, Ltd.

Address : 12F, NO.333, SEC.2, DUNHUA S. RD., TAIPEI, TAIWAN, R.O.C.

Date of Receipt : 2020/06/08
Issued Date : 2020/08/08
Report No. : 2060284R-E3042110011
Report Version : V1.0



The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standard through the calibration report of the equipment and evaluated measurement uncertainty herein.

This report must not be used to claim product endorsement by TAF or any agency of the government.

The test report shall not be reproduced without the written approval of DEKRA Testing and Certification Co., Ltd.

Measurement uncertainties evaluated for each testing system and associated connections are given here to provide the system information for reference. Compliance determinations do not take into account measurement uncertainties for each testing system, but are based on the results of the compliance measurement.

Test Report

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Product Name : Mobile Computer
Applicant : Cipherlab Co, Ltd.
Address : 12F, NO.333, SEC.2, DUNHUA S. RD., TAIPEI, TAIWAN, R.O.C.
Manufacturer : Cipherlab Co, Ltd.
Trade Name : CIPHERLAB
Model No. : RS35
EUT Rated Voltage : DC 3.6V~4.4V
EUT Test Voltage : DC 3.8V
Measurement Standard : FCC CFR Title 47 Part 22 ; Part 24 ; Part 27
Measurement : FCC CFR Title 47 Part 2
Reference : TIA/EIA 603-E 2016
KDB 971168 D01V03R01
ANSI C63.26 2015
Test Result : Complied

Documented By : Anny Chou
(Adm. Specialist / Anny Chou)

Tested By : Vorana Chen
(Senior Engineer / Vorana Chen)

Approved By : Vincent Lin
(Director / Vincent Lin)

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Revision History

Report No.	Version	Description	Issued Date
2060284R-E3042110011	V1.0	Initial issue of report.	2020-08-08

1. GENERAL INFORMATION

1.1. EUT Description

Product Name	Mobile Computer
Model No.	RS35
Trade Name	CIPHERLAB
IMEI No.	35457611
FCC ID	Q3N-RS35
TX Frequency	GSM850: 824.2 MHz ~ 848.8 MHz GSM1900: 1850.2 MHz ~ 1909.8MHz WCDMA Band 2: 1852.4 MHz ~ 1907.6 MHz WCDMA Band 4: 1712.4 MHz ~ 1752.6 MHz WCDMA Band 5: 826.4 MHz ~ 846.6 MHz
Rx Frequency	GSM850: 869.2 MHz ~ 893.8 MHz GSM1900: 1930.2 MHz ~ 1989.8 MHz WCDMA Band 2: 1932.4 MHz ~ 1987.6 MHz WCDMA Band 4: 2112.4 MHz ~ 2152.6 MHz WCDMA Band 5: 871.4 MHz ~ 891.6 MHz
Type of modulation	GPRS: GMSK; EGPRS: GMSK / 8PSK WCDMA: QPSK (Uplink); HSDPA: QPSK (Uplink); HSUPA: QPSK (Uplink)
HW Version	RS35.GSM.NB.200200515
SW Version	Android version: 10
Antenna Type	PIFA Antenna

1.2. Antenna List

No	Manufacturer	Part No	Peak Gain
1	Auden	RS35 (WWAN Main)	-0.3 dBi for 824-849 MHz 4.6 dBi for 1710-1755 MHz 4.4 dBi for 1850-1910 MHz
2	Auden	RS35 (WWAN Aux)	-2.5 dBi for 869-894 MHz -0.5 dBi for 1930-1990 MHz -3.4 dBi for 2110-2155 MHz

1.3. Operational Description

The EUT provide all functions described as above. The EUT is tested with maximum rated TX power via the Base Station simulator.

DEKRA has verified the construction and function in typical operation. All the test modes were carried out with the EUT in normal operation, which was shown in this test report and defined

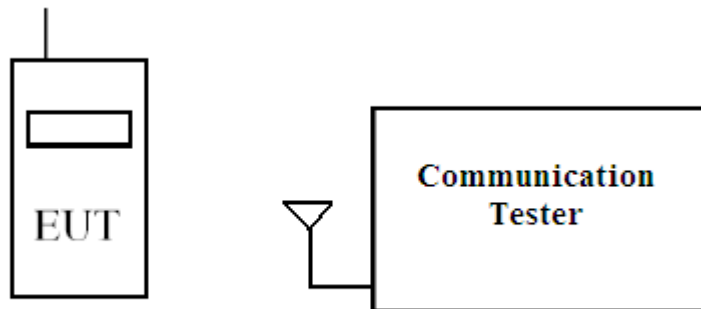
as:

Test Mode:	GSM 850 GPRS
	GSM 850 EGPRS
	PCS 1900 GPRS
	PCS 1900 EGPRS
	WCDMA BAND 2 (RMC/HSDPA/HSUPA)
	WCDMA BAND 4 (RMC/HSDPA/HSUPA)
	WCDMA BAND 5 (RMC/HSDPA/HSUPA)

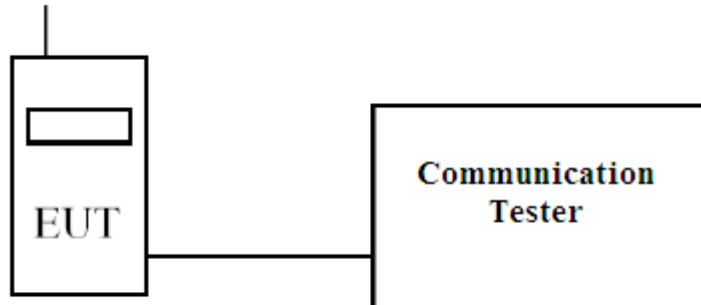
Note: All operation modes has been verified and the report shows the worst case mode.

1.4. Configuration of tested System

(a) Configuration of Radiated measurement



(b) Configuration of Conducted measurement



1.5. EUT Setup Procedures

- (1) Setup the EUT and simulators as shown on 1.3
- (2) Turn on the power of all equipments.
- (3) The EUT was set to communicate with communication tester.
- (4) Repeat the above procedure (3).

1.6. Test Facility

Ambient conditions in the laboratory:

Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	17 ~ 27
Humidity (%RH)	25-75	45 ~ 60

USA : FCC Registration Number: TW3023
Canada : IC Registration Number: 4075A

Site Description: Accredited by TAF
 Accredited Number: 3023

Test Laboratory: DEKRA Testing and Certification Co., Ltd
 Address: No.5-22, Ruishukeng, Linkou Dist., New Taipei City 24451,
 Taiwan, R.O.C.
 Phone number: 886-2-8601-3788
 Fax number: 886-2-8601-3789
 Email address: info.tw@dekra.com
 Website: <http://www.dekra.com.tw>

2. Technical Test

2.1. Summary of test result

Test Item	FCC Reference section	FCC Limit	Result	Result
Conducted Output Power	§2.1046	<7 Watts for §22.913(a) <2 Watts for §24.232(c) <1 Watts for §27.50(d)	Pass	Pass
	§22.913(a)			
	§24.232(c)			
	§27.50(d)			
Occupied Bandwidth	§2.1049	Within the frequency range	Pass	Pass
	§22.863			
	§24.238(b)			
	§27.53(h)			
Spurious Emission at Antenna Terminals	§2.1051	<-13dBm	Pass	Pass
	§22.917(a)			
	§24.238(a)			
	§27.53(h)			
Conducted Emission	§2.1051	<-13dBm	Pass	Pass
	§22.917(a)			
	§24.238(a)			
	§27.53(h)			
Field Strength of Spurious Radiation	§2.1053	<-13dBm	Pass	Pass
	§22.917(a)			
	§24.238(a)			
	§27.53(h)			
Frequency Stability for Temperature & Voltage	§2.1055	<±2.5 ppm for §22.355 Within the frequency range for §24.235, §27.54	Pass	Pass
	§22.355			
	§24.235			
	§27.54			
Peak to Average Ratio	§22.913 (d)	<13dB	Pass	Pass
	§24.232 (d)			
	§27.50 (d)			

2.2. List of test Equipment

Conducted /CTR

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
Spectrum Analyzer	Agilent	N9010A	MY54510357	2020/05/14
Directional coupler	Agilent	87300C	MY44300353	2019/12/05
Directional coupler	Agilent	778D-012	50550	2019/12/05
Standard Temperature & Humidity Chamber	WIT	TH-1S-B	EQ-201-00146	2020/04/06
DC power supply	Agilent	E3610A	MY40009845	2020/06/30
Communication Tester	R&S	CMW500	157304	2019/11/13

Radiated / Site3

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
Bilog Antenna	Schaffner Chase	CBL6112B	2707	2020/01/20
Horn Antenna	R&S	9120D	867	2020/04/21
Pre-Amplifier	Agilent	87405C	MY55380068	2019/08/09
Spectrum Analyzer	Agilent	N9010A	MY54510357	2020/05/14
DC power supply	Agilent	E3646A	MY53020023	2019/10/14
Communication Tester	R&S	CMW500	157304	2019/11/13

2.3. Measurement Uncertainty

Conducted Emission

The measurement uncertainty of confidence of 95% is evaluated as ± 1.52 dB

Radiated Emission (Below 1GHz)

The measurement uncertainty of confidence of 95% is evaluated as ± 4.22 dB

Radiated Emission (Above 1GHz)

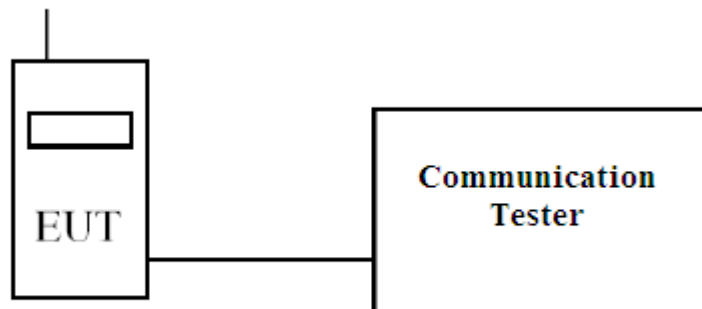
The measurement uncertainty of confidence of 95% is evaluated as ± 4.08 dB

3. Conducted Output Power Measurement

3.1. Test Specification

According to Part 2.1046, 22.913, 24.232, 27.50.

3.2. Test Setup



3.3. Limits

Band	Limit
850	ERP <7W
1900	EIRP <2W
AWS(1700)	EIRP <1W

3.4. Test Procedure

The EUT is tested with maximum rated TX power via the Base Station simulator, and the output power was measured at the antenna terminals of the EUT.

3.5. Test Result of Maximum Power Output

Product	Mobile Computer		
Test Mode	RF Output Power (Conducted)		
Date of Test	2020/08/03	Test Site	CTR

Band	GSM 850			GSM 1900		
CHANNEL	128	189	251	512	661	810
VOICE	32.11	32.33	32.51	28.33	28.13	28.21
GPRS Class 8	32.68	32.98	33.08	28.22	28.36	27.94
GPRS Class 10	29.37	29.84	30.00	26.94	27.49	27.14
GPRS Class 11	27.38	27.63	27.63	25.47	25.81	25.47
GPRS Class 12	26.07	26.33	26.37	24.01	24.62	24.16
EGPRS Class 8	27.30	27.57	27.59	26.34	26.55	26.27
EGPRS Class 10	25.84	26.24	26.06	25.16	25.33	25.07
EGPRS Class 11	24.21	24.50	24.40	23.40	23.61	23.33
EGPRS Class 12	22.52	22.83	23.07	20.98	21.45	21.08

Note: Unit : dBm

Band	WCDMA Band 2			WCDMA Band 4			WCDMA Band 5		
CHANNEL	9262	9400	9538	1312	1413	1513	4132	4183	4233
VOICE	19.23	19.44	19.57	19.45	19.46	19.60	23.53	23.40	23.42
RMC	19.17	19.34	19.52	19.47	19.45	19.54	23.48	23.26	24.06
HSDPA Set 1	18.20	18.32	18.53	18.36	18.38	18.50	22.62	22.49	22.53
HSDPA Set 2	17.49	17.90	17.89	17.99	17.95	18.09	22.24	22.04	22.04
HSDPA Set 3	17.55	17.72	17.94	17.90	18.04	18.17	22.17	22.02	22.10
HSDPA Set 4	17.46	17.76	18.03	17.99	17.96	18.16	22.31	21.98	22.02
HSUPA Set 1	18.01	18.31	18.52	18.41	18.45	18.51	22.12	22.06	22.22
HSUPA Set 2	16.07	16.29	16.50	16.42	16.47	16.61	20.33	20.32	20.61
HSUPA Set 3	17.14	17.24	17.49	17.31	17.55	17.49	21.32	21.35	21.53
HSUPA Set 4	16.10	16.25	16.44	16.45	16.49	16.69	20.35	20.39	20.60
HSUPA Set 5	18.12	18.34	18.53	18.38	18.11	18.57	22.37	22.43	22.60

Note: Unit : dBm

3.6. Maximum Conducted Power and ERP/EIRP Power

According to KDB 412172 D01 Section 1.2 Power Approach

$$\text{EIRP} = P_T + G_T - L_C = \text{ERP} + 2.15 \text{ dB}, \text{ERP} = \text{EIRP} - 2.15 \text{ dB}$$

P_T = transmitter output power in dBm

G_T = gain of the transmitting antenna in dBi

L_C = signal attenuation in the connecting cable between the transmitter and antenna in dB

GSM	CHANNEL	Conducted Peak Power (dBm)	Conducted Peak Power (W)	Antenna Gain (dBi)	Maximum ERP/EIRP (W)	Maximum ERP/EIRP Limit (W)
850	Voice/GPRS	33.08	2.032	-0.3	1.156	7
850	EGPRS	27.59	0.574	-0.3	0.327	7
1900	Voice/GPRS	28.36	0.685	4.4	1.888	2
1900	EGPRS	26.55	0.452	4.4	1.245	2

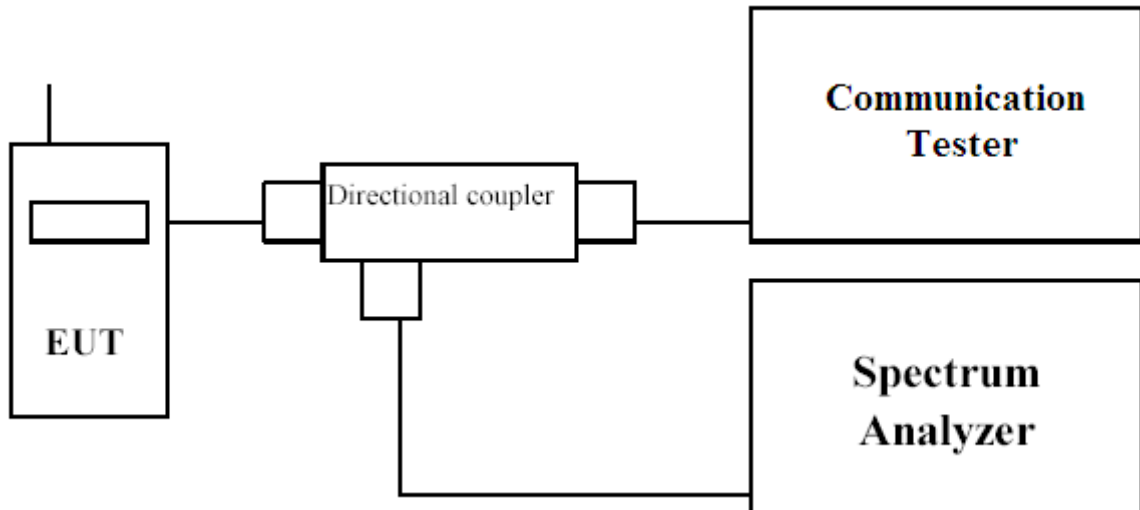
WCDMA	CHANNEL	Conducted Peak Power (dBm)	Conducted Peak Power (W)	Antenna Gain (dBi)	Maximum ERP/EIRP (W)	Maximum ERP/EIRP Limit (W)
Band 2	Voice/RMC	19.57	0.091	4.4	0.249	2
Band 2	HSDPA	18.53	0.071	4.4	0.196	2
Band 2	HSUPA	18.53	0.071	4.4	0.196	2
Band 4	Voice/RMC	19.60	0.091	4.6	0.263	1
Band 4	HSDPA	18.50	0.071	4.6	0.204	1
Band 4	HSUPA	18.57	0.072	4.6	0.207	1
Band 5	Voice/RMC	24.06	0.255	-0.3	0.145	7
Band 5	HSDPA	22.62	0.183	-0.3	0.104	7
Band 5	HSUPA	22.60	0.182	-0.3	0.104	7

4. Occupied Bandwidth

4.1. Test Specification

According to Part 2.1049, 22.863, 24.238, 27.53.

4.2. Test Setup



4.3. Test Procedure

The EUT is tested with maximum rated TX power via the Base Station simulator, and the occupied bandwidth was measured at the antenna terminals of the EUT.

The Resolution BW of the analyzer is set to 1 % of the emission bandwidth. The EUT's occupied bandwidth is measured as the width of the signal between two points, one below the carrier center frequency and one above the carrier frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

The plots below show the resultant display from the Spectrum Analyser.

4.4. Test Result of Occupied Bandwidth

Product	Mobile Computer
Test Mode	Occupied Bandwidth
Test Site	CTR
Date of Test	2020/07/07

GSM 850				
BW	Channel	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26 dB bandwidth (kHz)
VOICE	128	824.2	246.4400	320.6000
VOICE	189	836.4	242.6800	313.3000
VOICE	251	848.8	243.6200	308.0000
GPRS	128	824.2	245.8800	319.9000
GPRS	189	836.4	246.9300	320.0000
GPRS	251	848.8	247.1300	320.2000
EGPRS	128	824.2	242.6000	313.1000
EGPRS	189	836.4	245.0600	306.2000
EGPRS	251	848.8	245.2900	319.4000

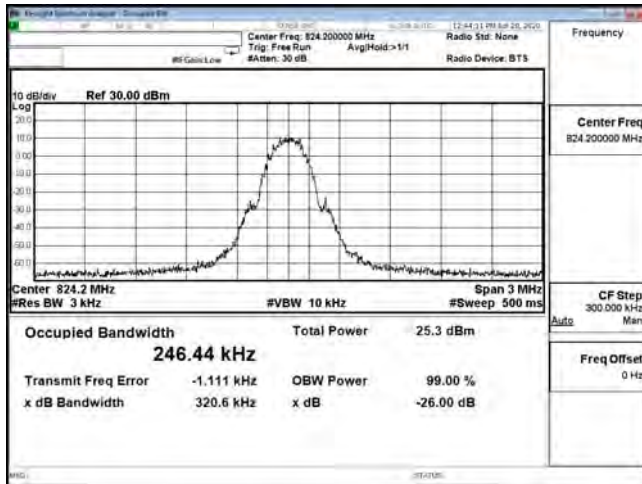
PCS 1900				
BW	Channel	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26 dB bandwidth (kHz)
VOICE	512	1850.2	243.6400	314.3000
VOICE	661	1880	242.6000	314.4000
VOICE	810	1909.8	244.4600	316.4000
GPRS	512	1850.2	245.6900	311.2000
GPRS	661	1880	244.1200	315.7000
GPRS	810	1909.8	240.5100	321.2000
EGPRS	512	1850.2	247.6900	320.1000
EGPRS	661	1880	244.0500	311.4000
EGPRS	810	1909.8	244.4800	316.9000

WCDMA Band2				
BW	Channel	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26 dB bandwidth (kHz)
VOICE	9262	1852.4	4.1059	4.7070
VOICE	9400	1880	4.1033	4.7020
VOICE	9538	1907.6	4.1112	4.7080
RMC	9262	1852.4	4.1156	4.6920
RMC	9400	1880	4.1166	4.6950
RMC	9538	1907.6	4.1243	4.6950
HSDPA	9262	1852.4	4.1092	4.7000
HSDPA	9400	1880	4.1223	4.6750
HSDPA	9538	1907.6	4.1179	4.6960
HSUPA	9262	1852.4	4.1084	4.6890
HSUPA	9400	1880	4.1219	4.6930
HSUPA	9538	1907.6	4.1220	4.7020

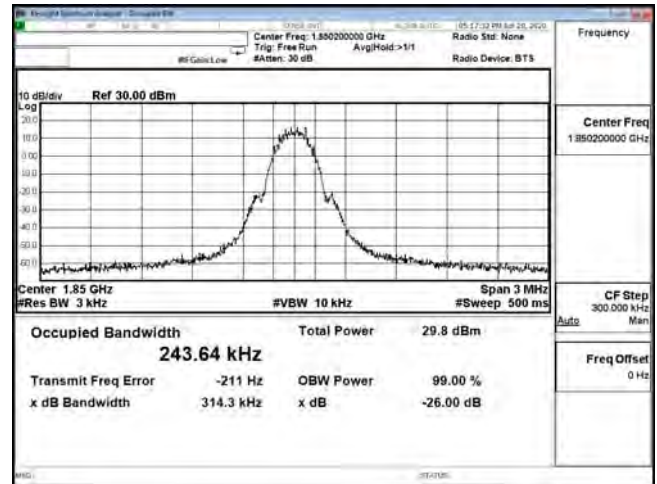
WCDMA Band4				
BW	Channel	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26 dB bandwidth (kHz)
VOICE	1312	1712.4	4.1065	4.7200
VOICE	1413	1732.6	4.1077	4.7330
VOICE	1513	1752.6	4.1099	4.7400
RMC	1312	1712.4	4.1122	4.7180
RMC	1413	1732.6	4.1133	4.7000
RMC	1513	1752.6	4.1069	4.7080
HSDPA	1312	1712.4	4.1183	4.7110
HSDPA	1413	1732.6	4.1164	4.7030
HSDPA	1513	1752.6	4.1234	4.7130
HSUPA	1312	1712.4	4.1156	4.6940
HSUPA	1413	1732.6	4.1100	4.7040
HSUPA	1513	1752.6	4.1158	4.7140

WCDMA Band5				
BW	Channel	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26 dB bandwidth (kHz)
VOICE	4132	826.4	4.1097	4.7100
VOICE	4183	836.6	4.1162	4.7290
VOICE	4233	846.6	4.1282	4.7490
RMC	4132	826.4	4.1182	4.7140
RMC	4183	836.6	4.1355	4.7010
RMC	4233	846.6	4.1346	4.7290
HSDPA	4132	826.4	4.1777	5.7740
HSDPA	4183	836.6	4.1951	5.8120
HSDPA	4233	846.6	4.1300	4.7100
HSUPA	4132	826.4	4.1830	5.6720
HSUPA	4183	836.6	4.1794	5.7980
HSUPA	4233	846.6	4.1390	4.7260

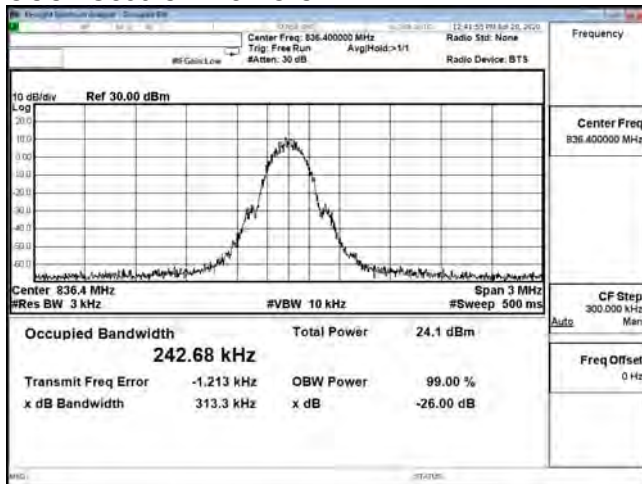
Product	Mobile Computer		
Test Mode	Occupied Bandwidth		
Date of Test	2020/07/07	Test Site	CTR
Test Condition	GSM 850 / PCS1900		



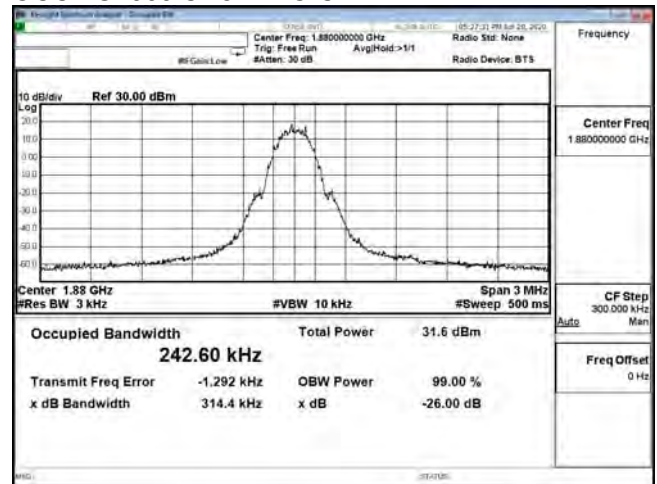
OCC 2G850 CH128 VOICE



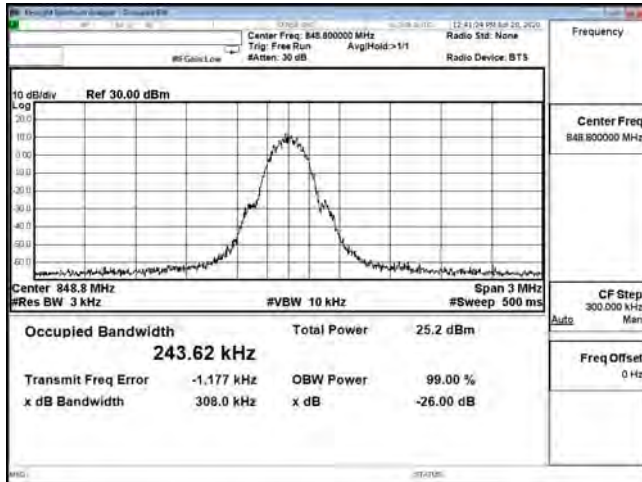
OCC 2G1900 CH512 VOICE



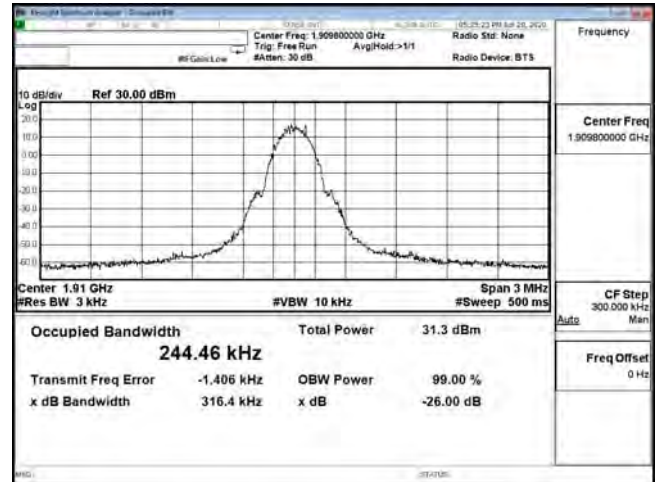
OCC 2G850 CH189 VOICE



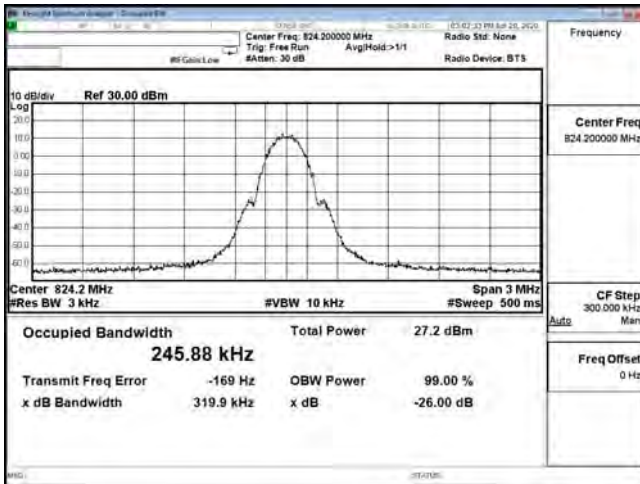
OCC 2G1900 CH661 VOICE



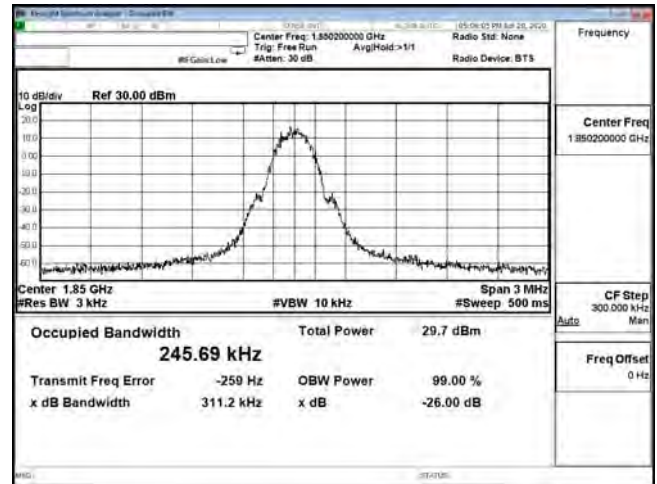
OCC 2G850 CH251 VOICE



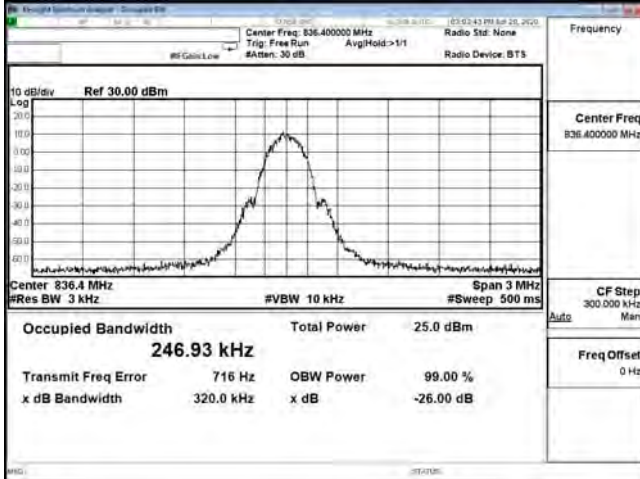
OCC 2G1900 CH810 VOICE



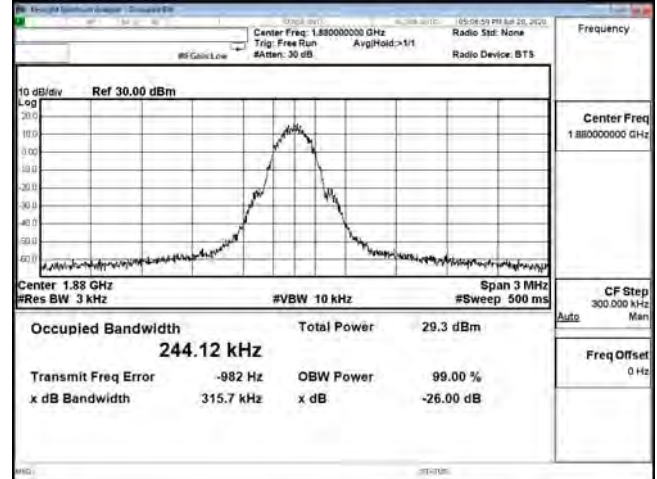
OCC 2G850 CH128 GPRS



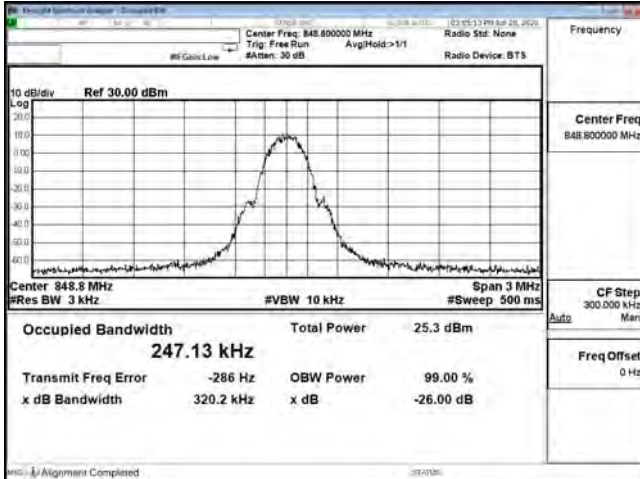
OCC 2G1900 CH512 GPRS



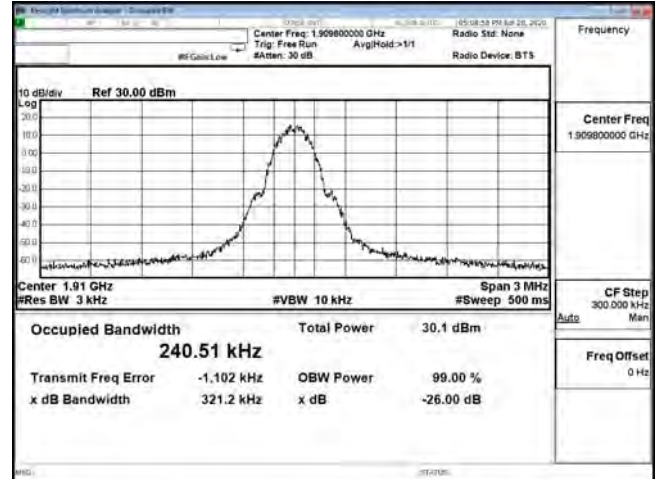
OCC 2G850 CH189 GPRS



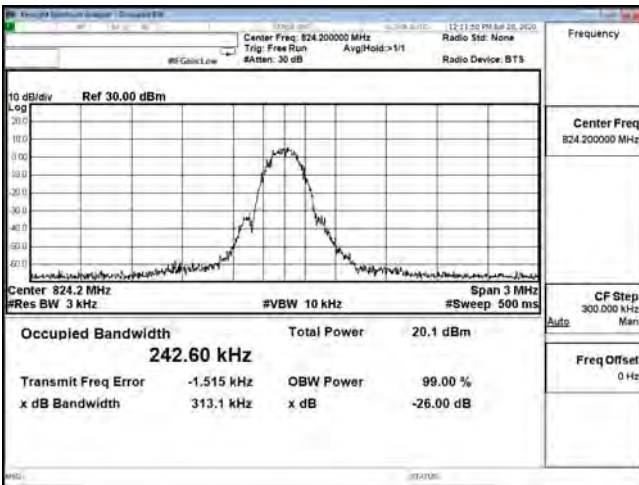
OCC 2G1900 CH661 GPRS



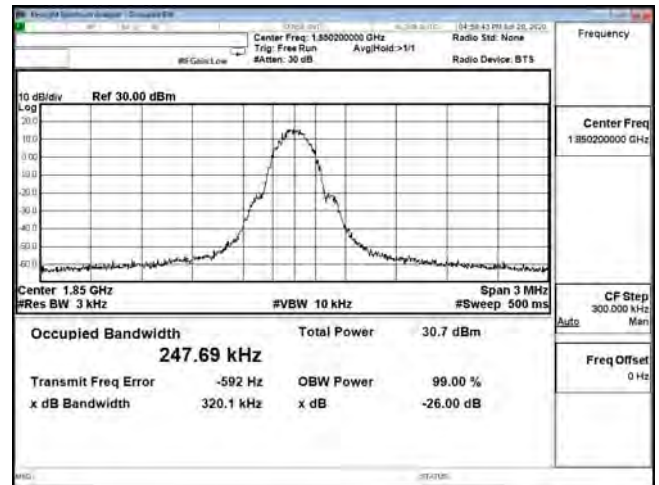
OCC 2G850 CH251 GPRS



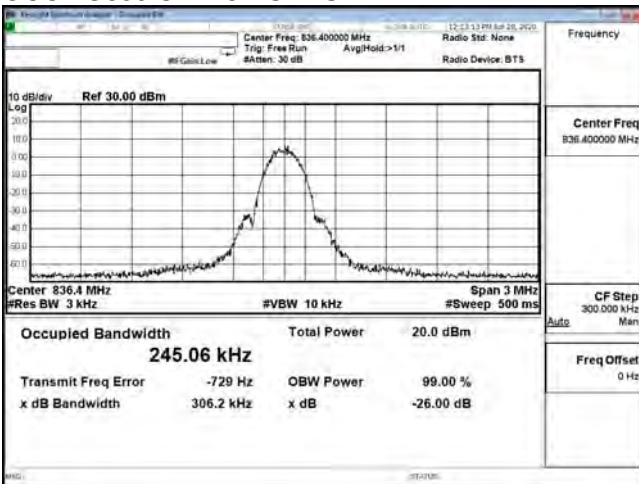
OCC 2G1900 CH810 GPRS



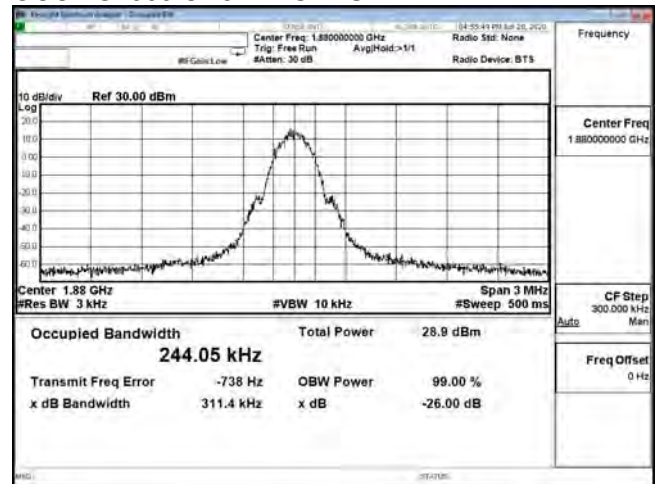
OCC 2G850 CH128 EGPRS



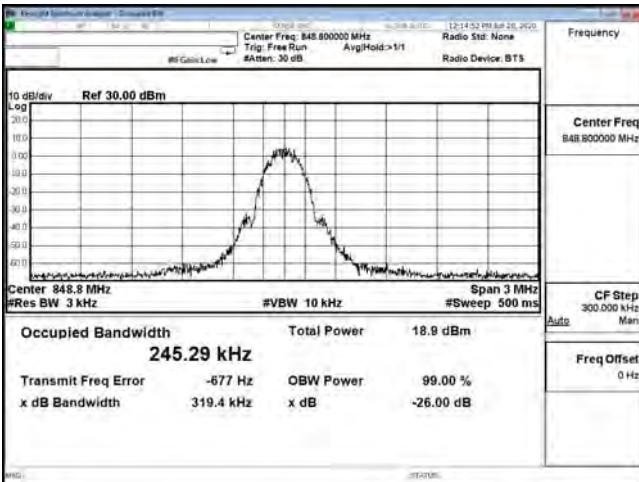
OCC 2G1900 CH512 EGPRS



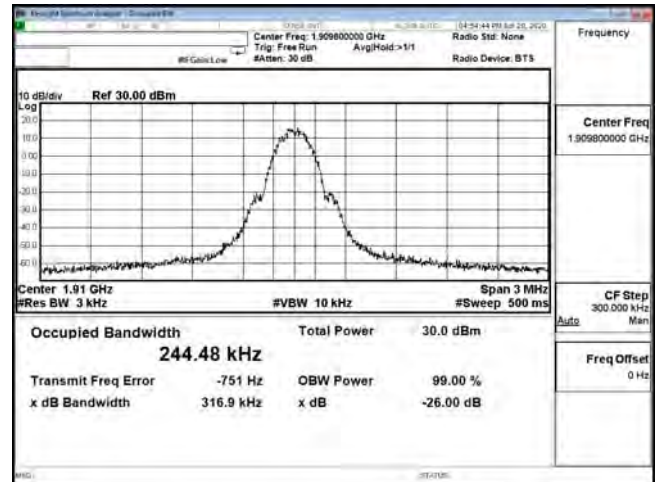
OCC 2G850 CH189 EGPRS



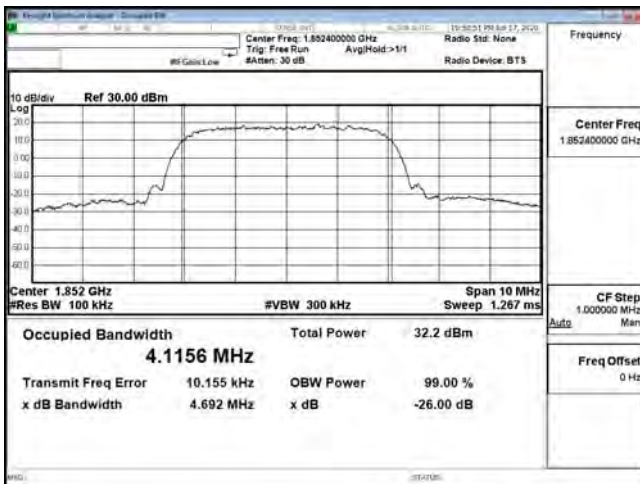
OCC 2G1900 CH661 EGPRS



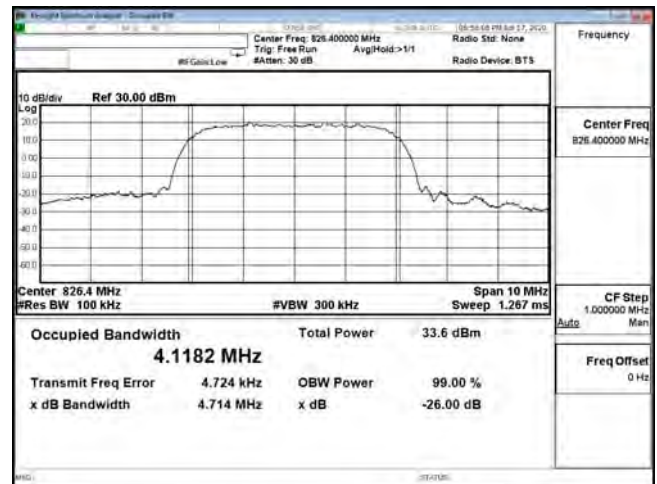
OCC 2G850 CH251 EGPRS



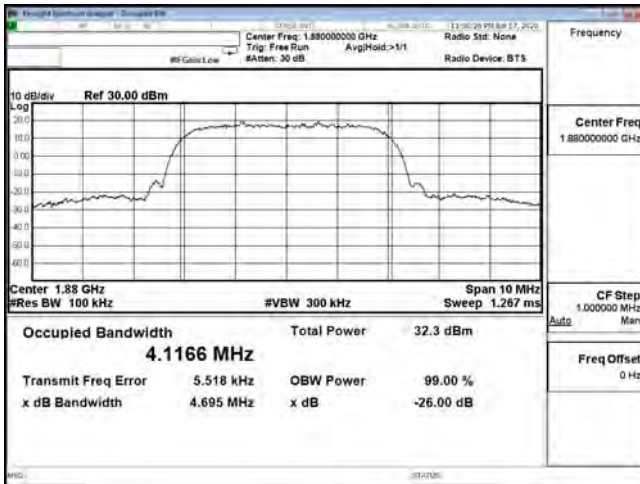
OCC 2G1900 CH810 EGPRS



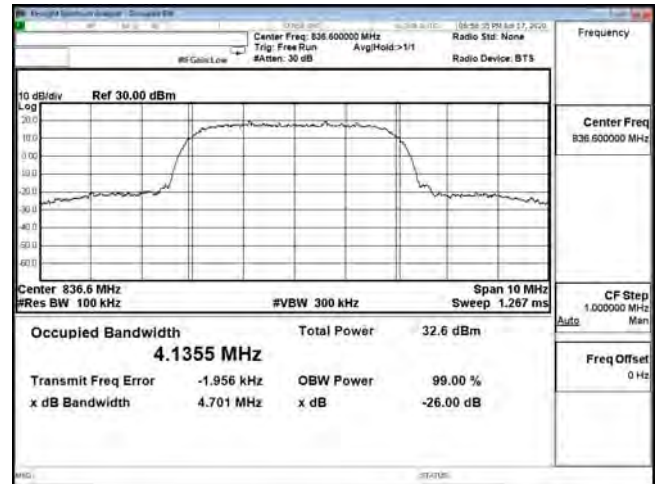
OCC B2 CH9262 RMC



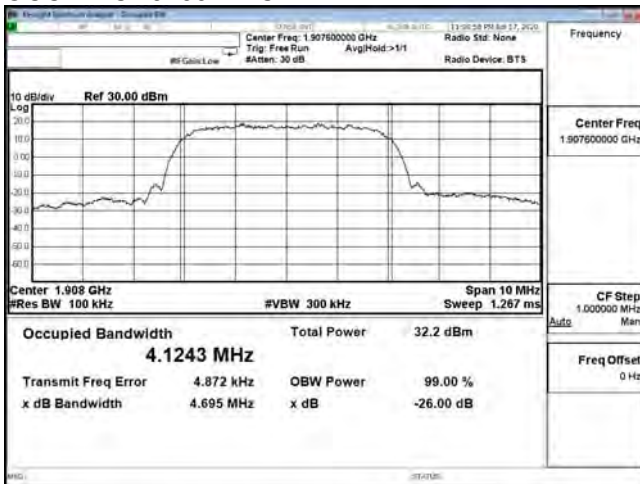
OCC B5 CH4132 RMC



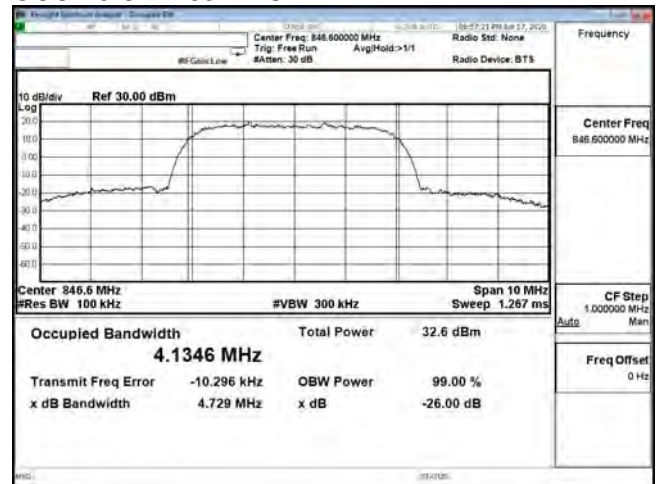
OCC B2 CH9400 RMC



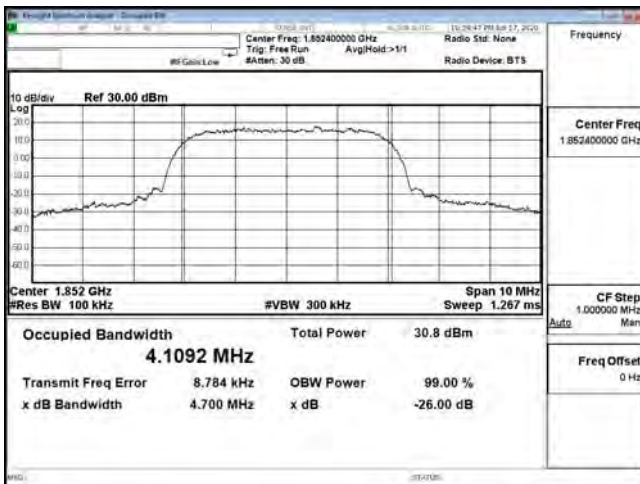
OCC B5 CH4183 RMC



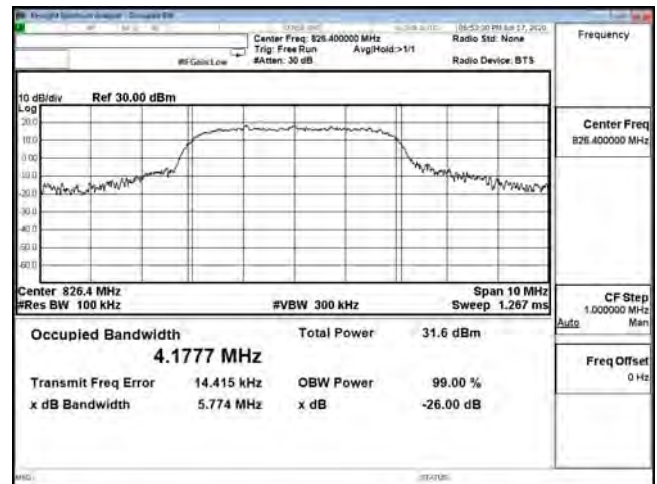
OCC B2 CH9538 RMC



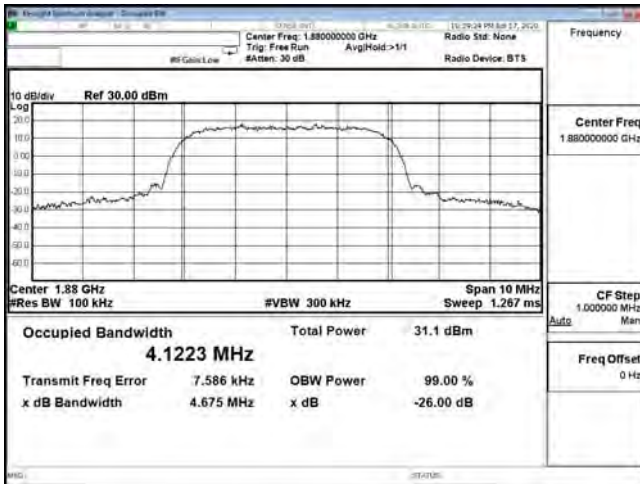
OCC B5 CH4233 RMC



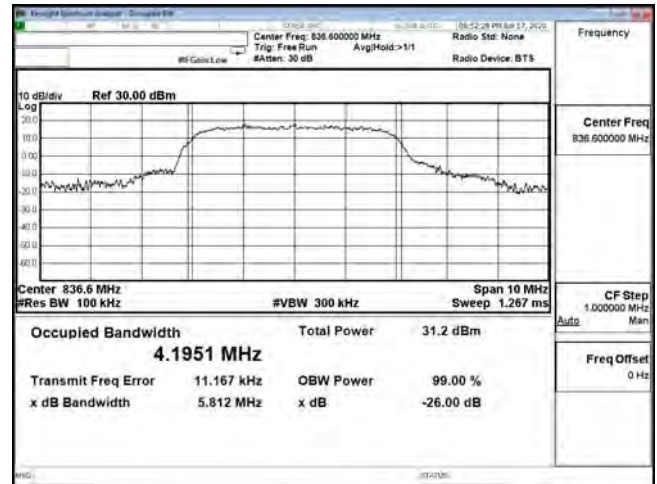
OCC B2 CH9262 HSDPA



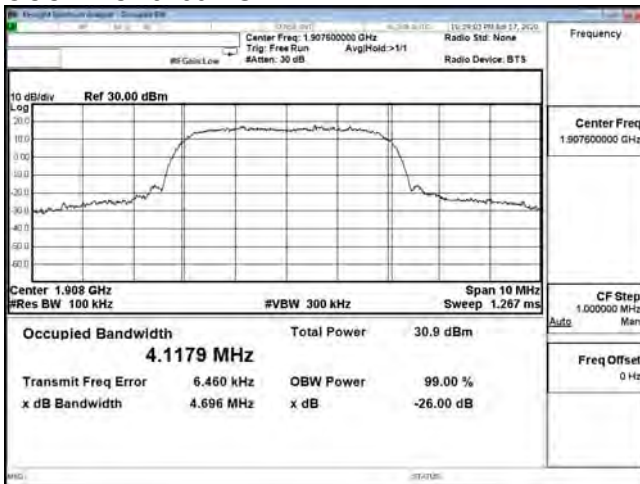
OCC B5 CH4132 HSDPA



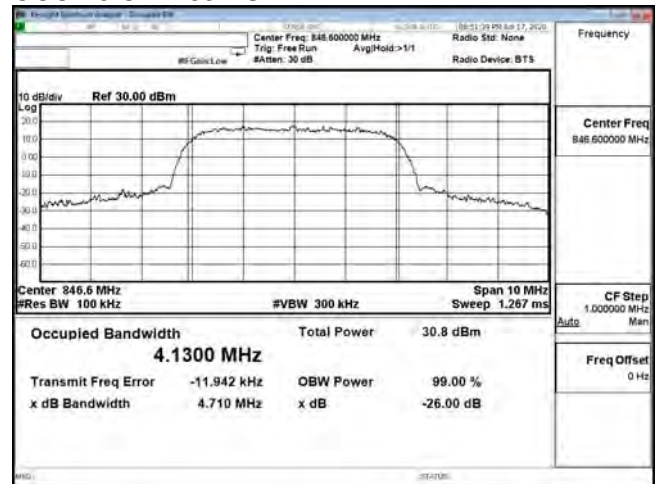
OCC B2 CH9400 HSDPA



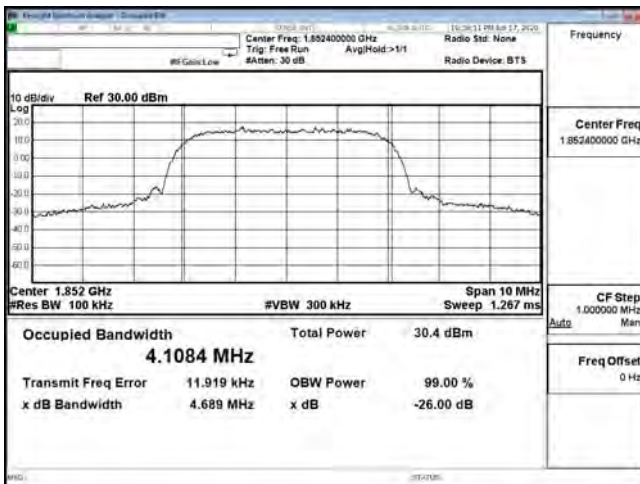
OCC B5 CH4183 HSDPA



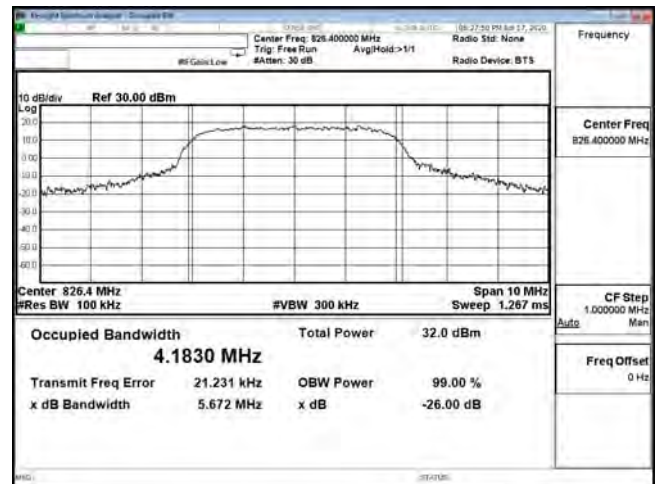
OCC B2 CH9538 HSDPA



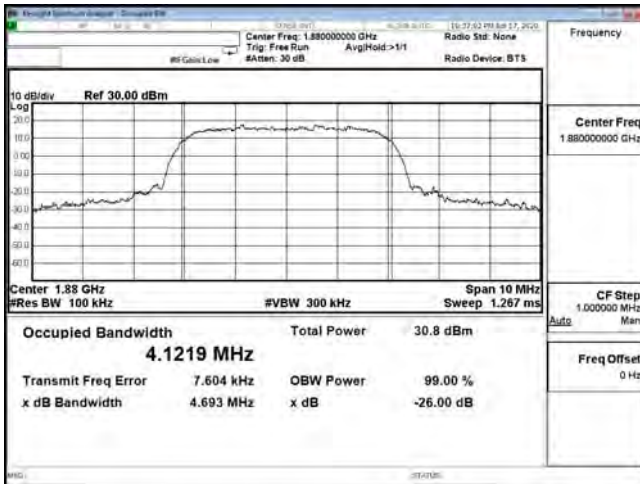
OCC B5 CH4233 HSDPA



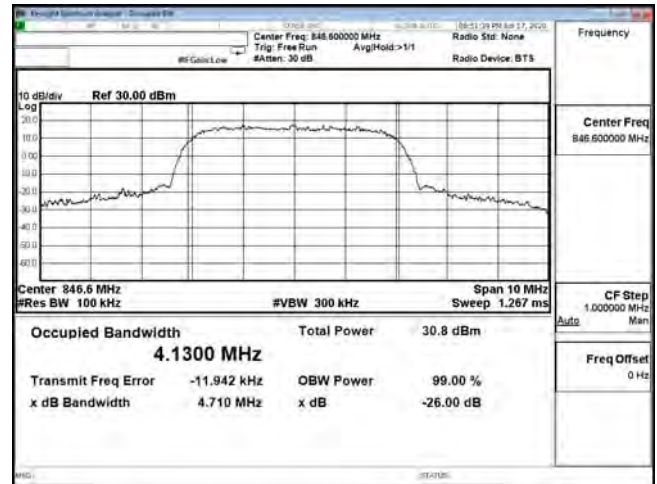
OCC B2 CH9262 HSUPA



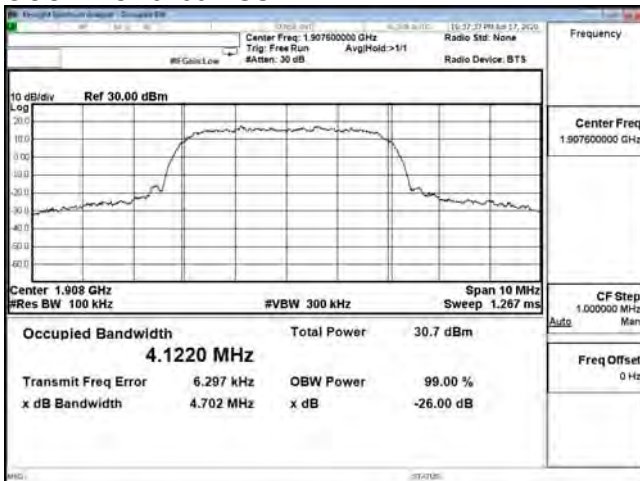
OCC B5 CH4132 HSUPA



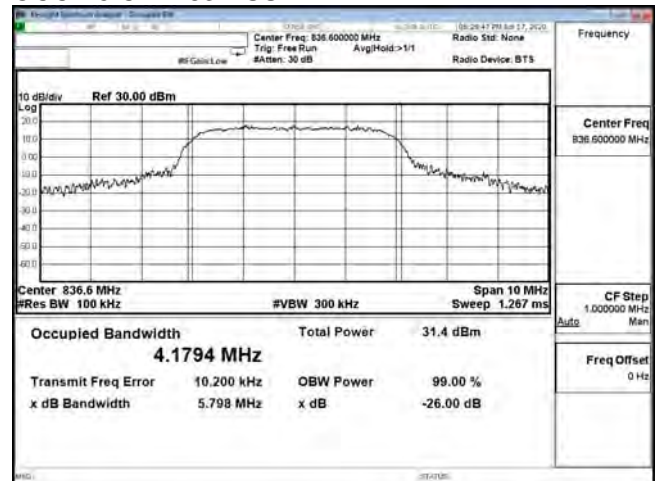
OCC B2 CH9400 HSUPA



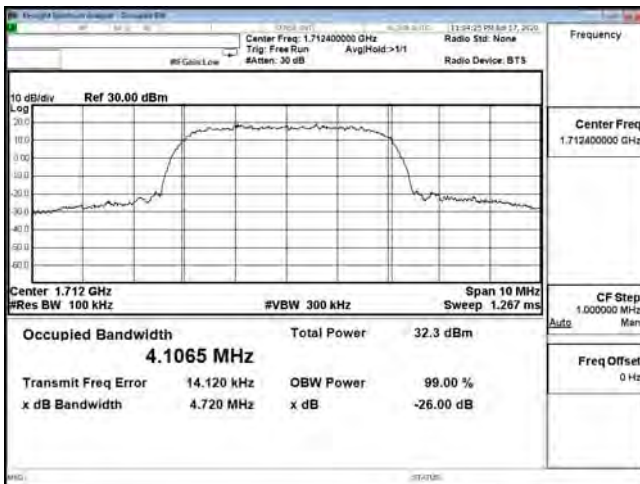
OCC B5 CH4183 HSUPA



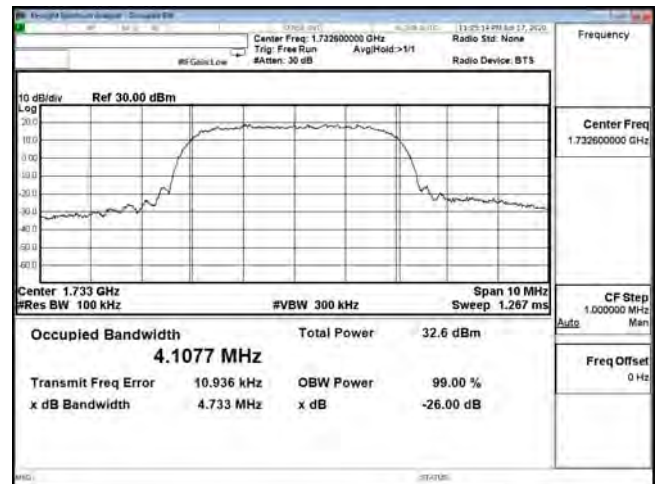
OCC B2 CH9538 HSUPA



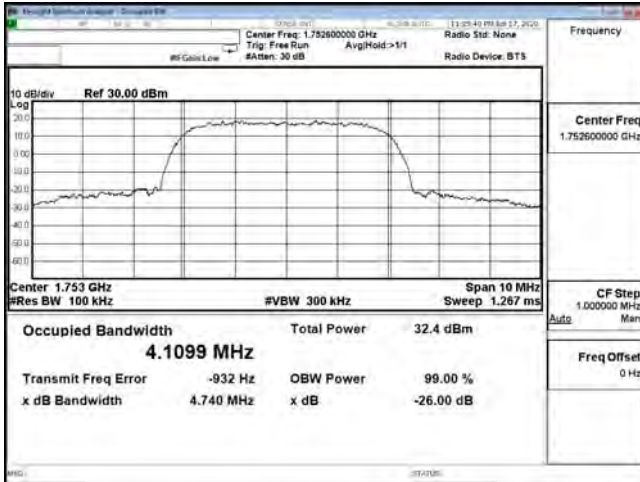
OCC B5 CH4233 HSUPA



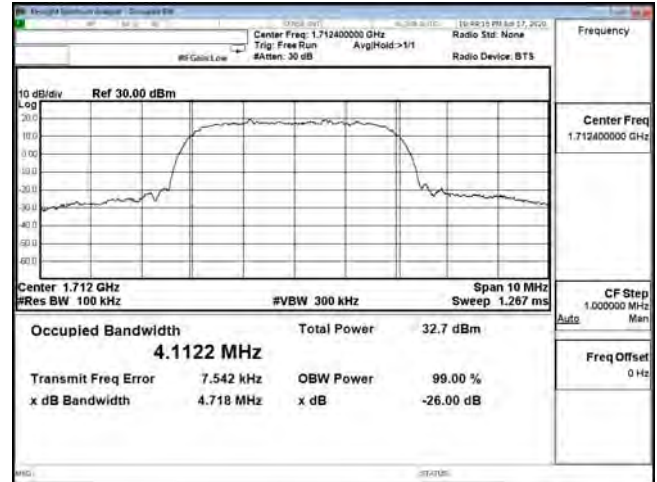
OCC B4 CH1312 VOICE



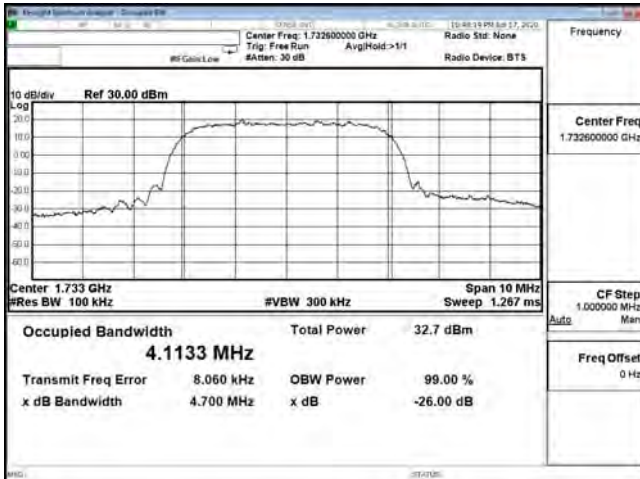
OCC B4 CH1413 VOICE



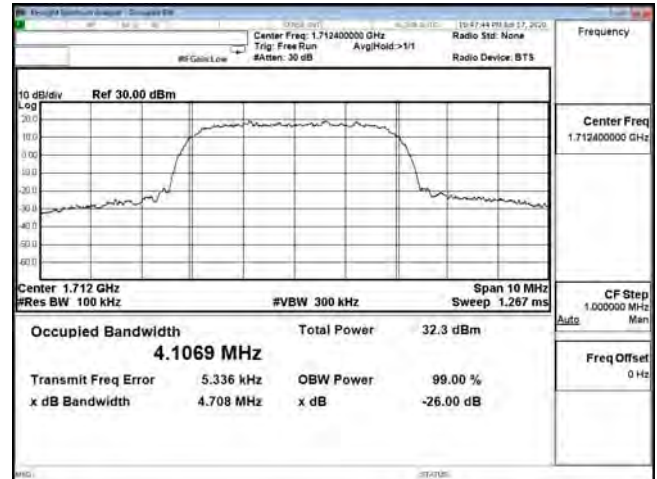
OCC B4 CH1513 VOICE



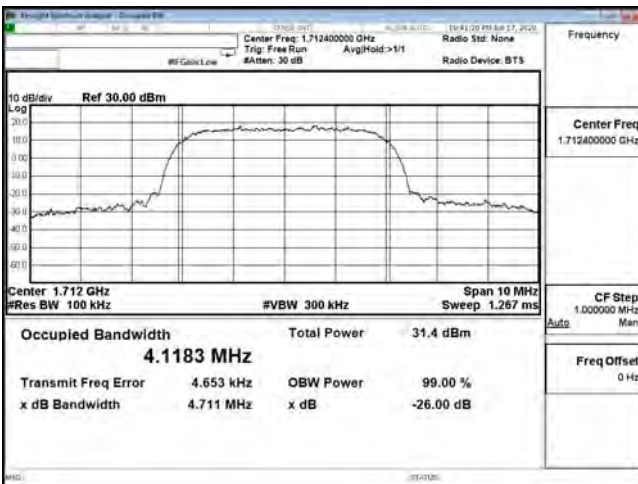
OCC B4 CH1312 RMC



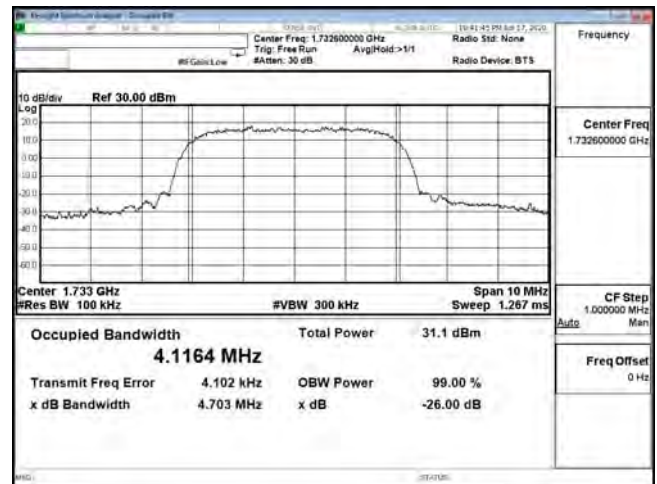
OCC B4 CH1413 RMC



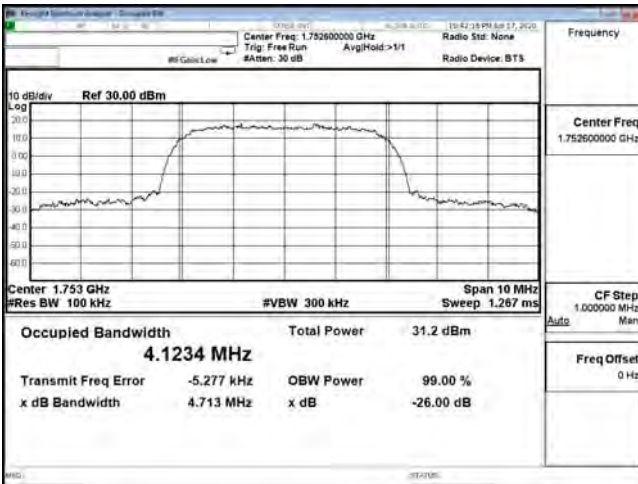
OCC B4 CH1513 RMC



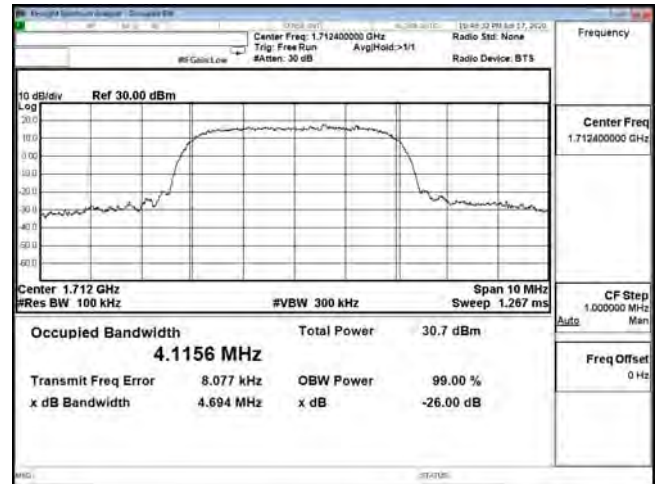
OCC B4 CH1312 HSDPA



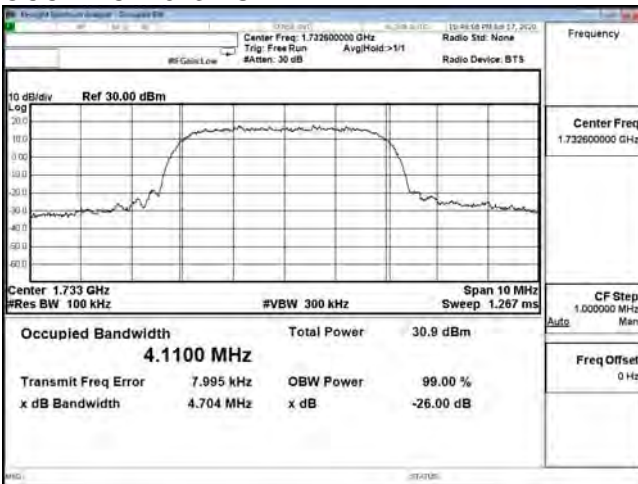
OCC B4 CH1413 HSDPA



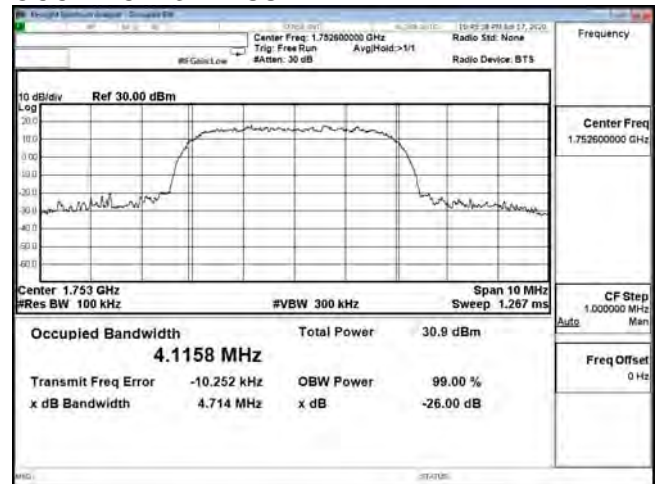
OCC B4 CH1513 HSDPA



OCC B4 CH1312 HSUPA



OCC B4 CH1413 HSUPA



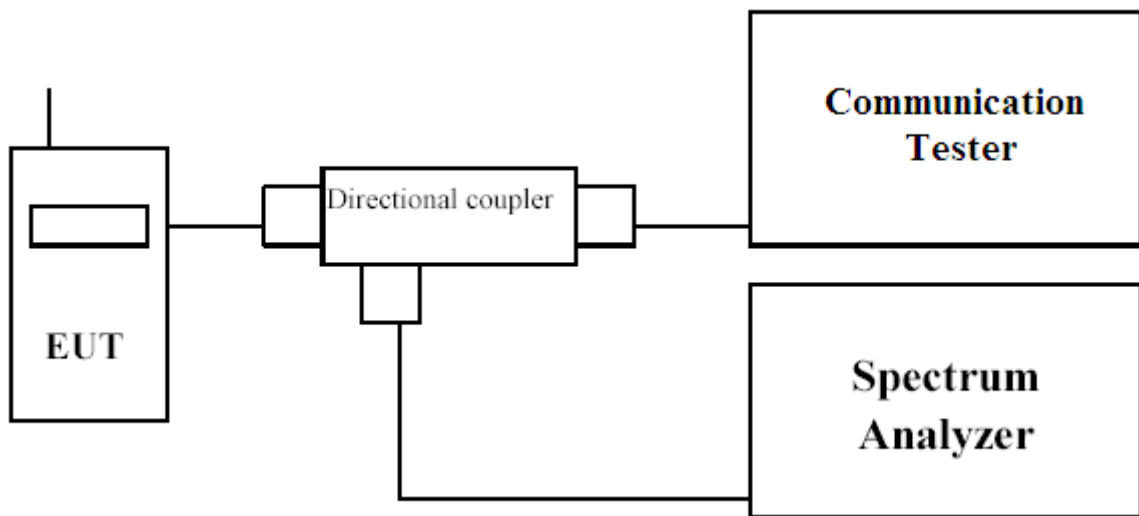
OCC B4 CH1513 HSUPA

5. Spurious Emission At Antenna Terminals (+/-1MHz)

5.1. Test Specification

According to Part 2.1051, 22.917, 24.238, 27.53.

5.2. Setup



5.3. Limits

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.

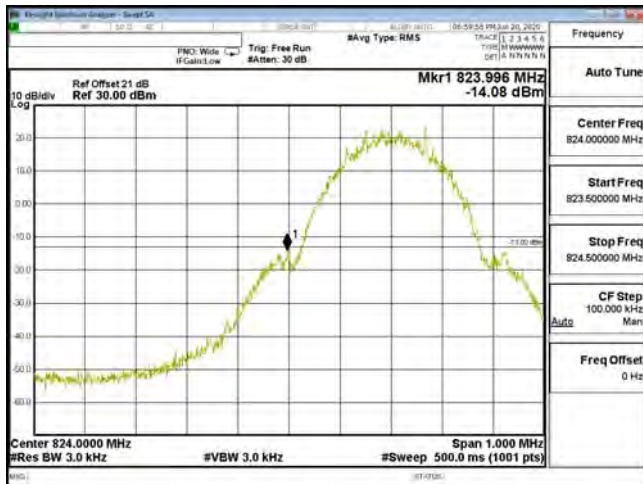
5.4. Test Procedure

In accordance with Part 22.917, 24.238, 27.53, at least 1% of the emission bandwidth was used for the resolution and video bandwidths up to 1MHz away from the Block Edge. At greater than 1MHz, the resolution and video bandwidth were set 3 x RBW.

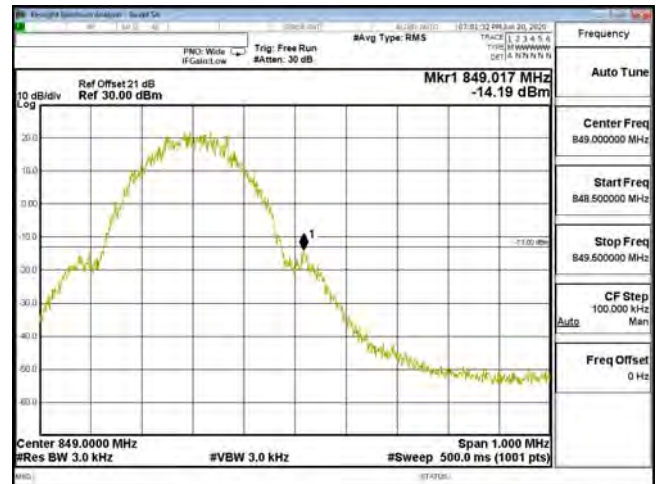
The reference power and path losses of all channels used for testing in each frequency block were measured.

5.5. Test Result of Spurious Emission At Antenna Terminals (+/-1MHz)

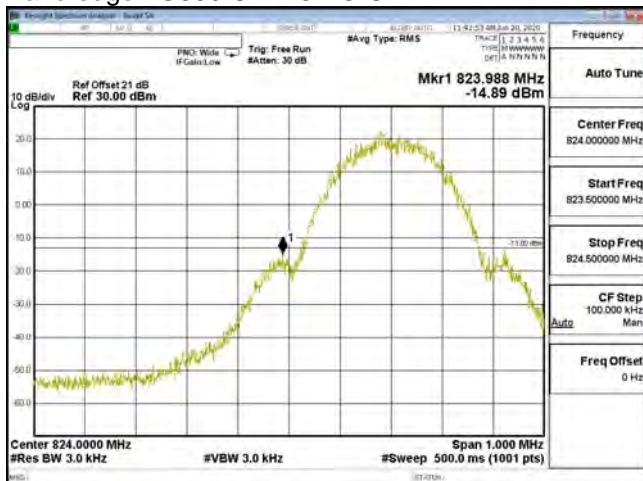
Product	Mobile Computer		
Test Mode	Spurious Emission At Antenna Terminals (+/-1MHz)		
Date of Test	2020/06/20	Test Site	CTR
Test Condition	Block Edge Test (GSM 850)		



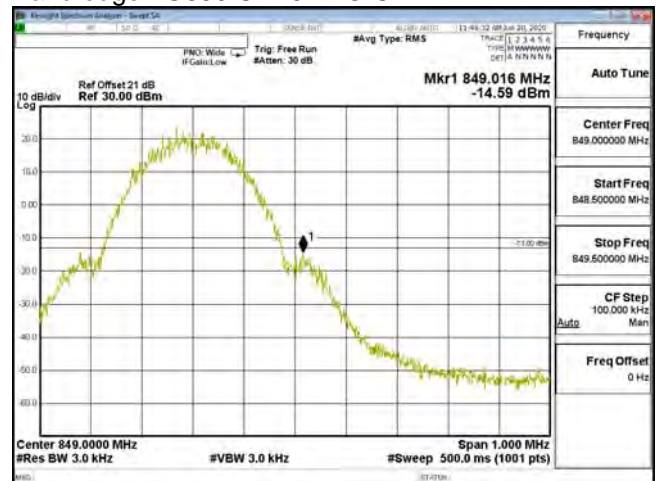
Band edge 2G850 CH128 VOICE



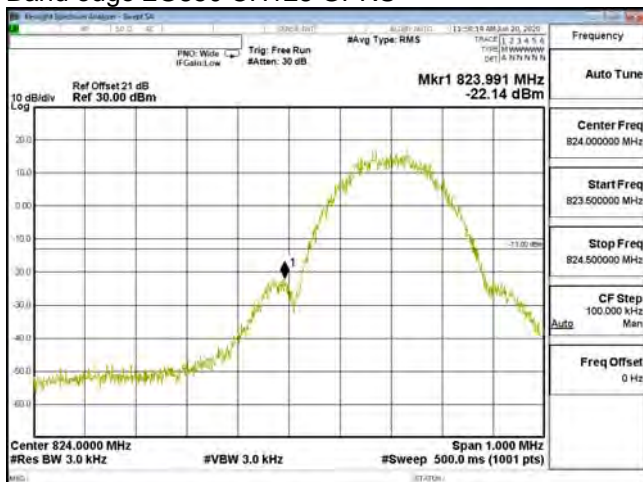
Band edge 2G850 CH251 VOICE



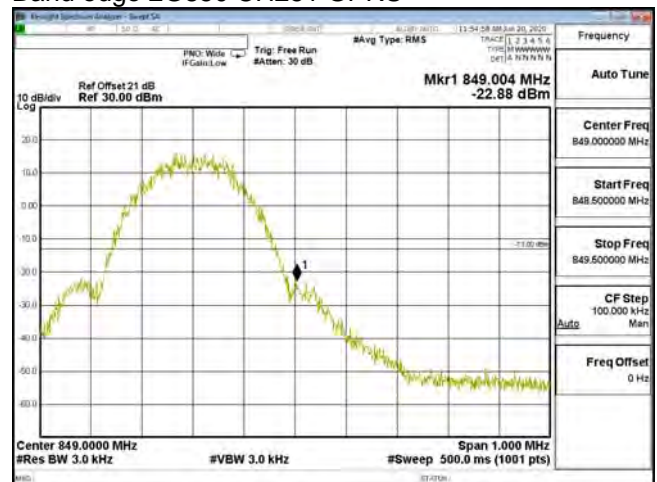
Band edge 2G850 CH128 GPRS



Band edge 2G850 CH251 GPRS

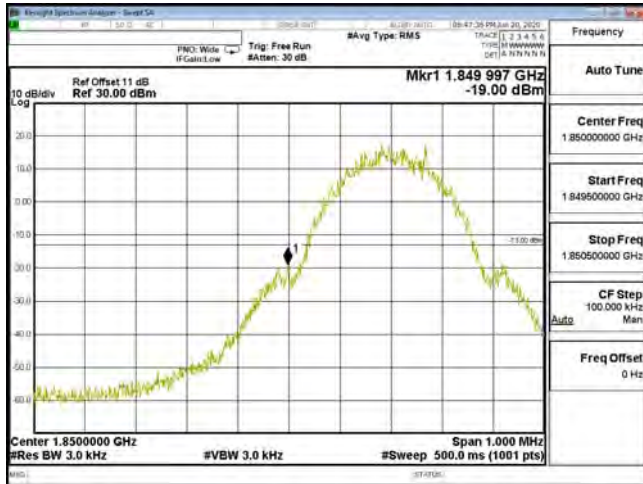


Band edge 2G850 CH128 EGPRS

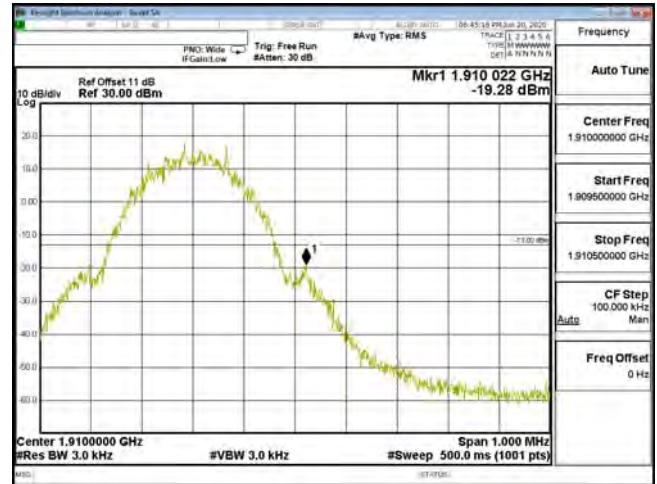


Band edge 2G850 CH251 EGPRS

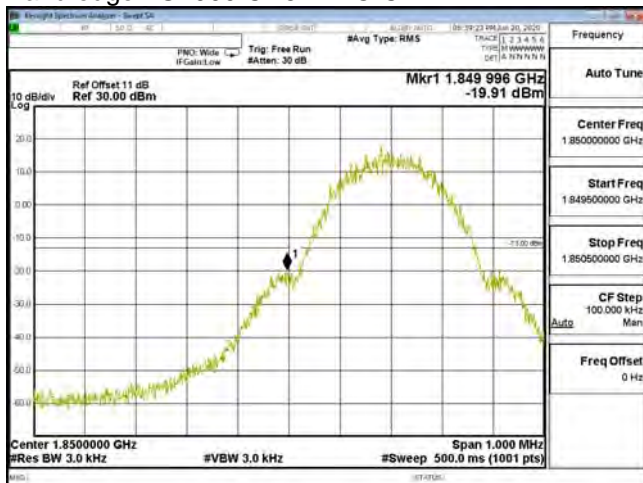
Product	Mobile Computer		
Test Mode	Spurious Emission At Antenna Terminals (+/-1MHz)		
Date of Test	2020/06/20	Test Site	CTR
Test Condition	Block Edge Test (PCS 1900)		



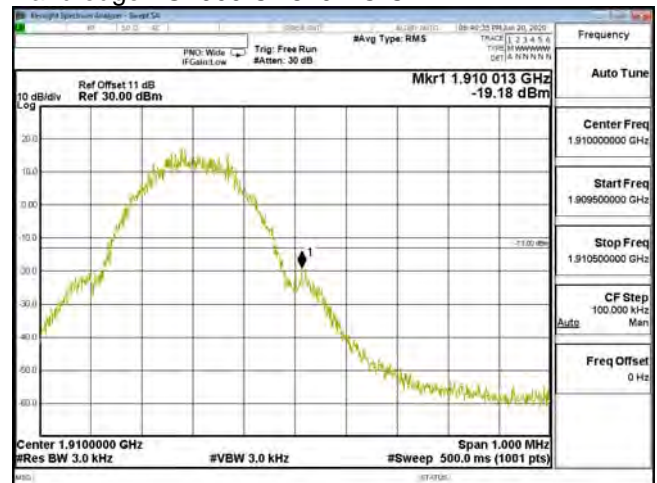
Band edge 2G1900 CH512 VOICE



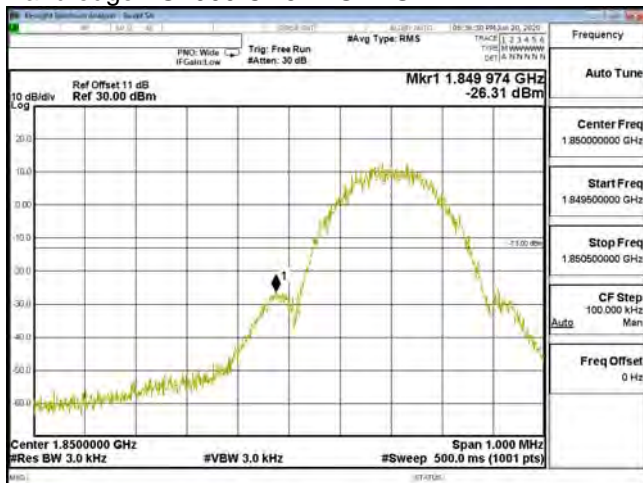
Band edge 2G1900 CH810 VOICE



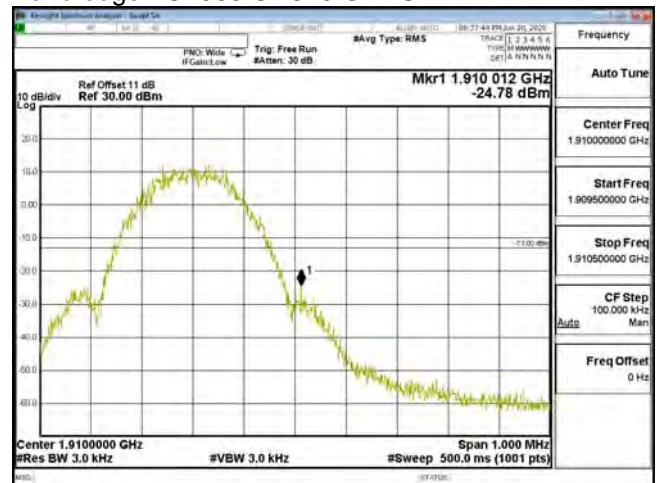
Band edge 2G1900 CH512 GPRS



Band edge 2G1900 CH810 GPRS

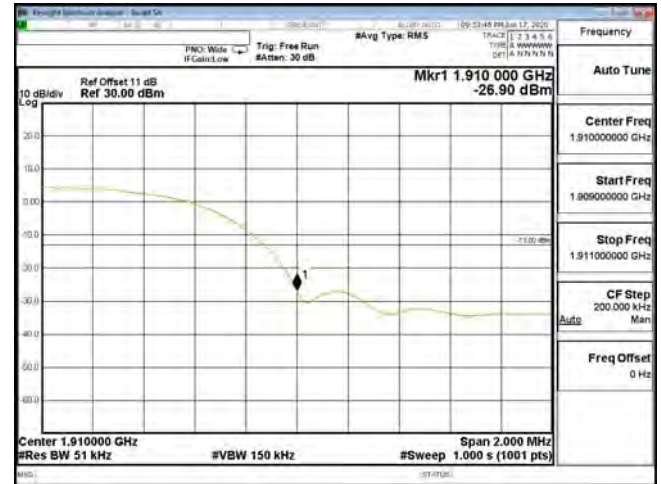
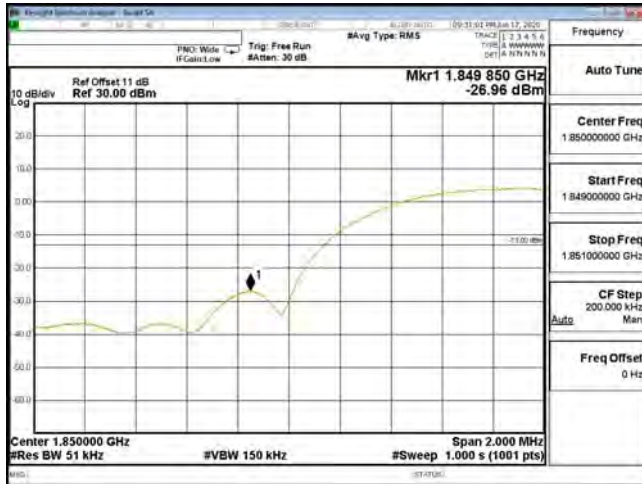


Band edge 2G1900 CH512 EGPRS



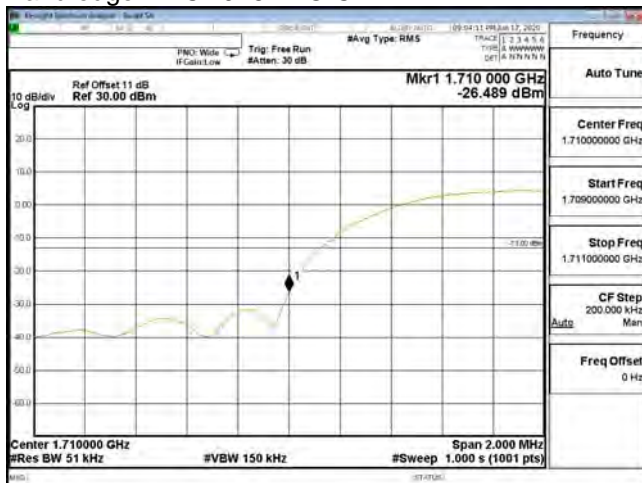
Band edge 2G1900 CH810 EGPRS

Product	Mobile Computer		
Test Mode	Spurious Emission At Antenna Terminals (+/-1MHz)		
Date of Test	2020/06/20	Test Site	CTR
Test Condition	Block Edge Test (WCDMA Band2/4/5)		



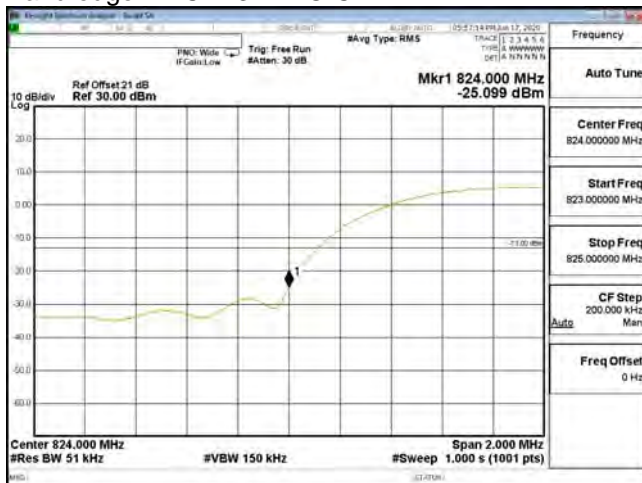
Band edge B2 CH9262 VOICE

Band edge B2 CH9538 VOICE



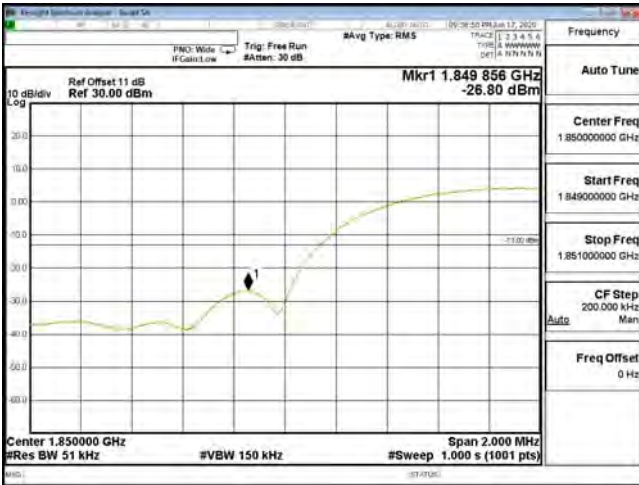
Band edge B4 CH1312 VOICE

Band edge B4 CH1513 VOICE

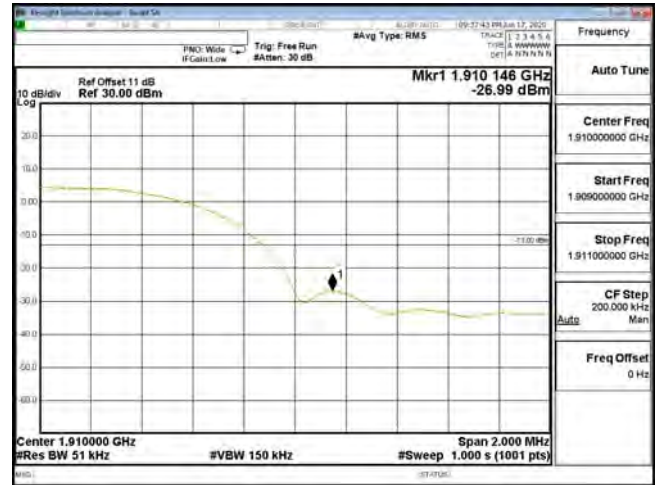


Band edge B5 CH4132 VOICE

Band edge B5 CH4233 VOICE



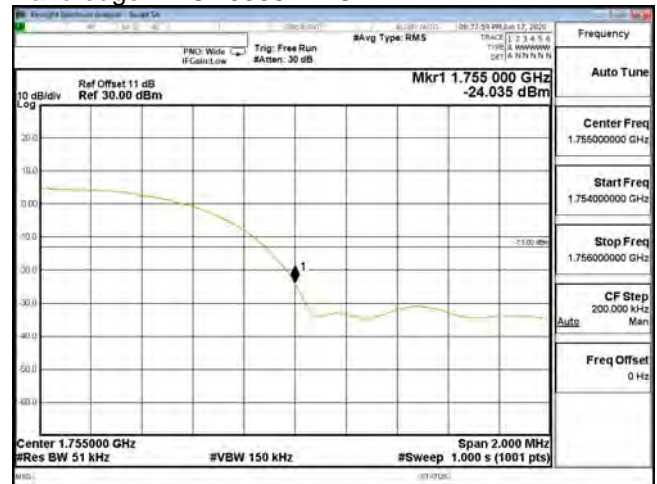
Band edge B2 CH9262 RMC



Band edge B2 CH9538 RMC



Band edge B4 CH1312 RMC



Band edge B4 CH1513 RMC



Band edge B5 CH4132 RMC



Band edge B5 CH4233 RMC



Band edge B2 CH9262 HSDPA



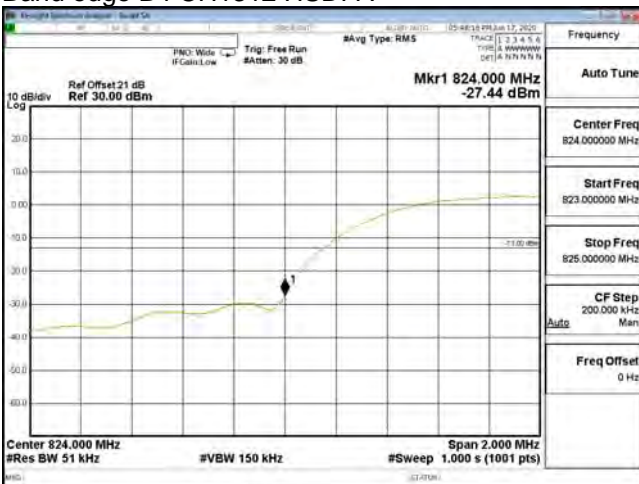
Band edge B2 CH9538 HSDPA



Band edge B4 CH1312 HSDPA



Band edge B4 CH1513 HSDPA



Band edge B5 CH4132 HSDPA



Band edge B5 CH4233 HSDPA



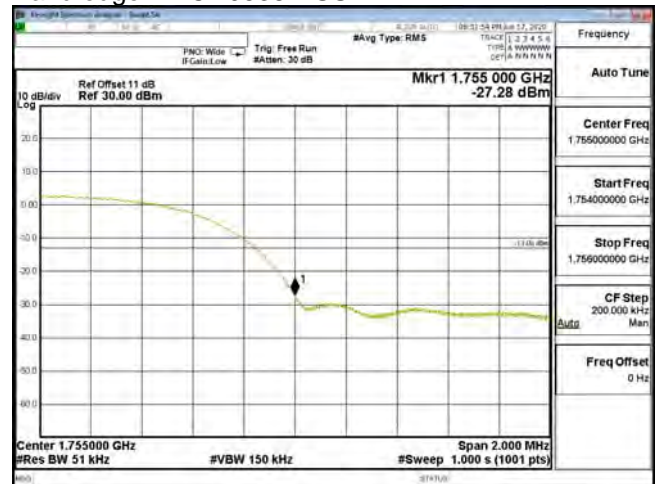
Band edge B2 CH9262 HSUPA



Band edge B2 CH9538 HSUPA



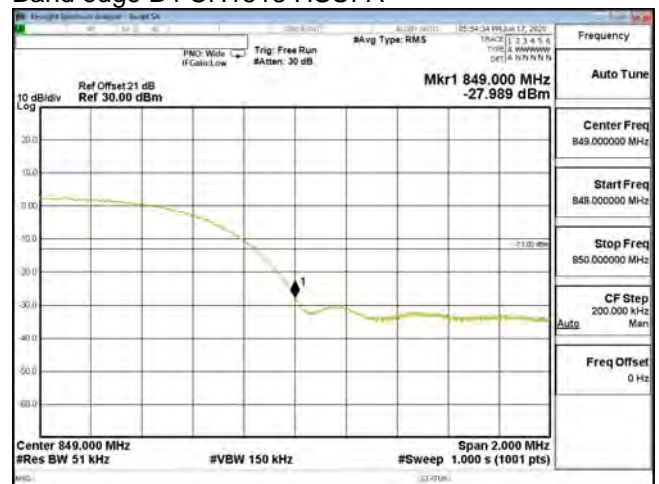
Band edge B4 CH1312 HSUPA



Band edge B4 CH1513 HSUPA



Band edge B5 CH4132 HSUPA



Band edge B5 CH4233 HSUPA

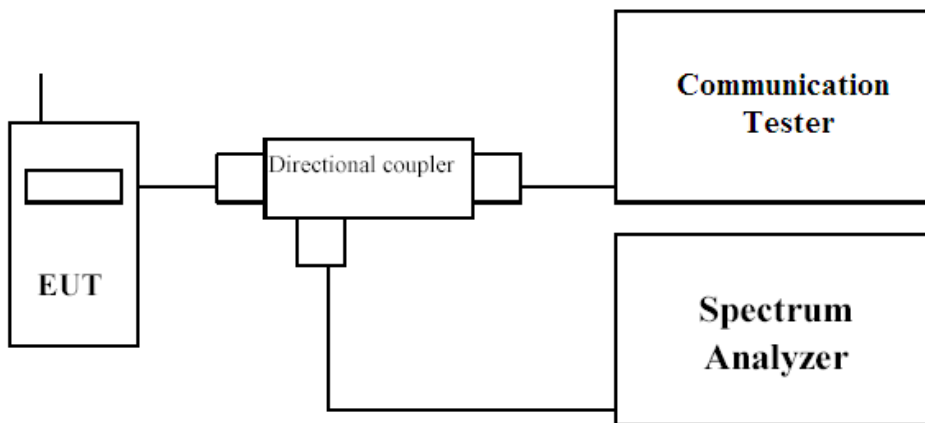
6. Spurious Emission

6.1. Test Specification

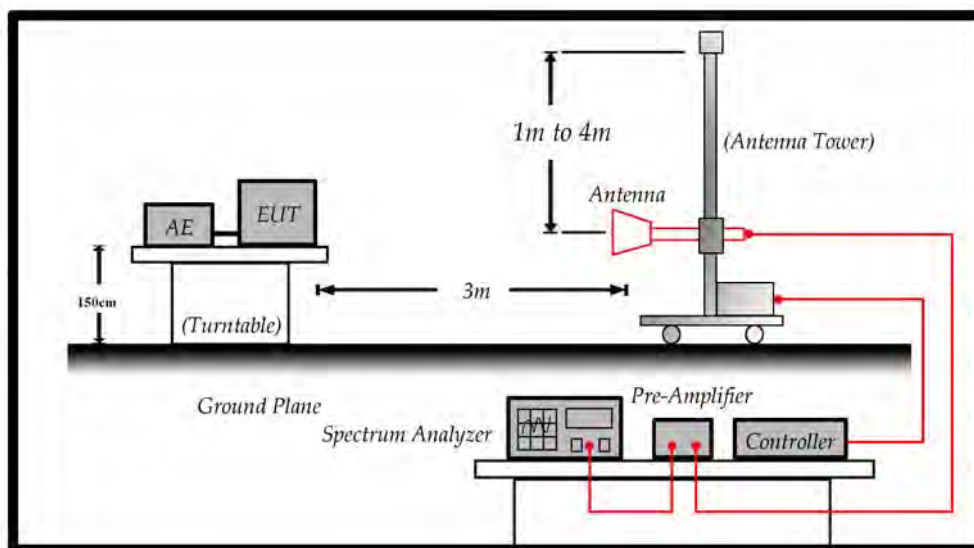
According to Part 2.1051, 2.1053, 22.917, 24.238, 27.53.

6.2. Test Setup

6.1.1 Spurious emissions at antenna terminals.



6.1.2 Field strength of spurious radiation.



6.3. Limits

Limit	<-13dBm
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$43 + 10\text{Log}(P)$ down on the carrier where P is the power in Watts.

6.4. Test Procedure

In accordance with Part 2.1051/2.1053, the spurious emissions from the EUT were measured. The transmitter output power was attenuated using a combination of filters and attenuators and the frequency spectrum investigated from 30MHz to 20GHz. The EUT was set to transmit on full power. The resolution and video bandwidth was set to 1MHz and 3 x RBW. in accordance with Part 22.917 & 24.238, 27.53. The spectrum analyzer detector was set to Max Hold. In addition, measurements were made up to the 10th harmonic of the fundamental. The device was then replaced with a substitution antenna, which input signal was adjusted until the received level matched that of the previously detected emission.

- (1) The EUT is tested with maximum rated TX power via the Base Station simulator.
- (2) The EUT is tested in three orthogonal planes; The worst case test configuration was record on report.

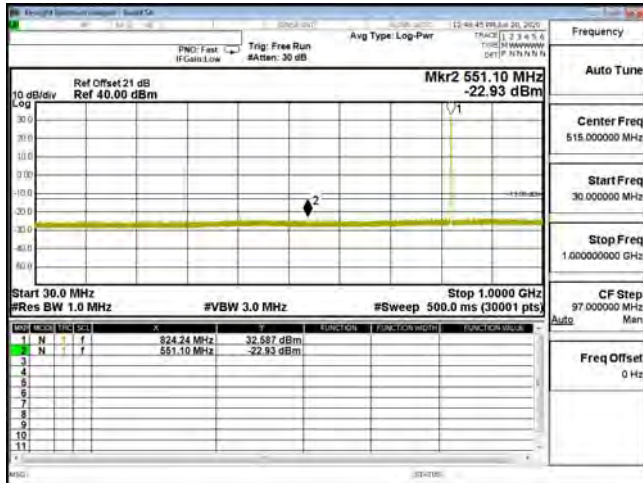
The EUT is placed on a turn table which is 1.5 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to TIA/EIA 603-E on radiated measurement.

6.5. Test Result of Spurious Emission

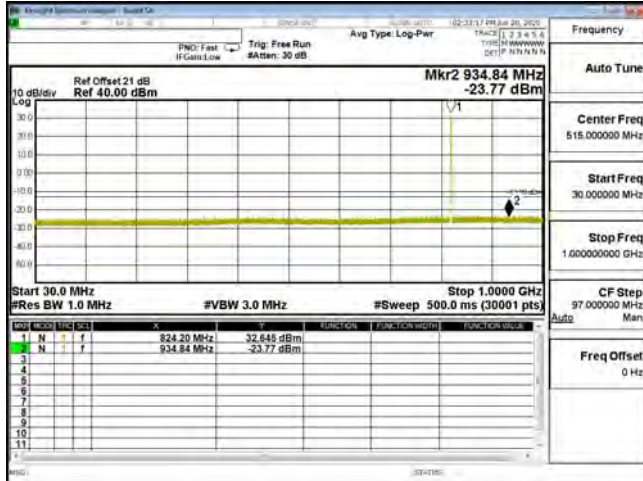
Product	Mobile Computer		
Test Mode	Spurious Emission (Conducted)		
Date of Test	2020/07/15	Test Site	CTR
Test Condition	GSM 850	Test Range	30MHz~10GHz



CSE 2G850 CH128 VOICE 30M-1G



CSE 2G850 CH128 VOICE 1G-10G



CSE 2G850 CH128 GPRS 30M-1G



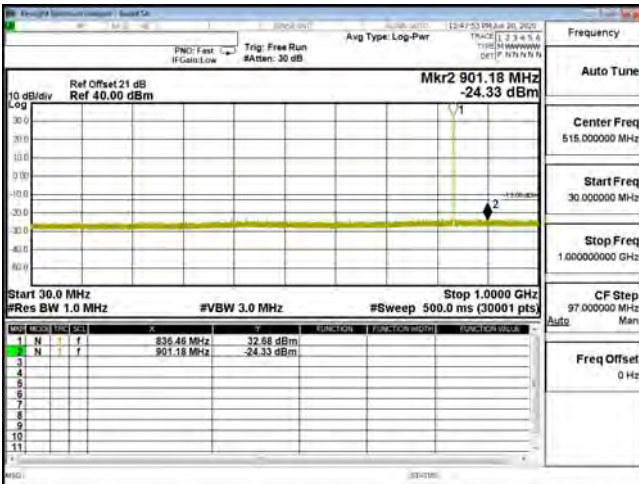
CSE 2G850 CH128 GPRS 1G-10G



CSE 2G850 CH128 EGPRS 30M-1G



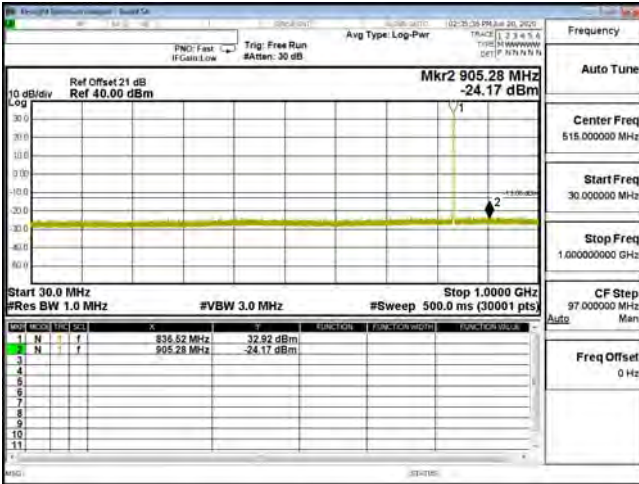
CSE 2G850 CH128 EGPRS 1G-10G



CSE 2G850 CH189 VOICE 30M-1G



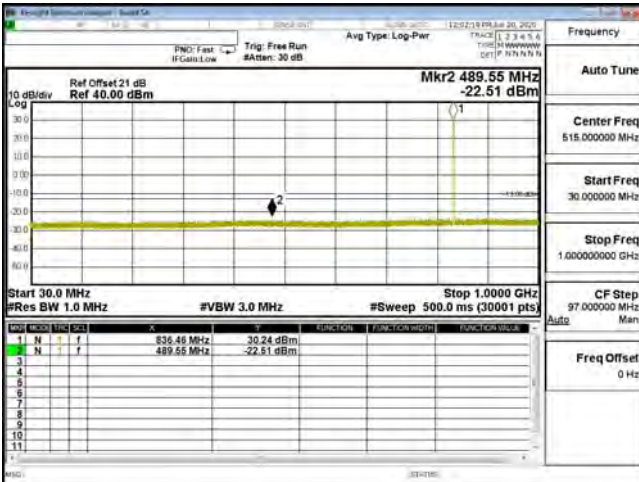
CSE 2G850 CH189 VOICE 1G-10G



CSE 2G850 CH189 GPRS 30M-1G



CSE 2G850 CH189 GPRS 1G-10G



CSE 2G850 CH189 EGPRS 30M-1G



CSE 2G850 CH189 EGPRS 1G-10G



CSE 2G850 CH251 VOICE 30M-1G



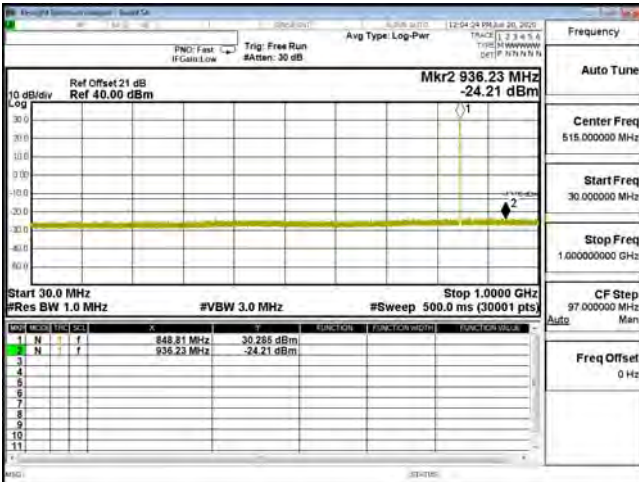
CSE 2G850 CH251 VOICE 1G-10G



CSE 2G850 CH251 GPRS 30M-1G



CSE 2G850 CH251 GPRS 1G-10G

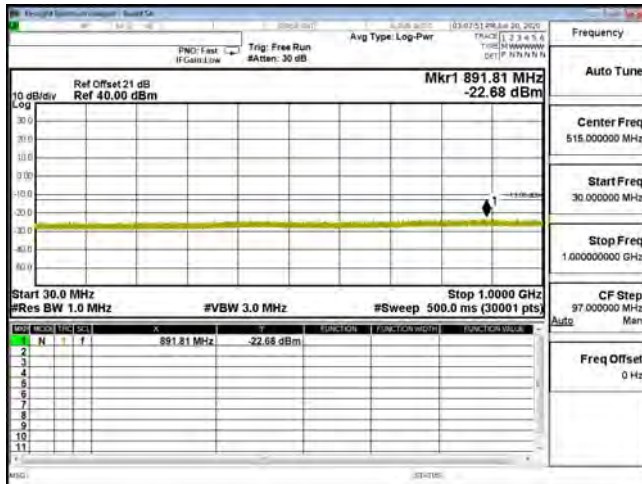


CSE 2G850 CH251 EGPRS 30M-1G

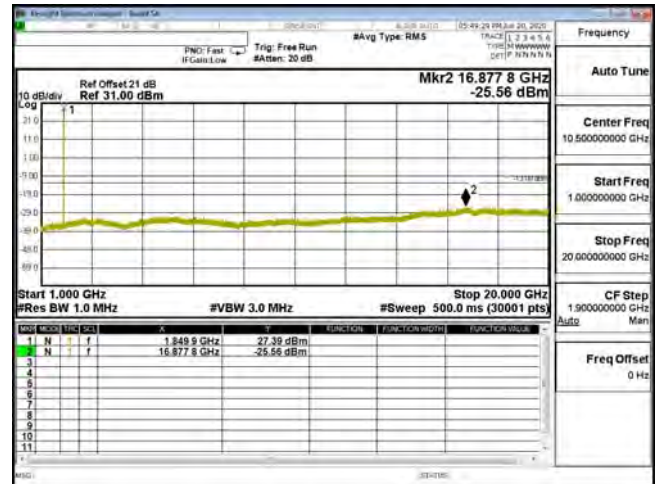


CSE 2G850 CH251 EGPRS 1G-10G

Product	Mobile Computer		
Test Mode	Spurious Emission (Conducted)		
Date of Test	2020/07/15	Test Site	CTR
Test Condition	PCS 1900	Test Range	30MHz~20GHz



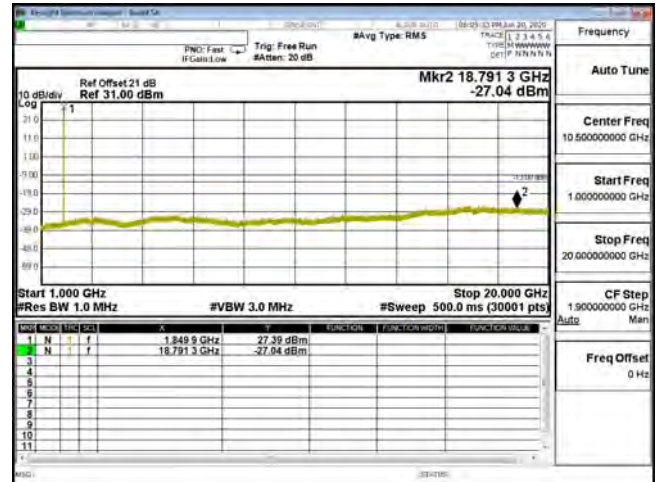
CSE 2G1900 CH512 VOICE 30M-1G



CSE 2G1900 CH512 VOICE 1G-20G



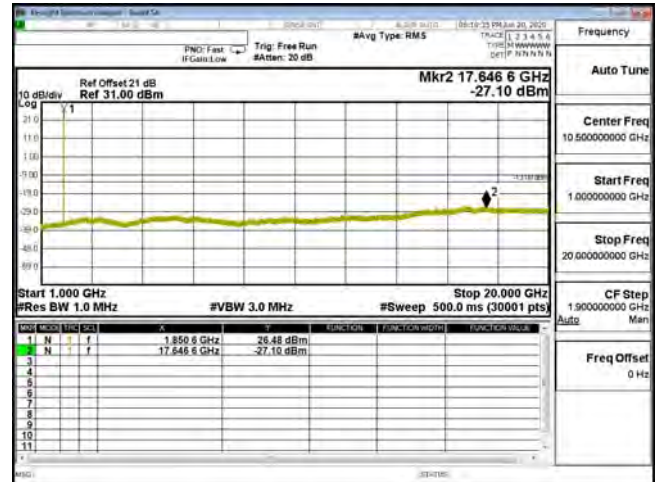
CSE 2G1900 CH512 GPRS 30M-1G



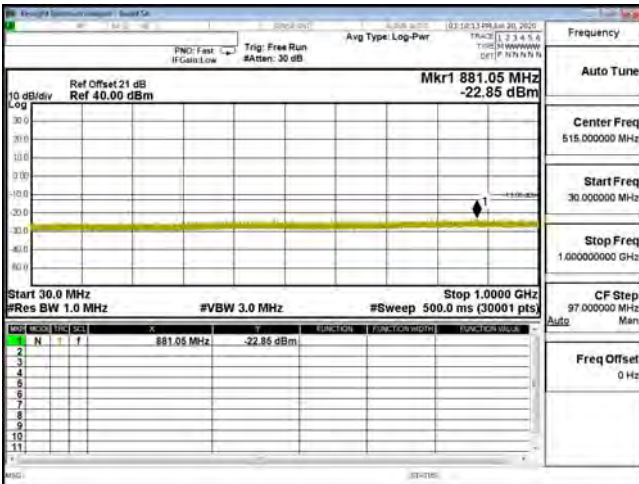
CSE 2G1900 CH512 GPRS 1G-20G



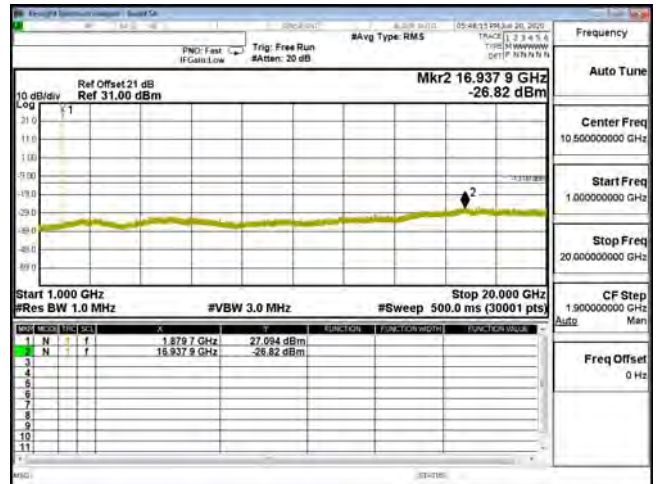
CSE 2G1900 CH512 EGPRS 30M-1G



CSE 2G1900 CH512 EGPRS 1G-20G



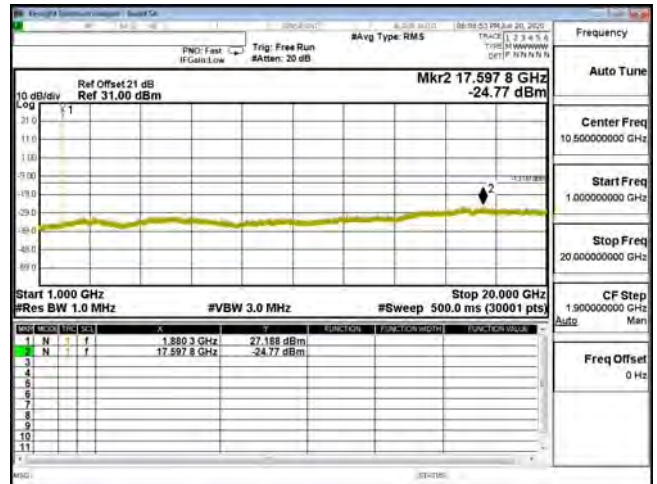
CSE 2G1900 CH661 VOICE 30M-1G



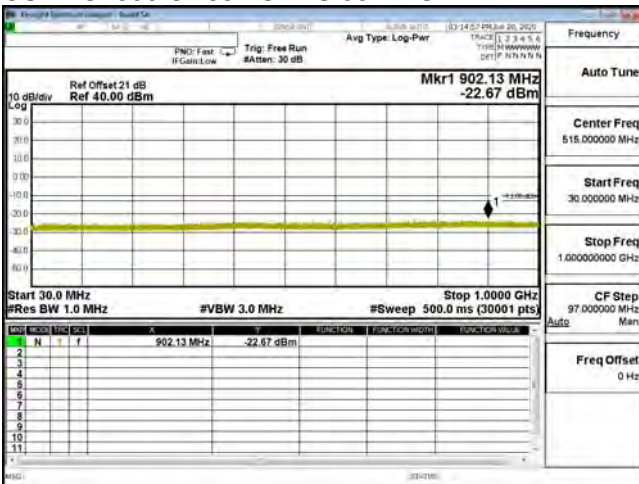
CSE 2G1900 CH661 VOICE 1G-20G



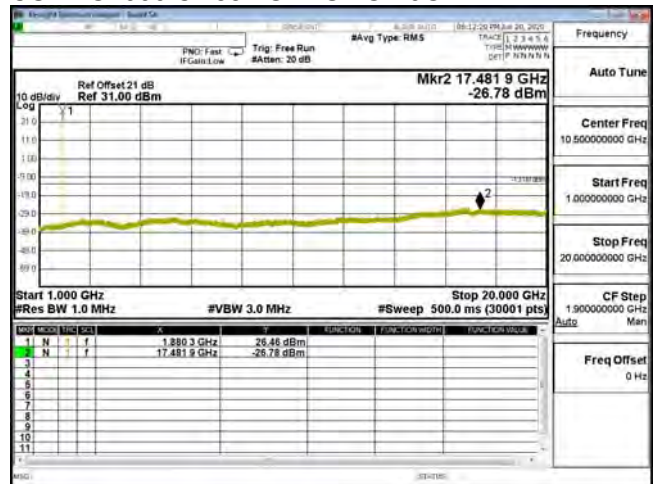
CSE 2G1900 CH661 GPRS 30M-1G



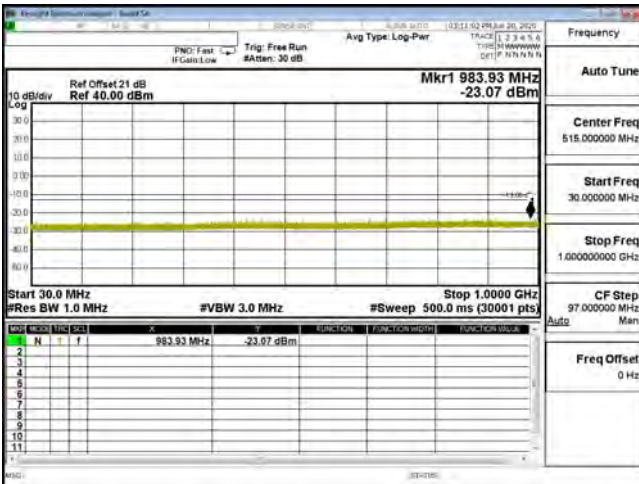
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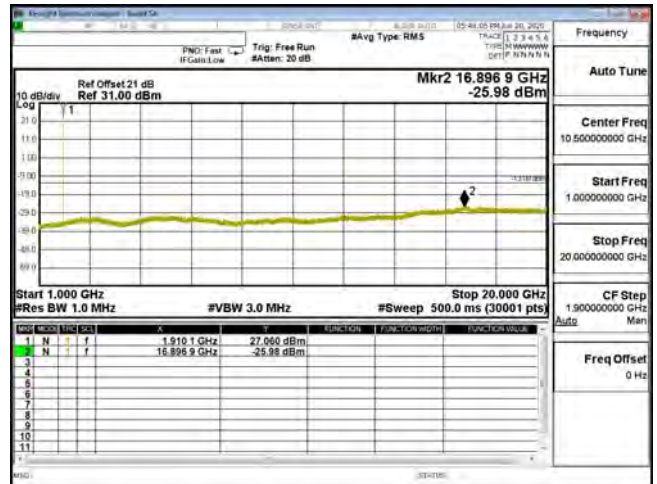
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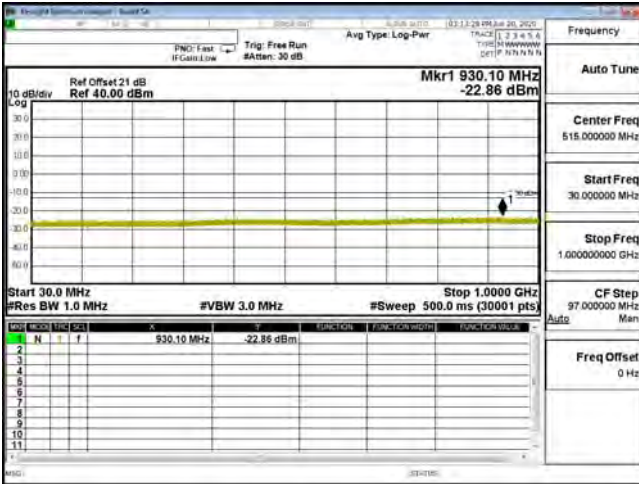
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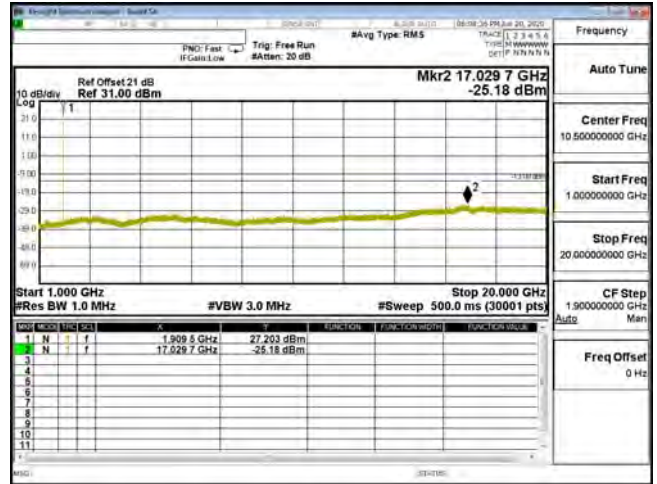
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CSE 2G1900 CH810 VOICE 1G-20G



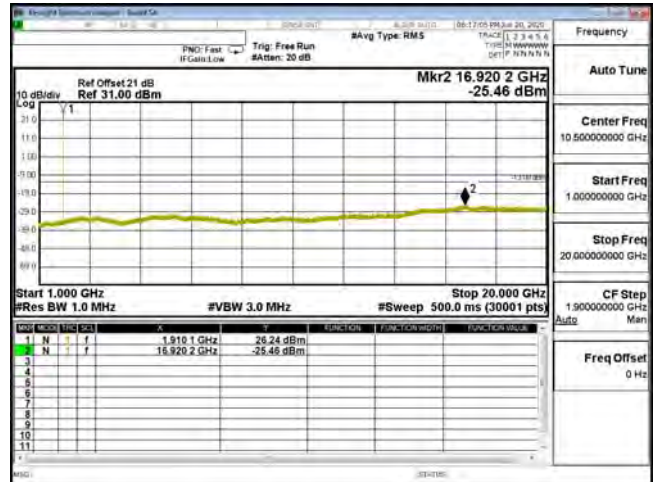
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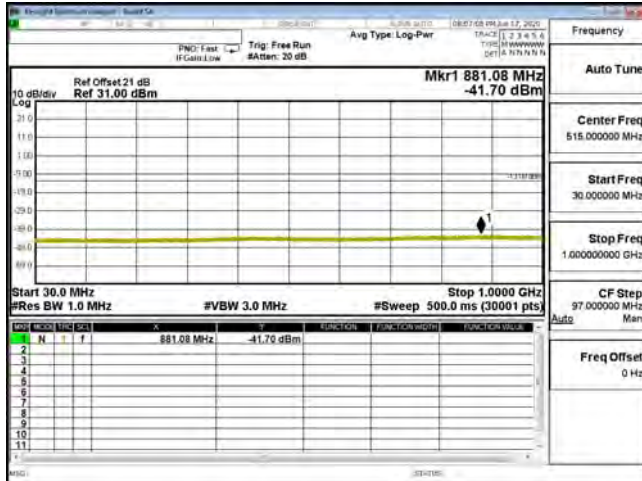


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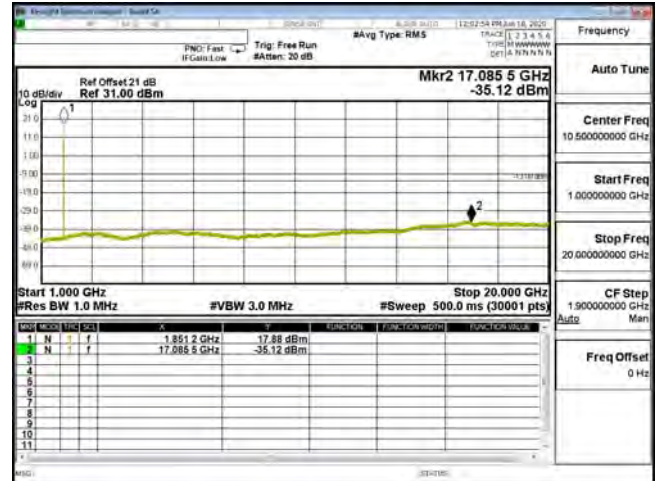


CSE 2G1900 CH810 EGPRS 1G-20G

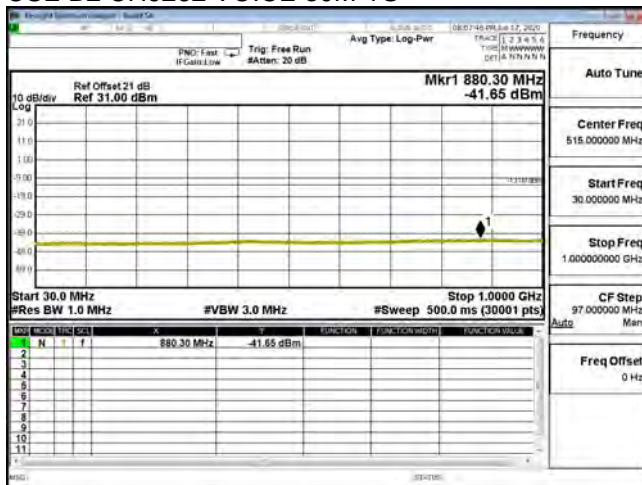
Product	Mobile Computer		
Test Mode	Spurious Emission (Conducted)		
Date of Test	2020/07/15	Test Site	CTR
Test Condition	WCDMA Band2 / Band4	Test Range	30MHz~20GHz
	WCDMA Band5	Test Range	30MHz~10GHz



CSE B2 CH9262 VOICE 30M-1G



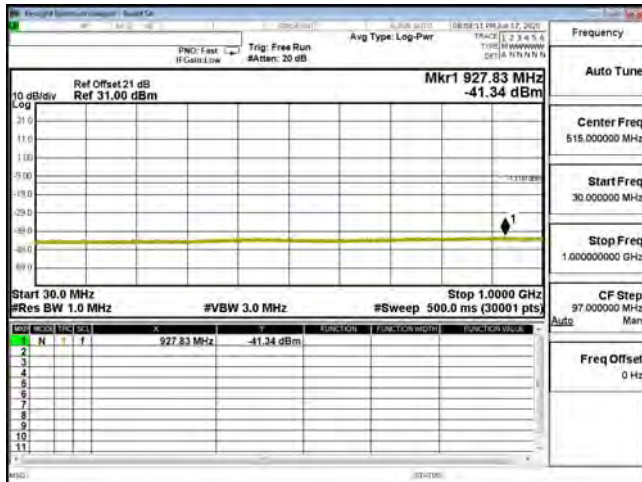
CSE B2 CH9262 VOICE 1G-20G



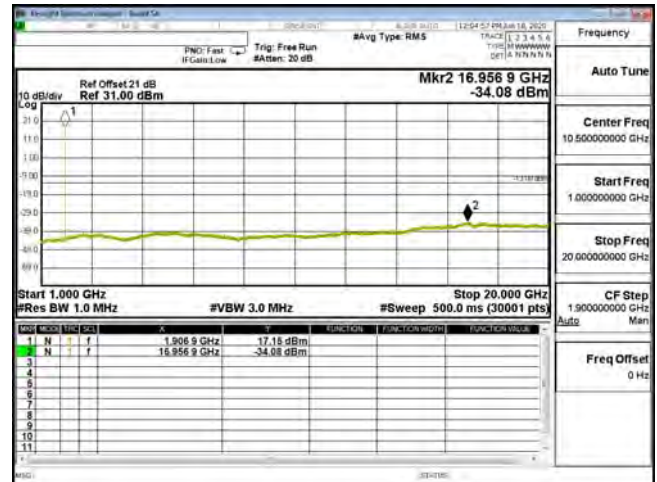
CSE B2 CH9400 VOICE 30M-1G



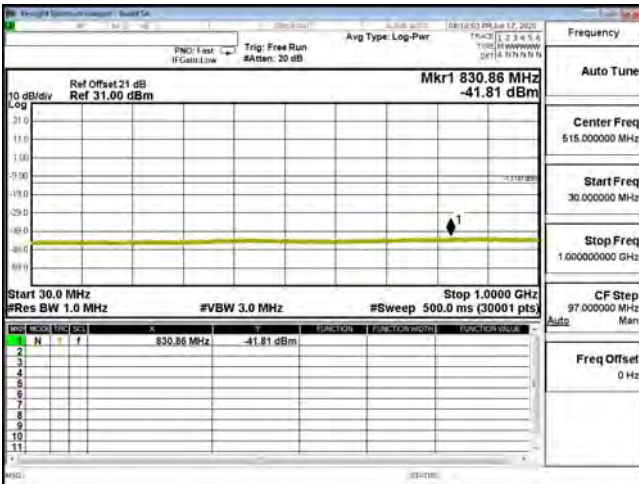
CSE B2 CH9400 VOICE 1G-20G



CSE B2 CH9538 VOICE 30M-1G



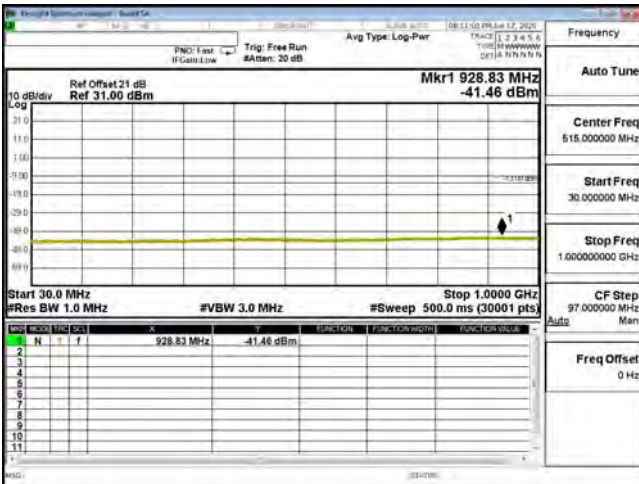
CSE B2 CH9538 VOICE 1G-20G



CSE B4 CH1312 VOICE 30M-1G



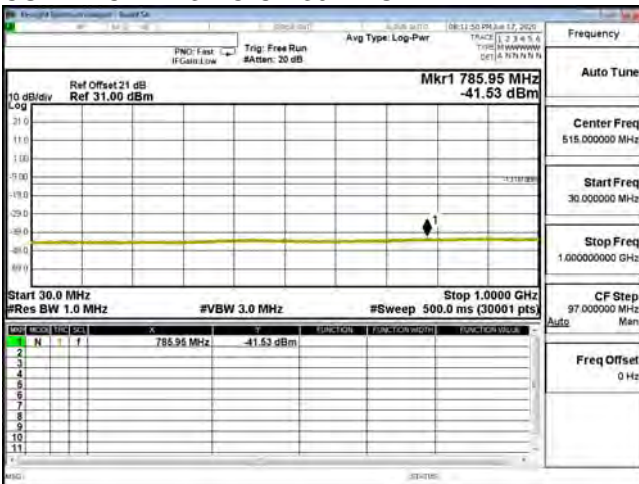
CSE B4 CH1312 VOICE 1G-18G



CSE B4 CH1413 VOICE 30M-1G



CSE B4 CH1413 VOICE 1G-18G



CSE B4 CH1513 VOICE 30M-1G



CSE B4 CH1513 VOICE 1G-18G