

# FCC TEST REPORT

# Test report On Behalf of DeltaTrak Inc. For Real-time data logger Model No.: FlashLink RTL 22370,FlashLink RTL 22371,FlashLink RTL 22372

# FCC ID: 2ATXY-2237X

Prepared for : DeltaTrak Inc. 1236 Doker Drive, Modesto, CA 95351 US

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Date of Test:July 1, 2021 - July 28, 2021Date of Report:July 28, 2021Report Number:TZ210602335-E1

# **TEST RESULT CERTIFICATION**

Applicant's name:	DeltaTrak Inc.
Address:	1236 Doker Drive, Modesto, CA 95351 US
Manufacture's Name:	DeltaTrak Inc.
Address:	1236 Doker Drive, Modesto, CA 95351 US
Product description	
Trade Mark:	DeltaTrak
Product name:	Real-time data logger
Model and/or type reference:	FlashLink RTL 22370, FlashLink RTL 22371, FlashLink RTL 22372
Standards	FCC Rules and Regulations Part 22, Part 24 & Part 27 ANSI C63.26:2015

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Date of Test	
Date (s) of performance of tests:	July 1, 2021 - July 28, 2021
Date of Issue:	July 28, 2021
Test Result:	Pass

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# **Revision History**

Revision	Issue Date	Revisions	Revised By
000	July 28, 2021	Initial Issue	Andy Zhang



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# **1** TEST STANDARDS

The tests were performed according to following standards:

FCC Part 2: FREQUENCY ALLOCA-TIONS AND RADIO TREATY MAT-TERS; GENERAL RULES AND REG-ULATIONS

FCC Part 22 Subpart H: PRIVATE LAND MOBILE RADIO SERVICES.

FCC Part 24 Subpart E: PUBLIC MOBILE SERVICES

FCC Part 27 Subpart L: MISCELLANEOUS WIRELESS COMMUNICATIONS SERVICES

ANSI/TIA-603-E-2016: Land Mobile FM or PM Communications Equipment Measurement and Performance Standards.

ANSI C63.26-2015: IEEE/ANSI Standard for Compliance Testing of Transmitters Used in Licensed Radio Services

FCCKDB971168D01 Power Meas License Digital Systems



# 2 SUMMARY

SUIVIIVIART	
I Product Description EUT	: Real-time data logger
Model Number	: FlashLink RTL 22370,FlashLink RTL 22371,FlashLink RTL 22372
Model Difference Declaration	<ul> <li>FlashLink RTL 22370 with one temperature probe,</li> <li>FlashLink RTL 22372 with dual temperature probe and FlashLink RTL 22371 without temperature probe.</li> </ul>
Test Model	: FlashLink RTL 22372
Power Supply	: DC 3.70V by Battery
Hardware version	: T70MR41F
Software version	: T72_3_DeltaTrak_L04
Sample ID	
Bluetooth	
Bluetooth Version	: V5.0[only support BLE in this product]
Channel Number	: 40 Channels for BLE (DTS)
Modulation Technology	: GFSK for BLE (DTS)
Data Rates	: BLE (DTS): 1Mbps
Antenna Type And Gain	Internal Antenna /0.0 dBi(Max)
GSM	
Support Bands	⊠GSM 850 : ⊠PCS 1900 ⊠GSM 900 ⊠PCS 1800
GSM FCC Operation Frequency	. GSM 850(UL: 824 – 848 MHz/DL: 869 – 894 MHz) . GSM 1900(UL: 1850 –1910 MHz/DL: 1930 – 1990 MHz)
Channel Separation	: 0.2MHz
Modulation Technology	: GMSK, 8PSK
Antenna Type And Gain	Internal Antenna GSM900: 0.3dBi : DCS1800: -0.9dBi GSM850: -1.01dBi PCS1900: 0.12dBi
UTRA	
Support Bands	<ul> <li>WCDMA BAND I</li> <li>WCDMA BAND II</li> <li>WCDMA BAND IV</li> <li>WCDMA BAND V</li> <li>WCDMA BAND VIII</li> </ul>
UTRA FCC Operation Frequency	WCDMA BAND V (UL: 824 – 848 MHz/DL: 869 – 894 MHz) : WCDMA BAND II (UL: 1850 –1910 MHz/DL: 1930 – 1990 MHz) WCDMA BAND IV(UL: 1710 –1755 MHz/DL: 2110 – 2155 MHz)
Channel Separation	: 0.2 MHz
Modulation Technology	: OFDM (16QAM, QPSK)
Antenna Type And Gain	Internal Antenna WCDMA BAND I: +0.21dBi : WCDMA BAND II: -0.27dBi WCDMA BAND IV: -0.53dBi WCDMA BAND V: +0.32dBi



#### WCDMA BAND VIII: +0.86dBi

# Note: Antenna position refer to EUT Photos.

# GSM/WCDMA Card Slot :

	Maximum ERP/EIRP (dBm)	Max. Peak Conducted Power (dBm)	Max. Average Burst Power (dBm)
GPRS 850	26.66	31.83	31.64
EGPRS 850	20.39	26.83	24.60
GPRS 1900	24.43	29.77	29.66
EGPRS 1900	19.62	25.42	22.22
UMTS BAND II	19.16	25.33	22.44
UMTS BAND IV	18.82	25.12	22.49
UMTS BAND V	20.19	24.95	22.54



#### 2.2 Host System Configuration List and Details

Manufacturer	Description	Model	Serial Number	Certificate

#### 2.3 Short description of the Equipment under Test (EUT)

EUT is subscriber equipment in the GSM/WCDMA system. Frequency bands Shows in section 2.1.

#### 2.4 Normal Accessory setting

Fully charged battery was used during the test.

#### 2.5 EUT configuration

The following peripheral devices and interface cables were connected during the measurement:

- - supplied by the manufacturer
- $\bigcirc$  supplied by the lab

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

This submittal(s) (test report) is intended for FCC ID: 2ATXY-2237X filing to comply with FCC Part 22 Rules, FCC Part 24 Rules and FCC Part 27 Rules.

#### 2.7 Modifications

No modifications were implemented to meet testing criteria.



# **3** TEST ENVIRONMENT

### 3.1 Test Facility

#### FCC

Designation Number: CN1275 Test Firm Registration Number: 167722 Shenzhen Tongzhou Testing Co.,Ltd has been listed on the US Federal Communications Commission list of test facilities recognized to perform electromagnetic emissions measurements.

#### A2LA

Certificate Number: 5463.01 Shenzhen Tongzhou Testing Co.,Ltd has been listed by American Association for Laboratory Accreditation to perform electromagnetic emission measurement.

#### IC

ISED#: 22033 CAB identifier: CN0099 Shenzhen Tongzhou Testing Co.,Ltd has been listed by Innovation, Science and Economic Development Canada to perform electromagnetic emission measurement.

The 3m-Semi anechoic test site fulfils CISPR 16-1-4 according to ANSI C63.10 and CISPR 16-1-4:2010

#### 3.2 Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature:	15-35 ° C
Humidity:	30-60 %
Atmospheric pressure:	950-1050mbar



# 3.3 Test Description

### PCS 1900 and UMTS BAND II:

Test Item	FCC Rule No.	Requirements	Judgement	Sample ID
Effective (Isotropic) Radiated Power	2.1046, 24.232(c)	EIRP ≤ 2W(33dBm)	Pass	TZ210602335-2#
Bandwidth	2.1049 24.238(a)	OBW: No limit. EBW: No limit.	Pass	TZ210602335-1#
Band Edges	2.1051, 24.238(a)	-13dBm	Pass	TZ210602335-1#
Spurious Emission at Antenna Terminals	2.1051, 24.238(a)	-13dBm	Pass	TZ210602335-1#
Field Strength of Spurious Radiation	2.1053, 24.238(a)	-13dBm	Pass	TZ210602335-2#
Frequency Stability	2.1055, 24.235	the fundamental emission stays within the authorized frequency block.	Pass	TZ210602335-1#
Peak to average ratio	24.232(d)	<13dB	Pass	TZ210602335-1#

### GSM850 and UMTS BAND V:

Test Item	FCC Rule No.	Requirements	Judgement	Sample ID
Effective (Isotropic) Radiated Power	2.1046, 2.913(a)	EIRP ≤ 7W(33dBm)	Pass	TZ210602335-2#
Occupied Bandwidth	2.1049	OBW: No limit.	Pass	TZ210602335-1#
Emission Bandwidth	22.917(b)	EBW: No limit.	Pass	TZ210602335-1#
Band Edges Compliance	2.1051, 22.917(a)(b)	KDB 971 168 D02 971168 D02 Misc OOBE License Digital Systems v01 &27.53(m) for detail the limit is upon different OBW	Pass	TZ210602335-1#
Spurious Emission at Antenna Terminals	2.1051, 22.917	-13dBm	Pass	TZ210602335-2#
Field Strength of Spurious Radiation	2.1053, 22.917	-13dBm	Pass	TZ210602335-1#
Frequency Stability	2.1055, 22.355	the fundamental emissions stay within the authorized bands of operation. (2.5ppm)	Pass	TZ210602335-1#

#### UMTS BAND IV:

Test Item	FCC Rule No.	Requirements	Judgement	Sample ID
Effective (Isotropic) Radiated Power	2.1046, 27.50(d)	EIRP ≤ 2W(33dBm)	Pass	TZ210602335-2#
Bandwidth	2.1049	OBW: No limit. EBW: No limit.	Pass	TZ210602335-1#
Band Edges	2.1051, 27.53(h)	-13dBm	Pass	TZ210602335-1#
Spurious Emission at Antenna Terminals	2.1051, 27.53(h)	-13dBm	Pass	TZ210602335-1#
Field Strength of Spurious Radiation	2.1053, 27.53(h)	-13dBm	Pass	TZ210602335-2#
Frequency Stability	2.1055, 27.54	the fundamental emissions stay within the authorized bands of operation. (2.5ppm)	Pass	TZ210602335-1#
Peak to average ratio	27.50(d)	<13dB	Pass	TZ210602335-1#



# 3.4 Equipments Used during the Test

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Due Date
1	MXA Signal Analyzer	Keysight	N9020A	MY52091623	2021/1/4	2022/1/3
2	Power Sensor	Agilent	U2021XA	MY5365004	2021/1/4	2022/1/3
3	Power Meter	Agilent	U2531A	TW53323507	2021/1/4	2022/1/3
4	Loop Antenna	schwarzbeck	FMZB1519B	00023	2019/11/16	2022/11/15
5	Wideband Antenna	schwarzbeck	VULB 9163	958	2019/11/16	2022/11/15
6	Horn Antenna	schwarzbeck	9120D-1141	1574	2019/11/16	2022/11/15
7	EMI Test Receiver	R&S	ESCI	100849/003	2021/1/4	2022/1/3
8	Controller	MF	MF7802	N/A	N/A	N/A
9	Amplifier	schwarzbeck	BBV 9743	209	2021/1/4	2022/1/3
10	Amplifier	Tonscend	TSAMP- 0518SE		2021/1/4	2022/1/3
11	RF Cable(below 1GHz)	HUBER+SUHNE R	RG214	N/A	2021/1/4	2022/1/3
12	RF Cable(above 1GHz)	HUBER+SUHNE R	RG214	N/A	2021/1/4	2022/1/3
12	RE test software	Tonscend	JS32-RE	V2.0.2.0	N/A	N/A
14	Test Software	Tonscend	JS1120-3	V2.5.77.0418	N/A	N/A
15	Horn Antenna	A-INFO	LB-180400- KF	J211020657	2020/10/12	2022/10/11
16	Amplifier	CDSA	PAP-1840	17021	2020/10/10	2021/10/09
17	Spectrum Analyzer	R&S	FSP40	100550	2021/1/10	2022/1/9
18	UNIVERSAL RADIO COMMUNICATION	R&S	CMW500	101855	2021/1/4	2022/1/3
19	Signal Generator	Keysight	N5182A	MY4620709	2021/1/4	2022/1/3



#### 3.5 Measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to ETSI TR 100 028 " Electromagnetic compatibility and Radio spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics" and is documented in the HUAK quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for HUAK is reported:

Test	Range	Measurem ent	Note
Radiated Emission	30~1000MHz	3.10 dB	(1)
Radiated Emission	1~18GHz	3.70 dB	(1)
Radiated Emission	18-40GHz	3.90 dB	(1)
Conducted Disturbance	0.15~30MHz	1.63 dB	(1)
Conducted Power	9KHz~18GHz	0.61 dB	(1)
Spurious RF Conducted Emission	9KHz~40GHz	1.22 dB	(1)
Band Edge Compliance of RF Emission	9KHz~40GHz	1.22 dB	(1)
Occuiped Bandwidth	9KHz~40GHz	-	(1)
Frequency Error	9KHz~40GHz	1 x 10 <sup>-7</sup>	(1)

(1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=1.96.



# 4 DESCRIPTION OF TEST MODES

During the testing, the EUT was controlled via Rhode & Schwarz Digital Radio Communication Tester (CMU 200)to ensure max power transmission and proper modulation. Three channels (The top channel, the middle channel and the bottom channel) were chosen for testing on both GSM and PCS frequency band. \*\*\*Note: GPRS 850, GPRS 1900, WCDMA/HSPA band II, WCDMA/HSPA band IV, WCDMA/HSPA band V mode have been tested during the test.

The worst condition was recorded in the test report if no other modes test data.

# **5** TEST CONDITIONS AND RESULTS

### 5.1 OUTPUT POWER

5.1.1 CONDUCTED OUTPUT POWER

#### 5.1.1.1 MEASUREMENT METHOD

The transmitter output port was connected to base station.

The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator.

The path loss was compensated to the results for each measurement.

Measure the maximum burst average power and average power for other modulation signal.

The EUT was setup for the max output power with pseudo random data modulation. Power was measured with Spectrum Analyzer. The measurements were performed on all modes(GSM/GPRS 850, GSM/GPRS 1900, WCDMA/HSPA band II, WCDMA/HSPA band IV, WCDMA/HSPA band V)at 3 typical channels(the Top Channel, the Middle Channel and the Bottom Channel) for each band.

#### 5.1.1.2 MEASUREMENT RESULT



# **GSM850**

Mode	Frequency (MHz)	Peak Power	Avg.Burst Power	Duty cycle Factor(dB)	Frame Power (dBm)	Peak to Average Ratio
0000050	824.2	31.83	31.64	-9	22.64	0.19
GPRS850 (1 Slot)	836.6	31.59	31.38	-9	22.38	0.21
(1 3101)	848.8	31.79	31.51	-9	22.51	0.28
0000050	824.2	30.14	30.03	-6	24.03	0.11
GPRS850 (2 Slot)	836.6	30.38	30.17	-6	24.17	0.20
(2 0101)	848.8	30.28	30.02	-6	24.02	0.26
0000050	824.2	29.50	29.39	-4.26	25.13	0.11
GPRS850 (3 Slot)	836.6	29.45	29.23	-4.26	24.97	0.21
(3 8101)	848.8	29.14	28.89	-4.26	24.63	0.25
0000050	824.2	27.09	26.81	-3	23.81	0.28
GPRS850 (4 Slot)	836.6	27.14	26.91	-3	23.91	0.23
(4 0101)	848.8	27.38	27.18	-3	24.18	0.19
50000050	824.2	26.83	24.30	-9	15.30	2.53
EGPRS850 (1 Slot)	836.6	26.77	24.60	-9	15.60	2.17
(1 3101)	848.8	26.59	23.62	-9	14.62	2.97
	824.2	25.12	22.90	-6	16.90	2.22
EGPRS850 (2 Slot)	836.6	25.35	22.95	-6	16.95	2.40
	848.8	25.37	23.29	-6	17.29	2.07
50000000	824.2	23.20	20.60	-4.26	16.34	2.60
EGPRS850 (3 Slot)	836.6	23.21	21.03	-4.26	16.77	2.18
	848.8	23.32	21.31	-4.26	17.05	2.01
50000050	824.2	21.81	19.01	-3	16.01	2.80
EGPRS850 (4 Slot)	836.6	21.98	19.90	-3	16.90	2.08
(+ 0101)	848.8	21.87	19.65	-3	16.65	2.21



### GSM1900

Mode	Frequency (MHz)	Peak Power	Avg.Burst Power	Duty cycle Factor(dB)	Frame Power(dBm)	Peak to Average Ratio
00004000	1850.2	29.70	29.47	-9	20.47	0.23
GPRS1900 (1 Slot)	1880	29.77	29.66	-9	20.66	0.11
(1 000)	1909.8	29.59	29.29	-9	20.29	0.30
00004000	1850.2	27.83	27.58	-6	21.58	0.25
GPRS1900 (2 Slot)	1880	27.90	27.71	-6	21.71	0.19
(2 000)	1909.8	27.91	27.80	-6	21.80	0.11
00004000	1850.2	26.94	26.75	-4.26	22.49	0.19
GPRS1900 (3 Slot)	1880	26.75	26.63	-4.26	22.37	0.13
(3 5101)	1909.8	26.58	26.38	-4.26	22.12	0.20
00004000	1850.2	25.78	25.55	-3	22.55	0.23
GPRS1900 (4 Slot)	1880	25.89	25.60	-3	22.60	0.29
(4 000)	1909.8	25.56	25.32	-3	22.32	0.23
500004000	1850.2	25.42	22.16	-9	13.16	3.26
EGPRS1900 (1 Slot)	1880	25.20	21.92	-9	12.92	3.28
(1 500)	1909.8	25.42	22.22	-9	13.22	3.20
500004000	1850.2	24.85	21.72	-6	15.72	3.13
EGPRS1900 (2 Slot)	1880	24.79	21.07	-6	15.07	3.72
(2 301)	1909.8	24.75	21.55	-6	15.55	3.20
500004000	1850.2	22.86	19.65	-4.26	15.39	3.21
EGPRS1900 (3 Slot)	1880	22.81	19.80	-4.26	15.54	3.01
(3 3101)	1909.8	22.58	19.35	-4.26	15.09	3.23
	1850.2	21.69	18.12	-3	15.12	3.57
EGPRS1900 (4 Slot)	1880	21.73	18.48	-3	15.48	3.25
	1909.8	21.91	18.35	-3	15.35	3.56



UMTS BAND II						
Mode	Frequency (MHz)	Peak Power	Avg.Burst Power	Peak to Average Ratio		
	1852.4	25.33	22.44	2.89		
RMC	1880	25.07	22.01	3.06		
	1907.6	24.08	21.98	2.10		
	1852.4	24.12	21.11	3.01		
HSDPA Subtest 1	1880	23.01	20.80	2.20		
	1907.6	23.37	20.79	2.59		
	1852.4	22.36	20.10	2.26		
HSDPA Subtest 2	1880	22.60	20.22	2.38		
	1907.6	22.98	20.78	2.20		
	1852.4	23.32	20.19	3.13		
HSDPA Subtest 3	1880	22.59	20.05	2.54		
	1907.6	23.07	20.17	2.90		
	1852.4	22.98	20.01	2.96		
HSDPA Subtest 4	1880	23.16	20.50	2.66		
	1907.6	23.59	20.69	2.90		
	1852.4	22.89	20.45	2.44		
HSUPA Subtest 1	1880	22.45	20.30	2.15		
	1907.6	23.04	20.31	2.72		
	1852.4	23.92	21.46	2.46		
HSUPA Subtest 2	1880	24.05	21.84	2.21		
	1907.6	23.89	21.30	2.60		
	1852.4	24.17	21.11	3.05		
HSUPA Subtest 3	1880	23.67	21.30	2.37		
	1907.6	24.16	21.25	2.92		
	1852.4	23.66	21.27	2.38		
HSUPA Subtest 4	1880	24.86	22.00	2.86		
	1907.6	25.01	22.36	2.65		
	1852.4	23.40	20.99	2.41		
HSUPA Subtest 5	1880	23.92	21.61	2.30		
	1907.6	24.63	21.85	2.79		



UMTS BAND IV					
Mode	Frequency (MHz)	Peak Power	Avg.Burst Power	Peak to Average Ratio	
	1712.4	24.87	22.49	2.38	
RMC	1732.4	25.12	21.96	3.17	
	1752.6	24.78	22.25	2.52	
	1712.4	23.57	21.23	2.34	
HSDPA Subtest 1	1732.4	23.50	20.92	2.58	
	1752.6	22.92	20.90	2.02	
	1712.4	22.72	20.29	2.42	
HSDPA Subtest 2	1732.4	22.96	20.13	2.82	
	1752.6	23.16	20.73	2.43	
	1712.4	22.63	20.01	2.62	
HSDPA Subtest 3	1732.4	22.05	19.95	2.10	
	1752.6	23.09	20.16	2.93	
	1712.4	22.60	20.38	2.22	
HSDPA Subtest 4	1732.4	23.35	20.56	2.79	
	1752.6	23.28	20.93	2.35	
	1712.4	22.82	20.60	2.22	
HSUPA Subtest 1	1732.4	23.36	20.25	3.12	
	1752.6	22.37	20.26	2.11	
	1712.4	24.34	21.54	2.80	
HSUPA Subtest 2	1732.4	24.02	21.91	2.11	
	1752.6	23.87	21.45	2.41	
	1712.4	23.38	21.05	2.33	
HSUPA Subtest 3	1732.4	24.10	21.17	2.93	
	1752.6	24.27	21.19	3.09	
	1712.4	23.35	21.24	2.11	
HSUPA Subtest 4	1732.4	24.60	22.18	2.43	
	1752.6	25.14	22.01	3.14	
	1712.4	23.45	21.17	2.29	
HSUPA Subtest 5	1732.4	24.03	21.59	2.43	
	1752.6	25.07	21.98	3.09	



UMTS BAND V					
Mode	Frequency (MHz)	Peak Power	Avg.Burst Power	Peak to Average Ratio	
	826.4	24.95	22.54	2.41	
WCDMA1900 RMC	836.4	23.99	21.90	2.09	
	846.6	24.56	22.10	2.46	
	826.4	23.61	21.05	2.56	
HSDPA Subtest 1	836.4	23.16	20.84	2.32	
	846.6	23.85	20.98	2.88	
	826.4	23.43	20.41	3.02	
HSDPA Subtest 2	836.4	22.91	20.17	2.73	
	846.6	23.53	20.45	3.08	
	826.4	22.74	20.07	2.68	
HSDPA Subtest 3	836.4	22.56	19.83	2.72	
	846.6	22.99	20.20	2.79	
	826.4	22.55	20.32	2.23	
HSDPA Subtest 4	836.4	23.00	20.63	2.37	
	846.6	23.63	20.70	2.93	
	826.4	23.67	20.79	2.88	
HSUPA Subtest 1	836.4	23.40	20.36	3.04	
	846.6	23.22	20.45	2.77	
	826.4	23.95	21.40	2.54	
HSUPA Subtest 2	836.4	25.00	21.86	3.13	
	846.6	23.66	21.33	2.33	
	826.4	23.43	21.25	2.18	
HSUPA Subtest 3	836.4	23.43	20.91	2.52	
	846.6	23.51	20.98	2.53	
	826.4	24.05	21.16	2.89	
HSUPA Subtest 4	836.4	25.36	22.36	2.99	
	846.6	25.13	21.99	3.14	
	826.4	24.09	20.97	3.11	
HSUPA Subtest 5	836.4	24.13	21.83	2.31	
	846.6	24.07	21.82	2.25	



According to 3GPP 25.101 sub-clause 6.2.2, the maximum output power is allowed to be reduced by following the table.

Table 6.1aA: UE maximum output power with HS-DPCCH and E-DCH

UE Transmit Channel Configuration	CM(db)	MPR(db)		
For all combinations of ,DPDCH,DPCCH	0≤ CM≤3.5			
HS-DPDCH, E-DPDCH and E-DPCCH		MAX(CM-1,0)		
Note: CM=1 for $\beta_{c}/\beta_{d}=12/15$ , $\beta_{hs}/\beta_{c}=24/15$ . For all other combinations of DPDCH, DPCCH, HS-				
DPCCH, E-DPDCH and E-DPCCH the MPR is based on the relative CM difference.				

The device supports MPR to solve linearity issues (ACLR or SEM) due to the higher peak-to average ratios (PAR) of the HSUPA signal. This prevents saturating the full range of the TX DAC inside of device and provides a reduced power output to the RF transceiver chip according to the Cubic Metric (a function of the combinations of DPDCH, DPCCH, HS-DPCCH, E-DPDCH and E-DPCCH).

When E-DPDCH channels are present the beta gains on those channels are reduced firsts to try to get the power under the allowed limit. If the beta gains are lowered as far as possible, then a hard limiting is applied at the maximum allowed level.

The SW currently recalculates the cubic metric every time the beta gains on the E-DPDCH are reduced. The cubic metric will likely get lower each time this is done .However, there is no reported reduction of maximum output power in the HSUPA mode since the device also provides a compensate for the power back-off by increasing the gain of TX\_AGC in the transceiver (PA) device.

The end effect is that the DUT output power is identical to the case where there is no MPR in the device.



#### 5.1.2 RADIATED OUTPUT POWER

#### 5.1.2.1 MEASUREMENT METHOD

The measurements procedures specified in ANSI/TIA-603-E-2016 were applied.

1. Effective Radiated Power (ERP) and Equivalent Isotropic Radiated Power (EIRP) measurements are performed using the substitution method described in ANSI/TIA-603-E-2016 with the EUT transmitting into an integral antenna. Measurements on signal operating below 1GHz are performed using dipole antennas. Measurements on signals operating above 1GHz are performed using broadband horn antennas. All measurements are performed as RMS average measurements while the EUT operating at its maximum duty cycle, at maximum power, and at the approximate frequencies.

2. In an anechoic antenna test chamber, a half-wave dipole antenna for the frequency band of interest is placed at the reference centre of the chamber. An RF Signal source for the frequency band of interest is connected to the dipole with a cable that has been constructed to not interfere with the radiation pattern of the antenna. A known (measured) power (Pin) is applied to the input of the dipole, and the power received (Pr) at the chamber's probe antenna is recorded.

3. The substitution method is used. Substitution values at each frequency are measured before and saved to the test software. A "reference path loss" is established as ARpl=Pin + 2.15 - Pr. TheARpl is the attenuation of "reference path loss", and including the gain of receive antenna, the cable loss and the air loss. The measurement results are obtained as described below: Power=PMea+ARpl

4. The EUT is substituted for the dipole at the reference centre of the chamber and a scan is performed to obtain the radiation pattern.

5. From the radiation pattern, the co-ordinates where the maximum antenna gain occurs are identified.

6. The EUT is then put into continuously transmitting mode at its maximum power level.

7. Power mode measurements are performed with the receiving antenna placed at the coordinates determined in Step 3 to determine the output power as defined in Rule 24.232 (b) and (c). The "reference path loss" from Step1 is added to this result.

8. This value is EIRP since the measurement is calibrated using a half-wave dipole antenna of known gain (2.15 dBi) and known input power (Pin).

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

#### 5.1.2.2 PROVISIONS APPLICABLE

Mode	FCC Part Section(s)	Nominal Peak Power
GSM/GPRS 850	22.913(a)(2)	<=38.45dBm (7W). ERP
GSM/GPRS 1900	24.232(c)	<=33dBm (2W). EIRP
UMTS BAND II	24.232(c)	<=33dBm (2W),EIRP
UMTS BAND IV	27.50(d)	<=30dBm (1W),EIRP
UMTS BANDV	22.913(a)(2)	<=38.45dBm (7W).ERP



Radiated Power (ERP) for GPRS/EGPRS 850					
		Res	sult		
Mode	Frequency	Max. Peak ERP	Polarization	Conclusion	
		(dBm)	Of Max. ERP		
	824.2	26.66	Horizontal	Pass	
	836.6	26.54	Horizontal	Pass	
	848.8	24.78	Horizontal	Pass	
GPRS -	824.2	24.26	Vertical	Pass	
	836.6	24.15	Vertical	Pass	
	848.8	25.10	Vertical	Pass	
	824.2	20.26	Horizontal	Pass	
	836.6	19.58	Horizontal	Pass	
	848.8	20.39	Horizontal	Pass	
EGPRS -	824.2	17.73	Vertical	Pass	
	836.6	18.99	Vertical	Pass	
	848.8	18.66	Vertical	Pass	

	Radiated Power (E.I.R.P) for GPRS/EGPRS 1900					
		Res	sult			
Mode	Frequency	Max. Peak	Polarization	Conclusion		
		E.I.R.P.(dBm)	Of Max. E.I.R.P.			
	1850.2	24.08	Horizontal	Pass		
	1880.0	24.43	Horizontal	Pass		
GPRS	1909.8	22.81	Horizontal	Pass		
GENG	1850.2	20.55	Vertical	Pass		
	1880.0	21.45	Vertical	Pass		
	1909.8	21.20	Vertical	Pass		
	1850.2	19.32	Horizontal	Pass		
	1880.0	19.22	Horizontal	Pass		
EGPR	1909.8	18.85	Horizontal	Pass		
S	1850.2	18.95	Vertical	Pass		
	1880.0	18.85	Vertical	Pass		
	1909.8	19.62	Vertical	Pass		



Radiated Power (E.I.R.P) for UMTS band II					
		Res	ult		
Mode	Frequency	Max. Peak E.I.R.P	Polarization	Conclusion	
		(dBm)	Of Max. E.I.R.P	Conclusion	
	1852.4	18.90	Horizontal	Pass	
	1880	19.16	Horizontal	Pass	
UMTS	1907.6	18.38	Horizontal	Pass	
UMIS	1852.4	18.17	Vertical	Pass	
	1880	17.54	Vertical	Pass	
	1907.6	17.70	Vertical	Pass	

	Radiated Power (E.I.R.P) for UMTS band IV											
		Res	ult									
Mode	Frequency	Max. Peak E.I.R.P	Polarization	Conclusion								
		(dBm)	Of Max. E.I.R.P	Conclusion								
	1712.4	18.74	Horizontal	Pass								
	1732.4	18.82	Horizontal	Pass								
UMTS	1752.6	18.14	Horizontal	Pass								
UM15	1712.4	16.89	Vertical	Pass								
	1732.4	18.03	Vertical	Pass								
	1752.6	16.07	Vertical	Pass								

	Radiated Power (ERP) for UMTS band V											
		R										
Mode	Frequency	Max. Peak ERP	Polarization	Conclusio								
		(dBm)	Of Max. ERP	n								
	826.4	20.19	Horizontal	Pass								
	836.4	18.29	Horizontal	Pass								
UMTS	846.6	19.62	Horizontal	Pass								
UMIS	826.4	18.37	Vertical	Pass								
	836.4	17.38	Vertical	Pass								
	846.6	17.45	Vertical	Pass								

Note: Above is the worst mode data.



#### 5.2 PEAK-TO-AVERAGE RATIO

#### 5.2.1 MEASUREMENT METHOD

Use one of the procedures presented in 4.1 to measure the total peak power and record as PPk. Use one of the applicable procedures presented 4.2 to measure the total average power and record as PAvg. Both the peak and average power levels must be expressed in the same logarithmic units (e.g., dBm). Determine the PAPR from:

PAPR(dB) = PPk(dBm) - PAvg(dBm).

#### 5.2.2 PROVISIONS APPLICABLE

This is the test for the Peak-to-Average Ratio from the EUT.

Power Complementary Cumulative Distribution Function (CCDF) curves provide a means for characterizing the power peaks of a digitally modulated signal on a statistical basis. A CCDF curve depicts the probability of the peak signal amplitude exceeding the average power level. Most contemporary measurement instrumentation include the capability to produce CCDF curves for an input signal provided that the instrument's resolution bandwidth can be set wide enough to accommodate the entire input signal bandwidth. In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.



#### 3 MEASUREMENT RESULT

Modes	Max Peak to Average Ratio(dB)	Upper limit(dB)	Result						
GSM850	2.97	13	Pass						
PCS1900	3.72	13	Pass						
UMTS BAND II	3.13	13	Pass						
UMTS BAND IV	3.17	13	Pass						
UMTS BAND V	3.14	13	Pass						
Note: refer to section of 5.1.1.2.									



# 5.3 OCCUPIED BANDWIDTH

#### 5.3.1 MEASUREMENT METHOD

1. The Occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upper Frequency limits, the mean power radiated are each equal to 0.5 percent of the total mean power radiated by a given emission shall be measured.

2. RBW=1~5% of the expected OBW, VBW>=3 x RBW, Detector=Peak, Trace mode=max hold, Sweep=auto couple, and the trace was allowed to stabilize.

#### 5.3.2 PROVISIONS APPLICABLE

The emission bandwidth is defined as two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26dB below the transmitter power

#### 5.3.3 MEASUREMENT RESULT

Туре	Frequency(MHz)	Mode	Occupied Bandwidth(KHz)	Emission Bandwidth(KHz)	Limit
GSM850	824.2	GPRS	242.88	310.5	No limit
GSM850	836.6	GPRS	245.46	310.8	No limit
GSM850	848.8	GPRS	247.43	306.4	No limit
GSM850	824.2	EGPRS	252.53	316.6	No limit
GSM850	836.6	EGPRS	251.15	310.3	No limit
GSM850	848.8	EGPRS	253.95	306	No limit
GSM1900	1850.2	GPRS	246.85	321.9	No limit
GSM1900	1880	GPRS	247.05	320.4	No limit
GSM1900	1909.8	GPRS	247.74	313.6	No limit
GSM1900	1850.2	EGPRS	251.62	317.7	No limit
GSM1900	1880	EGPRS	256.14	303.2	No limit
GSM1900	1909.8	EGPRS	251.93	306.4	No limit
UMTS BAND II	1852.4	RMC	4163.6	4670	No limit
UMTS BAND II	1880	RMC	4159.3	4678	No limit
UMTS BAND II	1907.6	RMC	4145.7	4650	No limit
UMTS BAND V	826.4	RMC	4182.7	4651	No limit
UMTS BAND V	836.4	RMC	4161.6	4650	No limit
UMTS BAND V	846.6	RMC	4166.5	4635	No limit
UMTS BAND IV	1712.4	RMC	4156.1	4646	No limit
UMTS BAND IV	1732.4	RMC	4163.9	4652	No limit
UMTS BAND IV	1752.6	RMC	4162.2	4651	No limit



#### GSM850-824.2MHz-GPRS

Agilent Spectrum Analy	zer - Occupied BW	PREC	SENSE	:PULSE		ALIGN OFF	02:41:50 Df	4 Jul 07, 2021	
Center Freq 82		2	Center Fr	eq: 824.2000	0 MHz		Radio Std:		Frequency
	#IF0		Trig: Free #Atten: 18		Avg Hold	: 100/100	Radio Dev	ice: BTS	
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-35.0 -45.0 -55.0								ang ang and a second	
Center 824.2 M							Sp:	an 1 MHz	05.04-1
#Res BW 5.1 kł	łz		#VB	W 15 kHz			Sweep	36.8 ms	CF Step 100.000 kHz
Occupied I	Bandwidth			Total Por	wer	35.6	i dBm		<u>Auto</u> Man
	242	.88 kH	z						Freq Offset
Transmit Fre	eq Error	<b>-284</b> ⊢	Iz	OBW Po	wer	99	9.00 %		0 Hz
x dB Bandwi	idth	310.5 kH	lz	x dB		-26.	00 dB		
MSG						<b>K</b> STATUS	5		

#### GSM850-836.6MHz-GPRS

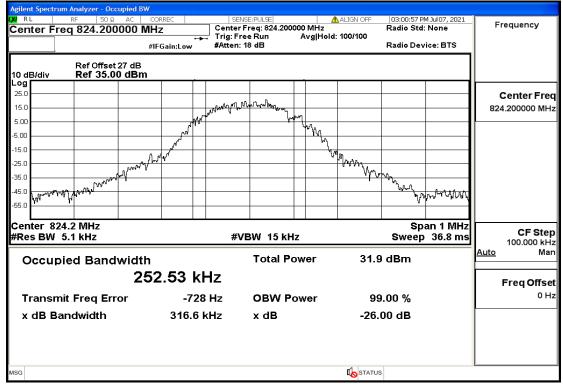
Agilent Spectrum	n Analyzer - Occ RF 50 Ω		RREC		SENSE:PULSE		ALIGN OFF	02:43:29 PM	4 Jul 07, 2021	[	
Center Fre					ter Freq: 836.6			Radio Std:		Fre	equency
		#IF	Gain:Low		: Free Run en: 18 dB	Avg H	old: 100/100	Radio Dev	ice: BTS		
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Occupi	ed Band				iotai	Power	34.	6 dBm			
		245	5.46	kHz						F	req Offse
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x dB Ba	ndwidth		310.	8 kHz	x dB		-26	.00 dB			
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#### GSM850-848.8MHz-GPRS

Agilent Spectrum Analyzer - Occupied BW	
IX         R L         RF         50 Ω         AC         CORREC         SENSE:PULSE         Δ         ALIGN OFF         02:44:05 PM Jul/07, 2021           Center Freq         848.800000 MHz         Center Freq: 848.800000 MHz         Radio Std: None	Frequency
Trig: Free Run Avg Hold: 100/100 #IFGain:Low #Atten: 18 dB Radio Device: BTS	
Ref Offset 27 dB 10 dB/div Ref 35.00 dBm	
25.0 an Man Man .	Center Freq
15.0	848.800000 MHz
-6.00	
-15.0	
-35.0	
-35.0 -45.0 -55.0 WWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWW	
Center 848.8 MHz Span 1 MHz	CF Step
#Res BW 5.1 kHz #VBW 15 kHz Sweep 36.8 ms	100.000 kHz
Occupied Bandwidth Total Power 34.0 dBm	<u>Auto</u> Man
247.43 kHz	
	Freq Offset
Transmit Freq Error 292 Hz OBW Power 99.00 %	0 Hz
x dB Bandwidth 306.4 kHz x dB -26.00 dB	
MSG STATUS	

#### GSM850-824.2MHz-EGPRS

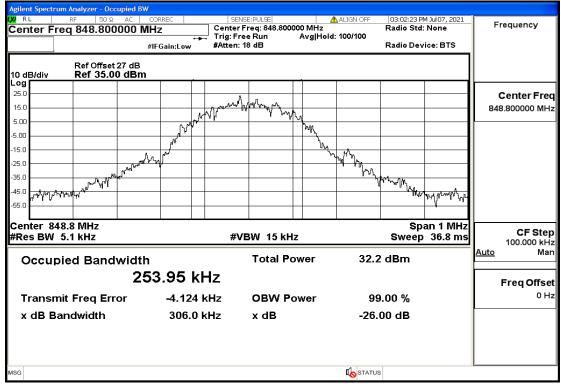




#### GSM850-836.6MHz-EGPRS

Agilent Spectrum											
Center Fred	RF 50 Ω				E:PULSE req: 836.600		ALIGN OFF	03:02:05 Pf Radio Std:	4 Jul 07, 2021 None	Fre	quency
	10001000			Trig: Fre# #Atten: 1		Avg Hold	: 100/100	Radio Dev	ice: BTS		
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Center 836. #Res BW 5.				#3.0	BW 15 kH	-			an 1 MHz 36.8 ms		CF Step
#Res BW 5.				#V		12		Sweep	30.8 ms		00.000 kHz
Occupie	d Band	width			Total P	ower	32.0	) dBm		Auto	Man
		251	.15 k	κHz						F	req Offset
Transmit	Freg Erre	or	93	84 Hz	OBW P	ower	99	9.00 %		l	0 Hz
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#### GSM850-848.8MHz-EGPRS





# GSM1900-1850.2MHz-GPRS

Agilent Spectrum										0	
Center Fred		AC   COF		Center	ISE:PULSE Freq: 1.85020	0000 GHz	ALIGN OFF	03:04:34 PM Radio Std:	4 Jul 07, 2021 None	Fr	equency
				Trig: Fr #Atten:	ee Run 18 dB	Avg Hold	l: 100/100	Radio Dev	ice: BTS		
			Sam.LOW	in Reen.	10 40			That is a set	1		
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-35.0		ግምር <b>፣</b>									
	- Arther and							WWW JWWW			
-45.0 -55.0	ղեպո							` \w	My Myron og L		
Center 1.85 #Res BW 5.				-#1	/BW 15 kH				an 1 MHz 36.8 ms		CF Step
#Res BW J.				#1		Z		Sweep	30.8 IIIS		100.000 kHz
Occupie	d Band	width			Total Pe	ower	34.5	i dBm		Auto	Man
		246	.85 I	кНz							Freq Offset
Transmit	Erea Err		-3.029		OBW P	ower	00	0.00 %		l '	0 Hz
	•					ower					
x dB Ban	dwidth		321.9	9 kHz	x dB		-26.	00 dB			
NSO											
MSG							<b>N</b> STATUS				

#### GSM1900-1880MHz-GPRS

Agilent Spectrum										P.	
Center Fre	RF 50 Ω α 1.88000	AC COF		Center F	:E:PULSE <b>req: 1.88000</b>	0000 GHz	ALIGN OFF	Radio Std:	1 Jul 07, 2021 None	Fre	equency
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#Res BW 5				#V	BW 15 kH	lz			36.8 ms		CF Step 100.000 kHz
Occupi	ed Band	width			Total P	ower	34.4	4 dBm		<u>Auto</u>	Mar
		247	.05 k	κHz						F	req Offset
Transmi	t Freq Erre	or	1.994	kHz	OBW P	ower	99	9.00 %			0 Hz
x dB Baı	ndwidth		320.4	kHz	x dB		-26.	00 dB			
MSG							I STATU	0			
Mag							No STATU	0			



# GSM1900-1909.8MHz-GPRS

Agilen	t Spectrum /	Analyzer - Occ	upied BW									
LXI RL				REC		NSE:PULSE		ALIGN OFF	03:07:22 P	M Jul 07, 2021	Frequ	ency
Cen	ter Fred	1.90980	0000 GF		🛻 🕹 Trig: Fi	ree Run	Avg Hold	: 100/100				,
			#IF	Gain:Low	#Atten	:18 dB			Radio Dev	ice: BTS		
		Ref Offset	27 dB									
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	ccunie	d Band	width			Total P	ower	34.7	7 dBm		<u>Auto</u>	Man
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			247	.74	KHZ						Free	q Offset
Tr	ansmit	Freq Err	or	3	65 Hz	OBW P	ower	99	9.00 %			0 Hz
	dB Ban	dwidth		313	6 kHz	x dB		-26	00 dB			
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MSG									2			
Mag								No statu:	3			

#### GSM1900-1850.2MHz-EGPRS

Agilent Spectrum Analyzer - Occupied BW					
RL RF 50 Ω AC COF     COF     Center Freq 1.850200000 GH		req: 1.850200000 GHz	Radio Std	M Jul 07, 2021 : <b>None</b>	Frequency
	Gain:Low #Atten: 1		: 100/100 Radio Dev	ice: BTS	
	Sumeow				
Ref Offset 27 dB 10 dB/div Ref 35.00 dBm					
Log 25.0					
15.0	allàs a	a flate a			Center Freq 1.850200000 GHz
5.00	moren	alla mar hours			1.850200000 GH2
-5.00	ليكرم	- Walas			
-15.0	M <sup>m</sup>				
-25.0	,	้หุก			
-35.0			· Mangana		
-45.0			່ ເທິດເປັນ ເ	WAIII -	
-25.0 -35.0 -45.0 -55.0			Maril College	՝ ՆՆ/սհ	
Center 1.85 GHz				an 1 MHz	
#Res BW 5.1 kHz	#VE	BW 15 kHz		36.8 ms	CF Step 100.000 kHz
Occupied Bandwidth		Total Power	29.3 dBm		<u>Auto</u> Man
	.62 kHz				
231	.02 KI IZ				Freq Offset
Transmit Freq Error	-3.419 kHz	OBW Power	99.00 %		0 Hz
x dB Bandwidth	317.7 kHz	x dB	-26.00 dB		
			~		
MSG					



# GSM1900-1880MHz-EGPRS

Agilent Spectrum Ar												1	
Center Freq		AC   COR			nter F	E:PULSE req: 1.88000		GHz	ALIGN OFF	03:10:20 PM Radio Std:	1 Jul 07, 2021 None	F	requency
					ig: Fre- tten: 1		Av	g Hold:	: 100/100	Radio Dev	ice: BTS		
		MIEC	sain:Luw		ccen. r					Itaalo Dev			
	Ref Offset 27 dB dB/div Ref 35.00 dBm												
Log		, abiii					TT						
25.0						ſ							Center Freq
15.0				malan	<sup>አለግ</sup> ገፖ <sup>ው</sup>	M www.						1.88	0000000 GHz
5.00			م می	, proc		<u> </u>	harry						
-5.00			A A					۳ų (					
-15.0			~/ <sup>1</sup>					<del>ار</del>	n <sub>m</sub>				
-25.0	(	North Con Can											
45.0	. white								r w	՟՟ՠՠ՟ՠ <sub>֎ՠՠ</sub>	1		
-15.0 -25.0 -35.0 -45.0 -55.0	v										<sup>heyfl</sup> yVAJunghb-		
Center 1.88 C	GHz				41 /E		<b>1</b>				an 1 MHz		CF Step
#Res BW 5.1	KITZ				#VE	3W 15 kH	12			Sweep	36.8 ms		100.000 kHz
Occupied	d Bandy	width				Total P	owe	r	29.6	i dBm		Auto	Man
		256	.14 k	٢Hz									
T													Freq Offset 0 Hz
Transmit F	•	or	-1.607			OBW P	owe	er -		0.00 %			
x dB Band	lwidth		303.2	2 kHz		x dB			-26.	00 dB			
1													
									-1				
MSG										6			

#### GSM1900-1909.8MHz-EGPRS

Agilent Spectrum Analyzer - Occupied BW		SE:PULSE	ALIGN OFF 03:10:34 P	M Jul 07, 2021									
Center Freq 1.909800000 0	Hz Center	Freq: 1.909800000 GHz	Radio Std		Frequency								
#	IFGain:Low #Atten:		: 100/100 Radio Dev	/ice: BTS									
Ref Offset 27 dB 10 dB/div Ref 35.00 dBm	dB/div Ref 35.00 dBm												
25.0					Center Freq								
15.0	. Introduction	www.h.			1.909800000 GHz								
5.00	- ANW W	· · · · · · · ·											
-5.00		1 1 V											
-15.0	Nr - T	իրը հեր	anna fi										
-35.0													
-45.0			VIC MARKED VIC	M ~ A									
-15.0 -25.0 -35.0 -45.0 -55.0				WWW TLANG									
Center 1.91 GHz			Sp	an 1 MHz	CE Otom								
#Res BW 5.1 kHz	#V	BW 15 kHz	Sweep	36.8 ms	CF Step 100.000 kHz								
Occupied Bandwidth		Total Power	29.7 dBm		<u>Auto</u> Man								
25	1.93 kHz				Erog Offect								
Transmit Freg Error	-3.067 kHz	OBW Power	99.00 %		Freq Offset 0 Hz								
x dB Bandwidth	306.4 kHz	x dB	-26.00 dB										
	500.4 KHZ	XUD	-20.00 dB										
MSG													



# UMTS BAND II-1852.4MHz-RMC

	um Analyzer - Occu									
Center Fr	RF 50 Ω req 1.852400				E:PULSE reg: 1.85240		ALIGN OFF	Radio Std	M Jul 07, 2021 : None	Frequency
			- in:Low	Trig: Free #Atten: 1		Avg Hold:	100/100	Radio Dev	/ice: BTS	
,,									1	
10 dB/div	Ref Offset 2 Ref 35.00									
Log 25.0										Center Freq
15.0			-							1.852400000 GHz
5.00			monenality	<sup>ው</sup> የምንም የምንም የምንም የምንም የምንም የምንም የምንም የምን	www.werken	monthony				1.002100000 0112
-5.00		{}					<sup>1</sup> \			
-15.0		/					`\			
-25.0	wm. W. W. www. w	mond					h h			
-35.0 ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	man all the second is a							a sa a con calle way	2 m prantin	
-45.0										
-55.0										
Center 1.									n 10 MHz	CF Step
#Res BW	51 kHz			#VE	BW 150 k	Hz		Sweep	3.733 ms	1.000000 MHz
Occur	bied Bandy	width			Total P	ower	29.0	) dBm		<u>Auto</u> Man
			36 MF	47						
										Freq Offset 0 Hz
Transn	nit Freq Erro	or -'	10.410 k	Hz	OBW P	ower	99	9.00 %		0 112
x dB B	andwidth		4.670 M	IHz	x dB		-26.	00 dB		
MSG								6		
MOG							STATU:	3		

#### UMTS BAND II-1880MHz-RMC

Agilent Spectrum Analyzer - Occupied BW													
RL RF 50 Ω AC CO     Conter Freq 1.880000000 GH		E:PULSE ALI req: 1.880000000 GHz	IGN AUTO/NORF	03:30:28 Pl Radio Std:	M Jul 07, 2021 None	Frequency							
	Trig: Fre	e Run Avg Hold		Radio Dev	iaa: BTC								
#IF	Gain:Low #Atten: 1	0 40		Radio Dev	ice. BTS								
Ref Offset 27 dB	Ref Offset 27 dB dB/div Ref 35.00 dBm												
Log	1		1 1										
25.0						Center Freq							
15.0	howmany	mar winner allow				1.88000000 GHz							
5.00													
-5.00			1										
-15.0													
-25.0			hand	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	man growing have								
-35.0					-Y WV								
-45.0													
-55.0													
Center 1.88 GHz				Spa	n 10 MHz								
#Res BW 51 kHz	#VI	3W 150 kHz			3.733 ms	CF Step 1.000000 MHz							
		Total Power	29.5	dDm		Auto Man							
Occupied Bandwidth		Total Power	29.5	авт									
4.15	593 MHz					Freq Offset							
Transmit Freq Error	-4.539 kHz	OBW Power	99.	00 %		0 Hz							
x dB Bandwidth	4.678 MHz	x dB	-26.0										
X dB Bandwidth	4.070 10112	X UB	-20.0	U UB									
MSG			STATUS										
1100			No SIA103										



# UMTS BAND II-1907.6MHz-RMC

	ım Analyzer - Occupie	d BW						
(XIRL)	RF 50 Ω AC eq 1.9076000		SENSE:PU	LSE	ALIGN OFF	03:31:32 P Radio Std	M Jul 07, 2021	Frequency
	eq 1.9076000	H	🚽 Trig: Free Ri	un Avg H	lold: 100/100			
		#IFGain:Low	#Atten: 18 dB	3		Radio Dev	/ice: BTS	
10 dB/div	Ref Offset 27 d Ref 35.00 d							
Log	Rei 35.00 u							
25.0								Center Freq
15.0		-normer	n-mp-man-m-y	and the more more more more more more more mor	<b>~</b> 1_			1.907600000 GHz
5.00		میں مراجع						
-5.00					1			
-15.0								
-25.0	mannama	$\sim$			many	-	www.	
-45.0							" WWW	
-55.0								
Center 1.9 #Res BW			#\/B\M	150 kHz			n 10 MHz 3.733 ms	CF Step
#Res DW			#10//			oweep	3.7 33 115	1.000000 MHz Auto Man
Occup	ied Bandwi	dth	Т	otal Power	29.0	0 dBm		<u>Auto</u> Man
	4	4.1457 M	Hz					Freg Offset
Transm	nit Freq Error	-5.937	kHz O	BW Power	9	9.00 %		0 Hz
x dB Ba	andwidth	4.650	MHz x	dB	-26.	.00 dB		
MSG					<b>I</b> statu	s		

#### UMTS BAND V-826.4MHz-RMC

Agilent Spectrum Analyzer									
Center Freq 826.		RREC	SENSE: Center Fre	PULSE eq: 826.400		ALIGN OFF	03:33:17 P Radio Std	M Jul 07, 2021 None	Frequency
			Trig: Free #Atten: 18	Run	Avg Hold:	100/100	Radio Dev	DTO	
	#IF	Gain:Low 1	#Atten: 18	aв			Radio Dev	lice: BTS	
	ffset 27 dB								
10 dB/div Ref 3	35.00 dBm					1			
25.0									Center Fre
15.0		way was and a	Prove and Proven	<u>አ. በኢ. ብ እ. አ. ጉ. ጉ.</u>	n-man				826.400000 MH
5.00					·····* •···	<u>_</u>			
-5.00						<u>الر</u>			
-15.0						+			
-25.0	and a star by					- V.	Crimen Car	monthem	
-35.0 M. Martin +	+ Marda							a work thereit	
-45.0						-			
-55.0									
Center 826.4 MHz							0.00	- 40 MIL-	
#Res BW 51 kHz	Z		#VB	W 150 k	H7			n 10 MHz 3.733 ms	CF Ste
							Uncep	0.1 00 1110	1.000000 MH Auto Ma
Occupied Ba	andwidth			Total Po	ower	30.5	o dBm		
	4.18	27 MH	7						F 0/
									Freq Offso 0 ⊢
Transmit Freq	Error	3.100 kH	z	OBW P	ower	99	0.00 %		0
x dB Bandwidt	th	4.651 MH	z	x dB		-26.	00 dB		
MSG							3		u
							1		



# UMTS BAND V-836.4MHz-RMC

		rum Analyzer - Occu									
				RREC		E:PULSE reg: 836.400		ALIGN OFF	03:34:36 P Radio Std	M Jul 07, 2021	Frequency
Ce	nter F	req 836.400		<u>د</u>	🚽 Trig: Free	e Run	Avg Hold:	100/100			
			#IF	Gain:Low	#Atten: 1	8 dB			Radio Dev	/ice: BTS	
		Ref Offset 2	27 dB								
	dB/div	Ref 35.00									
Lo: 25.											Center Free
15.											836.400000 MH
5.0				wall for the second second	᠋᠋ᡁᡀᢧᡘᡗᢑᠽᡊᢛᡗ᠂ᡁᠬᠬᢥᡁ	montenter	have by				830.400000 MIH
-5.0	-		۶					Tu.			
-15.	-		)								
			1								
-25.	a hand and	Mar Bruly Martine	كالريدم					ALM-AN	mm	mather how water	
-45.											
-55.	.0										
Ce	nter 8	36.4 MHz	1	1					Spa	n 10 MHz	
#R	es BW	51 kHz			#VE	3W 150 k	Hz			3.733 ms	CF Step 1.000000 MH
	~					T-4-1 D		20.0	)		Auto Mar
1	Occu	pied Bandy				Total P	ower	30.8	3 dBm		
			4.16	516 MI	Ηz						Freq Offse
·	Trans	mit Freq Erro	or	-9.118	кНz	OBW P	ower	99	9.00 %		0 H
Ι.	v dB E	Bandwidth		4.650 N	1H7	x dB		-26	00 dB		
1 1		Junumuti		4.000 1		X UB		20.			
1											
MSG									6		
Mag								No statu:	3		

#### UMTS BAND V-846.6MHz-RMC

	Spectru	m Analyzer - Occ										
Cent	er Fr	RF 50 Ω eq 846.600		RREC		E:PULSE req: 846.600		ALIGN OFF	03:35:28 Pl Radio Std:	4 Jul 07, 2021 None	Frequency	
<b>U</b> U U U				Gain:Low	Trig: Free #Atten: 1		Avg Hold:	100/100	Radio Dev	ice: BTS		
				Gam.cow						1		
10 dB	Ref Offset 27 dB dB/div Ref 35.00 dBm											
Log												-
25.0											Center Fr	- 1
5.00				Walker March	what when a	hanny	Winny				846.600000 M	IHZ
-5.00			آم									
-15.0												
			M					L				
-35.0	᠕ᡁᡀ	www.yu-yu-yuanaa	~~~~					, Mari	Arc-1410,000 Marca	www.www.		
-45.0												
-55.0												
L	or 94	6.6 MHz								n 10 MHz		_
		51 kHz			#VE	3W 150 k	Hz			3.733 ms	CF St	
									<u> </u>		1.000000 M Auto M	1HZ 1an
	ccup	ied Bandy				Total P	ower	30.1	l dBm			
			4.16	65 MI	Ηz						Freq Offs	set
	ansm	it Freg Erro	or	-15.033	kHz	OBW P	ower	99	9.00 %			Hz
		andwidth		4.635 N		x dB		-26	00 dB			-
^`				4.000 1	1112	X GD		-20.	00 00			
MSG									Б		l	



# UMTS BAND IV-1712.4MHz-RMC

	rum Analyzer - Occu												
(X) RL Center F	RF 50 Ω				E:PULSE reg: 1.71240		ALIGN OFF	03:36:51 F Radio Std	M Jul 07, 2021 : None	Frequency			
Contor I	109 1.7 1240		Gain:Low	1 - · -	e Run	Avg Hold	: 100/100	Radio Dev	vice: BTS				
		#IF	Gain:Low	#Attent is	5 GD			Radio Dev	nce. B13				
10 dB/div	Ref Offset 27 dB dB/div Ref 35.00 dBm												
Log							İ						
25.0										Center Freq			
15.0			- Martin	สมมาณาณา	how and the	mony				1.712400000 GHz			
5.00		Ņ	1				1.						
-5.00		- 1					1						
-15.0		n)											
-25.0 -35.0	My man with we	مربها					6 Vina	an and and	www.				
-45.0													
-55.0													
Center 1 #Res BW	.712 GHz			#\/E	3W 150 k	<b>U</b> -			n 10 MHz 3.733 ms	CF Step			
#Res DW	51 KHZ			#VE	500 IJUK	.пz		Sweep	3.7 33 1115	1.000000 MHz			
Occu	pied Band\	width			Total Po	ower	29.	4 dBm		<u>Auto</u> Man			
		4.15	61 MI	47						<b>F O</b>			
Ι_								~ ~ ~ ~		Freq Offset			
Trans	mit Freq Erro	or	-2.003 I	KHZ	OBW P	ower	9	9.00 %		0112			
x dB E	Bandwidth		4.646 N	٩Hz	x dB		-26	.00 dB					
							-1						
MSG	G STATUS												

#### UMTS BAND IV-1732.4MHz-RMC

Agilent Spectrum A										_			
Center Freq	RF 50Ω		RREC		E:PULSE reg: 1.73240		ALIGN OFF	03:38:36 P Radio Std	M Jul 07, 2021 • None	Frequer	ncy		
Center Fred	1.7 5240		++	🚽 Trig: Free	e Run	Avg Hold:	100/100						
		#1F	Gain:Low	#Atten: 18	3 dB			Radio Dev	/ice: BTS				
	Ref Offset 27 dB dB/div Ref 35.00 dBm												
10 dB/div Log	Ref 35.00	) dBm				1	ri	1					
25.0										Cente	er Freg		
15.0			ിത്തെന്നർവംക	<b>^</b> ^ъንъሌ- <mark>ጌ-</mark> ኮ-ւՐ-		.) г(b. o.)				1.7324000	00 GHz		
5.00					Janamanan	ally, and payment							
-5.00		/					`\						
-15.0							\						
-25.0	1						\ 						
-25.0 -35.0	4 W 4W 97	r~v•v•					6.00-	with the second state	Lang Carlow Landows				
-45.0													
-55.0													
Center 1.73	2 011-							0.7.0	- 40 Mill-				
#Res BW 51				#VE	3W 150 k	Hz			n 10 MHz 3.733 ms		F Step		
										1.0000 Auto	00 MHz Man		
Occupie	d Band	width			Total P	ower	29.4	l dBm		<u>, (ato</u>			
		4.16	539 MI	Ηz						From	Offeet		
<b>_</b>										Freq	Offset 0 Hz		
Transmit	Transmit Freq Error -6.262 kHz					ower	99	9.00 %			0 112		
x dB Ban	dwidth		4.652 N	1Hz	x dB		-26.	00 dB					
MSG							<b>K</b> STATUS	s					



# UMTS BAND IV-1752.6MHz-RMC

	n Analyzer - Occu									
(XI RL Center Fre	RF 50 Ω				E:PULSE reg: 1.75260		ALIGN OFF	03:40:04 P Radio Std	M Jul 07, 2021 : None	Frequency
	q 1.752000		↔	1 - · -	e Run	Avg Hold	: 100/100	Radio Dev	iao: BTC	
		#IF	Gain:Low	#Atten: 10	5 a D			Radio Dev	lice: B15	
10 dB/div	Ref Offset 2 Ref 35.00									
Log	Rei 35.00						İI.			
25.0										Center Freq
15.0			manh	ᢛᠰᢛᡙᡒᡇᡃᡗᡗᢏ᠕ᢑᠵ	man					1.752600000 GHz
5.00		N <sub>2</sub>	M <sup>are</sup>				Ψ 1η			
-5.00		f					<u>  `\</u>			
-15.0										
-25.0	monendorm	لتعميهم					man.			
							- r	and and the second second second second second second second second second second second second second second s	ᡥᢇᢛᡟᡆᡟ᠋ᠺ᠕ᠰᢑ	
-45.0										
-55.0										
Center 1.7									n 10 MHz	CF Step
#Res BW 🗧	51 kHz			#VE	3W 150 k	Hz		Sweep	3.733 ms	1.000000 MHz
Occupi	ied Bandv	width			Total P	ower	29.2	2 dBm		<u>Auto</u> Man
	cu Dunu		22 MI	1-						
		4.10		72						Freq Offset
Transmi	it Freq Erro	or	-5.739 l	кHz	OBW P	ower	99	9.00 %		0 Hz
x dB Ba	ndwidth		4.651 N	٩Hz	x dB		-26.	00 dB		
MSG								5		p
-										



#### 5.4 BAND EDGE

#### 5.4.1 MEASUREMENT METHOD

1. All out of band emissions are measured with an analyzer spectrum connected to the antenna terminal of the EUT while the EUT at its maximum duty cycle, at maximum power, and at the approximate frequencies. All data rates were investigated to determine the worst case configuration

2. The test set up and general procedure is similar to conducted peak output power test. Only different for setting the measurement configuration of the measuring instrument of Spectrum Analyzer.

3. Start and stop frequency were set such that the band edge would be placed in the center of the plot.

4. Span was set large enough so as to capture all out of band emissions near the band edge.

5. RBW>1% of the emission bandwidth, VBW >=3 x RBW, Detector=RMS, Number of points>=2 x Span/RBW,

Trace mode=max hold, Sweep time=auto couple, and the trace was allowed to stabilize

#### 5.4.2 PROVISIONS APPLICABLE

As Specified in FCC rules of 22.917(a), 24.238(a)and KDB 971168 D1 V03R01.

#### 5.4.3 Test Results

Pass



#### GSM850-824.2MHz-GPRS

Agilent		trum																				
w∥ RL Cent		re	RF q 82	50 23.9		ac 00 N		EC		1		Bur			vg Typ	ALIGN OF e: RMS : 10/10	F	TI	RACE	1 2 3 4	56	Frequency
10 dB	Vdiv			)ffset2 30.00				): Wide ain:Low		#Atter							r1 (	823.9	DET	ANNN	N N	Auto Tune
20.0																4'mm+1444+4	****	Y				Center Freq 823.950000 MHz
-10.0 ; -20.0 ·												• •	1 M		Γ '			<b>1</b> "II"		-13.00 -	•••• ₩	Start Freq 823.450000 MHz
-40.0 -50.0 -60.0	hantar	n M		Trajup <b>i de la</b>	parant 1		hep-parts		in the second		¶-											<b>Stop Freq</b> 824.450000 MHz
Start #Res	s BW	/ 3.	9 kl			×		#V	вw	11 kH	z*		EUN	ICTION		#Swee	ep	top 824 3.000 s	6 (20		ts)	<b>CF Step</b> 100.000 kHz <u>Auto</u> Man
1 2 3 4 5 6	N	1	f			823.9	81 0	MHz		-20.717	7 dE	3m										Freq Offset 0 Hz
7 8 9 10 11																				>		
MSG																<b>Гю</b> sт/	ATUS					

#### GSM850-848.8MHz-GPRS

		ectru	m An	alyzer - Sw	ept SA								
<mark>⊮</mark> ⊓ Cen		Fre	RF eq 8	50 Ω 849.050	0000 MH			E:PULSE		ALIGN OFF Type: RMS Iold: 10/10	TRA	PM Jul 07, 2021 ACE 1 2 3 4 5 6 YPE MWWWWW	Frequency
10 d	B/di <sup>,</sup>	v		Offset 27	IF 7 dB	NO: Wide * Gain:Low	#Atten: 1				849.02	0 0 MHz 95 dBm	Auto Tune
Log 20.0 10.0 0.00				Nine and a second	1. B. H. al.								Center Freq 849.050000 MHz
-10.0 -20.0 -30.0	1.8	44. <b>A</b>	1	, <sup>197</sup>				The second secon				- <del>13:00 dBm</del>	Start Frec 848.550000 MHz
-40.0 -50.0 -60.0								······································	nton the state of	######################################	The state of the s	₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽	Stop Freq 849.550000 MHz
Star #Re	sВ	W 3	3.9 I		X	#VB	W 11 kHz*		INCTION	#Sweep		5500 MHz (2001 pts)	CF Step 100.000 kHz <u>Auto</u> Man
1 2 3 4 5 6	N	1	f		849.020	0 MHz	-22.895 d						Freq Offset 0 Hz
7 8 9 10 11												~	
MSG										<b>K</b> STATU	s		u



#### GSM850-824.2MHz-EGPRS

Agilent Spectrum Analyzer - S					
Center Freq 823.95		SENSE:PULSE	ALIGN OFF #Avg Type: RMS Avg Hold: 30/30	04:00:01 PM Jul 07, 2021 TRACE 1 2 3 4 5 6 TYPE MWWWWW	Frequency
Ref Offset 2 10 dB/div Ref 30.00	IFGain:Low	#Atten: 18 dB		823.993 5 MHz -23.505 dBm	Auto Tune
20.0 10.0 0.00					Center Fred 823.950000 MHz
-10.0					Start Freq 823.450000 MHz
-40.0 -50.0 -60.0					Stop Fred 824.450000 MH;
Start 823.4500 MHz #Res BW 3.9 kHz MKR MODE TRC SCL	#VBW	11 kHz*		Stop 824.4500 MHz 1.000 s (2001 pts) FUNCTION VALUE	CF Step 100.000 kH <u>Auto</u> Mar
1         N         1         f           2         -         -         -         -           3         -         -         -         -         -           4         -	823.993 5 MHz	-23.505 dBm			Freq Offse 0 H:
7 8 9 10 11 (					
MSG				3	(t.

#### GSM850-848.8MHz-EGPRS

Agilent Spectrum Analyzer - Swept SA					
RL RF 50 Ω AC     Center Freq 849.050000	MHz		ALIGN OFF 03: ype: RMS Id: 10/10	12:59 PM Jul 07, 2021 TRACE 1 2 3 4 5 6 TYPE MWWWWW	Frequency
Ref Offset 27 dB 10 dB/div Ref 30.00 dBm	PNO: Wide ++++ Trig: Fre IFGain:Low #Atten: *		Mkr1 849	0.034 0 MHz 27.964 dBm	Auto Tune
20.0 10.0 0.00					Center Freq 849.050000 MHz
-10.0 -20.0 -30.0				-13.00 dDm	Start Freq 848.550000 MHz
-40.0		N Hindinlakingalangking Hindinlakingalangking Hindinlakingalangking Hindinlakingalangking Hindinlakingalangking Hindinlaking Hindin Hindin Hindin Hindin Hindin Hindin Hindin Hindin Hindin Hindin Hindi	the art the state of a star of a star of a star of a star of a star of a star of a star of a star of a star of a		<b>Stop Freq</b> 849.550000 MHz
Start 848.5500 MHz #Res BW 3.9 kHz	#VBW 11 kHz*	K	#Sweep 3.00	849.5500 MHz 10 s (2001 pts)	<b>CF Step</b> 100.000 kHz <u>Auto</u> Man
1         N         1         f         849           2         -	0.034 0 MHz -27.964 d				Freq Offset 0 Hz
10 11 MSG	int.		STATUS		



## GSM1900-1850.2MHz-GPRS

Agilent Spectrum Analyzer - S	wept SA		
K RL RF 50 Center Freq 1.8499	50000 GHz	ALIGN OFF 03:05:10 PM Jul 07, 2021 #Avg Type: RMS TRACE 1 2 3 4 5 6 Avg Hold: 10/10 TYPE MWWWWW	Frequency
Ref Offset 2	IFGain:Low #Atten: 18 dB	Mkr1 1.849 984 0 GHz	Auto Tune
10 dB/div Ref 30.00 20.0 10.0	dBm	-21.273 dBm	Center Fred 1.849950000 GH:
-10.0	1- 	-13.00 dBm	Start Free 1.849450000 GH
-40.0 -50.0	#VBW 11 kHz*		<b>Stop Free</b> 1.850450000 GH
			CF Ste 100.000 kH Auto Ma
MKR         MDDE         TRC         SCL           1         N         1         f           2         -         -           3         -         -           4         -         -           5         -         -	X Y F 1.849 984 0 GHz -21.273 dBm	FUNCTION FUNCTION WIDTH FUNCTION VALUE	Freq Offse
6 7 8 9 10 11			
MSG	<b>1</b>	STATUS	

#### GSM1900-1909.8MHz-GPRS

Agilent Spect	trum An	alyzer - Swe	ept SA								
Center F	RF Freq '	50 Ω 1.91005	0000 GH		7	E:PULSE	#Avg Typ Avg Hold		TRA	M Jul 07, 2021 CE 1 2 3 4 5 6 PE M WWWWW	Frequency
10 dB/div		Offset 27	dB	NO: Wide ↔ Gain:Low	#Atten: 1				□ 910 01:	8 0 GHz 68 dBm	Auto Tune
20.0			<b></b>								Center Freq 1.910050000 GHz
-10.0 -20.0 -30.0	<b>**</b> *					Males.				-13:00 dBm	<b>Start Freq</b> 1.909550000 GHz
-40.0 -50.0 -60.0							<b>nin in a</b>	In the second second second second second second second second second second second second second second second			<b>Stop Freq</b> 1.910550000 GHz
Start 1.9 #Res BW	V 3.9 H	Hz		#VBV	V 11 kHz*	EUM	CTION FL		3.000 s (	5500 GHz 2001 pts)	CF Step 100.000 kHz <u>Auto</u> Man
1 N 2 3 4 5 6	1 f		1.910 018	0 GHz	-22.868 dl						Freq Offset 0 Hz
7 8 9 10 11											
MSG									s		<u>[</u>



# GSM1900-1850.2MHz-EGPRS

	ım Analyzer - Sw								
Center Fr	RF 50 Ω eq 1.84995	50000 GHz	SENSE		#Avg Type Avg Hold:		TRAG	M Jul 07, 2021 CE 1 2 3 4 5 6 PE M WWWWWW	Frequency
10 dB/div	Ref Offset 27 Ref 30.00 (						¤ .849 990	6 5 GHz 70 dBm	Auto Tune
20.0 10.0							NP Anilan .		Center Fred 1.849950000 GHz
					we lawyer			-1 <del>3.00 dDm</del>	Start Fred 1.849450000 GHz
-40.0 -50.0 -60.0	ſ₩₩₩₩₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽	94994-1914-1914-1914-1914-1914-1914-191							Stop Frec 1.850450000 GHz
Start 1.849 #Res BW 3	94500 GHz 3.9 kHz	# <b>V</b> I	BW 11 kHz*	FUNCTIO	DN FUN		3.000 s (	1500 GHz 2001 pts)	CF Step 100.000 kH: <u>Auto</u> Mar
1 N 1 2 3 4 5 6	f	1.849 996 5 GHz	-28.270 dB	m					Freq Offse 0 H
7 8 9 10 11									
MSG						<b>I</b> STATUS	\$		L

#### GSM1900-1909.8MHz-EGPRS

Agilent Spect		yzer - Swep	it SA								
Center F	RF Freq 1.	50 Ω .910050	AC COR	z		E:PULSE		ALIGN OFF	TRA	M Jul 07, 2021 CE 1 2 3 4 5 6	Frequency
10 dB/div		)ffset 27 d 30.00 dl	IFG IB	O: Wide ↔ Sain:Low	, Trig: Free #Atten: 18		Avgino	Mkr1 1	.910 00	6 5 GHz 43 dBm	Auto Tune
20.0				TTL HTLAN							Center Freq 1.910050000 GHz
-10.0 -20.0 -30.0	politic and a second se	м <u>л</u> ., ,	<u> </u>							-13.00 dDm	Start Freq 1.909550000 GHz
-40.0 1 -50.0								the part of the second	Trinitian and the second second second second second second second second second second second second second s	(Nau)	<b>Stop Freq</b> 1.910550000 GHz
Start 1.9 #Res BW	/ 3.9 kl		×	#VBV	√ 11 kHz*	FUI	NCTION F		1.000 s (	5500 GHz (2001 pts)	CF Step 100.000 kHz <u>Auto</u> Man
1 N 2 3 4 5 6 7	1 f	1	1.910 006 5	5 GHz	-26.043 dE	3m					Freq Offset 0 Hz
8 9 10 11 <					m			<b>K</b> STATUS	5	►	

## UMTS BAND II-1852.4MHz-RMC

Agilent Spectrum Analyzer - Swept	SA				
RE RF 50 Ω A     Center Freq 1.8499000		SENSE:PULSE	ALIGN OFF #Avg Type: RMS Avg Hold: 10/10	03:29:13 PM Jul 07, 2021 TRACE 1 2 3 4 5 6	Frequency
Ref Offset 27 dE		#Atten: 18 dB		1.849 910 GHz -33.595 dBm	Auto Tune
20.0 10.0				Anna Innia Anna Anna Anna Anna Anna Anna Anna	Center Fred 1.849900000 GHz
-10.0				-13.00µEm	Start Fred 1.844900000 GHz
-40.0 -50.0 -60.0					<b>Stop Fred</b> 1.854900000 GH:
Start 1.844900 GHz #Res BW 39 kHz	#VBW	110 kHz*	Sweep	Stop 1.854900 GHz 3.000 s (2001 pts)	CF Step 1.000000 MH <u>Auto</u> Mar
1 N 1 f 2	1.849 910 GHz	-33.595 dBm			Freq Offse 0 H;
7 8 9 10 11				~	
MSG					

#### UMTS BAND II-1907.6MHz-RMC

	pectrui	m Ana	alyzer - Swe	pt SA										
LXI RL	r Erd	RF	50 Ω 1.91010	AC			SENSE	E:PULSE	*	Ava T	ALIGN OFF		M Jul 07, 2021	Frequency
		Ref	Offset 27	dB	PNO: Wi IFGain:L	de ↔ ow	Trig: Free #Atten: 18				id: 10/10	1.910 C	005 GHz 84 dBm	
10 dB/d Log	iv	Ref	<u> 30.00 d</u>	Bm								-33.1	64 UDIII	
20.0				·····			•••••••••••							Center Freq 1.910100000 GHz
-10.0	$\bigwedge$						$\rightarrow$						-13.00 dDm	Otherst Error
-20.0 7							\							Start Freq 1.905100000 GHz
-30.0							``	1						1.905100000 GH2
-40.0							<u> </u>	-						
-50.0														Stop Freq
-60.0													·	1.915100000 GHz
-00.0														
Start 1 #Res E					#	ŧvвw	110 kHz	*					5100 GHz (2001 pts)	
	E TRC			Х		ļ	Y		FUNCTIO	N	FUNCTION WIDTH	FUNCTI	ON VALUE	<u>Auto</u> Man
1 N 2	1	f		1.910	0 005 GH	z	-33.184 dE	3m		_				
3														Freq Offset
5													=	0 Hz
6														
8														
9 10						-								
11													~	
MSG											<b>I</b> STATU	s		
											No. No	-		



#### UMTS BAND V-826.4MHz-RMC

		ctrum		lyzer - Sw													
Cen		Fre	RF q8	50 Ω 23.900					1	E:PULS			ALIGN OFF ype: RMS Id: 10/10	TR	PM Jul 07, 2021 ACE 1 2 3 4 5 6 YPE MWWWWW		uency
10 d	B/div			Offset 27			0: Wide Gain:Low		#Atten: 1			Avgino		(r1 823.)	920 MHz	A	uto Tune
20.0 10.0				50.00												Cer	n <b>ter Freq</b> 10000 MHz
-10.0 -20.0 -30.0										↓/ ↓1-					-13.00 VDm		<b>tart Freq</b> 00000 MHz
-40.0 -50.0 -60.0	j, j, j, j, j, j, j, j, j, j, j, j, j, j					<u></u>											t <b>op Freq</b> 10000 MHz
#Re	_	N 3	9 kl				#V	вw	110 kHz	*			-	3.000 s	8.900 MHz (2001 pts)	1.00 Auto	CF Step 00000 MHz Man
1 2 3 4 5 6 7 8 9 10 11 1			f		× 82	23.920	D MHz		-28.907 dl	Bm	FUNU		FUNCTION WIDTH			Fre	e <b>q Offset</b> 0 Hz
MSG													<b>Ko</b> stati	JS			

#### UMTS BAND V-846.6MHz-RMC

Agilent Spectrum Analyzer - Swept SA				
XX RL RF 50 Ω AC Center Freq 849.100000 N		#Avg Type: RMS	03:36:05 PM Jul 07, 2021 TRACE 1 2 3 4 5 6	Frequency
Ref Offset 27 dB 10 dB/div Ref 30.00 dBm	PNO: Wide Trig: Free Run IFGain:Low #Atten: 18 dB	Avg Hold: 10/10 <b>Mk</b>	туре Милини Det A N N N N 1 849.080 MHz -29.095 dBm	Auto Tune
20.0 10.0 0.00				Center Freq 849.100000 MHz
-10.0			-13.00 dDm	Start Freq 844.100000 MHz
-40.0				Stop Freq 854.100000 MHz
Start 844.100 MHz #Res BW 39 kHz	#VBW 110 kHz*	#Sweep	Stop 854.100 MHz 3.000 s (2001 pts)	CF Step 1.000000 MHz <u>Auto</u> Man
	2.080 MHz -29.095 dBm			Freq Offset 0 Hz
MSG		<b>K</b> STATU:	s	· · · · · · · · · · · · · · · · · · ·



#### UMTS BAND IV-1712.4MHz-RMC

		ctrum		ılyzer - Sv													
Cen		Fre	RF q 1	50 s 1.7099			z		]	E:PULSE			ALIGN OFF /pe: RMS Id: 10/10		29 PM Jul 07, 2021 TRACE 1 2 3 4 5 TYPE MWWWW	6	Frequency
10 d	B/div			Offset 2			IO: Wide Gain:Low		#Atten: 1			Avgino			920 GHz	N Z	Auto Tune
20.0 10.0				30.00													Center Freq 1.709900000 GHz
-10.0 -20.0 -30.0															-13.00 \UBm		<b>Start Freq</b> 1.704900000 GHz
-40.0 -50.0 -60.0	ent-at-fin				******	****			~~~~~/								<b>Stop Freq</b> 1.714900000 GHz
#Re		N 39	9 kl	GHz Hz	×		#V	вw	110 kHz	*	FUN	Ction F		3.000	714900 GHz s (2001 pts	)	CF Step 1.000000 MHz Auto Man
1 2 3 4 5 6 7 8 9 10 11 <	N		f				0 GHz		<u>-32.502 d</u>	Bm	FUNC						Freq Offset 0 Hz
MSG													<b>K</b> STAT	us			

#### UMTS BAND IV-1752.6MHz-RMC

	trum Analyzer - Swep								
Center F	RF 50 Ω Freq 1.755100	0000 GHz	SENSE		#Avg Type Avg Hold:		TRAC	M Jul 07, 2021 E 1 2 3 4 5 6 E M WWWWWW	Frequency
10 dB/div	Ref Offset 27 d Ref 30.00 di		#Atten: 18		Avgirioid.		DE 1.755 0	80 GHz	Auto Tune
			we are the second						Center Freq 1.755100000 GHz
-10.0 -20.0 -30.0				,1				-13.00 dBm	<b>Start Freq</b> 1.750100000 GHz
-40.0 -50.0 -60.0				harmon	•••••••••••••••		- muse for a starting		<b>Stop Freq</b> 1.760100000 GHz
#Res BW	TRC SCL	×	3W 110 kHz*	FUN			3.000 s (	0100 GHz 2001 pts)	<b>CF Step</b> 1.000000 MHz <u>Auto</u> Man
1 N 2 3 4 5 6 7 8		1.755 080 GHz	-36.267 dB	m					Freq Offset 0 Hz
9 10 11 <			111			<b>K</b> STATUS	à		



#### 5.5 SPURIOUS EMISSION

#### 5.5.1 CONDUCTED SPURIOUS EMISSION

#### 5.5.1.1 MEASUREMENT METHOD

The following steps outline the procedure used to measure the conducted emissions from the EUT. 1. The level of the carrier and the various conducted spurious and harmonic frequency is measured by means of a calibrated spectrum analyzer. The spectrum is scanned from the lowest frequency generated in the equipment up to a frequency including its 10<sup>th</sup> harmonic. All out of band emissions are measured with a spectrum analyzer connected to the antenna terminal of the EUT while the EUT is operating at maximum power, and at the approximate frequencies. All data rates were investigated to determine the worst case configuration.

2. Determine frequency range for measurements: From CFR 2.1057 the spectrum should be investigated from the lowest radio frequency generated in the equipment up to at least the 10th harmonic of the carrier frequency. For the equipment of PCS1900 band, this equates to a frequency range of 30 MHz to 19.1 GHz, data taken from 30 MHz to 20 GHz. For GSM850, data taken from 30 MHz to 9 GHz.

3. Determine EUT transmit frequencies: the following typical channelswere chosen to conducted emissions testing.

Typical Channels for testing of GSM 850													
Channel	Frequency (MHz)												
128	824.2												
190	836.6												
251	848.8												

Typical Channels for testing of PCS 1900												
Channel	Frequency (MHz)											
512	1850.2											
661	1880.0											
810	1909.8											

Typical Channels for testing of UMTS band II												
Channel	Frequency (MHz)											
9262	1852.4											
9400	1880											
9538	1907.6											



Typical Channels for testing of UMTS band IV												
Channel	Frequency (MHz)											
1312	1712.4											
1412	1732.4											
1513	1752.6											

Typical Channels for testing of UMTS band V												
Channel	Frequency (MHz)											
4132	826.4											
4182	836.4											
4233	846.6											

#### 5.5.1.2 PROVISIONS APPLICABLE

On any frequency outside frequency band of the USPCS spectrum, the power of any emission shall be attenuated below the transmitter power (P, in Watts) by at least 43+10Log(P) dB. For all power levels +30 dBm to 0 dBm, this becomes a constant specification limit of -13 dBm.



#### 5.5.1.3 MEASUREMENT RESULT

#### Pass

#### GSM850-824.2MHz-GPRS@30mHz-1GHz@Pass

Agilent Spect	rum Ana	alyzer - Swe	pt SA													
Center F	RF req 5	50 Ω 515.000	000 MH				PULSE		#Avg T	ype:			TRAC	M Jul 07, 202	56	Frequency
10 dB/div		Offset 27 5 35.00 d	dB	'NO: Fast Gain:Low		ig: Free atten: 24			Avg Ho	old: 1		kr	□ 1 876.	52 MH	v N IZ	Auto Tune
25.0																Center Freq 515.000000 MHz
-5.00 -15.0 -25.0							•				4		1	-13.00 d	Bm	Start Freq 30.000000 MHz
-35.0 <b>44.444</b>			halanda ilg markattar													<b>Stop Freq</b> 1.000000000 GHz
Start 30.4 #Res BW	1.0 N		× 876.5	#V	BW 3.0	MHz Y .516 dE		FUNCT	ION		veep 1.3	33:	3 ms (2	0000 GH 0001 pt	s)	<b>CF Step</b> 97.000000 MHz <u>Auto</u> Man
2 3 4 5 6 7 8																Freq Offset 0 Hz
9 10 11 <											<b>I</b> STATUS	s				

#### GSM850-824.2MHz-GPRS@1GHz-9GHz@Pass

Agilent Spectrum Analyzer - Swep							
		SENSE:PULSE	#Avg Typ		TRAC	4 Jul 07, 2021 E 1 2 3 4 5 6	Frequency
Ref Offset 27 d	PNO: Fast ↔ IFGain:Low	, Trig: Free Run #Atten: 24 dB	Avg Hold		r1 5.472		Auto Tune
10 dB/div Ref 20.00 dE				1	-24.88	38 dBm	
0.00							Center Freq 5.000000000 GHz
-10.0			<b>1</b>			-13:00 dDm	
-20.0 -30.0 -40.0							<b>Start Freq</b> 1.000000000 GHz
-50.0							<b>Stop Freq</b> 9.000000000 GHz
Start 1.000 GHz #Res BW 1.0 MHz	#VBV	V 3.0 MHz	s	weep 13	Stop 9. 3.33 ms (2	.000 GHz 0001 pts)	CF Step 800.000000 MHz
MKR MODE TRC SCL	× 5.472 0 GHz	-24.888 dBm	FUNCTION FUN	NCTION WIDTH	FUNCTIO	IN VALUE	<u>Auto</u> Man
1         N         1         f           2         -	5.472 U GHZ	-24.888 dBm					<b>Freq Offset</b> 0 Hz
7 8 9 10 11							
MSG		EU.	ŀ	<b>I</b> STATU:	s		



## GSM850-836.6MHz-GPRS@30mHz-1GHz@Pass

Agiler		ectru					pt S	5A																					
ιхи Cer		r Fr	R eq			ם נו 00	00		MH2			]_		BE:PU				ype	ALIGN	s	C	02:43	TRA	CE 1	107, 20 2 3 4 1 <del>WWW</del>	56		Frequen	су
10 d	IB/di	iv			ffset 35.0					Fasi n:Lov	t⊶ w		ig: Fre atten: 2			AV	gino	10:	100/1				⊳ 77.	ет   F ОС	MH dB	N N		Auto	Tune
Log 25.0 15.0 5.00																												Cente 515.0000	
-5.00 -15.0 -25.0	╞														 								<b>♦</b> <sup>1</sup>		-13.00 (			<b>Star</b> 30.00000	<b>t Freq</b> 00 MHz
-35.0 -45.0 -55.0		<b>Verteile</b>	in the second second second second second second second second second second second second second second second	***						4			ile șe di îlită															<b>Stoj</b> 1.00000000	<b>p Freq</b> 00 GHz
Sta #Re	es B	SW	1.0	M	Hz			×		#\	/BW	/ 3.0	MHz	z	FUNC	TION		_		о 1. WIDTH	333	3 m		200	00 GI 01 p		A	CF 97.00000 <u>uto</u>	<b>Step =</b> 00 MHz Man
1 2 3 4 5 6 7 8 9 10 11	N								77.0	1Hz		-28	.160 d	IBm	 FUNC							FL						Freq	Offset 0 Hz
MSG																			4	STATU	s						<u> </u>		

## GSM850-836.6MHz-GPRS@1GHz-9GHz@Pass

Agilent Spectrum Analyzer - Swept SA				
RL RF 50 Ω AC     Center Freq 5.000000000	CORREC SENSE:PUL	#Avg Type: RMS	02:43:50 PM Jul 07, 2021 TRACE 1 2 3 4 5 6	Frequency
Ref Offset 27 dB	PNO: Fast +++ Trig: Free Ru IFGain:Low #Atten: 24 dB	-	r1 5.838 8 GHz -24.111 dBm	Auto Tune
			-13:00 dBm	Center Freq 5.00000000 GHz
-20.0 -30.0 -40.0				<b>Start Freq</b> 1.000000000 GHz
-50.0				<b>Stop Freq</b> 9.000000000 GHz
Start 1.000 GHz #Res BW 1.0 MHz MKR MODEL TRC SCL	#VBW 3.0 MHz	Sweep 13	Stop 9.000 GHz .33 ms (20001 pts) FUNCTION VALUE	CF Step 800.000000 MHz <u>Auto</u> Man
1         N         1         f         5.           2         -         -         -         -           3         -         -         -         -           4         -         -         -         -         -           6         -	.838 8 GHz -24.111 dBm		×	Freq Offset 0 Hz
MSG				t



## GSM850-848.8MHz-GPRS@30mHz-1GHz@Pass

Agiler		ctrur	n An	alyze	r - Swe	ept S/	A																	
ເ <mark>೫</mark> ℝ Cen		Fre	RF Pq		50 Ω	AC 000	:   co D MH		C			ENSE:				ј Тур	ALIGN e: RM	s	02:	TRA	CE 1 2	7,2021 345	6	Frequency
10 d	B/div				et 27		11		: Fast n:Lov		≓ Trig:f #Atter				Avgi	Hola:	: 100/1			815.	31	MHz	2	Auto Tune
25.0 15.0	$\square$																							Center Freq 515.000000 MHz
-5.00 -15.0 -25.0																			1			3.00 dBm		Start Freq 30.000000 MHz
-35.0 -45.0 -55.0	-		*****	iyofrayin	i i se di je	u i i i i i i i i i i i i i i i i i i i		<b></b>	****		lawa aya ha		در نیا آلید ا									<u>te det sette p</u>		<b>Stop Fred</b> 1.000000000 GHz
Star #Re	s B	W 1	.0	MHz	<u>.</u>		×		#V	вw	3.0 M	Hz		FLIN	CTION		weep		333 I		000	) GHz 1 pts		<b>CF Step</b> 97.000000 MHz <u>Auto</u> Man
1 2 3 4 5 6	N	1	f				815.	31 N	ИНZ		-28.767	7 dBı	m											Freq Offset 0 Hz
7 8 9 10 11 <																					]	v		
MSG																	<b>1</b>	STATUS	5					

## GSM850-848.8MHz-GPRS@1GHz-9GHz@Pass

Agilent Spectrum Analyz					
Center Freg 5.0	50 Ω AC CORREC	SENSE:PULSE	ALIGN OFF #Avg Type: RMS	04:04:50 PM Jul 07, 2021 TRACE 1 2 3 4 5 6	Frequency
Ref Off	PNO: Fast IFGain:Lov set 27 dB 0.00 dBm		Avg Hold: 100/100 <b>M</b> I	түре Муминин Det P NNNNN kr1 3.206 4 GHz -24.155 dBm	Auto Tune
				-13.80 dBm	Center Freq 5.000000000 GHz
-20.0 -30.0 -40.0			in a statistic sector and the sector in the sector of the		<b>Start Freq</b> 1.000000000 GHz
-50.0					<b>Stop Freq</b> 9.000000000 GHz
Start 1.000 GHz #Res BW 1.0 MH MKR MODE THE SCL	×		Sweep 1	Stop 9.000 GHz 3.33 ms (20001 pts) FUNCTION VALUE	<b>CF Step</b> 800.000000 MHz <u>Auto</u> Man
1         N         1         f           2         -         -         -           3         -         -         -           4         -         -         -           5         -         -         -           6         -         -         -           7         -         -         -           9         -         -         -           10         -         -         -           11         -         -         -	3.206 4 GHz	-24,155 dBm		×	Freq Offset 0 Hz
MSG			to statu	IS	



## GSM1900-1850.2MHz-GPRS@30mHz-1GHz@Pass

		ectru	m An	alyzer - S	wept S	5A														
ι <mark>χι</mark> ℝ Cer	_	Fre	RF eq :	50 515.00		0 MH				SENS				Тур	ALIGN OFF e: RMS 100/100	03:0	TRAC	M Jul 07, 20 E 1 2 3 4 PE M WWW	56	Frequency
10 d	Bidi			Offset 2		I		: Fast n:Low		#Atten: 2			Avgli				⊓ 752.	99 MI 90 dB	Hz	Auto Tune
10.0 0.00		•		1 20.00		•• 												-13:00		Center Freq 515.000000 MHz
-20.0 -30.0 -40.0	Hereit	Hereita	an an an an an an an an an an an an an a		h+**\*\#	a l Mara ( para stada Mara ya ( para stada			a Alaba Alaba			da agin da tata da						l of the second states of the	aley,	Start Freq 30.000000 MHz
-50.0 -60.0 -70.0	-																			<b>Stop Freq</b> 1.000000000 GHz
MKB	s B MODE	W 1	1.0     SCI	MHz		×			вW	3.0 MHz		FUN	CTION		weep 1.	333 r	ns (2	0000 G 0001 p		CF Step 97.000000 MHz <u>Auto</u> Man
1 2 3 4 5 6 7 8 9 10 11 <	N	1	f			752.	99 M			-29.390 dl	Bm									Freq Offset 0 Hz
MSG																s				μ

## GSM1900-1850.2MHz-GPRS@1GHz-7GHz@Pass

Agilent Spect			ept SA								
KN RL Center F	RF	50 Ω			SENSE	PULSE		ALIGN OFF		M Jul 07, 2021 E 1 2 3 4 5 6	Frequency
10 dB/div	Ref	Offset 27 35.00 c	P IF(	NO: Fast   • Gain:Low	+ Trig: Free #Atten: 24		Avg Hol	d: 100/100 MI	□ 1 (r1 6.04)	1 8 GHz 15 dBm	Auto Tune
25.0 15.0 5.00											Center Freq 4.000000000 GHz
-5.00 -15.0		مەربىرى بىرى	(111) (Ed. 112) (Ed. 112)							-13.00 dBm	<b>Start Freq</b> 1.000000000 GHz
-35.0 -45.0 -55.0											<b>Stop Freq</b> 7.000000000 GHz
Start 1.00 #Res BW	1.0 N		×	#VB	W 3.0 MHz	FU		Sweep 10	).67 ms (2	.000 GHz 0001 pts)	CF Step 600.000000 MHz <u>Auto</u> Man
1 N 2 3 4 5 6 7 7 8 8 9 9 10 11	f			8 GHz	-24.115 dE						Freq Offset 0 Hz
MSG									s		r.



## GSM1900-1850.2MHz-GPRS@7GHz-13.6GHz@Pass

Agilent Spect		zer - Swept S										
Center F	RF req 10	50 Ω A .300000	000 GHz	z			1	Avg Typ	ALIGN OFF e: RMS I: 100/100	TRA	M Jul 07, 2021 CE 1 2 3 4 5 6 PE M <del>WM/WM</del>	Frequency
10 dB/div		fset 27 dB	IFGair 5	Fast ⊶ n:Low	#Atten: 2					13.135	69 GHz	Auto Tune
												Center Freq 10.300000000 GHz
-20.0 -30.0 <b>Advision</b> -40.0			and the state of the state of the state of the state of the state of the state of the state of the state of the		a falska (m. 11. je so tiko so tiko so 1999 – Angelska (m. 11. je so tiko so tiko so 1999 – Angelska (m. 11. je so tiko so			ومعتوفة أأفريا		an a statistica a statistica a statistica a statistica a statistica a statistica a statistica a statistica a s		Start Fred 7.000000000 GHz
-50.0 -60.0 -70.0												Stop Frec 13.60000000 GHz
Start 7.00 #Res BW	1.0 MH		×		₩ 3.0 MHz		FUNCTIO		weep 12	2.00 ms (2	8.600 GHz 20001 pts) 001 ats	CF Step 660.000000 MHz <u>Auto</u> Mar
1 N 2 3 4 5 6 7 8 9 10		1	13.135 69 G	iHz	-22.966 dl	3m						Freq Offset 0 Hz
MSG					1111				<b>K</b> STATU	s	>	

## GSM1900-1850.2MHz-GPRS@13.6GHz-20GHz@Pass

Agilent Spectrum Analyzer - Swept SA					
🕅 RL RF 50 Ω AC				M Jul 07, 2021	Frequency
	PNO: Fast +++ Trig: Free IFGain:Low #Atten: 24	Run Avg Hold:	100/100 TY D	PE MWWWWW ET P N N N N N	Auto Tune
Ref Offset 27 dB 10 dB/div <b>Ref 20.00 dBm</b>			Mkr1 19.007 19.0	04 GHZ 26 dBm	
					Center Freq
0.00					16.800000000 GHz
-10.0			1	-13.00 dDm	
		مر المراجع المراجع المراجع المراجع المراجع المراجع المراجع المراجع المراجع المراجع المراجع المراجع المراجع الم	ter and the state of the state of the state of the state of the state of the state of the state of the state of		Start Freq
-30.0					13.600000000 GHz
-50.0					
-60.0					Stop Freq 20.00000000 GHz
-70.0					
Start 13.600 GHz #Res BW 1.0 MHz	#VBW 3.0 MHz	Si	Stop 20 weep 16.00 ms (2		<b>CF Step</b> 640.000000 MHz
MKR MODE TRC SCL ×	07 04 GHz -19.026 dE		CTION WIDTH FUNCTION	ON VALUE	<u>Auto</u> Man
2 3	-19.020 de				Freq Offset
4 5					0 Hz
6 7					
8					
10 11				~	
MSG			STATUS		



## GSM1900-1880MHz-GPRS@30mHz-1GHz@Pass

Agilent Spe	ctrum An	alyzer - Sw	ept SA										
Center	Freq :	50 Ω 515.000	0000 MH			ENSE:PU			Type	ALIGN OFF : RMS 100/100	TRA	M Jul 07, 2021 CE 1 2 3 4 5 6 PE M WAAAAAAA	Frequency
10 dB/div		Offset 27	' dB	PNO: Fast FGain:Low		n: 24 dE					kr1 570.	39 MHz 63 dBm	Auto Tune
10.0 0.00												-13.00 dBm	Center Freq 515.000000 MHz
-20.0 -30.0 -40.0	n de yn de wije steret ge	k b b safa barrak na pinika na Kang na pinika na pinika na di	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		k de la sue su su su su su su su su su su su su su		1-				i de la constante de	i kana jina si kika kata kana ji Mana jina si kana jina jina jina jina jina jina jina j	Start Freq 30.000000 MHz
-50.0													<b>Stop Freq</b> 1.000000000 GHz
Start 30 #Res B	W 1.0 I	MHz	×		BW 3.0 M			CTION		veep 1.3	333 ms (2	0000 GHz 0001 pts)	CF Step 97.000000 MHz <u>Auto</u> Man
1 N 2 3 4 5 6 7 8 9 10 11	1 f			.39 MHz	-28.76	3 dBm							Freq Offset 0 Hz
MSG											5	>	

## GSM1900-1880MHz-GPRS@1GHz-7GHz@Pass

Agilent Spectrum Analyzer - Swept SA				
🕅 RL RF 50Ω AC	CORREC SENSE:PI	#Avg Type: RMS	TRACE 1 2 3 4 5 6	Frequency
Ref Offset 27 dB	PNO: Fast →→ Trig: Free R IFGain:Low #Atten: 24 d	в	• TYPE MWWWWW DET PNNNN Mkr1 5.871 7 GHz -24.904 dBm	Auto Tune
25.0				Center Freq 4.000000000 GHz
-5.00 -15.0 -25.0	eter effetilsenter for stille			<b>Start Freq</b> 1.000000000 GHz
-35.0 -45.0 -55.0				<b>Stop Freq</b> 7.000000000 GHz
Start 1.000 GHz #Res BW 1.0 MHz	#VBW 3.0 MHz	FUNCTION FUNCTION W	Stop 7.000 GHz 10.67 ms (20001 pts)	CF Step 600.000000 MHz <u>Auto</u> Man
1         N         1         f         5           2         -         -         -         -           3         -         -         -         -           4         -         -         -         -           5         -         -         -         -           6         -         -         -         -           7         -         -         -         -           8         -         -         -         -           9         -         -         -         -           10         -         -         -         -	.871 7 GHz -24.904 dBm			Freq Offset 0 Hz
MSG		Line and the state of the state	TATUS	



## GSM1900-1880MHz-GPRS@7GHz-13.6GHz@Pass

Agilent Spe			ept SA										
Center	Freq		000000	GHz		ISE:PUL			Type	ALIGN OFF : RMS 100/100	TRA	M Jul 07, 2021 CE 1 2 3 4 5 6 PE M <del>WWWWW</del>	Frequency
		Offset 27	r dB	PNO: Fast FGain:Low	#Atten:			Avgir	1010.		12.758	17 GHz	
10 dB/di Log	v Re	f 20.00	dBm					1			-23.8	72 dBm	
10.0 0.00													Center Fred 10.300000000 GHz
-20.0											<b></b> 1	-13.00 dBm	
-30.0 -40.0													Start Fred 7.000000000 GHz
-50.0													Stop Fred 13.60000000 GHz
-70.0		_											
Start 7. #Res B				#VI	зw з.о мн	lz			Sv	veep 12		8.600 GHz 20001 pts)	CF Step 660.000000 MHz
	TRC SCL		× 12.758 ·	17 GHz	Y -23.872	dBm	FUNC	CTION	FUN	CTION WIDTH	FUNCTI	ON VALUE	Auto Man
2 3 4 5 6													Freq Offset 0 Hz
8 9 10													
11												~	
MSG											5		<u>1</u>

## GSM1900-1880MHz-GPRS@13.6GHz-20GHz@Pass

Agilent Spectrum Analyzer - Swept S					
RL RF 50 Ω AC     Center Freg 16.800000			e: RMS TRA	PM Jul 07, 2021 ACE 1 2 3 4 5 6	Frequency
Ref Offset 27 dB	PNO: Fast +++ Trig: F IFGain:Low #Atten	iree Run AvgjHold :: 24 dB	Mkr1 19.011	20 GHz	Auto Tune
				-13.00 dBm	Center Freq 16.800000000 GHz
-20.0 -30.0 -40.0					<b>Start Freq</b> 13.600000000 GHz
-60.0					<b>Stop Freq</b> 20.000000000 GHz
Start 13.600 GHz #Res BW 1.0 MHz	#VBW 3.0 MI		weep 16.00 ms (		CF Step 640.000000 MHz <u>Auto</u> Man
	9.011 20 GHz -18.625				Freq Offset 0 Hz
MSG			<b>I</b> STATUS		



## GSM1900-1909.8MHz-GPRS@30mHz-1GHz@Pass

		ectrui	m An	alyzer - Sv	vept SA													
(X/ R Cen		Fre	RF Pq	50 s 515.00		CORF			SENS				Тури	ALIGN OFF e: RMS 100/100	TR/	PM Jul 07, 202: ACE 1 2 3 4 5 YPE M WWWWA	56	Frequency
				Offset 2			10: Fast ain:Lov		#Atten: 2			Avgi			kr1 889	.95 MH	Z I	Auto Tune
10 a Log 10.0 0.00		v	Re	f 20.00												-13.00 dE		Center Freq 515.000000 MHz
-20.0 -30.0 -40.0	1						, i fitti tatlaşı		र्वत्र स्वयुक्तान्त्र स्वयु विद्य विदे स्वयुक्त स्वित्रिक स्वयुक्त स्वयुक्त विद्य					tere for a second second second second second second second second second second second second second second s Second second			*	Start Freq 30.000000 MHz
-50.0 -60.0 -70.0																		<b>Stop Freq</b> 1.000000000 GHz
	s B'	W 1	.0     SCI	MHz	×			вw	3.0 MHz		FUNC	CTION		weep 1.3	333 ms (	.0000 GH 20001 pt: ION VALUE		<b>CF Step</b> 97.000000 MHz <u>Auto</u> Man
1 2 3 4 5 6 7 8 9 10 11	N		f		8	89.95	5 MHz		-28.588 dl	<u>Bm</u>							(4)	Freq Offset 0 Hz
MSG															3			

## GSM1900-1909.8MHz-GPRS@1GHz-7GHz@Pass

Agilent Spect			ept SA								
Center F	RF	50 Ω				:PULSE	#Avg Ty		TRA	M Jul 07, 2021 CE 1 2 3 4 5 6	Frequency
10 dB/div	Ref	Offset 27	P IF(	NO: Fast ↔ Gain:Low	+ Trig: Free #Atten: 24		Avg Hol	d: 100/100 MI	ء kr1 5.88	1 3 GHz 00 dBm	Auto Tune
25.0 15.0 5.00											Center Freq 4.000000000 GHz
-5.00 -15.0 -25.0			مربع المربع ا	N	Attinues a class	te faite	, قراء م بر المانية بالم	a. J. anatolik Melis J. co. of Self-	1	-13.00 dBm	<b>Start Freq</b> 1.000000000 GHz
-35.0 -45.0 -55.0											<b>Stop Freq</b> 7.000000000 GHz
Start 1.00 #Res BW	1.0 1		×	#VB	W 3.0 MHz			Sweep 1	0.67 ms (2	2.000 GHz 20001 pts)	CF Step 600.000000 MHz <u>Auto</u> Man
1 N 2 3 4 5 6 7 7 8 9 10 11 <				3 GHz	-24.200 dB						Freq Offset 0 Hz
MSG								🚺 statu	IS		



## GSM1900-1909.8MHz-GPRS@7GHz-13.6GHz@Pass

Agilent Spect		zer - Swept S	SA											
Center F	RF Freq 10			lz		E:PULSE		#Avg 1 Avg He	Type:		TR	PM Jul 07, 2021 ACE 1 2 3 4 5 YPE M WWWWW	6	Frequency
		ffset 27 dE	IFGa 3	0: Fast  • ain:Low	#Atten: 2			- Argini	<u> </u>		12.940	) 99 GH:	N Z	Auto Tune
10 dB/div Log 10.0		20.00 dB	m								-20.			<b>Center Freq</b> 10.300000000 GHz
-10.0 -20.0 -30.0	ill supervised in the second second second second second second second second second second second second second		بەتاسانەتەر بىر		a kanalan ka <sub>mar</sub> se gilala jugilan kanal Kinga ang seringan gangan ganala kanala		الشيرة خفرا تنها	i and the second second second second second second second second second second second second second second se				1 -13:00 dB	m M	<b>Start Freq</b> 7.00000000 GHz
-50.0 -60.0 -70.0														<b>Stop Freq</b> 13.60000000 GHz
Start 7.00 #Res BW	1.0 M		×	#VB	W 3.0 MHz	<u>z</u>	FUNC			eep 12	.00 ms (	3.600 GH; 20001 pts	5)	CF Step 660.000000 MHz <u>Auto</u> Mar
1 N 2 3 4 5 6	1 f	,	12.940 99	GHz	-23.381 d	Bm								Freq Offset 0 Hz
6 7 8 9 10 11														
MSG											5			

## GSM1900-1909.8MHz-GPRS@13.6GHz-20GHz@Pass

Agilent Spectrum Analyzer - Swept SA					
RL         RF         50 Ω         AC           Center Freq 16.80000000         C         C         C         C		E:PULSE Avg Type		4 Jul 07, 2021 E 1 2 3 4 5 6	Frequency
Ref Offset 27 dB	PNO: Fast Trig: Free IFGain:Low #Atten: 24	eRun Avg∭Hold:∵	100/100 <sup>™™™™™™™™™™™™™™™™™™™™™™™™™™™™™™™™™™™</sup>	72 GHz 22 dBm	Auto Tune
10 dB/div Ref 20.00 dBm			-18.4/		
			.1		Center Freq 16.800000000 GHz
			♦' —	-13.00 0.011	
-20.0 -30.0					<b>Start Freq</b> 13.60000000 GHz
-50.0					
-60.0					Stop Freq 20.00000000 GHz
-70.0					
Start 13.600 GHz #Res BW 1.0 MHz	#VBW 3.0 MHz	FUNCTION FUNC	veep 16.00 ms (2		<b>CF Step</b> 640.000000 MHz <u>Auto</u> Man
1 N 1 f 19.03	22 72 GHz -18.422 dE	3m			
<u></u>					Freq Offset 0 Hz
6					
8					
9					
10				~	
<			1	>	
MSG			<b>K</b> STATUS		



## UMTS BAND II-1852.4MHz-RMC@30mHz-1GHz@Pass

Agiler	nt Spe	ectru	m Ar	alyzer - Swe	ept SA												
Cen		Fre	RF eq		000 MHz				E:PUL!			Тур	ALIGN OFF e: RMS 100/100	TRA	M Jul 07, 2021 CE 1 2 3 4 5 6 PE MWWWWW		Frequency
10 d	Bidi			Offset 27	dB	NO: Fast Gain:Lov	v •••	#Atten: 24		·		1010.		r1 785.	92 MHz 48 dBm	1	Auto Tune
Log 10.0 0.00 -10.0		• 		20.00											-13:00 dDm		Center Freq 515.00000 MHz
-20.0 -30.0 -40.0	Linki	i pining s	e e e e e e e e e e e e e e e e e e e	t da taka sa da taka sa da ta Taka sa da taka br>Taka sa da taka sa da t	in address of the later of the later and provide the second second second second second second second second second second second second second second		u editar	c.) (f. ley)) 1 ann an tao ann an tao ann an tao ann an tao ann an tao ann an tao ann an tao ann an tao ann ann Tao ann an tao ann an t					alatopolitikalita				Start Freq 30.000000 MHz
-50.0 -60.0 -70.0																	<b>Stop Freq</b> 1.000000000 GHz
Star #Re	sВ	W 1	.0	MHz	×		/BW	3.0 MHz		FUNC	CTION		weep 1.3	333 ms (2	0000 GHz 20001 pts)		CF Step 97.000000 MHz Auto Man
1 2 3 4 5 6 7 8 9 10 11 <	N	1	f		785.92	2 MHz		-28.848 dB	3m								Freq Offset 0 Hz
MSG													<b>K</b> STATUS	;			

## UMTS BAND II-1852.4MHz-RMC@1GHz-7GHz@Pass

		er - Swept SA									0
Center F	RF req 4.0	50 Ω AC				:PULSE	#Avg Typ		TRA	M Jul 07, 2021 CE 1 2 3 4 5 6	Frequency
		set 27 dB	IFGai	:Fast ↔ n:Low	≓ Trig: Free #Atten: 24		Avg Hold		r1 2.65	5 4 GHz 81 dBm	Auto Tune
10 dB/div Log	Ref 3	5.00 dBm	<u>1</u>						-24.4	81 aBm	
25.0											Center Freq 4.00000000 GHz
5.00											
-5.00											
-15.0										-13.00 dBm	Start Freq
			<b>↓</b>  _								1.00000000 GHz
-25.0	والديني والمرجوع	فالبلام والمقاطر				ويتلغ المراجا والمالي	فالإسفا الجامع المرام		ر با ان وراند. منطقاری از مها معمومه بیرسیان از م		
-35.0						AND DESCRIPTION OF					Stop Freq
-45.0											7.000000000 GHz
-55.0											
Start 1.00 #Res BW		z		#VBV	V 3.0 MHz		s	weep 10		.000 GHz 0001 pts)	CF Step 600.000000 MHz
MKR MODE T			×		Y		NCTION FUI	NCTION WIDTH	FUNCTI	ON VALUE	<u>Auto</u> Man
1 N /	f		2.655 4 (	GHz	-24.481 dE	3m					
3											Freq Offset
4 5											0 Hz
6											
8											
9 10											
11										<b>~</b>	
<								4	1		
MSG									s		

## UMTS BAND II-1852.4MHz-RMC@7GHz-13.6GHz@Pass

Agilent Spect	rum Anal	yzer - Swept	SA									
Center F	RF req 1		AC CORREC	z	7	:PULSE		ALI Type: F Hold: 10		TRA	M Jul 07, 2021 CE 1 2 3 4 5 6 PE M WWWWWW	Frequency
10 dB/div		) ffset 27 dE 20.00 dB	IFGain 3	Fast ↔ n:Low	#Atten: 24					□ 13.099	39 GHz 49 dBm	Auto Tune
10.0 0.00											10.00 dBm	Center Freq 10.300000000 GHz
-20.0 -30.0 4),,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,					in long on y to a paint dan dan dan site y y Tang dan sayar basa ya tang dan sayar							<b>Start Freq</b> 7.000000000 GHz
-50.0 -60.0 -70.0												<b>Stop Freq</b> 13.600000000 GHz
Start 7.00 #Res BW	1.0 M	Hz	×		V 3.0 MHz		FUNCTION		ep 12	.00 ms (2	.600 GHz 0001 pts) INVALUE	CF Step 660.000000 MHz <u>Auto</u> Man
1 N 2 3 4 5 6 6 7 7 8 9 10 11			13.099 39 G		-23.449 dE	3m						Freq Offset 0 Hz
MSG								[	STATUS	5		U

#### UMTS BAND II-1852.4MHz-RMC@13.6GHz-20GHz@Pass

Agilent Spectrum Analyzer - Swept SA					
RL RF 50 Ω AC	CORREC	SENSE:PULSE	ALIGN #Avg Type: RMS	TRACE 1 2 3	456 Frequency
Ref Offset 27 dB	PNO: Fast ↔ IFGain:Low	√ Trig: Free Run #Atten: 24 dB	Avg Hold: 100/10	kr1 18.998 08 G	Hz Auto Tune
10 dB/div Ref 20.00 dBm Log 10.0 0.00				-18.726 dE	Center Freq 16.80000000 GHz
-10.0 -20.0 -30.0 -40.0					Start Freq 13.60000000 GHz
-50.0					Stop Freq 20.000000000 GHz
Start 13.600 GHz #Res BW 1.0 MHz	#VBW	3.0 MHz	Sweep	Stop 20.000 G 16.00 ms (20001   VIDTH FUNCTION VALUE	
	98 08 GHz	-18.726 dBm			Freq Offset 0 Hz
MSG				STATUS	



## UMTS BAND II-1880MHz-RMC@30mHz-1GHz@Pass

Ref Offset 27 dB         Mkr1 925.21 MHz -28.603 dBm           10 dB/div         Ref 20.00 dBm         -28.603 dBm           10.0         -28.603 dBm         -28.603 dBm           10.0         -13.80 dbm         -30.0 dbm           10.0         -13.80 dbm         -28.603 dBm           10.0         -28.603 dBm         -28.603 dBm           10.0         -28.603 dBm         -28.603 dBm           10.0         -3.80 dbm         -3.80 dbm           10.0         -3.80 dbm         -3.80 dbm           10.0         -3.80 dbm         -3.80 dbm           20.0         -3.80 dbm         -3.80 dbm           40.0         -3.80 dbm         -3.80 dbm <t< th=""><th></th><th>rum Analyzer - Swept S</th><th>SA</th><th></th><th></th><th></th><th></th><th></th><th></th></t<>		rum Analyzer - Swept S	SA						
PNO: Past with and with the past of the pas		10 00 00 10	0 MHz		#Avg Typ	e: RMS	TRAC	E123456	Frequency
Log       Itel 2000 dbm         10.0       Itel 2000 dbm         0.00       Itel 2000 dbm         10.0       Itel 2000 dbm         20.0       Itel 2000 dbm         20.0       Itel 2000 dbm         30.0       Itel 2000 dbm         40.0       Itel 2000 dbm         40.0       Itel 2000 dbm         50.0       Itel 2000 dbm         60.0       Itel 2000 dbm         70.0       Itel 2000 dbm			IFGain:Low		Arginola.		<sup></sup> (r1 925.	21 MHz	Auto Tune
-20.0	10.0 0.00								Center Freq 515.000000 MHz
-60.0 -70.0	-30.0	the margine of the second provided by the second of the second of the second of the second of the second of the	an daine an tain taine ga ann an taine an the Star ang a falsan ang sanara taine an taine		in Alt i na franciska je svoja a slavnika Na slavnika svoja svoja svoja svoja svoja Na slavnika svoja svoja svoja svoja	(1) a present of the former after the state of the present of the present of the state of the st	a sali a la separa da la la sara p a la fa la sara da sara fa la sara fa	1 	Start Freq 30.000000 MHz
Start 30.0 MHz Stop 1.0000 GHz	-60.0								<b>Stop Frec</b> 1.000000000 GHz
	#Res BW	1.0 MHz		3W 3.0 MHz		<u> </u>	333 ms (2	0001 pts)	<b>CF Step</b> 97.000000 MHz <u>Auto</u> Mar
1         f         925.21 MHz         -28.603 dBm         Freq O           2         -         -         -         -         -         Freq O           3         -         -         -         -         -         Freq O           4         -         -         -         -         -         -         Freq O           6         -	2 3 4 5 6 7 8 9 10 11		925.21 MHz	-29.603 dBm					Freq Offse 0 Hz

#### UMTS BAND II-1880MHz-RMC@1GHz-7GHz@Pass

Agilent Spect													
LXI RL	RF	50 Ω		CORREC		SENSE	:PULSE			ALIGN OFF		M Jul 07, 2021	Frequency
Center F	req 4	1.0000	00000	GHZ PNO: Fas		Trig: Free	Run		#Avg Tyj Avg Hold		T	VCE 1 2 3 4 5 6	
				IFGain:Lo		#Atten: 24					(	DET P N N N N N	
										М	kr1 3 10	5 4 GHz	Auto Tune
		Offset 2								141		15 dBm	
10 dB/div Log	Rei	535.00	<u>abm</u>								-24.2		
25.0													Center Freq
15.0		1											4.000000000 GHz
													4.00000000 GHz
5.00													
-5.00		_	_										Start Freq
-15.0		_			<b>≕</b> 1‡			_				-13.00 dBm	
-25.0		ļ			<b>♦</b> .								1.00000000 GHz
فالاستر فرمسنا	سأحتنظناس	توجيك ورديس				ليبط المقر بالالح الإخرار	الشبيان وذاح	بأشخبانه	البلجانين بينايي		وي الي من من الم العاملية. من من المراجع المراجع المراجع المراجع المراجع المراجع المراجع المراجع المراجع المراجع المراجع المراجع المراجع ا	1	
-35.0						and the local sectors.							Oton From
-45.0											-		Stop Freq
-55.0													7.00000000 GHz
Start 1.0	00 GH	lz									Stop 7	7.000 GHz	CF Step
#Res BW	1.0	/IHz		#\	vвw	3.0 MHz			5	Sweep 1	0.67 ms (2	20001 pts)	600.000000 MHz
MKR MODE 1	Bri sri		×			Ŷ		FUNCT	ION EI	NCTION WIDTH	ELINCT	ION VALUE	<u>Auto</u> Man
1 N	1 f			195 4 GHz		-24.215 dE		Tonon		NCHOR WIDT		OT WALCE	
2													<b>E</b>
3													Freq Offset
5												=	0 Hz
6													
7 8	-												
9													
10													
11					I	1111					1	~	
MSG										<b>I</b> STATL			l
										No siAite			

# UMTS BAND II-1880MHz-RMC@7GHz-13.6GHz@Pass

Agilent Spect	rum Ana	lyzer - Swe	pt SA											
Center F	RF	50 Ω			SEI	NSE:PULSE		#Avg ]		RMS		DPM Jul 07, 3 RACE 1 2 3		Frequency
			I	GHZ PNO: Fast FGain:Low	↔ Trig: Fr #Atten:	ee Run 24 dB				100/100		DET P N N	NNN NNN	Auto Tune
10 dB/div		Offset 27 20.00 d										255 d		
10.0 0.00														<b>Center Freq</b> 10.300000000 GHz
-20.0												-13.0	1	
-30.0 <b>(14) (14) (14)</b>	-through							a a la situata a si						<b>Start Freq</b> 7.000000000 GHz
-50.0 -60.0														Stop Freq 13.60000000 GHz
-70.0						_			-					10.000000000000
Start 7.00 #Res BW	1.0 N			#VE	3W 3.0 MH	Iz					2.00 ms		pts)	CF Step 660.000000 MHz Auto Man
MKR MODE T	RC SCL		× 13.294	42 GHz	-24.255	dBm	FUNC	TION	FUNC	TION WIDTH	FUN	CTION VALUE		····
2 3 4 5 6														Freq Offset 0 Hz
7 8 9 10														
11													~	
MSG											s		2	
										-0	-			

## UMTS BAND II-1880MHz-RMC@13.6GHz-20GHz@Pass

Agilent Spectrum Analyzer - Swe					
RL RF 50 Ω     Center Freq 16.8000	AC CORREC	SENSE:PULSE	ALIGN OFF #Avg Type: RMS	03:31:15 PM Jul 07, 2021 TRACE 1 2 3 4 5 6	Frequency
Ref Offset 27	PN0: Fast ↔ IFGain:Low dB	≓ Trig: Free Run #Atten: 24 dB	Avg Hold: 100/100 Mkr1	18.980 80 GHz -18.608 dBm	Auto Tune
10 dB/div Ref 20.00 d				1 -1200 dBm	Center Freq 16.80000000 GHz
-20.0 -30.0					Start Freq 13.600000000 GHz
-60.0 -60.0 -70.0					<b>Stop Freq</b> 20.000000000 GHz
Start 13.600 GHz #Res BW 1.0 MHz	#VBV	V 3.0 MHz	Sweep 16	Stop 20.000 GHz 5.00 ms (20001 pts) FUNCTION VALUE	CF Step 640.000000 MHz <u>Auto</u> Man
1         N         1         f           2         1         3         3           3         3         3         3           4         4         5         6           6         6         7         7           8         9         9         10         11           11         1         1         1         1	18.980 80 GHz	-18,608 dBm		×	Freq Offset 0 Hz
MSG			to statu:	s	

## UMTS BAND II-1907.6MHz-RMC@30mHz-1GHz@Pass

Agilent Spect	rum Analyzer	- Swept SA									
Center F	<sup>RF</sup> req 515.	000000 MH		<b>_</b> '_	E:PULSE	#Avg	Type:	LIGN OFF RMS 00/100	TRA	M Jul 07, 2021 CE 1 2 3 4 5 6 PE M WWWWWW	Frequency
10 dB/div	Ref Offs		PNO: Fast ↔ IFGain:Low	#Atten: 2					⊳ kr1 959.	50 MHz 28 dBm	Auto Tune
										-13:00 dBm	Center Freq 515.000000 MHz
-20.0 -30.0 -40.0		else elsens fright of the test of test	M. Law (and a scalar scala Scalar scalar s	ta di kili bung aliafan da maa fali a da ma 11 a 12 away ni stari buga sa fali a da ma						1- 49 Ani Jan Ani	Start Freq 30.000000 MHz
-50.0 -60.0 -70.0											Stop Fred 1.000000000 GHz
Start 30.0 #Res BW	1.0 MHz	×	#VB	W 3.0 MHz		UNCTION		eep 1.:	333 ms (2	0000 GHz 0001 pts)	CF Step 97.000000 MHz <u>Auto</u> Man
1 N 2 3 4 5 6 7 8		959	.50 MHz	-28.528 dl	3m						Freq Offset 0 Hz
9 10 11 <				1001				<b>I</b> status	50	 ▼	

## UMTS BAND II-1907.6MHz-RMC@1GHz-7GHz@Pass

									rzer - Swe			
Frequency	M Jul 07, 2021 E 1 2 3 4 5 6	TRA		#Avg Typ	E:PULSE	7		AC CO	50 Ω 00000	RF		ι»/ι Cer
Auto Tune	6 4 GHz	r1 5.40		Avg Hold		≓ Trig:Free #Atten:24	NO: Fast ↔ Gain:Low	dB	ffset 27 35.00 d	Ref 0	B/div	
Center Freq 4.000000000 GHz												25.0 15.0
<b>Start Freq</b> 1.000000000 GHz	-13.00 dBm	anterior di schai I a di a di	1				ule of seal of the level	e istration at a second distance				-5.00 -15.0 -25.0
<b>Stop Freq</b> 7.000000000 GHz		,										-35.0 -45.0 -55.0
CF Step 600.000000 MHz <u>Auto</u> Man	.000 GHz 0001 pts)	.67 ms (2	weep 10		FIII	3.0 MHz	#VB	×		1.0 M	L rt 1.00 s BW	#Re
Freq Offset 0 Hz						-23.903 dF	4 GHz			f	N 1	1 2 3 4 5 6
												6 7 8 9 10 11
		•		•								MSG



## UMTS BAND II-1907.6MHz-RMC@7GHz-13.6GHz@Pass

	rum Analyzer									
XIRL Center F		00000000		SENSE:		#Avg Typ		TRA	M Jul 07, 2021 CE 1 2 3 4 5 6 PE M <del>WWWWW</del>	
10 dB/div	Ref Offse Ref 20.0	t 27 dB	PNO: Fast  ↔ IFGain:Low	, Trig: Free #Atten: 24		Avg Hold:		13.317	19 GHz 08 dBm	Auto Tune
10.0 0.00										Center Freq 10.300000000 GHz
-20.0 -30.0					, Lobales and some the	ing a think of the second	a huta data un anti-	a u Japan Adusta Manakanija		Start Fred 7.000000000 GHz
-50.0 -60.0 -70.0										<b>Stop Fred</b> 13.600000000 GHz
Start 7.00 #Res BW	1.0 MHz	×	#VB	W 3.0 MHz	FUNCI		weep 12	2.00 ms (2	0.600 GHz 20001 pts)	CF Step 660.000000 MHz Auto Mar
1 N 2 3 4 5 6			19 GHz	-24.208 dB						Freq Offset 0 Hz
7 8 9 10 11										
MSG								s		

## UMTS BAND II-1907.6MHz-RMC@13.6GHz-20GHz@Pass

Agilent Spectrum Analyzer - Swept SA					
RL RF 50 Ω AC     Center Freq 16.80000000		E:PULSE <u>4</u> #Avg Typ	e: RMS TRA	M Jul 07, 2021 CE 1 2 3 4 5 6	Frequency
Ref Offset 27 dB	PNO: Fast +++ Trig: Fre IFGain:Low #Atten: 2		Mkr1 19.004	16 GHz 33 dBm	Auto Tune
			.1.	-13.00 dBm	<b>Center Freq</b> 16.80000000 GHz
-20.0 -30.0 -40.0	nd na ola india india na fasta da fast Antenna da fasta da fa				<b>Start Freq</b> 13.600000000 GHz
-50.0					<b>Stop Freq</b> 20.000000000 GHz
Start 13.600 GHz #Res BW 1.0 MHz	#VBW 3.0 MHz		weep 16.00 ms (2		CF Step 640.000000 MHz <u>Auto</u> Man
	04 16 GHz -18.933 d				Freq Offset 0 Hz
MSG			STATUS		



## UMTS BAND V-826.4MHz-RMC@30mHz-1GHz@Pass

		ectr			lyzer - Sv	wep	ot SA																					
<mark>⊮</mark> ℝ Cer	_	r Fr		RF   5	50 s 15.00		AC			:			]	SENS					і Тур-	ALIGN OFF e: RMS 100/100	-	0	TR	ACE	Jul 07, 2	456		Frequency
10 d	BIdi	iu			Offset 2 35.00						Fast n:Lov	v		tten: 2				0,81			٧k		865	DET	61 M	N N N Hz	1	Auto Tun
25.0 15.0																						1						Center Fre 515.000000 MH
-5.00 -15.0 -25.0																							<b>↓</b> 1	-	-13.0	) dBm		Start Fre 30.000000 M⊢
-35.0 -45.0 -55.0						••••					ui di un					På deinge for						¥.						<b>Stop Fre</b> 1.000000000 G⊦
Sta #Re	s E	зw	1.0	V							#V	'в₩	/ 3.0	MHz			111-2			weep			ms (	20		pts)		<b>CF Ste</b> 97.000000 MH <u>Auto</u> Ma
1 2 3 4 5 6 7 8 9 10 11								* 865	5.61		IHz		-28	× .092 d	Bm					ICTION WID			FUNC		VALUE			Freq Offse
MSG																				<b>Ц<sub>о</sub> sta</b>	TUS							

#### UMTS BAND V-826.4MHz-RMC@1GHz-9GHz@Pass

Agilent Spectrum Analyzer - Swept SA				
RL RF 50 Ω AC     Center Freq 5.000000000	CORREC SENSE:PU	ILSE ALIGN OFF #Avg Type: RMS	03:34:15 PM Jul 07, 2021 TRACE 1 2 3 4 5 6	Frequency
Ref Offset 27 dB	PNO: Fast +++ IFGain:Low #Atten: 24 db	3	түре Муминин Det IP N N N N N kr1 3.150 8 GHz -25.113 dBm	Auto Tune
				Center Freq 5.000000000 GHz
-20.0 -30.0 00-00-00-00-00-00-00-00-00-00-00-00-00				<b>Start Freq</b> 1.000000000 GHz
-50.0				<b>Stop Freq</b> 9.000000000 GHz
Start 1.000 GHz #Res BW 1.0 MHz MKR MODE TRC SCL	#VBW 3.0 MHz	FUNCTION FUNCTION WIDTH	Stop 9.000 GHz 3.33 ms (20001 pts)	<b>CF Step</b> 800.000000 MHz <u>Auto</u> Man
2         3           4         -           5         -           6         -           7         -           8         -           9         -           10         -	.150 8 GHz -25.113 dBm			Freq Offset 0 Hz
11	ITT	statu	JS	



## UMTS BAND V-836.4MHz-RMC@30mHz-1GHz@Pass

		ectrui	m An	alyzer -	Swe	pt S/	1																							
الا Cen		Fre	RF Pq	515.0	)Ω 00	AC 000						1	SENSE Free				#Avg Avgi	Тур	e: R			03	Т	RAC	CE 1	07, 20 2 3 4	56		Frequency	
10 d	B/div			Offset f 35.0					0: F ain:l	ast Low			en: 24				- Y 91		. 100				88	DE 2.	ет  Р 34	MH dB	N N IZ		Auto Tu	une
Log 25.0 15.0 5.00																													Center F 515.000000 M	
-5.00 -15.0 -25.0																								• <sup>1</sup>		-13.00 (	3Bm		Start F 30.000000 N	
-35.0 -45.0 -55.0				ala an an an an an an an an an an an an an			a Phylic	-terestal				<b>l eta printi de prin</b>			rin,ryi,q			i ng ti li ti ng		i i fi si i fi			***						<b>Stop F</b> 1.000000000 (	
Star #Re	s B	W 1	.0	MHz			×		7	#VE	зw	3.0 N	/IHz		E	NET	TION			ep				(2	00	00 GI 01 pi		Į	CF Si 97.000000 M Auto M	
1 2 3 4 5 6 7 8 9 10 11	N		f					2.34	M			-29.13	37 dE	3m	FU				NCTIO				FUN			ALUE			Freq Off C	f <b>set</b> ) Hz
MSG																			0	lo st	ATUS									

#### UMTS BAND V-836.4MHz-RMC@1GHz-9GHz@Pass

	Analyzer - Swept SA						
	RF 50Ω AC	CORREC	SENSE:PU	ALIGN OFF		4 Jul 07, 2021 E 1 2 3 4 5 6	Frequency
R	ef Offset 27 dB	PNO: Fast ↔ IFGain:Low	, ⊟ Trig: Free R #Atten: 24 d	Id: 100/100	⊳ 15.837	7 2 GHz 48 dBm	Auto Tune
Log 10.0 0.00						- <del>13:00 dBm</del>	Center Freq 5.00000000 GHz
-20.0 -30.0 <b>parts the set of</b> -40.0					ky analistainy it donde		<b>Start Freq</b> 1.000000000 GHz
-50.0 -60.0 -70.0							<b>Stop Freq</b> 9.000000000 GHz
Start 1.000 G #Res BW 1.0	) MHz		V 3.0 MHz	Sweep 13	3.33 ms (2	.000 GHz 0001 pts)	CF Step 800.000000 MHz <u>Auto</u> Man
1         N         1         1           2         -         -         -           3         -         -         -           4         -         -         -           5         -         -         -           6         -         -         -           7         -         -         -           9         -         -         -           10         -         -         -           11         -         -         -	f 5	.837 2 GHz	-24.448 dBm				Freq Offset 0 Hz
MSG					s		



## UMTS BAND V-846.6MHz-RMC@30mHz-1GHz@Pass

	Spectr	um Ar	nalyzer -	Swep	t SA														
Cento	er Fi	RF req	515.0	ານ 000	ac 100 N				1	NSE:PU			Туре	ALIGN OFF e: RMS 100/100	03	TRA	M Jul 07, 20 CE <u>1</u> 2 3 4 PE M <del>WWM</del>	56	Frequency
10 dB/	/div		f Offset				IO: Fa ain:Lo	st ↔ )w	#Atten:			Avgir	1010.			□ 856.	93 MI 24 dB		Auto Tune
25.0 - 15.0 - 5.00 -																			Center Fred 515.000000 MHz
-5.00 - -15.0 = -25.0 -				_												•1	-13.00	dBm	Start Free 30.000000 MHz
-35.0 <b>/</b> -45.0 - -55.0 -		el arte		wite, it.														<u></u>	Stop Fred 1.000000000 GHz
Start #Res	BW	1.0	MHz				#	VBW	3.0 MH	İz				weep 1.	333	ms (2	<u> </u>		CF Step 97.000000 MHz Auto Mar
MKE         MI           1         1           2         3           4         5           6         7           8         9           10         11					× 8(	56.93	3 MHz		-27.424	dBm	FUNC			ICTION WIDTH			DN VALUE		Freq Offset

#### UMTS BAND V-846.6MHz-RMC@1GHz-9GHz@Pass

Agilent Spec	trum Ana	alyzer - Swe	pt SA								
Center I	RF	50 Ω		RREC	SENS	E:PULSE		ALIGN OFF		M Jul 07, 2021	Frequency
10 dB/div	Ref	Offset 27	P IF	NO: Fast ↔ Gain:Low	→ Trig: Fre #Atten: 2			100/100	r1 5.88	2 4 GHz 13 dBm	Auto Tune
10.00		20.00 u								-13:00 dDm	Center Freq 5.000000000 GHz
-20.0 -30.0	<u>n an an an an an an an an an an an an an</u>	al an earlier an de la la la la la la la la la la la la la		ili indet de la constantione							<b>Start Freq</b> 1.000000000 GHz
-50.0 -60.0 -70.0											<b>Stop Freq</b> 9.000000000 GHz
Start 1.0 #Res BW	V 1.0 M		× 5.882	#VB	W 3.0 MHz -24.613 d		FUNCTION	weep 13	.33 ms (2	0.000 GHz 20001 pts) 2010 01 01 01 01 01 01 01 01 01 01 01 01	CF Step 800.000000 MHz <u>Auto</u> Man
1         N           2         3           3         4           5         6           7         8           9         10           11			0.082		-24,013 Q						Freq Offset 0 Hz
MSG									3		

## UMTS BAND IV-1712.4MHz-RMC@30mHz-1GHz@Pass

		ectrur	n An	alyzer - Sv	vept SA														
wµ Cer		Fre	RF q (	50 s 515.00			:		SENS				Туре	ALIGN OFF e: RMS 100/100		TRACE	1 2 3 4 5	56	Frequency
10 c	B/di			Offset 2		IFG	NO: Fast Gain:Lov	~	#Atten: 2			-19 I			kr1 91 -29	DET	PNNN	Z Z	Auto Tune
Lõg 10.0 0.00		-															-13:00 d		Center Freq 515.000000 MHz
-20.0 -30.0 -40.0			lenker						Nickerski de Juisteren Statuer gebenne de se	dep (lejt)	an file and like	di territa din Secto presidenti		a a a a a a a a a a a a a a a a a a a			1 	*	Start Freq 30.000000 MHz
-50.0 -60.0 -70.0																			<b>Stop Freq</b> 1.000000000 GHz
#Re MKB	MODE	W 1	.0 I I SCI	MHz	×			/BW	3.0 MHz		FUNC	TION		weep 1. Chion width	333 ms	: (20	000 GH 001 pt value		<b>CF Step</b> 97.000000 MHz <u>Auto</u> Man
1 2 3 4 5 6 7 8 9 10 11	N	1	f			912.60	0 MHz		-29.400 dl	Bm									Freq Offset 0 Hz
MSG															s				

## UMTS BAND IV-1712.4MHz-RMC@1GHz-7GHz@Pass

Ref Offset 27 dB       WiKT 2.112 1 GHz         10 dB/div       Ref 35.00 dBm       -25.044 dBm         25.0       -25.044 dBm         15.0       -25.044 dBm         5.00       -25.044 dBm         15.0       -25.044 dBm         15.0       -25.044 dBm         25.0       -25.044 dBm         25.0       -25.044 dBm         25.0       -25.044 dBm         21.000 GHz       -25.044 dBm         21.000 GHz       -25.044 dBm         21.0112 GHz       -25.044 dBm         21.0112 GHz       -25.044 dBm         21.0112 GHz       -25.044 dBm         21.0112 GHz       -25.044 dBm         21.0112 GHz       -25.044 dBm         21.0112 GHz       -25.044 dBm         21.0112 GHz       -25.044 dBm         21.0112 GHz       -25.044 dBm         21.0112 GHz       -25.044 dBm         21.0112 GHz       -25.044 dBm         21.0112 GHz       -25.044	Agilent Spect											
Bit International Processor         Trig: Free Run #Atten: 24 dB         AvgiHeid: 100/100         Trief Mumanway Det P NNN Marken 25.0         Auto Tune           10 dB/div 15.0         Ref Offset 27 dB         Mkr1 2.112 1 GHz -25.044 dBm         Center Freq 4.00000000 GHz         Center Freq 4.00000000 GHz           5.00         Image: Start 1.000 GHz         Image: Start 1.000 GHz         Start 1.000 GHz         Storp 7.000 GHz         Storp 7.000 GHz           Start 1.000 GHz         Image: Start 1.000 GHz         Image: Storp 7.000 GHz         Storp 7.000 GHz         Storp 7.000 GHz           1         Image: Storp 7.000 GHz         Image: Storp 7.000 GHz         Storp 7.000 GHz         Finction Multiple Fince Finction Multiple Finction Finction Fince Fince Fi						SENS	E:PULSE	#Ava T				Frequency
Ref Offset 27 dB         Mkr1 2.112 1 GHz         Auto Tune           250	Centerr	Teq 4		F	NO: Fast					TY	PE M WWWWWW	
Ref Offset 27 dB       Pikt 12.112 1 GHz         10 dB/div       Ref 35.00 dBm       -25.044 dBm         25.0       -25.044 dBm         15.0       -25.044 dBm         5.00       -25.044 dBm         5.01       -25.044 dBm         5.01       -25.044 dBm         1       -26.0				IF	Gain:Low	#Atten: 2	4 dB					
250									M			Auto Tune
25.0	10 dB/div	Ref	′ 35.00 d	Bm						-25.0	44 aBm	
150												Center Fred
5.00												
5.00												4.00000000 GH2
15.0       -13.00 dBm       -13.00 dBm       -13.00 dBm       1.00000000 GHz         25.0       -25.0       -25.0       -25.0       -25.0       -25.0       -25.0         35.0       -20												
15.0       1	-5.00										-13.00 dBm	Start Freq
35.0       36.0       37.0	-15.0										-10.00 dbiii	
45.0       45.0       55.0	-25.0			والمرومية والمرومية	والمتلادم والله والم	Minute and a second second second second second second second second second second second second second second		tur un and the links to make	وراع المعالمة والعمالية والم	معادلته ويحمد متاكرة عاناس	an an an talay all a fill a literatur	
145.0       1 <td>-35.0</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>and the second sec</td> <td>- بو یہ فاضلہ جامیات سیالول</td> <td></td> <td></td>	-35.0								and the second sec	- بو یہ فاضلہ جامیات سیالول		
Start 1.000 GHz         #VBW 3.0 MHz         Stop 7.000 GHz         CF Step 600.00000 MHz           #Res BW 1.0 MHz         #VBW 3.0 MHz         Sweep 10.67 ms (20001 pts)         600.00000 MHz           Mode Tree Sol         X         Y         FUNCTION         FUNCTION WIDTH         FUNCTION VALUE           1         1         1         1         1         1         1         1         1         1         1	-45.0											Stop Freq
Start 1.000 GHz         #VBW 3.0 MHz         Stop 7.000 GHz         CF Step 600.00000 MHz           #Res BW 1.0 MHz         #VBW 3.0 MHz         Sweep 10.67 ms (20001 pts)         600.00000 MHz           Mode Tree Sol         X         Y         FUNCTION         FUNCTION WIDTH         FUNCTION VALUE           1         1         1         1         1         1         1         1         1         1         1	-55.0											7.00000000 GHz
#Res BW 1.0 MHz         #VBW 3.0 MHz         Sweep 10.67 ms (20001 pts)         600.00000 MHz           MKR MODE TEC SCL         X         Y         FUNCTION         FUNCTION WIDTH         FUNCTION VALUE         Auto         Auto         Man           1         N         1         f         2.112 1 GHz         -25.044 dBm         FUNCTION WIDTH         FUNCTION VALUE         FUNCTION VALUE         Auto         Man           3         - <t< td=""><td>-55.6</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>	-55.6											
#Res BW 1.0 MHz     #VBW 3.0 MHz     Sweep 10.67 ms (20001 pts)     600.00000 MHz       Model Tree Sci     X     Y     FUNCTION     FUNCTION WIDTH     FUNCTION VALUE       1     1     1     1     1     1     1												CF Step
MkR Mobel Table Solution         X         Y         FUNCTION         FUNCTION with the FUNCTION value         Function value           1         N         1         f         2.112 1 GHz         -25.044 dBm         -         -         -         -         Function with the Function value         Function value	#Res BW	1.0 N	/Hz		#VE	SW 3.0 MHz			Sweep 1	0.67 ms (2	0001 pts)	600.000000 MHz
2         Freq Offset       3         0 Hz       6        0 Hz       7           9           10	MKR MODE T	RC SCL		×		Y		UNCTION	UNCTION WIDTH	FUNCTI	ON VALUE	<u>Auto</u> Man
3		1 f		2.112	1 GHz	-25.044 d	Зm					
5         0	3											Freq Offset
6 <t< td=""><td>4</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>0 Hz</td></t<>	4											0 Hz
8	6											
9	7											
	9											
MSG In STATUS								I		1	>	
	MSG								<b>K</b> STATL	IS		u



## UMTS BAND IV-1712.4MHz-RMC@7GHz-13.6GHz@Pass

		ctrun	n Ana	alyzer - Sv	wept SA													
ι <mark>,γι</mark> RL Cent		Fre	RF	50 s 10.300			z	SENSE				Туре	ALIGN OFF : RMS 100/100	03:38	TRA	M Jul 07, 2021 28 1 2 3 4 5 PE M WWWW	6	Frequency
10 dE	3/div			Offset 2 20.00			): Fast in:Low	#Atten: 24			1810				₀ 01	76 GHz 11 dBm	N Z	Auto Tune
Log 10.0 0.00 -10.0																-13.00 dBr		Center Freq 10.300000000 GHz
-20.0 -30.0 -40.0	a se a se a se a se a se a se a se a se							in here, a second and and a					i jega bi stiložita jega jegite					Start Freq 7.000000000 GHz
-50.0 -60.0 -70.0																		<b>Stop Freq</b> 13.60000000 GHz
Star #Re:	s B\ Mode	N 1	.0 N		×	04.76		3.0 MHz		FUNC	TION		weep 12	2.00 m	s (2	.600 GHz 0001 pts INVALUE	)	CF Step 660.000000 MHz <u>Auto</u> Man
1 2 3 4 5 6 7 8 9 10 11	N	1			12.5	501 76	GHz	-23.611 dE	3m									Freq Offset 0 Hz
MSG													🚺 STATU	s				

## UMTS BAND IV-1712.4MHz-RMC@13.6GHz-20GHz@Pass

Agreent Spectrum Analyzer - Swept SA	CORREC	SENSE:PUL	.se	ALIGN OFF	03:38:15 P	M Jul 07, 2021	
Center Freq 16.8000000		] Trig: Free Ru		Type: RMS old: 100/100	TRA	CE 1 2 3 4 5 6 PE MWWWWW	Frequency
Ref Offset 27 dB	PNO: Fast ↔ IFGain:Low	#Atten: 24 dB			□ 19.061	76 GHz	Auto Tune
10 dB/div Ref 20.00 dBm					-19.6	51 dBm	
0.00							Center Freq 16.80000000 GHz
-10.0					<b></b> 1=	-13.00 dDm	
-20.0 -30.0			dina panina nika nika na panina na panina na panina na panina na panina na panina na panina na panina na panina				<b>Start Freq</b> 13.60000000 GHz
-50.0							
-60.0							Stop Freq 20.00000000 GHz
-70.0							20.000000000000
Start 13.600 GHz #Res BW 1.0 MHz	#VBW	3.0 MHz	FUNCTION	Sweep 16	.00 ms (2	.000 GHz 0001 pts)	<b>CF Step</b> 640.000000 MHz <u>Auto</u> Man
1 N 1 f 19.0	61 76 GHz	-19.651 dBm					
2 3 4 5 6							Freq Offset 0 Hz
7 8 9 10							
						~	
MSG				<b>K</b> STATUS	5		L

## UMTS BAND IV-1732.4MHz-RMC@30mHz-1GHz@Pass

		ectrur	n An	alyzer - Sv	vept SA														
wµ ℝ Cer		Fre	RF q (	50 s 515.00		MHz			SENS				Туре	ALIGN OFF : RMS 100/100		TRACE	ul 07, 202: 1 2 3 4 5 MWWMM	6	Frequency
10 d	B/div			Offset 2		IFG	NO: Fast Gain:Lov	t •• ∾	#Atten: 2			Cr.All			kr1 91 -28	DET	PNNNN	ı N Z	Auto Tune
Lõg 10.0 0.00 -10.0																	- <del>13:00 d</del> E	) 	Center Freq 515.000000 MHz
-20.0 -30.0 -40.0		in ti	in the second second second second second second second second second second second second second second second			e La se sa la classica da se se se se se se se se se se se se se	<b>ANNIN</b>		la colle di scittori di sc stata l'espesi tesperi	in a sin line Taking t							1		Start Freq 30.000000 MHz
-50.0 -60.0 -70.0																			<b>Stop Freq</b> 1.000000000 GHz
	s B'	W 1	.0 I I SCI	MHz	· · · · · · · · · · · · · · · · · · ·				3.0 MHz		FUNG	CTION		weep 1.3	333 ms	(20	000 GH 001 pt:		<b>CF Step</b> 97.000000 MHz <u>Auto</u> Man
1 2 3 4 5 6 7 8 9 10 11 <	N	1	f			910.18	3 MHz		-28.888 dl	Bm									Freq Offset 0 Hz
MSG															s				

#### UMTS BAND IV-1732.4MHz-RMC@1GHz-7GHz@Pass

Agilent Spectrum Analyzer - Swept SA							
RL RF 50 Ω AC Center Freq 4.000000000	CORREC GH7	SENSE:PULSE	#Avg Type		TRAC	4 Jul 07, 2021 E 1 2 3 4 5 6	Frequency
Ref Offset 27 dB	PNO: Fast +++ T	Trig: Free Run Atten: 24 dB	Avg Hold:			Auto Tune	
10 dB/div Ref 35.00 dBm 25.0 15.0					-23.80	05 dBm	Center Freq 4.00000000 GHz
5.00 -5.00 -15.0 -25.0				1		-13.00 dBm	<b>Start Freq</b> 1.000000000 GHz
-25.0 -35.0 -45.0 -55.0		Mandupateritiki (miggi pangalahinak) 			s had han dat ki pin kan si sa dat dat fan da si sa ta ang pin ha si sa gan si sa si sa si sa si sa si sa si sa si sa si sa si sa si sa si sa si sa si		<b>Stop Freq</b> 7.00000000 GHz
Start 1.000 GHz #Res BW 1.0 MHz	#VBW 3.			weep 10.	67 ms (2	.000 GHz 0001 pts)	CF Step 600.000000 MHz <u>Auto</u> Man
	395 6 GHz -2	3.805 dBm					Freq Offset 0 Hz
6 7 8 9 10 11							
MSG			<b> </b>				

## UMTS BAND IV-1732.4MHz-RMC@7GHz-13.6GHz@Pass

Agilent Spect	rum Ana	ılyzer - Swe	pt SA											
Center F	RF req 1	50 Ω 0.3000	00000	GHZ		SE:PULSE		д Туре	ALIGN OFF : RMS 100/100	TRA	M Jul 07, 2021 CE 1 2 3 4 5 6 PE M WWWWWW	Frequency		
10 dB/div		Offset 27	dB	PNO: Fast FGain:Low	#Atten:	Avg			13.099	39 GHz 14 dBm	Auto Tune			
Log 10.0 0.00											4 <u>0.00 dBm</u>	Center Freq 10.300000000 GHz		
-20.0 -30.0									dan sen lete son de de	المراجع معاصل الي ما		<b>Start Freq</b> 7.000000000 GHz		
-50.0 -60.0 -70.0												Stop Freq 13.60000000 GHz		
#Res BW	Start 7.000 GHz Stop 13.600 GHz #Res BW 1.0 MHz #VBW 3.0 MHz Sweep 12.00 ms (20001 pts) MKR MODE TRC SCL X Y FUNCTION WIDTH FUNCTION VALUE													
1 N 2 3 4 5 6 7 8 9 10 11	f		13.099	39 GHz	-23.814 (	IBm						Freq Offset 0 Hz		
MSG								1		5				

## UMTS BAND IV-1732.4MHz-RMC@13.6GHz-20GHz@Pass

Agrient Spec	RF 5		ORREC	SENSE			ALIGN OFF	00,00,000	M Jul 07, 2021	[
	Freq 16.80	00000000	GHz			#Avg Typ	e: RMS	TRA	CE 1 2 3 4 5 6	Frequency
	Ref Offse	t 27 dB	PNO: Fast ← IFGain:Low	Trig: Free #Atten: 24		Avg Hold		18.996		Auto Tune
10 dB/div Log	Ref 20.0	0 dBm						-18.9	35 dBm	
10.0										Center Freq 16.80000000 GHz
-10.0								1-	-13:00 dDm	
-20.0				d. I. Like downians die			فلاقتصاد المريداني	e dheal the first have a	a and a later and a	Otart Fran
-30.0		ing a state to be a second								Start Freq 13.60000000 GHz
-40.0										13.60000000 GHZ
-50.0										
-60.0										Stop Freq
-70.0										20.00000000 GHz
-70.0										
	.600 GHz V 1.0 MHz		#VB	W 3.0 MHz		s	weep 16		).000 GHz 20001 pts)	CF Step 640.000000 MHz
MKR MODE	TRC SCL	×		Y	FUN	CTION FU	NCTION WIDTH	FUNCTI	ON VALUE	<u>Auto</u> Man
1 N	1 f	18.996	48 GHz	-18.935 dB	m					
23										Freq Offset
4										0 Hz
6										
7 8										
9 10										
11									~	
<							-4			
MSG								5		



## UMTS BAND IV-1752.6MHz-RMC@30mHz-1GHz@Pass

		ectru		alyzer - Sv	wept SA														
ເxı ⊪ Cen		Fre	RF eq :	50 s 515.00		MHz			SENS				Туре	ALIGN OFF e: RMS 100/100	03:40:	TRAC	1 Jul 07, 202 E 1 2 3 4 5 E MWWW	56	Frequency
10 d	PN0: Fast → Trig: Free Run Avg Hold: 100/100 PPE MWWWW IFGain:Low #Atten: 24 dB Mkr1 730.19 MHz 0 dB/div Ref 20.00 dBm -27.890 dBm														Auto Tune				
Log 10.0 0.00 -10.0		v	Re	1 20.00													-13:00 dl		Center Freq 515.000000 MHz
-20.0 -30.0 -40.0	u la t		ų i fangli						fa tid baller arresti da ya di tara. Milay kayan tarihi ya sa maya			er in dein		•1				2	Start Freq 30.000000 MHz
-50.0 -60.0 -70.0																			<b>Stop Freq</b> 1.000000000 GHz
Star #Re	sВ	W 1	.0	VIHz	· ·	<	#\	/BW	3.0 MHz		FUNC	CTION		weep 1.	333 ms	6 (21	000 GH 0001 pt		<b>CF Step</b> 97.000000 MHz <u>Auto</u> Man
1 2 3 4 5 6 7 8 9 10 11	N	1	f			730.1	9 MHz		-27.890 dl	Bm									Freq Offset 0 Hz
< MSG			•	1										<b>I</b> o statu	s				

## UMTS BAND IV-1752.6MHz-RMC@1GHz-7GHz@Pass

Center Freq 4.00000000 GHz         Trace [1:3 45:6]         Frequency           PN0: Fast +>         #Avg Type: RMS         Trace [1:3 4:5:6]         Frequency           PN0: Fast +>         #Atten: 24 dB         Mkr1 2:638 3 GHz         Auto Tun           10 dB/div         Ref Offset 27 dB         -23.928 dBm         -23.928 dBm         Auto Tun           25:0         - <th>Agilent Spect</th> <th></th>	Agilent Spect														
PHO: Fast         Trig: Free Run IFGain:Low         Avg[Hold: 100/100         TWEE MAXAAAAA (100000000           Ref Offset 27 dB 10 dB/div         Ref 35.00 dBm         -23.928 dBm         Auto Tun           10 dB/div         Ref 35.00 dBm         -23.928 dBm         -23.928 dBm         -23.928 dBm           25.0	Center F					SEN	SE:PULSE	#Avg Ty				Frequency			
Log         Center Fre           150         1           500         1           500         1           500         1           160         1           1700000000 GHz         Stop Free           7         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1 <td></td> <td colspan="14">PNU: Fast #Atten: 24 dB IFGain:Low #Atten: 24 dB Ref Offset 27 dB 0 dB/div Ref 35.00 dBm -23.928 dBm -</td>		PNU: Fast #Atten: 24 dB IFGain:Low #Atten: 24 dB Ref Offset 27 dB 0 dB/div Ref 35.00 dBm -23.928 dBm -													
-15.0       -13.00 dBm       Start Free         -26.0       -26.0       -26.0       -26.0         -36.0       -26.0       -26.0       -26.0         -46.0       -26.0       -26.0       -26.0       -26.0         -46.0       -26.0       -26.0       -26.0       -26.0       -26.0         Start 1.000 GHz       -26.0       -26.0       -26.0       -26.0       -26.0       -26.0         Start 1.000 GHz       -26.0       -2	25.0 15.0											Center Freq 4.000000000 GHz			
-45.0       -45.0 <td< td=""><td>-15.0</td><td>4 35 41 37 414</td><td></td><td>1</td><td>والمتحدث واللارا</td><td>table to a state</td><td></td><td></td><td></td><td>ر را می ایند ایند. مانانید ایند ایند ایند ایند ایند ایند این</td><td></td><td>Start Fred 1.000000000 GHz</td></td<>	-15.0	4 35 41 37 414		1	والمتحدث واللارا	table to a state				ر را می ایند ایند. مانانید ایند ایند ایند ایند ایند ایند این		Start Fred 1.000000000 GHz			
#Res BW 1.0 MHz         #VBW 3.0 MHz         Sweep 10.67 ms (20001 pts)         600.00000 MH           MRR MODE TEC SCI         X         Y         FUNCTION         FUNCTION VALUE         600.00000 MH           1         N         1         f         2.638 3 GHz         -23.928 dBm         FUNCTION         FUNCTION VALUE         600.00000 MH           4         - </td <td>-45.0</td> <td></td> <td><b>Stop Fred</b> 7.000000000 GHz</td>	-45.0											<b>Stop Fred</b> 7.000000000 GHz			
1         N         1         f         2.638 3 GHz         -23.928 dBm           2         -         -         -         -         -         -         Freq Offse         0 H           3         -         -         -         -         -         -         -         0 H         0 H         0 H         0 H         0 H         -         0 H         0 H         0 H         -         0 H         0 H         -         0 H         -         -         0 H         -         0 H         -         -         0 H         -         -         0 H         -         -         -         0 H         -         -         -         0 H         -         -         -         -         -         0 H         -         -         -         -         0 H         -         -         -         -         -         0 H         -         -         -         -         -         -         -         0 H         -         -         0 H         -         -         -         -         -         -         -         0 H         -         -         -         -         -         -         -         -         -	#Res BW	Res BW 1.0 MHz #VBW 3.0 MHz Sweep 10.67 ms (20001 pts)													
8	1 N 2 3 4 5 6				3 GHz	-23.928 d						Freq Offset 0 Hz			
	8 9 10 11					111			<b>Lo</b> statu		 ►>				

## UMTS BAND IV-1752.6MHz-RMC@7GHz-13.6GHz@Pass

Agilent Spect		lyzer - Swe	pt SA												
Center F	RF req 1	50 Ω 0.3000	00000 0			SE:PULSE		#Avg Typ	ALIGN OFF e: RMS I: 100/100	TRA	M Jul 07, 2021 CE 1 2 3 4 5 6	Frequency			
10 dB/div	PN0: Fast         →         Trig: Free Run         AvgjHold: 100/100         TVPE MUMANANA           PN0: Fast         →         #Atten: 24 dB         Mkr1 12.552 58 GHz           Ref Offset 27 dB         -24.198 dBm         -24.198 dBm														
10.0 0.00											-13:00 dDm	Center Fred 10.300000000 GHz			
-20.0 -30.0		hadi yaken kari kari				La como sel, e del la la la como de la como de la como de la como de la como de la como de la como de la como d			tor bereit stirte on the			Start Fred 7.000000000 GHz			
-50.0 -60.0 -70.0												Stop Frec 13.60000000 GHz			
	Start 7.000 GHz Stop 13.600 GHz #Res BW 1.0 MHz #VBW 3.0 MHz Sweep 12.00 ms (20001 pts) MKR MODE TRC SCL × Y FUNCTION WIDTH FUNCTION VALUE														
1 N 2 3 4 5 6 7 8 9 10 11 <			12.552 5	8 GHz	-24.198 (	iBm						Freq Offset 0 Hz			
MSG									<b>Ko</b> statu	s					

#### UMTS BAND IV-1752.6MHz-RMC@13.6GHz-20GHz@Pass

		zer - Swept S												
Center F	RF rea 16		(C   CORF			E:PULSE		ALIGN OF	TF	PM Jul 07, 2021 RACE 1 2 3 4 5 6	Frequency			
10 dB/div	Ref C	ffset 27 dB 20.00 dB	PN IFG: }	0: Fast ↔ ain:Low	≓ Trig: Free #Atten: 24		Avg F	lold: 100/100 Mk	r1 19.07:	2 00 GHz 229 dBm	Auto Tune			
										-13:00 dBm	Center Freq 16.80000000 GHz			
-20.0 -30.0			l, in 31-million of the s	, and the second second second second second second second second second second second second second second se				an de side de la de la casa la casa de la casa de la casa de la casa de la casa de la casa de la casa de la cas			Start Freq 13.600000000 GHz			
-50.0 -60.0 -70.0											<b>Stop Freq</b> 20.000000000 GHz			
	Start 13.600 GHz Stop 20.000 GHz Res BW 1.0 MHz #VBW 3.0 MHz Sweep 16.00 ms (20001 pts) KRI MODELTER SCL X Y FUNCTION WIDTH FUNCTION VALUE													
1         N         2           3         -		1	× 19.072 00	GHZ	-19.229 dB						Freq Offset 0 Hz			
MSG								<b>К</b> о sta	TUS					



 $\label{eq:Note:1.Below 30MHZ no Spurious found and Above is the worst mode data.$ 

2. As no emission found in standby or receive mode, no recording in this report.



#### 5.5.2 RADIATED SPURIOUS EMISSION

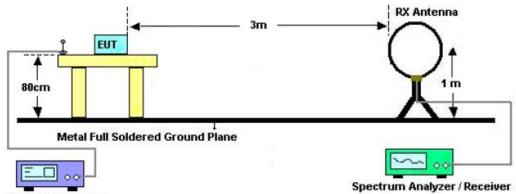
#### 5.5.2.1 MEASUREMENT METHOD

- 1. The EUT was placed on the top of the turntable 0.8 or 1.5 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
- 2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
- 3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.
- 4. For each suspected emissions, the antenna tower was scan (from 1 M to 4 M) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.
- 5. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
- 6. For emissions above 1GHz, use 1MHz VBW and RBW for peak reading. Then 1MHz RBW and 10Hz VBW for average reading in spectrum analyzer. Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.
- 7. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum values.
- 8. If the emissions level of the EUT in peak mode was 3 dB lower than the average limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method for below 1GHz.
- 9. For testing above 1GHz, the emissions level of the EUT in peak mode was lower than average limit (that means the emissions level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
- 10. In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be QP measured by receiver. High Low scan is not required in this case.

#### 5.5.2.2 TEST SETUP

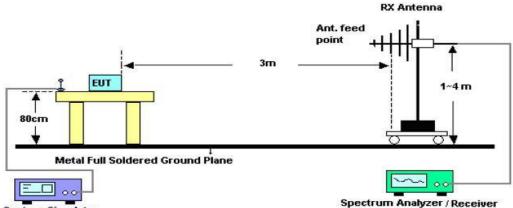






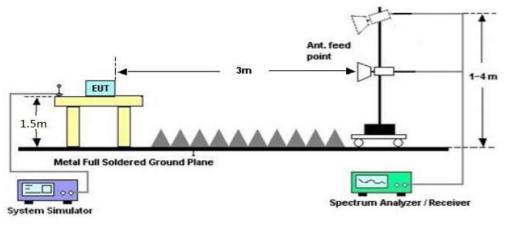
System Simulator

# RADIATED EMISSION TEST SETUP 30MHz-1000MHz



System Simulator

# RADIATED EMISSION TEST SETUP ABOVE 1000MHz



#### 5.5.2.3 PROVISIONS APPLICABLE

(a) On any frequency outside a licensee's frequency block (e.g. A, D, B, etc.) within the USPCS spectrum, the power of any emission shall be attenuated below the transmitter power (P, in Watts) by at least 43+10Log(P) dB. The specification that emissions shall be attenuated below the transmitter power (P) by at least 43 + 10 log (P) dB, translates in the relevant power range (1 to 0.001 W) to -13 dBm. At 1 W the specified minimum attenuation becomes 43 dB and relative to a 30 dBm (1 W) carrier becomes a limit of



## Report No.: TZ210602335-E1

-13 dBm. At 0.001 W (0 dBm) the minimum attenuation is 13 dB, which again yields a limit of -13 dBm. In this way a translation of the specification from relative to absolute terms is carried out. **Note:** only result the worst condition of each test mode:



## GSM 850:

	The Worst Test Results for Channel 128/824.2 MHz								
Frequency	Emission Level	Limits	Margin	Comment					
(MHz)	(dBm)	(dBm)	(dB)	Comment					
1648.19	-58.40	-13	45.40	Horizontal					
3296.50	-41.54	-13	28.54	Horizontal					
4944.93	-51.92	-13	38.92	Horizontal					
1648.05	-42.08	-13	29.08	Vertical					
3296.47	-48.71	-13	35.71	Vertical					
4944.95	-45.58	-13	32.58	Vertical					

## PCS 1900:

	The Worst Test Results for Channel 661/1880.0 MHz								
Frequency	Emission Level	Limits	Margin	Comment					
(MHz)	(dBm)	(dBm)	(dB)	Comment					
3759.68	-58.68	-13	45.68	Horizontal					
7519.63	-39.20	-13	26.20	Horizontal					
11279.63	-53.69	-13	40.69	Horizontal					
3759.77	-39.84	-13	26.84	Vertical					
7519.68	-49.37	-13	36.37	Vertical					
11279.69	-44.60	-13	31.60	Vertical					

#### WCDMA BAND II:

	The Worst Test Results for Channel 9400/1880MHz								
Frequency	Emission Level	Limits	Margin	Comment					
(MHz)	(dBm)	(dBm)	(dB)	Comment					
3750.08	-60.10	-13	47.10	Horizontal					
7512.98	-38.45	-13	25.45	Horizontal					
11271.70	-52.61	-13	39.61	Horizontal					
3754.36	-39.83	-13	26.83	Vertical					
7512.98	-49.37	-13	36.37	Vertical					
11271.73	-46.59	-13	33.59	Vertical					



# WCDMA BAND IV:

The Worst Test Results for Channel 1412/1732.4MHz								
Frequency	Emission Level	Limits	Margin	Comment				
(MHz)	(dBm)	(dBm)	(dB)	Comment				
3458.30	-57.63	-13	44.63	Horizontal				
6921.54	-40.32	-13	27.32	Horizontal				
10388.68	-54.51	-13	41.51	Horizontal				
3455.54	-41.41	-13	28.41	Vertical				
6923.62	-49.46	-13	36.46	Vertical				
10387.61	-44.30	-13	31.30	Vertical				

### WCDMA BAND V:

The Worst Test Results for Channel 4132/826.4MHz								
Frequency	Emission Level	Limits	Margin	Comment				
(MHz)	(dBm)	(dBm)	(dB)	Comment				
1645.50	-58.28	-13	45.28	Horizontal				
3298.78	-40.32	-13	27.32	Horizontal				
4952.92	-53.97	-13	40.97	Horizontal				
1645.23	-40.39	-13	27.39	Vertical				
3298.02	-49.45	-13	36.45	Vertical				
4952.85	-44.81	-13	31.81	Vertical				

# **RESULT: PASS**

Note:

11. Margin = Limit - Emission Level

12. Below 30MHZ no Spurious found and Above is the worst mode data.



# 5.6 FREQUENCY STABILITY

#### 5.6.1 MEASUREMENT METHOD

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

1 Measure the carrier frequency at room temperature.

2 Subject the EUT to overnight soak at  $-10^{\circ}$ C.

3 With the EUT, powered via nominal voltage, connected to the CMU200 and in a simulated call on channel 661 for PCS 1900 band , channel 190 for GSM 850 band, channel 9400 for UMTS band II, channel 1412 for UMTS band IV and channel 4175 for UMTS band V measure the carrier frequency. These measurements should be made within 2 minutes of Powering up the EUT, to prevent significant self-warming.

4 Repeat the above measurements at  $10^{\circ}$ C increments from  $-10^{\circ}$ C to  $+50^{\circ}$ C. Allow at least 1 1/2 hours at each temperature, unpowered, before making measurements.

5 Re-measure carrier frequency at room temperature with nominal voltage. Vary supply voltage from minimum voltage to maximum voltage, in 0.1Volt increments re-measuring carrier frequency at each voltage. Pause at nominal voltage for 1 1/2 hours unpowered, to allow any self-heating to stabilize, before continuing.

6 Subject the EUT to overnight soak at  $+50^{\circ}$ C.

7 With the EUT, powered via nominal voltage, connected to the CMU200 and in a simulated call on the centre channel, measure the carrier frequency. These measurements should be made within 2 minutes of Powering up the EUT, to prevent significant self-warming.

8 Repeat the above measurements at  $10^{\circ}$ C increments from  $+50^{\circ}$ C to  $-10^{\circ}$ C. Allow at least 1 1/2 hours at each temperature, unpowered, before making measurements.

9 At all temperature levels hold the temperature to +/-  $0.5^{\circ}$ C during the measurement procedure.

# 5.6.2 PROVISIONS APPLICABLE

#### 5.6.2.1 FOR HAND CARRIED BATTERY POWERED EQUIPMENT

According to the ANSI/TIA-603-E-2016, the frequency stability of the carrier shall be accurate to within 0.1 ppm of the received frequency from the base station. This accuracy is sufficient to meet Sec. 24.235, Frequency Stability. The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block. As this transceiver is considered "Hand carried, battery powered equipment" Section 2.1055(d)(2) applies. This requires that the lower voltage for frequency stability testing be specified by the manufacturer. This transceiver is specified to operate with an input voltage of between 3.4VDC and 4.2VDC, with a nominal voltage of 3.7VDC. Operation above or below these voltage limits is prohibited by transceiver software in order to prevent improper operation as well as to protect components from overstress. These voltages represent a tolerance of -10 % and +12.5 %. For the purposes of measuring frequency stability these voltage limits are to be used.



#### 5.6.2.2 FOR EQUIPMENT POWERED BY PRIMARY SUPPLY VOLTAGE

According to the ANSI/TIA-603-E-2016,the frequency stability of the carrier shall be accurate to within 0.1 ppm of the received frequency from the base station. This accuracy is sufficient to meet Sec. 24.235, Frequency Stability. The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block. For this EUT section 2.1055(d)(1) applies. This requires varying primary supply voltage from 85 to 115 percent of the nominal value for other than hand carried battery equipment, the normal environment temperature is 20°C.



#### 5.6.3 MEASUREMENT RESULT

# For GSM Test Band=GSM850/GSM1900

			Vol	tage			
		Voltage	Temperature	Deviation	Deviation	Limit	
Band	Channel	(Vdc)	(°C)	(Hz)	(ppm)	(ppm)	Verdict
GPRS850	128	VL	TN	3.31	0.0040	2.5	PASS
GPRS850	128	VN	TN	3.82	0.0046	2.5	PASS
GPRS850	128	VH	TN	5.18	0.0062	2.5	PASS
GPRS850	190	VL	TN	6.52	0.0078	2.5	PASS
GPRS850	190	VN	TN	5.35	0.0064	2.5	PASS
GPRS850	190	VH	TN	1.61	0.0019	2.5	PASS
GPRS850	251	VL	TN	6.04	0.0072	2.5	PASS
GPRS850	251	VN	TN	6.44	0.0077	2.5	PASS
GPRS850	251	VH	TN	4.93	0.0059	2.5	PASS
EGPRS850	128	VL	TN	12.53	0.0150	2.5	PASS
EGPRS850	128	VN	TN	11.15	0.0133	2.5	PASS
EGPRS850	128	VH	TN	12.55	0.0150	2.5	PASS
EGPRS850	190	VL	TN	13.12	0.0157	2.5	PASS
EGPRS850	190	VN	TN	13.25	0.0158	2.5	PASS
EGPRS850	190	VH	TN	11.11	0.0133	2.5	PASS
EGPRS850	251	VL	TN	12.25	0.0147	2.5	PASS
EGPRS850	251	VN	TN	11.93	0.0143	2.5	PASS
EGPRS850	251	VH	TN	10.1	0.0121	2.5	PASS
GPRS1900	512	VL	TN	7.17	0.0038	2.5	PASS
GPRS1900	512	VN	TN	9.66	0.0051	2.5	PASS
GPRS1900	512	VH	TN	13.76	0.0073	2.5	PASS
GPRS1900	661	VL	TN	23.28	0.0124	2.5	PASS
GPRS1900	661	VN	TN	26.83	0.0143	2.5	PASS
GPRS1900	661	VH	TN	30.92	0.0164	2.5	PASS
GPRS1900	810	VL	TN	25.14	0.0134	2.5	PASS
GPRS1900	810	VN	TN	22.66	0.0121	2.5	PASS
GPRS1900	810	VH	TN	28.38	0.0151	2.5	PASS
EGPRS1900	512	VL	TN	31	0.0165	2.5	PASS
EGPRS1900	512	VN	TN	29.85	0.0159	2.5	PASS
EGPRS1900	512	VH	TN	31.63	0.0168	2.5	PASS
EGPRS1900	661	VL	TN	36.01	0.0192	2.5	PASS
EGPRS1900	661	VN	TN	31.05	0.0165	2.5	PASS
EGPRS1900	661	VH	TN	32.8	0.0174	2.5	PASS
EGPRS1900	810	VL	TN	33.7	0.0179	2.5	PASS
EGPRS1900	810	VN	TN	31.5	0.0168	2.5	PASS
EGPRS1900	810	VH	TN	28.38	0.0151	2.5	PASS



	Temperature							
Band	Channel	Voltage	Temperature	Deviation	Deviation	Limit	Verdict	
Banu	Channel	(Vdc)	(°C)	(Hz)	(ppm)	(ppm)	verdict	
GPRS850	128	VN	-30	5.01	0.0060	2.5	PASS	
GPRS850	128	VN	-20	9.04	0.0108	2.5	PASS	
GPRS850	128	VN	-10	8.54	0.0102	2.5	PASS	
GPRS850	128	VN	0	9.69	0.0116	2.5	PASS	
GPRS850	128	VN	10	9.25	0.0111	2.5	PASS	
GPRS850	128	VN	20	7.89	0.0094	2.5	PASS	
GPRS850	128	VN	30	9.84	0.0118	2.5	PASS	
GPRS850	128	VN	40	7.51	0.0090	2.5	PASS	
GPRS850	128	VN	50	9.64	0.0115	2.5	PASS	
GPRS850	190	VN	-30	5.5	0.0066	2.5	PASS	
GPRS850	190	VN	-20	7.48	0.0089	2.5	PASS	
GPRS850	190	VN	-10	3.51	0.0042	2.5	PASS	
GPRS850	190	VN	0	0.66	0.0008	2.5	PASS	
GPRS850	190	VN	10	-0.18	-0.0002	2.5	PASS	
GPRS850	190	VN	20	2.57	0.0031	2.5	PASS	
GPRS850	190	VN	30	-1.11	-0.0013	2.5	PASS	
GPRS850	190	VN	40	0.06	0.0001	2.5	PASS	
GPRS850	190	VN	50	-0.32	-0.0004	2.5	PASS	
GPRS850	251	VN	-30	9.68	0.0116	2.5	PASS	
GPRS850	251	VN	-20	7.01	0.0084	2.5	PASS	
GPRS850	251	VN	-10	7.08	0.0085	2.5	PASS	
GPRS850	251	VN	0	7.19	0.0086	2.5	PASS	
GPRS850	251	VN	10	7.1	0.0085	2.5	PASS	
GPRS850	251	VN	20	5.55	0.0066	2.5	PASS	
GPRS850	251	VN	30	2.87	0.0034	2.5	PASS	
GPRS850	251	VN	40	5.79	0.0069	2.5	PASS	
GPRS850	251	VN	50	6.27	0.0075	2.5	PASS	
EGPRS850	128	VN	-30	12.34	0.0148	2.5	PASS	
EGPRS850	128	VN	-20	10.69	0.0128	2.5	PASS	
EGPRS850	128	VN	-10	10.15	0.0121	2.5	PASS	
EGPRS850	128	VN	0	12.06	0.0144	2.5	PASS	
EGPRS850	128	VN	10	10.42	0.0125	2.5	PASS	
EGPRS850	128	VN	20	9.07	0.0108	2.5	PASS	
EGPRS850	128	VN	30	9.41	0.0113	2.5	PASS	
EGPRS850	128	VN	40	11.1	0.0133	2.5	PASS	
EGPRS850	128	VN	50	13.16	0.0157	2.5	PASS	
EGPRS850	190	VN	-30	11.41	0.0136	2.5	PASS	
EGPRS850	190	VN	-20	11.15	0.0133	2.5	PASS	
EGPRS850	190	VN	-10	8.66	0.0104	2.5	PASS	
EGPRS850	190	VN	0	9.02	0.0108	2.5	PASS	
EGPRS850	190	VN	10	8.99	0.0108	2.5	PASS	
EGPRS850	190	VN	20	8.15	0.0097	2.5	PASS	
EGPRS850	190	VN	30	8.9	0.0106	2.5	PASS	
EGPRS850	190	VN	40	9.38	0.0112	2.5	PASS	



	-		-	-	-	-	
EGPRS850	190	VN	50	9.26	0.0111	2.5	PASS
EGPRS850	251	VN	-30	11.24	0.0134	2.5	PASS
EGPRS850	251	VN	-20	11.09	0.0133	2.5	PASS
EGPRS850	251	VN	-10	9.95	0.0119	2.5	PASS
EGPRS850	251	VN	0	8.69	0.0104	2.5	PASS
EGPRS850	251	VN	10	8.9	0.0106	2.5	PASS
EGPRS850	251	VN	20	8.45	0.0101	2.5	PASS
EGPRS850	251	VN	30	8.09	0.0097	2.5	PASS
EGPRS850	251	VN	40	8.93	0.0107	2.5	PASS
EGPRS850	251	VN	50	6.45	0.0077	2.5	PASS
GPRS1900	512	VN	-30	13.15	0.0070	2.5	PASS
GPRS1900	512	VN	-20	13.3	0.0071	2.5	PASS
GPRS1900	512	VN	-10	16.64	0.0089	2.5	PASS
GPRS1900	512	VN	0	16.55	0.0088	2.5	PASS
GPRS1900	512	VN	10	19.82	0.0105	2.5	PASS
GPRS1900	512	VN	20	11.1	0.0059	2.5	PASS
GPRS1900	512	VN	30	18.58	0.0099	2.5	PASS
GPRS1900	512	VN	40	19.82	0.0105	2.5	PASS
GPRS1900	512	VN	50	18	0.0096	2.5	PASS
GPRS1900	661	VN	-30	26.37	0.0140	2.5	PASS
GPRS1900	661	VN	-20	24.31	0.0129	2.5	PASS
GPRS1900	661	VN	-10	23.4	0.0124	2.5	PASS
GPRS1900	661	VN	0	28.23	0.0150	2.5	PASS
GPRS1900	661	VN	10	26.05	0.0139	2.5	PASS
GPRS1900	661	VN	20	26.69	0.0142	2.5	PASS
GPRS1900	661	VN	30	35.93	0.0191	2.5	PASS
GPRS1900	661	VN	40	22.56	0.0120	2.5	PASS
GPRS1900	661	VN	50	29.87	0.0159	2.5	PASS
GPRS1900	810	VN	-30	22.91	0.0122	2.5	PASS
GPRS1900	810	VN	-20	22.73	0.0121	2.5	PASS
GPRS1900	810	VN	-10	28.91	0.0154	2.5	PASS
GPRS1900	810	VN	0	27.55	0.0147	2.5	PASS
GPRS1900	810	VN	10	31.65	0.0168	2.5	PASS
GPRS1900	810	VN	20	27.18	0.0145	2.5	PASS
GPRS1900	810	VN	30	26.7	0.0142	2.5	PASS
GPRS1900	810	VN	40	33.61	0.0179	2.5	PASS
GPRS1900	810	VN	50	29.98	0.0159	2.5	PASS
EGPRS1900	512	VN	-30	33.97	0.0181	2.5	PASS
EGPRS1900	512	VN	-20	38.09	0.0203	2.5	PASS
EGPRS1900	512	VN	-10	34.41	0.0183	2.5	PASS
EGPRS1900	512	VN	0	36.38	0.0194	2.5	PASS
EGPRS1900	512	VN	10	28.62	0.0152	2.5	PASS
EGPRS1900	512	VN	20	36.65	0.0195	2.5	PASS
EGPRS1900	512	VN	30	34.44	0.0183	2.5	PASS
EGPRS1900	512	VN	40	25.81	0.0137	2.5	PASS
EGPRS1900	512	VN	50	32.86	0.0175	2.5	PASS
EGPRS1900	661	VN	-30	34.05	0.0181	2.5	PASS
EGPRS1900	661	VN	-20	30.28	0.0161	2.5	PASS



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EGPRS1900	661	VN	-10	27.94	0.0149	2.5	PASS
EGPRS1900	661	VN	0	27.22	0.0145	2.5	PASS
EGPRS1900	661	VN	10	31.98	0.0170	2.5	PASS
EGPRS1900	661	VN	20	32.02	0.0170	2.5	PASS
EGPRS1900	661	VN	30	31.01	0.0165	2.5	PASS
EGPRS1900	661	VN	40	32.4	0.0172	2.5	PASS
EGPRS1900	661	VN	50	35.41	0.0188	2.5	PASS
EGPRS1900	810	VN	-30	34.26	0.0182	2.5	PASS
EGPRS1900	810	VN	-20	24.86	0.0132	2.5	PASS
EGPRS1900	810	VN	-10	31.17	0.0166	2.5	PASS
EGPRS1900	810	VN	0	24.51	0.0130	2.5	PASS
EGPRS1900	810	VN	10	26.59	0.0141	2.5	PASS
EGPRS1900	810	VN	20	30.82	0.0164	2.5	PASS
EGPRS1900	810	VN	30	31.39	0.0167	2.5	PASS
EGPRS1900	810	VN	40	30.53	0.0162	2.5	PASS
EGPRS1900	810	VN	50	22.86	0.0122	2.5	PASS



# For WCDMA

# Test Band=WCDMA850/WCDMA1900/WCDMA1700

	-	-	Volta	ge	_	_	
Band	Channel	Voltage	Temperature	Deviation	Deviation	Limit	Verdict
		(Vdc)	(°C)	(Hz)	(ppm)	(ppm)	
Band II	9262	VL	TN	-26.42	-0.0141	2.5	PASS
Band II	9262	VN	TN	-24.36	-0.0130	2.5	PASS
Band II	9262	VH	TN	-25.73	-0.0137	2.5	PASS
Band II	9400	VL	TN	-21.98	-0.0117	2.5	PASS
Band II	9400	VN	TN	-31.35	-0.0167	2.5	PASS
Band II	9400	VH	TN	-23.9	-0.0127	2.5	PASS
Band II	9538	VL	TN	-24.2	-0.0129	2.5	PASS
Band II	9538	VN	TN	-22.91	-0.0122	2.5	PASS
Band II	9538	VH	TN	-29.5	-0.0157	2.5	PASS
Band IV	1312	VL	TN	-25.94	-0.0150	2.5	PASS
Band IV	1312	VN	TN	-23.9	-0.0138	2.5	PASS
Band IV	1312	VH	TN	-20.19	-0.0117	2.5	PASS
Band IV	1413	VL	TN	-20.03	-0.0116	2.5	PASS
Band IV	1413	VN	TN	-22.66	-0.0131	2.5	PASS
Band IV	1413	VH	TN	-22.48	-0.0130	2.5	PASS
Band IV	1513	VL	TN	-19.15	-0.0111	2.5	PASS
Band IV	1513	VN	TN	-22.09	-0.0128	2.5	PASS
Band IV	1513	VH	TN	-23.91	-0.0138	2.5	PASS
Band V	4132	VL	TN	-12.52	-0.0150	2.5	PASS
Band V	4132	VN	TN	-10.51	-0.0126	2.5	PASS
Band V	4132	VH	TN	-14.42	-0.0172	2.5	PASS
Band V	4182	VL	TN	-3.8	-0.0045	2.5	PASS
Band V	4182	VN	TN	-7.37	-0.0088	2.5	PASS
Band V	4182	VH	TN	-13.49	-0.0161	2.5	PASS
Band V	4233	VL	TN	-8.56	-0.0102	2.5	PASS
Band V	4233	VN	TN	-9.15	-0.0109	2.5	PASS
Band V	4233	VH	TN	-18.15	-0.0217	2.5	PASS



			Temper	ature			
		Voltage	Temperature	Deviation	Deviation	Limit	
Band	Channel	(Vdc)	(°C)	(Hz)	(ppm)	(ppm)	Verdict
Band II	9262	VN	-30	-19.5	-0.0104	2.5	PASS
Band II	9262	VN	-20	-24.28	-0.0129	2.5	PASS
Band II	9262	VN	-10	-28.25	-0.0150	2.5	PASS
Band II	9262	VN	0	-18.24	-0.0097	2.5	PASS
Band II	9262	VN	10	-21.24	-0.0113	2.5	PASS
Band II	9262	VN	20	-28.97	-0.0154	2.5	PASS
Band II	9262	VN	30	-25.88	-0.0138	2.5	PASS
Band II	9262	VN	40	-18.27	-0.0097	2.5	PASS
Band II	9262	VN	50	-23.44	-0.0125	2.5	PASS
Band II	9400	VN	-30	-29	-0.0154	2.5	PASS
Band II	9400	VN	-20	-27.1	-0.0144	2.5	PASS
Band II	9400	VN	-10	-27.31	-0.0145	2.5	PASS
Band II	9400	VN	0	-22.91	-0.0122	2.5	PASS
Band II	9400	VN	10	-21.71	-0.0115	2.5	PASS
Band II	9400	VN	20	-27.67	-0.0147	2.5	PASS
Band II	9400	VN	30	-22.66	-0.0121	2.5	PASS
Band II	9400	VN	40	-22.92	-0.0122	2.5	PASS
Band II	9400	VN	50	-20.25	-0.0108	2.5	PASS
Band II	9538	VN	-30	-23.13	-0.0123	2.5	PASS
Band II	9538	VN	-20	-23.54	-0.0125	2.5	PASS
Band II	9538	VN	-10	-23.82	-0.0127	2.5	PASS
Band II	9538	VN	0	-21.28	-0.0113	2.5	PASS
Band II	9538	VN	10	-22.51	-0.0120	2.5	PASS
Band II	9538	VN	20	-23.82	-0.0127	2.5	PASS
Band II	9538	VN	30	-19.77	-0.0105	2.5	PASS
Band II	9538	VN	40	-20.47	-0.0109	2.5	PASS
Band II	9538	VN	50	-23.65	-0.0126	2.5	PASS
Band V	4132	VN	-30	-9.55	-0.0114	2.5	PASS
Band V	4132	VN	-20	-11.83	-0.0142	2.5	PASS
Band V	4132	VN	-10	-10.8	-0.0129	2.5	PASS
Band V	4132	VN	0	-13.58	-0.0162	2.5	PASS
Band V	4132	VN	10	-11.99	-0.0143	2.5	PASS
Band V	4132	VN	20	-13.92	-0.0167	2.5	PASS
Band V	4132	VN	30	-9.99	-0.0119	2.5	PASS
Band V	4132	VN	40	-9.96	-0.0119	2.5	PASS
Band V	4132	VN	50	-14.5	-0.0173	2.5	PASS
Band V	4182	VN	-30	-14.24	-0.0170	2.5	PASS
Band V	4182	VN	-20	-10.66	-0.0128	2.5	PASS
Band V	4182	VN	-10	-13.24	-0.0158	2.5	PASS
Band V	4182	VN	0	-6.55	-0.0078	2.5	PASS
Band V	4182	VN	10	-10.42	-0.0125	2.5	PASS
Band V	4182	VN	20	-13.64	-0.0163	2.5	PASS
Band V	4182	VN	30	-6.05	-0.0072	2.5	PASS
Band V	4182	VN	40	-5.87	-0.0070	2.5	PASS



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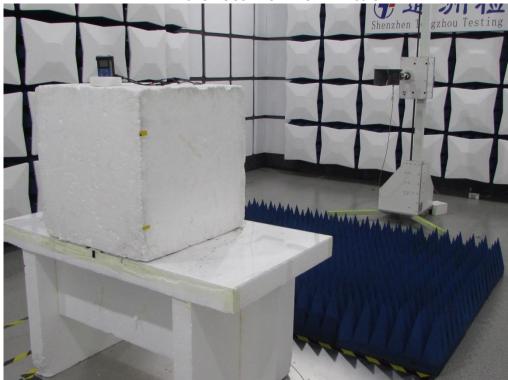
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Band V	4182	VN	50	-8.83	-0.0106	2.5	PASS
Band V	4233	VN	-30	-11.69	-0.0140	2.5	PASS
Band V	4233	VN	-20	-7.91	-0.0095	2.5	PASS
Band V	4233	VN	-10	-9.65	-0.0115	2.5	PASS
Band V	4233	VN	0	-9.78	-0.0117	2.5	PASS
Band V	4233	VN	10	-10.61	-0.0127	2.5	PASS
Band V	4233	VN	20	-4.44	-0.0053	2.5	PASS
Band V	4233	VN	30	-7.33	-0.0088	2.5	PASS
Band V	4233	VN	40	-2.59	-0.0031	2.5	PASS
Band V	4233	VN	50	-7.68	-0.0092	2.5	PASS
Band IV	1312	VN	-30	-21.12	-0.0122	2.5	PASS
Band IV	1312	VN	-20	-23.82	-0.0137	2.5	PASS
Band IV	1312	VN	-10	-29.49	-0.0170	2.5	PASS
Band IV	1312	VN	0	-18.77	-0.0108	2.5	PASS
Band IV	1312	VN	10	-22.58	-0.0130	2.5	PASS
Band IV	1312	VN	20	-26.67	-0.0154	2.5	PASS
Band IV	1312	VN	30	-23.34	-0.0135	2.5	PASS
Band IV	1312	VN	40	-19.94	-0.0115	2.5	PASS
Band IV	1312	VN	50	-27.31	-0.0158	2.5	PASS
Band IV	1413	VN	-30	-26.89	-0.0155	2.5	PASS
Band IV	1413	VN	-20	-26.59	-0.0153	2.5	PASS
Band IV	1413	VN	-10	-24.93	-0.0144	2.5	PASS
Band IV	1413	VN	0	-22.74	-0.0131	2.5	PASS
Band IV	1413	VN	10	-19.56	-0.0113	2.5	PASS
Band IV	1413	VN	20	-26.58	-0.0153	2.5	PASS
Band IV	1413	VN	30	-20.11	-0.0116	2.5	PASS
Band IV	1413	VN	40	-25.72	-0.0148	2.5	PASS
Band IV	1413	VN	50	-17.08	-0.0099	2.5	PASS
Band IV	1513	VN	-30	-21.56	-0.0124	2.5	PASS
Band IV	1513	VN	-20	-21.92	-0.0127	2.5	PASS
Band IV	1513	VN	-10	-25.04	-0.0145	2.5	PASS
Band IV	1513	VN	0	-19.1	-0.0110	2.5	PASS
Band IV	1513	VN	10	-22.81	-0.0132	2.5	PASS
Band IV	1513	VN	20	-26.44	-0.0153	2.5	PASS
Band IV	1513	VN	30	-19.9	-0.0115	2.5	PASS
Band IV	1513	VN	40	-22.48	-0.0130	2.5	PASS
Band IV	1513	VN	50	-24.53	-0.0142	2.5	PASS





# 6 APPENDIX A: PHOTOGRAPHS OF TEST SETUP

RADIATED SPURIOUS ABOVE 1GHz EMISSION



----END OF REPORT----