

FCC TEST REPORT

Test report On Behalf of KRIPTO MOBILE CORPORATION For Smart phone Model No.: K50

FCC ID: 2APX7K50

- Prepared for : KRIPTO MOBILE CORPORATION 7236 NW 31ST ST, MIAMI, FL 33122, United States
- Prepared By : Shenzhen Tongzhou Testing Co.,Ltd 1th Floor, Building 1, Haomai High-tech Park, Huating Road 387, Dalang Street, Longhua, Shenzhen, China

Date of Test: 2022/4/15 ~ 2022/4/24

Date of Report: 2022/4/25

Report Number: TZ220403146-E4

The test report apply only to the specific sample(s) tested under stated test conditions It is not permitted to copy extracts of these test result without the written permission of the test laboratory.



TEST RESULT CERTIFICATION

Applicant's name:	KRIPTO MOBILE CORPORATION
Address:	7236 NW 31ST ST, MIAMI, FL 33122, United States
Manufacture's Name	HuaYueShiTong Software Technology Co.,Ltd
Address:	Room 703-704, Building B, Phase 1, WankeYuncheng Innovation Valley, Xili Street, Nanshan District, Shenzhen, China
Product description	

Product description

Trade Mark	K RIP
Product name:	Smart phone
Model and/or type reference .:	K50
Standards	FCC Rules and Regulations Part 22 & Part 24 ANSI C63.26:2015

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Date of Test	
Date (s) of performance of tests:	2022/4/15 ~ 2022/4/24
Date of Issue	2022/4/25
Test Result:	Pass

:

:

Testing Engineer

Anna Hu

(Anna Hu)

Technical Manager

Hugo Chen

(Hugo Chen)

Authorized Signatory :

And

(Andy Zhang)



Revision History

Revision	Issue Date	Revisions	Revised By
000 2022/4/25		Initial Issue	Andy Zhang



Contents

1	TES	ST STANDARDS	5
2	SUI	MMARY	6
	2.1	Product Description	
	2.2	HOST SYSTEM CONFIGURATION LIST AND DETAILS	
	2.3	SHORT DESCRIPTION OF THE EQUIPMENT UNDER TEST (EUT)	
	2.4		
	2.5 2.6	EUT CONFIGURATION RELATED SUBMITTAL(S) / GRANT (S)	
	2.0 2.7		
3	TES	ST ENVIRONMENT	10
		TEST FACILITY	
		ENVIRONMENTAL CONDITIONS	
	3.4 3.5	EQUIPMENT USED DURING THE TEST MEASUREMENT UNCERTAINTY	
	3.3		13
4	DES	SCRIPTION OF TEST MODES	14
5	TEC	ST CONDITIONS AND RESULTS	14
5	IES	ST CONDITIONS AND RESULTS	14
	5.1		
		5.1.1 CONDUCTED OUTPUT POWER	
		5.1.2 RADIATED OUTPUT POWER	
	5.2	PEAK-TO-AVERAGE RATIO	
		5.2.2 PROVISIONS APPLICABLE	
		5.2.2 PROVISIONS APPLICABLE	
	E 2	OCCUPIED BANDWIDTH	
	5.5	5.3.1 MEASUREMENT METHOD	
		5.3.2 PROVISIONS APPLICABLE	
		5.3.3 MEASUREMENT RESULT	
	54	BAND EDGE	
	5.4	5.4.1 MEASUREMENT METHOD	
		5.4.2 PROVISIONS APPLICABLE	
		5.4.3 MEASUREMENT RESULT	
	5.5	SPURIOUS EMISSION	
	0.0	5.5.1 CONDUCTED SPURIOUS EMISSION	
		5.5.2 RADIATED SPURIOUS EMISSION	
		5.5.2.4 MEASUREMENT RESULT	
	5.6	FREQUENCY STABILITY	
		5.6.1 MEASUREMENT METHOD	
		5.6.2 PROVISIONS APPLICABLE	-
		5.6.3 MEASUREMENT RESULT	
6	APF	PENDIX A: PHOTOGRAPHS OF TEST SETUP	

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

<u>ANSI/TIA-603-E-2016</u>: 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

2.1 Product Description	
EUT	: Smart phone
Model Number	: K50
Model Declaration	: N/A
Test Model	: K50
Power Supply	: DC 3.8V by battery
Hardware version	: TG97 V2.2
Software version	: KRIP_K50_EN_11GO_HW1_V002_20220331_userdebug
Sample ID	: TZ220403146–1# TZ220403146–2#
Bluetooth	
Bluetooth Version	: V4.2
Channel Number	. 79 Channels for Bluetooth BR/EDR(DSS) 40 Channels for BLE (DTS)
Modulation Technology	- GFSK, π/4-DQPSK, 8-DPSK for Bluetooth BR/EDR (DSS) - GFSK for BLE (DTS)
Data Rates	Bluetooth BR/EDR (DSS): 1/2/3Mbps BLE (DTS): 1Mbps
Antenna Type And Gain	Internal Antenna /1.05 dBi(Max.)
WiFi	
WLAN	: Supported IEEE 802.11a/b/g/n
WLAN FCC Operation Frequency	IEEE 802.11b:2412-2462MHz : IEEE 802.11g:2412-2462MHz IEEE 802.11n HT20:2412-2462MHz
WLAN Channel Number	: 11 Channels for 2412-2462MHz(IEEE 802.11b/g/n HT20)
WLAN Modulation Technology	IEEE 802.11b: DSSS(CCK,DQPSK,DBPSK) : IEEE 802.11g: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n: OFDM (64QAM, 16QAM, QPSK, BPSK)
Antenna Type And Gain	: Internal Antenna / 1.05 dBi(Max.)
GSM	
GSM FCC Operation Frequency	GSM850(UL: 824 – 849 MHz/DL: 869 – 894 MHz) GSM1900(UL: 1850 –1910 MHz/DL: 1930 – 1990 MHz)
Channel Separation	: 0.2MHz
Modulation Technology	: GMSK,8PSK
Antenna Type And Gain	Internal Antenna : GSM850: -0.52dBi PCS1900: 0.79dBi
UTRA	
UTRA FCC Operation Frequency	: WCDMA BAND II (UL: 1850 –1910 MHz/DL: 1930 – 1990 MHz) : WCDMA BAND V (UL: 824 – 849 MHz/DL: 869 – 894 MHz)
Channel Separation	: 0.2MHz
Modulation Technology	: OFDM (16QAM, QPSK)
Antenna Type And Gain	: Internal Antenna



WCDMA BAND II: 0.79dBi WCDMA BAND V: -0.52dBi

E-UTRA	
E-UTRA FCC Operation Frequency	 FDD Band 2 (UL: 1850 – 1910 MHz/DL: 1930 – 1990 MHz) FDD Band 4 (UL: 1710 – 1755 MHz/DL: 2110 – 2155 MHz) FDD Band 7 (UL: 2500 MHz - 2570 MHz/DL: 2620 - 2690 MHz)
Channel Separation	: 0.1 MHz
Modulation Technology	: OFDM (16QAM, QPSK)
Antenna Type And Gain	Internal Antenna FDD Band 2: 0.79 dBi, FDD Band 4: 0.8 dBi, FDD Band 7: 0.61 dBi

Note: Antenna position refer to EUT Photos.



GSM/WCDMA Card Slot :

	Maximum ERP/EIRP (dBm)	Max. Conducted Power (dBm)	Max. Average Burst Power (dBm)
GSM 850	27.54	32.46	32.21
EGPRS 850	18.69	27.63	24.87
PCS 1900	25.81	30.33	30.13
EGPRS 1900	19.81	29.22	25.38
UMTS BAND II	18.94	25.18	22.58
UMTS BAND V	18.85	25.36	22.57



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/LTE 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

 $\, \odot \,$ - supplied by the lab

	Model:	
	Input:	
	Output:	

2.6 Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended for **FCC ID: 2APX7K50** filing to comply with FCC Part 22 and FCC Part 24 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/UMTS BAND II:

Test Item	FCC Rule No.	Requirements	Judgement	Sample ID
Effective (Isotropic) Radiated Power	2.1046, 24.232(c)	$EIRP \le 2W(33dBm)$	Pass	TZ220403146-2#
Bandwidth	2.1049 24.238(a)	OBW: No limit. EBW: No limit.	Pass	TZ220403146-1#
Band Edges	2.1051, 24.238(a)	-13dBm	Pass	TZ220403146-1#
Spurious Emission at Antenna Terminals	2.1051, 24.238(a)	-13dBm	Pass	TZ220403146-1#
Field Strength of Spurious Radiation	2.1053, 24.238(a)	-13dBm	Pass	TZ220403146-2#
Frequency Stability	2.1055, 24.235	the fundamental emission stays within the authorized frequency block.	Pass	TZ220403146-1#
Peak to average ratio	24.232(d)	<13dB	Pass	TZ220403146-1#

GSM850/UMTS BAND V:

Test Item	FCC Rule No.	Requirements	Judgement	Sample ID
Effective (Isotropic) Radiated Power	2.1046, 22.913(a)	ERP ≤ 7W(38.5dBm)	Pass	TZ220403146-2#
Occupied Bandwidth	2.1049	OBW: No limit.	Pass	TZ220403146-1#
Emission Bandwidth	22.917(b)	EBW: No limit.	Pass	TZ220403146-1#
Band Edges Compliance	2.1051, 22.917(a)(b)	-13dBm	Pass	TZ220403146-1#
Spurious Emission at Antenna Terminals	2.1051, 22.917	-13dBm	Pass	TZ220403146-1#
Field Strength of Spurious Radiation	2.1053, 22.917	-13dBm	Pass	TZ220403146-2#
Frequency Stability	2.1055, 22.355	the fundamental emissions stay within the authorized bands of operation. (2.5ppm)	Pass	TZ220403146-1#
Peak to average ratio	2.1046, 22.913(a)	<13dB	Pass	TZ220403146-1#

Remark: The measurement uncertainty is not included in the test result.



3.4 Equipment Used during the Test

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Due Date
1	MXA Signal Analyzer	Keysight	N9020A	MY52091623	2022/1/13	2023/1/12
2	Power Sensor	Agilent	U2021XA	MY5365004	2022/1/13	2023/1/12
3	Power Meter	Agilent	U2531A	TW53323507	2022/1/13	2023/1/12
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	2022/1/12	2023/1/11
8	Controller	MF	MF7802	N/A	N/A	N/A
9	Amplifier	schwarzbeck	BBV 9743	209	2022/1/12	2023/1/11
10	Amplifier	Tonscend	TSAMP- 0518SE		2022/1/12	2023/1/11
11	RF Cable(below 1GHz)	HUBER+SUHNE R	RG214	N/A	2022/1/12	2023/1/11
12	RF Cable(above 1GHz)	HUBER+SUHNE R	RG214	N/A	2022/1/14	2023/1/13
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	2021/10/10	2022/10/09
17	Spectrum Analyzer	R&S	FSP40	100550	2022/1/10	2023/1/9
18	UNIVERSAL RADIO COMMUNICATION	R&S	CMW500	101855	2022/1/13	2023/1/12
19	Signal Generator	Keysight	N5182A	MY4620709	2022/1/13	2023/1/12

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 Shenzhen Tongzhou Testing Co.,Ltd 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 Shenzhen Tongzhou Testing Co.,Ltd is reported:

Test	Range	Measurement Uncertainty	Notes
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 ⁻⁷	(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: GSM/GPRS 850, GSM/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

Pass

Temperature	23.9 ℃	Humidity	56%
Test Engineer	Anna Hu		



Mode	Frequency (MHz)	Peak Power	Avg.Burst Power	Duty cycle Factor(dB)	Frame Power (dBm)	Peak to Average Ratio
	824.2	32.39	32.20	-9	23.20	0.19
GSM850	836.6	32.31	32.16	-9	23.16	0.15
	848.8	32.46	32.21	-9	23.21	0.25
	824.2	31.91	31.64	-9	22.64	0.27
GPRS850 (1 Slot)	836.6	31.81	31.62	-9	22.62	0.19
(1 000)	848.8	31.77	31.65	-9	22.65	0.12
	824.2	30.49	30.20	-6	24.20	0.29
GPRS850 (2 Slot)	836.6	30.50	30.33	-6	24.33	0.17
(2 0101)	848.8	30.70	30.49	-6	24.49	0.20
	824.2	29.42	29.29	-4.26	25.03	0.13
GPRS850 (3 Slot)	836.6	29.70	29.42	-4.26	25.16	0.28
(0 0101)	848.8	29.73	29.49	-4.26	25.23	0.24
0000050	824.2	27.60	27.42	-3	24.42	0.18
GPRS850 (4 Slot)	836.6	27.52	27.27	-3	24.27	0.24
(4 0101)	848.8	27.50	27.25	-3	24.25	0.25
	824.2	27.13	24.69	-9	15.69	2.44
EGPRS850 (1 Slot)	836.6	27.63	24.84	-9	15.84	2.80
(1 3101)	848.8	27.58	24.87	-9	15.87	2.71
EGPRS850	824.2	26.71	24.21	-6	18.21	2.50
(2 Slot)	836.6	26.77	24.01	-6	18.01	2.76
()	848.8	27.04	24.43	-6	18.43	2.61
	824.2	26.16	23.19	-4.26	18.93	2.97
EGPRS850	836.6	25.56	23.47	-4.26	19.21	2.09
(3 Slot)	848.8	25.82	23.06	-4.26	18.80	2.76
	824.2	24.48	21.78	-3	18.78	2.70
EGPRS850	836.6	24.24	21.86	-3	18.86	2.38
(4 Slot)	848.8	23.95	21.86	-3	18.86	2.09



Mode	Frequency (MHz)	Peak Power	Avg.Burst Power	Duty cycle Factor(dB)	Frame Power(dBm)	Peak to Average Ratio
	1850.2	30.24	30.08	-9	21.08	0.16
GSM1900	1880	30.28	30.13	-9	21.13	0.15
	1909.8	30.33	30.05	-9	21.05	0.27
GPRS1900	1850.2	29.94	29.72	-9	20.72	0.22
(1 Slot)	1880	29.85	29.60	-9	20.60	0.25
(1000)	1909.8	29.81	29.60	-9	20.60	0.21
	1850.2	28.09	27.97	-6	21.97	0.12
GPRS1900 (2 Slot)	1880	28.15	27.99	-6	21.99	0.16
(2 0101)	1909.8	28.06	27.92	-6	21.92	0.14
00004000	1850.2	26.93	26.83	-4.26	22.57	0.10
GPRS1900 (3 Slot)	1880	26.84	26.56	-4.26	22.30	0.28
(3 0101)	1909.8	26.74	26.59	-4.26	22.33	0.16
00004000	1850.2	25.94	25.83	-3	22.83	0.12
GPRS1900 (4 Slot)	1880	25.76	25.60	-3	22.60	0.15
(4 0101)	1909.8	25.66	25.54	-3	22.54	0.12
	1850.2	29.22	25.38	-9	16.38	3.85
EGPRS1900 (1 Slot)	1880	28.89	25.36	-9	16.36	3.53
(1 300)	1909.8	28.71	25.24	-9	16.24	3.47
	1850.2	27.84	24.61	-6	18.61	3.24
EGPRS1900	1880	28.32	24.80	-6	18.80	3.52
(2 Slot)	1909.8	28.86	24.99	-6	18.99	3.87
	1850.2	26.32	22.67	-4.26	18.41	3.65
EGPRS1900	1880	26.40	22.94	-4.26	18.68	3.45
(3 Slot)	1909.8	26.69	22.85	-4.26	18.59	3.84
505504045	1850.2	25.11	21.90	-3	18.90	3.21
EGPRS1900 (4 Slot)	1880	25.51	21.58	-3	18.58	3.92
(+ 0.01)	1909.8	24.80	21.58	-3	18.58	3.23



UMTS BAND II

Mode	Frequency (MHz)	Peak Power	Avg.Burst Power	Peak to Average Ratio
	1852.4	24.92	22.58	2.34
RMC	1880	24.77	21.97	2.80
	1907.6	24.72	22.17	2.55
	1852.4	25.18	22.21	2.97
AMR	1880	24.88	21.98	2.90
	1907.6	24.67	22.01	2.65
	1852.4	23.84	21.25	2.58
HSDPA Subtest 1	1880	23.36	20.85	2.52
	1907.6	23.62	20.67	2.95
	1852.4	23.18	20.21	2.97
HSDPA Subtest 2	1880	23.02	19.84	3.18
	1907.6	23.66	20.79	2.86
	1852.4	22.64	19.99	2.65
HSDPA Subtest 3	1880	22.44	19.94	2.50
	1907.6	22.95	20.29	2.66
	1852.4	22.88	20.11	2.78
HSDPA Subtest 4	1880	23.42	20.68	2.75
	1907.6	23.53	20.85	2.69
	1852.4	23.12	20.39	2.72
HSUPA Subtest 1	1880	22.84	20.34	2.50
	1907.6	23.32	20.39	2.93
	1852.4	23.92	21.64	2.28
HSUPA Subtest 2	1880	24.85	21.88	2.98
	1907.6	24.24	21.34	2.90
	1852.4	23.96	21.25	2.71
HSUPA Subtest 3	1880	23.39	21.11	2.29
	1907.6	23.49	21.35	2.14
	1852.4	23.53	21.34	2.20
HSUPA Subtest 4	1880	25.07	22.01	3.06
	1907.6	24.69	22.00	2.69
	1852.4	23.49	21.19	2.30
HSUPA Subtest 5	1880	24.11	21.68	2.43
	1907.6	24.49	21.95	2.54



UMTS BAND V

Mode	Frequency (MHz)	Peak Power	Avg.Burst Power	Peak to Average Ratio
	826.4	25.36	22.57	2.79
RMC	836.4	24.83	22.00	2.83
	846.6	24.92	22.22	2.70
	826.4	24.69	22.32	2.37
AMR	836.4	24.28	21.85	2.43
	846.6	24.11	21.78	2.33
	826.4	23.95	21.12	2.83
HSDPA Subtest 1	836.4	23.78	21.13	2.65
	846.6	23.25	20.68	2.57
	826.4	22.22	20.16	2.06
HSDPA Subtest 2	836.4	22.15	20.00	2.15
	846.6	22.94	20.64	2.31
	826.4	23.00	20.05	2.95
HSDPA Subtest 3	836.4	23.05	19.91	3.14
	846.6	22.90	20.15	2.76
	826.4	23.30	20.19	3.12
HSDPA Subtest 4	836.4	23.51	20.47	3.03
	846.6	23.53	20.70	2.84
	826.4	22.78	20.66	2.12
HSUPA Subtest 1	836.4	23.11	20.48	2.63
	846.6	22.86	20.43	2.44
	826.4	23.84	21.60	2.24
HSUPA Subtest 2	836.4	24.02	21.86	2.16
	846.6	23.54	21.19	2.35
	826.4	23.50	21.29	2.21
HSUPA Subtest 3	836.4	23.23	20.97	2.26
	846.6	23.09	21.00	2.09
	826.4	24.05	21.07	2.99
HSUPA Subtest 4	836.4	24.25	22.24	2.01
	846.6	24.38	22.38	2.01
	826.4	23.14	21.05	2.09
HSUPA Subtest 5	836.4	23.99	21.83	2.16
	846.6	24.58	21.81	2.77



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	MAX(CM-1,0)		
HS-DPDCH, E-DPDCH and E-DPCCH				
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



5.1.2.3 MEASUREMENT RESULT

Pass

Temperature	24.1 ℃	Humidity	58%
Test Engineer	Anna Hu		

Radiated Power (ERP) for GPRS/EGPRS 850					
		Res	sult		
Mode	Frequency	Max. Peak ERP	Polarization	Conclusion	
		(dBm)	Of Max. E.R.P		
	824.2	27.45	Horizontal	Pass	
	836.6	25.95	Horizontal	Pass	
GSM -	848.8	27.45	Horizontal	Pass	
GSIVI	824.2	22.45	Vertical	Pass	
	836.6	21.89	Vertical	Pass	
	848.8	21.36	Vertical	Pass	
	824.2	26.24	Horizontal	Pass	
	836.6	26.47	Horizontal	Pass	
GPRS -	848.8	25.24	Horizontal	Pass	
GFKS	824.2	21.40	Vertical	Pass	
	836.6	21.22	Vertical	Pass	
	848.8	20.08	Vertical	Pass	
	824.2	18.67	Horizontal	Pass	
	836.6	17.61	Horizontal	Pass	
EGPRS -	848.8	18.69	Horizontal	Pass	
LOFNO	824.2	14.66	Vertical	Pass	
	836.6	13.87	Vertical	Pass	
	848.8	14.77	Vertical	Pass	



	Radiated Power (E.I.R.P) for GPRS/EGPRS 1900									
		Re	sult							
Mode	Frequency	Max. Peak ERP	Polarization	Conclusion						
		(dBm)	Of Max. E.I.R.P							
	1850.2	25.53	Horizontal	Pass						
	1880.0	25.81	Horizontal	Pass						
GSM —	1909.8	25.29	Horizontal	Pass						
GSIM	1850.2	20.49	Vertical	Pass						
	1880.0	21.86	Vertical	Pass						
	1909.8	20.67	Pass							
	1850.2	23.91	Horizontal	Pass						
	1880.0	24.91	Horizontal	Pass						
GPRS -	1909.8	23.08	Horizontal	Pass						
GPRS	1850.2	20.36	Vertical	Pass						
	1880.0	21.49	Vertical	Pass						
	1909.8	21.27	Vertical	Pass						
	1850.2	19.81	Horizontal	Pass						
	1880.0	19.28	Horizontal	Pass						
EGPRS -	1909.8	18.70	Horizontal	Pass						
EGFR3	1850.2	14.24	Vertical	Pass						
	1880.0	14.08 Vertical		Pass						
	1909.8	14.37	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							
	1852.4	18.71	Horizontal	Pass						
	1880	18.94	18.94 Horizontal							
UMTS	1907.6	18.50	Horizontal	Pass						
UNITS	1852.4	13.98	Vertical	Pass						
	1880	12.55	Vertical	Pass						
	1907.6	13.54	Vertical	Pass						

	Radiated Power (ERP) for UMTS band V									
		F	Result							
Mode	Frequency	Max. Peak ERP	Polarization	Conclusion						
		(dBm)	Of Max. E.R.P							
	826.4	18.85	Horizontal	Pass						
	836.4	18.43	Horizontal	Pass						
UMTS	846.6	18.43	Horizontal	Pass						
010113	826.4	11.87	Vertical	Pass						
	836.4	13.00	Vertical	Pass						
	846.6	11.12	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.



5.2.3 MEASUREMENT RESULT

Modes	Max Peak to Average Ratio(dB)	Upper limit(dB)	Result						
GSM850	2.87	13	Pass						
PCS1900	3.92	13	Pass						
UMTS BAND II	3.18	13	Pass						
UMTS BAND V	3.14	13	Pass						
Note: refer to section	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

Pass

Temperature	23.9 ℃	Humidity	56%
Test Engineer	Anna Hu		

Туре	Frequency(MHz)	Mode	Occupied Bandwidth(KHz)	Emission Bandwidth(KHz)	Limit
GSM850	824.2	Voice	244.45	320.5	No limit
GSM850	836.6	Voice	251.4	318.1	No limit
GSM850	848.8	Voice	243.8	305	No limit
GSM850	824.2	GPRS	249.84	312.8	No limit
GSM850	836.6	GPRS	245.89	320	No limit
GSM850	848.8	GPRS	243.04	323	No limit
GSM850	824.2	EGPRS	236.57	287.2	No limit
GSM850	836.6	EGPRS	241.24	311.7	No limit
GSM850	848.8	EGPRS	236.72	320	No limit
GSM1900	1850.2	Voice	243.55	318.2	No limit
GSM1900	1880	Voice	247.72	307.8	No limit
GSM1900	1909.8	Voice	242.91	314	No limit
GSM1900	1850.2	GPRS	243.14	300.8	No limit
GSM1900	1880	GPRS	247.11	314.8	No limit
GSM1900	1909.8	GPRS	247.46	312.4	No limit
GSM1900	1850.2	EGPRS	242.04	311.7	No limit
GSM1900	1880	EGPRS	262.39	323	No limit
GSM1900	1909.8	EGPRS	251.03	306.8	No limit
UMTS BAND II	1852.4	RMC	4153.3	4621	No limit
UMTS BAND II	1880	RMC	4145.5	4623	No limit
UMTS BAND II	1907.6	RMC	4156.3	4645	No limit
UMTS BAND V	826.4	RMC	4145.6	4642	No limit
UMTS BAND V	836.4	RMC	4180.3	4642	No limit
UMTS BAND V	846.6	RMC	4152.2	4622	No limit



GSM850-824.2MHz-Voice

x dB Bandwidth	320.5 kHz	x dB	-26.00 dB				
Transmit Freq Error	-1.109 kHz	OBW Power	99.00 %		0 Hz		
2	244.45 kHz				Freq Offset		
Occupied Bandwid	th	Total Power	37.8 dBm		<u>Auto</u> Man		
Center 824.2 MHz #Res BW 5.1 kHz	#	VBW 15 kHz		an 1 MHz 36.8 ms	CF Step 100.000 kHz		
-55.0							
-40.0 wryman			- Why brokelowing	ᠰᠰᢑᡔ~ _{ᠧᢧ} ᠬᡐᢪᠡᡧ			
-25.0 -35.0			Why was				
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5.00	and the second s	- When			824.200000 MHz		
25.0	W WWW	J' Har have all have			Center Freq		
Ref Offset 27 dE 10 dB/div Ref 35.00 dB Log							
	#IFGain:Low #Atten: 18 dB Radio Device: BTS						
Center Freq 824.200000		r Freq: 824.200000 MHz ree Run Avg Hold	Radio Std: 1: 100/100	None	Frequency		
LX/ RL RF 50Ω AC	CORREC SE	INSE: PULSE	ALIGNAUTO 03:52:37 PI	4 Apr 21, 2022	_		

GSM850-836.6MHz-Voice

Agilent Spectrum										1	
Center Frec				Center	NSE:PULSE		ALIGN AUTO	03:54:18 Pf Radio Std:	4 Apr 21, 2022 None	Fre	quency
				Trig: Fi #Atten:	ree Run 18 dB	Avg Hold	: 100/100	Radio Dev	ice: BTS		
10 dB/div	Ref Offset: Ref 35.00										
Log 25.0											ntor From
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-55.0											
Center 836.									an 1 MHz		CF Step
#Res BW 5.	1 kHz			#\	/BW 15 k	Hz		Sweep	36.8 ms		100.000 kHz
Occupie	d Bandy	width			Total P	ower	37.8	3 dBm		Auto	Man
		251	.40 ŀ	(Hz						_	
											reqOffset 0 Hz
Transmit	•	or	2.486 kHz		OBW F	ower		9.00 %			0112
x dB Ban	dwidth		318.1 kHz		x dB	x dB		00 dB			
MSG								8			
mod							No statu:	3			



GSM850-848.8MHz-Voice

Agilent Spectrum Analyzer - Occ						
RL RF 50 Ω Center Freq 848.800		SENSE:PULSE Center Freq: 848.80	0000 MHz	Radio Sto	M Apr 21, 2022 I: None	Frequency
	↔ #IEGain:Low	↓ Trig: Free Run #Atten: 18 dB	Avg Hold: 1	100/100 Radio De	vice: BTS	
Ref Offset 10 dB/div Ref 35.0						
Log 25.0		n phone in it				Contor From
15.0		MWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWW				Center Freq 848.800000 MHz
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-35.0					n	
-45.0 why home and a second					, ^{ու} ստերելեն	
-55.0						
Center 848.8 MHz					an 1 MHz	CF Step
#Res BW 5.1 kHz		#VBW 15 kl	Hz	Sweep	o 36.8 ms	100.000 kHz
Occupied Band	width	Total P	ower	38.8 dBm		<u>Auto</u> Man
	243.80 k	Hz				
				~~~~~		Freq Offset 0 Hz
Transmit Freq Err		I Hz OBW F	ower	99.00 %		0112
x dB Bandwidth	305.0	kHz xdB	x dB -26.			
MSG						

## GSM850-824.2MHz-GPRS

Agilent Spectrum Analyzer - Occupied									
RL RF 50 Ω AC     Center Freq 824.200000		SENSE:PULSE nter Freq: 824.200000 MHz	ALIGNAUTO 04:01:18 PM Apr 2 Radio Std: None						
	ti Tri	g:FreeRun Avg Hold ten:18 dB	: 100/100 Radio Device: E	ITS					
Ref Offset 27 d 10 dB/div Ref 35.00 dE									
25.0				Center Freq					
15.0		Ward ward Who was		824.200000 MHz					
5.00									
-5.00									
-15.0	www.	h	hor hy						
-25.0			WW						
-25.0 -35.0 -45.0 -55.0			Jun W. Why week						
-45.0 -55.0			ાજ્યના	Manute Part					
Center 824.2 MHz #Res BW 5.1 kHz		#VBW 15 kHz	Span 1 Sweep 36.	8 mel CF Step					
sites Bit of the			-	Auto Man					
Occupied Bandwic		Total Power	37.8 dBm						
	249.84 kHz			Freq Offset					
Transmit Freq Error	567 Hz	OBW Power	99.00 %	0 Hz					
x dB Bandwidth	312.8 kHz	x dB	-26.00 dB						
MSG			STATUS						



#### GSM850-836.6MHz-GPRS

	m Analyzer - Occ										
KI RL	RF 50 Ω eq 836.600				E:PULSE reg: 836.600	000 MHz	ALIGN AUTO	04:02:39 PM Radio Std:	1 Apr 21, 2022 None	Fr	equency
	cq 050.000		÷	🚽 Trig: Fre	Trig: Free Run Avg Hold: 100/100 #Atten: 18 dB			Radio Dev	DI DIC		
		#IFC	Gain:Low	#Atten: 1				Radio Dev	ice: BTS		
	Ref Offset										
10 dB/div Log	Ref 35.00	U aBM									
25.0				, mar 10 - 10	MATHICHAN						Center Freq
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-55.0									U		
Center 83	6.6 MHz							Spa	an 1 MHz		
#Res BW				#VE	3W 15 kH	Iz			36.8 ms		CF Step 100.000 kHz
					<b>T</b> - 4 - 1 <b>D</b>			38.1 dBm			Man
Occup	ied Band				Total P	ower	38.	IaBm			
		245	.89 k	Hz							Freq Offset
Transm	it Freg Err	or	2.674	kHz	OBW P	ower	99	9.00 %			0 Hz
	andwidth		320.0	<b>∠</b> ⊔-,	x dB		-26	00 dB			
			R112	2 XUB -20		-20.	-20.00 UB				
MSG								5			
in o d							No STATU				

## GSM850-848.8MHz-GPRS

Agilent Spectrum Analyze										
Center Freq 848	50 Ω AC COR 8 800000 MH ₂			E:PULSE  req:848.8000	000 MHz	ALIGN AUTO	04:03:14 PM Radio Std:	1 Apr 21, 2022 None	Free	quency
		ain:Low		Run	Avg Hold	: 100/100	Radio Dev	ice: BTS		
	#IFC	ain:Low	#Attent. It				Radio Dev			
	Offset 27 dB 35.00 dBm									
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-45.0 Jan 1997 - 45.0							· ·	MALTINIA MA		
-55.0										
Center 848.8 MH								an 1 MHz		CF Step
#Res BW 5.1 kHz	2		#VE	SW 15 kH	z		Sweep	36.8 ms	1	00.000 kHz
Occupied B	andwidth			Total Po	ower	38.2 dBm			<u>Auto</u>	Man
		.04 kŀ	<b>_</b> _							
	243	.04 KI	72						Fi Fi	req Offset
Transmit Free	q Error	-849	Hz	OBW Po	ower	99	9.00 %			0 Hz
x dB Bandwid	IB Bandwidth 323.0 kHz		Hz	x dB		-26.	00 dB			
MSG							s			
						-	1			



## GSM850-824.2MHz-EGPRS

Agilent Spectrum An											
Center Freq					E:PULSE reg: 824.200		ALIGN AUTO	04:08:52 PM Radio Std:	1Apr 21, 2022 None	Fi	requency
Conterrined	024.2000			Trig: Free #Atten: 1	Run	Avg Hold	: 100/100	Radio Devi	BTC		
		#IFG	iain:Low	#Atten: 10	ab			Radio Dev	ce: 615		
	Ref Offset 2										
10 dB/div	Ref 35.00	aBm	r			<u> </u>					
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Center 824.2									an 1 MHz		
#Res BW 5.1				#VE	3W 15 kH	Iz			36.8 ms		CF Step 100.000 kHz
										Auto	Man
Occupied	l Bandv				Total P	ower	30.4	dBm			
		236	.57 k	Hz							Freq Offset
Transmit F	rea Erro	hr.	66	6 Hz	OBW P	ower	99	.00 %			0 Hz
x dB Band			287.2					00 dB			
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							<b>1</b>				
MSG											

## GSM850-836.6MHz-EGPRS

Agilent Spectrum Ar			555	07110						l.	
Center Freq					E:PULSE req: 836.600		ALIGNAUTO	04:09:53 PM Radio Std:	4 Apr 21, 2022 None	Fr	equency
	00010000			Trig: Free #Atten: 18		Avg Hold	: 100/100	Radio Dev	ice: BTS		
		#IFC	ain:Luw	WARGEN. N				Itaalo Dev			
10 dB/div	Ref Offset 2 Ref 35.00										
Log 25.0										6	enter Freq
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-5.00			- pr								
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-45.0 -55.0 Vlmm.m	rnap 🔍 🛸								_{ԴՈ} րդերչովը(101տ		
Center 836.6								Spa	an 1 MHz		
#Res BW 5.1	kHz			#VE	3W 15 kH	lz			36.8 ms		CF Step 100.000 kHz
Occupied	d Bandy	width			Total P	ower	30.3	dBm		<u>Auto</u>	Man
		241	.24 k	Hz							Freq Offset
Transmit F	Freq Erro	or	-1.354	kHz	OBW P	ower	99	0.00 %			0 Hz
x dB Band	width		311.7	kHz	x dB		-26.	00 dB			
1100							<b>1</b>				
MSG											



## GSM850-848.8MHz-EGPRS

Agilent Spectrum Ana										
				E:PULSE req: 848.800		ALIGN AUTO	04:10:14 PM Radio Std:	1Apr 21, 2022 None	Fr	equency
	540.000000	↔	Trig: Free #Atten: 1	e Run	Avg Hold:	100/100	Radio Devi	BTC		
		#IFGain:Low	#Atten: 10	5 a D			Radio Dev	ce: 615		
	Ref Offset 27 d									
10 dB/div R	Ref 35.00 dE	<u>sm</u>								
25.0									0	enter Freq
15.0			- Malenseler	alu dave and the transformed and the second se					848	.800000 MHz
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-15.0					- ·(					
-25.0						Winner (				
-35.0	- NY M				-	- Vur				
-45.0 -55.0 mm/m/mmm	What was						WWANT PROVING	141 D . A AM		
-55.0 mm h h h h								~ ላዊ ለባሉ ላ ።		
Center 848.8	MHz						Sna	an 1 MHz		
#Res BW 5.1			#VE	3W 15 kH	z			36.8 ms		CF Step 100.000 kHz
									Auto	Man
Occupied				Total Po	ower	30.2	dBm			
		236.72 kl	Ηz							Freq Offset
Transmit F	rea Error	-2.016	kHz	OBW P	ower	99	.00 %			0 Hz
x dB Bandy		320.0		x dB			00 dB			
	WIGUI	320.01		хub		-20.	00 08			
MSG							5			]
· · · · · · · ·						<b>N</b>				

## GSM1900-1850.2MHz-Voice

Center Freq 1.850200000 GHz       Center Freq: 1.850200000 GHz       Radio Std: None       Frequency         MIFGain:Low       MIFGain:Low       Avg Hold: 100/100       Radio Device: BTS         Io dB/div       Ref Offset 27 dB       Center Freq: 1.85020000 GHz       Radio Device: BTS         Io dB/div       Ref Offset 27 dB       Center Freq: 1.85020000 GHz       Radio Device: BTS         Io dB/div       Ref Offset 27 dB       Center Freq: 1.85020000 GHz       Ref Offset 27 dB         Io dB/div       Ref Offset 27 dB       Center Freq: 1.85020000 GHz       Ref Offset 27 dB         Iso       Ion dB/div       Ref Offset 27 dB       Center Freq: 1.85020000 GHz         Iso       Ion dB/div       Ion dB/div       Ion dB/div       Center Freq: 1.85020000 GHz         Iso       Ion dB/div       Ion dB/div       Ion dB/div       Ion dB/div       Center Freq: 1.85020000 GHz         Iso       Ion dB/div       Ion dB/div       Ion dB/div       Ion dB/div       Iso200000 GHz         Center 1.85 GHz       #VBW 15 kHz       Span 1 MHz       Sweep 36.8 ms       Ion dB/div         Occupied Bandwidth       Total Power       34.7 dBm       Ion dB/div       Ion dB/div         243.55 KHz       Transmit Freq Error       Too Hz       OBW Power       99.00 %       IHz	Agilent Spectrum A											
Image: Second							0000 GHz	ALIGN AUTO			Fre	quency
Notesting         Ref Offset 27 dB         Center Freq           10 dB/div         Ref 35.00 dBm	oontoi 110q	1.00020		+			Avg Hold	: 100/100	Padia Day	ice: BTS		
10 dB/div       Ref 35.00 dBm         Log       Center Freq         15.0       0         5.00       0         5.00       0         5.00       0         5.00       0         5.00       0         5.00       0         5.00       0         5.00       0         5.00       0         5.00       0         5.00       0         5.00       0         5.00       0         5.00       0         5.00       0         5.00       0         5.00       0         5.00       0         5.00       0         5.00       0         5.00       0         5.00       0         5.00       0         5.00       0         5.00       0         5.00       0         5.00       0         5.1 kHz       #VBW 15 kHz         Span 1 MHz       Auto         00.00 kHz       0         100.000 kHz       0         100.000 kHz       0 <tr< td=""><td></td><td></td><td>#IFC</td><td>ain:Low</td><td>#Attent</td><td></td><td></td><td></td><td>Radio Dev</td><td></td><td></td><td></td></tr<>			#IFC	ain:Low	#Attent				Radio Dev			
Log       25.0       Center Freq         15.0       0       0       0         5.00       0       0       0         15.0       0       0       0         15.0       0       0       0         15.0       0       0       0         15.0       0       0       0         15.0       0       0       0         25.0       0       0       0         25.0       0       0       0         25.0       0       0       0         25.0       0       0       0         25.0       0       0       0         25.0       0       0       0         25.0       0       0       0         25.0       0       0       0         26.0       0       0       0         26.0       0       0       0         26.0       0       0       0         26.0       0       0       0         26.0       0       0       0         26.0       0       0       0         27       0       0 <td>10 dB(div</td> <td></td>	10 dB(div											
Image: Section of the sectio	Log		, abiii									
130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       130       1					~LAMM	ann walker a						
5.00       Image: Constraint of the second sec				Λι	M.	1	^N N.				1.8502	200000 GHz
15.0       15.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       0.00       KHz       Span 1 MHz       Steep 36.8 ms       100.000 kHz       100.000 kHz       Auto       Man         Center 1.85 GHz       #VBW 15 kHz       Sweep 36.8 ms       100.000 kHz       Auto       Man         Cocupied Bandwidth       Total Power       34.7 dBm       Freq Offset       0 Hz       Man         243.55 kHz       700 Hz       OBW Power       99.00 %       0 Hz       0 Hz         x dB Bandwidth       318.2 kHz       x dB       -26.00 dB       0 Hz       0 Hz				an all			No.					
Center 1.85 GHz #Res BW 5.1 kHzSpan 1 MHz Sweep 36.8 msCF Step 100.000 kHz AutoOccupied BandwidthTotal Power34.7 dBm243.55 kHzFreq OffsetTransmit Freq Error700 HzOBW Power99.00 %x dB Bandwidth318.2 kHzx dB-26.00 dB	-5.00		J. c.	A.			ل س	a b				
Center 1.85 GHz #Res BW 5.1 kHzSpan 1 MHz Sweep 36.8 msCF Step 100.000 kHz 	-15.0		- Marin	~			1%	" Wily				
Center 1.85 GHz #Res BW 5.1 kHzSpan 1 MHz Sweep 36.8 msCF Step 100.000 kHz AutoOccupied BandwidthTotal Power34.7 dBm243.55 kHzFreq OffsetTransmit Freq Error700 HzOBW Power99.00 %x dB Bandwidth318.2 kHzx dB-26.00 dB	-35.0		γ ^{/IV}					- W	n n dan			
Center 1.85 GHz #Res BW 5.1 kHzSpan 1 MHz Sweep 36.8 msCF Step 100.000 kHz AutoOccupied BandwidthTotal Power34.7 dBm243.55 kHzFreq OffsetTransmit Freq Error700 HzOBW Power99.00 %0 Hzx dB Bandwidth318.2 kHzx dB-26.00 dBImage: State of the state of	-45.0	w m							V Vayan	www.		
Center 1.85 GHz #Res BW 5.1 kHzSpan 1 MHz Sweep 36.8 msCF Step 100.000 kHz AutoOccupied BandwidthTotal Power34.7 dBm243.55 kHzFreq OffsetTransmit Freq Error700 HzOBW Power99.00 %x dB Bandwidth318.2 kHzx dB-26.00 dB	-55.0									· · · · ·		
#Res BW 5.1 kHz       #VBW 15 kHz       Sweep 36.8 ms       CF Step 100.000 kHz         Occupied Bandwidth       Total Power       34.7 dBm       Auto       Man         243.55 kHz       Freq Offset       Freq Offset         Transmit Freq Error       700 Hz       OBW Power       99.00 %       0 Hz         x dB Bandwidth       318.2 kHz       x dB       -26.00 dB       0 Hz												
Occupied Bandwidth       Total Power       34.7 dBm         243.55 kHz       Freq Offset         Transmit Freq Error       700 Hz       OBW Power       99.00 %       0 Hz         x dB Bandwidth       318.2 kHz       x dB       -26.00 dB       0 Hz					#VE	3W 15 kH	7					
Occupied Bandwidth       Total Power       34.7 dBm         243.55 kHz       Freq Offset         Transmit Freq Error       700 Hz       OBW Power       99.00 %       0 Hz         x dB Bandwidth       318.2 kHz       x dB       -26.00 dB       0 Hz									•			
Transmit Freq Error 700 Hz OBW Power 99.00 % ^{0 Hz} x dB Bandwidth 318.2 kHz x dB -26.00 dB	Occupie	d Bandy	width			Total Po	ower	34.7	7 dBm			
Transmit Freq Error     700 Hz     OBW Power     99.00 %     0 Hz       x dB Bandwidth     318.2 kHz     x dB     -26.00 dB			243	.55 k	Hz						F	rea Offset
	Transmit	Freq Erro	or	70	0 Hz	OBW P	ower	99	9.00 %			· ·
	x dB Ban	dwidth		318.2	kHz	x dB		-26.	00 dB			
	MSG								s			



#### GSM1900-1880MHz-Voice

Agilent Spectrum Analyzer - Occupied BW											
RL RF 50 Ω AC CC     Conter Freq 1.880000000 G		ISE:PULSE Freq: 1.880000000 GHz	ALIGNAUTO 04:18:31 P Radio Std:	MApr 21, 2022 None	Frequency						
· · ·	Gain:Low #Atten:		l: 100/100 Radio Dev	ice: BTS							
	-Gam.cow written	10 48	1.4410 201								
Ref Offset 27 dB 10 dB/div <b>Ref 35.00 dBm</b>											
Log											
25.0	איזייזא	marking o.			Center Freq 1.88000000 GHz						
15.0											
5.00	n/n	h h									
		- N.	0.5								
-15.0 -25.0 -25.0	N N	III III	uhan ha								
-35.0			· m								
-35.0 -45.0			"When we have a second	พายิก							
-55.0				1 4.110							
Center 1.88 GHz #Res BW 5.1 kHz	-443.4	/BW 15 kHz		an 1 MHz 36.8 ms	CF Step						
#Res BW 5.1 KHZ	#V		Sweep	30.8 IIIS	100.000 kHz						
Occupied Bandwidth		Total Power	35.1 dBm		<u>Auto</u> Man						
247	7.72 kHz										
					Freq Offset 0 Hz						
Transmit Freq Error	334 Hz	OBW Power	99.00 %		0 H2						
x dB Bandwidth	307.8 kHz	x dB	-26.00 dB								
MSG			STATUS								

## GSM1900-1909.8MHz-Voice

Agilent Spectrum											
Center Free	RF 50Ω				E:PULSE reg: 1.909800	0000 GHz	ALIGN AUTO	04:19:28 P Radio Std	M Apr 21, 2022 : None	Frequ	lency
	9 1.00000			Trig: Fre #Atten: 1		Avg Hold	: 100/100	Radio Dev	ice: BTS		
		#IFU	sain:Low	#Attent is	5 <b>u</b> D			Radio Dev	nce. BTS		
10 dB/div	Ref Offset Ref 35.0										
Log	Rei 33.0										
25.0	-			Lound	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	-				Cer	nter Freq
15.0			r		Mary alway	^η ν.				1.90980	0000 GHz
5.00			~~^^	1		m					
-5.00			ארעק ארעק			+					
-15.0		, morning	vr'				Anny My				
-25.0		TWIN MILL					لىرى	AV Collewallow			
-35.0 -45.0 <del>ፓኒቶ-ምድምም</del>	. haarongarangara							- Vorylow Mon	Mr. Anna		
-45.0 <b>10 - 10 - 10 - 10 - 10 - 10</b>	1								trill I Mare		
-55.0											
Center 1.91									an 1 MHz		CF Step
#Res BW 5.	.1 kHz			#VE	3W 15 kH	z		Sweep	36.8 ms		0.000 kHz
Occupie	ed Band	width			Total Po	wer	35.4	l dBm		<u>Auto</u>	Man
	sa bana		02 1	/U-							
		242	.93 k							Fre	q Offset
Transmit	Freq Err	or	-72	22 Hz	OBW Po	ower	99	9.00 %			0 Hz
x dB Ban	ndwidth		314.0	kHz	x dB		-26.	00 dB			
MSG								s			
							-	1			



## GSM1900-1850.2MHz-GPRS

Agilent Spectrum Analy											
Center Freq 1.	50 Ω 850200	AC COR			E:PULSE req: 1.85020	0000 GHz	ALIGN AUTO	04:22:19 PM Radio Std:	1 Apr 21, 2022 None	Fi	requency
	.000200			Trig: Fre #Atten: 1		Avg Hold	l: 100/100	Radio Dev	ice: BTS		
		#1F0	ain:Luw	Protein. P				Itaalo Dev	100.010		
	ef Offset 2 ef 35.00										
Log	<u>ci 00.00</u>	<u>ubiii</u>									
25.0				al why	mar warde						Center Freq
15.0				~h~~	10 ¹⁰ 1	n.				1.85	0200000 GHz
5.00			م مى			NY N					
-5.00			An 1								
-15.0 -25.0 -35.0 -45.0 [hy]ma(m) ^{ben} head ^{1,10} -65.0			~*				Wyr mynn				
-25.0	~/	N.						M _			
-45.0	white							a. "wywywyłeryw	ᡙᡟ ^ᡗ ᠂ᢧᡃ᠆᠈᠘ᡁᡘᡁ		
-55 D											
Center 1.85 GH #Res BW 5.1 k				#\/E	3W 15 kH	-			an 1 MHz 36.8 ms		CF Step
#Res DVV 5.1 K	Π2			#VC	5WV 15 KH	12		Sweep	30.8 ms	<b>.</b> .	100.000 kHz
Occupied	Bandv	vidth			Total Po	ower	35.7	′ dBm		Auto	Man
		243	.14 k	Hz							
	_										Freq Offset 0 Hz
Transmit Fr	eq Erro	r	1.210	kHz	OBW P	ower	99	0.00 %			0 112
x dB Bandw	<i>i</i> dth		300.8	kHz	x dB		-26.	00 dB			
							4				
MSG								5			

## GSM1900-1880MHz-GPRS

Agilent Spectrum Analyzer - Occupied BW											
Center F	RF 50 Ω		REC	Center F	E:PULSE req: 1.88000		ALIGN AUTO	04:25:19 PM Radio Std:	4 Apr 21, 2022 None	Frequer	ncy
	]			Trig: Fre #Atten: 1		Avg Hold	: 100/100	Radio Dev	ice: BTS		
10 dB/div	Ref Offset: Ref 35.00										
25.0										Cente	r Freq
15.0				1 man	Trank Charles	n.				1.8800000	
5.00			كمين ا	n _e v ¹ 1 ^e		111 N					
-5.00			JV IV			- ^V					
-15.0		Arterete	and the second s				Brachy Why				
-25.0		~~ ^h /					****v				
-35.0	wanger for the second							han www.	MMMM		
-45.0 אייזיידע 1-55.0											
Center 1 #Res BW				#VE	3W 15 kH	z			an 1 MHz 36.8 ms		F Step
					Total Po		25.2			Auto 100.0	00 kHz Man
Occu	pied Band				lotal Po	ower	35.3	3 dBm			
		247	.11 k	KHZ						Freq	Offset
Trans	mit Freq Erre	or	74	9 Hz	OBW P	ower	99	9.00 %			0 Hz
x dB E	Bandwidth		314.8	kHz	x dB		-26.	00 dB			
MSG								5			



#### GSM1900-1909.8MHz-GPRS

Agilent Spectrum Analyzer - Occupied BW           IM         RF         50 Ω         AC         CC	RREC SEN	SE:PULSE	ALIGNAUTO 04:2	6:58 PM Apr 21, 2022	
Center Freq 1.909800000 GI		Freq: 1.909800000 GHz		o Std: None	Frequency
#IF	Gain:Low #Atten: /			o Device: BTS	
Ref Offset 27 dB 10 dB/div Ref 35.00 dBm					
Log					
25.0	1 Mu	w Mayman			Center Freq
15.0	A Martin	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			1.909800000 GHz
-5.00	mont	- Win			
-15.0	n man	- W	1~~~		
-25.0	, <b>v</b>		www.		
-25.0 -35.0 -45.0				Manyuna	
-45.0 manufilter 1/2-1				. a L. J. Andres and order	
-55.0					
Center 1.91 GHz				Span 1 MHz	05.04-1
#Res BW 5.1 kHz	#V	BW 15 kHz	Sw	veep 36.8 ms	CF Step 100.000 kHz
Occupied Bandwidth		Total Power	35.7 dBr	n	<u>Auto</u> Man
247	′.46 kHz				Freq Offset
Transmit Freg Error	77 Hz	OBW Power	99.00 9	6	0 Hz
x dB Bandwidth	312.4 kHz	x dB	-26.00 dl	B	
			20100 4	_	
MSG					

## GSM1900-1850.2MHz-EGPRS

Agilent Spectrum Analyzer - Occupied BW					
RL RF 50 Ω AC CC     Conter Freq 1.850200000 GI		SE:PULSE Freg: 1.850200000 GHz	ALIGNAUTO 04:29:00 P Radio Std	M Apr 21, 2022 None	Frequency
·	Gain:Low #Atten:		: 100/100 Radio Dev	ice: BTS	
	Gam:Low watten.		Radio Der		
Ref Offset 27 dB 10 dB/div Ref 35.00 dBm					
Log					
25.0	1 m.	n n n n n n n n n n n n n n n n n n n			Center Freq
15.0	March March 1	The part have			1.850200000 GHz
-5.00	M	L'han			
	المالي الم				
-15.0 -25.0 -35.0 -45.0 ftp://hpit/Au//////h//h//////////////////////////	₩V.	ľ.	Mur Willing Descont for		
-35.0			· wvw		
-45.0 no 100 100 100 100 100 100 100 100 100 10			• ግጥነት	my with m	
-55.0					
Center 1.85 GHz			Cn	an 1 MHz	
#Res BW 5.1 kHz	#V	BW 15 kHz		36.8 ms	CF Step
					100.000 kHz <u>Auto</u> Man
Occupied Bandwidth		Total Power	31.3 dBm		
242	2.04 kHz				Freq Offset
Transmit Freq Error	3.111 kHz	OBW Power	99.00 %		0 Hz
x dB Bandwidth	311.7 kHz	x dB	-26.00 dB		
MSG			STATUS		



## GSM1900-1880MHz-EGPRS

Agilent Spectrum Analyzer - Occupied BW					l
KL RF 50 Ω AC C     Center Freq 1.880000000 G	Hz Center	NSE:PULSE	Radio Std	M Apr 21, 2022 None	Frequency
· · · · ·	FGain:Low #Atten:		l: 100/100 Radio Dev	vice: BTS	
	Foam.Low Fracen.	10 40	114410 0 0		
Ref Offset 27 dB 10 dB/div <b>Ref 35.00 dBm</b>					
Log					
25.0		สมเมือ			Center Freq
15.0		wely and we with the second se			1.880000000 GHz
5.00	20 P37	- Mula			
-5.00	all could	- N			
-15.0 -25.0 -35.0 -45.0 -45.0	าในท		Walkan Wakangarangarang Wakangarangarangarangarangarangarangarang		
-35.0			WWW WWW Com		
-45.0 Myllow from May 1000			• ግግሌት	w $r$ $w$ $r$ $r$ $w$ $r$	
-55.0				'	
Center 1.88 GHz #Res BW 5.1 kHz	#\	/BW 15 kHz		an 1 MHz 36.8 ms	CF Step
#RC3 BW 3.1 RH2	<i>#</i> *		Uncep	50.0 ms	100.000 kHz Auto Man
Occupied Bandwidth		Total Power	31.2 dBm		<u>Auto</u> main
26	2.39 kHz				Freq Offset
Transmit Freg Error	1.972 kHz	OBW Power	99.00 %		0 Hz
x dB Bandwidth	323.0 kHz	x dB	-26.00 dB		
			<b>1</b>		
MSG					

## GSM1900-1909.8MHz-EGPRS

	rum Analyzer - Occ										
(XIRL Center F	RF 50 Ω req 1.90980				ENSE:PULSE er Freg: 1.9098	00000 GHz	ALIGN AUTO	04:30:51 Pl Radio Std:	MApr 21, 2022	Fre	quency
Cerner I	req 1.30300			井 Trig:	Free Run n: 18 dB		l: 100/100	Radio Dev			
		#IF0	Gain:Low	#Atte	n: 18 dB			Radio Dev	ICE: BIS		
	Ref Offset :										
10 dB/div Log	Ref 35.00	) dBm									
25.0						++				Ce	enter Freq
15.0				- Andre		+				1.9098	300000 GHz
5.00			r	Vulu-1							
-5.00											
-15.0			₩ [°]			- Na	4-1				
-25.0		- MW	u .				Willy we				
-35.0	Annon trade	<i>м</i> .					- Kí	Wady will w	ᢣᠯᡙᢧᡊ᠆ᠴᢧ		
-45.0 M 14/100	thouse Led on							• 9	July way		
-55.0											
Center 1	.91 GHz							Sp	an 1 MHz		
#Res BW				#	VBW 15 k	Hz			36.8 ms		CF Step 00.000 kHz
					Total F					Auto	Man
Occu	pied Bandy				i otal F	ower	31.:	5 dBm			
		251	.03	kHz						E F	req Offset
Transi	nit Freq Erre	or	-2.31	2 kHz	OBW F	ower	99	9.00 %			0 Hz
x dB B	andwidth		306.	8 kHz	x dB		-26.	00 dB			
MSG							<b>I</b> STATU	s		L	
							-				



#### UMTS BAND II-1852.4MHz-RMC

		rum Analyzer	- Occi										
	X RL RF 50 Ω AC CORREC							E:PULSE reg: 1.85240		ALIGN AUTC	04:37:01 F Radio Std	M Apr 21, 2022	Frequency
Center Freq 1.852400000 GHz						rig: Free		Avg Hold:	100/100	Radio Sto	. None		
	#IFGain:Low				, #/	Atten: 1	3 dB			Radio De	vice: BTS		
		Ref Of	feat 3	27 서묘									
10 d	B/div			dBm									
Log					TI T								
25.0													Center Freq
15.0					mark	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	$l_m$	www.low	me harrow when				1.852400000 GHz
5.00					7					1			
-5.00	<u> </u>				1					$\parallel$			
-15.0	<u> </u>			{									
-25.0													
-35.0			M	$\sim$						ો ખેત		passary and the former of the second	
-45.0	የ የ	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	יזייע	νη.								ᢉᡆᠯᢛᢉᢦᡘᢦᡄᢩᡗᡉᠯᢪ᠈ _{ᡫᡘᡀ} ᡘᠯᢕ	
-55.0													
-55.0													
Cen	ter 1	.852 GHz									Spa	n 10 MHz	0.5.01
#Re	#Res BW 51 kHz						#VE	3W 150 k	Hz		Sweep	3.733 ms	CF Step 1.000000 MHz
											- 18		Auto Man
C	)ccu	pied Ba	ndv	width				Total P	ower	30	.5 dBm		
				4.1	533 I	MHz							Freq Offset
Ι_			_										0 Hz
<u>י</u> ۱	Transmit Freq Error 359 H				859 Hz	Hz OBW Power			99.00 %			0112	
x	x dB Bandwidth 4.621 MH				1 MHz	Hz xdB			-26.00 dB				
MEC										<b>I</b> STAT	110		
MSG											US		

## UMTS BAND II-1880MHz-RMC

		um Analyzer - Occ									
Cen		RF 50 Ω eq 1.88000		RREC	SENSE:PULSE ALIGN AUTO				04:39:24 PM Apr 21, 2022 Radio Std: None		Frequency
Con		<u>eq 1.00000</u>		Gain:Low	1 - · -	e Run	Avg Hold:	: 100/100	Radio Device: BTS		
			#IF	Gain:Low	#Attent is	5 40			Radio Dev		
10 4	Ref Offset 27 dB 10 dB/div <b>Ref 35.00 dBm</b>										
Log	5/010	Ker 33.00						<u>i</u>			
25.0											Center Freq
15.0				not when a	ᡭᢦᢌᡍᢛᢇᢧᠠᡰᢏ᠊ᢧᡁᠮᡟ	Mara Aller	manhouse				1.880000000 GHz
5.00			ۍ ا	1.				1			
-5.00			- /								
-15.0											
-25.0 -35.0			N					h _A	n		
-35.0	๛๛๛ป	www.www.www.www.	าง					- v v	BUNN WWW	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	
-40.0											
		88 GHz			40.7F	W 450 L				n 10 MHz	CF Step
#Re	SBW	51 kHz			#VE	3W 150 k	HZ		Sweep	3.733 ms	1.000000 MHz
0	Occupied Bandwidth					Total Power 3					<u>Auto</u> Man
	-		4 14	155 MI	47						
											Freq Offset
T	Transmit Freq Error 6.095				κHz	OBW P	ower	99.00 %			0 Hz
×	x dB Bandwidth 4.623				<b>1Hz</b>	x dB		-26.00 dB			
MSG									6		



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

Frequency Center Freq
Center Freq
1.907600000 GHz
1.000000 MHz
Auto Man
Eron Offert
Freq Offset
0 Hz

# UMTS BAND V-826.4MHz-RMC

	trum Analyzer - Occu														
(XI RL Center	RF 50 Ω Freq 826.400		EC		E:PULSE reg: 826.400		ALIGN AUTO	04:43:16 P Radio Std	M Apr 21, 2022 None	Frequency					
Center				1 - · -	Run	Avg Hold:	100/100								
		#IFG:	ain:Low	#Atten: 18	a a B			Radio Dev	lice: BTS						
	Ref Offset 2														
10 dB/div Log	Ref 35.00	) dBm					1								
25.0										Center Freq					
15.0			. ann har	°ᢏ _{୶ᠮ} ᠕ᡅᠬ _{ᡡᢧᡆ} ᢂ᠈ᢏ	all hall and a constrained	· / h በ P / h.				826.400000 MHz					
5.00		וילק ריק	~ *	, .		- 04	۵ <u>ــــــ</u>								
-5.00							$\uparrow$								
-15.0							+								
-25.0							h.								
-35.0	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	$\sim$					~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		hraha mayo						
-45.0															
-55.0															
Center	826.4 MHz							Sna	n 10 MHz						
	V 51 kHz			#VE	SW 150 k	Hz			3.733 ms	CF Step 1.000000 MHz					
										Auto Man					
Occu	ipied Bandy				Total P	ower	30.4	dBm							
		4.14	56 MF	Ηz						Freq Offset					
Trans	smit Freq Erro	or	-1.510 k	Hz	OBW P	ower	99	0.00 %		0 Hz					
	Bandwidth		4.642 N	147	x dB		-26	00 dB							
	Danawiath		4.042 10	11 12	X UD		-20.	00 00							
MSG															
mod							No shares	´							



#### UMTS BAND V-836.4MHz-RMC

		rum Analyzer - O										
LXI RI		RF 50 1		RREC		E:PULSE		ALIGN A	UTO	04:44:35 P Radio Std	M Apr 21, 2022	Frequency
Cen	ter F	req 836.40	0000 MH	<u>z</u> →		req: 836.40 e Run	0000 MHZ Avg Hold	1: 100/10	00	Radio Sta	: None	
			#IF	Gain:Low	#Atten: 1					Radio Dev	ice: BTS	
10 di	3/div	Ref Offse Ref 35.	et 27 dB 00 dBm									
Log 25.0												Center Freq
15.0												
				a marine a	hereman	and the second	er man	m.				836.400000 MHz
5.00								1				
-5.00			1					++	1			
-15.0			+ +									
-25.0												
-35.0		Indraw Arabitrawa	m m						η.	ሙም ^መ ህቢ ሲያየምኒልላቶ	allow to whome have	
-45.0	ትምሳሌ	narme ·										
-55.0												
		36.4 MHz 51 kHz			#VI	BW 1501	kHz				n 10 MHz 3.733 ms	CF Step 1.000000 MHz
0	ccu	pied Ban	dwidth			Total P	ower	:	30.5	dBm		<u>Auto</u> Man
			4.18	03 M	Hz							Freq Offset
Т	ansi	mit Freq Er	ror	213.85	kHz	OBW F	Power		99	.00 %		0 Hz
x	dB E	Bandwidth		4.642 I	MHz	x dB			-26.0	00 dB		
MSG								<b>1</b> 0	STATUS			

# UMTS BAND V-846.6MHz-RMC

	rum Analyzer - Occu									
(XIRL)	RF 50 Ω req 846.6000		RREC		E:PULSE req: 846.600		ALIGNAUTO	04:45:43 P Radio Std	M Apr 21, 2022	Frequency
	req 640.0000		+	🚽 Trig: Free	e Run	Avg Hold:	100/100			
		#IF	Gain:Low	#Atten: 1	8 dB			Radio Dev	/ice: BTS	
	Ref Offset 2									
10 dB/div Log	Ref 35.00	dBm								
25.0										Center Freq
15.0			- 1 - 010	A						846.600000 MHz
5.00			มหล่องสามใหญ่ได้เป็ ที่	የ ውስጥ የአያትያ የሚገዱ ውስጥ	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	and the second second second	h			
-5.00		/					<del>`</del> \			
-15.0		/								
-25.0										
	A matrin Alb	N					WWW.	Jan Marine	V-	
-45.0		V I							1 V (A1 An	
-55.0										
	46.6 MHz								n 10 MHz	CF Step
#Res BW	51 kHz			#VE	BW 150 k	Hz		Sweep	3.733 ms	1.000000 MHz
0000	pied Bandv	vidth			Total P	ower	30.5	5 dBm		<u>Auto</u> Man
	pica Balla			1-						
		4.15	522 MI	72						Freq Offset
Transı	nit Freq Erro	or	-6.426 I	кНz	OBW P	ower	99	9.00 %		0 Hz
V dB E	andwidth		4.622 N	1H7	x dB		-26	00 dB		
	anawiath		4.022 1		A GD		-20.	00 08		
MSG								6		
Mag							IN STATU:	3		



#### 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 MEASUREMENT RESULT

#### Pass

Temperature	<b>23.9</b> ℃	Humidity	56%
Test Engineer	Anna Hu		



#### GSM850-824.2MHz-Voice

	Analyzer - Swept S								
Center Fre	RF 50 Ω AC q 823.95000			PULSE	#Avg Type		TRAC	Apr 21, 2022 1 2 3 4 5 6	Frequency
		PNO: Wide ↔ IFGain:Low	Trig: Free #Atten: 18		Avg Hold:		DI		Auto Tune
10 dB/div	Ref Offset 27 dB <b>Ref 30.00 dB</b> n							72 dBm	
20.0 10.0					an shall an and	₽₩₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽			Center Freq 823.950000 MHz
0.00 -10.0 -20.0								ана -13:00 «Віт Марадарії раці	Start Freq 823.450000 MHz
-30.0 -40.0 -50.0 -60.0		11679-16-1-16-16-16-16-16-16-16-16-16-16-16-1							Stop Freq 824.450000 MHz
Start 823.45 #Res BW 3.	500 MHz 9 kHz	#VBV	√ 11 kHz*				3.000 s (	500 MHz 2001 pts)	CF Step 100.000 kHz <u>Auto</u> Man
MKR         MODE         TRC           1         N         1           2         -         -           3         -         -           4         -         -           5         -         -           6         -         -		× 23.995 5 MHz	-17.572 dE	Bm 			FUNCTIO		Freq Offset 0 Hz
7 8 9 10 11 <									
MSG						<b>K</b> STATUS			· · · · · · · · · · · · · · · · · · ·

# GSM850-848.8MHz-Voice

Agilent Spectrum Analyzer - Swept SA				
🕅 RL RF 50 Ω AC Center Freq 849.050000 M		#Avg Type: RMS	03:57:38 PM Apr 21, 2022 TRACE 1 2 3 4 5 6 TYPE MWWWWW	Frequency
Ref Offset 27 dB	PNO: Wide +++ Trig: Free Rur IFGain:Low #Atten: 18 dB		DET A NNNN 849.024 0 MHz	Auto Tune
10 dB/div Ref 30.00 dBm 20.0 10.0	Alexies in the second		-18.028 dBm	Center Freq 849.050000 MHz
-10.0 -20.0 -30.0			-13.00 dDm	Start Freq 848.550000 MHz
-40.0		S	haladaatal allanaa liinaa aa ahaa ahaa	Stop Freq 849.550000 MHz
Start 848.5500 MHz #Res BW 3.9 kHz	#VBW 11 kHz*		top 849.5500 MHz 3.000 s (2001 pts)	CF Step 100.000 kHz <u>Auto</u> Man
	024 0 MHz -18.028 dBm		×	Freq Offset 0 Hz
MSG				



#### GSM850-824.2MHz-GPRS

		ectru		alyzer -	Swe	ot SA													
K R		Fre	RF ea f	823.9	50 Ω 350	AC				SENS	E:PULSE		#Avg T		LIGNAUTO	TR	PM Apr 21, 2	156	Frequency
			Ref	Offse	t 27 -	dB	PN	O: Wide Sain:Lov		J Trig: Fre #Atten: 1			AvgĪHo	id:		823.97	79 5 M	Hz	Auto Tune
10 di 20.0 10.0	F	v	Re	f 30.0	)0 d	Bm												sm 	Center Freq 823.950000 MHz
-10.0 -20.0 -30.0											• ¹	¥							Start Freq 823.450000 MHz
-40.0 -50.0 -60.0	- Hereit		444				<b>y</b> h###	uniter from	r pri										<b>Stop Freq</b> 824.450000 MHz
Star #Re	s B	w :	3.9 I		z	×		#V	вw	/ 11 kHz*		EUNC	TION		S #Sweep	3.000 s	.4500 M (2001 p		CF Step 100.000 kHz <u>Auto</u> Man
1 2 3 4 5 6 7 8 9 10	N	1	f				1.979 t	5 MHz		-18.523 dl	3m								Freq Offset 0 Hz
11 MSG															<b>K</b> STATUS			>	

# GSM850-848.8MHz-GPRS

Agilent Spectrum Analyzer - Swept SA				
Center Freq 849.050000		#Avg Type: RMS	TRACE 1 2 3 4 5 6	Frequency
Ref Offset 27 dB	PNO: Wide ++++ Trig: Free F IFGain:Low #Atten: 18 d	dB		
10 dB/div Ref 30.00 dBm	Ministration -		-18.463 dBm	Center Freq 849.050000 MHz
0.00 -10.0 -20.0				Start Freq 848.550000 MHz
-30.0 (1997) - 1997 -40.0		LANGUNT LANGUAR INTO A THE AND A THE		<b>Stop Freq</b> 849.550000 MHz
Start 848.5500 MHz #Res BW 3.9 kHz	#VBW 11 kHz*	#Swe	ep 3.000 s (2001 pts)	CF Step 100.000 kHz Auto Man
2 3 4 5	.020 5 MHz -18.463 dBr	n FUNCTION FUNCTION W	IDTH FUNCTION VALUE	Freq Offset
6 7 8 9 10 11				
MSG	• 	r Kos	TATUS	



#### GSM850-824.2MHz-EGPRS

Agilen		ctru	m An	alyze			SA																						
Cen		Fre	RF eq 8		50 s 3.95		AC	MH				] _,	SEN:	BE:PU				ј Тур	ALIGN AU e: RMS : 10/10		04:0	TRA	CE 1	21, 202 2 3 4 5 WWW	56		Frequ	ency	
10 di	2/div	,			set 2 ).00					Wide 1:Low			tten: /				~ 191			(r1	823. -2	₀ .964	ет <u>а</u> 45	NNNI	N N IZ		Au	ito Tun	ıе
20.0 10.0		, 																		μ. M	*******					\$		ter Fre 0000 M⊦	- 1
-10.0 -20.0 -30.0															1-	X					<b>. 1</b> . <b>1</b> . <b>1</b>			13.00 dl	Ðm	8		art Fre 0000 M⊦	- 1
-40.0 -50.0 -60.0			14 <b>*1</b> 14	hyda	**	P NH		w Might	<b>I</b> N 1	) 	ver,ti		<b>***</b> *		<u> """                                 </u>									μ. η		ŧ		: <b>ор Fre</b> 0000 м⊦	- 1
Star #Re:	s Bl	N 3	9.9 I	٢Hz						#V	вw	/ 11	kHz*	:					#Swe	ер		0 s (	200	1 pt		Aut	100	<b>CF Ste</b> 0.000 k⊦ Ma	Ξz
1 2 3 4 5 6 7 8 9 10 11							× 823	.964	5 M			-29	Y .631 d	IBm							F	UNCTI						q Offso 0 ⊦	et
MSG																			Г <mark>ю</mark> sт	TATUS									

# GSM850-848.8MHz-EGPRS

Agilent Spectrum Analyzer - Swept SA					
M RL   RF   50 Ω AC   Center Freq 849.050000 Ι	MHz	E:PULSE #Avg Typ e Run Avg Hold	e: RMS	2 PM Apr 21, 2022 RACE 1 2 3 4 5 6 TYPE MWWWWW	Frequency
Ref Offset 27 dB	PNO: Wide +++ Trig: Fre IFGain:Low #Atten: 1		Mkr1 849.0 [°]	16 5 MHz	Auto Tune
10 dB/div Ref 30.00 dBm		1 1	-29.	797 dBm	
20.0	ni fifte da luz.				Center Freq 849.050000 MHz
-10.0 -20.0				- <del>13:00 dDm</del>	Start Freq 848.550000 MHz
-30.0					
-50.0		<u>`````````````````````````````````````</u>	Stop 849	all the second	<b>Stop Freq</b> 849.550000 MHz
Start 848.5500 MHz #Res BW 3.9 kHz	#VBW 11 kHz*		#Sweep 3.000 s	(2001 pts)	CF Step 100.000 kHz Auto Man
MKR MODE TRC SCL X	016 5 MHz -29.797 d		NCTION WIDTH FUNC	TION VALUE	<u>Auto</u> Mai
2 3 4 5 6					<b>Freq Offset</b> 0 Hz
8 9 10					
				~	
MSG					



#### GSM1900-1850.2MHz-Voice

Agiler		Spe	ctru	m A	nal	yzer			t SA																										
<mark>⊮</mark> ℝ Cer		ər	Fre	R eq		.84	50 s 99		AC			z			].	Trio	SENS			#Avg Avgi		əe: F		то	04	17:22 TI	RACE	Apr 2: 1 2 M₩	345	6		Fre	eque	ncy	
10 d	IB/	div					et 2			<u> </u>			Wide 1:Lov				en: 1			191				1 1		9 9 19.	DE" 97	0 C	GH:	z			Aut	o Tu	ne
Lõg 20.0 10.0																				<b>/</b> ***	N <b>W</b>	,	***										ente 99500		- 1
-10.0 -20.0 -30.0																	, u ⁴	, <b>, , , , , , , , , , , , , , , , , , </b>									****	-10 N N		m Ja		1.849	<b>Sta</b> 94500	rt Fr 000 G	
-40.0 -50.0 -60.0	$\left  - \right $	ት ት	heet lie		ł	<b>e</b> re fe	1	n P	<b>4</b>			ja ju ju		41 fed	┝┍╹┕	/ <b>!#</b>	- <b>174</b>					-										1.850	<b>Sto</b> 04500	<b>p Fr</b> 000 G	- 1
Stai #Re	es	B۱	N 3		k		Hz		>								Hz*		FUR	ITINI			Swe	ер		1.85 00 s	s (2		pts	5)	Au	<u>to</u>		FSt 000 k N	
1 2 3 4 5 6 7 8 9 10 11	N		1	f				1		99	97 (		Hz		-1	9.4	50 d	IBm														F	=req		set Hz
MSG																							t <mark>o</mark> st	TATUS	5										

# GSM1900-1909.8MHz-Voice

Agilent Spectrum Analyzer - Swept SA				
₩ RL   RF  50Ω AC   Center Freq 1.910050000	CORREC SENSE:PULSE	ALIGNAUTO I #Avg Type: RMS Avg Hold: 10/10	04:20:06 PM Apr 21, 2022 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		10 021 0 GHz -20.567 dBm	Auto Tune
20.0 10.0 0.00	rywy			Center Freq 1.910050000 GHz
-10.0			-13.00 dDm	Start Freq 1.909550000 GHz
-40.0 -50.0 -60.0		Apartic and a second	·****	<b>Stop Freq</b> 1.910550000 GHz
Start 1.9095500 GHz #Res BW 3.9 kHz MKR MODE TRO SCL			01.9105500 GHz 000 s (2001 pts)	<b>CF Step</b> 100.000 kHz <u>Auto</u> Man
2 3 4 5 6 7 8	021 0 GHz -20.567 dBm			Freq Offset 0 Hz
9 10 11 K MSG				



#### GSM1900-1850.2MHz-GPRS

Agilent Spectrum Analyzer - Sw					
Center Freq 1.8499		SENSE:PULSE	ALIGNAUTO #Avg Type: RMS	04:22:57 PM Apr 21, 2022 TRACE 1 2 3 4 5 6	Frequency
Ref Offset 2' 10 dB/div Ref 30.00		√ Trig: Free Run #Atten: 18 dB	Avg Hold: 10/10 Mkr1 1	.849 980 5 GHz -21.487 dBm	Auto Tune
20.0 10.0			Ale the training and th	MANNAMANA	Center Freq 1.849950000 GHz
-10.0					<b>Start Freq</b> 1.849450000 GHz
-20.0 -30.0 -40.0 -50.0 -60.0 -60.0 -60.0 -85 art 1.8494500 GHz #Res BW 3.9 kHz	here a lot an and the offer the stand and th				<b>Stop Freq</b> 1.850450000 GHz
Start 1.8494500 GHz #Res BW 3.9 kHz	#VBW		St #Sweep	op 1.8504500 GHz 3.000 s (2001 pts)	<b>CF Step</b> 100.000 kHz <u>Auto</u> Man
1         N         1         f           2         -         -         -           3         -         -         -           4         -         -         -           5         -         -         -           6         -         -         -	1.849 980 5 GHz	-21.487 dBm			Freq Offset 0 Hz
7 8 9 10 11					
MSG				5	

# GSM1900-1909.8MHz-GPRS

Agilent Spectrum Analyzer - Swep					
M RL RF 50 Ω Center Freq 1.910050	AC CORREC 0000 GHZ PNO: Wide ++	SENSE:PULSE	ALIGNAUTO #Avg Type: RMS Avg Hold: 10/10	04:27:36 PM Apr 21, 2022 TRACE 1 2 3 4 5 6 TYPE M WWWWW	Frequency
Ref Offset 27 d 10 dB/div <b>Ref 30.00 d</b>	IFGain:Low	#Atten: 18 dB		.910 021 0 GHz -19.506 dBm	Auto Tune
20.0 10.0 0.00	eytrikidetraininget				<b>Center Freq</b> 1.910050000 GHz
-10.0 -20.0 -30.0	^^			-13.00 dDm	<b>Start Freq</b> 1.909550000 GHz
-40.0			an a	an a	<b>Stop Freq</b> 1.910550000 GHz
Start 1.9095500 GHz #Res BW 3.9 kHz MKR MODE TRC SCL	×			top 1.9105500 GHz 3.000 s (2001 pts) FUNCTION VALUE	CF Step 100.000 kHz <u>Auto</u> Man
2 3 4 5 6 7	.910 021 0 GHz	-19.506 dBm			Freq Offset 0 Hz
8 9 10 11 ×			Los STATU:	s	



#### GSM1900-1850.2MHz-EGPRS

Agilen		pec	tru	m Ar	naly			ept	SA																									
Cen	_	r i	Fre	RI Pq			50 Ω 995		^{1C}	) G		2			Tria	SENS						ALIG e: R : 10/		0	04:	29:38 TR	ACE	123	2022 4 5 1	6		Fred	queno	сy
10 d	8//	110				ffse 30.0						: Wi in:L	ide ⊷ ow	•		en: 1				.v gli			kr1	1.			_{DET}	a n n 0 C	Hz	N Z		A	uto	Tune
20.0 10.0																				العد	المر	M	<b>k</b> iniki	144		<b>.</b>					1.			° <b>Freq</b> 0 GHz
-10.0 -20.0 -30.0																		 1,∦#	y M							"Thinky	ite Muny	-13:	DO dDr		1.			<b>Freq</b> 0 GHz
-40.0 -50.0 -60.0	#	<b>h</b> hi	ihi.	¢M#		<b>i</b> Nation	<b>He</b> rry	<b>1</b>	iko ya	ŋ#	<b>4</b> 44	*		W															<u> </u>	-	1.			<b>Freq</b> 0 GHz
Star #Re	sl	ви	VЗ	9.9	ĸŀ	l GH	łz					#	ŧ٧Β١	N	11 k	Hz*							wee	ер			(20	001	pts)	)	Aut			<b>Step</b> 00 kHz Man
1 2 3 4 5 6 7 8 9 10 11 <	N		1					1.	× 849	996	50	GH:			-28.3	25 d	Bm	FUN		N						FUNC						Fr	req C	Offset 0 Hz
MSG																						Ľ,	STA	TUS										

# GSM1900-1909.8MHz-EGPRS

Agilent Spectrum Analyzer - Swept SA					
Center Freq 1.910050000	GHz	#Avg Type	E: RMS TRA	M Apr 21, 2022 ©E 1 2 3 4 5 6 PE M WWWWW	Frequency
Ref Offset 27 dB 10 dB/div Ref 30.00 dBm	PNO: Wide 🔶 Trig: Free IFGain:Low #Atten: 18	3 dB	™ 1.910 01	ETANNNN	Auto Tune
20.0 10.0 0.00	101004 4/1 104 104 104 104 104 104 104 104 104 10				Center Freq 1.910050000 GHz
-20.0					<b>Start Freq</b> 1.909550000 GHz
-40.0 -50.0 -60.0		^{Yan} indhalanaki/daninarianahi	Malifarity and a state of the second	Nate Martin Martin	<b>Stop Freq</b> 1.910550000 GHz
Start 1.9095500 GHz #Res BW 3.9 kHz	#VBW 11 kHz*		#Sweep 3.000 s (	2001 pts)	<b>CF Step</b> 100.000 kHz uto Man
	014 0 GHz -22.162 dE				Freq Offset 0 Hz
MSG			STATUS		



#### UMTS BAND II-1852.4MHz-RMC

			alyzer		ot SA													
Cen		RF req		50 Ω 9900	AC 0000			1	E:PULSE			ALIGN. ype: RM old: 10/10	IS		RACE 1 2	21,2022 3456 www.ww		Frequency
			f Offse			PNO: V IFGain:	Nide ↔ :Low	#Atten: 1			Avgine			1.849	930	GHz	1	Auto Tune
10 dE Log	B/div	Re	f 30.0	00 dl	Bm									-35.	376	dBm		
20.0 10.0															******			<b>Center Freq</b> 1.849900000 GHz
-10.0 -20.0 -30.0									1	-					-1			<b>Start Freq</b> 1.844900000 GHz
-40.0 -50.0 -60.0						*****										Y		<b>Stop Freq</b> 1.854900000 GHz
#Re:	s BW	39 H		z			#VBW	110 kHz	*				/еер	top 1.8 3.000 s	(200	1 pts)		CF Step 1.000000 MHz uto Man
■ 1 2 3 4 5 6	N	RC SC			× 1.849	930 GI	Hz	-35.376 dl	3m	FUNC		FUNCTION	WIDTH	FUNC	TION VAL			Freq Offset 0 Hz
6 7 8 9 10 11																		
MSG								. 1111				ų.	STATUS	5				

# UMTS BAND II-1907.6MHz-RMC

Agilent Spectrum Analyzer - Swept SA				
🗱 RL   RF   50 Ω AC   Center Freq 1.910100000		ALIGN AUTO #Avg Type: RMS Avg Hold: 10/10	04:41:42 PM Apr 21, 2022 TRACE 1 2 3 4 5 6 TYPE MWWWWW	Frequency
Ref Offset 27 dB 10 dB/div Ref 30.00 dBm	PNO: Wide Trig: Free Run IFGain:Low #Atten: 18 dB		.910 255 GHz -35.114 dBm	Auto Tune
20.0 10.0 0.00				Center Freq 1.910100000 GHz
-10.0	 ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓		-13:00 dBm	Start Fred 1.905100000 GHz
-40.0 V			A	Stop Fred 1.915100000 GHz
Start 1.905100 GHz #Res BW 39 kHz MKR MODE TRC SCL			op 1.915100 GHz .000 s (2001 pts) Function value	CF Step 1.000000 MHz <u>Auto</u> Mar
1         N         1         f         1.911           2         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         - <td>0 255 GHz -35.114 dBm</td> <td></td> <td></td> <td>Freq Offset 0 Hz</td>	0 255 GHz -35.114 dBm			Freq Offset 0 Hz
7         8           9         10           10         11			×	
MSG		<b>K</b> STATUS		



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

<u> </u>		um An	alyzer - Sw									
Cent		RF req		0000 MI					ALIGNAUTO Type: RMS Iold: 10/10	TRA	M Apr 21, 2022 CE 1 2 3 4 5 6 /PE M WWWWWW	Frequency
10 dE	3/div		Offset 23	7 dB	PNO: Wide * IFGain:Low	#Atten: 18		יועיי		r1 823.9	30 MHz 50 dBm	Auto Tune
Log 20.0 10.0 0.00										-		Center Freq 823.900000 MHz
-10.0 -20.0 -30.0							1				-13.00 pBm	Start Freq 818.900000 MHz
-40.0 -50.0 -60.0				-								Stop Freq 828.900000 MHz
#Res	t 818. s BW	39 k	Hz	×	#VB	SW 110 kHz		UNCTION	#Sweep	3.000 s	8.900 MHz (2001 pts)	CF Step 1.000000 MHz <u>Auto</u> Man
1 2 3 4 5 6 7 8 9 10 11 5	N 1				930 MHz	-33.950 dE						Freq Offset 0 Hz
MSG									<b>K</b> STATI	ar		

# UMTS BAND V-846.6MHz-RMC

Agilent Spectrum Analyzer - Swept SA				
κα RL RF 50 Ω AC Center Freq 849.100000		ALIGNAUTO #Avg Type: RMS Avg[Hold: 10/10	04:46:21 PM Apr 21, 2022 TRACE 1 2 3 4 5 6 TYPE MWWWWW	Frequency
Ref Offset 27 dB 10 dB/div <b>Ref 30.00 dB</b> m	PNO: Wide +++ Trig: Free Run IFGain:Low #Atten: 18 dB		849.065 MHz -34.404 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 V			man and the second s	Stop Fred 854.100000 MHz
Start 844.100 MHz #Res BW 39 kHz MKR MODE TRE SCL ×	#VBW 110 kHz*		top 854.100 MHz 3.000 s (2001 pts) Function Value	CF Step 1.000000 MHz <u>Auto</u> Mar
1         1         f         84           2         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -	49.065 MHz -34.404 dBm			Freq Offset 0 Hz
1         3         3         3         3         10         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11				
MSG		Ko status		



#### 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 10th 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.

3. Determine EUT transmit frequencies: the following typical channels were 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	or 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

Temperature	<b>23.9</b> ℃	Humidity	56%
Test Engineer	Anna Hu		

Note: Fundamental frequency is exempt from assessment, only list the result of Voice and GPRS mode, as the result is worse than EGPRS mode.



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

		ectru	m An	alyzer - S	wept	SA													
Cen		Fre	RF eq :	50 515.00		AC DO N				7	ENSE:P		Туре	ALIGN AUTC e: RMS 100/100	)	03:53:22 F TRA	M Apr 21, : CE 1 2 3 'PE M <del>WW</del>	456	Frequency
10 d	B/di [,]			Offset 2				IO: Fas ain:Lo	st ↔ ow	#Atten					/lki	r <b>1 786</b> .	PNN	Hz	Auto Tune
Log 25.0 15.0 5.00																			Center Freq 515.000000 MHz
-5.00 -15.0 -25.0			_												<u>1</u>			0 dBm	Start Freq 30.000000 MHz
-35.0 -45.0 -55.0				<u>nikipunnin</u>				i de la constanti de la constan La constanti de la constanti de					h in the second s	an said the best					<b>Stop Freq</b> 1.00000000 GHz
Star #Re	s B	W 1	.0     SCI	MHz		×				7 3.0 M		CTION		weep 1	1.33	<u> </u>			<b>CF Step</b> 97.000000 MHz <u>Auto</u> Man
1 2 3 4 5 6 7 8 9	N	1	f			78	36.16	5 MHz		-28.663	<u>3 dBr</u>								Freq Offset 0 Hz
10 11 <														<b>K</b> STAT	TUS			>	

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

	um Analyzer - Swept SA						
Center Fr	RF 50 Ω AC		SENSE:PULSE	ALI #Avg Type: I Avg Hold: 10	RMS	53:36 PM Apr 21, 2022 TRACE 1 2 3 4 5 6 TYPE MWWWWW	Frequency
10 dB/div	Ref Offset 27 dB Ref 20.00 dBm	PNO: Fast ↔ IFGain:Low	#Atten: 24 dB		Mkr1 (	5.333 6 GHz 23.978 dBm	Auto Tune
Log 10.0 0.00						-13.00 dBm	Center Freq 5.000000000 GHz
-20.0 -30.0 -40.0							Start Fred 1.000000000 GHz
-50.0 -60.0 -70.0							<b>Stop Fred</b> 9.000000000 GHz
Start 1.00 #Res BW	1.0 MHz	#VBW	3.0 MHz		eep 13.33	top 9.000 GHz ms (20001 pts) FUNCTION VALUE	CF Step 800.000000 MHz <u>Auto</u> Mar
1 N 1 2 3 4 5 6	f 5.	333 6 GHz	-23.978 dBm			E	Freq Offse 0 Hz
7 8 9 10 11						<u> </u>	
MSG					STATUS		1



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

		ctru	m An	alyzer - S	Swept	t SA																
Cen		Fre	RF Pq	515.0	ιΩ 000	AC 00	MHz				sensi				Туре	ALIGN AUTO : RMS 100/100	0	13:54:25 P TRAI	M Apr 21, 2 E 1 2 3 E M WWW	456	Frequency	,
10 di	3/div			Offset				NO: F Gain:	ast ⊷ Low		Atten: 24			0,181,	1010.			536. -28.3	=т Р N N I 87 М	N N N Hz	Auto T	une
Log 25.0 15.0 5.00																					Center F 515.000000 I	- 1
-5.00 -15.0 -25.0													,1						-13.00		Start F 30.000000 I	1
-35.0 -45.0 -55.0			aldaja		<b></b>											n mag faig si se fairme de					Stop F 1.000000000	
Star #Re:	s B	W 1	.0 I	MHz		×					0 MHz		FUN	etion		weep 1.	333	<u>`</u>			CF S 97.000000 I <u>Auto</u>	
1 2 3 4 5 6 7 8 9 10 11	N	1	f			5	536.8	7 MH		-28	3.388 di	Bm									Freq Off	<b>fset</b> 0 Hz
< MSG		ļ	I	I							ш				I	<b>I</b> o statu	s			>		

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

	rum Analyzer - S	wept SA								
Center F	RF 50	000000 GH		□'_	PULSE	#Avg Type Avg Hold:		TRAC	Apr 21, 2022 1 2 3 4 5 6 MWWWWW	Frequency
10 dB/div	Ref Offset 2	1F0 27 dB	NO: Fast ↔ Gain:Low	#Atten: 24		Avginoia.		r1 6.03	1 6 GHz 23 dBm	Auto Tune
Log 10.0 0.00									-13:00 dBm	Center Freq 5.000000000 GHz
-20.0 -30.0		روند بر الدين العربي العربي المراجع العربي			a part and a state of the state		i den ander an en ster skilde der	i sa shekala ku	ili je po state i po st	<b>Start Fred</b> 1.000000000 GHz
-50.0 -60.0 -70.0										<b>Stop Fred</b> 9.000000000 GHz
Start 1.00 #Res BW	1.0 MHz	×		V 3.0 MHz			weep 13	.33 ms (2	.000 GHz 0001 pts)	<b>CF Step</b> 800.000000 MH2 <u>Auto</u> Mar
1 N 2 3 4 5 6 7 8		6.031	6 GHz	-23.723 dB	"m					Freq Offsel 0 Hz
9 10 11 <				m			<b>I</b> status	5	 ▼ ▼	



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

		ectru	m An	alyzer - S	iwep	t SA																		
Cen		Fre	RF Pq	50 515.00		AC	MH:				Tri	SENSE				/g Typ g Hold		IS	03:	57:44 P TRA TV	CE 1 2	21, 2022 3 4 5	6	Frequency
10 di	B/div			Offset 2					Fast n:Lov	v ••		ten: 24					. 1007			881. 29.0	ет <u>Р №</u>	MH2	N Z	Auto Tune
Log 25.0 15.0 5.00																								Center Freq 515.000000 MHz
-5.00 -15.0 -25.0																				<b>●</b> ¹	-1	3.00 dBr	- -	Start Freq 30.000000 MHz
-35.0 -45.0 -55.0				y in side being the				y ang						i tani				<u> Selfteit</u>						<b>Stop Freq</b> 1.000000000 GHz
Star #Re: MKB	s B'	W 1	.0	MHz		×				/BW	Y	MHz		FUN	CTION			p 1.: WDTH	333 r	op 1.( ns (2	000	1 pts	)	<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				381.6	6 M	1Hz		-29.0	031 dE	3m											Freq Offset 0 Hz
K MSG																-	Ń	STATUS	;			>		

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

Agilent Spectrum An									
Center Freq			SENSE:P		#Avg Type	ALIGNAUTO		Apr 21, 2022	Frequency
		PNO: Fast ↔ IFGain:Low	Trig: Free F #Atten: 24 d	Run	Avg Hold:	100/100	TYF DE		Auto Tune
	f Offset 27 dB f <b>20.00 dBm</b>							62 dBm	
									Center Freq 5.00000000 GHz
-10.0	1							-13.00 dDm	
-20.0 -30.0				الالارد والقام		الفرير (دورد مراد) الفرير المراجع (د	ja maliikki elektra ak de		<b>Start Freq</b> 1.000000000 GHz
-50.0									<b>Stop Freq</b> 9.000000000 GHz
Start 1.000 GI #Res BW 1.0	MHz	#VBV	V 3.0 MHz	FUNCTI		weep 13.	33 ms (2	.000 GHz 0001 pts)	CF Step 800.000000 MHz <u>Auto</u> Man
1 N 1 f 2 3 4 5 6 6	2.0	619 6 GHz	-23.962 dBn						<b>Freq Offset</b> 0 Hz
7 8 9 10 11								>	
MSG			144			<b>K</b> STATUS			



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

-		ectrui	m An	alyzer - Swe	ept SA													
Cen		Fre	RF eq (	50 Ω 515.000	000 MH			]	E:PULSE		#Avg T	Гуре	LIGN AUTO : RMS 100/100		TRAG	4 Apr 21, 20 E 1 2 3 4 E M WWW	56	Frequency
10 di	B/div			Offset 27 f 35.00 c	dB	PNO: Fast FGain:Lov		#Atten: 24						kr	□ 1 994.	67 MH 38 dB	N N	Auto Tune
25.0 15.0 5.00																	_	Center Freq 515.000000 MHz
-5.00 -15.0 -25.0																-13.00 d	1	Start Freq 30.000000 MHz
-35.0 -45.0 -55.0				ile foight a start a s				<u>lettinit too ets lett</u>										<b>Stop Freq</b> 1.00000000 GHz
Star #Re	s B'	W 1	.0 I	MHz	×		/BW	3.0 MHz		FUNC	TION		veep 1. mon.width	33:	3 ms (2	0000 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		994.	67 MHz		-28.738 dB	3m									Freq Offset 0 Hz
MSG														s				

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

Agilent Spectrum Analyzer - Swept SA				
X RL RF 50 Ω AC	CORREC SENSE:P	ULSE ALIGI #Avg Type: RI	NAUTO 04:02:17 PM Apr 21, 2022 MS TRACE 1 2 3 4 5 6	Frequency
Ref Offset 27 dB	PNO: Fast ↔ Trig: Free F IFGain:Low #Atten: 24 d		Mkr1 6.976 4 GHz -24.116 dBm	Auto Tune
			-13.00 dBm	Center Freq 5.000000000 GHz
-20.0 -30.0 -40.0		می با می باد می از م مراجع می باد م		<b>Start Freq</b> 1.000000000 GHz
-50.0				<b>Stop Freq</b> 9.00000000 GHz
Start 1.000 GHz #Res BW 1.0 MHz	#VBW 3.0 MHz		Stop 9.000 GHz ep 13.33 ms (20001 pts)	<b>CF Step</b> 800.000000 MHz <u>Auto</u> Man
1         N         1         f         6.9           2         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -	76 4 GHz -24.116 dBn			Freq Offset 0 Hz
10 11 MSG	and a second sec	L	STATUS	



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

-		ectru	m An	alyzer - S	wept S	A													
Cen		Fre	RF Pq	50 515.00		O MH			SENS				Туре	ALIGN AUTO : RMS 100/100	C	TRA	4 Apr 21, 2 2 1 2 3 4 2 M WWW	5.6	Frequency
10 di	B/div			Offset 2 f 35.00		IF	'NO: Fast Gain:Lov	w interest of the second se	#Atten: 2			1810	1010.			⊳ 765.	16 MI 30 dB	Hz	Auto Tune
Log 25.0 15.0 5.00																		_	Center Freq 515.000000 MHz
-5.00 -15.0 -25.0														1			-13.00		Start Freq 30.000000 MHz
-35.0 -45.0 -55.0	, <b>1999</b>	i in the second s		in printed stated			<b>Aliperte state</b>					i enyik settinin 							<b>Stop Freq</b> 1.000000000 GHz
Star #Re	s B	W 1	.0	MHz		×	#\	/BW	3.0 MHz		FUN	CTION		weep 1.:		) ms (2	0000 G 0001 p		CF Step 97.000000 MHz <u>Auto</u> Man
1 2 3 4 5 6	N	1	f			765.1	6 MHz		-29.130 di	Bm									Freq Offset 0 Hz
7 8 9 10 11									TILI										
MSG														K STATU:	s				

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

	rum Analyzer - Swe	pt SA							
Center F	RF 50 Ω				#Avg Type Avg Hold:		TRAC	1 Apr 21, 2022 E 1 2 3 4 5 6 E M WWWWWW	Frequency
	Ref Offset 27				Avginoia.		r1 5.998	3 8 GHz 11 dBm	Auto Tune
10 dB/div Log 10.0	Ref 20.00 d	Bm					-24.7		Center Freq 5.00000000 GHz
-10.0 -20.0 -30.0	Level of the second sec				<b>♦</b> ¹	in data in 1923 better	المراجع مراجع المراجع ا	-13:00 dBm	Start Freq
-40.0 -50.0 -60.0									Stop Freq 9.000000000 GHz
-70.0 Start 1.00 #Res BW		#\	/BW 3.0 MHz		S	weep 13		.000 GHz 0001 pts)	CF Step 800.000000 MH
MKR MODE T 1 N 2 3 4	RC SCL	× 5.998 8 GHz	¥ -24.711 dE	FUNCTI		ICTION WIDTH	FUNCTIO	ON VALUE	Auto Mar FreqOffset 0 Hz
5 6 7 8 9									
10 11 MSG			1111			To STATUS		×	



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

		ctru		alyzer - Sw	ept SA													
Cen		Fre	RF		AC C			SENSE				Туре	ALIGN AUTO : RMS 100/100	04:	TRAG	4 Apr 21, 20 E 1 2 3 4 E M WWW	56	Frequency
10 di	B/div			Offset 27	′ dB	PNO: Fas IFGain:Lov	t⊶► w	#Atten: 24				<u> </u>			₀ 922.	84 MH 21 dB	N N	Auto Tune
Log 25.0 15.0 5.00																		Center Freq 515.000000 MHz
-5.00 -15.0 -25.0																-13.00 d		Start Freq 30.000000 MHz
-35.0 -45.0 -55.0	*****			an fan de sen en de sen de La regione de sen de						ti in the second se			and the state of the second					<b>Stop Freq</b> 1.000000000 GHz
Star #Re:	s B	W 1	.0 P	MHz	×		/BW	3.0 MHz		FUNC	CTION		weep 1.3	333 I	ns (2	0000 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		922	.84 MHz		-28.521 dE	3m									Freq Offset 0 Hz
MSG											•			•				

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

	Analyzer - Swept SA								
	RF 50 Ω AC		SENSE:F		#Avg Type Avg Hold:		TRAC	1 Apr 21, 2022 E 1 2 3 4 5 6 E M WWWWW	Frequency
	tef Offset 27 dB Ref 20.00 dBm	PNO: Fast ↔ IFGain:Low	#Atten: 24				r1 5.368	3 4 GHz 33 dBm	Auto Tune
Log 10.0 0.00									Center Freq 5.000000000 GHz
-20.0 -30.0	مر المراجعة المنافر مع من المراجع			•1	i ka la desta da	d të dhë më të	an að að lítera ísla er í ljóða		Start Freq 1.000000000 GHz
-50.0 -60.0 -70.0									<b>Stop Freq</b> 9.000000000 GHz
Start 1.000 ( #Res BW 1.(	) MHz	#VBW	/ 3.0 MHz	FUNC		weep 13		.000 GHz 0001 pts) NVALUE	<b>CF Step</b> 800.000000 MHz <u>Auto</u> Mar
1 N 1 2 3 4 5 6 6	f 5.	368 4 GHz	-24.083 dBr	n				E	Freq Offset 0 Hz
7 8 9 10 11								v	
MSG						<b>K</b> STATUS	,		



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

Agilent Spec	trum An	alyzer - Swej	ot SA										
war∟ Center F	req (	50 Ω	000 MHz			NSE:PUL		#Avg T	Гуре	LIGN AUTO : RMS 100/100	TRA	M Apr 21, 2022 CE 1 2 3 4 5 6 PE M WWWWW	Frequency
10 dB/div		Offset 27	dB	NO: Fast Gain:Low							r1 775.	49 MHz 58 dBm	Auto Tune
10.0 0.00												-13.00 dBm	Center Freq 515.000000 MHz
-20.0 -30.0 -40.0	al la clina a	e ang	n ( an fair the fail and a fail of the fai	r dider at the star time from the star point of the					<b></b>	<b>↓</b> 1			Start Freq 30.000000 MHz
-50.0 -60.0 -70.0													<b>Stop Freq</b> 1.000000000 GHz
Start 30. #Res BW	1.0	/Hz	×	#V	BW 3.0 MH	łz	FUNC			veep 1.3 monworth	33 ms (2	0000 GHz 0001 pts)	<b>CF Step</b> 97.000000 MHz <u>Auto</u> Man
1 N 2 3 4 5 6 7 8 9 9 10 11	1 <b>f</b>		775.4	9 MHz	-28.358	dBm							Freq Offset 0 Hz
MSG													

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

Agilent		trum																		
LXI RL			RF			AC	COR			SEN	ISE:PU	.SE			ALIGN AUTO	04		M Apr 21, 2		Frequency
Cent	er I	Fre	q 4	.000	000	000				Trig: Fr	~~ Pi		#Avg AvgiH		e:RMS		TRA	CE 1 2 3 4 PE M <del>W/W</del>	156	Trequency
								IO: Fas ain:Lo	st ⊶⊷ w	#Atten:			- AR ARIA	ioiu.			D	ET A N N N	INN	Auto Tune
				Offset											М			8 6 GI 29 dE		Auto Tune
10 dB Log r	8/div	-	Ref	25.0	0 dE	m											33.Z	29 U E	<u>,                                    </u>	
15.0																				
																				Center Freq
5.00			+																	4.000000000 GHz
-5.00																			_	
-15.0				_							_					_		-13.00	dBm	
																				Start Freq
-25.0 -			-				▲1													1.000000000 GHz
-35.0							×		~~~											
-45.0																				
																				Stop Freq
-55.0			-								-									7.000000000 GHz
-65.0			_								_								_	7.000000000000000
<b>  </b> L																				
Start																		.000 G		CF Step
#Res	S BM	٧1.	0 N	IHz				#1	VBW	3.0 MH	Z*			#	Sweep	1.00	0 s (2	0001 p	its)	600.000000 MHz
MKR M	INNEL	TBC	seil			×				Ŷ		ELIN	CTION	I EUN	ICTION WIDTH	41	FUNCTI	DN VALUE		<u>Auto</u> Man
	N	1	f				538 6	6 GHz		-33.229	dBm	- TON	onion							
2																				
3			_													-			-	Freq Offset
		-	-																	0 Hz
5 6 7																				
7			_																-	
8																			-	
10																				
11																			~	
<															4	_			>	
MSG															<b>I</b> STATI	US				



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

Agilent Spect	rum Ana										
Center F	req '	50 Ω 10.30000		Hz		E:PULSE		ALIGN AU Type: RMS Iold: 100/100	TR	PM Apr 21, 2022 ACE <u>1</u> 2 3 4 5 6 YPE M <del>WWWW</del>	Frequency
10 dB/div		Offset 27 d <b>20.00 dE</b>	IFG	NO: Fast Gain:Low	#Atten: 2				(r1 13.246	DET P N N N N N	Auto Tune
10.0 0.00										-13: ှ_ ±Bm	Center Freq 10.30000000 GHz
-20.0 -30.0				yndet i soed	nden de store general de des se	, izitla etifer	ala ana a a a a a a a a a a a a a a a a				<b>Start Freq</b> 7.000000000 GHz
-50.0 -60.0 -70.0											<b>Stop Freq</b> 13.60000000 GHz
Start 7.00 #Res BW	1.0 N		×		SW 3.0 MHz		FUNCTION	Sweep	12.00 ms (	3.600 GHz 20001 pts) ION VALUE	
1 N 2 3 3 5 6 7 8 9 10	1 <b>f</b>		13.246 90	0 GHz	-22.982 d	3m					Freq Offset 0 Hz
10 11 < MSG								To st	ATUS	►	

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

			alyzer - S	wept SA										
(XI RL Cent		RF		Ω AC			SENSE	E:PULSE	#Ava		LIGN AUTO		M Apr 21, 2022	Frequency
		Ref	f Offset 2	?7 dB	PNO: Fa IFGain:L		Trig: Free #Atten: 24				100/100	، 19.024		Auto Tune
Log 10.0 - -10.0 -								an a		. 1		11	-13.00 dDm	Center Freq 16.800000000 GHz
-30.0 -40.0														Start Freq 13.600000000 GHz
-50.0 + -60.0 + -70.0 +														<b>Stop Freq</b> 20.000000000 GHz
Start #Res		1.0	MHz	X	#	vвw	3.0 MHz		UNCTION		veep 16	.00 ms (2	0.000 GHz 20001 pts)	CF Step 640.000000 MHz <u>Auto</u> Man
	N 1	f			4 00 GH2	2	<u>-17.695 dE</u>							Freq Offset 0 Hz
MSG												6		



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

		trum	i Ana	alyzer - Swe	ept SA											
Cent		Fre	RF q 5	50 Ω	AC 0000 N			]	E:PULSE			Туре	RMS	TRA	M Apr 21, 2022 CE 1 2 3 4 5 6 PE M WWWWW	Frequency
10 dB	3/div			Offset 27		PNO: Fas IFGain:Lo		Trig: Free #Atten: 24			Avgin	1010:	100/100 M	⊳ kr1 987.	24 MHz 69 dBm	Auto Tune
Log 10.0 - 0.00 -															-13:00 dBm	Center Freq 515.000000 MHz
-20.0 -30.0 -40.0			Vet			n di i i i santika Sentari	alin in ini Alin ini ini			li parte de la companya de la compa	An Barth Harri An Barth Marth	al ()				Start Freq 30.000000 MHz
-50.0 + -60.0 + -70.0 +																<b>Stop Freq</b> 1.000000000 GHz
Start #Res	s BV	V 1.	.0 N SCL		×			3.0 MHz		FUNC	TION		weep 1.3	333 ms (2	0000 GHz 20001 pts) 0NVALUE	CF Step 97.000000 MHz <u>Auto</u> Man
1 2 3 4 5 6 7 8 9 10 11 <	N	1	f		98	87.24 MHz		-27.969 dE	3m							Freq Offset 0 Hz
MSG														5		μ

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

Agilent Spectrum Analyzer - Swept SA					
X RL RF 50 Ω AC Center Freq 4.000000000		ISE:PULSE #Avg Ty		7 PM Apr 21, 2022 RACE 1 2 3 4 5 6	Frequency
Ref Offset 27 dB	PNO: Fast + Trig: Fr IFGain:Low #Atten:	eeRun Avg Hol	d: 5/5 Mkr1 2.6	45 2 GHz 553 dBm	Auto Tune
10 dB/div Ref 25.00 dBm 15.0 5.00 -5.00					Center Freq 4.00000000 GHz
-15.0	▶ ¹			-13.00 dBm	<b>Start Freq</b> 1.00000000 GHz
-45.0 -55.0 -65.0					<b>Stop Freq</b> 7.00000000 GHz
Start 1.000 GHz #Res BW 1.0 MHz MKR MODE TRO SCL	#VBW 3.0 MH	FUNCTION	#Sweep 1.000 s		<b>CF Step</b> 600.000000 MHz <u>Auto</u> Man
1         N         1         f         2:           2         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -	645 2 GHz -33.553 (			×	Freq Offset 0 Hz
MSG			STATUS		



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

<u> </u>		ctrur	n An	alyzer - Sv														
Cent		Fre	RF q '	50 s 10.300		00 G			SENS				Туре	ALIGN AUTO : RMS 100/100	TR/	M Apr 21, 2022 CE 1 2 3 4 5 6 /PE M WWWWW		Frequency
10 dE	3/div			Offset 2		IFO	NO: Fas Gain:Lov	t ⊶► w	#Atten: 24			1810			13.257	79 GHz	1	Auto Tune
Log 10.0 0.00 -10.0																-13:r iBm	1	Center Freq 0.300000000 GHz
-20.0 -30.0 -40.0				<b>1.</b> 1 (			da hunhishin	i contra	lintere, i seriende kalende	ile ula di			la na lute	e bale on Alex I. A context	an a statistic shi i g Han H			<b>Start Freq</b> 7.00000000 GHz
-50.0 -60.0 -70.0																	1	<b>Stop Freq</b> 3.60000000 GHz
Star #Res	s B\ Mode	N 1	.0 1	MHz	*			/BW	3.0 MHz		FUNC	CTION		weep 12 ction width	.00 ms (:	3.600 GHz 20001 pts) DN VALUE		<b>CF Step</b> 660.000000 MHz <u>ito</u> Man
1 2 3 4 5 6 7 8 9 10 11 11 <	N	1	<u> </u>		13	.257 7	9 GHZ		-23.052 dł	Bm								<b>Freq Offset</b> 0 Hz
MSG															5			

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

Agiler		ctru	m An	alyzer	- Swe	pt SA													
LXI R			RF		50 Ω	AC	CORRE			SENSE	:PULSE				ALIGN AUTO		4 PM Apr 21, 20		Frequency
Cen	ter	Fre	ed .	16.8	000	0000	0 GH	z		g: Free	Dun				: RMS 100/100		RACE 1 2 3 4 1		requeriey
								:Fast + in:Low		g. 1 ee ten: 24			Or Ali	ioiu.	100/100		DETPNNN	ŇŇ	
<u> </u>								meow								40.05	<u> </u>		Auto Tune
				Offse											IVI Kr1		2 16 GH		
10 d	B/div	/	Re	f 20.	00 d	Bm										-17.	227 dBi	m	
Log																			
10.0			-																Center Freq
0.00																		-	16.80000000 GHz
-10.0																<b>1</b>	-13.00 d	Den	
			-											_		•	-13.00 u	UIII	
-20.0	والعربي	. الطبط		ر استادا د	I	المتعا فحرارس	فالع أحاده وداده	املان بالبعيداني	hit of all the start	a detta	ير وي الألك	ومطاطعه	للاحديات والمعروان	م دسانيان	والأصادية ورابيه				Start Freq
-30.0						119. 19. 19. 19. 19. 19. 19. 19. 19. 19.							hte andreasa.		and the second			-	13.60000000 GHz
-40.0																		_	10.00000000000000
-50.0																			Stop Freq
-60.0			-						_									-	
-70.0																		_	20.00000000 GHz
Star	t 13	3.60	10 G	Hz												Stop 2	20.000 GH	iz	CF Step
#Re	s Bl	W 1	.0	VIHz				#VB	W 3.0	MHz				S١	weep 16		(20001 pt		640.000000 MHz
																	<u> </u>	-	Auto Man
MKR 1	N		f			40.0	52 16 (	~L.I.=	474	í 227 dE	1	FUNC	TION	FUN	CTION WIDTH	FUN	CTION VALUE	^	
2	IN					19.0	52 10 0	382	-17.4	227 06	5111								
3																			Freq Offset
4																			0 Hz
5																			
7																			
8																			
10																			
11																		~	
<					_							_					>		
MSG															STATU:	5			
															-				



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

-		ctrui	n An	alyzer - Sw	ept SA												
Cen	-	Fre	RF q	50 Ω 515.000					SENS				Туре	ALIGN AUTO : RMS 100/100	TRA	M Apr 21, 2022 CE 1 2 3 4 5 6 PE MWWWWW	Frequency
10 di	B/div			Offset 27			IO: Fast ain:Lov		#Atten: 24			1810	1014.		r1 792.	91 MHz 50 dBm	
Log 10.0 0.00 -10.0																- <del>13:00 dBm</del>	Center Fre 515.000000 MH
-20.0 -30.0 -40.0	an the second			<b>une filipien</b> met	in the state of the	withus be	elj., pistelist		ing the first particular state of the second se	in pi			up stille				Start Fre 30.000000 MH
-50.0 -60.0 -70.0																	Stop Fre 1.00000000 GF
Star #Re	s B	W 1	I 0.	MHz	X			/BW	3.0 MHz		FUNC	CTION		weep 1.3	333 ms (2	0000 GHz 20001 pts)	CF Ste 97.000000 MH <u>Auto</u> Ma
1 2 3 4 5 6 7 8 9 10 11	N	1	f		7	792.91	IMHZ		-28.650 dt	3m							Freq Offs 0 F
MSG																	

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

Agilent Spectrum Analyzer - Swept S	A				
RL RF 50 Ω AC     Center Freq 4.0000000		SENSE:PULSE	ALIGNAUTO #Avg Type: RMS	04:20:21 PM Apr 21, 2022 TRACE 1 2 3 4 5 6	Frequency
Ref Offset 27 dB	PNO: Fast ↔ IFGain:Low	Trig: Free Run #Atten: 24 dB	AvgjHoid: 5/5	түре Милинин Det A N N N N N (r1 2.677 3 GHz -33.253 dBm	Auto Tune
					Center Freq 4.000000000 GHz
-15.0 -25.0 -35.0	••••			-13.00 dBm	<b>Start Freq</b> 1.000000000 GHz
-45.0					<b>Stop Freq</b> 7.000000000 GHz
Start 1.000 GHz #Res BW 1.0 MHz	#VBW	3.0 MHz*	#Sweep	Stop 7.000 GHz 1.000 s (20001 pts)	<b>CF Step</b> 600.000000 MHz <u>Auto</u> Man
1     N     1     f       2     -     -       3     -     -       4     -     -       5     -     -       6     -     -       7     -     -       8     -     -       9     -     -       10     -     -       11     -     -	2.677 3 GHz	-33.253 dBm			Freq Offset 0 Hz
MSG				5	



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

	rum Analy	zer - Swept SA								
Center F	_R ⊧ req 10	50 Ω AC				#Avg Typ Avg Hold		TRA	M Apr 21, 2022 CE 1 2 3 4 5 6 PE M WWWWW	Frequency
10 dB/div		ffset 27 dB 20.00 dBm	PNO: Fast IFGain:Low					□ 12.826	81 GHz 86 dBm	Auto Tune
										Center Freq 10.300000000 GHz
-20.0 -30.0				Mennen, steri _{sera} nnik selating,	a kin in property		l an coincideac and			<b>Start Freq</b> 7.000000000 GHz
-50.0 -60.0 -70.0										<b>Stop Freq</b> 13.60000000 GHz
Start 7.00 #Res BW	1.0 MI	lz ×	#V	BW 3.0 MHz	FU		weep 12	2.00 ms (2	.600 GHz 0001 pts)	<b>CF Step</b> 660.000000 MHz <u>Auto</u> Man
1 N 2 3 4 5 6 7	1 f	12.	326 81 GHz	-22.886 dE	3m					Freq Offset 0 Hz
8 9 10 11 <				nu -			<b>I</b> statu:	s		

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

		ctru	m An	alyzer -	Swept SA												
LXI R	L		RF	50	Ω AC	CORR	EC		SENSE	PULSE			ALIGN AUTO		M Apr 21, 2022		England
Cen	ter	Fre	ea '	16.80	00000	)00 GH	-Iz						e: RMS		CE 1 2 3 4 5 1		Frequency
L			-			PN	0:Fast +		j: Free		Avgj	Hold:	100/100	T	PE MWWWWW	¥ –	
						IFGa	ain:Low	#Att	en: 24	dB				L	EIF NININI	N	
													Mkr1	10 060	44 GHz	7	Auto Tune
				Offset									IVINI				
10 d	B/div	1	Rei	f 20.0	0 dBm	1								-18.2	64 dBm	- 1	
Log																	
10.0			-													11	Center Freq
0.00																1	6.800000000 GHz
0.00																1 "	5.80000000 GHZ
-10.0								_						<u></u> 1-	-13.00 dDm		
-20.0																	
-20.0	يتقرآنهن	<u>ы.</u>	4		الشعادية والط	الأدادية فالمرجا	الى بارىيا ھائە يەتتى يەرىكى بارىيا ھائە يەتتى			القرد في مطالبة ف	ويخدا بقديه والغ	and the	and the second second				Start Freq
-30.0		1947-		,		din a canada da serie de la competencia de la competencia de la competencia de la competencia de la competencia La competencia de la c		-		. Autodendarie .		<b>.</b>				1	3.600000000 GHz
-40.0																II "	0.000000000000000
-40.0																	
-50.0			_														
-60.0																	Stop Freq
-00.0																2	0.000000000 GHz
-70.0								_								11	
Star	t 13	1.60	0 G	iHz										Stop 20	).000 GHz		CF Step
#Re							#VB	W 3.0 I	MHz			S	ween 16		20001 pts		640.000000 MHz
<i>"</i> "	5 01			71112					11112								
MKR	MODE	TRC	SCL		×	<		Y		FL	JNCTION	FUN	ICTION WIDTH	FUNCT	ION VALUE	Au	ito wan
1	N	1	f		19	.069 44	GHz	-18.2	64 dE	3m							
2																	
3																	Freq Offset
4												-					0 Hz
6																	
5 6 7												-					
8																	
8 9																	
10																	
11		<u> </u>										<u> </u>			~		
<															>		
MSG														5			
													-	1			



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

		ctru	m An	alyzer - S	wept S	5A												
wµ Cer		Fre	RF eq (	50 515.00		0 MH			7	SE:PUL			Туре	ALIGN AUTO : RMS 100/100	TR	PM Apr 21, 20 ACE 1 2 3 4 YPE M WWWW	56	Frequency
10 d	B/div			Offset 2		IF	Gain:	ast ↔ Low	#Atten: 2		. <u> </u>				kr1 905	DETPNNN	N N	Auto Tune
Log 10.0 0.00 -10.0																-13.00 d	Ðm	Center Freq 515.000000 MHz
-20.0 -30.0 -40.0			र हो ज कि कि इ. पर जाता हो इ. पर जाता हो			er en de fan de de General e general e g	lik pakata,							a fi da si a basa da si da da da 1993 marta di Sangar di Sangar	a di subara di Alfra da di Alfri Alfra da Alfra da di Alfri Alfra da Alfrida di Alfrida di Alfrida		著	Start Freq 30.000000 MHz
-50.0 -60.0 -70.0																		<b>Stop Freq</b> 1.000000000 GHz
	s B'	W 1	.0 I	VIHz		×			V 3.0 MHz		FUN	CTION		weep 1.	333 ms (	.0000 <b>GH</b> 20001 pt ION VALUE		CF Step 97.000000 MHz <u>Auto</u> Man
1 2 3 4 5 6 7 8 9 10 11 <	N	1	f			905.4	47 M⊢		-28.695 d	IBm								Freq Offset 0 Hz
MSG														🚺 STATU	s			

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

Agilent Spectrum Analyzer - Swept SA					
RL RF 50 Ω AC     Center Freq 4.000000000		SENSE:PULSE	ALIGN AUTO #Avg Type: RMS	04:23:12 PM Apr 21, 2022 TRACE 1 2 3 4 5 6	Frequency
Ref Offset 27 dB	PNO: Fast ↔→ IFGain:Low	┘ Trig: Free Run #Atten: 24 dB	Avg Hold: 5/5	түре Милини Det A N N N N (r1 5.832 1 GHz -33.369 dBm	Auto Tune
10 dB/div Ref 25.00 dBm Log 15.0 5.00					Center Freq 4.000000000 GHz
-5.00 -15.0 -25.0 -35.0	~~~~~			-13.00 dBm	<b>Start Freq</b> 1.00000000 GHz
-45.0 -65.0 -65.0					<b>Stop Freq</b> 7.000000000 GHz
Start 1.000 GHz #Res BW 1.0 MHz	#VBW	3.0 MHz*	#Sweep	Stop 7.000 GHz 1.000 s (20001 pts)	CF Step 600.000000 MHz <u>Auto</u> Man
	32 1 GHz	-33.369 dBm			Freq Offset 0 Hz
MSG			STATU		l <u>.</u>



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

		ctrur	n Ana	alyzer - S	wept SA												
Cer		Fre	RF Pq 1	50 10.300		00 G			SENS			Туре	ALIGN AUTO : RMS 100/100	TRA	M Apr 21, 2022 CE 1 2 3 4 5 6 /PE M WWWWWW	Frequer	ncy
10.4	B/div			Offset 2		IFG	NO: Fast Gain:Lov		#Atten: 2		1810	1014.		12.836	38 GHz 94 dBm	Auto	o Tune
10 a Log 10.00 -10.00				20.00													e <b>r Freq</b> 00 GHz
-20.0 -30.0 -40.0			<u>, 141 e</u>				, Mildon Ig						e y zeri a tel alty digita da			Star 7.0000000	r <b>t Freq</b> 00 GHz
-50.0 -60.0 -70.0	-															<b>Sto</b> 13.6000000	<b>p Freq</b> 00 GHz
Star #Re MKB		W 1	.0 1	ИНz	12	< .836 38		/BW	3.0 MHz	FUNC	TION		weep 12 ottonwidth	.00 ms (2	3.600 GHz 20001 pts) ON VALUE		F Step 00 MHz Man
2 3 4 5 6 7 8 9 10 11 <																Freq	Offset 0 Hz
MSG														5			

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

Agilent Spectrum Analyzer - Swept SA					
🕅 RL   RF   50 Ω AC   Center Freq 16.80000000		SENSE:PULSE	ALIGNAUTO #Avg Type: RMS	04:23:39 PM Apr 21, 2022 TRACE 1 2 3 4 5 6	Frequency
Ref Offset 27 dB	PNO: Fast ↔ IFGain:Low	[/] Trig: Free Run #Atten: 24 dB	Avg Hold: 100/100 Mkr1	19.064 00 GHz -18.017 dBm	Auto Tune
				1	Center Freq 16.80000000 GHz
-20.0 -30.0 -40.0					<b>Start Freq</b> 13.60000000 GHz
-60.0					<b>Stop Freq</b> 20.000000000 GHz
Start 13.600 GHz #Res BW 1.0 MHz	#VBW	3.0 MHz	Sweep 16	Stop 20.000 GHz 5.00 ms (20001 pts)	CF Step 640.000000 MHz <u>Auto</u> Man
	64 00 GHz	-18.017 dBm		×	Freq Offset 0 Hz
MSG			Ko statu	S	<u>[[</u> ]



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

	Spectr	um An	alyzer - Sw	ept SA											
Cent	er F	RF req	50 Ω 515.000				SENSE	PULSE		ј Туре	ALIGN AUTO : RMS 100/100	TRA	M Apr 21, 2022 .CE 1 2 3 4 5 6 .PE M WWWWW		су
10 15			Offset 27		PNO: Fast IFGain:Lov		Atten: 24		Avgi			⊤ kr1 846.	.35 MHz	Auto	Tune
10 dB 10.0 - 0.00 -	Jaiv	Re	1 20.00										-13:00 dDm	<b>Center</b> 515.00000	
-20.0 -30.0 -40.0		laita (st	in jili kirata angli		وال ومر المعل و علم المعل المعلم المعلم والمعلم المعلم المعلم والمعلم المعلم المعل	in the second				and Marcula Participation		1		Start 30.00000	t <b>Freq</b> 10 MHz
-50.0 - -60.0 - -70.0 -														Stop 1.00000000	<b>Freq</b> 00 GHz
Start #Res	BW	1.0	MHz		#V	'BW 3.	0 MHz	F	UNCTION		weep 1.3	333 ms (2	0000 GHz 20001 pts) ON VALUE		<b>Step</b> 0 MHz Man
	N 1	f		84	16.35 MHz	-28	8.612 dE	3m						FreqC	Offset 0 Hz
MSG												5			

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

Agilent				er - Sw	rept SA													
LXI RL			F	50 Ω		CORF			SENSE	E:PULSE			ALIGN AUT	0 (		M Apr 21, 2		Frequency
Cent	ter F	req	4.0	000	0000		Z 10: Fast ain:Low		Trig: Free #Atten: 24			#Avg Ty Avg Hol	pe: RMS d: 5/5		T١	CE 1 2 3 4 PE MWWW DET A N N N	www	
10 dE	3/div			set 2 5.00	7 dB dBm								N	/kr1		89G 88dE		Auto Tune
Log 15.0 • 5.00 •																	_	Center Freq 4.000000000 GHz
-15.0 -25.0 -35.0								1-						,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		-13.00	dBm	<b>Start Freq</b> 1.00000000 GHz
-45.0 + -55.0 + -65.0 +																		<b>Stop Freq</b> 7.000000000 GHz
Start #Res	s BW	1.0	MH	z	×		#V	'BW	3.0 MHz		FUNCT		#Sweep	0 1.0	00 s (2	7.000 G 20001 p Ionvalue		CF Step 600.000000 MHz <u>Auto</u> Man
						3.178 9	) GHz		-33.088 dE									Freq Offset 0 Hz
MSG													<b>Гю</b> sta	TUS				



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

		ctrur		alyzer - Swe											
ι <mark>»/</mark> ι Cer		Fre	RF q 1	50 Ω 10.3000	00000			SENSE	E:PULSE		і Туре	LIGN AUTO RMS 100/100	TRA	M Apr 21, 2022 CE 1 2 3 4 5 6 PE M WWWWWW	Frequency
	B/div			Offset 27 7 <b>20.00 (</b>	dB	PNO: Fast FGain:Lov	k •••• W	#Atten: 24					^ـ 13.178	92 GHz 86 dBm	Auto Tune
Log 10.0 0.00 -10.0														-1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -	Center Freq 10.300000000 GHz
-20.0 -30.0 -40.0	. (1944)			lini (na stala)			<u>, 1141111111</u>		ad bi post det livit		u kinal y	a mana sa kata kata kata sa kat			<b>Start Freq</b> 7.000000000 GHz
-50.0 -60.0 -70.0															<b>Stop Freq</b> 13.60000000 GHz
	s B	W 1	.0 M	ИНz	×			3.0 MHz		FUNCTION		weep 12 crion width	.00 ms (2	8.600 GHz 20001 pts) DN VALUE	CF Step 660.000000 MHz <u>Auto</u> Man
1 2 3 4 5 6 7 8 9 10 11	N				13.178	92 GHz		-22.786 dE	3m						Freq Offset 0 Hz
MSG													5		

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

		rum Ar	nalyzer -	Swept S	A									
LXI RI		RF			:   CORF 000 G		S	ENSE:PULS	=	#Avg Ty	ALIGNAUTO		M Apr 21, 2022 CE 1 2 3 4 5 6	Frequency
		Re	f Offse	t 27 dB	PN IFG	IIZ IO: Fast   • ain:Low		ree Run 1: 24 dB			l: 100/100	19.086		Auto Tune
10 di Log	B/div	Re	f 20.0	0 dBn	n							-17.6	54 dBm	
10.0 0.00														Center Freq 16.80000000 GHz
-10.0												1-	-13:00 dDm	
-20.0						salaan La	ppp and a shall be	والمتحدثة والمتحدث	. salati	و معدد الم	فأعلمه والمراجع المالي		المسريس وحرب والفقادي وروا	Start Freq
-30.0 -40.0			i si katakatan Majarta Magana			and the second secon						and		13.600000000 GHz
-50.0														
-60.0														Stop Freq
-70.0														20.00000000 GHz
#Re	t 13.0 s BW	1.0	MHz		×	#VB	SW 3.0 M	Hz	FUNC		Sweep 16	6.00 ms (2	0.000 GHz 20001 pts)	<b>CF Step</b> 640.000000 MHz <u>Auto</u> Man
MKB	N	1 f			× 9.086 08	GHz	-17.654	dBm	FUNL	TIUN   FU	INCTION WIDTH			
2 3 4 5 6														Freq Offset 0 Hz
7 8 9														
10 11													<b>~</b>	
< MSG											<b>I</b> STATU	s	>	
											•			



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

	pectrum	Analy	rzer - Swe	pt SA												
Cente	r Free	r⊧ q 51	50 Ω 5.000	000 MH			SENSE			#Avg ]	Гуре	LIGN AUTO RMS 100/100	TRA	M Apr 21, 2022 CE 1 2 3 4 5 6 PE M WWWWW	5	Frequency
10 dB/c			ffset 27 20.00 d	u dB	PNO: Fast FGain:Lov		#Atten: 24				<u> </u>		(r1 773	55 MHz 43 dBm	1	Auto Tune
Log 10.0														-13.00 dBm		Center Freq 515.000000 MHz
-20.0					1   1   1   1   1   1   1   1   1   1	an lines a sta		hiteri ser			işi i	1-	na bi att y - 16 ti da tau 16 Ta ti ang ti	(1912) Performance Statistics of Party Performance Design (see		Start Freq 30.000000 MHz
-50.0 — -60.0 — -70.0 —																<b>Stop Freq</b> 1.00000000 GHz
Start 3 #Res I	BW 1.	0 MI	Hz	×	#V	/BW 3	B.0 MHz		FUNC	TION		weep 1.3	333 ms (2	0000 GHz 20001 pts) ON VALUE		<b>CF Step</b> 97.000000 MHz <u>uto</u> Man
1 N 2 3 4 5 6 7 8 9		f		773.	55 MHz		29.143 dE	3m								Freq Offset 0 Hz
11 MSG							1111					STATUS	è.	~		

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

Agilent Spec											
Center	RF		AC CORF		SENS	E:PULSE	#Avg Ty	ALIGNAUTO pe: RMS		M Apr 21, 2022	Frequency
10 dB/div	Ref 0	offset 27 d 25.00 dE	PN IFG B	L IO:Fast ← ain:Low	Trig: Free #Atten: 2		AvgjHol		□ 1 6.25	9 3 GHz 67 dBm	Auto Tune
15.00											Center Freq 4.000000000 GHz
-15.0 -25.0 -35.0									• 1	-13.00 dBm	<b>Start Freq</b> 1.000000000 GHz
-45.0 -55.0 -65.0											<b>Stop Freq</b> 7.00000000 GHz
Start 1.0 #Res BV	V 1.0 M		×		W 3.0 MHz	FL	JNCTION F	#Sweep	1.000 s (2	.000 GHz 0001 pts) INVALUE	<b>CF Step</b> 600.000000 MHz <u>Auto</u> Man
1 N 2 3 4 5 6	1 f		6.259 3	3 GHz	-33.667 dl	3m				=	Freq Offset 0 Hz
7 8 9 10 11										v	
MSG								<b>Ko</b> statu	s		ų



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

		ctrun	n Ana	alyzer - Sv	wept SA	1												
Cen		Fre	RF q 1	50 s 10.300		000 G			SENS				Туре	ALIGN AUTO : RMS 100/100	TRA	M Apr 21, 2022 ACE 1 2 3 4 5 6 YPE M WWWWW	6	Frequency
	B/div			Offset 2		IFO	NO: Fas Gain:Lo		#Atten: 2						12.827	80 GHz		Auto Tune
10.0 10.0 0.00		, 		20.00		<u> </u>												Center Freq 10.30000000 GHz
-20.0 -30.0 -40.0	ii a a b	handa									n fins han di kang			ensored, sticket be available				<b>Start Freq</b> 7.000000000 GHz
-50.0 -60.0 -70.0																		<b>Stop Freq</b> 13.60000000 GHz
Stai #Re MKE		W 1	.0 1	ЛНz		× 2.827 8		/BW	3.0 MHz		FUNC	TION		weep 12 chon width	.00 ms (:	3.600 GHz 20001 pts; ION VALUE		CF Step 660.000000 MHz Auto Man
1 2 3 4 5 6 7 8 9 10 11	N		<u> </u>		12	2.827 8	<u>U GHZ</u>		-22.812 di	Bm								Freq Offset 0 Hz
MSG															5			

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

		ctru		alyzer																
LXI R		_	RF		50 Ω	AC	CORF			SENSI	E:PULS	=	#0		ALIGN AUTO			1 Apr 21, 202		Frequency
Cen	iter	Fre	eq	16.8	000	0000		HZ 0: Fast		Trig: Free	e Run				100/100		TYP	EMWWW	₩	
								ain:Lov		#Atten: 2	4 dB						DE	T P N N N N	IN	
			_												Mkr1	19.03	37	44 GH	z	Auto Tune
10 d	Bidis	,		f Offse f 20.0														71 dBr		
Lõg				1 20.	000															
10.0																			-1	Center Freq
0.00			_																-1	16.80000000 GHz
-10.0																. 1	1	-13.00 dB		
																		-15.00 ub	-	
-20.0		No.	فمعطنه	مرة أكلام والم	وعلية يسدوا	سطفاني	فلنحر رساف	n, ikingteit.	و والمعالي			ر بينانين المراجع . ويستعمل المراجع .	الخارية وورا	hi ka da	المرافع المراجع بالي 10 ماري مساحة معارض الي 10 م			ا الاربار الماد والمالية الالتيامية والمار المربي محمد الماز والمحم	1	Start Freq
-30.0	110 A.V.					tent ( ^{ben} t)eren												-	1	13.600000000 GHz
-40.0			_																-1	
-50.0																				
-60.0																				Stop Freq
																				20.00000000 GHz
-70.0																			1	
Star	<u>⊢</u> + 13	19.5	0 0	117												Ston	20	.000 GH		07.01
#Re								#\/		3.0 MHz				S	weep 16					CF Step 640.000000 MHz
										0.0 11112							•	<u> </u>	7	Auto Man
MKR 1	NODE		SCI f			40.0	37 44	CU-		-18.271 di	1	FUNC	TION	FUN	CTION WIDTH	FUI	NCTIO	IN VALUE	-	
2	IN					19.0	51 44	GEZ		-10.271 ut	2111									
3																				Freq Offset
4																			=	0 Hz
6																			-	
7																				
8																				
10																				
11			I															>	~	
MSG																-				
Nag															No STATUS					



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

		ectrui	m An	alyzer - Sw	vept SA													
wµ Cer		Fre	RF eq (	50 s 515.00					SENS				Туре	ALIGN AUTO : RMS 100/100	TRA	M Apr 21, 2022 CE 1 2 3 4 5 ( PE M WWWWW	6	Frequency
10 c	B/di			Offset 2			10: Fast Gain:Lov		#Atten: 24				1014.		۔ 1 kr1 870	55 MHz		Auto Tune
Log 10.0 0.00																-13.00 dBm		Center Freq 515.000000 MHz
-20.0 -30.0 -40.0	) 	, and	in the second		الا المارين بين مارين المراجع المراجع المراجع		- Luisterii ja	at inclu	- The fast of fact of the fast and second and standard local				, ilia ia	ng ang binang kang dapat dapat Sang bang bang bang bang bang bang bang b	1	a a sugar a sug		Start Freq 30.000000 MHz
-50.0 -60.0 -70.0																		<b>Stop Freq</b> 1.000000000 GHz
#Re	rt 30 es B	W 1	.0 1	MHz	X		#\	/BW	3.0 MHz		FUNC	CTION		weep 1.3	333 ms (2	0000 GHz 20001 pts)		<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		5	370.55	5 MHz		-28.750 df	3m								Freq Offset 0 Hz
MSG															3			

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

Agilent Spectrum Analyzer -					
Center Freq 4.000		SENSE:PULSE	ALIGNAUTO #Avg Type: RMS	04:37:55 PM Apr 21, 2022 TRACE 1 2 3 4 5 6	Frequency
Ref Offset	PNO: Fast ↔ IFGain:Low t 27 dB	┘ Trig: Free Run #Atten: 24 dB	Avg Hold: 5/5	түре Милини DET A N N N N N (r1 1.763 8 GHz -32.301 dBm	Auto Tune
					Center Freq 4.000000000 GHz
-15.0 -25.0 -35.0				-13.00 dBm	<b>Start Freq</b> 1.000000000 GHz
-45.0 -55.0 -65.0					<b>Stop Freq</b> 7.000000000 GHz
Start 1.000 GHz #Res BW 1.0 MHz	×	3.0 MHz*	#Sweep *	Stop 7.000 GHz 1.000 s (20001 pts)	<b>CF Step</b> 600.000000 MHz <u>Auto</u> Man
1         N         1         f           2         -         -         -           3         -         -         -           4         -         -         -           6         -         -         -           7         -         -         -           9         -         -         -           10         -         -         -           11         -         -         -	1.763 8 GHz	-32.301 dBm			Freq Offset 0 Hz
MSG				5	



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

		alyzer - Sw	ept SA								
(XI RL Cente	r Freq		000000 G			e Pun		ALIGNAUT Type: RMS old: 100/100	TRA	M Apr 21, 2022 CE 1 2 3 4 5 6	Frequency
10 dB/d		f Offset 27 f 20.00 (	iFC 7 dB	NO: Fast • Gain:Low	#Atten: 2				۰ r1 13.103	PNNNNN	Auto Tune
10.0											Center Freq 10.300000000 GHz
-20.0	in the second	hini kongo di									<b>Start Freq</b> 7.000000000 GHz
-50.0 -60.0 -70.0											<b>Stop Freq</b> 13.600000000 GHz
#Res E	e trc sci	MHz	×		W 3.0 MHz		FUNCTION	Sweep	12.00 ms (2	3.600 GHz 20001 pts) 0NVALUE	<b>CF Step</b> 660.000000 MHz <u>Auto</u> Man
1 N 2 3 4 5 6 7 8 9			13.103 3	5 GHz	-22.873 d	Bm					Freq Offset 0 Hz
10 11 <					iui			To STA	TUS	×	

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

		ctru	m An	alyzer -	- Swep	ot SA											
LXI R			RF		50 Ω	AC	CORREC		SENSI	E:PULSE			ALIGN AUTO		PM Apr 21, 2022		Frequency
Cen	ter	Fre	eq '	16.80	000	0000	0 GHz			_			e: RMS		CE 1 2 3 4 5		Frequency
								Fast 🔸	Trig: Free #Atten: 24		A۱	g Hold	: 100/100	1	PE N N N N N	Ň	
							IFGain	Low	#Atten: 24	t aB					211		A
				~~									Mkr1	19.057	60 GHz	Z	Auto Tune
10 d				Offse f 20.0											20 dBm		
Log	Bially	<i>(</i>	Re	20.0	<u>, , , , , , , , , , , , , , , , , , , </u>	ыш									.20 40	ΗE	
10.0																	0 <b>-</b>
10.0																	Center Freq
0.00			-													11.	16.80000000 GHz
-10.0														• 1	-13:00 dDn		
			-											- • · ·	-15.00 001	-	
-20.0	البين	ب ماهراه				وليواني ب	فليتح وروا	والمتعالم وروارهما	حاطرامه البرامين	والروح والمعر أفاقا	والمحرين الأطعانة	والم الفاقية وروده	فيستغيث القيم والمالحين فا	and the second second	a land a start		Start Freq
-30.0		-											A CONTRACTOR OF A CONTRACTOR OF A CONTRACTOR OF A CONTRACTOR A CONTRAC				•
																н.	13.60000000 GHz
-40.0			-													┨┡╴	
-50.0																	
																н.	Stop Freq
-60.0			-													11.	20.000000000 GHz
-70.0			_													11	20.000000000 GH2
Star	1 13	1 60	in c	Hz										Stop 2	0.000 GHz	16	CF Step
#Re								#\/R\A(	3.0 MHz			2	ween 16		20001 pts		640.000000 MHz
<b><i>m</i>ixe</b>	301			¥11 12				#*0**	5.0 141112				weep to		20001 pt3	· .	Auto Man
MKR	MODE	TRC	SCL			×			Y		FUNCTION	FUI	NCTION WIDTH	FUNCT	ION VALUE		<u>Auto</u> Man
1	Ν	1	f			19.05	57 60 GI	Ηz	-18.220 di	3m							
2																	
3																	Freq Offset
5																	0 Hz
ĕ																	
7																	
8																	
9																	
10 11																	
2	_	I	-		_										>		
													<b>1</b>				
MSG														2			



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

Agilent Spec	trum An	alyzer - Swe	pt SA								
Center I	req :	50 Ω 515.000	000 MH			vse:puls		ALIGN AUTO pe: RMS d: 100/100	TRA	M Apr 21, 2022 CE 1 2 3 4 5 6 PE M WWWWWW	Frequency
10 dB/div		Offset 27	ll dB	PNO: Fast FGain:Low					۔ kr1 755.	80 MHz 09 dBm	Auto Tune
10.0 0.00										- <del>13.00 dDm</del>	Center Freq 515.000000 MHz
-20.0 -30.0 -40.0		(freidstaterenses f			nin a tagan na sa			1- 1-	ten dan lipit pintagan tilatan 23 yeka bit ayan tilatan 24 yeka bit ayan tilatan tang		Start Freq 30.000000 MHz
-50.0 -60.0 -70.0											<b>Stop Freq</b> 1.000000000 GHz
Start 30. #Res BV	1.0	MHz	X	#V	BW 3.0 MH	iz	FUNC	Sweep 1.	.333 ms (2	0000 GHz 0001 pts)	CF Step 97.000000 MHz <u>Auto</u> Man
1 N 2 3 4 5 6	1 f		755.	80 MHz	-28.909	dBm					Freq Offset 0 Hz
7 8 9 10 11											
MSG								<b>Ko</b> stati	IS		L

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

Agilen		ctrur		alyze																
LXI RI			RF		50 Ω	AC	COR			SENS	E:PULS	-			ERMS	04:39		Apr 21, 20		Frequency
Cen	ter	Fre	q 2	1.00	0000	0000		Z 10: Fast		Trig: Fre	e Run		#Avg Avg H				TYP	1234 EM <del>WWM</del>	₩₩	
								io: Fasi iain:Lov		#Atten: 2							DE	TANNN	NN	
															M	(r1 3	172	3 GF	17	Auto Tune
10 d					et 27	dB d <b>Bm</b>												6 dB		
Log	Bialv		Rei	23	.00 0						1							o ub	-	
15.0																			_	Center Freq
5.00																				4.000000000 GHz
																				4.00000000 GH2
-5.00																		-13.00 d	Bm	
-15.0			-	_										-			-			Start Freq
-25.0									<b>▲</b> 1-										-	1.000000000 GHz
-35.0																				1.00000000 GH2
		-						-			-		a second and a second						-	
-45.0																				Stop Freq
-55.0	<u> </u>													_					-	
-65.0																			_	7.000000000 GHz
Star																		000 GH		CF Step
#Re	s B∖	N 1	.0 P	/IHz	2			#V	/BW	3.0 MHz	*			#	Sweep	1.000 :	s (20	)001 pt	S)	600.000000 MHz
MKB	MODE	TRC	SCI			×				Y		FUNC	TION	FIIN	CTION WIDTH	FL	NCTIO	N VALUE	>	<u>Auto</u> Man
1	N	1	f				.172 3	3 GHz		-33.586 d	Bm									
2																				Erog Offoot
4																			- 1	Freq Offset
																			Ξ	0 Hz
5 6 7																			- 1	
8																			-	
8 9																				
10 11																				
<			I	-	_											-	_	>		
MSG																s			2	
																-				



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

Agilent Spect		rzer - Swep											
Center F	RF Freq 10	50 Ω <b>).30000</b>	0000 G			ISE:PUL		#Avg	Type:	LIGN AUTO : RMS 100/100	TRA	M Apr 21, 2022 CE 1 2 3 4 5 6 PE M WWWWW	Frequency
10 dB/div		ffset 27 d 20.00 dE	IFC	NO: Fast Gain:Low							□ 12.397	81 GHz 27 dBm	Auto Tune
10.0 0.00												-13.00 dDm	Center Freq 10.300000000 GHz
-20.0 -30.0					halder for the property light for			a footbiller for a footbiller for a footbiller footbiller footbiller footbiller footbiller footbiller footbille		usaani, gagaanid getaa			<b>Start Freq</b> 7.000000000 GHz
-50.0 -60.0 -70.0													<b>Stop Freq</b> 13.60000000 GHz
Start 7.0 #Res BW	/ 1.0 M		X 40 207 0		BW 3.0 MH		FUNC	TION		veep 12	.00 ms (2	3.600 GHz 20001 pts) ON VALUE	CF Step 660.000000 MHz <u>Auto</u> Man
1 N 2 3 3 5 6 7 8 9 10			12.397 8		-22.827	dBm							Freq Offset 0 Hz
11 MSG					ш					<b>K</b> STATUS	\$	×	

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

		ctrun		alyzer -	Swept :	SA												
LXI R		Ero	RF			xc c 0000			SENS	E:PULSE		#Ava		LIGNAUTO		7 PM Apr 2		Frequency
	ler					I	GHZ PNO: Fa FGain:L		Trig: Fre #Atten: 2					100/100	19.03	DET P N	NNNN	Auto Tune
10 di Log	B/div			Offset 20.0										WIKI I		.356 (		
10.0							_											Center Freq
0.00																		16.80000000 GHz
-10.0															1	1	<del>3.00 dDm</del>	
-20.0	بدلقني	الالتحاط				ا اینست اس	المراجع والمراجع	الانتفادير ومعا		بلغيطا	ا ما ألا م	أفاعتما والعامر الغارب	بالأبحي	iner kantilitetti tira		di na kanadisi	and the second state	Start Freq
-30.0		1		and Makes					-				_		-			13.60000000 GHz
-40.0													-					
-50.0																		Stop Freq
-60.0 -70.0																		20.00000000 GHz
-70.0																		
Star #Re							#	VBW	3.0 MHz				S١	veep 16		20.000 (2000		CF Step 640.000000 MHz
	MODE					×			Y		FUNC	TION		TION WIDTH		CTION VAL		Auto Man
1	Ν	1	f			19.039	36 GH:	z	-18.356 dl	Зm								
3																		Freq Offset
4 5 6																		0 Hz
7																		
8 9																		
10 11																	~	
< MSG														TL STATE			>	
MSG															3			



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

Agilent Spect	trum Analy	rzer - Swep	ot SA									
Center F	_R ⊧ Freq 51	50 Ω 1 <b>5.000</b>	000 MHz			NSE:PUL!		#Avg Ty	ALIGNAUTO pe: RMS d: 100/100	TRA	M Apr 21, 2022 CE 1 2 3 4 5 6 PE M WWWWWW	Frequency
10 dB/div		ffset 27 d 20.00 d	dB	NO: Fast Gain:Low	#Atten					۔ 1kr1 819.	PNNNNN	Auto Tune
10.0 0.00											- <del>13.00 dDm</del>	Center Freq 515.000000 MHz
-20.0 -30.0 -40.0		fiù a chu giv			na hadahat kana ang panih bi Kalang sa pinapanana ang bi			ent matter aller på	(da) , dila misura interna Interna di Santa di S	•1		Start Freq 30.000000 MHz
-50.0 -60.0 -70.0												<b>Stop Freq</b> 1.000000000 GHz
Start 30. #Res BW	/ 1.0 MI	Hz	×		3.0 MH		FUNC		Sweep 1	.333 ms (2	0000 GHz 20001 pts) 0NVALUE	<b>CF Step</b> 97.000000 MHz <u>Auto</u> Man
1 N 2 3 4 5 6 7 7 8 9			819.5	8 MHz	-28.285	dBm					3	Freq Offset 0 Hz
9 10 11 < MSG					iui				<b>K</b> STAT	us		

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

Agilent Spectrum Analyzer - Swept SA				
RL RF 50 Ω AC     Center Freq 4.000000000		E ALIGNAUTO #Avg Type: RMS	04:41:57 PM Apr 21, 2022 TRACE 1 2 3 4 5 6	Frequency
Ref Offset 27 dB	PNO: Fast +++ Trig: Free Run IFGain:Low #Atten: 24 dB	AvgjHold: 5/5	TYPE MWWWWW DET A N N N N N	Auto Tune
10 dB/div Ref 25.00 dBm Log 15.0 5.00			-33.572 dBm	<b>Center Freq</b> 4.000000000 GHz
-15.0 -25.0 -35.0	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		-13,00 dBm	<b>Start Freq</b> 1.000000000 GHz
-45.0 -55.0 -65.0				<b>Stop Freq</b> 7.000000000 GHz
Start 1.000 GHz #Res BW 1.0 MHz	#VBW 3.0 MHz*	#Sweep 1.0	Stop 7.000 GHz 000 s (20001 pts)	<b>CF Step</b> 600.000000 MHz <u>Auto</u> Man
1         N         1         f         3.1           2	88 2 GHz 33.572 dBm		×	Freq Offset 0 Hz
MSG		STATUS		



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

		ctru	m An	alyzer - Sv	vept SA												
<mark>⊮</mark> ℝ Cen		Fre	RF Pq '	ء 50 £ 10.300				7	E:PULSE		#Avg ` AvalH	Туре	LIGN AUTO : RMS 100/100	TRA	M Apr 21, 202 CE 1 2 3 4 5 PE MWWWW	6	Frequency
				Offset 2		PNO: I IFGain:	Fast ↔ Low	#Atten: 24			0,181,1	<u>.</u>		12.861	ET P N N N N	z	Auto Tune
10 di 10.0 0.00			Rei	f 20.00													Center Freq 10.300000000 GHz
-20.0 -30.0 -40.0	a Libula	lation (		ine tet et au faul d'ar die The tet et au faul de la state			u da adatasi kin	fran start between statistics	r, en lista			hint yet i	ر ها شد. او می و هم از می در بار می و می و می و می و می و می		1		<b>Start Freq</b> 7.000000000 GHz
-50.0 -60.0 -70.0																	<b>Stop Freq</b> 13.60000000 GHz
Star #Re	s B	W 1	.0 1	VIHz	X		#VBW	/ 3.0 MHz		FUNC	TION		veep 12	.00 ms (2	3.600 GH 20001 pts 0004406	5)	<b>CF Step</b> 660.000000 MHz <u>Auto</u> Man
1 2 3 4 5 6	N	1	f		12.86	51 46 GH		-23.188 dE	3m								Freq Offset 0 Hz
7 8 9 10 11 <																<ul> <li>Image: A start of the start of</li></ul>	
MSG													<b>K</b> STATUS	5			

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

Agiler		ctru	m An	alyzer	r - Swe	ept SA											
L <b>XI</b> R			RF		50 Ω	AC	CORREC		SENSI	E:PULSE			ALIGN AUTO		M Apr 21, 2022		Frequency
Cen	ter	Fre	ea	16.8	000	0000	0 GH2	2	7				: RMS		CE 1 2 3 4 5 (		Frequency
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							IFGair	n:Low	#Atten: 24	4 dB				L. L.	DELLE INTRUMUNT	N	
													Mkr1	10 005	20 GHz	,	Auto Tune
				Offs									IVINI		18 dBm		
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Star	t 13	3.60	10 G	iHz										Stop 20	).000 GHz		CF Step
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<i>mixe</i>	30			1112				#*0**	5.0 10112				acch 10	.) 6111 00.		4	
MKR	MODE	TRC	SCL			×			Y	F	UNCTION	FUN	CTION WIDTH	FUNCT	ION VALUE	Au	<u>to</u> iviari
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2																	
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8																	
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11															~		
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#### UMTS BAND V-826.4MHz-RMC@30mHz-1GHz@Pass

		ctru	m An	alyzer -	Swep	it SA														
Cen		Fre	RF eq (	515.0	ງ 000	AC	MHz			7	SE:PU			Туре	ALIGN AUTO e: RMS 100/100		04:44:00 Pl TRAC TV	4 Apr 21, 2 2 1 2 3 4 E M <del>M MV</del>	156	Frequency
10 di	B/div			Offset				NO: Fa Gain:L	ast ↔ ow	#Atten: 2				1014.		kr'	1 971. -28.8	=τ  ^Ρ ΝΝΛ <b>19 Μ</b>	Hz	Auto Tune
Log 25.0 15.0 5.00																				Center Freq 515.000000 MHz
-5.00 -15.0 -25.0																		-13.00	•1	Start Freq 30.000000 MHz
-35.0 -45.0 -55.0		n i i i i i i i i i i i i i i i i i i i					*******			iteli (matilin Burghi) 										<b>Stop Freq</b> 1.000000000 GHz
Star #Re:	s B'	W 1	.0	ИНz		×				7 3.0 MH: Y		FUNC	CTION		weep 1.	33:				<b>CF Step</b> 97.000000 MHz <u>Auto</u> Man
1 2 3 4 5 6 7 8 9 10	N	1	f			2	971.19	9 MH:		-28.875 c	<u>IBm</u>									Freq Offset 0 Hz
11 K MSG			-	1								ļ				s			>	

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

Agilent Spectrum Analyzer - Sw	rept SA			
Center Freq 5.0000	00000 GHz	#Avg Type: RMS	04:44:15 PM Apr 21, 2022 TRACE 1 2 3 4 5 6	Frequency
Ref Offset 2 10 dB/div Ref 20.00			r1 5.358 0 GHz -22.612 dBm	Auto Tune
10.0 0.00 -10.0			-13:00 dBm	Center Freq 5.000000000 GHz
-20.0 -30.0 -40.0			nach fan Alain In rann Alfred yn yw ar fan Unig Mar yw ar ywr ar fan y rann y fan Alfred yn yw ar fan y fan Alfred yn ywr ar fan y fan Alfred yn yw ar fan Alfred	Start Fred 1.000000000 GHz
-50.0 -60.0 -70.0				<b>Stop Fred</b> 9.000000000 GHz
Start 1.000 GHz #Res BW 1.0 MHz	#VBW 3.0 MHz	Sweep 13.	Stop 9.000 GHz .33 ms (20001 pts)	<b>CF Step</b> 800.000000 MH2 <u>Auto</u> Mar
1         1         f           2         -         -           3         -         -           4         -         -           5         -         -           6         -         -           7         -         -	5.358 0 GHz -22.612 dBm		B	Freq Offset 0 Hz
8 9 10 10 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1			 ▼	



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

Agiler		ectru			er - Sw	/ept	SA																				
<mark>⊮</mark> ℝ Cen		· Fr	RF eq		50Ω		.c )0	MHz				] _{Tri}	SENSI				Avg T Avg He	Гуре		IS	0		ACE	Apr 21, 1 2 3 M <del>W/</del>	456		Frequency
10 d	B/di	iv			set 27					Fast n:Lov	v ••		tten: 2				- v gji i		1007			959 -28.	DET	9 M	N N N	ſ	Auto Tune
Log 25.0 15.0 5.00																						N					Center Freq 515.000000 MHz
-5.00 -15.0 -25.0														 										-13.0	0 dBm		Start Freq 30.000000 MHz
-35.0 -45.0 -55.0			in ije olde	ul( not	<u>449464</u>						i li se la s				in Anterin		****										<b>Stop Freq</b> 1.00000000 GHz
Star #Re	s E Modi	w	1.0	MH	z		×				/BW		MHz		FUI	NCTIO	N			p 1. WDTH	333	top 1 ms (	(20				CF Step 97.000000 MHz Auto Man
1 2 3 4 5 6	N	1	f				9	59.9	9 1	1Hz		-28.	729 di	<u>3m</u>													Freq Offset 0 Hz
7 8 9 10 11																											
MSG																			<b>K</b>	STATU	s				<u>·</u>		

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

		ctrui		alyzer - S														
LXI RI		_	RF	50			RREC		SENS	E:PULS	Æ			ALIGN AUTO		PM Apr 21, 202		Frequency
Cen	ter	Fre	ed (	5.000	0000	00 GI			Trig: Fre	o Dur				: RMS 100/100		ACE 1 2 3 4 5 YPE M WWWW		Trequency
							NO: Fast Gain:Lov		#Atten: 2		•	0,81	1014.	100/100		DET P N N N N	Ň	
							Gameo										٦l	Auto Tune
				Offset:										IVIN		0 8 GH		
10 di	B/div	,	Re	f 20.00	) dBr	n									-24.1	27 dBn	n	
Log																	٦ľ	
10.0																	Ш	Center Freq
0.00					_												-11	5.00000000 GHz
-10.0																-13.00 dD		
			-									<b>™</b> 1				-13.00 dbi	<u> </u>	
-20.0					<u> </u>							<b>.</b>		1.6			11	Start Freq
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-40.0							1											1.00000000000000
-50.0																	11	Stop Freq
-60.0			-		_					-						_	-11	
-70.0																		9.000000000 GHz
10.0																		
Star	t 1.0	000	GH	17			1								Stop	9.000 GH	71	CF Step
#Re							#∖	/BW	3.0 MHz				S	weep 13		20001 pts		800.000000 MHz
														-				Auto Man
MKR		TRC				×			Y		FUN	CTION	FUN	CTION WIDTH	FUNCT	ION VALUE	^	
<u>1</u> 2	Ν	1	f			5.880	8 GHz		-24.127 d	Bm							ľ	
3																		Freq Offset
4																		0 Hz
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7																		
8																		
9																		
10 11																		
<				ł					1111						1	>	-	
MSG																		
														- North				



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

Agilen		ctru	m Ar	alyz	er - Sv	vept	SA																							
Cen	-	Fre	RF Pq		50 s 5.00		AC 00	MI						SENSE					Гуре	ALIGN 2: RN 100/		)	04:	46:28   TR4 T	ACE	pr 21, 1 2 3 M <del>WW</del>	456		Frequency	
10 di	B/div				set 2 5.00					U: Fa ain:L	ist ⊶ ow			en: 24				. 91				Лk			.3	P N N 8 M	N N N	1	Auto Tu	ne
Log 25.0 15.0 5.00																								1					Center Fr 515.000000 M	- 1
-5.00 -15.0 -25.0			_													 				1		_					0 dBm		Start Fre 30.000000 M	- 1
-35.0 -45.0 -55.0		i (nyi) iy		eși eși in			<b>i fani</b> i	v-aib.	A gaine in a	krię 4									<b>ليرالينا</b>										<b>Stop Fr</b> 1.00000000 G	1
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1 2 3 4 5 6 7	N	1	f					706	.38	MH	z	-2	28.64	48 dE	Зm														Freq Offs 0	set Hz
8 9 10 11 <														Ш						Ū.	STAT	rus					>			

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

Agilent Spectrum Analyzer - Swept S	A				
RL RF 50 Ω AC     Center Freg 5.0000000		SENSE:PULSE	ALIGNAUTO #Avg Type: RMS	04:46:42 PM Apr 21, 2022 TRACE 1 2 3 4 5 6	Frequency
Ref Offset 27 dB	PNO: Fast ↔ IFGain:Low	Trig: Free Run #Atten: 24 dB	Avg Hold: 100/100	түре DET P N N N N (r1 5.884 8 GHz -24.051 dBm	Auto Tune
				-13:00 dDm	Center Freq 5.000000000 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	#VBW	3.0 MHz	Sweep 13	Stop 9.000 GHz 3.33 ms (20001 pts)	<b>CF Step</b> 800.000000 MHz <u>Auto</u> Man
1         N         1         f           2         -         -         -           3         -         -         -           4         -         -         -           5         -         -         -           6         -         -         -           7         -         -         -           8         -         -         -           9         -         -         -           10         -         -         -	5.884 8 GHz	-24.051 dBm			Freq Offset 0 Hz
10 11 ×			STATU	s	



**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.



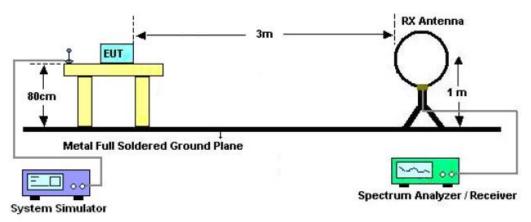
### 5.5.2 RADIATED SPURIOUS EMISSION

#### 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 for maximum emissions 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.

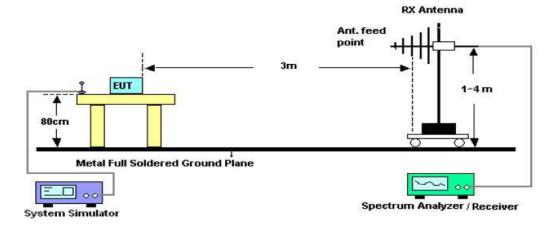
#### 5.5.2.2 TEST SETUP



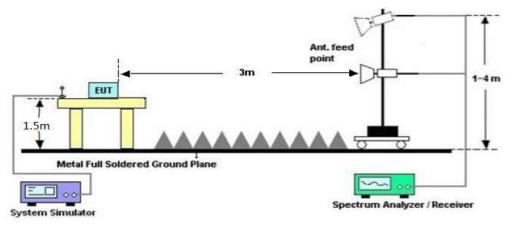


### Radiated Emission Test-Setup Frequency Below 30MHz

RADIATED EMISSION TEST SETUP 30MHz-1000MHz



#### 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 -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:



### 5.5.2.4 MEASUREMENT RESULT

#### Pass

Temperature	<b>24.1</b> ℃	Humidity	58%
Test Engineer	Anna Hu		

#### GSM 850:

	The Worst Test	Results for Channel	128/824.2 MHz	
Frequency	Emission Level	Limits	Margin	Comment
(MHz)	(dBm)	(dBm)	(dB)	Comment
1648.22	-56.21	-13	43.21	Horizontal
3296.64	-42.03	-13	29.03	Horizontal
4945.02	-50.98	-13	37.98	Horizontal
1648.24	-42.05	-13	29.05	Vertical
3296.68	-49.45	-13	36.45	Vertical
4945.06	-46.71	-13	33.71	Vertical

#### PCS 1900:

	The Worst Test Results for Channel 512/1850.2 MHz										
Frequency	Emission Level	Limits	Margin	Comment							
(MHz)	(dBm)	(dBm)	(dB)	Comment							
3759.84	-57.98	-13	44.98	Horizontal							
7519.88	-41.70	-13	28.70	Horizontal							
11279.86	-55.00	-13	42.00	Horizontal							
3759.81	-41.02	-13	28.02	Vertical							
7519.83	-50.30	-13	37.30	Vertical							
11279.88	-43.39	-13	30.39	Vertical							

## WCDMA BAND II:

The Worst Test Results for Channel 9400/1880MHz										
Frequency	Emission Level	Limits	Margin	Comment						
(MHz)	(dBm)	(dBm)	(dB)	Comment						
3759.84	-57.98	-13	44.98	Horizontal						
7519.88	-41.70	-13	28.70	Horizontal						
11279.86	-55.00	-13	42.00	Horizontal						
3759.81	-41.02	-13	28.02	Vertical						
7519.83	-50.30	-13	37.30	Vertical						
11279.88	-43.39	-13	30.39	Vertical						



### WCDMA BAND V:

The Worst Test Results for Channel 4132/826.4MHz									
Frequency	Emission Level	Limits	Margin	Comment					
(MHz)	(dBm)	(dBm)	(dB)	Comment					
1649.89	-56.62	-13	43.62	Horizontal					
3301.13	-40.01	-13	27.01	Horizontal					
4953.85	-53.46	-13	40.46	Horizontal					
1650.08	-41.56	-13	28.56	Vertical					
3302.47	-49.48	-13	36.48	Vertical					
4955.82	-43.40	-13	30.40	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 -30  $^{\circ}$ 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  $-30^{\circ}$ 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  $-30^{\circ}$ C. Allow at least 1 1/2 hours at each temperature, unpowered, before making measurements.

9 At all temperature levels hold the temperature to +/-  $0.5\,^\circ\!\mathrm{C}$  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 3.5VDC 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

Pass

## For GSM

### Test Band=GSM850/GSM1900

			Volta	ge			
		Voltage	Temperature	Deviation	Deviation	Limit	
Band	Channel	(Vdc)	(°C)	(Hz)	(ppm)	(ppm)	Verdict
GSM850	128	VL	TN	11.84	0.0142	2.5	PASS
GSM850	128	VN	TN	8.86	0.0106	2.5	PASS
GSM850	128	VH	TN	13.13	0.0157	2.5	PASS
GSM850	190	VL	TN	7.94	0.0095	2.5	PASS
GSM850	190	VN	TN	12.07	0.0144	2.5	PASS
GSM850	190	VH	TN	8.59	0.0103	2.5	PASS
GSM850	251	VL	TN	9.44	0.0113	2.5	PASS
GSM850	251	VN	TN	7.46	0.0089	2.5	PASS
GSM850	251	VH	TN	10.61	0.0127	2.5	PASS
GPRS850	128	VL	TN	2.88	0.0034	2.5	PASS
GPRS850	128	VN	TN	4.19	0.0050	2.5	PASS
GPRS850	128	VH	TN	5.67	0.0068	2.5	PASS
GPRS850	190	VL	TN	5.87	0.0070	2.5	PASS
GPRS850	190	VN	TN	5.01	0.0060	2.5	PASS
GPRS850	190	VH	TN	1.67	0.0020	2.5	PASS
GPRS850	251	VL	TN	5.84	0.0070	2.5	PASS
GPRS850	251	VN	TN	6.5	0.0078	2.5	PASS
GPRS850	251	VH	TN	5.53	0.0066	2.5	PASS
EGPRS850	128	VL	TN	13.92	0.0167	2.5	PASS
EGPRS850	128	VN	TN	11.44	0.0137	2.5	PASS
EGPRS850	128	VH	TN	13.91	0.0166	2.5	PASS
EGPRS850	190	VL	TN	12.36	0.0148	2.5	PASS
EGPRS850	190	VN	TN	11.77	0.0141	2.5	PASS
EGPRS850	190	VH	TN	11.64	0.0139	2.5	PASS
EGPRS850	251	VL	TN	13.39	0.0160	2.5	PASS
EGPRS850	251	VN	TN	11	0.0132	2.5	PASS
EGPRS850	251	VH	TN	9.28	0.0111	2.5	PASS
GSM1900	512	VL	TN	13.36	0.0071	2.5	PASS
GSM1900	512	VN	TN	12.96	0.0069	2.5	PASS
GSM1900	512	VH	TN	12.82	0.0068	2.5	PASS
GSM1900	661	VL	TN	21.91	0.0117	2.5	PASS
GSM1900	661	VN	TN	24.53	0.0130	2.5	PASS
GSM1900	661	VH	TN	26.12	0.0139	2.5	PASS
GSM1900	810	VL	TN	29.79	0.0158	2.5	PASS
GSM1900	810	VN	TN	27.05	0.0144	2.5	PASS
GSM1900	810	VH	TN	26.84	0.0143	2.5	PASS
GPRS1900	512	VL	TN	7.72	0.0041	2.5	PASS



GPRS1900	512	VN	TN	9.94	0.0053	2.5	PASS
GPRS1900	512	VH	TN	13.08	0.0070	2.5	PASS
GPRS1900	661	VL	TN	24.12	0.0128	2.5	PASS
GPRS1900	661	VN	TN	27.19	0.0145	2.5	PASS
GPRS1900	661	VH	TN	28.46	0.0151	2.5	PASS
GPRS1900	810	VL	TN	27.17	0.0145	2.5	PASS
GPRS1900	810	VN	TN	21.25	0.0113	2.5	PASS
GPRS1900	810	VH	TN	24.38	0.0130	2.5	PASS
EGPRS1900	512	VL	TN	30.75	0.0164	2.5	PASS
EGPRS1900	512	VN	TN	27.75	0.0148	2.5	PASS
EGPRS1900	512	VH	TN	31.86	0.0169	2.5	PASS
EGPRS1900	661	VL	TN	32.62	0.0174	2.5	PASS
EGPRS1900	661	VN	TN	33.15	0.0176	2.5	PASS
EGPRS1900	661	VH	TN	37.47	0.0199	2.5	PASS
EGPRS1900	810	VL	TN	31.7	0.0169	2.5	PASS
EGPRS1900	810	VN	TN	27.83	0.0148	2.5	PASS
EGPRS1900	810	VH	TN	28.76	0.0153	2.5	PASS

			Tempera	ature			
Band	Channel	Voltage	Temperature	Deviation	Deviation	Limit	Verdict
Danu	Channel	(Vdc)	(°C)	(Hz)	(ppm)	(ppm)	Veruici
GSM850	128	VN	-30	10.84	0.0130	2.5	PASS
GSM850	128	VN	-20	8.02	0.0096	2.5	PASS
GSM850	128	VN	-10	9.96	0.0119	2.5	PASS
GSM850	128	VN	0	9.04	0.0108	2.5	PASS
GSM850	128	VN	10	10.94	0.0131	2.5	PASS
GSM850	128	VN	20	8.91	0.0107	2.5	PASS
GSM850	128	VN	30	8.89	0.0106	2.5	PASS
GSM850	128	VN	40	9.67	0.0116	2.5	PASS
GSM850	128	VN	50	8.99	0.0108	2.5	PASS
GSM850	190	VN	-30	8.87	0.0106	2.5	PASS
GSM850	190	VN	-20	12.12	0.0145	2.5	PASS
GSM850	190	VN	-10	7.41	0.0089	2.5	PASS
GSM850	190	VN	0	10.11	0.0121	2.5	PASS
GSM850	190	VN	10	8.21	0.0098	2.5	PASS
GSM850	190	VN	20	8.11	0.0097	2.5	PASS
GSM850	190	VN	30	9.77	0.0117	2.5	PASS
GSM850	190	VN	40	9.43	0.0113	2.5	PASS
GSM850	190	VN	50	9.76	0.0117	2.5	PASS
GSM850	251	VN	-30	9.08	0.0109	2.5	PASS
GSM850	251	VN	-20	8.43	0.0101	2.5	PASS
GSM850	251	VN	-10	7.78	0.0093	2.5	PASS
GSM850	251	VN	0	9.8	0.0117	2.5	PASS
GSM850	251	VN	10	6.45	0.0077	2.5	PASS
GSM850	251	VN	20	6.24	0.0075	2.5	PASS
GSM850	251	VN	30	6.57	0.0079	2.5	PASS
GSM850	251	VN	40	12.59	0.0151	2.5	PASS



GSM850	251	VN	50	9.38	0.0112	2.5	PASS
GPRS850	128	VN	-30	4.84	0.0058	2.5	PASS
GPRS850	128	VN	-20	9.36	0.0112	2.5	PASS
GPRS850	128	VN	-10	8.7	0.0104	2.5	PASS
GPRS850	128	VN	0	10.14	0.0121	2.5	PASS
GPRS850	128	VN	10	8.94	0.0107	2.5	PASS
GPRS850	128	VN	20	7.68	0.0092	2.5	PASS
GPRS850	128	VN	30	8.83	0.0106	2.5	PASS
GPRS850	128	VN	40	7.9	0.0094	2.5	PASS
GPRS850	128	VN	50	9.12	0.0109	2.5	PASS
GPRS850	190	VN	-30	5.37	0.0064	2.5	PASS
GPRS850	190	VN	-20	7.19	0.0086	2.5	PASS
GPRS850	190	VN	-10	3.69	0.0044	2.5	PASS
GPRS850	190	VN	0	0.74	0.0009	2.5	PASS
GPRS850	190	VN	10	-0.21	-0.0003	2.5	PASS
GPRS850	190	VN	20	2.69	0.0032	2.5	PASS
GPRS850	190	VN	30	-1.03	-0.0012	2.5	PASS
GPRS850	190	VN	40	0.07	0.0001	2.5	PASS
GPRS850	190	VN	50	-0.31	-0.0004	2.5	PASS
GPRS850	251	VN	-30	9.79	0.0117	2.5	PASS
GPRS850	251	VN	-20	7.83	0.0094	2.5	PASS
GPRS850	251	VN	-10	7.65	0.0092	2.5	PASS
GPRS850	251	VN	0	7.32	0.0088	2.5	PASS
GPRS850	251	VN	10	7.31	0.0087	2.5	PASS
GPRS850	251	VN	20	5.53	0.0066	2.5	PASS
GPRS850	251	VN	30	2.91	0.0035	2.5	PASS
GPRS850	251	VN	40	5	0.0060	2.5	PASS
GPRS850	251	VN	50	5.85	0.0070	2.5	PASS
EGPRS850	128	VN	-30	10.7	0.0128	2.5	PASS
EGPRS850	128	VN	-20	9.28	0.0111	2.5	PASS
EGPRS850	128	VN	-10	12.1	0.0145	2.5	PASS
EGPRS850	128	VN	0	12.52	0.0150	2.5	PASS
EGPRS850	128	VN	10	9.35	0.0112	2.5	PASS
EGPRS850	128	VN	20	8.01	0.0096	2.5	PASS
EGPRS850	128	VN	30	9.26	0.0111	2.5	PASS
EGPRS850	128	VN	40	10	0.0120	2.5	PASS
EGPRS850	128	VN	50	13.99	0.0167	2.5	PASS
EGPRS850	190	VN	-30	10.98	0.0131	2.5	PASS
EGPRS850	190	VN	-20	10.46	0.0125	2.5	PASS
EGPRS850	190	VN	-10	8.46	0.0101	2.5	PASS
EGPRS850	190	VN	0	8.75	0.0105	2.5	PASS
EGPRS850	190	VN	10	9.21	0.0110	2.5	PASS
EGPRS850	190	VN	20	9.26	0.0111	2.5	PASS
EGPRS850	190	VN	30	7.91	0.0095	2.5	PASS
EGPRS850	190	VN	40	8.51	0.0102	2.5	PASS
EGPRS850	190	VN	50	8.09	0.0097	2.5	PASS
EGPRS850	251	VN	-30	11.41	0.0136	2.5	PASS



EGPRS850	251	VN	-20	10.53	0.0126	2.5	PASS
EGPRS850	251	VN	-10	10.68	0.0128	2.5	PASS
EGPRS850	251	VN	0	8.11	0.0097	2.5	PASS
EGPRS850	251	VN	10	9.73	0.0116	2.5	PASS
EGPRS850	251	VN	20	7.57	0.0091	2.5	PASS
EGPRS850	251	VN	30	8.01	0.0096	2.5	PASS
EGPRS850	251	VN	40	9.47	0.0113	2.5	PASS
EGPRS850	251	VN	50	6.87	0.0082	2.5	PASS
GSM1900	512	VN	-30	12.97	0.0069	2.5	PASS
GSM1900	512	VN	-20	11.04	0.0059	2.5	PASS
GSM1900	512	VN	-10	8.01	0.0043	2.5	PASS
GSM1900	512	VN	0	11.08	0.0059	2.5	PASS
GSM1900	512	VN	10	9.02	0.0048	2.5	PASS
GSM1900	512	VN	20	6.71	0.0036	2.5	PASS
GSM1900	512	VN	30	9.25	0.0049	2.5	PASS
GSM1900	512	VN	40	11.97	0.0064	2.5	PASS
GSM1900	512	VN	50	10.06	0.0054	2.5	PASS
GSM1900	661	VN	-30	26.51	0.0141	2.5	PASS
GSM1900	661	VN	-20	22.25	0.0118	2.5	PASS
GSM1900	661	VN	-10	23.14	0.0123	2.5	PASS
GSM1900	661	VN	0	25.03	0.0133	2.5	PASS
GSM1900	661	VN	10	24.2	0.0129	2.5	PASS
GSM1900	661	VN	20	24.12	0.0128	2.5	PASS
GSM1900	661	VN	30	28.09	0.0149	2.5	PASS
GSM1900	661	VN	40	22.82	0.0121	2.5	PASS
GSM1900	661	VN	50	26.82	0.0143	2.5	PASS
GSM1900	810	VN	-30	31.25	0.0166	2.5	PASS
GSM1900	810	VN	-20	25.75	0.0137	2.5	PASS
GSM1900	810	VN	-10	26.02	0.0138	2.5	PASS
GSM1900	810	VN	0	22.4	0.0119	2.5	PASS
GSM1900	810	VN	10	26.13	0.0139	2.5	PASS
GSM1900	810	VN	20	25.24	0.0134	2.5	PASS
GSM1900	810	VN	30	28.97	0.0154	2.5	PASS
GSM1900	810	VN	40	28.54	0.0152	2.5	PASS
GSM1900	810	VN	50	26.96	0.0143	2.5	PASS
GPRS1900	512	VN	-30	10.94	0.0058	2.5	PASS
GPRS1900	512	VN	-20	12.73	0.0068	2.5	PASS
GPRS1900	512	VN	-10	17.64	0.0094	2.5	PASS
GPRS1900	512	VN	0	17.85	0.0095	2.5	PASS
GPRS1900	512	VN	10	16.81	0.0089	2.5	PASS
GPRS1900	512	VN	20	11.88	0.0063	2.5	PASS
GPRS1900	512	VN	30	16.67	0.0089	2.5	PASS
GPRS1900	512	VN	40	21.08	0.0112	2.5	PASS
GPRS1900	512	VN	50	18.39	0.0098	2.5	PASS
GPRS1900	661	VN	-30	27.16	0.0144	2.5	PASS
GPRS1900	661	VN	-20	26.64	0.0142	2.5	PASS
GPRS1900	661	VN	-10	25.13	0.0134	2.5	PASS



GPRS1900	661	VN	0	30.02	0.0160	2.5	PASS
GPRS1900	661	VN	10	26.04	0.0139	2.5	PASS
GPRS1900	661	VN	20	26	0.0138	2.5	PASS
GPRS1900	661	VN	30	30.42	0.0162	2.5	PASS
GPRS1900	661	VN	40	21.13	0.0112	2.5	PASS
GPRS1900	661	VN	50	27.5	0.0146	2.5	PASS
GPRS1900	810	VN	-30	22.71	0.0121	2.5	PASS
GPRS1900	810	VN	-20	24.02	0.0128	2.5	PASS
GPRS1900	810	VN	-10	27.64	0.0147	2.5	PASS
GPRS1900	810	VN	0	28.75	0.0153	2.5	PASS
GPRS1900	810	VN	10	34.5	0.0184	2.5	PASS
GPRS1900	810	VN	20	26.05	0.0139	2.5	PASS
GPRS1900	810	VN	30	27.14	0.0144	2.5	PASS
GPRS1900	810	VN	40	29.68	0.0158	2.5	PASS
GPRS1900	810	VN	50	25.79	0.0137	2.5	PASS
EGPRS1900	512	VN	-30	33.73	0.0179	2.5	PASS
EGPRS1900	512	VN	-20	36.76	0.0196	2.5	PASS
EGPRS1900	512	VN	-10	36.03	0.0192	2.5	PASS
EGPRS1900	512	VN	0	30.56	0.0163	2.5	PASS
EGPRS1900	512	VN	10	30.64	0.0163	2.5	PASS
EGPRS1900	512	VN	20	31.39	0.0167	2.5	PASS
EGPRS1900	512	VN	30	32.98	0.0175	2.5	PASS
EGPRS1900	512	VN	40	27.43	0.0146	2.5	PASS
EGPRS1900	512	VN	50	33.27	0.0177	2.5	PASS
EGPRS1900	661	VN	-30	32.06	0.0171	2.5	PASS
EGPRS1900	661	VN	-20	29.67	0.0158	2.5	PASS
EGPRS1900	661	VN	-10	32.49	0.0173	2.5	PASS
EGPRS1900	661	VN	0	29.93	0.0159	2.5	PASS
EGPRS1900	661	VN	10	28.8	0.0153	2.5	PASS
EGPRS1900	661	VN	20	29.06	0.0155	2.5	PASS
EGPRS1900	661	VN	30	30.99	0.0165	2.5	PASS
EGPRS1900	661	VN	40	29.99	0.0160	2.5	PASS
EGPRS1900	661	VN	50	29.68	0.0158	2.5	PASS
EGPRS1900	810	VN	-30	28.54	0.0152	2.5	PASS
EGPRS1900	810	VN	-20	25.26	0.0134	2.5	PASS
EGPRS1900	810	VN	-10	28.24	0.0150	2.5	PASS
EGPRS1900	810	VN	0	25.38	0.0135	2.5	PASS
EGPRS1900	810	VN	10	23.4	0.0124	2.5	PASS
EGPRS1900	810	VN	20	26.06	0.0139	2.5	PASS
EGPRS1900	810	VN	30	28.97	0.0154	2.5	PASS
EGPRS1900	810	VN	40	27.8	0.0148	2.5	PASS
EGPRS1900	810	VN	50	26.43	0.0141	2.5	PASS



#### For WCDMA

## Test Band=WCDMA850/WCDMA1900

	Voltage										
Band	Channel	Voltage (Vdc)	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict				
Band II	9262	VL	TN	-24.38	-0.0130	2.5	PASS				
Band II	9262	VN	TN	-27.22	-0.0145	2.5	PASS				
Band II	9262	VH	TN	-27.17	-0.0145	2.5	PASS				
Band II	9400	VL	TN	-22.41	-0.0119	2.5	PASS				
Band II	9400	VN	TN	-27.41	-0.0146	2.5	PASS				
Band II	9400	VH	TN	-23.47	-0.0125	2.5	PASS				
Band II	9538	VL	TN	-25.31	-0.0135	2.5	PASS				
Band II	9538	VN	TN	-25.71	-0.0137	2.5	PASS				
Band II	9538	VH	TN	-27.56	-0.0147	2.5	PASS				
Band V	4132	VL	TN	-11.32	-0.0135	2.5	PASS				
Band V	4132	VN	TN	-12.24	-0.0146	2.5	PASS				
Band V	4132	VH	TN	-13.35	-0.0160	2.5	PASS				
Band V	4182	VL	TN	-3.79	-0.0045	2.5	PASS				
Band V	4182	VN	TN	-8.1	-0.0097	2.5	PASS				
Band V	4182	VH	TN	-13.01	-0.0156	2.5	PASS				
Band V	4233	VL	TN	-7.91	-0.0095	2.5	PASS				
Band V	4233	VN	TN	-9.08	-0.0109	2.5	PASS				
Band V	4233	VH	TN	-19.54	-0.0234	2.5	PASS				

			Temper	ature			
Band	Channel	Voltage	Temperature	Deviation	Deviation	Limit	Verdict
		(Vdc)	(°C)	(Hz)	(ppm)	(ppm)	
Band II	9262	VN	-30	-21.33	-0.0113	2.5	PASS
Band II	9262	VN	-20	-21.18	-0.0113	2.5	PASS
Band II	9262	VN	-10	-29.01	-0.0154	2.5	PASS
Band II	9262	VN	0	-20.02	-0.0106	2.5	PASS
Band II	9262	VN	10	-24.42	-0.0130	2.5	PASS
Band II	9262	VN	20	-26.85	-0.0143	2.5	PASS
Band II	9262	VN	30	-26.76	-0.0142	2.5	PASS
Band II	9262	VN	40	-16.98	-0.0090	2.5	PASS
Band II	9262	VN	50	-24.92	-0.0133	2.5	PASS
Band II	9400	VN	-30	-28.18	-0.0150	2.5	PASS
Band II	9400	VN	-20	-22.89	-0.0122	2.5	PASS
Band II	9400	VN	-10	-25.96	-0.0138	2.5	PASS
Band II	9400	VN	0	-24.43	-0.0130	2.5	PASS
Band II	9400	VN	10	-19.75	-0.0105	2.5	PASS
Band II	9400	VN	20	-25.6	-0.0136	2.5	PASS
Band II	9400	VN	30	-20.07	-0.0107	2.5	PASS
Band II	9400	VN	40	-21.58	-0.0115	2.5	PASS
Band II	9400	VN	50	-18.84	-0.0100	2.5	PASS
Band II	9538	VN	-30	-24.44	-0.0130	2.5	PASS



Band II	9538	VN	-20	-22.06	-0.0117	2.5	PASS
Band II	9538	VN	-10	-27.91	-0.0148	2.5	PASS
Band II	9538	VN	0	-20.73	-0.0110	2.5	PASS
Band II	9538	VN	10	-23.24	-0.0124	2.5	PASS
Band II	9538	VN	20	-24.7	-0.0131	2.5	PASS
Band II	9538	VN	30	-22.42	-0.0119	2.5	PASS
Band II	9538	VN	40	-22.12	-0.0118	2.5	PASS
Band II	9538	VN	50	-22.04	-0.0117	2.5	PASS
Band V	4132	VN	-30	-9.38	-0.0112	2.5	PASS
Band V	4132	VN	-20	-11.62	-0.0139	2.5	PASS
Band V	4132	VN	-10	-10.33	-0.0124	2.5	PASS
Band V	4132	VN	0	-13.11	-0.0157	2.5	PASS
Band V	4132	VN	10	-11.21	-0.0134	2.5	PASS
Band V	4132	VN	20	-14.27	-0.0171	2.5	PASS
Band V	4132	VN	30	-9.96	-0.0119	2.5	PASS
Band V	4132	VN	40	-11.14	-0.0133	2.5	PASS
Band V	4132	VN	50	-12.99	-0.0155	2.5	PASS
Band V	4182	VN	-30	-13.87	-0.0166	2.5	PASS
Band V	4182	VN	-20	-9.79	-0.0117	2.5	PASS
Band V	4182	VN	-10	-11.67	-0.0140	2.5	PASS
Band V	4182	VN	0	-6.71	-0.0080	2.5	PASS
Band V	4182	VN	10	-10.64	-0.0127	2.5	PASS
Band V	4182	VN	20	-14.6	-0.0175	2.5	PASS
Band V	4182	VN	30	-5.55	-0.0066	2.5	PASS
Band V	4182	VN	40	-6.06	-0.0072	2.5	PASS
Band V	4182	VN	50	-9.01	-0.0108	2.5	PASS
Band V	4233	VN	-30	-9.92	-0.0119	2.5	PASS
Band V	4233	VN	-20	-7.02	-0.0084	2.5	PASS
Band V	4233	VN	-10	-10.02	-0.0120	2.5	PASS
Band V	4233	VN	0	-10.09	-0.0121	2.5	PASS
Band V	4233	VN	10	-12.37	-0.0148	2.5	PASS
Band V	4233	VN	20	-4.39	-0.0053	2.5	PASS
Band V	4233	VN	30	-7.66	-0.0092	2.5	PASS
Band V	4233	VN	40	-2.37	-0.0028	2.5	PASS
Band V	4233	VN	50	-8.74	-0.0105	2.5	PASS





# 6 APPENDIX A: PHOTOGRAPHS OF TEST SETUP

Radiated Emission Above 1GHz



----END OF REPORT----