

CFR 47 FCC PART 22 H CFR 47 FCC PART 24 E

TEST REPORT

For

5G Smart Phone

MODEL NUMBER: S6702X

REPORT NUMBER: 4791041023-1-RF-6

ISSUE DATE: Jan. 12, 2024

FCC ID:2ADINS6702X

Prepared for

Sun Cupid Technology (HK) Ltd. 16/F, CEO Tower, 77 Wing Hong St, Cheung Sha Wan, Kowloon Hong Kong

Prepared by

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Revision History

Rev.	Issue Date	Revisions	Revised By
V0	October 22, 2023	Initial Issue	\

Note:

1. This test report is only published to and used by the applicant, and it is not for evidence purpose in China.

2. The measurement result for the sample received is <Pass> according to < CFR 47 FCC PART 22 H >< CFR 47 FCC PART 24 E> > < when <Simple Acceptance> decision rule is applied.



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1. ATTESTATION OF TEST RESULTS

Applicant Information

Company Name:	Sun Cupid Technology (HK) Ltd.
Address:	16/F, CEO Tower, 77 Wing Hong St, Cheung Sha Wan,
	Kowloon Hong Kong

Manufacturer Information

Company Name:	Sun Cupid Technology (HK) Ltd.
Address:	16/F, CEO Tower, 77 Wing Hong St, Cheung Sha Wan, Kowloon Hong Kong
EUT Information	
EUT Name:	5G Smart Phone
Model:	S6702X
Series Model:	B30 Pro, NUU B30 Pro
Brand:	NUU
Sample Received Date:	October 26, 2023
Sample Status:	Normal
Sample ID:	6616020
Date of Tested:	Oct. 26, 2023 to Jan. 5, 2024

APPLICABLE STANDARDS					
STANDARD TEST RESULTS					
CFR 47 FCC PART 22 H	PASS				
CFR 47 FCC PART 24 E	PASS				

Prepared By:

James Qin Project Engineer

Approved By:

ephentin

Stephen Guo Operations Manager

Checked By:

Sum

Denny Huang Senior Project Engineer



2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.26-2015, 971168 D01 Power Meas License Digital Systems v03r01, 971168 D02 Misc Rev Approv License Devices v02r01, 412172 D01 v01r01 Determining ERP and EIRP, CFR 47 FCC Part 2, Part 22 H, Part 24 E.

3. FACILITIES AND ACCREDITATION

	A2LA (Certificate No.: 4102.01)		
	UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch.		
	has been assessed and proved to be in compliance with A2LA.		
	FCC (FCC Designation No.: CN1187)		
	UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch.		
	Has been recognized to perform compliance testing on equipment subject		
	to the Commission's Delcaration of Conformity (DoC) and Certification		
	rules		
	ISED (Company No.: 21320)		
Accreditation	UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch.		
Certificate	has been registered and fully described in a report filed with ISED.		
The Company Number is 21320 and the test lab Conformity Asse Body Identifier (CABID) is CN0046.			
	UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch.		
	has been assessed and proved to be in compliance with VCCI, the		
	Membership No. is 3793.		
	Facility Name:		
	Chamber D, the VCCI registration No. is G-20192 and R-20202.		
	Shielding Room B, the VCCI registration No. is C-20153 and T-20155.		

Note 1: All tests measurement facilities use to collect the measurement data are located at Building 10, Innovation Technology Park, Song Shan Lake Hi tech Development Zone, Dongguan, 523808, China

Note 2: The test anechoic chamber in UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch had been calibrated and compared to the open field sites and the test anechoic chamber is shown to be equivalent to or worst case from the open field site.

Note 3: For below 30 MHz, lab had performed measurements at test anechoic chamber and comparing to measurements obtained on an open field site. And these measurements below 30 MHz had been correlated to measurements performed on an OFS.



4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations and is traceable to recognize national standards.

4.2. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

Test Item	Uncertainty			
Conduction emission	3.62 dB			
Radiated Emission (Included Fundamental Emission) (9 kHz ~ 30 MHz)	2.2 dB			
Radiated Emission (Included Fundamental Emission) (30 MHz ~ 1 GHz)	4.00 dB			
	5.78 dB (1 GHz-18 GHz)			
Radiated Emission (Included Fundamental Emission) (1 GHz to 40 GHz)	5.23dB (18 GHz-26 GHz)			
	5.64 dB (26 GHz-40 GHz)			
Bandwidth 1.1 %				
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.				



5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

EUT Name:	5G Smart Phone
Model:	S6702X
Series Model:	B30 Pro, NUU B30 Pro
Model Difference:	B30 Pro, NUU B30 Pro have the same technical construction including circuit diagram, PCB Layout, components and component layout, all electrical construction and mechanical construction with S6702X. The difference lies only the model number. all these changes do not degrade the unwanted emissions of the certified product.

5.2. TEST CHANNEL CONFIGURATION

Band	Mode	Low	Middle	High
GSM850	GRPS/EGPRS	128	190	251
63101050	GRF3/EGFR3	824.2 MHz	836.6 MHz	848.8 MHz
CSM1000		512	661	810
GSM1900	GRPS/EGPRS	1850.2 MHz	1880.0 MHz	1909.8 MHz



5.3. MAXIMUM AVERAGE OUTPUT POWER

GSM 850						
Part 22H						
ERP Limit(W)	7					
Antenna Gain (dBi)	-3.9					
Mode		Frequency Range (MHz)	Conducted Average power (dBm)	ERP (W)	99% OBW (MHz)	Emission Designator
GSM		824.2 ~ 848.8	32.44	0.436	0.248	248KGXW
GRPS(GMSK)		824.2 ~ 848.8	32.59	0.451	0.246	246KGXW
EGPRS(8PSK)	824.2 ~ 848.8	26.22	0.104	0.251	251KG7W

GSM 1900						
Part 24						
EIRP Limit(W)	2.0					
Antenna Gain (dBi)	-0.9					
Mode		Frequency Range (MHz)	Conducted Average power (dBm)	EIRP (W)	99% OBW (MHz)	Emission Designator
GSM		1850.2 ~ 1909.8	28.18	0.326	0.243	243KGXW
GRPS(GMSK)		1850.2 ~ 1909.8	28.23	0.541	0.243	243KGXW
EGPRS(8PSK)		1850.2 ~ 1909.8	24.34	0.334	0.248	248KG7W



5.4. WORST-CASE CONFIGURATION AND MODE

The radiated spurious emissions measurements were carried out in semi-anechoic chamber with 3-meter test range, and EUT was investigated in three orthogonal orientations X, Y and Z. It was determined that X orientation was the worst-case orientation.

Radiated spurious emissions were investigated below 30 MHz, 30 MHz - 1 GHz and above 1 GHz. There were no emissions found on below 1GHz and above 18 GHz, the emissions between 1 GHz – 18 GHz were tested at the low, mid, high channel and the worst configuration.

For GSM850/1900, GPRS worst results are shown in test report.



5.5. DESCRIPTION OF AVAILABLE ANTENNAS

Antenna	Band	Antenna Type	MAX Antenna Gain (dBi)
Ant0	GSM850	FPC	-3.9
Ant0	GSM1900	FPC	-0.9

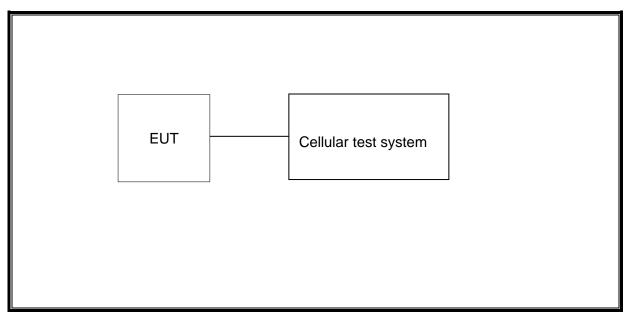
Band	Transmit and Receive Mode	Description
GSM850	⊠1TX, 2RX	Ant0 antenna can be used as transmitting/receiving antenna, DIV antenna can be used as receiving antenna
GSM1900	⊠1TX, 2RX	Ant0 antenna can be used as transmitting/receiving antenna, DIV antenna can be used as receiving antenna

Note: The value of the antenna gain was declared by customer.

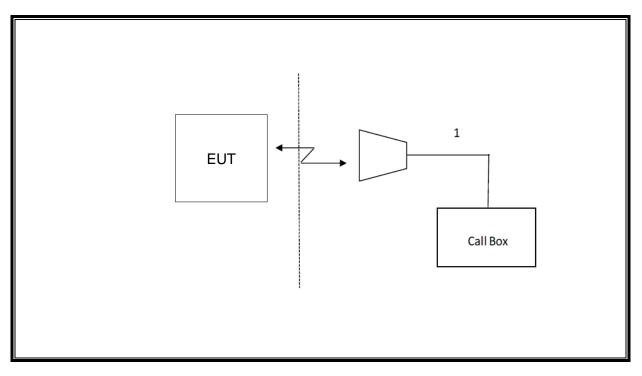


5.6. DESCRIPTION OF TEST SETUP

Conducted



Radiated





6. MEASURING INSTRUMENT AND SOFTWARE USED

	Antenna Terminal Test								
	Instrument								
Used	Equipment	Manufacturer	Мос	lel No.	Se	erial N	۱o.	Last Cal.	Next Cal.
\checkmark	Spectrum Analyzer	R&S	FS	SV40	S42	2060	0001	Oct.12, 2023	Oct.11, 2024
V	Wideband Radio Communication Tester	R&S	СМ	W500	1	5552	3	Oct.12, 2023	Oct.11, 2024
\checkmark	DC Power Supply	Array	36	62A	A1	5120)15	Oct.12, 2023	Oct.11, 2024
			So	oftware					
Used	Descript	tion	Ma	nufactu	irer		1	Name	Version
	Tonsend Cellular	Test System	Т	onsen	b	JS1		RF Auto Test	3.1.46
Radiated Test									
Instrument									
Used	Equipment	Manufacturer	Мос	Model No. Serial No.		Last Cal.	Next Cal.		
\checkmark	MXE EMI Receiver	KESIGHT	N9	038A	MY56400036		0036	Oct.12, 2023	Oct.11, 2024
V	Hybrid Log Periodic Antenna	TDK		HLP- 3003C 130959		9	Aug.02, 2021	Aug.01, 2024	
\checkmark	Preamplifier	HP	84	47D	294	4A09	099	Oct.12, 2023	Oct.11, 2024
	EMI Measurement Receiver	R&S	ES	SR26	101377		7	Oct.12, 2023	Oct.11, 2024
\checkmark	Horn Antenna	TDK	HRN	V-0118	1	3094	-0	July 20, 2021	July 19, 2024
\checkmark	Horn Antenna	Schwarzbeck	BBH	A9170		697		July 20, 2021	July 19, 2024
V	Preamplifier	TDK		\-02- 118			7	Oct.12, 2023	Oct.11, 2024
V	Preamplifier	TDK	PA	-02-2		RS-30 00003		Oct.12, 2023	Oct.11, 2024
\checkmark	Loop antenna	Schwarzbeck	15	519B	(30000	8	Dec.14, 2021	Dec.13, 2024
Ø	High Pass Filter	Wi	WHKX10- 2700- 3000- 18000- 40SS			23		Oct.12, 2023	Oct.11, 2024
			Sc	oftware					
Used	Desci	iption		Manuf	factu	rer		Name	Version
	Test Software for R	adiated disturba	ance	Fa	rad			EZ-EMC	Ver. UL-3A1



7. ANTENNA TERMINAL TEST RESULTS

7.1. EFFECTIVE (ISOTROPIC) RADIATED POWER OF TRANSMITTER

RULE PART(S)

FCC: §2.1046, §22.913, §24.232

LIMITS

22.913(a) The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts.

24.232(c) Mobile/portable stations are limited to 2 watts e.i.r.p. peak power and the equipment must employ means to limit the power to the minimum necessary for successful communications.

27.50(c) Portable stations (hand-held devices) in the 600 MHz uplink band and the 698-746 MHz band, and fixed and mobile stations in the 600 MHz uplink band are limited to 3 watts ERP. 27.50(d) Fixed, mobile, and portable (hand-held) stations operating in the 1710-1755 MHz band and mobile and portable stations operating in the 1695-1710 MHz and 1755-1780 MHz bands are limited to 1 watts EIRP.

27.50(h) Mobile stations are limited to 2.0 watts EIRP. All user stations are limited to 2.0 watts transmitter output power.

In addition, when the transmitter power is measured in terms of average value, the peak-toaverage ratio of the power shall not exceed 13 dB.

TEST PROCEDURE

Refer to ANSI C63.26:2015 and KDB 971168 D01 Section 5.6

ERP/ EIRP = PMeas + GT - LC

where:

ERP or EIRP = effective or equivalent isotropically radiated power, respectively (expressed in the same units as PMeas, typically dBW or dBm);

PMeas = measured transmitter output power or PSD, in dBm or dBW;

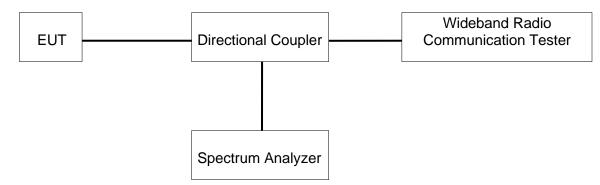
GT = gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP);

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

The transmitter has a maximum radiated ERP / EIRP output powers as follows:



TEST SETUP



TEST ENVIRONMENT

Temperature	23.1°C	Relative Humidity	63.8%
Atmosphere Pressure	101kPa	Test Voltage	DC 3.87 V

Test Result

Bong	1	Channel	Channel	Channel
Band		128	190	251
GSM850	(CS)	32.31	32.29	32.44
	1 TimeSlot	32.49	32.44	32.59
GPRS/EGPRS	2 TimeSlots	31.71	31.71	31.85
(GMSK)	3 TimeSlots	29.94	29.96	30.13
	4 TimeSlots	28.83	28.89	29.06
	1 TimeSlot	26.05	26.22	25.12
EGPRS	2 TimeSlots	25.00	25.20	25.90
(8PSK)	3 TimeSlots	22.83	22.98	22.91
	4 TimeSlots	21.64	21.78	21.73

Pop	Band		Channel	Channel
Banu		128	190	251
GSM850	(CS)	32.31	32.29	32.44
	1 TimeSlot	32.49	32.44	32.59
GPRS/EGPRS	2 TimeSlots	31.71	31.71	31.85
(GMSK)	3 TimeSlots	29.94	29.96	30.13
	4 TimeSlots	28.83	28.89	29.06
	1 TimeSlot	26.05	26.22	25.12
EGPRS	2 TimeSlots	25.00	25.20	25.90
(8PSK)	3 TimeSlots	22.83	22.98	22.91
	4 TimeSlots	21.64	21.78	21.73



7.2. PEAK TO AVERAGE RADIO

<u>LIMITS</u>

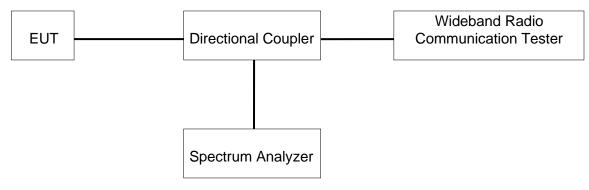
In addition, when the transmitter power is measured in terms of average value, the peak-toaverage ratio of the power shall not exceed 13 dB.

TEST PROCEDURE

Refer to KDB 971168 D01 Power Meas License Digital Systems v03r01;

The transmitter output was connected to a CMW500 Test Set and configured to operate at maximum power. The PAR was measured on the Spectrum Analyzer.

TEST SETUP



TEST ENVIRONMENT

Temperature	23.1°C	Relative Humidity	63.8%
Atmosphere Pressure	101kPa	Test Voltage	DC 3.87 V

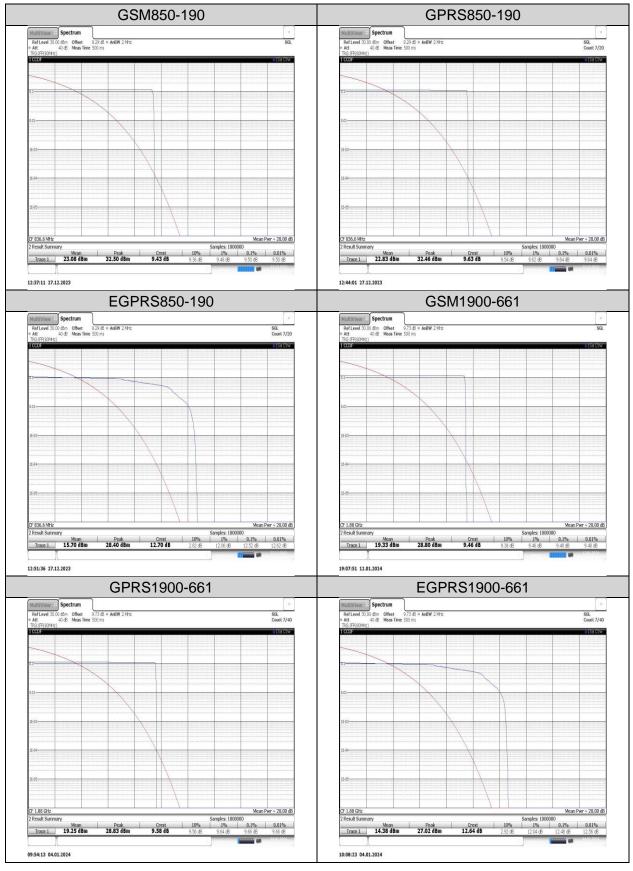
Test Result

Middle was used to measure as the worst case. The results from all CCDF plots are passed with 13dB peak-to-average power ratio criteria.

Band	Channel	Result(dB)	Limit(dB)	Verdict
GSM850	190	9.5	13	PASS
GPRS850	190	9.64	13	PASS
EGPRS850	190	12.44	13	PASS
GSM1900	661	9.48	13	PASS
GPRS1900	661	9.66	13	PASS
EGPRS1900	661	12.42	13	PASS



Test Graphs





7.3. OCCUPIED BANDWIDTH

RULE PART(S)

FCC: §2.1049.

<u>LIMITS</u>

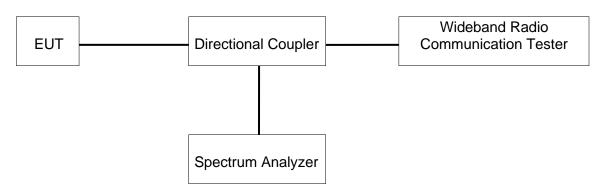
For reporting purposes only.

TEST PROCEDURE

The transmitter output was connected to a calibrated coaxial cable and coupler, the other end of which was connected to a spectrum analyzer. The occupied bandwidth was measured with the spectrum analyzer at the low, middle and high channel in each band. The -26dB bandwidth was also measured and recorded.

(Refer to KDB 971168 D01 Power Meas License Digital Systems v03r01)

TEST SETUP



TEST ENVIRONMENT

Temperature	23.1°C	Relative Humidity	66.3%
Atmosphere Pressure	101kPa	Test Voltage	DC 3.87 V

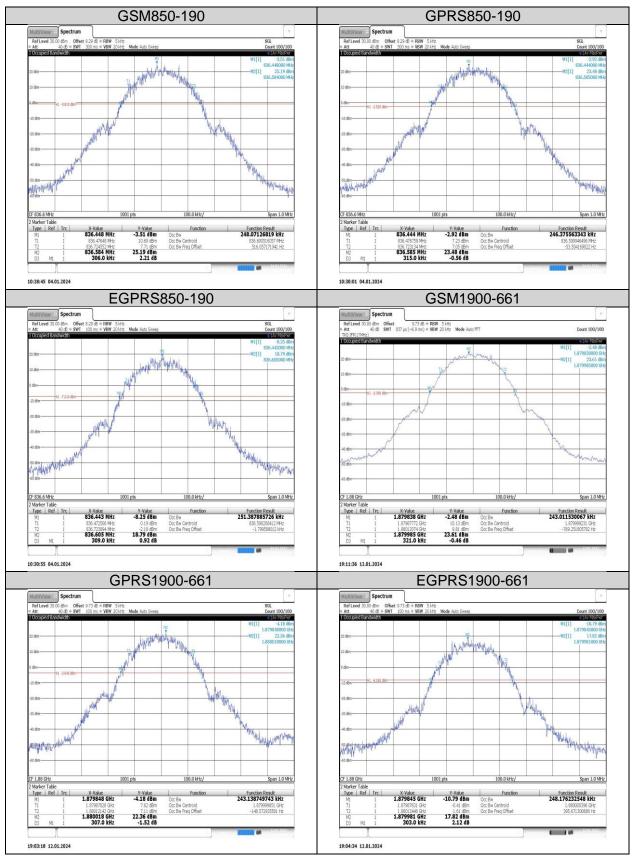
<u>Test Result</u>

There is no limit required and power is the same for low, middle and high channel, therefore, only middle channel was tested.

Band	Channel	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Limit (MHz)	Verdict
GSM850	190	0.248	0.31		PASS
GPRS850	190	0.246	0.31		PASS
EGPRS850	190	0.251	0.31		PASS
GSM1900	661	0.243	0.32		PASS
GPRS1900	661	0.243	0.31		PASS
EGPRS1900	661	0.248	0.30		PASS



Test Graphs





7.4. BAND EDGE EMISSIONS

RULE PART(S)

FCC §2.1051, §22.917, §24.238

LIMITS

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

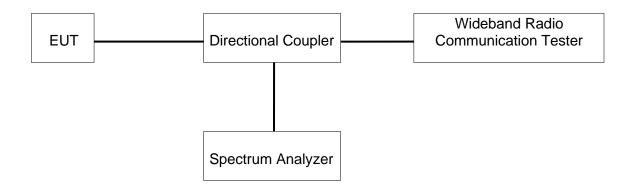
TEST PROCEDURE

Refer to KDB 971168 D01 Power Meas License Digital Systems v03r01 The transmitter output was connected to a CMW500 Test Set and configured to operate at maximum power. The band edge emissions were measured at the required operating frequencies in each band on the Spectrum Analyzer.

- a) Set the RBW = 1 ~ 1.5 % of OBW (Typically limited to a minimum RBW of 1% of the OBW)
- b) Set VBW \geq 3 × RBW;
- c) Set span \geq 1.5 times the OBW;
- d) Sweep time = Auto;
- e) Detector = RMS;
- f) Ensure that the number of measurement points $\geq 2^{*}$ Span/RBW;
- g) Trace mode = Average (100);



TEST SETUP



TEST ENVIRONMENT

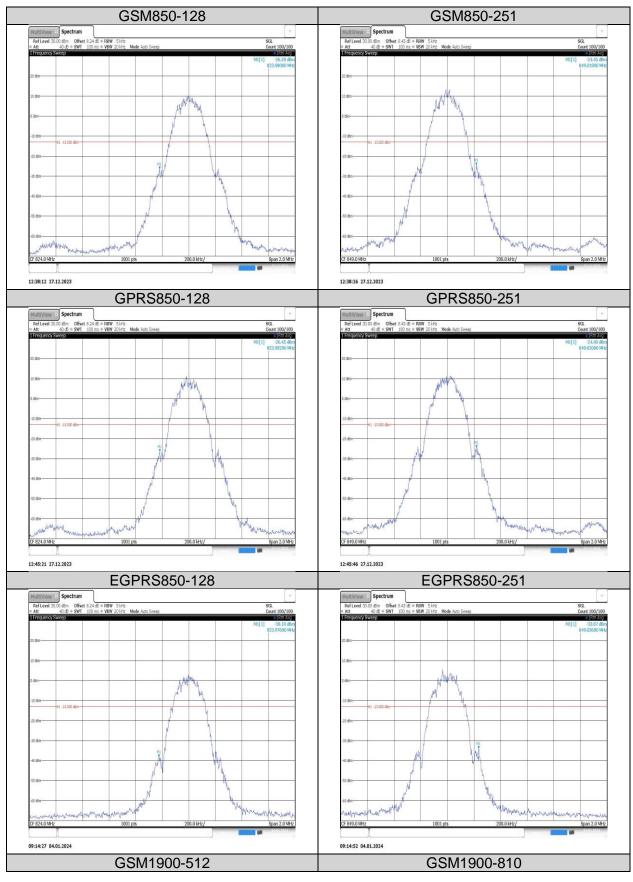
Temperature	23.1°C	Relative Humidity	66.3%
Atmosphere Pressure	101kPa	Test Voltage	DC 3.87 V

Test Result

Band	Channel	Freq (MHz)	Result (dBm)	Limit(dBm)	Verdict
GSM850	128	823.98	-26.39	-13	PASS
GSM850	251	849.02	-24.45	-13	PASS
GPRS850	128	823.98	-26.45	-13	PASS
GPRS850	251	849.02	-24.40	-13	PASS
EGPRS850	128	823.98	-38.10	-13	PASS
EGPRS850	251	849.04	-33.87	-13	PASS
GSM1900	512	1849.98	-29.18	-13	PASS
GSM1900	810	1910.01	-30.43	-13	PASS
GPRS1900	512	1849.98	-31.15	-13	PASS
GPRS1900	810	1910.02	-27.55	-13	PASS
EGPRS1900	512	1849.98	-38.43	-13	PASS
EGPRS1900	810	1910.00	-35.91	-13	PASS

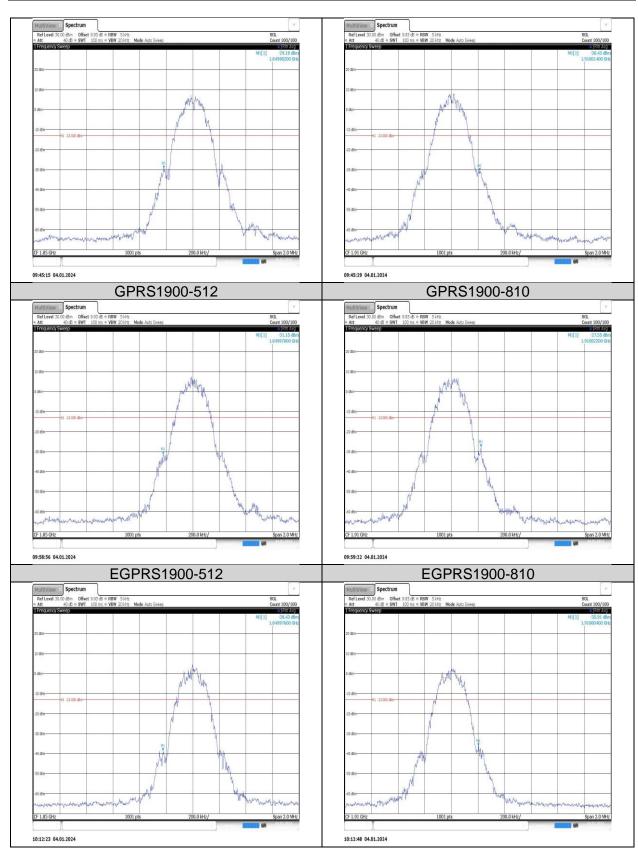


Test Graphs



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7.5. SPURIOUS EMISSION AT ANTENNA TERMINAL

RULE PART(S)

FCC: §2.1051, §22.901, §22.917, §24.238

LIMITS

FCC: §22.901, §22.917, §24.238

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

TEST PROCEDURE

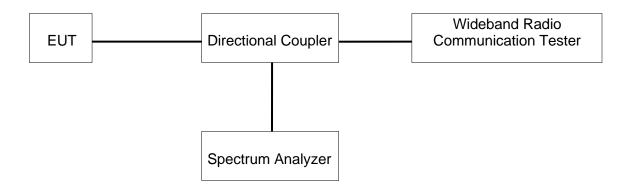
Per KDB 971168 D01 Power Meas License Digital Systems v03r01

The RF output of the transmitter was connected to a spectrum analyzer through a calibrated coaxial cable. Sufficient scans were taken to show the out-of-band Emissions, if any, up to 10th harmonic. Multiple sweeps were recorded in maximum hold mode using a peak detector to ensure that the worst-case emissions were caught.

a) Set the RBW = 100 kHz for emission below 1GHz and 1MHz for emissions above 1GHz (Tests were performed 1 MHz [Worst case], to sweep 1 time for all frequency range)

- b) Set VBW \geq 3 × RBW;
- c) Set span \geq 1.5 times the OBW;
- d) Sweep time = auto couple;
- e) Detector = rms;
- f) Ensure that the number of measurement points = Max (40001);
- g) Trace mode = trace average for continuous emissions, max hold for pulse emissions;

TEST SETUP





TEST ENVIRONMENT

Temperature	23.1°C	Relative Humidity	66.3%
Atmosphere Pressure	101kPa	Test Voltage	DC 3.87 V

Test Result

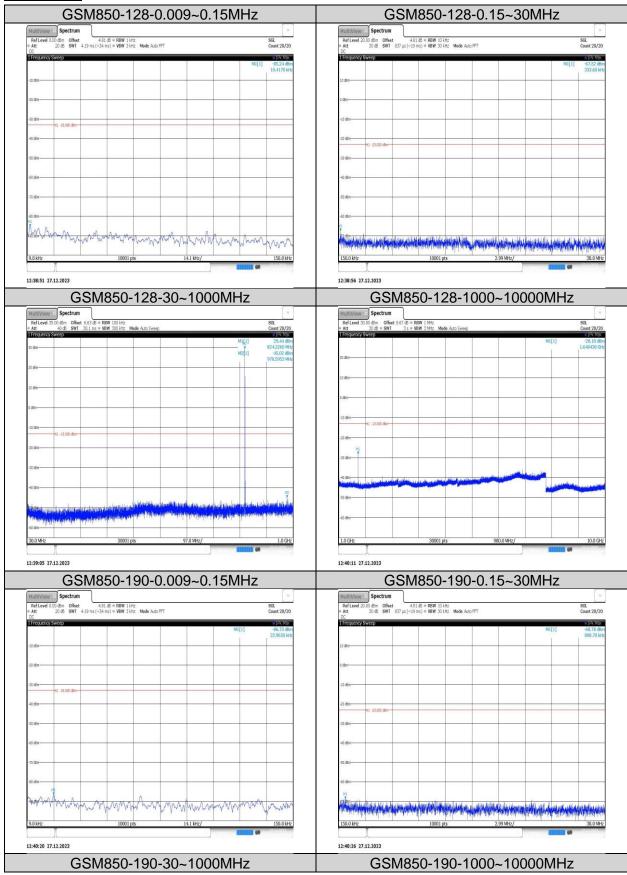
			-			
Band	Channel	Frequency Range(MHz)	Max.Freq. (MHz)	Result (dBm)	Limit (dBm)	Verdict
GSM850	128	0.009~0.15MHz	0.01	-85.24	-33	PASS
GSM850	128	0.15~30MHz	0.33	-67.52	-23	PASS
GSM850	128	30~1000MHz	978.6	-45.02	-13	PASS
GSM850	128	1000~10000MHz	1648.43	-28.1	-13	PASS
GSM850	190	0.009~0.15MHz	0.02	-86.73	-33	PASS
GSM850	190	0.15~30MHz	0.89	-68.78	-23	PASS
GSM850	190	30~1000MHz	462.26	-45.13	-13	PASS
GSM850	190	1000~10000MHz	1673.03	-27.47	-13	PASS
GSM850	251	0.009~0.15MHz	0.01	-85.17	-33	PASS
GSM850	251	0.15~30MHz	16.24	-68.9	-23	PASS
GSM850	251	30~1000MHz	424.24	-45.37	-13	PASS
GSM850	251	1000~10000MHz	1697.33	-26.92	-13	PASS
GPRS850	128	0.009~0.15MHz	0.02	-86.42	-33	PASS
GPRS850	128	0.15~30MHz	5.57	-68.99	-23	PASS
GPRS850	128	30~1000MHz	959	-44.35	-13	PASS
GPRS850	128	1000~10000MHz	1648.43	-28.57	-13	PASS
GPRS850	190	0.009~0.15MHz	0.01	-85.64	-33	PASS
GPRS850	190	0.15~30MHz	3.58	-68.46	-23	PASS
GPRS850	190	30~1000MHz	552.09	-45.7	-13	PASS
GPRS850	190	1000~10000MHz	1673.03	-27.21	-13	PASS
GPRS850	251	0.009~0.15MHz	0.01	-86.94	-33	PASS
GPRS850	251	0.15~30MHz	0.52	-68.21	-23	PASS
GPRS850	251	30~1000MHz	547.82	-45.34	-13	PASS
GPRS850	251	1000~10000MHz	1697.93	-26.6	-13	PASS
EGPRS850	128	0.009~0.15MHz	0.01	-85.41	-33	PASS
EGPRS850	128	0.15~30MHz	0.3	-69.13	-23	PASS
EGPRS850	128	30~1000MHz	969.35	-45.71	-13	PASS
EGPRS850	128	1000~10000MHz	7133.15	-36.91	-13	PASS
EGPRS850	190	0.009~0.15MHz	0.01	-87.64	-33	PASS
EGPRS850	190	0.15~30MHz	11.01	-67	-23	PASS
EGPRS850	190	30~1000MHz	596.9	-45.04	-13	PASS
EGPRS850	190	1000~10000MHz	1673.33	-35.97	-13	PASS
EGPRS850	251	0.009~0.15MHz	0.01	-84.91	-33	PASS
EGPRS850	251	0.15~30MHz	1.93	-68.97	-23	PASS
EGPRS850	251	30~1000MHz	543.23	-45.28	-13	PASS
EGPRS850	251	1000~10000MHz	1697.63	-35.75	-13	PASS
GSM1900	512	0.009~0.15MHz	0.01	-86.9	-43	PASS
GSM1900	512	0.15~30MHz	13.83	-64.97	-33	PASS
GSM1900	512	30~1000MHz	552.86	-43.2	-13	PASS
GSM1900	512	1000~18000MHz	7400.5	-36.23	-13	PASS
GSM1900	661	0.009~0.15MHz	0.01	-85.34	-43	PASS



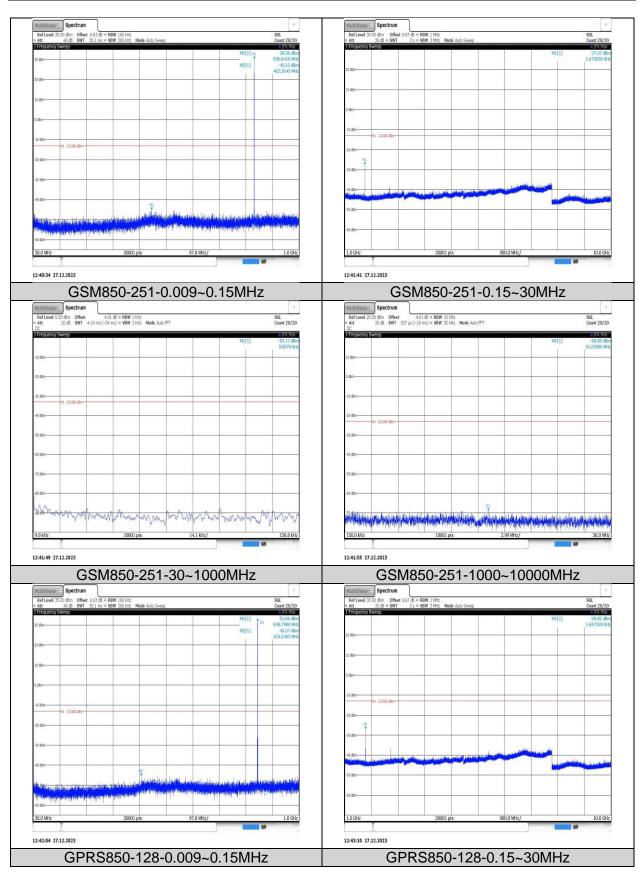
GSM1900	661	0.15~30MHz	0.43	-64.87	-33	PASS
GSM1900	661	30~1000MHz	863.61	-43.37	-13	PASS
GSM1900	661	1000~18000MHz	7519.5	-35.87	-13	PASS
GSM1900	810	0.009~0.15MHz	0.01	-86.31	-43	PASS
GSM1900	810	0.15~30MHz	0.61	-64.45	-33	PASS
GSM1900	810	30~1000MHz	457.29	-43.59	-13	PASS
GSM1900	810	1000~18000MHz	7639.63	-36.15	-13	PASS
GPRS1900	512	0.009~0.15MHz	0.01	-86.25	-43	PASS
GPRS1900	512	0.15~30MHz	0.18	-64.54	-33	PASS
GPRS1900	512	30~1000MHz	554.87	-43.23	-13	PASS
GPRS1900	512	1000~18000MHz	7400.5	-35.91	-13	PASS
GPRS1900	661	0.009~0.15MHz	0.03	-87.35	-43	PASS
GPRS1900	661	0.15~30MHz	0.29	-63.06	-33	PASS
GPRS1900	661	30~1000MHz	477.62	-43.38	-13	PASS
GPRS1900	661	1000~18000MHz	7520.07	-34.46	-13	PASS
GPRS1900	810	0.009~0.15MHz	0.01	-86.75	-43	PASS
GPRS1900	810	0.15~30MHz	16.76	-64.28	-33	PASS
GPRS1900	810	30~1000MHz	474.52	-43.11	-13	PASS
GPRS1900	810	1000~18000MHz	7126.23	-36.2	-13	PASS
EGPRS1900	512	0.009~0.15MHz	0.01	-86.74	-43	PASS
EGPRS1900	512	0.15~30MHz	0.32	-63.89	-33	PASS
EGPRS1900	512	30~1000MHz	552.31	-43.33	-13	PASS
EGPRS1900	512	1000~18000MHz	6999.87	-36.84	-13	PASS
EGPRS1900	661	0.009~0.15MHz	0.02	-85.2	-43	PASS
EGPRS1900	661	0.15~30MHz	0.25	-64.83	-33	PASS
EGPRS1900	661	30~1000MHz	551.76	-43.63	-13	PASS
EGPRS1900	661	1000~18000MHz	7033.3	-36.62	-13	PASS
EGPRS1900	810	0.009~0.15MHz	0.01	-85.41	-43	PASS
EGPRS1900	810	0.15~30MHz	1.25	-63.73	-33	PASS
EGPRS1900	810	30~1000MHz	553.06	-42.9	-13	PASS
EGPRS1900	810	1000~18000MHz	7883.87	-36.89	-13	PASS



Test Graphs

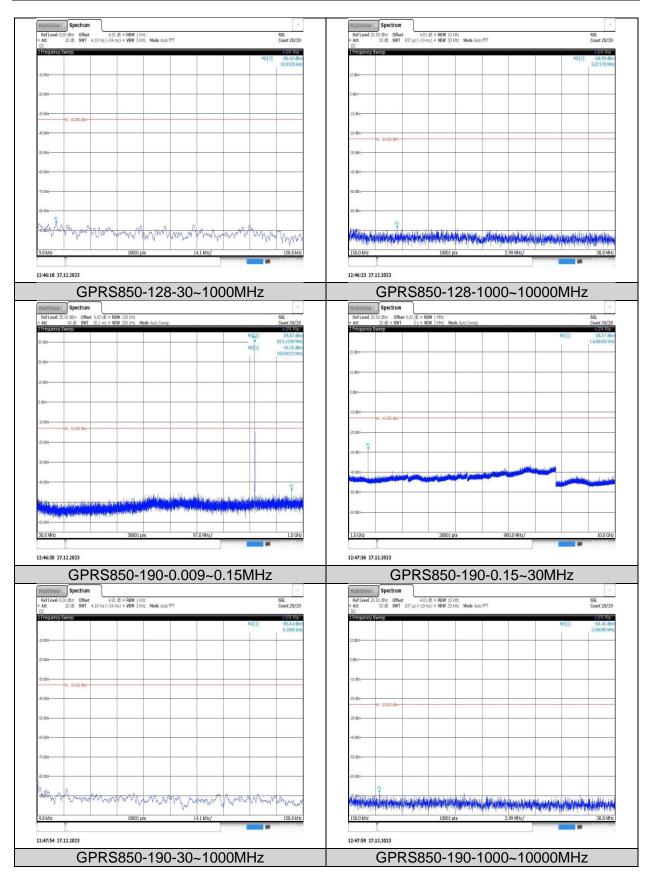








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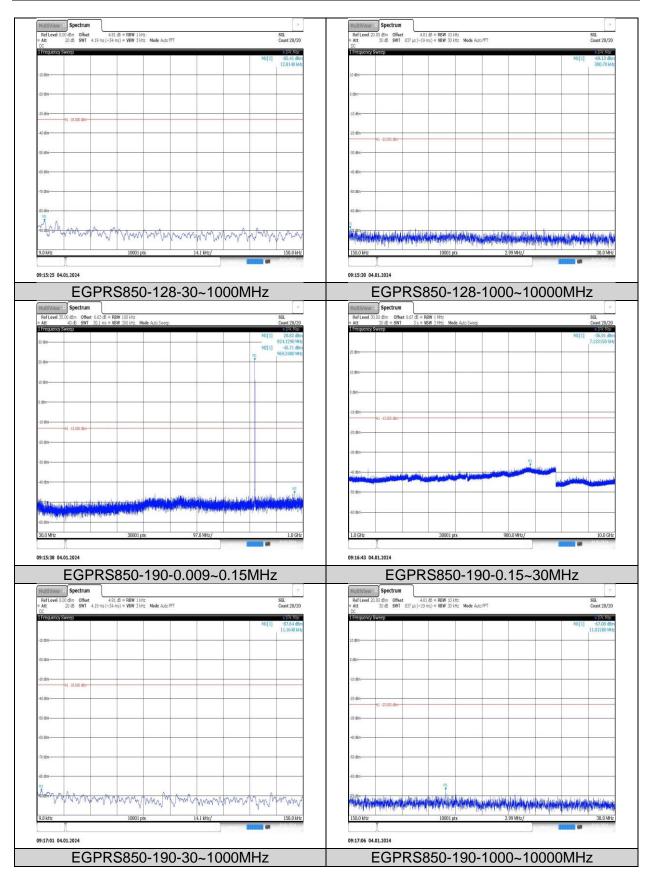




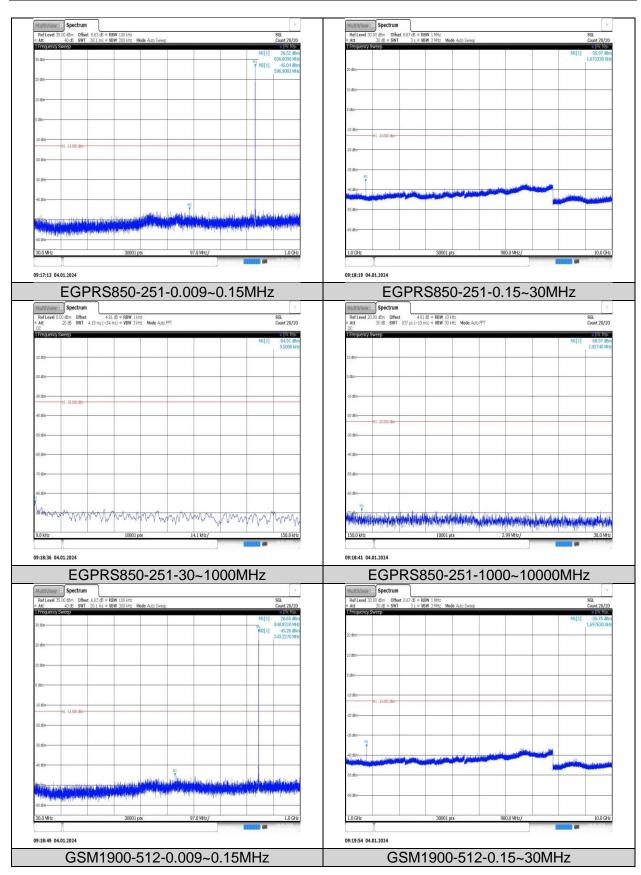
Att 40	Spectrum	00.144+				y SGL	MultiView			V 136H+						SGL
1 Frequency Sweet	dBm Offset 6.63 dB = RBW 1 0 dB SWT 30.1 ms = VBW 3	100 kHz Mode Auto Sweet	p.			SGL Count 20/20	e Att	30.00 dBm Offs 30 dB + SWT	et sords ≑ HBV 3 s ≑ VBV	V 3 MHz Mode	Auto Sweep					SGL Count 20,
20 Gin	49				M1[3]	30.86 dBm 836.6410 MHz	TTEQUEIR	y Sweep	2 - C						M1[1]	-27.21 1.673030
30 den					M2[1]	-45.70 dBm 552.0863 MHz	20 dBm									1/573030
20 d8m						552,0863 MHZ										
							10 dBm									
10 d8m			+	<u> </u>		_										
							0 dBm									
0 dBm-							-10 d8m				1					
-10 d8m			_				-10 000	H1 -13.000 dBm							-	_
H1 -1	-13.000 dBm						-20 d8m-	_	-					_		
-20 dBm							1	1								
							-30 d8m								-	
-30 d8m							-40 dBn							Sala and Johnson		
-40 d8m							March March	and the second second	and the second				-		LANGE WAIRING	Munemalie
			M				-50 d8m									
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30.0 MHz		30001 pts	97	7.0 MHz/		1.0 GHz	1.0 GHz	Y		30001 pts		90	00.0 MHz/			10.0 0
							L									
12:48:07 27.12.2							12:49:12		_	_						
(GPRS85	50-251-	0.00	9~0.1	15MH	Z		G	PRS	850-	251	-0.1	5~3	BOMI	Hz	
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	Spectrum					7	MultiViev									ſ
Reflevel 0.00 dB		RBW 1 kHz	FFT			SGL Count 20/20		20.00 dBm Offse	et 4.81 di 837 µs (~19 ms	B = RBW 10 kHz	Made	907				SGL Count 20/
DC	ου <b>σπι</b> 4.19 mš (~34 mš) (	<ul> <li>vom o kinz Mode Auto</li> </ul>	uft			count 20/20	DC		007 bi (~19 Mš	y = visiw .30 kHz	mude Autol	25				
1 Frequency Swee	1/				M1[1]	-86.94 dBm 9.0490 kHz	1 Frequenc	, sweep							M1[1]	-68.21 c 524.60
-10 d8m						2/0420 1012	10 dBm							_		524,60
							An other -									
-20 dBm			+	<u>                                     </u>			0 d8m								-	-
-30 d8m	-33.000 dBm						-10 d8m									-
-40 d8n							-20 dēn									_
1000000								H1 -23.000 dBm								-
-50 d8m-			+				-30 dBm	-						-	_	
							10000									
-60 d8n							-40 dBm									
-70 dBm				<u> </u>			-50 d8m	-								+
-00 d8n			+	-			-60 d2m									+
marma	1 0000 1						MI V			1						1
	sound have by	WWW	MMMMM	worn	mont	M.M.M.M	With the second s	ivillandarishinda	A TANK		AT A HAR	with this the	<b>Maliketura</b>	and But See	Alienter	Martine)
and range			F	4.1 kHz/		150.0 kHz	150.0 kHz	die mieje tra		10001 pts	Le com card	2	.99 MHz/	el sisk, site	a hite a cutt	30.0 M
9.0 kHz		10001 pts				M		I.						] 1	(A	971935933
		10001 pts					12:49:35	27.12.2023								
9.0 kHz	2023	10001 pts														
9.0 kHz			1 20	1000						0.25	- 1	000	10	000		-
9.0 kHz	GPRS		1-30~	-1000	OMHz				RS85	50-25	51-1	000	~10	000	MHz	2
9.0 kHz 12:49:30 27.12.2 MultiView S	GPRS8	350-251	1-30~	-100(	OMHz	Y		Spectrum			51-1	000	~10	000	MHz	[
9.0 kHz 12:49:30 27.12.2 MultiView 5 Ref Level 35.00 d att 40	GPRS8	350-251		-100(	OMHz	SGL Count 20/20	Ref Level	30.00 dBm Offs 30 dB + SWI		V 1 MHz		000	~10	0000	MHz	SGL Count 20/
9.0 kHz 12:49:30 27.12.2 MultiView S Ref Level 35.00 d # Att 40 1 Troquency Swee	GPRS8	350-251		-100(	M1[1]	SGL Count 20/20 1Pk Max 31.66 dBm	RefLevel	30.00 dBm Offs 30 dB + SWI	et 8.67 dB # RBV	V 1 MHz		000	~10		MHz	SGL Count 20/3 = 11231/5 -26.60 d
9.0 kHz 12:49:30 27.12.2 MultiView 5 RefLovel 35:00 d e Att 40	GPRS8	350-251		-100(		SGL Count 20/20 31.66 dBm 848.7980 MHz -45.34 dBm	Ref Level # Att Frequent	30.00 dBm Offs 30 dB + SWI	et 8.67 dB # RBV	V 1 MHz		000	~10			SGL Count 20/2
9.0 kHz 12:49:30 27.12.2 MultiView :: S Ref Level 35:00 dl # Att 40 1 Frequency Sweet 20 din	GPRS8	350-251		-100(	M1[1]	SGL Count 20/20 1194 Materia 31.66 dBm 1 848.7980 MHz	Ref Level	30.00 dBm Offs 30 dB + SWI	et 8.67 dB # RBV	V 1 MHz		000	~10			SGL Count 20/3 = 11231/5 -26.60 d
9.0 kHz 12:49:30 27.12.2 MultiView S Ref Level 35.00 dl a Att 40 1 Frequency Sweet	GPRS8	350-251		-100(	M1[1]	SGL Count 20/20 31.66 dBm 848.7980 MHz -45.34 dBm	Ref Level # Att Frequent	30.00 dBm Offs 30 dB + SWI	et 8.67 dB # RBV	V 1 MHz		000	-10			SGL Count 20/ #IP2M6 -26.60 d
9.0 kHz 12:49:30 27.12.2 MultiView :: S Ref Level 35:00 di # Att # 40 H Frequency Sweet 30 dim	GPRS8	350-251		-100	M1[1]	SGL Count 20/20 31.66 dBm 848.7980 MHz -45.34 dBm	Ref Level # Att # Frequence 20 den	30.00 dBm Offs 30 dB + SWI	et 8.67 dB # RBV	V 1 MHz		000	~10			SGL Count 20/ #IP2M6 -26.60 d
9.0 kHz 12:49:30 27.12.2 MultiView 5 Ref.Leed 35.00 db Het 40 Het	GPRS8	350-251		-100	M1[1]	SGL Count 20/20 31.66 dBm 848.7980 MHz -45.34 dBm	Ref Level # Att # Frequence 20 den	30.00 dBm Offs 30 dB + SWI	et 8.67 dB # RBV	V 1 MHz		000	~10			SGL Count 20/ #IP2M6 -26.60 d
9.0 kHz 12:49:30 27.12.2 MultiView 5 Ref.Leed 35.00 db Het 40 Het	GPRS8	350-251		-100	M1[1]	SGL Count 20/20 31.66 dBm 848.7980 MHz -45.34 dBm	R fat (and 4 At 10 San 10 San 1 San 1 San	30.00 dBm Offs 30 dB + SWI	et 8.67 dB # RBV	V 1 MHz		000	)~10			SGL Count 20/ #IP2M6 -26.60 d
9.0 kHz 12:49:30 27.12.2 NuttView S RefLeed 5.0 d 17:004000 Sec 30 din 20 din 0 din 0 din	GPRS8	350-251		-100	M1[1]	SGL Count 20/20 31.66 dBm 848.7980 MHz -45.34 dBm	Paf Level + Att 1 frequen 20 dm	30.00 dBm Offs 30 dB + SWI	et 8.67 dB # RBV	V 1 MHz		000	)~10			SGL Count 20/ #IP2M6 -26.60 d
9.0 HHz	GPRS8	350-251		-100	M1[1]	SGL Count 20/20 31.66 dBm 848.7980 MHz -45.34 dBm	Pol ( text) + Att 10 dan	V ED Spectrum 30.00 dam Offs 30.08 + SWI 30.08 + SWI VSW240	et 8.67 dB # RBV	V 1 MHz		000	-10			SGL Count 20/ #IP2M6 -26.60 d
9.0 HHz	GPRS8	350-251		-100	M1[1]	SGL Count 20/20 31.66 dBm 848.7980 MHz -45.34 dBm	Part (1 and 1 and	Spectrum 30.00 dBm Offs 30.00 sWT ysWc20	et 8.67 dB # RBV	V 1 MHz		000	-10			SGL Count 20/ #IP2M6 -26.60 d
9.0 kHz	GPRS8	350-251		-100	M1[1]	SGL Count 20/20 31.66 dBm 848.7980 MHz -45.34 dBm	Pol ( text) + Att 10 dan	Spectrum 30.00 dBm Offs 30.00 sWT ysWc20	et 8.67 dB # RBV	V 1 MHz		000				SGL Count 20/ #IP2M6 -26.60 d
9.0 kHz	GPRS8	350-251		-100	M1[1]	SGL Count 20/20 31.66 dBm 848.7980 MHz -45.34 dBm	Ref (area)           Att           10 @m           10 @m           10 @m           30 @m           31 @m           31 @m	Spectrum 30.00 dBm Offs 30.00 sWT ysWc20	et 8.67 dB # RBV	V 1 MHz		000				SGL Count 20/ #IP2M6 -26.60 d
9.0 kHz	GPRS8	350-251		-100	M1[1]	SGL Count 20/20 31.66 dBm 848.7980 MHz -45.34 dBm	Ref (area)           Att           1 data           10 data	Spectrum 30.00 dbm Offs 30.00 - SWI 30.00 - SWI *1 -11.00 dbm	et 8.67 dE = RBW 3 s = VBW	V 1 MHz					MI[1]	SGL Cont 20/ 919/16 -26.60 1.6979301
9.0 kHz	GPRS8	350-251		-100	M1[1]	SGL Count 20/20 31.66 dBm 848.7980 MHz -45.34 dBm	Ref Level           Att           1 Star           20 dan           10 dan           10 dan           30 dan           30 dan           310 dan           320 dan           10 dan	Spectrum 30.00 dbm Offs 30.00 - SWI 30.00 - SWI *1 -11.00 dbm	et 8.67 dE = RBW 3 s = VBW	V 1 MHz V 3 MHz Mode						SGL Cont 20/ 919/16 -26.60 1.6979301
9.0 Hz	GPRS8	350-251	9 9 1			SGL Count 20/20 31.66 dBm 848.7980 MHz -45.34 dBm	Ref (area)           Att           1 data           10 data	Spectrum 30.00 dbm Offs 30.00 - SWI 30.00 - SWI *1 -11.00 dbm	et 8.67 dE = RBW 3 s = VBW	V 1 MHz V 3 MHz Mode					MI[1]	SGL Cont 20/ 919/16 -26.60 1.6979301
9.0 Hz  HuttView  MuttView  So  Ref Level 50 of  Hatt View  So  So  So  So  So  So  So  So  So  S	GPRS8	350-251				SG Count 20/70 31.66 dm 1 98.67.990 Mi 45.34 dim 547.8183 Mit 547.8183 Mit 40.000 mi 547.8183 Mit 547.8183 Mit 547.81843 Mit 547.8183	Ref Level           Att           1 Star           20 dan           10 dan           10 dan           30 dan           30 dan           310 dan           320 dan           10 dan	Spectrum 30.00 dbm Offs 30.00 - SWI 30.00 - SWI *1 -11.00 dbm	et 8.67 dE = RBW 3 s = VBW	V 1 MHz V 3 MHz Mode			~10		MI[1]	SGL Cont 20/ 919/16 -26.60 1.6979301
9.0 Hz  HuttView  MuttView  So  Ref Level 50 of  Hatt View  So  So  So  So  So  So  So  So  So  S	GPRS8	350-251				SGL Count 20/20 31.66 dBm 848.7980 MHz -45.34 dBm	Pol ( text) Att 1 Att 20 dbn 10 dbn 0 dbn 	Spectrum 30.00 dbm Offs 30.00 - SWI 30.00 - SWI *1 -11.00 dbm	et 8.67 dE = RBW 3 s = VBW	V 1 MHz V 3 MHz Mode		000	~10		MI[1]	SGL Cont 20/ 919/46 -26.60 1.6979301
9.0 kHz  HuttiView  MuttiView  Mu	GPRS8	350-251		Harblerg, d. 394 (s. Weitherger, d. 394 (s.		SG Count 20/70 31.6 d Em 1 BER.7900 Mit 45.3 d Em 547.8 183 Mit 4.3 Stars and Alexandro 4.3 Stars and Alexandro 4.3 Stars and Alexandro 4.3 Stars and Alexandro 4.3 Stars and Alexandro 5.3 Stars and Star	Part (and final sector)           a Att           1 Control sector)           1 0 dan	Spectrum 30.00 dbm Offs 30.00 - SWI 30.00 - SWI *1 -11.00 dbm	et 8.67 dE = RBW 3 s = VBW	V 1 MHz V 1 MHz Mode					MI[1]	SG. Count 20/20 15/870 15/97500
9.0 kHz  12:49:30 27.12.2  MultiView 5 5  Ref Level 3.0 d  11 recording wee 30 d  11 recording wee 30 d  11 recording wee 30 d  -32 d  -32 d  -32 d  -33 d  -42 d  -44 d -44 d  -44 d  -44 d  -44 d  -44 d -44 d  -4	GPRS8	350-251				SG Court 20/20 10:46 dan 10:46	Pol ( text) Att 1 Att 20 dbn 10 dbn 0 dbn 	Spectrum 30.00 dbm Offs 30.00 - SWI 30.00 - SWI 7 SWGD	et 8.67 dE = RBW 3 s = VBW	V 1 MHz V 3 MHz Mode			0.0 MHz/		MI[1]	SGL Cont 20/ 919/46 -26.60 1.6979301
9.0 kHz  12:49:30 27.12.2  MultiView S  Ref Level 35.0 dt  10 de  20 de	GPRSE	350-251		Harblerg, d. 394 (s. Weitherger, d. 394 (s.	T [1]M	SG Court 20/20 10:46 dan 10:46	Part (and final sector)           a Att           1 Control sector)           1 0 dan	Spectrum     Spectrum     Spectrum     Size     Size	et 8.67 dE = RBW 3 s = VBW	V 1 MHz V 1 MHz Mode					M[[]	SG. Count 20/20 15/870 15/97500



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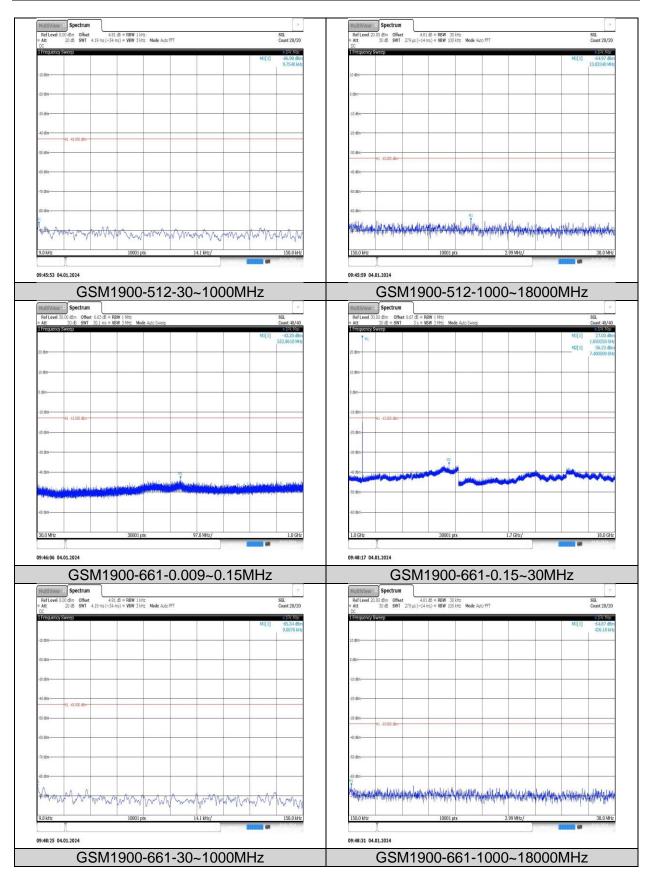




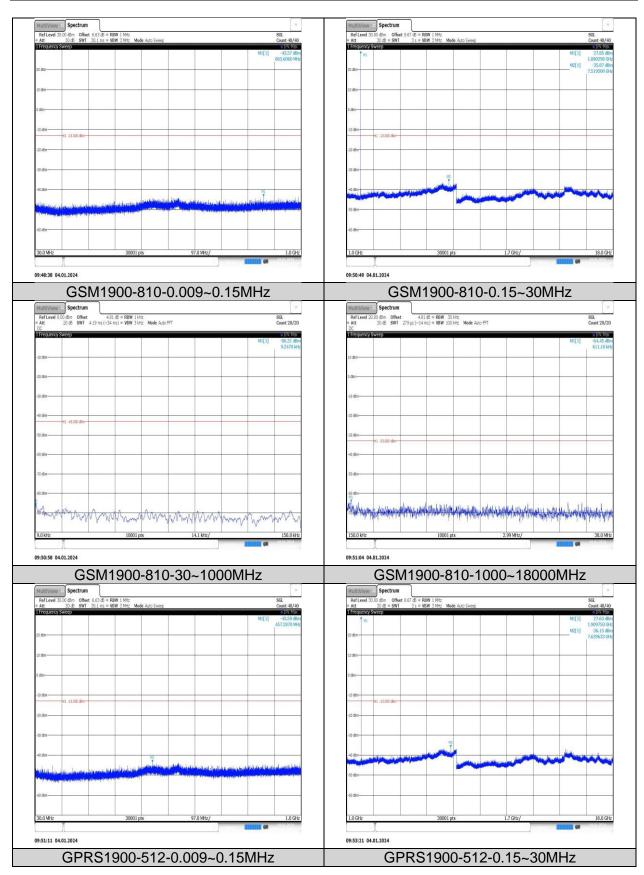




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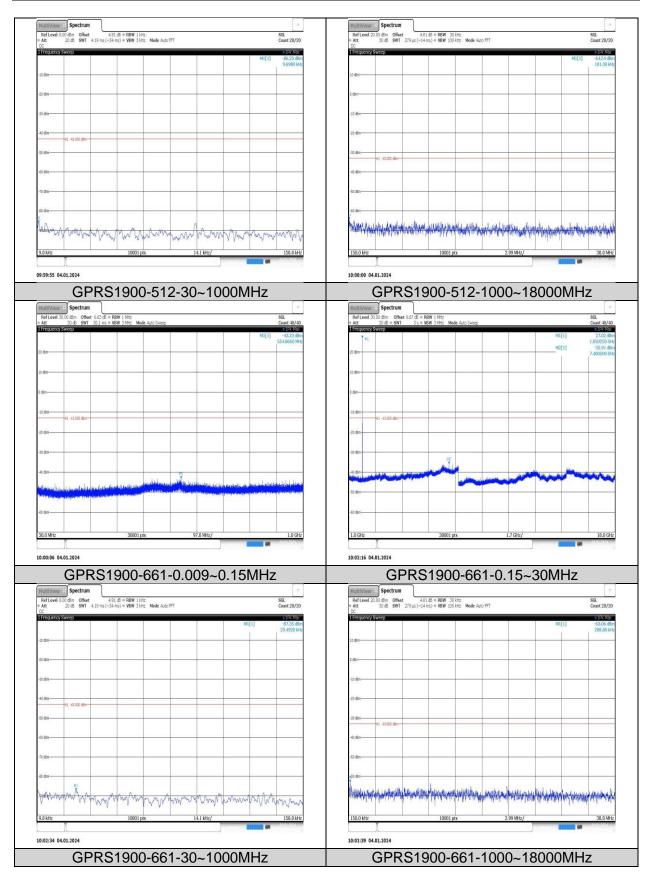




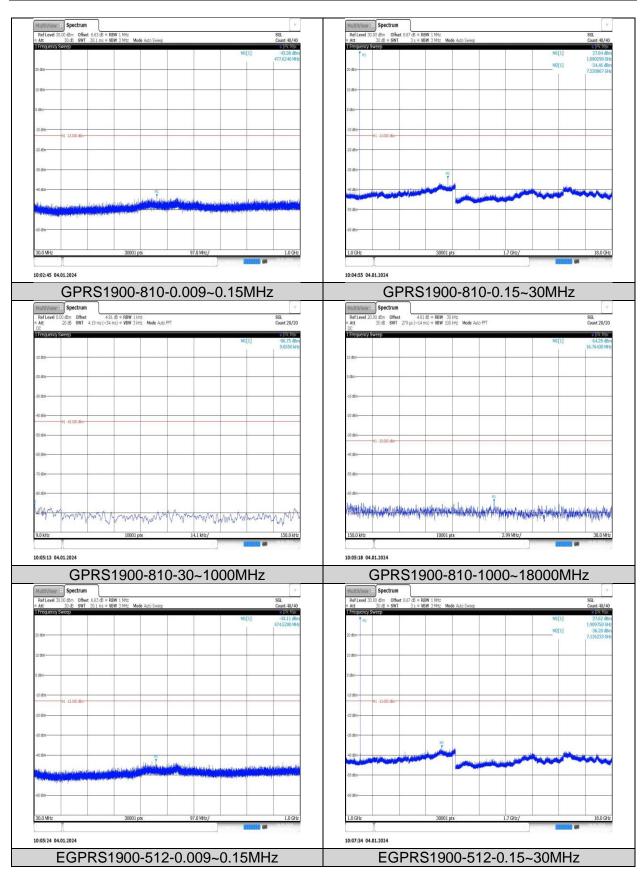




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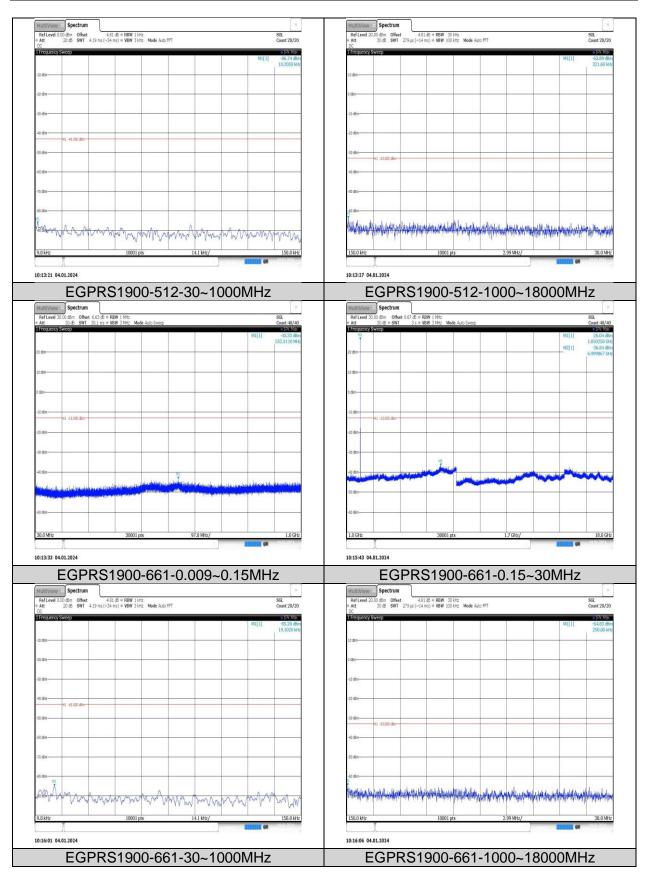




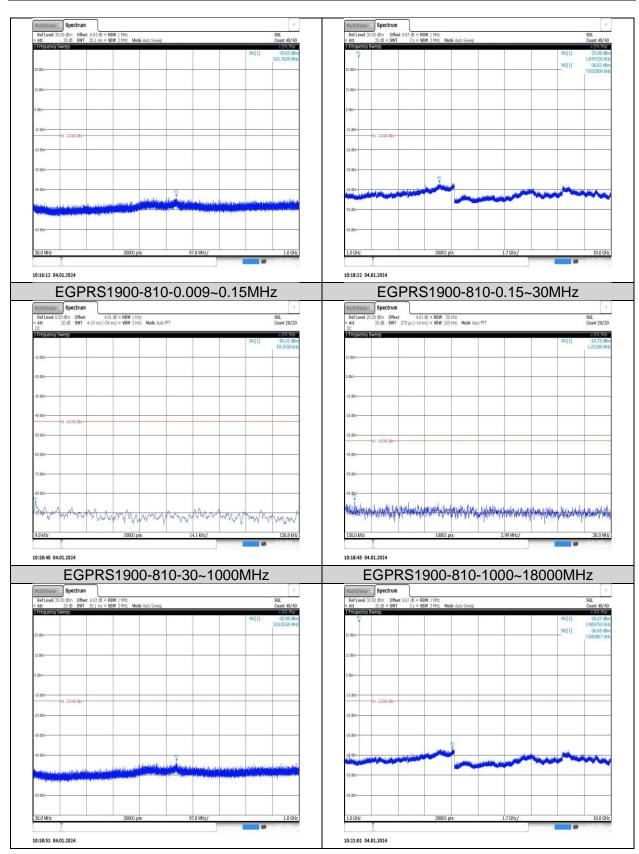




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## 7.6. FREQUENCY STABILITY

Rule Part:

FCC: §2.1055, §22.355, §24.235

#### <u>LIMITS</u>

22.355 - The carrier frequency shall not depart from the reference frequency in excess of ±2.5 ppm for mobile stations.

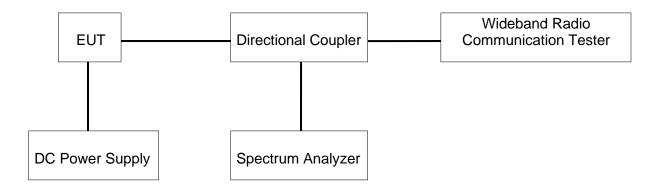
§24.235 - The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

#### TEST PROCEDURE

Refer to KDB 971168 D01 Power Meas License Digital Systems v03r01.

	Normal Test Conditions	Extreme Test Conditions		
Relative Humidity	45 % - 75 %	/		
<b>Atmospheric Pressure</b>	100 kPa ~102 kPa	/		
Tomporatura	$T_N$ (Normal Temperature):	T _L (Low Temperature): -30 °C		
Temperature	24.5 °C	T _H (High Temperature): 50 °C		
	(hormol)/oltogo), DC 2.97 (	V _L (Low Voltage): DC 3.3V		
Supply Voltage	$V_N$ (Normal Voltage): DC 3.87 V	V _H (High Voltage): DC 4.5 V		

#### TEST SETUP



#### TEST ENVIRONMENT

Temperature	23.1°C	Relative Humidity	66.3%
Atmosphere Pressure	101kPa	Test Voltage	/



#### Test Result

The peak frequency error is recorded (worst-case).

			Voltage				
Band	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
GSM850	190	VL	NT	-10.56	- 0.012623	±2.5	PASS
GSM850	190	VN	NT	1.49	0.001781	±2.5	PASS
GSM850	190	VH	NT	-8.17	- 0.009766	±2.5	PASS
GPRS850	190	VL	NT	-0.03	- 0.000036	±2.5	PASS
GPRS850	190	VN	NT	-3.36	- 0.004016	±2.5	PASS
GPRS850	190	VH	NT	-1.84	- 0.002199	±2.5	PASS
EGPRS850	190	VL	NT	-4.75	- 0.005678	±2.5	PASS
EGPRS850	190	VN	NT	-4.16	- 0.004973	±2.5	PASS
EGPRS850	190	VH	NT	-3.58	- 0.004279	±2.5	PASS
GSM1900	661	VL	NT	-24.02	- 0.012777	±2.5	PASS
GSM1900	661	VN	NT	-7.59	- 0.004037	±2.5	PASS
GSM1900	661	VH	NT	-19.21	- 0.010218	±2.5	PASS
GPRS1900	661	VL	NT	-2.23	- 0.001186	±2.5	PASS
GPRS1900	661	VN	NT	-6.20	- 0.003298	±2.5	PASS
GPRS1900	661	VH	NT	2.45	0.001303	±2.5	PASS
EGPRS1900	661	VL	NT	-20.11	- 0.010697	±2.5	PASS
EGPRS1900	661	VN	NT	-18.37	- 0.009771	±2.5	PASS
EGPRS1900	661	VH	NT	-18.21	- 0.009686	±2.5	PASS

	Temperature											
Band	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict					
GSM850	190	NV	-30	-6.65	-0.007949	±2.5	PASS					
GSM850	190	NV	-20	-9.98	-0.011929	±2.5	PASS					
GSM850	190	NV	-10	-8.85	-0.010579	±2.5	PASS					
GSM850	190	NV	0	-6.84	-0.008176	±2.5	PASS					
GSM850	190	NV	10	-7.59	-0.009072	±2.5	PASS					
GSM850	190	NV	20	-6.75	-0.008068	±2.5	PASS					
GSM850	190	NV	30	-7.97	-0.009527	±2.5	PASS					



GSM850 GSM850 GPRS850 GPRS850	190 190	NV	40	-3.81	-0.004554	±2.5	PASS
GPRS850	190					±2.0	FASS
		NV	50	-10.17	-0.012156	±2.5	PASS
GPRS850	190	NV	-30	-3.58	-0.004279	±2.5	PASS
0110000	190	NV	-20	-1.45	-0.001733	±2.5	PASS
GPRS850	190	NV	-10	-3.07	-0.003670	±2.5	PASS
GPRS850	190	NV	0	-4.04	-0.004829	±2.5	PASS
GPRS850	190	NV	10	-2.36	-0.002821	±2.5	PASS
GPRS850	190	NV	20	-2.07	-0.002474	±2.5	PASS
GPRS850	190	NV	30	-4.97	-0.005941	±2.5	PASS
GPRS850	190	NV	40	-2.91	-0.003478	±2.5	PASS
GPRS850	190	NV	50	-4.00	-0.004781	±2.5	PASS
EGPRS850	190	NV	-30	-5.23	-0.006251	±2.5	PASS
EGPRS850	190	NV	-20	-3.97	-0.004745	±2.5	PASS
EGPRS850	190	NV	-10	-1.13	-0.001351	±2.5	PASS
EGPRS850	190	NV	0	-5.13	-0.006132	±2.5	PASS
EGPRS850	190	NV	10	-2.32	-0.002773	±2.5	PASS
EGPRS850	190	NV	20	-5.75	-0.006873	±2.5	PASS
EGPRS850	190	NV	30	-6.46	-0.007722	±2.5	PASS
EGPRS850	190	NV	40	-6.55	-0.007829	±2.5	PASS
EGPRS850	190	NV	50	-5.52	-0.006598	±2.5	PASS
GSM1900	661	NV	-30	-18.66	-0.009926	±2.5	PASS
GSM1900	661	NV	-20	-19.95	-0.010612	±2.5	PASS
GSM1900	661	NV	-10	-19.89	-0.010580	±2.5	PASS
GSM1900	661	NV	0	-13.75	-0.007314	±2.5	PASS
GSM1900	661	NV	10	-18.63	-0.009910	±2.5	PASS
GSM1900	661	NV	20	-21.70	-0.011543	±2.5	PASS
GSM1900	661	NV	30	-15.56	-0.008277	±2.5	PASS
GSM1900	661	NV	40	-16.30	-0.008670	±2.5	PASS
GSM1900	661	NV	50	-11.20	-0.005957	±2.5	PASS
GPRS1900	661	NV	-30	1.16	0.000617	±2.5	PASS
GPRS1900	661	NV	-20	-5.68	-0.003021	±2.5	PASS
GPRS1900	661	NV	-10	-0.36	-0.000191	±2.5	PASS
GPRS1900	661	NV	0	-2.94	-0.001564	±2.5	PASS
GPRS1900	661	NV	10	-1.03	-0.000548	±2.5	PASS
GPRS1900	661	NV	20	-4.71	-0.002505	±2.5	PASS
GPRS1900	661	NV	30	-1.90	-0.001011	±2.5	PASS
GPRS1900	661	NV	40	-6.52	-0.003468	±2.5	PASS
GPRS1900	661	NV	50	-8.62	-0.004585	±2.5	PASS
EGPRS1900	661	NV	-30	-13.01	-0.006920	±2.5	PASS
EGPRS1900	661	NV	-20	-11.78	-0.006266	±2.5	PASS
EGPRS1900	661	NV	-10	-19.44	-0.010340	±2.5	PASS
EGPRS1900	661	NV	0	-10.04	-0.005340	±2.5	PASS
EGPRS1900	661	NV	10	-19.02	-0.010117	±2.5	PASS
EGPRS1900	661	NV	20	-13.66	-0.007266	±2.5	PASS
EGPRS1900	661	NV	30	-14.79	-0.007867	±2.5	PASS
EGPRS1900	661	NV	40	-15.85	-0.008431	±2.5	PASS
EGPRS1900	661	NV	50	-10.01	-0.005324	±2.5	PASS



## 8. RADIATED SPURIOUS EMISSIONS

#### <u>LIMIT</u>

#### FCC: §24.238(a) (GSM1900)

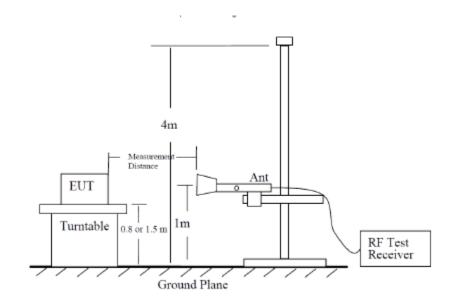
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.

#### FCC: §22.917(a) (GSM850)

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10.00 (P) dB.

#### TEST PROCEDURE

Following the test configuration shown below, radiated emissions measured directly from the EUT and convert the measured field strength or received power to ERP or EIRP, as required, for comparison to the applicable limits. As stated in section 5.5.1 of ANSI C63.26-2015. The field strength measurement method by using a test site validated to the requirement of ANSI C63.4 is an alternative method to the substitution measurement.





#### Radiated Power Measurement Calculation According to ANSI C63.26-2015

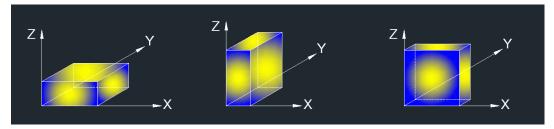
- a) E (dBµV/m) = Measured amplitude level (dBµV) + Cable Loss (dB)+ Antenna Factor (dB/m).
- b) È (dBµV/m) = Measured amplitude level (dBm) + 107 + Cable Loss (dB) + Antenna Factor (dB/m).
- c)  $\dot{E} (dB\mu V/m) = EIRP (dBm) 20l0g(D) + 104.8$ , where D is the measurement distance (in the far field region) in m.
- d) EIRP (dBm) = E (dBµV/m) + 20l0g(D) 104.8, where D is the measurement distance (in the far field region) in m.

So, from d)

The measuring distance is at 3m, then 20*Log(3) = 9.5424

Then, EIRP (dBm) = E (dB $\mu$ V/m) + 9.5424 - 104.8 = E (dB $\mu$ V/m) - 95.2576

X axis, Y axis, Z axis:



Note: The EUT was investigated in three orthogonal orientations X/Y/Z on ANT0 to determine the worst-case orientation. X orientation is finally determined the worst.



#### **TEST ENVIRONMENT**

Temperature	24.3°C	Relative Humidity	61%
Atmosphere Pressure	101kPa	Test Voltage	DC 3.87 V

#### **Test Result**

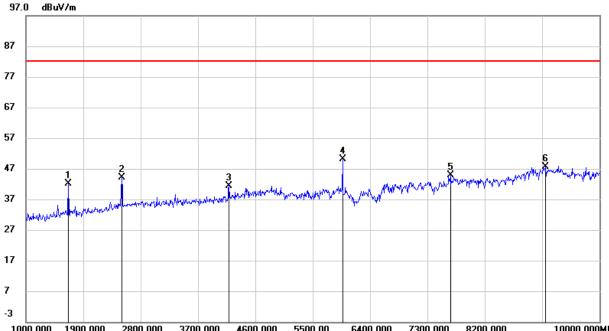
GSM 850

**GPRS-** Low Channel- Horizontal

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1666.000	58.50	-12.16	46.34	82.25	-35.91	peak
2	2503.000	48.29	-8.48	39.81	82.25	-42.44	peak
3	3349.000	46.74	-6.19	40.55	82.25	-41.70	peak
4	4186.000	47.33	-3.61	43.72	82.25	-38.53	peak
5	7498.000	38.80	5.69	44.49	82.25	-37.76	peak
6	9064.000	38.08	9.76	47.84	82.25	-34.41	peak



#### GPRS- Low Channel- Vertical



1000.000	1900.000 2800.	.000 3700.000	4600.000	5500.00 6400	.000 7300.000	8200.000	10000.000MHz
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1666.000	54.21	-12.16	42.05	82.25	-40.20	peak
2	2503.000	52.51	-8.48	44.03	82.25	-38.22	peak
3	4186.000	45.05	-3.61	41.44	82.25	-40.81	peak
4	5968.000	48.36	1.76	50.12	82.25	-32.13	peak
5	7660.000	39.10	5.68	44.78	82.25	-37.47	peak
6	9154.000	37.91	9.80	47.71	82.25	-34.54	peak

#### GPRS- Mid Channel- Horizontal

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1666.000	57.94	-12.16	45.78	82.25	-36.47	peak
2	2503.000	47.81	-8.48	39.33	82.25	-42.92	peak
3	4186.000	50.45	-3.61	46.84	82.25	-35.41	peak
4	6670.000	39.20	4.57	43.77	82.25	-38.48	peak
5	7885.000	39.06	5.66	44.72	82.25	-37.53	peak
6	9352.000	38.10	9.88	47.98	82.25	-34.27	peak

#### **GPRS-** Mid Channel- Vertical

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1666.000	51.50	-12.16	39.34	82.25	-42.91	peak
2	2503.000	53.20	-8.48	44.72	82.25	-37.53	peak
3	4186.000	45.93	-3.61	42.32	82.25	-39.93	peak
4	4996.000	42.32	-0.17	42.15	82.25	-40.10	peak
5	7885.000	39.06	5.66	44.72	82.25	-37.53	peak
6	8947.000	38.28	9.37	47.65	82.25	-34.60	peak



#### Frequency Reading Correct Result Limit Margin Remark No. (MHz) (dBuV) (dB/m) (dBuV/m) (dBuV/m) (dB) 1666.000 46.47 58.63 -12.16 82.25 -35.78 1 peak 2 2503.000 50.64 -8.48 42.16 82.25 -40.09 peak 3 4186.000 50.34 -3.61 46.73 82.25 -35.52 peak 4 7030.000 36.97 6.18 43.15 82.25 -39.10 peak 5 7597.000 39.13 5.68 44.81 82.25 -37.44 peak 6 9154.000 38.14 9.80 47.94 82.25 -34.31 peak

#### GPRS- High Channel- Horizontal

#### GPRS- High Channel- Vertical

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1666.000	51.83	-12.16	39.67	82.25	-42.58	peak
2	2503.000	52.94	-8.48	44.46	82.25	-37.79	peak
3	4186.000	47.19	-3.61	43.58	82.25	-38.67	peak
4	7723.000	39.11	5.67	44.78	82.25	-37.47	peak
5	9136.000	37.26	9.80	47.06	82.25	-35.19	peak
6	9667.000	36.91	10.35	47.26	82.25	-34.99	peak

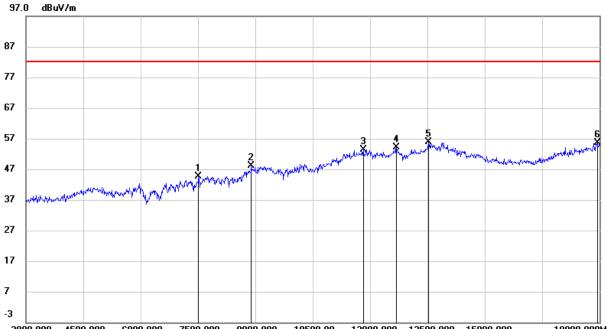


#### GSM 1900

**GPRS-** Low Channel- Horizontal

**GPRS-** Low Channel- Vertical

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5715.000	40.13	1.46	41.59	82.25	-40.66	peak
2	7755.000	38.82	6.31	45.13	82.25	-37.12	peak
3	9135.000	37.92	10.55	48.47	82.25	-33.78	peak
4	11520.000	36.29	16.65	52.94	82.25	-29.31	peak
5	13995.000	33.18	21.95	55.13	82.25	-27.12	peak
6	17985.000	29.75	25.60	55.35	82.25	-26.90	peak



3000.000	4500.000 6000.	000 7500.000	9000.000	10500.00 1200	0.000 13500.000	15000.000	18000.000MHz
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	7515.000	38.38	6.33	44.71	82.25	-37.54	peak
2	8895.000	38.40	9.71	48.11	82.25	-34.14	peak
3	11820.000	36.03	17.47	53.50	82.25	-28.75	peak
4	12690.000	36.02	18.02	54.04	82.25	-28.21	peak
5	13530.000	34.89	20.96	55.85	82.25	-26.40	peak
6	17940.000	30.33	25.34	55.67	82.25	-26.58	peak

#### GPRS- Mid Channel- Horizontal

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	7725.000	39.08	6.32	45.40	82.25	-36.85	peak
2	9195.000	37.80	10.56	48.36	82.25	-33.89	peak
3	10305.000	36.55	12.61	49.16	82.25	-33.09	peak
4	11790.000	36.41	17.38	53.79	82.25	-28.46	peak
5	13605.000	34.10	21.12	55.22	82.25	-27.03	peak
6	17865.000	30.03	24.89	54.92	82.25	-27.33	peak



#### GPRS- Mid Channel- Vertical

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5715.000	40.37	1.46	41.83	82.25	-40.42	peak
2	7515.000	39.21	6.33	45.54	82.25	-36.71	peak
3	9135.000	37.38	10.55	47.93	82.25	-34.32	peak
4	11715.000	36.78	17.19	53.97	82.25	-28.28	peak
5	13620.000	34.53	21.15	55.68	82.25	-26.57	peak
6	17940.000	29.76	25.34	55.10	82.25	-27.15	peak

#### GPRS- High Channel- Horizontal

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	7830.000	38.42	6.32	44.74	82.25	-37.51	peak
2	9255.000	37.39	10.59	47.98	82.25	-34.27	peak
3	11535.000	36.88	16.70	53.58	82.25	-28.67	peak
4	12645.000	36.16	17.92	54.08	82.25	-28.17	peak
5	13605.000	34.52	21.12	55.64	82.25	-26.61	peak
6	17985.000	29.67	25.60	55.27	82.25	-26.98	peak

#### GPRS- High Channel- Vertical

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5925.000	39.24	2.04	41.28	82.25	-40.97	peak
2	7515.000	40.32	6.33	46.65	82.25	-35.60	peak
3	9060.000	37.91	10.51	48.42	82.25	-33.83	peak
4	11520.000	36.95	16.65	53.60	82.25	-28.65	peak
5	13875.000	33.67	21.70	55.37	82.25	-26.88	peak
6	17955.000	30.11	25.42	55.53	82.25	-26.72	peak

## **END OF REPORT**