

TEST REPORT

Product Name : Data Concentrator Unit
Model Number : AJ102C
FCC ID : 2AQPUAJ102C

Prepared for : Lin Man Power Technology, Inc.
Address : No.6 3rd street, Meridian Industrial Complex Balibago, Sta.
Rosa City, Laguna 4026, Philippines.

Prepared by : EMTEK (SHENZHEN) CO., LTD.
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TABLE OF CONTENTS

1 TEST RESULT CERTIFICATION.....	4
2 EUT TECHNICAL DESCRIPTION.....	5
3 SUMMARY OF TEST RESULT.....	6
4 TEST METHODOLOGY.....	7
4.1 GENERAL DESCRIPTION OF APPLIED STANDARDS.....	7
4.2 MEASUREMENT EQUIPMENT USED.....	7
4.3 DESCRIPTION OF TEST MODES.....	8
5 FACILITIES AND ACCREDITATIONS.....	9
5.1 FACILITIES.....	9
5.2 LABORATORY ACCREDITATIONS AND LISTINGS.....	9
6 TEST SYSTEM UNCERTAINTY.....	10
7 SETUP OF EQUIPMENT UNDER TEST.....	11
7.1 RADIO FREQUENCY TEST SETUP 1.....	11
7.2 RADIO FREQUENCY TEST SETUP 2.....	11
7.3 SUPPORT EQUIPMENT.....	13
8 TEST REQUIREMENTS.....	14
8.1 EFFECTIVE (ISOTROPIC) RADIATED POWER.....	14
8.2 FIELD STRENGTH OF SPURIOUS RADIATION.....	16

Modified Information

Version	Report No.	Revision Date	Summary
Ver.1.0	ENS2410180034W00102R	/	Original Report

1 TEST RESULT CERTIFICATION

Applicant : Lin Man Power Technology, Inc.
Address : No.6 3rd street, Meridian Industrial Complex Balibago, Sta. Rosa City, Laguna 4026, Philippines.
Manufacturer : Lin Man Power Technology, Inc.
Address : No.6 3rd street, Meridian Industrial Complex Balibago, Sta. Rosa City, Laguna 4026, Philippines.
Product Name : Data Concentrator Unit
Model Number : AJ102C
Trademark : 

Measurement Procedure Used:


APPLICABLE STANDARDS	
STANDARD	TEST RESULT
FCC 47 CFR Part 2 , Subpart J FCC 47 CFR Part 22, Subpart H FCC 47 CFR Part 24, Subpart E	PASS

The device described above is tested by EMTEK (Shenzhen) Co., Ltd. to determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. The measurement results are contained in this test report and EMTEK (Shenzhen) Co., Ltd. is assumed full of responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT (Equipment Under Test) is technically compliant with the above table standards requirement.

This report applies to above tested sample only and shall not be reproduced in part without written approval of EMTEK (Shenzhen) Co., Ltd.

Date of Test : November 11, 2024 to December 24, 2024

Prepared by : 
Una Yu/Editor

Reviewer : 
Joe Xia/Supervisor

Approved & Authorized Signer : 
Lisa Wang/Manager

2 EUT TECHNICAL DESCRIPTION

Product Name:	Data Concentrator Unit
Model Number:	AJ102C
Support Networks:	GPRS
Support Bands:	GPRS850 GPRS1900
Frequency Range:	GPRS850: Tx: 824~849MHz/ Rx: 869~894MHz GPRS1900: Tx: 1850~1910MHz/ Rx: 1930~1990MHz
Modulation Mode:	GMSK for GPRS
GPRS Class:	Class 12
Type of Antenna:	External Antenna
Antenna Gain:	GPRS850: 4.42dBi GPRS1900: 2.62dBi
Power Supply	AC 120V/60Hz
Temperature Range:	-25°C~85°C

Note: for more details, please refer to the user's manual of the EUT.

3 SUMMARY OF TEST RESULT

FCC Rule	Test Parameter	Verdict	Remark
2.1046 22.913 (a), 24.232 (c)	RF Power Output	PASS	*
2.1046 22.913 (a), 24.232 (c)	ERP and EIRP	PASS	
2.1049 22.917 (b), 24.238 (b)	Occupied Bandwidth	PASS	*
2.1051, 22.917, 24.238, 27.53	Spurious Emissions at Antenna Terminal	PASS	*
2.1053, 22.917, 24.238, 27.53	Field Strength of Spurious Radiation	PASS	
2.1051, 22.917	Band Edges Compliance	PASS	*
22.917 (a), 24.238 (a)	Out of Band Emissions	PASS	*
2.1055, 22.355, 24.235, 27.54	Frequency Stability	PASS	*
24.232, 27.50	Peak-to-average Ratio (PAR) of Transmitter	PASS	*
NOTE: * these modules have been tested and comply with the above table standards requirement, according to technical characteristic, only Equivalent (Isotropic) Radiated Power and Field Strength of Spurious Radiation retest for this device, all other test results please reference original module's test report No.: I22W00078-GSM-RF-FCC.			

RELATED SUBMITTAL(S) / GRANT(S):

This submittal(s) (test report) is filing to comply with the above table standards requirement.

4 TEST METHODOLOGY

4.1 GENERAL DESCRIPTION OF APPLIED STANDARDS

According to its specifications, the EUT must comply with the requirements of the following standards:

FCC 47 CFR Part 2 , Subpart J
 FCC 47 CFR Part 22, Subpart H
 FCC 47 CFR Part 24, Subpart E
 KDB971168 D01:V03r01
 ANSI/TIA-603-E-2016
 ANSI C63.26:2015

4.2 MEASUREMENT EQUIPMENT USED

For Spurious Emissions Test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
Pre-Amplifier	Bonn	BLMA 011001N	2213967A	2024/10/18	1Year
EMI Test Receiver	Rohde & Schwarz	ESR7	102551	2024/10/18	1Year
Bilog Antenna	Schwarzbeck	VULB9163	9163142	2024/7/8	2Year
Horn antenna	Schwarzbeck	BBHA9120D	9120D-1198	2023/6/2	2Year
Pre-Amplifier	Bonn	BLMA 0118-5G	2213967B-01	2024/10/18	1Year
Spectrum Analyzer	Rohde & Schwarz	FSV40	100967	2024/5/10	1Year
Horn antenna	Schwarzbeck	BBHA9170	9170-399	2023/5/12	2Year
Pre-Amplifier	Lunar EM	LNA18G26-40	J1012131010001	2024/5/11	1Year
Pre-Amplifier	Lunar EM	LNA26G40-40	J1013131028001	2024/5/11	1Year
Loop Antenna	Schwarzbeck	FMZB1519	1519-012	2023/5/12	2Year
Wideband Radio Communication Tester	R&S	CMW500	171168	2024/9/18	1Year
Coaxial Cable	TIMES	NmNm-7-C15702	N/A	2024/5/23	1Year
Coaxial Cable	TIMES	HF290-NMSM-6.5M	N/A	2024/5/23	1Year

4.3 DESCRIPTION OF TEST MODES

The EUT has been tested under its typical operating condition. The CMW500 used to control the EUT staying in continuous transmitting and receiving mode for testing.

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

During all testing, EUT is in link mode with base station emulator at maximum power level.

The Transmitter was operated in the normal operating mode. The TX frequency was fixed which was for the purpose of the measurements.

Test of channel included the lowest and middle and highest frequency to perform the test, then record on this report.

Pre-defined engineering program for regulatory testing used to control the EUT for staying in continuous transmitting and receiving mode is programmed.

Test Mode List		
Test Mode	Description	Remark
TM1	GPRS 850	Low, Middle, High Channels
TM2	GPRS1900	Low, Middle, High Channels

Testing Configure		
Support Standard	Channel Frequency	Channel Number
GPRS850	824.2 MHz	128
	836.6 MHz	190
	848.8 MHz	251
GPRS1900	1850.2 MHz	512
	1880.0 MHz	661
	1909.8 MHz	810
Note: the transmitter has been tested on the communications mode of GPRS compliance test and record the worst case.		

■ Test Environment

Environment Parameter	Selected Values During Tests	
Relative Humidity	Ambient	
Temperature	TN	Ambient
Ambient	VL	AC 108V
	VN	AC 120V
	VH	AC 132V
NOTE: VL= Lower Extreme Test Voltage VN= Nominal Voltage VH= Upper Extreme Test Voltage TN= Normal Temperature		

5 FACILITIES AND ACCREDITATIONS

5.1 FACILITIES

All measurement facilities used to collect the measurement data are located at

Building 69, Majialong Industry Zone District, Nanshan District, Shenzhen, China

The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.26 and CISPR Publication 22.

5.2 LABORATORY ACCREDITATIONS AND LISTINGS

Site Description

EMC Lab.

: **Accredited by CNAS**

The Certificate Registration Number is L2291

The Laboratory has been assessed and proved to be in compliance with CNAS-CL01 (identical to ISO/IEC 17025:2017)

Accredited by FCC

Designation Number: CN1204

Test Firm Registration Number: 882943

Accredited by A2LA

The Certificate Number is 4321.01

Accredited by Industry Canada

The Conformity Assessment Body Identifier is CN0008

Name of Firm

: EMTEK (SHENZHEN) CO., LTD.

Site Location

: Building 69, Majialong Industry Zone, Nanshan District, Shenzhen, Guangdong, China

6 TEST SYSTEM UNCERTAINTY

The following measurement uncertainty levels have been estimated for tests performed on the apparatus:

Parameter	Uncertainty
Radio Frequency	$\pm 1 \times 10^{-5}$
RF Power Output	$\pm 1.0\text{dB}$
Radiated Emission Test	$\pm 2.0\text{dB}$
Occupied Bandwidth Test	$\pm 1.0\text{dB}$
Band Edge Test	$\pm 3\text{dB}$
All emission, radiated	$\pm 3\text{dB}$
Antenna Port Emission	$\pm 3\text{dB}$
Temperature	$\pm 0.5^\circ\text{C}$
Humidity	$\pm 3\%$

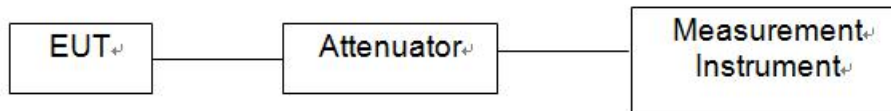
Measurement Uncertainty for a level of Confidence of 95%



7 SETUP OF EQUIPMENT UNDER TEST

7.1 RADIO FREQUENCY TEST SETUP 1

The component's antenna ports(s) of the EUT are connected to the measurement instrument per an appropriate attenuator. The EUT is controlled by PC/software to emit the specified signals for the purpose of measurements.



7.2 RADIO FREQUENCY TEST SETUP 2

The test site semi-anechoic chamber has met the requirement of NSA tolerance 4 dB according to the standards: ANSI C63.10. The test distance is 3m. The setup is according to the requirements in Section 13.1.4.1 of ANSI C63.26-2015 and CAN/CSA-CEI/IEC CISPR 32.

Below 30MHz:

The EUT is placed on a turntable 0.8 meters above the ground in the chamber, 3 meter away from the antenna (loop antenna). The Antenna should be positioned with its plane vertical at the specified distance from the EUT and rotated about its vertical axis for maximum response at each azimuth about the EUT. The center of the loop shall be 1 m above the ground. For certain applications, the loop antenna plane may also need to be positioned horizontally at the specified distance from the EUT.

Above 30MHz:

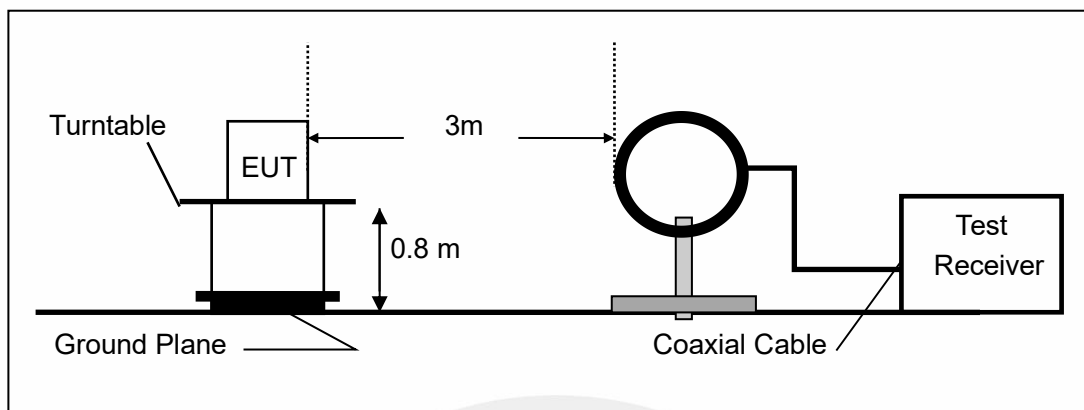
The EUT is placed on a turntable 0.8 meters above the ground in the chamber, 3 meter away from the antenna. The maximal emission value is acquired by adjusting the antenna height, polarisation and turntable azimuth. Normally, the height range of antenna is 1 m to 4 m, the azimuth range of turntable is 0° to 360°, and the receive antenna has two polarizations Vertical (V) and Horizontal (H).

Above 1GHz:

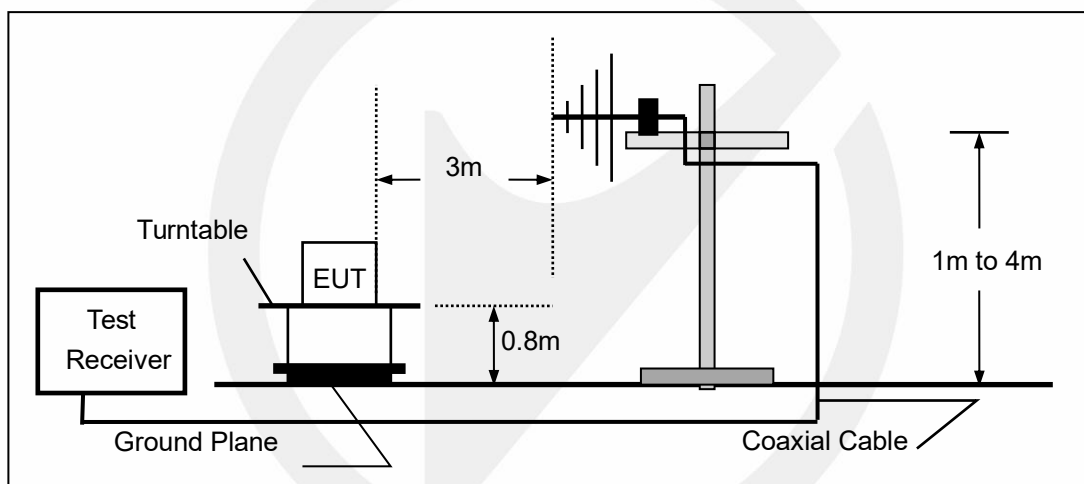
(Note: the FCC's permission to use 1.5m as an alternative per TCBC Conf call of Dec. 2, 2014.)

The EUT is placed on a turntable 1.5 meters above the ground in the chamber, 3 meter away from the antenna. The maximal emission value is acquired by adjusting the antenna height, polarisation and turntable azimuth. Normally, the height range of antenna is 1 m to 4 m, the azimuth range of turntable is 0° to 360°, and the receive antenna has two polarizations Vertical (V) and Horizontal (H).

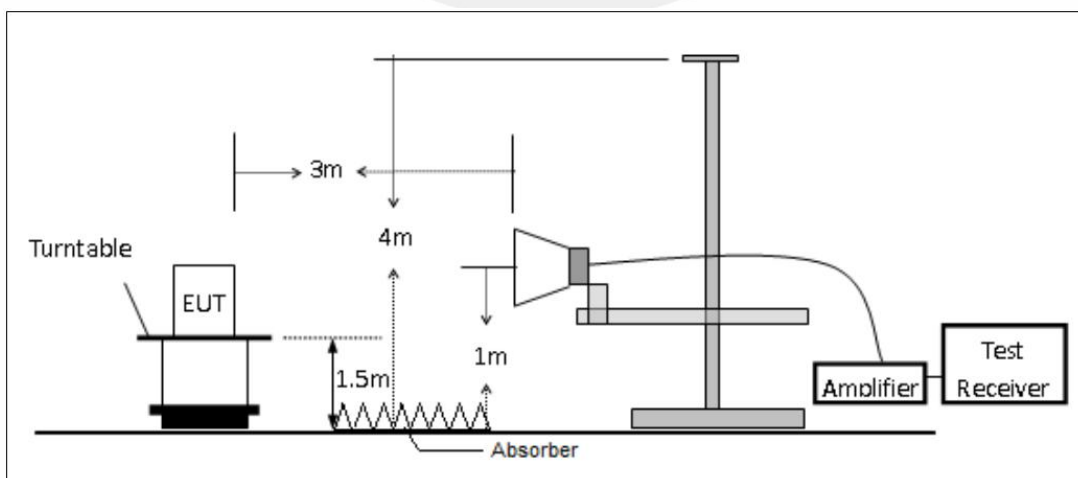
(a) Radiated Emission Test Set-Up, Frequency Below 30MHz



(b) Radiated Emission Test Set-Up, Frequency Below 1000MHz



(c) Radiated Emission Test Set-Up, Frequency above 1000MHz



7.3 SUPPORT EQUIPMENT

N/A

Notes:

- 1.All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
- 2.Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.



8 TEST REQUIREMENTS

8.1 EFFECTIVE (ISOTROPIC) RADIATED POWER

8.1.1 Conformance Limit

For FCC Part 22.913

Extend coverage on a secondary basis into cellular unserved areas, as those areas are defined in §22.949, the ERP of base transmitters and cellular repeaters of such systems must not exceed 1000 Watts. The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts.

For FCC Part 24.232

Mobile and portable stations are limited to 2 watts EIRP and the equipment must employ a means for limiting power to the minimum necessary for successful communications.

For FCC Part 27.50

Fixed, mobile, and portable (hand-held) stations operating in the 1710-1755 MHz band and mobile and portable stations operating in the 1695-1710 MHz and 1755-1780 MHz bands are limited to 1 watt EIRP. Fixed stations operating in the 1710-1755 MHz band are limited to a maximum antenna height of 10 meters above ground. Mobile and portable stations operating in these bands must employ a means for limiting power to the minimum necessary for successful communications.

8.1.2 Test Configuration

Test according to clause 7.3 radio frequency test setup 3

8.1.3 Test Procedure

Connect the EUT to Universal Radio Communication Tester CMU500 via the antenna connector. A call is set up by the SS according to the generic call set up procedure on a channel with ARFCN in the Mid ARFCN range, power control level set to Max power. MS TXPWR_MAX_CCH is set to the maximum value supported by the Power Class of the Mobile under test

The instrument must have an available measurement/resolution bandwidth that is equal to or exceeds the OBW. If this capability is available, then the following procedure can be used to determine the total peak output power.

- a) Set the RBW \geq OBW.
- b) Set VBW $\geq 3 \times$ RBW.
- c) Set span $\geq 2 \times$ RBW
- d) Sweep time = auto couple.
- e) Detector = peak.
- f) Ensure that the number of measurement points \geq span/RBW.
- g) Trace mode = max hold.
- h) Allow trace to fully stabilize.
- i) Use the peak marker function to determine the peak amplitude level.

The EUT was placed on a turn table which is 0.8m above ground plane. Maximum procedure was performed on the six highest emissions to ensure EUT compliance. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. Repeat above procedures until all frequency measured was complete.

A receiving antenna was placed on the antenna mast 3 meters from the EUT for emission measurements. The height of receiving antenna is 1.5m. The test setup refers to figure below. Detected emissions were maximized at each frequency by rotating the EUT through 360° and adjusting the receiving antenna polarization. The radiated emission measurements of all transmit frequencies in three channels (High, Middle, Low) were measured with peak detector.

The EUT is then put into continuously transmitting mode at its maximum power level during the test. And the maximum value of the receiver should be recorded as (Pr).

The EUT shall be replaced by a substitution antenna. The test setup refers to figure below. In the chamber, a substitution antenna for the frequency band of interest is placed at the reference point of the chamber. An RF Signal source for the frequency band of interest is connected to the substitution antenna with a cable that has been constructed to not interfere with the radiation pattern of the antenna. A power (PMea) is applied to the input of the substitution antenna, and adjust the level of the signal generator output until the value of the receiver reach the previously recorded (Pr). The power of signal source

(PMea) is recorded. The test should be performed by rotating the test item and adjusting the receiving antennapolarization.

A amplifier should be connected to the Signal Source output port. And the cable should be connect between the Amplifier and the Substitution Antenna.

The cable loss (Pcl), the Substitution Antenna Gain (Ga) and the Amplifier Gain (PAg) should be recorded after test.

The measurement results are obtained as described below:

Power(EIRP)=PMea- PAg - Pcl - Ga

This value is EIRP since the measurement is calibrated using an antenna of known gain (2.15 dBi) and known input power.

ERP can be calculated from EIRP by subtracting the gain of the dipole,

ERP = EIRP -2.15dBi.

8.1.4 Test Results

GPRS850:

Frequency (MHz)	Power Step	Slot	Conducted Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Verdict
824.2	3	1TS	32.60	4.42	34.87	38.45	PASS
824.2	3	2TS	32.45	4.42	34.72	38.45	PASS
824.2	3	3TS	30.50	4.42	32.77	38.45	PASS
824.2	3	4TS	28.87	4.42	31.14	38.45	PASS
836.6	3	1TS	32.45	4.42	34.72	38.45	PASS
836.6	3	2TS	32.21	4.42	34.48	38.45	PASS
836.6	3	3TS	30.19	4.42	32.46	38.45	PASS
836.6	3	4TS	28.56	4.42	30.83	38.45	PASS
848.8	3	1TS	32.52	4.42	34.79	38.45	PASS
848.8	3	2TS	32.36	4.42	34.63	38.45	PASS
848.8	3	3TS	30.28	4.42	32.55	38.45	PASS
848.8	3	4TS	28.66	4.42	30.93	38.45	PASS

Note:

EIRP = Output Power + Antenna Gain

ERP = EIRP - 2.15dBi.

GPRS1900:

Frequency (MHz)	Power Step	Slot	Conducted Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Verdict
1850.2	3	1TS	29.58	2.62	32.20	33	PASS
1850.2	3	2TS	29.31	2.62	31.93	33	PASS
1850.2	3	3TS	27.66	2.62	30.28	33	PASS
1850.2	3	4TS	25.54	2.62	28.16	33	PASS
1880	3	1TS	29.42	2.62	32.04	33	PASS
1880	3	2TS	29.24	2.62	31.86	33	PASS
1880	3	3TS	27.53	2.62	30.15	33	PASS
1880	3	4TS	25.34	2.62	27.96	33	PASS
1909.8	3	1TS	29.42	2.62	32.04	33	PASS
1909.8	3	2TS	29.21	2.62	31.83	33	PASS
1909.8	3	3TS	27.39	2.62	30.01	33	PASS
1909.8	3	4TS	25.24	2.62	27.86	33	PASS

Note:

EIRP = Output Power + Antenna Gain

8.2 FIELD STRENGTH OF SPURIOUS RADIATION

8.2.1 Conformance Limit

For FCC Part 22.917

Out of band emissions. 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.

For FCC Part 24.238

Out of band emissions. 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.

For FCC Part 27.53

Out of band emissions. 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.

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.

8.2.2 Test Configuration

Test according to clause 7.3 radio frequency test setup 3

8.2.3 Test Procedure

Connect the EUT to Universal Radio Communication Tester CMU500 via the antenna connector. A call is set up by the SS according to the generic call set up procedure on a channel with ARFCN in the Mid ARFCN range, power control level set to Max power. MS TXPWR_MAX_CCH is set to the maximum value supported by the Power Class of the Mobile under test.

Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 100 kHz or 1 percent of emission bandwidth, as specified). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

then the following procedure can be used to determine spurious emission

- a) RBW = 1 MHz for $f \geq 1$ GHz (1GHz to 25GHz), 100 kHz for $f < 1$ GHz (30MHz to 1GHz), 200Hz for $f < 150$ KHz (9KHz to 150KHz), 9KHz for $f < 30$ MHz (150KHz to 30KHz)
- b) Set VBW $\geq 3 \times$ RBW.
- c) Set span wide enough to fully capture the emission being measured
- d) Sweep time = auto couple.
- e) Detector = peak.
- f) Ensure that the number of measurement points \geq span/RBW.
- g) Trace mode = max hold.
- h) Allow trace to fully stabilize.
- i) Use the peak marker function to determine the peak amplitude level.

Step1. The EUT was placed on a rotatable wooden table with 0.8 meter above ground.

Step2. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.

Step3. The table was rotated 360 degrees to determine the position of the highest spurious emission.

Step4. The height of the receiving antenna is varied between one meter and four meters to search

the

maximum spurious emission for both horizontal and vertical polarizations.

Step5. Make the measurement with the spectrum analyzer's RBW , VBW , taking the record of maximum spurious emission.

Step6. A horn antenna was substituted in place of the EUT and was driven by a signal generator.

Step7. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.

Step8. Taking the record of output power at antenna port.

Step9. Repeat step 7 to step 8 for another polarization.

Step10. Emission level (dBm) = output power + substitution Gain. Test Results

8.2.4 Test Results

PASS

■ Spurious Emission below 30MHz (9KHz to 30MHz)

Temperature:	25℃	Test By:	ZXR
Humidity:	60%	Test Mode:	Middle Channel

Freq. (MHz)	H/V	Bandwidth (MHz)	Test RB	Emission Level(dBm)	Limit (dBm)	Margin (dBm)	Verdict
--	--	--	--	--	--	--	--

Note: the amplitude of spurious emission that is attenuated by more than 20dB below the permissible limit has no need to be reported.

■ Spurious Emission Above 30MHz (30MHz to 1 GHz)

Radiated Spurious Emission emitted by the MS allocated a channel for GSM850						
Temperature:	25°C	Mode	GPRS			
Humidity:	60%	Test Mode:	ARFCN			
Air Pressure	106kPa	Traffic Channel:	<input type="checkbox"/> CH128 <input checked="" type="checkbox"/> CH190 <input type="checkbox"/> CH251			
Frequency (MHz)	Antenna Polarization	RBW (kHz)	Emission level (dBm)	Limit (dBm)	Over (dB)	Verdict
83.5952	V	100	-52.22	-13.00	39.22	PASS
251.5106	V	100	-56.77	-13.00	43.77	PASS
500.0855	V	100	-58.41	-13.00	45.41	PASS
644.9137	V	100	-55.29	-13.00	42.29	PASS
830.2415	V	100	-53.92	-13.00	40.92	PASS
991.8031	V	100	-51.85	-13.00	38.85	PASS
83.5952	H	100	-52.34	-13.00	39.34	PASS
247.9214	H	100	-52.77	-13.00	39.77	PASS
402.3046	H	100	-58.89	-13.00	45.89	PASS
601.5526	H	100	-53.87	-13.00	40.87	PASS
800.946	H	100	-48.77	-13.00	35.77	PASS
962.4106	H	100	-50.54	-13.00	37.54	PASS

Radiated Spurious Emission emitted by the MS allocated a channel for GSM1900						
Temperature:	25°C	Mode	GPRS			
Humidity:	60%	Test Mode:	ARFCN			
Air Pressure	106kPa	Traffic Channel:	<input type="checkbox"/> CH512 <input checked="" type="checkbox"/> CH661 <input type="checkbox"/> CH810			
Frequency (MHz)	Antenna Polarization	RBW (kHz)	Emission level (dBm)	Limit (dBm)	Over (dB)	Verdict
83.2557	V	100	-52.54	-13.00	39.54	PASS
245.5448	V	100	-57.55	-13.00	44.55	PASS
507.2154	V	100	-57.54	-13.00	44.54	PASS
652.8681	V	100	-55.50	-13.00	42.50	PASS
811.6166	V	100	-53.74	-13.00	40.74	PASS
885.2918	V	100	-51.42	-13.00	38.42	PASS
83.5467	H	100	-51.07	-13.00	38.07	PASS
249.328	H	100	-52.77	-13.00	39.77	PASS
405.1178	H	100	-58.43	-13.00	45.43	PASS
601.4556	H	100	-53.27	-13.00	40.27	PASS
788.0929	H	100	-52.98	-13.00	39.98	PASS
963.7687	H	100	-50.92	-13.00	37.92	PASS

Note: (1) Emission Level= Reading Level+ Correct Factor +Cable Loss.

(2) Correct Factor= Ant_F + Cab_L - Preamp

(3) Data of measurement within this frequency range shown "--" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

■ Spurious Emission Above 1GHz (1GHz to 10th harmonics)

Radiated Spurious Emission emitted by the MS allocated a channel for GSM850						
Temperature:	25°C	Mode	GPRS			
Humidity:	60%	Test Mode:	ARFCN			
Air Pressure	106kPa	Traffic Channel:	<input type="checkbox"/> CH128 <input checked="" type="checkbox"/> CH190 <input type="checkbox"/> CH251			
Frequency (MHz)	Antenna Polarization	RBW (kHz)	Emission level (dBm)	Limit (dBm)	Over (dB)	Verdict
2900.980	V	100	-43.12	-13.00	30.12	PASS
6485.297	V	100	-36.83	-13.00	23.83	PASS
9202.440	V	100	-29.96	-13.00	16.96	PASS
10685.13	V	100	-26.86	-13.00	13.86	PASS
14473.49	V	100	-21.47	-13.00	8.47	PASS
17986.39	V	100	-22.59	-13.00	9.59	PASS
3808.961	H	100	-42.35	-13.00	29.35	PASS
6495.499	H	100	-36.88	-13.00	23.88	PASS
8695.739	H	100	-30.24	-13.00	17.24	PASS
10059.41	H	100	-26.78	-13.00	13.78	PASS
14320.46	H	100	-21.07	-13.00	8.07	PASS
17979.59	H	100	-20.74	-13.00	7.74	PASS

Radiated Spurious Emission emitted by the MS allocated a channel for GSM1900						
Temperature:	25°C	Mode	GPRS			
Humidity:	60%	Test Mode:	ARFCN			
Air Pressure	106kPa	Traffic Channel:	<input type="checkbox"/> CH512 <input checked="" type="checkbox"/> CH661 <input type="checkbox"/> CH810			
Frequency (MHz)	Antenna Polarization	RBW (kHz)	Emission level (dBm)	Limit (dBm)	Over (dB)	Verdict
3798.759	V	100	-42.89	-13.00	29.89	PASS
6481.896	V	100	-37.09	-13.00	24.09	PASS
8658.331	V	100	-29.33	-13.00	16.33	PASS
10664.73	V	100	-27.08	-13.00	14.08	PASS
14306.86	V	100	-21.65	-13.00	8.65	PASS
17530.70	V	100	-22.35	-13.00	9.35	PASS
3825.965	H	100	-42.18	-13.00	29.18	PASS
6447.889	H	100	-37.10	-13.00	24.10	PASS
9042.608	H	100	-30.49	-13.00	17.49	PASS
11079.61	H	100	-27.18	-13.00	14.18	PASS
14269.45	H	100	-21.54	-13.00	8.54	PASS
17833.36	H	100	-21.15	-13.00	8.15	PASS

Note: (1) Emission Level= Reading Level+ Correct Factor +Cable Loss.

(2) Correct Factor= Ant_F + Cab_L - Preamp

(3) Data of measurement within this frequency range shown “ -- ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

Detail of factor for radiated emission

Frequency(MHz)	Ant_F(dB)	Cab_L(dB)	Preamp(dB)	Correct Factor(dB)
0.009	20.6	0.03	\	20.63
0.15	20.7	0.1	\	20.8
1	20.9	0.15	\	21.05
10	20.1	0.28	\	20.38
30	18.8	0.45	\	19.25
30	11.7	0.62	27.9	-15.58
100	12.5	1.02	27.8	-14.28
300	12.9	1.91	27.5	-12.69
600	19.2	2.92	27	-4.88
800	21.1	3.54	26.6	-1.96
1000	22.3	4.17	26.2	0.27
1000	25.6	1.76	41.4	-14.04
3000	28.9	3.27	43.2	-11.03
5000	31.1	4.2	44.6	-9.3
8000	36.2	5.95	44.7	-2.55
10000	38.4	6.3	43.9	0.8
12000	38.5	7.14	42.3	3.34
15000	40.2	8.15	41.4	6.95
18000	45.4	9.02	41.3	13.12
18000	37.9	1.81	47.9	-8.19
21000	37.9	1.95	48.7	-8.85
25000	39.3	2.01	42.8	-1.49
28000	39.6	2.16	46.0	-4.24
31000	41.2	2.24	44.5	-1.06
34000	41.5	2.29	46.6	-2.81
37000	43.8	2.30	46.4	-0.3
40000	43.2	2.50	42.2	3.5

--- End of Report ---

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