SPECTRUM REPORT
(UMTS)

Applicant:	Shenzhen Huafurui Technology Co., Ltd.
Address of Applicant:	Unit 1401 &1402, 14/F, Jinqi zhigu mansion (No. 4 building of Chongwen Garden), Crossing of the Liuxian street and Tangling road, Taoyuan street, Nanshan district, Shenzhen,P.R. China

Equipment Under Test (EUT)

Product Name:	Smart Phone
Model No.:	CUBOT J9
Trade mark:	CUBOT
Applicable standards:	ETSI EN 301 908-1 V11.1.1 (2016-07) ETSI EN 301 908-2 V11.1.2 (2017-08)
Date of sample receipt:	31 Mar., 2020
Date of Test:	01 Apr., to 15 Apr., 2020
Date of report issued:	27 Apr., 2020
Test Result:	PASS*

*****In the configuration tested, the EUT complied with the standards specified above.

The CE mark as shown below can be used, under the responsibility of the manufacturer, after completion of an EC Declaration of Conformity and compliance with all relevant EC Directives. The protection requirements with respect to electromagnetic compatibility contained in Directive 2014/53/EU are considered.

SHENZHEN ZHONGJIAN NANFANG TESTING CO., LTD
CCIS

Bruce Zhang
Laboratory Manager

2 Version

Version No.	Date	Description
00	*16 Apr., 2020*	*Original*
01	*27 Apr., 2020*	*Update page 5*

Tested by:	Yaro Wu ***Test Engineer***	***Date:***	*27 Apr., 2020*
Reviewed by:	Winner Zhang ***Project Engineer***	***Date:***	*27 Apr., 2020*

3 Contents

4 Test Summary

Test Item	Test Requirement	Test method	Result
Transmitter maximum output power	ETSI EN 301 908-2 section 4.2.2	ETSI EN 301 908-2 section 5.3.1	Pass
Transmitter spectrum emission mask	ETSI EN 301 908-2 section 4.2.3	ETSI EN 301 908-2 section 5.3.2	Pass
Transmitter spurious emissions	ETSI EN 301 908-2 section 4.2.4	ETSI EN 301 908-2 section 5.3.3	Pass
Transmitter minimum output power	ETSI EN 301 908-2 section 4.2.5	ETSI EN 301 908-2 section 5.3.4	Pass
Transmitter Adjacent Channel Leakage Power Ratio (ACLR)	ETSI EN 301 908-2 section 4.2.12	ETSI EN 301 908-2 section 5.3.11	Pass
Out-of-synchronization handling of output power	ETSI EN 301 908-2 section 4.2.11	ETSI EN 301 908-2 section 5.3.10	Pass
Receiver adjacent channel selectivity (ACS)	ETSI EN 301 908-2 section 4.2.6	ETSI EN 301 908-2 section 5.3.5	Pass
Receiver blocking characteristics	ETSI EN 301 908-2 section 4.2.7	ETSI EN 301 908-2 section 5.3.6	Pass
Receiver spurious response	ETSI EN 301 908-2 section 4.2.8	ETSI EN 301 908-2 section 5.3.7	Pass
Receiver intermodulation characteristics	ETSI EN 301 908-2 section 4.2.9	ETSI EN 301 908-2 section 5.3.8	Pass
Receiver spurious emissions	ETSI EN 301 908-2 section 4.2.10	ETSI EN 301 908-2 section 5.3.9	Pass
Receiver Reference Sensitivity level	ETSI EN 301 908-2 section 4.2.13	ETSI EN 301 908-2 section 5.3.12	Pass
Radiated emissions	ETSI EN 301 908-1 Section 4.2.2	ETSI EN 301 908-1 Section 5.3.1	Pass
Control and monitoring functions	ETSI EN 301 908-1 Section 4.2.4	ETSI EN 301 908-1 Section 5.3.3	Pass

Remark:
Pass: The EUT complies with the essential requirements in the standard.

5 General Information

5.1 Client Information

Applicant:	Shenzhen Huafurui Technology Co., Ltd.
Address:	Unit 1401 &1402, 14/F, Jinqi zhigu mansion (No. 4 building of Chongwen Garden), Crossing of the Liuxian street and Tangling road, Taoyuan street, Nanshan district, Shenzhen,P.R. China
Manufacturer/ Factory:	Shenzhen Huafurui Technology Co., Ltd.
Address:	Unit 1401 &1402, 14/F, Jinqi zhigu mansion (No. 4 building of Chongwen Garden), Crossing of the Liuxian street and Tangling road, Taoyuan street, Nanshan district, Shenzhen,P.R. China

5.2 General Description of E.U.T.

Product Name:	Smart Phone
Model No.:	CUBOT J9
Transmitter frequency range:	Band I: 1920 MHz~1980 MHz Band VIII: 880 MHz~915 MHz
Receiver frequency range:	Band I: 2110 MHz~2170 MHz Band VIII: 925 MHz~960 MHz
Hardware version:	W956_MB_V1.0_20191228
Software version:	CUBOT_J9_A021C_V01_20200313
Modulation type:	WCDMA: QPSK ; HSDPA: QPSK,16QAM; HSUPA: QPSK
Antenna Type:	Internal Antenna
Antenna Gain:	Band I: 1.01 dBi (declare by Applicant) Band VIII: 1.11 dBi (declare by Applicant)
Power supply:	Rechargeable Li-ion Battery DC3.85V/4200mAh
AC adapter:	Model No.:TPA-97050100VU Input: AC100-240V, 50/60Hz 0.15A Output: DC 5.0V, 1.0A

5.3 Test environment and mode

Operating Environment:	
Temperature:	Normal: 15℃ ~ 35℃, Extreme: -20℃ ~ +55℃
Humidity:	20 % ~ 75 % RH
Atmospheric Pressure:	1008 mbar
Voltage:	Nominal: 3.85Vdc, Extreme: Low 3.5Vdc, High 4.4Vdc
Test mode:	
RMC mode	Keep the EUT communication with simulated station in RMC mode
HSDPA mode	Keep the EUT communication with simulated station in HSDPA mode
HSUPA mode	Keep the EUT communication with simulated station in HSUPA mode

Note:
1. *All the test environments and test modes required following ETSI TS 134 121-1 and ETSI EN 301 908-2.*
2. *During the test, pre-scan SIM 1 and SIM 2, found SIM 1 was worse case. The report only reflects the worst case.*

5.4 Description of Support Units

Test Equipment	Manufacturer	Model No.	Serial No.
Simulated Station	Anritsu	MT8820C	6201026545
Simulated Station	Rohde & Schwarz	CMU200	122477

5.5 Measurement Uncertainty

Parameter	Expanded Uncertainty (Confidence of 95%)
Radio Frequency	$\pm 1.2 * 10^{-9}$
RF Power, Conducted	±0.64 dB
Spurious emission, Conducted	±1.18 dB
Temperature	±0.3 °C
Voltage	±0.1 %
Humidity	±2 %
Time	±10 %
Radiated Emission (30MHz ~ 1000MHz)	±4.32 dB
Radiated Emission (1GHz ~ 18GHz)	±5.38 dB

5.6 Laboratory Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **FCC - Designation No.: CN1211**

Shenzhen Zhongjian Nanfang Testing Co., Ltd. has been accredited as a testing laboratory by FCC(Federal Communications Commission). The test firm Registration No. is 727551.

- **ISED – CAB identifier.: CN0021**

The 3m Semi-anechoic chamber of Shenzhen Zhongjian Nanfang Testing Co., Ltd. has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 10106A-1.

- **CNAS - Registration No.: CNAS L6048**

Shenzhen Zhongjian Nanfang Testing Co., Ltd. is accredited to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration laboratories for the competence of testing. The Registration No. is CNAS L6048.

- **A2LA - Registration No.: 4346.01**

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 General requirements for the competence of testing and calibration laboratories. The test scope can be found as below link: https://portal.a2la.org/scopepdf/4346-01.pdf

5.7 Laboratory Location

Shenzhen Zhongjian Nanfang Testing Co., Ltd.
Address: No. B-C, 1/F., Building 2, Laodong No.2 Industrial Park, Xixiang Road,
Bao'an District, Shenzhen, Guangdong, China
Tel: +86-755-23118282, Fax: +86-755-23116366
Email: info@ccis-cb.com, Website: http://www.ccis-cb.com

5.8 Test Instruments list

Radiated Emission:					
Test Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Cal. Date (mm-dd-yy)**	**Cal. Due date (mm-dd-yy)**
3m SAC	SAEMC	9m*6m*6m	966	07-22-2017	07-21-2020
BiConiLog Antenna	SCHWARZBECK	VULB9163	497	03-18-2019	03-17-2020
				03-18-2020	03-17-2021
Biconical Antenna	SCHWARZBECK	VUBA9117	359	06-22-2017	06-21-2020
Horn Antenna	SCHWARZBECK	BBHA9120D	916	03-18-2019	03-17-2020
				03-18-2020	03-17-2021
Horn Antenna	SCHWARZBECK	BBHA9120D	1805	06-22-2017	06-21-2020
EMI Test Software	AUDIX	E3	Version: 6.110919b		
Pre-amplifier	HP	8447D	2944A09358	03-18-2019	03-17-2020
				03-18-2020	03-17-2021
Pre-amplifier	CD	PAP-1G18	11804	03-18-2019	03-17-2020
				03-18-2020	03-17-2021
Spectrum analyzer	Rohde & Schwarz	FSP30	101454	03-18-2019	03-17-2020
				03-18-2020	03-17-2021
EMI Test Receiver	Rohde & Schwarz	ESRP7	101070	03-18-2019	03-17-2020
				03-18-2020	03-17-2021
Signal Generator	Rohde & Schwarz	SMX	835454/016	03-18-2019	03-17-2020
				03-18-2020	03-17-2021
Signal Generator	Rohde & Schwarz	SMR20	1008100050	03-18-2019	03-17-2020
				03-18-2020	03-17-2021
Cable	ZDECL	Z108-NJ-NJ-81	1608458	03-18-2019	03-17-2020
				03-18-2020	03-17-2021
Cable	MICRO-COAX	MFR64639	K10742-5	03-18-2019	03-17-2020
				03-18-2020	03-17-2021
Cable	SUHNER	SUCOFLEX100	58193/4PE	03-18-2019	03-17-2020
				03-18-2020	03-17-2021
RF Switch Unit	MWRFTEST	MW200	N/A	N/A	N/A
Test Software	MWRFTEST	MTS8200	Version: 2.0.0.0		

Conducted method:					
Test Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Cal. Date (mm-dd-yy)**	**Cal. Due date (mm-dd-yy)**
Spectrum Analyzer	Agilent	N9020A	MY50510123	11-18-2019	11-17-2020
Vector Signal Generator	Agilent	N5182A	MY49060014	11-18-2019	11-17-2020
Signal Generator	Rohde & Schwarz	SMR20	1008100050	03-18-2019	03-17-2020
				03-18-2020	03-17-2021
Simulated Station	Rohde & Schwarz	CMW500	140493	07-22-2019	07-21-2020
RF Switch Unit	MWRFTEST	MW200	N/A	N/A	N/A
Test Software	MWRFTEST	MTS8200	Version: 2.0.0.0		
DC Power Supply	XinNuoEr	WYK-10020K	1409050110020	09-25-2019	09-24-2020
Temperature Humidity Chamber	HengPu	HPGDS-500	20140828008	11-01-2019	10-31-2020

6 Radio Technical Requirements Specification in ETSI EN 301 908-1/-2

6.1 Justification

The EUT and test equipment were configured for testing according to ETSI EN 301 908-2 V11.1.1 (2016-07) and ETSI TS 134 121-1.

The EUT was tested in the normal operating mode to represent worst-case results during the final qualification test.

The EUT was tested with a dummy battery.

6.2 Test Configuration of EUT

WCDMA Band I			WCDMA Band VIII		
Channel Number		Frequency (MHz)	Channel Number		Frequency (MHz)
Low channel	9612	1922.4	Low channel	2712	882.4
Middle channel	9750	1950.0	Middle channel	2788	897.6
High channel	9888	1977.6	High channel	2863	912.6

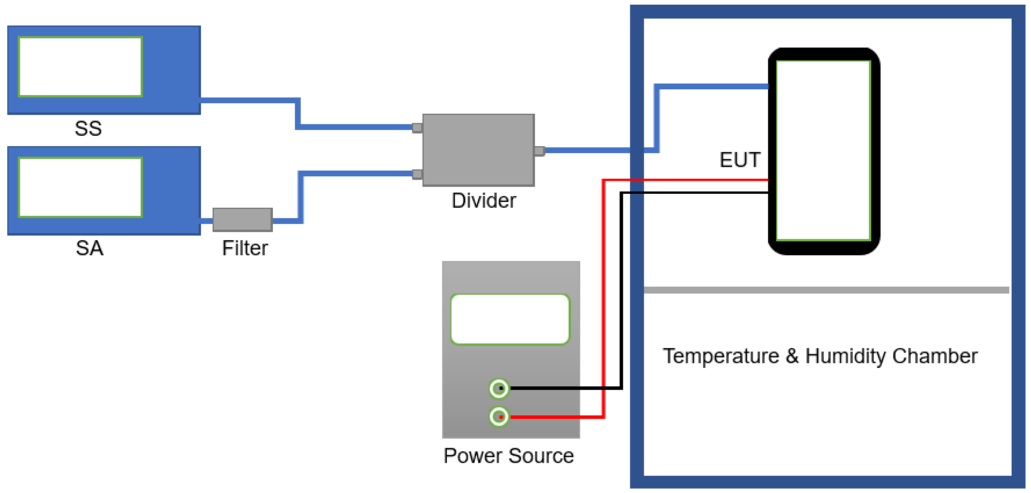
Clause No.	Test Conditions					Test Channel			Test Modes		
	NTNV	LTLV	LTHV	HTLV	HTHV	Low	Middle	High	RMC	HSDPA	HSUPA
4.2.2	√	√	√	√	√	√	√	√	√	√	√
4.2.3	√					√	√	√	√	√	√
4.2.4	√					√	√	√	√		
4.2.5	√	√	√	√	√		√		√		
4.2.6	√						√		√		
4.2.7	√						√		√		
4.2.8	√						√		√		
4.2.9	√						√		√		
4.2.10	√						√		√		
4.2.11	√						√		√		
4.2.12	√	√	√	√	√	√	√	√	√	√	√
4.2.13	√	√	√	√	√	√	√	√	√		

Note:

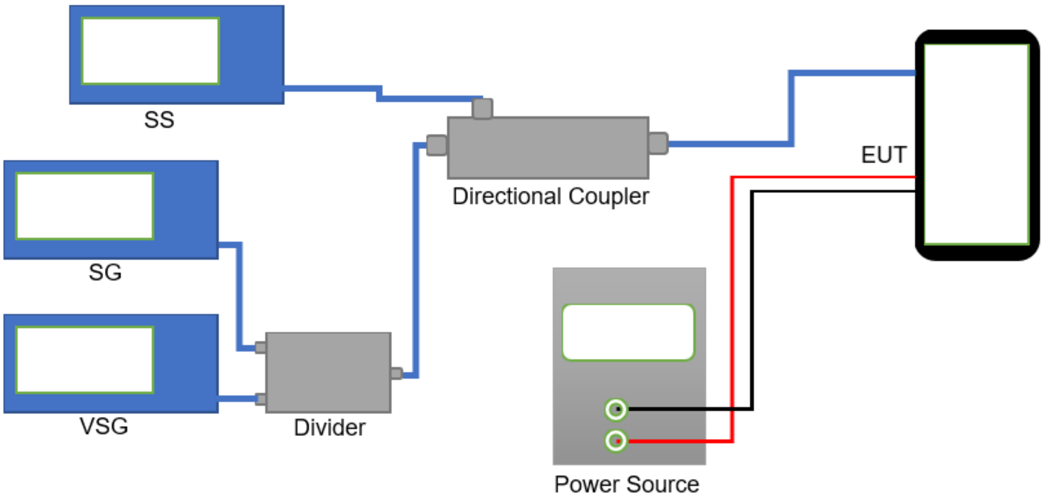
1. *"√" means that this configuration is chosen for test.*
2. *"NTNV" means Normal Temperature Normal Voltage, "LTLV" means Low Temperature Low Voltage, "LTHV" means Low Temperature High Voltage, "HTLV" means High Temperature Low Voltage, "HTHV" means High Temperature High Voltage.*

6.3 Test Setup Block

Transmitter



Receiver



6.4 Test Results

6.4.1 Test Result Summary

Clause No.	Test Mode	Test Condition	Test Band: WCDMA Band I, VIII – Test Data	Verdict
Requirements in EN 301 908-2				
4.2.2	RMC	NTNV	Appendix A - WCDMA - NTNV	Pass
		LTLV	Appendix B - WCDMA - LTLV	Pass
		LTHV	Appendix C - WCDMA - LTHV	Pass
		HTLV	Appendix D - WCDMA - HTLV	Pass
		HTHV	Appendix E - WCDMA - HTHV	Pass
4.2.3	RMC	NTNV	Appendix A - WCDMA - NTNV	Pass
	HSDPA	NTNV	Appendix A - WCDMA - NTNV	Pass
	HSUPA	NTNV	Appendix A - WCDMA - NTNV	Pass
4.2.4	RMC	NTNV	Appendix A - WCDMA - NTNV	Pass
4.2.5	RMC	NTNV	Appendix A - WCDMA - NTNV	Pass
		LTLV	Appendix B - WCDMA - LTLV	Pass
		LTHV	Appendix C - WCDMA - LTHV	Pass
		HTLV	Appendix D - WCDMA - HTLV	Pass
		HTHV	Appendix E - WCDMA - HTHV	Pass
4.2.6	RMC	NTNV	Appendix A - WCDMA - NTNV	Pass
4.2.7	RMC	NTNV	See Section 6.4.2	Pass
4.2.8	RMC	NTNV	See Section 6.4.3	Pass
4.2.9	RMC	NTNV	Appendix A - WCDMA - NTNV	Pass
4.2.10	RMC	NTNV	Appendix A - WCDMA - NTNV	Pass
4.2.11	RMC	NTNV	See Section 6.4.4	Pass
4.2.12	RMC	NTNV	Appendix A - WCDMA - NTNV	Pass
		LTLV	Appendix B - WCDMA - LTLV	Pass
		LTHV	Appendix C - WCDMA - LTHV	Pass
		HTLV	Appendix D - WCDMA - HTLV	Pass
		HTHV	Appendix E - WCDMA - HTHV	Pass
	HSDPA	NTNV	Appendix A - WCDMA - NTNV	Pass
		LTLV	Appendix B - WCDMA - LTLV	Pass
		LTHV	Appendix C - WCDMA - LTHV	Pass
		HTLV	Appendix D - WCDMA - HTLV	Pass
		HTHV	Appendix E - WCDMA - HTHV	Pass
	HSUPA	NTNV	Appendix A - WCDMA - NTNV	Pass
		LTLV	Appendix B - WCDMA - LTLV	Pass
		LTHV	Appendix C - WCDMA - LTHV	Pass
		HTLV	Appendix D - WCDMA - HTLV	Pass
		HTHV	Appendix E - WCDMA - HTHV	Pass
4.2.13	RMC	NTNV	Appendix A - WCDMA - NTNV	Pass
		LTLV	Appendix B - WCDMA - LTLV	Pass
		LTHV	Appendix C - WCDMA - LTHV	Pass
		HTLV	Appendix D - WCDMA - HTLV	Pass
		HTHV	Appendix E - WCDMA - HTHV	Pass
Requirements in EN 301 908-1				
4.2.2	RMC	NTNV	See Section 6.4.5	Pass
4.2.4	RMC	NTNV	See Section 6.4.6	Pass

Note:
"NTNV" means Normal Temperature Normal Voltage, "LTLV" means Low Temperature Low Voltage, "LTHV" means Low Temperature High Voltage, "HTLV" means High Temperature Low Voltage, "HTHV" means High Temperature High Voltage.

6.4.2 Receiver blocking characteristics

WCDMA 900:

ACS	BER	Limit	Result
Offset -5MHz	0%	0.01%	Pass
Offset 5MHz	0%	0.01%	

WCDMA 2100:

ACS	BER	Limit	Result
Offset -5MHz	0%	0.01%	Pass
Offset 5MHz	0%	0.01%	

6.4.3 Receiver spurious response

WCDMA 900:

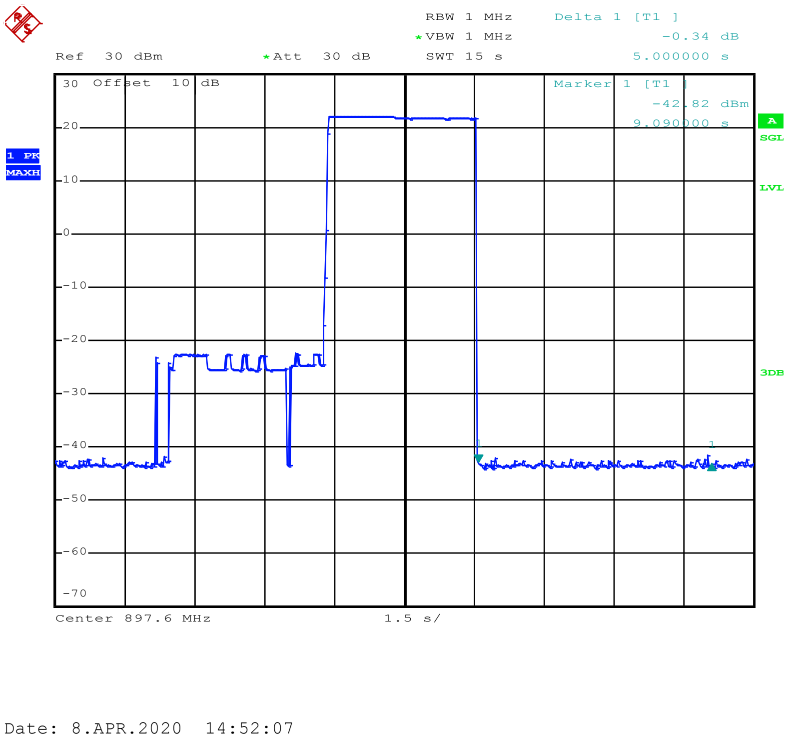
ACS	BER	Limit	Result
Offset -5MHz	0%	0.01%	Pass
Offset 5MHz	0%	0.01%	

WCDMA 2100:

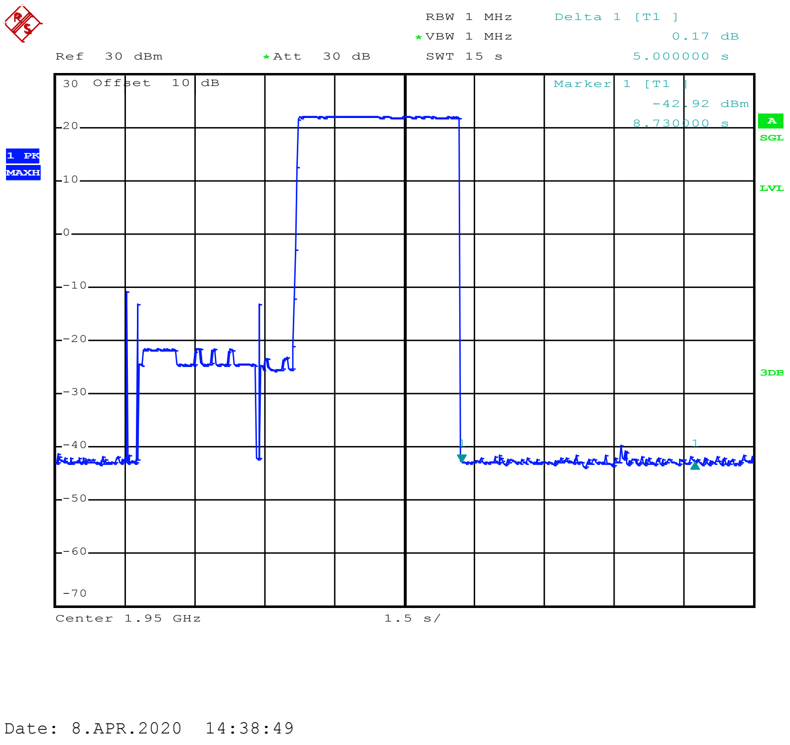
ACS	BER	Limit	Result
Offset -5MHz	0%	0.01%	Pass
Offset 5MHz	0%	0.01%	

6.4.4 Out-of-synchronization handling of output power

The Middle channel-WCDMA 900



The Middle channel- WCDMA 2100



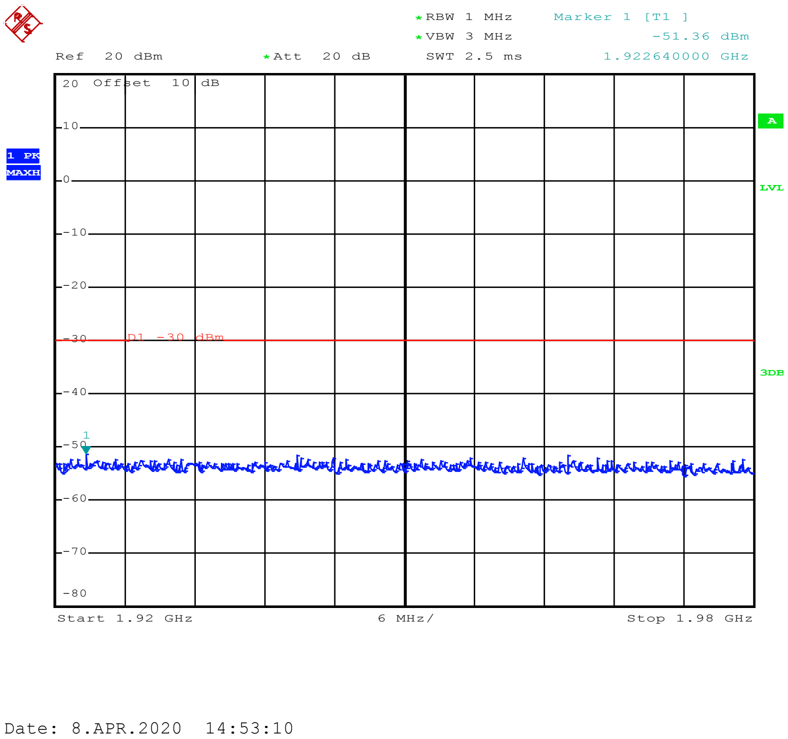
6.4.5 Radiated spurious emissions

The Middle channel-WCDMA 2100 mode-Traffic mode				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Test Result
	polarization	Level(dBm)		
44.74	Vertical	-67.16	-36 dBm below 1GHz, -30 dBm above 1GHz.	Pass
147.92	V	-69.25		
3900.00	V	-47.48		
5850.00	V	-43.97		
71.58	Horizontal	-73.41		
98.14	H	-74.20		
3900.00	H	-46.60		
5850.00	H	-42.86		
The Middle channel-WCDMA 2100 mode-Idle mode				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Test Result
	polarization	Level(dBm)		
44.74	Vertical	-67.48	-57dBm below 1GHz, -47dBm above 1GHz.	Pass
147.92	V	-69.18		
3900.00	V	-62.11		
5850.00	V	-60.24		
71.58	Horizontal	-67.83		
98.14	H	-69.93		
3900.00	H	-62.47		
5850.00	H	-60.58		

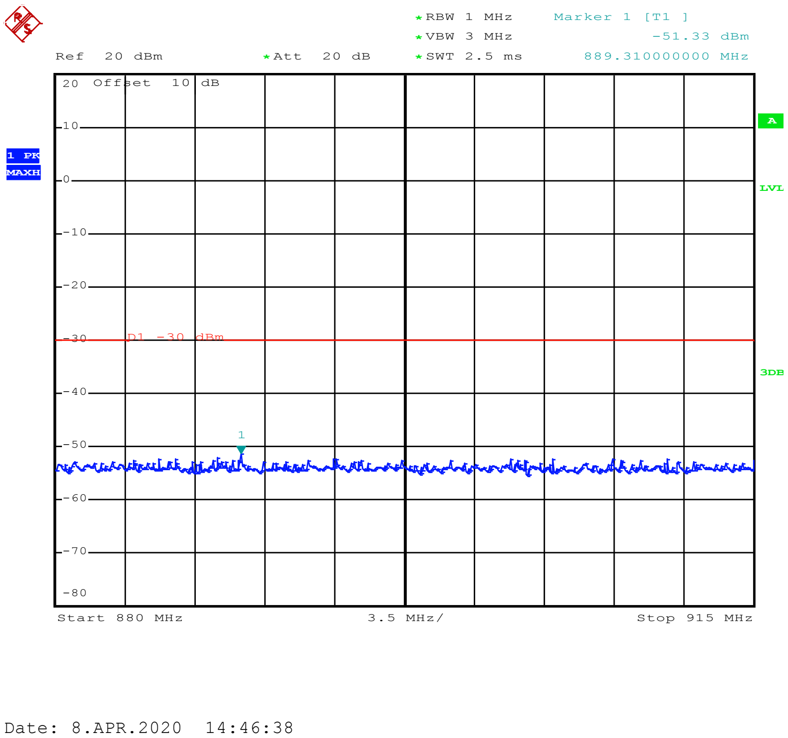
The Middle channel- WCDMA 900 mode- Traffic mode				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Test Result
	polarization	Level(dBm)		
44.74	Vertical	-67.82	-36 dBm below 1GHz, -30 dBm above 1GHz.	Pass
147.92	V	-69.81		
1795.20	V	-49.72		
2692.80	V	-49.32		
71.58	Horizontal	-73.91		
98.14	H	-74.34		
1795.20	H	-56.35		
2692.80	H	-54.05		
The Middle channel- WCDMA 900 mode - Idle mode				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Test Result
	polarization	Level(dBm)		
44.74	Vertical	-67.14	-57Bm below 1GHz, -47Bm above 1GHz.	Pass
147.92	V	-69.24		
1795.20	V	-63.24		
2692.80	V	-62.83		
71.58	Horizontal	-73.16		
98.14	H	-74.28		
1795.20	H	-63.97		
2692.80	H	-62.83		

6.4.6 Control and monitoring functions

WCDMA 2100



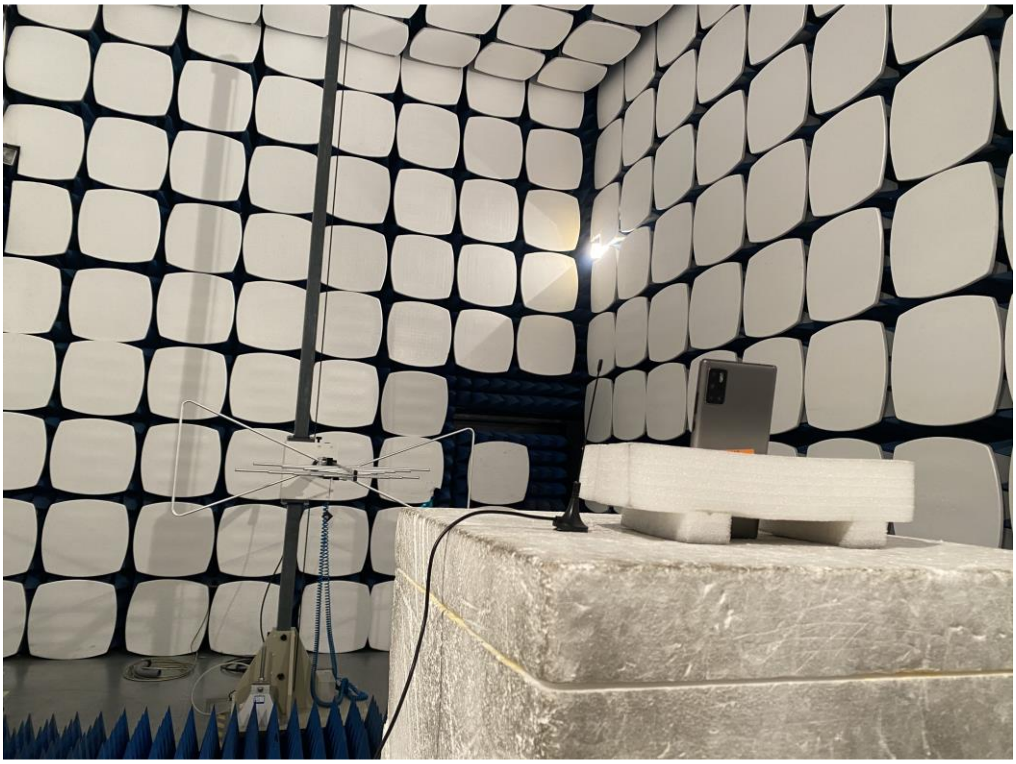
WCDMA 900



7 Test Setup Photo

Radiated Spurious Emission

Below 1GHz



Above 1GHz

8 EUT Constructional Details

Reference to the test report No. CCISE200311701

------ End of report ------