

# **SPECTRUM REPORT**

## **(E-UTRA)**

**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:** Smartphone

**Model No.:** K30

**Trade mark:** HAFURY

**Applicable standards:** ETSI EN 301 908-1 V11.1.1 (2016-07)  
ETSI EN 301 908-13 V11.1.2 (2017-07)

**Date of sample receipt:** 09 Apr., 2020

**Date of Test:** 09 Apr., to 22 Apr., 2020

**Date of report issued:** 16 Jun., 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.



Bruce Zhang  
Laboratory Manager



This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product and does not permit the use of the CCIS product certification mark. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

This report may only be reproduced and distributed in full. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards.

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## 2 Version

Version No.	Date	Description
00	16 Jun., 2020	Original

Remark: This report was revised by CCISE200402407 report, which was released and tested by Shenzhen Zhongjian Nanfang Testing Co., Ltd. The differences between them as below: Update model, product name, trademark and software version. So no needs to be retested.

Tested by:

YT Yang

Test Engineer

Date:

16 Jun., 2020

Reviewed by:

Winner Zhang

Project Engineer

Date:

16 Jun., 2020

## 3 Contents

	Page
1 COVER PAGE.....	1
2 VERSION.....	2
3 CONTENTS .....	3
4 TEST SUMMARY .....	4
5 GENERAL INFORMATION .....	5
5.1 CLIENT INFORMATION .....	5
5.2 GENERAL DESCRIPTION OF E.U.T. ....	5
5.3 TEST ENVIRONMENT AND MODE.....	6
5.4 DESCRIPTION OF SUPPORT UNITS.....	6
5.5 MEASUREMENT UNCERTAINTY .....	6
5.6 LABORATORY FACILITY .....	6
5.7 LABORATORY LOCATION .....	6
5.8 TEST INSTRUMENTS LIST.....	7
6 RADIO TECHNICAL REQUIREMENTS SPECIFICATION IN ETSI EN 301 908-1/-13 .....	8
6.1 JUSTIFICATION.....	8
6.2 TEST CONFIGURATION OF EUT .....	8
6.3 TEST SETUP BLOCK.....	10
6.4 TEST RESULTS .....	11
6.4.1 TEST RESULT SUMMARY .....	11
6.4.2 RECEIVER BLOCKING CHARACTERISTICS .....	12
6.4.3 RECEIVER SPURIOUS RESPONSE .....	15
6.4.4 RADIATED SPURIOUS EMISSIONS .....	16
6.4.5 CONTROL AND MONITORING FUNCTIONS .....	19
7 TEST SETUP PHOTO.....	22
8 EUT CONSTRUCTIONAL DETAILS.....	23

## 4 Test Summary

Test Item	Test Requirement	Test method	Result
Transmitter maximum output power	ETSI EN 301 908-13 section 4.2.2	ETSI EN 301 908-13 section 5.3.1	Pass
Transmitter spectrum emission mask	ETSI EN 301 908-13 section 4.2.3	ETSI EN 301 908-13 section 5.3.2	Pass
Transmitter spurious emissions	ETSI EN 301 908-13 section 4.2.4	ETSI EN 301 908-13 section 5.3.3	Pass
Transmitter minimum output power	ETSI EN 301 908-13 section 4.2.5	ETSI EN 301 908-13 section 5.3.4	Pass
Receiver adjacent channel selectivity (ACS)	ETSI EN 301 908-13 section 4.2.6	ETSI EN 301 908-13 section 5.3.5	Pass
Receiver blocking characteristics	ETSI EN 301 908-13 section 4.2.7	ETSI EN 301 908-13 section 5.3.6	Pass
Receiver spurious response	ETSI EN 301 908-13 section 4.2.8	ETSI EN 301 908-13 section 5.3.7	Pass
Receiver intermodulation characteristics	ETSI EN 301 908-13 section 4.2.9	ETSI EN 301 908-13 section 5.3.8	Pass
Receiver spurious emissions	ETSI EN 301 908-13 section 4.2.10	ETSI EN 301 908-13 section 5.3.9	Pass
Transmitter adjacent channel leakage power ratio	ETSI EN 301 908-13 section 4.2.11	ETSI EN 301 908-13 section 5.3.10	Pass
Receiver Reference Sensitivity Level	ETSI EN 301 908-13 section 4.2.12	ETSI EN 301 908-13 section 5.3.11	Pass
Radiated emissions(UE)	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:	Smartphone
Model No.:	K30
Transmitter frequency range:	LTE Band 1: 1920MHz~1980MHz, LTE Band 3: 1710MHz~1785MHz LTE Band 7: 2500MHz~2570MHz, LTE Band 8: 880MHz~915MHz LTE Band 20: 832MHz~862MHz
Receiver frequency range:	LTE Band 1: 2110MHz~2170MHz, LTE Band 3: 1805MHz~1880MHz LTE Band 7: 2620MHz~2690MHz, LTE Band 8: 925MHz~960MHz LTE Band 20: 791MHz~821MHz
Hardware version:	TE626_MAIN_PCB_V1.0
Software version:	HAFURY_K30_A011CH_V01_20200615
Modulation type:	QPSK, 16-QAM
Antenna Type:	Internal Antenna
Antenna Gain:	LTE Band 1: -0.75 dBi (Declared by applicant), LTE Band 3: -0.80 dBi (Declared by applicant); LTE Band 7: -0.90 dBi (Declared by applicant); LTE Band 8: -0.80dBi (Declared by applicant); LTE Band 20: -0.91 dBi (Declared by applicant);
Power supply :	Rechargeable Li-ion polymer Battery DC3.85V/4200mAh
AC adapter:	Model No.: HJ-0501500W2-EU Input: AC100-240V, 50/60Hz 0.3A Output: DC 5.0V, 1.5A

### 5.3 Test environment and mode

Operating Environment:	
Temperature:	Normal: 15°C ~ 35°C, Extreme: -20°C ~ +55°C
Humidity:	20 % ~ 75 % RH
Atmospheric Pressure:	1008 mbar
Voltage:	Nominal: 3.85Vdc, Extreme: Low 3.50Vdc, High 4.40Vdc
Test mode:	
Single Carrier mode	Keep the EUT communication with simulated station in Single carrier mode
Note:	
1. All the test environments and test modes required following ETSI TS 136 521-1 and ETSI EN 301 908-13.	
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

### 5.5 Measurement Uncertainty

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

- **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 ZhongjianNanfang Testing Co.,Ltd.

Address: No.110~116, Building B, Jinyuan Business Building, 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	03-18-2020	03-17-2021
Biconical Antenna	SCHWARZBECK	VUBA9117	359	06-22-2017	06-21-2020
Horn Antenna	SCHWARZBECK	BBHA9120D	916	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	03-18-2020	03-17-2021
Pre-amplifier	CD	PAP-1G18	11804	03-18-2020	03-17-2021
Spectrum analyzer	Rohde & Schwarz	FSP30	101454	03-18-2020	03-17-2021
EMI Test Receiver	Rohde & Schwarz	ESRP7	101070	03-18-2020	03-17-2021
Signal Generator	Rohde & Schwarz	SMX	835454/016	03-18-2020	03-17-2021
Signal Generator	Rohde & Schwarz	SMR20	1008100050	03-18-2020	03-17-2021
Cable	ZDECL	Z108-NJ-NJ-81	1608458	03-18-2020	03-17-2021
Cable	MICRO-COAX	MFR64639	K10742-5	03-18-2020	03-17-2021
Cable	SUHNER	SUCOFLEX100	58193/4PE	03-18-2020	03-17-2021
RF Switch Unit	MWRFTTEST	MW200	N/A	N/A	N/A
Test Software	MWRFTTEST	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	03-18-2020	03-17-2021
Simulated Station	Rohde & Schwarz	CMW500	140493	07-22-2019	07-21-2020
RF Switch Unit	MWRFTTEST	MW200	N/A	N/A	N/A
Test Software	MWRFTTEST	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/-13

### 6.1 Justification

The EUT and test equipment were configured for testing according to ETSI EN 301 908-13 and ETSI TS 136 521-1.

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

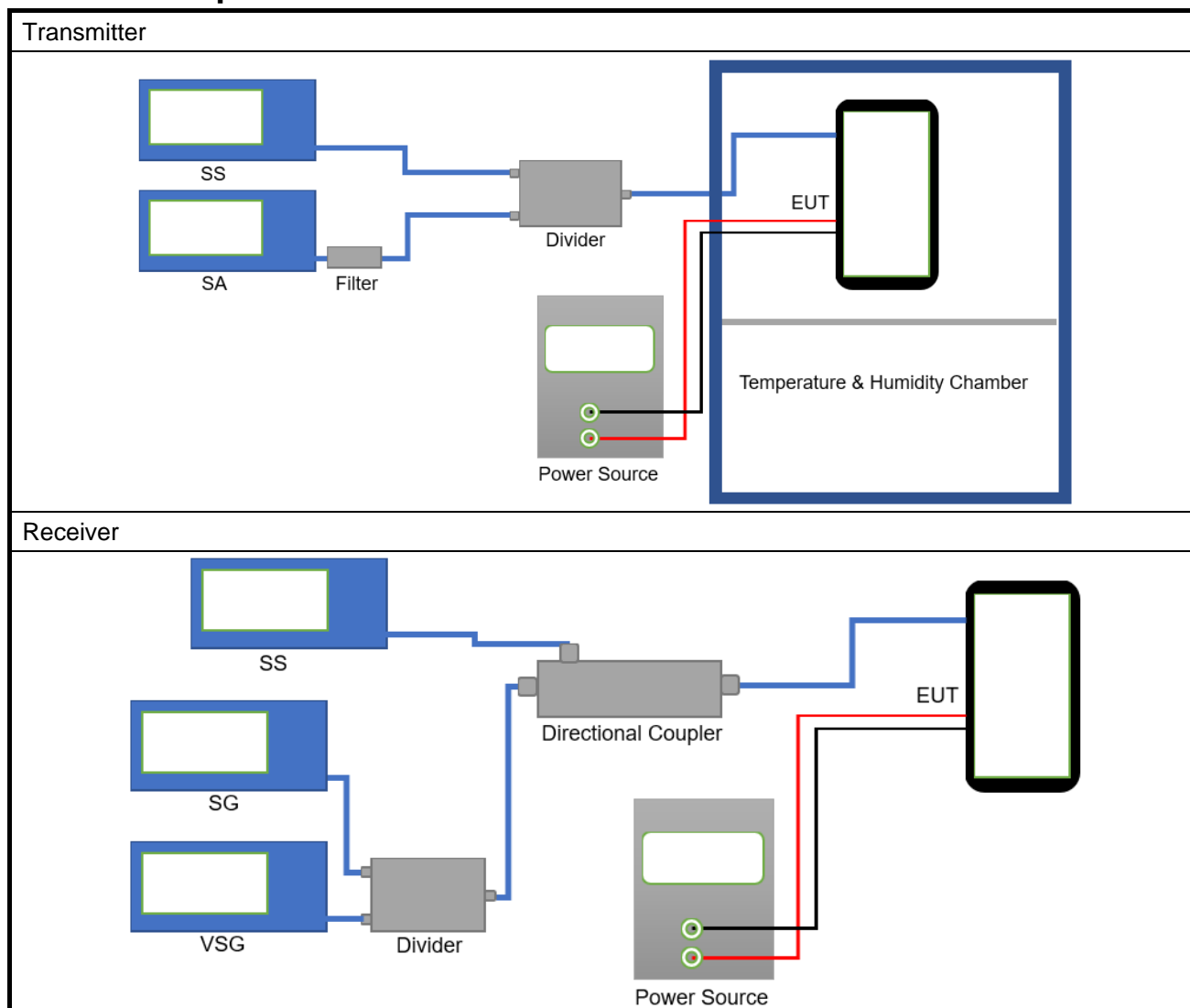
LTE Band	Bandwidth	Channel Number/ Frequency		
LTE Band 1	5 MHz	Low	18025	1922.5 MHz
		Middle	18300	1950.0 MHz
		High	18575	1977.5 MHz
	10 MHz	Low	18050	1925.0 MHz
		Middle	18300	1950.0 MHz
		High	18550	1975.0 MHz
	20 MHz	Low	18100	1930.0 MHz
		Middle	18300	1950.0 MHz
		High	18500	1970.0 MHz
LTE Band 3	1.4 MHz	Low	19207	1710.7 MHz
		Middle	19575	1747.5 MHz
		High	19943	1784.3 MHz
	5 MHz	Low	19225	1712.5 MHz
		Middle	19575	1747.5 MHz
		High	19925	1782.5 MHz
	10 MHz	Low	19250	1715.0 MHz
		Middle	19575	1747.5 MHz
		High	19900	1780.0 MHz
	20 MHz	Low	19300	1720.0 MHz
		Middle	19575	1747.5 MHz
		High	19850	1775.0 MHz
LTE Band 7	5 MHz	Low	20775	2502.5 MHz
		Middle	21100	2535.0 MHz
		High	21425	2567.5 MHz
	10 MHz	Low	20800	2505.0 MHz
		Middle	21100	2535.0 MHz
		High	21400	2565.0 MHz
	20 MHz	Low	20850	2510.0 MHz
		Middle	21100	2535.0 MHz
		High	21350	2560.0 MHz
LTE Band 8	1.4 MHz	Low	21457	880.7 MHz
		Middle	21625	897.5 MHz
		High	21793	914.3 MHz
	5 MHz	Low	21475	882.5 MHz
		Middle	21625	897.5 MHz
		High	21775	912.5 MHz
	10 MHz	Low	21500	885.0 MHz
		Middle	21625	897.5 MHz
		High	21750	910.0 MHz



LTE Band	Bandwidth	Channel Number/ Frequency		
LTE Band 20	5 MHz	Low	24175	834.5 MHz
		Middle	24300	847.0 MHz
		High	24425	859.5 MHz
	10 MHz	Low	24200	837.0 MHz
		Middle	24300	847.0 MHz
		High	24400	857.0 MHz
	20 MHz	Low	24250	842.0 MHz
		Middle	24300	847.0 MHz
		High	24350	852.0 MHz

Clause No.	Test Conditions					Test Channel			Modulation		RB Allocation		
	NTNV	LTLV	LTHV	HTLV	HTHV	Low	Middle	High	QPSK	16QAM	1	Partial	Full
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	√	√	√	√	√	√	√	√	√				√
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



## 6.4 Test Results

### 6.4.1 Test Result Summary

Clause No.	Test Mode	Test Condition	Test Band	
			LTE Band 1, 3, 7, 8, 20	
			Test Data	Verdict
Requirements in EN 301 908-13				
4.2.2	Single Carrier	NTNV	Appendix A - LTE - NTVN	Pass
		LTLV	Appendix B - LTE - LTLV	Pass
		LTHV	Appendix C - LTE - LTHV	Pass
		HTLV	Appendix D - LTE - HTLV	Pass
		HTHV	Appendix E - LTE - HTHV	Pass
4.2.3	Single Carrier	NTNV	Appendix A - LTE - NTVN	Pass
4.2.4	Single Carrier	NTNV	Appendix A - LTE - NTVN	Pass
4.2.5	Single Carrier	NTNV	Appendix A - LTE - NTVN	Pass
		LTLV	Appendix B - LTE - LTLV	Pass
		LTHV	Appendix C - LTE - LTHV	Pass
		HTLV	Appendix D - LTE - HTLV	Pass
		HTHV	Appendix E - LTE - HTHV	Pass
4.2.6	Single Carrier	NTNV	Appendix A - LTE - NTVN	Pass
4.2.7	Single Carrier	NTNV	See Section 6.4.2	Pass
4.2.8	Single Carrier	NTNV	See Section 6.4.3	Pass
4.2.9	Single Carrier	NTNV	Appendix A - LTE - NTVN	Pass
4.2.10	Single Carrier	NTNV	Appendix A - LTE - NTVN	Pass
4.2.11	Single Carrier	NTNV	Appendix A - LTE - NTVN	Pass
		LTLV	Appendix B - LTE - LTLV	Pass
		LTHV	Appendix C - LTE - LTHV	Pass
		HTLV	Appendix D - LTE - HTLV	Pass
		HTHV	Appendix E - LTE - HTHV	Pass
4.2.12	Single Carrier	NTNV	Appendix A - LTE - NTVN	Pass
		LTLV	Appendix B - LTE - LTLV	Pass
		LTHV	Appendix C - LTE - LTHV	Pass
		HTLV	Appendix D - LTE - HTLV	Pass
		HTHV	Appendix E - LTE - HTHV	Pass
Requirements in EN 301 908-1				
4.2.2	Single Carrier	NTNV	See Section 6.4.4	Pass
4.2.4	Single Carrier	NTNV	See Section 6.4.5	Pass

## 6.4.2 Receiver blocking characteristics

## In-Band Blocking

Band No.	Bandwidth	Channel	Downlink Configuration		Uplink Configuration		Result
			Modulation	RB allocation	Modulation	RB allocation	
Band 1	5MHz	Middle	QPSK	25	QPSK	25	PASS
			QPSK	25	QPSK	20	PASS
			QPSK	25	QPSK	15	PASS
			QPSK	25	QPSK	N/A	PASS
	20MHz	Middle	QPSK	100	QPSK	100	PASS
			QPSK	100	QPSK	75	PASS
			QPSK	100	QPSK	50	PASS
			QPSK	100	QPSK	25	PASS
Band 3	1.4MHz	Middle	QPSK	6	QPSK	6	PASS
			QPSK	25	QPSK	25	PASS
	5MHz	Middle	QPSK	25	QPSK	20	PASS
			QPSK	25	QPSK	15	PASS
			QPSK	25	QPSK	N/A	PASS
	20MHz	Middle	QPSK	100	QPSK	100	PASS
			QPSK	100	QPSK	75	PASS
			QPSK	100	QPSK	50	PASS
Band 7	5MHz	Middle	QPSK	25	QPSK	25	PASS
			QPSK	25	QPSK	20	PASS
			QPSK	25	QPSK	15	PASS
			QPSK	25	QPSK	N/A	PASS
	20MHz	Middle	QPSK	100	QPSK	100	PASS
			QPSK	100	QPSK	75	PASS
			QPSK	100	QPSK	50	PASS
			QPSK	100	QPSK	25	PASS
Band 8	1.4MHz	Middle	QPSK	6	QPSK	6	PASS
			QPSK	25	QPSK	25	PASS
	5MHz	Middle	QPSK	25	QPSK	20	PASS
			QPSK	25	QPSK	15	PASS
			QPSK	25	QPSK	N/A	PASS
	20MHz	Middle	QPSK	100	QPSK	100	PASS
			QPSK	100	QPSK	75	PASS
			QPSK	100	QPSK	50	PASS
Band 20	5MHz	Middle	QPSK	25	QPSK	25	PASS
			QPSK	25	QPSK	20	PASS
			QPSK	25	QPSK	15	PASS
			QPSK	25	QPSK	N/A	PASS
	20MHz	Middle	QPSK	100	QPSK	100	PASS
			QPSK	100	QPSK	75	PASS
			QPSK	100	QPSK	50	PASS
			QPSK	100	QPSK	25	PASS
Band 20	5MHz	Middle	QPSK	25	QPSK	25	PASS
			QPSK	25	QPSK	20	PASS
			QPSK	25	QPSK	15	PASS
			QPSK	25	QPSK	N/A	PASS
	20MHz	Middle	QPSK	100	QPSK	100	PASS
			QPSK	100	QPSK	75	PASS
			QPSK	100	QPSK	50	PASS
			QPSK	100	QPSK	25	PASS
Band 20	5MHz	Middle	QPSK	25	QPSK	25	PASS
			QPSK	25	QPSK	20	PASS
			QPSK	25	QPSK	15	PASS
			QPSK	25	QPSK	N/A	PASS
	20MHz	Middle	QPSK	100	QPSK	100	PASS
			QPSK	100	QPSK	75	PASS
			QPSK	100	QPSK	50	PASS
			QPSK	100	QPSK	25	PASS
Band 20	5MHz	Middle	QPSK	25	QPSK	25	PASS
			QPSK	25	QPSK	20	PASS
			QPSK	25	QPSK	15	PASS
			QPSK	25	QPSK	N/A	PASS
	20MHz	Middle	QPSK	100	QPSK	100	PASS
			QPSK	100	QPSK	75	PASS
			QPSK	100	QPSK	50	PASS
			QPSK	100	QPSK	25	PASS
Band 20	5MHz	Middle	QPSK	25	QPSK	25	PASS
			QPSK	25	QPSK	20	PASS
			QPSK	25	QPSK	15	PASS
			QPSK	25	QPSK	N/A	PASS
	20MHz	Middle	QPSK	100	QPSK	100	PASS
			QPSK	100	QPSK	75	PASS
			QPSK	100	QPSK	50	PASS
			QPSK	100	QPSK	25	PASS

## Out-of-Band Blocking

Band No.	Bandwidth	Channel	Downlink Configuration		Uplink Configuration		Result
			Modulation	RB allocation	Modulation	RB allocation	
Band 1	5MHz	Middle	QPSK	25	QPSK	25	PASS
			QPSK	25	QPSK	20	PASS
			QPSK	25	QPSK	15	PASS
			QPSK	25	QPSK	N/A	PASS
	20MHz	Middle	QPSK	100	QPSK	100	PASS
			QPSK	100	QPSK	75	PASS
			QPSK	100	QPSK	50	PASS
			QPSK	100	QPSK	25	PASS
			QPSK	100	QPSK	20	PASS
Band 3	1.4MHz	Middle	QPSK	6	QPSK	6	PASS
			QPSK	25	QPSK	25	PASS
	5MHz	Middle	QPSK	25	QPSK	20	PASS
			QPSK	25	QPSK	15	PASS
			QPSK	25	QPSK	N/A	PASS
			QPSK	25	QPSK	N/A	PASS
	20MHz	Middle	QPSK	100	QPSK	100	PASS
			QPSK	100	QPSK	75	PASS
			QPSK	100	QPSK	50	PASS
			QPSK	100	QPSK	25	PASS
			QPSK	100	QPSK	20	PASS
Band 7	5MHz	Middle	QPSK	25	QPSK	25	PASS
			QPSK	25	QPSK	20	PASS
			QPSK	25	QPSK	15	PASS
			QPSK	25	QPSK	N/A	PASS
	20MHz	Middle	QPSK	100	QPSK	100	PASS
			QPSK	100	QPSK	75	PASS
			QPSK	100	QPSK	50	PASS
			QPSK	100	QPSK	25	PASS
			QPSK	100	QPSK	20	PASS
Band 8	1.4MHz	Middle	QPSK	6	QPSK	6	PASS
			QPSK	25	QPSK	25	PASS
	5MHz	Middle	QPSK	25	QPSK	20	PASS
			QPSK	25	QPSK	15	PASS
			QPSK	25	QPSK	N/A	PASS
			QPSK	25	QPSK	N/A	PASS
	20MHz	Middle	QPSK	100	QPSK	100	PASS
			QPSK	100	QPSK	75	PASS
			QPSK	100	QPSK	50	PASS
			QPSK	100	QPSK	25	PASS
			QPSK	100	QPSK	25	PASS
Band 20	5MHz	Middle	QPSK	25	QPSK	25	PASS
			QPSK	25	QPSK	20	PASS
			QPSK	25	QPSK	15	PASS
			QPSK	25	QPSK	N/A	PASS
	20MHz	Middle	QPSK	100	QPSK	100	PASS
			QPSK	100	QPSK	75	PASS
			QPSK	100	QPSK	50	PASS
			QPSK	100	QPSK	25	PASS
			QPSK	100	QPSK	25	PASS

## Narrow Band Blocking

Band No.	Bandwidth	Channel	Downlink Configuration		Uplink Configuration		Result
			Modulation	RB allocation	Modulation	RB allocation	
Band 1	5MHz	Middle	QPSK	25	QPSK	25	PASS
			QPSK	25	QPSK	20	PASS
			QPSK	25	QPSK	15	PASS
			QPSK	25	QPSK	N/A	PASS
	20MHz	Middle	QPSK	100	QPSK	100	PASS
			QPSK	100	QPSK	75	PASS
			QPSK	100	QPSK	50	PASS
			QPSK	100	QPSK	25	PASS
			QPSK	100	QPSK	20	PASS
Band 3	1.4MHz	Middle	QPSK	6	QPSK	6	PASS
			QPSK	25	QPSK	25	PASS
	5MHz	Middle	QPSK	25	QPSK	20	PASS
			QPSK	25	QPSK	15	PASS
			QPSK	25	QPSK	N/A	PASS
			QPSK	25	QPSK	N/A	PASS
	20MHz	Middle	QPSK	100	QPSK	100	PASS
			QPSK	100	QPSK	75	PASS
			QPSK	100	QPSK	50	PASS
			QPSK	100	QPSK	25	PASS
			QPSK	100	QPSK	20	PASS
Band 7	5MHz	Middle	QPSK	25	QPSK	25	PASS
			QPSK	25	QPSK	20	PASS
			QPSK	25	QPSK	15	PASS
			QPSK	25	QPSK	N/A	PASS
	20MHz	Middle	QPSK	100	QPSK	100	PASS
			QPSK	100	QPSK	75	PASS
			QPSK	100	QPSK	50	PASS
			QPSK	100	QPSK	25	PASS
			QPSK	100	QPSK	20	PASS
			QPSK	100	QPSK	20	PASS
Band 8	1.4MHz	Middle	QPSK	6	QPSK	6	PASS
			QPSK	25	QPSK	25	PASS
	5MHz	Middle	QPSK	25	QPSK	20	PASS
			QPSK	25	QPSK	15	PASS
			QPSK	25	QPSK	N/A	PASS
			QPSK	25	QPSK	N/A	PASS
	20MHz	Middle	QPSK	100	QPSK	100	PASS
			QPSK	100	QPSK	75	PASS
			QPSK	100	QPSK	50	PASS
			QPSK	100	QPSK	25	PASS
			QPSK	100	QPSK	25	PASS
Band 20	5MHz	Middle	QPSK	25	QPSK	25	PASS
			QPSK	25	QPSK	20	PASS
			QPSK	25	QPSK	15	PASS
			QPSK	25	QPSK	N/A	PASS
	20MHz	Middle	QPSK	100	QPSK	100	PASS
			QPSK	100	QPSK	75	PASS
			QPSK	100	QPSK	50	PASS
			QPSK	100	QPSK	25	PASS
			QPSK	100	QPSK	25	PASS
			QPSK	100	QPSK	20	PASS

## 6.4.3 Receiver spurious response

Band No.	Bandwidth	Channel	Downlink Configuration		Uplink Configuration		Result
			Modulation	RB allocation	Modulation	RB allocation	
Band 1	5MHz	Middle	QPSK	25	QPSK	25	PASS
			QPSK	25	QPSK	20	PASS
			QPSK	25	QPSK	15	PASS
			QPSK	25	QPSK	N/A	PASS
	20MHz	Middle	QPSK	100	QPSK	100	PASS
			QPSK	100	QPSK	75	PASS
			QPSK	100	QPSK	50	PASS
			QPSK	100	QPSK	25	PASS
Band 3	1.4MHz	Middle	QPSK	6	QPSK	6	PASS
	5MHz	Middle	QPSK	25	QPSK	25	PASS
			QPSK	25	QPSK	20	PASS
			QPSK	25	QPSK	15	PASS
			QPSK	25	QPSK	N/A	PASS
	20MHz	Middle	QPSK	100	QPSK	100	PASS
			QPSK	100	QPSK	75	PASS
			QPSK	100	QPSK	50	PASS
			QPSK	100	QPSK	25	PASS
			QPSK	100	QPSK	20	PASS
Band 7	5MHz	Middle	QPSK	25	QPSK	25	PASS
			QPSK	25	QPSK	20	PASS
			QPSK	25	QPSK	15	PASS
			QPSK	25	QPSK	N/A	PASS
	20MHz	Middle	QPSK	100	QPSK	100	PASS
			QPSK	100	QPSK	75	PASS
			QPSK	100	QPSK	50	PASS
			QPSK	100	QPSK	25	PASS
Band 8	1.4MHz	Middle	QPSK	6	QPSK	6	PASS
	5MHz	Middle	QPSK	25	QPSK	25	PASS
			QPSK	25	QPSK	20	PASS
			QPSK	25	QPSK	15	PASS
			QPSK	25	QPSK	N/A	PASS
	20MHz	Middle	QPSK	100	QPSK	100	PASS
			QPSK	100	QPSK	75	PASS
			QPSK	100	QPSK	50	PASS
			QPSK	100	QPSK	25	PASS
			QPSK	100	QPSK	20	PASS
Band 20	5MHz	Middle	QPSK	25	QPSK	25	PASS
			QPSK	25	QPSK	20	PASS
			QPSK	25	QPSK	15	PASS
			QPSK	25	QPSK	N/A	PASS
	20MHz	Middle	QPSK	100	QPSK	100	PASS
			QPSK	100	QPSK	75	PASS
			QPSK	100	QPSK	50	PASS
			QPSK	100	QPSK	25	PASS
			QPSK	100	QPSK	20	PASS

## 6.4.4 Radiated spurious emissions

LTE Band 1 - Middle channel - Traffic mode					
Frequency (MHz)	Spurious Emission	Level(dBm)		Limit (dBm)	Test Result
		5MHz	20MHz		
30.32	Vertical	-68.25	-68.10	-36 dBm below 1GHz,  -30 dBm above 1GHz.	Pass
52.03	V	-67.41	-67.98		
3900.00	V	-42.58	-41.26		
5850.00	V	-41.42	-42.01		
193.10	Horizontal	-66.25	-64.19		
259.23	H	-64.77	-65.91		
3900.00	H	-44.18	-45.26		
5850.00	H	-42.78	-41.98		
LTE Band 1 - Middle channel - Idle mode					
Frequency (MHz)	Spurious Emission	Level(dBm)		Limit (dBm)	Test Result
		5MHz	20MHz		
30.32	Vertical	-69.25	-64.12	-57 dBm below 1GHz,  -47 dBm above 1GHz.	Pass
52.03	V	-67.42	-65.25		
3900.00	V	-59.02	-60.13		
193.10	Horizontal	-64.79	-66.23		
259.23	H	-65.19	-68.96		
3900.00	H	-60.34	-59.12		

LTE Band 3 - Middle channel - Traffic mode						
Frequency (MHz)	Spurious Emission	Level(dBm)			Limit (dBm)	Test Result
		1.4MHz	5MHz	20MHz		
30.32	Vertical	-67.25	-68.61	-66.39	-36 dBm below 1GHz,  -30 dBm above 1GHz.	Pass
52.03	V	-68.25	-67.49	-65.33		
3495.00	V	-44.20	-45.25	-44.29		
5242.50	V	-37.75	-36.26	-35.17		
193.10	Horizontal	-66.25	-65.17	-64.39		
259.23	H	-68.02	-67.62	-66.93		
3495.00	H	-43.41	-42.25	-41.62		
5242.50	H	-32.57	-33.66	-32.52		
LTE Band 3 - Middle channel - Idle mode						
Frequency (MHz)	Spurious Emission	Level(dBm)			Limit (dBm)	Test Result
		1.4MHz	5MHz	20MHz		
30.32	Vertical	-65.20	-69.17	-68.25	-57 dBm below 1GHz,  -47 dBm above 1GHz.	Pass
52.03	V	-66.31	-67.40	-68.55		
3495.00	V	-61.25	-59.40	-59.17		
193.10	Horizontal	-64.25	-65.26	-66.25		
259.23	H	-66.79	-64.19	-65.21		
3495.00	H	-59.19	-60.37	-63.32		

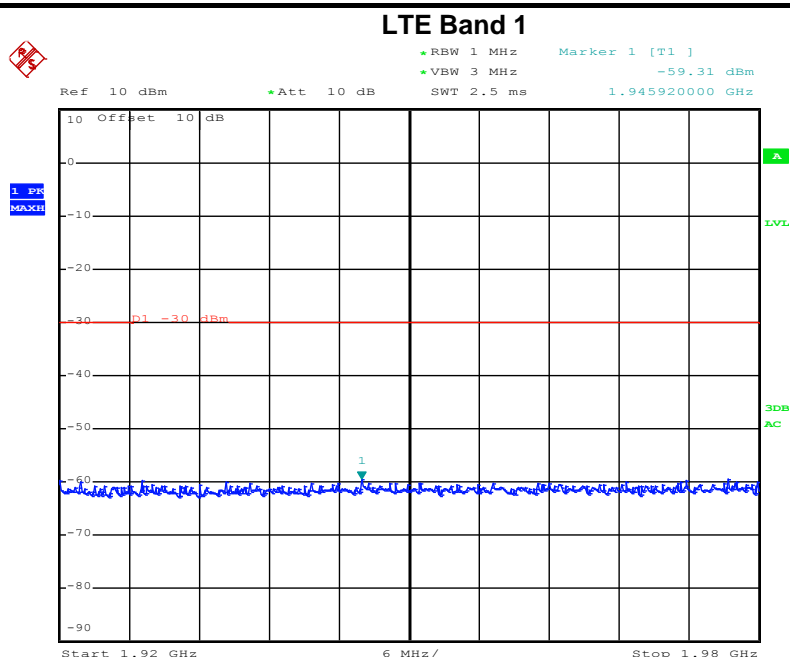


LTE Band 7 - Middle channel - Traffic mode					
Frequency (MHz)	Spurious Emission	Level(dBm)		Limit (dBm)	Test Result
		5MHz	20MHz		
30.32	Vertical	-68.25	-67.49	-36 dBm below 1GHz,  -30 dBm above 1GHz.	Pass
52.03	V	-66.32	-68.26		
5070.00	V	-44.03	-45.77		
7605.00	V	-31.57	-32.69		
193.10	Horizontal	-63.25	-65.41		
259.23	H	-66.88	-65.19		
5070.00	H	-42.34	-41.52		
7605.00	H	-34.95	-33.69		
LTE Band 7 - Middle channel - Idle mode					
Frequency (MHz)	Spurious Emission	Level(dBm)		Limit (dBm)	Test Result
		5MHz	20MHz		
30.32	Vertical	-65.26	-64.73	-57 dBm below 1GHz,  -47 dBm above 1GHz.	Pass
52.03	V	-68.56	-69.25		
5070.00	V	-60.37	-59.36		
193.10	Horizontal	-66.45	-64.71		
259.23	H	-64.19	-65.26		
5070.00	H	-59.02	-61.47		

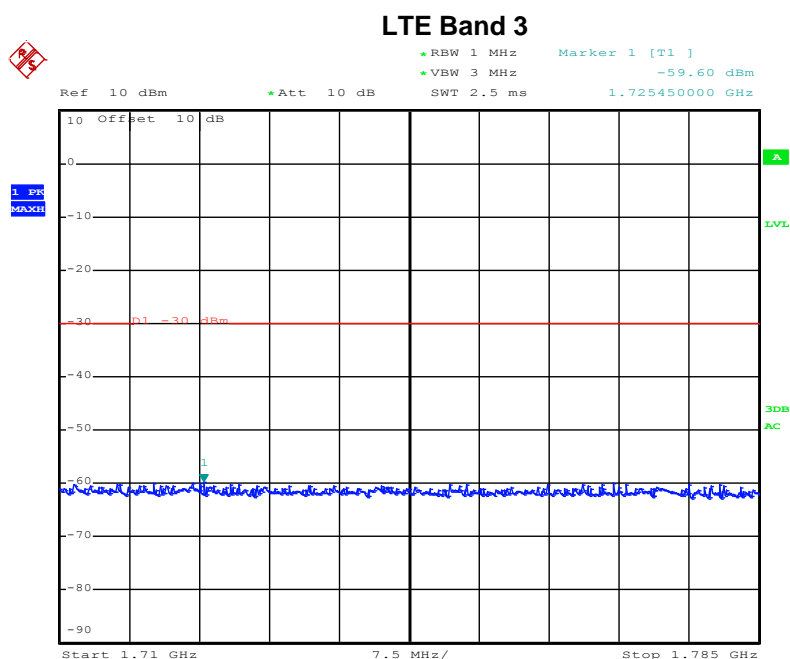
LTE Band 8 - Middle channel - Traffic mode						
Frequency (MHz)	Spurious Emission	Level(dBm)			Limit (dBm)	Test Result
		1.4MHz	5MHz	20MHz		
30.32	Vertical	-66.25	-67.36	-68.29	-36 dBm below 1GHz,  -30 dBm above 1GHz.	Pass
52.03	V	-65.79	-64.13	-67.66		
1795.00	V	-51.91	-52.25	-53.12		
2692.50	V	-53.37	-54.10	-53.79		
193.10	Horizontal	-66.25	-64.15	-65.38		
259.23	H	-65.19	-63.34	-64.70		
1795.00	H	-52.46	-51.32	-49.62		
2692.50	H	-50.95	-48.25	-47.13		
LTE Band 8 - Middle channel - Idle mode						
Frequency (MHz)	Spurious Emission	Level(dBm)			Limit (dBm)	Test Result
		1.4MHz	5MHz	20MHz		
30.32	Vertical	-66.14	-65.73	-64.19	-57 dBm below 1GHz,  -47 dBm above 1GHz.	Pass
52.03	V	-64.95	-65.39	-65.31		
2692.50	V	-58.19	-59.79	-63.15		
193.10	Horizontal	-66.32	-65.41	-63.72		
259.23	H	-66.47	-68.25	-63.43		
2692.50	H	-59.02	-62.26	-61.77		

LTE Band 20 - Middle channel - Traffic mode					
Frequency (MHz)	Spurious Emission	Level(dBm)		Limit (dBm)	Test Result
		5MHz	20MHz		
30.32	Vertical	-67.26	-68.32	-36 dBm below 1GHz,  -30 dBm above 1GHz.	Pass
52.03	V	-65.29	-66.25		
1694.00	V	-58.04	-57.32		
2541.00	V	-54.92	-53.99		
193.10	Horizontal	-61.45	-65.29		
259.23	H	-65.18	-63.47		
1694.00	H	-58.46	-57.21		
2541.00	H	-55.49	-54.19		
LTE Band 20 - Middle channel - Idle mode					
Frequency (MHz)	Spurious Emission	Level(dBm)		Limit (dBm)	Test Result
		5MHz	20MHz		
30.32	Vertical	-67.25	-68.62	-57 dBm below 1GHz,  -47 dBm above 1GHz.	Pass
52.03	V	-68.16	-68.34		
1694.00	V	-59.02	-62.77		
193.10	Horizontal	-65.21	-64.75		
259.23	H	-63.32	-65.18		
1694.00	H	-60.17	-59.39		

## 6.4.5 Control and monitoring functions

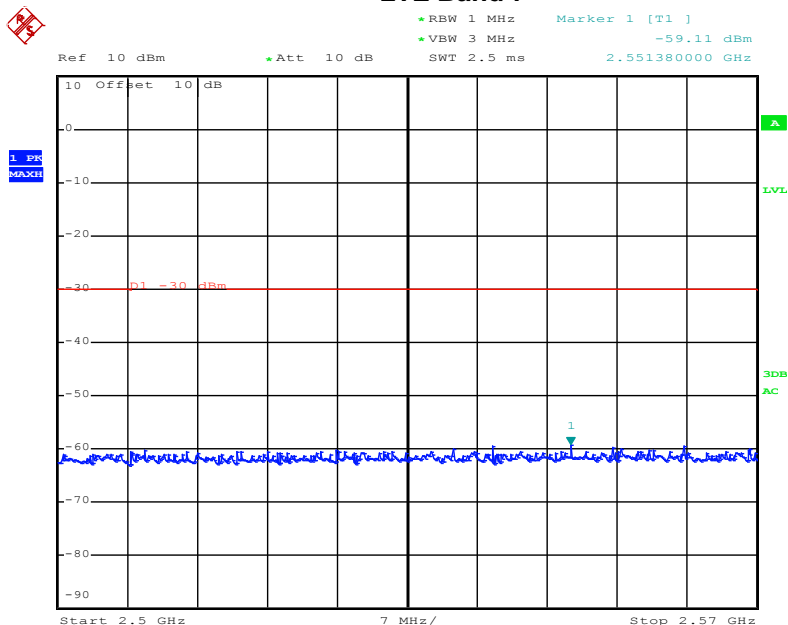


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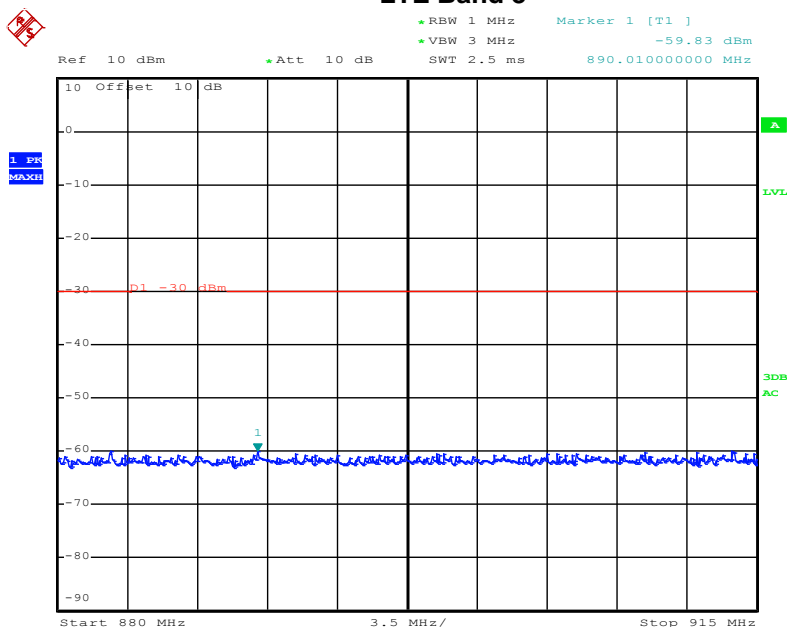
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## LTE Band 7

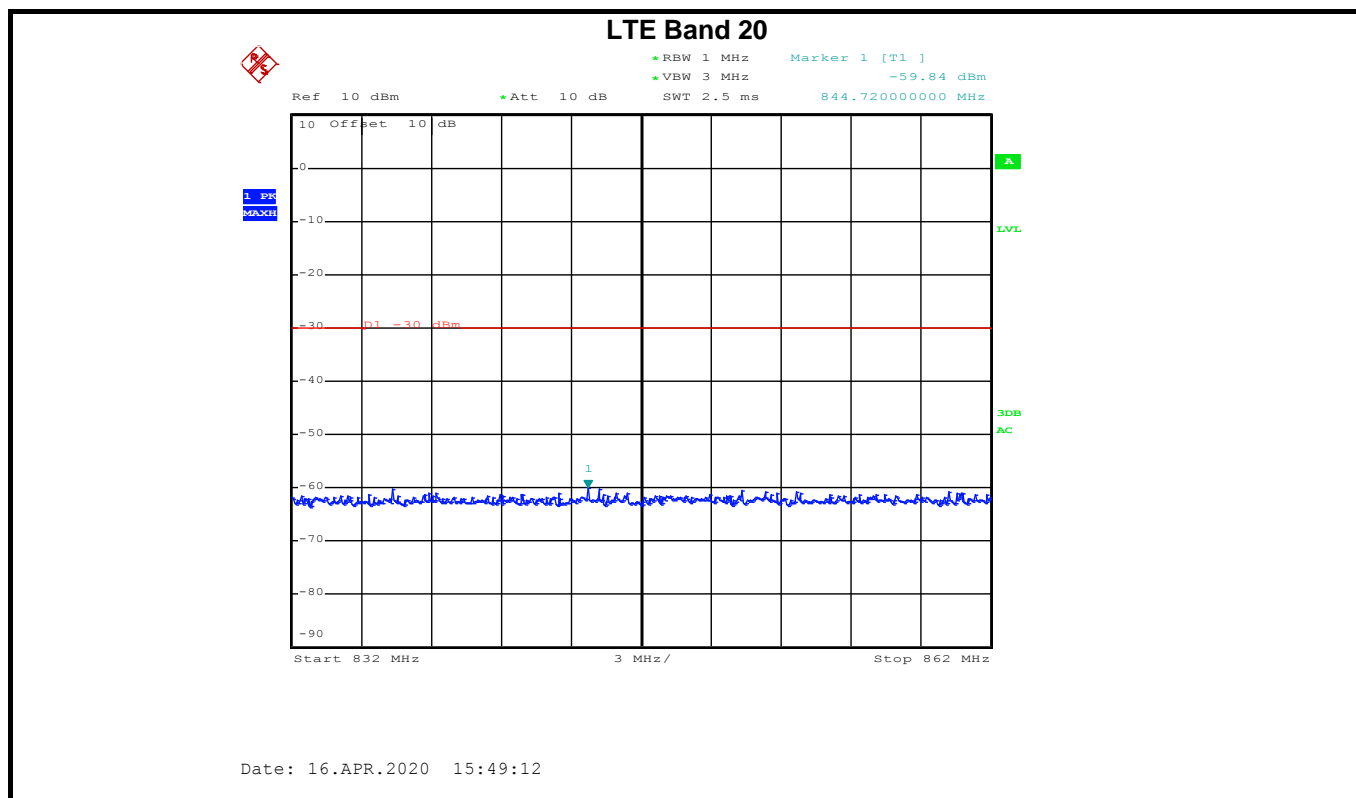


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## LTE Band 8

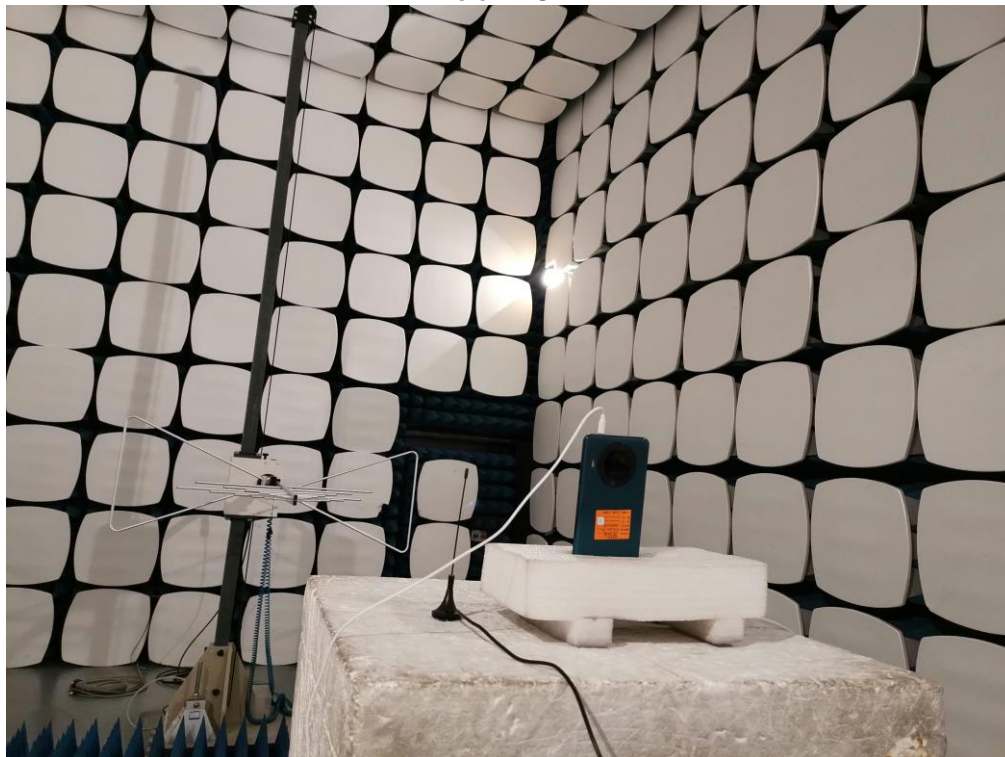


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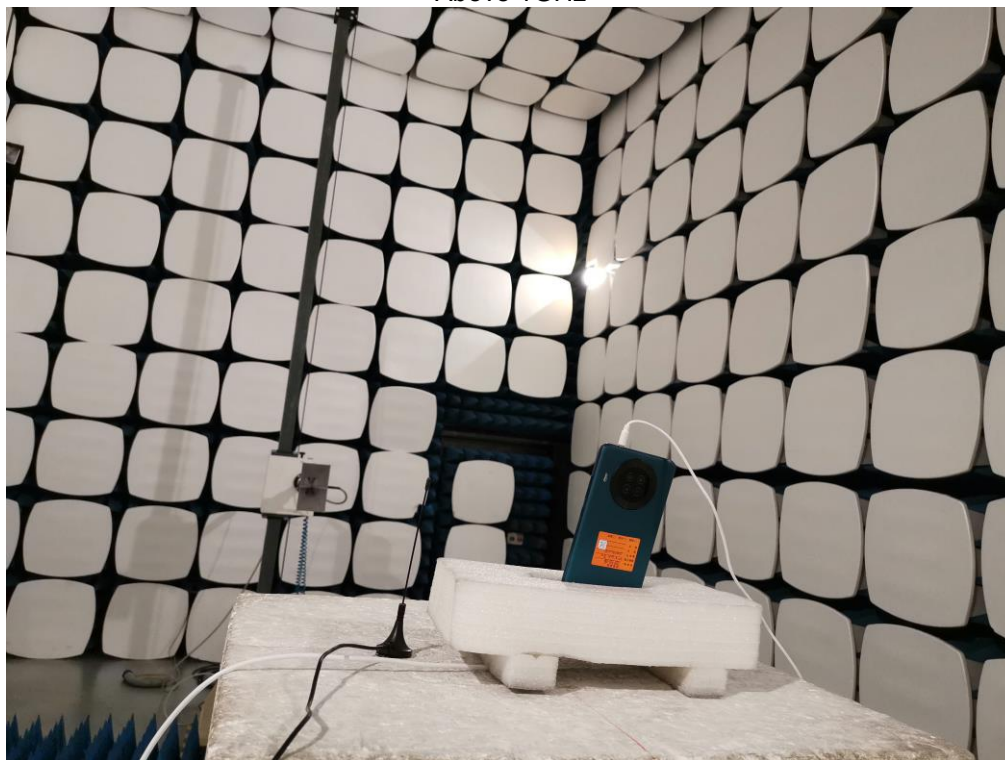


## 7 Test Setup Photo

Radiated Spurious Emission  
Below 1GHz



Above 1GHz



## **8 EUT Constructional Details**

Reference to the test report No. CCISE200603701

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