



# FCC RADIO TEST REPORT

**FCC ID** : LHJ-BL28NARD2  
**Equipment** : BL28NA-RD2  
**Brand Name** : Continental  
**Model Name** : BL28NA-RD2  
**Applicant** : Continental Automotive Systems, Inc.  
21440 W Lake Cook Rd., Deer Park, IL 60010, USA  
**Manufacturer** : Continental Automotive Systems, Inc.  
21440 W Lake Cook Rd., Deer Park, IL 60010, USA  
**Standard** : FCC 47 CFR Part 2, 22(H), 24(E), 27

The product was received on Jan. 31, 2023 and testing was performed from Feb. 07, 2023 to Feb. 15, 2023. We, Sporton International Inc. Wensan Laboratory, would like to declare that the tested sample has been evaluated in accordance with the test procedures given in ANSI / TIA-603-E and has been in compliance with the applicable technical standards.

The test results in this variant report apply exclusively to the tested model / sample. Without written approval from Sporton International Inc. Wensan Laboratory, the test report shall not be reproduced except in full.

*Louis Wu*

Approved by: Louis Wu

**Sporton International Inc. Wensan Laboratory**

No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City 333010, Taiwan (R.O.C.)



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## Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3.2	§2.1046	Conducted Output Power	Reporting only	-
	§22.913 (a)(5)	Effective Radiated Power (Band 5)	Pass	
	§27.50 (b)(10) §27.50 (c)(10)	Effective Radiated Power (Band 12)		
	§24.232 (c) §27.50 (h)(2)	Equivalent Isotropic Radiated Power (Band 2) (Band 7)		
	§27.50 (d)(4)	Equivalent Isotropic Radiated Power (Band 4)		
-	§24.232 (d) §27.50 (d)(5)	Peak-to-Average Ratio	Not Required	-
-	§2.1049	Occupied Bandwidth	Not Required	-
-	§2.1051 §22.917 (a) §24.238 (a) §27.53 (c)(2)(4) §27.53 (g) §27.53 (h)	Conducted Band Edge Measurement (Band 2) (Band 4) (Band 5) (Band 12)	Not Required	-
	§2.1051 §27.53 (m)(4)	Conducted Band Edge Measurement (Band 7)		
-	§2.1051 §22.917 (a) §24.238 (a) §27.53 (c)(2) §27.53 (g) §27.53 (h)	Conducted Spurious Emission (Band 2) (Band 4) (Band 5) (Band 12)	Not Required	-
	§2.1051 §27.53 (m)(4)	Conducted Spurious Emission (Band 7)		
-	§2.1055 §22.355 §24.235 §27.54	Frequency Stability Temperature & Voltage	Not Required	-



Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
4.2	§2.1053 §22.917 (a) §24.238 (a) §27.53 (c)(2) §27.53 (f) §27.53 (g) §27.53 (h)	Radiated Spurious Emission (Band 12)	Pass	14.89 dB under the limit at 7506.000 MHz
	§2.1051 §27.53 (m)(4)	Radiated Spurious Emission (Band 7)		

**Note:**

1. Not required means after assessing, test items are not necessary to carry out.
2. This is a variant report by adding host information. All the test cases were performed on original report which can be referred to FCC ID: LHJ-BL28NARD2. Based on the original report, the test cases were verified.

**Declaration of Conformity:**

1. The test results (PASS/FAIL) with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers. It's means measurement values may risk exceeding the limit of regulation standards, if measurement uncertainty is include in test results.
2. The measurement uncertainty please refer to report "Uncertainty of Evaluation".

**Comments and Explanations:**

The product specifications of the EUT presented in the report are declared by the manufacturer who shall take full responsibility for the authenticity.

**Reviewed by: Yun Huang**

**Report Producer: Dewi Huang**



# 1 General Description

## 1.1 Product Feature of Equipment Under Test

Product Feature	
Equipment	BL28NA-RD2
Brand Name	Continental
Model Name	BL28NA-RD2
FCC ID	LHJ-BL28NARD2
Integrated the Host	Equipment: StrLnk2P Brand Name: Continental Model Name: StrLnk2P
EUT supports Radios application	GSM/WCDMA/HSPA/LTE/GNSS
HW Version	P4.0
EUT Stage	Identical Prototype

**Remark:** The above EUT's information is declared by manufacturer.



### 1.2 Product Specification of Equipment Under Test

Product Specification is subject to this standard	
<b>Tx Frequency</b>	LTE Band 2: 1850.7 MHz ~ 1909.3 MHz LTE Band 4: 1710.7 MHz ~ 1754.3 MHz LTE Band 5: 824.7 MHz ~ 848.3 MHz LTE Band 7: 2502.5 MHz ~ 2567.5 MHz LTE Band 12: 699.7 MHz ~ 715.3 MHz
<b>Rx Frequency</b>	LTE Band 2: 1930.7 MHz ~ 1989.3 MHz LTE Band 4: 2110.7 MHz ~ 2154.3 MHz LTE Band 5: 869.7 MHz ~ 893.3 MHz LTE Band 7: 2622.5MHz ~ 2687.5 MHz LTE Band 12: 729.7 MHz ~ 745.3 MHz
<b>Bandwidth</b>	LTE Band 2: 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz LTE Band 4: 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz LTE Band 5: 1.4MHz / 3MHz / 5MHz / 10MHz LTE Band 7: 5MHz / 10MHz / 15MHz / 20MHz LTE Band 12: 1.4MHz / 3MHz / 5MHz / 10MHz
<b>Maximum Output Power to Antenna</b>	LTE Band 2 : 22.85 dBm LTE Band 4 : 23.21 dBm LTE Band 5 : 23.25 dBm LTE Band 7 : 22.78 dBm LTE Band 12 : 23.12 dBm
<b>Antenna Type</b>	Fixed External Antenna Antenna Model name: SPDA24700/2700 Antenna Manufactory: Pulse electronics
<b>Antenna Gain</b>	LTE Band 2 : 2 dBi LTE Band 4 : 2 dBi LTE Band 5 : 2 dBi LTE Band 7 : 2 dBi LTE Band 12 : 2 dBi
<b>Type of Modulation</b>	QPSK / 16QAM

### 1.3 Modification of EUT

No modifications made to the EUT during the testing.



### 1.4 Testing Location

<b>Test Site</b>	Sporton International Inc. Wensan Laboratory	
<b>Test Site Location</b>	No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City 333010, Taiwan (R.O.C.) TEL: +886-3-327-0868 FAX: +886-3-327-0855	
<b>Test Site No.</b>	<b>Sporton Site No.</b>	
	TH05-HY	03CH20-HY
<b>Test Engineer</b>	Hao En Zhang	Howard Huang and John Chuang
<b>Temperature (°C)</b>	20.3~23.6	18~21
<b>Relative Humidity (%)</b>	43.3~54.3	68~70

**Note:** The test site complies with ANSI C63.4 2014 requirement.

FCC Designation No.: TW3786

### 1.5 Applicable Standards

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

- ♦ ANSI C63.26-2015
- ♦ ANSI / TIA-603-E
- ♦ FCC 47 CFR Part 2, 22(H), 24(E), 27
- ♦ FCC KDB 971168 D01 Power Meas. License Digital Systems v03r01
- ♦ FCC KDB 412172 D01 Determining ERP and EIRP v01r01
- ♦ FCC KDB 414788 D01 Radiated Test Site v01r01.

**Remark:**

1. All the test items were validated and recorded in accordance with the standards without any modification during the testing.
2. The TAF code is not including all the FCC KDB listed without accreditation.





## 2 Test Configuration of Equipment Under Test

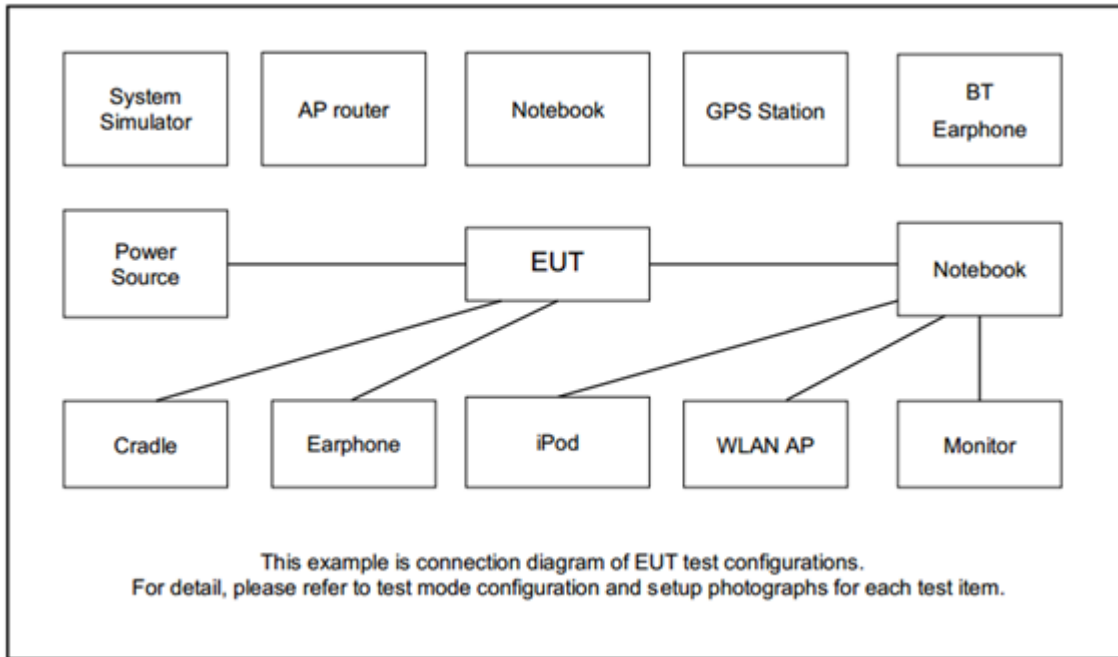
### 2.1 Test Mode

Antenna port conducted and radiated test items listed below are performed according to KDB 971168 D01 Power Meas. License Digital Systems v03r01 with maximum output power.

For radiated measurement, the measured emission level of the EUT was maximized by rotating the EUT on a turntable, adjusting the orientation of the EUT and EUT antenna in two config (Ant. Degree 0 and Ant. Degree 90), and adjusting the measurement antenna orientation, following C63.26 exploratory test procedures and only the worst case emissions were reported in this report.

Test Items	Band	Bandwidth (MHz)						Modulation		RB #			Test Channel			
		1.4	3	5	10	15	20	QPSK	16QAM	1	Half	Full	L	M	H	
Max. Output Power	2						v	v		v	v	v	v	v	v	
	4						v	v		v	v	v	v	v	v	
	5				v	-	-	v		v	v	v	v	v	v	
	7	-	-				v	v		v	v	v	v	v	v	
	12				v	-	-	v		v	v	v	v	v	v	
E.R.P / E.I.R.P	2						v	v		<b>Max. Power</b>						
	4						v	v								
	5				v	-	-	v								
	7	-	-				v	v								
	12				v	-	-	v								
Radiated Spurious Emission	7						v	v		v				v	v	v
	12				v			v		v				v	v	v
Remark	<ol style="list-style-type: none"> <li>The mark "v" means that this configuration is chosen for testing</li> <li>The mark "-" means that this bandwidth is not supported.</li> <li>The device is investigated from 30MHz to 10 times of fundamental signal for radiated spurious emission test under different RB size/offset and modulations in exploratory test. Subsequently, only the worst case emissions are reported.</li> <li>For modulation of 16QAM, the maximum power of 16QAM is lower than other modulation (QPSK), therefore, according to engineering evaluation, we choose higher power (QPSK) to perform all tests and show in the report.</li> <li>The radiated spurious emission measurement of the device (model: StrLnk2P) and the module (model: BL28NA-RD2) uses the same antenna (model: SPDA24700/2700), based on the identical test antenna the device verify the worse case from module report (FCC ID: LHJ-BL28NARD2).</li> </ol>															

## 2.2 Connection Diagram of Test System



## 2.3 Support Unit used in test configuration and system

Item	Equipment	Brand Name	Model No.	FCC ID	Data Cable	Power Cord
1.	System Simulator	Anritsu	MT8820C	N/A	N/A	Unshielded, 1.8 m
2.	Power Supply	GW Instek	GPE-2323	N/A	N/A	Unshielded, 1.8 m
3.	TP Load Box	Continental	N/A	N/A	N/A	N/A



### 2.4 Frequency List of Low/Middle/High Channels

LTE Band 2 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
20	Channel	18700	18900	19100
	Frequency	1860	1880	1900
LTE Band 4 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
20	Channel	20050	20175	20300
	Frequency	1720	1732.5	1745
LTE Band 5 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
10	Channel	20450	20525	20600
	Frequency	829	836.5	844
LTE Band 7 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
20	Channel	20850	21100	21350
	Frequency	2510	2535	2560
LTE Band 12 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
10	Channel	23060	23095	23130
	Frequency	704	707.5	711

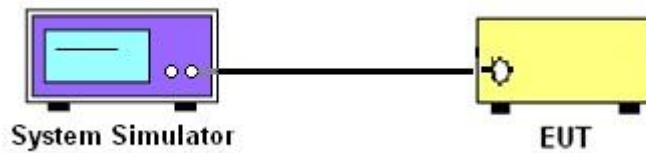
### 3 Conducted Test Items

#### 3.1 Measuring Instruments

See list of measuring instruments of this test report.

##### 3.1.1 Test Setup

##### 3.1.2 Conducted Output Power



##### 3.1.3 Test Result of Conducted Test

Please refer to Appendix A.



## 3.2 Conducted Output Power and ERP/EIRP

### 3.2.1 Description of the Conducted Output Power Measurement and ERP/EIRP Measurement

A system simulator was used to establish communication with the EUT. Its parameters were set to force the EUT transmitting at maximum output power. The measured power in the radio frequency on the transmitter output terminals shall be reported.

The ERP of mobile transmitters must not exceed 7 Watts for LTE Band 5

The ERP of mobile transmitters must not exceed 3 Watts for LTE Band 12

The EIRP of mobile transmitters must not exceed 2 Watts for LTE Band 2 and Band 7

The EIRP of mobile transmitters must not exceed 1 Watts for LTE Band 4

According to KDB 412172 D01 Power Approach,

$EIRP = P_T + G_T - L_C$ ,  $ERP = EIRP - 2.15$ , where

$P_T$  = transmitter output power in dBm

$G_T$  = gain of the transmitting antenna in dBi

$L_C$  = signal attenuation in the connecting cable between the transmitter and antenna in dB

### 3.2.2 Test Procedures

1. The transmitter output port was connected to the system simulator.
2. Set EUT at maximum power through the system simulator.
3. Select lowest, middle, and highest channels for each band and different modulation.
4. Measure and record the power level from the system simulator.

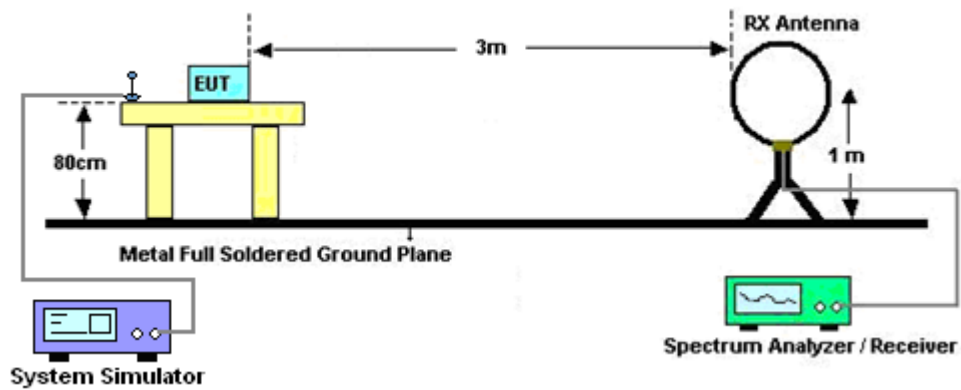
## 4 Radiated Test Items

### 4.1 Measuring Instruments

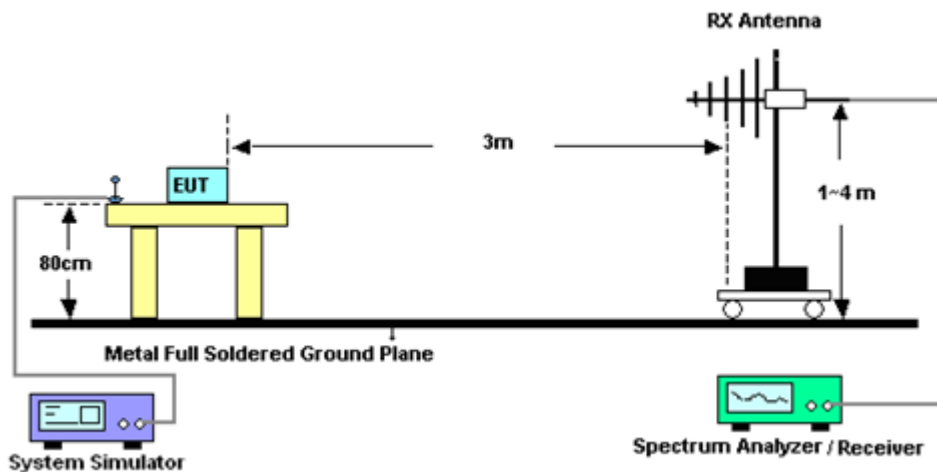
See list of measuring instruments of this test report.

#### 4.1.1 Test Setup

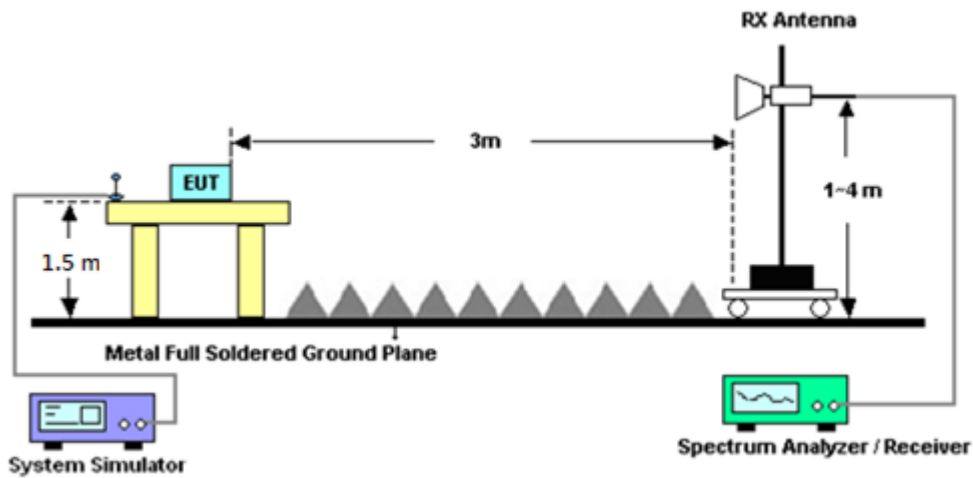
For radiated test below 30MHz



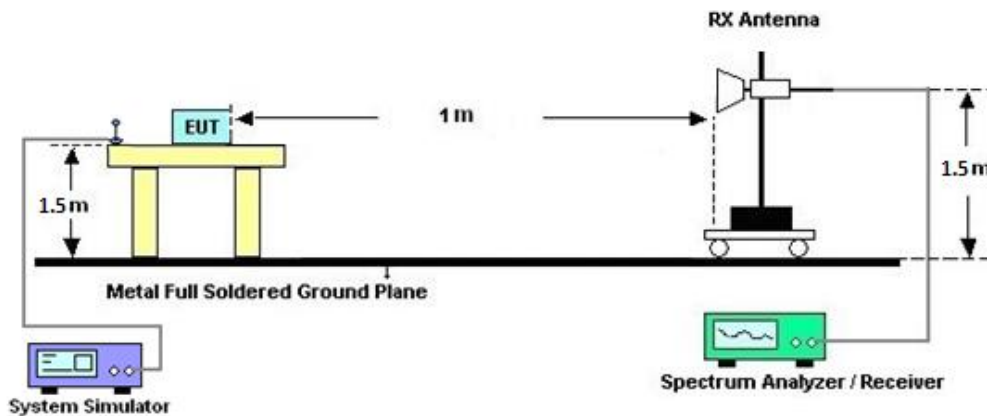
For radiated test from 30MHz to 1GHz



For radiated test from 1GHz to 18GHz



For radiated test above 18GHz



#### 4.1.2 Test Result of Radiated Test

Please refer to Appendix B.

**Note:**

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line was not reported.

There is adequate comparison measurement of both open-field test site and alternative test site - semi-Anechoic chamber according to 414788 D01 Radiated Test Site v01r01, and the result came out very similar.



## 4.2 Radiated Spurious Emission Measurement

### 4.2.1 Description of Radiated Spurious Emission Measurement

The radiated spurious emission was measured by substitution method according to ANSI / TIA-603-E. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least  $43 + 10 \log (P)$  dB.

For LTE Band 7

For operations in the 746-758 MHz, 775-788 MHz, and 805-806 MHz bands, emissions in the band 1559-1610 MHz shall be limited to  $-70$  dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and  $-80$  dBW EIRP for discrete emissions of less than 700 Hz bandwidth. The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic.

### 4.2.2 Test Procedures

The testing follows FCC KDB 971168 D01 v03r01 Section 7 and ANSI / TIA-603-E Section 2.2.12.

1. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
2. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest spurious emission.
4. 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.
5. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking the record of maximum spurious emission.
6. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
7. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
8. Taking the record of output power at antenna port.
9. Repeat step 7 to step 8 for another polarization.
10. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

The limit line is derived from  $43 + 10\log(P)$ dB below the transmitter power P(Watts)

For LTE Band 7

The limit line is derived from  $55 + 10\log(P)$ dB below the transmitter power P(Watts)

$EIRP (dBm) = S.G. Power - Tx Cable Loss + Tx Antenna Gain$

$ERP (dBm) = EIRP - 2.15$





## 5 List of Measuring Equipment

Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Signal Analyzer	Keysight	N9010B	MY60241058	N/A	Jul. 07, 2022	Feb. 07, 2023~ Feb. 08, 2023	Jul. 06, 2023	Radiation (03CH20-HY)
Signal Generator	Anritsu	MG3694C	163401	0.1Hz~40GHz	Feb. 13, 2022	Feb. 07, 2023~ Feb. 08, 2023	Feb. 12, 2023	Radiation (03CH20-HY)
Preamplifier	COM-POWER	PAM-103	18020201	1MHz-1000MHz	Jan. 02, 2023	Feb. 07, 2023~ Feb. 08, 2023	Jan. 01, 2024	Radiation (03CH20-HY)
Amplifier	EMCI	EMC118A45SE	980792	N/A	Nov. 14, 2022	Feb. 07, 2023~ Feb. 08, 2023	Nov. 13, 2023	Radiation (03CH20-HY)
Preamplifier	EMEC	EM18G40G	060715	18GHz~40GHz	Dec. 07, 2022	Feb. 07, 2023~ Feb. 08, 2023	Dec. 06, 2023	Radiation (03CH20-HY)
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100488	9 kHz~30 MHz	Sep. 20, 2022	Feb. 07, 2023~ Feb. 08, 2023	Sep. 19, 2023	Radiation (03CH20-HY)
Bilog Antenna	TESEQ	CBL 6111D&00802N 1D01N-06	54682 & AT-N0603	30MHz~1GHz	Sep. 18, 2022	Feb. 07, 2023~ Feb. 08, 2023	Sep. 17, 2023	Radiation (03CH20-HY)
Bilog Antenna	TESEQ	CBL 6111D&00802N 1D01N-06	55606 & 08	30MHz~1GHz	Oct. 22, 2022	Feb. 07, 2023~ Feb. 08, 2023	Oct. 21, 2023	Radiation (03CH20-HY)
Horn Antenna	SCHWARZBE CK	BBHA 9120 D	9120D-02038	1GHz~18GHz	Aug. 09, 2022	Feb. 07, 2023~ Feb. 08, 2023	Aug. 08, 2023	Radiation (03CH20-HY)
Horn Antenna	SCHWARZBE CK	BBHA 9120 D	9120D-1212	1GHz~18GHz	Mar. 10, 2022	Feb. 07, 2023~ Feb. 08, 2023	Mar. 09, 2023	Radiation (03CH20-HY)
SHF-EHF Horn Antenna	SCHWARZBE CK	BBHA9170	00994	18GHz-40GHz	Nov. 04, 2022	Feb. 07, 2023~ Feb. 08, 2023	Nov. 03, 2023	Radiation (03CH20-HY)
SHF-EHF Horn Antenna	SCHWARZBE CK	BBHA9170	00993	18GHz-40GHz	Nov. 24, 2022	Feb. 07, 2023~ Feb. 08, 2023	Nov. 23, 2023	Radiation (03CH20-HY)
Hygrometer	TECPEL	DTM-303B	TP200879	N/A	Sep. 28, 2022	Feb. 07, 2023~ Feb. 08, 2023	Sep. 27, 2023	Radiation (03CH20-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	519229/2,80 4015/2,8040 27/2	N/A	Jan. 18, 2023	Feb. 07, 2023~ Feb. 08, 2023	Jan. 17, 2024	Radiation (03CH20-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	MY2857/2	N/A	Sep. 28, 2022	Feb. 07, 2023~ Feb. 08, 2023	Sep. 27, 2023	Radiation (03CH20-HY)
Software	Audix	E3 6.2009-8-24	RK-002156	N/A	N/A	Feb. 07, 2023~ Feb. 08, 2023	N/A	Radiation (03CH20-HY)
Antenna Mast	EMEC	AM-BS-4500-B	N/A	1m~4m	N/A	Feb. 07, 2023~ Feb. 08, 2023	N/A	Radiation (03CH20-HY)
Turn Table	EMEC	TT2000	N/A	0~360 Degree	N/A	Feb. 07, 2023~ Feb. 08, 2023	N/A	Radiation (03CH20-HY)
Controller	EMEC	EM1000	N/A	Control Turn table & Ant Mast	N/A	Feb. 07, 2023~ Feb. 08, 2023	N/A	Radiation (03CH20-HY)
Radio Communication Analyzer	Anritsu	MT8821C	6261849015	LTE	Dec. 09, 2022	Feb. 15, 2023	Dec. 08, 2023	Conducted (TH05-HY)



## 6 Uncertainty of Evaluation

### Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ )	3.33 dB
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### Uncertainty of Radiated Emission Measurement (1 GHz ~ 18 GHz)

Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ )	3.40 dB
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### Uncertainty of Radiated Emission Measurement (18 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ )	4.43 dB
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## Appendix A. Test Results of Conducted Test

### Conducted Output Power(Average power & ERP/EIRP)

LTE Band 2 Maximum Average Power [dBm] (GT - LC = 2 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP (W)
20	1	0	QPSK	22.76	22.85	22.00	24.85	0.3055
20	1	49		22.53	22.35	22.29		
20	1	99		22.15	22.28	22.40		
20	50	0		21.72	21.78	21.64		
20	50	24		21.73	21.70	21.55		
20	50	50		21.49	21.63	21.50		
20	100	0		21.56	21.78	21.64		
Limit	EIRP < 2W			Result			Pass	

LTE Band 4 Maximum Average Power [dBm] (GT - LC = 2 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP (W)
20	1	0	QPSK	23.05	23.21	23.20	25.21	0.3319
20	1	49		22.40	22.86	22.95		
20	1	99		22.34	22.78	22.81		
20	50	0		21.82	21.92	22.16		
20	50	24		21.95	22.02	21.84		
20	50	50		21.86	21.94	21.93		
20	100	0		21.90	21.96	21.87		
Limit	EIRP < 1W			Result			Pass	

LTE Band 5 Maximum Average Power [dBm] (GT - LC = 2 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	ERP (dBm)	ERP (W)
10	1	0	QPSK	23.10	23.11	23.25	23.10	0.2042
10	1	25		22.22	22.47	22.35		
10	1	49		22.75	22.48	23.21		
10	25	0		21.86	21.71	21.75		
10	25	12		21.82	21.66	22.05		
10	25	25		21.83	21.74	22.07		
10	50	0		21.89	21.70	21.94		
Limit	ERP < 7W			Result			Pass	



LTE Band 7 Maximum Average Power [dBm] (GT - LC = 2 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP (W)
20	1	0	QPSK	22.78	22.66	22.49	24.78	0.3006
20	1	49		22.22	22.33	22.30		
20	1	99		22.30	22.71	22.72		
20	50	0		21.60	21.54	21.69		
20	50	24		21.75	21.76	21.68		
20	50	50		21.74	21.59	21.50		
20	100	0		21.72	21.64	21.73		
Limit	EIRP < 2W			Result			Pass	

LTE Band 12 Maximum Average Power [dBm] (GT - LC = 2 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	ERP (dBm)	ERP (W)
10	1	0	QPSK	23.08	22.37	23.12	22.97	0.1982
10	1	25		22.25	22.40	22.49		
10	1	49		22.63	22.70	23.07		
10	25	0		21.70	21.75	22.01		
10	25	12		21.98	21.81	22.09		
10	25	25		21.85	21.83	22.09		
10	50	0		21.78	21.97	21.96		
Limit	ERP < 3W			Result			Pass	



## Appendix B. Test Results of Radiated Test

### LTE Band 12

LTE Band 12 / 10MHz / QPSK										
Channel	Frequency ( MHz )	ERP ( dBm )	Limit ( dBm )	Over Limit ( dB )	SPA Reading (dBm)	S.G. Power ( dBm )	TX Cable loss ( dB )	TX Antenna Gain (dBi)	Polarization (H/V)	
Lowest	1400	-46.29	-13.00	-33.29	-54.40	-50.44	0.90	7.20	H	
	2096	-64.76	-13.00	-51.76	-75.21	-70.85	0.98	9.22	H	
	2800	-64.49	-13.00	-51.49	-77.51	-71.61	1.13	10.40	H	
	3498	-63.84	-13.00	-50.84	-79.15	-72.02	1.07	11.40	H	
	4200	-58.87	-13.00	-45.87	-76.34	-66.53	1.49	11.30	H	
										H
										H
	1400	-34.86	-13.00	-21.86	-42.88	-39.01	0.90	7.20	V	
	2096	-58.04	-13.00	-45.04	-68.44	-64.13	0.98	9.22	V	
	2800	-62.00	-13.00	-49.00	-75.50	-69.12	1.13	10.40	V	
	3498	-63.55	-13.00	-50.55	-78.59	-71.73	1.07	11.40	V	
	4200	-58.42	-13.00	-45.42	-76.02	-66.08	1.49	11.30	V	
										V
										V
Middle	1408	-46.86	-13.00	-33.86	-54.98	-51.06	0.90	7.25	H	
	2112	-49.89	-13.00	-36.89	-60.40	-55.98	0.98	9.22	H	
	2816	-64.69	-13.00	-51.69	-77.83	-71.87	1.13	10.46	H	
										H
										H
	1408	-35.00	-13.00	-22.00	-43.05	-39.20	0.90	7.25	V	
	2112	-57.11	-13.00	-44.11	-67.56	-63.20	0.98	9.22	V	
	2816	-62.58	-13.00	-49.58	-76.15	-69.76	1.13	10.46	V	
										V
										V



Highest	1416	-50.32	-13.00	-37.32	-58.45	-54.56	0.90	7.30	H
	2120	-66.01	-13.00	-53.01	-76.54	-72.12	0.98	9.24	H
	2826	-64.44	-13.00	-51.44	-77.66	-71.66	1.13	10.50	H
									H
									H
									H
									H
	1416	-38.45	-13.00	-25.45	-46.53	-42.69	0.90	7.30	V
	2120	-56.64	-13.00	-43.64	-67.11	-62.75	0.98	9.24	V
	2826	-63.76	-13.00	-50.76	-77.39	-70.98	1.13	10.50	V
									V
									V
									V
									V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.



**LTE Band 7**

LTE Band 7 / 20MHz / QPSK									
Channel	Frequency ( MHz )	EIRP ( dBm )	Limit ( dBm )	Over Limit ( dB )	SPA Reading (dBm)	S.G. Power ( dBm )	TX Cable loss ( dB )	TX Antenna Gain (dBi)	Polarization (H/V)
Lowest	5004	-45.65	-25	-20.65	-65.87	-55.03	1.52	10.90	H
	7506	-46.23	-25	-21.23	-71.26	-55.63	1.94	11.34	H
	10008	-51.16	-25	-26.16	-79.16	-60.62	2.33	11.79	H
									H
									H
									H
									H
	5004	-43.99	-25	-18.99	-64.14	-53.37	1.52	10.90	V
	7506	-39.89	-25	-14.89	-65.18	-49.29	1.94	11.34	V
	10008	-48.83	-25	-23.83	-76.06	-58.29	2.33	11.79	V
									V
									V
									V
									V
Middle	5052	-47.48	-25	-22.48	-67.7	-56.86	1.53	10.91	H
	7578	-50.67	-25	-25.67	-75.87	-60.27	1.94	11.54	H
	10098	-53.29	-25	-28.29	-81.2	-62.66	2.34	11.70	H
									H
									H
									H
	5052	-48.78	-25	-23.78	-68.97	-58.16	1.53	10.91	V
	7578	-44.37	-25	-19.37	-69.87	-53.97	1.94	11.54	V
	10098	-52.02	-25	-27.02	-79.17	-61.39	2.34	11.70	V
									V
									V



Highest	5100	-49.83	-25	-24.83	-70.05	-59.49	1.54	11.20	H
	7656	-48.54	-25	-23.54	-73.88	-57.90	1.94	11.30	H
	10206	-53.12	-25	-28.12	-80.93	-62.39	2.34	11.61	H
									H
									H
									H
									H
	5100	-48.41	-25	-23.41	-68.63	-58.07	1.54	11.20	V
	7656	-43.51	-25	-18.51	-69.16	-52.87	1.94	11.30	V
	10206	-52.39	-25	-27.39	-79.45	-61.66	2.34	11.61	V
									V
									V
									V
									V

**Remark:** Spurious emissions within 30-1000MHz were found more than 20dB below limit line.