



## RADIO TEST REPORT

For

Shenzhen Huafurui Technology Co., Ltd.

Tablet

Test Model: TAB 40

Prepared for : 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, 518055, P.R. China

Prepared by : Shenzhen LCS Compliance Testing Laboratory Ltd.  
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Date of receipt of test sample : May 15, 2023  
Number of tested samples : 2  
Serial number : Prototype  
Date of Test : May 15, 2023 ~ June 05, 2023  
Date of Report : June 06, 2023





<b>RADIO TEST REPORT</b> <b>ETSI EN 303 413 V1.2.1 (2021-04)</b> Satellite Earth Stations and Systems (SES); Global Navigation Satellite System (GNSS) receivers; Radio equipment operating in the 1 164 MHz to 1 300 MHz and 1 559 MHz to 1 610 MHz frequency bands; Harmonised Standard for access to radio spectrum	
<b>Report Reference No.</b>	: <b>LCSA051523055EK</b>
<b>Date of Issue</b>	: June 06, 2023
<b>Testing Laboratory Name</b>	: <b>Shenzhen LCS Compliance Testing Laboratory Ltd.</b>
<b>Address</b>	: Room 101, 201, Building A and Room 301, Building C, Juji Industrial Park, Yabianxueziwei, Shajing Street, Bao'an District, Shenzhen, Guangdong, China
<b>Testing Location/ Procedure</b>	: Full application of Harmonised standards <input checked="" type="checkbox"/> Partial application of Harmonised standards <input type="checkbox"/> Other standard testing method <input type="checkbox"/>
<b>Applicant's Name</b>	: <b>Shenzhen Huafurui Technology Co., Ltd.</b>
<b>Address</b>	: 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, 518055, P.R. China
<b>Test Specification</b>	
<b>Standard</b>	: ETSI EN 303 413 V1.2.1 (2021-04)
<b>Test Report Form No.</b>	: LCSEMC-1.0
<b>TRF Originator</b>	: Shenzhen LCS Compliance Testing Laboratory Ltd.
<b>Master TRF</b>	: Dated 2017-06
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<b>Test Item Description</b>	: <b>Tablet</b>
<b>Trade Mark</b>	: CUBOT
<b>Test Model</b>	: TAB 40
<b>Ratings</b>	: Input: 5.0V $\Rightarrow$ 2.0A For AC Adapter Input: 100-240V~, 50/60Hz, 0.3A Adapter Output: 5.0V $\Rightarrow$ 2.0A, 10.0W DC 3.8V by Rechargeable Li-ion Battery, 7500mAh
<b>Result</b>	: <b>Positive</b>

Compiled by:

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Cary Luo/ Technique principal

Approved by:

Gavin Liang

Gavin Liang/ Manager



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## RADIO -- TEST REPORT

**Test Report No. : LCSA051523055EK**June 06, 2023  
Date of issue

Test Model..... : TAB 40

EUT..... : Tablet

**Applicant..... : Shenzhen Huafurui Technology Co., Ltd.**

Address..... : Unit 1401 &amp; 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, 518055, P.R. China

Telephone..... : /

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**Manufacturer..... : Shenzhen Huafurui Technology Co., Ltd.**

Address..... : Unit 1401 &amp; 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, 518055, P.R. China

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Telephone..... : /

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**Test Result****Positive**

The test report merely corresponds to the test sample.

It is not permitted to copy extracts of these test result without the written permission of the test laboratory.



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Revision History

Report Version	Issue Date	Revision Content	Revised By
000	June 06, 2023	Initial Issue	---





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## 1. GENERAL INFORMATION

### 1.1. Product Description for Equipment Under Test (EUT)

EUT	: Tablet
Test Model	: TAB 40
Power Supply	: Input: 5.0V $\pm$ 2.0A For AC Adapter Input: 100-240V~, 50/60Hz, 0.3A Adapter Output: 5.0V $\pm$ 2.0A, 10.0W DC 3.8V by Rechargeable Li-ion Battery, 7500mAh
Hardware Version	: S30DL_S88V1.1X
Software Version	: CUBOT_TAB 40_P061_V01
Bluetooth	:
Frequency Range	: 2402MHz~2480MHz
Channel Number	: 79 channels for Bluetooth V5.0 (BDR/EDR) 40 channels for Bluetooth V5.0 (BT LE)
Channel Spacing	: 1MHz for Bluetooth V5.0 (BDR/EDR) 2MHz for Bluetooth V5.0 (BT LE)
Modulation Type	: GFSK, $\pi/4$ -DQPSK, 8-DPSK for Bluetooth V5.0 (BDR/EDR) GFSK for Bluetooth V5.0 (BT LE)
Bluetooth Version	: V5.0
Antenna Description	: PIFA Antenna, 1.4dBi(Max.)
WIFI(2.4G Band)	:
Frequency Range	: 2412MHz~2472MHz
Channel Spacing	: 5MHz
Channel Number	: 13 Channel for 20MHz bandwidth(2412~2472MHz) 9 channels for 40MHz bandwidth(2422~2462MHz)
Modulation Type	: 802.11b: DSSS (CCK, DQPSK, DBPSK) 802.11g/n: OFDM (64QAM, 16QAM, QPSK, BPSK)
Antenna Description	: PIFA Antenna, 1.4dBi(Max.)
WIFI(5.2G Band)	:
Frequency Range	: 5180MHz~5240MHz
Channel Number	: 4 channels for 20MHz bandwidth(5180~5240MHz) 2 channels for 40MHz bandwidth(5190~5230MHz) 1 channels for 80MHz bandwidth(5210MHz)
Modulation Type	: 802.11a/n: OFDM (64QAM, 16QAM, QPSK, BPSK) 802.11ac: OFDM (256QAM, 64QAM, 16QAM, QPSK, BPSK)
Antenna Description	: PIFA Antenna, 1.12dBi(Max.)
WIFI(5.8G Band)	:
Frequency Range	: 5745MHz~5825MHz



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Channel Number : 5 channels for 20MHz bandwidth(5745~5825MHz)  
2 channels for 40MHz bandwidth(5755~5795MHz)  
1 channels for 80MHz bandwidth(5775MHz)  
Modulation Type : 802.11a/n: OFDM (64QAM, 16QAM, QPSK, BPSK)  
802.11ac: OFDM (256QAM, 64QAM, 16QAM, QPSK, BPSK)  
Antenna Description : PIFA Antenna, 1.12dBi(Max.)

**2G**

Support Band : ☒ GSM 900 (EU-Band) ☒ DCS 1800 (EU-Band)  
☒ GSM 850 (U.S.-Band) ☒ PCS 1900 (U.S.-Band)

Release Version : R99

GPRS Class : Class 12

EGPRS Class : Class 12

Uplink : GSM 900: 880MHz~915MHz  
DCS 1800: 1710MHz~1785MHz

Downlink : GSM 900: 925MHz~960MHz  
DCS 1800: 1805MHz~1880MHz

Type Of Modulation : GMSK for GSM/GPRS; GMSK/8PSK for EGPRS

Antenna Description : PIFA Antenna

-1.75dBi (max.) For GSM 900

1.01dBi (max.) For DCS 1800

Power Class : GSM 900: Level 5, DCS 1800: Level 0  
EGPRS 900: Level 8, EGPRS 1800: Level 2

**3G**

Support Band : ☐ WCDMA Band II (U.S.-Band)  
☐ WCDMA Band V (U.S.-Band)  
☐ WCDMA Band IV (U.S.-Band)  
☒ WCDMA Band I (EU-Band)  
☒ WCDMA Band VIII (EU-Band)

Release Version : R8

Uplink : WCDMA Band I: 1920MHz~1980MHz  
WCDMA Band VIII: 880MHz~915MHz

Downlink : WCDMA Band I: 2110MHz~2170MHz  
WCDMA Band VIII: 925MHz~960MHz

Type Of Modulation : QPSK/16QAM

Antenna Description : PIFA Antenna

1.01dBi (max.) For WCDMA Band I

-1.75dBi (max.) For WCDMA Band VIII

Power Class : Level 3

**LTE**

Support Band : ☒ E-UTRA Band 1(EU-Band)  
☒ E-UTRA Band 3(EU-Band)



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- ☒ E-UTRA Band 7(EU-Band)
- ☒ E-UTRA Band 8(EU-Band)
- ☒ E-UTRA Band 20(EU-Band)

LTE Release Version : R9

FDD Band : Uplink: E-UTRA Band 1: 1920MHz~1980MHz  
E-UTRA Band 3: 1710MHz~1785MHz  
E-UTRA Band 7: 2500MHz~2570MHz  
E-UTRA Band 8: 880MHz~915MHz  
E-UTRA Band 20: 832MHz~862MHz  
Downlink: E-UTRA Band 1: 2110MHz~2170MHz  
E-UTRA Band 3: 1805MHz~1880MHz  
E-UTRA Band 7: 2620MHz~2690MHz  
E-UTRA Band 8: 925MHz~960MHz  
E-UTRA Band 20: 791MHz~821MHz

Type Of Modulation : QPSK/16QAM

Antenna Description : PIFA Antenna  
1.01dBi (max.) For E-UTRA Band 1  
1.01dBi (max.) For E-UTRA Band 3  
1.01dBi (max.) For E-UTRA Band 7  
-1.75dBi (max.) For E-UTRA Band 8  
-1.75dBi (max.) For E-UTRA Band 20

Power Class : Class 3

GPS Receiver :

Receive Frequency : 1575.42MHz

Channel Number : 1

Antenna Description : PIFA Antenna, 1.53dBi(Max.)

GLONASS Receiver :

Receive Frequency : 1602.5625MHz

Channel Number : 1

Antenna Description : PIFA Antenna, 1.53dBi(Max.)

Galileo Receiver :

Receive Frequency : 1589.74MHz

Channel Number : 1

Antenna Description : PIFA Antenna, 1.53dBi(Max.)



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## 1.2. Objective

This Type approval report is prepared on behalf of **Shenzhen Huafurui Technology Co., Ltd.** in accordance with ETSI EN 303 413 V1.2.1 (2021-04), Satellite Earth Stations and Systems (SES); Global Navigation Satellite System (GNSS) receivers; Radio equipment operating in the 164 MHz to 1 300 MHz and 1 559 MHz to 1 610 MHz frequency bands; Harmonised Standard for access to radio spectrum.

The objective is to determine compliance with ETSI EN 303 413 V1.2.1 (2021-04).

## 1.3. Related Submittal(s)/Grant(s)

No Related Submittals.

## 1.4. Test Methodology

All measurements contained in this report were conducted with ETSI EN 303 413 V1.2.1 (2021-04).

## 1.5. Description of Test Facility

NVLAP Accreditation Code is 600167-0.

FCC Designation Number is CN5024.

CAB identifier is CN0071.

CNAS Registration Number is L4595.

## 1.6. Support Equipment List

Manufacturer	Description	Model	Serial Number	Certificate
ShenZhen HuaJin Electronics CO., LTD	AC Power Adapter	HJ-0502000W2-EU	---	CE

## 1.7. External I/O

I/O Port Description	Quantity	Cable
Type-C USB Port	1	USB Cable: 1.0m, unshielded
Headphone Port	1	Headphone Cable: 1.2m, unshielded





## 1.8. Measurement Uncertainty

Item	MU	Remark
Uncertainty for Power point Conducted Emissions Test	2.42dB	
Uncertainty for Radiation Emission test in 3m chamber (30MHz to 1GHz)	3.54dB	Polarize: V
	4.1dB	Polarize: H
Uncertainty for Radiation Emission test in 3m chamber (1GHz to 25GHz)	2.08dB	Polarize: H
	2.56dB	Polarize: V
Uncertainty for radio frequency	0.01ppm	
Uncertainty for conducted RF Power	0.65dB	
Uncertainty for temperature	0.2℃	
Uncertainty for humidity	1%	
Uncertainty for DC and low frequency voltages	0.06%	

## 9. Description Of Test Modes

The EUT has been tested under operating condition.

Mode 1: GPS Receiving;

Mode 2: GLONASS Receiving;

Mode 3: Galileo Receiving;

This test was performed with EUT in X, Y, Z position and the worse case was found when EUT in Y position.





## 2. SYSTEM TEST CONFIGURATION

### 2.1. Justification

The system was configured for testing in engineering mode.

### 2.2. EUT Exercise Software

N/A.

### 2.3. Special Accessories

N/A.

### 2.4. Block Diagram/Schematics

Please refer to the related document.

### 2.5. Equipment Modifications

Shenzhen LCS Compliance Testing Laboratory Ltd. has not done any modification on the EUT.

### 2.6. Configuration of Test Setup

Please refer to the test setup photo.



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### 3. SUMMARY OF TEST RESULTS

RULES ETSI EN 303 413 V1.2.1 (2021-04)	DESCRIPTION OF TEST	RESULT
§ 4.2.1	Receiver blocking	Compliant
§ 4.2.2	Receiver spurious emissions	Compliant

Note: "N/A" means this test item is not applicable.





## 4. TEST RESULTS

### 4.1. Receiver blocking

#### 4.1.1 Definition and Limit

Receiver blocking is a measure of the capability of the GUE to receive a wanted signal without exceeding a given degradation due to the presence of an unwanted input signal operating in accordance with the allocation table of the ITU Radio Regulations [i.13] in frequency bands adjacent or near-adjacent to the relevant RNSS band.

The  $C/N_0$  metric reported by the GUE for all GNSS constellations and GNSS signals given in table 4-1 and supported by the GUE shall not degrade by more than the value given in equation (4-1) when a blocking signal is applied. The blocking signal is defined in table 4-4, with the frequencies and power levels defined in table 4-2 and/or in table 4-3 depending on the RNSS bands supported by the GUE

Equation 4-1: Maximum degradation in  $C/N_0$

$$\Delta C/N_0 \leq 1 \text{ dB} \quad (4-1)$$

**Table 4-2: Frequency bands, blocking signal test point centre frequencies and power levels for the 1 559 MHz to 1 610 MHz RNSS band**

Frequency band (MHz)	Test point centre frequency (MHz)	Blocking signal power level (dBm)	Comments
1518 to 1525	1524	-65	MSS (space-to-Earth) band
1525 to 1549	1548	-95	MSS (space-to-Earth) band
1549 to 1559	1554	-105	MSS (space-to-Earth) band
1559 to 1610	GUE RNSS band under test		
1610 to 1626	1615	-105	MSS (space-to-Earth) band
1626 to 1640	1627	-85	MSS (space-to-Earth) band

**Table 4-3: Frequency bands, blocking signal test point centre frequencies and power levels for the 1 164 MHz to 1 300 MHz RNSS band**

Frequency band (MHz)	Test point centre frequency (MHz)	Blocking signal power level (dBm)	Comments
960 to 1164	1154	-75	AM(R)S, ARNS band
1164 to 1215	GUE RNSS band under test		
1215 to 1260	GUE RNSS band under test		
1260 to 1300	GUE RNSS band under test		
1300 to 1350	1310	-85	Radiolocation, ARNS, RNSS (Earth-to-space) band

**Table 4-4: Blocking signal**

Parameter	Value	Comments
Frequency	See table 4-2 and table 4-3	
Power level	See table 4-2 and table 4-3	
Bandwidth	1 MHz	See clause B.1 for details
Format	AWGN	



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#### 4.1.2 Test Procedure

- 1) Configure the GNSS signal generator to simulate the GNSS constellations and GNSS signals from table 4-1 declared as supported by the GUE, with power levels and other details as specified in clause B.2.
- 2) With the blocking signal switched off, the EUT shall be given sufficient time to acquire all simulated satellites from the declared GNSS constellations.
- 3) Record the  $C/N_0$  value(s) reported by the EUT under the condition in step 2). Sufficient filtering shall be used to obtain stable value(s).  $C/N_0$  may be averaged over time and across all the simulated satellites for a particular GNSS constellation and GNSS signal. However,  $C/N_0$  shall not be averaged across different satellite signals in the same GNSS constellation or across different GNSS constellations. For a multi-GNSS constellation and/or multi-GNSS signal EUT, there shall be a separate  $C/N_0$  value recorded for each GNSS constellation and each GNSS signal supported.
- 4) The blocking signal generator shall be configured to generate the signal defined in table 4-4, at the first test point centre frequency and signal power level as specified in table 4-2.
- 5) The blocking signal shall be switched on, and the EUT's  $C/N_0$  value(s) recorded as in step 3). The difference(s) between this value(s) and the value(s) recorded in step 3) is the  $C/N_0$  degradation caused by the blocking signal for this test point.
- 6) Test point Pass/Fail Criteria: If the  $C/N_0$  degradation from step 5) does not exceed the value in equation (4-1), then this test point is set to "pass". If the  $C/N_0$  degradation exceeds the value in equation (4-1), then this test point is set to "fail". For a multi-GNSS constellation and/or multi-GNSS signal EUT, there shall be a separate pass/fail determination for each GNSS constellation and for each GNSS signal supported. If the  $C/N_0$  degradation exceeds the value in equation (4-1) for any supported GNSS constellation or supported GNSS signal, then this test point is set to "fail".
- 7) Step 1) through step 6) shall be repeated for all test point centre frequencies (and associated signal power level) specified in table 4-2.

#### 4.1.3 Test Result

##### Environmental Conditions

Temperature/ Humidity:	24.3°C/ 54.4%	ATM Pressure:	100.9 kPa
Operator:	Taylor Hu	Conclusion:	Pass

Frequency Band(MHz)	Test Point Center Frequency(MHz)	Blocking signal power level (dBm)	Test Result(dB)	Limit(dB) ( $\Delta C/N_0$ )
1518 to 1525	1524	-65	0.54	$\leq 1$
1525 to 1549	1548	-95	0.47	$\leq 1$
1 549 to 1 559	1554	-105	0.65	$\leq 1$
1 610 to 1 626	1615	-105	0.77	$\leq 1$
1 626 to 1 640	1627	-85	0.51	$\leq 1$



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## 4.2. Receiver Spurious Emissions

### 4.2.1 Definition and Limit

Receiver spurious emissions are emissions at any frequency when the GUE is active.

Frequency range	Maximum power	Bandwidth
30 MHz to 1 GHz	-57 dBm	100 kHz
1 GHz to 8,3 GHz	-47 dBm	1 MHz

### 4.2.2 Test Procedure

Please refer to ETSI EN 303 413 V1.2.1 (2021-04) clause 5.5.3 for measurement method.

### 4.2.3 Test Result

#### Environmental Conditions

Temperature/ Humidity:	24.3°C / 54.4%	ATM Pressure:	100.9 kPa
Test Mode:	Mode 1-1575.42MHz	Operator:	Taylor Hu

#### Test Result For Receiving Mode(Detecting Frequency Range: 30MHz~1GHz)

Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Margin (dB)	Polarity (H/V)
65.85	-66.75	-57.00	-9.75	V
910.15	-68.99	-57.00	-11.99	V
163.64	-73.17	-57.00	-16.17	H
925.24	-73.84	-57.00	-16.84	H

#### Test Result For Receiving Mode(Detecting Frequency Range: Above 1GHz)

Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Margin (dB)	Polarity (H/V)
1715.58	-69.82	-47.00	-22.82	V
3564.53	-54.04	-47.00	-7.04	H
2019.91	-73.80	-47.00	-26.80	H
3565.80	-61.74	-47.00	-14.74	V



**Environmental Conditions**

Temperature/ Humidity:	24.3°C/ 54.4%	ATM Pressure:	100.9 kPa
Test Mode:	Mode 2-1602.5625MHz	Operator:	Taylor Hu

**Test Result For Receiving Mode(Detecting Frequency Range: 30MHz~1GHz)**

Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Margin (dB)	Polarity (H/V)
66.63	-67.88	-57.00	-10.88	V
910.60	-68.89	-57.00	-11.89	V
163.67	-73.49	-57.00	-16.49	H
924.39	-76.24	-57.00	-19.24	H

**Test Result For Receiving Mode(Detecting Frequency Range: Above 1GHz)**

Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Margin (dB)	Polarity (H/V)
1715.17	-71.93	-47.00	-24.93	V
3565.75	-55.78	-47.00	-8.78	H
2020.61	-75.24	-47.00	-28.24	H
3568.13	-60.44	-47.00	-13.44	V

**Environmental Conditions**

Temperature/ Humidity:	24.3°C/ 54.4%	ATM Pressure:	100.9 kPa
Test Mode:	Mode 3-1589.74MHz	Operator:	Taylor Hu

**Test Result For Receiving Mode(Detecting Frequency Range: 30MHz~1GHz)**

Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Margin (dB)	Polarity (H/V)
66.50	-68.22	-57.00	-11.22	V
911.57	-70.92	-57.00	-13.92	V
164.34	-71.80	-57.00	-14.80	H
928.35	-72.65	-57.00	-15.65	H

**Test Result For Receiving Mode(Detecting Frequency Range: Above 1GHz)**

Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Margin (dB)	Polarity (H/V)
1714.14	-69.66	-47.00	-22.66	V
3564.00	-54.88	-47.00	-7.88	H
2017.30	-71.84	-47.00	-24.84	H
3567.93	-59.26	-47.00	-12.26	V

**Notes:**

1. Measuring frequencies from 25MHz~10th harmonic or 26.5GHz (which is less)
2. The emissions that at least 20dB below the official limit are not reported.



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Scan code to check authenticity



## 5. LIST OF MEASURING EQUIPMENT

Item	Equipment	Manufacturer	Model No.	Serial No.	Cal Date	Due Date
1	MXA Signal Analyzer	Agilent	N9020A	MY51250905	2022-10-29	2023-10-28
2	WIDEBAND RADIO COMMUNICATION TESTER	R&S	CMW 500	103818	2022-06-16	2023-06-15
3	MXG Vector Signal Generator	Agilent	N5182A	MY47071151	2022-06-16	2023-06-15
4	Combiner	N/A	N/A	SHWLCB2-52500S	2022-10-29	2023-10-28
5	EMI Test Software	Farad	EZ	/	N/A	N/A
6	3m Full Anechoic Chamber	MRDIANZI	FAC-3M	MR009	2021-09-25	2024-09-24
7	Positioning Controller	Max-Full	MF7802BS	MF780208586	N/A	N/A
8	By-log Antenna	SCHWARZBECK	VULB9163	9163-470	2021-09-12	2024-09-11
9	Horn Antenna	SCHWARZBECK	BBHA 9120D	9120D-1925	2021-09-05	2024-09-04
10	EMI Test Receiver	R&S	ESR 7	101181	2022-06-16	2023-06-15
11	RS SPECTRUM ANALYZER	R&S	FSP40	100503	2022-10-29	2023-10-28
12	Broadband Preamplifier	/	BP-01M18G	P190501	2022-06-16	2023-06-15





## 6. PHOTOGRAPHS OF TEST SETUP

Please refer to separated files Appendix D for Photographs of Test Setup\_RF.

## 7. PHOTOGRAPHS OF THE EUT

Please refer to separated files Appendix C for Photographs of The EUT.

-----THE END OF REPORT-----

