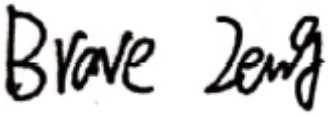
TEST REPORT

Report No.:	BCTC2504708272-12E
Applicant:	Shenzhen Huafurui Technology Co., Ltd.
Product Name:	Smartphone
Test Model:	P90
Tested Date:	2025-04-07 to 2025-05-09
Issued Date:	2025-06-03

Shenzhen BCTC Testing Co., Ltd.

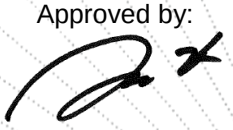
Product Name:	Smartphone
Trademark:	CUBOT
Model/Type reference:	P90
Prepared For:	Shenzhen Huafurui Technology Co., Ltd.
Address:	Unit 601-03, 6/F, Block A, Building 1, Ganfeng Technology Building, No. 993 Jiaxian Road, Xiangjiaotang Community, Bantian Street, Longgang District, Shenzhen, P.R. China
Manufacturer:	Shenzhen Huafurui Technology Co., Ltd.
Address:	Unit 601-03, 6/F, Block A, Building 1, Ganfeng Technology Building, No. 993 Jiaxian Road, Xiangjiaotang Community, Bantian Street, Longgang District, Shenzhen, P.R. China
Prepared By:	Shenzhen BCTC Testing Co., Ltd.
Address:	1-2/F., Building B, Pengzhou Industrial Park, No.158, Fuyuan 1st Road, Zhancheng, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China
Sample Received Date:	2025-04-07
Sample tested Date:	2025-04-07 to 2025-05-09
Issue Date:	2025-06-03
Report No.:	BCTC2504708272-12E
Test Standards:	ETSI EN 300 330 V2.1.1 (2017-02)
Test Results:	PASS
Remark:	This is NFC radio test report.

Tested by:



Brave Zeng/ Project Handler

Approved by:



Zero Zhou/Reviewer

Table Of Content

(Note: N/A Means Not Applicable)

1. Version

Report No.	Issue Date	Description	Approved
BCTC2504708272-12E	2025-06-03	Original	Valid

2. Test Summary

The Product has been tested according to the following specifications:

No.	Test Parameter	Clause No.	Results
Transmitter Parameters The EUT has no external RF connector with it, the EUT is belongs class1 product in B.2			
1	Permitted range of operating frequencies	4.3.1	YES
2	Operating frequency ranges	4.3.2	YES
3	Modulation bandwidth	4.3.3	YES
4	Transmitter H-field requirements	4.3.4	YES
5	Transmitter radiated spurious domain emission limits < 30 MHz	4.3.8	YES
6	Transmitter radiated spurious domain emission limits > 30 MHz	4.3.9	YES
Note: N/A.			

3. Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the Product as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

RF frequency	1×10^{-7}
RF power, conducted	1.38dB
RF power, radiated	4.8dB
Temperature	0.59℃
Humidity	5.3%

4. Product Information And Test Setup

4.1 Product Information

Model/Type reference:	P90
Model differences:	N/A
Technologies:	Tagging systems
Hardware Version:	3368D-MC-V1.1
Software Version:	CUBOT_P90_F021C_V01
Operation Frequency:	13.56MHz
Antenna installation:	Internal antenna
Product Class:	1
Antenna Gain:	0 dBi Remark: ☒ The antenna gain of the product comes from the antenna report provided by the customer, and the test data is affected by the customer information. ☐ The antenna gain of the product is provided by the customer, and the test data is affected by the customer information.
Ratings:	DC 9V from adapter/DC 3.87V from battery
Adapter 1 Information:	Model: HJ-PD18W-EU Input: 100-240V~ 50/60Hz 0.6A Output: 5.0V ⎓ 3.0A 15.0W OR 9.0V ⎓ 2.0A 18.0W OR 12.0V ⎓ 1.5A 18.0W MAX
Adapter 2 Information:	Model: TPD-203A120167VF01 Input: 100-240V~ 50/60Hz 0.6A Output: 5.0V ⎓ 3.0A 15.0W or 9.0V ⎓ 2.22A 19.98W or 12.0V ⎓ 1.67A 20.04W

Cable of Product

No.	Cable Type	Quantity	Provider	Length (m)	Shielded	Note
1	--	--	Applicant	---	Yes/No	With a ferrite ring in mid Detachable
2	--	--	BCTC	--	Yes/No	--

4.2 Test Setup Configuration

See test photographs attached in EUT TEST SETUP PHOTOGRAPHS for the actual connections between Product and support equipment.

4.3 Support Equipment

No.	Device Type	Brand	Model	Series No.	Note
1.	Adapter	/	TPD-203A120167 VF01	---	---
2.	Adapter	/	HJ-PD18W-EU	---	---
3.	TF card	SanDisk	32G	---	---

Note:
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.

4.4 Channel List

Not applicable

4.5 Test Mode

All test mode(s) and condition(s) mentioned were considered and evaluated respectively by performing full tests, the worst data were recorded and reported.

Operational Mode	Function of mobile device	Center Frequency
co-location	TX	13.56MHz

5. Test Facility And Test Instrument Used

5.1 Test Facility

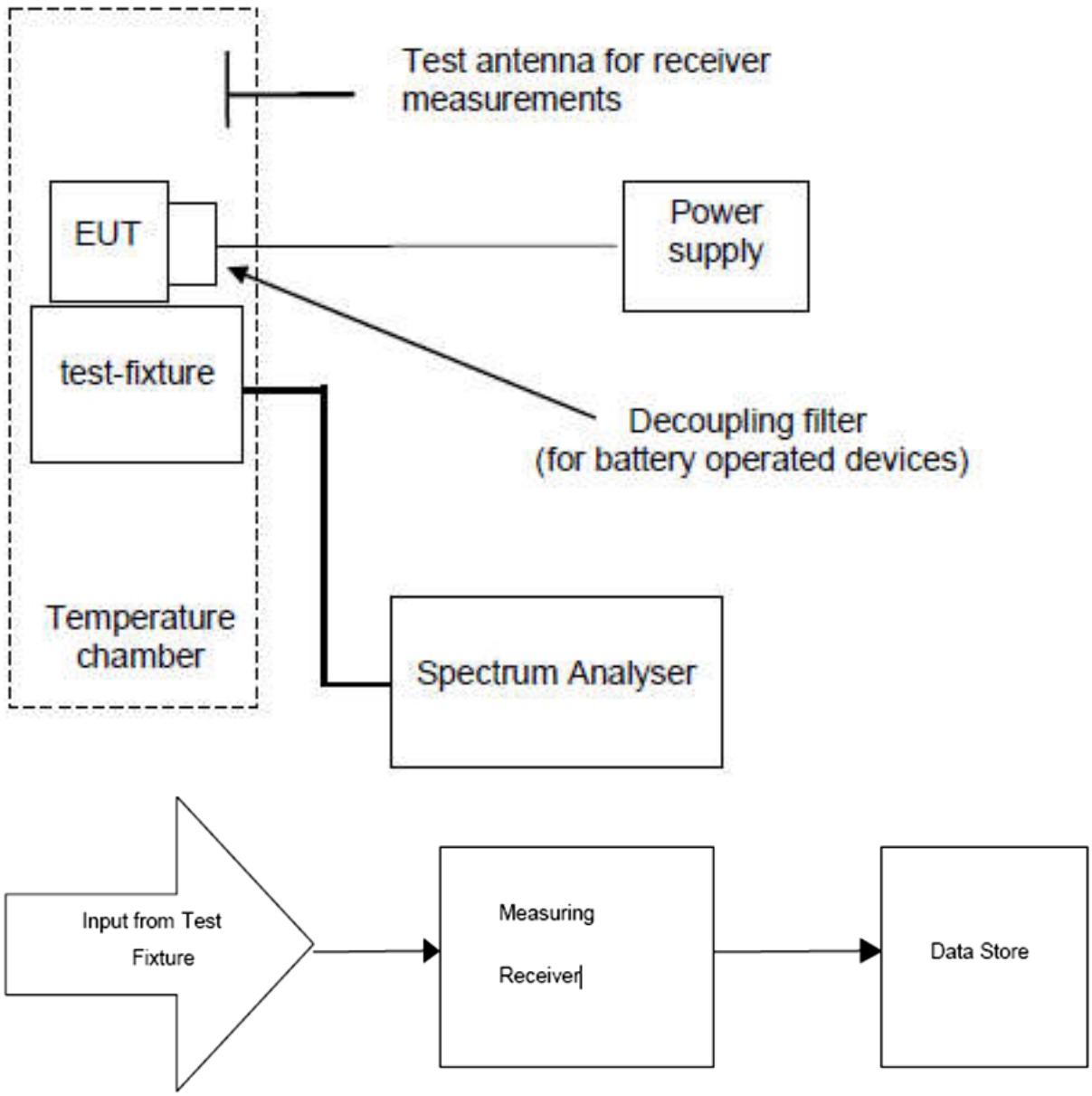
All measurement facilities used to collect the measurement data are located at Shenzhen BCTC Testing Co., Ltd. Address: 1-2/F., Building B, Pengzhou Industrial Park, No.158, Fuyuan 1st Road, Zhancheng, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China. The site and apparatus are constructed in conformance with the requirements of ANSI C63.4 and CISPR 16-1-1 other equivalent standards.

5.2 Test Instrument Used

Item	Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
1	966 chamber	ChengYu	966 Room	966	May 15, 2023	May 14, 2026
2	Receiver	R&S	ESR	102075	May 16, 2024	May 15, 2025
3	Receiver	R&S	ESRP	101154	May 16, 2024	May 15, 2025
4	Amplifier	Schwarzbeck	BBV9744	9744-0037	May 16, 2024	May 15, 2025
5	TRILOG Broadband Antenna	Schwarzbeck	VULB 9163	942	May 21, 2024	May 20, 2025
6	Loop Antenna	Schwarzbeck	FMZB1519B	00014	May 21, 2024	May 20, 2025
7	Amplifier	SKET	LAPA_01G18G-45dB	SK2021040901	May 16, 2024	May 15, 2025
8	Horn Antenna	Schwarzbeck	BBHA9120D	1541	May 21, 2024	May 20, 2025
9	Preamplifier	MITEQ	TTA1840-35-HG	2034381	May 16, 2024	May 15, 2025
10	Horn antenna	Schwarzbeck	BBHA9170	00822	May 21, 2024	May 20, 2025
11	Spectrum Analyzer 9kHz-40GHz	R&S	FSP 40	100363	May 16, 2024	May 15, 2025
12	Software	Frad	EZ-EMC	FA-03A2 RE	\	\
13	Spectrum Analyzer	Keysight	N9020A	MY49100060	May 16, 2024	May 15, 2025
14	Signal Generator	Keysight	N5182B	MY56200519	May 16, 2024	May 15, 2025
15	Signal Generator	Keysight	83711B	US37100131	May 16, 2024	May 15, 2025
16	Communication test set	R&S	CMW500	126173	Nov. 11. 2024	Nov. 10, 2025
17	band rejection filter	ZBSF	ZBSF-C2441.5	1706003606	May 16, 2024	May 15, 2025
18	Programmable constant temperature and humidity test chamber	DGBELL	BTKS5-150C	\	Jul. 01, 2024	Jun. 30, 2025
19	Radio frequency control box	MAIWEI	MW200-RFCB	\	\	\
20	Software	MAIWEI	MTS 8200	\	\	\

6. Permitted Range Of Operating Frequencies

6.1 Test Setup



Test set-up for measuring the operating frequency range

Receiver Setup

Frequency: (f)	Detector type	Measurement receiver bandwidth	Spectrum analyser bandwidth
9 kHz ≤ f < 150 kHz	Quasi Peak	200 Hz	300 Hz
150 kHz ≤ f < 30 MHz	Quasi Peak	9 kHz	10 KHz
30 MHz ≤ f ≤ 1 000 MHz	Quasi Peak	120 kHz	100 kHz
NOTE: For the measurement of the ranges 6,765 MHz ≤ f ≤ 6,795 MHz and 11,810 MHz ≤ f ≤ 15,310 MHz, the measurement bandwidth has to be 200 Hz respectively 300 Hz.			

6.2 Limits

The operating frequency ranges for intentional emissions shall be entirely within the frequency bands in table 1.

Table 1: Short Range Devices within the 9 kHz to 30 MHz permitted frequency bands

	Frequency Bands/frequencies	Applications
Transmit and Receive	9 kHz to 90 kHz	Inductive devices, Generic use
Transmit and Receive	90 kHz to 119 kHz	Inductive devices, Generic use
Transmit and Receive	119 kHz to 140 kHz	Inductive devices, Generic use
Transmit and Receive	140 kHz to 148,5 kHz	Inductive devices, Generic use
Transmit and Receive	148,5 kHz to 5 MHz	Inductive devices, Generic use
Transmit and Receive	400 kHz to 600 kHz	RFID only
Transmit and Receive	5 MHz to 30 MHz	Inductive devices, Generic use
Transmit and Receive	3 155 kHz to 3 400 kHz	Inductive devices, Generic use
Transmit and Receive	984 kHz to 7 484 kHz (Note 3, Centre frequency is 4 234 kHz)	Inductive devices, Railway applications
Transmit and Receive	4 516 kHz	Inductive devices, Railway applications
Transmit and Receive	6 765 kHz to 6 795 kHz	Inductive devices, Generic use
Transmit and Receive	7 400 kHz to 8 800 kHz	Inductive devices, Generic use
Transmit and Receive	10 200 kHz to 11,000 MHz	Inductive devices, Generic use
Transmit and Receive	11,810 MHz to 15,310 MHz (Centre frequency is 13,56 MHz)	RFID only
Transmit and Receive	12,5 MHz to 20 MHz	Inductive devices, Wireless healthcare
Transmit and Receive	13,553 MHz to 13,567 MHz	Inductive devices, Generic use
Transmit and Receive	26,957 MHz to 27,283 MHz	Inductive devices, Generic use
Transmit and Receive	27,090 MHz to 27,100 MHz	Inductive devices, Railway applications

NOTE 1: In addition, it should be noted that other frequency bands may be available in a country within the frequency range 9 kHz to 30 MHz.

NOTE 2: On non-harmonised parameters, national administrations may impose certain conditions such as the type of modulation, frequency, channel/frequency separations, maximum transmitter radiated power, duty cycle, and the inclusion of an automatic transmitter shut-off facility, as a condition for the issue of an Individual Rights for use of spectrum or General Authorization, or as a condition for use under "licence exemption" as it is in most cases for Short Range Devices.

NOTE 3: Transmitting only on receipt of a Balise/Eurobalise tele-powering signal from a train.

Table 5

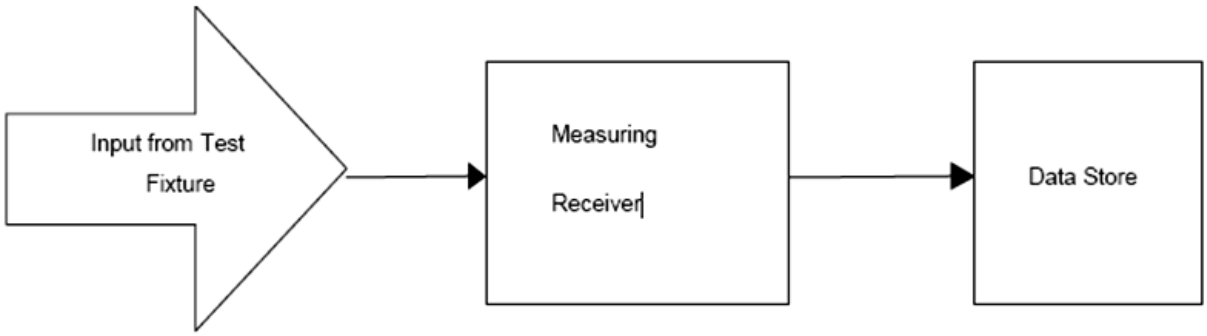
State	Frequency 9 kHz ≤ f < 10 MHz	Frequency 10 MHz ≤ f < 30 MHz
Operating	27 dBμA/m at 9 kHz descending 3 dB/oct	-3,5 dBμA/m
Standby	5,5 dBμA/m at 9 kHz descending 3 dB/oct	-25 dBμA/m

6.3 Test Result

Operational frequency band 13.56MHz declared by the manufacturer

7. Operating Frequency Ranges

7.1 Test Setup



Test set-up for measuring the operating frequency range

The measurement antenna shall be placed at one point of the setup up. Alternatively, a current probe could be used. A spectrum analyser with the following settings is used as measuring receiver in the test set-up:

Start frequency:	lower than the lower edge of the permitted frequency range.
Stop frequency:	higher than the upper edge of the permitted frequency range.
Resolution Bandwidth:	see table 11
Video Bandwidth:	≥ Resolution Bandwidth
Detector mode:	RMS.
Display mode:	Maxhold

Table 11

Frequency: (f)	Detector type	Measurement receiver bandwidth	Spectrum analyser bandwidth
9 kHz ≤ f < 150 kHz	Quasi Peak	200 Hz	300 Hz
150 kHz ≤ f < 30 MHz	Quasi Peak	9 kHz	10 KHz
30 MHz ≤ f ≤ 1 000 MHz	Quasi Peak	120 kHz	100 kHz
NOTE: For the measurement of the ranges 6,765 MHz ≤ f ≤ 6,795 MHz and 11,810 MHz ≤ f ≤ 15,310 MHz, the measurement bandwidth has to be 200 Hz respectively 300 Hz.			

Different bandwidth may be used if agreed with the test laboratory, for further guidance see annex K. The measurement bandwidth and any related calculations shall be stated in the test report.

The 99 % OBW function shall be used to determine the operating frequency range:
f_H s determined. fH is the frequency of the upper marker resulting from the OFR.
f_L is determined. fL is the frequency of the lower marker resulting from the OFR.
f_c is the centre frequency. $f_c = (f_H + f_L)/2$
Alternatively, the recorded results from the H-field measurement described in clause 6.2.4 may be used.

7.2 Limits

The operating frequency ranges for intentional emissions shall be entirely within the frequency bands in table 1.

Table 1: Short Range Devices within the 9 kHz to 30 MHz permitted frequency bands

	Frequency Bands/frequencies	Applications
Transmit and Receive	9 kHz to 90 kHz	Inductive devices, Generic use
Transmit and Receive	90 kHz to 119 kHz	Inductive devices, Generic use
Transmit and Receive	119 kHz to 140 kHz	Inductive devices, Generic use
Transmit and Receive	140 kHz to 148,5 kHz	Inductive devices, Generic use
Transmit and Receive	148,5 kHz to 5 MHz	Inductive devices, Generic use
Transmit and Receive	400 kHz to 600 kHz	RFID only
Transmit and Receive	5 MHz to 30 MHz	Inductive devices, Generic use
Transmit and Receive	3 155 kHz to 3 400 kHz	Inductive devices, Generic use
Transmit and Receive	984 kHz to 7 484 kHz (Note 3, Centre frequency is 4 234 kHz)	Inductive devices, Railway applications
Transmit and Receive	4 516 kHz	Inductive devices, Railway applications
Transmit and Receive	6 765 kHz to 6 795 kHz	Inductive devices, Generic use
Transmit and Receive	7 400 kHz to 8 800 kHz	Inductive devices, Generic use
Transmit and Receive	10 200 kHz to 11,000 MHz	Inductive devices, Generic use
Transmit and Receive	11,810 MHz to 15,310 MHz (Centre frequency is 13,56 MHz)	RFID only
Transmit and Receive	12,5 MHz to 20 MHz	Inductive devices, Wireless healthcare
Transmit and Receive	13,553 MHz to 13,567 MHz	Inductive devices, Generic use
Transmit and Receive	26,957 MHz to 27,283 MHz	Inductive devices, Generic use
Transmit and Receive	27,090 MHz to 27,100 MHz	Inductive devices, Railway applications

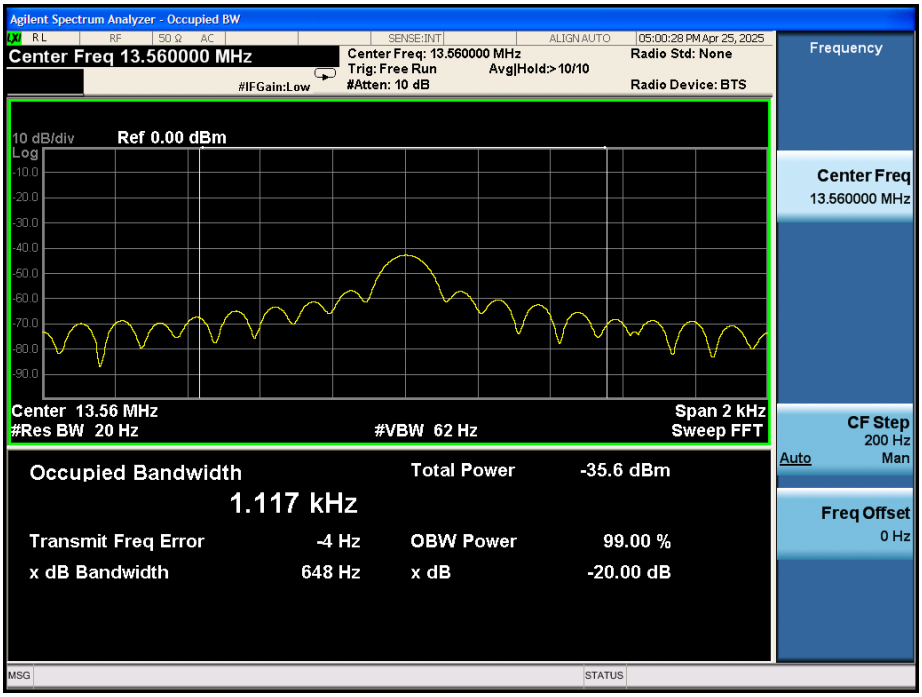
NOTE 1: In addition, it should be noted that other frequency bands may be available in a country within the frequency range 9 kHz to 30 MHz.

NOTE 2: On non-harmonised parameters, national administrations may impose certain conditions such as the type of modulation, frequency, channel/frequency separations, maximum transmitter radiated power, duty cycle, and the inclusion of an automatic transmitter shut-off facility, as a condition for the issue of an Individual Rights for use of spectrum or General Authorization, or as a condition for use under "licence exemption" as it is in most cases for Short Range Devices.

NOTE 3: Transmitting only on receipt of a Balise/Eurobalise tele-powering signal from a train.

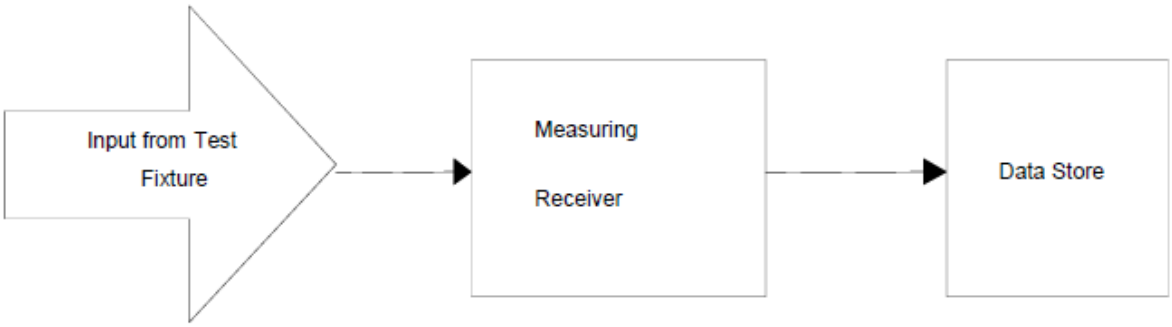
7.3 Test Result

13.56MHz



8. Modulation Bandwidth

8.1 Test Setup

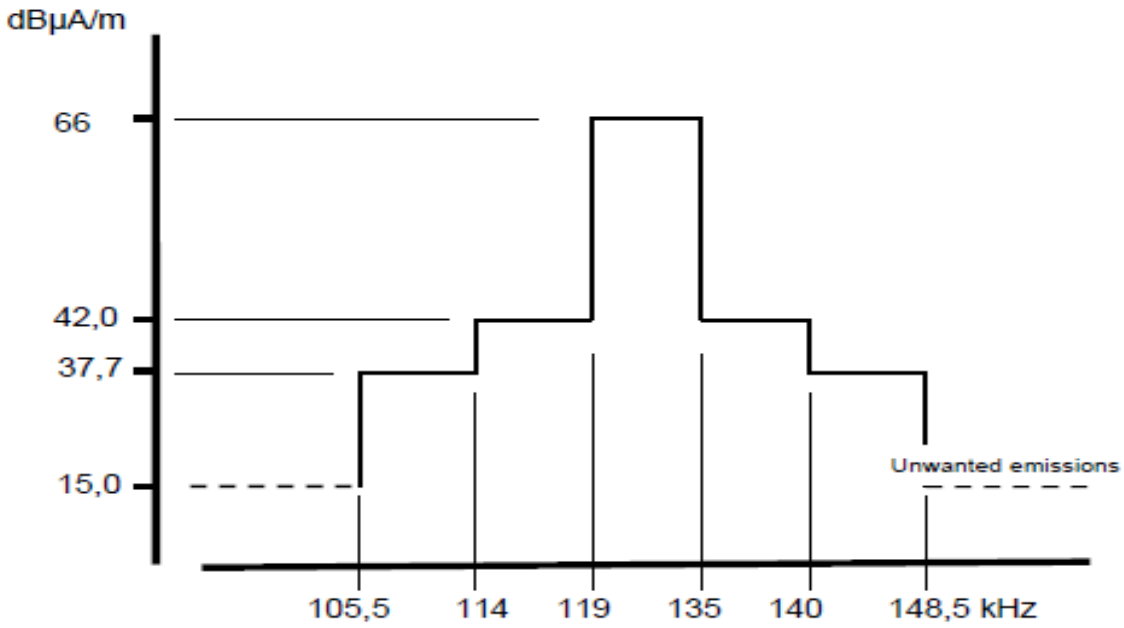


The modulation bandwidth contains all associated side bands above the following level:
a) For carrier frequencies below 135 kHz:
23 dB below the carrier, for RFID within the transmitter emission boundary of figure I.1, and for RFID and EAS systems within the transmitter mask of figures I.2, I.3 and I.4, see CISPR 16-1-4 [2] or the appropriate spurious limit as defined in clauses 4.3.7, 4.3.8, 4.3.9.

b) For carrier frequencies in the range 135 kHz to 30 MHz:
15 dB below the carrier or the appropriate spurious limit as defined in clauses 4.3.7, 4.3.8, 4.3.9.

8.2 Limits

The modulation bandwidth shall be within the assigned frequency band see table 1 or ±7,5 % of the carrier frequency whichever is the smallest. For RFID and EAS Systems, the modulation bandwidth shall be within the transmitter emission boundary of figures I.1, I.2, I.3 and I.4.



NOTE: The limit at 129,1 kHz ± 500 Hz is maximum 42 dBµA/m at 10 m.

Figure I.1: Emission boundary for LF RFID systems

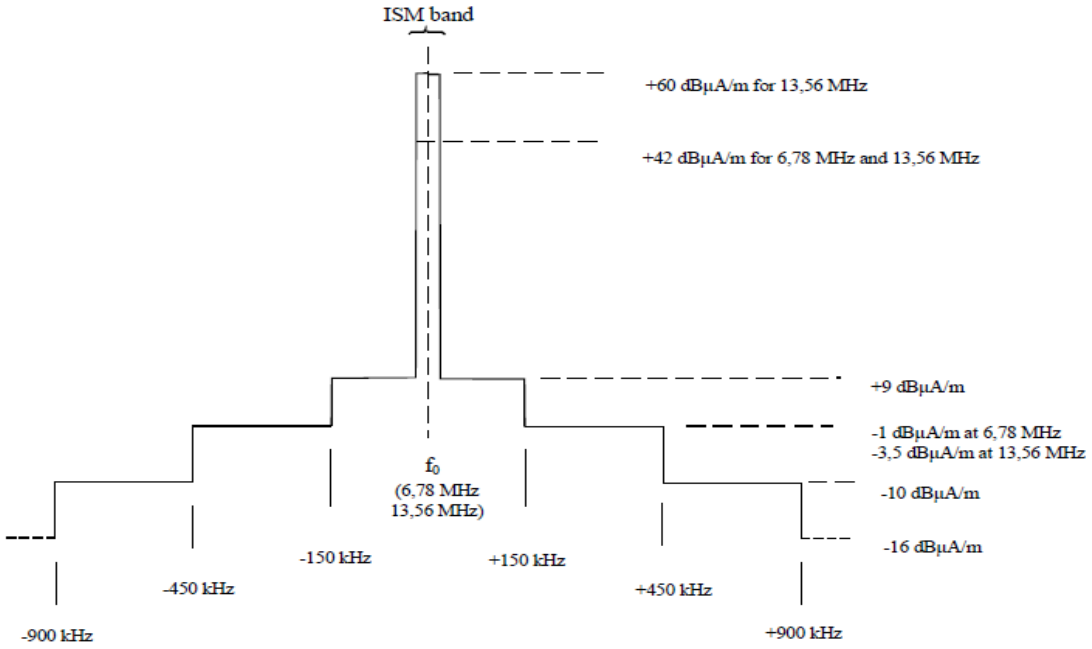


Figure I.2: Spectrum mask limit for RFIDs and EAS in the 6,78 MHz and 13,56 MHz range

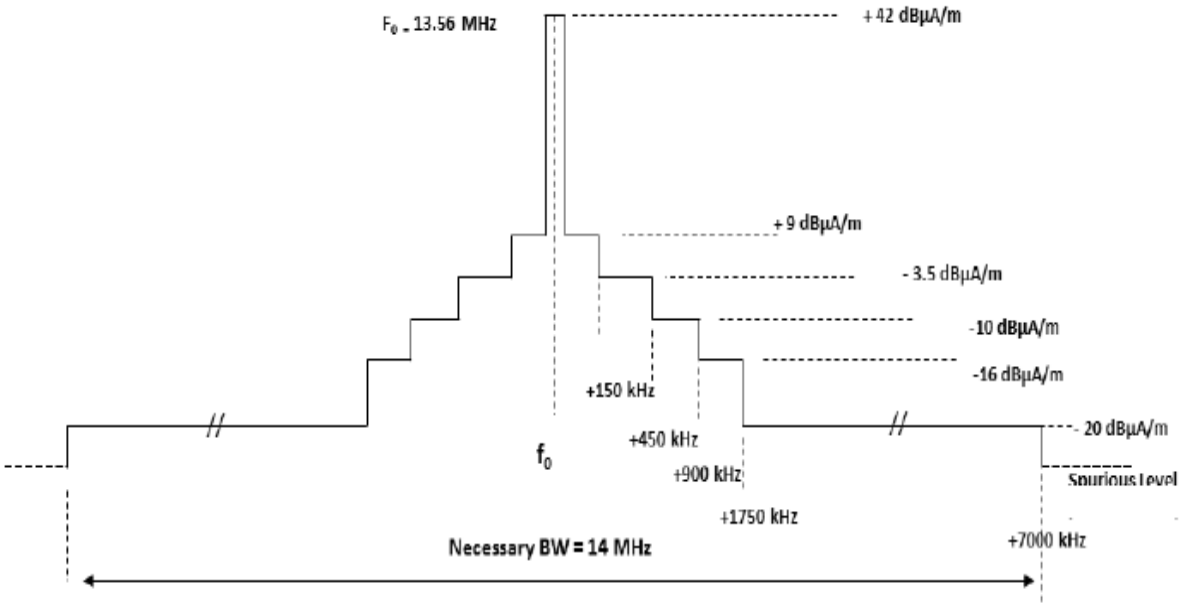


Figure I.3: Spectrum mask limit for wideband RFIDs (incl. NFC application) in the 13,56 MHz range

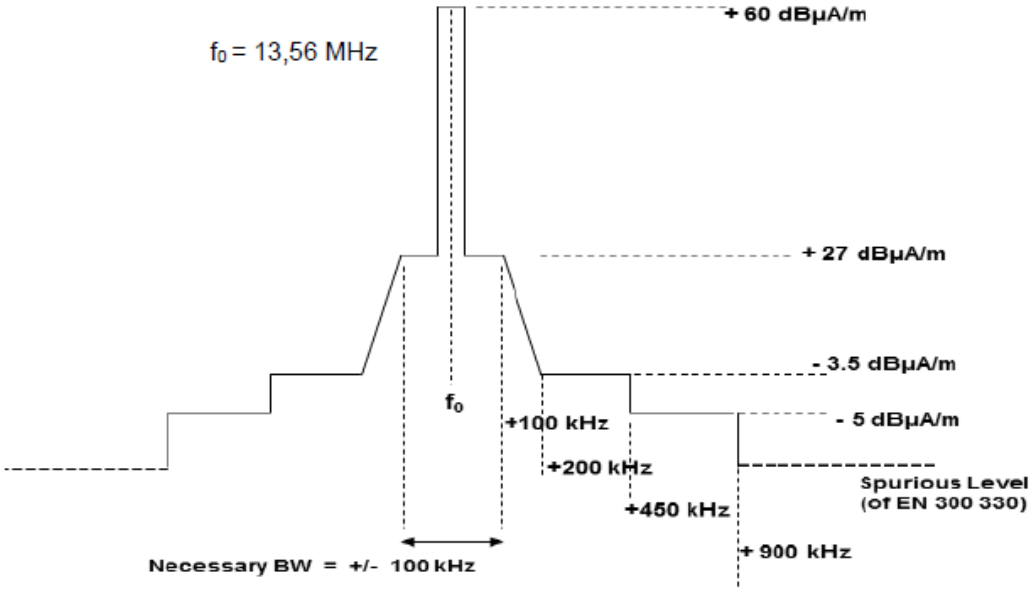


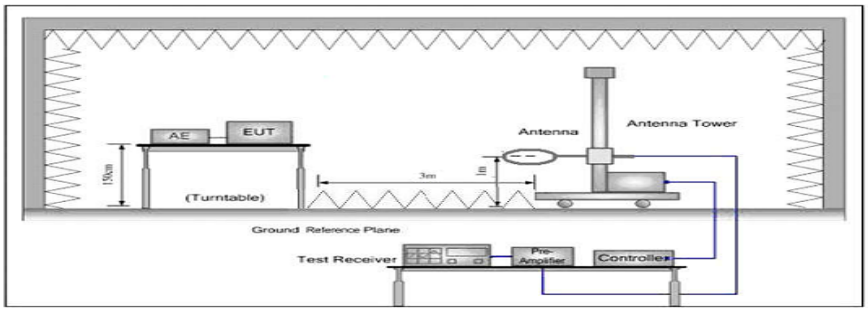
Figure I.4: Spectrum mask limit for narrowband RFIDs (incl. NFC application) in the 13,56 MHz range

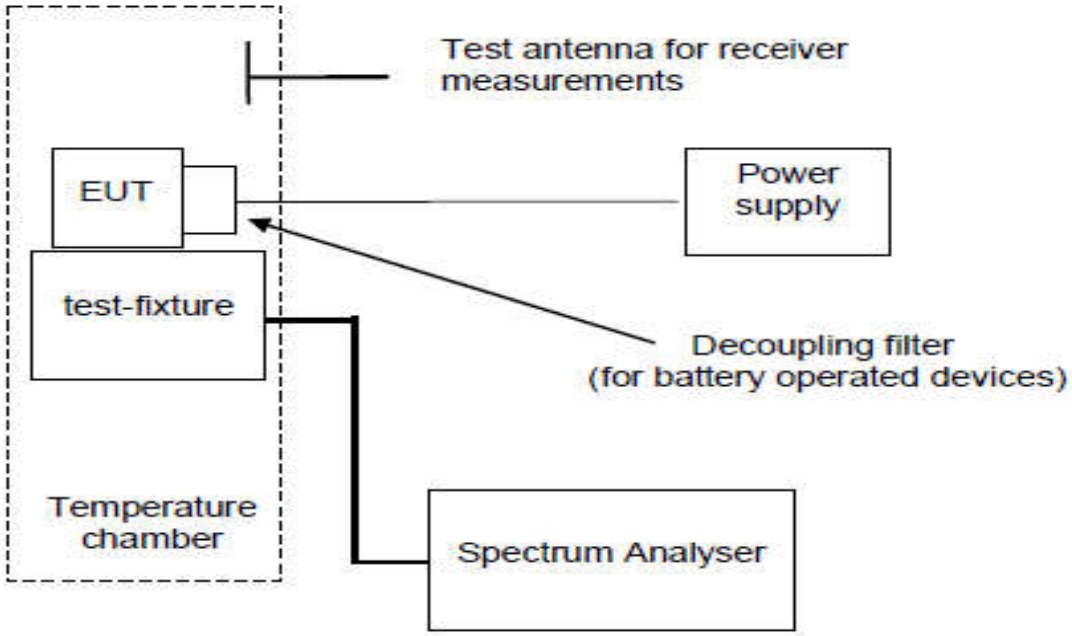
8.3 Test Result

PASS

9. Transmitter H-Field Requirements

9.1 Test Setup





Normal condition **Extreme condition**

Receiver Setup

Frequency: (f)	Detector type	Measurement receiver bandwidth	Spectrum analyser bandwidth
9 kHz ≤ f < 150 kHz	Quasi Peak	200 Hz	300 Hz
150 kHz ≤ f < 30 MHz	Quasi Peak	9 kHz	10 KHz
30 MHz ≤ f ≤ 1 000 MHz	Quasi Peak	120 kHz	100 kHz
NOTE: For the measurement of the ranges 6,765 MHz ≤ f ≤ 6,795 MHz and 11,810 MHz ≤ f ≤ 15,310 MHz, the measurement bandwidth has to be 200 Hz respectively 300 Hz.			

9.2 Test Procedure

The following test procedure as below:
1) Keep tx operating with modulation.
2) The EUT was powered ON and placed on a 1.5m hight table at a 3 meter fully Anechoic Chamber. The antenna of the transmitter was extended to its maximum length.
3) Adjust the centre frequency of spectrum analyzer on any frequency be measured.
4) The disturbance of the transmitter was maximized on the test receiver display by rotating through 360° the turntable. After the fundamental emission was maximized, a field strength measurement was made.
5) Steps 2) to 4) were performed with the EUT and the receive antenna in in X, Y and Z polarization.
6) Pretest X, Y and Z, and found the X polarization which it is worse case, the test worst case is recorded in the report.
7) Repeat above procedures normal and extreme conditions measured were complete.

9.3 Limits

Table 2: H-field limits at 10 m

Frequency range (MHz)	H-field strength limit (H_f) dBµA/m at 10 m or specified in mW e.r.p.
0,009 ≤ f < 0,090	72 descending 3 dB/oct above 0,03 MHz or according to note 1 (see note 5)
0,09 ≤ f < 0,119	42
0,119 ≤ f < 0,135	66 descending 3 dB/oct above 0,119 MHz or according to note 1 (see notes 3 and 5)
0,135 ≤ f < 0,140	42
0,140 ≤ f < 0,1485	37,7
0,1485 ≤ f < 30	-5 (see note 4)
0,315 ≤ f < 0,600	-5
3,155≤ f < 3,400	13,5
4,234	9 (see note 9)
4,516	7
7,400 ≤ f < 8,800	9
10,2 ≤ f < 11,00	9
12,5 ≤ f ≤ 20	-7
6,765 ≤ f ≤ 6,795	42 (see notes 3 and 7)
26,957 ≤ f ≤ 27,283	42 (see note 3)
13,410 ≤ f ≤13,553, 13,567 ≤ f ≤ 13,710	9 (see note 6)
13,110 ≤ f ≤ 13,410, 13,710 ≤ f ≤ 14,010	-3,5 (see note 6)
12,660 ≤ f ≤ 13,110, 14,010 ≤ f ≤ 14,460	-10 (see note 6)
11,810 ≤ f ≤ 12,660, 14,460 ≤ f ≤ 15,310	-16 (see note 6)
13,460 ≤ f ≤ 13,553, 13,567 ≤ f ≤ 13,660	27 (see note 6)
13,360 ≤ f ≤ 13,460, 13,660 ≤ f ≤ 13,760	Linear transition from 27 to -3,5 (see note 6)
13,110 ≤ f ≤ 13,360, 13,760 ≤ f ≤ 14,010	-3,5 (see note 6)
12,660 ≤ f ≤ 13,110, 14,010 ≤ f ≤ 14,460	-5 (see note 6)
13,553 ≤ f ≤ 13,567	42 (see note 3) or 60 (see notes 2 and 3)
27,095	42

Frequency range (MHz)	H-field strength limit (H_f) dBµA/m at 10 m or specified in mW e.r.p.
26,995, 27,045, 27,095, 27,145, 27,195 (see note 8)	100 mW

NOTE 1: For the frequency ranges 9 kHz to 135 kHz, the following additional restrictions apply to limits above 42 dBµA/m:
- for loop coil antennas with an area ≥ 0,16 m^2 this table and table B.1 with the antenna limitations apply;
- for loop coil antennas with an area between 0,05 m^2 and 0,16 m^2 table B.1 applies with a correction factor. The limit is: table value + 10 × log (area/0,16 m^2);
- for loop coil antennas with an area < 0,05 m^2 the limit is 10 dB below table B.1.

NOTE 2: For RFID (incl. NFC) and EAS applications only.
NOTE 3: Spectrum mask limit, see annex I.
NOTE 4: For further information see annex G.
NOTE 5: Limit is 42 dBµA/m for the following spot frequencies: 60 kHz ± 250 Hz, 66,6 kHz ± 750 Hz, 75 kHz ± 250 Hz, 77,5 kHz ± 250 Hz, and 129,1 kHz ± 500 Hz.
NOTE 6: Only in conjunction with spectrum mask, see annex I.
NOTE 7: The frequency range 6,765 MHz - 6,795 MHz is not a harmonised ISM frequency band according article 5.138 of the ITU Radio Regulations [i.13].
NOTE 8: Center frequencies for channelized systems by using ≤ 10 kHz bandwidth.
NOTE 9: The limit is valid in the range 984 kHz - 7 484 kHz for Transmitting only on receipt of a Balise/Eurobalise tele-powering signal from a train.

9.4 Test Result

13.56MHz

Test Normal Temperature	Test Normal Voltage	Test Press
26°C	DC 3.87V	101kPa

Test conditions		Polarization	Result (MHz)	Reading (3m)	Factor	Measurement (10m)	Limit (10m)	Result
Temp (°C)	Volt (V DC)					dBuA/m	dBuA/m	
Normal (25)	$V_{norm:}$	X	13.56	34.95	24.5	10.45	42	Pass
		Y	13.56	32.99	24.5	8.49	42	Pass
		Z	13.56	30.66	24.5	6.16	42	Pass
	Vmin	N/A	13.56	N/A	N/A	N/A		
	Vmax	N/A	13.56	N/A	N/A	N/A		

Note:H3m = H10m + C3 (F.2),C3=24.5

10. Transmitter Radiated Spurious Domain

10.1 Test Setup

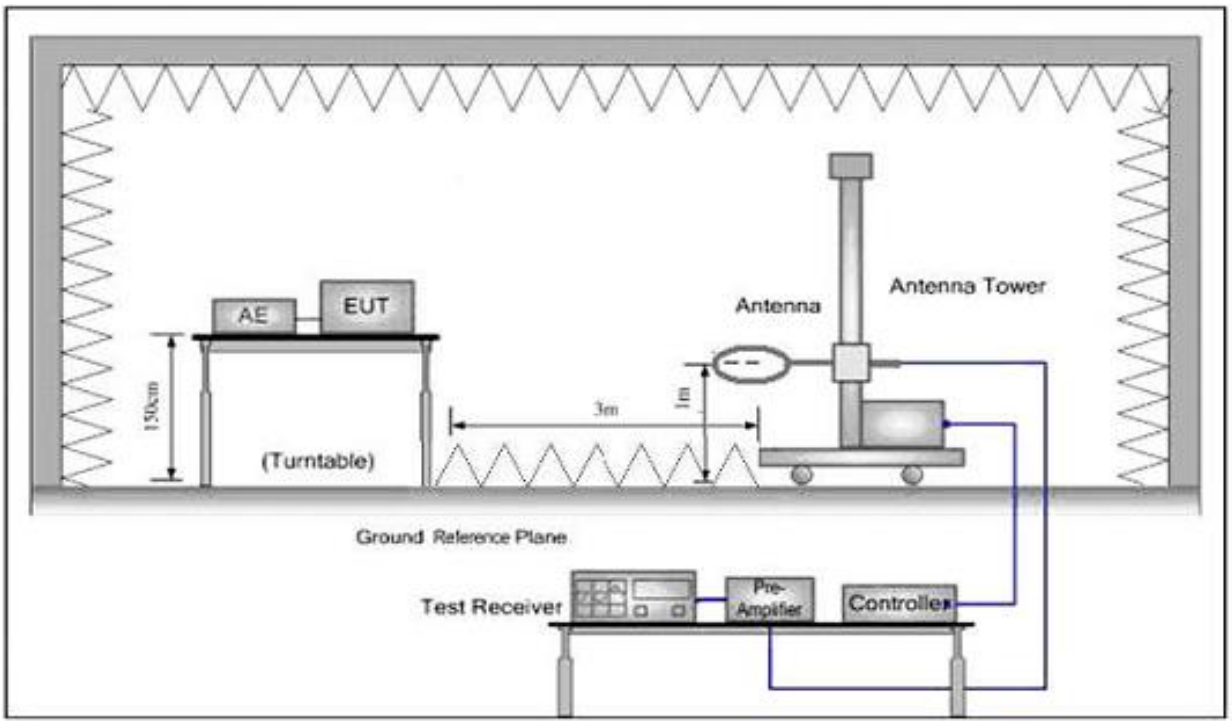


Figure 1. Below 30MHz

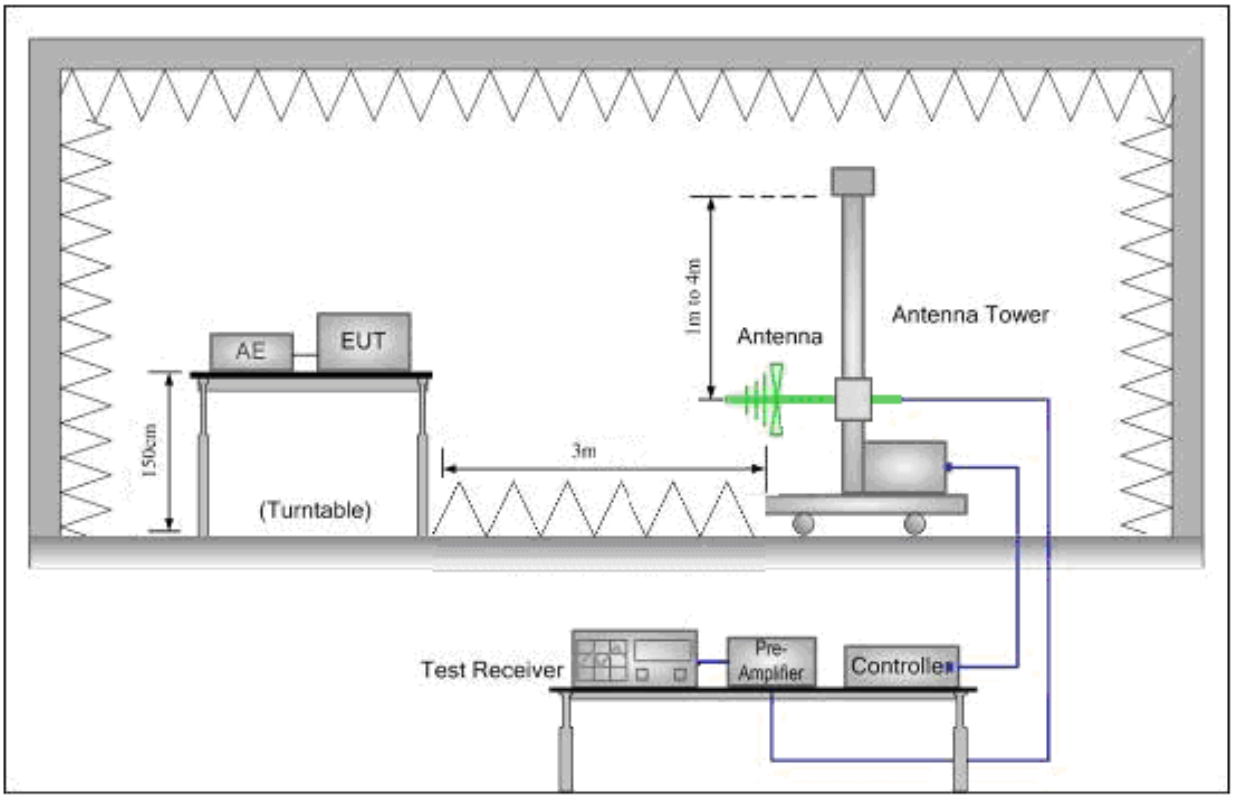


Figure 2. 30MHz-1000MHz

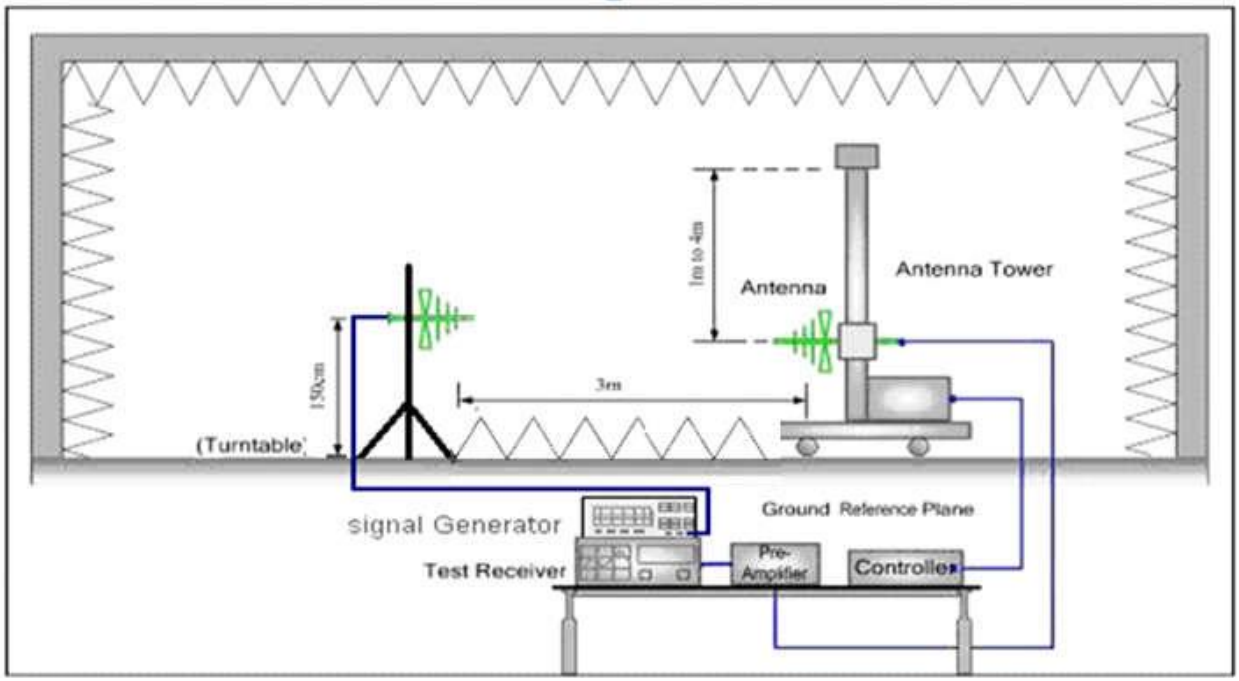


Figure 3. 30MHz-1000MHz

Receiver Setup

Frequency: (f)	Detector type	Measurement receiver bandwidth	Spectrum analyser bandwidth
9 kHz ≤ f < 150 kHz	Quasi Peak	200 Hz	300 Hz
150 kHz ≤ f < 30 MHz	Quasi Peak	9 kHz	10 KHz
30 MHz ≤ f ≤ 1 000 MHz	Quasi Peak	120 kHz	100 kHz
NOTE: For the measurement of the ranges 6,765 MHz ≤ f ≤ 6,795 MHz and 11,810 MHz ≤ f ≤ 15,310 MHz, the measurement bandwidth has to be 200 Hz respectively 300 Hz.			

10.2 Test Procedure

The following test procedure as below:
1) Keep tx operating with modulation.
2) The EUT was powered ON and placed on a 1.5m hight table at a 3 meter fully Anechoic Chamber. The antenna of the transmitter was extended to its maximum length.
3) Adjust the centre frequency of spectrum analyzer on any frequency be measured.
4) The disturbance of the transmitter was maximized on the test receiver display by rotating through 360° the turntable. After the fundamental emission was maximized, a field strength measurement was made.
5) Steps 2) to 4) were performed with the EUT and the receive antenna in in X, Y and Z polarization.
6) Pretest X, Y and Z, and found the X polarization which it is worse case, the test worst case is recorded in the report.
2. 30MHz-1GHz test procedure as below:
1) Scan from 30MHz to 1 GHz; find the maximum radiation frequency to measure.
2) The technique used to find the Spurious Emissions of the transmitter was the antenna substitution method. Substitution method was performed to determine the actual ERP emission levels of the EUT.
3) The EUT was powered ON and placed on a 1.5m high table at a 3 meter fully Anechoic Chamber. The antenna of the transmitter was extended to its maximum length. Modulation mode and the measuring receiver shall be tuned to the frequency of the transmitter under test.
4) The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

5) The disturbance of the transmitter was maximized on the test receiver display by raising and lowering from 1m to 4m the receive antenna and by rotating through 360° the turntable. After the fundamental emission was maximized, a field strength measurement was made.
6) Steps 3) to 5) were performed with the EUT and the receive antenna in both vertical and horizontal polarization.
7) The transmitter was then removed and replaced with another antenna. The center of the antenna was approximately at the same location as the center of the transmitter.
8) A signal at the disturbance was fed to the substitution antenna by means of a nonradiating cable. With both the substitution and the receive antennas horizontally polarized, the receive antenna was raised and lowered to obtain a maximum reading at the test receiver. The level of the signal generator was adjusted until the measured field strength level in step 3) is obtained for this set of conditions.
9) The output power into the substitution antenna was then measured.
10) Steps 8) and 9) were repeated with both antennas polarized.
11) Calculate power in dBm by the following formula:
ERP(dBm) = Pg(dBm) – cable loss (dB) + antenna gain (dBd)
where: Pg is the generator output power into the substitution antenna.
12) Test the EUT in the lowest channel, middle channel, the Highest channel.
13) Repeat above procedures until all frequencies measured was complete.

10.3 Limits

Table 5

State	Frequency 9 kHz ≤ f < 10 MHz	Frequency 10 MHz ≤ f < 30 MHz
Operating	27 dBµA/m at 9 kHz descending 3 dB/oct	-3,5 dBµA/m
Standby	5,5 dBµA/m at 9 kHz descending 3 dB/oct	-25 dBµA/m

Table 6

State	47 MHz to 74 MHz 87,5 MHz to 118 MHz 174 MHz to 230 MHz 470 MHz to 790 MHz	Other frequencies between 30 MHz to 1 000 MHz
Operating	4 nW	250 nW
Standby	2 nW	2 nW

10.4 Test Result

13.56 MHz

Test Voltage	:	DC 3.87V	**Test Mode**	:	NFC Link
Temp./Hum.(%RH) / Pressure	:	26℃/54%/101kPa	**Test frequency**	:	9kHz-30MHz

Freq.	Detector	Reading (3m)	Factor	E-field (3m)	Corrected H-field (3m)	Limit (10m)	Limit (3m)	Margin
MHz	QP/AV	dBµV	dB	dBµV/m	dBµA/m	dBµA/m	dBµA/m	dB
6.98	QP	66.54	-9.55	56.99	5.49	-1.90	25.10	-19.61
25.49	QP	63.21	-9.06	54.15	2.65	-3.50	11.20	-8.55

Remark: This Report only show the test plots of the worst case.

Remark: The H-field limit in dBµA/m at 3 m, H3m, is determined by the following equation:
H3m = H10m + C3 (F.2)

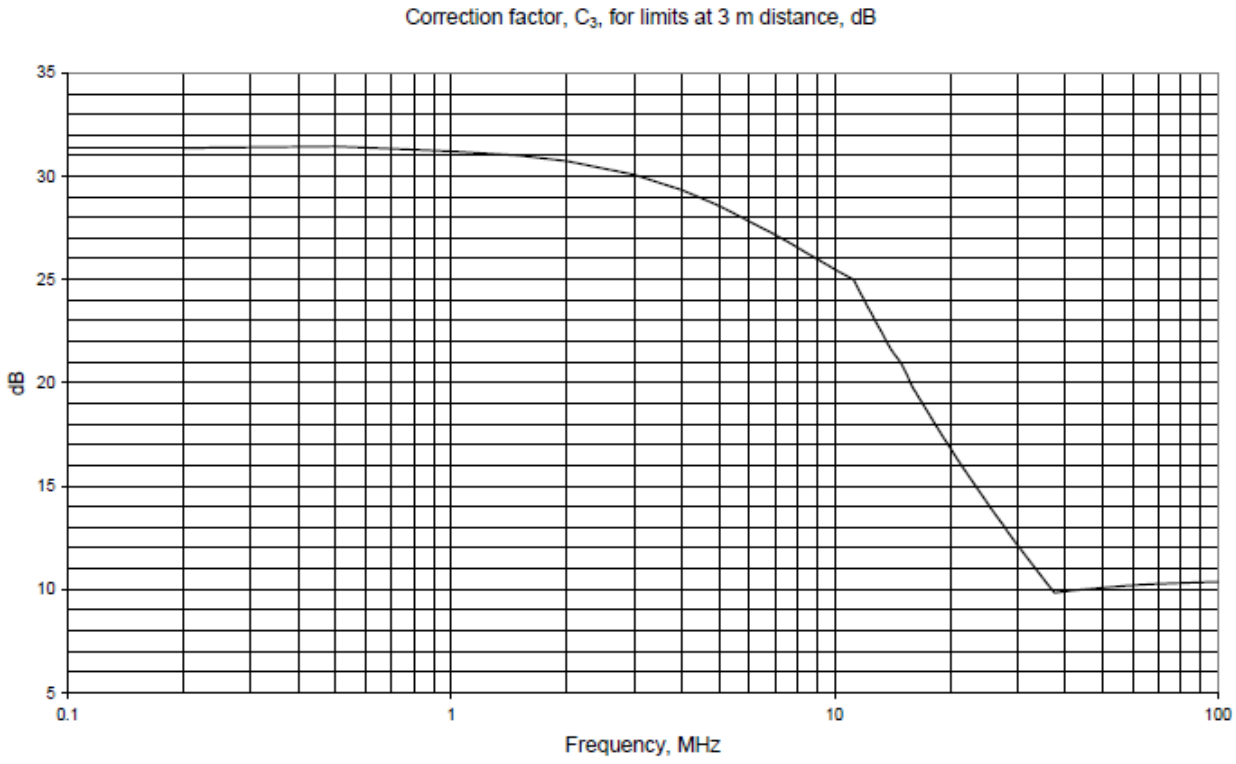


Figure H.2: Conversion factor C_3 versus frequency

30MHz ~ 1GHz:

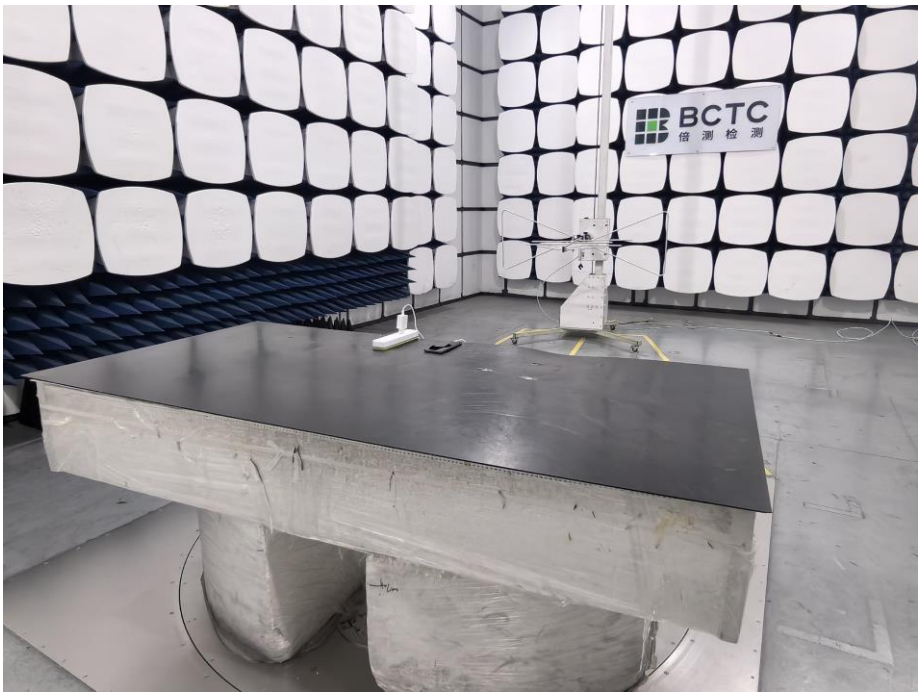
Test Voltage	:	DC 3.87V	**Test Mode**	:	NFC Link
Temp./Hum.(%RH) / Pressure	:	26℃/54%/101kPa	**Test frequency**	:	30MHz-1GHz

Frequency	**Receiver Reading**	**Turn table Angle**	**RX Antenna**		**Correct**	**Absolute Level**	**Result**	
			Height	**Polar**	**Factor**		**Limit**	**Margin**
(MHz)	**(dBm)**	**Degree**	**(m)**	**(H/V)**	**(dB)**	**(dBm)**	**(dBm)**	**(dB)**
13.56 MHz channel								
60.78	-69.44	83	2.4	H	-14.62	-84.06	-54	-30.06
60.78	-69.40	20	1.6	V	-14.62	-84.02	-54	-30.02
90.50	-63.33	4	1.2	H	-16.8	-80.13	-54	-26.13
90.50	-62.63	180	1.7	V	-16.8	-79.43	-54	-25.43
195.34	-73.82	47	2.1	H	-16.57	-90.39	-54	-36.39
195.34	-73.63	97	1.3	V	-16.57	-90.20	-54	-36.20

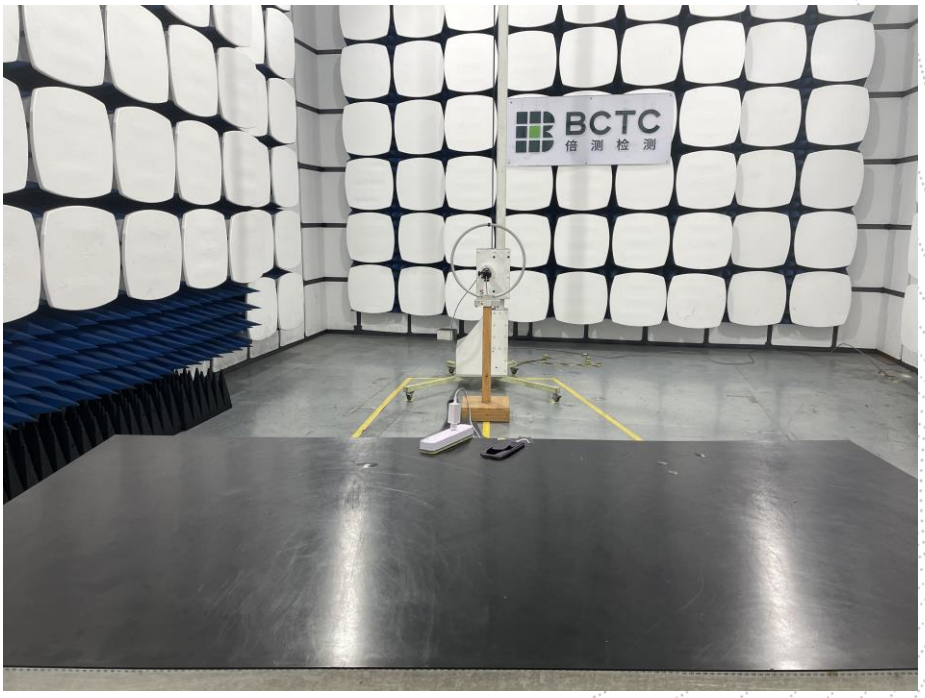
Remark: This Report only show the test plots of the worst case.

11. Test Setup Photo

Spurious emissions (30-1000MHz)

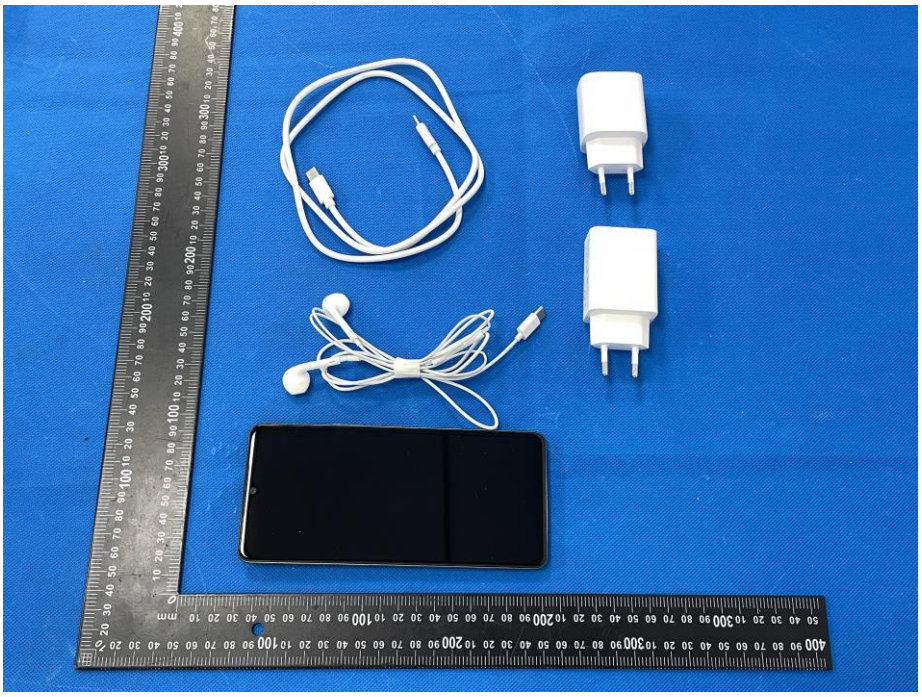


Spurious emissions (0.009-30MHz)



12. EUT Photos

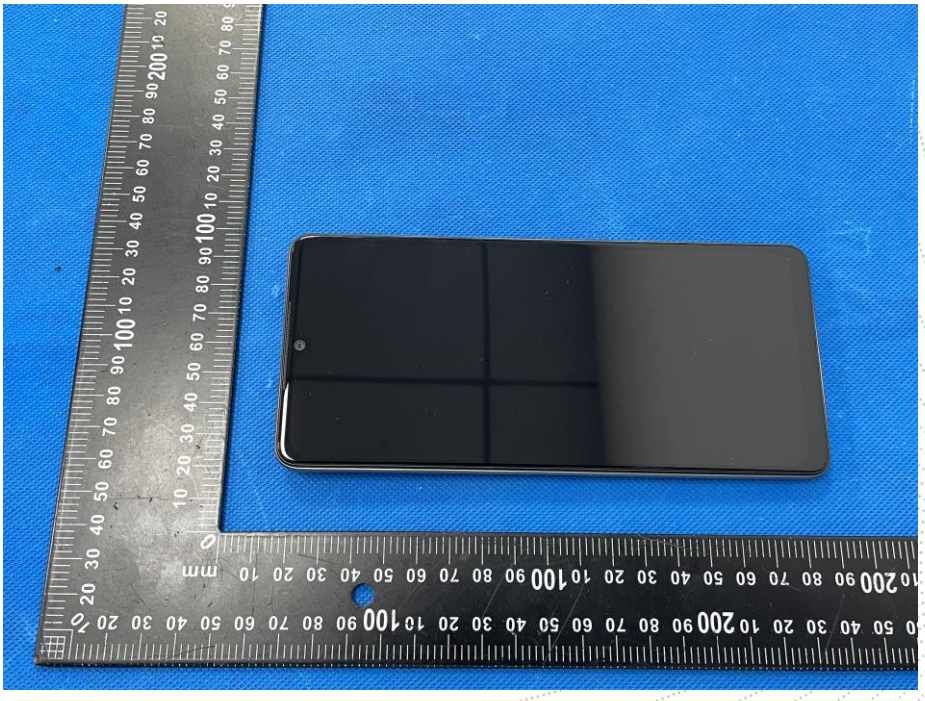
EUT Photo 1



EUT Photo 2

EUT Photo 3

EUT Photo 4



NOTE: Appendix-Photographs Of EUT Constructional Details

STATEMENT

1. The equipment lists are traceable to the national reference standards.

2. The test report can not be partially copied unless prior written approval is issued from our lab.

3. The test report is invalid without the "special seal for inspection and testing".

4. The test report is invalid without the signature of the approver.

5. The test process and test result is only related to the Unit Under Test.

6. Sample information is provided by the client and the laboratory is not responsible for its authenticity.

7. The quality system of our laboratory is in accordance with ISO/IEC17025.

8. If there is any objection to this test report, the client should inform issuing laboratory within 15 days from the date of receiving test report.

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