

TEST REPORT

Report No.: BCTC2504708272-2E

Applicant: Shenzhen Huafurui Technology Co., Ltd.

Product Name: Smartphone

Test Model: P90

Tested Date: 2025-04-07 to 2025-05-09

Issued Date: 2025-05-21

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: 2025-05-21

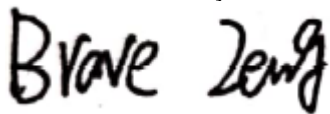
Report No.: BCTC2504708272-2E

Test Standards: ETSI EN 301 489-1 V2.2.3 (2019-11)
ETSI EN 301 489-3 V2.3.2 (2023-01)
ETSI EN 301 489-17 V3.2.4 (2020-09)
ETSI EN 301 489-19 V2.2.1 (2022-09)
ETSI EN 301 489-52 V1.2.1 (2021-11)

Test Results: PASS

Remark: This is RED EMC test report.

Tested by:



Brave Zeng/ Project Handler

Approved by:



Zero Zhou/Reviewer

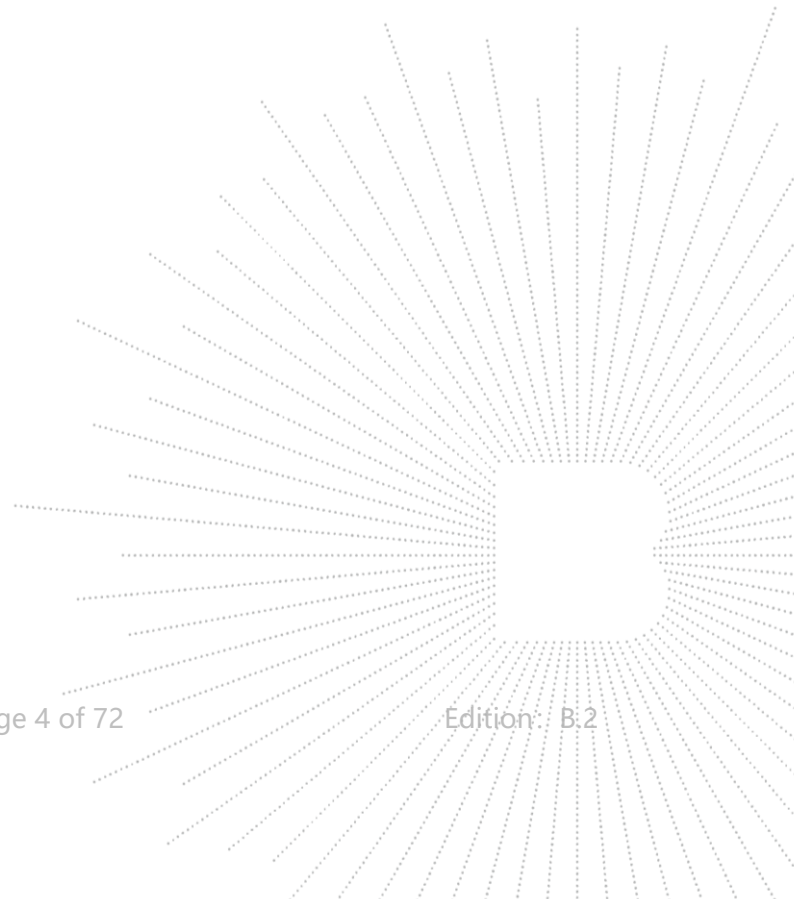
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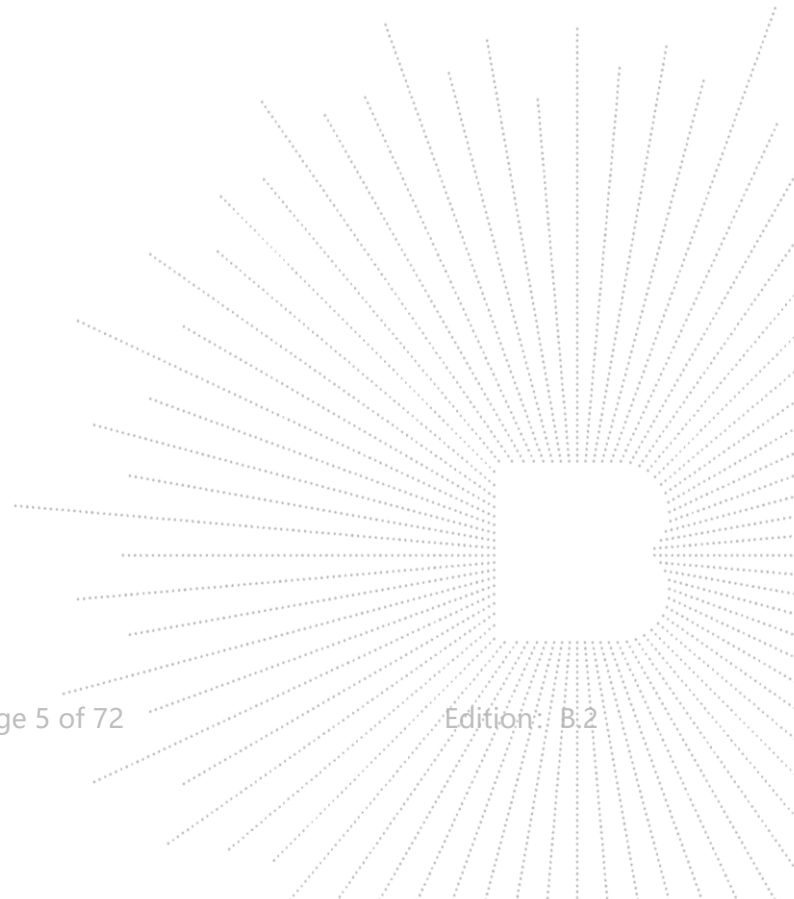
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(Note: N/A means not applicable)



1. Version

Report No.	Issue Date	Description	Approved
BCTC2504708272-2E	2025-05-21	Original	Valid



2. Test Summary

The Product has been tested according to the following specifications:

EMISSION		
Standard	Test Item	Test result
EN 301 489-1	Conducted emissions from the AC mains power ports	Pass
EN 301 489-1	Asymmetric mode conducted emissions	N/A ²
EN 301 489-1	Conducted differential voltage emissions	N/A ¹
EN 301 489-1	Radiated emissions	Pass
EN 301 489-1	Harmonic current emission(H)	N/A ²
EN 301 489-1	Voltage fluctuations & flicker(F)	Pass

IMMUNITY		
Standard	Test Item	Test result
EN 301 489-1	Electrostatic discharge (ESD)	Pass
EN 301 489-1	Continuous RF electromagnetic field disturbances(RS)	Pass
EN 301 489-1	Electrical fast transients/burst (EFT)	Pass
EN 301 489-1	Surges	Pass
EN 301 489-1	Radio frequency, common mode	Pass
EN 301 489-1	Voltage dips and interruptions (DIPS)	Pass

Remark:

- (1) TV broadcast receiver tuner ports with an accessible connector,
(2) RF modulator output ports;
(3) FM broadcast receiver tuner ports with an accessible connector.

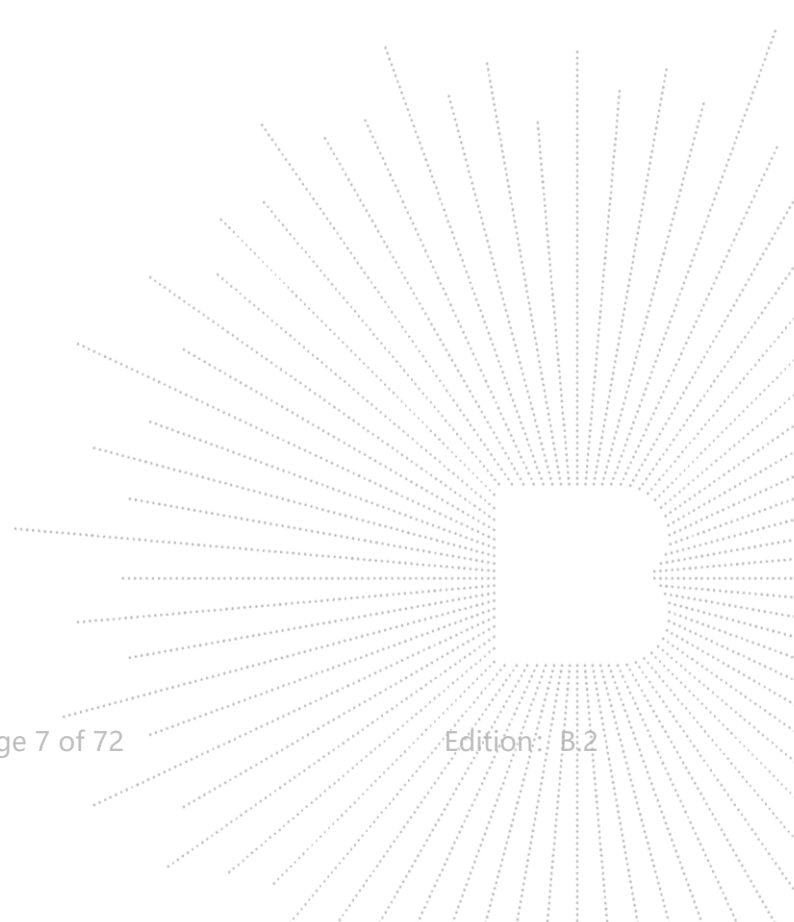
But the EUT has no above ports, so this test item is not applicable.

- The Product belongs to Class A, and its power is less than 75W, so it deems to fulfil this standard without testing.

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 $k=2$.

Test item	Value (dB)
Conducted Emission (150kHz-30MHz)	3.10
Radiated Emission(30MHz~200MHz)	4.60
Radiated Emission(200MHz~1GHz)	5.20
Radiated Emission(1GHz~6GHz)	5.20



4. Product Information And Test Setup

4.1 Product Information

Model/Type reference:	P90
Model differences:	N/A
Bluetooth Version:	5.2
GSM Band(s):	GSM/GPRS/EGPRS 900/1800MHz
GPRS Class:	12
WCDMA Band(s):	FDD Band I/VIII
LTE Band(s):	FDD Band 1, Band 3, Band 7, Band 8, Band 20, Band 28, Band 38, Band 40
GPS:	Support
Technologies:	Tagging systems
Hardware Version:	3368D-MC-V1.1
Software Version:	CUBOT_P90_F021C_V01

	Bluetooth(BDR+ED R+BLE):	2402-2480MHz
	WIFI(2.4GHz):	IEEE 802.11b/g/n HT20: 2412-2472MHz IEEE 802.11n HT40: 2422-2462MHz
	WIFI(5.1GHz):	IEEE 802.11a/n HT20/ac HT20: 5180MHz-5240MHz IEEE 802.11n HT40/ac HT40: 5190 MHz-5230MHz IEEE 802.11ac HT80: 5210MHz
	WIFI(5.8GHz):	IEEE 802.11a/n HT20/ac HT20:5745MHz-5825MHz IEEE 802.11n HT40/ac HT40:5755 MHz-5795MHz IEEE 802.11ac HT80:5775MHz
	GSM/GPRS/EGPRS 900:	Tx: 880-915MHz, Rx: 925-960MHz
	GSM/GPRS/EGPRS 1800:	Tx: 1710-1785MHz, Rx: 1805-1880MHz
	WCDMA Band I:	Tx: 1920-1980MHz, Rx: 2110-2170MHz
	WCDMA Band VIII:	Tx: 880-915MHz, Rx: 925-960MHz
Operation Frequency:	LTE Band 1:	(UL)1920MHz~1980MHz (DL)2110MHz~2170MHz
	LTE Band 3:	(UL)1710MHz~1785MHz (UL)1805MHz~1880MHz
	LTE Band 7:	(UL)2500MHz~2570MHz (DL)2620MHz~2690MHz
	LTE Band 8:	(UL)880MHz~915MHz (DL)925MHz~960MHz
	LTE Band 20:	(UL)832MHz~862MHz (DL)791MHz~821MHz
	LTE Band 28:	(UL)703MHz~748MHz, (DL)758MHz~803MHz
	LTE Band 38:	(UL)2570MHz-2620MHz (DL)2570MHz-2620MHz
	LTE Band 40:	(UL)2300MHz-2400MHz

	(DL)2300MHz-2400MHz
GPS:	1.57542GHz
NFC:	13.56MHz
Bluetooth(BDR+EDR):	2.51 dBm
Bluetooth(BLE):	-0.42 dBm
WIFI(2.4GHz) :	12.12 dBm
WIFI(5.1GHz):	11.67 dBm
WIFI(5.8GHz):	9.70 dBm
GSM/GPRS/EGPRS 900:	32.82 dBm
GSM/GPRS/EGPRS 1800:	29.88 dBm
Max. RF output power:	WCDMA Band I: 23.94 dBm
	WCDMA Band VIII: 22.82 dBm
	LTE Band 1: 24.28 dBm
	LTE Band 3: 23.62 dBm
	LTE Band 7: 22.77 dBm
	LTE Band 8: 23.04 dBm
	LTE Band 20: 24.09 dBm
	LTE Band 28: 23.60 dBm
	LTE Band 38: 24.44 dBm
	LTE Band 40: 22.48 dBm
Type of Modulation:	Bluetooth(EDR): GFSK, $\pi/4$ DQPSK, 8DPSK
	Bluetooth(BLE): GFSK
	WIFI(2.4GHz+5.1GHz+5.8GHz): DSSS, OFDM, OFDMA
	GSM/GPRS/EGPRS: GMSK
	WCDMA: QPSK, 16QAM, 64QAM, BPSK
	LTE: QPSK, 16-QAM
Antenna installation:	Internal antenna
	Bluetooth(BDR+EDR+BLE) 3.14 dBi
	WIFI(2.4GHz): 3.14 dBi,
	WIFI(5.1GHz): 2.14 dBi,
	WIFI(5.8GHz): 2.14 dBi,
Antenna Gain:	GSM/GPRS/EGPRS 900: -1.35 dBi
	GSM/GPRS/EGPRS 1800: -1.25 dBi
	WCDMA Band I: -1.25 dBi
	WCDMA Band VIII: -1.35 dBi
	LTE band 1: -1.25 dBi
	LTE Band 3: -1.91 dBi
	LTE Band 7: -1.97 dBi
	LTE Band 8: -1.35 dBi

LTE Band 20: 0.61 dBi
 LTE Band 28: 0.87 dBi
 LTE Band 38: -2.4 dBi
 LTE Band 40: -0.01 dBi
 GPS: 0.08 dBi
 NFC: 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

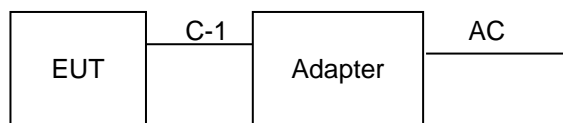
Output: 5.0V = 3.0A 15.0W or 9.0V = 2.22A 19.98W or 12.0V = 1.67A 20.04W

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.

Conducted Emission and Radiated Spurious Emission:


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	---	---

Notes

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 Test Mode

Test item	Test Mode	Test Voltage
Adapter 1 Conducted emissions at AC Port QP/AV <input type="checkbox"/> Class A <input checked="" type="checkbox"/> Class B	Mode 1	AC 230V/50Hz
	Mode 2	AC 230V/50Hz
	Mode 3*	AC 230V/50Hz
Adapter 2 Conducted emissions at AC Port QP/AV <input type="checkbox"/> Class A <input checked="" type="checkbox"/> Class B	Mode 1*	AC 230V/50Hz
	Mode 2	AC 230V/50Hz
	Mode 3	AC 230V/50Hz
Adapter 1 Radiated emissions(30MHz-1GHz) QP <input type="checkbox"/> Class A <input checked="" type="checkbox"/> Class B	Mode 1	AC 230V/50Hz
	Mode 2	AC 230V/50Hz
	Mode 3	AC 230V/50Hz
Adapter 2 Radiated emissions(30MHz-1GHz) QP <input type="checkbox"/> Class A <input checked="" type="checkbox"/> Class B	Mode 1	AC 230V/50Hz
	Mode 2	AC 230V/50Hz
	Mode 3*	AC 230V/50Hz
Adapter 1 Radiated emissions(1 - 6 GHz) QP 108≤F<500MHz up to 2G 500≤F<1GHz up to 5G 1GHz ≤F up to 6G <input type="checkbox"/> Class A <input checked="" type="checkbox"/> Class B	Mode 1*	AC 230V/50Hz
	Mode 2	AC 230V/50Hz
	Mode 3	AC 230V/50Hz
Adapter 2 Radiated emissions(1 - 6 GHz) QP 108≤F<500MHz up to 2G 500≤F<1GHz up to 5G 1GHz ≤F up to 6G <input type="checkbox"/> Class A <input checked="" type="checkbox"/> Class B	Mode 1*	AC 230V/50Hz
	Mode 2	AC 230V/50Hz
	Mode 3	AC 230V/50Hz
Voltage fluctuations & flicker	Mode 1	AC 230V/50Hz
	Mode 2	AC 230V/50Hz
Electrostatic discharge (ESD) <input checked="" type="checkbox"/> HCP & VCP: ±4Kv, ±2Kv, <input checked="" type="checkbox"/> Air Discharge: ±8Kv, ±4Kv, ±2Kv, <input checked="" type="checkbox"/> Contact Discharge: ±4Kv, ±2Kv,	Mode 1	AC 230V/50Hz
	Mode 2	AC 230V/50Hz
	Mode 3	AC 230V/50Hz
Continuous RF electromagnetic field disturbances(RS) 80MHz-6000MHz,, 3V/m,80% Front, Rear, Left, Right H/V	Mode 1	AC 230V/50Hz
	Mode 2	AC 230V/50Hz
	Mode 3	AC 230V/50Hz
Electrical fast transients/burst (EFT)	Mode 1	AC 230V/50Hz

Test item	Test Mode	Test Voltage
<input checked="" type="checkbox"/> 1kV AC(Input) <input type="checkbox"/> 0.5kV DC(Input) <input type="checkbox"/> 0.5kV signal,Telec,control	Mode 2	AC 230V/50Hz
Surges <input checked="" type="checkbox"/> 1KV /0.5KV Line-N <input type="checkbox"/> 2kV Line-PE, N-PE <input type="checkbox"/> 0.5kVDC(Input) <input type="checkbox"/> 1KV, <input type="checkbox"/> 4KV signal, Telec, control C Line-Line:90°+1kV,270°-1kV Line-PE:90°+2kV,270°-2kV N-PE:90°-2kV,270°+2kV	Mode 1	AC 230V/50Hz
	Mode 2	AC 230V/50Hz
Continuous induced RF disturbances (CS) A 0.15MHz to 10MHz 3V, 10MHz-30MHz 3 to 1V, 30MHz-80MHz 1V <input checked="" type="checkbox"/> AC(Input) <input type="checkbox"/> DC(Input) <input type="checkbox"/> signal, Telec, control	Mode 1	AC 230V/50Hz
	Mode 2	AC 230V/50Hz
Voltage dips and interruptions Dip 0% 0.5P 10ms Dip 0% 1P 20ms Dip 70% 25P 500ms Voltage Interruptions 0% 250P 5000ms	Mode 1	AC 230V/50Hz
	Mode 2	AC 230V/50Hz
All test mode were tested and passed, only Conducted Emissions, Radiated Emissions shows (*) is the worst case mode which were recorded in this report.		

Remark:

Mode1: Charging+BT+WiFi+GPS+ Camera shooting+2G GSM Link+NFC

Mode2: Charging+BT+WiFi+ GPS+TF Card Playing+3G WCDMA Lk+NFC

Mode3: Charging+BT+WiFi+ GPS+ Memory play +4G LTE Link+NFC

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

Conducted Emissions Test					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
Receiver	R&S	ESR	102075	May 16, 2024	May 15, 2025
LISN	R&S	ENV216	101375	May 16, 2024	May 15, 2025
Software	Frad	EZ-EMC	EMC-CON 3A1	\	\
Pulse limiter	Schwarzbeck	VTSD 9561-F	01323	May 16, 2024	May 15, 2025

Radiated Emissions Test (966 Chamber#01)					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
966 chamber	ChengYu	966 Room	966	May 15, 2023	May 14, 2026
Receiver	R&S	ESRP	101154	May 16, 2024	May 15, 2025
Receiver	R&S	ESR	102075	May 16, 2024	May 15, 2025
Amplifier	SKET	LAPA_01G18 G-45dB	SK2021040901	May 16, 2024	May 15, 2025
Amplifier	Schwarzbeck	BBV9744	9744-0037	May 16, 2024	May 15, 2025
TRILOG Broadband Antenna	schwarzbeck	VULB9163	942	May 21, 2024	May 20, 2025
Horn Antenna	schwarzbeck	BBHA9120D	1541	May 21, 2024	May 20, 2025
Software	Frad	EZ-EMC	FA-03A2 RE	\	\

Radiated Emissions Test (966 Chamber#02)					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
966 chamber	SKET	966 Room	966	Oct. 31. 2024	Oct. 30.2027
Receiver	R&S	ESR	102075	May 16, 2024	May 15, 2025
Receiver	R&S	ESRI7	100010	Oct. 31. 2024	Oct. 30. 2025
TRILOG Broadband Antenna	Schwarzbeck	VULB9168	1323	Feb. 28, 2025	Feb. 27, 2026
Amplifier	SKET	LNPA-30M01 G-30	SK2021082004	Oct. 31. 2024	Oct. 30. 2025
Software	SKET	EZ-EMC	FA-03A1	\	\
Horn Antenna	schwarzbeck	BBHA9120D	1541	May 21, 2024	May 20, 2025
Amplifier	SKET	LAPA_01G18 G-45dB	SK2021040901	May 16, 2024	May 15, 2025

Harmonic / Flicker Test					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
Harmonic & Flicker Tester	LAPLACE	AC2000A	439263	May 16, 2024	May 15, 2025
AC Power Supply	KIKUSUI	PCR4000M	UK001879	May 16, 2024	May 15, 2025
Software	HTEC	H/F	V1.5	\	\

Electrostatic Discharge Test					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
Electrostatic Discharge Simulator	3C TEST	EDS 30T	ES031000123059	Mar. 4, 2025	Mar. 4, 2026

Continuous RF Electromagnetic Field Disturbances Test					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
Power meter	Keysight	E4419	A00065	May 16, 2024	May 15, 2025
Power sensor	Keysight	E9300A	US39211659	May 16, 2024	May 15, 2025
Power sensor	Keysight	E9300A	US39211305	May 16, 2024	May 15, 2025
Amplifier	SKET	HAP_801000-250W	21201805013	May 16, 2024	May 15, 2025
Amplifier	SKET	HAP_0103-75W	21201805014	May 16, 2024	May 15, 2025
Amplifier	SKET	HAP_0306-50W	21201805015	May 16, 2024	May 15, 2025
Stacked double Log.-Per. Antenna	Schwarzbeck	STLP 9129	00077	\	\
Field Probe	Narda	EP-601	611WX80256	May 25, 2024	May 24, 2025
Signal Generator	Agilent	N5181A	MY50143748	May 16, 2024	May 15, 2025
Software	SKET	EMC-S	1.2.0.18	\	\

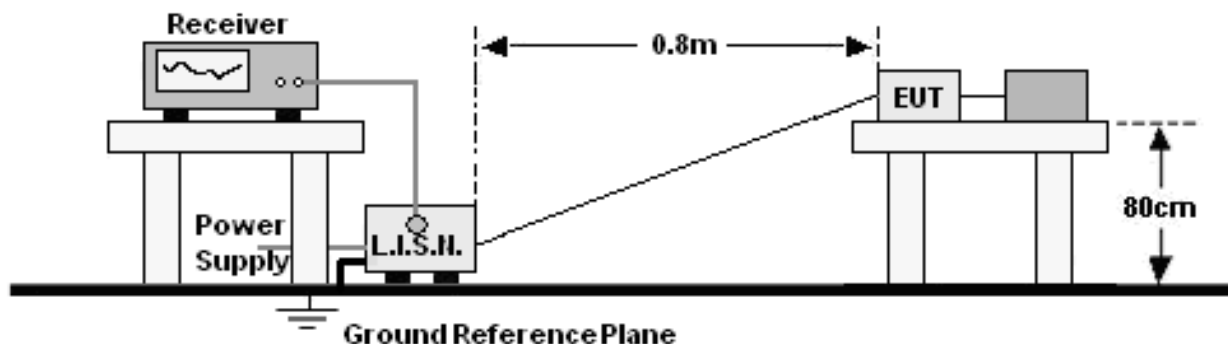
EFT And Surge And Voltage Dips And Interruptions Test					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
Compact Generator	TRANSIENT	TRA2000	646	May 16, 2024	May 15, 2025
Coupling Clamp	PARTNER	CN-EFT1000	CN-EFT1000-1624	May 16, 2024	May 15, 2025

Continuous Induced RF Disturbances Test					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
C/S Test System	SCHLODER	CDG-6000-75	126B1405/2016	May 16, 2024	May 15, 2025
Attenuator	SCHLODER	6DB DC-1G	HA1630	May 16, 2024	May 15, 2025
CDN	SCHLODER	CDN M2+M3	A2210389/2016	May 16, 2024	May 15, 2025
Injection Clamp	SCHLOBER	EMCL-20	132A1272/2016	May 16, 2024	May 15, 2025
Software	HUBERT	HUBERTEN 61000-4-6	1.4.1.0	\	\

6. Conducted emissions

6.1 Block Diagram Of Test Setup

For mains ports:



6.2 Limit

Limits for Conducted emissions at the mains ports of Class B MME

Frequency range (MHz)	Limits dB(μV)	
	Quasi-peak	Average
0,15 to 0,50	66 to 56*	56 to 46*
0,50 to 5	56	46
5 to 30	60	50

Notes: 1. *Decreasing linearly with logarithm of frequency.
2. The lower limit shall apply at the transition frequencies.

6.3 Test procedure

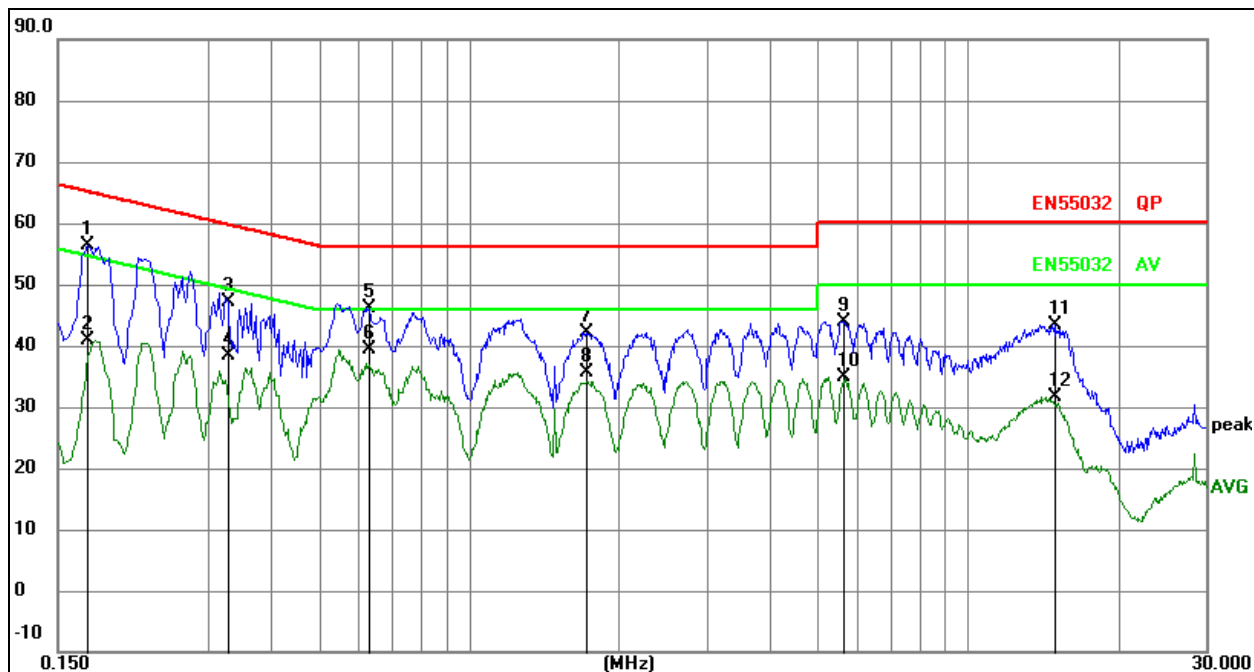
For mains ports:

- The Product was placed on a nonconductive table 0.8 m above the horizontal ground reference plane, and 0.4 m from the vertical ground reference plane, and connected to the main through Line Impedance Stability Network (L.I.S.N).
- The RBW of the receiver was set at 9 kHz in 150 kHz ~ 30MHz with Peak and AVG detector in Max Hold mode. Run the receiver's pre-scan to record the maximum disturbance generated from Product in all power lines in the full band.
- For each frequency whose maximum record was higher or close to limit, measure its QP and AVG values and record.

6.4 Test Result

Adapter 1

Temperature:	24.5 °C	Relative Humidity:	54%
Pressure:	101KPa	Phase :	L
Test Mode:	The worst data(Mode 3)	Remark:	N/A

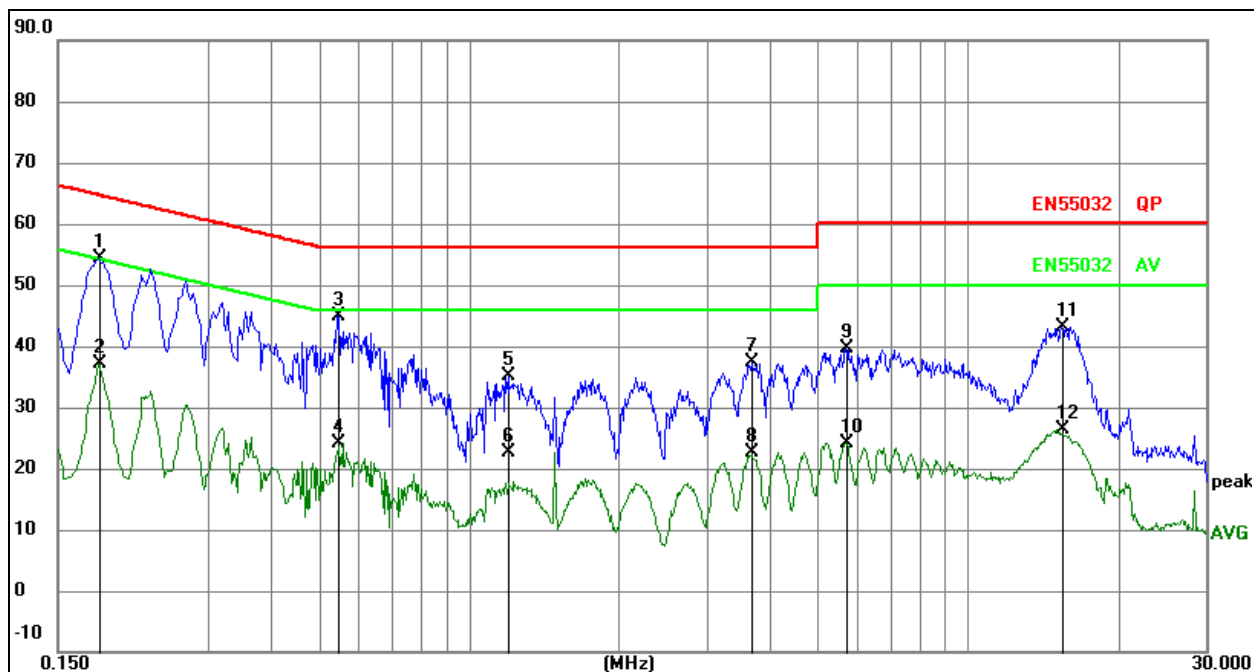


Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.
3. Measurement=Reading Level+Correct Factor
4. Over=Measurement-Limit

No.	Mk.	Freq. MHz	Reading Level	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector
1		0.1720	36.31	20.07	56.38	64.86	-8.48	QP
2		0.1720	20.85	20.07	40.92	54.86	-13.94	AVG
3		0.3285	27.00	20.07	47.07	59.49	-12.42	QP
4		0.3285	18.39	20.07	38.46	49.49	-11.03	AVG
5		0.6304	26.00	20.09	46.09	56.00	-9.91	QP
6	*	0.6304	19.23	20.09	39.32	46.00	-6.68	AVG
7		1.7161	22.06	20.10	42.16	56.00	-13.84	QP
8		1.7161	15.52	20.10	35.62	46.00	-10.38	AVG
9		5.6233	23.81	20.15	43.96	60.00	-16.04	QP
10		5.6233	14.64	20.15	34.79	50.00	-15.21	AVG
11		14.9068	23.17	20.31	43.48	60.00	-16.52	QP
12		14.9068	11.24	20.31	31.55	50.00	-18.45	AVG

Temperature:	24.5 °C	Relative Humidity:	54%
Pressure:	101KPa	Phase :	N
Test Mode:	The worst data(Mode 3)	Remark:	N/A



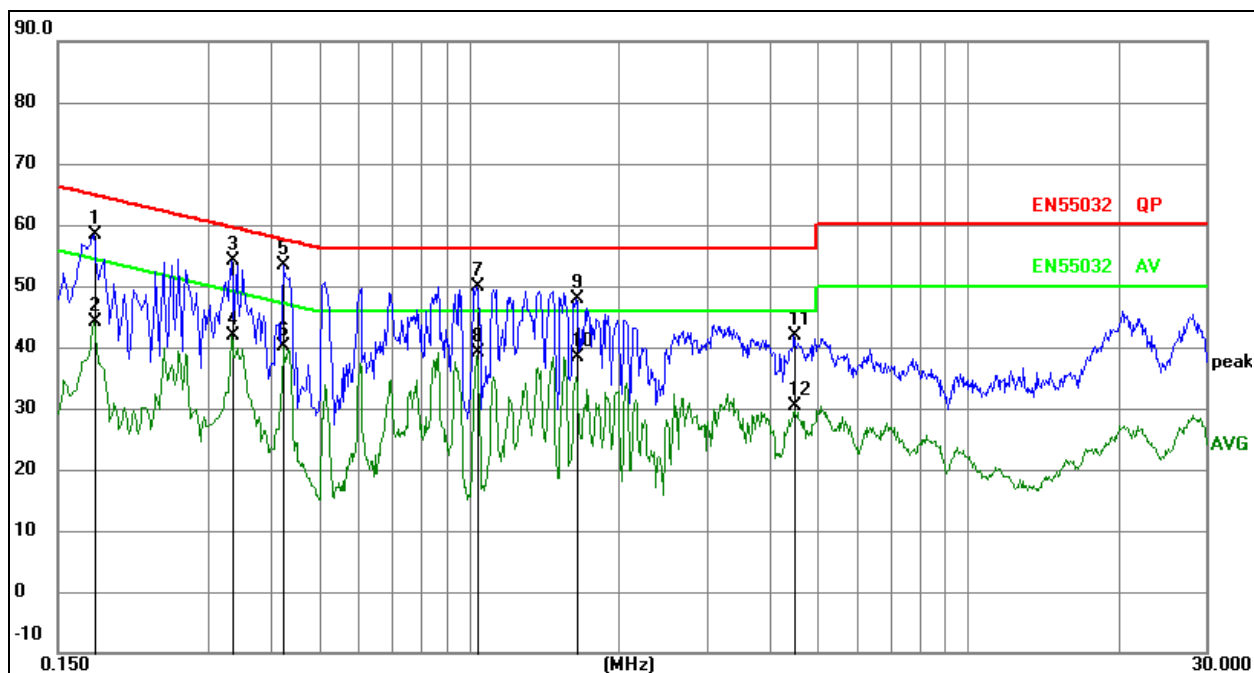
Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.
3. Measurement=Reading Level+Correct Factor
4. Over=Measurement-Limit

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz		dB	dBuV	dBuV	dB	Detector
1	*	0.1815	34.28	20.07	54.35	64.42	-10.07	QP
2		0.1815	17.09	20.07	37.16	54.42	-17.26	AVG
3		0.5460	24.81	20.08	44.89	56.00	-11.11	QP
4		0.5460	4.14	20.08	24.22	46.00	-21.78	AVG
5		1.1985	14.93	20.09	35.02	56.00	-20.98	QP
6		1.1985	2.64	20.09	22.73	46.00	-23.27	AVG
7		3.6825	17.25	20.13	37.38	56.00	-18.62	QP
8		3.6825	2.42	20.13	22.55	46.00	-23.45	AVG
9		5.6984	19.47	20.15	39.62	60.00	-20.38	QP
10		5.6984	3.94	20.15	24.09	50.00	-25.91	AVG
11		15.4320	22.92	20.31	43.23	60.00	-16.77	QP
12		15.4320	5.98	20.31	26.29	50.00	-23.71	AVG

Adapter 2

Temperature:	24.5 °C	Relative Humidity:	54%
Pressure:	101KPa	Phase :	L
Test Mode:	The worst data(Mode 1)	Remark:	N/A

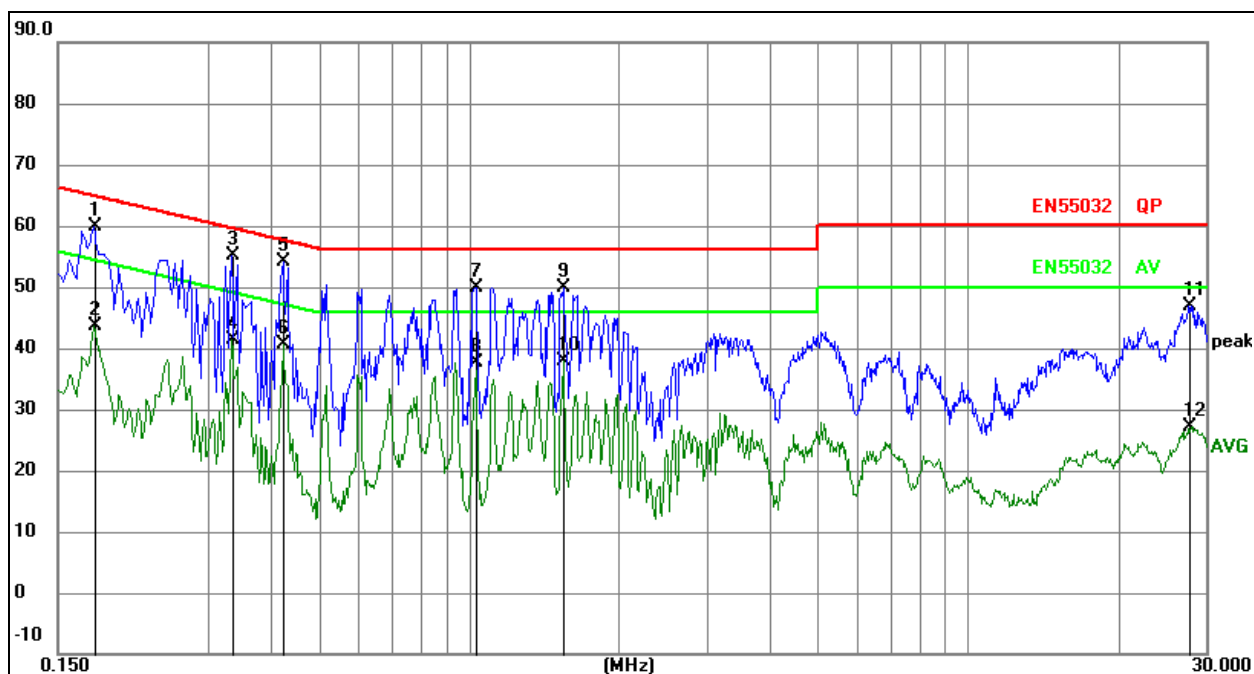


Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.
3. Measurement=Reading Level+Correct Factor
4. Over=Measurement-Limit

No.	Mk.	Freq. MHz	Reading Level dB	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector
1		0.1770	38.24	20.07	58.31	64.63	-6.32	QP
2		0.1770	23.98	20.07	44.05	54.63	-10.58	AVG
3		0.3345	34.09	20.07	54.16	59.34	-5.18	QP
4		0.3345	21.75	20.07	41.82	49.34	-7.52	AVG
5	*	0.4245	33.24	20.08	53.32	57.36	-4.04	QP
6		0.4245	20.09	20.08	40.17	47.36	-7.19	AVG
7		1.0410	29.88	20.09	49.97	56.00	-6.03	QP
8		1.0410	19.11	20.09	39.20	46.00	-6.80	AVG
9		1.6395	27.75	20.10	47.85	56.00	-8.15	QP
10		1.6395	18.38	20.10	38.48	46.00	-7.52	AVG
11		4.4835	21.62	20.14	41.76	56.00	-14.24	QP
12		4.4835	10.22	20.14	30.36	46.00	-15.64	AVG

Temperature:	24.5 °C	Relative Humidity:	54%
Pressure:	101KPa	Phase :	N
Test Mode:	The worst data(Mode 1)	Remark:	N/A



Remark:

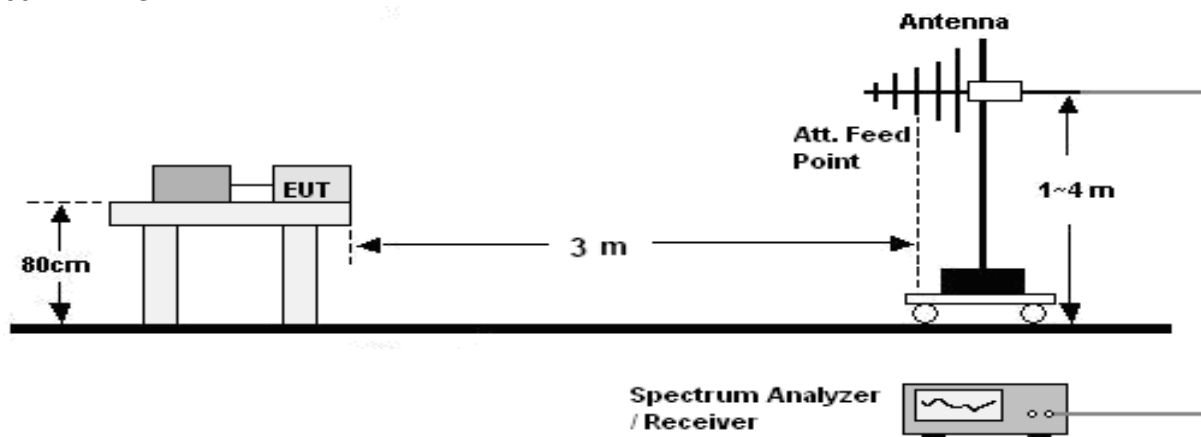
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.
3. Measurement=Reading Level+Correct Factor
4. Over=Measurement-Limit

No.	Mk.	Freq. MHz	Reading Level dB	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector
1		0.1770	39.79	20.07	59.86	64.63	-4.77	QP
2		0.1770	23.61	20.07	43.68	54.63	-10.95	AVG
3		0.3345	35.12	20.07	55.19	59.34	-4.15	QP
4		0.3345	21.41	20.07	41.48	49.34	-7.86	AVG
5	*	0.4245	34.00	20.08	54.08	57.36	-3.28	QP
6		0.4245	20.62	20.08	40.70	47.36	-6.66	AVG
7		1.0275	29.89	20.09	49.98	56.00	-6.02	QP
8		1.0275	17.51	20.09	37.60	46.00	-8.40	AVG
9		1.5494	29.67	20.10	49.77	56.00	-6.23	QP
10		1.5494	17.66	20.10	37.76	46.00	-8.24	AVG
11		27.8205	26.66	20.28	46.94	60.00	-13.06	QP
12		27.8205	6.97	20.28	27.25	50.00	-22.75	AVG

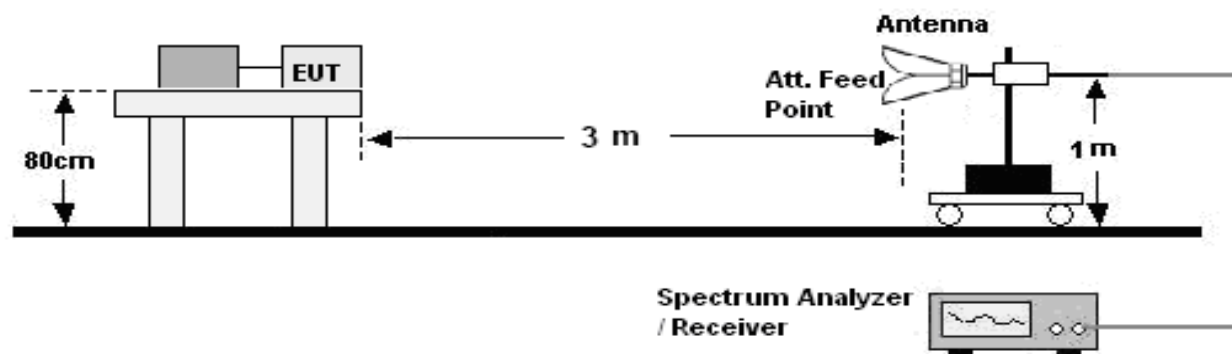
7. Radiated Emissions Test

7.1 Block Diagram Of Test Setup

30MHz ~ 1GHz:



Above 1GHz:



7.2 Limits

Limits for radiated disturbance of Class B MME

Frequency (MHz)	Quasi-peak limits at 3m dB(μV/m)	
30-230	40	
230-1000	47	
Frequency (GHz)	limit above 1G at 3m dB(μV/m)	
	Average	peak
1-3	50	70
3-6	54	74

Note: The lower limit shall apply at the transition frequencies.

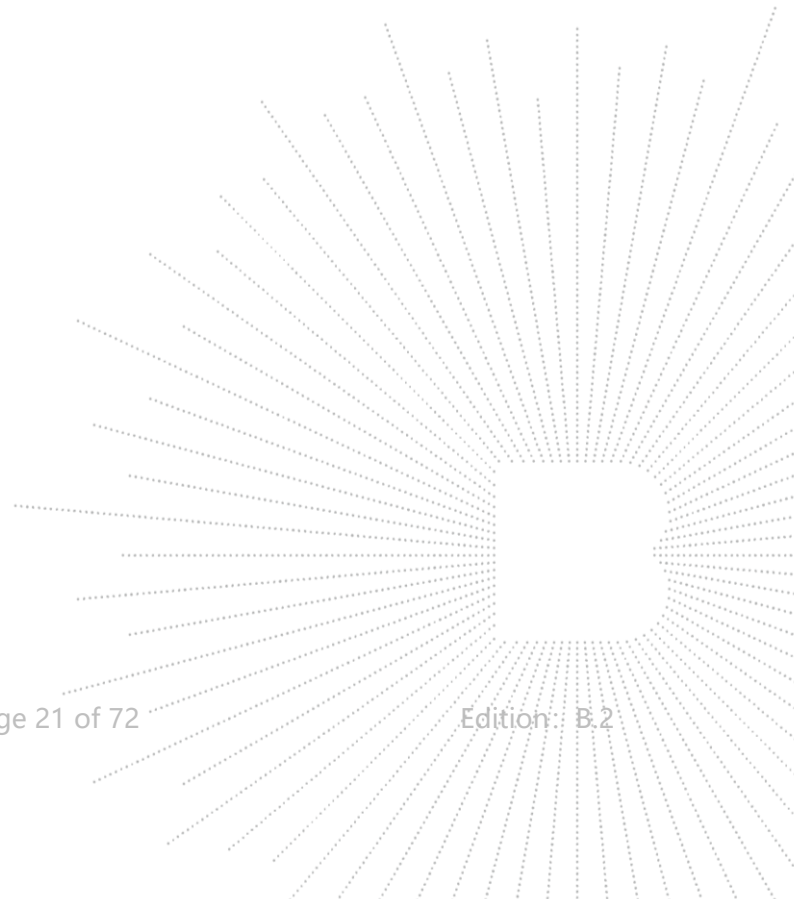
7.3 Test Procedure

30MHz ~ 1GHz:

- a. The Product was placed on the nonconductive turntable 0.8m above the ground in a semi anechoic chamber.
- b. Set the spectrum analyzer/receiver in Peak detector, Max Hold mode, and 120 kHz RBW. Record the maximum field strength of all the pre-scan process in the full band when the antenna is varied between 1~4 m in both horizontal and vertical, and the turntable is rotated from 0 to 360 degrees.
- c. For each frequency whose maximum record was higher or close to limit, measure its QP value: vary the antenna's height and rotate the turntable from 0 to 360 degrees to find the height and degree where Product radiated the maximum emission, then set the test frequency analyzer/receiver to QP Detector and specified bandwidth with Maximum Hold Mode, and record the maximum value.

Above 1GHz:

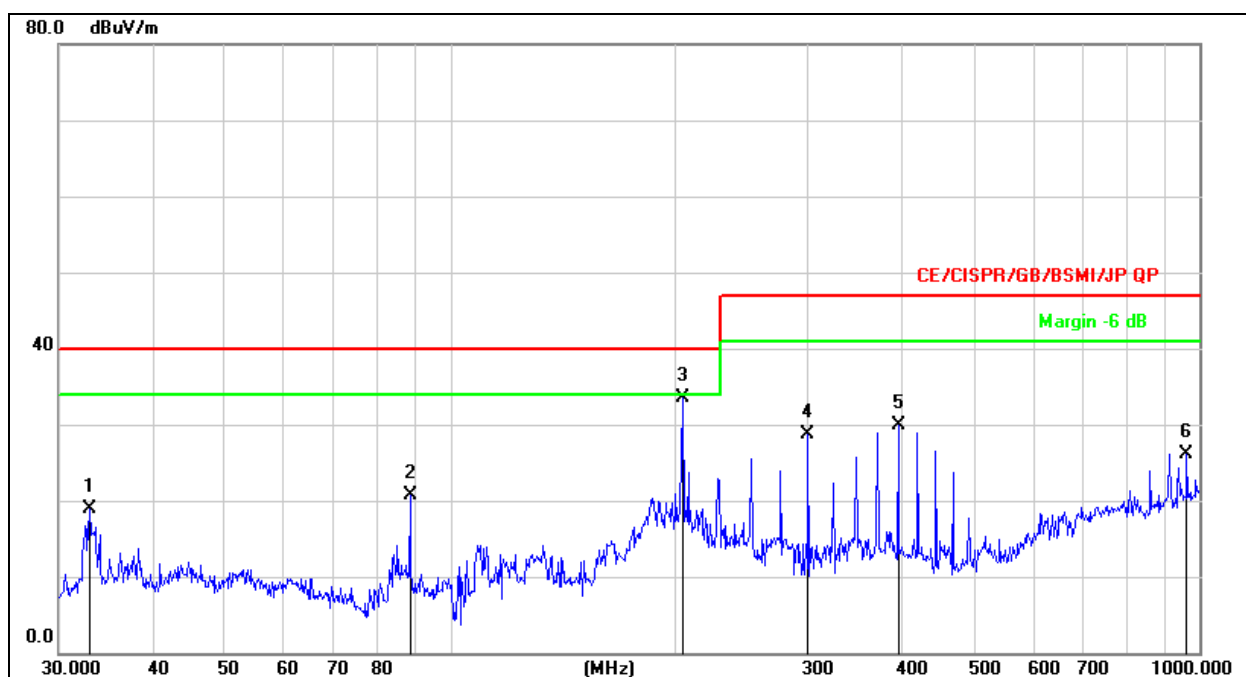
- a. The Product was placed on the non-conductive turntable 0.8 m above the ground in a full anechoic chamber.
- b. Set the spectrum analyzer/receiver in Peak detector, Max Hold mode, and 1MHz RBW. Record the maximum field strength of all the pre-scan process in the full band when the antenna is varied in both horizontal and vertical, and the turntable is rotated from 0 to 360 degrees.
- c. For each frequency whose maximum record was higher or close to limit, measure its AV value: rotate the turntable from 0 to 360 degrees to find the degree where Product radiated the maximum emission, then set the test frequency analyzer/receiver to AV value and specified bandwidth with Maximum Hold Mode, and record the maximum value.



7.4 Test Results

Adapter 1
Below 1GHz

Temperature:	22.6 °C	Relative Humidity:	54%
Pressure:	101KPa	Phase :	Horizontal
Test Mode:	The worst data(Mode 4)	Remark:	N/A

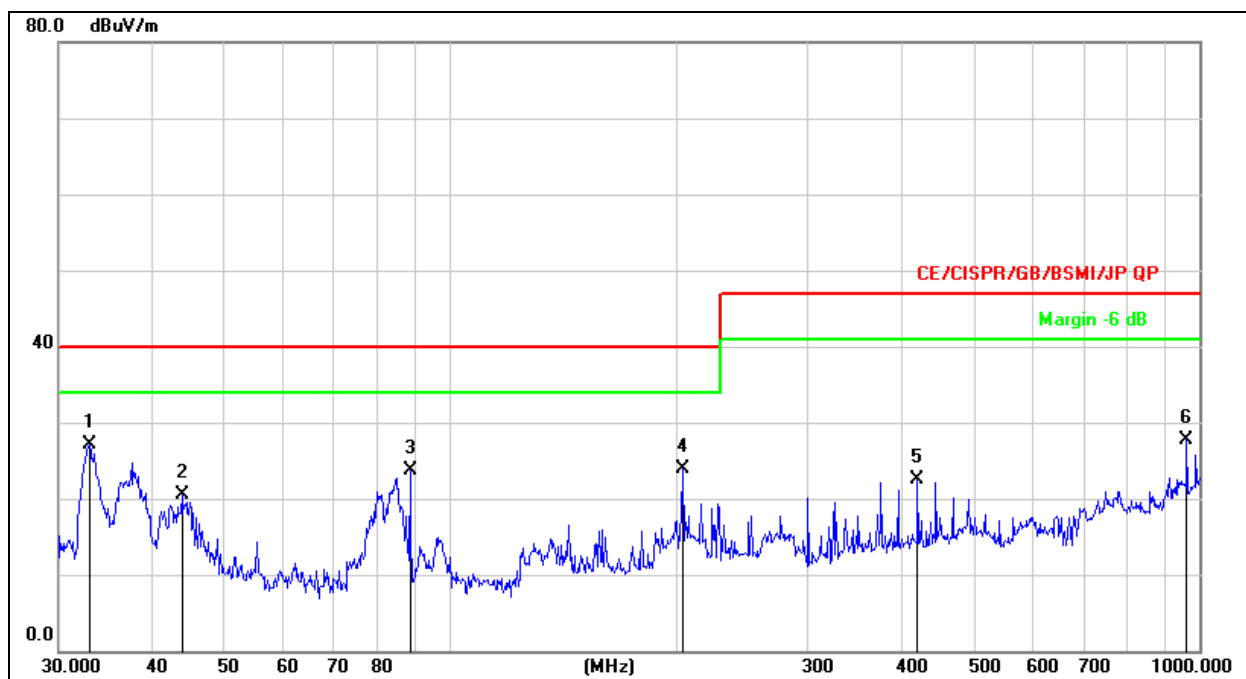


Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.
2. Measurement=Reading Level+Correct Factor
3. Over=Measurement-Limit

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1		32.9791	35.06	-16.07	18.99	40.00	-21.01	QP
2		88.3421	38.40	-17.79	20.61	40.00	-19.39	QP
3	*	204.2375	49.14	-15.60	33.54	40.00	-6.46	QP
4		300.3672	41.87	-13.23	28.64	47.00	-18.36	QP
5		396.2412	40.87	-10.89	29.98	47.00	-17.02	QP
6		962.1621	28.93	-2.80	26.13	47.00	-20.87	QP

Temperature:	22.6 °C	Relative Humidity:	54%
Pressure:	101KPa	Phase :	Vertical
Test Mode:	The worst data(Mode 4)	Remark:	N/A



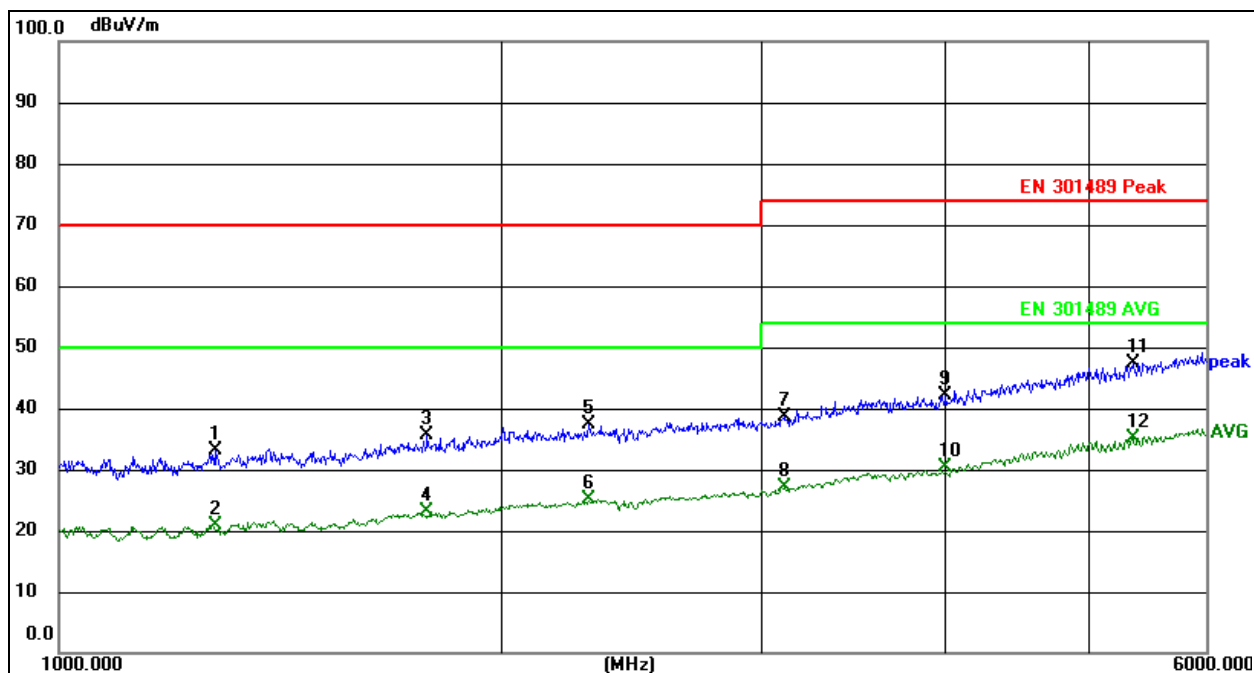
Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.
2. Measurement = Reading Level + Correct Factor
3. Over = Measurement - Limit

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1	*	32.9791	43.08	-16.07	27.01	40.00	-12.99	QP
2		43.8119	34.90	-14.41	20.49	40.00	-19.51	QP
3		88.3421	41.45	-17.79	23.66	40.00	-16.34	QP
4		204.2375	39.59	-15.60	23.99	40.00	-16.01	QP
5		420.5803	33.02	-10.44	22.58	47.00	-24.42	QP
6		962.1621	30.57	-2.80	27.77	47.00	-19.23	QP

Above 1GHz

Temperature:	24.1 °C	Relative Humidity:	41%
Pressure:	101KPa	Phase :	Horizontal
Test Mode:	The worst data(Mode 3)	Remark:	N/A

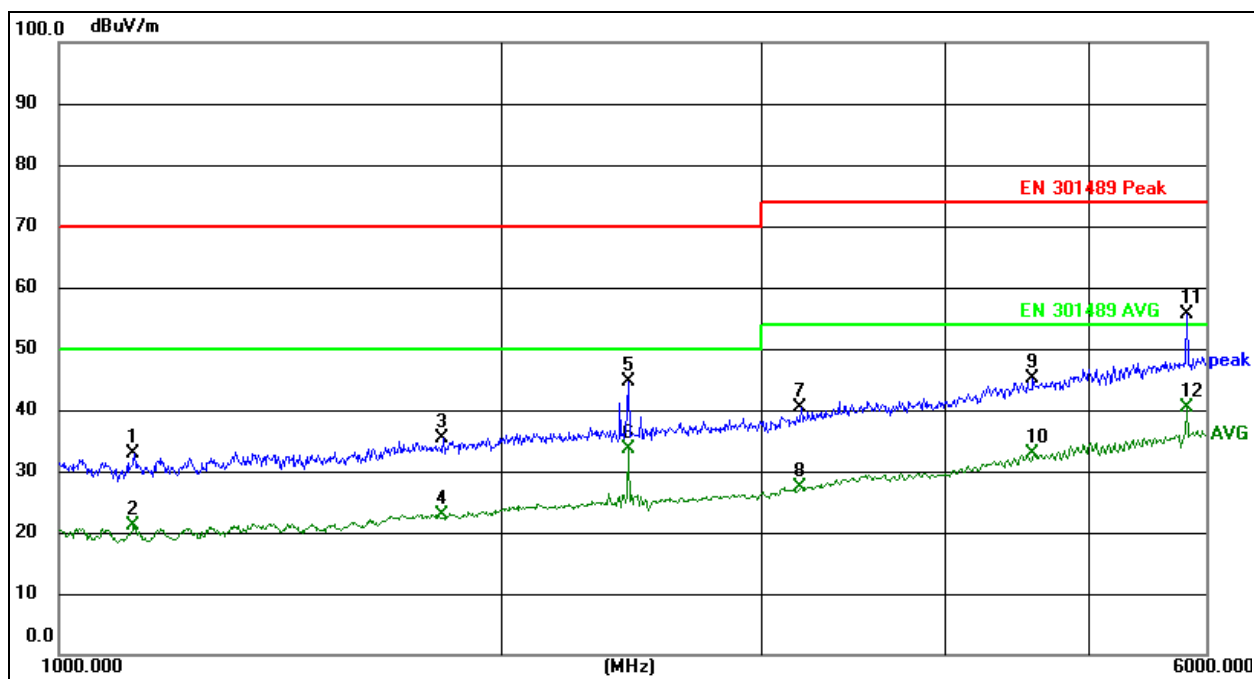


Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.
2. Measurement=Reading Level+Correct Factor
3. Over=Measurement-Limit

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1275.935	59.88	-26.87	33.01	70.00	-36.99	peak
2	1275.935	47.75	-26.87	20.88	50.00	-29.12	AVG
3	1777.406	60.50	-24.98	35.52	70.00	-34.48	peak
4	1777.406	48.10	-24.98	23.12	50.00	-26.88	AVG
5	2288.263	60.64	-23.31	37.33	70.00	-32.67	peak
6	2288.263	48.50	-23.31	25.19	50.00	-24.81	AVG
7	3108.635	60.09	-21.36	38.73	74.00	-35.27	peak
8	3108.635	48.47	-21.36	27.11	54.00	-26.89	AVG
9	3994.946	60.38	-18.21	42.17	74.00	-31.83	peak
10	3994.946	48.54	-18.21	30.33	54.00	-23.67	AVG
11	5349.948	60.55	-13.05	47.50	74.00	-26.50	peak
12 *	5349.948	48.26	-13.05	35.21	54.00	-18.79	AVG

Temperature:	24.1 °C	Relative Humidity:	41%
Pressure:	101KPa	Phase :	Vertical
Test Mode:	The worst data(Mode 3)	Remark:	N/A



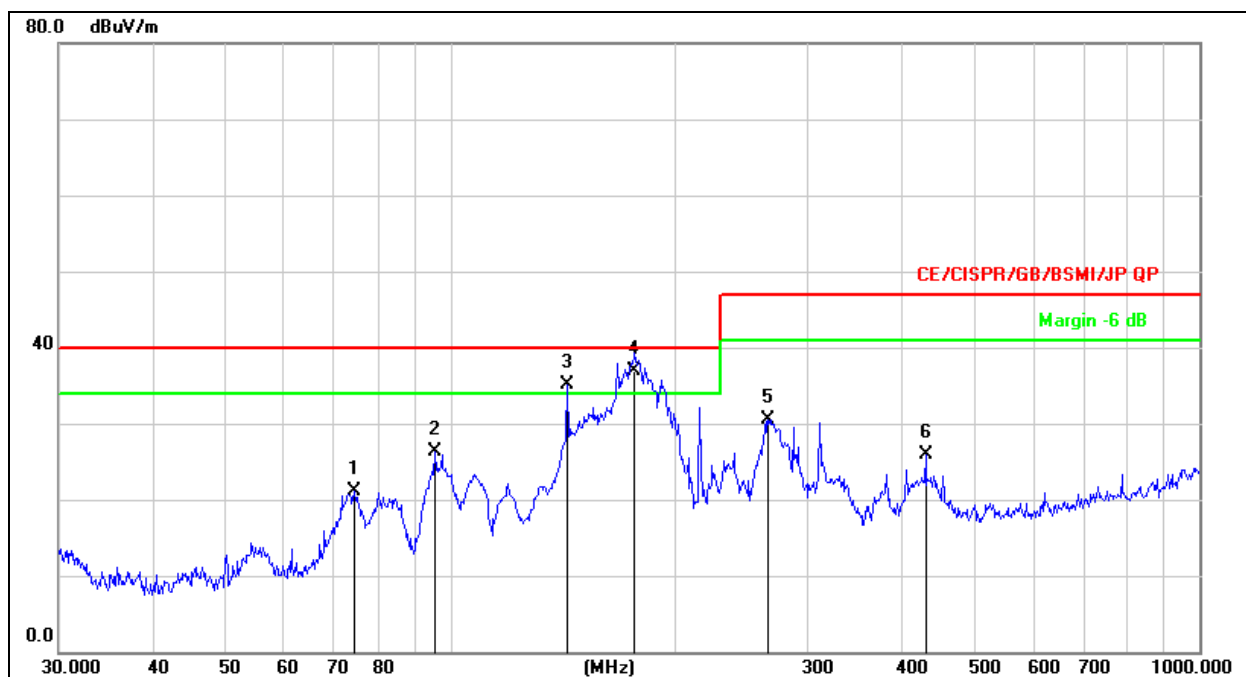
Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.
2. Measurement=Reading Level+Correct Factor
3. Over=Measurement-Limit

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1125.532	60.10	-27.32	32.78	70.00	-37.22	peak
2	1125.532	48.57	-27.32	21.25	50.00	-28.75	AVG
3	1822.555	60.21	-24.78	35.43	70.00	-34.57	peak
4	1822.555	47.67	-24.78	22.89	50.00	-27.11	AVG
5	2431.997	67.60	-22.96	44.64	70.00	-25.36	peak
6	2431.997	56.70	-22.96	33.74	50.00	-16.26	AVG
7	3187.600	61.43	-20.96	40.47	74.00	-33.53	peak
8	3187.600	48.41	-20.96	27.45	54.00	-26.55	AVG
9	4577.733	60.81	-15.62	45.19	74.00	-28.81	peak
10	4577.733	48.55	-15.62	32.93	54.00	-21.07	AVG
11	5819.996	67.06	-11.51	55.55	74.00	-18.45	peak
12 *	5819.996	51.77	-11.51	40.26	54.00	-13.74	AVG

Adapter 2
Below 1GHz

Temperature:	22.6 °C	Relative Humidity:	54%
Pressure:	101KPa	Phase :	Horizontal
Test Mode:	The worst data(Mode 1)	Remark:	N/A

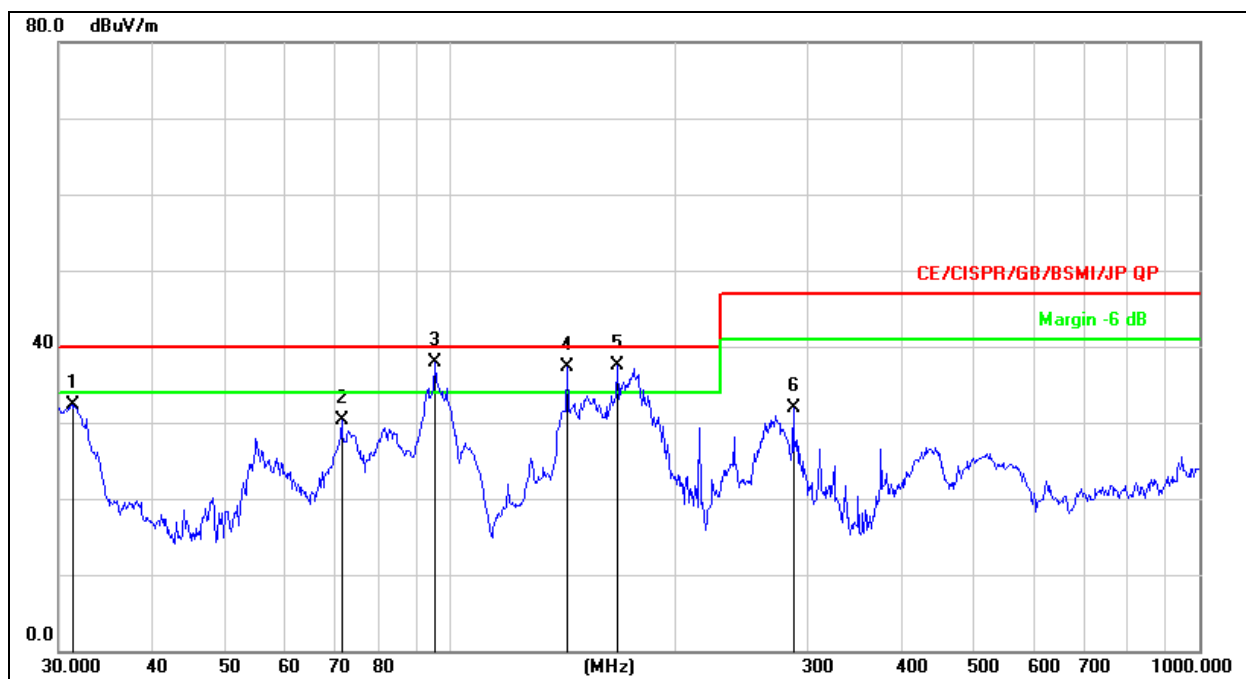


Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.
2. Measurement = Reading Level + Correct Factor
3. Over = Measurement - Limit

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dB/m	Over dB	Detector
1		74.3955	36.19	-15.11	21.08	40.00	-18.92	QP
2		95.4270	42.05	-15.80	26.25	40.00	-13.75	QP
3	!	143.3261	50.46	-15.27	35.19	40.00	-4.81	QP
4	*	176.2686	51.61	-14.76	36.85	40.00	-3.15	QP
5		265.6757	43.41	-12.94	30.47	47.00	-16.53	QP
6		431.0316	35.14	-9.29	25.85	47.00	-21.15	QP

Temperature:	22.6 °C	Relative Humidity:	54%
Pressure:	101KPa	Phase :	Vertical
Test Mode:	The worst data(Mode 1)	Remark:	N/A



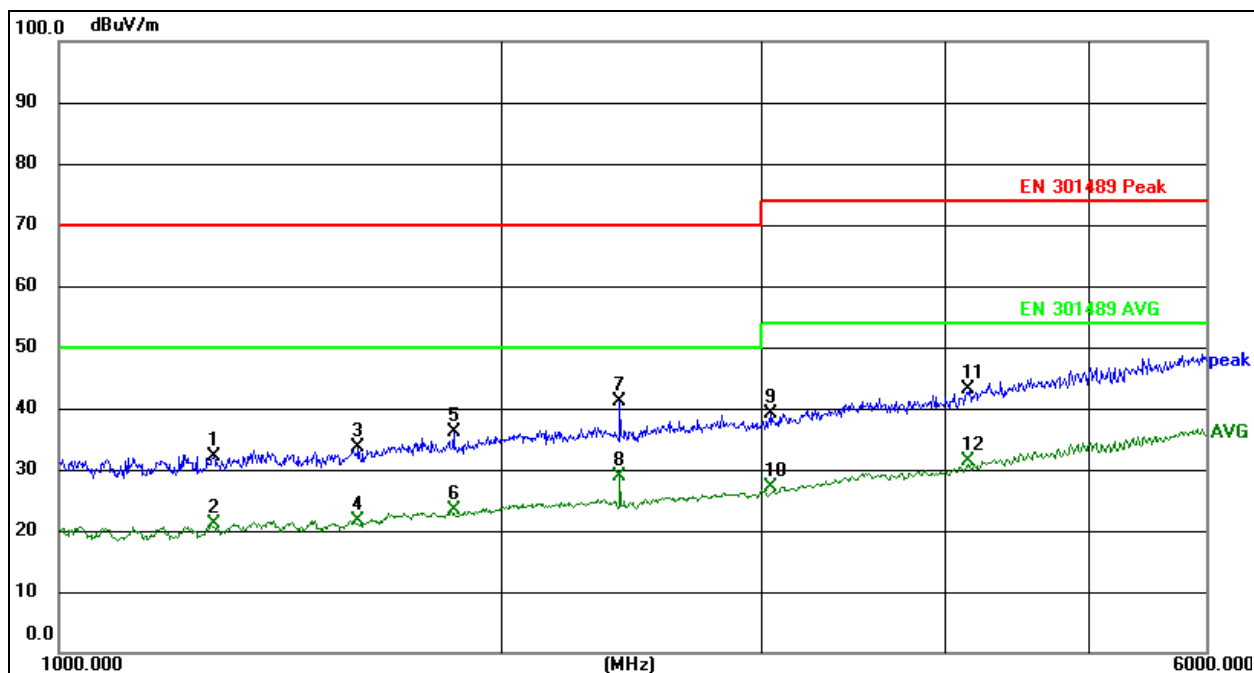
Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.
2. Measurement=Reading Level+Correct Factor
3. Over=Measurement-Limit

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dB/m	Over dB	Detector
1		31.2893	48.19	-15.86	32.33	40.00	-7.67	QP
2		71.5806	45.31	-15.02	30.29	40.00	-9.71	QP
3	*	95.4270	53.73	-15.80	37.93	40.00	-2.07	QP
4	!	143.3261	52.63	-15.27	37.36	40.00	-2.64	QP
5	!	167.2368	52.38	-14.90	37.48	40.00	-2.52	QP
6		286.9823	44.29	-12.47	31.82	47.00	-15.18	QP

Above 1GHz

Temperature:	24.1 °C	Relative Humidity:	41%
Pressure:	101KPa	Phase :	Horizontal
Test Mode:	The worst data(Mode 1)	Remark:	N/A

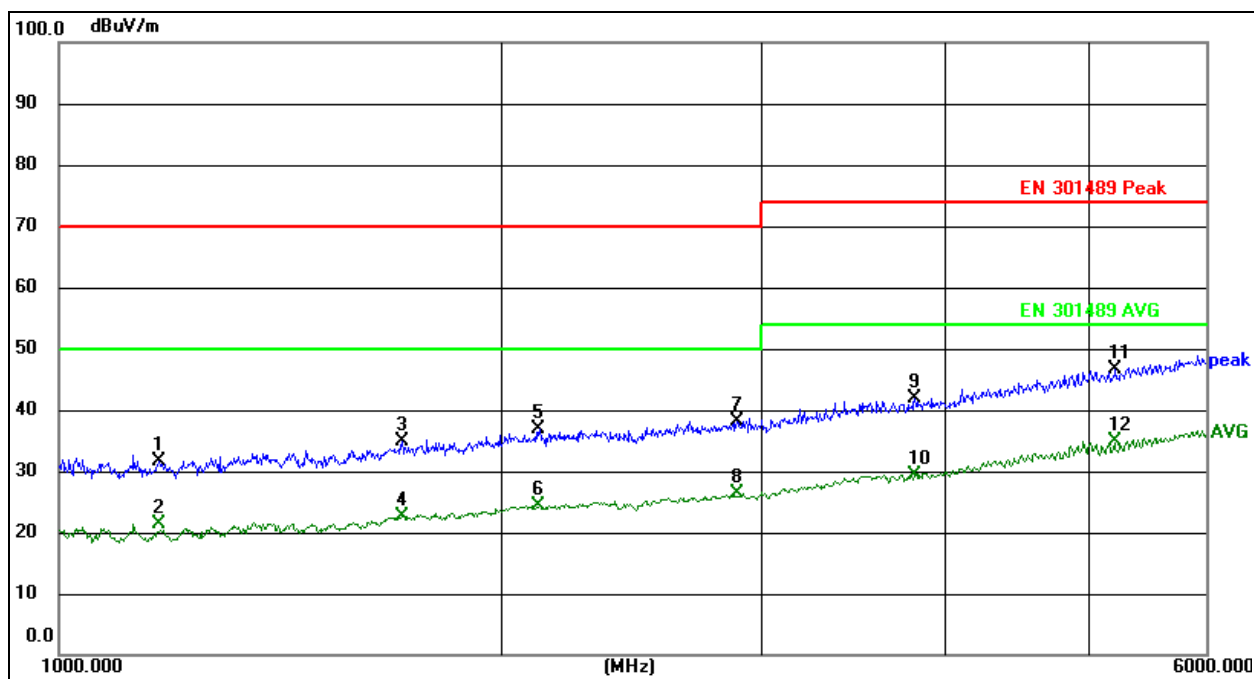


Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.
2. Measurement=Reading Level+Correct Factor
3. Over=Measurement-Limit

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1273.651	59.11	-26.88	32.23	70.00	-37.77	peak
2	1273.651	48.09	-26.88	21.21	50.00	-28.79	AVG
3	1596.237	59.31	-25.78	33.53	70.00	-36.47	peak
4	1596.237	47.44	-25.78	21.66	50.00	-28.34	AVG
5	1852.184	60.74	-24.65	36.09	70.00	-33.91	peak
6	1852.184	47.91	-24.65	23.26	50.00	-26.74	AVG
7	2401.685	64.07	-23.04	41.03	70.00	-28.97	peak
8 *	2401.685	51.97	-23.04	28.93	50.00	-21.07	AVG
9	3042.509	60.77	-21.69	39.08	74.00	-34.92	peak
10	3042.509	48.78	-21.69	27.09	54.00	-26.91	AVG
11	4148.127	60.58	-17.52	43.06	74.00	-30.94	peak
12	4148.127	48.84	-17.52	31.32	54.00	-22.68	AVG

Temperature:	24.1 °C	Relative Humidity:	41%
Pressure:	101KPa	Phase :	Vertical
Test Mode:	The worst data(Mode 1)	Remark:	N/A



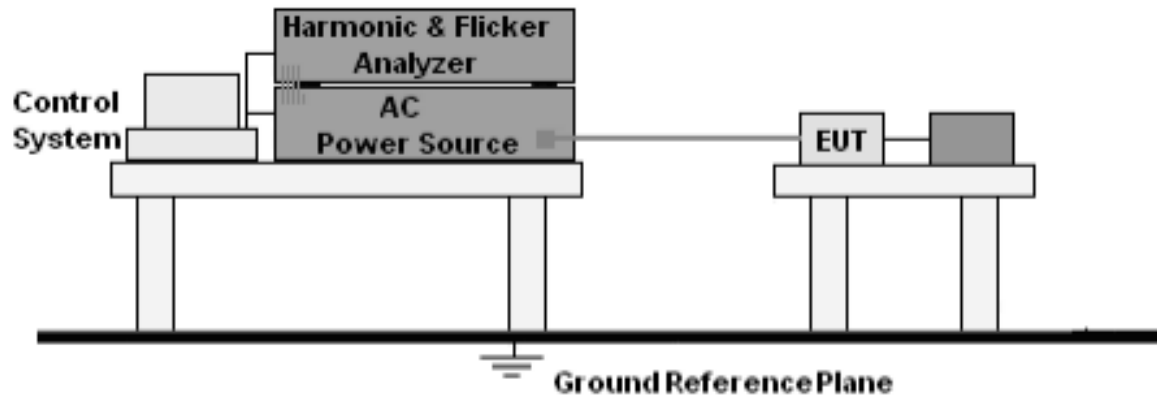
Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.
2. Measurement=Reading Level+Correct Factor
3. Over=Measurement-Limit

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1168.690	58.91	-27.19	31.72	70.00	-38.28	peak
2	1168.690	48.55	-27.19	21.36	50.00	-28.64	AVG
3	1708.706	60.04	-25.28	34.76	70.00	-35.24	peak
4	1708.706	47.99	-25.28	22.71	50.00	-27.29	AVG
5	2118.582	60.67	-23.72	36.95	70.00	-33.05	peak
6	2118.582	48.12	-23.72	24.40	50.00	-25.60	AVG
7	2883.284	60.27	-22.11	38.16	70.00	-31.84	peak
8	2883.284	48.43	-22.11	26.32	50.00	-23.68	AVG
9	3806.281	60.58	-18.66	41.92	74.00	-32.08	peak
10	3806.281	48.16	-18.66	29.50	54.00	-24.50	AVG
11	5208.076	60.13	-13.48	46.65	74.00	-27.35	peak
12 *	5208.076	48.28	-13.48	34.80	54.00	-19.20	AVG

8. Harmonic Current Emission(H)

8.1 Block Diagram Of Test Setup



8.2 Limit

EN IEC 61000-3-2:2019+A1:2021

8.3 Test Procedure

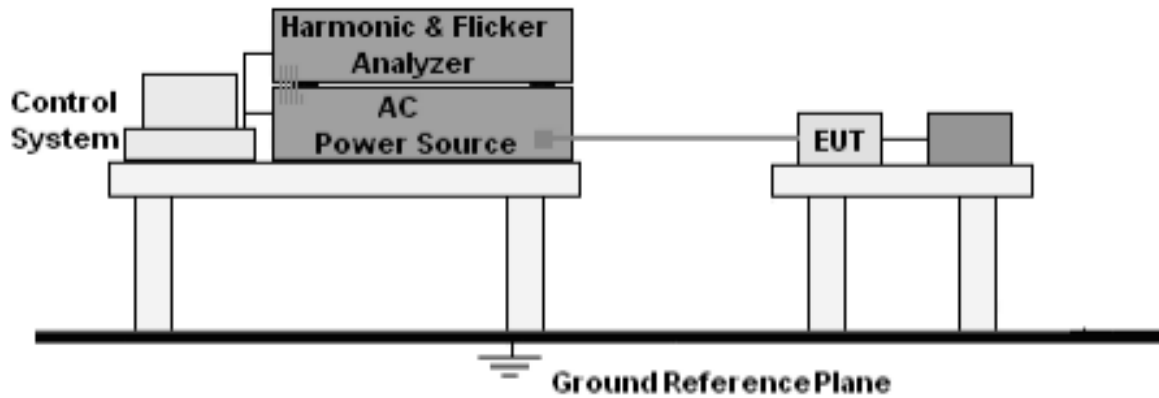
- The Product was placed on the top of a non-conductive table above the ground and operated to produce the maximum harmonic components under normal operating conditions for each successive harmonic component in turn.
- The correspondent test program of test instrument to measure the current harmonics emanated from Product was chosen. The measure time shall be not less than the time necessary for the Product to be exercised.

8.4 Test Results

The Product belongs to Class A, and its power is less than 75W, so it deems to fulfil this standard without testing.

9. Voltage Fluctuations & Flicker(F)

9.1 Block Diagram Of Test Setup



9.2 Limit

EN 61000-3-3:2013+A2:2021 Clause 5

9.3 Test Procedure

- The Product was placed on the top of a non-conductive table above the ground and operated to produce the most unfavorable sequence of voltage changes under normal operating conditions.
- During the flick test, the measure time shall include that part of whole operation cycle in which the Product produce the most unfavorable sequence of voltage changes. The observation period for short-term flicker indicator is 10 minutes and the observation period for long-term flicker indicator is 2 hours.

9.4 Test Results

Adapter 1

Test duration (sec):600**Describe:**

Load Power : 0.020 kW
Load Current : 0.211 Arms
Nominal Voltage : 230.53 Vrms

Power Factor:0.408
Crest Factor:4.232

Test Result: pass **Status:** Test Completed

Result:

T-max (ms):	0.00	Test limit (ms):	500.00	Pass
Highest dc (%):	0.03	Test limit (%):	3.30	Pass
Highest dmax (%):	0.58	Test limit (%):	4.00	Pass
Highest Pst (10 min. period):	0.00	Test limit:	1.00	Pass

Adapter 2

Test duration (sec):600**Describe:**

Load Power : 0.020 kW
Load Current : 0.181 Arms
Nominal Voltage : 230.30 Vrms

Power Factor:0.435
Crest Factor:4.343

Test Result: pass **Status:** Test Completed

Result:

T-max (ms):	0.00	Test limit (ms):	500.00	Pass
Highest dc (%):	0.03	Test limit (%):	3.30	Pass
Highest dmax (%):	0.60	Test limit (%):	4.00	Pass
Highest Pst (10 min. period):	0.00	Test limit:	1.00	Pass

10. Immunity Test Of General The Performance Criteria

Performance Criteria of ETSI EN 301 489-1, sub clause 6

Criteria	Performance Criteria
CT/CR	During and after the test, the apparatus shall continue to operate as intended. No degradation of performance or loss of function is allowed below a permissible performance level specified by the manufacturer when the apparatus is used as intended. In some cases this permissible performance level may be replaced by a permissible loss of performance.
TT/TR	After the test, the apparatus shall continue to operate as intended. No degradation of performance or loss of function is allowed below a permissible performance level specified by the manufacturer, when the apparatus is used as intended. In some cases this permissible performance level may be replaced by a permissible loss of performance.

Performance Criteria of ETSI EN 301 489-3, sub clause 6

Criteria	Performance Criteria
CT/CR	For equipment with primary function type I or II including ancillary equipment tested on a stand alone basis, the performance criteria A of the applicable device type as given in clause 6.3 shall apply. For equipment with primary function type II or III that requires a communication link that is maintained during the test, it shall be verified by appropriate means supplied by the manufacturer that the communication link is maintained during each individual exposure in the test sequence. Where the EUT is a transmitter, tests shall be repeated with the EUT in standby mode to ensure that any unintentional transmission does not occur. Where the EUT is a transceiver, under no circumstances shall the transmitter operate unintentionally during the test.
TT/TR	For equipment with primary function type I or II, including ancillary equipment tested on a stand alone basis, the performance criteria B of the applicable device type as given in clause 6.3 shall apply, except for power interruptions exceeding a certain time the performance criteria deviations are specified in clause 7.2.2. For equipment with primary function type II or III that requires a communication link that is maintained during the test, this shall be verified by appropriate means supplied by the manufacturer during each individual exposure in the test sequence. Where the EUT is a transmitter, tests shall be repeated with the EUT in standby mode to ensure that any unintentional transmission does not occur. Where the EUT is a transceiver, under no circumstances shall the transmitter operate unintentionally during the test.

Performance Criteria of ETSI EN 301 489-17, sub clause 6

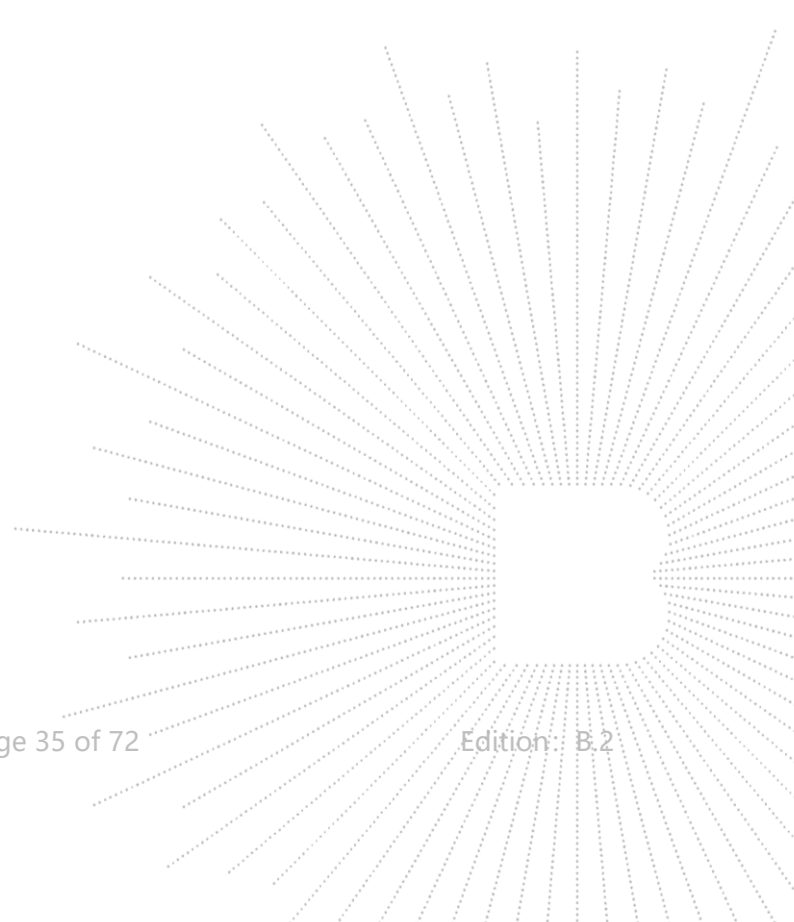
Criteria	Performance Criteria
CT/CR	The performance criteria A shall apply. Tests shall be repeated with the EUT in standby mode (if applicable) to ensure that unintentional transmission does not occur. In systems using acknowledgement signals, it is recognized that an acknowledgement (ACK) or Not acknowledgement (NACK) transmission may occur, and steps should be taken to ensure that any transmission resulting from the application of the test is correctly interpreted.
TT/TR	The performance criteria B shall apply, except for voltage dips of 100 ms and voltage interruptions of 5 000 ms duration, for which performance criteria C shall apply. Tests shall be repeated with the EUT in standby mode (if applicable) to ensure that unintentional transmission does not occur. In systems using acknowledgement signals, it is recognized that an acknowledgement (ACK) or not-acknowledgement (NACK) transmission may occur, and steps should be taken to ensure that any transmission resulting from the application of the test is correctly interpreted.

Performance Criteria of ETSI EN 301 489-19, sub clause 6

Criteria	Performance Criteria
CT/CR	The performance criteria A shall apply. Tests shall be repeated with the EUT in standby mode (if applicable) to ensure that unintentional transmission does not occur. In systems using acknowledgement signals, it is recognized that an acknowledgement (ACK) or Not acknowledgement (NACK) transmission may occur, and steps should be taken to ensure that any transmission resulting from the application of the test is correctly interpreted.
TT/TR	The performance criteria B shall apply, except for voltage dips of 100 ms and voltage interruptions of 5 000 ms duration, for which performance criteria C shall apply. Tests shall be repeated with the EUT in standby mode (if applicable) to ensure that unintentional transmission does not occur. In systems using acknowledgement signals, it is recognized that an acknowledgement (ACK) or not-acknowledgement (NACK) transmission may occur, and steps should be taken to ensure that any transmission resulting from the application of the test is correctly interpreted.

Performance Criteria of ETSI EN 301 489-52, sub clause 6

Criteria	Performance Criteria
CT/CR	<p>A communication link shall be established at the start of the test, and maintained during the test, see clauses 4.2.2 to 4.2.5.</p> <p>During the test, the uplink speech output level shall be at least 35 dB less than the previously recorded reference levels, when measured through an audio band pass filter of width 200 Hz, centred on 1 kHz (audio breakthrough check).</p> <p>NOTE: When there is a high level background noise present the filter bandwidth can be reduced down to a minimum of 40 Hz.</p> <p>At the conclusion of the test, the EUT shall operate as intended with no loss of user control functions or stored data, and the communication link shall have been maintained. In addition to confirming the above performance during a call, the test shall also be performed in idle mode, and the transmitter shall not unintentionally operate.</p>
TT/TR	<p>A communications link shall be established at the start of the test, see clauses 4.2.2 to 4.2.5.</p> <p>At the conclusion of each exposure the EUT shall operate with no user noticeable loss of the communication link.</p> <p>At the conclusion of the total test comprising the series of individual exposures, the EUT shall operate as intended with no loss of user control functions or stored data, as declared by the manufacturer, and the communication link shall have been maintained.</p> <p>In addition to confirming the above performance during a call, the test shall also be performed in idle mode, and the transmitter shall not unintentionally operate.</p>

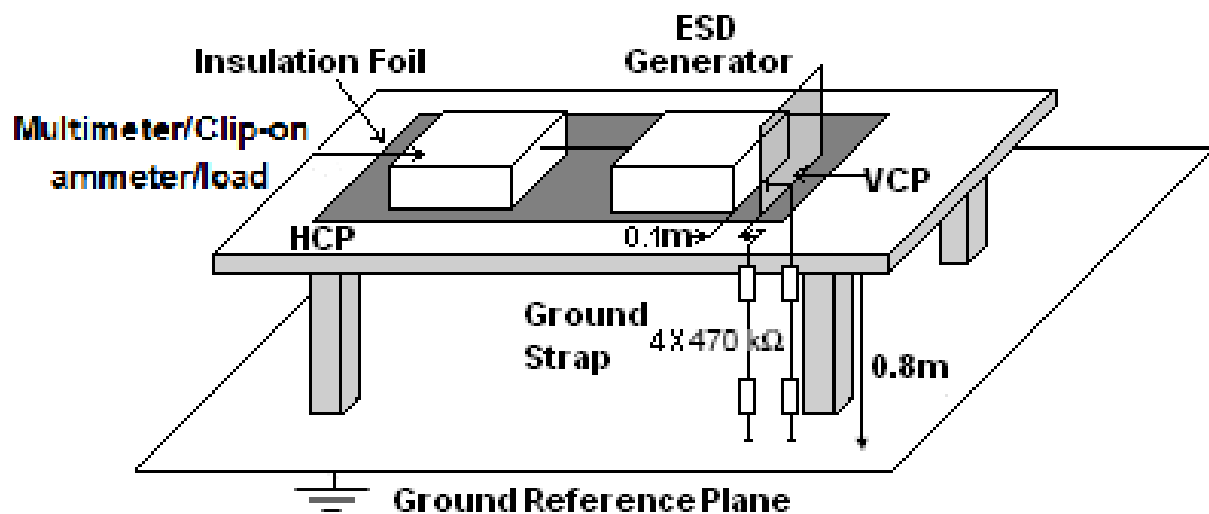


11. Electrostatic Discharge (ESD)

11.1 Test Specification

Test Port	: Enclosure port
Discharge Impedance	: 330 ohm / 150 pF
Discharge Mode	: Single Discharge
Discharge Period	: one second between each discharge

11.2 Block Diagram Of Test Setup



11.3 Test Procedure

- Electrostatic discharges were applied only to those points and surfaces of the Product that are accessible to users during normal operation.
- The test was performed with at least ten single discharges on the pre-selected points in the most sensitive polarity.
- The time interval between two successive single discharges was at least 1 second.
- The ESD generator was held perpendicularly to the surface to which the discharge was applied and the return cable was at least 0.2 meters from the Product.
- Contact discharges were applied to the non-insulating coating, with the pointed tip of the generator penetrating the coating and contacting the conducting substrate.
- Air discharges were applied with the round discharge tip of the discharge electrode approaching the Product as fast as possible (without causing mechanical damage) to touch the Product. After each discharge, the ESD generator was removed from the Product and re-triggered for a new single discharge. The test was repeated until all discharges were complete.

11.4 Test Results

Temperature:	24.2 °C	Relative Humidity:	51%
Pressure:	101KPa	Test Mode:	The worst data

Mode	Air Discharge (Test result)								Contact Discharge (Test result)								Perform Criteria	Judgment
Test level (kV)	2		4		8		15		2		4		6		8			
Test Location	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-		
HCP									A	A	A	A					TT,TR	PASS
VCP									A	A	A	A					TT,TR	PASS
Metal parts									A	A	A	A					TT,TR	PASS
Port									A	A	A	A					TT,TR	PASS
enclosure	A	A	A	A	A	A											TT,TR	PASS
Keys	A	A	A	A	A	A											TT,TR	PASS
screen	A	A	A	A	A	A											TT,TR	PASS

Note:

- 1) P/N denotes the Positive/Negative polarity of the output voltage.
- 2) Test condition:
Direct / Indirect (HCP/VCP) discharges: Minimum 50 times (Positive/Negative) at each point.
Air discharges: Minimum 10 times (Positive/Negative) at each point.
- 3) N/A - denotes test is not applicable in this test report
- 4) There was not any unintentional transmission in standby mode

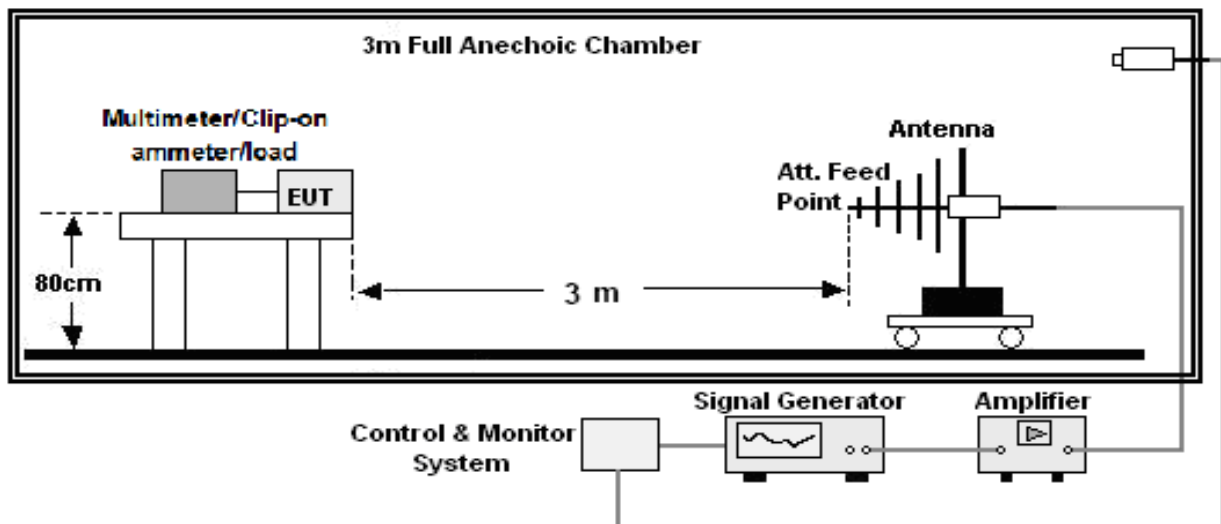
12. Continuous RF Electromagnetic Field Disturbances(RS)

12.1 Test Specification

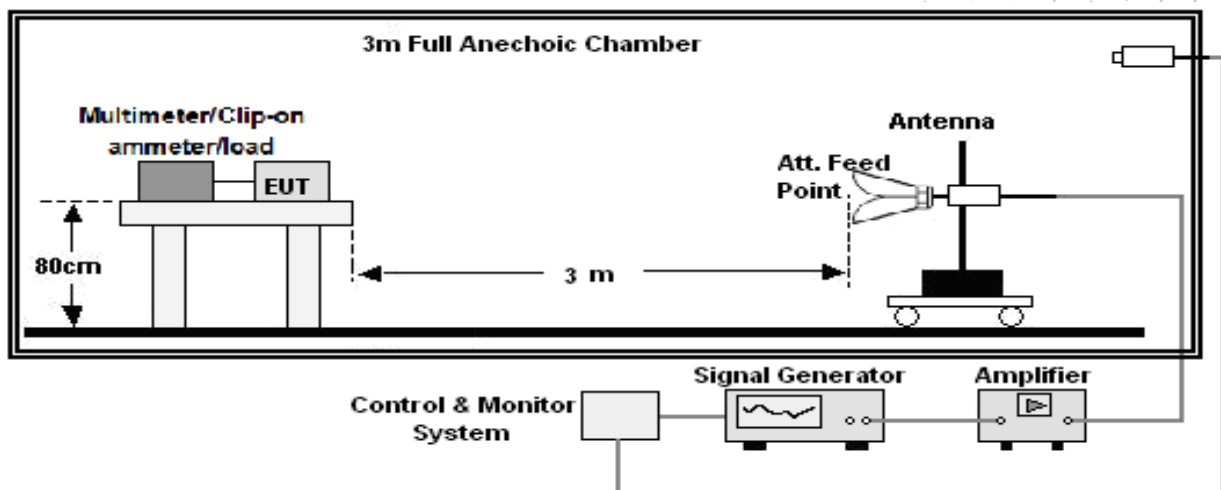
Test Port	: Enclosure port
Step Size	: 1%
Modulation	: 1kHz, 80% AM
Dwell Time	: 1 second
Polarization	: Horizontal & Vertical

12.2 Block Diagram Of Test Setup

Below 1GHz:



Above 1GHz:



12.3 Test Procedure

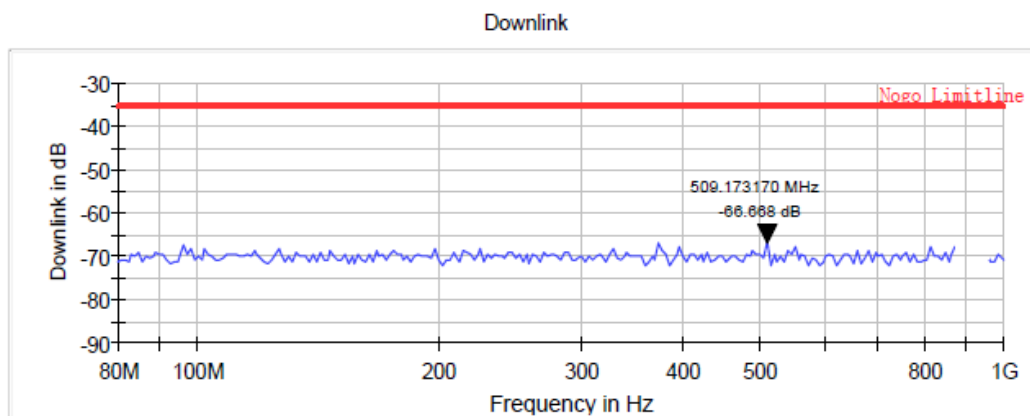
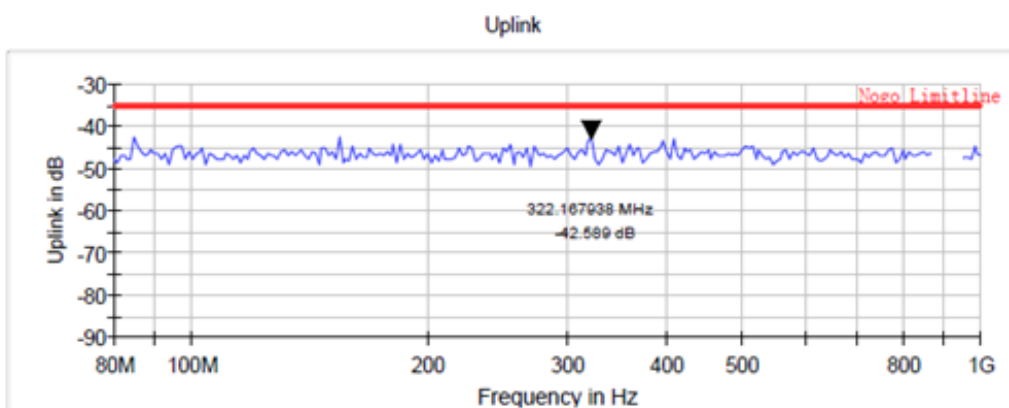
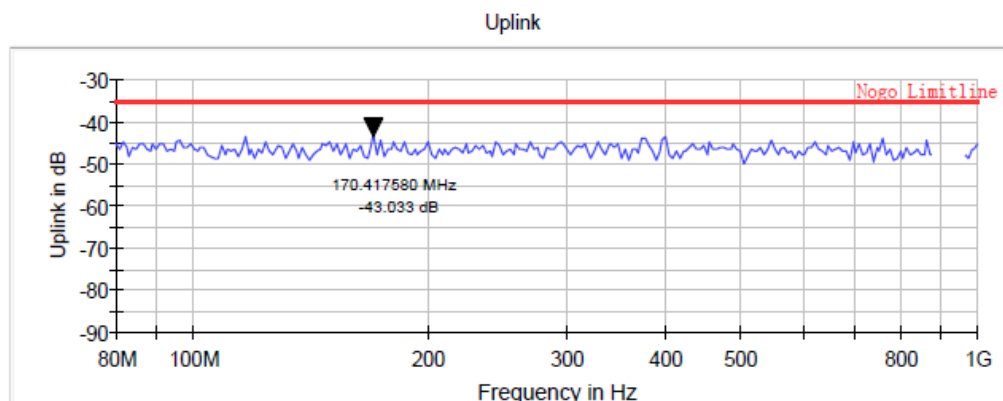
- The testing was performed in a fully-anechoic chamber. The transmit antenna was located at a distance of 3 meters from the Product.
- The frequency range is swept from 80MHz to 6000MHz, with the signal 80% amplitude modulated with a 1 kHz sine wave, and the step size was 1%.
- The dwell time at each frequency shall not be less than the time necessary for the EUT to be exercised and to be able to respond, but should not exceed 5 s at each of the frequencies during the scan.
- The test was performed with the Product exposed to both vertically and horizontally polarized fields on each of the four sides.
- For Broadcast reception function: Group 2 not apply in this test.

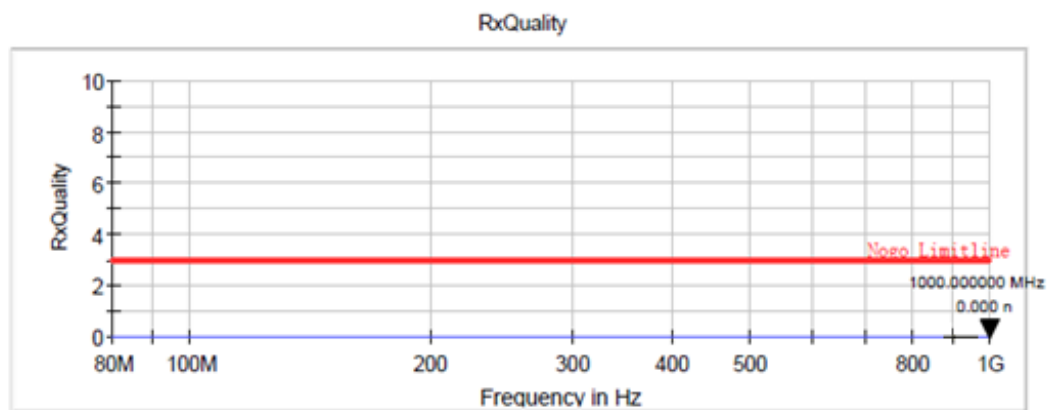
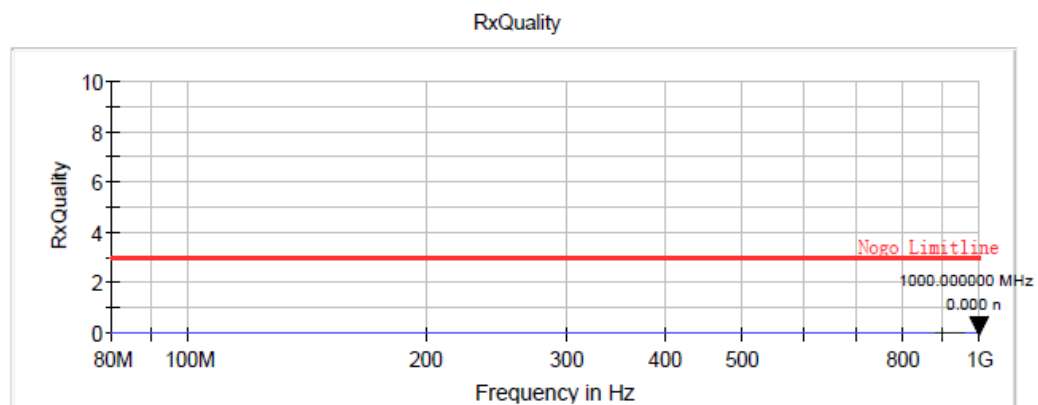
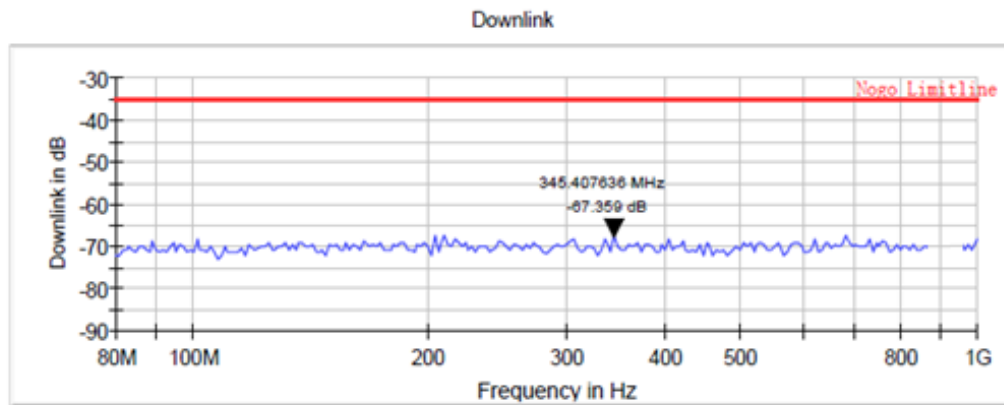
12.4 Test Results

Temperature:	24.1 °C	Relative Humidity:	41%
Pressure:	101KPa	Test Mode:	The worst data

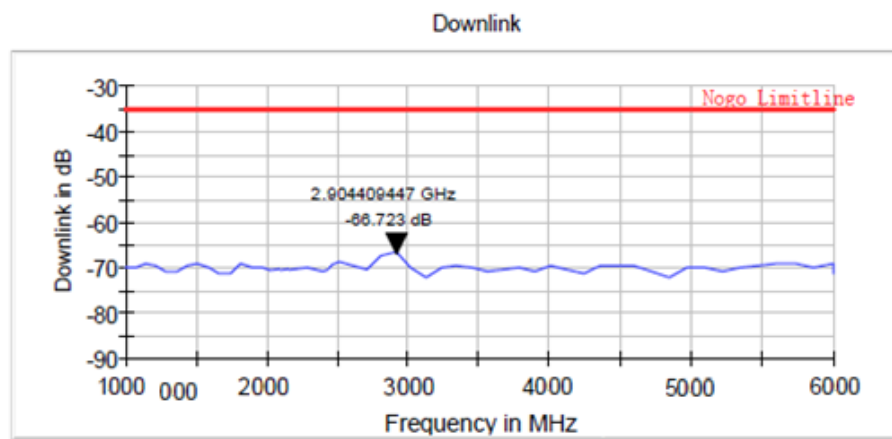
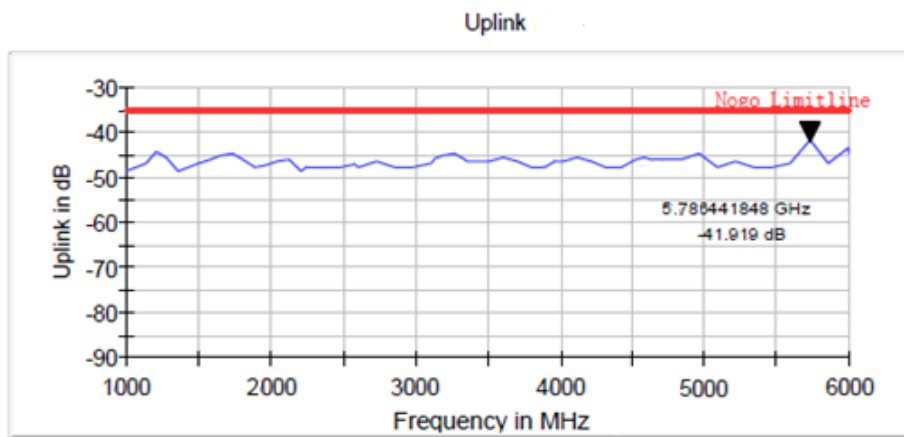
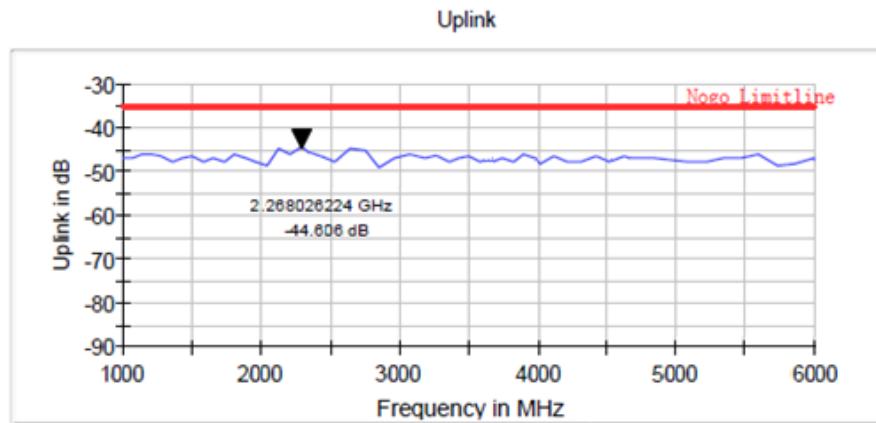
Frequency Range (MHz)	RF Field Position	R.F. Field Strength	Azimuth	Perform Criteria	Judgment
80~6000	H / V	3 V/m (rms) AM Modulated 1000Hz, 80%	Front	CT,CR	PASS
			Rear		
			Left		
			Right		

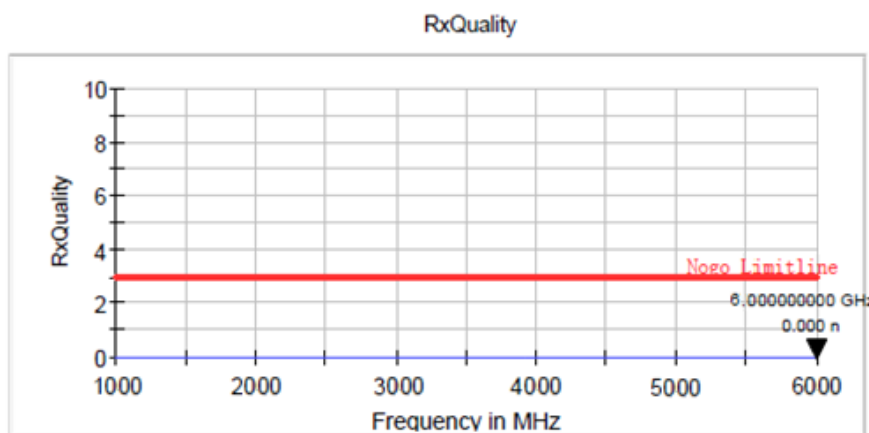
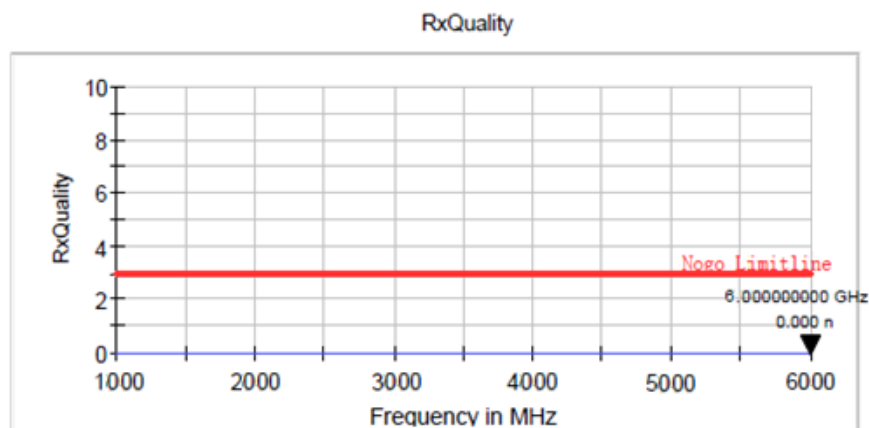
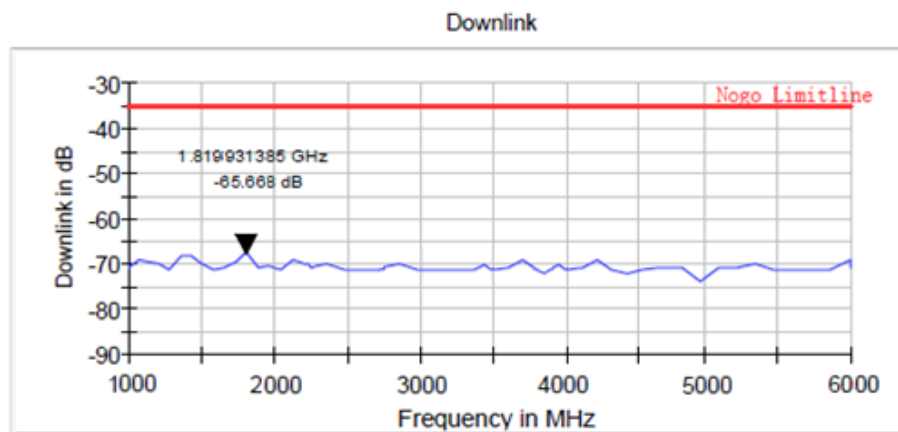
Data of below 1G:
GSM900



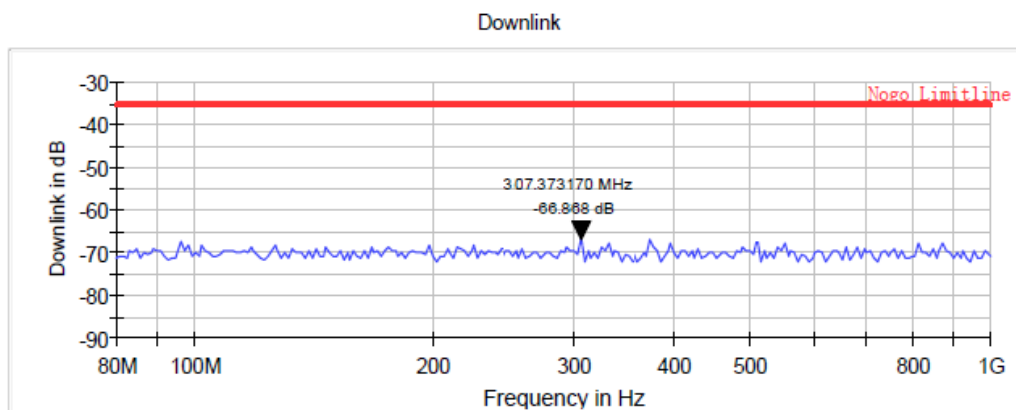
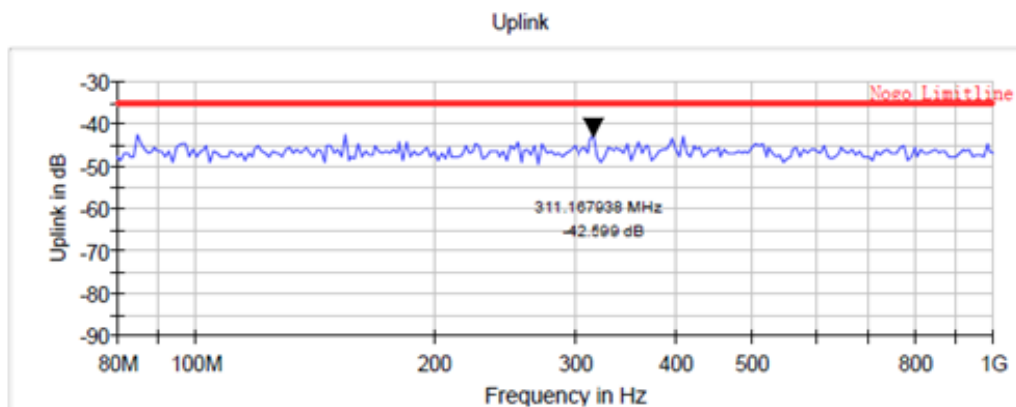
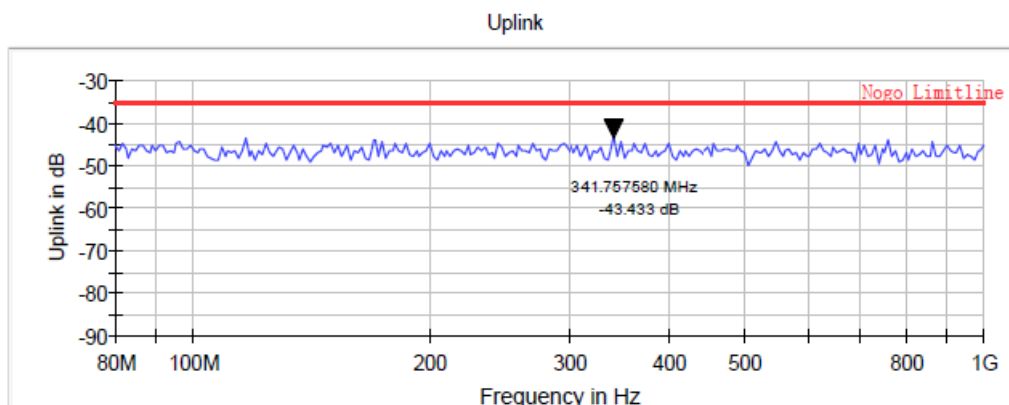


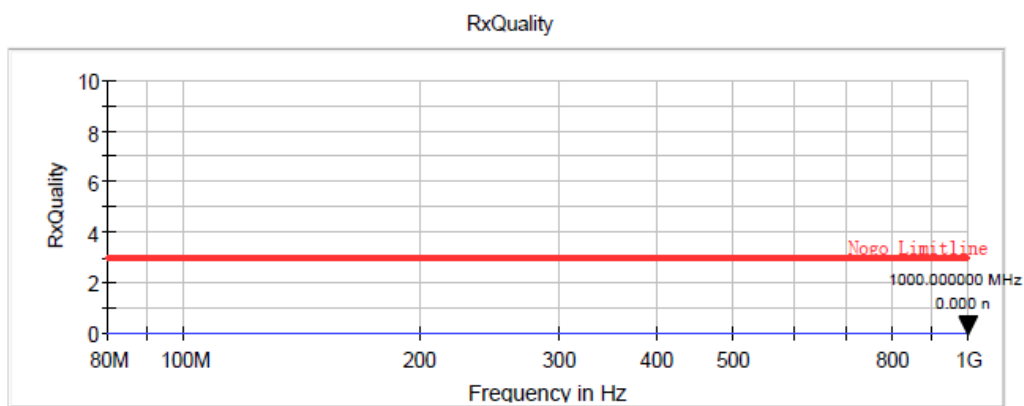
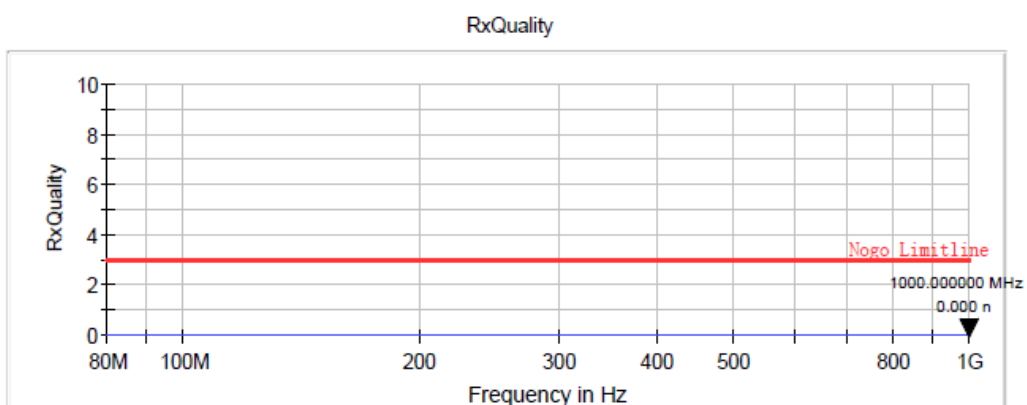
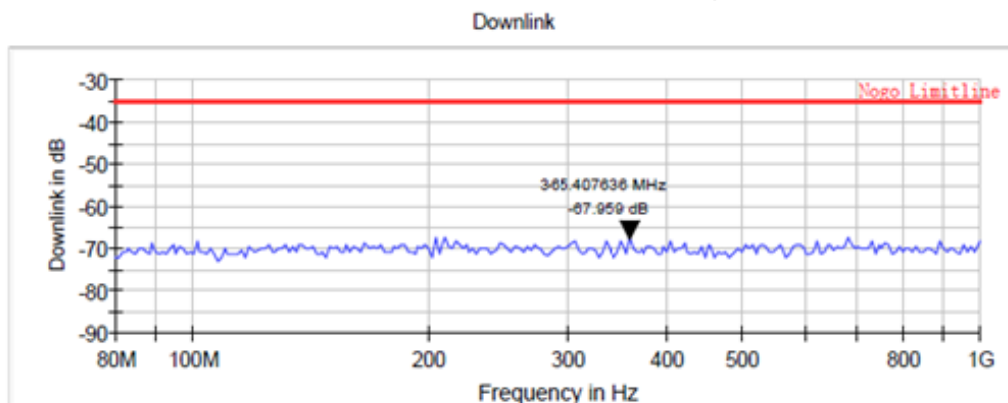
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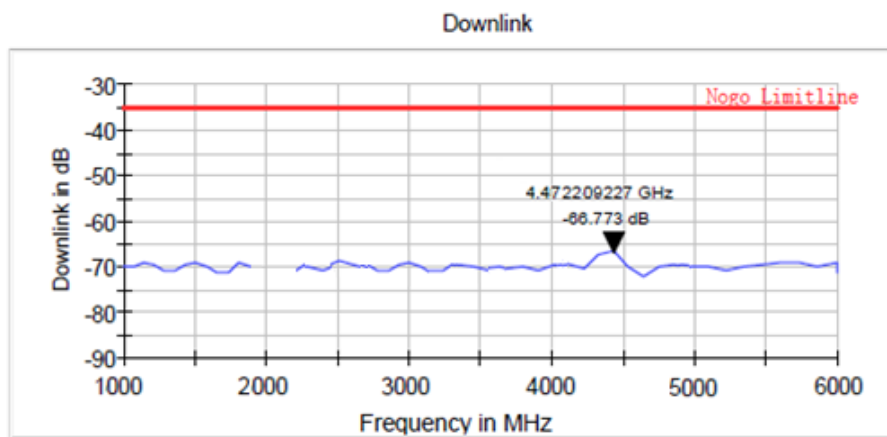
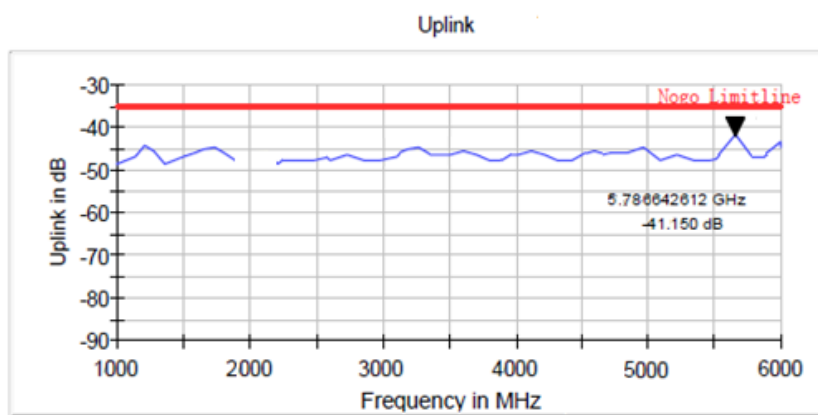
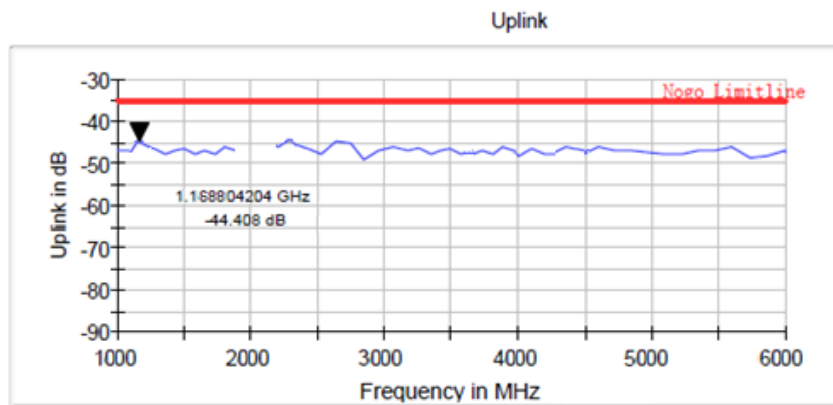


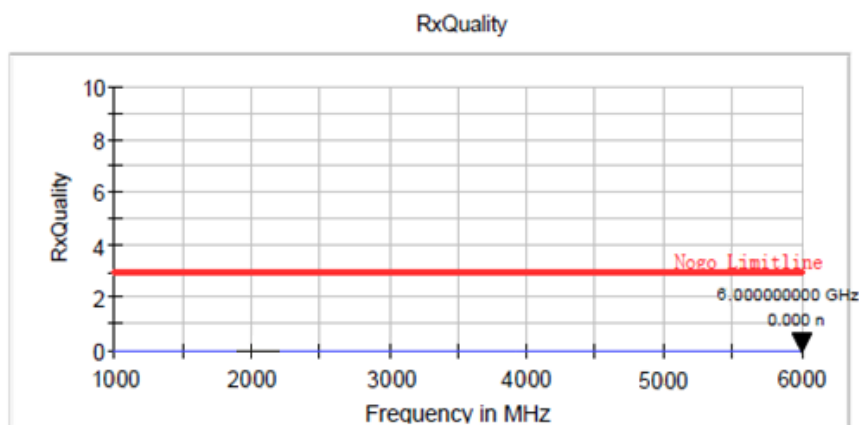
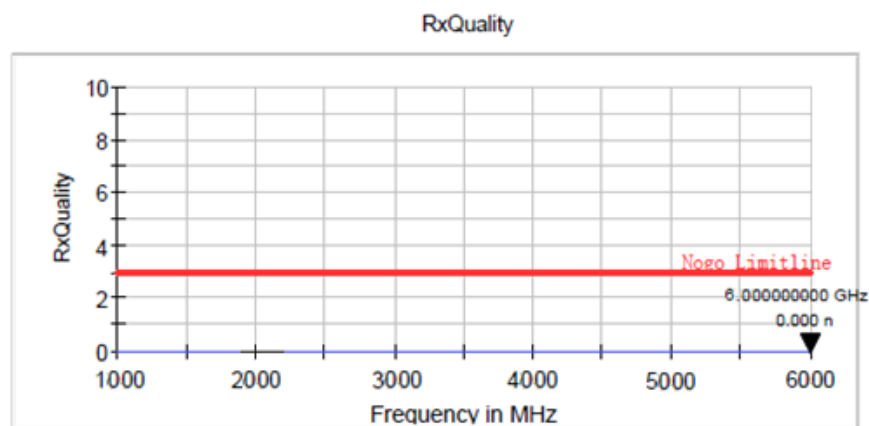
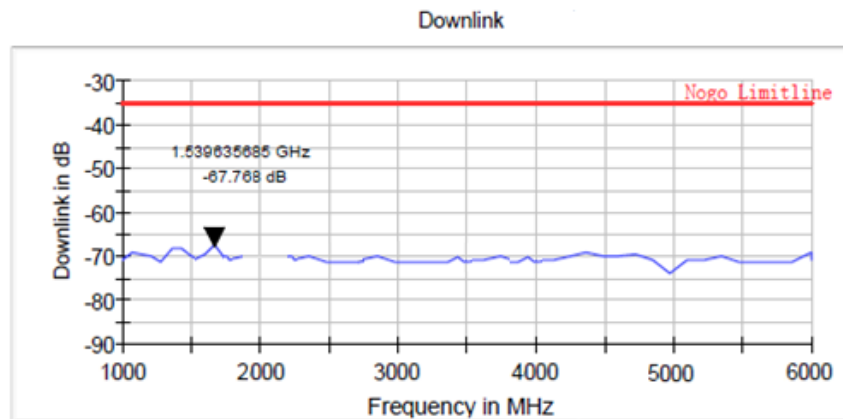
Data of below 1G:
WCDMA-BAND 1



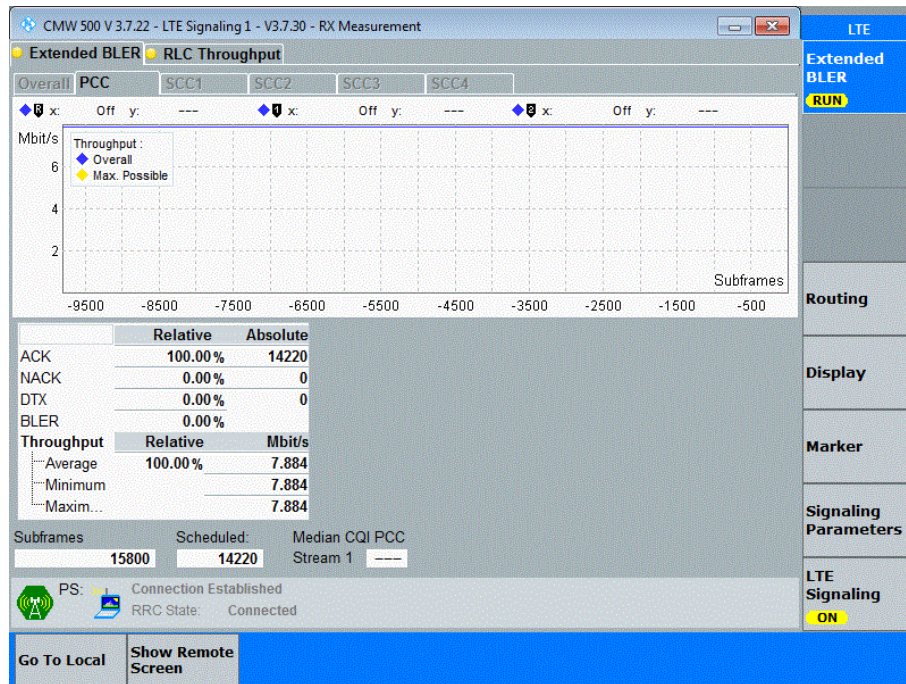


Data of above 1G:

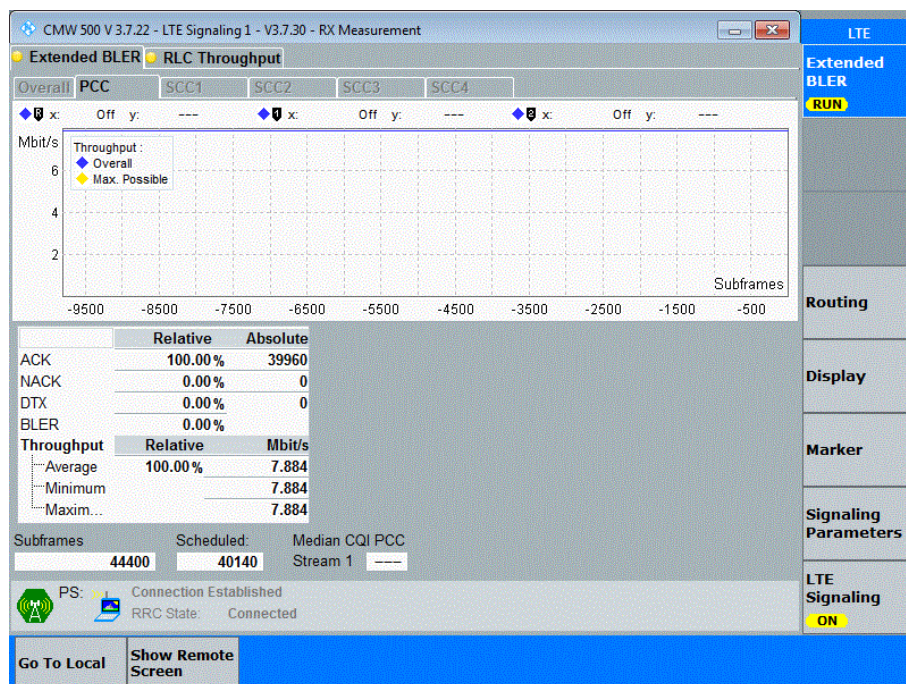




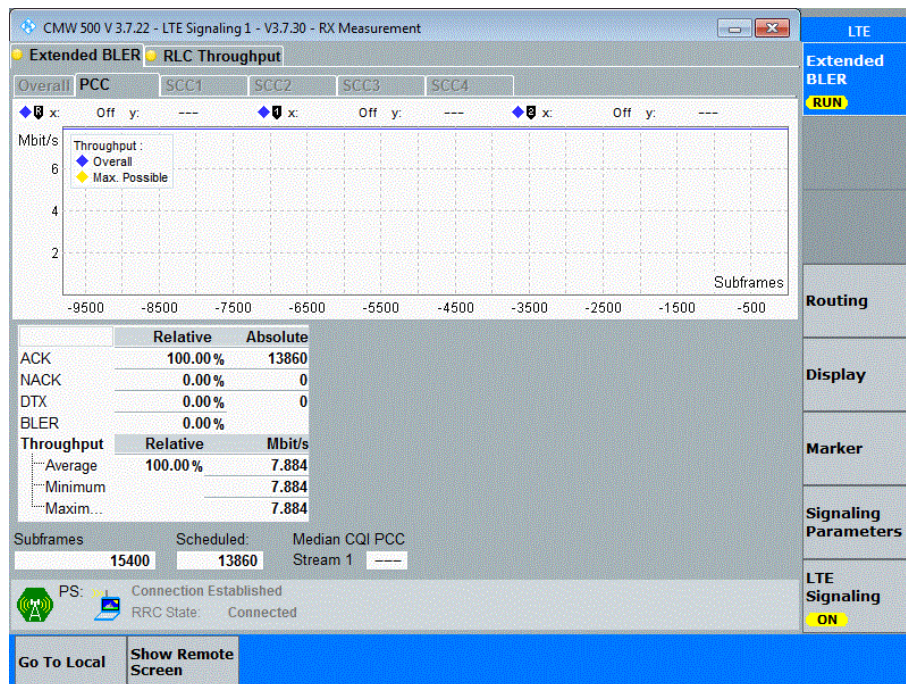
LTE Band 1



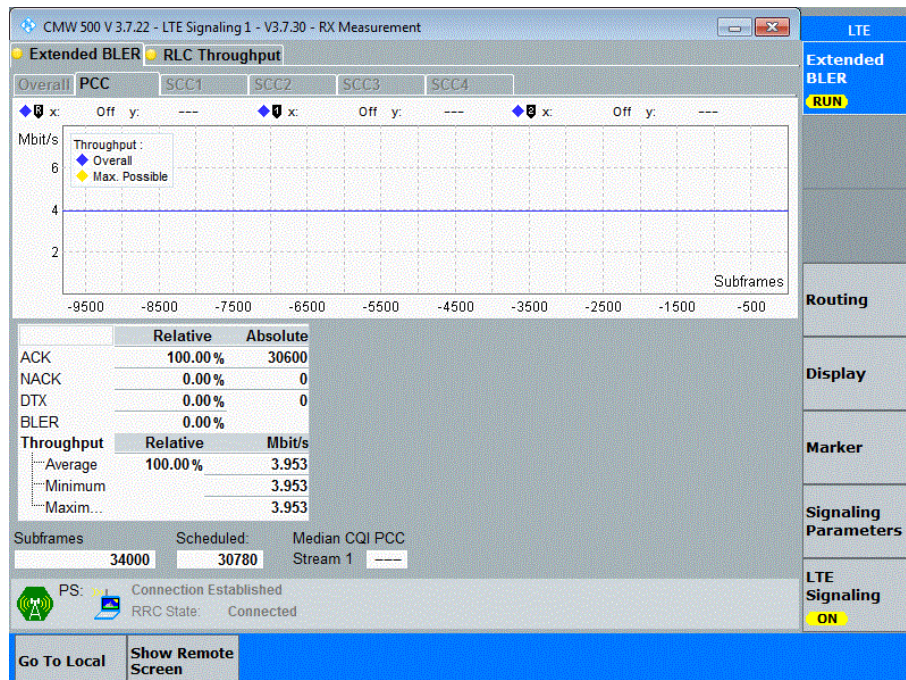
LTE Band 3



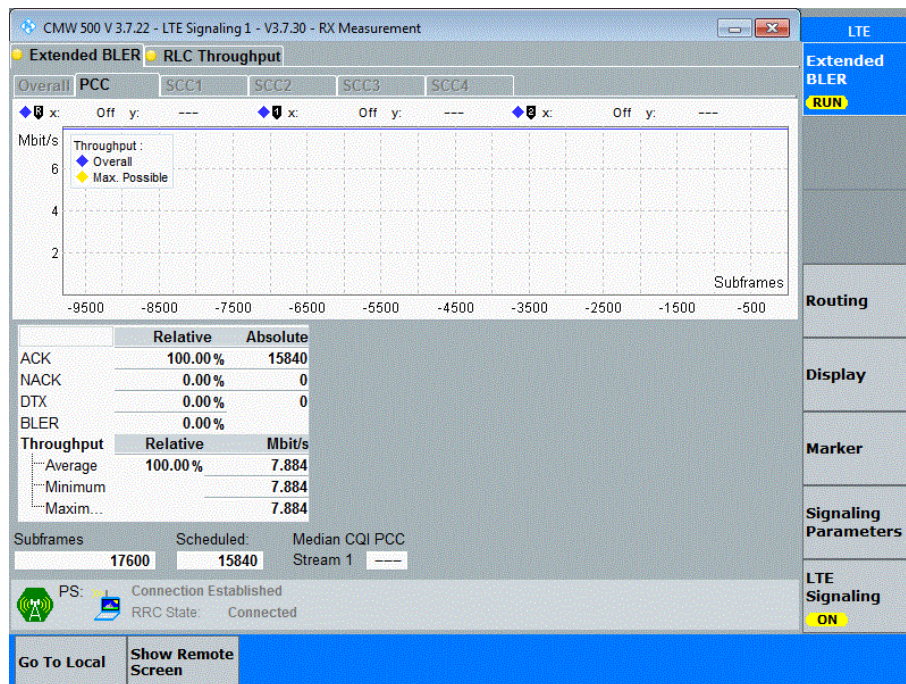
LTE Band 7



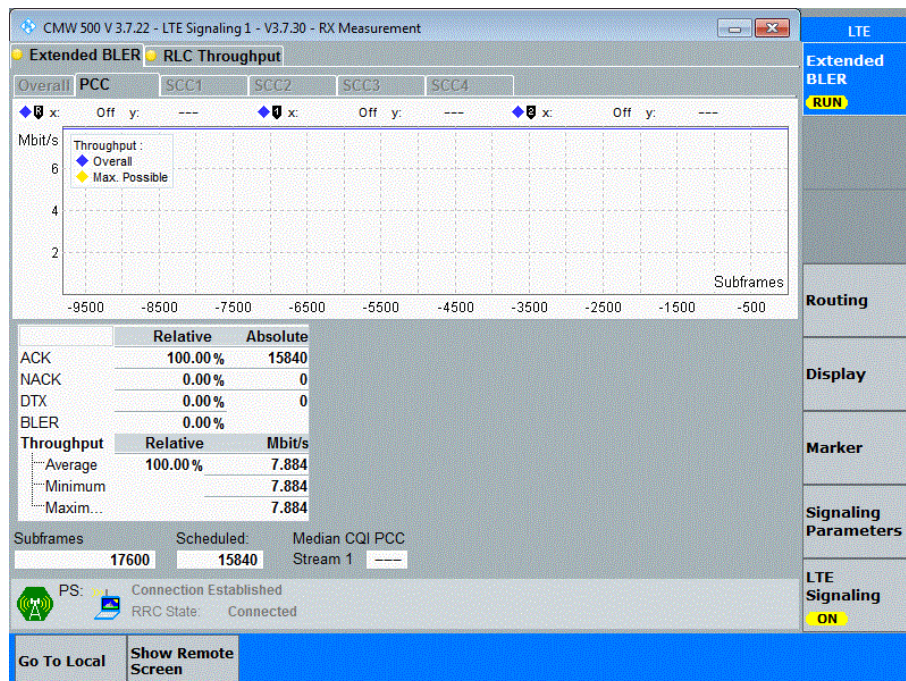
LTE Band 8



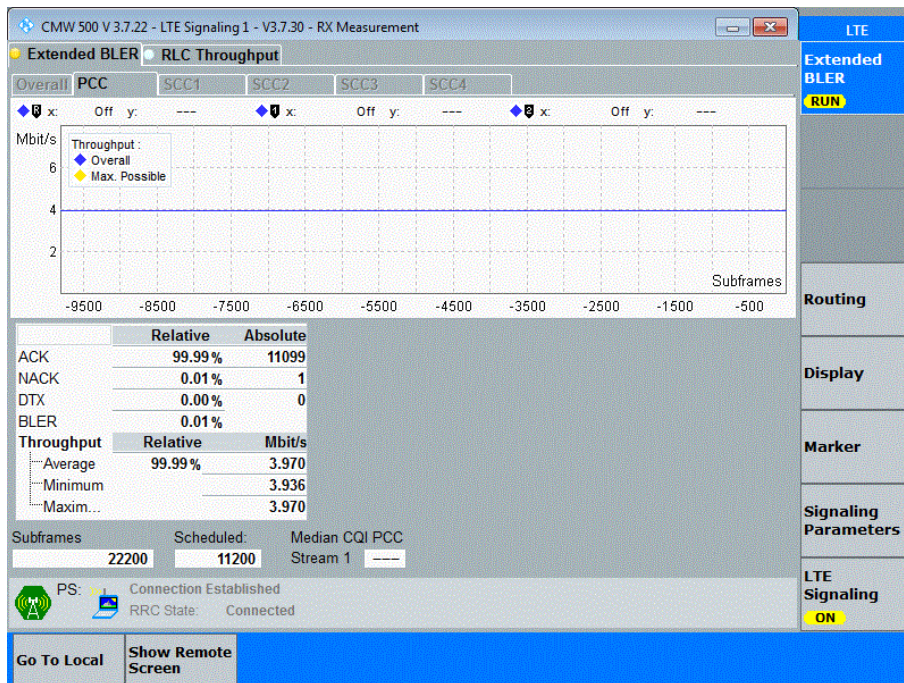
LTE Band 20



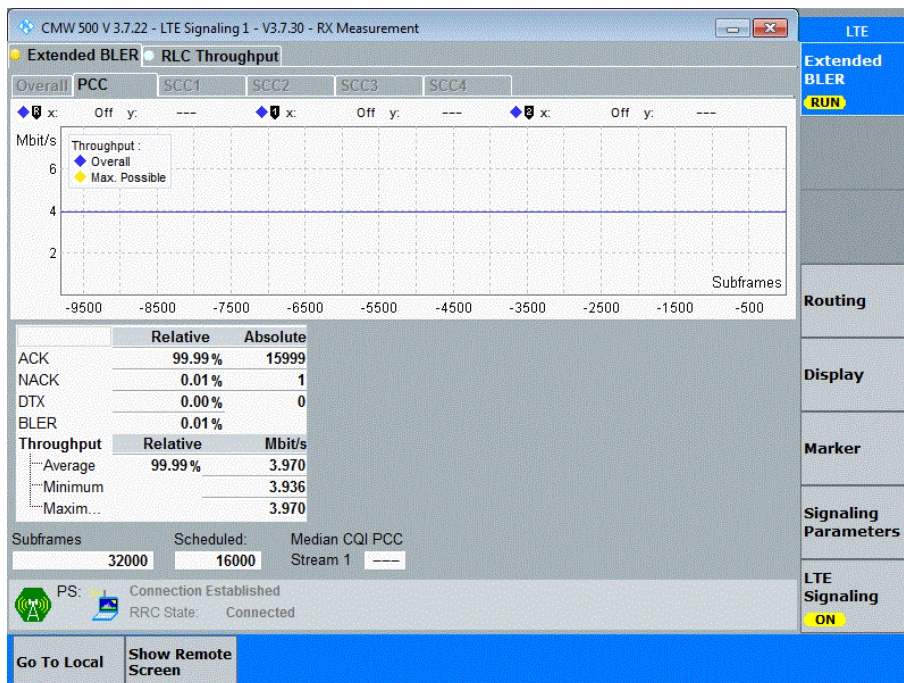
LTE Band 28



LTE Band 38



LTE Band 40



GPS

EUT Working Mode	Antenna Polarity	Frequency(MHz)	Fielded Strength(V/m)	Obserbation	Position	Conclusion
Operating Mode	Vertical	80-6000	3	CR	Front, Right, Left, Back	PASS
	Horizontal	80-6000	3	CR	Front, Right, Left, Back	PASS
	Vertical	80MHz,104MHz, 136MHz,165MHz, 200MHz,260MHz, 330MHz,430MHz 560MHz, 715MHz±1MHz, 920MHz±1MHz (spot test)	3	CR	Front, Right, Left, Back	PASS
	Horizontal	80MHz,104MHz, 136MHz,165MHz, 200MHz,260MHz, 330MHz,430MHz 560MHz, 715MHz±1MHz, 920MHz±1MHz (spot test)	3	CR	Front, Right, Left, Back	PASS

Note:

- 1) P/N denotes the Positive/Negative polarity of the output voltage.
- 2) N/A - denotes test is not applicable in this test report.
- 3) There was no change operated with initial operating during the test.
- 4) There was not any unintentional transmission in standby mode
- 5) The test data shows only the worst patterns.

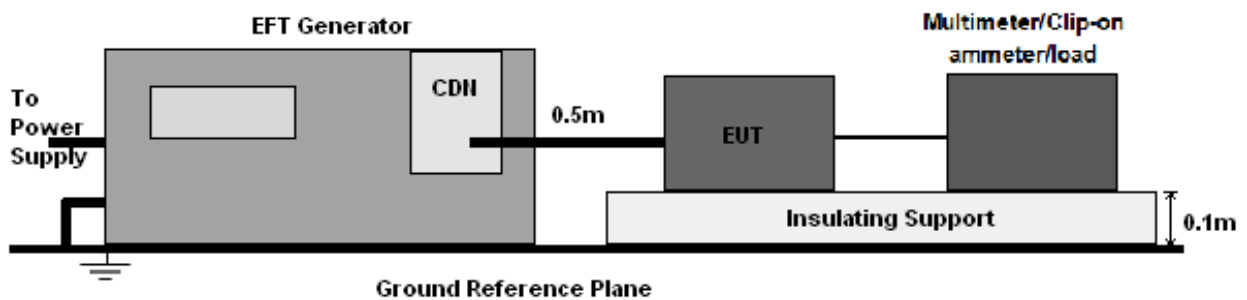
13. Electrical Fast Transients/Burst (EFT)

13.1 Test Specification

Test Port	: input AC/DC power port
Impulse Frequency	: 5 kHz
Impulse Wave-shape	: 5/50 ns
Burst Duration	: 15 ms
Burst Period	: 300 ms
Test Duration	: 2 minutes per polarity

13.2 Block Diagram Of EUT Test Setup

For input AC/DC power port:



13.3 Test Procedure

- The Product and support units were located on a non-conductive table above ground reference plane.
- A 0.5m-long power cord was attached to Product during the test.

13.4 Test Results

Temperature:	24.1 °C	Relative Humidity:	55%
Pressure:	101KPa	Test Mode:	The worst data

Coupling Line		Test level (KV)I								Perform Criteria	Judgment
		0.5		1		2		4			
		+	-	+	-	+	-	+	-		
AC Line	L			A	A					TT,TR	PASS
	N			A	A						PASS
	L+N			A	A						PASS
	PE										
	L+PE										
	N+PE										
	L+N+PE										
DC Line											
Signal Line											

Note:

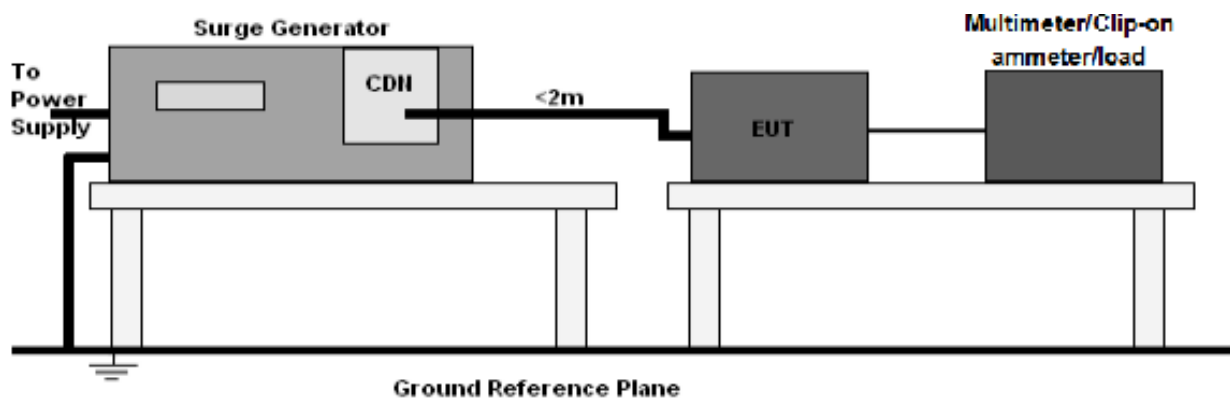
- 1) P/N denotes the Positive/Negative polarity of the output voltage.
- 2) N/A - denotes test is not applicable in this test report.
- 3) There was not any unintentional transmission in standby mode

14. Surges Immunity Test

14.1 Test Specification

Test Port	: input AC/DC power port
Wave-Shape	: Open Circuit Voltage - 1.2 / 50 us Short Circuit Current - 8 / 20 us
Pulse Repetition Rate	: 1 pulse / min.
Phase Angle	: 0° / 90° / 180° / 270°
Test Events	: 5 pulses (positive & negative) for each polarity

14.2 Block Diagram Of EUT Test Setup



14.3 Test Procedure

- The surge is to be applied to the Product power supply terminals via the capacitive coupling network. Decoupling networks are required in order to avoid possible adverse effects on equipment not under test that may be powered by the same lines, and to provide sufficient decoupling impedance to the surge wave.
- The power cord between the Product and the coupling/decoupling networks shall be 2 meters in length (or shorter). Interconnection line between the Product and the coupling/decoupling networks shall be 2 meters in length (or shorter).

14.4 Test Result

Temperature:	24.1 °C	Relative Humidity:	55%
Pressure:	101KPa	Test Mode:	The worst data

Coupling Line			Test level (KV) Test Result								Perform Criteria	Judgme nt
			0.5		1		2		4			
			+	-	+	-	+	-	+	-		
AC Line	L-N	0°			A	A					TT,TR	PASS
		90°			A	A						
		180°			A	A						
		270°			A	A						
	L-PE	0°										
		90°										
		180°										
		270°										
	N-PE	0°										
		90°										
		180°										
		270°										
DC Line												
Signal Line												

Note:

- 1) Polarity and Numbers of Impulses: 5 Pst / Ngt at each tested mode
- 2) N/A - denotes test is not applicable in this Test Report
- 3) There was not any unintentional transmission in standby mode

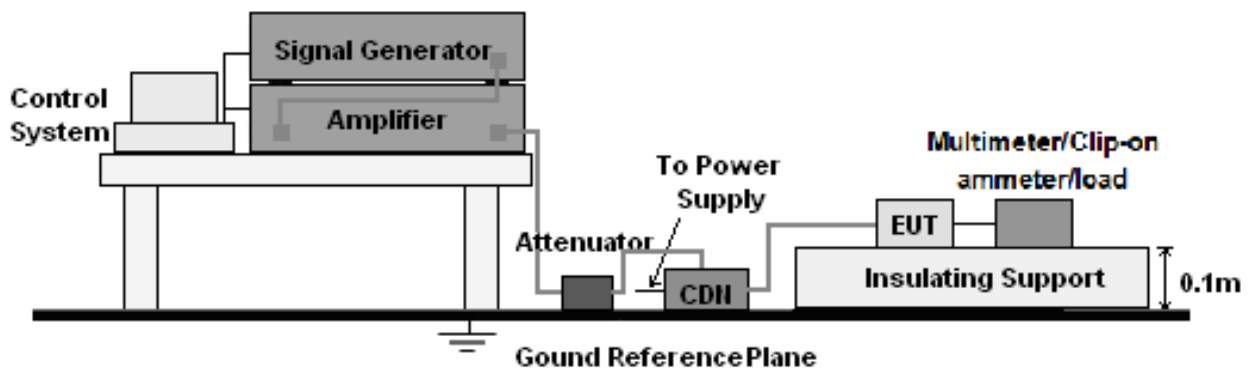
15. Continuous Induced RF Disturbances (CS)

15.1 Test Specification

Test Port	:	input AC/DC. power port
	:	analogue/digital data port
Step Size	:	1%
Modulation	:	1kHz, 80% AM
Dwell Time	:	1 second

15.2 Block Diagram Of EUT Test Setup

For input AC/DC power port:



15.3 Test Procedure

For input AC/DC power port:

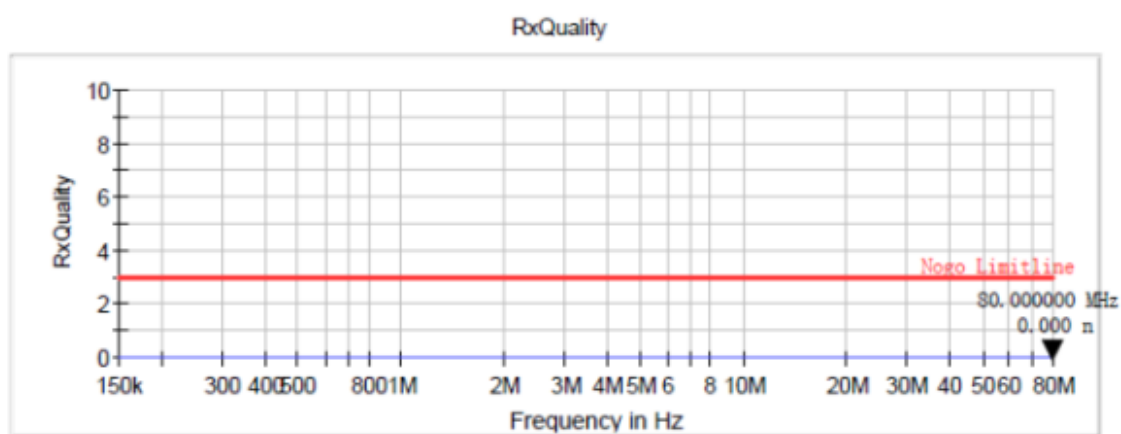
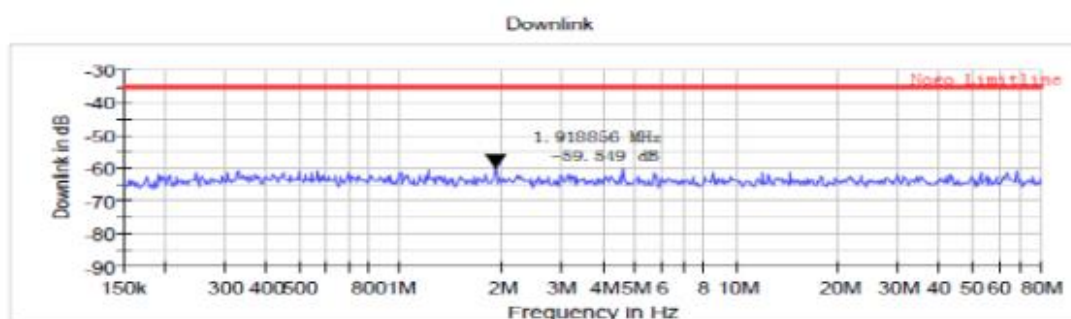
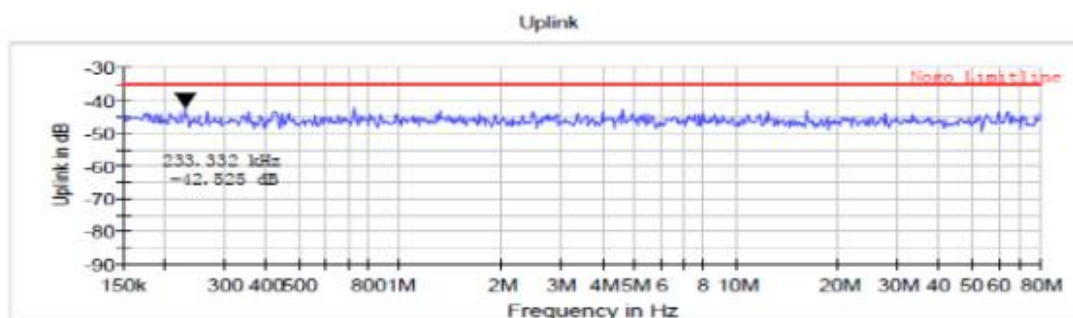
- The Product and support units were located at a ground reference plane with the interposition of a 0.1 m thickness insulating support and the CDN was located on GRP directly.
- The frequency range is swept from 150 kHz to 10MHz, 10MHz to 30MHz, 30MHz to 80MHz with the signal 80% amplitude modulated with a 1 kHz sine wave, and the step size was 1% of fundamental.
- The dwell time at each frequency shall be not less than the time necessary for the Product to be able to respond.

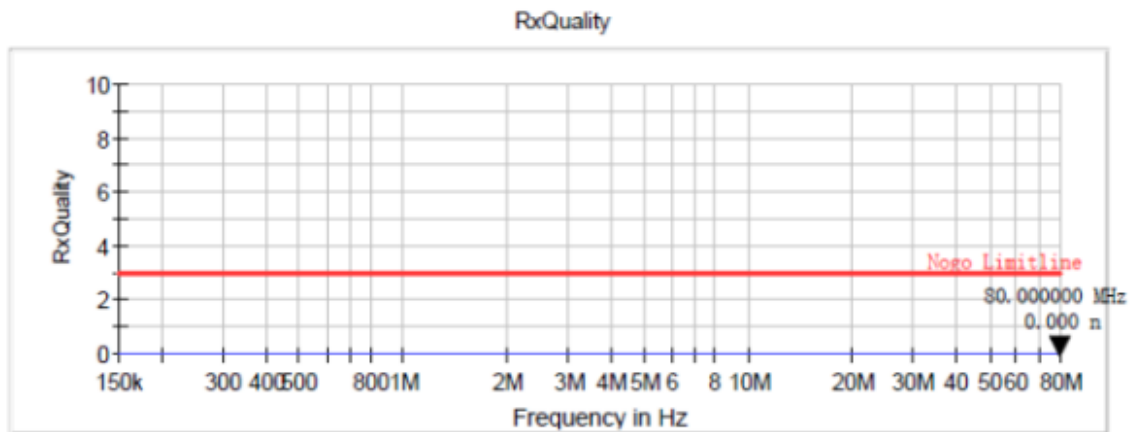
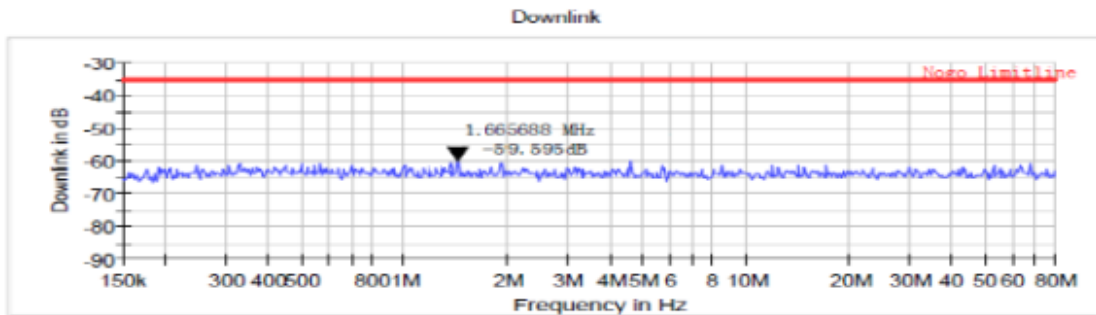
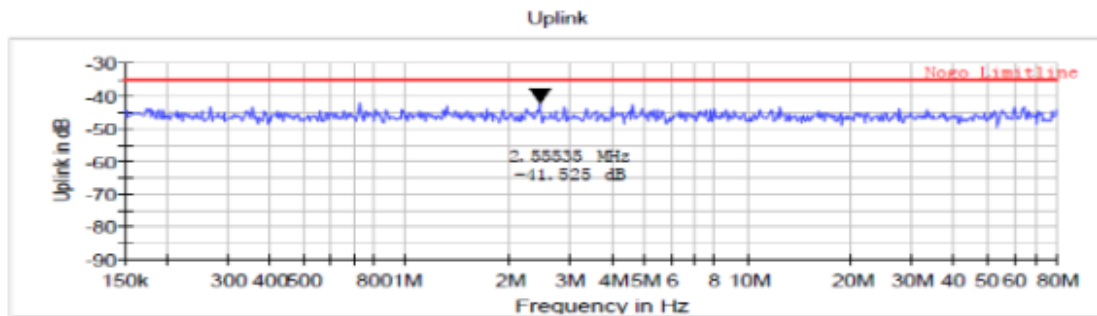
15.4 Test Result

Temperature:	24.1 °C	Relative Humidity:	55%
Pressure:	101KPa	Test Mode:	The worst data

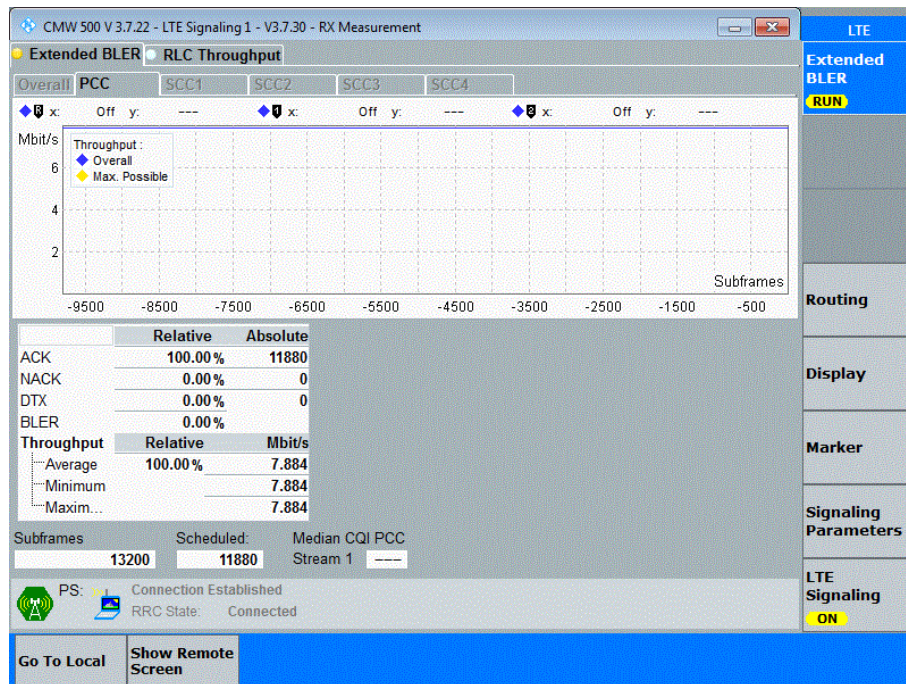
Test Ports (Mode)	Freq. Range (MHz)	Field Strength Azimuth	Perform Criteria	Judgment
Input/ Output AC. Power Port	0.15-80	3 V/m (rms) AM Modulated 1000Hz, 80%	CT,CR	PASS
Input/ Output DC. Power Port	0.15-80		N/A	N/A
Signal Line	0.15-80		N/A	N/A

Note: The test data shows only the worst patterns.

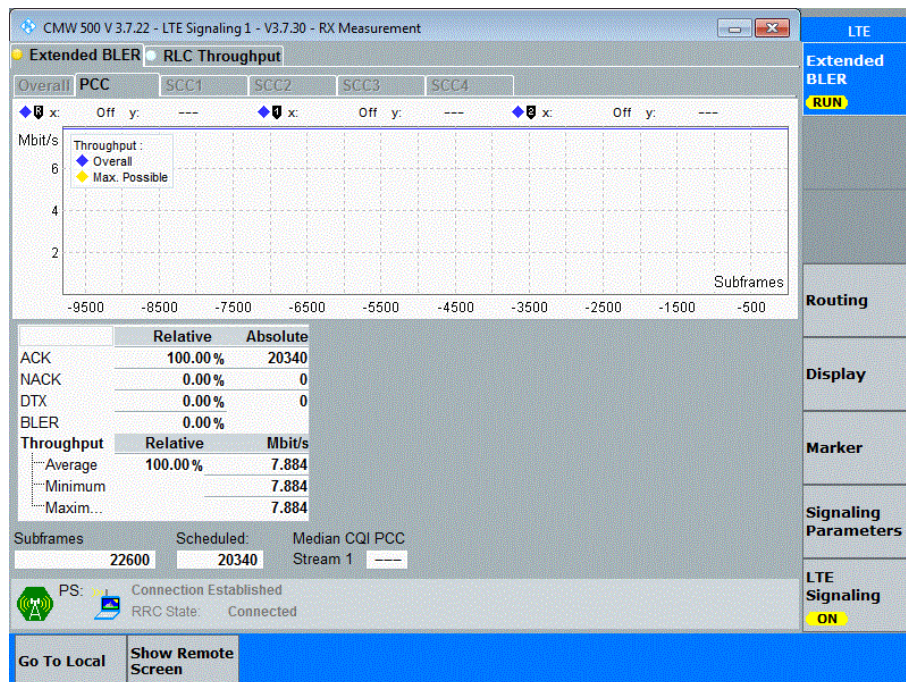
GSM900


WCDMA-BAND1


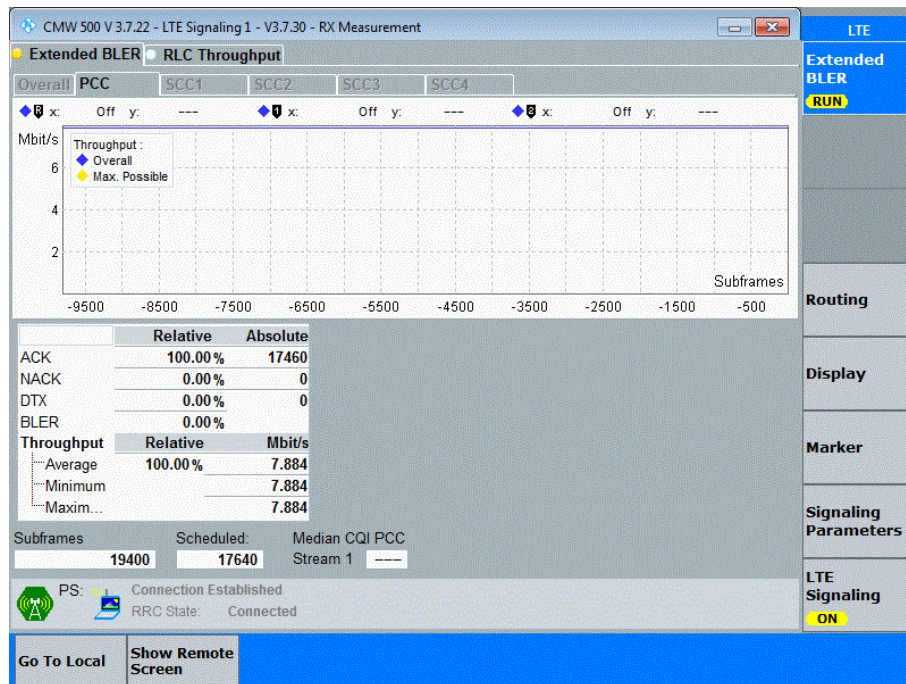
LTE Band 1



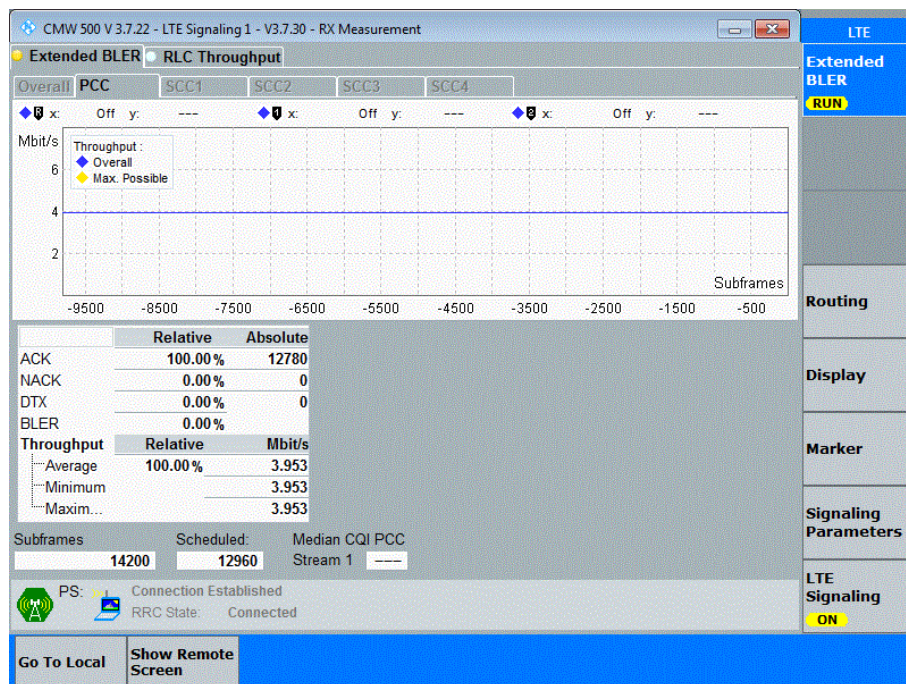
LTE Band 3



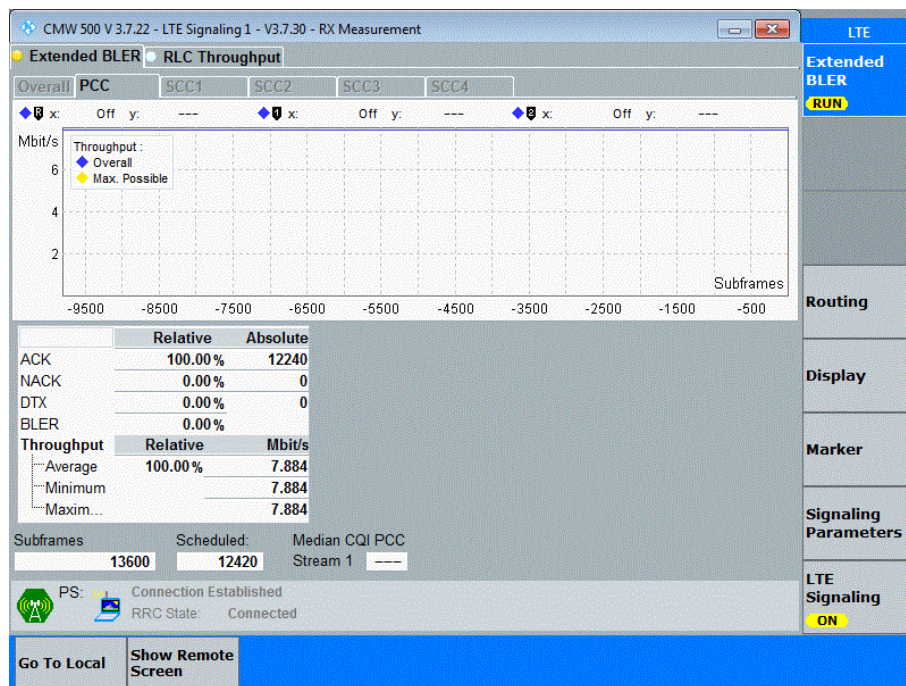
LTE Band 7



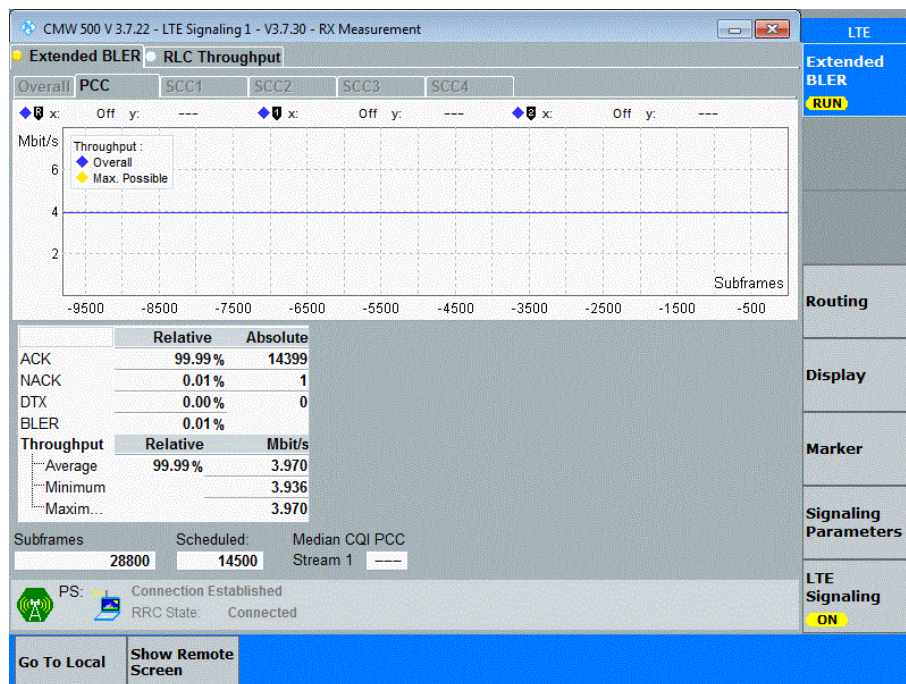
LTE Band 8



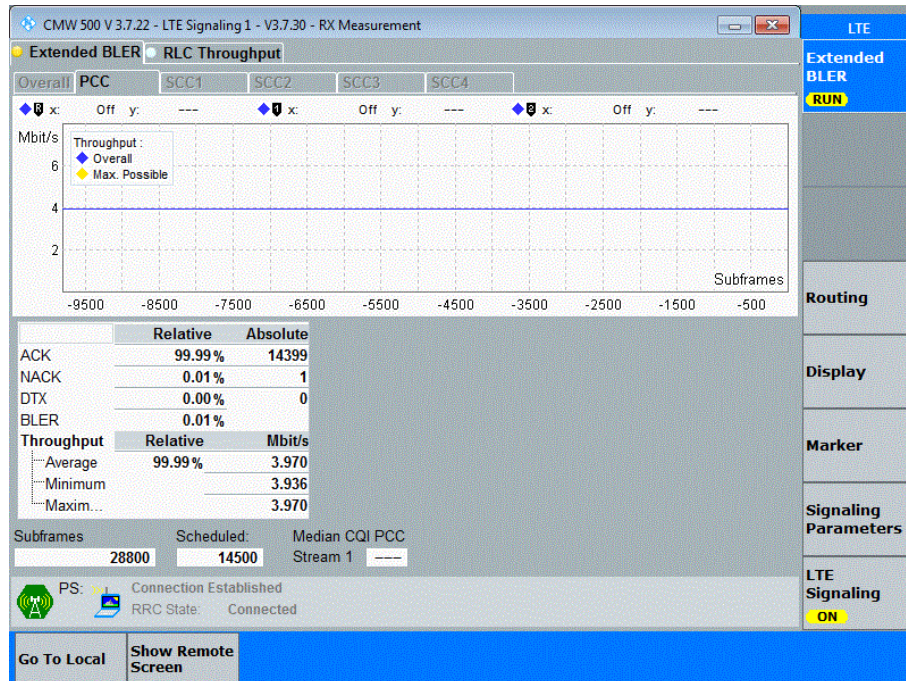
LTE Band 20



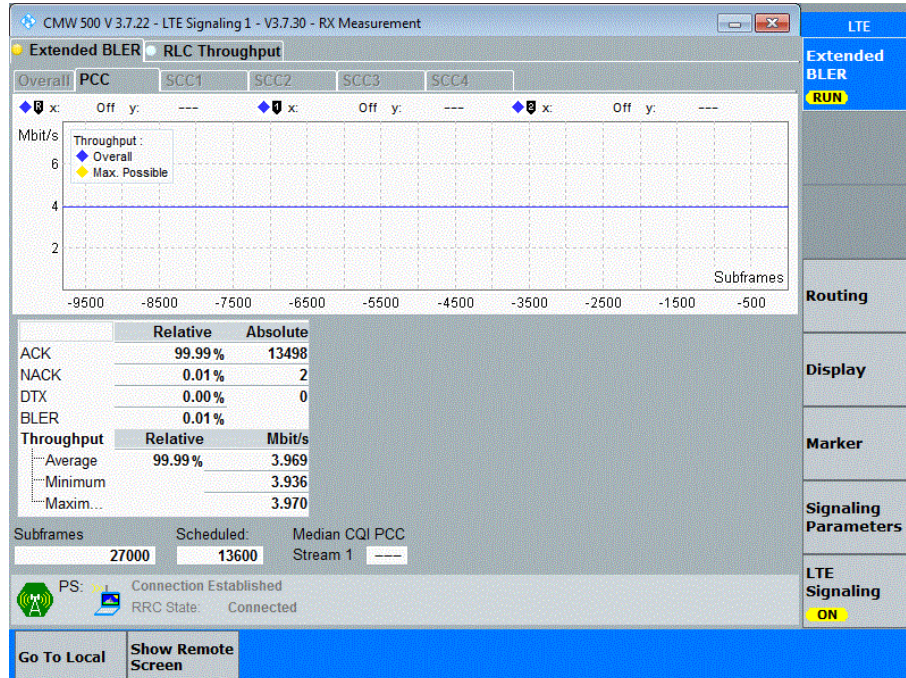
LTE Band 28



LTE Band 38



LTE Band 40



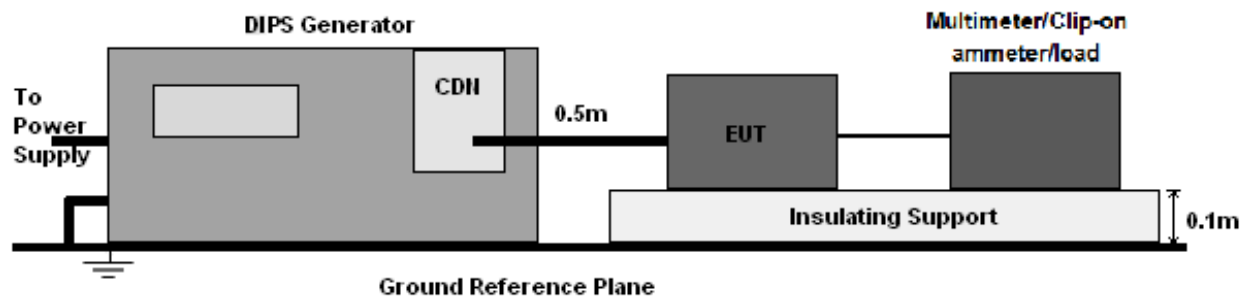
Note: The test data shows only the worst patterns.

16. Voltage Dips And Interruptions (DIPS)

16.1 Test Specification

Test Port : input AC power port
Phase Angle : 0°, 180°
Test cycle : 3 times

16.2 Block Diagram Of EUT Test Setup



16.3 Test Procedure

- The Product and support units were located on a non-conductive table above ground floor.
- Set the parameter of tests and then perform the test software of test simulator.
- Conditions changes to occur at 0 degree crossover point of the voltage waveform.

16.4 Test Result

Temperature:	26 °C	Relative Humidity:	54%
Pressure:	101KPa	Test Mode:	The worst data

Voltage Reduction	Duration (ms)	Perform Criteria	Test Result	Judgment
Voltage dip 0%	10	TT, TR	A	PASS
Voltage dip 0%	20	TT, TR	A	PASS
Voltage dip 70%	500	TT, TR	B	PASS
Voltage interruptions	5000	TT, TR	N	PASS

Note: Charging interruption can be automatically restored.

17. EUT Photographs

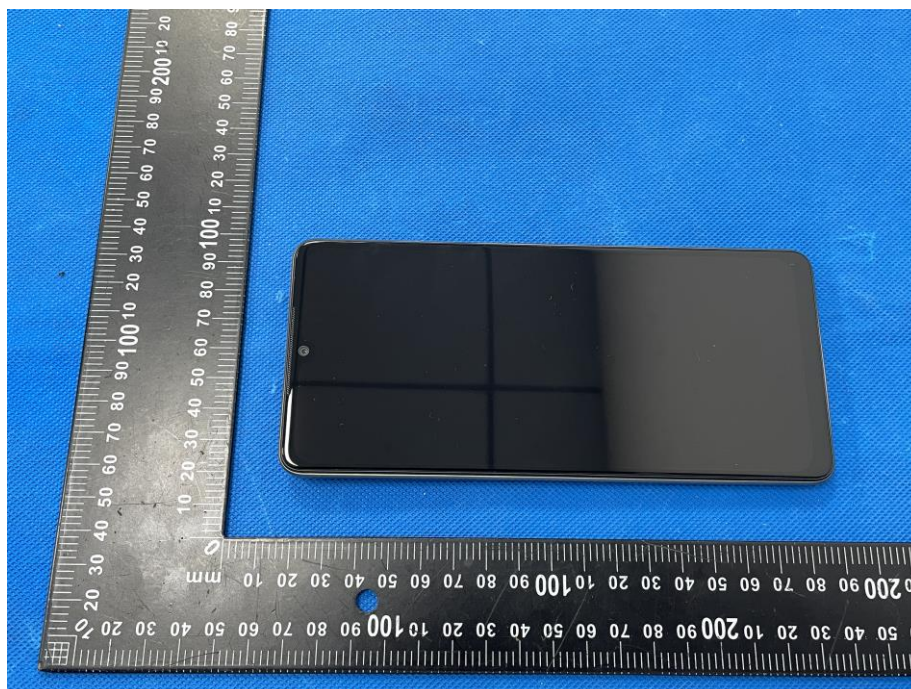
EUT Photo 1



EUT Photo 2



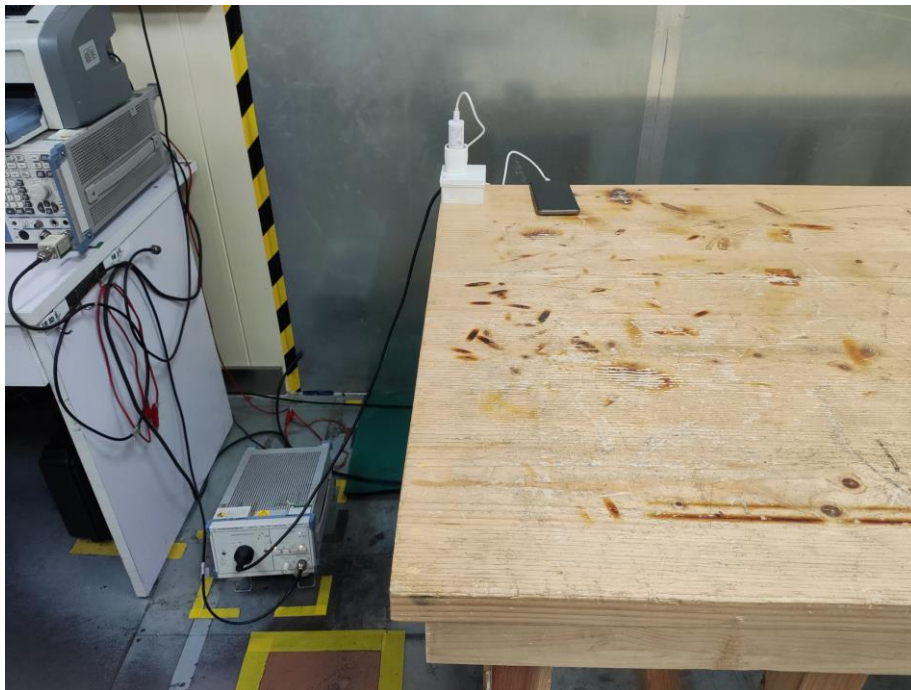
EUT Photo 3

EUT Photo 4


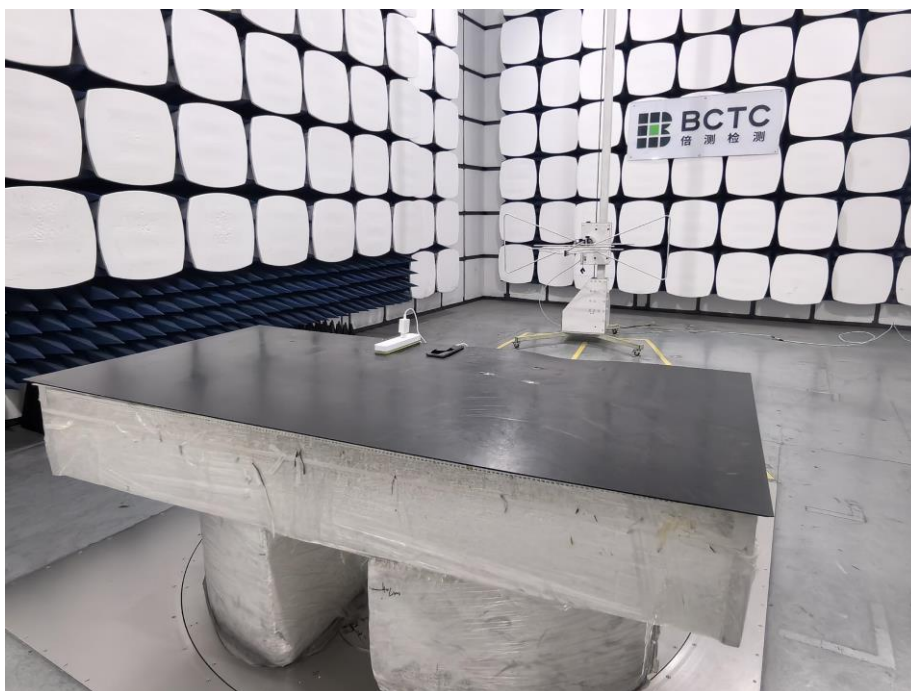
NOTE: Appendix-Photographs Of EUT Constructional Details

18. EUT Test Setup Photographs

Conducted emissions



Radiated emissions(30MHz~1GHz)



Radiated emissions (Above 1GHz)



F



ESD



RS



CS



EFT & Dips & Surges



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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***** END *****

