

EMC TEST REPORT

Applicant: Quanzhou SKYDROID Technology Co., Ltd.

Address of Applicant: 2nd Floor, Building A, Yucheng Base, Fengze District,
Quanzhou City, Fujian Province, China

Manufacturer/Factory: Quanzhou SKYDROID Technology Co., Ltd.

**Address of
Manufacturer/Factory:** 2nd Floor, Building A, Yucheng Base, Fengze District,
Quanzhou City, Fujian Province, China

Equipment Under Test (EUT)

Product Name: H16 remote control

Model No.: H16, H16PRO

Trade Mark: SKYDROID

Applicable standards: ETSI EN 301 489-1 V2.2.3 (2019-11)
ETSI EN 301 489-3 V2.1.1 (2019-03)
ETSI EN 301 489-17 V3.2.4 (2020-09)
ETSI EN 301 489-19 V2.1.1 (2019-04)

Date of sample receipt: October 21, 2020

Date of Test: October 22, 2020-November 03, 2020

Date of report issue: November 04, 2020

Test Result : PASS *

* In the configuration tested, the EUT complied with the standards specified above.

The CE mark as shown below can be used, under the responsibility of the manufacturer, after completion of an EC Declaration of Conformity and compliance with all relevant EC Directives. The protection requirements with respect to electromagnetic compatibility contained in Directive 2014/53/EU are considered.



Robinson Lo
Laboratory Manager

This results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver

2 Version

Version No.	Date	Description
00	November 04, 2020	Original

Prepared By:

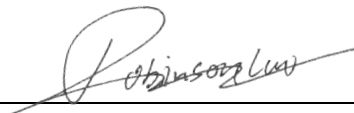


Date:

November 04, 2020

Project Engineer

Check By:



Date:

November 04, 2020

Reviewer

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4 Test Summary

EMI Test				
Test Item	Test Requirement	Test Method	Application	Result
Radiated Emission	ETSI EN 301 489-3 ETSI EN 301 489-17 ETSI EN 301 489-19	ETSI EN301 489-1	Enclosure	Pass
Conducted Emission	ETSI EN 301 489-3 ETSI EN 301 489-17 ETSI EN 301 489-19	ETSI EN301 489-1	AC port	Pass
Harmonic Current Emissions	ETSI EN 301 489-3 ETSI EN 301 489-17 ETSI EN 301 489-19	ETSI EN301 489-1	AC port	N/A
Voltage Fluctuations and Flicker	ETSI EN 301 489-3 ETSI EN 301 489-17 ETSI EN 301 489-19	ETSI EN301 489-1	AC port	Pass
EMS Test				
ESD (Electrostatic Discharge)	ETSI EN 301 489-3 ETSI EN 301 489-17 ETSI EN 301 489-19	EN 61000-4-2	Enclosure	Pass
Radio frequency electromagnetic field (80 MHz to 6 000 MHz)	ETSI EN 301 489-3 ETSI EN 301 489-17 ETSI EN 301 489-19	EN 61000-4-3	Enclosure	Pass
EFT (Electrical Fast Transients)	ETSI EN 301 489-3 ETSI EN 301 489-17 ETSI EN 301 489-19	EN 61000-4-4	AC port	Pass
Surge Immunity	ETSI EN 301 489-3 ETSI EN 301 489-17 ETSI EN 301 489-19	EN 61000-4-5	AC port	Pass
Radio frequency, common mode	ETSI EN 301 489-3 ETSI EN 301 489-17 ETSI EN 301 489-19	EN 61000-4-6	AC port	Pass
Voltage Dips and Interruptions	ETSI EN 301 489-3 ETSI EN 301 489-17 ETSI EN 301 489-19	EN 61000-4-11	AC port	Pass

Remark:

Pass: The EUT complies with the essential requirements in the standard.

5 General Information

5.1 General Description of EUT

Product Name:	H16 remote control
Model No.:	H16, H16PRO
Test Model No.:	H16
Remark: All above models are identical in the same PCB layout, interior structure and electrical circuits. The only difference is model name for commercial purpose.	
Power Supply:	ADAPTOR MODEL:KXS-012 INPUT: 110V-240V~50/60Hz 0.5A max OUTPUT: 3.6V-6V 3A or 6V-9V 32A or 9V-12V 31.5A Or DC 3.7V Battery
2.4G WIFI	
Operation Frequency:	2412MHz~2472MHz(802.11b/802.11g/802.11n(HT20))
Channel numbers:	13 for 802.11b/802.11g/802.11n(HT20)
Channel separation:	5MHz
Modulation Technology:	802.11b: DSSS 802.11g/802.11n: OFDM
Antenna Type:	Integral Antenna
Antenna Gain:	0dBi
5G WIFI:	
Operation Frequency:	5180MHz~5240MHz; (802.11a/n/ac(HT20) @ 5G band) 5190MHz~5230MHz; (802.11n/ac(HT40) @ 5G band) 5210MHz; (802.11ac(HT80) @ 5G band)
Channel numbers:	4 channels for 802.11a/n/ac(HT20); 2 channels for 802.11n/ac(HT40) 1 channels for 802.11ac(HT80)
Modulation technology:	802.11a/n/ac: OFDM
Antenna Type:	Integral Antenna
Antenna gain:	0dBi
2.4G	
Operation Frequency:	2410MHz~2470MHz
Channel numbers:	13
Channel separation:	5MHz
Modulation Technology:	DSSS
Antenna Type:	Integral Antenna
Antenna Gain:	0dBi

SRD @ 5.8G band:	
Operation Frequency:	5745MHz ~ 5825MHz
Modulation technology:	Orthogonal Frequency Division Multiplexing(OFDM)
Antenna Type:	Integral Antenna
Antenna gain:	0dBi
GPS	
Operation Frequency:	L1: 1559~1610MHz L2: 1215~1300MHz
Modulation technology:	BPSK
Antenna Type:	Integral Antenna
Antenna gain:	ANT: 0dBi
BT	
Operation Frequency:	2402~2480MHz
Channel numbers:	BT EDR:79 BLE: 40
Channel separation:	BT EDR:1MHz BLE: 2MHz
Modulation technology:	BT EDR:GFSK, Pi/4DQPSK, 8DPSK BLE: GFSK
Antenna Type:	Integral Antenna
Antenna gain:	0dBi(declare by applicant)

5.2 Operating Modes

Operating mode	Detail description
GPS mode	Keep the EUT in GPS receiving status
Bluetooth mode	Keep the EUT in communications with Bluetooth function.
WiFi mode	Keep the EUT in continuously transmitting mode in WIFI status
Transmitting mode	Keep the EUT in continuously transmitting mode

5.3 Description of Support Units

None

5.4 Monitoring of EUT for All Immunity Test

Visual:	Monitored the light and work status of the EUT
Audio:	Monitored the sound of the EUT

5.5 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **FCC —Registration No.: 381383**

Global United Technology Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in files. Registration 381383.

- **IC —Registration No.: 9079A**

The 3m Semi-anechoic chamber of Global United Technology Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 9079A

- **NVLAP (LAB CODE:600179-0)**

Global United Technology Services Co., Ltd., is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP). LAB CODE:600179-0.

5.6 Test Location

RS test was performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen Branch,
No. 1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, Guangdong, China.
518057.

All other tests were performed at:

Global United Technology Services Co., Ltd.
Address: No. 123-128, Tower A, Jinyuan Business Building, No.2, Laodong Industrial Zone, Xixiang Road, Baoan District, Shenzhen, Guangdong, China 518102
Tel: 0755-27798480
Fax: 0755-27798960

5.7 Deviation from Standards

None.

5.8 Abnormalities from Standard Conditions

None.

5.9 Other Information Requested by the Customer

None.

6 Equipment Used during Test

Radiated Emission:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	3m Semi- Anechoic Chamber	ZhongYu Electron	9.2(L)*6.2(W)* 6.4(H)	GTS250	July. 02 2020	July. 01 2025
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A
3	EMI Test Receiver	Rohde & Schwarz	ESU26	GTS203	June. 25 2020	June. 24 2021
4	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS214	June. 25 2020	June. 24 2021
5	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120 D	GTS208	June. 25 2020	June. 24 2021
6	Horn Antenna	ETS-LINDGREN	3160	GTS217	June. 25 2020	June. 24 2021
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
8	Coaxial Cable	GTS	N/A	GTS213	June. 25 2020	June. 24 2021
9	Coaxial Cable	GTS	N/A	GTS211	June. 25 2020	June. 24 2021
10	Coaxial cable	GTS	N/A	GTS210	June. 25 2020	June. 24 2021
11	Coaxial Cable	GTS	N/A	GTS212	June. 25 2020	June. 24 2021
12	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	June. 25 2020	June. 24 2021
13	Amplifier(2GHz-20GHz)	HP	84722A	GTS206	June. 25 2020	June. 24 2021
14	Amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	June. 25 2020	June. 24 2021
15	Band filter	Amindeon	82346	GTS219	June. 25 2020	June. 24 2021
16	Power Meter	Anritsu	ML2495A	GTS540	June. 25 2020	June. 24 2021
17	Power Sensor	Anritsu	MA2411B	GTS541	June. 25 2020	June. 24 2021
18	Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	GTS575	June. 25 2020	June. 24 2021
19	Splitter	Agilent	11636B	GTS237	June. 25 2020	June. 24 2021
20	Loop Antenna	ZHINAN	ZN30900A	GTS534	June. 25 2020	June. 24 2021
21	Breitband hornantenne	SCHWARZBECK	BBHA 9170	GTS579	Oct. 18 2020	Oct. 17 2021
22	Amplifier	TDK	PA-02-02	GTS574	Oct. 18 2020	Oct. 17 2021
23	Amplifier	TDK	PA-02-03	GTS576	Oct. 18 2020	Oct. 17 2021
24	PSA Series Spectrum Analyzer	Rohde & Schwarz	FSP	GTS578	June. 25 2020	June. 24 2021

Conducted Emission						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	Shielding Room	ZhongYu Electron	7.3(L)x3.1(W)x2.9(H)	GTS252	May.15 2019	May.14 2022
2	EMI Test Receiver	R&S	ESCI 7	GTS552	June. 25 2020	June. 24 2021
3	Coaxial Switch	ANRITSU CORP	MP59B	GTS225	June. 25 2020	June. 24 2021
4	ENV216 2-L-V-NETZNACHB.DE	ROHDE&SCHWARZ	ENV216	GTS226	June. 25 2020	June. 24 2021
5	Coaxial Cable	GTS	N/A	GTS227	N/A	N/A
6	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
7	Thermo meter	KTJ	TA328	GTS233	June. 25 2020	June. 24 2021
8	Absorbing clamp	Elektronik-Feinmechanik	MDS21	GTS229	June. 25 2020	June. 24 2021
9	ISN	SCHWARZBECK	NTFM 8158	GTD565	June. 25 2020	June. 24 2021

ESD						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	ESD Simulator	KIKUSUI	KES4021A	GTS242	June. 25 2020	June. 24 2021
2	Thermo meter	KTJ	TA328	GTS243	June. 25 2020	June. 24 2021

Conducted Immunity						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	Signal Generator	ROHDE & SCHWARZ	SMB 100A	GTS553	June. 25 2020	June. 24 2021
2	CDN	LionCEL	CDN-M3-16	GTS554	June. 25 2020	June. 24 2021
3	CDN	CYBERTEK	EM 5070	GTS559	June. 25 2020	June. 24 2021
4	Power amplifier	rflight	NTWPA-00010475	GTS555	June. 25 2020	June. 24 2021
5	ATT	SUNWAVE	SJ-50-06DB	GTS556	June. 25 2020	June. 24 2021
6	Clamp	SCHAFFNER	KEMZ 801	GTS558	June. 25 2020	June. 24 2021

Harmonic/ Flicker						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	Power Analyzer H/F	EMTEST	DPA500	GTS235	June. 25 2020	June. 24 2021
2	AC POWER SUPPLY	EMTEST	ACS500	GTS236	June. 25 2020	June. 24 2021
3	Thermo meter	KTJ	TA328	GTS256	June. 25 2020	June. 24 2021

EFT, Surge, Voltage dips and Interruption						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	EMTEST system	EMTEST	UCS500N	GTS239	June. 25 2020	June. 24 2021
2	Clamp	EMTEST	HFK	GTS557	June. 25 2020	June. 24 2021
3	Thermo meter	KTJ	TA328	GTS238	June. 25 2020	June. 24 2021

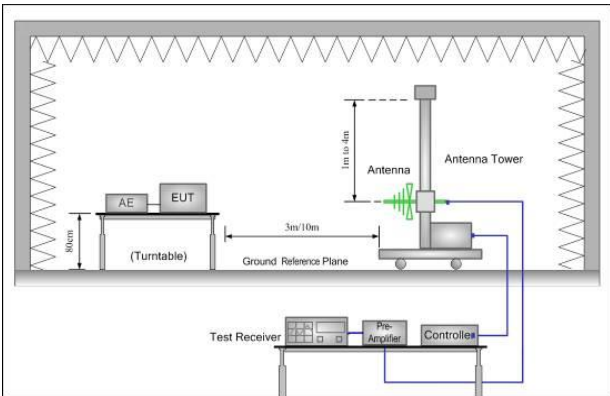
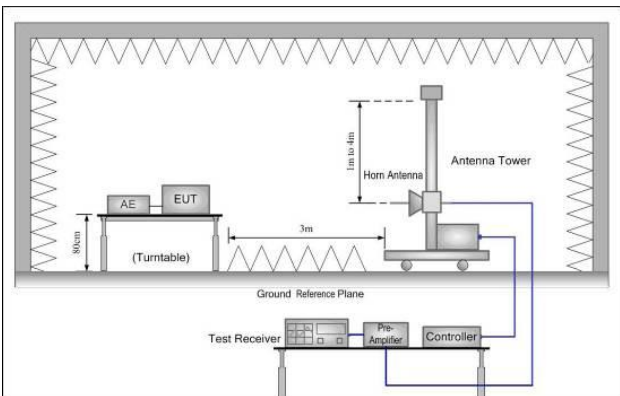
Radiated Immunity						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	Fully-Anechoic Chamber 2	Chang Zhou Zhong Shuo	854	SEM001-05	2020-05-09	2023-05-08
2	Power Sensor	Rohde & Schwarz	NRP-Z91	SEM009-09	2020-04-01	2021-03-31
3	Stacked Log.-Per.- Broadband Antenna (70MHz-10GHz)	Schwarzbeck	STLP 9129	SEM003-25	N/A	N/A
4	Signal Generator (9kHz-6GHz)	Rohde & Schwarz	SMB100A	SEM006-11	2020-04-01	2021-03-31
5	Broadband Amplifier (80MHz-1GHz)	Rohde & Schwarz	BBA150-BC250	SEM005-12	2019-09-24	2020-09-23
6	Broadband Amplifier(800MHz- 3GHz)	Rohde & Schwarz	BBA150-D110	SEM005-13	2020-04-01	2021-03-31
7	Broadband Amplifier(2.5GHz- 6GHz)	Rohde & Schwarz	BBA150-E60	SEM005-16	2020-04-11	2021-04-10
8	Measurement Software	Rohde & Schwarz	EMC32 V9.25.00	N/A	N/A	N/A

General used equipment:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	Humidity/ Temperature Indicator	KTJ	TA328	GTS243	June. 25 2020	June. 24 2021
2	Barometer	ChangChun	DYM3	GTS255	June. 25 2020	June. 24 2021

7 EMC Requirements Specification in ETSI EN 301 489-3/-17/-19

7.1 EMI (Emission)

7.1.1 Radiated Emission

Test Requirement:	ETSI EN 301 489-3/-17/-19					
Test Method:	ETSI EN 301 489-1 and EN 55032					
Test Frequency Range:	30MHz to 6GHz					
Test site:	Measurement Distance: 3m					
Receiver setup:	Frequency	Detector	RBW	VBW	Remark	
	30MHz-1GHz	Quasi-peak	100kHz	300kHz	Quasi-peak Value	
	Above 1GHz	Peak	1MHz	3MHz	Peak Value	
		AV	1MHz	3MHz	Average Value	
Limit:	Frequency		Limit (dBuV/m @3m)		Remark	
	30MHz-230MHz		40.00		Quasi-peak Value	
	230MHz-1GHz		47.00		Quasi-peak Value	
	1GHz-3GHz		50.00		Average Value	
			70.00		Peak Value	
	3GHz-6GHz		54.00		Average Value	
			74.00		Peak Value	
Test setup:	Below 1GHz					
						
Test setup:	Above 1GHz					
						
Test environment:	Temp.:	25 °C	Humid.:	50%	Press.:	1 010mbar
Measurement Record:	Uncertainty: 3.8039dB (30MHz-200MHz) 3.9679dB (200MHz-1GHz)					

	4.29dB (1GHz-18GHz)
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details, only show the worst case.
Test results:	Pass

Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. The emission levels of other frequencies are very lower than the limit and not show in test report.

Measurement Data

Below 1GHz

2.4G WIFI mode

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarity
32.07	53.17	11.24	0.57	35.15	29.83	40.00	-10.17	Vertical
36.00	54.49	11.52	0.62	35.42	31.21	40.00	-8.79	Vertical
43.51	53.63	12.24	0.70	35.86	30.71	40.00	-9.29	Vertical
58.82	46.74	11.43	0.85	36.31	22.71	40.00	-17.29	Vertical
91.82	47.86	10.97	1.12	36.65	23.30	43.50	-20.20	Vertical
383.93	47.99	15.08	2.78	37.51	28.34	46.00	-17.66	Vertical
36.90	43.45	11.67	0.63	35.48	20.27	40.00	-19.73	Horizontal
49.01	41.95	12.29	0.76	36.13	18.87	40.00	-21.13	Horizontal
92.46	41.04	11.04	1.13	36.66	16.55	43.50	-26.95	Horizontal
293.08	51.27	13.42	2.32	37.41	29.60	46.00	-16.40	Horizontal
566.62	46.16	18.78	3.59	37.53	31.00	46.00	-15.00	Horizontal
801.79	44.20	21.40	4.46	37.62	32.44	46.00	-13.56	Horizontal

5G WiFi mode

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarity
32.52	53.41	11.25	0.58	35.19	30.05	40.00	-9.95	Vertical
36.13	54.31	11.52	0.62	35.43	31.02	40.00	-8.98	Vertical
44.28	54.99	12.25	0.71	35.90	32.05	40.00	-7.95	Vertical
56.59	45.16	11.62	0.83	36.28	21.33	40.00	-18.67	Vertical
92.14	48.43	11.04	1.13	36.66	23.94	43.50	-19.56	Vertical
386.63	48.93	15.11	2.79	37.51	29.32	46.00	-16.68	Vertical
36.64	43.82	11.61	0.63	35.46	20.60	40.00	-19.40	Horizontal
48.67	43.45	12.29	0.76	36.12	20.38	40.00	-19.62	Horizontal
91.50	39.83	10.90	1.12	36.65	15.20	43.50	-28.30	Horizontal
274.19	50.62	12.87	2.24	37.40	28.33	46.00	-17.67	Horizontal
502.94	45.60	17.35	3.32	37.51	28.76	46.00	-17.24	Horizontal
900.15	42.08	22.30	4.85	37.60	31.63	46.00	-14.37	Horizontal

BT mode

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarity
41.86	50.55	12.22	0.68	35.77	27.68	40.00	-12.32	Vertical
66.97	57.69	8.65	0.92	36.41	30.85	40.00	-9.15	Vertical
91.82	57.25	10.97	1.12	36.65	32.69	40.00	-7.31	Vertical
124.13	59.38	8.96	1.39	36.91	32.82	40.00	-7.18	Vertical
148.44	59.11	7.57	1.56	37.07	31.17	40.00	-8.83	Vertical
195.82	56.16	10.17	1.82	37.31	30.84	40.00	-9.16	Vertical
72.08	54.84	7.48	0.96	36.46	26.82	40.00	-13.18	Horizontal
88.34	55.66	10.19	1.10	36.62	30.33	40.00	-9.67	Horizontal
157.56	58.07	8.15	1.62	37.12	30.72	40.00	-9.28	Horizontal
197.20	56.70	10.26	1.82	37.32	31.46	40.00	-8.54	Horizontal
216.02	53.00	11.02	1.93	37.35	28.60	40.00	-11.40	Horizontal
232.53	51.41	11.60	2.03	37.36	27.68	47.00	-19.32	Horizontal

BLE mode

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarity
41.86	50.28	12.22	0.68	35.77	27.41	40.00	-12.59	Vertical
70.83	58.57	7.49	0.95	36.45	30.56	40.00	-9.44	Vertical
93.11	55.36	11.18	1.14	36.66	31.02	40.00	-8.98	Vertical
126.77	56.89	8.58	1.41	36.93	29.95	40.00	-10.05	Vertical
148.44	59.71	7.57	1.56	37.07	31.77	40.00	-8.23	Vertical
222.17	52.53	11.24	1.97	37.35	28.39	40.00	-11.61	Vertical
69.36	56.98	7.73	0.94	36.43	29.22	40.00	-10.78	Horizontal
86.81	53.99	9.68	1.08	36.61	28.14	40.00	-11.86	Horizontal
109.03	54.88	11.20	1.27	36.80	30.55	40.00	-9.45	Horizontal
126.77	59.66	8.58	1.41	36.93	32.72	40.00	-7.28	Horizontal
138.87	58.65	7.49	1.50	37.01	30.63	40.00	-9.37	Horizontal
211.53	54.36	10.84	1.91	37.34	29.77	40.00	-10.23	Horizontal

transmitting mode

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarity
32.41	53.17	11.25	0.58	35.18	29.82	40.00	-10.18	Vertical
36.38	54.15	11.58	0.62	35.45	30.90	40.00	-9.10	Vertical
43.81	54.26	12.24	0.71	35.87	31.34	40.00	-8.66	Vertical
58.41	47.64	11.45	0.85	36.30	23.64	40.00	-16.36	Vertical
92.79	49.80	11.11	1.13	36.66	25.38	43.50	-18.12	Vertical
397.63	47.34	15.27	2.84	37.52	27.93	46.00	-18.07	Vertical
36.64	43.82	11.61	0.63	35.46	20.60	40.00	-19.40	Horizontal
47.99	42.77	12.28	0.75	36.09	19.71	40.00	-20.29	Horizontal
92.79	39.74	11.11	1.13	36.66	15.32	43.50	-28.18	Horizontal
272.28	44.78	12.84	2.24	37.40	22.46	46.00	-23.54	Horizontal
508.26	44.96	17.47	3.34	37.51	28.26	46.00	-17.74	Horizontal
878.32	40.30	22.09	4.77	37.60	29.56	46.00	-16.44	Horizontal

GPS mode

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarity
31.96	53.24	11.24	0.57	35.15	29.90	40.00	-10.10	Vertical
36.90	53.47	11.67	0.63	35.48	30.29	40.00	-9.71	Vertical
43.97	54.87	12.24	0.71	35.88	31.94	40.00	-8.06	Vertical
57.19	45.90	11.57	0.84	36.28	22.03	40.00	-17.97	Vertical
92.79	49.80	11.11	1.13	36.66	25.38	43.50	-18.12	Vertical
392.10	45.78	15.19	2.82	37.51	26.28	46.00	-19.72	Vertical
36.00	41.14	11.52	0.62	35.42	17.86	40.00	-22.14	Horizontal
49.36	42.93	12.29	0.77	36.15	19.84	40.00	-20.16	Horizontal
96.78	37.98	11.72	1.17	36.69	14.18	43.50	-29.32	Horizontal
266.61	48.68	12.65	2.21	37.39	26.15	46.00	-19.85	Horizontal
495.93	47.12	17.22	3.29	37.51	30.12	46.00	-15.88	Horizontal
845.09	41.25	21.82	4.63	37.61	30.09	46.00	-15.91	Horizontal

Above 1GHz

2.4G WiFi mode

Peak measurement

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarity
1405.00	36.26	25.16	2.24	36.09	27.57	70.00	-42.43	Vertical
2000.00	36.15	26.10	2.54	36.50	28.29	70.00	-41.71	Vertical
2775.00	38.25	28.10	3.19	37.15	32.39	70.00	-37.61	Vertical
3375.00	38.26	28.40	3.64	37.34	32.96	74.00	-41.04	Vertical
4110.00	34.84	30.00	3.97	37.45	31.36	74.00	-42.64	Vertical
5100.00	31.57	31.54	4.91	37.64	30.38	74.00	-43.62	Vertical
1430.00	39.16	25.20	2.25	36.11	30.50	70.00	-39.50	Horizontal
2210.00	36.65	26.81	2.69	36.69	29.46	70.00	-40.54	Horizontal
3025.00	37.66	28.40	3.44	37.30	32.20	74.00	-41.80	Horizontal
3600.00	33.07	28.70	3.84	37.36	28.25	74.00	-45.75	Horizontal
4455.00	32.37	30.63	4.38	37.59	29.79	74.00	-44.21	Horizontal
5615.00	31.81	31.91	5.31	36.91	32.12	74.00	-41.88	Horizontal

5G WiFi mode

Peak measurement

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarity
1500.00	36.74	25.30	2.28	36.17	28.15	70.00	-41.85	Vertical
2095.00	37.02	26.43	2.60	36.59	29.46	70.00	-40.54	Vertical
2805.00	35.64	28.14	3.21	37.17	29.82	70.00	-40.18	Vertical
3430.00	37.97	28.40	3.67	37.35	32.69	74.00	-41.31	Vertical
4075.00	33.45	29.93	3.95	37.43	29.90	74.00	-44.10	Vertical
4915.00	32.83	31.37	4.73	37.77	31.16	74.00	-42.84	Vertical
1410.00	36.68	25.16	2.24	36.10	27.98	70.00	-42.02	Horizontal
2180.00	37.53	26.72	2.66	36.67	30.24	70.00	-39.76	Horizontal
2975.00	38.35	28.37	3.38	37.28	32.82	70.00	-37.18	Horizontal
3555.00	38.25	28.58	3.79	37.36	33.26	74.00	-40.74	Horizontal
4415.00	33.06	30.57	4.35	37.58	30.40	74.00	-43.60	Horizontal
5590.00	32.42	31.85	5.30	36.96	32.61	74.00	-41.39	Horizontal

BT mode

Peak measurement

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarity
1500.00	44.68	25.30	2.28	36.17	36.09	70.00	-33.91	Vertical
1765.00	45.08	25.76	2.45	36.36	36.93	70.00	-33.07	Vertical
2115.00	45.14	26.49	2.63	36.61	37.65	70.00	-32.35	Vertical
2575.00	43.08	27.81	3.09	37.00	36.98	70.00	-33.02	Vertical
2825.00	42.02	28.17	3.23	37.18	36.24	70.00	-33.76	Vertical
3790.00	40.23	29.23	3.91	37.38	35.99	74.00	-38.01	Vertical
1210.00	44.28	24.82	2.15	35.92	35.33	70.00	-34.67	Horizontal
1505.00	44.82	25.31	2.29	36.17	36.25	70.00	-33.75	Horizontal
1790.00	45.15	25.79	2.47	36.37	37.04	70.00	-32.96	Horizontal
2210.00	45.76	26.81	2.69	36.69	38.57	70.00	-31.43	Horizontal
2450.00	42.80	27.55	2.96	36.90	36.41	70.00	-33.59	Horizontal
2580.00	42.48	27.82	3.09	37.00	36.39	70.00	-33.61	Horizontal

BLE mode

Peak measurement

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarity
1460.00	44.69	25.24	2.26	36.14	36.05	70.00	-33.95	Vertical
2115.00	45.14	26.49	2.63	36.61	37.65	70.00	-32.35	Vertical
3790.00	40.23	29.23	3.91	37.38	35.99	74.00	-38.01	Vertical
4710.00	37.32	31.05	4.56	37.69	35.24	74.00	-38.76	Vertical
5320.00	36.47	31.63	5.08	37.33	35.85	74.00	-38.15	Vertical
6000.00	34.29	32.60	5.61	36.40	36.10	74.00	-37.90	Vertical
1505.00	44.82	25.31	2.29	36.17	36.25	70.00	-33.75	Horizontal
2210.00	45.76	26.81	2.69	36.69	38.57	70.00	-31.43	Horizontal
2375.00	41.80	27.33	2.89	36.84	35.18	70.00	-34.82	Horizontal
3210.00	39.45	28.40	3.61	37.32	34.14	74.00	-39.86	Horizontal
3735.00	36.38	29.09	3.89	37.38	31.98	74.00	-42.02	Horizontal
5745.00	34.25	32.15	5.41	36.73	35.08	74.00	-38.92	Horizontal

transmitting mode
Peak measurement

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarity
1460.00	37.35	25.24	2.26	36.14	28.71	70.00	-41.29	Vertical
1995.00	37.41	26.09	2.54	36.50	29.54	70.00	-40.46	Vertical
2790.00	38.58	28.12	3.20	37.16	32.74	70.00	-37.26	Vertical
3460.00	38.03	28.40	3.71	37.35	32.79	74.00	-41.21	Vertical
4100.00	32.90	29.98	3.96	37.44	29.40	74.00	-44.60	Vertical
4960.00	31.30	31.44	4.79	37.78	29.75	74.00	-44.25	Vertical
1445.00	38.14	25.22	2.26	36.12	29.50	70.00	-40.50	Horizontal
2235.00	36.68	26.89	2.73	36.72	29.58	70.00	-40.42	Horizontal
3000.00	36.72	28.40	3.42	37.30	31.24	70.00	-38.76	Horizontal
3575.00	36.22	28.64	3.81	37.36	31.31	74.00	-42.69	Horizontal
4415.00	33.06	30.57	4.35	37.58	30.40	74.00	-43.60	Horizontal
5560.00	31.57	31.82	5.27	36.98	31.68	74.00	-42.32	Horizontal

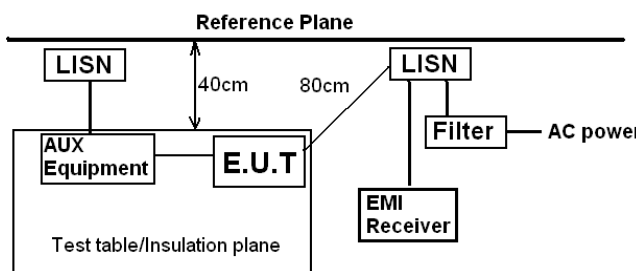
GPS mode
Peak measurement

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarity
1450.00	36.47	25.23	2.26	36.13	27.83	70.00	-42.17	Vertical
2070.00	36.80	26.35	2.59	36.57	29.17	70.00	-40.83	Vertical
2695.00	36.12	27.99	3.16	37.09	30.18	70.00	-39.82	Vertical
3380.00	37.39	28.40	3.64	37.34	32.09	74.00	-41.91	Vertical
4035.00	33.74	29.87	3.94	37.42	30.13	74.00	-43.87	Vertical
5040.00	33.32	31.52	4.87	37.73	31.98	74.00	-42.02	Vertical
1395.00	37.50	25.14	2.23	36.08	28.79	70.00	-41.21	Horizontal
2165.00	36.70	26.66	2.66	36.65	29.37	70.00	-40.63	Horizontal
2960.00	36.13	28.34	3.37	37.27	30.57	70.00	-39.43	Horizontal
3540.00	36.47	28.52	3.77	37.36	31.40	74.00	-42.60	Horizontal
4475.00	33.50	30.66	4.40	37.60	30.96	74.00	-43.04	Horizontal
5555.00	30.65	31.79	5.27	37.00	30.71	74.00	-43.29	Horizontal

Remark:

1. The EUT was test at 3m in field chamber.
2. If the average limit is met when using a Peak detector, the EUT shall be deemed to meet both peak and average limits. And measurement with the average detector is unnecessary.

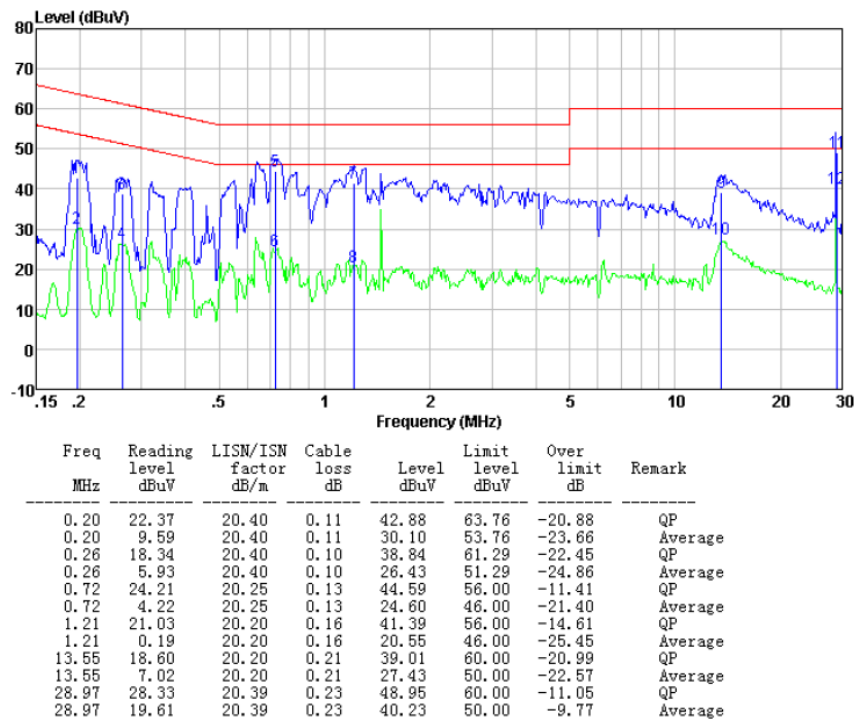
7.1.2 Conducted Emissions

Test Requirement:	ETSI EN 301 489-3/-17/-19					
Test Method:	ETSI EN 301 489-1 and EN 55032					
Test Frequency Range:	150kHz to 30MHz					
Class / Severity:	Class B					
Receiver setup:	RBW=9kHz, VBW=30kHz					
Limit:	Frequency range (MHz)		Limit (dBuV)			
			Quasi-peak	Average		
	0.15-0.5		66 to 56*	56 to 46*		
	0.5-5		56	46		
	5-30		60	50		
* Decreases with the logarithm of the frequency.						
Test setup:						
	<i>Remark</i> E.U.T.: Equipment Under Test LISN: Line Impedance Stabilization Network Test table height=0.8m					
Test Instruments:	Temp.:	24 °C	Humid.:	51%	Press.:	1 010mbar
Measurement Record:	Uncertainty: 3.44dB					
Test Instruments:	Refer to section 6.0 for details					
Test mode:	Refer to section 5.2 for details.					
Test results:	Pass					

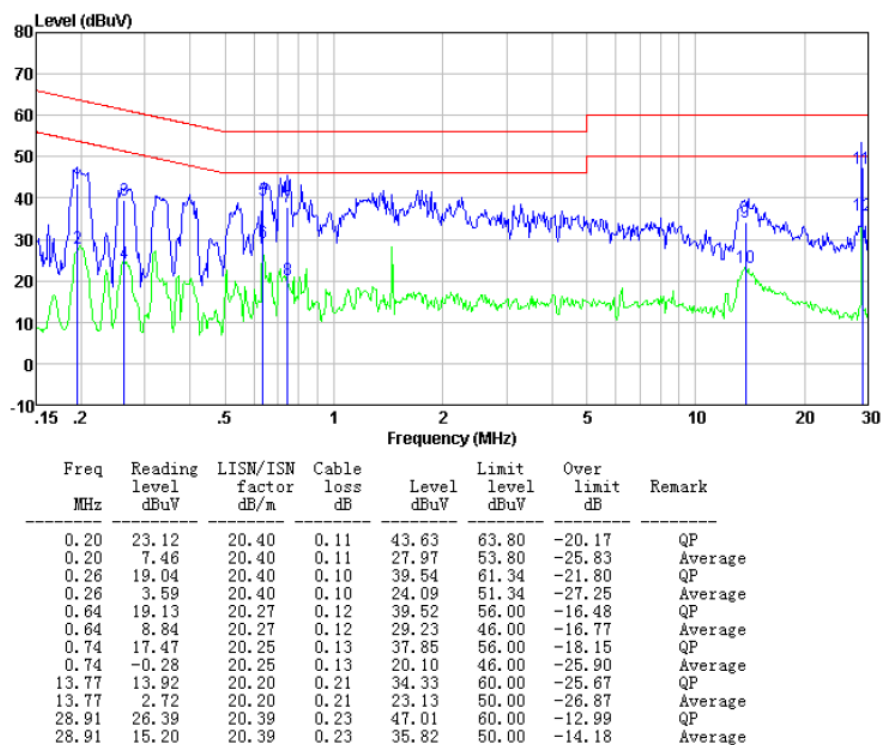
Measurement Data

WIFI mode

Line:

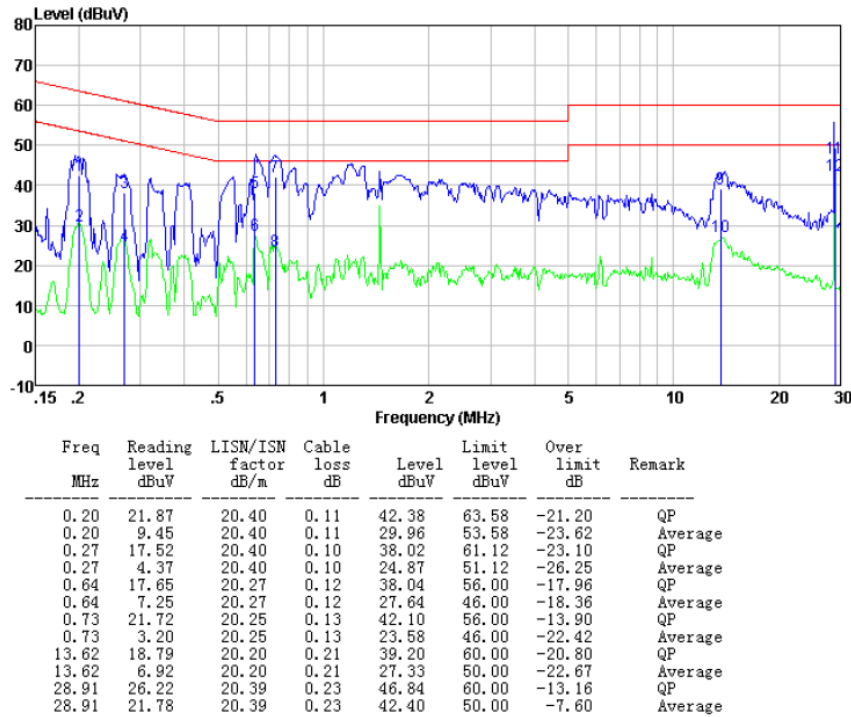


Neutral:

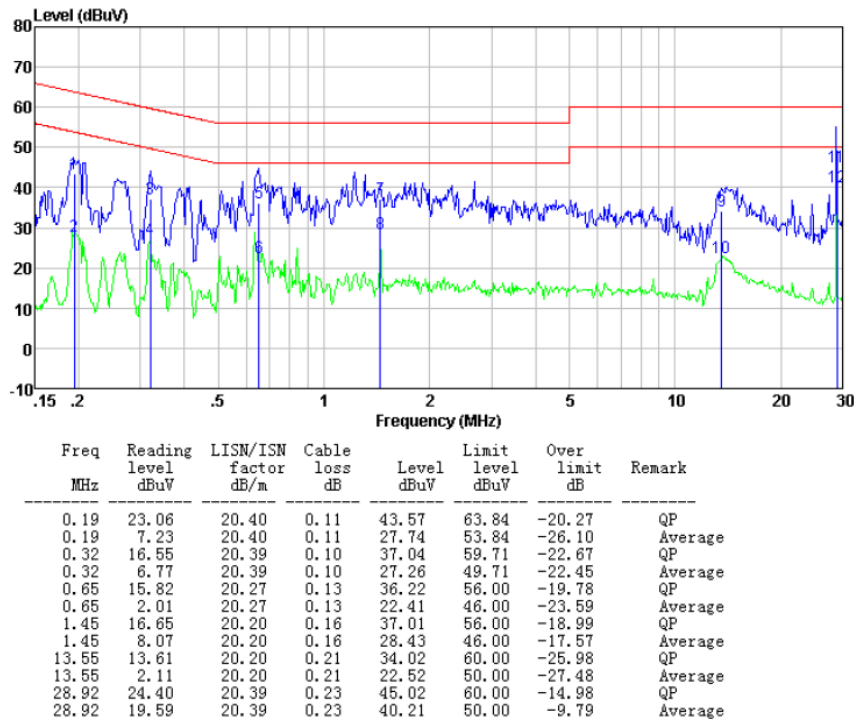


BT mode

Line:

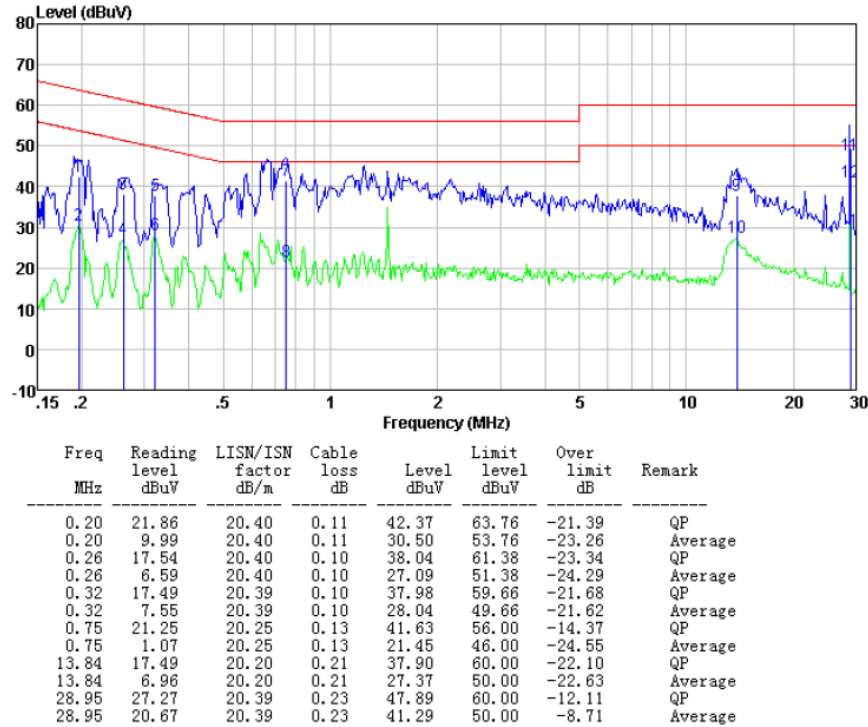


Neutral:

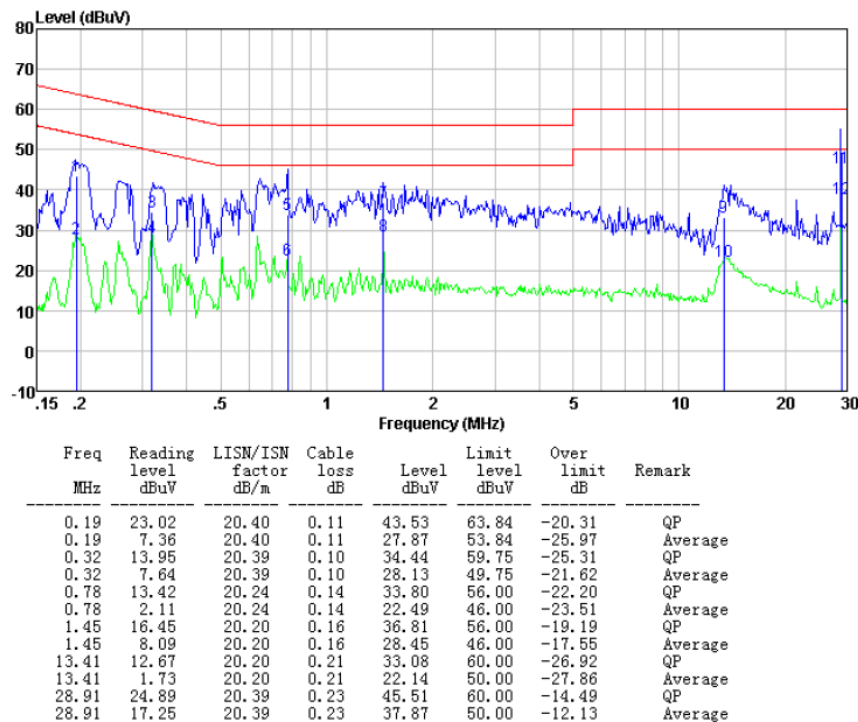


transmitting mode

Line:

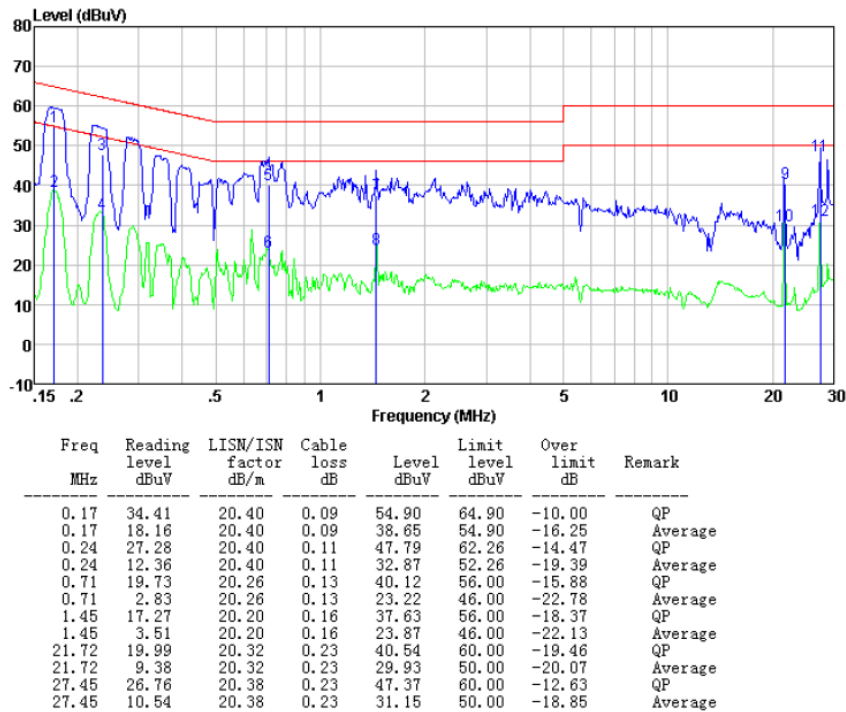


Neutral:

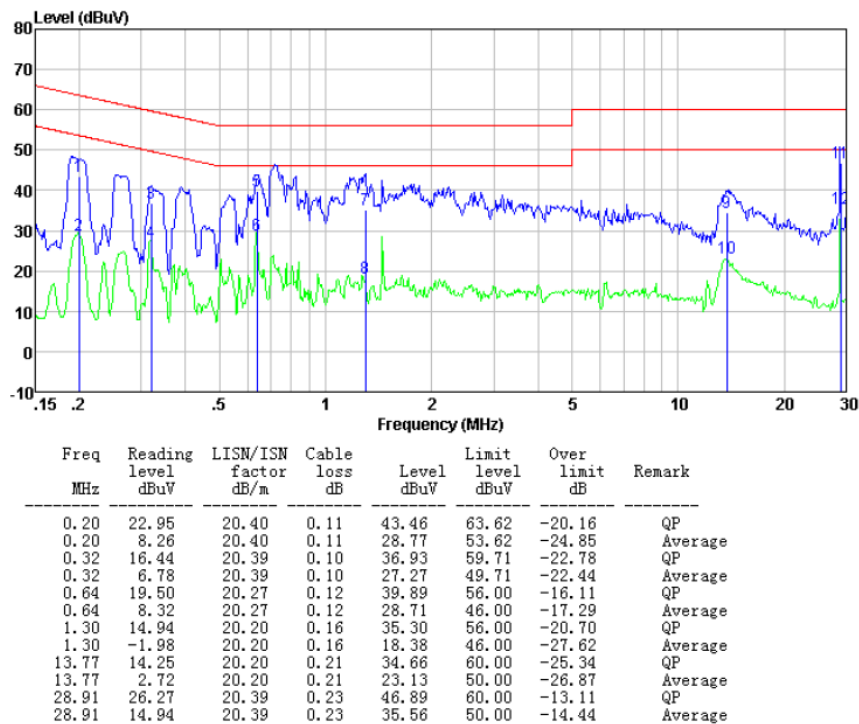


GPS mode

Line:



Neutral:



7.1.3 Harmonics Test Results

Test Requirement:	ETSI EN 301 489-3/-17/-19, EN 61000-3-2
Test Method:	N/A: See Remark Below
Remark:	There is no need for Harmonics test to be performed on this product (rated power is less than 75W) in accordance with EN 61000-3-2. For further details, please refer to Clause 7, Note 1 of EN 61000-3-2 Which states: “For the following categories of equipment limits are not specified in this edition of the standard. Note 1: Equipment with a rated power of 75W or less, other than lighting equipment.”

7.1.4 Flicker Test Results

Test Requirement:	ETSI EN 301 489-3/-17/-19, EN 61000-3-3					
Test Method:	EN 61000-3-3					
Class/Severity:	Clause 5 of EN 61000-3-3					
Measurement Time:	10 min					
Detector:	As per EN 61000-3-3					
Test Instruments:	Temp.:	24 °C	Humid.:	51%	Press.:	1 010mbar
Test Instruments:	Refer to section 6.0 for details					
Test mode:	Refer to section 5.2 for details					
Test results:	Pass					

Measurement Data

	EUT values	Limit	Result
Pst	0.028	1.00	PASS
dc [%]	0.000	3.30	PASS
dmax [%]	0.060	4.00	PASS
dt [s]	0.000	0.50	PASS

7.2 Immunity

Performance Criteria of ETSI EN 301 489-1, clause 6	
6.0 Introduction	The performance criteria are used to take a decision on whether a radio equipment passes or fails immunity tests. For the purpose of the present document two categories of performance criteria apply: •Performance criteria for continuous phenomena. •Performance criteria for transient phenomena. NOTE: Normally, the performance criteria depends upon the type of radio equipment and/or its intended application. Thus, the present document only contains general performance criteria commonly used for the assessment of radio equipment.
6.1 Performance criteria for continuous phenomena	During the test, the equipment shall: •continue to operate as intended; •not unintentionally transmit; •not unintentionally change its operating state; •not unintentionally change critical stored data.
6.2 Performance criteria for transient phenomena	For all ports and transient phenomena with the exception described below, the following applies: •The application of the transient phenomena shall not result in a change of the mode of operation (e.g. unintended transmission) or the loss of critical stored data. •After application of the transient phenomena, the equipment shall operate as intended. For surges applied to symmetrically operated wired network ports intended to be connected directly to outdoor lines the following criteria applies: •For products with only one symmetrical port intended for connection to outdoor lines, loss of function is allowed, provided the function is self-recoverable, or can be otherwise restored. Information stored in non-volatile memory, or protected by a battery backup, shall not be lost. •For products with more than one symmetrical port intended for connection to outdoor lines, loss of function on the port under test is allowed, provided the function is self-recoverable. Information stored in non-volatile memory, or protected by a battery backup, shall not be lost.

Performance Criteria of ETSI EN 301 489-3, clause 6		
Criteria	During Test	After Test
A	Operate as intended No loss of function No unintentional responses	Operate as intended No loss of function No degradation of performance No loss of stored data or user programmable functions
B	May show loss of function No unintentional responses	Operate as intended Lost function(s) shall be self-recoverable No degradation of performance No loss of stored data or user programmable functions

Performance Criteria of ETSI EN 301 489-17, clause 6		
Criteria	During Test	After Test
A	Shall operate as intended. (see note). Shall be no loss of function. Shall be no unintentional transmissions.	Shall operate as intended. Shall be no degradation of performance. Shall be no loss of function. Shall be no loss of critical stored data.
B	May be loss of function .	Functions shall be self-recoverable. Shall operate as intended after recovering. Shall be no loss of critical stored data.
C	May be loss of function .	Functions shall be recoverable by the operator. Shall operate as intended after recovering. Shall be no loss of critical stored data.
Note:	Operate as intended during the test allows a level of degradation in accordance with clause 6.2.2.	
6.2.2	Minimum performance level For equipment that supports a PER or FER, the minimum performance level shall be a PER or FER less than or equal to 10 %. For equipment that does not support a PER or a FER, the minimum performance level shall be no loss of the wireless transmission function needed for the intended use of the equipment.	
6.3	Performance criteria for Continuous phenomena The performance criteria A shall apply. Where the EUT is a transmitter in standby mode, unintentional transmission shall not occur during the test. Where the EUT is a transceiver in receive mode, unintentional transmission shall not occur during the test.	
6.4	Performance criteria for Transient phenomena The performance criteria B shall apply, except for voltage dips greater than or equal to 100 ms and voltage interruptions of 5 000 ms duration, for which performance criteria C shall apply. Where the EUT is a transmitter in standby mode, unintentional transmission shall not occur as a result of the application of the test. Where the EUT is a transceiver in receive mode, unintentional transmission shall not occur as a result of the application of the test.	

Performance Criteria of ETSI EN 301 489-19, clause 6	
6.1 GSM and DCS Performance Criteria	
General	The equipment shall meet the performance criteria specified in this clause and clauses 6.1.1 to 6.1.4, as appropriate. Portable equipment intended for use whilst powered by the main battery of a vehicle shall additionally fulfil the applicable requirements set out in ETSI EN 301 489-1 [1], clauses 7.1 and 7.2 for mobile equipment. Portable or mobile equipment powered by the AC mains shall additionally fulfil the applicable requirements of ETSI EN 301 489-1 [1], clauses 7.1 and 7.2 for radio and ancillary equipment for fixed use. The establishment and maintenance of a communications link, the assessment of RXQUAL, and the assessment of the audio breakthrough by monitoring the speech output signal level, are used as performance criteria to ensure that all primary functions of the transmitter and receiver are evaluated during the immunity tests. In addition, the test shall also be performed in idle mode to ensure the transmitter does not unintentionally operate. The maintenance of a communications link shall be assessed using an indicator which may be part of the test system or the EUT. If an equipment is of a specialized nature, such that the performance criteria described in the following clauses are not appropriate, then the manufacturer shall declare, for inclusion in the test report, his own specification for an acceptable level of performance or degradation of performance during and/or after the immunity tests. The performance specification shall be included in the product description and documentation. The performance criteria specified by the manufacturer shall give the same degree of immunity protection as called for in the following clauses.
Performance criteria for Continuous phenomena applied to Transmitters (CT)	A communication link shall be established at the start of the test, and maintained during the test, see clauses 4.2.3 and 4.2.4. 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). NOTE: When there is a high level background noise present the filter bandwidth can be reduced down to a minimum of 40 Hz. 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.
Performance criteria for Transient phenomena applied to Transmitters (TT)	A communications link shall be established at the start of the test, see appropriate clauses 4.2 to 4.2.4. At the conclusion of each exposure the EUT shall operate with no user noticeable loss of the communication link. 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. 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.
Performance criteria for Continuous phenomena applied to Receivers (CR)	A communications link shall be established at the start of the test, see appropriate clauses 4.2 to 4.2.6. During the test, the RXQUAL of the downlink shall not exceed the value of three, measured during each individual exposure in the test sequence. During the test, the downlink 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). NOTE: When there is a high level background noise present the filter bandwidth can be reduced down to a minimum of 40 Hz. 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.
Performance criteria for Transient phenomena applied to Receivers (TR)	A communications link shall be established at the start of the test, see appropriate clauses 4.2. to 4.2.6. At the conclusion of each exposure the EUT shall operate with no user noticeable loss of the communication link. 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.
Performance criteria for ancillary equipment tested on a stand alone basis	The provision of ETSI EN 301 489-1 [1], clause 6.4 shall apply.
6.2 CDMA Direct Spread (UTRA and E-UTRA) Performance Criteria	
6.2.1 General	
The equipment shall meet the performance criteria specified in this clause and clauses 6.2.2 and 6.2.3 as appropriate. The maintenance of a communications link shall be assessed by using an indicator, which may be part of the test system or the equipment under test. If an equipment is of a specialized nature, that the performance criteria described in the following clauses are not appropriate, then the manufacturer shall declare, for inclusion in the test report, his own specification for an acceptable level of performance or degradation of performance during and/or after testing, as required by the present document. The performance criteria specified by the manufacturer shall give the same degree of immunity protection as called for in the following clauses. In addition, the test shall also be performed in idle mode to ensure the transmitter does not unintentionally operate. The requirements apply to all types of UTRA and E-UTRA (FDD or TDD) for the UE.	
6.2.2 Performance criteria for continuous phenomena	

General	A communication link shall be established at the start of the test, and maintained during the test, clauses 4.1 and 4.2. In the speech mode, the performance criteria shall be that the Up Link and Down Link speech output levels shall be atleast 35 dB less than the recorded reference levels, when measured through an audio band pass filter of width 200 Hz,centred on 1 kHz (annex B). NOTE: When there is a high level of background audio noise present, the filter bandwidth can be reduced downto a minimum of 40 Hz. At the conclusion of the test, the EUT shall operate as intended with no loss of user control functions or stored data, andthe communication link shall have been maintained. In addition to confirming the above performance in traffic mode, the test shall be performed in idle mode, and thetransmitter shall not unintentionally operate.
UTRA	In the data transfer mode, the performance criteria can be one of the following: • if the BER (as referred in ETSI TS 134 109 [4]) is used, it shall not exceed 0,001 during the test sequence; • if the BLER (as referred in ETSI TS 134 109 [4]) is used, it shall not exceed 0,01 during the test sequence. The BLER calculation shall be based on evaluating the CRC on each transport block.
E-UTRA	In the data transfer mode, the performance criteria shall be that the throughput shall be ≥ 95 % of the maximumthroughput of the reference measurement channel as specified in annex C in ETSI TS 136 101 [9] with parametersspecified in tables 7.3.1-1 and 7.3.1-2 in ETSI TS 136 101 [9] during the test sequence.

6.2.3 Performance criteria for Transient phenomena

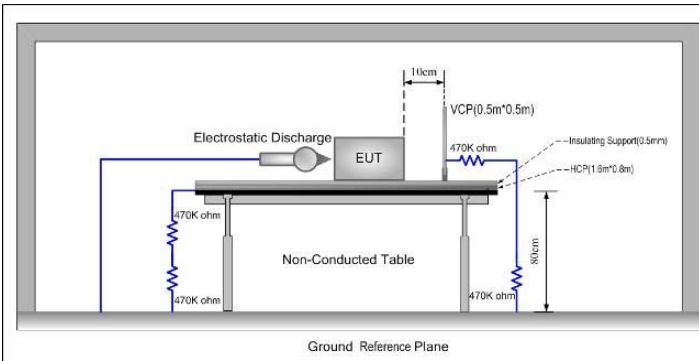
A communications link shall be established at the start of the test, clauses 4.1 and 4.2.

At the conclusion of each exposure the EUT shall operate with no user noticeable loss of the communication link.

At the conclusion of the total test comprising the series of individual exposures, the EUT shall operate as intended withno loss of user control functions or stored data, as declared by the manufacturer, and the communication link shall havebeen maintained.

In addition to confirming the above performance in traffic mode, the test shall also be performed in idle mode, and thetransmitter shall not unintentionally operate.

7.2.1 Electrostatic Discharge

Test Requirement:	ETSI EN 301489-3/-17/-19
Test Method:	EN 61000-4-2
Discharge Voltage:	Contact Discharge: $\pm 4\text{kV}$ Air Discharge: $\pm 2\text{kV}$, $\pm 4\text{kV}$, $\pm 8\text{kV}$ HCP/VCP: $\pm 4\text{kV}$
Polarity:	Positive & Negative
Number of Discharge:	Contact Discharge: Minimum 10 times at each test point, Air Discharge: Minimum 10 times at each test point.
Discharge Mode:	Single Discharge
Discharge Period:	1 second minimum
Limit:	Criteria B
Test setup:	
Test Procedure:	Air discharge: 1. The test was applied on non-conductive surfaces of EUT. 2. The round discharge tip of the discharge electrode was approached as fast as possible to touch the EUT. 3. After each discharge, the discharge electrode was removed from the EUT. 4. The generator was re-triggered for a new single discharge and repeated 10 times for each pre-selected test point. 5. This procedure was repeated until all the air discharge completed Contact Discharge: 1. The test was applied on conductive surfaces of EUT. 2. the generator was re-triggered for a new single discharge and repeated 10 times for each pre-selected test point. 3. the tip of the discharge electrode was touch the EUT before the discharge switch was operated. Indirect discharge for horizontal coupling plane 1. At least 10 single discharges shall be applied at the front edge of each HCP opposite the centre point of each unit of the EUT and 0.1m from the front of the EUT. 2. The long axis of the discharge electrode shall be in the plane of the HCP and perpendicular to its front edge during the discharge. 3. Consideration should be given to exposing all sides of the EUT.

	Indirect discharge for vertical coupling plane 1. At least 10 single discharges were applied to the center of one vertical edge of the coupling plane. 2. The coupling plane, of dimensions 0.5m X 0.5m, was placed parallel to, and positioned at a distance of 0.1m from the EUT. 3. Discharges were applied to the coupling plane, with this plane in sufficient different positions that the four faces of the EUT are completely illuminated.
Test environment:	Temp.: 24 °C Humid.: 51% Press.: 1 010mbar
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

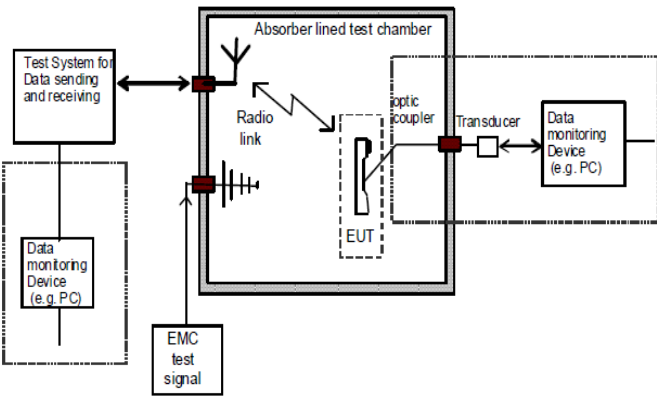
Measurement Record:

Measurement Record:				
Test points:	I: N/A			
	II: All plastic seams, screen, keys			
Direct discharge				
Discharge Voltage (KV)	Type of discharge	Test points	Observations Performance	Result
± 4	Contact	I	N/A	N/A
± 2, ± 4, ± 8	Air	II	A	Pass
Indirect discharge				
Discharge Voltage (KV)	Type of discharge	Test points	Observation Performance	Result
± 4	HCP	Edge of the HCP	A	Pass
± 4	VCP	Center of the VCP	A	Pass

Remark:

A: Normal performance within the specification limits.

7.2.2 Radio frequency electromagnetic field

Test Requirement:	ETSI EN 301 489-3/-17/-19
Test Method:	EN 61000-4-3
Frequency range:	80MHz to 6GHz
Test Level:	3V/m
Modulation:	80%, 1kHz Amplitude Modulation
Performance Criterion:	Criteria A
Test setup:	
Test monitor:	Traffic mode: 1. The test system shall simulate a Base Station (BS) with Broadcast Control Channel/Common Control Channel (BCCH/CCCH) on one carrier. 2. The EUT shall be synchronized to the BCCH, listening to the CCCH and able to respond to paging messages. Idle mode: 1. The test system shall simulate a Base Station (BS) with Broadcast Control Channel/Common Control Channel (BCCH/CCCH) on one carrier. 2. The EUT shall be synchronized to the BCCH, listening to the CCCH and able to respond to paging messages.
Test environment:	Temp.: 25 °C Humid.: 52% Press.: 1 010mbar
Test Instruments:	Refer to section 6.0 for details
Test results:	Pass

Measurement Record:

Measurement result:

Frequency	Level	Modulation	Operating Mode	Antenna Polarization	EUT Face	Observations (Performance Criterion)
80 MHz-6 GHz	3 V/m	1 kHz, 80 % Amp. Mod, 1 % increment,	WIFI mode	V	Front	A
				H		A
				V	Rear	A
				H		A
				V	Left	A
				H		A
				V	Right	A
				H		A
				V	Top	A
				H		A
				V	Bottom	A
				H		A

Remarks:

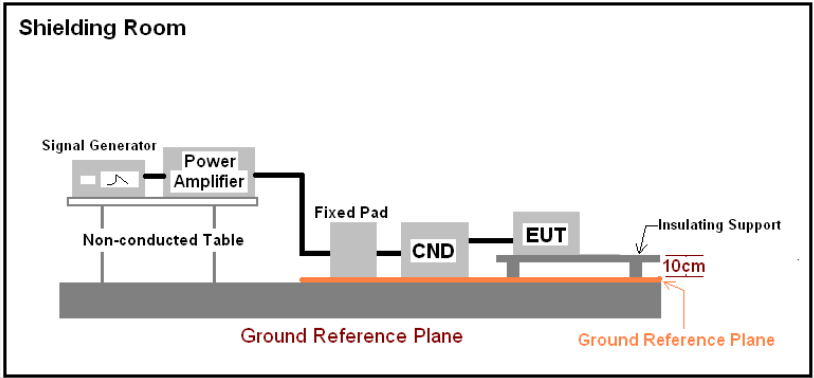
A: normal performance within the specification limits

Frequency	Level	Modulation	Operating Mode	Antenna Polarization	EUT Face	Observations (Performance Criterion)
80 MHz; 104 MHz; 136 MHz; 165 MHz; 200 MHz; 260 MHz; 330 MHz; 430 MHz; 560 MHz; 715 MHz $\pm$ 1 MHz; 920 MHz $\pm$ 1 MHz;	3 V/m	200Hz, 100 % modulated	GNSS modes	V	Front	A
				H		A
				V	Rear	A
				H		A
				V	Left	A
				H		A
				V	Right	A
				H		A
				V	Top	A
				H		A
				V	Bottom	A
				H		A

Remarks:

A: normal performance within the specification limits

7.2.3 Radio frequency, common mode

Test Requirement:	ETSI EN 301 489-3/-17/-19
Test Method:	EN 61000-4-6
Frequency range:	0.15MHz to 80MHz
Test Level:	3V rms on AC Ports (unmodulated emf into 150 Ω)
Modulation:	80%, 1kHz Amplitude Modulation
Performance Criterion:	Criteria A
Test setup:	
Test Procedure:	1. Let the EUT work in test mode and test it. 2. The EUT are placed on an insulating support 0.1m high above a ground reference plane. CDN (coupling and decoupling device) is placed on the ground plane about 0.3m from EUT. Cables between CDN and EUT are as short as possible, and their height above the ground reference plane shall be between 30 and 50 mm (where possible). 3. The disturbance signal described below is injected to EUT through CDN. 4. The EUT operates within its operational mode(s) under intended climatic conditions after power on. 5. The frequency range is swept from 0.150MHz to 80MHz using 3V signal level, and with the disturbance signal 80% amplitude modulated with a 1kHz sine wave. The rate of sweep shall not exceed 1.5×10^{-3} decades/s. Where the frequency is swept incrementally; the step size shall not exceed 1% of the start and thereafter 1% of the preceding frequency value. 6. Recording the EUT operating situation during compliance testing and decide the EUT immunity criterion.
Test environment:	Temp.: 24 $^{\circ}\text{C}$ Humid.: 51% Press.: 1 010mbar
Test Instruments:	Refer to section 6.0 for details
Test results:	Pass

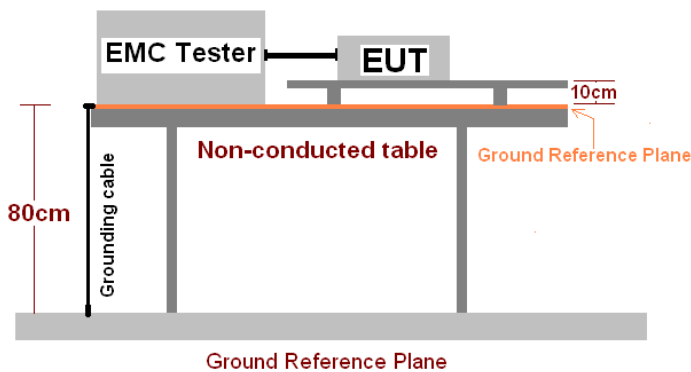
Measurement Record:

Frequency	Injected Position	Test Level	Modulation	Step Size	Dwell Time	Observations (Performance Criterion)
150kHz to 80MHz	AC Main	3Vrms	80%, 1kHz Amp. Mod.	1%	2s	A

Remark:

A: Normal performance within the specification limits.

7.2.4 Electrical Fast Transients

Test Requirement:	ETSI EN 301 489-3/-17/-19
Test Method:	EN 61000-4-4
Test Level:	1.0kV on AC port
Polarity:	Positive & Negative
Repetition Frequency:	5kHz
Burst Duration:	15ms
Burst Period:	300ms
Test Duration:	2 minute per level & polarity
Performance Criterion:	B
Test setup:	
Test environment:	Temp.: 26 °C Humid.: 54% Press.: 1 010mbar
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

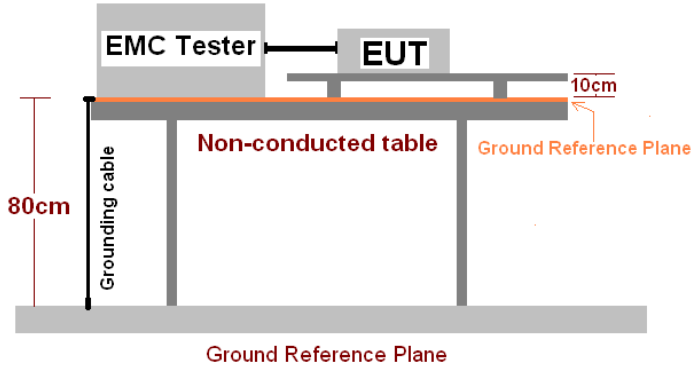
Measurement Record:

Lead under Test	Level (±kV)	Coupling Direct/Clamp	Observations (Performance Criterion)	Result
L	± 1.0	Direct	A	Pass
N	± 1.0	Direct	A	Pass
L-N	± 1.0	Direct	A	Pass

Remark:

A: Normal performance within the specification limits

7.2.5 Surge

Test Requirement:	ETSI EN 301 489-3/-17/-19
Test Method:	ETSI EN 61000-4-5
Test Level:	±1kV Live to Neutral: Differential mode
Polarity:	Positive & Negative
Test Interval:	60s between each surge
No. of surges:	5 positive, 5 negative at 0°, 90°, 180°, 270°.
Performance Criterion:	B
Test setup:	
Test environment:	Temp.: 26 °C Humid.: 53% Press.: 1 010mbar
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

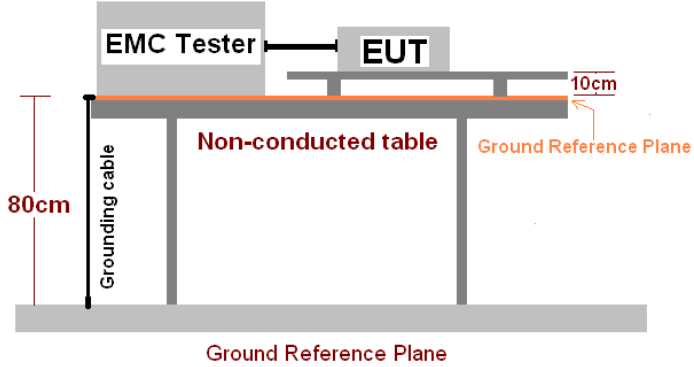
Measurement Record:

Location	Level(kV)	Pulse No	Surge Interval	Phase(deg)	Observations (Performance Criterion)
L-N	± 1	5	60s	0°	A
				90°	A
				180°	A
				270°	A

Remark:

A. Normal performance within the specification limits

7.2.6 Voltage Dip and Voltage Interruptions

Test Requirement:	ETSI EN 301 489-3/-17/-19
Test Method:	EN 61000-4-11
Test Level:	0% of VT(Supply Voltage) for 0.5 period 0% of VT(Supply Voltage) for 1.0 period 70% of VT(Supply Voltage) for 25 period 0% of VT(Supply Voltage) for 250 period
No. of Dips / Interruptions:	3 per Level
Performance Criterion:	0% VD, 0.5 period----Performance criterion: B 0% VD, 1 period----Performance criterion: B 70% VD, 25 period----Performance criterion: C 0% VI, 250 period----Performance criterion: C
Test setup:	 The diagram illustrates the test setup. An EMC Tester and the Equipment Under Test (EUT) are positioned on a non-conducted table. The table's height is indicated as 80cm from the ground reference plane. The EUT is placed on the table, and its height is indicated as 10cm from the table surface. A grounding cable is connected to the table. The ground reference plane is shown at the bottom of the diagram.
Test environment:	Temp.: 26 °C Humid.: 53% Press.: 1 010mbar
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Measurement Record:

Test Level U_T	Duration (Periods)	Phase angle	No of dropout	Time between dropout	Observations (Performance Criterion)
0%	0.5	0°, 90°, 180°, 270°	3	10s	A
0%	1.0	0°, 90°, 180°, 270°	3	10s	A
70%	25	0°, 90°, 180°, 270°	3	10s	A
0%	250	0°, 90°, 180°, 270°	3	10s	B

Remark:

A: No loss of function was observed.

B: During the test, the EUT stopped charging, after the test, it can return to normal automatically

8 Test Setup Photo

Reference to the **appendix I** for details.

9 EUT Constructional Details

Reference to the **appendix II** for details.

-----End-----