



Test Report No.: PSU-NQN2402040109RF09



Certificate #6613.01

# VARIANT TEST REPORT

Applicant:	HMD Global Oy
Address:	Bertel Jungin aukio 9 Espoo 02600 Finland

Manufacturer or Supplier:	HMD Global Oy
Address:	Bertel Jungin aukio 9 Espoo 02600 Finland
Product:	Smartphone
Brand Name:	HMD
Model Name:	TA-1590
FCC ID:	2AJOTTA-1590
Date of tests:	Jan. 02, 2024 ~ Feb. 19, 2024

The submitted sample of the above equipment has been tested for according to the requirements of the following standards:

- FCC Part 15, Subpart C, Section 15.247     ANSI C63.10-2013
- FCC Part 15, Subpart E, Section 15.407
- FCC Part 22     FCC Part 24
- FCC Part 27
- FCC Part 2     ANSI/TIA/EIA-603-D
- ANSI/TIA/EIA-603-E     ANSI C63.26-2015

**CONCLUSION: The submitted sample was found to COMPLY with the test requirement**

Prepared by Hanwen Xu Engineer / Mobile Department	Approved by Peibo Sun Manager / Mobile Department
Date: Feb. 19, 2024	Date: Feb. 19, 2024

This report is governed by, and incorporates by reference, the Conditions of Testing as posted at the date of issuance of this report at <http://www.bureauveritas.com/home/about-us/our-business/cps/about-us/terms-conditions> and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. Statements of conformity are based on simple acceptance criteria without taking measurement uncertainty into account, unless otherwise requested in writing. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.



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## RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
PSU-NQN2311090109RF09	Original release	Jan. 30, 2024
PSU-NQN2402040109RF09	For FCC ID 2AJOTTA-1590 that it is involved in two product models N159V and TA-1590, the difference of N159V and TA-1590 is only model name, memory and software customization applications. For HW, the TA-1590 product has only 6+128 memory, the memory of the N159V product is 3+64, hardware is the same except the memory, and there is no change of the hardware version number. For SW, on the basis of N159V, some customized applications of TA-1590 on the software are removed, and the software version number is changed. So this report data is copied from the report PSU-NQN2311090109RF09(model:N159V, FCC ID: 2AJOTTA-1590).	Feb. 19, 2024



# 1 GENERAL INFORMATION

## 1.1 GENERAL DESCRIPTION OF EUT

<b>PRODUCT*</b>	Smartphone	
<b>BRAND NAME*</b>	HMD	
<b>MODEL NAME*</b>	TA-1590	
<b>NOMINAL VOLTAGE*</b>	5.0Vdc (adapter) 3.87Vdc (battery)	
<b>MODULATION TYPE</b>	<b>BT_LE</b>	GFSK
	<b>Bluetooth</b>	GFSK, π/4-DQPSK, 8DPSK
	<b>FM</b>	FM
	<b>WLAN</b>	DSSS, OFDM
	<b>GPS</b>	BPSK
	<b>GSM/GPRS/EDGE</b>	GMSK, 8PSK
	<b>WCDMA</b>	HSDPA/HSUPA/DC-HSDPA
	<b>LTE</b>	QPSK/16QAM/64QAM
<b>OPERATING FREQUENCY</b>	<b>Bluetooth/BT_LE</b>	2402MHz ~ 2480MHz
	<b>FM</b>	87.5MHz ~ 108MHz
	<b>WLAN</b>	2412 ~ 2462MHz for 11b/g/n(HT20/40) 5180 ~ 5240MHz, 5260 ~ 5320 MHz, 5500 ~ 5720MHz, 5745 ~ 5825 MHz for 11a/ n(HT20)/ n(HT40) / ac(VHT20)/ ac(VHT40) / ac(VHT80)
	<b>GPS</b>	1559MHz ~ 1610MHz
	<b>GSM</b>	824.2MHz ~ 848.8MHz (FOR GSM 850) 1850.2MHz ~ 1909.8MHz (FOR GSM 1900)



<b>OPERATING FREQUENCY</b>	<b>WCDMA</b>	1852.4MHz ~ 1907.6MHz(FOR WCDMA Band 2) 826.4MHz ~ 846.6MHz (FOR WCDMA Band 5)
	<b>LTE</b>	1850.7MHz ~ 1909.3MHz (FOR LTE Band2) 1710.7MHz ~ 1754.3MHz (FOR LTE Band4) 824.7MHz ~ 848.3MHz (FOR LTE Band5) 699.7MHz ~ 715.3MHz (FOR LTE Band12) 779.5MHz ~ 784.5MHz (FOR LTE Band13) 1710.7MHz ~ 1779.3MHz (FOR LTE Band66) The following only support downlink: CA_2A-2A CA_2A-4A CA_2A-5A CA_2A-13A CA_2A-66A CA_4A-4A CA_4A-5A CA_4A-13A CA_5A-5A CA_5A-66A CA_5B CA_13A-66A CA_66A-66A CA_66B CA_66C
<b>HW VERSION*</b>	V 1.0	
<b>SW VERSION*</b>	00US_0_100	
<b>I/O PORTS*</b>	Refer to user's manual	
<b>CABLE SUPPLIED*</b>	N/A	
<b>ACCESSORY DEVICES*</b>	Refer to note as below	

**NOTE:**

1. \*Since the above data and/or information is provided by the client relevant results or conclusions of this report are only made for these data and/or information , Test Lab is not responsible for the authenticity, integrity and results of the data and information and/or the validity of the conclusion.
2. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
3. For the test results, the EUT had been tested with all conditions. But only the worst case was shown in

test report.

4. For the product of TA-1590(FCC ID 2AJOTTA-1590), the following components are different between the first and second supply, other parameters are the same.

component		First supply		Second supply	
		Supplier	Spec	Supplier	Spec
PCBA	Charger IC	SGMICRO	3.78A Single Cell Switching Battery Charger IC	Unisemi	3.78A Single Cell Switching Battery Charger IC
LCM	LCD	TCL	LCD a-Si TFT;720*1612	Iceptron	LCD a-Si TFT;720*1612
Front camera	Camera	Union Image	5M;FF	Imaging	5M;FF
CAM	Camera	Union Image	13 AF	Sunwin	13 AF
	Camera	SEGA	2M	Imaging	2M
Acoustic	Vibrator	KunWang	0830	HONGZHIFA	0830
	FPC	XINYE	Speaker FPC: 32.1*11.46*0.15	Lat	Speaker FPC: 32.1*11.46*0.15
LED		Runlite	White LED;500mA;1500mA	latticepower	White LED;500mA;1500mA
Battery		gaoyuan	4000mAh;3.87V;4.45V	highpower	4000mAh;3.87V;4.45V
antenna		Haitong	Omni-directional,Linear,antenna shrapnel	Kexinhuache ng	Omni-directional,Linear,antenna shrapnel
MIC		Gettop	L2.75xW1.85xH0.9 mm	goertek	L2.75xW1.85xH0.9 mm
Data cable		Saibao	5V2A	TorchWay	5V2A

**List of Accessory:**

ACCESSORIES	BRAND	MANUFACTURER	MODEL	SPECIFICATION
Battery 1	Gaoyuan	N/A	CH426385	Power Rating: 15.48Wh
Battery 2	Highpower	N/A	CH426385	Power Rating: 15.48Wh
AC Adapter	BaiJunDa	BaiJunDa	HAD-010U	I/P: 100-240Vac, O/P: 4.8~5.4Vdc, 2.0A
USB Cable 1	Saibao	N/A	SZN-A036A	Signal Line, 1.0meter 5V 2A
USB Cable 2	TorchWay	N/A	JWUB1651-ZN01H	Signal Line, 1.0meter 5V 2A

## 2 SUMMARY OF TEST RESULTS

### 2.1 TEST RESULTS

TEST TYPE	Result	Test lab*
Radiated Emissions	Pass	A

**NOTE:** For FCC ID 2AJOTTA-1590 that it is involved in two product models N159V and TA-1590, the difference of N159V and TA-1590 is only model name, memory and software customization applications. For HW, the TA-1590 product has only 6+128 memory, the memory of the N159V product is 3+64, hardware is the same except the memory, and there is no change of the hardware version number. For SW, on the basis of N159V, some customized applications of TA-1590 on the software are removed, and the software version number is changed. So this report data is copied from the report PSU-NQN2311090109RF09(model:N159V, FCC ID: 2AJOTTA-1590).

#### \*Test Lab Information Reference

##### Lab A:

Huarui 7Layers High Technology (Suzhou) Co., Ltd.

##### Lab Address:

Tower N, Innovation Center, 88 Zhuyi Road, High-tech District, Suzhou City, Anhui Province

**Accredited Test Lab Cert 6613.01**

The FCC Site Registration No. is 434559; The Designation No. is CN1325.

### 2.2 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

MEASUREMENT	UNCERTAINTY
Radiated emissions & Radiated Power (30MHz~1GMHz)	±4.98dB
Radiated emissions & Radiated Power (1GMHz ~6GMHz)	±4.70dB
Radiated emissions (6GMHz ~18GMHz)	±4.60dB
Radiated emissions (18GMHz ~40GMHz)	±4.12dB

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

## 2.3 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Pre-Amplifier	R&S	SCU18F1	100815	Aug.30,22	Aug.29,24
Pre-Amplifier	R&S	SCU08F1	101028	Sep.16,22	Sep.15,24
Signal Generator	R&S	SMB100A	182185	Feb.16,22	Feb.15,24
3m Fully-anechoic Chamber	TDK	9m*6m*6m	HRSW-SZ-EMC-01Chamber	Nov.25,22	Nov.24,25
3m Semi-anechoic Chamber	TDK	9m*6m*6m	HRSW-SZ-EMC-02Chamber	Nov.25,22	Nov.24,25
EMI TEST Receiver	R&S	ESW44	101973	Feb.25,22	Feb.24,24
Bilog Antenna	SCHWARZBECK	VULB 9163	1264	Feb.28,22	Feb.27,24
Horn Antenna	ETS-LINDGREN	3117	227836	Aug.22,22	Aug.21,24
Horn Antenna (18GHz-40GHz)	Steatite Q-par Antennas	QMS 00880	23486	Feb.23,22	Feb.22,24
Horn Antenna	Steatite Q-par Antennas	QMS 00208	23485	Aug.22,22	Aug.21,24
Loop Antenna	SCHWARZ	HFH2-Z2/Z2E	100976	Feb.23,22	Feb.22,24
WIDEBANDRADIO COMMUNICATION TESTER	R&S	CMW500	169399	Jun.27,22	Jun.26,24
Test Software	ELEKTRA	ELEKTRA4.32	N/A	N/A	N/A
Open Switch and Control Unit	R&S	OSP220	101964	N/A	N/A
DC Source	HYELEC	HY3010B	551016	Aug.31,22	Aug.30,24
Hygrothermograph	DELI	20210528	SZ014	Sep.06,22	Sep.05,24
PC	LENOVO	E14	HRSW0024	N/A	N/A
TMC-AMI18843A(CABLE)	R&S	HF290-NMNM-7.00M	N/A	N/A	N/A
TMC-AMI18843A(CABLE)	R&S	HF290-NMNM-4.00M	N/A	N/A	N/A
CABLE	R&S	W13.02	N/A	Apr.28,23	Apr.27,24
CABLE	R&S	W13.02	N/A	Apr.28,23	Apr.27,24
CABLE	R&S	W12.14	N/A	Apr.28,23	Apr.27,24
CABLE	R&S	W12.14	N/A	Apr.28,23	Apr.27,24

- NOTE:**
- 1.The calibration interval of the above test instruments is 12 months or 24 months or 36 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.
  2. The test was performed in 3m Chamber.
  3. The test was performed in 3m Semi-anechoic Chamber and RF Oven Room.
  4. The horn antenna is used only for the measurement of emission frequency above 1GHz if tested.



## 2.4 REFERENCED STANDARDS

The following referenced standards are necessary for the report. For undated references in this report, the cited version applies.

No.	Identify	Note
1	FCC Part 15, Subpart C, Section 15.247	For 2.4G WIFI&BT
2	FCC Part 15, Subpart E, Section 15.407	For 5G WIFI
3	FCC PART 22, Subpart H	For WWAN
	FCC PART 24, Subpart E	For WWAN
4	FCC Part 27	For WWAN

**Note:** More informations and test procedures pls refer to 15.247/15.407/Part22/Part24/ Part27 reports.

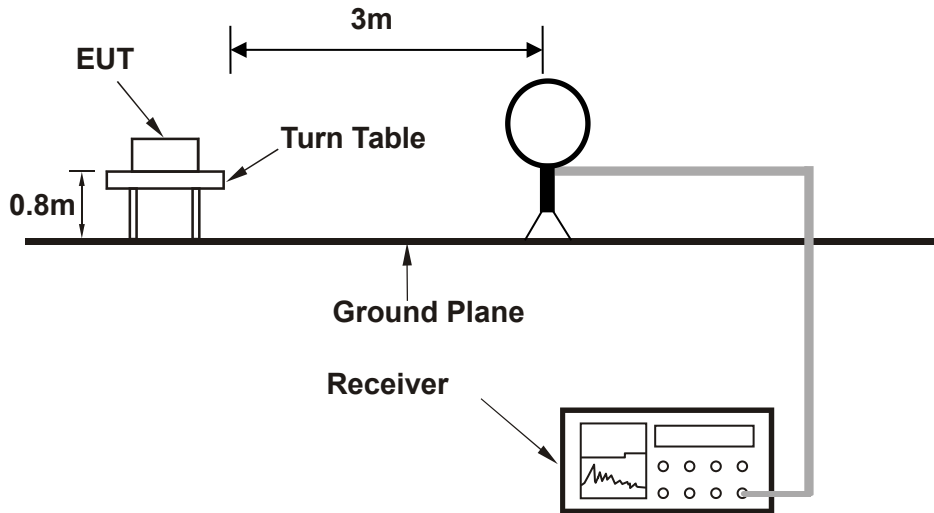
## 2.5 TEST CONFIGURATIONS

Test Configurations	Description
Worst case test Mode	
1	GSM1900_LINK+2.4G_WIFI_11G_TX_CH1
2	WCDMA_B5_LINK+5G_WIFI_11AC80_TX_CH106
3	LTE_B13_LINK+BT2.0_GFSK_TX_CH78

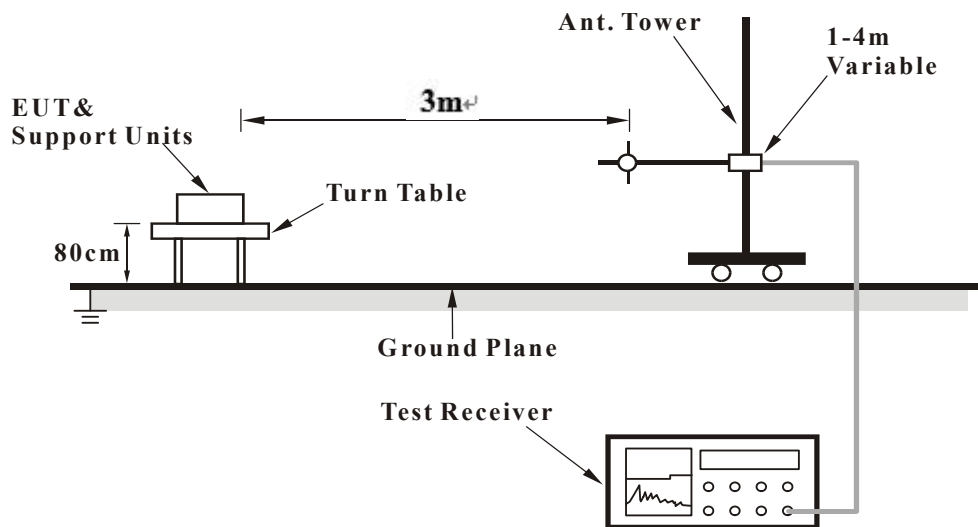
- Note:**
1. Test equipment and site refer to Referenced Standards report
  2. For higher frequency, the emission is 20dB below the limit was not record

## 2.6 TEST DATA

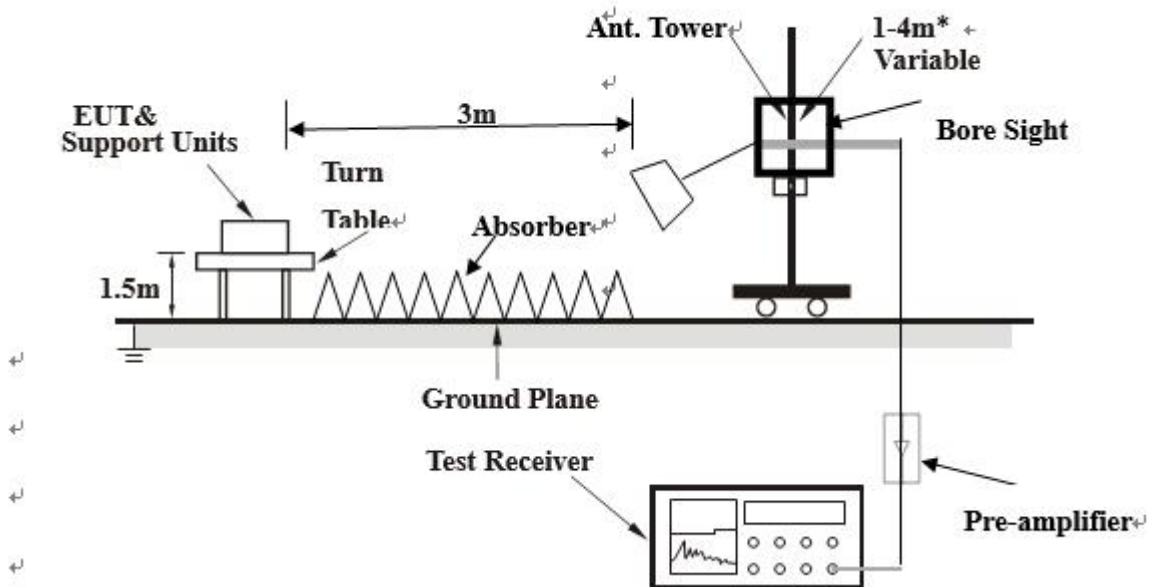
<Frequency Range 9KHz~30MHz >



< Frequency Range 30MHz~1GHz >



<Frequency Range above 1GHz>



**Note:** Above 1G is a directional antenna

Depends on the EUT height and the antenna 3dB beamwidth both, refer to section 7.3 of CISPR 16-2-3.

For the actual test configuration, please refer to the attached file (Test Setup Photo).

### 2.6.1 EUT OPERATING CONDITIONS

- Set the EUT under full load condition and placed them on a testing table.
- Set the transmitter part of EUT under transmission condition continuously at specific channel frequency.
- The necessary accessories enable the EUT in full functions.

## 2.6.2 TEST RESULTS

**NOTE :** The 9K~30MHz amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required in the report.

**GSM1900\_LINK+2.4G\_WIFI\_11G\_TX\_CH1:**

**BELOW 1GHz WORST-CASE DATA:**

**30MHz – 1GHz data:**

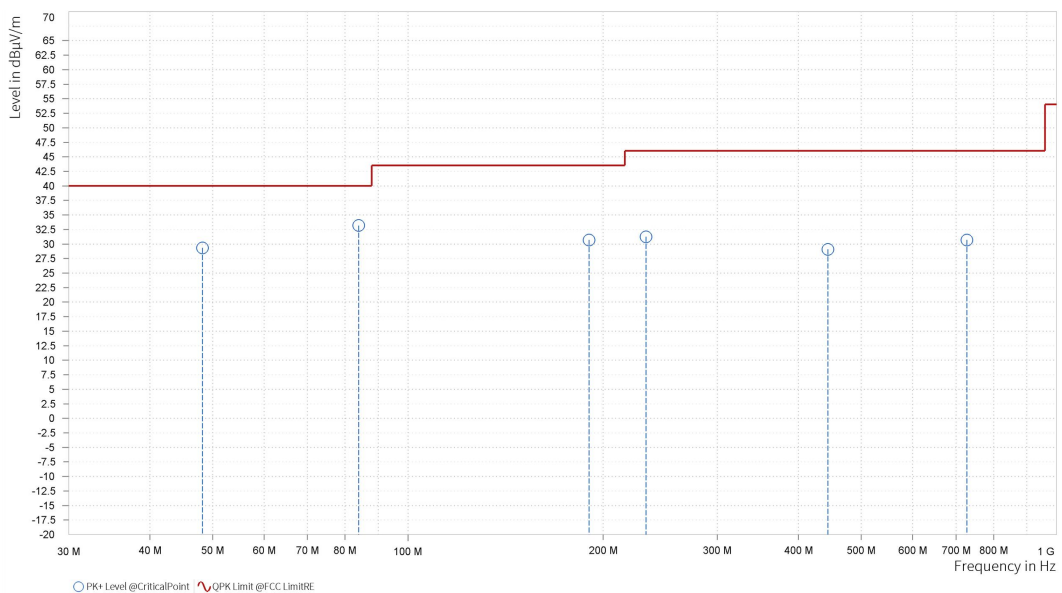
<b>CHANNEL</b>	GSM1900_LINK+2.4G_WIFI_11G_TX_CH1	<b>DETECTOR FUNCTION</b>	Quasi-Peak (QP)
<b>FREQUENCY RANGE</b>	30MHz ~ 1GHz		

**ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M**

Rg	Frequency [MHz]	PK+ Level [dBμV/m]	PK+: QPK Limit [dBμV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	48.214	29.33	40.00	10.67	-7.44	H	355.5	2.00
1	83.943	33.18	40.00	6.82	-12.76	H	258.9	2.00
1	190.212	30.69	43.50	12.81	-9.37	H	191.9	1.00
1	232.892	31.24	46.00	14.76	-7.57	H	209.8	1.00
1	443.974	29.08	46.00	16.92	-3.79	H	347.9	1.00
1	727.699	30.70	46.00	15.30	0.06	H	191.9	1.00

### REMARKS:

1. Emission level (dBuV/m) = Read level (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value =Limit value– Emission level.



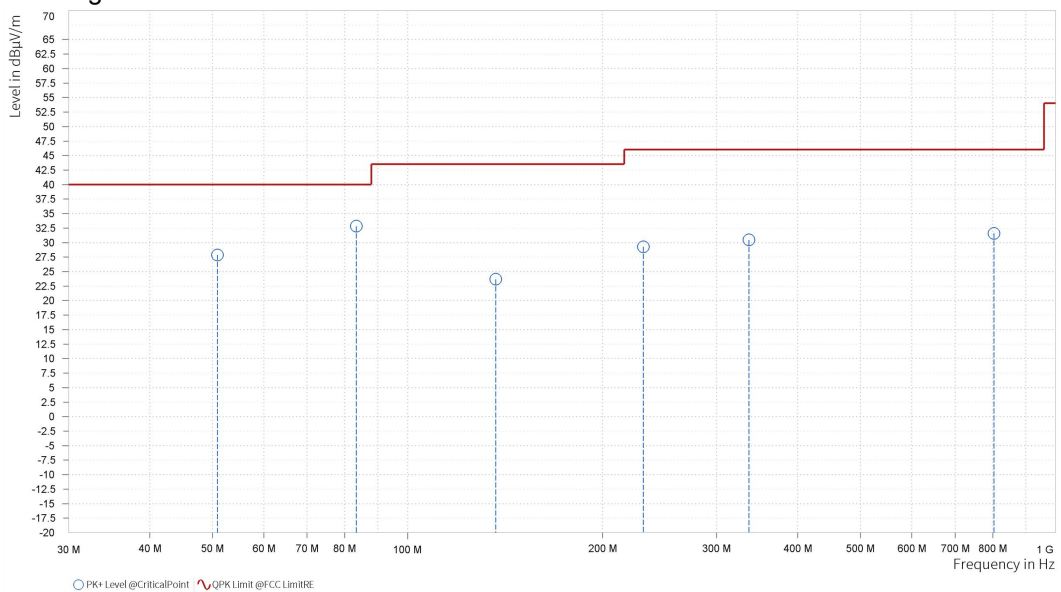
<b>CHANNEL</b>	GSM1900_LINK+2.4G_WI FI_11G_TX_CH1	<b>DETECTOR FUNCTION</b>	Quasi-Peak (QP)
<b>FREQUENCY RANGE</b>	30MHz ~ 1GHz		

**ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M**

Rg	Frequency [MHz]	PK+ Level [dBμV/m]	PK+: QPK Limit [dBμV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	50.909	27.89	40.00	12.11	-7.53	V	275.5	2.00
1	83.404	32.84	40.00	7.16	-12.89	V	206.2	2.00
1	136.862	23.68	43.50	19.82	-12.41	V	330.6	1.00
1	231.113	29.27	46.00	16.73	-7.67	V	330.6	1.00
1	336.358	30.48	46.00	15.52	-4.17	V	170.5	2.00
1	803.737	31.60	46.00	14.40	1.05	V	48.5	1.00

**REMARKS:**

1. Emission level (dBuV/m) = Read level (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value =Limit value– Emission level.





ABOVE 1GHz WORST-CASE DATA:

Note: For higher frequency, the emission is too low to be detected.

<b>CHANNEL</b>	GSM1900_LINK+2.4G_WI FI_11G_TX_CH1	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 18GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBμV/m]	PK+ Limit [dBμV/m]	PK+ Margin [dB]	AVG Level [dBμV/m]	AVG Limit [dBμV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
3	3,760.000	48.76	74.00	25.24	38.35	54.00	15.65	3.46	H	1	2.00
3	4,823.000	51.16	74.00	22.84	39.89	54.00	14.11	4.29	H	359	2.00
3	5,640.000	52.14	74.00	21.86	41.16	54.00	12.84	6.25	H	1	2.00
3	7,236.000	56.45	74.00	17.55	44.25	54.00	9.75	11.18	H	1	2.00

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBμV/m]	PK+ Limit [dBμV/m]	PK+ Margin [dB]	AVG Level [dBμV/m]	AVG Limit [dBμV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
3	3,760.000	49.19	74.00	24.81	38.22	54.00	15.78	3.46	V	0.9	2.00
3	4,824.000	51.04	74.00	22.96	39.94	54.00	14.06	4.31	V	133.4	2.00
3	5,640.000	51.54	74.00	22.46	41.23	54.00	12.77	6.25	V	133.4	2.00
3	7,236.000	54.48	74.00	19.52	44.43	54.00	9.57	11.18	V	133.4	2.00

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor  
Margin value =Limit value– Emission level.

**NOTE :** The 9K~30MHz amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required in the report.

**WCDMA\_B5\_LINK+5G\_WIFI\_11AC80\_TX\_CH106:**

**BELOW 1GHz WORST-CASE DATA:**

**30MHz – 1GHz data:**

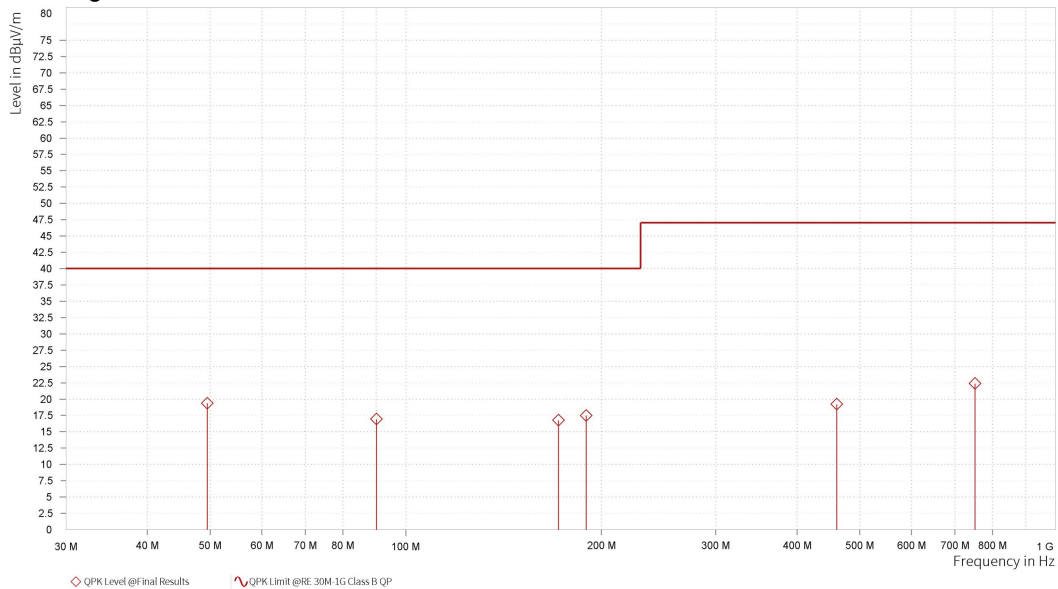
<b>CHANNEL</b>	WCDMA_B5_LINK+5G_WIFI_11AC80_TX_CH106	<b>DETECTOR FUNCTION</b>	Quasi-Peak (QP)
<b>FREQUENCY RANGE</b>	30MHz ~ 1GHz		

**ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M**

Rg	Frequency [MHz]	QPK Level [dBμV/m]	QPK Limit [dBμV/m]	QPK Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]	Meas. BW [kHz]
1	49.486	19.36	40.00	20.64	-18.25	H	359	2.00	120.000
1	90.074	16.93	40.00	23.07	-21.71	H	359	2.00	120.000
1	171.797	16.75	40.00	23.25	-22.34	H	359	2.00	120.000
1	189.472	17.49	40.00	22.51	-20.88	H	1	1.00	120.000
1	460.763	19.21	47.00	27.79	-14.22	H	1	2.00	120.000
1	751.532	22.38	47.00	24.62	-8.88	H	1	1.00	120.000

**REMARKS:**

1. Emission level (dBuV/m) = Read level (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value =Limit value– Emission level.





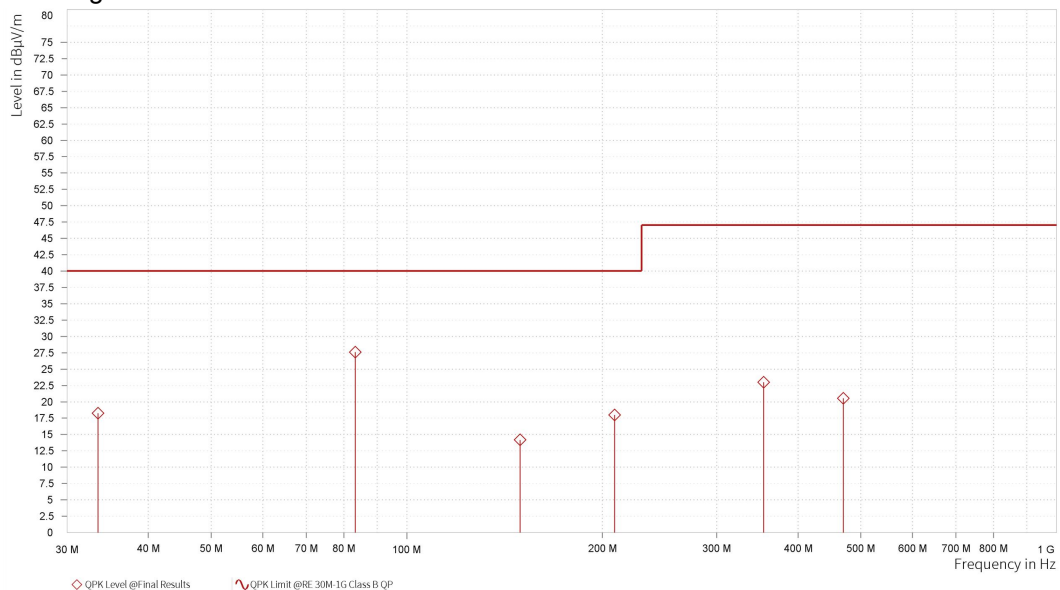
<b>CHANNEL</b>	WCDMA_B5_LINK+5G _WIFI_11AC80_TX_CH 106	<b>DETECTOR FUNCTION</b>	Quasi-Peak (QP)
<b>FREQUENCY RANGE</b>	30MHz ~ 1GHz		

**ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M**

Rg	Frequency [MHz]	QPK Level [dBμV/m]	QPK Limit [dBμV/m]	QPK Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]	Meas. BW [kHz]
1	33.463	18.25	40.00	21.75	-21.33	V	91	1.00	120.000
1	83.316	27.59	40.00	12.41	-23.58	V	181	2.00	120.000
1	149.341	14.17	40.00	25.83	-23.24	V	1	1.00	120.000
1	208.737	17.97	40.00	22.03	-20.22	V	1	1.00	120.000
1	354.332	22.98	47.00	24.02	-15.94	V	181	2.00	120.000
1	469.589	20.53	47.00	26.47	-14.00	V	181	1.00	120.000

**REMARKS:**

1. Emission level (dBuV/m) = Read level (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value =Limit value– Emission level.





ABOVE 1GHz WORST-CASE DATA:

Note: For higher frequency, the emission is too low to be detected.

<b>CHANNEL</b>	WCDMA_B5_LINK+5G_WI FI_11AC80_TX_CH106	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBμV/m]	PK+ Limit [dBμV/m]	PK+ Margin [dB]	AVG Level [dBμV/m]	AVG Limit [dBμV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	1,672.800	38.39	74.00	35.61	27.64	54.00	26.36	-5.54	H	5	1.00
1	2,509.200	44.79	74.00	29.21	33.03	54.00	20.97	1.35	H	1	1.00
4	11,060.000	36.47	74.00	37.53	26.43	54.00	27.57	12.03	H	1	1.00
4	16,590.000	47.10	74.00	26.90	36.24	54.00	17.76	19.90	H	1	1.00

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBμV/m]	PK+ Limit [dBμV/m]	PK+ Margin [dB]	AVG Level [dBμV/m]	AVG Limit [dBμV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	1,672.800	38.02	74.00	35.98	28.07	54.00	25.93	-5.54	V	1	1.00
1	2,509.200	43.52	74.00	30.48	33.46	54.00	20.54	1.35	V	1	1.00
4	11,060.000	37.19	74.00	36.81	26.61	54.00	27.39	12.03	V	358.6	1.00
4	16,590.000	47.40	74.00	26.60	36.97	54.00	17.03	19.90	V	359.1	1.00

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor  
Margin value =Limit value– Emission level.

**NOTE :** The 9K~30MHz amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required in the report.

**LTE\_B13\_LINK+BT2.0\_GFSK\_TX\_CH78:**

**BELOW 1GHz WORST-CASE DATA:**

**30MHz – 1GHz data:**

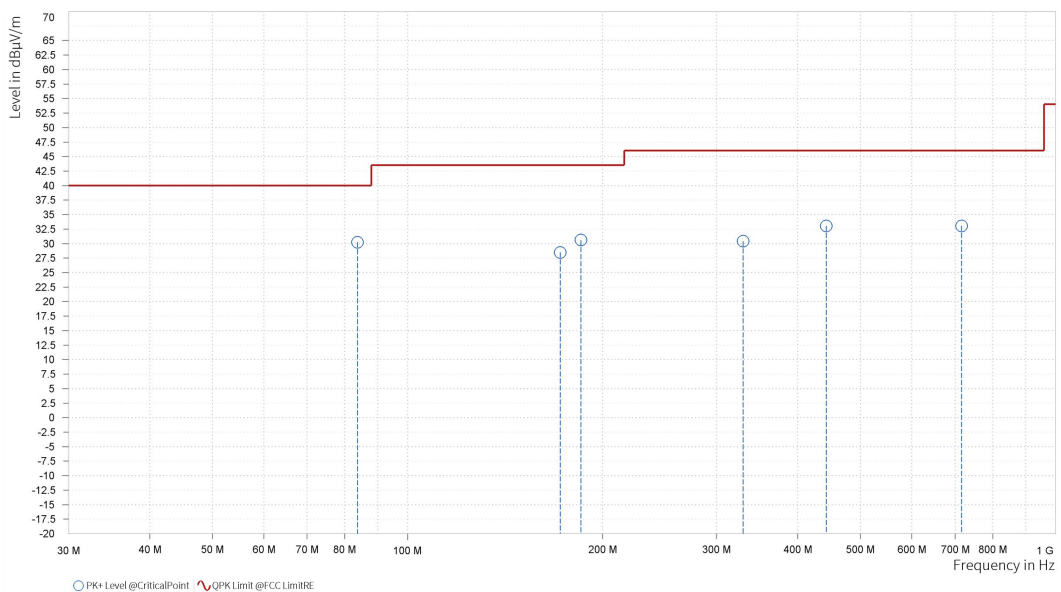
<b>CHANNEL</b>	LTE_B13_LINK+BT2.0_GFSK_TX_CH78	<b>DETECTOR FUNCTION</b>	Quasi-Peak (QP)
<b>FREQUENCY RANGE</b>	30MHz ~ 1GHz		

**ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M**

Rg	Frequency [MHz]	PK+ Level [dBμV/m]	PK+: QPK Limit [dBμV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	83.690	30.23	40.00	9.77	-12.82	H	259	1.00
1	171.960	28.48	43.50	15.02	-11.06	H	127.4	1.00
1	185.249	30.62	43.50	12.88	-9.97	H	232.7	2.00
1	329.585	30.43	46.00	15.57	-4.51	H	127.4	1.00
1	442.687	33.07	46.00	12.93	-3.77	H	359	2.00
1	716.130	33.05	46.00	12.95	-0.26	H	127.4	1.00

**REMARKS:**

1. Emission level (dBuV/m) = Read level (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value =Limit value– Emission level.



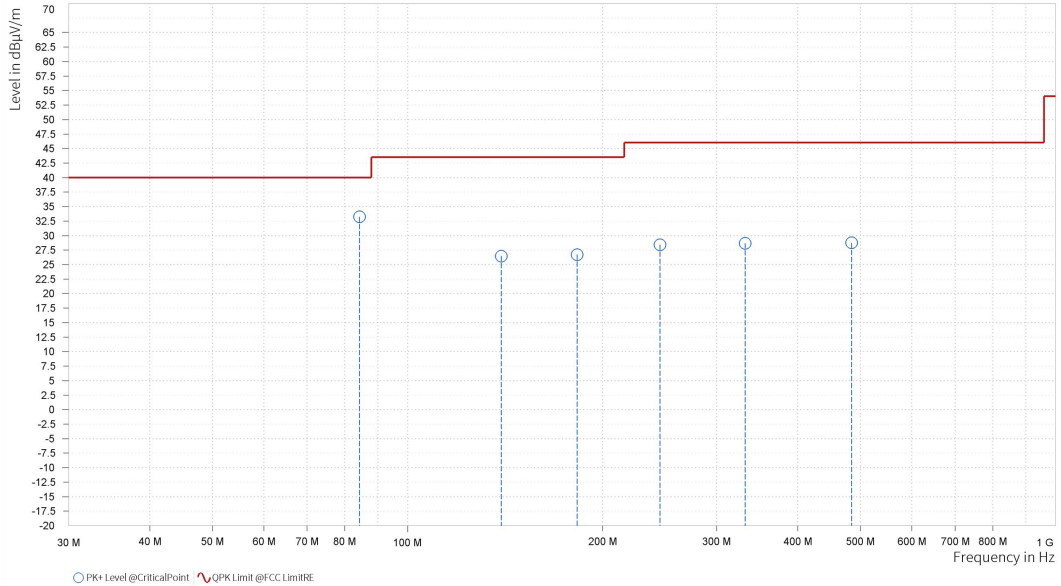
<b>CHANNEL</b>	LTE_B13_LINK+BT2.0_GFSK_TX_CH78	<b>DETECTOR FUNCTION</b>	Quasi-Peak (QP)
<b>FREQUENCY RANGE</b>	30MHz ~ 1GHz		

**ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M**

Rg	Frequency [MHz]	PK+ Level [dBμV/m]	PK+: QPK Limit [dBμV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	84.320	33.23	40.00	6.77	-12.67	V	223.1	2.00
1	139.502	26.47	43.50	17.03	-12.45	V	188.4	2.00
1	182.667	26.73	43.50	16.77	-10.22	V	206.3	2.00
1	245.232	28.43	46.00	17.57	-7.16	V	2.4	2.00
1	331.939	28.68	46.00	17.32	-4.40	V	171.7	1.00
1	484.499	28.76	46.00	17.24	-3.68	V	171.7	1.00

**REMARKS:**

1. Emission level (dBuV/m) = Read level (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value =Limit value– Emission level.





ABOVE 1GHz WORST-CASE DATA:

Note: For higher frequency, the emission is too low to be detected.

<b>CHANNEL</b>	LTE_B13_LINK+BT2.0_GF SK_TX_CH78	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBμV/m]	PK+ Limit [dBμV/m]	PK+ Margin [dB]	AVG Level [dBμV/m]	AVG Limit [dBμV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	1,564.500	60.89	74.00	13.11	52.08	54.00	1.92	-6.70	H	1	2.00
1	2,346.150	46.37	74.00	27.63	34.73	54.00	19.27	0.86	H	359	2.00
3	4,960.000	51.17	74.00	22.83	39.35	54.00	14.65	4.83	H	359	2.00
3	7,440.000	55.12	74.00	18.88	44.96	54.00	9.04	10.81	H	1	2.00

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBμV/m]	PK+ Limit [dBμV/m]	PK+ Margin [dB]	AVG Level [dBμV/m]	AVG Limit [dBμV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	1,564.500	50.72	74.00	23.28	42.30	54.00	11.70	-6.70	V	359.1	1.00
1	2,346.150	46.67	74.00	27.33	34.58	54.00	19.42	0.86	V	1	1.00
3	4,960.000	49.77	74.00	24.23	39.43	54.00	14.57	4.83	V	359	2.00
3	7,440.000	55.88	74.00	18.12	44.78	54.00	9.22	10.81	V	359	2.00

REMARKS:

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor  
Margin value =Limit value– Emission level.

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