RF TEST REPORT

Report No.: SET2021-17338

Product Name: RCP-P1

Model No. : HSA-20NP-PB, HSA-20NP-PA

FCC ID: 2AHPN-HSA-20NP-PB

IC: 6434C-HSA20NPPB

Applicant: Harman International Industries Incorporated

Address： 30001, Cabot Drive, Novi, MI 48377, USA

Dates of Testing: 11/11/2021 - 12/21/2021

Issued by: CCIC Southern Testing Co., Ltd.

Lab Location: Electronic Testing Building, No. 43 Shahe Road, Xili Street, Nanshan District, Shenzhen, Guangdong, China.

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Test Report

Product Name.....:	RCP-P1
Brand Name.....:	Ride Command Plus
Applicant.....:	Harman International Industries Incorporated
Applicant Address.....:	30001, Cabot Drive, Novi, MI 48377, USA
Manufacturer.....:	Harman International Industries Incorporated
Manufacturer Address .....:	30001, Cabot Drive, Novi, MI 48377, USA
Test Standards.....:	47 CFR FCC Part 2/22/24/27 RSS-Gen Issue 5 RSS-132 Issue 3 RSS-133 Issue 6 RSS-139 Issue 3
Test Result.....:	PASS

Tested by.....:

Sun 2021.12.22

Sun, Test Engineer

Reviewed by.....:

Chris You 2021.12.22

Chris You, Senior Engineer

Approved by.....:

Shuangwen Zhang 2021.12.22

Shuangwen Zhang，Manager

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Change History		
Issue	Date	Reason for change
1.0	2021.12.22	First edition

1. GENERAL INFORMATION

1.1 EUT Description

EUT Name	RCP-P1
EUT supports Radios application	WCDMA/HSPA
Hardware Version	V1.0
Software Version	N75NA_POPLS_R6.2.4
Frequency Range	WCDMA 850MHz Tx: 826.4 - 846.6MHz (at intervals of 200kHz); Rx: 871.4 - 891.6MHz (at intervals of 200kHz) WCDMA 1900MHz Tx: 1852.4 - 1907.6MHz (at intervals of 200kHz); Rx: 1932.4 - 1987.6MHz (at intervals of 200kHz) WCDMA 1700MHz Tx: 1712.4 - 1752.6MHz (at intervals of 200kHz); Rx: 2112.4 - 2152.6MHz (at intervals of 200kHz)
Maximum Output Power to Antenna	WCDMA 850: 21.87dBm WCDMA 1900: 22.31dBm WCDMA 1700: 21.95dBm
Type of Modulation	WCDMA: QPSK(Uplink) HSDPA/DC-HSDPA: QPSK HSUPA: QPSK HSPA+: 16QAM(uplink is not supported) DC-HSDPA: 64QAM
Antenna Gain	WCDMA 850: 1.0 dBi WCDMA 1900: 1.0 dBi WCDMA 1700: 1.0 dBi
Antenna Type	Internal Antenna
Power supply	DC 9V-16V

1.2 Maximum ERP/EIRP, Frequency Tolerance, and Emission Designator

FCC				
System	Type of Modulation	Emission Designator	Frequency Tolerance (ppm)	Maximum ERP/EIRP(W)
WCDMA 850 RMC 12.2Kbps	QPSK	4M17F9W	0.0075	0.118
WCDMA 1900 RMC 12.2Kbps	QPSK	4M13F9W	0.0069	0.214
WCDMA 1700 RMC 12.2Kbps	QPSK	4M13F9W	0.0072	0.197

IC				
System	Type of Modulation	Emission Designator	Frequency Tolerance (ppm)	Maximum EIRP(W)
WCDMA 850 RMC 12.2Kbps	QPSK	4M17F9W	0.0075	0.194
WCDMA 1900 RMC 12.2Kbps	QPSK	4M13F9W	0.0069	0.214
WCDMA 1700 RMC 12.2Kbps	QPSK	4M13F9W	0.0072	0.197

1.3 Test Standards and Results

The objective of the report is to perform testing according to FCC/IC Certification:

1. 47 CFR Part 2, 22(H), 24(E), 27(L).
2. ANSI C63.26:2015.
3. FCC KDB 971168 D01 Power Meas License Digital Systems v03r01.
4. RSS-GEN Issue 5.
5. RSS-132 Issue 3, RSS-133 Issue 6, RSS-139 Issue 3.

Test detailed items/section required by FCC/IC rules and results are as below:

No.	Section FCC	Section IC	Description	Limit	Result
1	2.1046	RSS-Gen, 6.12	Conducted Output Power	Reporting Only	PASS*
2	22.913 (d) 24.232 (d) 27.53 (h)(3)	RSS-132,5.4 RSS-133,6.4 RSS-139,6.5	Peak to Average Radio	＜13dBm	PASS*
3	2.1049 22.917 (b)(1) 24.238 (b) 27.53 (h)(3)	RSS-GEN,6.7 RSS-132, 5.5 RSS-133, 6.5 RSS-139, 3.1	Occupied Bandwidth	Reporting Only	PASS*
4	2.1055 22.355 24.235 27.54	RSS-GEN, 6.11 RSS-132, 5.3 RSS-133, 6.3 RSS-139, 6.4	Frequency Stability	Within ±2.5 ppm for Part 22(H), RSS-132, RSS-133 Within Authorized Band	PASS
5	2.1051 22.917 (a) 24.238 (a) 27.53 (h)	RSS-GEN,6.13 RSS-132,5.5 RSS-133,6.5 RSS-139,6.6	Conducted Out of Band Emissions	< 43+10log10 (P[Watts])	PASS*
6	2.1051 22.917 (a) 24.238 (a) 27.53 (h)	RSS-GEN,6.13 RSS-132,5.5 RSS-133,6.5 RSS-139,6.6	Band Edge	< 43+10log10 (P[Watts])	PASS*

7	22.913 (a)(5)	RSS-132,5.4	Effective Radiated Power（FCC） Equivalent Isotropic Radiated Power (IC)	＜7Watts for Part 22 ＜11.5Watts for RSS-132	PASS
	24.232 (c)	RSS-133,6.4	Equivalent Isotropic Radiated Power	＜2Watts	PASS
	27.50 (d)(4)	RSS-139,6.5	Effective Radiated Power	＜1Watts	PASS
8	2.1053 22.917 (a) 24.238 (a) 27.53 (h)	RSS-GEN,6.13 RSS-132,5.5 RSS-133,6.5 RSS-139,6.6	Radiated Spurious Emissions	< 43+10log10 (P[Watts])	PASS
9	/	RSS-GEN,6.8	Transmit antenna	Refer to RSS-GEN,6.8	PASS

Remark：

1. PASS*: Test data reference report: CG142024ATX, Canada IC: 21545-N75NA.
2. All test items were verified and recorded according to the standards and without any deviation during the test.
3. This EUT has also been tested and complied with the requirements of FCC Part 15 Subpart B and ICES-003 Issue 7 October 2020, recorded in a separate test report.

1.4 Test Configuration of Equipment under Test

Antenna port conducted and radiated test items were performed according to KDB 971168 D01 Power Meas. License Digital Systems v03r01 with maximum output power.

Radiated measurements were performed with rotating EUT in different three orthogonal test planes to find the maximum emission.

Radiated emissions were investigated as following frequency range:

1. 30 MHz to 9000 MHz for WCDMA Band V.
2. 30 MHz to 20000 MHz for WCDMA Band II.
3. 30 MHz to 18000 MHz for WCDMA Band IV.

All modes and data rates and positions were investigated.

Test modes are chosen to be reported as the worst case configuration below:

Test Modes		
Band	Radiated TCs	Conducted TCs
WCDMA Band V	RMC 12.2Kbps Link	RMC 12.2Kbps Link
WCDMA Band II	RMC 12.2Kbps Link	RMC 12.2Kbps Link
WCDMA Band IV	RMC 12.2Kbps Link	RMC 12.2Kbps Link

Note: The maximum power levels are chosen to test as the worst case configuration as follows:

RMC 12.2Kbps mode for WCDMA band V,

RMC 12.2Kbps mode for WCDMA band II,

RMC 12.2Kbps mode for WCDMA band IV, only these modes were used for all tests.

1.5 Measurement Results Explanation Example

For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuator factor between EUT conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

Offset = RF cable loss + Power Splitter + attenuator factor..

Following shows an offset computation example with cable loss 1dB, 3dB Power Splitter, 10dB attenuator.

Example:

Offset (dB) = RF cable loss(dB) + Power Splitter(dB) + attenuator factor(dB).

= 1 + 3 + 10 = 14 (dB)

1.6 Facilities and Accreditations

1.6.1 Test Facilities

CNAS-Lab Code: L1659

CCIC-SET is a third party testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L1659.

FCC-Registration No.: CN1283

CCIC Southern Testing Co., Ltd EMC Laboratory has been registered and fully described in a re port filed with the FCC (Federal Communications Commission). The acceptance letter from the F CC is maintained in our files. Designation Number: CN1283, valid time is until June 30th,2021.

ISED Registration: 11185A-1
CAB identifier: CN0064
CCIC Southern Testing Co., Ltd. EMC Laboratory has been registered by Certification and Engin eering Bureau of Industry Canada for the performance of radiated measurements with Registratio n No. 11185A-1 on Aug. 04, 2016, valid time is until June 30th, 2021

A2LA Code: 5721.01
CCIC-SET is a third party testing organization accredited by A2LA according to ISO/IEC 17025. The accreditation certificate number is 5721.01.

1.6.2 Test Environment Conditions

Temperature (℃):	15℃- 35℃
Relative Humidity (%):	30% -60%
Atmospheric Pressure (kPa):	86KPa-106KPa

During the measurement, the environmental conditions were within the listed ranges:

2. TEST REQUIREMENTS

2.1 Conducted RF Output Power and ERP/EIRP

2.1.1 Definition

A system simulator was used to establish communication with the EUT. Its parameters were set to enforce EUT transmitting at the maximum power. The measured power in the radio frequency on the transmitter output terminals shall be reported.

The ERP of mobile transmitters must not exceed 7 Watts for WCDMA Band V(Part 22).
The EIRP of mobile transmitters must not exceed 11.5 Watts for WCDMA Band V(RSS-132).
The EIRP of mobile transmitters must not exceed 2 Watts for WCDMA Band II.
The EIRP of mobile transmitters must not exceed 1 Watts for WCDMA Band IV.
According to KDB 412172 D01 Determining ERP and EIRP v01r01.
EIRP = PT + GT － LC, ERP = EIRP -2.15, where
PT = transmitter output power in dBm
GT = gain of the transmitting antenna in dBi
LC = signal attenuation in the connecting cable between the transmitter and antenna in dB

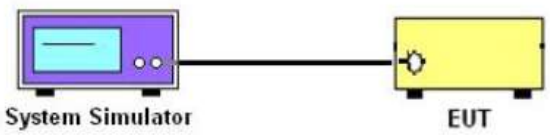
2.1.2 Measuring Instruments

The measuring equipment is listed in the section 3 of this test report.

2.1.3 Test Procedures

1. The transmitter output port was connected to the system simulator.
2. Set EUT at maximum power through system simulator.
3. Select lowest, middle, and highest channels for each band and different modulation.
4. Measure and record the power level from the system simulator.

2.1.4 Test Setup



2.1.5 Test Results of Conducted Output Power and ERP/EIRP

Note: Conducted Output Power reference report: CG142024ATX, Canada IC: 21545-N75NA.

FCC: WCDMA 850							
EUT Mode		Conducted Average power (dBm)			Ant. Gain (dBi)	Max. ERP (dBm)	ERP Limit (dBm)
		4132	4183	4233			
		826.4MHz	836.6MHz	846.6MHz			
RMC	12.2 kbps	21.76	**21.87**	21.75	1.00	20.72	38.45
HSDPA	Subtest 1	20.66	20.84	20.78			
	Subtest 2	20.75	20.86	20.49			
	Subtest 3	20.31	20.39	20.31			
	Subtest 4	20.32	20.39	20.32			
HSUPA	Subtest 1	20.58	20.79	20.72			
	Subtest 2	20.66	20.80	20.57			
	Subtest 3	20.30	20.27	20.24			
	Subtest 4	20.25	20.27	20.29			
	Subtest 5	20.30	20.81	20.38			
DC-HSDPA	Subtest 1	19.29	19.84	19.80			
	Subtest 2	19.37	19.38	19.43			
	Subtest 3	19.89	20.04	19.71			
	Subtest 4	20.60	20.80	20.80			
HSPA+ (16QAM)	Subtest 1	18.72	18.84	18.91			

IC: WCDMA 850							
EUT Mode		Conducted Average power (dBm)			Ant. Gain (dBi)	Max. EIRP (dBm)	EIRP Limit (dBm)
		4132	4183	4233			
		826.4MHz	836.6MHz	846.6MHz			
RMC	12.2 kbps	21.76	**21.87**	21.75	1.00	22.87	40.61
HSDPA	Subtest 1	20.66	20.84	20.78			
	Subtest 2	20.75	20.86	20.49			
	Subtest 3	20.31	20.39	20.31			
	Subtest 4	20.32	20.39	20.32			
HSUPA	Subtest 1	20.58	20.79	20.72			
	Subtest 2	20.66	20.80	20.57			
	Subtest 3	20.30	20.27	20.24			
	Subtest 4	20.25	20.27	20.29			
	Subtest 5	20.30	20.81	20.38			
DC-HSDPA	Subtest 1	19.29	19.84	19.80			
	Subtest 2	19.37	19.38	19.43			
	Subtest 3	19.89	20.04	19.71			
	Subtest 4	20.60	20.80	20.80			
HSPA+ (16QAM)	Subtest 1	18.72	18.84	18.91			

WCDMA 1900							
EUT Mode		Conducted Average power (dBm)			Ant. Gain (dBi)	Max. EIRP (dBm)	EIRP Limit (dBm)
		9262	9400	9538			
		1852.4MHz	1880.0MHz	1907.6MHz			
RMC	12.2 kbps	**22.31**	22.11	22.23	1.00	23.31	33
HSDPA	Subtest 1	21.27	21.38	21.32			
	Subtest 2	21.26	21.38	21.27			
	Subtest 3	20.84	20.89	20.84			
	Subtest 4	20.83	20.88	20.84			
HSUPA	Subtest 1	21.17	21.32	21.30			
	Subtest 2	21.22	21.29	21.19			
	Subtest 3	20.82	20.82	20.79			
	Subtest 4	20.77	20.82	20.78			
	Subtest 5	21.22	21.44	21.11			
DC-HSDPA	Subtest 1	20.26	20.07	20.29			
	Subtest 2	20.55	20.17	20.51			
	Subtest 3	20.41	20.82	20.77			
	Subtest 4	21.40	21.50	21.50			
HSPA+ (16QAM)	Subtest 1	19.52	19.66	19.58			

WCDMA 1700							
EUT Mode		Conducted Average power (dBm)			Ant. Gain (dBi)	Max. EIRP (dBm)	EIRP Limit (dBm)
		1312	1412	1513			
		1712.4MHz	1713.4MHz	1752.6MHz			
RMC	12.2 kbps	21.80	21.70	**21.95**	1.00	22.95	30
HSDPA	Subtest 1	20.76	20.87	20.93			
	Subtest 2	20.91	20.89	20.94			
	Subtest 3	20.45	20.42	20.48			
	Subtest 4	20.45	20.42	20.48			
HSUPA	Subtest 1	20.66	20.78	20.90			
	Subtest 2	20.89	20.81	20.87			
	Subtest 3	20.42	20.39	20.37			
	Subtest 4	20.38	20.33	20.37			
	Subtest 5	20.56	20.63	20.61			
DC-HSDPA	Subtest 1	20.14	20.17	19.85			
	Subtest 2	19.72	19.78	19.59			
	Subtest 3	19.98	20.34	19.85			
	Subtest 4	21.10	21.20	20.90			
HSPA+ (16QAM)	Subtest 1	19.21	19.18	19.02			

2.2 Frequency Stability

2.2.1 Requirement

The frequency stability shall be measured by variation of ambient temperature and variation of primary supply voltage to ensure that the fundamental emission stays within the authorized frequency block. The frequency stability of the transmitter shall be maintained within ±0.00025% (±2.5ppm) of the center frequency.

2.2.2 Measuring Instruments

The measuring equipment is listed in the section 3 of this test report.

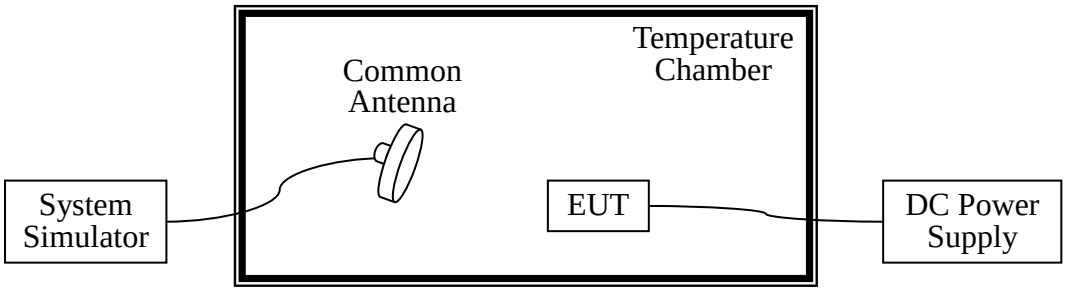
2.2.3 Test Procedures for Temperature Variation

1. The testing follows FCC KDB 971168 D01 v03r01 Section 9.0.
2. The EUT was set up in the thermal chamber and connected with the system simulator.
3. With power OFF, the temperature was decreased to -30 ℃ and the EUT was stabilized before testing. Power was applied and the maximum change in frequency was recorded within one minute.
4. With power OFF, the temperature was raised in 10 ℃ steps up to 50 ℃. The EUT was stabilized at each step for at least half an hour. Power was applied and the maximum frequency change was recorded within one minute.

2.2.4 Test Procedures for Voltage Variation

1. The testing follows FCC KDB 971168 D01 v03r01 Section 9.0.
2. The EUT was placed in a temperature chamber at 25±5 °C and connected with the system simulator.
3. The power supply voltage to the EUT was varied from BEP to 115% of the nominal value measured at the input to the EUT.
4. The variation in frequency was measured for the worst case.

2.2.5 Test Setup



2.2.6 Test Results of Frequency Stability

WCDMA Band V, RMC 12.2Kbps, Channel=4183, Frequency=836.6 MHz				
Power (VDC)	Temperature (℃)	Deviation (ppm)	Limit(ppm)	Result
12.0	-30	0.0052	±2.5	PASS
	-20	0.0036		
	-10	0.0049		
	0	0.0047		
	+10	0.0028		
	+20	0.0032		
	+30	0.0041		
	+40	0.0038		
	+50	**0.0075**		
10.2	+25	0.0049		
13.8	+25	0.0047		

WCDMA Band II, RMC 12.2Kbps, Channel=9400, Frequency=1880.0 MHz				
Power (VDC)	Temperature (℃)	Deviation (ppm)	Limit(ppm)	Result
12.0	-30	0.0052	FCC: Within authorized band for WCDMA II IC: ±2.5	PASS
	-20	0.0042		
	-10	0.0036		
	0	0.0029		
	+10	0.0031		
	+20	0.0039		
	+30	0.0041		
	+40	0.0032		
	+50	**0.0069**		
10.2	+25	0.0054		
13.8	+25	0.0046		

WCDMA Band IV, RMC 12.2Kbps, Channel=1413, Frequency=1732.6 MHz				
Power (VDC)	Temperature (℃)	Deviation (ppm)	Limit(ppm)	Result
12.0	-30	0.0045	Within authorized band for WCDMA IV	PASS
	-20	0.0036		
	-10	0.0033		
	0	0.0032		
	+10	0.0044		
	+20	0.0029		
	+30	0.0022		
	+40	0.0047		
	+50	**0.0072**		
10.2	+25	0.0051		
13.8	+25	0.0048		

2.3 Radiated Spurious Emissions

2.3.1 Requirement

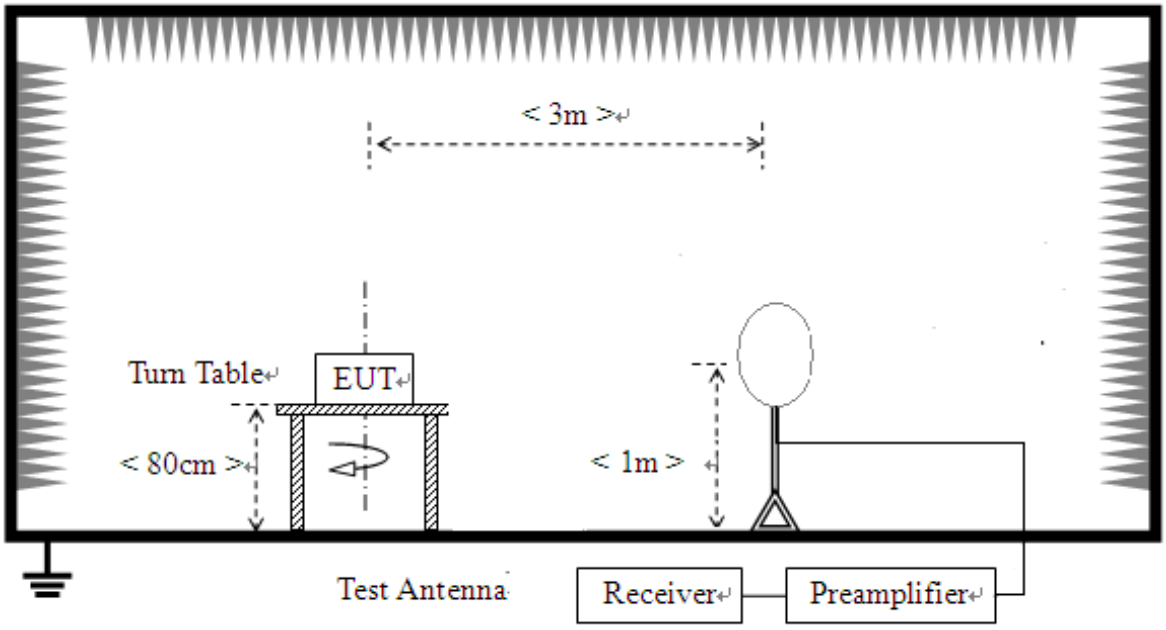
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least 43 + 10 log (P) dB. The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic.

2.3.2 Measuring Instruments

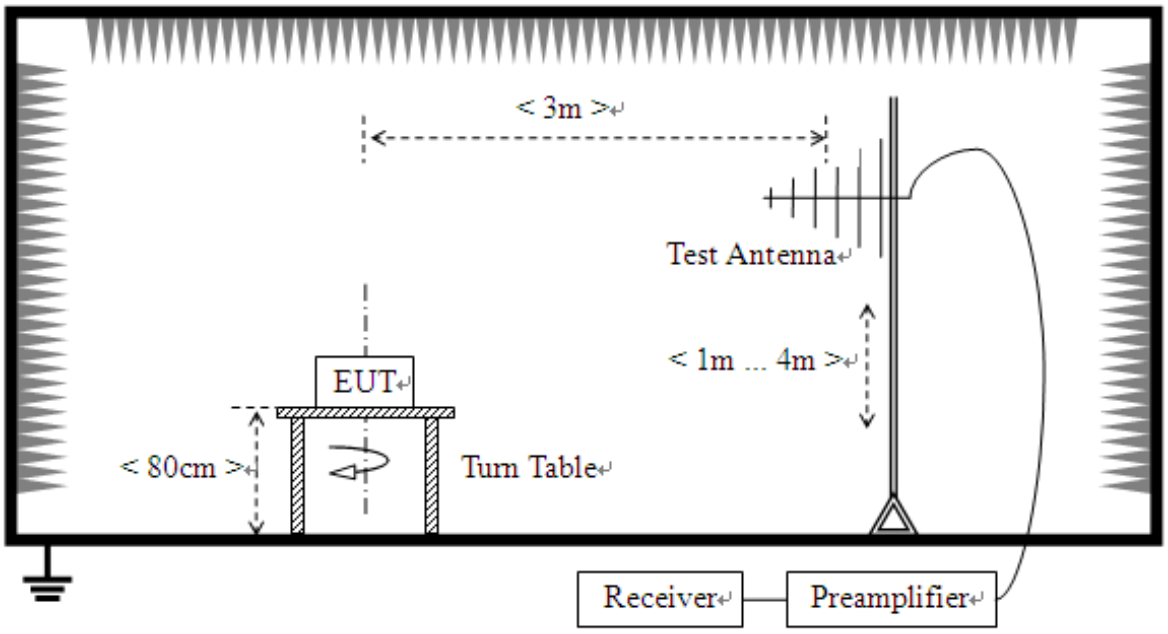
The measuring equipment is listed in the section 3 of this test report.

2.3.3 Test Setup

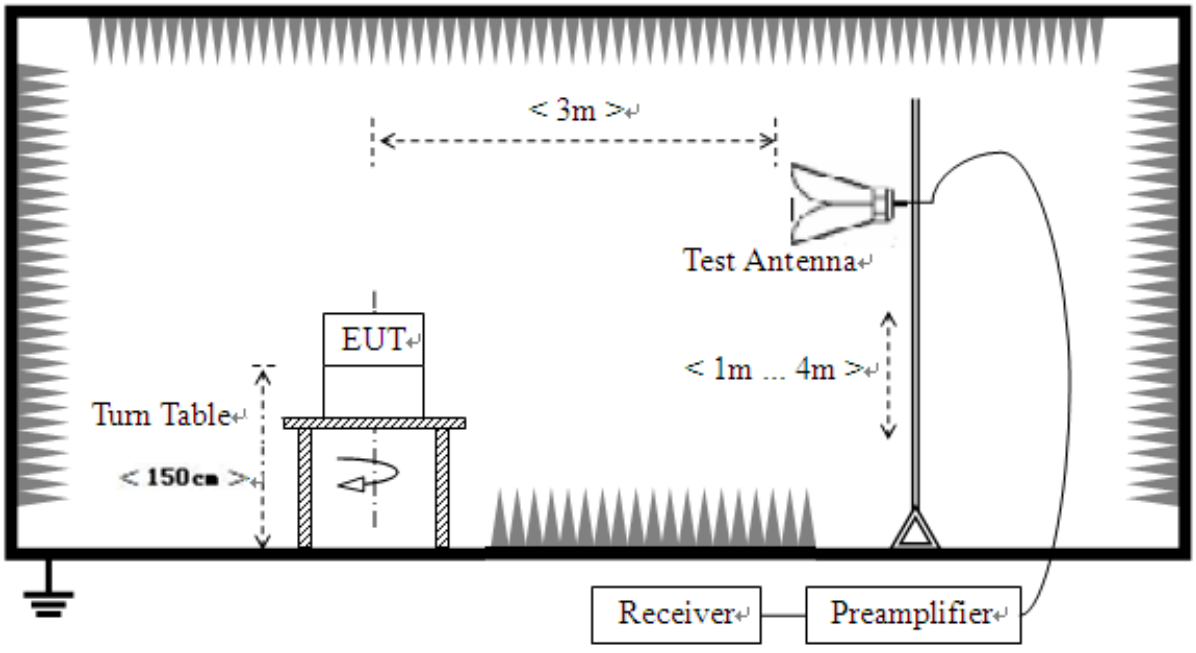
For radiated emissions from 9 kHz to 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



2.3.4 Test Procedures

1. The testing follows FCC KDB 971168 D01 v03r01 Section 5.8.
2. The EUT was placed on a rotatable wooden table 0.8/1.5 meters above the ground.
3. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.
4. The table was rotated 360 degrees to determine the position of the highest spurious emission.
5. The height of the receiving antenna is varied between one meter and four meters to search for the maximum spurious emission for both horizontal and vertical polarizations.
6. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking record of maximum spurious emission.
7. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
8. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
9. Taking the record of output power at antenna port.
10. Repeat step 7 to step 8 for another polarization.
11. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
12. The limit line is derived from 43 + 10log(P) dB below the transmitter power P(Watts)
    = P(W) - [43 + 10log(P)] (dB)
    = [30 + 10log(P)] (dBm) - [43 + 10log(P)] (dB)
    = -13dBm.
13. This device employs GMSK technology with GSM and GSM capabilities. All configurations were investigated and the worst case emissions were found in GSM mode.
14. This device employs UMTS technology with WCDMA (AMR/RMC), HSDPA, HSUPA capabilities. All configurations were investigated and the worst case UMTS emissions were found in RMC WCDMA mode at 12.2Kbps.
15. This unit was tested with its standard battery.
16. All Spurious Emission tests were performed in X, Y, Z axis direction and low, middle, high channel. And only the worst axis test condition was recorded in this test report.
17. The spectrum is measured from 9 KHz to the 10^{th} harmonic of the fundamental frequency of the transmitter using CISPR quasi peak detector below 1GHz. The worst case emissions

are reported however emissions whose levels were not within 20dB of the respective limits were not reported.

18. For 9KHz to 30MHz: the amplitude of spurious emissions are attenuated by more than 20dB below the permissible value has no need to be reported.

2.3.5 Test Results of Radiated Spurious Emissions

Note: 1. (Absolute)Level=Reading Level + Factor

Worst-Case test data provide as below:

WCDMA 850 Middle Channel: 30MHz~10GHz							
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Polarity
1	45.0425	-82.20	-61.81	-13.00	48.81	20.39	Horizontal
2	62.9965	-80.40	-61.06	-13.00	48.06	19.34	Horizontal
3	314.837	-104.57	-77.75	-13.00	64.75	26.82	Horizontal
4	513.786	-104.47	-72.00	-13.00	59.00	32.47	Horizontal
5	4690.84	-69.18	-56.78	-13.00	43.78	12.40	Horizontal
6	7242.12	-70.31	-52.93	-13.00	39.93	17.38	Horizontal
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Polarity
1	44.5573	-82.14	-62.59	-13.00	49.59	19.55	Vertical
2	62.9965	-80.33	-59.93	-13.00	46.93	20.40	Vertical
3	262.431	-105.56	-80.84	-13.00	67.84	24.72	Vertical
4	2947.47	-69.44	-63.57	-13.00	50.57	5.87	Vertical
5	5175.58	-70.00	-55.86	-13.00	42.86	14.14	Vertical
6	7871.43	-68.45	-52.32	-13.00	39.32	16.13	Vertical

WCDMA 1900 Middle Channel: 30MHz~20GHz							
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Polarity
1	45.0425	-81.65	-61.26	-13.00	48.26	20.39	Horizontal
2	63.4817	-79.44	-60.10	-13.00	47.10	19.34	Horizontal
3	522.521	-104.48	-72.25	-13.00	59.25	32.23	Horizontal
4	661.300	-104.57	-69.76	-13.00	56.76	34.81	Horizontal
5	5175.58	-68.88	-54.74	-13.00	41.74	14.14	Horizontal
6	7140.07	-69.92	-53.14	-13.00	40.14	16.78	Horizontal
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Polarity
1	62.9965	-81.35	-60.95	-13.00	47.95	20.40	Vertical
2	281.840	-104.97	-80.05	-13.00	67.05	24.92	Vertical
3	891.305	-103.91	-66.90	-13.00	53.90	37.01	Vertical
4	2462.73	-66.38	-63.41	-13.00	50.41	2.97	Vertical
5	3687.34	-69.14	-60.90	-13.00	47.90	8.24	Vertical
6	7259.12	-70.18	-52.80	-13.00	39.80	17.38	Vertical

WCDMA 1700 Middle Channel: 30MHz~18GHz							
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Polarity
1	44.072	-81.76	-61.14	-13.00	48.14	20.62	Horizontal
2	66.8784	-83.04	-63.69	-13.00	50.69	19.35	Horizontal
3	479.819	-103.81	-72.70	-13.00	59.70	31.11	Horizontal
4	857.338	-104.26	-67.18	-13.00	54.18	37.08	Horizontal
5	4707.85	-68.60	-56.11	-13.00	43.11	12.49	Horizontal
6	7123.06	-69.67	-53.05	-13.00	40.05	16.62	Horizontal
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Polarity
1	44.5573	-81.19	-61.64	-13.00	48.64	19.55	Vertical
2	60.5703	-80.69	-60.57	-13.00	47.57	20.12	Vertical
3	275.047	-105.90	-81.10	-13.00	68.10	24.80	Vertical
4	634.127	-103.91	-70.83	-13.00	57.83	33.08	Vertical
5	5439.21	-69.22	-55.66	-13.00	42.66	13.56	Vertical
6	7310.15	-70.67	-53.35	-13.00	40.35	17.32	Vertical

2.4 Transmit antenna

2.4.1 Applicable Standard

According to RSS GEN issue5 6.8, The applicant for equipment certification shall provide a list of all antenna types that may be used with the transmitter, where applicable (i.e. for transmitters with detachable antenna), indicating the maximum permissible antenna gain (in dBi) and the required impedance for each antenna. The test report shall demonstrate the compliance of the transmitter with the limit for maximum equivalent isotropically radiated power (e.i.r.p.) specified in the applicable RSS, when the transmitter is equipped with any antenna type, selected from this list.

For expediting the testing, measurements may be performed using only the antenna with highest gain of each combination of transmitter and antenna type, with the transmitter output power set at the maximum level. However, the transmitter shall comply with the applicable requirements under all operational conditions and when in combination with any type of antenna from the list provided in the test report (and in the notice to be included in the user manual, provided below). When measurements at the antenna port are used to determine the RF output power, the effective gain of the device's antenna shall be stated, based on a measurement or on data from the antenna's manufacturer. The test report shall state the RF power, output power setting and spurious emission measurements with each antenna type that is used with the transmitter being tested.

2.4.2 Antenna Information

Antenna Category: Internal Antenna

A internal Antenna was soldered to the antenna port of EUT via an adaptor cable, can't be removed.

Antenna General Information:

No.	EUT	Operating frequency range	Ant. Type	Ant. Gain (Max)
1	RCP-P1	WCDMA Band2：1852.4-1907.6 MHz WCDMA Band4：1712.4-1752.6 MHz WCDMA Band5：826.4-846.4 MHz	Internal	1.0 dBi

2.4.3 Result: comply

The EUT has a permanently and irreplaceable attached antenna. Please refer to the EUT internal photos.

3. LIST OF MEASURING EQUIPMENT

Description	Manufacturer	Model	Serial No.	Cal. Date	Due Date	Remark
EMI Test Receiver	R&S	ESR3	A181103297	2021.06.25	2022.06.24	Radiation
Loop Antenna	Schwarz beck	HFH2-Z2	100047	2019.04.26	2022.04.25	Radiation
Broadband antenna (30MHz~1GHz)	Schwarbeck	BBHA 9120 J	A190503537	2019.01.07	2022.01.06	Radiation
Broadband antenna (30MHz~1GHz)	R&S	VULB9160	A0805560	2019.05.24	2022.05.23	Radiation
Double ridge horn antenna (1GHz~18GHz)	R&S	HF906	100150	2019.04.27	2022.04.26	Radiation
Double ridge horn antenna (1GHz~18GHz)	R&S	HF906	100149	2019.04.17	2022.04.16	Radiation
Horn antenna (18GHz~26.5GHz)	AR	AT4510	A0804450	2020.06.19	2023.06.18	Radiation
Horn antenna (18GHz~26.5GHz)	AR	AT4003A	0329293	2020.09.17	2022.08.16	Radiation
Amplifier 30M~1GHz	MILMEGA	80RF1000-10004	A140101634	2020.09.22	2023.09.21	Radiation
Amplifier 1G~18GHz	MILMEGA	AS0104R-800/400	A160302517	2021.01.26	2022.01.25	Radiation
Spectrum Analyzer	KEYSIGHT	N9030A	A160702554	2021.04.26	2022.04.25	Conducted
Test Receiver	R&S	ESIB7	A0501375	2021.05.24	2022.05.23	Conducted
Temperature chamber	TABAI	PS-232	A8708054	2021.09.24	2022.09.23	Temperature chamber
Wideband Radio Communication tester	R&S	CMW500	A130101034	2021.01.26	2023.01.25	Conducted
Power Supply	R&S	WYJ-60100	A141102031	2020.01.16	2023.01.15	Conducted

4. UNCERTAINTY OF EVALUATION

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI C63.10-2013. All the measurement uncertainty value were shown with a coverage K=2 to indicate 95% level of confidence . The measurement data show herein meets or exceeds the CISPR measurement uncertainty values specified in CISPR 16-4-2 and can be compared directly to specified limit to determine compliance.

Uncertainty of Conducted Emission Measurement (150KHz~30MHz)

Measuring Uncertainty for a level of confidence of 95%(U=2Uc(y))	2.6dB

Uncertainty of Radiated Emission Measurement (30MHz~1GHz)

Measuring Uncertainty for a level of confidence of 95%(U=2Uc(y))	2.4dB

Uncertainty of Radiated Emission Measurement (1GHz~40GHz)

Measuring Uncertainty for a level of confidence of 95%(U=2Uc(y))	2.8dB

** END OF REPORT **