# **TEST REPORT**



CTK Co., Ltd.

(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si, Gyeonggi-do, Korea Tel: +82-31-339-9970

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• Name : SJIT Co.,Ltd

Address: 54-11, Dongtanhana 1-gil, Hwaseong-si, Gyeonggi-do, Republic of Korea

• Date of Receipt: 2024-07-03

2. Manufacturer

• Name: SJIT Co.,Ltd

• Address: 54-11, Dongtanhana 1-qil, Hwaseong-si, Gyeonggi-do, Republic of Korea

3. Use of Report: For FCC & ISED Certification

**4. Test Sample / Model :** Audio Transceiver / ATM610

**5. Date of Test :** 2024-07-16 to 2024-08-20

6. Test Standard(method) used: FCC 47 CFR part 15 subpart C 15.247

ANSI C63.10-2013, ISED RSS-247 Issue 3 &

RSS-Gen Issue 5

**7. Testing Environment :** refer to 6 page

8. Test Results: Compliance

**9. Location of Test:** Permanent Testing Lab On Site Testing

(Address: (Unhak-Dong) 5, Dongbu-ro 221beon-gil, Cheoin-gu, Yongin-si,

Gyeonggi-do, Korea)

The results shown in this test report refer only to the sample(s) tested unless otherwise stated. This report cannot be reproduced or copied without the written consent of CTK.

Approval

Min-wook Jung: (Signature)

Technical Manager

Won-Jae, Hwang: (Signature)

Remark. This report is not related to KOLAS accreditation and relevant regulation.

2024-08-22

CTK Co., Ltd.



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REPORT REVISION HISTORY

Date	Revision	Page No
2024-08-22	Issued (CTK-2024-02365)	all

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Project Number: CTK-R-2024-03591

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# 1. General Product Description

# 1.1 Applicant Information

Company	SJIT Co.,Ltd
Contact Point  54-11, Dongtanhana 1-gil, Hwaseong-si, Gyeonggi-do, Re	
Contact Person	Name: Wan Seong Kim E-mail: wskim@seongji.co.kr Tel: +82-31-239-8194 Fax: -

# 1.2 Product Information

FCC ID	2BEK7ATM610
Certification Number ISED	32019-ATM610
Product Description	Audio Transceiver
Basic model(HVIN)	ATM610
Variant Model name	-
Operating Frequency	2 404.35 MHz - 2 474.35 MHz (4 MHz BW)
RF Output Power	ANT 0 : 13.80 dBm (23.99 mW) ANT 1 : 13.90 dBm (24.55 mW)
Antenna type	PCB Antenna
Antenna gain	ANT 0 : 2.7 dBi ANT 1 : 2.7 dBi
Number of channels	36
Channel Spacing	2 MHz
Type of Modulation	Pi/4-DQPSK
Power Source	DC 3.3 V
FVIN	2.0.65

# 1.3 Peripheral Devices

Device	Manufacturer	Model No.	Serial No.
Notebook Computer	HP	HP ProBook 455 G7	5CD0234DX4
AC/DC Adapter	HP	TPN-CA16	L25298-002



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# 2. Accreditations

# 2.1 Laboratory Accreditations and Listings

Country	Agency	Registration Number
USA	FCC	805871
CANADA	ISED	CN: 8737A CAB ID: KR0025
KOREA	NRRA	KR0025

# 2.2 Calibration Details of Equipment Used for Measurement

Test equipment and test accessories are calibrated on regular basis. The maximum time between calibrations is one year or what is recommended by the manufacturer, whichever is less. All test equipment calibrations are traceable to the Korea Research Institute of Standards and Science (KRISS), therefore, all Test Data recorded in this report is traceable to KRISS.



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# 3. Test Specifications

## 3.1 Standards

Section in FCC	Section in RSS	Requirement(s)	Status (Note 1)	Test Condition
15.247(a)	RSS-247 5.2(a), RSS-GEN 6.7	6 dB Bandwidth & 99 % Bandwidth	С	
15.247(e)	RSS-247 5.2(b)	Transmitter power spectral density	С	Conducted
15.247(b)	RSS-247 5.4(d)	Output Power	С	Conducted
15.247(d)	RSS-247 5.5	Unwanted emission	С	
15.209	RSS-Gen 6.13	Transmitter emission	С	Radiated
15.207(a) RSS-Gen 8.8 AC Conducted Emission C Line Conducted				
Note 1: C=Complies NC=Not Complies NT=Not Tested NA=Not Applicable				

Note 2: The data in this test report are traceable to the national or international standards.

Note 3: The sample was tested according to the following specification: FCC Part 15.247, ANSI C63.10-2013, RSS-247 Issue 3, RSS-GEN Issue 5

Note 4: The tests were performed according to the method of measurements prescribed in KDB No.558074, ANSI C63.10-2013

# 3.2 Testing Environment

	Test Item	Test Date	Temperature (°)	Relative Humidity (%)
6 dB Bandwidth & 99 % Bandwidth				
Transmitter po	ower spectral density	2024-07-26	23~25	59~69
Maximum pea	k conducted output power	~ 2024-08-13		
Unwanted emi	Unwanted emission (Conducted)			
1) 9 kHz to 30 MHz 2) 30 MHz to 1 GHz	1) 9 kHz to 30 MHz	2024-07-16	24.25	50 57
	~ 24~25 2024-08-12	50~57		
Transmitter emission	3) 1 GHz to 18 GHz	2024-07-25		
(Radiated)	4) 18 GHz to 26.5 GHz		24~26	55~67
	5) Restricted Frequency Bands	- 2024-08-20		
AC Conducted Emission		2024-08-12	24	55



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# 3.3 Mode of operation during the test

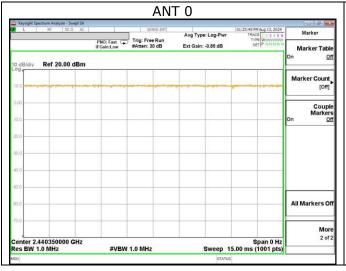
The EUT is operated in a manner representative of the typical of the equipments. During at testing, system components were manipulated within the confines of typical usage to maximize each emission. All modulation modes were tests.

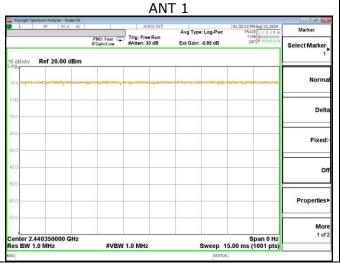
**Test Frequency** 

Lowest Frequency	Middle Frequency	Highest Frequency
2 404.35 MHz	2 440.35 MHz	2 474.35 MHz

**Test mode Duty** 

lest mode buty
Duty Cycle
100 %







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# 3.4 Maximum Measurement Uncertainty

The value of the measurement uncertainty for the measurement of each parameter. Coverage factor k = 2, Confidence levels of 95 %

Description	Uncertainty
Conducted RF Output Power	1.5 dB (C.L. : Approx. 95 %, <i>k</i> = 2)
Power Spectral Density	1.5 dB (C.L. : Approx. 95 %, <i>k</i> = 2)
Occupied Bandwidth	0.1 MHz (C.L. : Approx. 95 %, k = 2)
Unwanted Emission(conducted)	3.0 dB (C.L. : Approx. 95 %, $k = 2$ )
Radiated Emissions ( $f \le 1 \text{ GHz}$ )	3.82 dB (C.L. : Approx. 95 %, k = 2)
Radiated Emissions (f > 1 GHz)	4.50 dB (C.L. : Approx. 95 %, k = 2)
AC Conducted Emission	2.00 dB (C.L. : Approx. 95 %, k = 2)

# 3.5 Test Software

Conducted Test	Ics Pro Ver. 6.0.3			
Radiated Test	EP5RE Ver. 6.0.10, ES10 Ver. 2022.04.000			
Line Conducted Test	EMC32 Ver. 10.50.00			



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# 4. Technical Characteristic Test

### 4.1 6 dB Bandwidth and 99 % Bandwidth

#### **Test Procedures**

KDB 558074 - Section 8.2 ANSI C63.10-2013 - Section 6.9.2 / Section 11.8.2 RSS-Gen - Section 6.7

Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

### **Test Procedures**

ANSI C63.10-2013 - Section 6.9.3 RSS-Gen - Section 6.7

The occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers are each equal to 0.5 % of the total mean power of the given emission.

Use the 99 % power bandwidth function of the instrument and report the measured bandwidth.

#### **Test Settings:**

Center frequency = the highest, middle and the lowest Frequencies

- a) RBW = 100 kHz(6 dB Bandwidth,
- b) VBW  $\geq$  3 x RBW

99 % Bandwidth)

c) Detector = peak

d) Trace mode = Max hold

- e) Sweep = auto couple
- f) Allow trace to fully stabilize
- g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

Limit: 6 dB Bandwidth

6 dB Bandwidth > 500 kHz

Limit: 99 % Bandwidth

N/A



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# Test Data:

Mode	Frequency [MHz]	6 dB Bandwidth [MHz]	99 % Bandwidth [MHz]	Result
	2 404.35	3.543	3.865	
ANT 0	2 440.35	3.530	3.875	
	2 474.35	3.485	3.856	Carradia a
	2 404.35	3.594	3.859	Complies
ANT 1	2 440.35	3.506	3.865	
	2 474.35	3.552	3.880	

See next pages for actual measured spectrum plots.



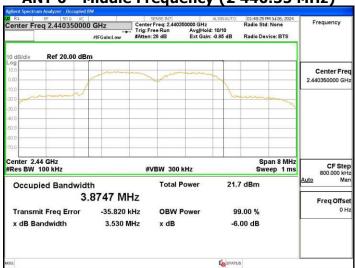
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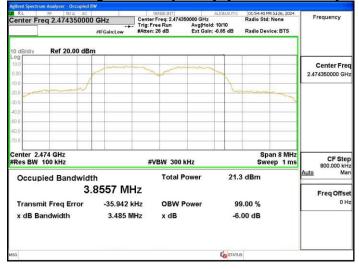
ANT 0 - Lowest Frequency (2 404.35 MHz)



ANT 0 - Middle Frequency (2 440.35 MHz)



ANT 0 - Highest Frequency (2 474.35 MHz)

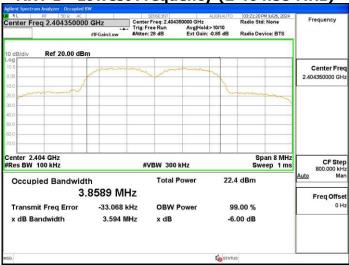




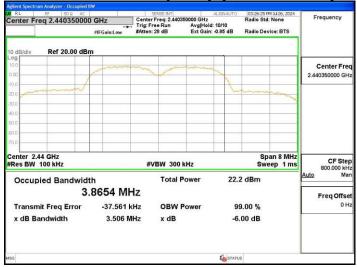
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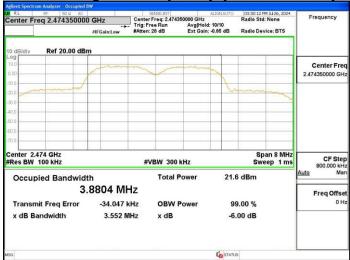




ANT 1 - Middle Frequency (2 440.35 MHz)



ANT 1 - Highest Frequency (2 474.35 MHz)





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# 4.2 Output Power

#### **Test Procedures**

KDB 558074 - Section 8.3.2.2 (Average Power) ANSI C63.10-2013 - Section 11.9.2.2 RSS-Gen - Section 6.12

The transmitter output is connected to a spectrum analyzer and the analyzer's internal channel power integration function is used to integrate the power over a bandwidth greater than or equal to the 99% bandwidth.

### **Test Settings:**

Center frequency = the highest, middle and the lowest Frequencies

a) span  $\geq 1.5 \times OBW$ 

b) RBW = 1 MHz

c) VBW  $\geq$  3 x RBW

d) Sweep time = auto

e) Detector = RMS

f) average at least 100

#### Limit:

Output Power < 1 W (30 dBm)

### Test Data:

Mode	Frequency	Measu da	rement ita	Limit	Result	
	[MHz]	[dBm]	[mW]	[dBm]		
	2 404.35 13.80 23.99					
ANT 0	2 440.35	13.52	22.49	20	Complies	
	2 474.35	12.89	19.45			
	2 404.35	13.90	24.55	30	Complies	
ANT 1	2 440.35	13.84	24.21			
	2 474.35	13.30	21.38			

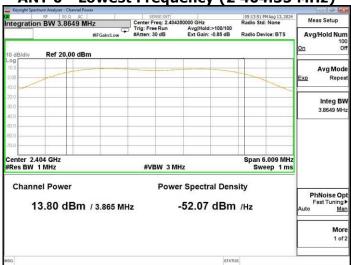
See next pages for actual measured spectrum plots.



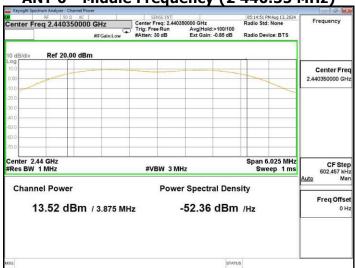
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# ANT 0 - Middle Frequency (2 440.35 MHz)



# ANT 0 - Highest Frequency (2 474.35 MHz)

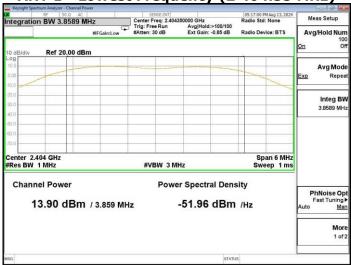




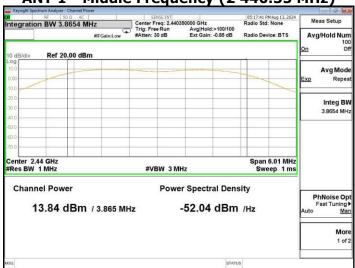
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ANT 1 - Lowest Frequency (2 404.35 MHz)



ANT 1 - Middle Frequency (2 440.35 MHz)



ANT 1 - Highest Frequency (2 474.35 MHz)





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# 4.3 Transmitter Power Spectral Density

#### **Test Procedures**

KDB 558074 - Section 8.4 ANSI C63.10-2013 - Section 11.10.2

This procedure shall be used if maximum peak conducted output power was used to demonstrate compliance.

# **Test Settings:**

Center frequency = the highest, middle and the lowest Frequencies

a) RBW :  $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$ 

b) VBW  $\geq$  3 x RBW

c) span  $\geq$  1.5 x DTS bandwidth

d) Sweep time = auto couple

e) Detector = peak

f) Trace mode= max hold

- g) Allow trace to fully stabilize
- h) Use the peak marker function to determine the maximum amplitude level within the RBW.

### Limit:

Power Spectral Density < 8 dBm @ 3 kHz BW

### Test Data:

Mode	Frequency [MHz]	Measurement data [dBm]	Limit [dBm]	Result		
	2 404.35 -4.744					
ANT 0	2 440.35	-5.217		Complies		
	2 474.35	-5.446	0			
	2 404.35	-4.235	- 8	Complies		
ANT 1	2 440.35	-5.409				
	2 474.35	-5.175				

See next pages for actual measured spectrum plots.



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ANT 0 - Middle Frequency (2 440.35 MHz)



ANT 0 - Highest Frequency (2 474.35 MHz)





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ANT 1 - Middle Frequency (2 440.35 MHz)



ANT 1 - Highest Frequency (2 474.35 MHz)





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# 4.4 Conducted Spurious emission

#### **Test Procedures**

KDB 558074 - Section 8.5 ANSI C63.10-2013 - Section 11.11.3 RSS-Gen - Section 6.13

The Unwanted emission from the EUT were measured according to the dictates PKPSD measurement procedure in section 11.11 of ANSI C63.10-2013.

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under Section 5.4(d), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in RSS-Gen is not required.

### **Test Settings:**

Center frequency = the highest, middle and the lowest Frequencies

a) RBW = 100 kHz

b) VBW  $\geq$  3 x RBW

c) Detector = peak

d) Sweep time = auto couple

- e) Trace mode= max hold
- f) Allow trace to fully stabilize
- g) Use the peak marker function to determine the maximum amplitude level.

### Limit:

Emission level < 30 dBc

## **Test results: Complies**

- All conducted emission in any 100 kHz bandwidth outside of the spread spectrum band was at least 30 dB lower than the highest in-band spectral density. Therefore the applying equipment meets the requirement.

See next pages for actual measured spectrum plots.



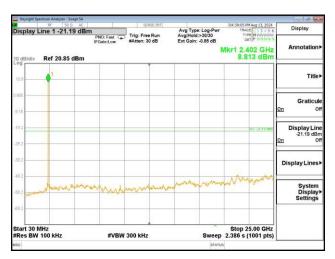
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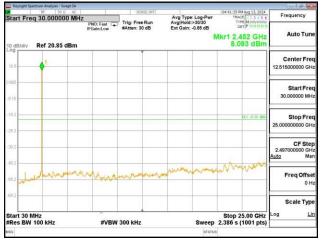
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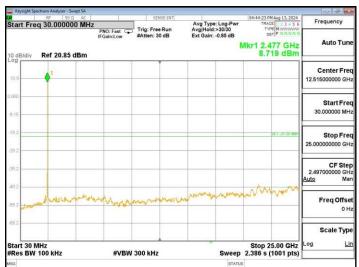
### **Test Mode: ANT 0**













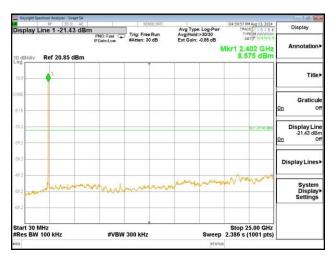
Fax: +82-31-624-9501

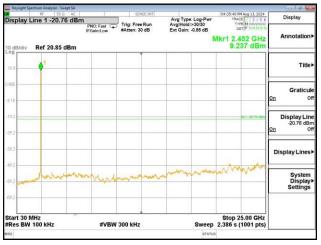
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### **Test Mode: ANT 1**













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## 4.5 Radiated Emission

Test		~	•	$\mathbf{a}$	n
1636	LU	·La		u	

 $\boxtimes$  10 m SAC (test distance :  $\square$  10 m,  $\boxtimes$  3 m)  $\boxtimes$  3 m SAC (test distance : 3 m)

### **Test Procedures**

KDB 558074 - Section 8.5, 8.6 ANSI C63.10-2013 - Section 11.11, 11.12 RSS-Gen - Section 6.13

- 1) In the frequency range of 9 kHz to 30 MHz, magnetic field is measured with Loop Antenna. The center of the Loop Test Antenna is 1m above the ground. During the measurement the Loop Test Antenna rotates about its vertical axis for maximum response at each azimuth about the EUT.
- In the frequency rage above 30 MHz, Bi-Log Test Antenna(30 MHz to 1 GHz) and Horn 2) Test Antenna (above 1 GHz) are used. Test Antenna is 3 m away from the EUT. Test Antenna height is carried from 1 m to 4 m above the ground to determine the maximum value of the field strength. The emissions levels at both horizontal and vertical polarizations should be tested.

## **Test Settings:**

Frequency Range = 9 kHz ~ 26.5 GHz (2.4 GHz 10<sup>th</sup> harmonic)

a) RBW = 1 MHz for  $f \ge 1$  GHz, 100 kHz for f < 1 GHz, 9 kHz for f < 30 MHz, 200 Hz for f < 150 kHz

b) VBW ≥ RBW

b) VBW ≥ RBW

c) Sweep time = auto couple



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### Limit:

Unwanted emissions that do not fall within the restricted frequency bands of Table 1 shall comply either with the limits specified in the applicable RSS or with those specified in this RSS-Gen.

FCC Part 15 § 15.205 (a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

**Table 1. Restricted Frequency Bands** 

MHz	MHz	MHz	MHz	MHz	GHz
0.09-0.11	8.37626-8.38675	73-74.6	399.9-410	2690-2900	10.6-12.7
<sup>1</sup> 0.495-0.505	8.41425-8.41475	74.8-75.2	608-614	3260-3267	13.25-13.4
2.1735-2.1905	12.29-12.293	108-121.94	960-1240	3332-3339	14.47-14.5
4.125-4.128	12.51975-12.52025	123-138	1300-1427	3345.8-3358	15.35-16.2
4.17725-4.17775	12.57675-12.57725	149.9-150.05	1435-1626.5	3600-4400	17.7-21.4
4.20725-4.20775	13.36-13.41	156.52475- 156.52525	1645.5-1646.5	4500-5150	22.01-23.12
6.215-6.218	16.42-16.423	156.7-156.9	1660-1710	5350-5460	23.6-24
6.26775-6.26825	16.69475-16.69525	162.0125-167.17	1718.8-1722.2	7250-7750	31.2-31.8
6.31175-6.31225	16.80425-16.80475	167.72-173.2	2200-2300	8025-8500	36.43-36.5
8.291-8.294	25.5-25.67	240-285	2310-2390	9000-9200	<sup>2</sup> Above 38.6
8.362-8.366	37.5-38.25	322-335.4	2483.5-2500	9300-9500	

<sup>&</sup>lt;sup>1</sup> Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

§ 15.205 (b) Except as provided in paragraphs (d) and (e), the field strength of emissions appearing within these frequency bands shall not exceed the limits shown is Section 15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

\*Certain frequency bands listed in Table 1 and in band above 38.6 GHz are designated for licence-exempt applications. These frequency bands and the requirements that apply to the devices are set out in the 200- and 300-series of RSSs, such as RSS-210 and RSS-310, which contain the requirements that apply to licence-exempt radio apparatus

<sup>&</sup>lt;sup>2</sup> Above 38.6



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FCC Part 15 § 15.209 (a) Except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table 2:

Except when the requirements applicable to a given device state otherwise, emissions from licence-exempt transmitters shall comply with the field strength limits shown in table 2 Additionally, the level of any transmitter emission shall not exceed the level of the transmitter's fundamental emission.

Table 2. General Field Strength Limits for Licence-Exempt Transmitters (FCC)

Frequency(MHz)	Field Strength (uV/m)	Field Strength (dBuV/m)	Deasurement Distance (meters)
0.009-0.490	2400/F(kHz)	48.5 - 13.8	300
0.490-1.705	24000/F(kHz)	33.8 - 23	30
1.705-30	30	29.5	30
30-88	100**	40	3
88-216	150**	43.5	3
216-960	200**	46	3
Above 960	500	54	3

<sup>\*\*</sup> Except as provided in 15.209(g).fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz, 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g.15.231 and 15.241.

Table 3. General field strength limits at frequencies below 30 MHz (ISED)

Frequency(kHz)	Magnetic Field Strength (uV/m)	Magnetic Field Strength (dBuA/m)	Field Strength (dBuV/m)**	Deasurement Distance (meters)
9 - 490	6.37/F(kHz)	-3 ~ -37.7	48.5 ~ 13.8	300
490 - 1705	63.7/F(kHz)	-17.7 ~ -28.6	33.8 ~ 23	30
1.705 - 30	0.08	-21.9	29.5	30

<sup>\*\*</sup>Field Strength (dBuV/m): Magnetic Field Strength (dBuA/m) + 51.5 (conversion factor). The limit of 30 MHz or more is the same as Table 2.

#### Note:

- 1) For above 1 GHz, the emission limit in this paragraph is based on measurement instrumentation employing an average detector, measurement using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit.
- 2) For above 1 GHz, limit field strength of harmonics : 54 dBuV/m@3 m (AV) and 74 dBuV/m@3 m (PK)
- 3) For measurement above 1 GHz, the resolution bandwidth is set to 1 MHz and video bandwidth is set to 3 MHz for peak measurement.

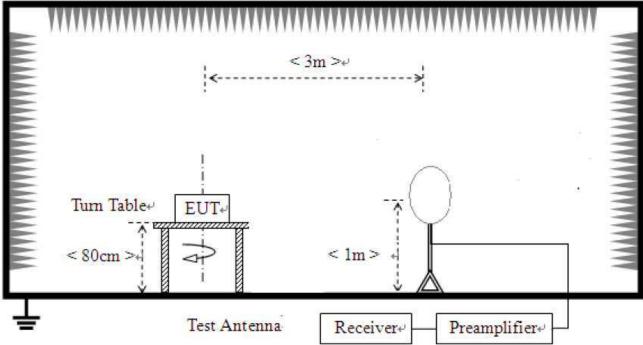


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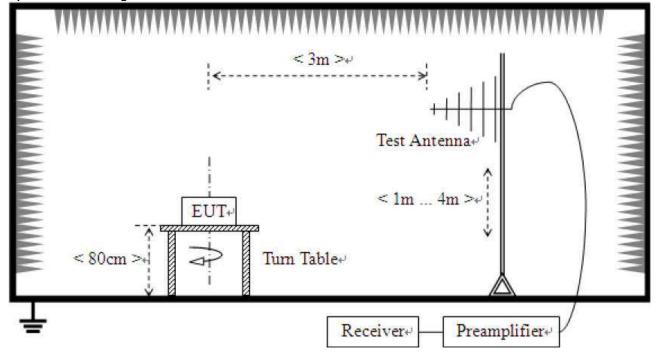
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# **Test Setup:**

1) For field strength of emissions from 9 kHz to 30 MHz



2) For field strength of emissions from 30 MHz to 1 GHz

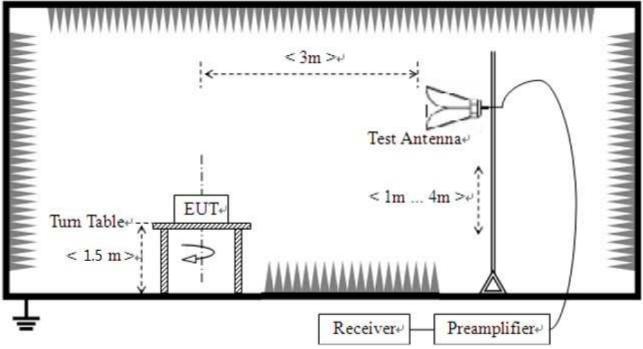




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3) For field strength of emissions above 1 GHz





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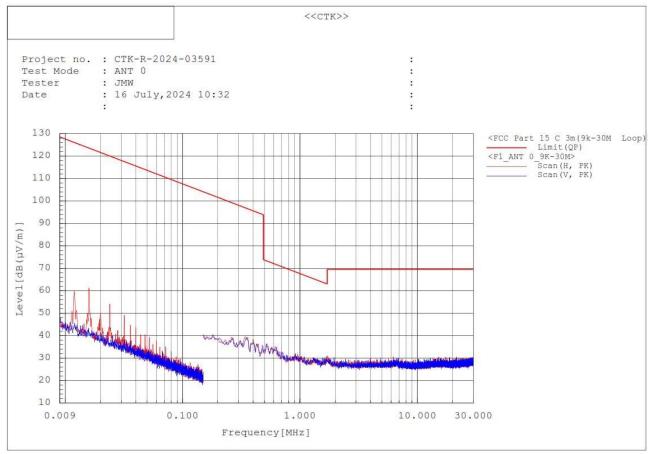
#### **Test results**

### 1) 9 kHz to 30 MHz

### Test mode: ANT 0 - Transmission status, Lowest Frequency

The requirements are:

#### Test Data:



Result: No peak found

### Remark:

- 1. Measuring position: The Unwanted emission was measured in the following position: EUT stand-up position(Y axis), lie-down position(X,Z axis). The worst emission was found in stand-up position(Y axis) and the worst case was recorded.
- 2. Result = Reading + c.f(correction factor)
- 3. Correction factor = Antenna factor + Cable loss + 6 dB attenuator
- 4. This data is the Peak(PK) value.

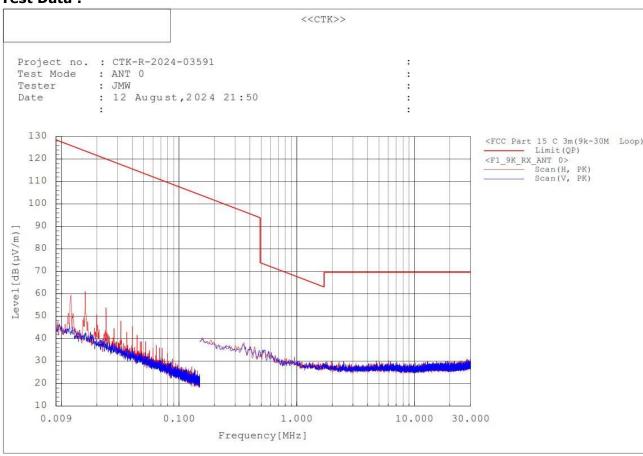


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# Test mode: ANT 0 - Receiving, status Lowest Frequency

The requirements are:

#### Test Data:



Result: No peak found

#### Remark:

- 1. Measuring position: The Unwanted emission was measured in the following position: EUT stand-up position(Y axis), lie-down position(X,Z axis). The worst emission was found in stand-up position(Y axis) and the worst case was recorded.
- 2. Result = Reading + c.f(correction factor)
- 3. Correction factor = Antenna factor + Cable loss + 6 dB attenuator
- 4. This data is the Peak(PK) value.



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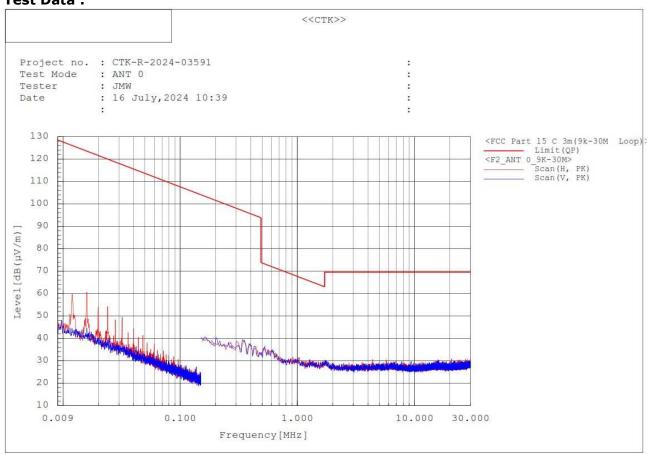
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## Test mode: ANT 0 - Transmission status, Middle Frequency

The requirements are:

#### Test Data:



Result: No peak found

### Remark:

- 1. Measuring position: The Unwanted emission was measured in the following position: EUT stand-up position(Y axis), lie-down position(X,Z axis). The worst emission was found in stand-up position(Y axis) and the worst case was recorded.
- 2. Result = Reading + c.f(correction factor)
- 3. Correction factor = Antenna factor + Cable loss + 6 dB attenuator
- 4. This data is the Peak(PK) value.



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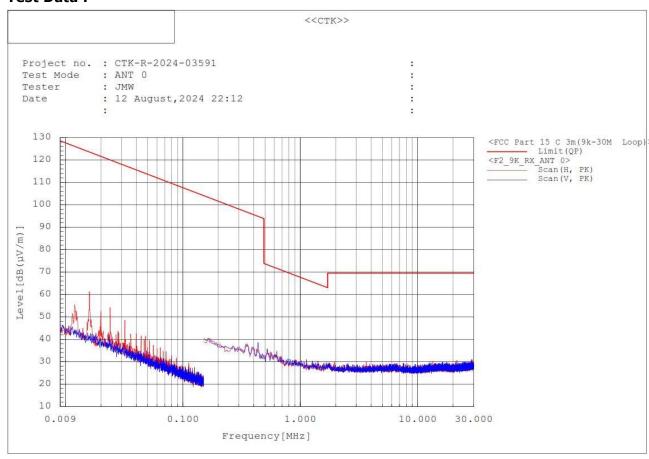
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# Test mode: ANT 0 - Receiving, status Middle Frequency

The requirements are:

#### Test Data:



Result: No peak found

### Remark:

- 1. Measuring position: The Unwanted emission was measured in the following position: EUT stand-up position(Y axis), lie-down position(X,Z axis). The worst emission was found in stand-up position(Y axis) and the worst case was recorded.
- 2. Result = Reading + c.f(correction factor)
- 3. Correction factor = Antenna factor + Cable loss + 6 dB attenuator
- 4. This data is the Peak(PK) value.

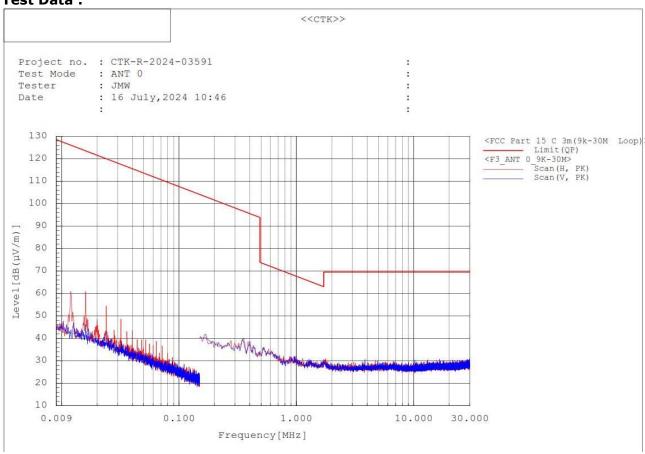


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## Test mode: ANT 0 - Transmission status, Highest Frequency

The requirements are:

#### Test Data:



Result: No peak found

#### Remark:

- 1. Measuring position: The Unwanted emission was measured in the following position: EUT stand-up position(Y axis), lie-down position(X,Z axis). The worst emission was found in stand-up position(Y axis) and the worst case was recorded.
- 2. Result = Reading + c.f(correction factor)
- 3. Correction factor = Antenna factor + Cable loss + 6 dB attenuator
- 4. This data is the Peak(PK) value.



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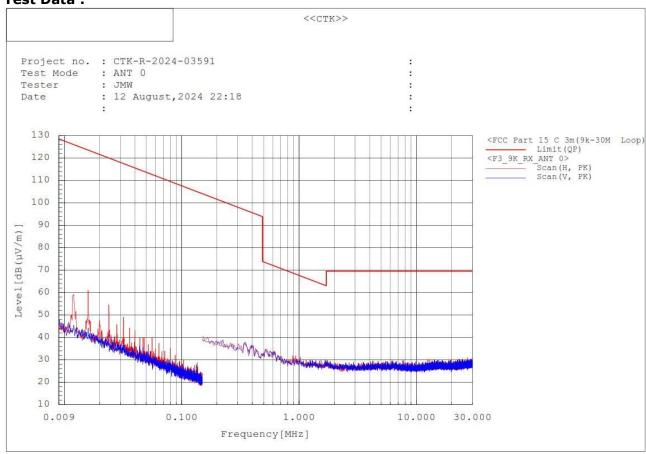
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# Test mode: ANT 0 - Receiving, status Highest Frequency

The requirements are:

### Test Data:



Result: No peak found

### Remark:

- 1. Measuring position: The Unwanted emission was measured in the following position: EUT stand-up position(Y axis), lie-down position(X,Z axis). The worst emission was found in stand-up position(Y axis) and the worst case was recorded.
- 2. Result = Reading + c.f(correction factor)
- 3. Correction factor = Antenna factor + Cable loss + 6 dB attenuator
- 4. This data is the Peak(PK) value.



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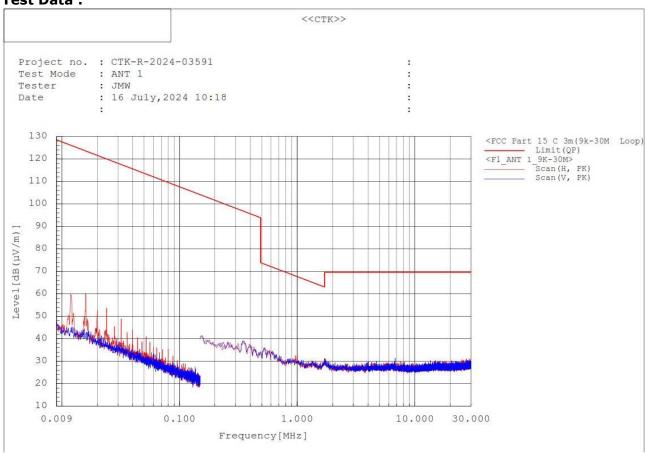
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Report No.: CTK-2024-02365 Page (33) / (88) Pages

## Test mode: ANT 1 - Transmission status, Lowest Frequency

The requirements are:

#### Test Data:



Result: No peak found

#### Remark:

- 1. Measuring position: The Unwanted emission was measured in the following position: EUT stand-up position(Y axis), lie-down position(X,Z axis). The worst emission was found in stand-up position(Y axis) and the worst case was recorded.
- 2. Result = Reading + c.f(correction factor)
- 3. Correction factor = Antenna factor + Cable loss + 6 dB attenuator
- 4. This data is the Peak(PK) value.

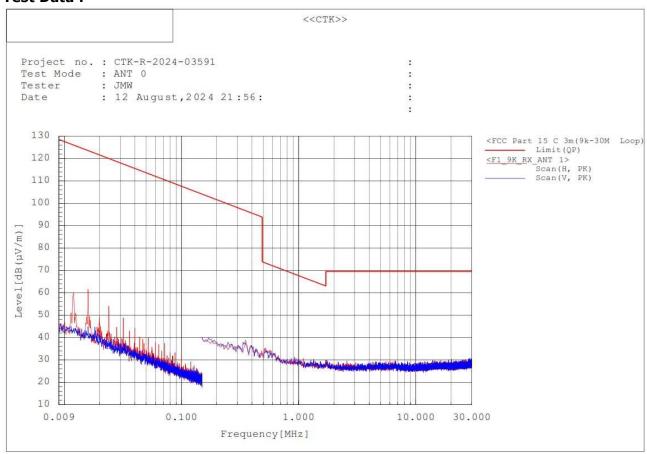


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# Test mode: ANT 1 - Receiving, status Lowest Frequency

The requirements are:

#### Test Data:



Result: No peak found

#### Remark:

- 1. Measuring position: The Unwanted emission was measured in the following position: EUT stand-up position(Y axis), lie-down position(X,Z axis). The worst emission was found in stand-up position(Y axis) and the worst case was recorded.
- 2. Result = Reading + c.f(correction factor)
- 3. Correction factor = Antenna factor + Cable loss + 6 dB attenuator
- 4. This data is the Peak(PK) value.



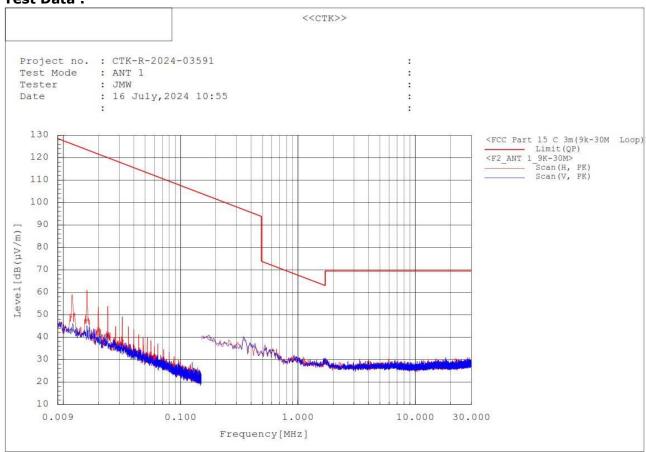
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## Test mode: ANT 1 - Transmission status, Middle Frequency

The requirements are:

#### Test Data:



Result: No peak found

## Remark:

- 1. Measuring position: The Unwanted emission was measured in the following position: EUT stand-up position(Y axis), lie-down position(X,Z axis). The worst emission was found in stand-up position(Y axis) and the worst case was recorded.
- 2. Result = Reading + c.f(correction factor)
- 3. Correction factor = Antenna factor + Cable loss + 6 dB attenuator
- 4. This data is the Peak(PK) value.

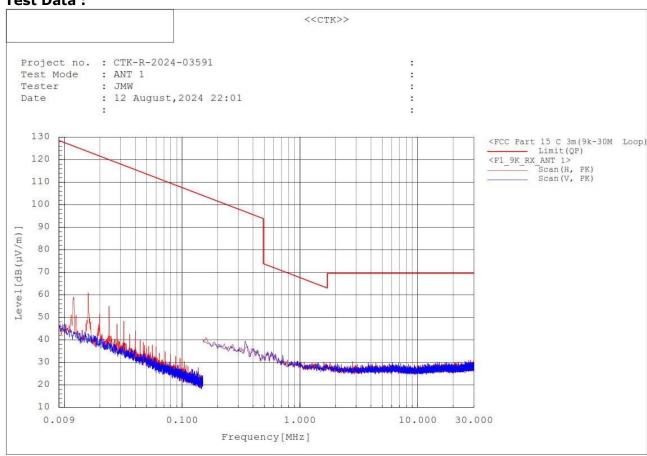


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# Test mode: ANT 1 - Receiving, status Middle Frequency

The requirements are:

# Test Data:



Result: No peak found

#### Remark:

- 1. Measuring position: The Unwanted emission was measured in the following position: EUT stand-up position(Y axis), lie-down position(X,Z axis). The worst emission was found in stand-up position(Y axis) and the worst case was recorded.
- 2. Result = Reading + c.f(correction factor)
- 3. Correction factor = Antenna factor + Cable loss + 6 dB attenuator
- 4. This data is the Peak(PK) value.



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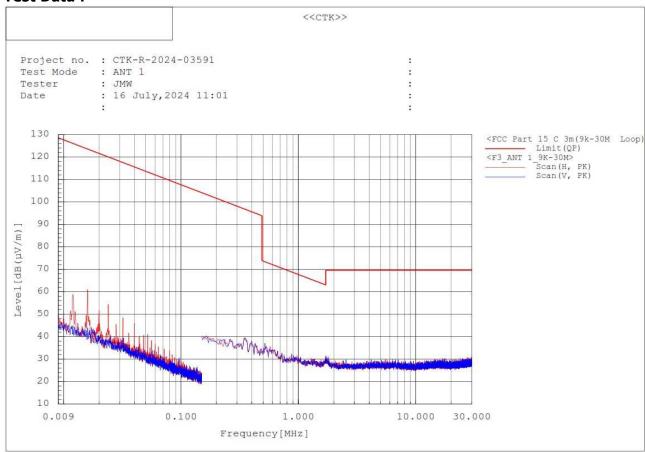
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## Test mode: ANT 1 - Transmission status, Highest Frequency

The requirements are:

#### Test Data:



Result: No peak found

### Remark:

- 1. Measuring position: The Unwanted emission was measured in the following position: EUT stand-up position(Y axis), lie-down position(X,Z axis). The worst emission was found in stand-up position(Y axis) and the worst case was recorded.
- 2. Result = Reading + c.f(correction factor)
- 3. Correction factor = Antenna factor + Cable loss + 6 dB attenuator
- 4. This data is the Peak(PK) value.

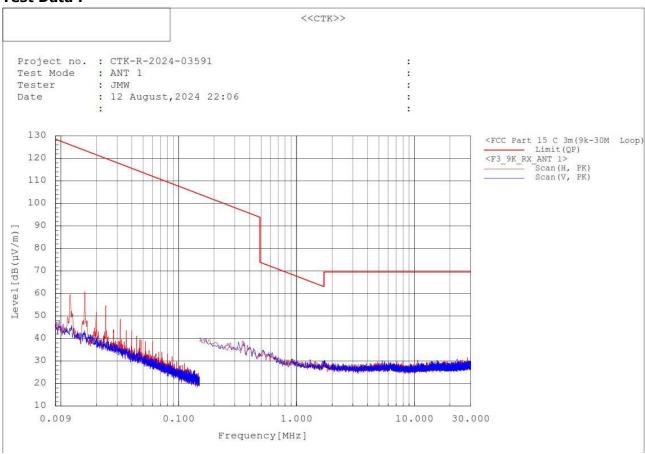


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# Test mode: ANT 1 - Receiving, status Highest Frequency

The requirements are:

#### Test Data:



Result: No peak found

#### Remark:

- 1. Measuring position: The Unwanted emission was measured in the following position: EUT stand-up position(Y axis), lie-down position(X,Z axis). The worst emission was found in stand-up position(Y axis) and the worst case was recorded.
- 2. Result = Reading + c.f(correction factor)
- 3. Correction factor = Antenna factor + Cable loss + 6 dB attenuator
- 4. This data is the Peak(PK) value.



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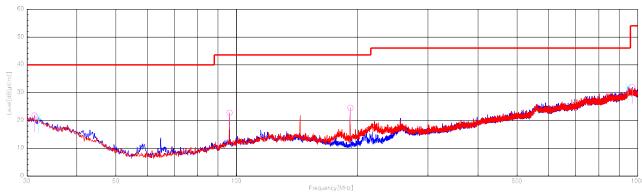
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# 2) 30 MHz to 1 GHz

## Test mode: ANT 0 - Transmission status Lowest Frequency

The requirements are:

#### Test Data:



Frequency [MHz]	(P)	Reading PK [dB(uV)]	C.f [dB(1/m)]	Level PK [dB(uV/m)]	Limit QP [dB(uV/m)]	Margin QP-PK [dB]	Height [cm]	Angle [deg]	Remark
31.358	Н	29.0	-7.3	21.7	40.0	18.3	200.1	57.7	
32.134	٧	28.8	-7.6	21.2	40.0	18.8	200.0	359.7	
95.960	Н	37.7	-15.0	22.7	43.5	20.8	200.1	337.6	
191.990	Н	39.7	-15.2	24.5	43.5	19.0	99.9	1.0	
947.135	٧	27.2	5.0	32.2	46.0	13.8	400.0	0	
969.833	Н	26.0	5.9	31.9	54.0	22.1	200.1	358.9	

### Remark:

- 1. Measuring position: The Unwanted emission was measured in the following position: EUT stand-up position(Y axis), lie-down position(X,Z axis). The worst emission was found in stand-up position(Y axis) and the worst case was recorded.
- 2. Result = Reading + c.f(Correction factor)
- 3. Correction factor = Antenna factor + Cable loss + 6 dB attenuator Amp Gain
- 4. This data is the Peak(PK) value.



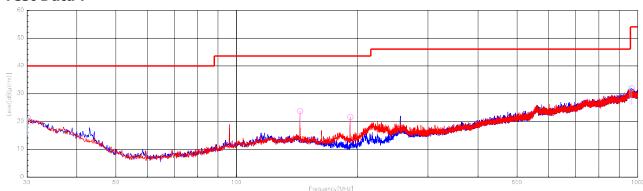
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## Test mode: ANT 0 - Receiving, status Lowest Frequency

The requirements are:

#### Test Data:



Frequency [MHz]	(P)	Reading PK [dB(uV)]	C.f [dB(1/m)]	Level PK [dB(uV/m)]	Limit QP [dB(uV/m)]	Margin QP-PK [dB]	Height [cm]	Angle [deg]	Remark
30.097	Н	28.1	-6.8	21.3	40.0	18.7	200.0	130.6	
30.097	٧	27.6	-6.8	20.8	40.0	19.2	100.0	282.3	
143.975	Н	36.5	-12.8	23.7	43.5	19.8	200.0	280.7	
191.990	Н	36.8	-15.2	21.6	43.5	21.9	200.0	358.6	
956.932	٧	26.5	5.5	32.0	46.0	14.0	100.0	359.1	
966.147	Н	26.1	5.8	31.9	54.0	22.1	200.0	236.0	

### Remark:

- 1. Measuring position: The Unwanted emission was measured in the following position: EUT stand-up position(Y axis), lie-down position(X,Z axis). The worst emission was found in stand-up position(Y axis) and the worst case was recorded.
- 2. Result = Reading + c.f(Correction factor)
- 3. Correction factor = Antenna factor + Cable loss + 6 dB attenuator Amp Gain
- 4. This data is the Peak(PK) value.



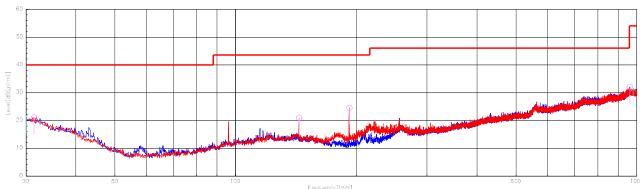
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## **Test mode: ANT 0 - Transmission status Middle Frequency**

The requirements are:

#### Test Data:



Frequency [MHz]	(P)	Reading PK [dB(uV)]	C.f [dB(1/m)]	Level PK [dB(uV/m)]	Limit QP [dB(uV/m)]	Margin QP-PK [dB]	Height [cm]	Angle [deg]	Remark
30.097	٧	28.2	-6.8	21.4	40.0	18.6	200.0	6.9	
31.455	Н	28.4	-7.3	21.1	40.0	18.9	99.9	18.0	
143.975	Н	33.6	-12.8	20.8	43.5	22.7	200.0	325.2	
191.990	Н	39.7	-15.2	24.5	43.5	19.0	99.9	356.3	
962.752	Н	26.4	5.7	32.1	54.0	21.9	99.9	0.2	
979.630	٧	25.6	5.8	31.4	54.0	22.6	100.0	0.4	

### Remark:

- 1. Measuring position: The Unwanted emission was measured in the following position: EUT stand-up position(Y axis), lie-down position(X,Z axis). The worst emission was found in stand-up position(Y axis) and the worst case was recorded.
- 2. Result = Reading + c.f(Correction factor)
- 3. Correction factor = Antenna factor + Cable loss + 6 dB attenuator Amp Gain
- 4. This data is the Peak(PK) value.



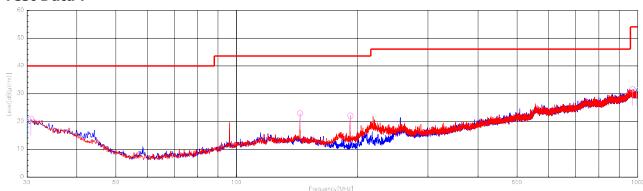
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## Test mode: ANT 0 - Receiving, status Middle Frequency

The requirements are:

#### Test Data:



Frequency [MHz]	(P)	Reading PK [dB(uV)]	C.f [dB(1/m)]	Level PK [dB(uV/m)]	Limit QP [dB(uV/m)]	Margin QP-PK [dB]	Height [cm]	Angle [deg]	Remark
30.194	٧	27.4	-6.8	20.6	40.0	19.4	100.0	319.0	
30.679	Н	27.9	-7.0	20.9	40.0	19.1	200.2	7.4	
143.975	Н	35.6	-12.8	22.8	43.5	20.7	200.2	283.1	
191.990	Н	37.3	-15.2	22.1	43.5	21.4	100.0	0.8	
969.542	Н	25.8	5.8	31.6	54.0	22.4	100.0	43.4	
992.628	٧	26.1	5.6	31.7	54.0	22.3	100.0	271.4	

### Remark:

- 1. Measuring position: The Unwanted emission was measured in the following position: EUT stand-up position(Y axis), lie-down position(X,Z axis). The worst emission was found in stand-up position(Y axis) and the worst case was recorded.
- 2. Result = Reading + c.f(Correction factor)
- 3. Correction factor = Antenna factor + Cable loss + 6 dB attenuator Amp Gain
- 4. This data is the Peak(PK) value.



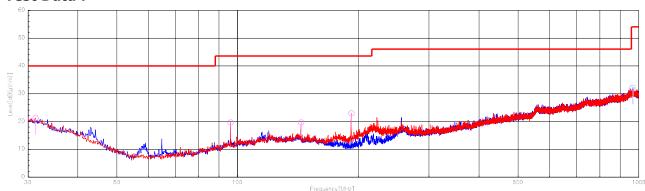
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## Test mode: ANT 0 - Transmission status Highest Frequency

The requirements are:

#### Test Data:



Frequency [MHz]	(P)	Reading PK [dB(uV)]	C.f [dB(1/m)]	Level PK [dB(uV/m)]	Limit QP [dB(uV/m)]	Margin QP-PK [dB]	Height [cm]	Angle [deg]	Remark
31.358	Н	28.5	-7.3	21.2	40.0	18.8	100.0	158.8	
95.960	Н	34.6	-15.0	19.6	43.5	23.9	300.0	353.8	
143.975	Н	32.4	-12.8	19.6	43.5	23.9	200.0	359.1	
191.990	Н	38.0	-15.2	22.8	43.5	20.7	100.0	359.7	
964.304	Н	26.4	5.7	32.1	54.0	21.9	200.0	0.5	
969.445	٧	26.3	5.8	32.1	54.0	21.9	200.0	0.7	

### Remark:

- 1. Measuring position: The Unwanted emission was measured in the following position: EUT stand-up position(Y axis), lie-down position(X,Z axis). The worst emission was found in stand-up position(Y axis) and the worst case was recorded.
- 2. Result = Reading + c.f(Correction factor)
- 3. Correction factor = Antenna factor + Cable loss + 6 dB attenuator Amp Gain
- 4. This data is the Peak(PK) value.



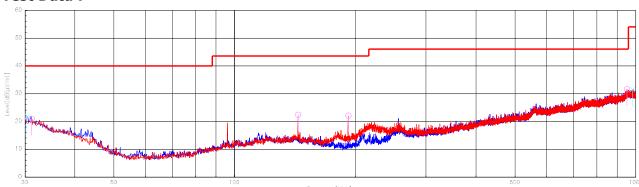
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## Test mode: ANT 0 - Receiving, status Highest Frequency

The requirements are:

#### Test Data:



Frequency [MHz]	(P)	Reading PK [dB(uV)]	C.f [dB(1/m)]	Level PK [dB(uV/m)]	Limit QP [dB(uV/m)]	Margin QP-PK [dB]	Height [cm]	Angle [deg]	Remark
30.388	٧	28.7	-6.9	21.8	40.0	18.2	100.0	349.5	
31.164	Н	28.0	-7.2	20.8	40.0	19.2	100.0	47.1	
143.975	Н	35.2	-12.8	22.4	43.5	21.1	200.0	295.2	
191.990	Н	37.3	-15.2	22.1	43.5	21.4	100.0	0.3	
952.082	Н	26.3	5.3	31.6	46.0	14.4	100.0	197.0	
981.764	٧	25.6	5.8	31.4	54.0	22.6	200.0	254.5	

## Remark:

- 1. Measuring position: The Unwanted emission was measured in the following position: EUT stand-up position(Y axis), lie-down position(X,Z axis). The worst emission was found in stand-up position(Y axis) and the worst case was recorded.
- 2. Result = Reading + c.f(Correction factor)
- 3. Correction factor = Antenna factor + Cable loss + 6 dB attenuator Amp Gain
- 4. This data is the Peak(PK) value.