TEST REPORT

Application No.:	SUCR2604000317WM
FCC ID:	2AWF6-SH3350
Applicant:	START USA, INC.
Address of Applicant:	5600 Tennyson Parkway, Suite 390, Plano, TX 75024, USA
Manufacturer:	START USA, INC.
Address of Manufacturer:	5600 Tennyson Parkway, Suite 390, Plano, TX 75024, USA
Equipment Under Test (EUT):	
EUT Name:	5G Feature phone
Model No.:	SH3350
Trade Mark:	START
Standard(s) :	47 CFR Part 15, Subpart E 15.407
Date of Receipt:	2026-04-07
Date of Test:	2026-06-25 to 2026-07-10
Date of Issue:	2026-07-13
Test Result:	**Pass***

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

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Revision Record			
Version	**Description**	**Date**	**Remark**
00	Original	2026-07-13	/

Authorized for issue by:				
Prepared By		Nature Shen **Nature_Shen/Project Engineer**		
Approved By		Cedar cheng **Cedar Cheng /Reviewer**		

2 Test Summary

Radio Spectrum Technical Requirement				
Item	**Standard**	**Method**	**Requirement**	**Result**
Antenna Requirement	47 CFR Part 15, Subpart E 15.407	N/A	47 CFR Part 15, Subpart C 15.203	Pass
Transmission in the Absence of Data		N/A	47 CFR Part 15, Subpart E 15.407 (c)	Pass

Radio Spectrum Matter Part				
Item	**Standard**	**Method**	**Requirement**	**Result**
Conducted Emissions at AC Power Line (150kHz-30MHz)	47 CFR Part 15, Subpart E 15.407	ANSI C63.10-2020+Cor.1-2023 Section 6.2	47 CFR Part 15, Subpart C 15.207 & Subpart E 15.407 b(9)	Pass
Radiated Emissions (Below 1GHz)		ANSI C63.10-2020+Cor.1-2023 Section 6.4,6.5	47 CFR Part 15, Subpart C 15.209 & Subpart E 15.407(b)	Pass
Radiated Emissions (Above 1GHz)		ANSI C63.10-2020+Cor.1-2023 Section 6.6 & 12.7	47 CFR Part 15, Subpart C 15.209 & Subpart E 15.407(b)	Pass
Radiated Emissions which fall in the restricted bands		ANSI C63.10-2020+Cor.1-2023 Section 6.10.5 & 12.7.2	47 CFR Part 15, Subpart C 15.209 & Subpart E 15.407(b)	Pass
Duty Cycle		ANSI C63.10-2020+Cor.1-2023 Section 12.2	ANSI C63.10-2020+Cor.1-2023 Section 12.2	Pass
99% Bandwidth		ANSI C63.10-2020+Cor.1-2023 Section 6.9.3	ANSI C63.10-2020+Cor.1-2023 Section 12.5.3	Pass
26dB Emission Bandwidth		ANSI C63.10-2020+Cor.1-2023 Section 12.5.2	47 CFR Part 15, Subpart E 15.407 (a)	Pass
Minimum 6 dB Bandwidth (5.725-5.85 GHz band)		ANSI C63.10-2020+Cor.1-2023 Section 12.5.1	47 CFR Part 15, Subpart E 15.407 (e)	Pass
Maximum Conducted Output Power		ANSI C63.10-2020+Cor.1-2023 Section 12.4	47 CFR Part 15, Subpart E 15.407 (a)	Pass
Power Spectral Density		ANSI C63.10-2020+Cor.1-2023 Section 12.6	47 CFR Part 15, Subpart E 15.407 (a)	Pass
Channel Move Time		KDB 905462 D02 Section 7.8.3	KDB 905462 D02 Section 5.1	Pass
Frequency Stability		KDB 905462 D02 Section 7.8.3	KDB 905462 D02 Section 5.1	Pass

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4 General Information

4.1 Details of E.U.T.

Hardware Version:	SH3350HV1.0
Software Version:	SH3350SV1.0.0
IMEI:	Sample 1: 355770280000174 Sample 2: 355770280001628
Power supply:	DC 3.85V from internal rechargeable battery which can be charged by AC/DC adapter
Operation Frequency/Number of channels (20MHz):	U-NII-1: 5180-5240MHz (4 Channels); U-NII-2A: 5260-5320MHz (4 Channels); U-NII-2C: 5500-5700MHz (11 Channels); U-NII-3: 5745-5825MHz (5 Channels)
Operation Frequency/Number of channels/(40MHz):	U-NII-1: 5190-5230MHz (2 Channels); U-NII-2A: 5270-5310MHz (2 Channels); U-NII-2C: 5510-5670MHz (5 Channels); U-NII-3: 5755-5795MHz (2 Channels)
Operation Frequency/Number of channels (80MHz):	U-NII-1: 5210MHz (1 Channel); U-NII-2A: 5290MHz (1 Channels); U-NII-2C: 5530-5610MHz (2 Channels); U-NII-3: 5775MHz (1 Channel)
Modulation Type:	802.11a: OFDM (BPSK, QPSK, 16QAM, 64QAM); 802.11n: OFDM (BPSK, QPSK, 16QAM, 64QAM); 802.11ac: OFDM (BPSK, QPSK, 16QAM, 64QAM, 256QAM)
Channel Spacing:	802.11a/n/ac 20: 20MHz; 802.11n/ac 40: 40MHz; 802.11ac 80: 80MHz
DFS Function:	Slave without Radar detection
TPC Function:	Support TPC function
Antenna Type:	FPC Antenna
Antenna Gain:	U-NII-1:Ant9:-0.19dBi; (Provided by the manufacturer) U-NII-2A:Ant9:0.03dBi; (Provided by the manufacturer) U-NII-2C:Ant9:1.13dBi; (Provided by the manufacturer) U-NII-3:Ant9:1.2dBi; (Provided by the manufacturer)
Antenna Number:	1

4.2 Environment Parameter

Environment Parameter	Selected Values During Tests	
Relative Humidity	Ambient	
Value	Temperature(°C)	Voltage(V)
NTNV	25	3.85

Note:

NV:Normal Voltage	LV:Low Extreme Test Voltage	HV:High Extreme Test Voltage
NT:Normal Temperature	LT:Low Extreme Test Temperature	HT:High Extreme Test Temperature

4.3 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
Computer	Lenovo	T14	2YK6GR
Router	Smavwave Technology Co.,Ltd	SRT 421	RT421X02211300001

4.4 Measurement Uncertainty & Decision Rule

No.	Item	Measurement Uncertainty
1	Radio Frequency	± 7.25 x 10^{-8}
2	Duty cycle	± 0.37%
3	Occupied Bandwidth	± 3%
4	Conduction emission	± 3.0dB (150kHz to 30MHz)
5	RF conducted power	± 0.75dB
6	RF power density	± 2.84dB
7	Conducted Spurious emissions	± 0.75dB
8	RF Radiated power	±1.56dB (9KHz-30MHz)
		±4.80dB (30MHz-1GHz)
		±4.80dB (1GHz-18GHz)
		±4.80dB (18GHz-40GHz)
9	Temperature test	± 1°C
10	Humidity test	± 3%
11	Supply voltages	± 1%
12	Time	± 3%

Remark:
The U_{lab} (lab Uncertainty) is less than $U_{cispr/ETSI}$ (CISPR/ETSI Uncertainty), so the test results
– compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;
– non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.

4.5 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

South of No. 6 Plant, No. 1, Runsheng Road, Suzhou Industrial Park, Suzhou Area, China (Jiangsu) Pilot Free Trade Zone

No tests were sub-contracted.

Note:

1.SGS is not responsible for wrong test results due to incorrect information (e.g., max. internal working frequency, antenna gain, cable loss, etc) is provided by the applicant. (If applicable).

2.SGS is not responsible for the authenticity, integrity and the validity of the conclusion based on results of the data provided by applicant. (If applicable).

3. Sample source: sent by customer.

4.6 Test Facility

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

• A2LA (Certificate No. 6336.01)

SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.is accredited by the American Association for Laboratory Accreditation (A2LA).

• FCC (Designation Number: CN1312)

SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd. has been recognized as an accredited testing laboratory. Test Firm Registration Number:717327

• ISED (CAB Identifier: CN0120)

SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd. has been recognized by Innovation, Science and Economic Development Canada (ISED) as an accredited testing laboratory.

Company Number: 27594

4.7 Deviation from Standards

None

4.8 Abnormalities from Standard Conditions

None

5 Equipment List

Item	Equipment	Manufacturer	Model	Inventory No	Cal Date	Cal. Due Date
Conducted Emission at Mains Terminals						
1	EMI Test Receive	R&S	ESR7	SUWI-01-10-01	1/14/2026	1/13/2027
2	LISN	R&S	ENV216	SUWI-01-19-03	4/22/2026	4/21/2027
3	LISN	Schwarzbeck	ENV216	SUWI-01-19-04	4/22/2026	4/21/2027
4	Test Software	Tonscend	JS32-CE_4.0.0.2	SUWI-02-09-05	N.C.R	N.C.R
5	Test Cable	Tonscend	NA	SUWI-01-03-04	4/22/2026	4/21/2027
RF Conducted Test						
1	Signal Analyzer	ROHDE&SCHWARZ	FSW43	SUWI-01-02-04	1/14/2026	1/13/2027
2	Signal Analyzer	KEYSIGHT	N9020A	SUWI-01-02-15	11/21/2025	11/20/2026
3	MXG Vector signal genitor	KEYSIGHT	N5182B	SUWI-01-38-01	1/14/2026	1/13/2027
4	Signal Generator	ROHDE&SCHWARZ	SMW200A	SUWI-01-07-08	1/14/2026	1/13/2027
5	Signal Generator	ROHDE&SCHWARZ	SMW100A	SUWI-01-08-01	1/14/2026	1/13/2027
6	MXG Vector Signal Generator	ROHDE&SCHWARZ	SMR20	SUWI-01-33-01	11/21/2025	11/20/2026
7	Wideband Radio Communication Tester	ROHDE&SCHWARZ	CMW500	SUWI-01-16-13	4/22/2026	4/21/2027
8	Wideband Radio Communication Test Station	Anritsu	MT8000A	SUWI-01-34-02	11/21/2025	11/20/2026
9	Wideband Radio Communication Tester	Anritsu	MT8821C	SUWI-01-26-03	11/21/2025	11/20/2026
10	Power meter	Anritsu	ML2495A	SUWI-01-31-01	11/21/2025	11/20/2026
11	Pulse power sensor	Anritsu	MA2411B	SUWI-01-32-01	11/21/2025	11/20/2026
12	DC Power Supply	HYELEC	HY3005B	SUWI-01-18-01	1/14/2026	1/13/2027
13	Temperature and humidity meter	MingGao	TH101B	SUWI-01-01-07	2/11/2026	2/10/2027
14	Temperature Chamber	GIANT FORCE	ICT-017-40-SP-SD	SUWI-01-13-02	5/7/2026	5/6/2027
15	Measurement Software	TST	TST 272 V2.02	SUWI-03-55-03	NCR	NCR
16	RF Control unit	TST	TSCB3023R2	SUWI-02-20-01	NCR	NCR
17	RFCables	Tonscend	NA	SUWI-01-03-01	1/15/2026	1/14/2027
RF Radiated Test						
1	Semi-Anechoic Chamber	Brilliant-emc	N/A	SUWI-04-02-01	6/9/2026	6/8/2029
2	Signal Analyzer	ROHDE&SCHWARZ	FSW43	SUWI-01-02-04	1/14/2026	1/13/2027
3	Signal Analyzer	KEYSIGHT	N9020A	SUWI-01-02-07	11/20/2025	11/19/2026
4	Test receiver	ROHDE&SCHWARZ	ESR7	SUWI-01-10-01	1/14/2026	1/13/2027
5	Signal Generator	ROHDE&SCHWARZ	SMW100A	SUWI-01-18-01	1/14/2026	1/13/2027

6	Receiving antenna	SCHWRZBECK MESS-ELEKTRONIK	VULB 9168	SUWI-01-11-04	11/29/2025	11/28/2027
7	Receiving antenna	SCHWRZBECK MESS-ELEKTRONIK	BBHA 9120D	SUWI-01-11-02	5/7/2025	5/6/2027
8	Receiving antenna	SCHWRZBECK MESS-ELEKTRONIK	BBHA 9170	SUWI-01-11-03	5/7/2025	5/6/2027
9	Active Loop Antenna	SCHWRZBECK MESS-ELEKTRONIK	FMZB 1519B	SUWI-01-21-01	5/7/2025	5/6/2027
10	Amplifier	Tonscend	TAP9K3G40	SUWI-01-14-01	1/14/2026	1/13/2027
11	Amplifier	Tonscend	TAP01018050	SUWI-01-14-02	1/14/2026	1/13/2027
12	Amplifier	Tonscend	TAP18040048	SUWI-01-14-03	1/14/2026	1/13/2027
13	Wideband Radio Communication Tester	Anritsu	MT8820C	SUWI-01-26-01	8/25/2025	8/24/2026
14	Wideband Radio Communication Tester	Anritsu	MT8821C	SUWI-01-26-03	8/25/2025	8/24/2026
15	Wideband Radio Communication Tester	ROHDE&SCHWARZ	CMW500	SUWI-01-16-09	8/26/2025	8/25/2026
16	Radio Communication Analyzer	StarPoint	SP9500E	SUWI-01-28-06	11/21/2025	11/20/2026
17	Signal Generator	ROHDE&SCHWARZ	SMB100A	SUWI-01-08-01	1/14/2026	1/13/2027
18	DC Power Supply	HYELEC	HY3005B	SUWI-01-18-01	1/14/2026	1/13/2027
19	Temperature and humidity meter	MingGao	TH101B	SUWI-01-01-05	2/11/2026	2/10/2027
20	Measurement Software	Tonscend	JS32-RE 4.0.0.0	SUWI-02-09-06	NCR	NCR
21	RF Control unit	Tonscend	JS0806-1	SUWI-02-20-01	NCR	NCR
22	RFCables	Tonscend	NA	SUWI-01-03-02	NCR	NCR

6 Radio Spectrum Technical Requirement

6.1 Antenna Requirement

6.1.1 Test Requirement:

47 CFR Part 15, Subpart C 15.203

6.1.2 Conclusion

Standard Requirement:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit permanently attached antenna or of an so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

EUT Antenna:

The antenna is FPC Antenna and no consideration of replacement. The best case gain of the U-NII-1: -0.19dBi ;U-NII-2A: 0.03dBi ;U-NII-2C: 1.13dBi ;U-NII-3: 1.2dBi;

Antenna location: Refer to internal photo.

6.2 Transmission in the Absence of Data

6.2.1 Test Requirement:

47 CFR Part 15, Subpart E 15.407 (c)

6.2.2 Conclusion

6.2.2ConclusionStandard Requirement:The device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure. These provisions are not intended to preclude the transmission of control or signalling information or the use of repetitive codes used by certain digital technologies to complete frame or burst intervals.Applicants shall include in their application for equipment authorization a description of how this requirement is met.EUT Details:WIFI chip support automatically discontinue transmission in case of either absence of information to transmit or operational failure, if the chip detect absence of information to transmit or operational failure, it will be automatically shut off.

7 Radio Spectrum Matter Test Results

7.1 Conducted Emissions at AC Power Line (150kHz-30MHz)

Test Requirement 47 CFR Part 15, Subpart C 15.207 & Subpart E 15.407 b(9)
Test Method: ANSI C63.10-2020+Cor.1-2023 Section 6.2

Limit:

Frequency of emission(MHz)	Conducted limit(dBμV)	
	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.		

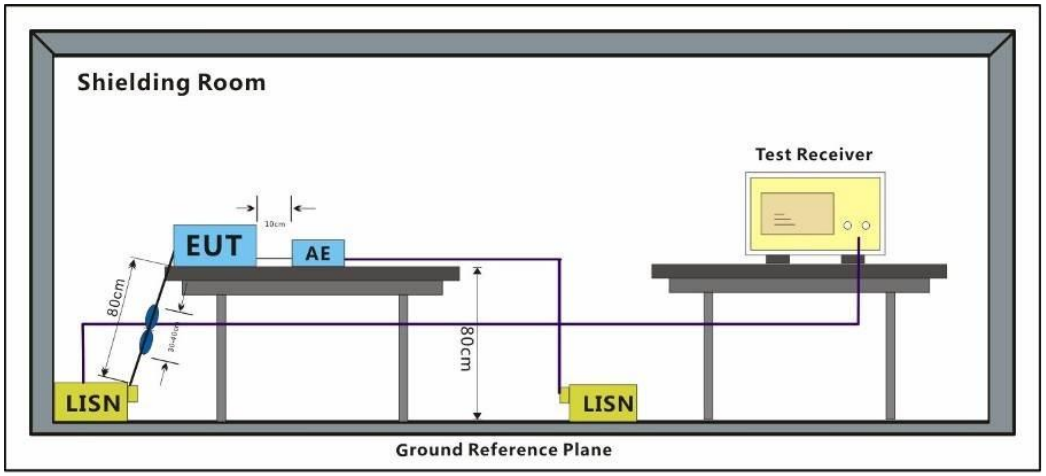
7.1.1 E.U.T. Operation

Operating Environment:
Temperature: 22 °C Humidity: 43 % RH Atmospheric Pressure: 1001 mbar

7.1.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	04	TX mode (U-NII-1) _Keep the EUT in continuously transmitting mode with all modulation types and being charged. All data rates for each modulation type have been tested, Only the data of worst case is recorded in the report.
Pre-scan	05	TX mode (U-NII-2A) _Keep the EUT in continuously transmitting mode with all modulation types and being charged. All data rates for each modulation type have been tested, Only the data of worst case is recorded in the report.
Pre-scan	06	TX mode (U-NII-2C) _Keep the EUT in continuously transmitting mode with all modulation types and being charged. All data rates for each modulation type have been tested, Only the data of worst case is recorded in the report.
Pre-scan	07	TX mode (U-NII-3) _Keep the EUT in continuously transmitting mode with all modulation types and being charged. All data rates for each modulation type have been tested, Only the data of worst case is recorded in the report.

7.1.3 Test Setup Diagram



7.1.4 Measurement Procedure and Data

1) The mains terminal disturbance voltage test was conducted in a shielded room.

2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a 50ohm/50μH + 5ohm linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.

3) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane,

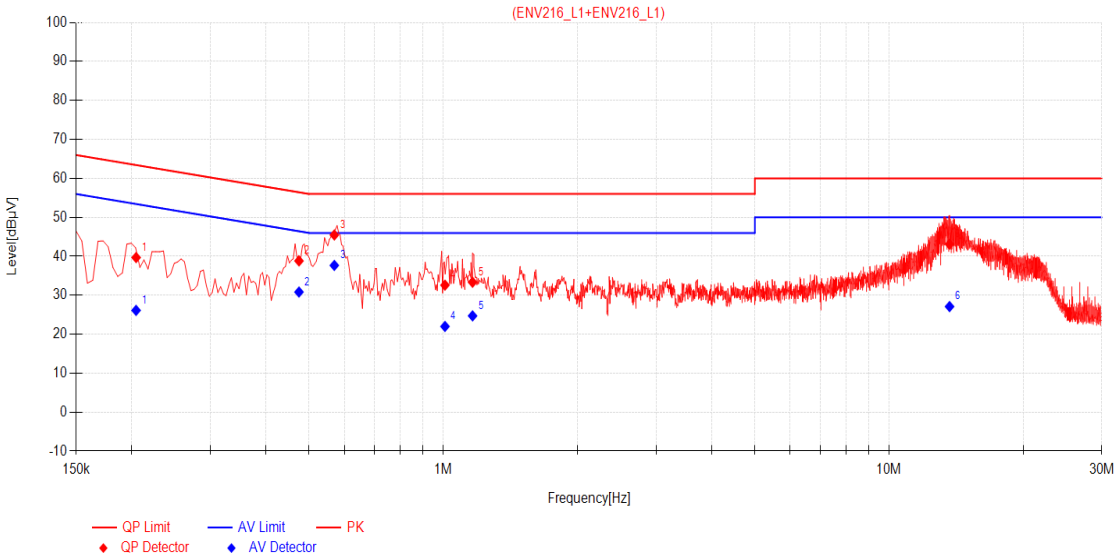
4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2.

5) In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10 on conducted measurement.

Remark 1: Level=Read Level+ Cable Loss+ LISN Factor

Remark 2: Pre-test AC 120V/50-60Hz&AC 240V/50-60Hz then choose the AC 120/60Hz as worst case.

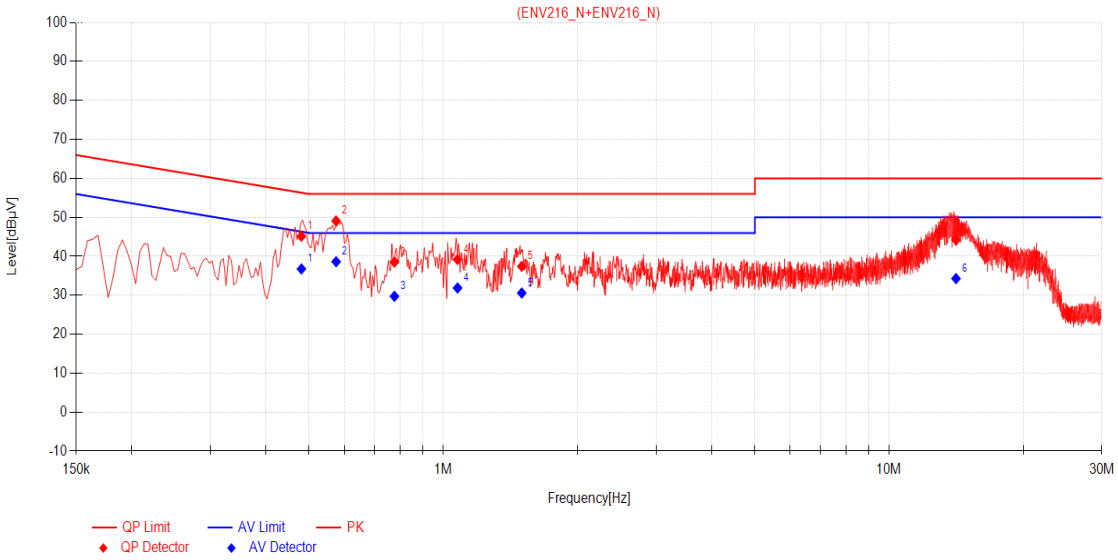
Test Mode: 04; Line: Live line



Final Data List

NO.	Frequency [MHz]	Factor [dB]	QP Reading [dBµV]	QP Value [dBµV]	QP Limit [dBµV]	QP Margin [dB]	AV Reading [dBµV]	AV Value [dBµV]	AV Limit [dBµV]	AV Margin [dB]	Verdict
1	0.2045	10.40	29.28	39.68	63.43	23.75	15.72	26.12	53.43	27.31	PASS
2	0.4744	9.81	29.01	38.82	56.44	17.62	21.02	30.83	46.44	15.61	PASS
3	0.5694	9.75	35.73	45.48	56.00	10.52	27.91	37.66	46.00	8.34	PASS
4	1.0087	9.77	22.83	32.60	56.00	23.40	12.23	22.00	46.00	24.00	PASS
5	1.1631	9.79	23.56	33.35	56.00	22.65	14.92	24.71	46.00	21.29	PASS
6	13.6685	10.18	32.93	43.11	60.00	16.89	16.92	27.10	50.00	22.90	PASS

Test Mode: 04; Line: Neutral Line



Final Data List

NO.	Frequency [MHz]	Factor [dB]	QP Reading [dBµV]	QP Value [dBµV]	QP Limit [dBµV]	QP Margin [dB]	AV Reading [dBµV]	AV Value [dBµV]	AV Limit [dBµV]	AV Margin [dB]	Verdict
1	0.4804	9.93	35.22	45.15	56.33	11.18	26.83	36.76	46.33	9.57	PASS
2	0.5746	9.93	39.16	49.09	56.00	6.91	28.69	38.62	46.00	7.38	PASS
3	0.7768	9.94	28.56	38.50	56.00	17.50	19.79	29.73	46.00	16.27	PASS
4	1.0763	9.94	29.25	39.19	56.00	16.81	21.93	31.87	46.00	14.13	PASS
5	1.4996	9.94	27.49	37.43	56.00	18.57	20.63	30.57	46.00	15.43	PASS
6	14.1363	10.06	34.13	44.19	60.00	15.81	24.23	34.29	50.00	15.71	PASS

7.2 Radiated Emissions (Below 1GHz)

Test Requirement 47 CFR Part 15, Subpart C 15.209 & Subpart E 15.407(b)

Test Method: ANSI C63.10-2020+Cor.1-2023 Section 6.4,6.5

Limit:

Frequency(MHz)	Field strength(microvolts/meter)	Measurement distance(meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
960-1000	500	3

Note

1.The above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz. Radiated emission limits in these two bands are based on measurements employing an average d etector.

2. At frequencies below 1GHz, measurements may be performed at a distance different to specified in the regulations.

Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor+ Aux Factor (if applicable)

The aux factor needs to be added when measurements are performed at a distance other than the limit distance provided.

EX. Below 30MHz, Aux Factor = 40 dB/decade of distance, the aux factor is 40log(3/300) = -80dB (for 3m test distance).

EX. Above 30MHz, Aux Factor = 20 dB/decade of distance, the aux factor is 20log(10/3) = 10.46dB (for 10m test distance).

7.2.1 E.U.T. Operation

Operating Environment:

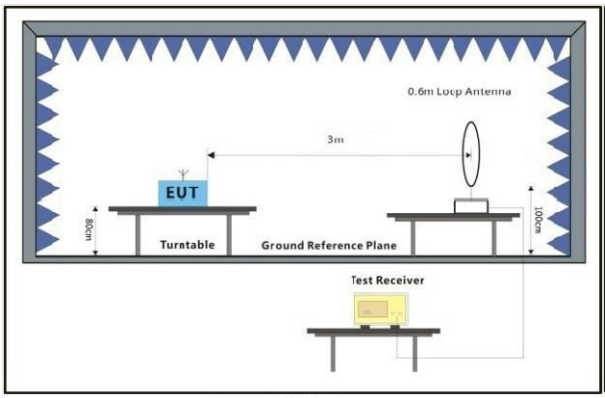
Temperature: 23 °C Humidity: 44 % RH Atmospheric Pressure: 1001 mbar

7.2.2 Test Mode Description

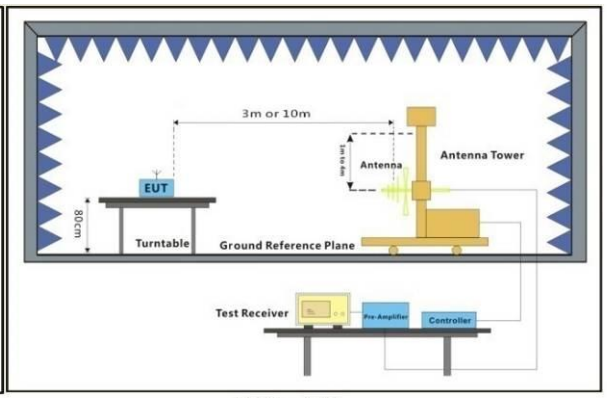
Pre-scan / Final test	Mode Code	Description
Final test	04	TX mode (U-NII-1) _Keep the EUT in continuously transmitting mode with all modulation types and being charged. All data rates for each modulation type have been tested, Only the data of worst case is recorded in the report.
Pre-scan	05	TX mode (U-NII-2A) _Keep the EUT in continuously transmitting mode with all modulation types and being charged. All data rates for each modulation type have been tested, Only the data of worst case is recorded in the report.
Pre-scan	06	TX mode (U-NII-2C) _Keep the EUT in continuously transmitting mode with all modulation types and being charged. All data rates for each modulation type have been tested, Only the data of worst case is recorded in the report.

Pre-scan	07	TX mode (U-NII-3) _Keep the EUT in continuously transmitting mode with all modulation types and being charged. All data rates for each modulation type have been tested, Only the data of worst case is recorded in the report.

7.2.3 Test Setup Diagram



Below 30MHz



30MHz-1GHz

7.2.4 Measurement Procedure and Data

a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8m above the ground at a semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3m or 10m away from the interference-receiving antenna, which was mounted on the variable-height antenna tower.

c. The antenna height is varied from 1m to 4m above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1m to 4m (for the test frequency of below 30MHz, the antenna was tuned to heights 1m) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using quasi-peak method as specified and then reported in a data sheet.

g. Test the EUT in the lowest channel, the middle channel, the Highest channel.

h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.

i. Repeat above procedures until all frequencies measured was complete.

Remark:

1. At frequencies below 1GHz, measurements may be performed at a distance different to specified in the regulations.

Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor+ Aux Factor (if applicable)

The aux factor needs to be added when measurements are performed at a distance other than the limit distance provided.

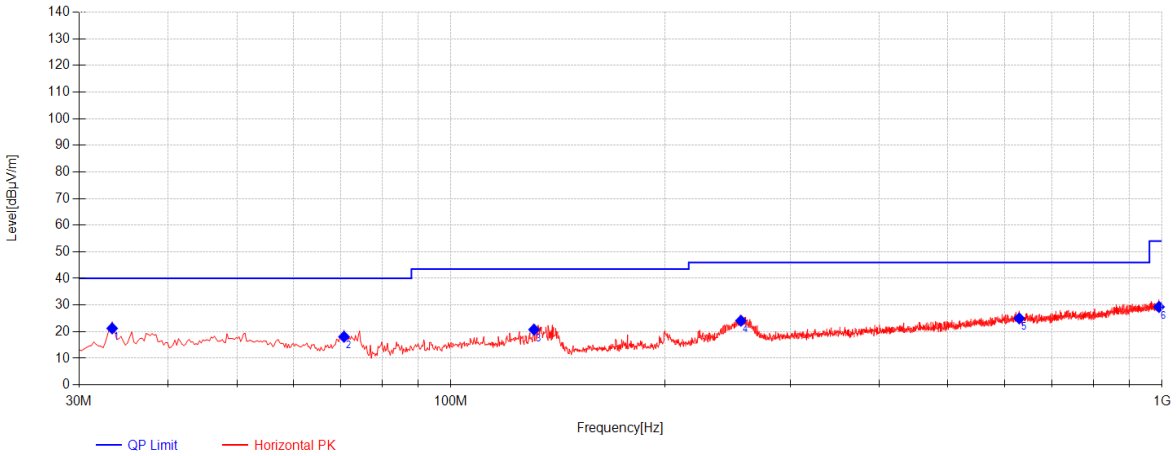
EX. Below 30MHz, Aux Factor = 40 dB/decade of distance, the aux factor is 40log(3/300) = -80dB (for 3m test distance).

EX. Above 30MHz, Aux Factor = 20 dB/decade of distance, the aux factor is 20log(10/3) = 10.46dB (for 10m test distance).

2. Scan from 9kHz to 30MHz, the disturbance below 30MHz was very low. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.

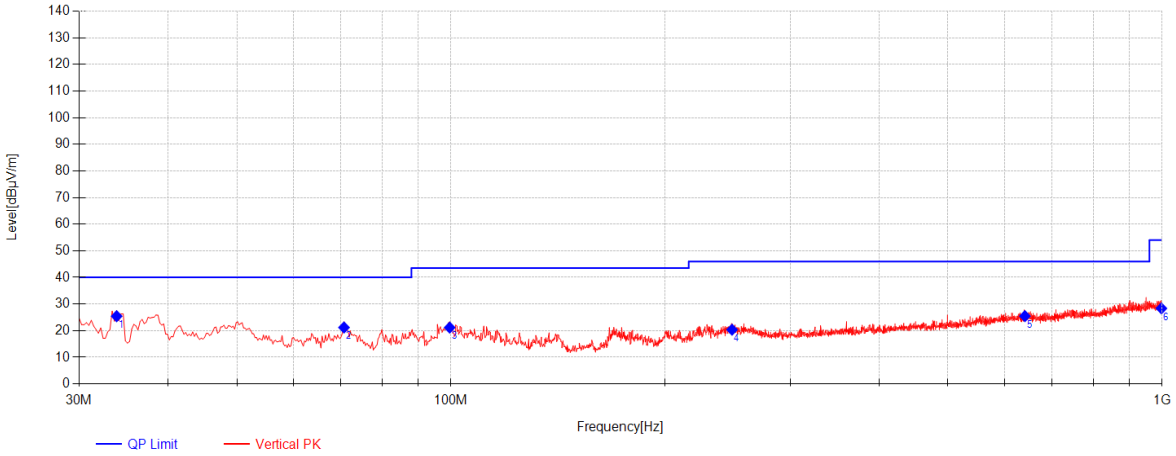
3. The disturbance below 1GHz was very low and the harmonics were the highest point could be found when testing, so only the worst-case test curve is displayed.

Test Mode: 04; Polarity: Horizontal



Final Data List								
NO.	Frequency [MHz]	Reading [dBµV]	AF [dB/m]	Factor [dB]	QP Value [dBµV/m]	QP Limit [dBµV/m]	QP Margin [dB]	Polarity
1	33.395	45.37	17.18	-41.32	21.23	40.00	18.77	Horizontal
2	70.74	42.72	16.15	-40.78	18.09	40.00	21.91	Horizontal
3	130.88	45.73	15.10	-40.05	20.78	43.50	22.72	Horizontal
4	255.7675	43.87	18.92	-38.70	24.09	46.00	21.91	Horizontal
5	629.7025	36.1	24.79	-35.91	24.98	46.00	21.02	Horizontal
6	990.0575	35.39	27.70	-33.80	29.29	54.00	24.71	Horizontal

Test Mode: 04; Polarity: Vertical



Final Data List								
NO.	Frequency [MHz]	Reading [dBµV]	AF [dB/m]	Factor [dB]	QP Value [dBµV/m]	QP Limit [dBµV/m]	QP Margin [dB]	Polarity
1	33.88	49.46	17.28	-41.31	25.43	40.00	14.57	Vertical
2	70.74	45.82	16.15	-40.78	21.19	40.00	18.81	Vertical
3	99.5975	44.16	17.40	-40.40	21.16	43.50	22.34	Vertical
4	248.4925	40.27	18.70	-38.61	20.36	46.00	25.64	Vertical
5	641.3425	36.49	24.98	-36.01	25.46	46.00	20.54	Vertical
6	997.8175	33.97	28.10	-33.71	28.36	54.00	25.64	Vertical

7.3 Radiated Emissions (Above 1GHz)

Test Requirement 47 CFR Part 15, Subpart C 15.209 & Subpart E 15.407(b)

Test Method: ANSI C63.10-2020+Cor.1-2023 Section 6.6 & 12.7

Limit:

Frequency(MHz)	Field strength(microvolts/meter)	Measurement distance(meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

*(1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

(2) For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

(3) For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

(4) For transmitters operating in the 5.725-5.85 GHz band:

(i) All emissions shall be limited to a level of −27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

Remark:

1. The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90kHz, 110-490kHz and above 1000MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

2. Above 18GHz, measurements may be performed at a distance shorter than that specified in the regulations

Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor+ Aux Factor (if applicable)

The aux factor needs to be added when measurements are performed at a distance other than the limit distance provided.

EX. Above 18GHz, Aux Factor = 20 dB/decade of distance, the aux factor is 20log(1/3) = -9.54dB (for 1m test distance).

7.3.1 E.U.T. Operation

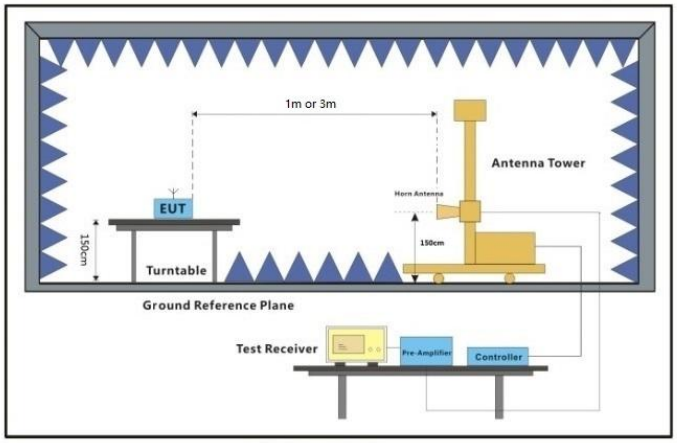
Operating Environment:

Temperature: 23 °C Humidity: 41 % RH Atmospheric Pressure: 1001 mbar

7.3.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	04	TX mode (U-NII-1) _Keep the EUT in continuously transmitting mode with all modulation types and being charged. All data rates for each modulation type have been tested, Only the data of worst case is recorded in the report.
Final test	05	TX mode (U-NII-2A) _Keep the EUT in continuously transmitting mode with all modulation types and being charged. All data rates for each modulation type have been tested, Only the data of worst case is recorded in the report.
Final test	06	TX mode (U-NII-2C) _Keep the EUT in continuously transmitting mode with all modulation types and being charged. All data rates for each modulation type have been tested, Only the data of worst case is recorded in the report.
Final test	07	TX mode (U-NII-3) _Keep the EUT in continuously transmitting mode with all modulation types and being charged. All data rates for each modulation type have been tested, Only the data of worst case is recorded in the report.

7.3.3 Test Setup Diagram



Above 1GHz

7.3.4 Measurement Procedure and Data

a. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak or average method as specified and then reported in a data sheet.

g. Test the EUT in the lowest channel, the middle channel, the Highest channel.

h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.

i. Repeat above procedures until all frequencies measured was complete.

Remark:

1. Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor

2. Scan from 1GHz to 40GHz, The points marked on below plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.

3. As shown in this section, for frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.

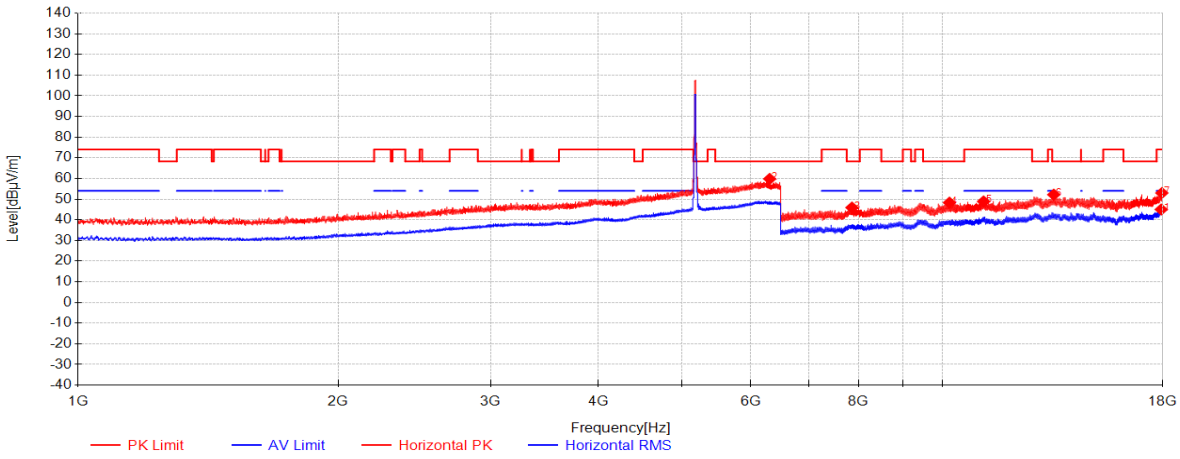
4. The disturbance above 18GHz were very low and the below harmonics were the highest point could be found when testing, so only the below harmonics had been displayed.

5. For devices with multiple operating modes, measurements on the middle channel is used to determine the worst-case mode(s). Only the worst case mode with the highest output power and the mode with the highest output power spectral density for each modulation family (e.g., OFDM and direct sequence spread spectrum) is recorded in the test report.

6. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 3MHz for Peak detection (PK) and Average detection (AV) at frequency above 1GHz.

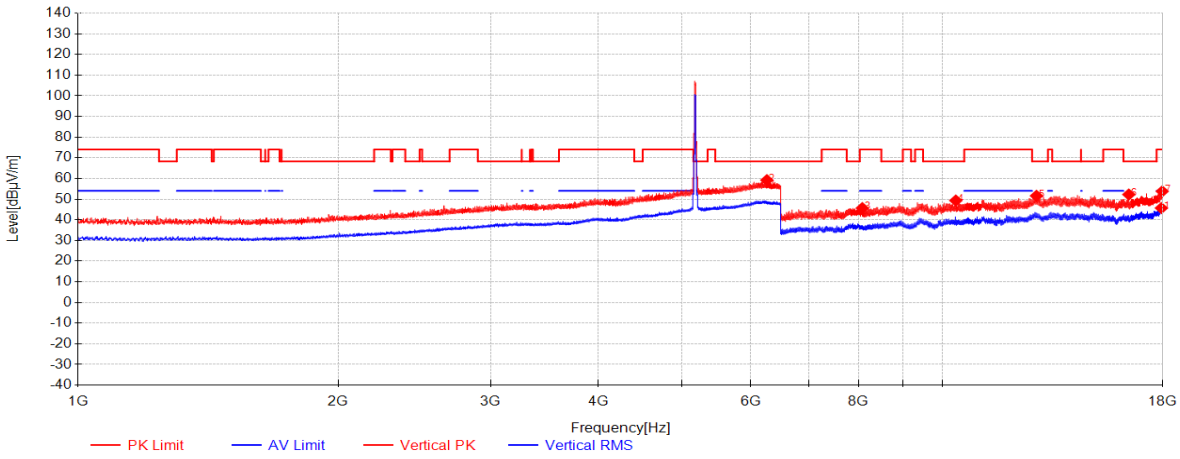
7. For fundamental and harmonic signal measurement, the resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is ⩾1/T (Duty cycle<98%) or 10Hz (Duty cycle⩾98%) for Average detection (AV) at frequency above 1GHz.

11a_TX_CH_36_Horizontal



Data List								
NO.	Frequency [MHz]	Reading [dBµV]	AF [dB/m]	Factor [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Polarity
1	17918.35	34.62	41.46	-31.09	44.99	54.00	9.01	Horizontal
2	6311.625	41.66	35.12	-16.99	59.80	68.20	8.40	Horizontal
3	7859.6833	50.21	37.02	-41.31	45.92	68.20	22.28	Horizontal
4	10189.9667	46.34	38.33	-36.36	48.31	68.20	19.89	Horizontal
5	11159.8	44.99	39.20	-35.34	48.86	74.00	25.14	Horizontal
6	13456.7333	46.89	40.13	-34.85	52.17	68.20	16.03	Horizontal
7	17948.25	42.44	41.55	-31.03	52.96	74.00	21.04	Horizontal

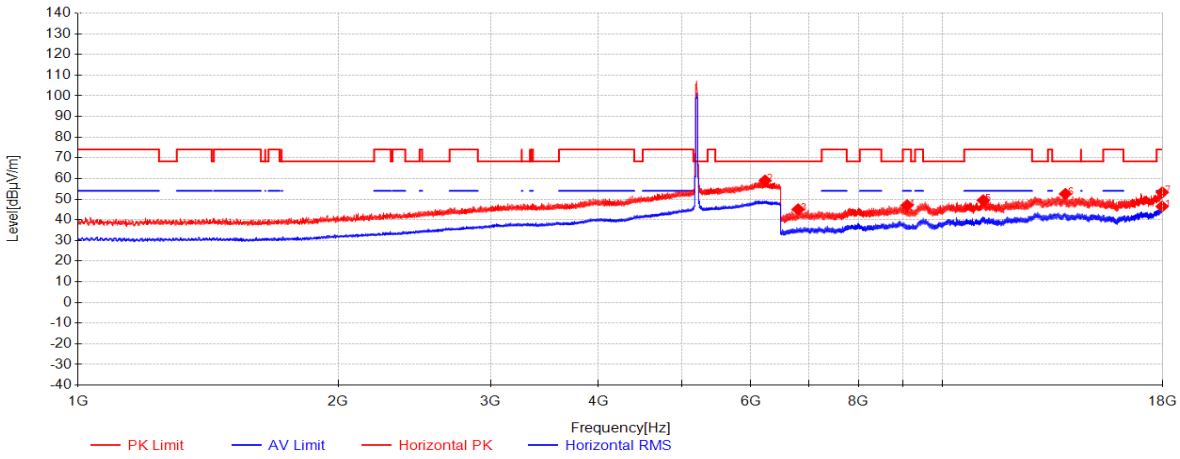
11a_TX_CH_36_Vertical



Data List

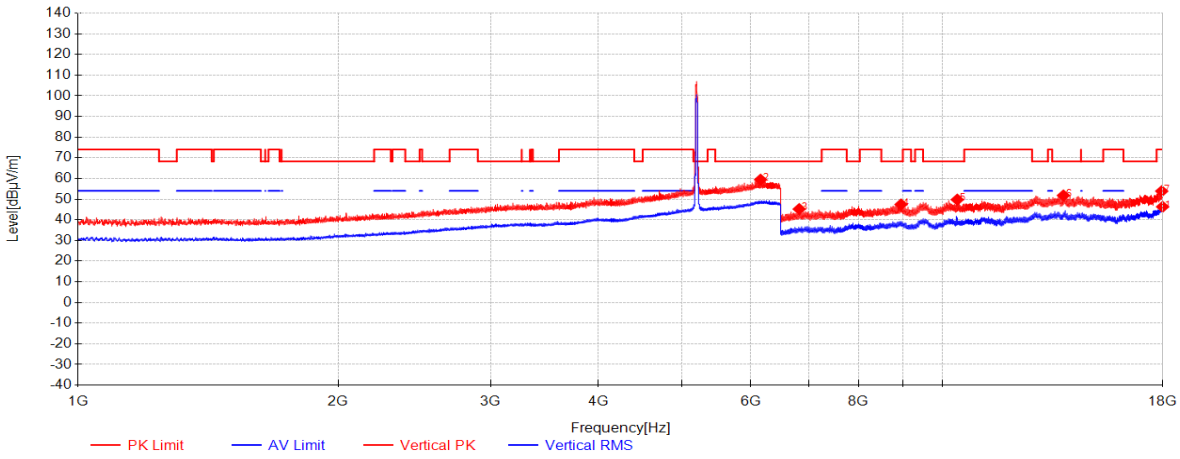
NO.	Frequency [MHz]	Reading [dBµV]	AF [dB/m]	Factor [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Polarity
1	17926.0167	35.26	41.49	-31.08	45.67	54.00	8.33	Vertical
2	6265.3333	41.13	35.03	-16.96	59.20	68.20	9.00	Vertical
3	8078.95	49.40	37.36	-41.06	45.69	74.00	28.31	Vertical
4	10363.6167	47.61	38.54	-36.83	49.32	68.20	18.88	Vertical
5	12850.6833	46.51	39.72	-34.62	51.61	68.20	16.59	Vertical
6	16435.6167	46.82	38.35	-32.94	52.22	68.20	15.98	Vertical
7	17967.0333	43.18	41.60	-31.00	53.79	74.00	20.21	Vertical

11a_TX_CH_40_Horizontal



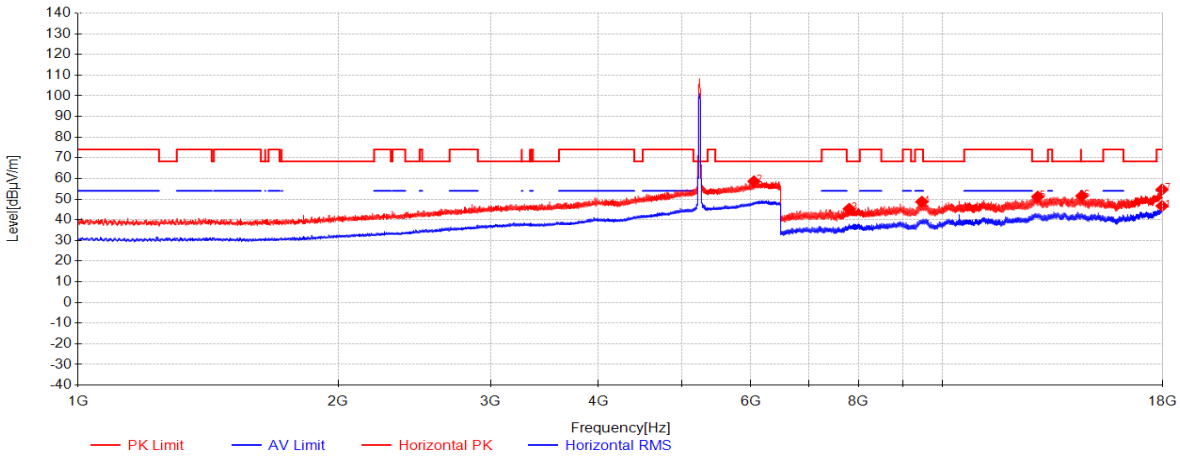
Data List								
NO.	Frequency [MHz]	Reading [dBµV]	AF [dB/m]	Factor [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Polarity
1	17961.2833	35.86	41.59	-31.01	46.44	54.00	7.56	Horizontal
2	6234.625	40.92	34.97	-16.89	59.00	68.20	9.20	Horizontal
3	6808.5833	51.89	35.99	-42.83	45.05	68.20	23.15	Horizontal
4	9103.6	48.74	38.01	-39.68	47.07	74.00	26.93	Horizontal
5	11149.8333	45.61	39.21	-35.41	49.41	74.00	24.59	Horizontal
6	13878.4	46.26	40.34	-34.09	52.51	68.20	15.69	Horizontal
7	17969.3333	42.65	41.61	-30.99	53.27	74.00	20.73	Horizontal

11a_TX_CH_40_Vertical



Data List								
NO.	Frequency [MHz]	Reading [dBµV]	AF [dB/m]	Factor [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Polarity
1	17985.8167	35.60	41.66	-30.96	46.30	54.00	7.70	Vertical
2	6159.9167	41.37	34.82	-16.76	59.43	68.20	8.77	Vertical
3	6828.5167	51.96	36.03	-42.79	45.20	68.20	23.00	Vertical
4	8957.55	48.88	37.97	-39.42	47.43	68.20	20.77	Vertical
5	10404.6333	47.77	38.59	-36.60	49.75	68.20	18.45	Vertical
6	13805.1833	46.56	40.30	-35.08	51.78	68.20	16.42	Vertical
7	17942.8833	43.37	41.53	-31.04	53.86	74.00	20.14	Vertical

11a_TX_CH_48_Horizontal



Data List								
NO.	Frequency [MHz]	Reading [dBµV]	AF [dB/m]	Factor [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Polarity
1	17960.1333	36.13	41.58	-31.01	46.70	54.00	7.30	Horizontal
2	6052.6667	40.89	34.61	-16.89	58.61	68.20	9.59	Horizontal
3	7801.8	49.41	36.90	-41.03	45.28	68.20	22.92	Horizontal
4	9467.3833	49.20	38.05	-38.53	48.71	74.00	25.29	Horizontal
5	12893.6167	45.91	39.77	-34.48	51.20	68.20	17.00	Horizontal
6	14502.4667	46.28	40.10	-34.81	51.57	68.20	16.63	Horizontal
7	17959.3667	44.08	41.58	-31.01	54.65	74.00	19.35	Horizontal