



REPORT No.: SZ25080057W01

TEST REPORT

APPLICANT : Copeland Comfort Control LP

PRODUCT NAME : WIFI Smart Thermostat

MODEL NAME : 1F96U-52WFTR, 1F96U-52WFAS

BRAND NAME : WIFI Smart Thermostat

FCC ID : 2A4JN-1F96U52

STANDARD(S) : 47 CFR Part 15 Subpart C

RECEIPT DATE : 2025-08-05

TEST DATE : 2025-08-14 to 2026-01-09

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Change History		
Version	Date	Reason for change
1.0	2026-01-23	First edition

1. Summary of Test Result

No.	Section	Description	Test Date	Test Engineer	Result	Remark
1	15.203	Antenna Requirement	N/A	N/A	PASS	/
2	15.255(c)	E.I.R.P.	Sep. 01, 2025	Su Xiaoxian	PASS	/
3	15.255(e)(2)	Emission Bandwidth and Occupied Bandwidth	Sep. 01,2025, Jan. 09,2026	Su Xiaoxian	PASS	/
4	15.207	Conducted Emission	Aug. 14, 2025	Wang Yapeng	PASS	/
5	15.255(d)	Radiated Spurious Emission	Aug. 25-28, 2025	Tian Xin	PASS	/
6	15.255(f)	Frequency Stability	Sep. 01, 2025	Su Xiaoxian	PASS	/

Note 1: The tests were performed according to the method of measurements prescribed in ANSI C63.10-2020.

Note 2: Any additions, deviation, or exclusions from the method shall be noted in the “Remark”.

1.1. Testing Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- 47 CFR 15.255
- ANSI C63.10-2020
- KDB [364244 D01 Meas 15.255 Radars v01r01](#)



1.2. Test Equipment List

1.2.1 Radiated Test Equipment

Equipment	Serial No.	Type	Manufacturer	Cal. Date	Due Date
Signal Analyzer	MY56060145	N9020A	Agilent	2025.05.13	2026.05.12
Test Antenna - Bi-Log	9163-519	VULB 9163	Schwarzbeck	2025.06.22	2026.06.21
Test Antenna - Loop	1519-022	FMZB1519	Schwarzbeck	2025.05.16	2026.05.15
Test Antenna – Horn	01774	BBHA 9120D	Schwarzbeck	2025.06.20	2026.06.19
Test Antenna – Horn	BBHA9170 #773	BBHA9170	Schwarzbeck	2025.06.20	2026.06.19
Preamplifier (10MHz-6GHz)	46732	S10M100L3 802	LUCIX CORP.	2025.05.13	2026.05.12
Preamplifier (2GHz-18GHz)	61171/61172	S020180L3 203	LUCIX CORP.	2025.05.13	2026.05.12
Preamplifier (18GHz-40GHz)	DS77209	DCLNA011 8-40C-S	Decentest	2025.05.13	2026.05.12
RF Coaxial Cable (DC-18GHz)	MRE001	PE330	Pasternack	2025.05.13	2026.05.12
RF Coaxial Cable (DC-18GHz)	MRE002	CLU18	Pasternack	2025.05.13	2026.05.12
RF Coaxial Cable (DC-18GHz)	MRE003	CLU18	Pasternack	2025.05.13	2026.05.12
RF Coaxial Cable (DC-40GHz)	22290045	QA360-40-KK-0.5	Qualwave	2024.09.11	2025.09.10
				2025.09.03	2026.09.02
RF Coaxial Cable (DC-40GHz)	22290046	QA360-40-KKF-2	Qualwave	2024.09.11	2025.09.10
				2025.09.03	2026.09.02
RF Coaxial Cable (DC-18GHz)	22120181	QA500-18-NN-5	Qualwave	2024.09.11	2025.09.10
				2025.09.03	2026.09.02
Anechoic Chamber	N/A	9m*6m*6m	CRT	2025.06.21	2028.06.20
Low Noise Amplifier (40GHz-60GHz)	ADSE01	OQ-LNA-4060-3805C	Shanghai Ouqiao Electronics Technology Co., Ltd	2024.08.17	2026.08.16



Equipment	Serial No.	Type	Manufacturer	Cal. Date	Due Date
Low Noise Amplifier(60GHz-90GHz)	ADJU05	OQ-LNA-6090-3805T	Shanghai Ouqiao Electronics Technology Co., Ltd	2024.08.17	2026.08.16
Low Noise Amplifier(90GHz-140GHz)	AEMA02	AT-LNA-90140-1806E	Shanghai AT Microwave Ltd.	2025.02.26	2026.02.25
Low Noise Amplifier(140GHz-200GHz)	ADAU01	OQ-LNA-140200-1606T	Shanghai Ouqiao Electronics Technology Co., Ltd	2024.08.17	2026.08.16
Horn Antenna (40GHz-60GHz)	2020036000036	LB-19-20-A	A-INFOMW	2022.06.16	2027.06.15
Horn Antenna(60GHz-90GHz)	J202026347	LB-12-20-A	A-INFOMW	2022.06.16	2027.06.15
Horn Antenna(90GHz-140GHz)	J202062617	LB-8-25-A	A-INFOMW	2022.06.16	2027.06.15
Horn Antenna(140GHz-220GHz)	2020004000025	LB-5-20-A	A-INFOMW	2022.06.16	2027.06.15
Spectrum Analyzer Frequency Conversion Module (40GHz-60GHz)	2022081902	SAFC19	Nanjing Nuozhijie Electronic Technology Co.,Ltd	2022.06.16	2027.06.15
Spectrum Analyzer Frequency Conversion Module(60GHz-90GHz)	2022081904	SAFC12	Nanjing Nuozhijie Electronic Technology Co.,Ltd	2024.08.17	2026.08.16
Spectrum Analyzer Frequency Conversion Module(90GHz-	2023022002	SAFC08	Nanjing Nuozhijie Electronic Technology	2025.02.18	2027.02.17



Equipment	Serial No.	Type	Manufacturer	Cal. Date	Due Date
140GHz)			Co.,Ltd		
Spectrum Analyzer Frequency Conversion Module(140GHz- 220GHz)	2023022004	SAFC05	Nanjing Nuozhijie Electronic Technology Co.,Ltd	2025.02.18	2027.02.17
Signal&Spectrum Analyzer	1406.6000K0 3-183151-sS	FSW	R&S	2025.05.13	2026.05.12
RF Coaxial Cable (DC-40GHz)	158230831	RAC360- 40MM-1000	RFTOP	2024.09.11	2025.09.10
				2025.09.03	2026.09.02
Temperature Chamber	12108015	DTL- 003S/01	YOMA	2025.09.03	2026.09.02

1.2.2 Conducted Emission Test Equipment

Equipment	Serial No.	Type	Manufacturer	Cal. Date	Due Date
Receiver	101052	ESPI	R&S	2025.05.15	2026.05.14
LISN	103131	ENV 216	R&S	2025.03.20	2026.03.19
Pulse Limiter (10dB)	VTSD 9561 F- B #206	VTSD 9561-F	R&S	2025.05.13	2026.05.12
RF Coaxial Cable (DC-100MHz)	EMC-CE- 00514	N/A	N/A	2025.05.06	2026.05.05

1.2.3 List of Software Used

Description	Manufacturer	Software Version
MORLAB EMCR	Morlab	V1.2
TS+ -[JS32-CE]	Tonscend	V2.5.0.0

1.2.4 Test Peripheral Equipment

Equipment	Serial No.	Manufacturer	Import	Output
Transformer	90-T50F3	White-Rodgers	120/208/240V	24V



1.3. Measurement Uncertainty

The uncertainty is calculated using the methods suggested in the "Guide to the Expression of Uncertainty in Measurement" (GUM) published by ISO.:

Uncertainty of Radiated Emission Measurement

Test Items	Uncertainty	
Measuring Uncertainty for a Level of Confidence of 95%(U=2Uc(y))	30MHz-200MHz	±5.06dB
	200MHz-1000MHz	±5.04dB
	1GHz-6GHz	±5.18dB
	6GHz-18GHz	±5.48dB

1.4. Testing Laboratory

1.4.1. Identification and Location of the Responsible Testing Laboratory

Laboratory Name	Shenzhen Morlab Communications Technology Co., Ltd.
Laboratory Address	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China
Telephone	+86 755 36698555
Facsimile	+86 755 36698525
FCC Designation Number	CN1192
FCC Test Firm Registration Number	226174

2. General Description

2.1. Information of Applicant and Manufacturer

Applicant	Copeland Comfort Control LP
Applicant Address	8100 West Florissant Ave, St. Louis, United States of America
Manufacturer	Copeland Comfort Control LP
Manufacturer Address	8100 West Florissant Ave, St. Louis, United States of America

2.2. Information of EUT

Product Name:	WIFI Smart Thermostat
Sample No.:	1#
Hardware Version:	0059 5601003
Software Version:	7017590402-ef4e670
Equipment Type:	☒ Field disturbance sensors/radars ☐ Pulsed field disturbance sensors/radars ☐ Devices other than field disturbance sensors
Operating Frequency Range:	57GHz-64GHz
Operating Frequency:	60.3GHz
Modulation Type:	FMCW
Antenna Type:	AOP Antenna
Antenna Gain:	8.7dBi

Note 1: According to the certificate holder, they declared that the product name: WIFI Smart Thermostat, with model name: 1F96U-52WFTR, 1F96U-52WFAS have the same hardware and software. The PCB design of the above models is exactly the same, only the logo are different, and these changes will not affect the RF performance. The main test model name is 1F96U-52WFTR, only the result for 1F96U-52WFTR was recorded in this report.

Note 2: The EUT description presented in the report are provided by applicant and/or manufacturer, and the test laboratory is not responsible for the accuracy of the information. For a more detailed description, please refer to Specification or User's Manual supplied by the applicant and/or manufacturer.



2.3. Test Configuration of EUT

The EUT was tested while in a continues transmitter/receiver mode under the control of tool which is provided by manufacturer, all the items of transmitter were tested under the maximum output power.

2.4. Test Conditions

2.4.1.Environment Condition

Temperature (°C):	5-35
Relative Humidity (%):	45-85
Atmospheric Pressure (kPa):	86-106

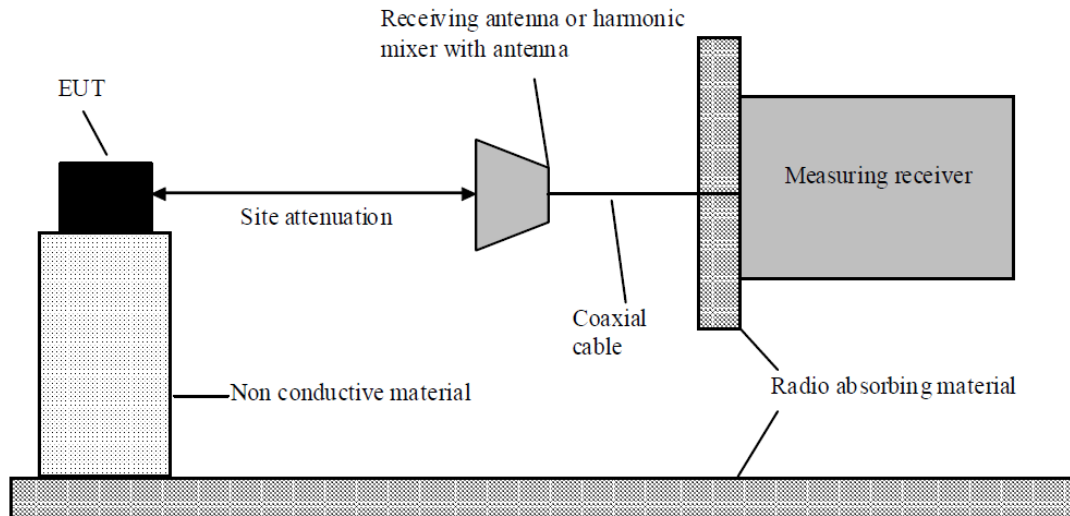
2.4.2.EUT Setup and Operating Conditions

The EUT is activated and controlled by the System Simulator and software. The EUT is powered by battery.

Supply Voltage:	Normal(NV)	24V
Test Temperature:	Normal(NT)	25°C

2.5. Test Setup Layout Diagram

2.5.1. General



Free Space Loss (FSL): 68dB

Receive Antenna Gain (AG): 40dB

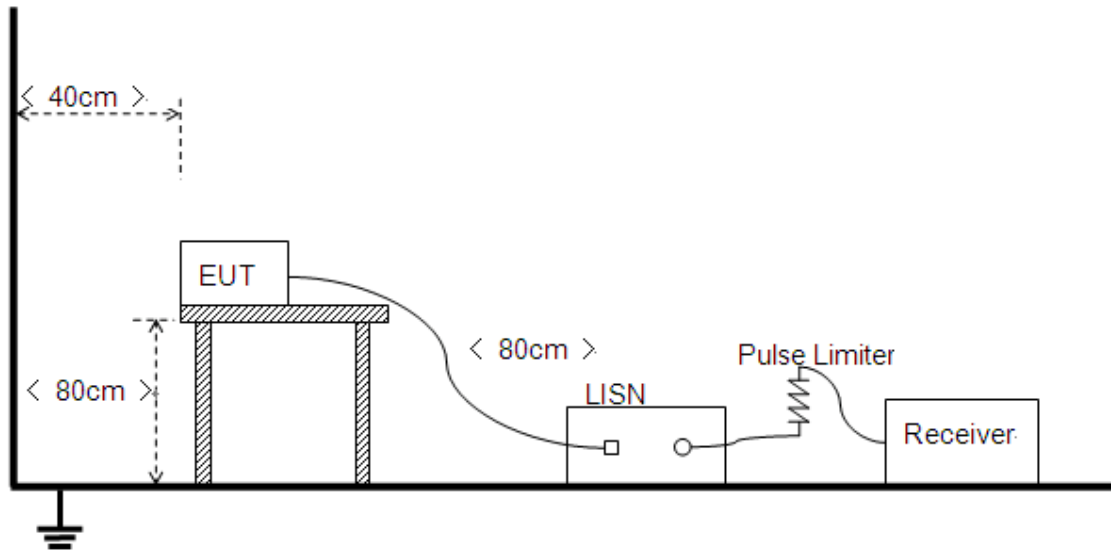
Cable Loss: 1dB

Attenuation: 0dB

Conversion Loss of Mixer: 4.97dB

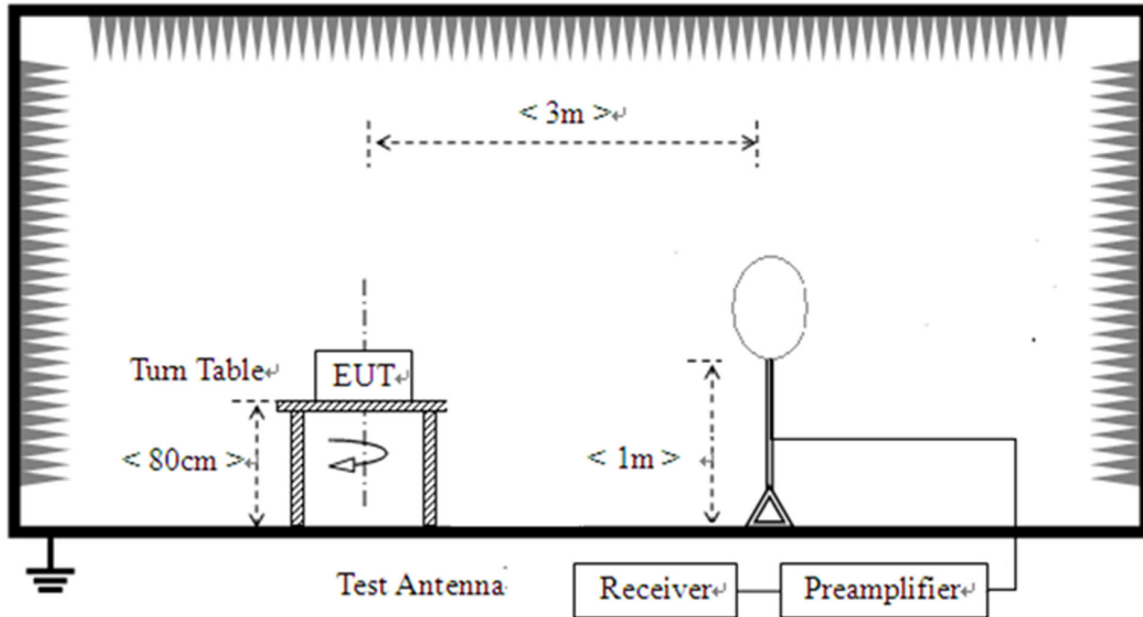
Correction Factor = FSL – AG + Cable Loss + Attenuation + Conversion Loss of Mixer = 33.97dB

2.5.2. Conducted Emission

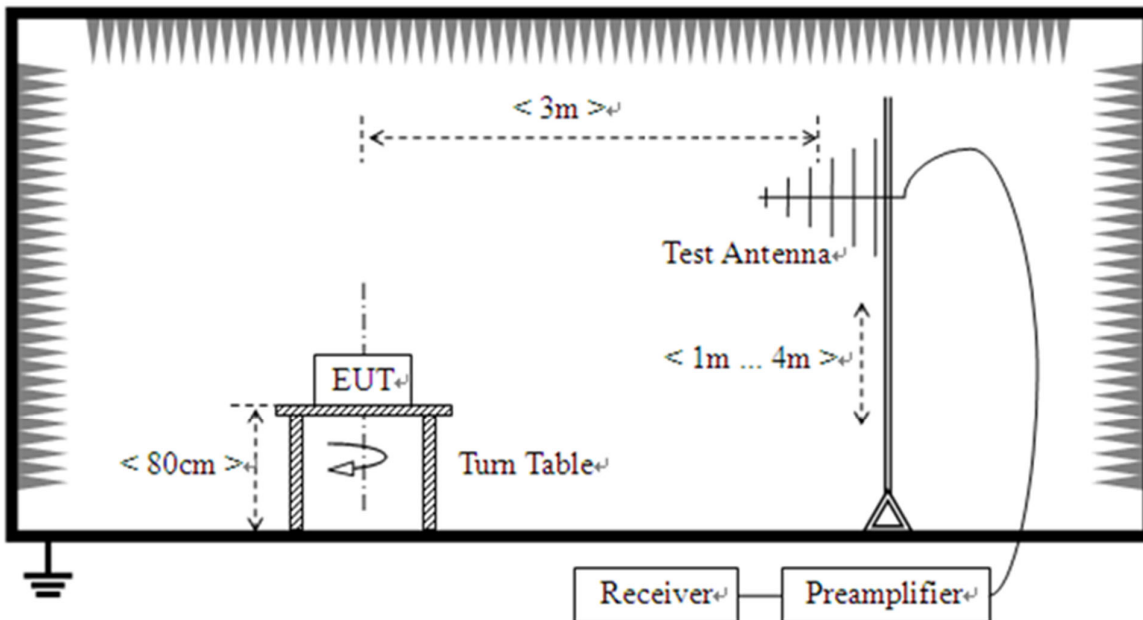


2.5.3.Radiation

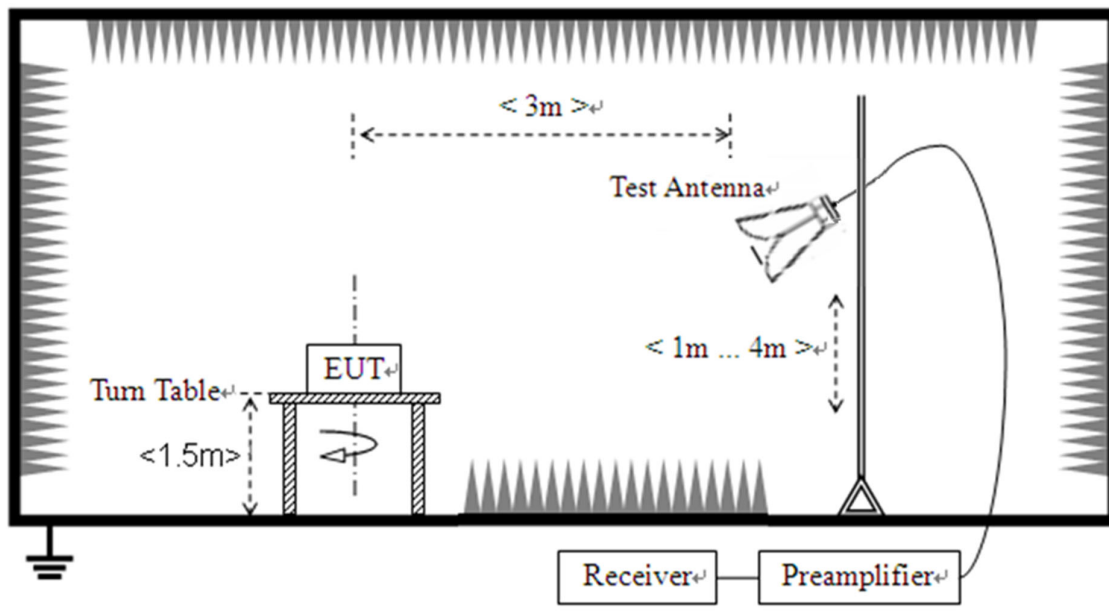
1) For radiated emissions from 9kHz to 30MHz



2) For radiated emissions from 30MHz to 1GHz

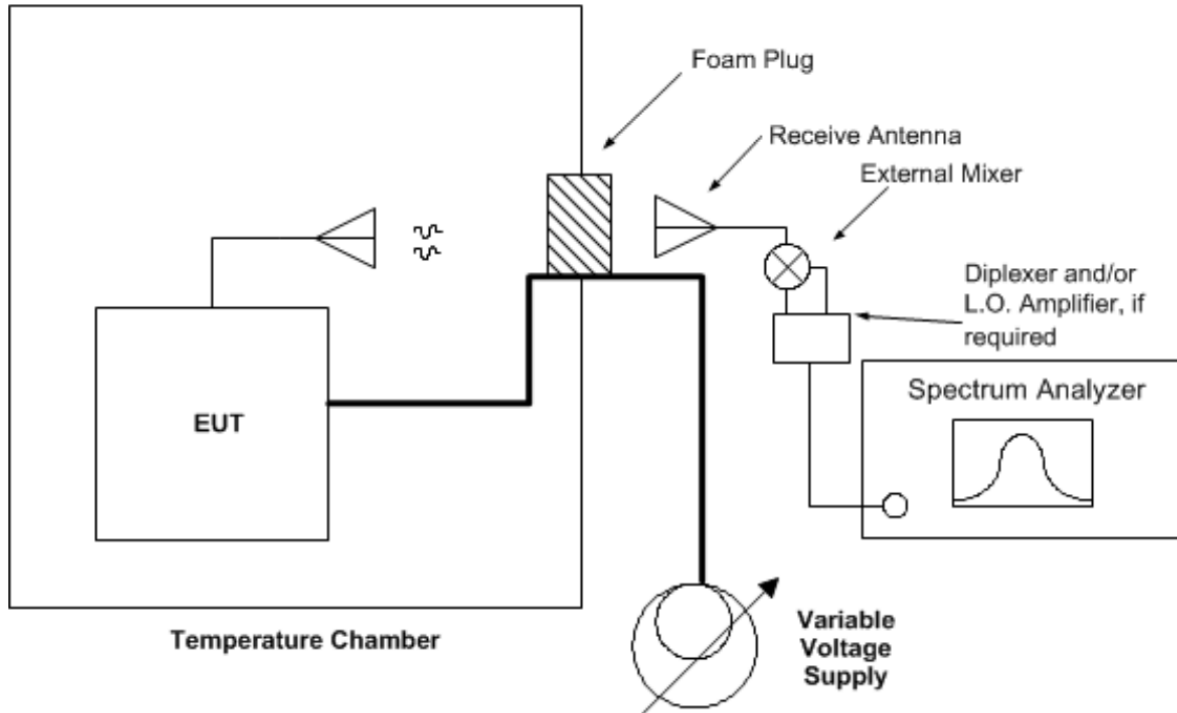


3) For radiated emissions above 1GHz



2.5.4. Frequency Stability

EUT uses a horn antenna connected to a spectrum analyzer for measurement. The EUT was placed in an environmental chamber using foam plugs to maintain temperature conditions inside. The horn antenna measures the frequency of the fundamental signal.





3. Test Results

3.1. Antenna Requirement

3.1.1. Requirements

According to FCC 15.203, 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 permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.

3.1.2. Test Results

Antenna location	Antenna Type	Coupling Method
☒ Internal ☐ External	☐ FPC Antenna ☐ Spring Antenna ☐ Ceramic Antenna ☐ Integrated Antenna ☐ Dipole Antenna ☐ PCB Antenna ☐ PIFA Antenna ☒ AOP Antenna	☐ I-PEX Connector ☐ SMA Connector ☐ RP-SMA Connector ☐ Metal Shrapnel ☒ SMD Connector

3.2.E.I.R.P. and Transmitter Conducted Output Power

3.2.1.Requirements

Equipment Type	Freq. Range/ Application	Peak EIRP	Average EIRP	Peak Conducted Power
Field disturbance sensors/radars	General	10dBm @15.255(c)(2)	-	<=-10dBm
	60-64GHz ¹ (Deployed on unmanned aircraft)	<=20dBm (the sum of tx off-time of >=2ms >=16.5ms within 33ms; and <=121.92m above ground level) @15.255(b)(3)	-	-
	57.0-59.4 GHz ¹	<=20dBm (Indoor); <=30dBm (Outdoor). @15.255(c)(2)(i)	-	
	57.0-61.56 GHz ¹	<=3dBm; <=20dBm (the sum of tx off-time of >=2ms >=16.5ms within 33ms) @15.255(c)(2)(ii)	-	
	57.0-64.0 GHz ¹	<=14dBm (the sum of tx off-time of >=2ms >=25.5ms within 33ms) @15.255(c)(2)(iii)(A)	-	
		<=20dBm (the sum of tx off-time of >=2ms >=16.5ms within 33ms when operated outdoor) @15.255(c)(2)(iii)(B)	-	
	61.0-61.5 GHz ¹	<=43dBm; <=13dBm (Outside 61.0-61.5GHz, within 57-71GHz) @15.255(c)(2)(V)	<=40dBm; <=10dBm (Outside 61.0-61.5GHz, within 57-71GHz) @15.255(c)(2)(V)	

Devices other than field disturbance sensors	-	$\leq 43\text{dBm}$ @15.255(c)(1)(i)	$\leq 40\text{dBm}$ @15.255(c)(1)(i)	$\leq 500\text{mW} \cdot (6\text{dB BW}/100\text{MHz})$, for 6dB $\text{BW} \leq 100\text{MHz}$ @15.255(e)(2)
	Fixed P2P	$\leq 85\text{dBm}$ (reduced by 2 dB for every dB that the antenna gain is less than 51 dBi) @15.255(c)(1)(ii)	$\leq 82\text{dBm}$ (reduced by 2 dB for every dB that the antenna gain is less than 51 dBi) @15.255(c)(1)(ii)	
Pulsed field disturbance sensors/radars	57-64 GHz	$\leq 20\text{dB}$ above the maximum permitted average emission limit applicable to the EUT@15.255(c)(3)	$\leq 13\text{dBm}$ (pulse duration time $\leq 6\text{ns}$, duty cycle $\leq 10\%$ within $0.3\mu\text{s}$) @15.255(c)(3)	Min $\{-10\text{dBm}$ @15.255(c)(2)}, $\{$ $\leq 500\text{mW}$ @15.255(e)(1)}\}
			Average integrated EIRP $\leq 5\text{dBm}$ within 61.5-64GHz (in any $0.3\mu\text{s}$) @15.255(c)(3)	

Note 1: According to 47 CFR 15.255 (c)(2), this type will operate without being subject to a transmitter conducted output power limit.

3.2.2. Test Results

Equipment Type	Freq. Range/Application
☒ Field disturbance sensors/radars	☐ 60-64GHz (Deployed on unmanned aircraft)
	☐ 57.0-59.4GHz
	☐ 57.0-61.56GHz
	☒ 57.0-64.0GHz @15.255(c)(2)(iii)(A)
	☐ 61.0-61.5GHz
☐ Devices other than field disturbance sensors	☐ Fixed P2P
☐ Pulsed field disturbance sensors/radars	☐ 57-64GHz

This product type is not subject to a transmitter conducted output power limit.

For E.I.R.P. results, refer to [Annex A.1](#) in this report.



3.3.Emission Bandwidth and Occupied Bandwidth

3.3.1.Requirements

For the purposes of this paragraph, emission bandwidth is defined as the instantaneous frequency range occupied by a steady state radiated signal with modulation, outside which the radiated power spectral density never exceeds 6 dB below the maximum radiated power spectral density in the band, as measured with a 100 kilohertz resolution bandwidth spectrum analyzer.

3.3.2.Test Results

Refer to [Annex A.2](#) in this report.

3.4. Conducted Emission

3.4.1. Requirements

According to FCC section 15.207, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency within the band 150kHz to 30MHz shall not exceed the limits in the following table, as measured using a 50 μ H/50 Ω line impedance stabilization network (LISN).

Frequency Range (MHz)	Conducted Limit (dB μ V)	
	Quai-peak	Average
0.15 - 0.50	66 to 56	56 to 46
0.50 - 5	56	46
5 - 30	60	50

Note:

- (a) The lower limit shall apply at the band edges.
- (b) The limit decreases linearly with the logarithm of the frequency in the range 0.15 - 0.50MHz.

3.4.2. Test Results

Refer to [Annex A.3](#) in this report.

Interpretation of the test data:

The maximum conducted interference is searched using Peak (PK), if the emission levels more than the Average and Quasi peak limits, and that have narrow margins from the Average and Quasi peak limits will be re-measured with Average and Quasi peak detectors. Tests for both L phase and N phase lines of the power mains connected to the EUT are performed. Refer to recorded points and plots below.

Note: Both of the test voltage AC 120V/60Hz and AC 230V/50Hz were considered and tested respectively, only the results of the worst case AC 120V/60Hz were recorded in this report.

A. Test Setup:

Test Mode: EUT + Test peripheral equipment + Radar TX

Test voltage: AC 120V/60Hz

The measurement results are obtained as below:

$$E \text{ [dB}\mu\text{V]} = U_R \text{ [dB}\mu\text{V]} + L_{\text{Cable loss}} \text{ [dB]} + A_{\text{Factor}} \text{ [dB]}$$

U_R : Receiver Reading

A_{Factor} : Voltage division factor of LISN

3.5. Radiated Spurious Emission

3.5.1. Requirements

According to FCC section 15.255(d):

The power density of any emissions outside the 57-71 GHz band shall consist solely of spurious emissions.

Radiated emissions below 40 GHz shall not exceed the general limits in § 15.209.

Between 40 GHz and 200 GHz, the level of these emissions shall not exceed 90 pW/cm² at a distance of 3 meters.

The levels of the spurious emissions shall not exceed the level of the fundamental emission.

According to FCC section 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:

Frequency (MHz)	Field Strength ($\mu\text{V/m}$)	Measurement Distance (m)
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

Note1: For above 1000MHz, 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 20dB above the maximum permitted average limit.

Note2: For above 1000MHz, limit field strength of harmonics: 54dBuV/m@3m (AV) and 74dBuV/m@3m (PK). In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), also should comply with the radiated emission limits specified in Section 15.209(a)(above table).

3.5.2. Test Results

Refer to [Annex A.4](#) in this report.

Interpretation of the test data:

According to ANSI C63.10, because of peak detection will yield amplitudes equal to or greater than amplitudes measured with the quasi-peak (or average) detector, the measurement data from a spectrum analyzer peak detector will represent the worst-case results, if the peak measured



value complies with the quasi-peak (or average) limit, it is unnecessary to perform a quasi-peak measurement (or average).

The measurement results are obtained as below:

$$A_{\text{SUBST}} = P_{\text{SUBST_TX}} - P_{\text{SUBST_RX}} - L_{\text{SUBST_CABLES}} + G_{\text{SUBST_TX_ANT}}$$

$$A_{\text{TOT}} = L_{\text{CABLES}} + A_{\text{SUBST}}$$

Where: A_{SUBST} is the final substitution correction including receive antenna gain.

$P_{\text{SUBST_TX}}$ is signal generator level,

$P_{\text{SUBST_RX}}$ is receiver level,

$L_{\text{SUBST_CABLES}}$ is cable losses including TX cable,

$G_{\text{SUBST_TX_ANT}}$ is substitution antenna gain.

A_{TOT} is total correction factor including cable loss and substitution correction

During the test, the data of A_{TOT} was added in the test spectrum analyzer, so spectrum analyzer reading is the final values which contain the data of A_{TOT} .

For above 40GHz:

$$\text{Power Density (W/m}^2\text{)} = 10^{[(\text{EIRP}-30)/10]}/4\pi d^2$$

$$\text{Power Density (pW/cm}^2\text{)} = \text{Power Density (W/m}^2\text{)} * 10^{(-8)}$$

Desensitization correction factor.



3.6. Frequency Stability

3.6.1. Requirements

Fundamental emissions must be contained within the frequency bands specified in this section during all conditions of operation. Equipment is presumed to operate over the temperature range -20 to + 50 degrees Celsius with an input voltage variation of 85% to 115% of rated input voltage, unless justification is presented to demonstrate otherwise.

3.6.2. Test Results

Refer to [Annex A.5](#) in this report.



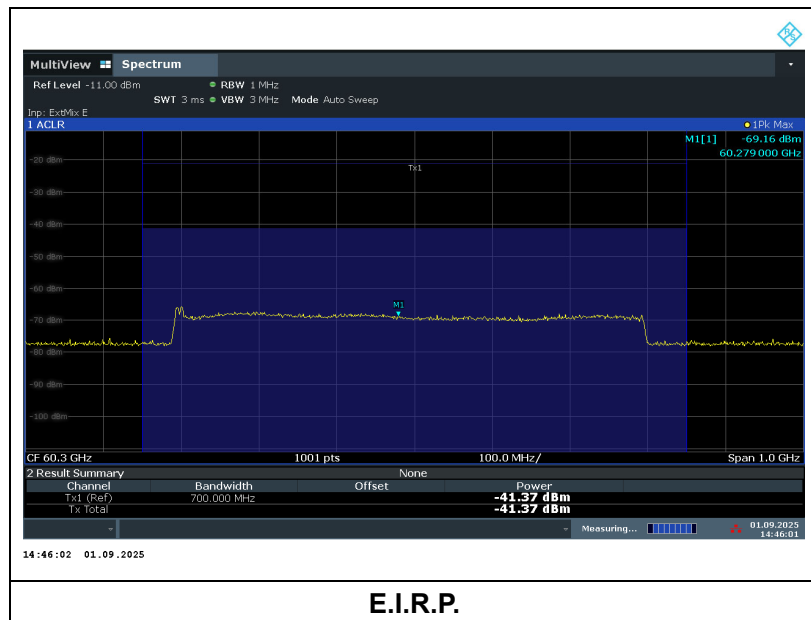
Annex A Test Data and Result

A.1. E.I.R.P. and Transmitter Conducted Output Power

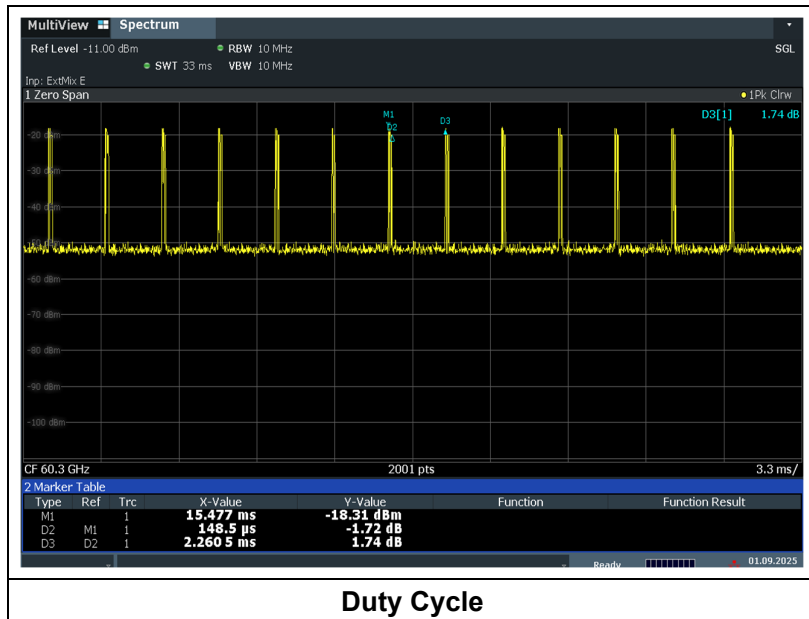
Peak E.I.R.P.:

Reading Value (dBm)	FSL (dB)	AG (dB)	Cable Loss (dB)	Att. (dB)	Conversion Loss of Mixer (dB)	E.I.R.P. _{Corr.} (dBm)	Limit (dBm)	Verdict
-41.37	68	40	1	0	4.97	-7.4	14	PASS

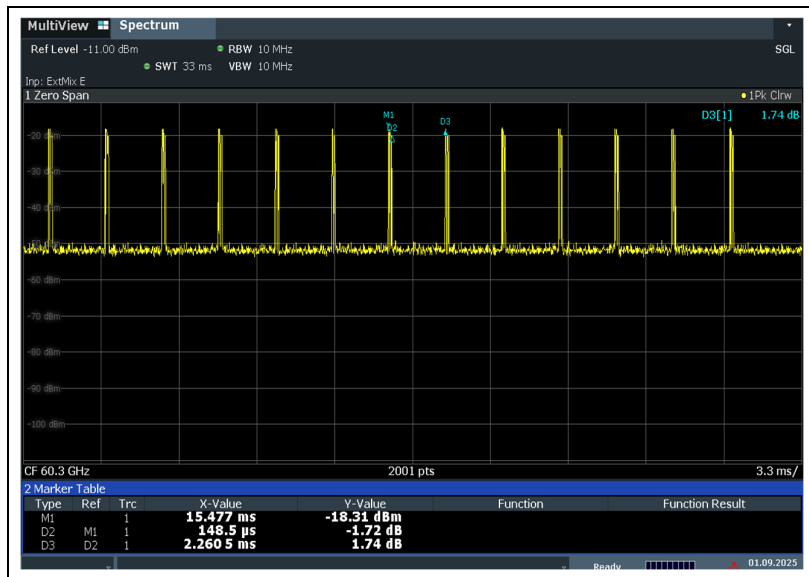
$E.I.R.P._{Corr.} = \text{Reading Value} + \text{FSL} - \text{AG} + \text{Cable Loss} + \text{Att.} + \text{Conversion Loss of Mixer.}$



E.I.R.P.

**Transmission times:**

Single Tx off-time (ms)	Nubmber of Tx off in 33ms	Total Tx off Time in 33ms (ms)	Limit (ms)	Verdict
2.2605	13	29.39	>=25.5	PASS



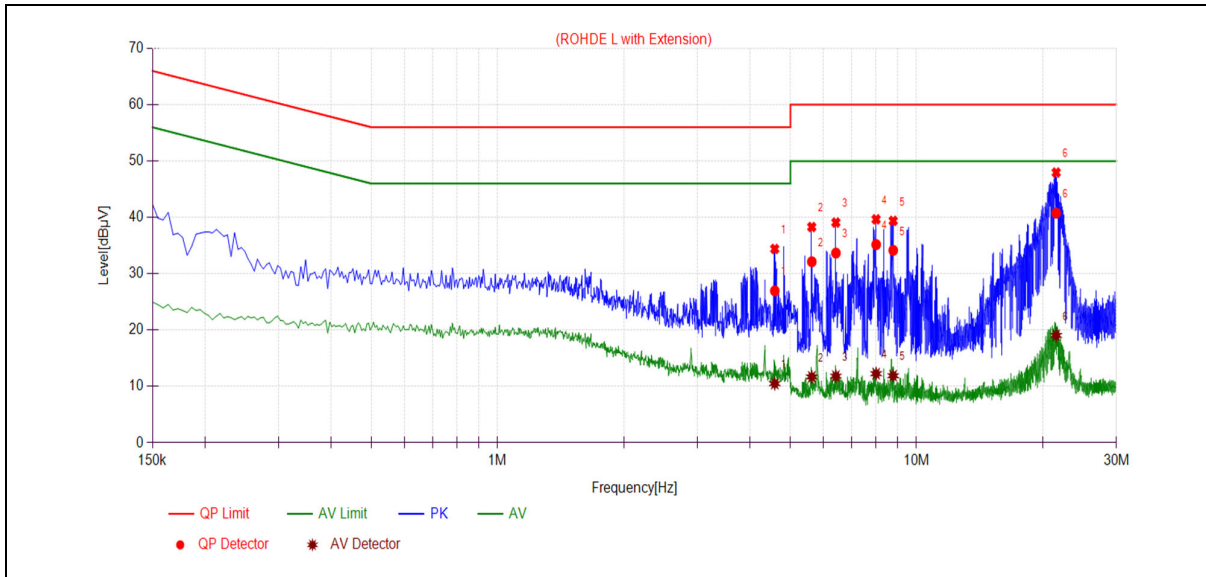
**A.2. Emission Bandwidth and Occupied Bandwidth**

Operation Frequency Band	Results	
	6dB Emission Bandwidth	Occupied Bandwidth
57-71GHz	600.12MHz	613.4MHz

**6dB Emission Bandwidth****Occupied Bandwidth**

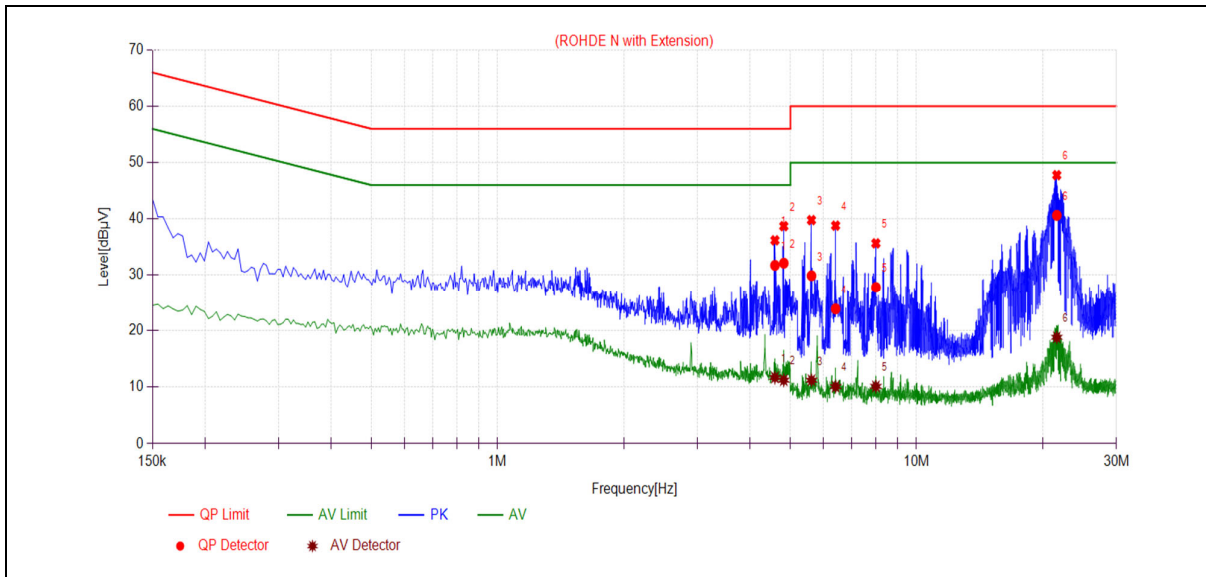


A.3. Conducted Emission



(L Phase)

No.	Fre. (MHz)	Reading (dBμV)		Factor (dB)	Emission Level (dBμV)		Limit (dBμV)		Power- line	Verdict
		Quai-peak	Average		Quai-peak	Average	Quai-peak	Average		
1	4.5872	16.69	0.23	10.28	26.97	10.51	56.00	46.00	Line	PASS
2	5.6221	21.75	1.31	10.39	32.14	11.70	60.00	50.00		PASS
3	6.4185	23.22	1.38	10.46	33.68	11.84	60.00	50.00		PASS
4	8.0076	24.55	1.64	10.63	35.18	12.27	60.00	50.00		PASS
5	8.7942	23.45	1.20	10.71	34.16	11.91	60.00	50.00		PASS
6	21.5485	29.05	7.35	11.71	40.76	19.06	60.00	50.00		PASS



(N Phase)

No.	Fre. (MHz)	Reading (dBμV)		Factor (dB)	Emission Level (dBμV)		Limit (dBμV)		Power- line	Verdict
		Quai-peak	Average		Quai-peak	Average	Quai-peak	Average		
1	4.5913	21.44	1.42	10.30	31.74	11.72	56.00	46.00	Neutral	PASS
2	4.8206	21.82	0.93	10.32	32.14	11.25	56.00	46.00		PASS
3	5.6129	19.48	0.83	10.41	29.89	11.24	60.00	50.00		PASS
4	6.4090	13.41	-0.37	10.48	23.89	10.11	60.00	50.00		PASS
5	7.9988	17.15	-0.50	10.65	27.80	10.15	60.00	50.00		PASS
6	21.6185	28.85	7.05	11.79	40.64	18.84	60.00	50.00		PASS

**A.4. Radiated Spurious Emission**

Start Freq.	Stop Freq.	FMC W Width (Fs)	Ramp Time (Ts)	Sweep Rate	RB W	RB W	Normalized Sweep Rate	Desensitization Correction Factor	Desensitization Correction Factor
GHz	GHz	MHz	μ s	MHz/ μ s	MHz	Hz	Lin.	Lin.	dB
59.9865	60.5999	613.4	9.6	63.9	1	10^6	6.39×10^7	0.19	-14.41

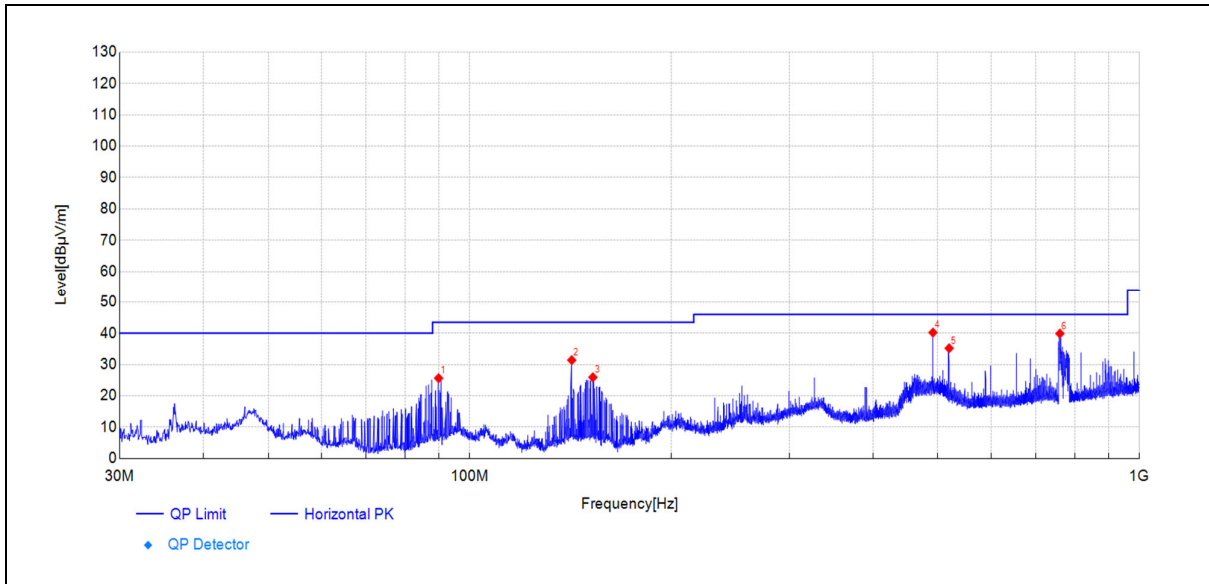
Note:

1. Cntr Freq=(Start Freq + Stop Freq) /2
2. FMCW Width,(Fs)=(Stop Freq-Start Freq)*1000
3. Sweep Rate (MHz/us)=FMCW Width, (Fs) / Ramp Time, (Ts)
4. Normalized Sweep Rate (lin)= Sweep Rate (Hz/s) / [RBW (Hz)]
5. Desensitization correction factor (lin) = $1/((1+((2*LN(2))/3.14)^2*(Normalized Sweep Rate (lin)^2)))^{0.25}$
6. Desensitization correction factor (dB) = $[20*\log(Desensitization correction factor (lin))]$

Note 1: All radiated emission tests were performed in X, Y, Z axis direction. And only the worst axis test condition (X axis) was recorded in this test report.

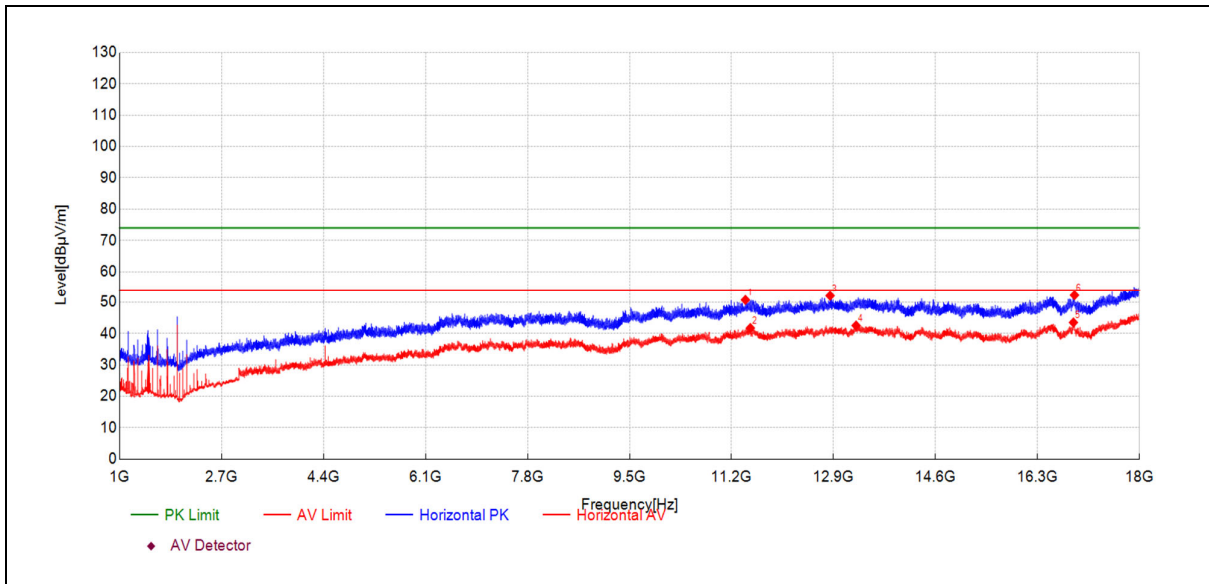
Note 2: The low frequency, which started from 9kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not reported.

30MHz-18GHz



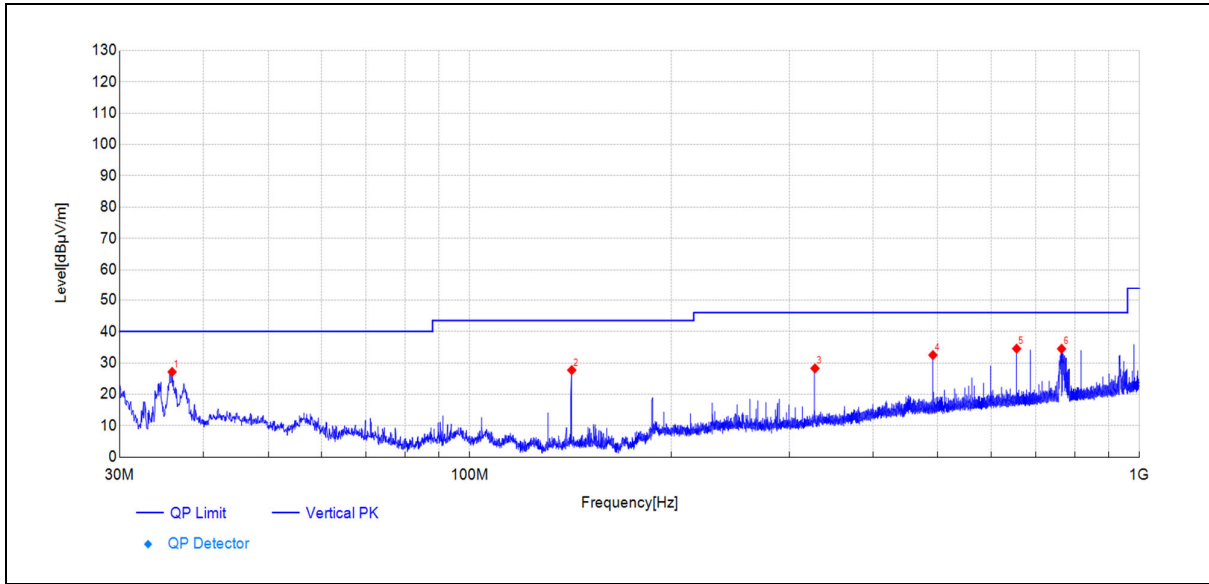
(Antenna Horizontal, 30MHz to 1GHz)

Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
89.85	57.6	25.62	-31.970	43.50	17.88	150	47	PK	PASS
142.00	65.0	31.39	-33.570	43.50	12.11	150	111	PK	PASS
152.70	59.1	25.91	-33.180	43.50	17.59	150	149	PK	PASS
491.57	62.3	40.22	-22.030	46.00	5.78	150	359	PK	PASS
519.73	56.7	35.20	-21.480	46.00	10.80	150	360	PK	PASS
760.54	56.9	39.88	-16.970	46.00	6.12	150	149	PK	PASS



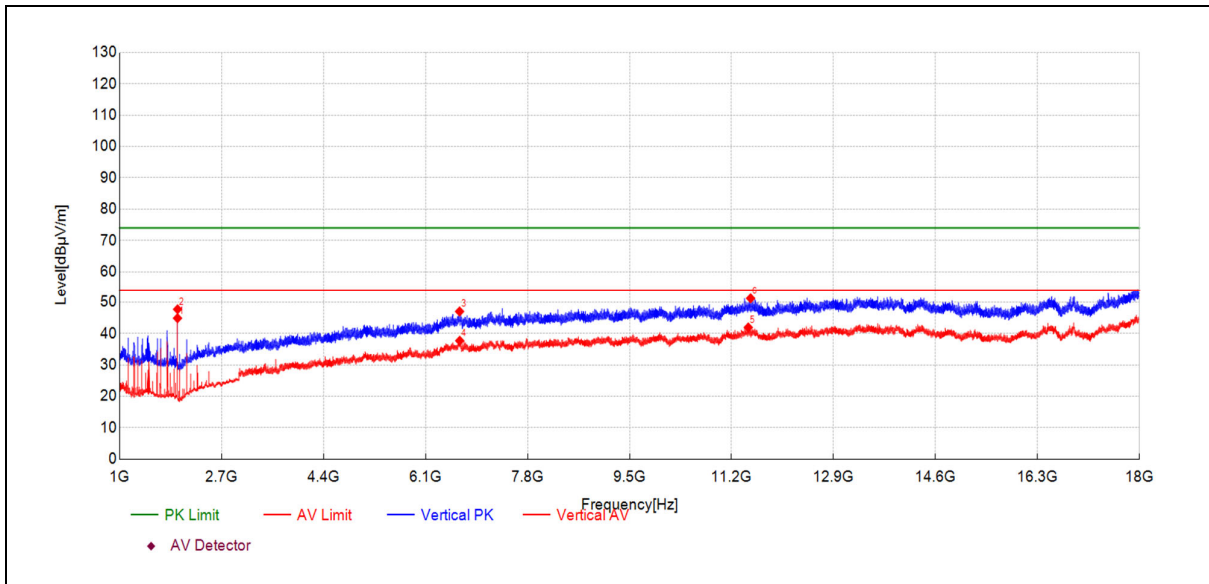
(Antenna Horizontal, 1GHz to 18GHz)

Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
11430.76	48.1	50.71	2.660	74.00	23.29	150	147	PK	PASS
11513.50	39.1	41.73	2.680	54.00	12.27	150	29	AV	PASS
12842.74	48.1	52.05	3.980	74.00	21.95	150	289	PK	PASS
13276.30	37.3	42.53	5.240	54.00	11.47	150	314	AV	PASS
16898.67	36.2	43.50	7.260	54.00	10.50	150	0	AV	PASS
16916.58	45.3	52.22	6.930	74.00	21.78	150	0	PK	PASS



(Antenna Vertical, 30MHz to 1GHz)

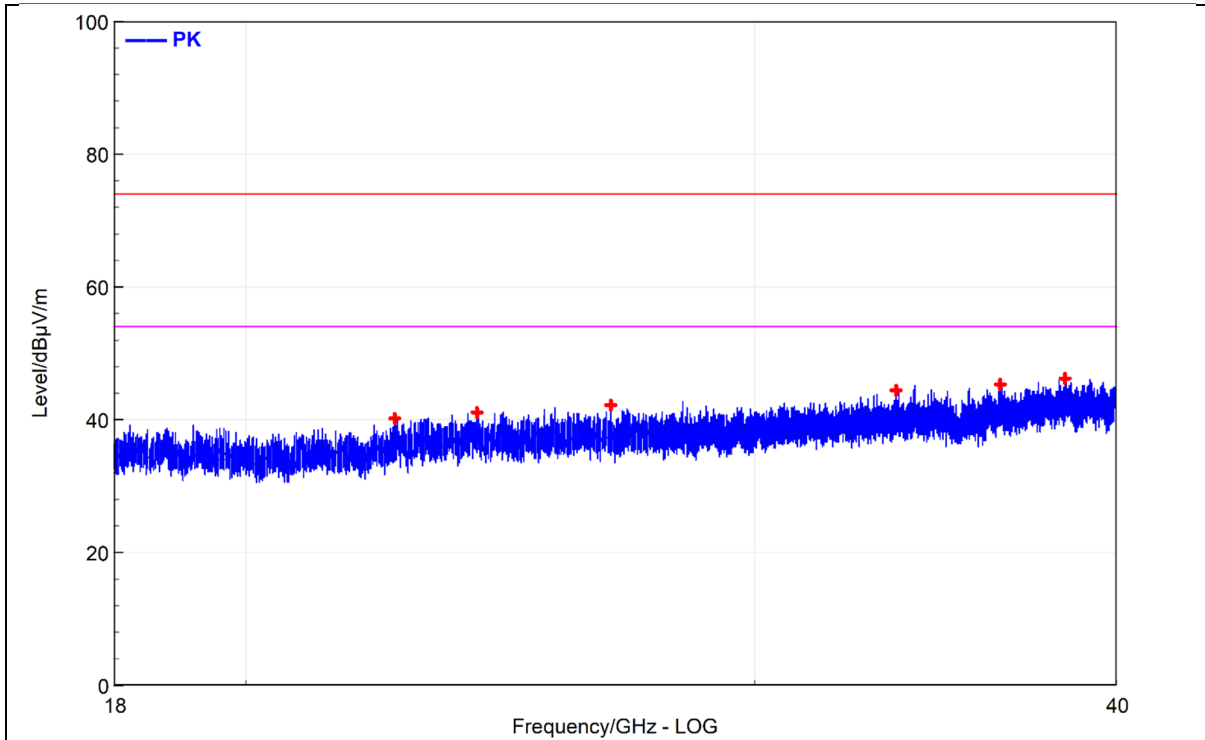
Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
35.94	57.7	27.10	-30.590	40.00	12.90	150	0	PK	PASS
142.00	61.3	27.68	-33.570	43.50	15.82	150	0	PK	PASS
327.72	54.2	28.24	-25.960	46.00	17.76	150	148	PK	PASS
491.57	54.5	32.47	-22.030	46.00	13.53	150	160	PK	PASS
655.48	53.2	34.52	-18.640	46.00	11.48	150	326	PK	PASS
765.07	51.5	34.48	-16.980	46.00	11.52	150	251	PK	PASS



(Antenna Vertical, 1GHz to 18GHz)

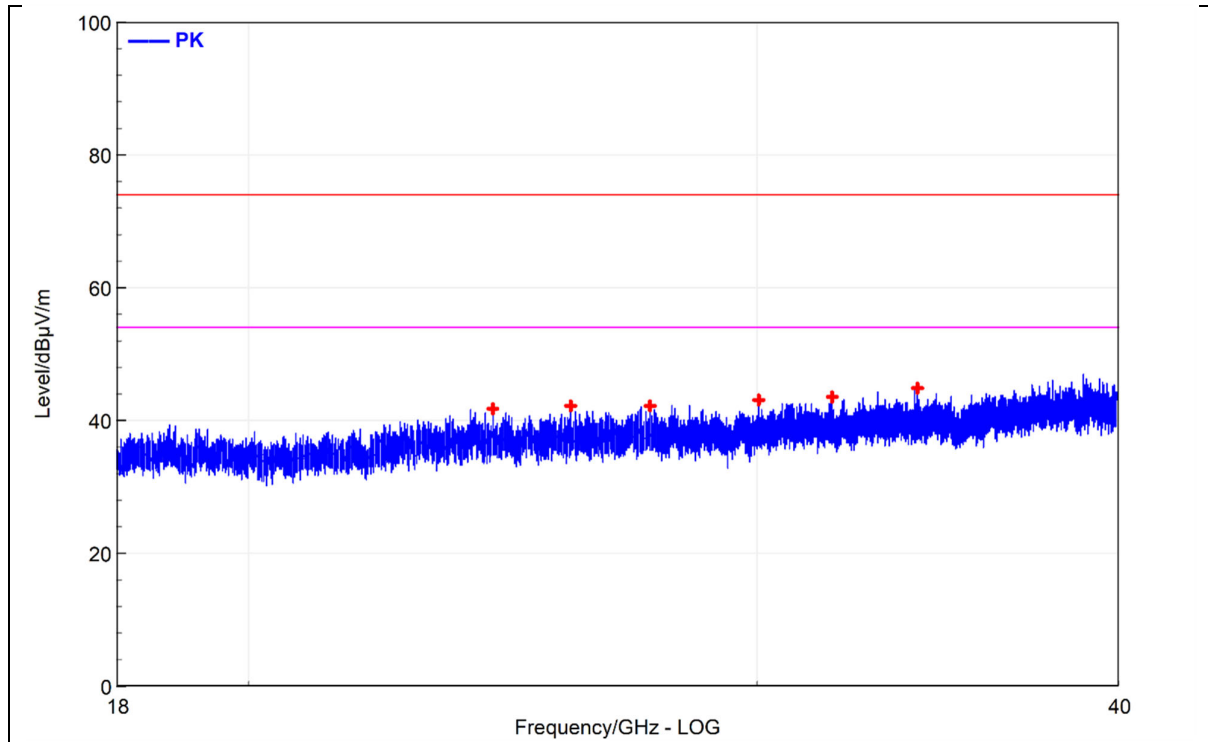
Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
1966.09	66.1	44.86	-21.220	54.00	9.14	150	352	AV	PASS
1966.58	68.9	47.69	-21.220	74.00	26.31	150	352	PK	PASS
6667.38	50.8	47.01	-3.780	74.00	26.99	150	47	PK	PASS
6669.31	41.5	37.69	-3.790	54.00	16.31	150	21	AV	PASS
11479.14	39.3	41.91	2.650	54.00	12.09	150	120	AV	PASS
11517.86	48.5	51.21	2.690	74.00	22.79	150	47	PK	PASS

18GHz-40GHz



No.	Fre.	E	Limit	EUT Axial	ANT Pol.	Remark	Verdict
	GHz	dBμV/m	dBμV/m				
1	22.528206	40.14	74	X	H	Peak	Pass
2	24.064276	41.04	74	X	H	Peak	Pass
3	26.753398	42.17	74	X	H	Peak	Pass
4	33.591709	44.26	74	X	H	Peak	Pass
5	36.523842	45.29	74	X	H	Peak	Pass
6	38.444929	46.15	74	X	H	Peak	Pass

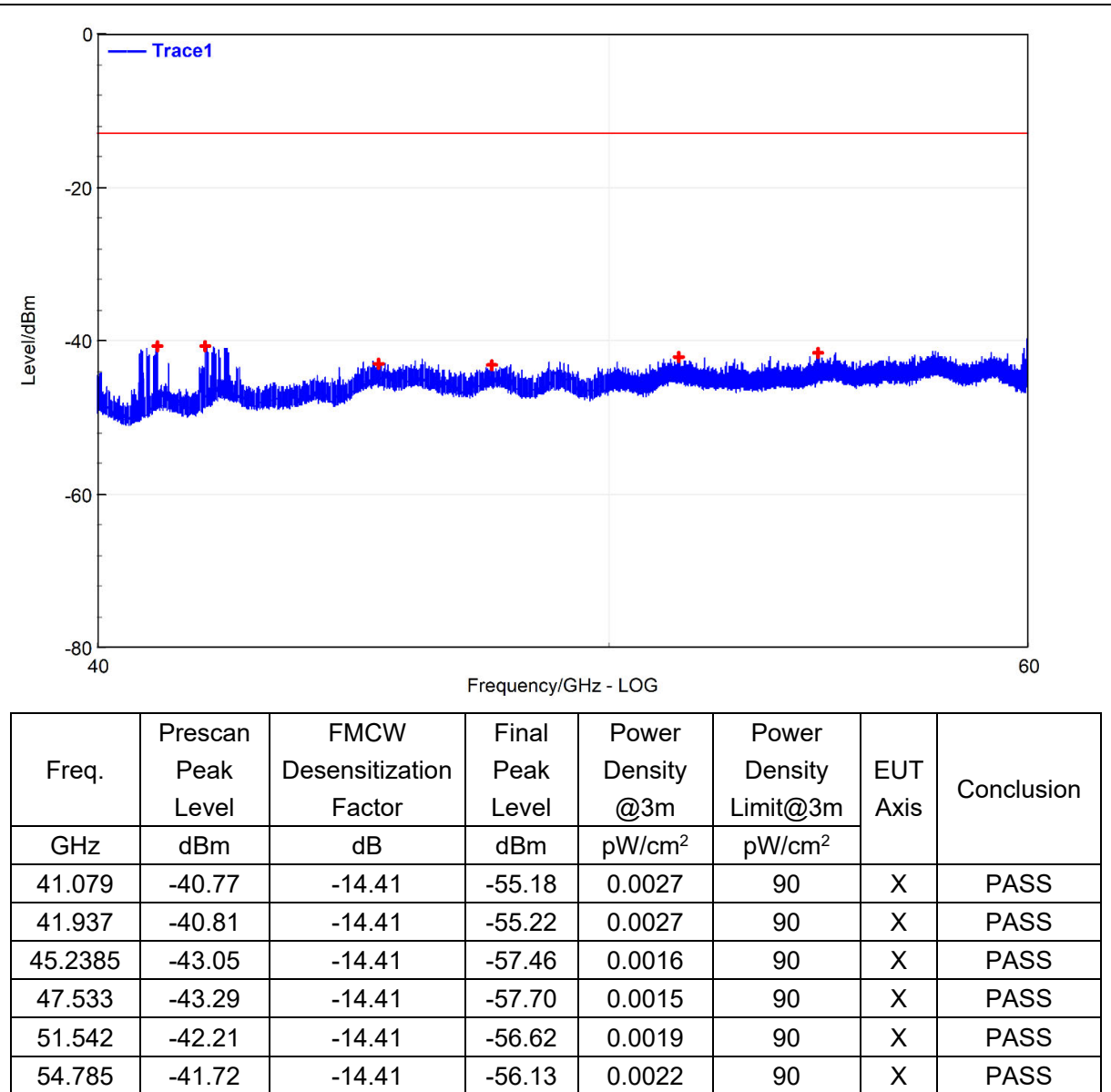
(Antenna Horizontal, 18GHz to 40GHz)



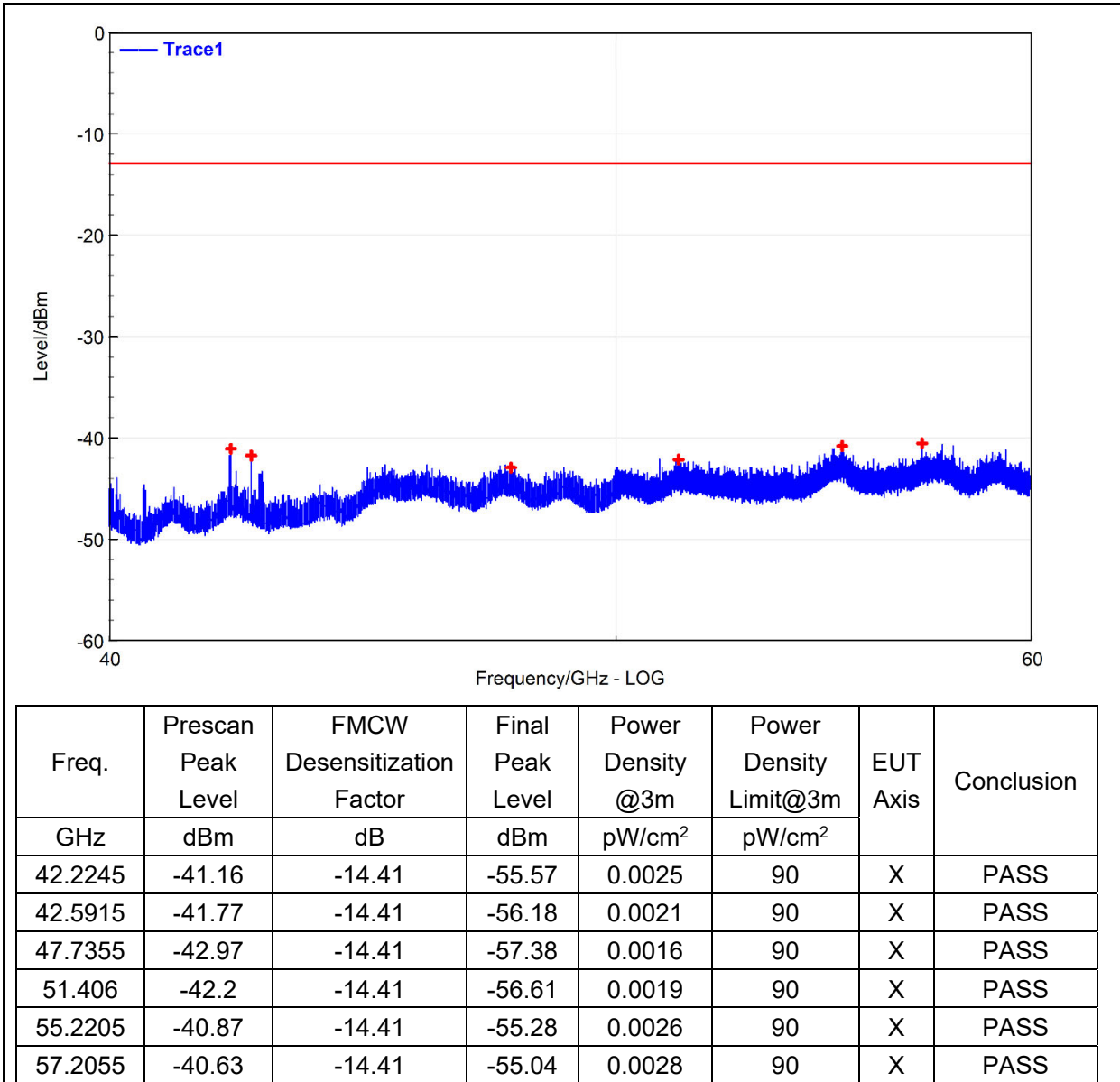
No.	Fre.	E	Limit	EUT Axial	ANT Pol.	Remark	Verdict
	GHz	dBμV/m	dBμV/m				
1	24.302286	41.73	74	X	V	Peak	Pass
2	25.879358	42.03	74	X	V	Peak	Pass
3	27.562435	42.22	74	X	V	Peak	Pass
4	30.051548	43.03	74	X	V	Peak	Pass
5	31.86263	43.52	74	X	V	Peak	Pass
6	34.114732	44.87	74	X	V	Peak	Pass

(Antenna Vertical, 18GHz to 40GHz)

40GHz to 60GHz

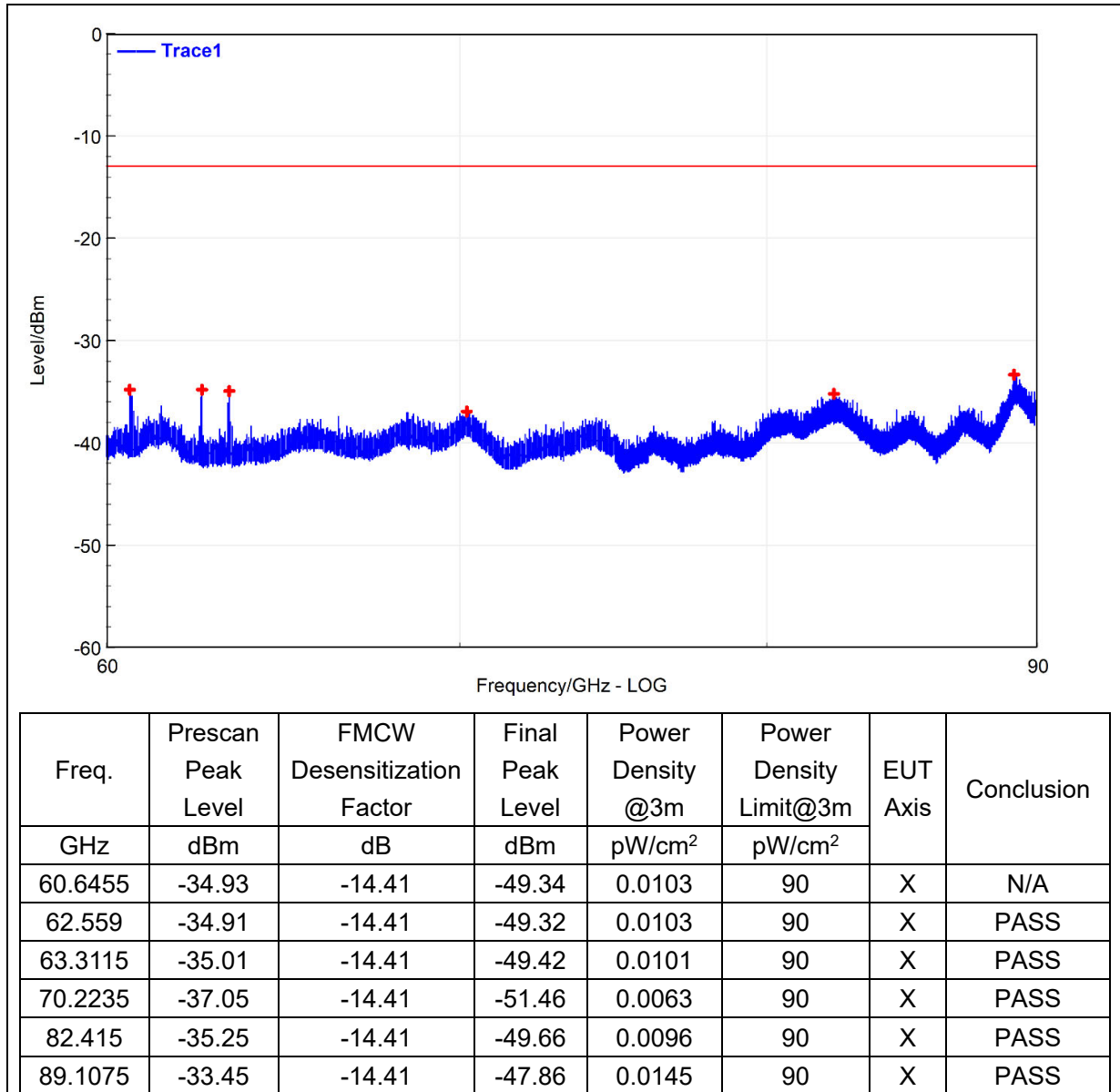


(Antenna Horizontal, 40GHz to 60GHz)

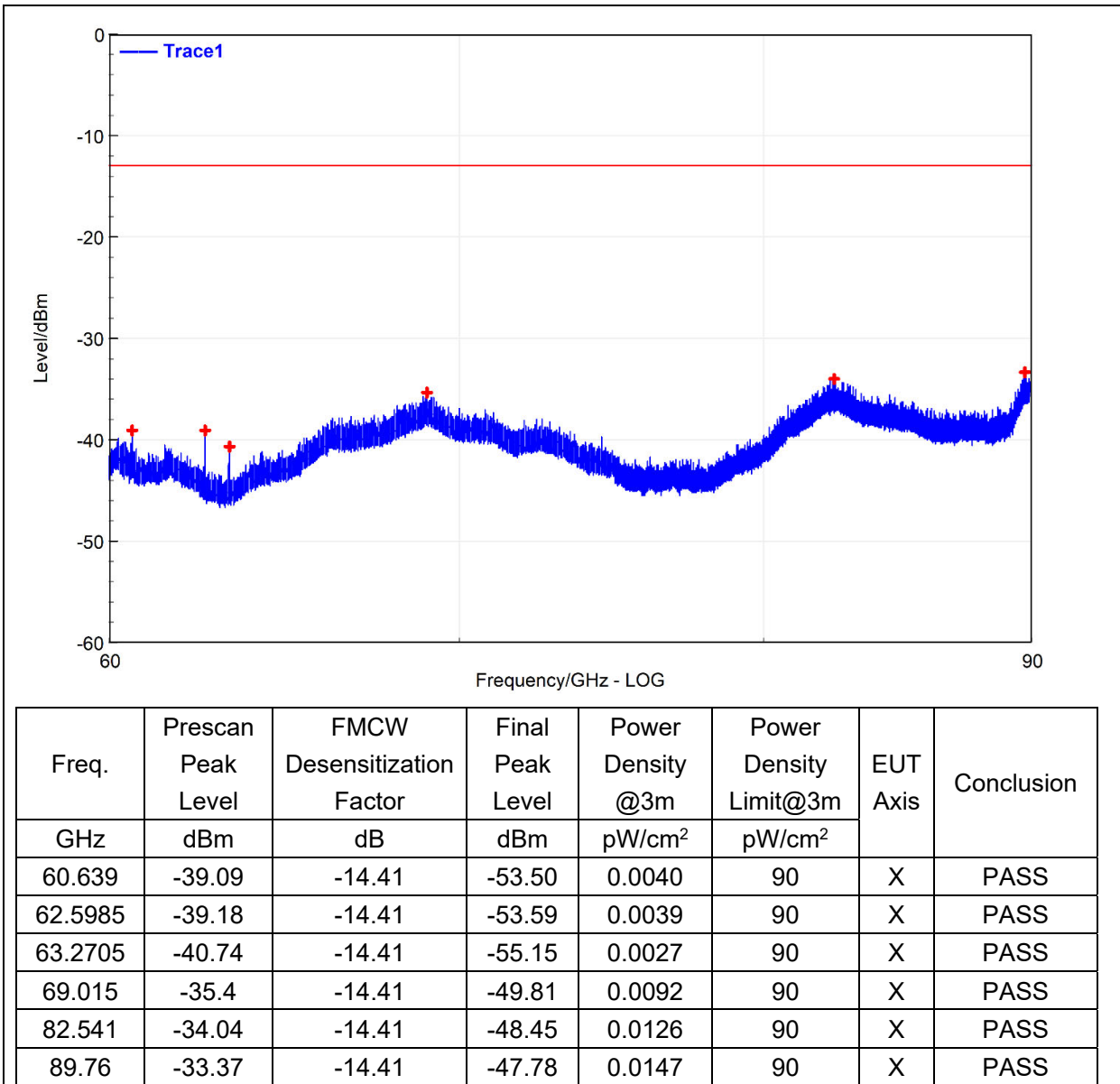


(Antenna Vertical, 40GHz to 60GHz)

60GHz to 90GHz

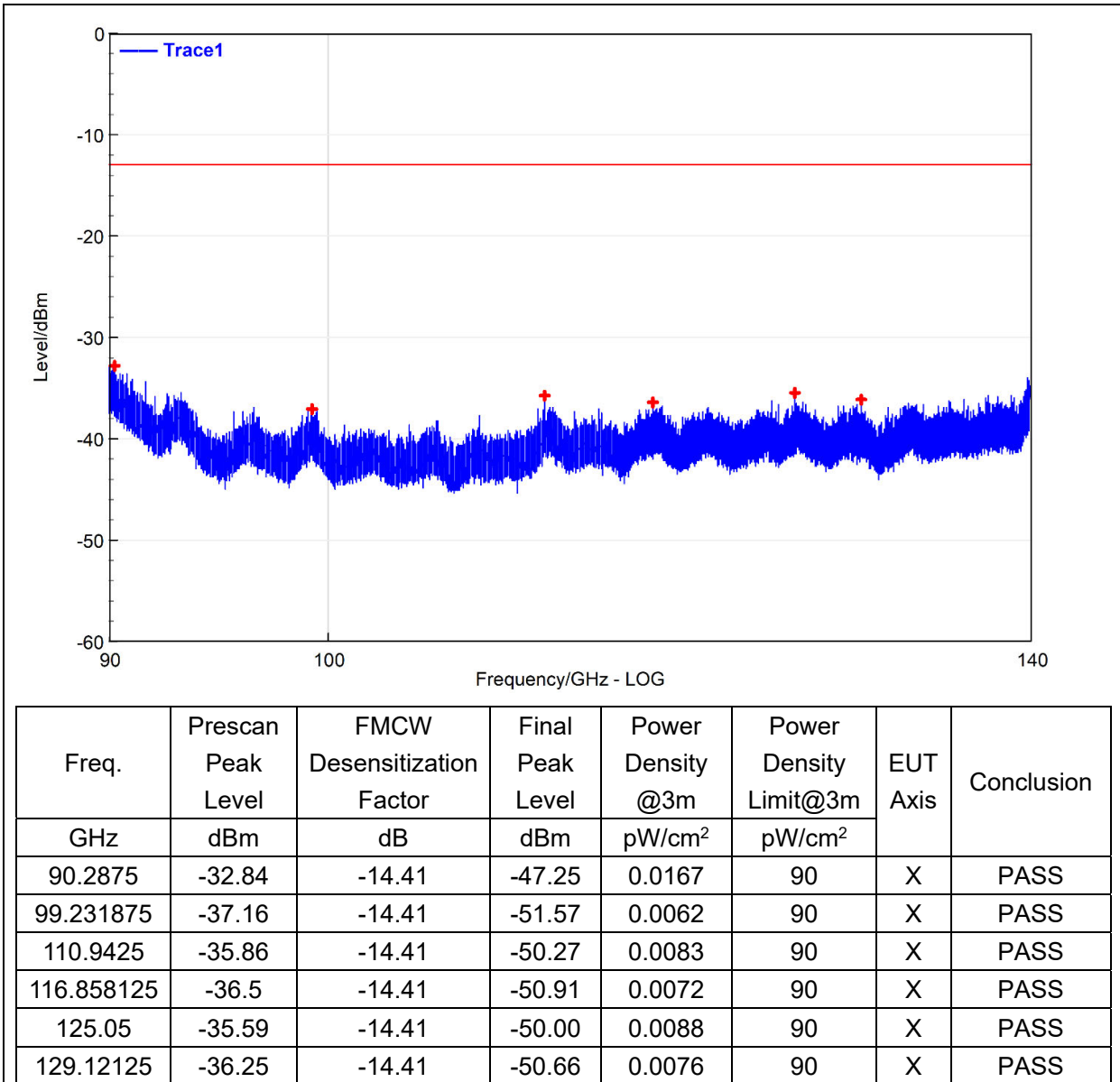


(Antenna Horizontal, 60GHz to 90GHz)

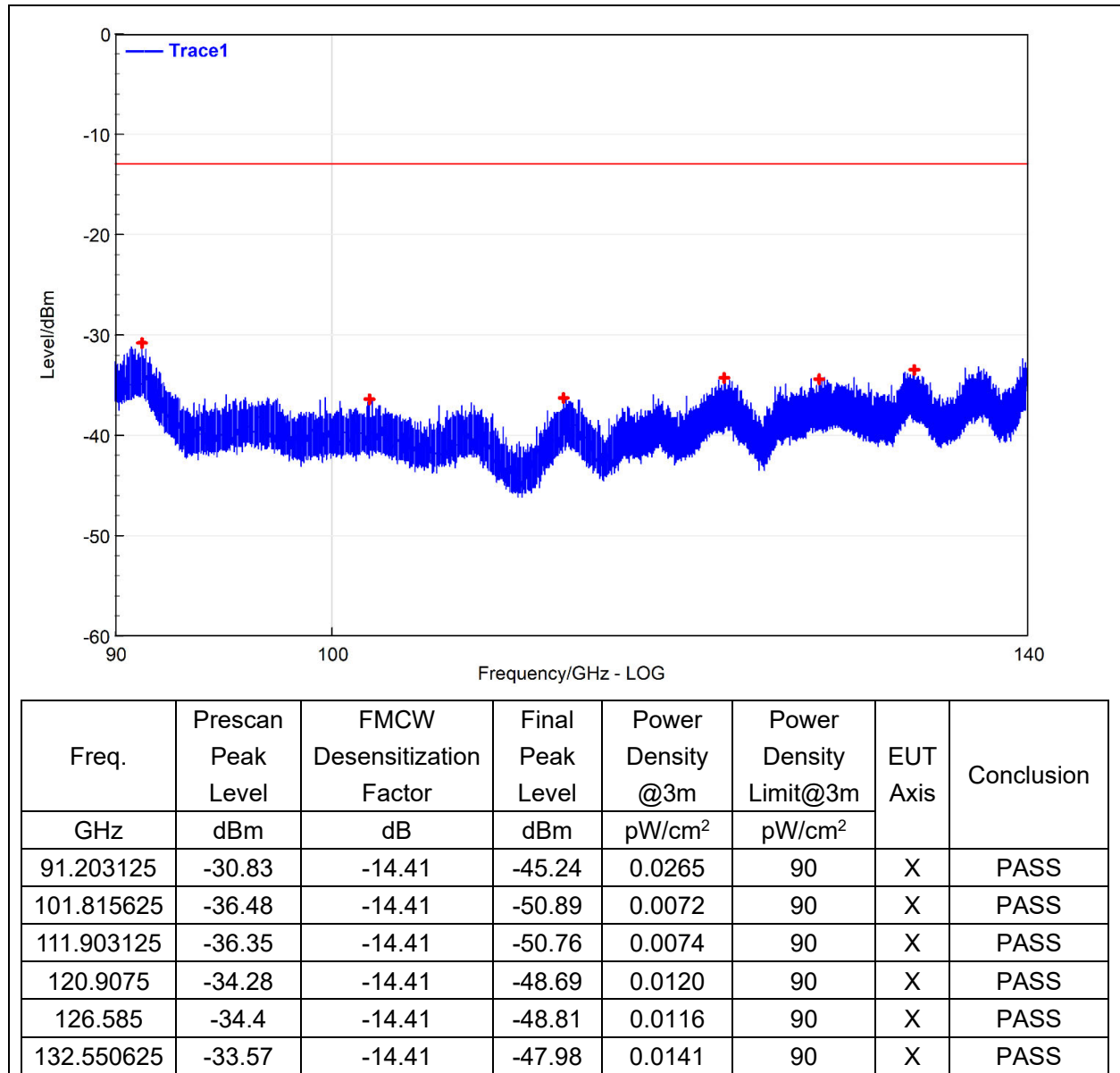


(Antenna Vertical, 60GHz to 90GHz)

90GHz to 140GHz

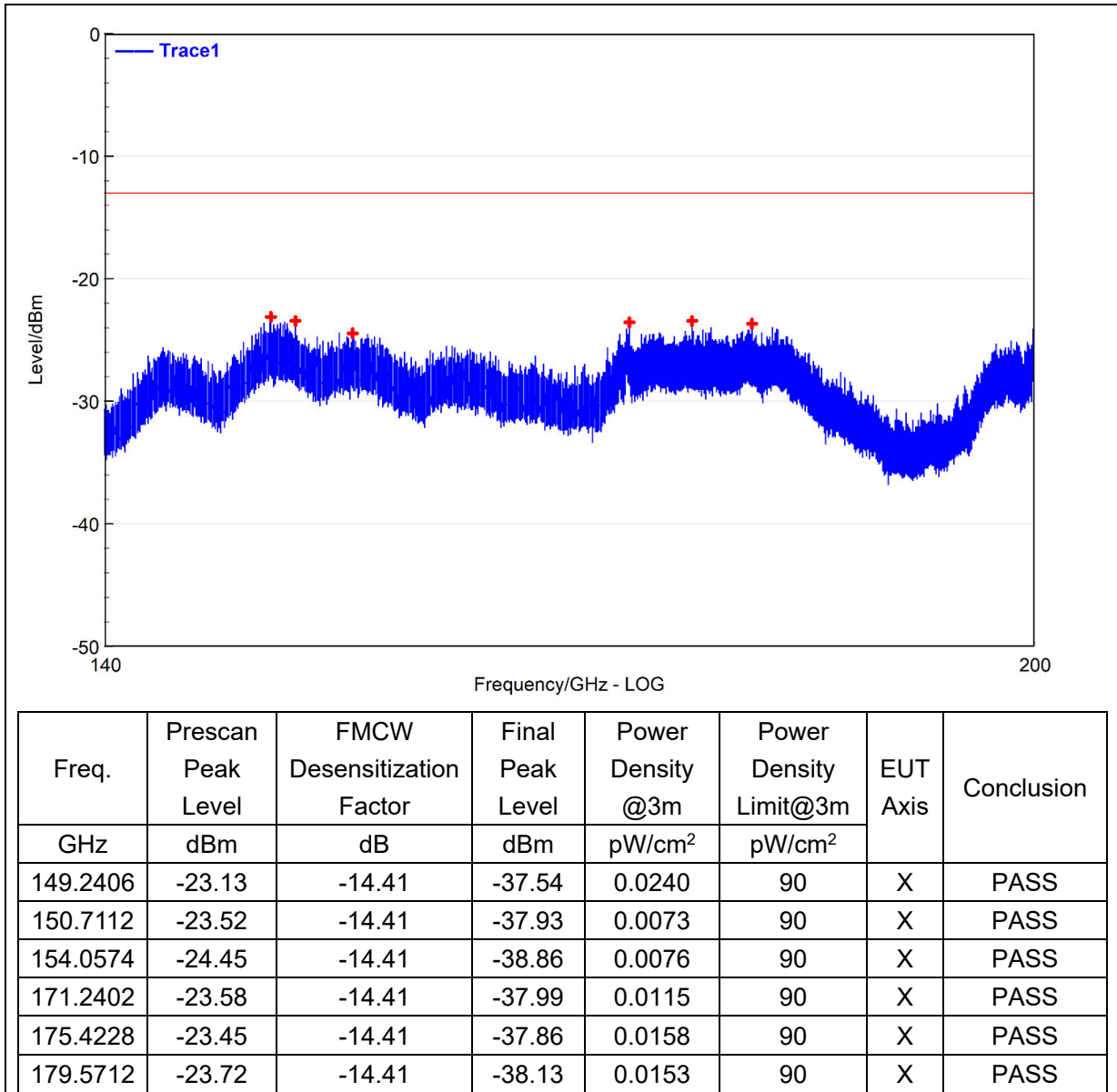


(Antenna Horizontal, 90GHz to 140GHz)

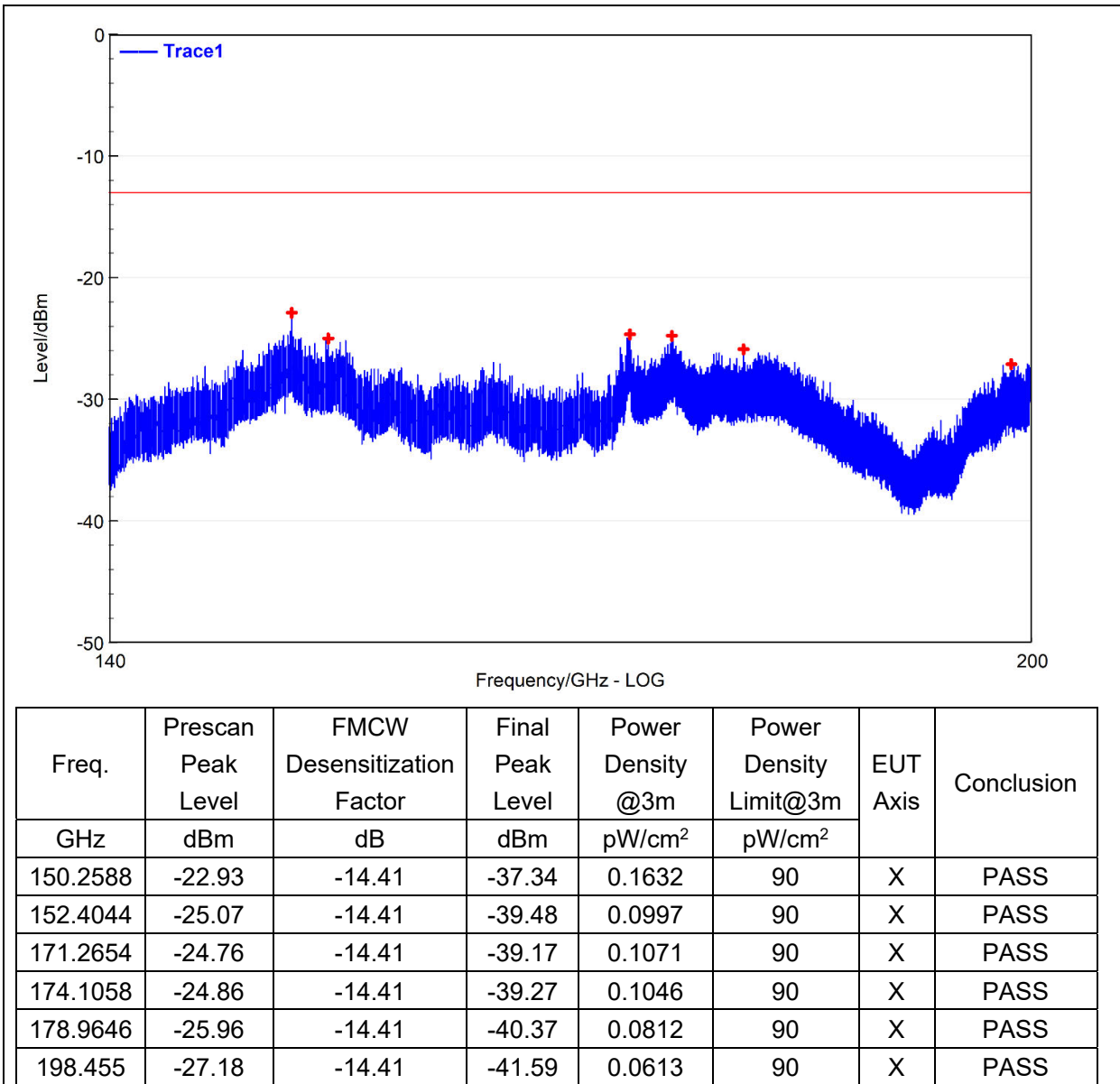


(Antenna Vertical, 90GHz to 140GHz)

140GHz to 200GHz



(Antenna Horizontal, 140GHz to 200GHz)

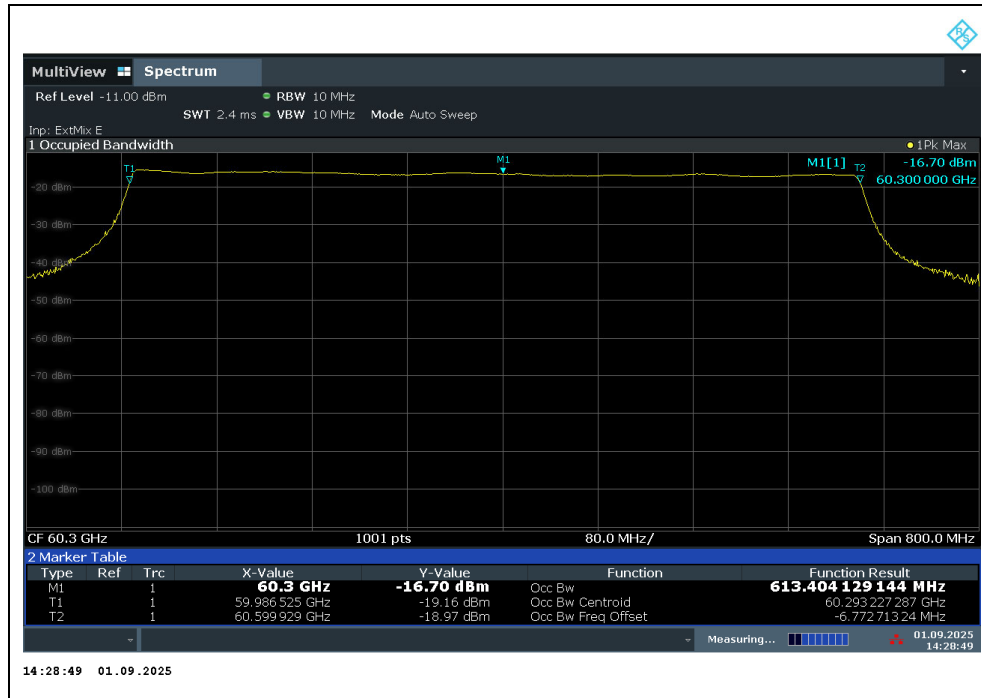


(Antenna Vertical, 140GHz to 200GHz)

**A.5. Frequency Stability**

Voltage (%)	Temp. (°C)	f _L (GHz)	f _H (GHz)	Limit	Verdict
100	0	59.9955	60.5909	57.0-64.0GHz	PASS
	10	59.9995	60.5859	57.0-64.0GHz	PASS
	20	59.9865	60.5999	57.0-64.0GHz	PASS
	30	59.9915	60.5949	57.0-64.0GHz	PASS
	40	59.9945	60.5919	57.0-64.0GHz	PASS
	49	59.9935	60.5929	57.0-64.0GHz	PASS
115	20	59.9975	60.5889	57.0-64.0GHz	PASS
85	20	59.9874	60.5909	57.0-64.0GHz	PASS

Note: Test performed under both normal and extreme conditions.



END OF REPORT