

Test Report

Product	Wireless Repeater / DECT Wireless Relay Station
Name and address of the applicant	Panasonic Corporation 2-15 Matsubacho, Kadoma, Osaka 571-0041 Japan
Name and address of the manufacturer	Panasonic Corporation 2-15 Matsubacho, Kadoma, Osaka 571-0041 Japan
Model	WX-CR480P
Rating	5 Vdc
Trademark	Panasonic
Additional information	DECT 6.0
Tested according to	Parts of FCC Part 15, subpart D (Limited tests) Isochronous UPCS Device, 1920 – 1930 MHz Parts of ISED Canada RSS-213, Issue 3 (Limited tests) 2 GHz License-Exempt Personal Communications Services (LE-PCS) Devices
Order number	PRJ0104200
Tested in period	2026-06-24 to 2026-07-03
Issue date	2026-07-10
Name and address of the testing laboratory	 Nemko Scandinavia AS Instituttveien 6 2007 Kjeller, Norway www.nemko.com CAB Number: FCC: NO0001 ISED: NO0470 ISED No: 2040D-1   An accredited technical test executed under the Norwegian accreditation scheme
 Digitally signed by Frode Sveinsen DN: cn=Frode Sveinsen, c=NO, o=Nemko Scandinavia AS, ou=ETM, email=frode.sveinsen@nemko.com Reason: I am the author of this document Location: Kjeller Date: 2026.07.10 11:36:04 +0200  Jan G Eriksen C=NO, CN=Jan G Eriksen, OU=Senior Engineer, O=Nemko Scandinavia AS, E=jan.gunnar.eriksen@nemko.com 2026.08.07 08:15:36 +0200 Prepared by [Frode Sveinsen] Approved by [Jan G. Eriksen]	
This report was originally distributed electronically with digital signatures. For more information, please contact Nemko Scandinavia AS.	

Revision history

Revision	Date	Comment	Sign
A	2026-07-10	First edition	FS

GENERAL REMARKS

This report applies only to the samples tested. It is the manufacturer's responsibility to ensure the additional production units of this product are manufactured with identical electrical and mechanical components. The manufacturer is solely responsible for any modifications to the product that could result in non-compliance with the relevant regulations.

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Opinions expressed within this report regarding general assessments and qualifications for PASS or FAIL to the standards limits and requirements are not part of the current accreditation. Neither are opinions expressed regarding model variants covered by the testing of this report.

CALIBRATION

All instruments used in the tests given in this test report are calibrated and traceable to national or international standards. Between calibrations all test set-ups are controlled and verified on a regular basis by periodic checks to ensure, with 95% confidence, that the instruments remain within the calibrated levels.

MEASUREMENT UNCERTAINTY

Measurement uncertainties are calculated or considered for all instruments and instrument set-ups used during these tests. Uncertainty figures are found in a separate clause in this report.

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1 INFORMATION

1.1 Tested Item

Product	Wireless Repeater / DECT Wireless Relay Station
Manufacturer	Panasonic Corporation
Model	WX-CR480P
Serial number	/
FCC ID	ACJ9TAWX-CR480P
ISED ID	216A-WXCR480P
Hardware version	/
Software version	/
Frequency Range	1921.536 – 1928.448 MHz
Number of Channels	5 RF Channels, 5x12 = 60 TDMA Duplex Channels
Type of Modulation	Digital (Gaussian Frequency Shift Keying)
Antenna Connector	Yes, one external SMA connector
Number of Antennas	2
Antenna Diversity	Yes
Power Supply	USB power adaptor (Model: BSMPA2418P1PK)
Companion Device	N/A

1.2 Description of Tested Device

The EUT is a DECT Wireless Relay Station (WRS) and is a responding device as described in ANSI C63.17 and it is designed to operate together with a DECT Handset, which is the initiating device.

The WRS works by retransmitting the data from the Handset to the Base Station in the next DECT frame, and vice versa with the response from the Base Station to the Handset. The WRS has its own unique ID and will only work with Base Stations it has previously been registered to. The WRS will not transmit at all if it does not see the Base Station it has been registered to.

The WRS decodes the signal it receives and retransmits only the data, the RF signal transmitted from the WRS is on a different timeslot and is completely independent of the input signal received by the WRS, except that it is on the same RF Carrier and contains the same data.

1.3 Test Conditions

Temperature:	20 – 24 °C
Relative humidity:	30 – 50 %
Normal test voltage:	120 V 60 Hz (Power to AC Adaptor)

The values are the limit registered during the test period.

All tests were performed with the EUT powered from an external AC Adaptor.

1.4 Test Engineers

Frode Sveinsen

1.5 Digital Modulation Techniques

The EUT uses Multi Carrier / Time Division Multiple Access / Time Division Duplex and Digital GFSK modulation. For further details see the operational description provided by the applicant.

Requirement, FCC 15.319(b), RSS-213 Issue 3, clause 5.1:

All transmissions must use only digital modulation techniques.

1.6 Antenna Requirement

Does the EUT have detachable antenna(s)?	☒ YES	☐ NO
If detachable, is the antenna connector(s) non-standard?	☒ YES	☐ NO
SMA		

Requirement: FCC 15.203, 15.204, 15.317, RSS-GEN Issue 5, clause 6.8

1.7 Channel Frequencies

UPCS CHANNEL	FREQUENCY (MHz)
Upper Band Edge	1930.000
0 (Highest)	1928.448
1	1926.720
2	1924.992
3	1923.264
4 (Lowest)	1921.536
Lower Band Edge	1920.000

Requirement: FCC 15.303, RSS-213 Issue 3, clause 5.1:

Within 1920 -1930 MHz band for isochronous devices.

1.8 Other Comments

Only limited tests were performed to test different antenna cables and a new antenna.

This version is a modified version of the originally certified model. One of the antennas have been disconnected and an antenna connector have been installed for connecting an external antenna.

This test covers Output Power, and Spurious Emissions measurements with two different cables and one external antenna.

Out-of-Band emissions measured directly on the antenna connector is also included.

2 TEST REPORT SUMMARY

2.1 General

The tests were conducted on a sample of the equipment for demonstrating compliance with one or more of the following standards:

Standard	Description
FCC CFR 47 Part 15D	Unlicensed Personal Communications Service Devices
ISED RSS-213, Issue 3	2 GHz Licence-Exempt Personal Communications Services (LE-PCS) Devices
ISED RSS-GEN Issue 5	General Requirements for Compliance of Radio Apparatus

The following standards and documents were used for one or more measurements:

Standard	Description
ANSI C63.4-2014	Unintentional Radiators
ANSI C63.17-2013	Unlicensed Personal Communications Service (UPCS) Devices
FCC KDB 412172 D01	Determining ERP and EIRP

All measurements are traceable to national standards.

A description of the test facility is on file with FCC and ISED Canada.

☐ New Submission	☒ Production Unit
☒ Class II Permissive Change	☐ Pre-production Unit
PUB Equipment Class	☐ Family Listing

2.2 Test Summary

Name of test	FCC CFR 47 Paragraph #	ISED RSS-213 Paragraph #	Verdict
Digital Modulation Techniques	15.319(b)	5.1	Complies
Labeling requirements	15.19(a)(3)	RSP-100 3.1	Complies
Antenna Requirement	15.317, 15.203	RSS-GEN 6.8	Complies
Channel Frequencies	15.303	5.1	Complies
Out-of-band emissions	15.323(d)	5.8.1	Complies
Peak Transmit Power and Antenna Gain	15.319(c)(e), 15.31(e)	5.6 RSS-GEN 8.3	Complies
Spurious Emissions (Radiated)	15.319(g) 15.109(a) 15.209(a)	RSS-GEN 7.3 / 8.9	Complies

3 TEST RESULTS

3.1 Peak Power Output

Test Method:

ANSI C63.17, clause 6.1.2.

Test Results: Complies

Measurement Data:

Maximum Conducted Output Power

Maximum Conducted Output Power (dBm)				
Channel No.	Frequency (MHz)	No Cable	HMA6RSP10	Boobrie 3m RG58
4	1921.536	16.6	12.3	14.4
2	1924.992	16.2	12.2	14.3
0	1928.448	16.5	12.0	14.3

Limit:

Conducted: $100 \mu\text{W} \times \text{SQRT}(B)$ where B is the measured Emission Bandwidth in Hz

FCC 15.319(c)(e): 20.67 dBm (117 mW)

ISED RSS-213, Issue 3: 20.45 dBm (111 mW)

Requirements,

FCC 15.319(c)(e):

Peak transmit power shall not exceed 100 microwatts multiplied by the square root of the emission bandwidth in Hertz.

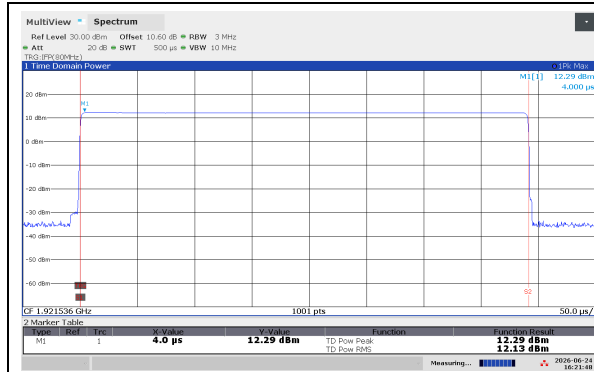
RSS-213 Issue 3, clause 5.6:

Peak transmit power shall not exceed 100 microwatts multiplied by the square root of the occupied bandwidth in Hertz.

FCC 15.319(c)(e); RSS-213 Issue 3, clause 5.6:

The peak transmit power shall be reduced by the amount in decibels that the maximum directional gain of the antenna exceeds 3 dBi.

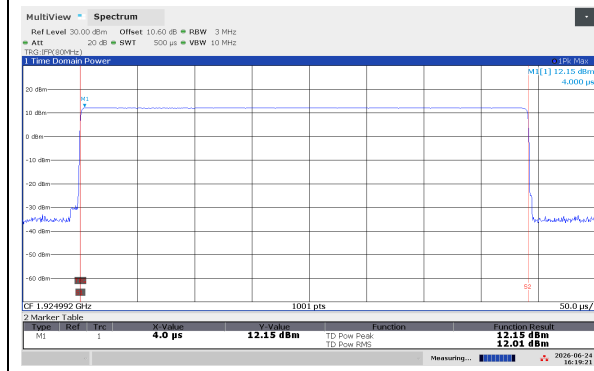




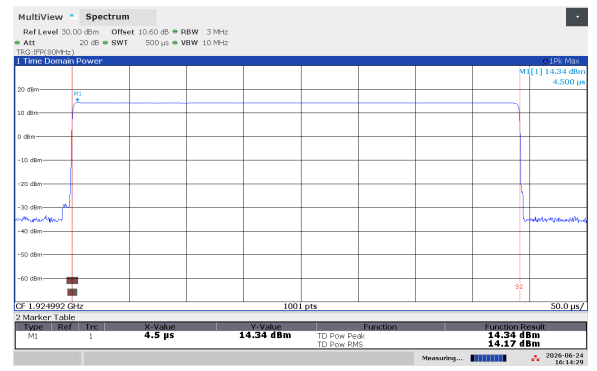
Peak Output Power, Lower Channel, HMA6RSP10 Cable



Peak Output Power, Lower Channel, Boobrie 3m RG58



Peak Output Power, Middle Channel, HMA6RSP10 Cable



Peak Output Power, Middle Channel, Boobrie 3m RG58



Peak Output Power, Upper Channel, HMA6RSP10 Cable



Peak Output Power, Upper Channel, Boobrie 3m RG58

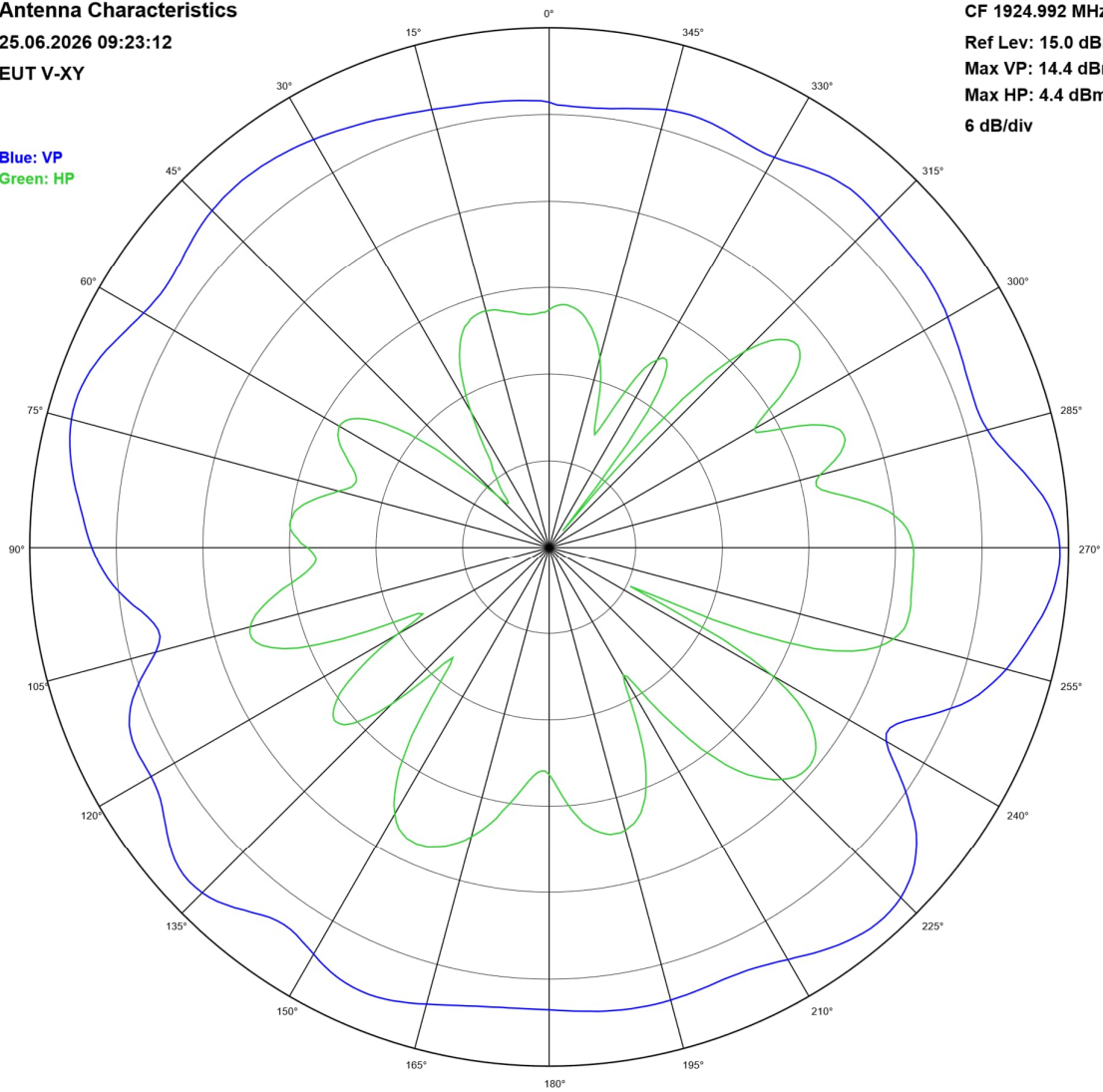
Antenna Characteristics

25.06.2026 09:23:12

EUT V-XY

Blue: VP
Green: HP

CF 1924.992 MHz
Ref Lev: 15.0 dBm
Max VP: 14.4 dBm
Max HP: 4.4 dBm
6 dB/div



PRJ0104200 Panasonic WX-CR480P

Measured with HMA6RSP10 Cable and HG1903RD-RSP Antenna

3.2 Out-of-band Emissions, Conducted

Test Method:

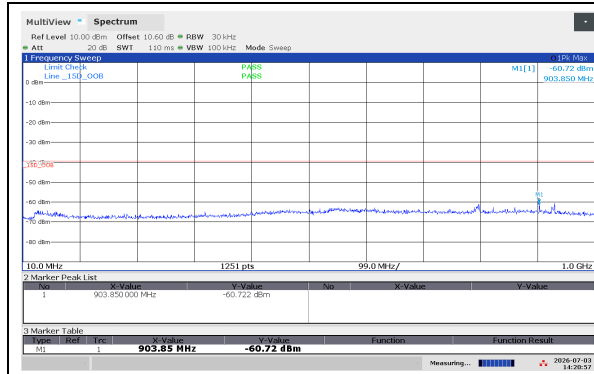
ANSI C63.17, clause 6.1.6.2.

Test Results: Complies

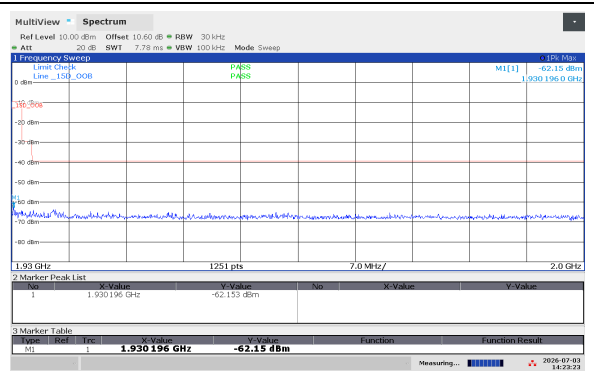
Measurement Data: See plots

Requirements, FCC 15.323(d), RSS-213 Issue 3, clause 5.8.1:

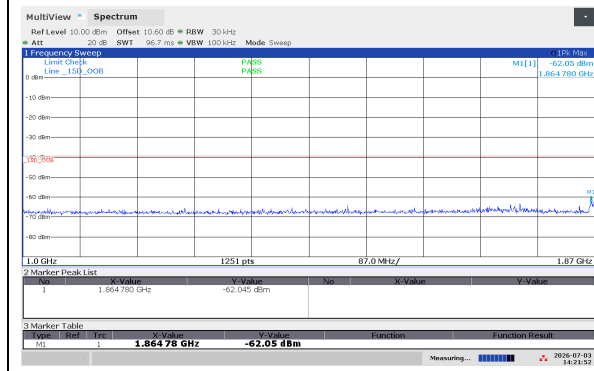
Frequency Range	Limit
$f \leq 1.25\text{MHz}$ outside UPCS band	$\leq -9.5\text{dBm}$
$1.25\text{MHz} \leq f \leq 2.5\text{MHz}$ outside UPCS band	$\leq -29.5\text{ dBm}$
$f \geq 2.5\text{MHz}$ outside UPCS band	$\leq -39.5\text{ dBm}$



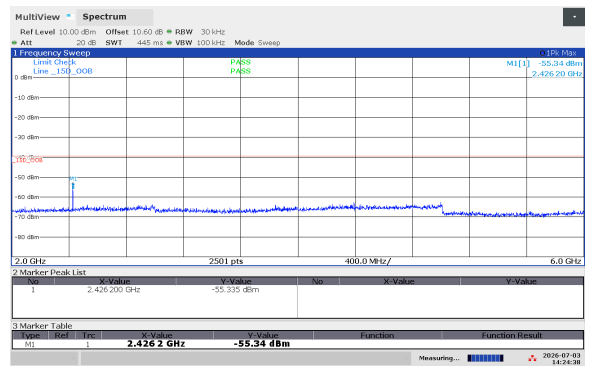
Out-of-Band Emissions, Lower Channel



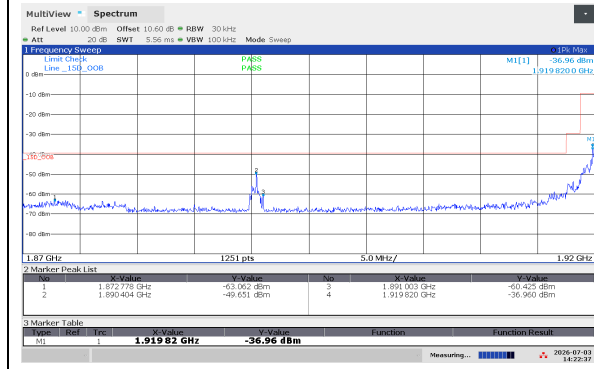
Out-of-Band Emissions, Lower Channel



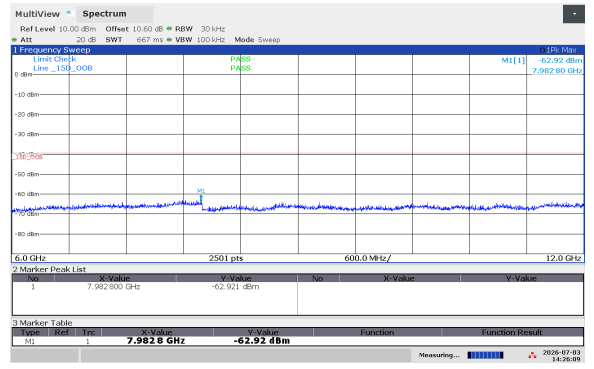
Out-of-Band Emissions, Lower Channel



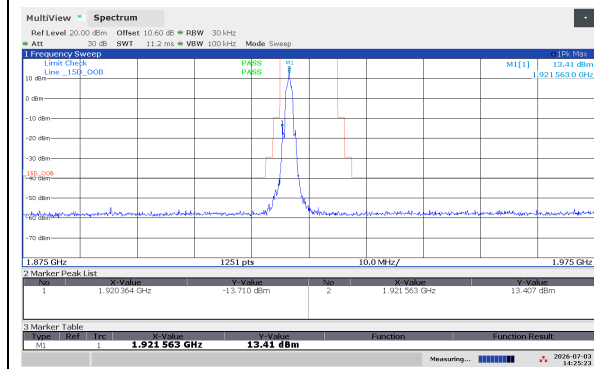
Out-of-Band Emissions, Lower Channel



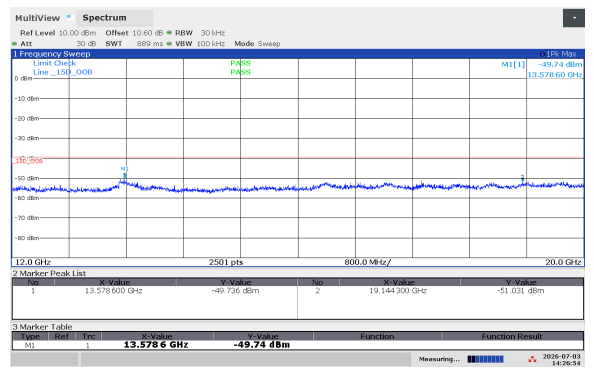
Out-of-Band Emissions, Lower Channel



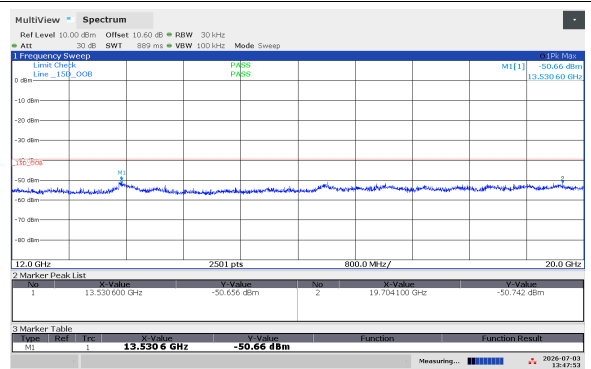
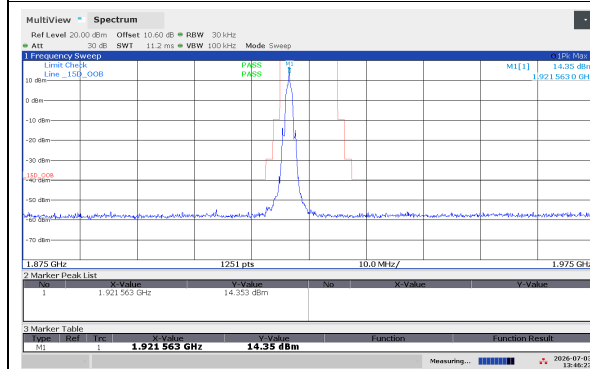
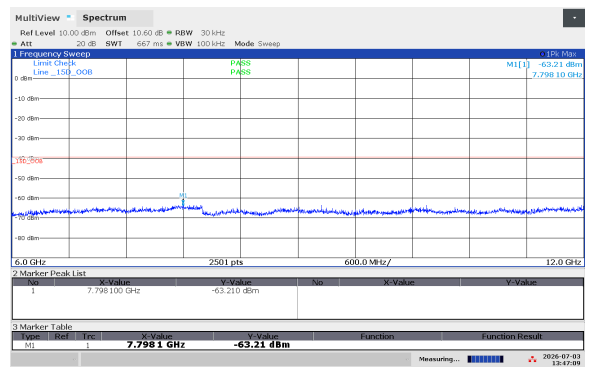
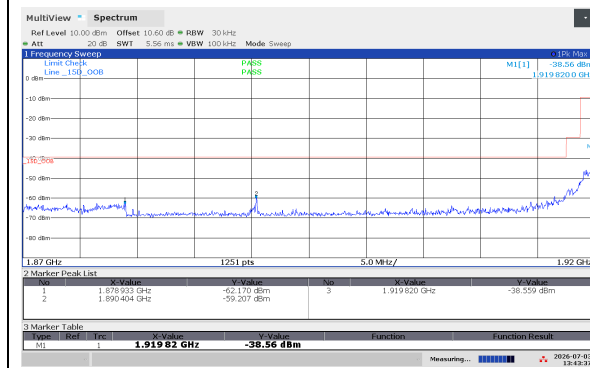
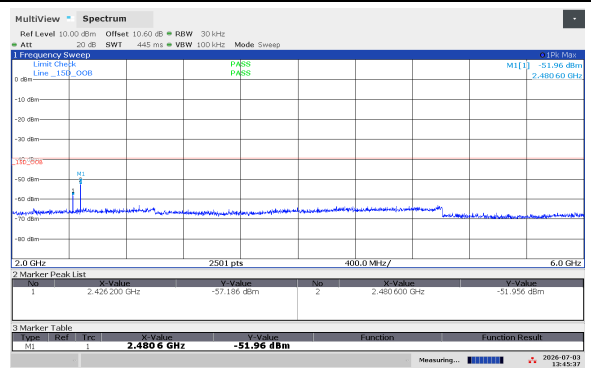
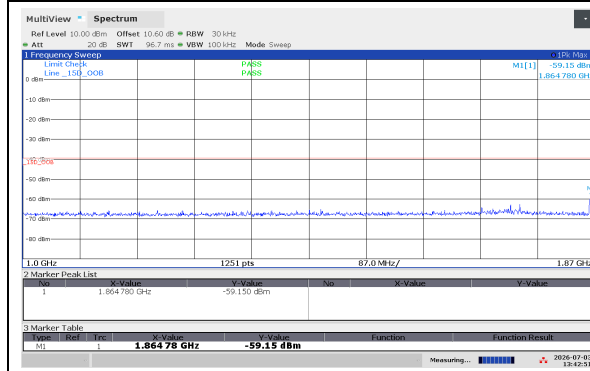
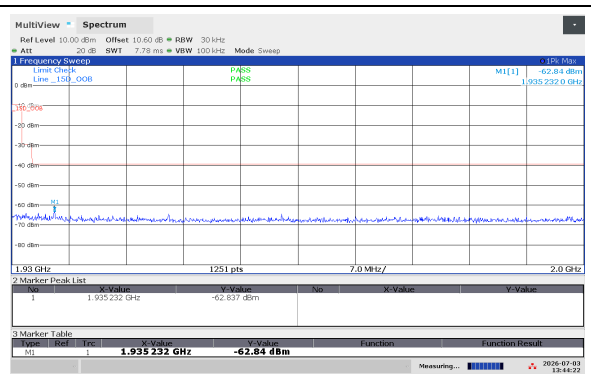
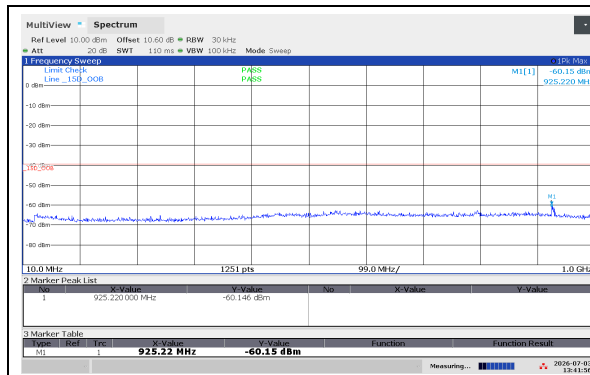
Out-of-Band Emissions, Lower Channel



Out-of-Band Emissions, Lower Channel



Out-of-Band Emissions, Lower Channel



3.3 Radiated Emissions, 30 – 1000 MHz

FCC Part 15.209 (a)

ISED Canada RSS-GEN Issue 5, Clause 7.3/8.9

Measurement procedure: ANSI C63.10-2020 Clause 11.12

Test Results: Complies

Measurement Data:

Detector: Peak

Measuring distance 3m

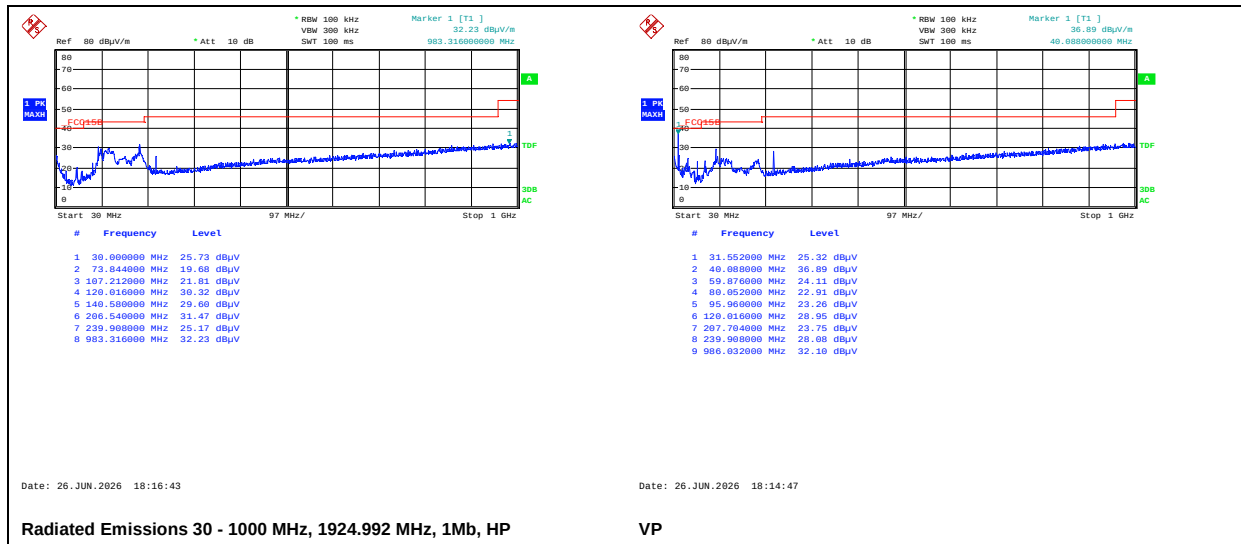
Tested in test mode with EUT transmitting on 1924.992 MHz

The measurement was performed with cable Boobrie RG58 3m and antenna HG1903RD-RSP

See attached plots

Requirements/Limit

FCC	Part 15.209 @ frequencies defined in §15.205	
ISED	RSS-GEN Issue 5, Clause 8.9 @ frequencies defined in clause 8.10	
Frequency	Radiated emission limit @3 meters	
30 – 88 MHz	100 $\mu\text{V/m}$	40.0 dB $\mu\text{V/m}$
88 – 216 MHz	150 $\mu\text{V/m}$	43.5 dB $\mu\text{V/m}$
216 – 960 MHz	200 $\mu\text{V/m}$	46.0 dB $\mu\text{V/m}$
960 – 1000 MHz	500 $\mu\text{V/m}$	54.0 dB $\mu\text{V/m}$
Limits above are with Quasi Peak Detector		



3.4 Radiated Emissions, 1 – 18 GHz

FCC Part 15.209 (a)

ISED Canada RSS-GEN Issue 5, Clause 7.3/8.9

Measurement procedure: ANSI C63.10-2020 Clause 11.12

Test Results: Complies

Measurement Data:

Measuring distance: 3m

Boobrie RG58 3m with antenna HG1903RD-RSP							
Carrier Frequency (MHz)	Measured Frequency (MHz)	Measured Emissions (dBµV/m)		Limit (dBµV/m)		Margin (dB)	
		Peak	Average	Pk	Av	Pk	Av
1921.536	7686.144	58.4	42.8	74	54	15.6	11.2
1928.448	7713.792	58.9	43.3	74	54	15.1	10.7

HMA6RSP10 with antenna HG1903RD-RSP							
Carrier Frequency (MHz)	Measured Frequency (MHz)	Measured Emissions (dBµV/m)		Limit (dBµV/m)		Margin (dB)	
		Peak	Average	Pk	Av	Pk	Av
1921.536	3843.072	63.5	47.9	74	54	10.5	6.1
	7686.144	64.1	48.5	74	54	9.9	5.5
	11529.216	58.0	42.4	74	54	16.0	11.6
1928.448	3856.896	63.7	48.1	74	54	10.3	5.9
	7713.792	63.1	47.5	74	54	10.9	6.5
	11570.688	57.1	41.5	74	54	16.9	12.5

Duty Cycle (DC) with 4 handsets is 4/24 => DC Correction Factor = $20 \cdot \log(4/24) = 15.6$ dB

A Band Reject Filter was used for measurements from 1 GHz to 18 GHz

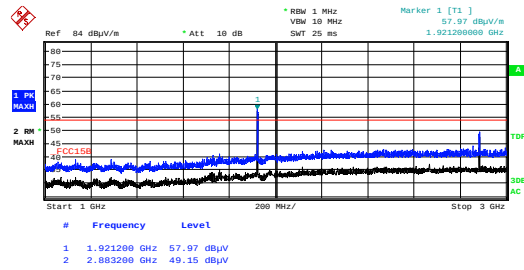
Antenna factor, amplifier gain and cable loss are included in spectrum analyser "Transducer factor".

See plots.

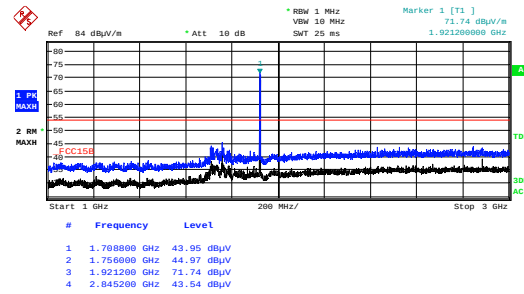
Requirements/Limit

FCC	Part 15.209 @ frequencies defined in §15.205	
ISED	RSS-GEN Issue 5, clause 8.9 @ frequencies defined in clause 8.10	
	Radiated emission limit @3 meters	
Frequency	Average Detector	Peak Detector
1 – 20 GHz	54.0 dBµV/m	74.0 dBµV/m

Measured with Cable Boobrie RG58 3m and Antenna HG1903RD-RSP



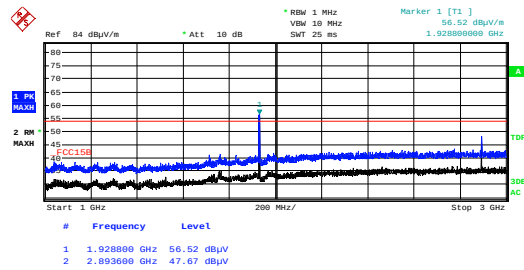
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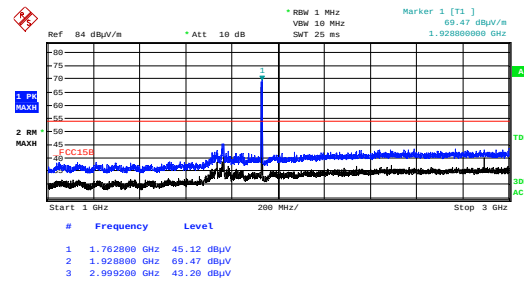
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Radiated Emissions 1000 - 3000 MHz, 1921.536 MHz, HP

VP



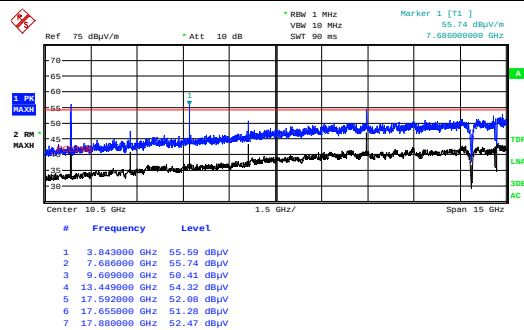
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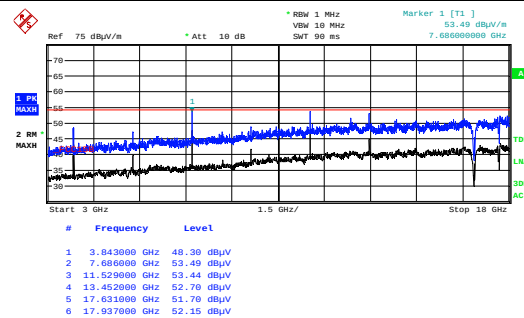
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Radiated Emissions 1000 - 3000 MHz, 1928.448 MHz, HP

VP



Date: 26.JUN.2026 17:44:08

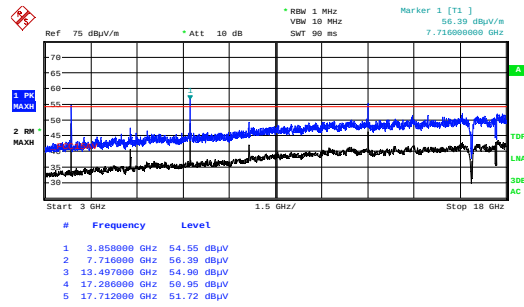


Date: 26.JUN.2026 17:42:10

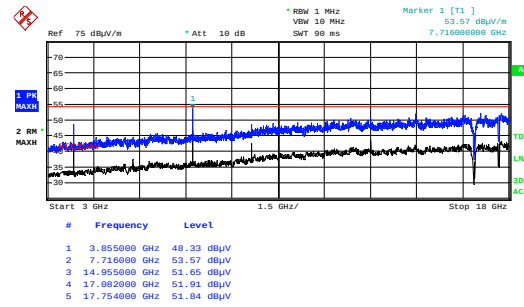
Radiated Emissions 3000 - 18000 MHz, 1921.536 MHz, HP

VP

Measured with Cable Boobrie RG58 3m and Antenna HG1903RD-RSP

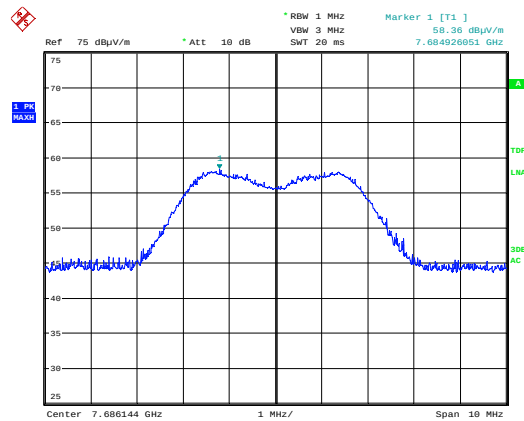


Date: 26.JUN.2026 17:03:58



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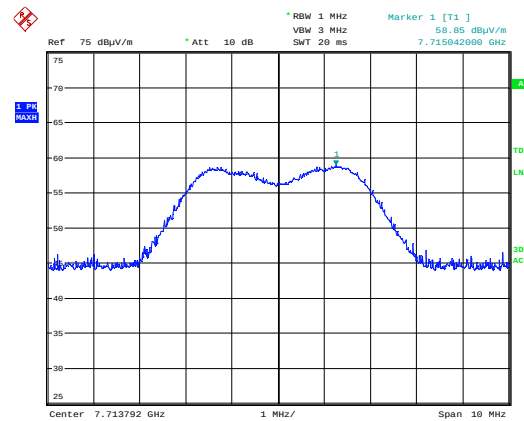
Radiated Emissions 3000 - 18000 MHz, 1928.448 MHz, HP



Date: 26.JUN.2026 17:48:48

Spurious 7686.144 MHz, Max: HP, Peak

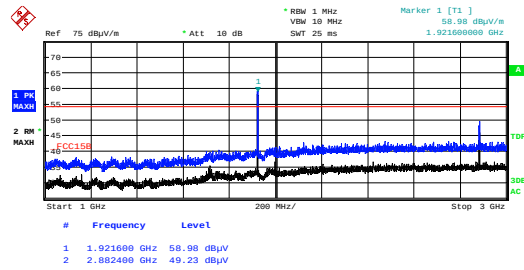
VP



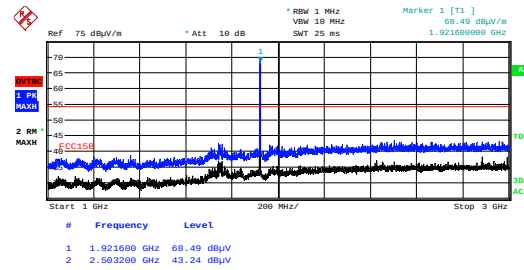
Date: 26.JUN.2026 17:34:16

Spurious 7713.792 MHz, Max: HP, Peak

Measured with Cable HMA6RSP10 and Antenna HG1903RD-RSP



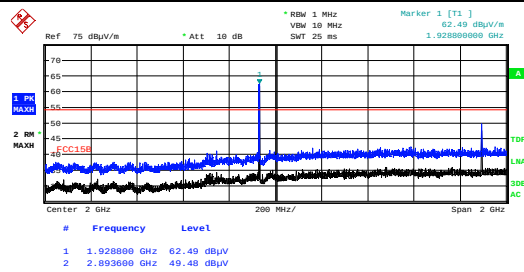
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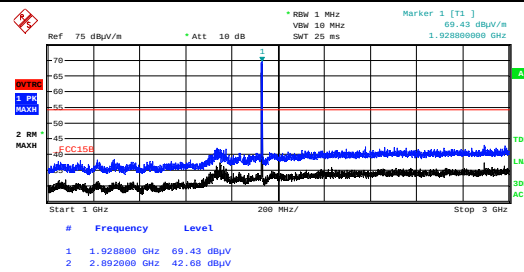
Date: 26.JUN.2026 16:19:24

Radiated Emissions 1000 - 3000 MHz, 1921.536 MHz, HP

VP



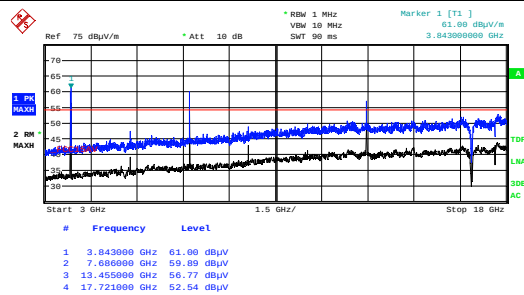
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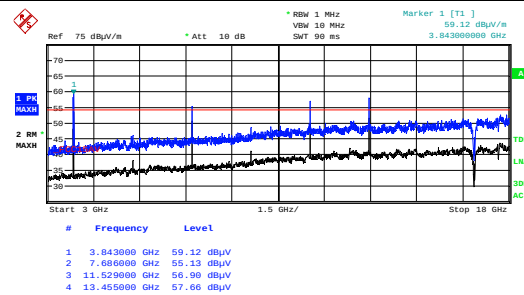
Date: 26.JUN.2026 16:26:43

Radiated Emissions 1000 - 3000 MHz, 1928.448 MHz, HP

VP



Date: 26.JUN.2026 15:49:42

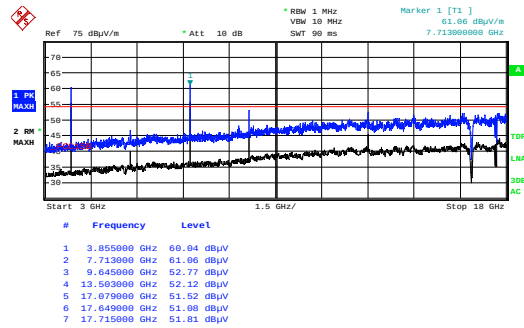


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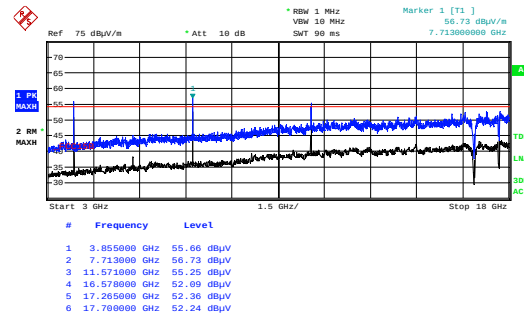
Radiated Emissions 3000 - 18000 MHz, 1921.536 MHz, HP

VP

Measured with Cable HMA6RSP10 and Antenna HG1903RD-RSP

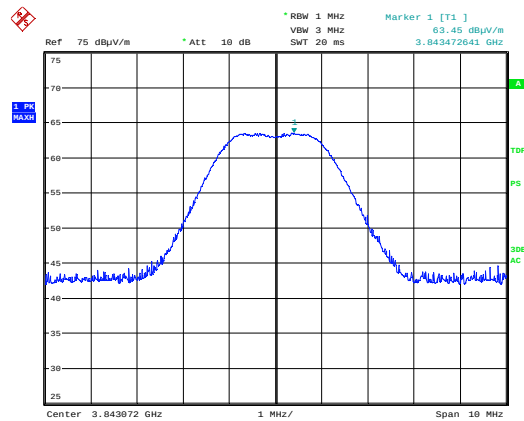


Date: 26.JUN.2026 16:39:12



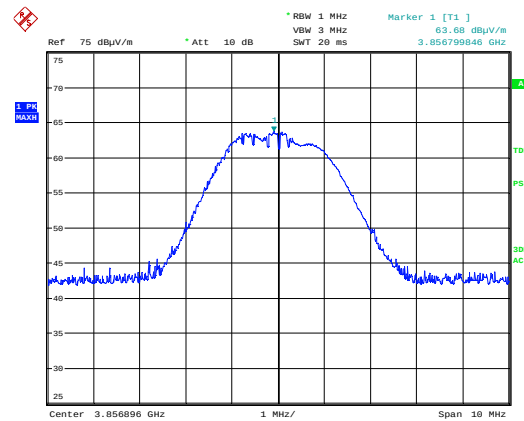
Date: 26.JUN.2026 16:37:14

Radiated Emissions 3000 - 18000 MHz, 1928.448 MHz, HP



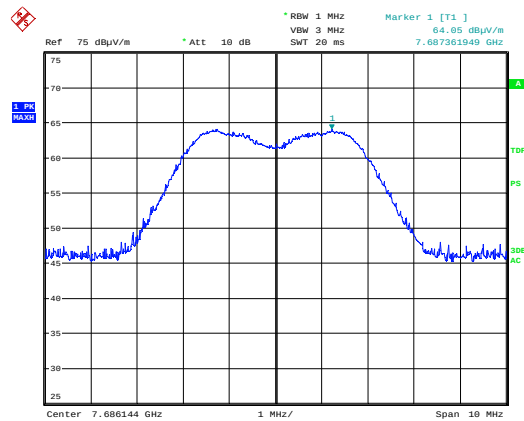
Date: 26.JUN.2026 15:42:59

VP



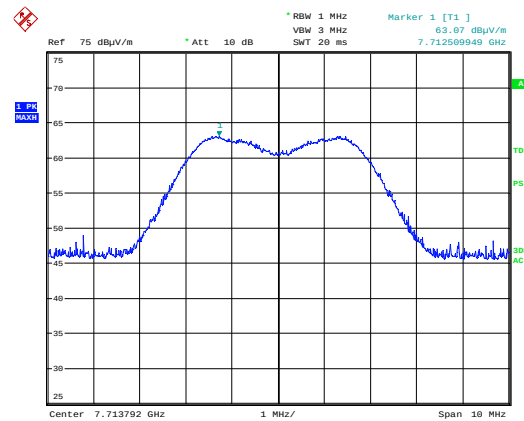
Date: 26.JUN.2026 14:58:32

Spurious 3843.072 MHz, Max: HP, Peak



Date: 26.JUN.2026 15:36:09

Spurious 3856.896 MHz, Max: HP, Peak

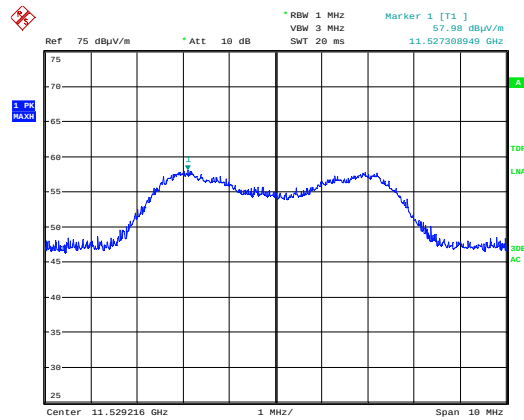


Date: 26.JUN.2026 15:13:22

Spurious 7686.144 MHz, Max: HP, Peak

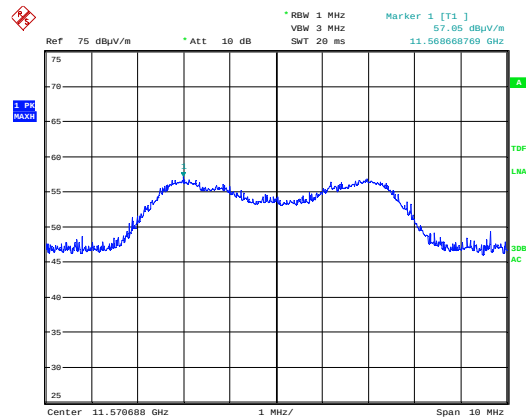
Spurious 7713.792 MHz, Max: HP, Peak

Measured with Cable HMA6RSP10 and Antenna HG1903RD-RSP



Date: 26.JUN.2026 16:13:58

Spurious 11529.216 MHz, Max: VP, Peak



Date: 26.JUN.2026 16:47:36

Spurious 11570.688 MHz, Max: VP, Peak

4 Measurement Uncertainty

Measurement Uncertainty Values		
Test Item		Uncertainty
Output Power		±0.5 dB
Power Spectral Density		±0.5 dB
Out of Band Emissions, Conducted (RBW < 100 kHz)	< 3.6 GHz	±0.6 dB
	> 3.6 GHz	±0.9 dB
Spurious Emissions, Radiated	< 1 GHz	±2.5 dB
	> 1 GHz	±2.2 dB
Emission Bandwidth		±4 %
Power Line Conducted Emissions		+2.9 / -4.1 dB
Spectrum Mask Measurements	Frequency	±5 %
	Amplitude	±1.0 dB
Frequency Error		±0.6 ppm
Timing and Jitter Measurements		±2.0 ns
Frame Timing Measurements		±1.4 ppm
Receiver Blocking Levels		±1.0 dB
Temperature Uncertainty		±1 °C

All uncertainty values are expanded standard uncertainty to give a confidence level of 95%, based on coverage factor k=2

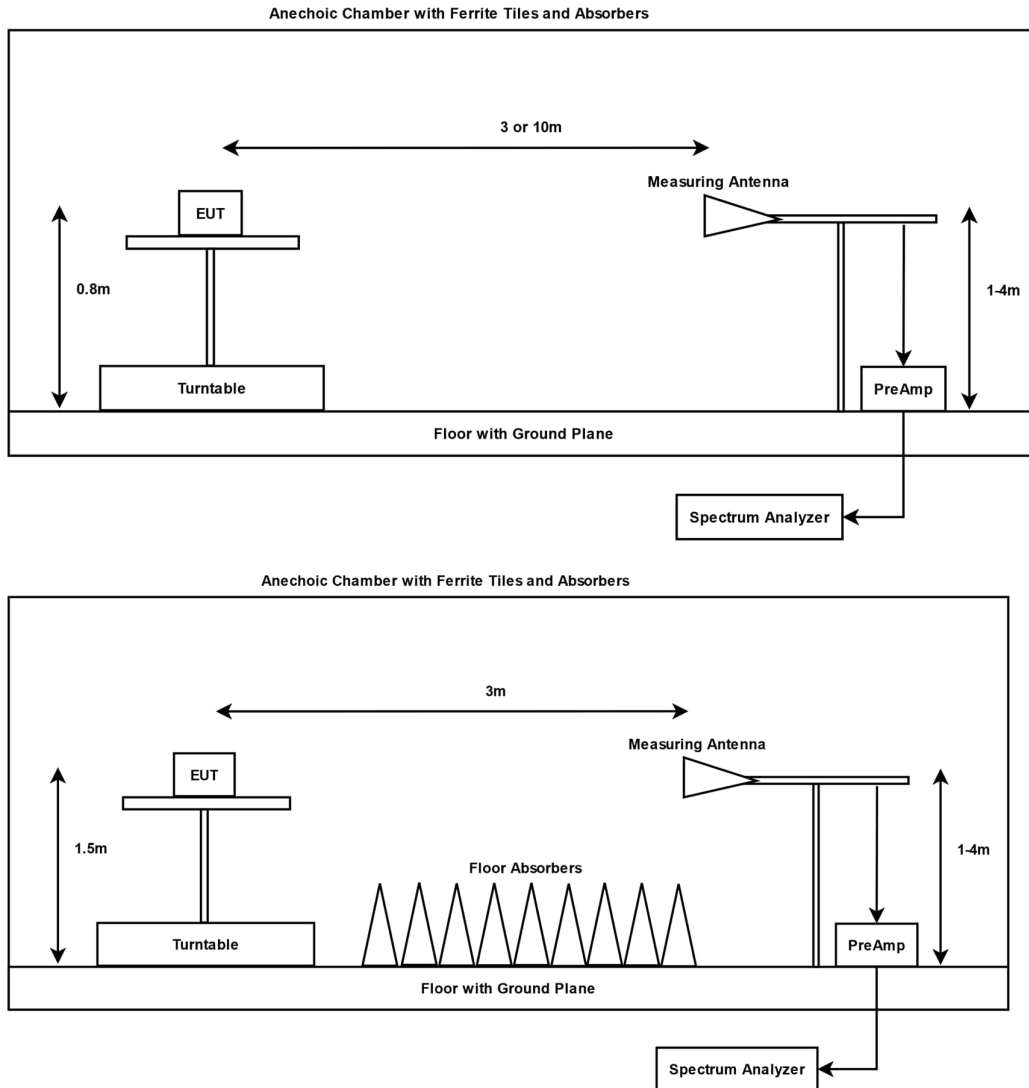
5 Test Setups

5.1 Conducted Emission Test



This setup is used for all measurements at the antenna connector

5.2 Test Site Radiated Emission



This test setup is used for all radiated emissions tests. Measuring distance is 3m. Emissions above 1 GHz are measured with a Spectrum Analyzer and Horn Antenna.

All measurements at 1GHz and above were performed with turntable height 1.5m and with the ground plane covered by absorbers. A pre-amplifier is used for all measurements.

6 Test Equipment Used

To facilitate inclusion on each page of the test equipment used for related tests, each item of test equipment and ancillaries are identified (numbered) by the Testhouse.

No.	Model number	Description	Manufacturer	Ref. no.	Cal. date	Cal. Due
1	ESU40	Measuring Receiver	Rohde & Schwarz	LR 1639	2026-01	2027-01
2	FSW43	Spectrum Analyzer	Rohde & Schwarz	LR 1690	2026-01	2027-01
3	SMB100A	Signal generator	Rohde & Schwarz	LR 1790	2025-01	2027-01
4	5910_N-50-010	Attenuator	Suhner	LR 1821	COU	
5	3115	Horn Antenna	EMCO	LR 1330	2022-11	2027-11
6	3117-PA	Horn Antenna with Pre-Amp	EMCO	LR 1717	2025-08	2026-08
7	JB1	Hybrid Antenna	SunAR RF Motion	LR 1734	2025-04	2028-04
8	310	Pre-Amplifier	Sonoma Inst	LR 1686	2025-08	2026-08
9	8449B	Pre-Amplifier	Hewlett Packard	LR 1322	2025-08	2026-08
10	N0319501	Band Reject Filter (1.9 GHz)	Microwave Circuits	LR 1765	COU	
11	6HC2500/18000-3-KK	High Pass Filter	Trilithic	LR 1615	COU	
12	6812B	AC Power Source	Agilent	LR 1515	COU	
13	Model 87 V	Multimeter	Fluke	N 4671	2024-11	2026-11
14	ST18/SMA/N/36	RF Cable	Suhner	LR 1627	COU	

COU = Cal on use

The software listed below has been used for one or more tests.

No.	Manufacturer	Name	Version	Comment
1	Nemko AS	RSPlot	1.0.8.0	Screenshots from R&S Spectrum Analyzers