

Report Number: TRA-068316-47-00B
Issue: B

Report on the Radio Testing of a
ATN Corp.
THOR 6 Mini
With Respect to Specification
FCC 47CFR 15.247

TEST DATE: 2025-11-03 to 2026-02-13

Tested by: S Garwell
Radio Test Engineer

Written by:

S Garwell
Radio Test Engineer

Approved by:

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Lab Manager

Date: 2026-05-26

Disclaimers:

- [1] THIS DOCUMENT MAY BE REPRODUCED ONLY IN ITS ENTIRETY AND WITHOUT CHANGE
[2] THE RESULTS CONTAINED IN THIS DOCUMENT RELATE ONLY TO THE ITEM(S) TESTED

RF915



1 Revision Record

<i>Issue</i>	<i>Issue Date</i>	<i>Revision History</i>
A	2026-05-08	Original
B	2026-05-26	Updated references throughout document to ANSI C63.10 2020, correction to 802.11b bandwidth plots in section 13.6, general corrections throughout document.

2 Summary

TEST REPORT NUMBER:	TRA-068316-47-00B
WORKS ORDER NUMBER:	TRA-068316-00
PURPOSE OF TEST:	Testing of radio frequency equipment per the relevant authorisation requirements of chapter 47 of CFR (code of federal regulations) Part 2, subpart J & ISSED Canada RSS Gen
TEST SPECIFICATION:	47CFR15.247
EQUIPMENT UNDER TEST (EUT):	THOR 6 Mini
FCC IDENTIFIER:	2BKIH-THRM6
EUT SERIAL NUMBER:	V1.000.00000000.0.R.200825
MANUFACTURER/AGENT:	ATN Corp.
ADDRESS:	2400 NW 95th Avenue Doral Florida 33172 USA
CLIENT CONTACT:	Ravi Reddy ☎ 650-989-5100 ✉ rreddy@atncorp.com
ORDER NUMBER:	109911
TEST DATE:	2025-11-03 to 2026-02-13
TESTED BY:	S Garwell Element

2.1 Test Summary

Test Method and Description		Requirement Clause FCC 47 CFR	Requirement Clause ISED RSS	Applicable to this equipment	Result / Note
Radiated spurious emissions (restricted bands of operation and cabinet radiation)		15.205	247: 3.3	☒	Pass
AC power line conducted emissions		15.207	Gen: 8.8	☒	Pass
6 dB bandwidth		15.247 (a) (2)	247: 5.2 (a)	☒	Pass
Occupied bandwidth (99% bandwidth)		N/A	Gen: 6.7	☐	N/A
Conducted output power	Peak	15.247 (b) (3)	247: 5.4 (d)	☒	Pass
	Maximum			☐	
Undesirable / unwanted emissions		15.247 (d)	247: 5.5	☒	Pass
Power spectral density		15.247 (e)	247: 5.2 (b) 247: 6.2.4.2	☒	Pass
Pulsed operation correction		15.35 (c)	Gen: 8.2	☒	-

Specific notes:

General notes:

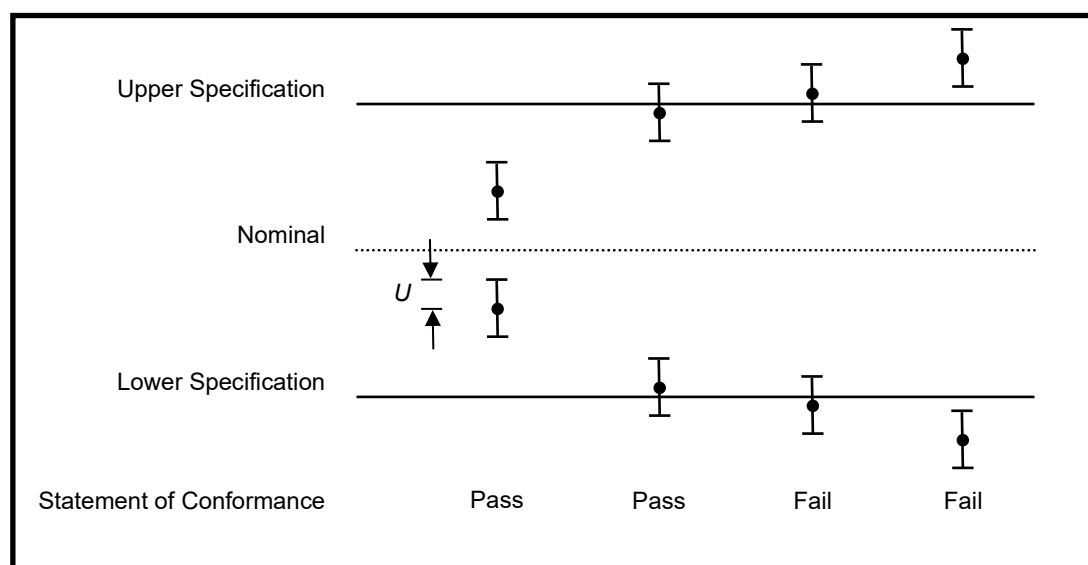
The results contained in this report relate only to the items tested, in the condition at time of test, and were obtained in the period between the date of initial receipt of samples and the date of issue of the report.

The apparatus was set up and exercised using the configurations, modes of operation and arrangements defined in this report only. Any modifications made are identified in Section 8 of this report.

Particular operating modes, apparatus monitoring methods and performance criteria required by the standards tested to have been performed except where identified in Section 5.2 of this test report (Deviations from Test Standards).

The decision rule for compliance is not inherent within this specification and compliance is based on the customer requesting a simple acceptance rule based on understanding and acceptance of Elements Measurement Uncertainty values.

Graphical Representation of a Pass / Fail Binary Statement - Simple Acceptance



● = Measured value

U = 95 % expanded measurement uncertainty

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4 Introduction

This report TRA-068316-47-00B presents the results of the Radio testing on a ATN Corp., THOR 6 Mini to specification FCC Title 47 CFR 15 Radio Frequency Devices.

The testing was carried out for ATN Corp. by Element, at the address detailed below.

☒	Element Skelmersdale Unit 1 Pendle Place Skelmersdale West Lancashire WN8 9PN UK	☐	Element Surrey Hills Unit 15 B Henley Business Park Pirbright Road Normandy Guildford GU3 2DX UK
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This report details the configuration of the equipment, the test methods used and any relevant modifications where appropriate.

All test and measurement equipment under the control of the laboratory and requiring calibration is subject to an established programme and procedures to control and maintain measurement standards. The quality management system meets the principles of ISO 9001, and has quality control procedures for monitoring the validity of tests undertaken. Records and sufficient detail are retained to establish an audit trail of calibration records relating to its test results for a defined period. Under control of the established calibration programme, key quantities or values of the test & measurement instrumentation are within specification and comply with the relevant traceable internationally recognised and appropriate standard specifications, which are ISO/IEC 17025:2017 accredited calibrated as such where these properties have a significant effect on results. Participation in inter-laboratory comparisons and proficiency testing ensures satisfactory correlation of results conform to Elements own procedures, as well as statistical techniques for analysis of test data providing the appropriate confidence in measurements.

Throughout this report EUT denotes equipment under test.

FCC Site Listing:

The test laboratory is accredited for the above sites under the following US-UK MRA, Designation numbers.

Element Surrey Hills	UK2027
Element Skelmersdale	UK2020

The test site requirements of ANSI C63.4-2014 are met up to 1 GHz.

The test site SVSWR requirements of CISPR 16-1-4:2010 are met over the frequency range 1 GHz to 18 GHz.

5 Test Specifications

5.1 *Normative References*

- FCC 47 CFR Ch. I – Part 15 – Radio Frequency Devices.
- ANSI/USEMCSC C63.10-2020/Cor 1-2023 - American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.
- ANSI C63.4-2014 – American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz.

5.2 *Deviations from Test Standards*

The client declares that the EUT only operates on the centre channel (2437 MHz).

6 Glossary of Terms

§	denotes a section reference from the standard, not this document
AC	Alternating Current
ANSI	American National Standards Institute
BW	bandwidth
C	Celsius
CFR	Code of Federal Regulations
CW	Continuous Wave
dB	decibel
dBm	dB relative to 1 milliwatt
DC	Direct Current
DSSS	Direct Sequence Spread Spectrum
EIRP	Equivalent Isotropically Radiated Power
ERP	Effective Radiated Power
EUT	Equipment under Test
FCC	Federal Communications Commission
FHSS	Frequency Hopping Spread Spectrum
Hz	hertz
IC	Industry Canada
ITU	International Telecommunication Union
LBT	Listen before Talk
m	metre
max	maximum
MIMO	Multiple Input and Multiple Output
min	minimum
MRA	Mutual Recognition Agreement
N/A	Not Applicable
PCB	Printed Circuit Board
PDF	Portable Document Format
Pt-mpt	Point-to-multipoint
Pt-pt	Point-to-point
RF	Radio Frequency
RH	Relative Humidity
RMS	Root Mean Square
Rx	receiver
s	second
SVSWR	Site Voltage Standing Wave Ratio
Tx	transmitter
UKAS	United Kingdom Accreditation Service
V	volt
W	watt
Ω	ohm

7 Equipment under Test

7.1 EUT Identification

- Name: THOR 6 Mini
- Serial Number: V1.000.0000000.0.R.200825
- Model Number: Thermal Imaging Riflescope
- Software Revision: Production 1.0
- Build Level / Revision Number: Production 1.0

7.2 System Equipment

Equipment listed below forms part of the overall test setup and is required for equipment functionality and/or monitoring during testing. The compliance levels achieved in this report relate only to the EUT and not items given in the following list.

- Acer N19C1 laptop serial number: NXHF9EK011944051863400.

7.3 EUT Mode of Operation

The EUT was transmitting on the frequencies as indicated.

7.4 EUT Radio Parameters

7.4.1 General

Frequency of operation:	2437 MHz
Modulation type(s):	DSSS / OFDM
Occupied channel bandwidth:	20 MHz / 40 MHz
Channel spacing:	5 MHz
Declared output power:	19 dBm
Nominal Supply Voltage:	110 Vac 60 Hz to 5 Vdc via a mains adaptor

7.4.2 Antennas

Type:	Integral
Frequency range:	2400 MHz – 2483.5 MHz
Impedance:	50 Ω impedance
Gain:	2 dBi

7.4.3 Product specific declarations

Multiple antenna configuration(s), e.g. MIMO:	Single
Fixed pt-pt operations (yes/no):	No
Installation manual advice on pt-pt operational restrictions (yes/no):	No
Fixed pt-mpt operations (yes/no):	No
Simultaneous tx (yes/no):	No

7.5 EUT Description

The EUT is a thermal imaging and multi-spectrum optic containing a 2.4 GHz Wi-Fi module, the EUT is designed primarily for hunting, wildlife observation, and outdoor applications.

This test report covers the testing of the 2.4 GHz Wi-Fi radio only.

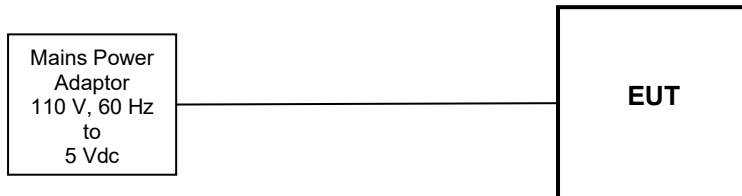
8 Modifications

No modifications were performed during this assessment.

9 EUT Test Setup

9.1 Block Diagram

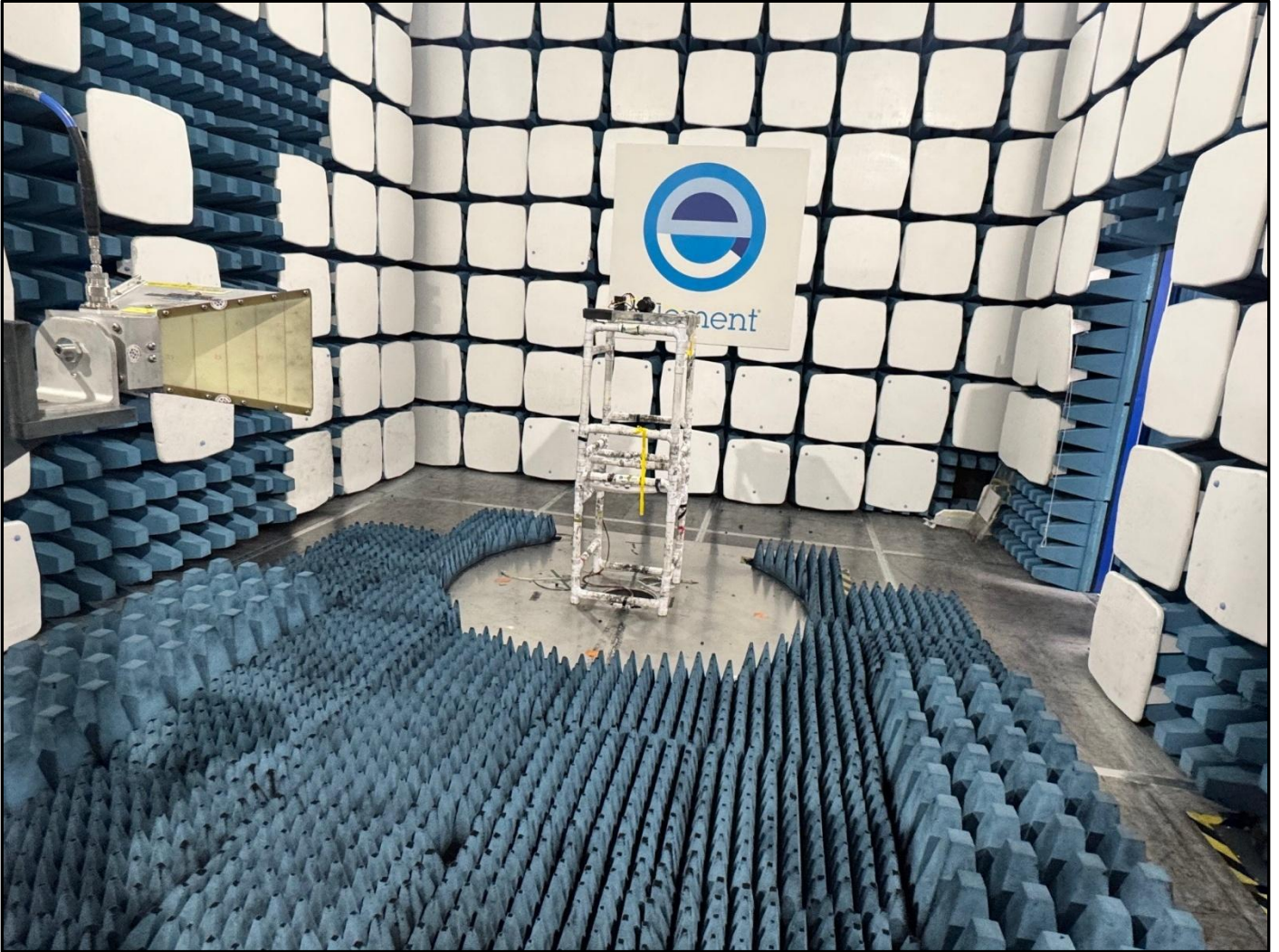
The following diagram shows basic EUT interconnections:



9.2 General Set-up Photographs

The following photographs show basic EUT set-up:





9.3 *Measurement software*

Where applicable, the following software was used to perform measurements contained within this report.

Element Emissions R5 – 2025.04.30.2

10 General Technical Parameters

10.1 Normal Conditions

The EUT was tested under the normal environmental conditions of the test laboratory, except where otherwise stated. The normal power source applied was 110 Vac 60 Hz to 5 Vdc from a mains power adaptor.

10.2 Varying Test Conditions

There are no specific frequency stability requirements for the type of device. The results contained in this report demonstrate that the occupied bandwidth is contained within the authorised band.

Variation of supply voltage is required to ensure stability of the declared output power. During carrier power testing the following variations were made:

	Category	Nominal	Variation
☒	Mains	110 Vac +/-2 %	85 % and 115 %
☐	Battery	New battery	N/A

11 Radiated emissions

11.1 Definitions

Spurious emissions

Emissions on a frequency or frequencies, which are outside the necessary bandwidth and the level of which may be reduced without affecting the corresponding transmission of information. Spurious emissions include harmonic emissions, parasitic emissions, intermodulation products and frequency conversion products, but exclude out-of-band emissions.

Restricted bands

A frequency band in which intentional radiators are permitted to radiate only spurious emissions but not fundamental signals.

11.2 Test Parameters

Test Location:	Element Skelmersdale
Test Chamber:	REF940
Test Standard and Clause:	ANSI C63.10-2020, Clause 6.5 and 6.6
EUT Frequency Measured:	2437 MHz
Deviations from Standard:	See section 5.2
Measurement BW:	30 MHz to 1 GHz: 120 kHz; Above 1 GHz: 1 MHz
Measurement Detector:	Up to 1 GHz: quasi-peak; Above 1 GHz: RMS average and Peak

Environmental Conditions (Normal Environment)

Temperature: 25 °C	+15 °C to +35 °C (as declared)
Humidity: 42 % RH	20 % RH to 75 % RH (as declared)
Supply: 110 Vac	As declared

11.3 Test Limit

Unwanted emissions that fall within the restricted frequency bands shall comply with the limits specified:

General Field Strength Limits for License-Exempt Transmitters at Frequencies above 30 MHz

<i>Frequency (MHz)</i>	<i>Field Strength (μV/m at 3 m)</i>	<i>Field Strength (dBμV/m at 3 m)</i>
30 to 88	100	40.0
88 to 216	150	43.5
216 to 960	200	46.0
Above 960	500	54.0

On frequencies below or equal to 1000 MHz, the limits shown are based on measuring equipment employing a CISPR quasi-peak detector function. On frequencies above 1000 MHz, the radiated emission limits are based on the use of measurement instrumentation employing an average detector function. The limit on peak radio frequency emissions is 20 dB above the maximum permitted average emission limit.

11.4 Test Method

With the EUT setup as per section 9 of this report and connected as per Figure i, the emissions from the EUT were measured on a spectrum analyzer / EMI receiver.

Radiated electromagnetic emissions from the EUT are checked first by preview scans. Preview scans for all spectrum and modulation characteristics are checked, using a peak detector and where applicable worst-case determined for function, operation, orientation, etc. for both vertical and horizontal polarisations. Pre-scan plots are shown with a peak detector and 100 kHz RBW.

If the EUT connects to auxiliary equipment and is table or floor standing, the configurations prescribed in ANSI C63.10 are followed. Alternatively, a layout closest to normal use (as declared by the provider) is employed, (see EUT setup photographs for more detail).

Emissions between 30 MHz and 1 GHz are measured using calibrated broadband antennas. Emissions above 1 GHz are characterized using standard gain horn antennas. Pre-amplifiers and filters are used where required. Care is taken to ensure that test receiver resolution bandwidth, video bandwidth and detector type(s) meet the regulatory requirements.

For both horizontal and vertical polarizations, the EUT is then rotated through 360 degrees in azimuth until the highest emission is detected. At the previously determined azimuth the test antenna is raised and lowered from 1 to 4 m in height until a maximum emission level is detected, this maximum value is recorded.

Power values measured on the test receiver / analyzer are converted to field strength, FS, in dB μ V/m at the regulatory distance, using:

$$FS = PR + CL + AF - PA + DC - CF$$

$$\text{Factor} = CL + AF - PA$$

Where,

PR is the power recorded on the receiver / spectrum analyzer in dB μ V;

CL is the cable loss in dB;

AF is the test antenna factor in dB/m;

PA is the pre-amplifier gain in dB (where used);

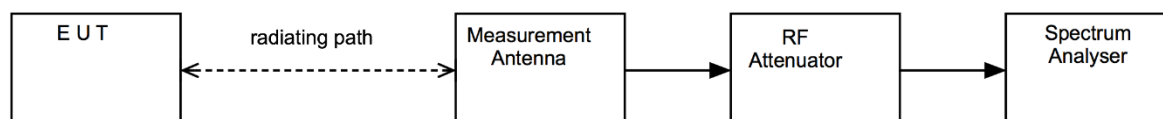
DC is the duty correction factor in dB (where used, e.g. harmonics of pulsed fundamental);

CF is the distance factor in dB (where measurement distance different to limit distance);

This field strength value is then compared with the regulatory limit.

As per ANSI C63.10 clause 5.6.2.2 (b) testing was limited to the mode with the highest output power and the mode with the highest spectral density for each modulation family.

Figure i Test Setup



11.5 Test Equipment

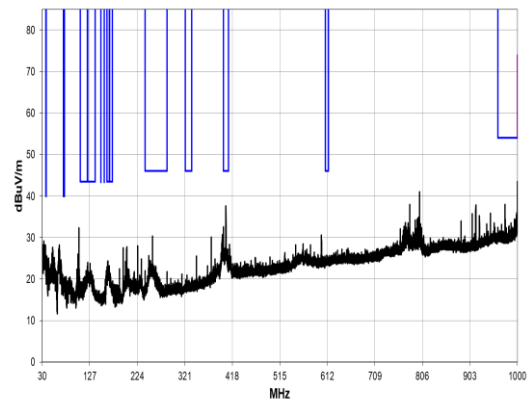
Equipment Type	Manufacturer	Equipment Description	Element No	Due For Calibration
EMI Receiver	R&S	ESR26	U489	2026-11-19
Spectrum Analyser	R&S	FSU50	U544	2026-12-22
Horn Antenna	EMCO	3115	L138	2026-06-11
500 MHz -18 GHz Pre Amp	COM-POWER	PAM-118A	U1016	2026-06-20
Pre-Amp (18 - 40 GHz)	Com-Power	PAM-840A	REF2390	2026-10-27
Bilog	Chase	CBL611/B	U573	2026-11-04
PreAmp	Watkins Johnson	6201-69	U372	2026-03-17
Horn Antenna	A Info Inc	LB-180400-25-C-KF	REF2246	2026-10-08
3.1 GHz High Pass Filter	MiniCircuits	VHF-3100+	U718	2026-02-19
High Pass Filter	Atlantic Microwave	AFH-07000	U558	2026-02-17
Radio Chamber - PP	Rainford EMC	ATS	REF940	2028-01-19
Radiated Test Software	Element	Emissions R5	REF9000	Cal Not Required

11.6 Test Results

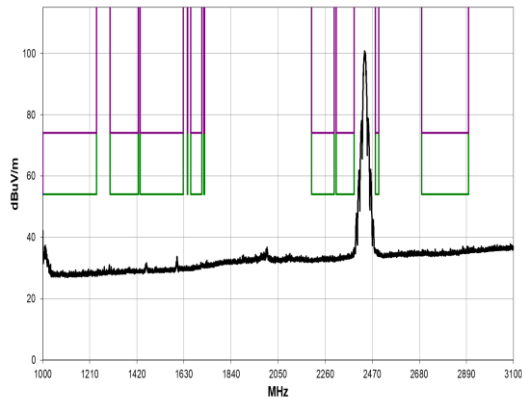
Common Emissions

Freq (MHz)	Amplitude (dBuV)	Factor (dB/m)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)
999.996	38.6	5.2	1.5	2.0	3.0	0.0	Horz	QP	0.0	43.8	54.0	-10.2
404.992	39.8	-4.3	1.0	277.9	3.0	0.0	Horz	QP	0.0	35.5	46.0	-10.5
399.972	36.0	-4.6	1.0	256.9	3.0	0.0	Horz	QP	0.0	31.4	46.0	-14.6
974.804	32.7	5.1	1.5	354.9	3.0	0.0	Horz	QP	0.0	37.8	54.0	-16.2
999.994	31.7	5.2	1.0	293.0	3.0	0.0	Vert	QP	0.0	36.9	54.0	-17.1
255.015	36.8	-8.0	1.0	164.1	3.0	0.0	Horz	QP	0.0	28.8	46.0	-17.2
967.495	28.4	5.3	1.5	147.9	3.0	0.0	Horz	QP	0.0	33.7	54.0	-20.3

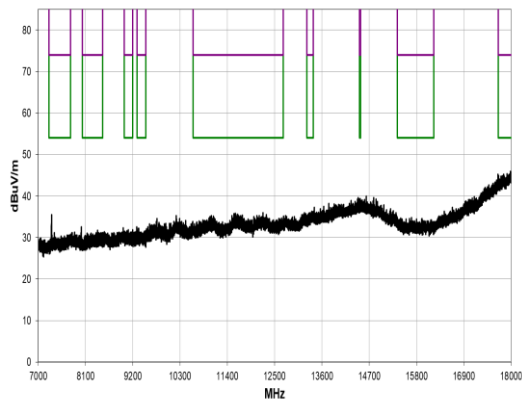
802.11b; Frequency: 2437 MHz; Bandwidth: 20 MHz; Data Rate: 1 Mbps; Power Setting: High



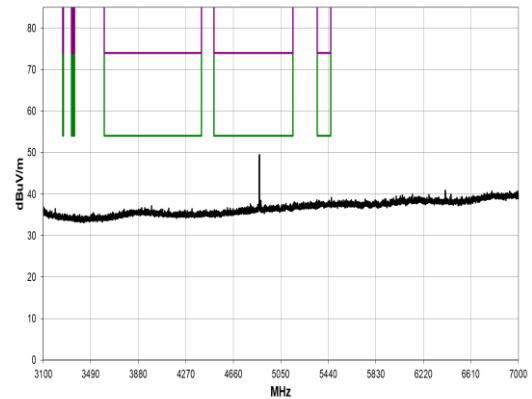
30 MHz to 1 GHz



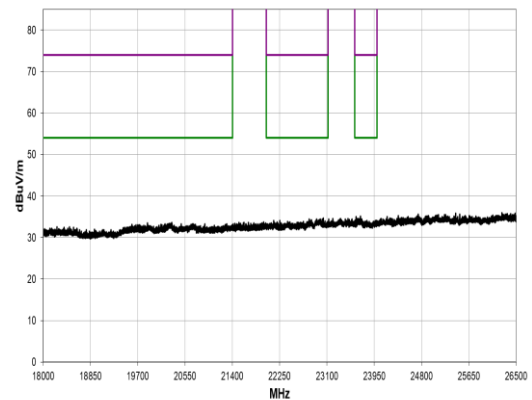
1 GHz to 3.1 GHz



7 GHz to 18 GHz



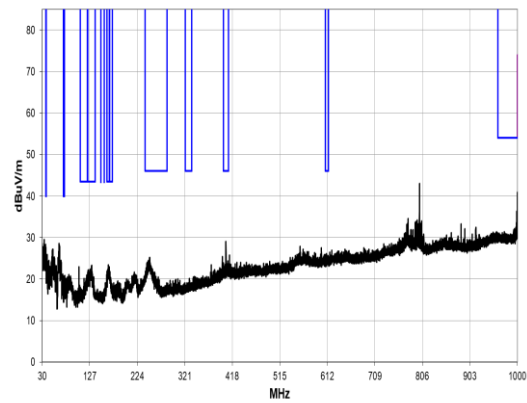
3.1 GHz to 7 GHz



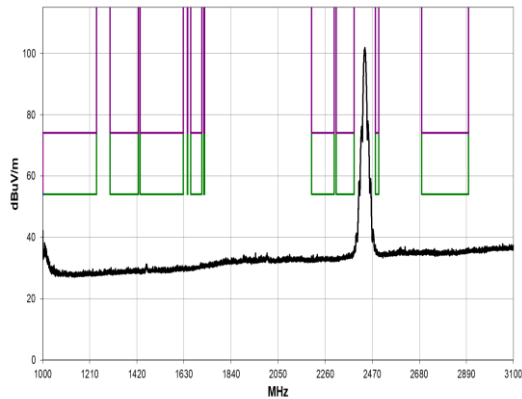
18 GHz to 26.5 GHz

Freq (MHz)	Amplitude (dBuV)	Factor (dB/m)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)
1000.135	52.9	-13.9	1.5	7.0	3.0	0.0	Horz	AV	0.0	39.0	54.0	-15.0
1000.156	50.5	-13.9	1.5	29.9	3.0	0.0	Vert	AV	0.0	36.6	54.0	-17.4
1000.135	67.6	-13.9	1.5	7.0	3.0	0.0	Horz	PK	0.0	53.7	74.0	-20.3
1006.167	62.4	-13.9	1.5	29.9	3.0	0.0	Vert	PK	0.0	48.5	74.0	-25.5
4874.208	50.4	-1.9	1.5	69.0	3.0	0.0	Vert	AV	0.0	48.5	54.0	-5.5
4874.208	47.2	-1.9	1.5	157.0	3.0	0.0	Horz	AV	0.0	45.3	54.0	-8.7
4873.958	55.2	-1.9	1.5	69.0	3.0	0.0	Vert	PK	0.0	53.3	74.0	-20.7
4874.208	53.4	-1.9	1.5	157.0	3.0	0.0	Horz	PK	0.0	51.5	74.0	-22.5
7312.000	45.1	3.2	1.82	59.0	1.0	0.0	Horz	AV	-9.5	38.8	54.0	-15.2
7312.000	45.1	3.2	1.36	67.9	1.0	0.0	Vert	AV	-9.5	38.8	54.0	-15.2
7310.918	53.4	3.2	1.36	67.9	1.0	0.0	Vert	PK	-9.5	47.1	74.0	-26.9
7312.416	53.1	3.2	1.82	59.0	1.0	0.0	Horz	PK	-9.5	46.8	74.0	-27.2

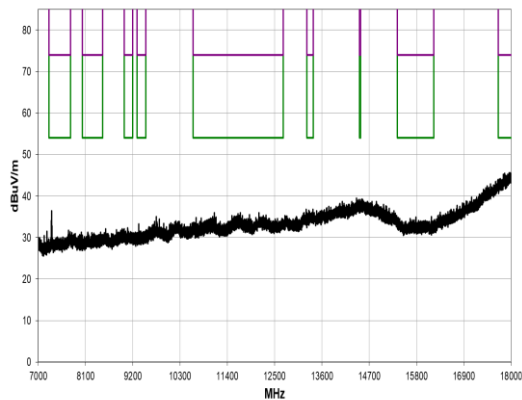
802.11b; Frequency: 2437 MHz; Bandwidth: 20 MHz; Data Rate: 11 Mbps; Power Setting: High



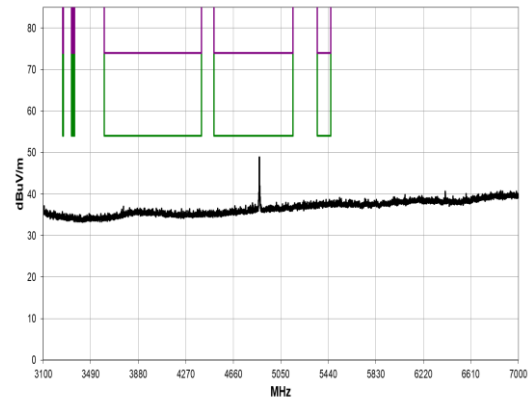
30 MHz to 1 GHz



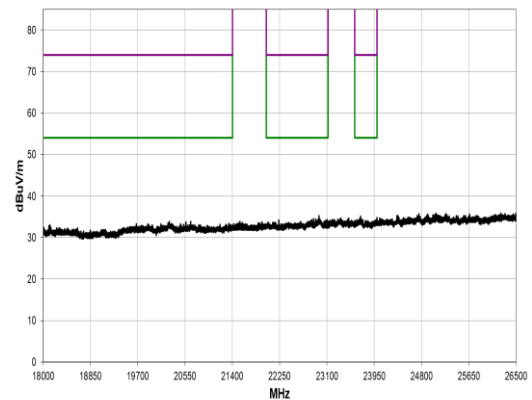
1 GHz to 3.1 GHz



7 GHz to 18 GHz



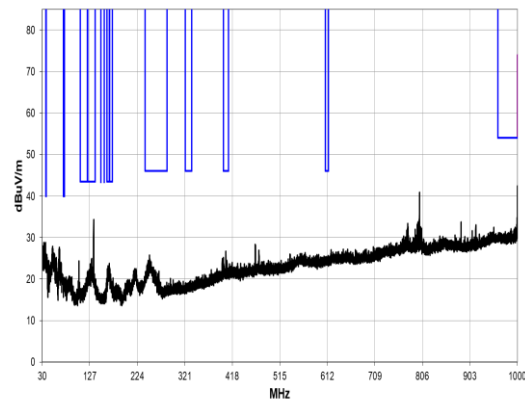
3.1 GHz to 7 GHz



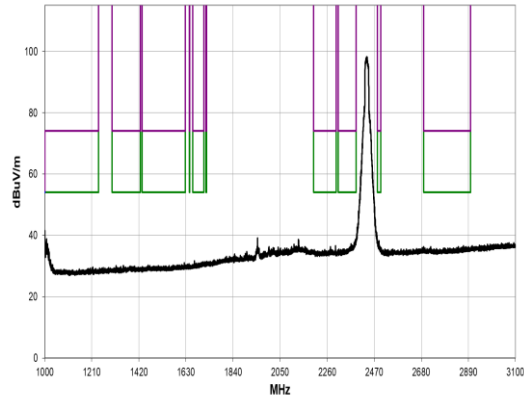
18 GHz to 26.5 GHz

Freq (MHz)	Amplitude (dBuV)	Factor (dB/m)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)
1000.139	50.8	-13.9	2.11	328.0	3.0	0.0	Vert	AV	0.0	36.9	54.0	-17.1
1000.135	49.3	-13.9	1.5	1.0	3.0	0.0	Horz	AV	0.0	35.4	54.0	-18.6
1000.019	64.3	-13.9	1.5	1.0	3.0	0.0	Horz	PK	0.0	50.4	74.0	-23.6
1000.281	63.1	-13.9	2.11	328.0	3.0	0.0	Vert	PK	0.0	49.2	74.0	-24.8
4874.208	39.4	-1.9	1.5	66.9	3.0	0.0	Vert	AV	0.0	37.5	54.0	-16.5
4874.208	37.6	-1.9	1.08	120.0	3.0	0.0	Horz	AV	0.0	35.7	54.0	-18.3
4873.958	52.9	-1.9	1.5	66.9	3.0	0.0	Vert	PK	0.0	51.0	74.0	-23.0
4873.792	51.5	-1.9	1.08	120.0	3.0	0.0	Horz	PK	0.0	49.6	74.0	-24.4
7312.291	42.3	3.2	1.46	73.0	1.0	0.0	Vert	AV	-9.5	36.0	54.0	-18.0
7312.291	38.9	3.2	1.93	134.0	1.0	0.0	Horz	AV	-9.5	32.6	54.0	-21.4
7310.627	55.4	3.2	1.46	73.0	1.0	0.0	Vert	PK	-9.5	49.1	74.0	-24.9
7311.667	52.5	3.2	1.93	134.0	1.0	0.0	Horz	PK	-9.5	46.2	74.0	-27.8

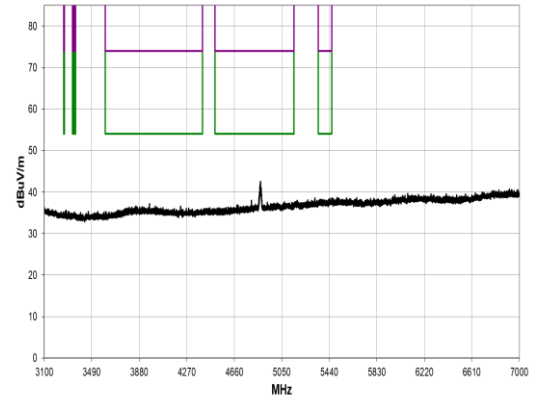
802.11g; Frequency: 2437 MHz; Bandwidth: 20 MHz; Data Rate: 6 Mbps; Power Setting: High



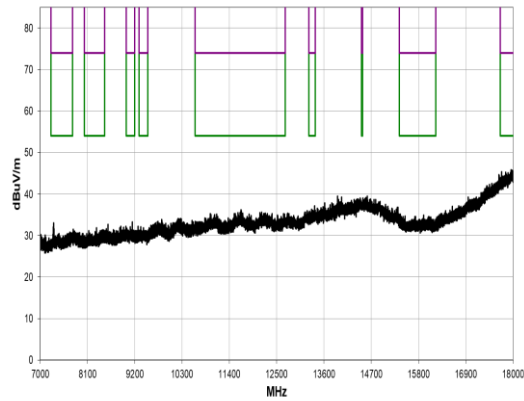
30 MHz to 1 GHz



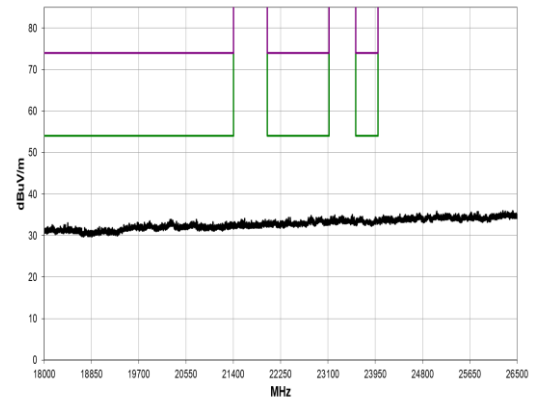
1 GHz to 3.1 GHz



3.1 GHz to 7 GHz



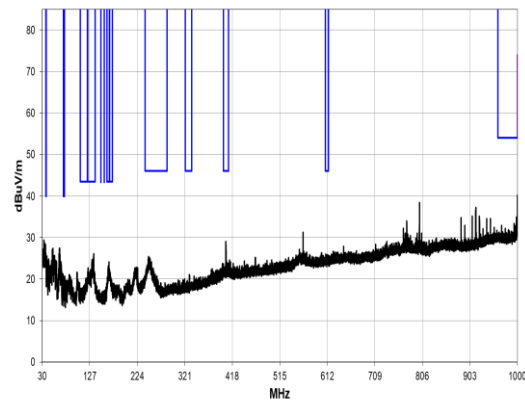
7 GHz to 18 GHz



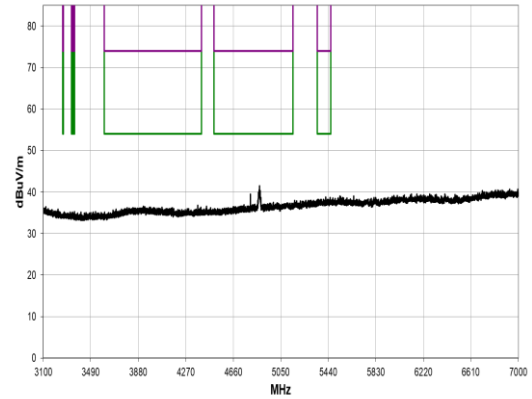
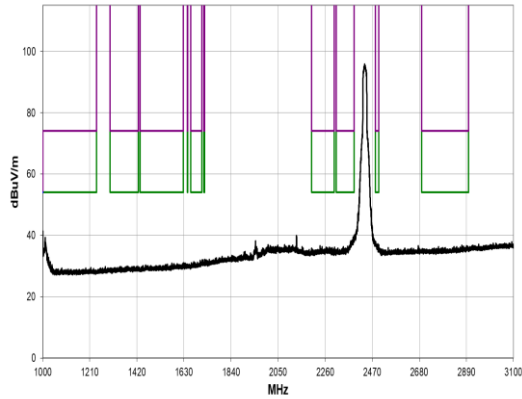
18 GHz to 26.5 GHz

Freq (MHz)	Amplitude (dBuV)	Factor (dB/m)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)
1000.144	52.5	-13.9	1.5	172.1	3.0	0.0	Horz	AV	0.0	38.6	54.0	-15.4
1000.135	46.8	-13.9	1.5	176.0	3.0	0.0	Vert	AV	0.0	32.9	54.0	-21.1
1000.235	66.6	-13.9	1.5	172.1	3.0	0.0	Horz	PK	0.0	52.7	74.0	-21.3
1000.056	61.7	-13.9	1.5	176.0	3.0	0.0	Vert	PK	0.0	47.8	74.0	-26.2
4874.208	39.8	-1.9	1.36	120.9	3.0	0.0	Vert	AV	0.0	37.9	54.0	-16.1
4874.250	36.5	-1.9	1.5	107.0	3.0	0.0	Horz	AV	0.0	34.6	54.0	-19.4
4884.108	54.0	-1.8	1.36	120.9	3.0	0.0	Vert	PK	0.0	52.2	74.0	-21.8
4874.166	50.7	-1.9	1.5	107.0	3.0	0.0	Horz	PK	0.0	48.8	74.0	-25.2

802.11g; Frequency: 2437 MHz; Bandwidth: 20 MHz; Data Rate: 54 Mbps; Power Setting: High

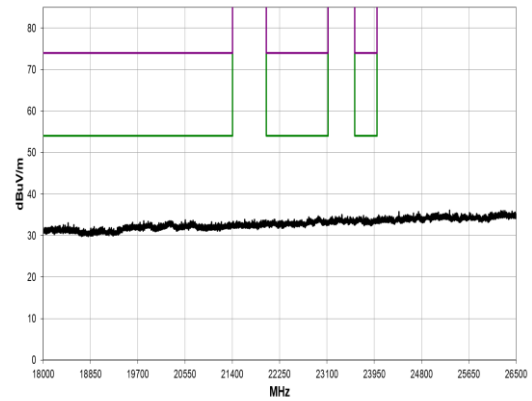
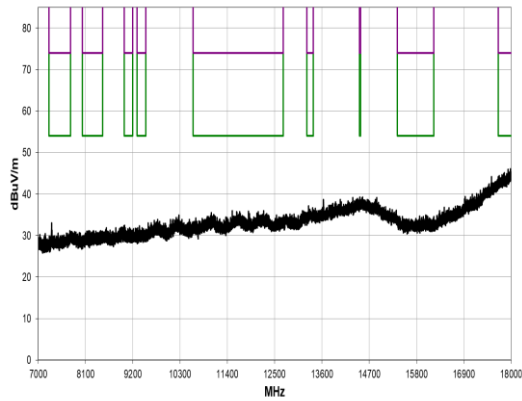


30 MHz to 1 GHz



1 GHz to 3.1 GHz

3.1 GHz to 7 GHz



7 GHz to 18 GHz

18 GHz to 26.5 GHz

Freq (MHz)	Amplitude (dBuV)	Factor (dB/m)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)
1000.135	52.8	-13.9	1.46	360.0	3.0	0.0	Horz	AV	0.0	38.9	54.0	-15.1
1010.472	66.7	-13.8	1.46	360.0	3.0	0.0	Horz	PK	0.0	52.9	74.0	-21.1
1000.156	44.8	-13.9	1.5	263.1	3.0	0.0	Vert	AV	0.0	30.9	54.0	-23.1
1000.031	57.9	-13.9	1.5	263.1	3.0	0.0	Vert	PK	0.0	44.0	74.0	-30.0
4874.208	37.4	-1.9	1.5	68.0	3.0	0.0	Vert	AV	0.0	35.5	54.0	-18.5
4874.250	34.0	-1.9	1.5	254.9	3.0	0.0	Horz	AV	0.0	32.1	54.0	-21.9
4880.240	48.9	-1.9	1.5	254.9	3.0	0.0	Horz	PK	0.0	47.0	74.0	-27.0
4870.464	52.4	-1.9	1.5	68.0	3.0	0.0	Vert	PK	0.0	50.5	74.0	-23.5

12 AC power-line conducted emissions

12.1 Definition

Line-to-ground radio-noise voltage that is conducted from all of the EUT current-carrying power input terminals that are directly (or indirectly via separate transformers or power supplies) connected to a public power network.

12.2 Test Parameters

Test Location:	Element Skelmersdale
Test Chamber:	Transient Laboratory
Test Standard and Clause:	ANSI C63.10-2020, Clause 6.2
EUT Frequency Measured:	2437 MHz
EUT Channel Bandwidths:	20 MHz
EUT Modulation:	DSSS / OFDM
Deviations From Standard:	None
Measurement BW:	9 kHz
Measurement Detectors:	Quasi-Peak and Average, RMS

Environmental Conditions (Normal Environment)

Temperature: 23.6 °C	+15 °C to +35 °C (as declared)
Humidity: 23 % RH	20 % RH to 75 % RH (as declared)
Supply: 110 Vac	as declared

12.3 Test Limit

A radio apparatus that is designed to be connected to the public utility (AC) power line shall ensure that the radio frequency voltage, which is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz, shall not exceed the limits in Table 3.

Table 3 – AC Power Line Conducted Emission Limits

<i>Frequency (MHz)</i>	<i>Conducted limit (dBμV)</i>	
	<i>Quasi-Peak</i>	<i>Average**</i>
0.15 to 0.5	66 to 56*	56 to 46*
0.5 to 5	56	46
5 to 30	60	50

*The level decreases linearly with the logarithm of the frequency.

**A linear average detector is required.

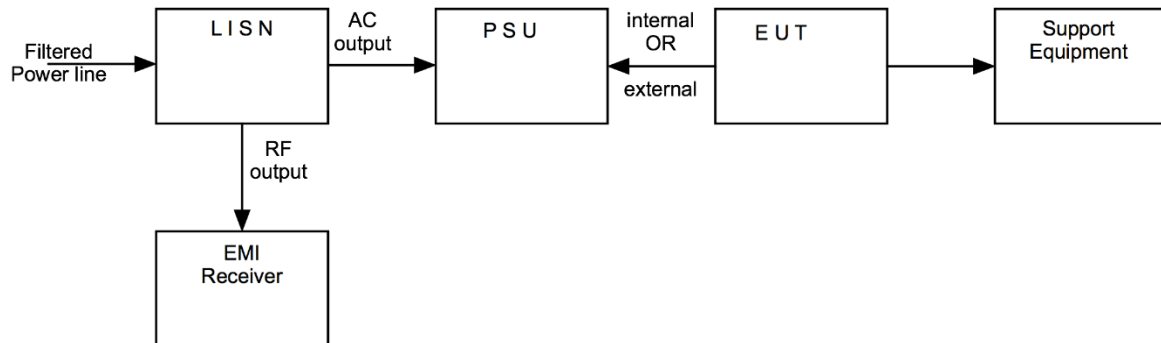
12.4 Test Method

With the EUT setup in a screened room, as per section 9 of this report and connected as per Figure ii, the power line emissions were measured on a spectrum analyzer / EMI receiver.

AC power line conducted emissions from the EUT are checked first by preview scans with peak and average detectors covering both live and neutral lines. A spectrum analyzer is used to determine if any periodic emissions are present.

Formal measurements using the correct detector(s) and bandwidth are made on frequencies identified from the preview scans. Final measurements were performed with EUT set at its maximum duty in transmit and receive modes.

Figure ii Test Setup



12.5 Test Set-up Photograph

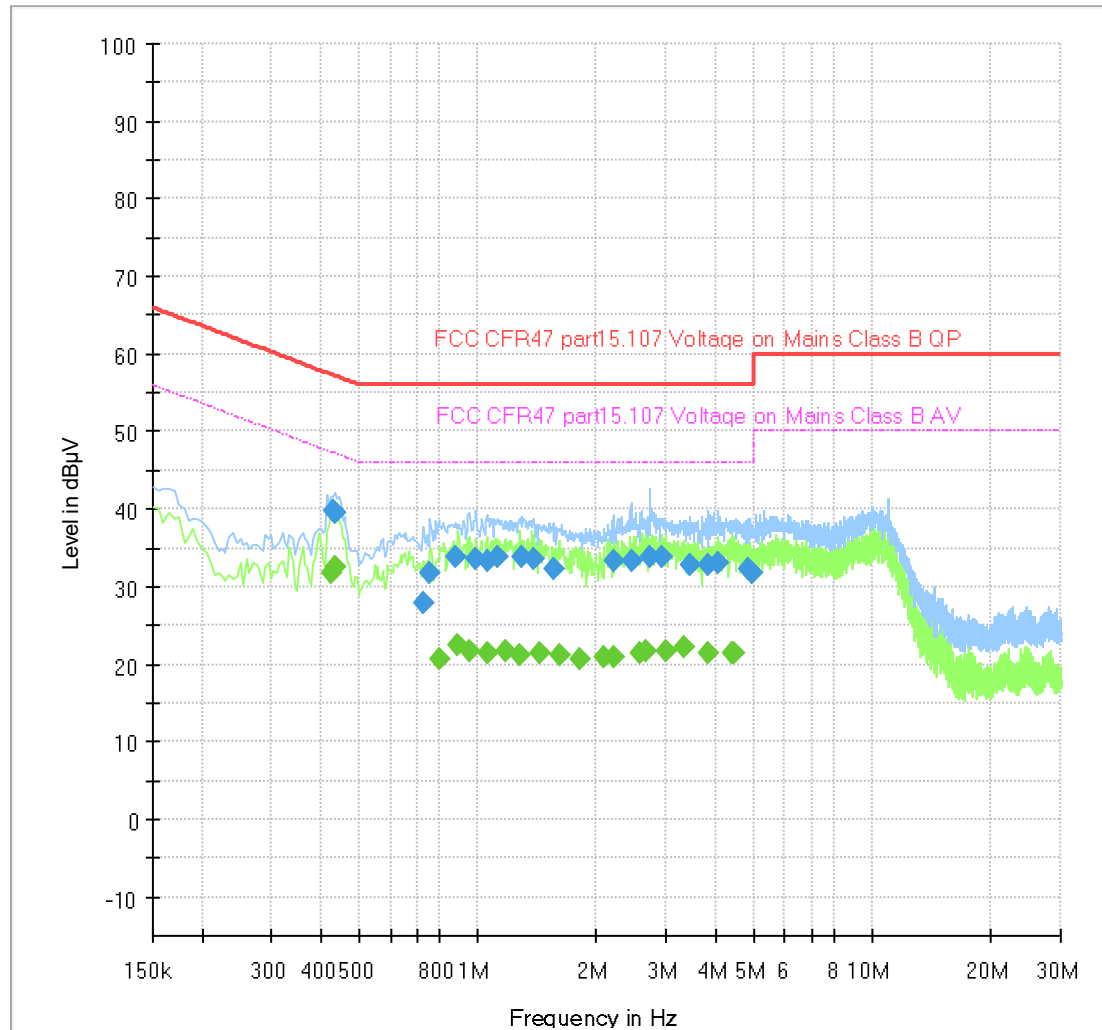


12.6 Test Equipment

Equipment Type	Manufacturer	Equipment Description	Element No	Due For Calibration
Spectrum Analyser	R&S	ESR 7	U727	2026-06-13
Pulse Limiter	R&S	ESH3-Z2	U443	2026-03-19
Lisn	R&S	ENV216	U396	2026-12-09

12.7 Test Results

Full Spectrum



Final Results Quasi-Peak

Frequency (MHz)	QuasiPeak (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.428600	39.80	57.28	17.48	10000.0	9.000	N	OFF	19.6
0.433575	39.60	57.18	17.58	10000.0	9.000	N	OFF	19.6
0.727100	27.95	56.00	28.05	10000.0	9.000	L1	OFF	19.6
0.756950	31.72	56.00	24.28	10000.0	9.000	N	OFF	19.6
0.881325	33.96	56.00	22.04	10000.0	9.000	N	OFF	19.6
0.990775	33.55	56.00	22.45	10000.0	9.000	N	OFF	19.6
1.055450	33.31	56.00	22.69	10000.0	9.000	N	OFF	19.6
1.125100	33.85	56.00	22.15	10000.0	9.000	N	OFF	19.6
1.289275	33.74	56.00	22.26	10000.0	9.000	N	OFF	19.6
1.388775	33.47	56.00	22.53	10000.0	9.000	N	OFF	19.6
1.547975	32.39	56.00	23.61	10000.0	9.000	N	OFF	19.6
2.199700	33.29	56.00	22.71	10000.0	9.000	N	OFF	19.7
2.443475	33.42	56.00	22.58	10000.0	9.000	N	OFF	19.8
2.737000	33.95	56.00	22.05	10000.0	9.000	N	OFF	19.8
2.931025	33.71	56.00	22.29	10000.0	9.000	N	OFF	19.8
3.453400	32.81	56.00	23.19	10000.0	9.000	N	OFF	19.8
3.826525	32.70	56.00	23.30	10000.0	9.000	N	OFF	19.8
4.060350	33.03	56.00	22.97	10000.0	9.000	N	OFF	19.8
4.826500	32.17	56.00	23.83	10000.0	9.000	N	OFF	19.8
4.975750	31.81	56.00	24.19	10000.0	9.000	N	OFF	19.9

Final Results Cispr Average

Frequency (MHz)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.423625	31.73	47.38	15.65	10000.0	9.000	N	OFF	19.6
0.433575	32.61	47.18	14.57	10000.0	9.000	N	OFF	19.6
0.801725	20.78	46.00	25.22	10000.0	9.000	N	OFF	19.6
0.891275	22.49	46.00	23.51	10000.0	9.000	N	OFF	19.6
0.950975	21.82	46.00	24.18	10000.0	9.000	N	OFF	19.6
1.055450	21.49	46.00	24.51	10000.0	9.000	N	OFF	19.6
1.169875	21.64	46.00	24.36	10000.0	9.000	N	OFF	19.6
1.274350	21.08	46.00	24.92	10000.0	9.000	N	OFF	19.6
1.428575	21.50	46.00	24.50	10000.0	9.000	N	OFF	19.6
1.602700	21.29	46.00	24.71	10000.0	9.000	N	OFF	19.6
1.821600	20.69	46.00	25.31	10000.0	9.000	N	OFF	19.6
2.090250	20.87	46.00	25.13	10000.0	9.000	N	OFF	19.6
2.219600	20.87	46.00	25.13	10000.0	9.000	N	OFF	19.7
2.582775	21.33	46.00	24.67	10000.0	9.000	N	OFF	19.8
2.657400	21.65	46.00	24.35	10000.0	9.000	N	OFF	19.8
3.000675	21.68	46.00	24.32	10000.0	9.000	N	OFF	19.8
3.334000	22.16	46.00	23.84	10000.0	9.000	N	OFF	19.8
3.826525	21.54	46.00	24.46	10000.0	9.000	N	OFF	19.8
4.398650	21.35	46.00	24.65	10000.0	9.000	N	OFF	19.8
4.468300	21.33	46.00	24.67	10000.0	9.000	N	OFF	19.8

13 Occupied Bandwidth

13.1 Definition

The emission bandwidth (x dB) is defined as the frequency range between two points, one above and one below the carrier frequency, at which the spectral density of the emission is attenuated x dB below the maximum in-band spectral density of the modulated signal.

The 99% emission bandwidth is defined as the frequency range between two points, one above and the other below the carrier frequency, within which 99% of the total transmitted power of the fundamental transmitted emission is contained.

13.2 Test Parameters

Test Location:	Element Skelmersdale
Test Chamber:	Radio Laboratory
Test Standard and Clause:	6 dB Bandwidth: ANSI C63.10-2020, Clause 11.8
EUT Frequency Measured:	2437 MHz
EUT Channel Bandwidths:	20 MHz, 40 MHz
EUT Test Modulations:	802.11b, 802.11g & 802.11n, 802.11ax
Deviations From Standard:	See section 5.2
Measurement BW: (FCC requirement: 1% to 5% OBW)	200 kHz, 500 kHz
Spectrum Analyzer Video BW: (requirement at least 3x RBW)	1 MHz, 2 MHz
Measurement Span: (requirement 2 to 5 times OBW)	40 MHz, 80 MHz
Measurement Detector:	Peak

Environmental Conditions (Normal Environment)

Temperature: 22 °C	+15 °C to +35 °C (as declared)
Humidity: 49 % RH	20 % RH to 75 % RH (as declared)
Supply: 5 Vdc	As declared)

13.3 Test Limit

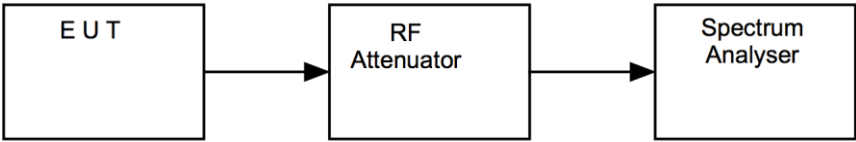
The minimum -6 dB bandwidth shall be at least 500 kHz.

13.4 Test Method

With the EUT setup as per section 9 of this report and connected as per Figure iii, the bandwidth of the EUT was measured on a spectrum analyser.

The measurements were performed with EUT set at its maximum duty. All modulation schemes, data rates and power settings were used to observe the worst-case configuration in each bandwidth.

Figure iii Test Setup

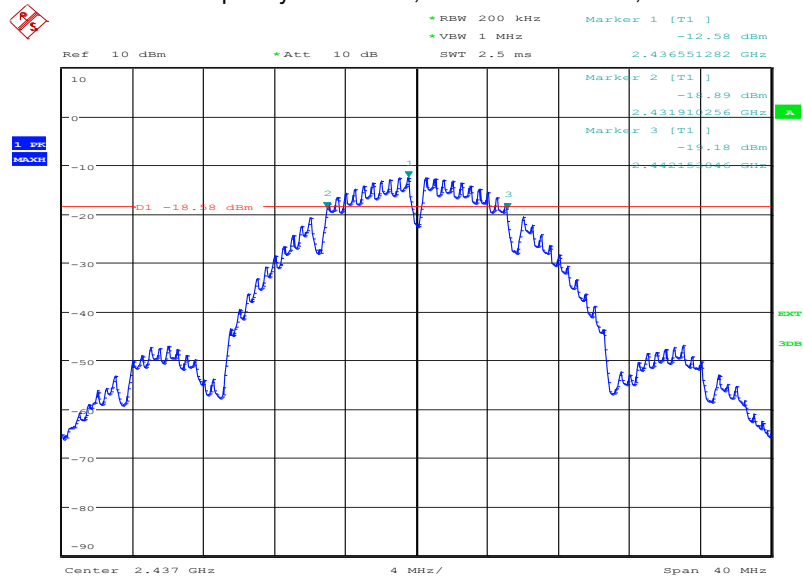


13.5 Test Equipment

Equipment Type	Manufacturer	Equipment Description	Element No	Due For Calibration
Spectrum Analyser	R&S	FSU46	REF910	2026-02-27
20dB Attenuator	Mini Circuits	40 GHz BW-K20 2W44	U790	2026-07-23

13.6 Test Results

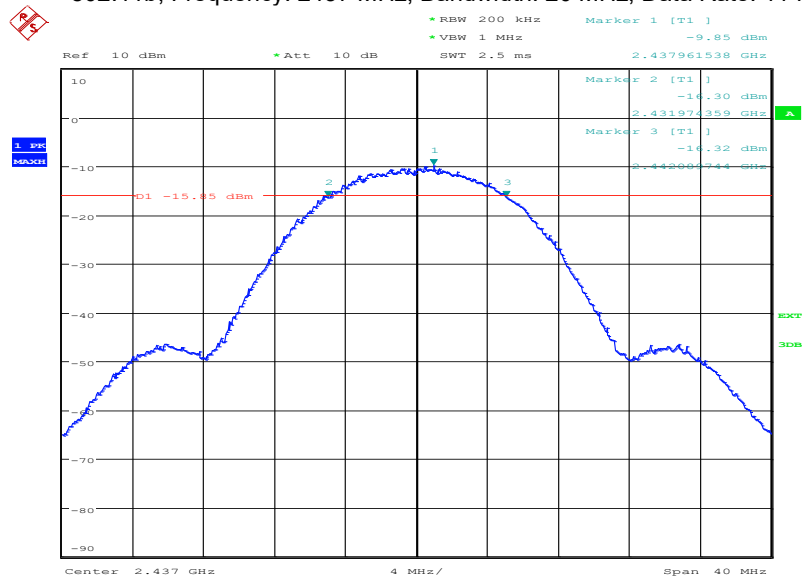
802.11b; Frequency: 2437 MHz; Bandwidth: 20 MHz; Data Rate: 1 Mbps



Date: 14.MAY.2026 09:51:10

802.11b; Bandwidth: 20 MHz; Data Rate: 1 Mbps				
Frequency (MHz)	F_L (MHz)	F_H (MHz)	6 dB Bandwidth (MHz)	Result
2437	2431.910256	2442.153846	10.243590	Pass

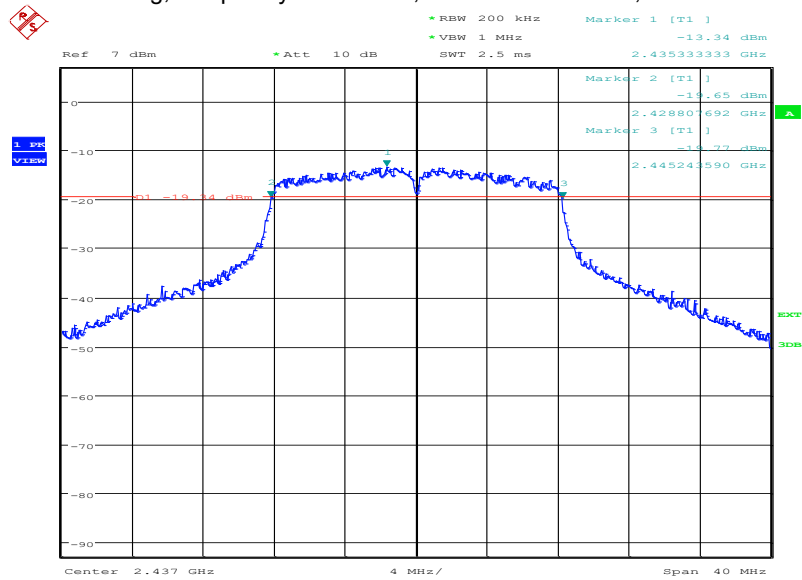
802.11b; Frequency: 2437 MHz; Bandwidth: 20 MHz; Data Rate: 11 Mbps



Date: 14.MAY.2026 09:54:36

802.11b; Bandwidth: 20 MHz; Data Rate: 11 Mbps				
Frequency (MHz)	F_L (MHz)	F_H (MHz)	6 dB Bandwidth (MHz)	Result
2437	2431.974359	2442.089744	10.115385	Pass

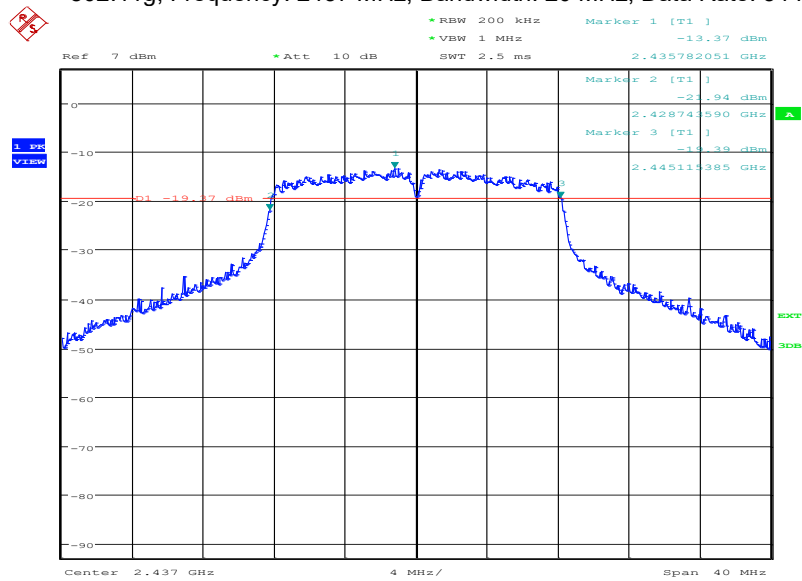
802.11g; Frequency: 2437 MHz; Bandwidth: 20 MHz; Data Rate: 6 Mbps



Date: 4.NOV.2025 08:36:27

802.11g; Bandwidth: 20 MHz; Data Rate: 6 Mbps				
Frequency (MHz)	F_L (MHz)	F_H (MHz)	6 dB Bandwidth (MHz)	Result
2437	2428.807692	2445.243590	16.43590	Pass

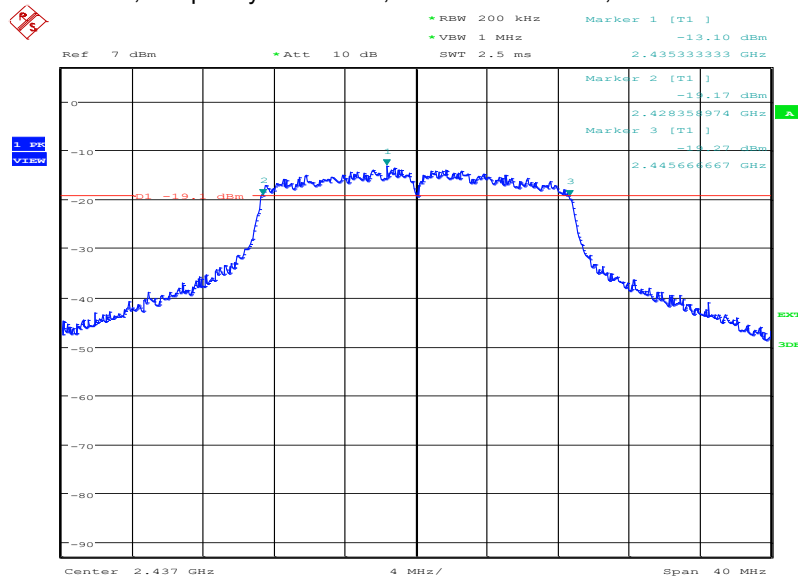
802.11g; Frequency: 2437 MHz; Bandwidth: 20 MHz; Data Rate: 54 Mbps



Date: 4.NOV.2025 08:43:05

802.11g; Bandwidth: 20 MHz; Data Rate: 54 Mbps				
Frequency (MHz)	F_L (MHz)	F_H (MHz)	6 dB Bandwidth (MHz)	Result
2437	2428.743590	2445.115385	16.371795	Pass

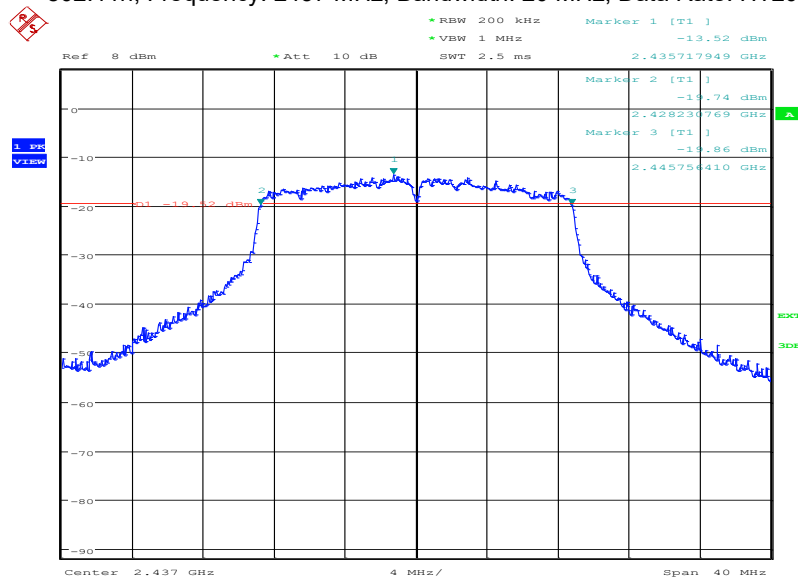
802.11n; Frequency: 2437 MHz; Bandwidth: 20 MHz; Data Rate: HT20, MCS0



Date: 4.NOV.2025 08:57:10

802.11n; Bandwidth: 20 MHz; Data Rate: HT20, MCS0				
Frequency (MHz)	F_L (MHz)	F_H (MHz)	6 dB Bandwidth (MHz)	Result
2437	2428.358974	2445.666667	17.307693	Pass

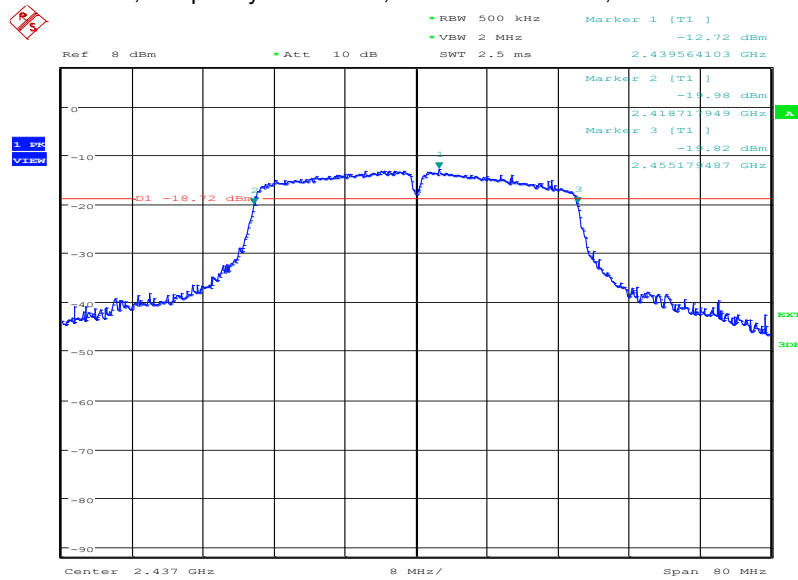
802.11n; Frequency: 2437 MHz; Bandwidth: 20 MHz; Data Rate: HT20, MCS7



Date: 4.NOV.2025 09:09:06

802.11n; Bandwidth: 20 MHz; Data Rate: HT20, MCS7				
Frequency (MHz)	F_L (MHz)	F_H (MHz)	6 dB Bandwidth (MHz)	Result
2437	2428.230769	2445.75641	17.525641	Pass

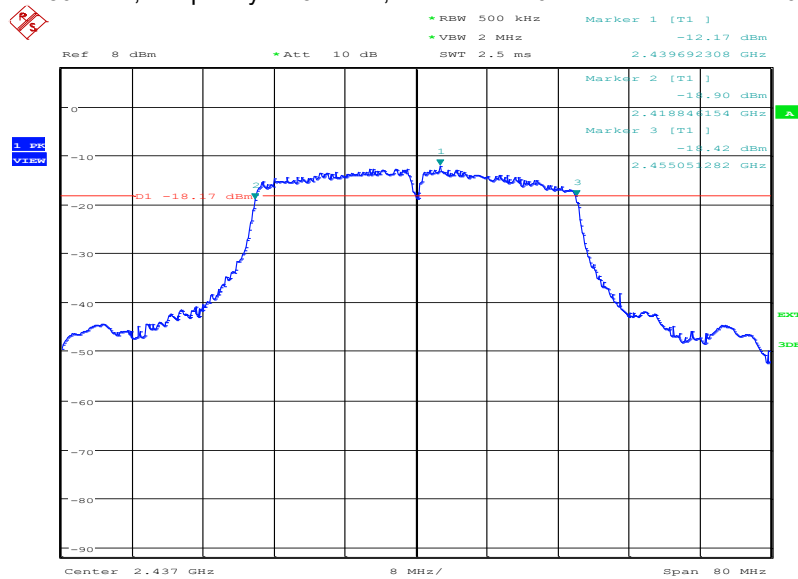
802.11n; Frequency: 2437 MHz; Bandwidth: 40 MHz; Data Rate: HT40, MCS0



Date: 4.NOV.2025 14:30:39

802.11n; Bandwidth: 40 MHz; Data Rate: HT40, MCS0				
Frequency (MHz)	F_L (MHz)	F_H (MHz)	6 dB Bandwidth (MHz)	Result
2437	2418.717949	2455.179487	36.461538	Pass

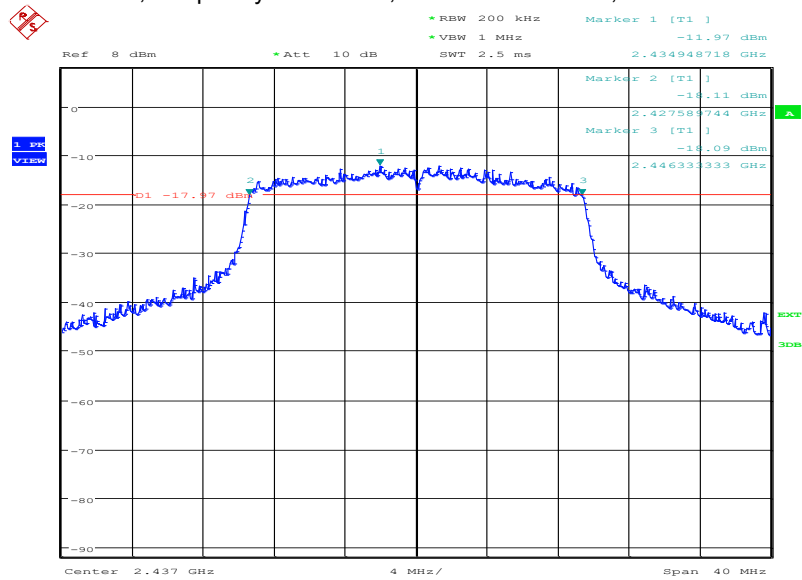
802.11n; Frequency: 2437 MHz; Bandwidth: 40 MHz; Data Rate: HT40, MCS7



Date: 4.NOV.2025 14:40:24

802.11n; Bandwidth: 40 MHz; Data Rate: HT40, MCS7				
Frequency (MHz)	F_L (MHz)	F_H (MHz)	6 dB Bandwidth (MHz)	Result
2437	2418.846154	2455.051282	36.205128	Pass

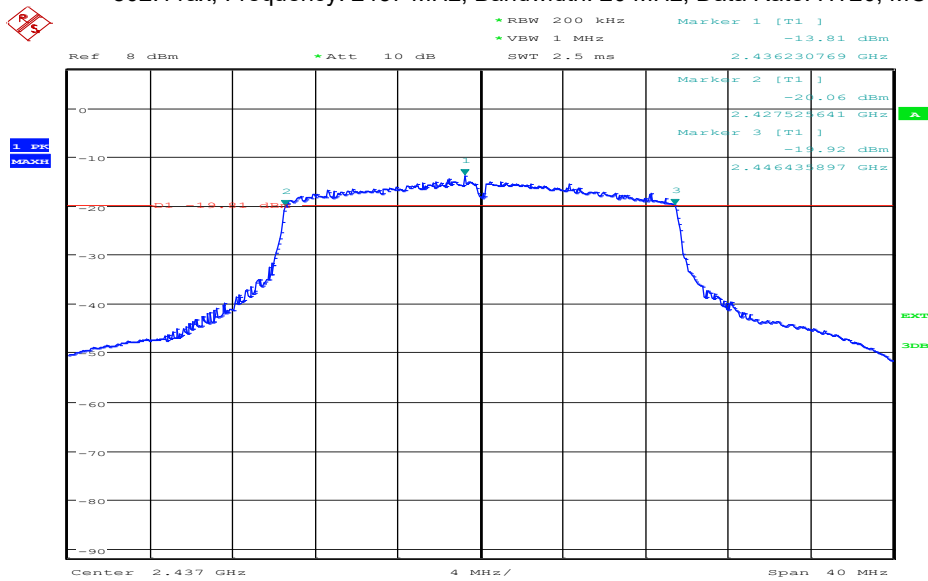
802.11ax; Frequency: 2437 MHz; Bandwidth: 20 MHz; Data Rate: HT20, MCS0



Date: 4.NOV.2025 09:33:05

802.11ax; Bandwidth: 20 MHz; Data Rate: HT20, MCS0				
Frequency (MHz)	F_L (MHz)	F_H (MHz)	6 dB Bandwidth (MHz)	Result
2437	2427.589744	2446.333333	18.743589	Pass

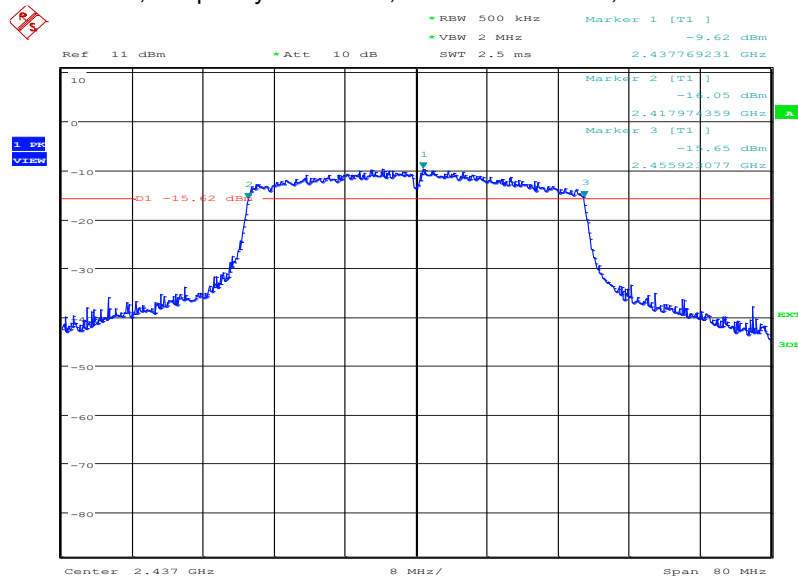
802.11ax; Frequency: 2437 MHz; Bandwidth: 20 MHz; Data Rate: HT20, MCS9



Date: 4.NOV.2025 12:03:13

802.11ax; Bandwidth: 20 MHz; Data Rate: HT20, MCS9				
Frequency (MHz)	F_L (MHz)	F_H (MHz)	6 dB Bandwidth (MHz)	Result
2437	2427.525641	2446.435897	18.910256	Pass

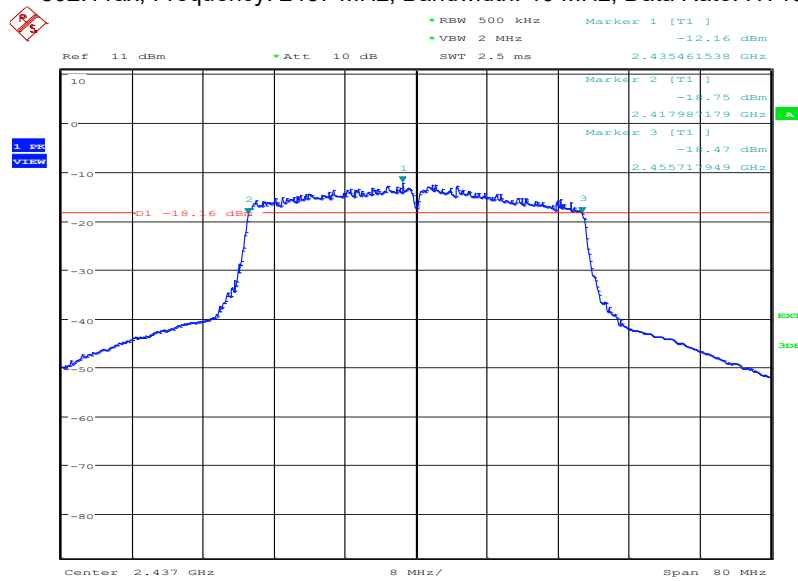
802.11ax; Frequency: 2437 MHz; Bandwidth: 40 MHz; Data Rate: HT40, MCS0



Date: 4.NOV.2025 11:15:40

802.11ax; Bandwidth: 40 MHz; Data Rate: HT40, MCS0				
Frequency (MHz)	F_L (MHz)	F_H (MHz)	6 dB Bandwidth (MHz)	Result
2437	2417.974359	2455.923077	37.948718	Pass

802.11ax; Frequency: 2437 MHz; Bandwidth: 40 MHz; Data Rate: HT40, MCS9



Date: 4.NOV.2025 13:25:23

802.11ax; Bandwidth: 40 MHz; Data Rate: HT40, MCS9				
Frequency (MHz)	F_L (MHz)	F_H (MHz)	6 dB Bandwidth (MHz)	Result
2437	2417.987179	2455.717949	37.730770	Pass

14 Maximum peak conducted output power

14.1 Definition

The maximum peak conducted output power is defined as the maximum power level measured with a peak detector using a filter with width and shape of which is sufficient to accept the signal bandwidth.

14.2 Test Parameters

Test Location:	Element Skelmersdale
Test Chamber:	Radio Laboratory
Test Standard and Clause:	ANSI C63.10-2020, Clause 11.9.1
EUT Frequency Measured:	2437 MHz
EUT Channel Bandwidths:	20 MHz, 40 MHz
Deviations From Standard:	See section 5.2
Measurement BW:	N/A Power Meter
Spectrum Analyzer Video BW: (requirement at least 3x RBW)	N/A Power Meter
Measurement Detector:	Peak

Environmental Conditions (Normal Environment)

Temperature: 22 °C	+15 °C to +35 °C (as declared)
Humidity: 49 % RH	20 % RH to 75 % RH (as declared)

14.3 Test Limit

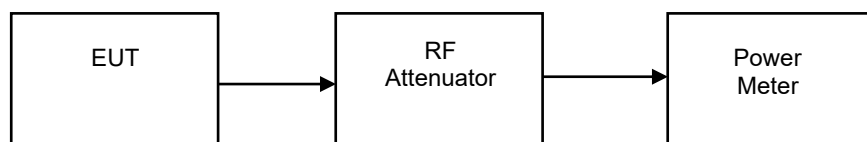
For systems employing digital modulation techniques operating in the bands 902 to 928 MHz, 2400 to 2483.5 MHz and 5725 to 5850 MHz, the maximum peak conducted output power shall not exceed 1 W.

14.4 Test Method

With the EUT setup as per section 9 of this report and connected as per Figure iv, the resolution bandwidth of the spectrum analyser was increased above the EUT occupied bandwidth and the peak emission data noted.

The measurements were performed with EUT set at its maximum duty. All modulation schemes, data rates and power settings were used to observe the worst-case configuration in each bandwidth.

Figure iv Test Setup



14.5 Test Equipment

<i>Equipment Type</i>	<i>Manufacturer</i>	<i>Equipment Description</i>	<i>Element No</i>	<i>Due For Calibration</i>
Power Meter	Agilent	N1911A	REF836	2026-09-04
Power Sensor	Agilent	N1922A	REF835	2026-09-05
20dB Attenuator	Mini Circuits	40 GHz BW-K20 2W44	U790	2026-07-23

14.6 Test Results

<i>802.11b; Data Rate: 1 Mbps; Power Setting: Default</i>			
<i>Frequency (MHz)</i>	<i>Maximum peak conducted output power</i>		<i>Result</i>
	<i>(dBm)</i>	<i>(W)</i>	
2437	17.90	0.06166	Pass

<i>802.11b; Data Rate: 11 Mbps; Power Setting: Default</i>			
<i>Frequency (MHz)</i>	<i>Maximum peak conducted output power</i>		<i>Result</i>
	<i>(dBm)</i>	<i>(W)</i>	
2437	17.94	0.06223	Pass

<i>802.11g; Data Rate: 6 Mbps; Power Setting: Default</i>			
<i>Frequency (MHz)</i>	<i>Maximum peak conducted output power</i>		<i>Result</i>
	<i>(dBm)</i>	<i>(W)</i>	
2437	23.54	0.22594	Pass

<i>802.11g; Data Rate: 54 Mbps; Power Setting: Default</i>			
<i>Frequency (MHz)</i>	<i>Maximum peak conducted output power</i>		<i>Result</i>
	<i>(dBm)</i>	<i>(W)</i>	
2437	23.46	0.22182	Pass

802.11n; Data Rate: HT20, MCS0; Power Setting: Default			
Frequency (MHz)	Maximum peak conducted output power		Result
	(dBm)	(W)	
2437	23.37	0.21727	Pass

802.11n; Data Rate: HT20, MCS7; Power Setting: Default			
Frequency (MHz)	Maximum peak conducted output power		Result
	(dBm)	(W)	
2437	23.49	0.22336	Pass

802.11n; Data Rate: HT40, MCS0; Power Setting: Default			
Frequency (MHz)	Maximum peak conducted output power		Result
	(dBm)	(W)	
2437	23.10	0.20417	Pass

802.11n; Data Rate: HT40, MCS7; Power Setting: Default			
Frequency (MHz)	Maximum peak conducted output power		Result
	(dBm)	(W)	
2437	23.47	0.22233	Pass

802.11ax; Data Rate: HT20, MCS0; Power Setting: Default			
Frequency (MHz)	Maximum peak conducted output power		Result
	(dBm)	(W)	
2437	23.18	0.20797	Pass

802.11ax; Data Rate: HT20, MCS9; Power Setting: Default			
Frequency (MHz)	Maximum peak conducted output power		Result
	(dBm)	(W)	
2437	23.43	0.22029	Pass

802.11ax; Data Rate: HT40, MCS0; Power Setting: Default			
Frequency (MHz)	Maximum peak conducted output power		Result
	(dBm)	(W)	
2437	23.34	0.21577	Pass

802.11ax; Data Rate: HT40, MCS9; Power Setting: Default			
Frequency (MHz)	Maximum peak conducted output power		Result
	(dBm)	(W)	
2437	23.49	0.22336	Pass

15 Out-of-band and conducted spurious emissions

15.1 Definition

Out-of-band emission.

Emission on a frequency or frequencies immediately outside the necessary bandwidth that results from the modulation process but excluding spurious emissions.

Spurious emission.

Emission on a frequency or frequencies that are outside the necessary bandwidth and the level of which may be reduced without affecting the corresponding transmission of information. Spurious emissions include harmonic emissions, parasitic emissions, intermodulation products, and frequency conversion products, but exclude out-of-band emissions.

15.2 Test Parameters

Test Location:	Element Skelmersdale
Test Chamber:	Radio Laboratory
Test Standard and Clause:	ANSI C63.10-2020, Clause 11.11
EUT Frequency Measured:	2437 MHz
EUT Channel Bandwidth:	20 MHz
Deviations From Standard:	See section 5.2
Measurement BW:	100 kHz
Spectrum Analyzer Video BW: (requirement at least 3x RBW)	300 kHz
Measurement Detector:	Peak
Measurement Range:	9 kHz to 25 GHz

Environmental Conditions (Normal Environment)

Temperature: 22 °C	+15 °C to +35 °C (as declared)
Humidity: 49 % RH	20 % RH to 75 % RH (as declared)
Supply: 5 Vdc	As declared

15.3 Test Limit

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, the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in FCC 47CFR15.209(a) / RSS-Gen is not required.

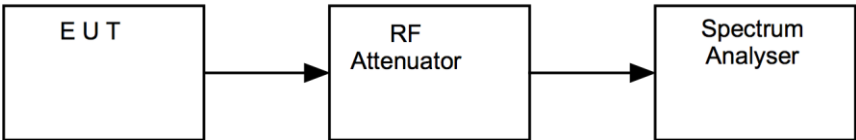
15.4 Test Method

With the EUT setup as per section 9 of this report and connected as per Figure v, the emissions from the EUT were measured on a spectrum analyser.

The measurements were performed with EUT set at its maximum duty. All modulation schemes, data rates and power settings were used to observe the worst case configuration in each bandwidth.

As per ANSI C63.10 clause 5.6.2.2 (b) testing was limited to the mode with the highest output power and the mode with the highest spectral density for each modulation family.

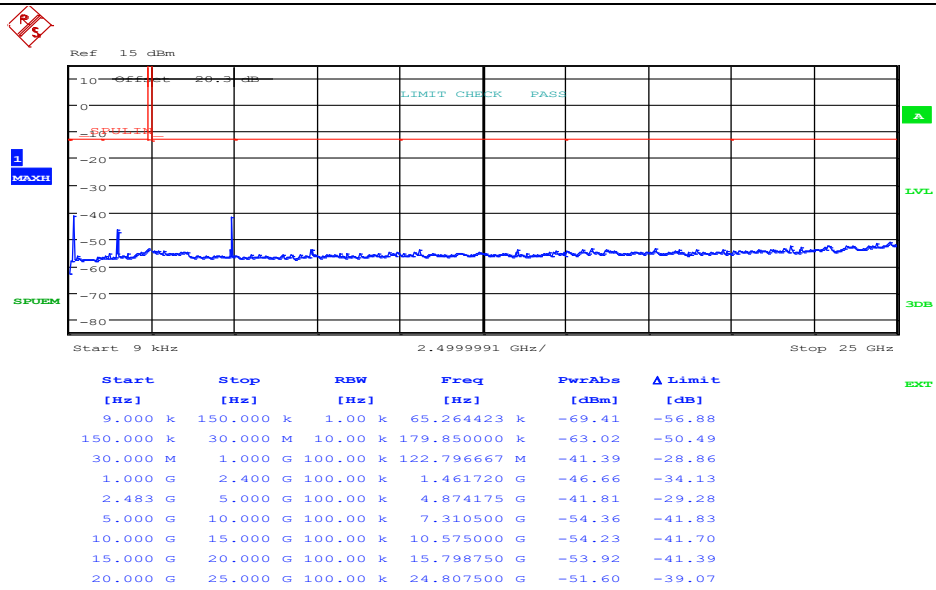
Figure v Test Setup



15.5 Test Equipment

Equipment Type	Manufacturer	Equipment Description	Element No	Due For Calibration
Spectrum Analyser	R&S	FSU46	REF910	2026-02-27
20dB Attenuator	Mini Circuits	40 GHz BW-K20 2W44	U790	2026-07-23

15.6 Test Results



Date: 16.DEC.2003 23:34:47

802.11b; Frequency: 2437 MHz; Bandwidth: 20 MHz; Data Rate: 1 Mbps

EXT

802.11b; Frequency: 2437 MHz; Bandwidth: 20 MHz; Data Rate: 11 Mbps



802.11g; Frequency: 2437 MHz; Bandwidth: 20 MHz; Data Rate: 6 Mbps



RF915 14

16 Power spectral density

16.1 Definition

The power per unit bandwidth.

16.2 Test Parameters

Test Location:	Element Skelmersdale
Test Chamber:	Radio Laboratory
Test Standard and Clause:	ANSI C63.10-2020, Clause 11.10
EUT Frequency Measured:	2437 MHz
EUT Channel Bandwidths:	20 MHz, 40 MHz
Deviations From Standard:	See section 5.2
Measurement BW:	10 kHz
Spectrum Analyzer Video BW: (requirement at least 3x RBW)	30 kHz
Measurement Span: (requirement 1.5 times Channel BW)	1.5 Times Channel BW
Measurement Detector:	Peak

Environmental Conditions (Normal Environment)

Temperature: 22 °C	+15 °C to +35 °C (as declared)
Humidity: 49 % RH	20 % RH to 75 % RH (as declared)
Supply: 5 Vdc	As declared

16.3 Test Limit

For equipment operating in the bands 902 - 928 MHz and 2400 - 2483.5 MHz the transmitter power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

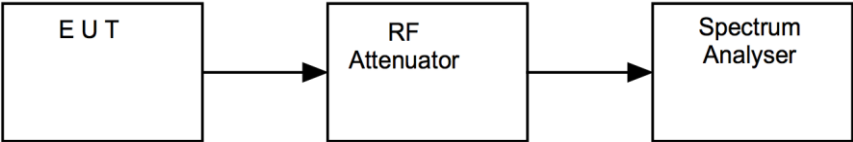
For equipment operating in the band 5725 - 5850 MHz the output power spectral density shall not exceed 30 dBm in any 500 kHz band

16.4 Test Method

With the EUT setup as per section 9 of this report and connected as per the test set-up diagram below, the peak emission of the EUT was measured on a spectrum analyser, with path losses taken into account.

The measurements were performed with EUT set at its maximum duty. All modulation schemes, data rates and power settings were used to observe the worst case configuration in each bandwidth.

Test Set-up Diagram

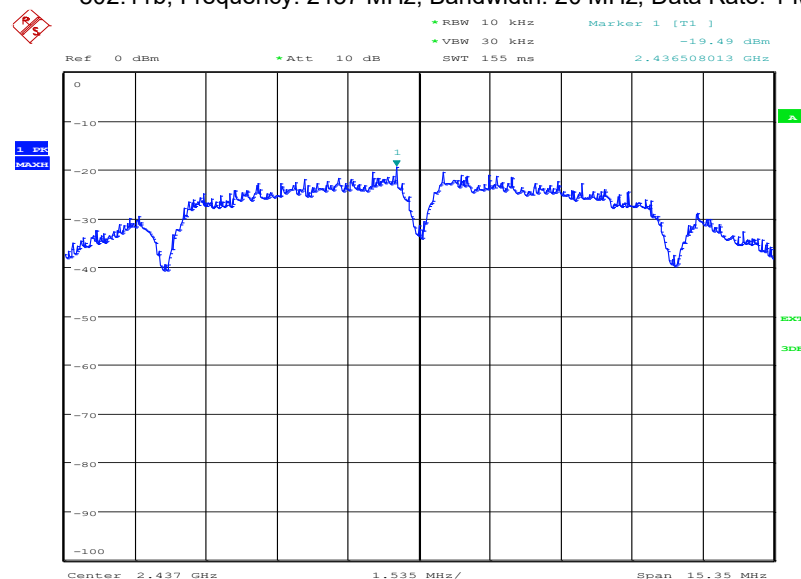


16.5 Test Equipment

Equipment Type	Manufacturer	Equipment Description	Element No	Due For Calibration
Spectrum Analyser	R&S	FSU46	REF910	2026-02-27
20dB Attenuator	Mini Circuits	40 GHz BW-K20 2W44	U790	2026-07-23

16.6 Test Results

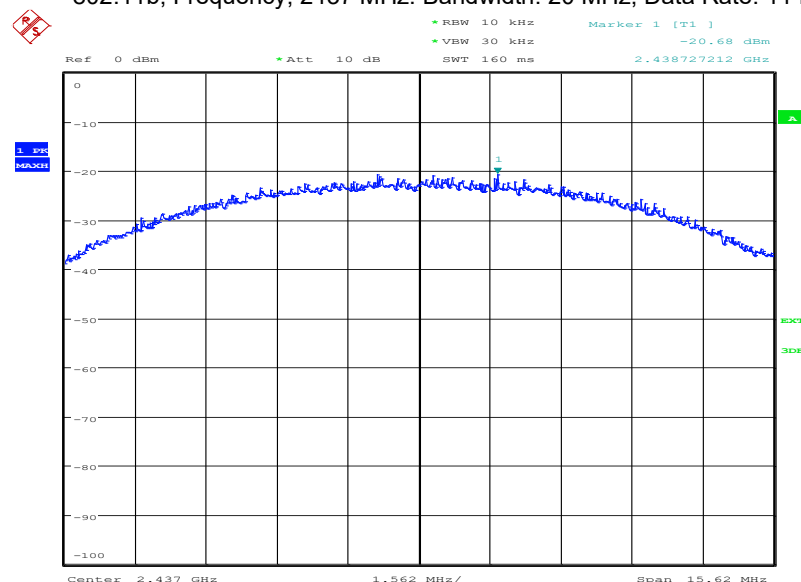
802.11b; Frequency: 2437 MHz; Bandwidth: 20 MHz; Data Rate: 1 Mbps



Date: 4.NOV.2025 15:13:52

802.11b; Bandwidth: 20 MHz; Data Rate: 1 Mbps					
Channel Frequency (MHz)	Analyser Level (dBm)	Cable loss (dB)	Power Spectral Density (dBm/10kHz)	Limit (dBm/3kHz)	Result
2437	-19.49	20.26	0.77	8.00	Pass

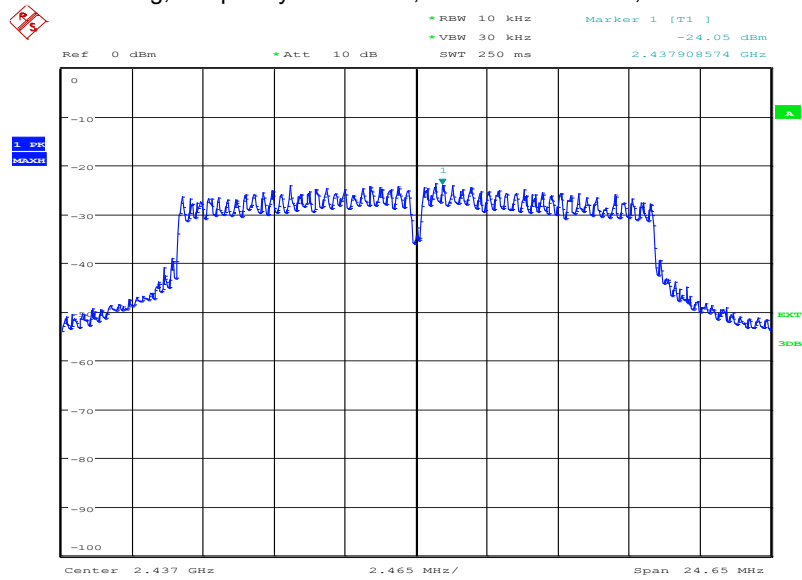
802.11b; Frequency: 2437 MHz; Bandwidth: 20 MHz; Data Rate: 11 Mbps



Date: 4.NOV.2025 15:20:26

802.11b; Bandwidth: 20 MHz; Data Rate: 11 Mbps					
Channel Frequency (MHz)	Analyser Level (dBm)	Cable loss (dB)	Power Spectral Density (dBm/10kHz)	Limit (dBm/3kHz)	Result
2437	-20.68	20.26	-0.42	8.00	Pass

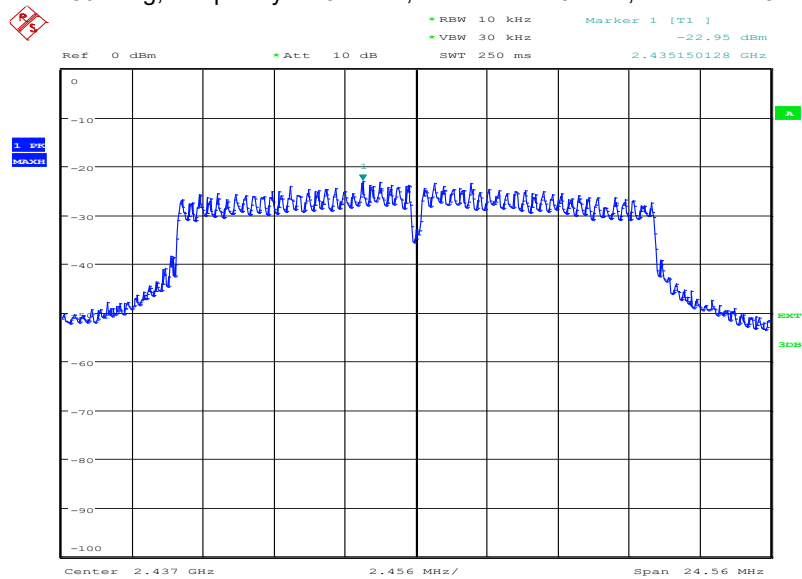
802.11g; Frequency: 2437 MHz; Bandwidth: 20 MHz; Data Rate: 6 Mbps



Date: 4.NOV.2025 15:25:38

802.11g; Bandwidth: 20 MHz; Data Rate: 6 Mbps					
Channel Frequency (MHz)	Analyser Level (dBm)	Cable loss (dB)	Power Spectral Density (dBm/10kHz)	Limit (dBm/3kHz)	Result
2437	-24.05	20.26	-3.79	8.00	Pass

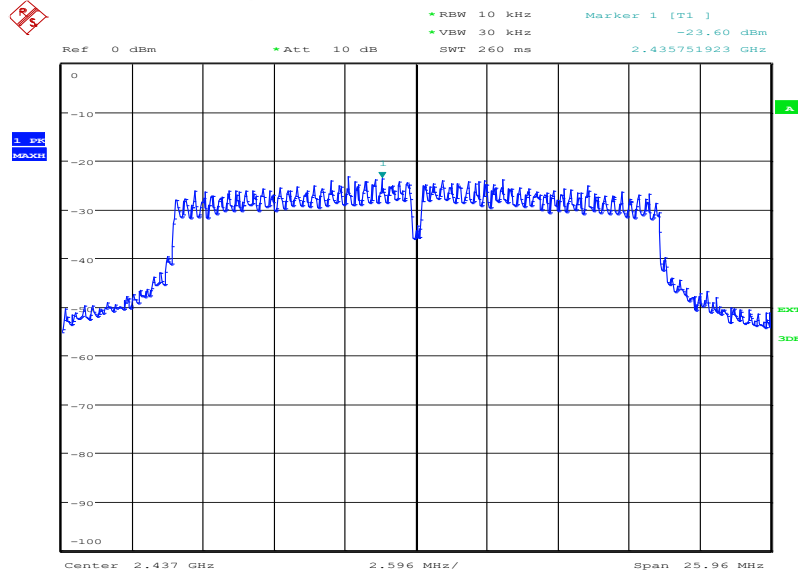
802.11g; Frequency: 2437 MHz; Bandwidth: 20 MHz; Data Rate: 54 Mbps



Date: 4.NOV.2025 15:32:18

802.11g; Bandwidth: 20 MHz; Data Rate: 54 Mbps					
Channel Frequency (MHz)	Analyser Level (dBm)	Cable loss (dB)	Power Spectral Density (dBm/10kHz)	Limit (dBm/3kHz)	Result
2437	-22.95	20.26	-2.69	8.00	Pass

802.11n; Frequency: 2437 MHz; Bandwidth: 20 MHz; Data Rate: HT20, MCS0

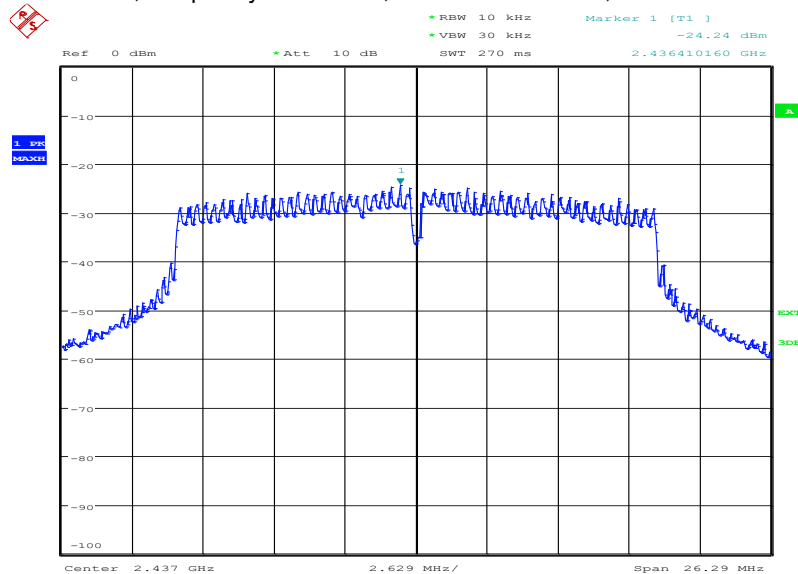


Date: 4.NOV.2025 15:38:03

802.11n; Bandwidth: 20 MHz; Data Rate: HT20, MCS0

Channel Frequency (MHz)	Analyser Level (dBm)	Cable loss (dB)	Power Spectral Density (dBm/10kHz)	Limit (dBm/3kHz)	Result
2437	-23.60	20.26	-3.34	8.00	Pass

802.11n; Frequency: 2437 MHz; Bandwidth: 20 MHz; Data Rate: HT20, MCS7

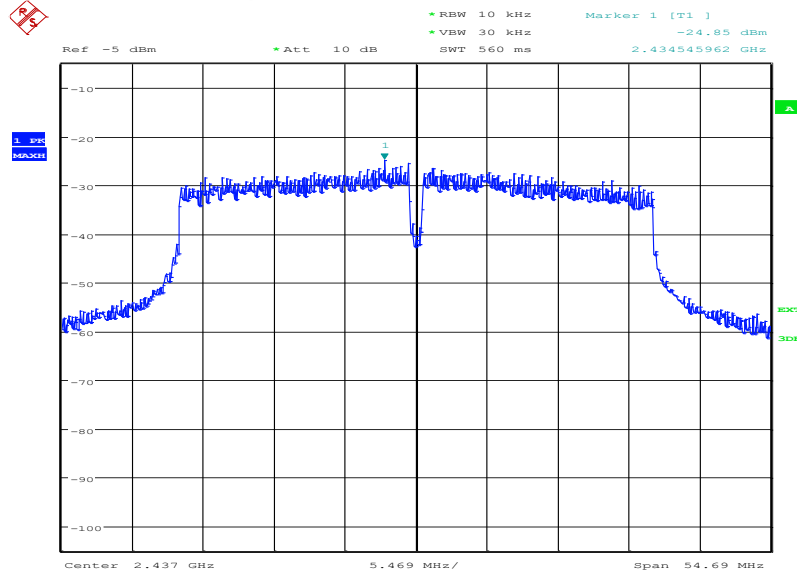


Date: 4.NOV.2025 15:43:38

802.11n; Bandwidth: 20 MHz; Data Rate: HT20, MCS7

Channel Frequency (MHz)	Analyser Level (dBm)	Cable loss (dB)	Power Spectral Density (dBm/10kHz)	Limit (dBm/3kHz)	Result
2437	-24.24	20.26	-3.98	8.00	Pass

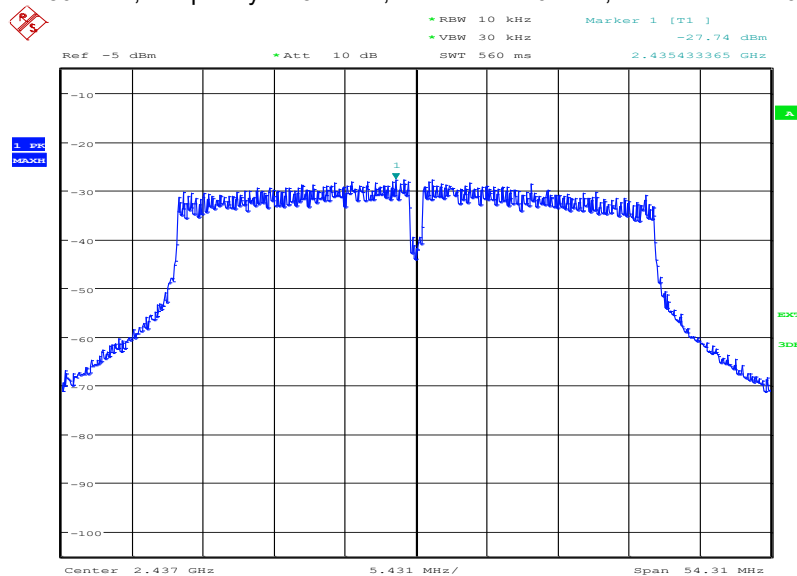
802.11n; Frequency: 2437 MHz; Bandwidth: 40 MHz; Data Rate: HT40, MCS0



Date: 4.NOV.2025 16:05:04

802.11n; Bandwidth: 40 MHz; Data Rate: HT40, MCS0					
Channel Frequency (MHz)	Analyser Level (dBm)	Cable loss (dB)	Power Spectral Density (dBm/10kHz)	Limit (dBm/3kHz)	Result
2437	-24.85	20.26	-4.59	8.00	Pass

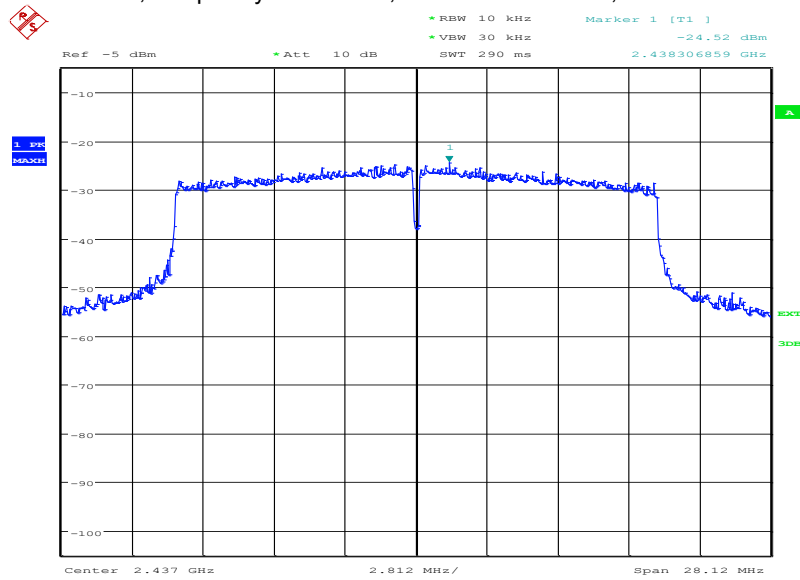
802.11n; Frequency: 2437 MHz; Bandwidth: 40 MHz; Data Rate: HT40, MCS7



Date: 4.NOV.2025 16:12:16

802.11n; Bandwidth: 40 MHz; Data Rate: HT40, MCS7					
Channel Frequency (MHz)	Analyser Level (dBm)	Cable loss (dB)	Power Spectral Density (dBm/10kHz)	Limit (dBm/3kHz)	Result
2437	-27.74	20.26	-7.48	8.00	Pass

802.11ax; Frequency: 2437 MHz; Bandwidth: 20 MHz; Data Rate: HT20, MCS0

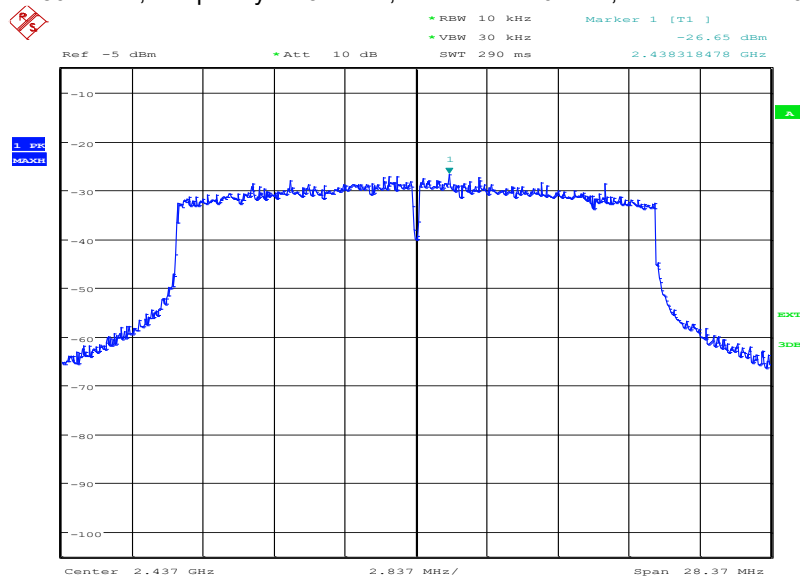


Date: 4.NOV.2025 16:20:24

802.11ax; Bandwidth: 20 MHz; Data Rate: HT20, MCS0

Channel Frequency (MHz)	Analyser Level (dBm)	Cable loss (dB)	Power Spectral Density (dBm/10kHz)	Limit (dBm/3kHz)	Result
2437	-24.52	20.26	-4.26	8.00	Pass

802.11ax; Frequency: 2437 MHz; Bandwidth: 20 MHz; Data Rate: HT20, MCS9

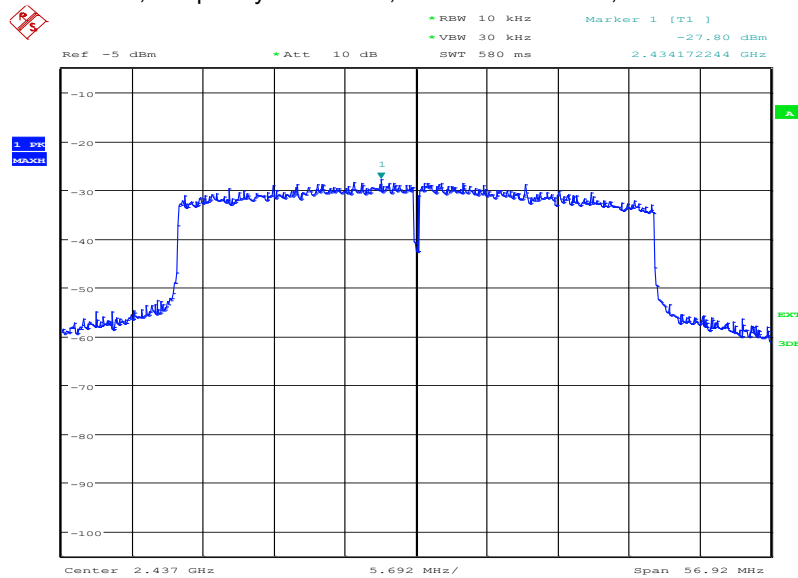


Date: 4.NOV.2025 16:25:42

802.11ax; Bandwidth: 20 MHz; Data Rate: HT20, MCS9

Channel Frequency (MHz)	Analyser Level (dBm)	Cable loss (dB)	Power Spectral Density (dBm/10kHz)	Limit (dBm/3kHz)	Result
2437	-26.65	20.26	-6.39	8.00	Pass

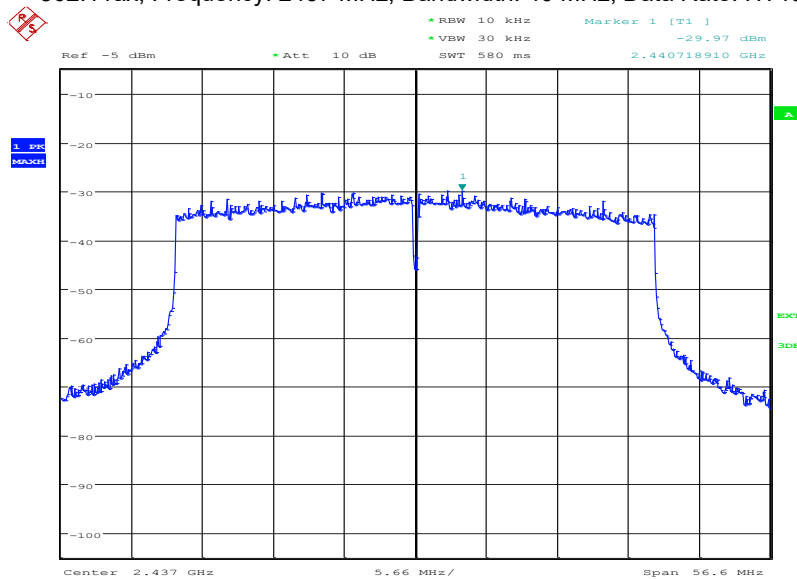
802.11ax; Frequency: 2437 MHz; Bandwidth: 40 MHz; Data Rate: HT40, MCS0



Date: 4.NOV.2025 16:31:02

802.11ax; Bandwidth: 40 MHz; Data Rate: HT40, MCS0					
Channel Frequency (MHz)	Analyser Level (dBm)	Cable loss (dB)	Power Spectral Density (dBm/10kHz)	Limit (dBm/3kHz)	Result
2437	-27.80	20.26	-7.54	8.00	Pass

802.11ax; Frequency: 2437 MHz; Bandwidth: 40 MHz; Data Rate: HT40, MCS9



Date: 4.NOV.2025 16:36:31

802.11ax; Bandwidth: 40 MHz; Data Rate: HT40, MCS9					
Channel Frequency (MHz)	Analyser Level (dBm)	Cable loss (dB)	Power Spectral Density (dBm/10kHz)	Limit (dBm/3kHz)	Result
2437	-29.97	20.26	-9.71	8.00	Pass

17 Measurement Uncertainty

Radio Testing – General Uncertainty Schedule

All statements of uncertainty are expanded standard uncertainty using a coverage factor of 1.96 to give a 95 % confidence where no required test level exists.

Test/Measurement	Budget Number	MU
Conducted RF Power, Power Spectral Density, Adjacent Channel Power and Spurious emissions		
Absolute RF power (via antenna connector) Sampling Power Meter to 8 GHz	MU4001	0.9 dB
Carrier Power and PSD - Spectrum Analysers	MU4004	1.7 dB
Adjacent Channel Power	MU4002	1.9 dB
Transmitter conducted spurious emissions (Including emissions due to intermodulation)	MU4041	0.9 dB
Conducted power and spurious emissions 40 GHz to 50 GHz	MU4042	2.4 dB
Conducted power and spurious emissions 50 GHz to 75 GHz	MU4043	2.5 dB
Conducted power and spurious emissions 75 GHz to 110 GHz	MU4044	2.4 dB
Radiated RF Power and Spurious emissions ERP and EIRP		
Effective Radiated Power Reverb Chamber	MU4020	3.7 dB
Effective Radiated Power	MU4021	4.7 dB
TRP Emissions 30 MHz to 1 GHz using CBL6111 or CBL6112 Bilog Antenna	MU4046	5.3 dB
TRP Emissions 1 GHz to 18 GHz using HL050 Log Periodic Antenna	MU4047	5.1 dB
TRP Emissions 18 GHz to 26.5 GHz using Standard Gain Horn	MU4048	2.7 dB
TRP Emissions 26.5 GHz to 40 GHz using Standard Gain Horn	MU4049	2.7 dB
In-band (3450-3980 MHz) TRP using CATR_ASH_B2	MU4051	4.1 dB
Cellular Radiated Spurious Emissions in a SAC 30 MHz to 180 MHz	MU4052	6.3 dB
Cellular Radiated Spurious Emissions in a SAC 180 MHz to 18 GHz	MU4052	3.6 dB
Cellular Radiated Spurious Emissions in a FAR 30 MHz to 180 MHz	MU4052	5.4 dB
Cellular Radiated Spurious Emissions in a FAR 180 MHz to 18 GHz	MU4052	3.0 dB
Spurious Emissions Electric and Magnetic Field		
Radiated Spurious Emissions 30 MHz to 1 GHz (Including emissions due to intermodulation)	MU4037	4.7 dB
Radiated Spurious Emissions 1-18 GHz (Including emissions due to intermodulation)	MU4032	4.5 dB
E Field Emissions 18 GHz to 26 GHz	MU4024	3.2 dB
E Field Emissions 26 GHz to 40 GHz	MU4025	3.3 dB
E Field Emissions 40 GHz to 50 GHz	MU4026	3.5 dB
E Field Emissions 50 GHz to 75 GHz	MU4027	3.6 dB
E Field Emissions 75 GHz to 110 GHz	MU4028	3.6 dB
Radiated Magnetic Field Emissions	MU4031	2.3 dB

Test/Measurement	Budget Number	MU
Frequency Measurements		
Frequency Deviation	MU4022	3.7 kHz
Frequency error using CMTA test set	MU4023	113.441 Hz
Frequency error using GPS locked frequency source	MU4045	0.0413 ppm
Bandwidth/Spectral Mask Measurements		
Channel Bandwidth	MU4005	3.87%
Transmitter Mask Amplitude	MU4039	1.3 dB
Transmitter Mask Frequency	MU4040	2.59%
Time Domain Measurements		
Transmission Time	MU4038	4.40%
Dynamic Frequency Selection (DFS) Parameters		
DFS Analyser - Measurement Time	MU4006	678.984 μ s
DFS Generator - Frequency Error	MU4007	91.650 Hz
DFS Threshold Conducted	MU4008	1.3 dB
DFS Threshold Radiated	MU4009	3.2 dB
Receiver Parameters		
EN 300 328 Receiver Blocking	MU4010	1.1 dB
EN 301 893 Receiver Blocking	MU4011	1.1 dB
EN 303 340 Adjacent Channel Selectivity	MU4012	1.1 dB
EN 303 340 Overloading	MU4013	1.1 dB
EN 303 340 Receiver Blocking	MU4014	1.1 dB
EN 303 340 Receiver Sensitivity	MU4015	0.9 dB
EN 303 372-1 Image Rejection	MU4016	1.4 dB
EN 303 372-1 Receiver Blocking	MU4017	1.1 dB
EN 303 372-2 Adjacent Channel Selectivity	MU4018	1.1 dB
EN 303 372-2 Dynamic Range	MU4019	0.9 dB
Receiver Blocking Talk Mode Conducted	MU4033	1.2 dB
Receiver Blocking Talk Mode- radiated	MU4034	3.4 dB
Rx Blocking, listen mode, blocking level	MU4035	3.2 dB
Rx Blocking, listen mode, radiated Threshold Measurement	MU4036	3.4 dB
Adjacent Sub Band Selectivity	MU4003	4.2 dB

Test/Measurement	Budget Number	MU
Rohde & Schwarz TS8997		
Carrier frequency	MU4050	5.2 ppm
RF Output Power	MU4050	1.0 dB
Peak Power	MU4050	0.8 dB
Power Spectral Density	MU4050	1.0 dB
Occupied Channel Bandwidth	MU4050	2.08 %
Transmitter unwanted emissions in-band	MU4050	0.9 dB
Transmitter unwanted emissions in the spurious domain 30 MHz to 1 GHz	MU4050	0.6 dB
Transmitter unwanted emissions in the spurious domain 1 GHz to 12.75 GHz	MU4050	1.8 dB
Receiver Spurious emission 30 MHz to 1 GHz	MU4050	0.6 dB
Receiver Spurious emission 1 GHz to 12.75 GHz	MU4050	1.8 dB
Duty Cycle	MU4050	0.02 %
Tx Sequence	MU4050	0.02 %
Tx Gap	MU4050	0.02 %
Medium Utilisation	MU4050	0.1 %
Accumulated Transmit Time	MU4050	0.01 %
Minimum Frequency Occupation Time	MU4050	0.01 %
Hopping Frequency Separation	MU4050	0.6 %
Receiver blocking (for bit streams)	MU4050	3.0 dB
Channel Access Mechanism / Adaptivity / DFS / Contention Based Protocol	MU4050	1.8 dB