





CUSTOM S.p.A

**Applicant:** Via Berettine 2/B – 43010 Fontevivo – Parma - Italy

Phone: 0521 680111

Trademark: CUSTOM®

Test item: Printer MP RANGER USB TH FI BLACK IT

Identification / Type No.: MP350

FCC ID: OAH-5040120

**Order content:** Full tests according to the following standard:

Test specification: FCC Part 15, Subpart C (15.247)

**Date of receipt:** 22/02/2022

Internal storage No.: A003216149-003

**Testing period:** From 04/04/2022 to 20/04/2022

TÜV Rheinland Italia S.r.l.

Place of testing: Via E. Mattei, 3

20005 Pogliano Milanese – Milano

Italy

TÜV Rheinland Italia S.r.l.

Testing laboratory: Via E. Mattei, 3

20005 Pogliano Milanese - Milano

Italy

Test result: PASS

Tested by: Francesco Lombardi Authorized by: Giovanni Molteni

Date: 16/09/2022 (Laboratory Technician) Date: 16/09/2022 (Laboratory Manager)

Position Sachverständige(r)/Expert Position Sachverständige(r)/Expert

**Condition of the test item at delivery:**Test item complete and undamaged

The test results reported in this test report shall refer only to the samples tested.

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TRI refuses any responsibility about information supplied by the customer contained in this test report.

TRI is not responsible for the sampling phase.







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The equipment used during the specified testing period was calibrated according to our test laboratory calibration program. The equipment fulfils the requirements included in the relevant standards. The traceability of the test equipment used is ensured by compliance with the regulations of our management system.

Detailed information regarding test conditions, equipment and measurement uncertainty is available in the test laboratory and could be provided on request.

As contractually agreed, this document has been signed digitally only. TUV Rheinland has not verified and unable to verify which legal or other pertaining requirements are applicable for this document. Such verification is within the responsibility of the user of this document. Upon request by its client, TUV Rheinland can confirm the validity of the digital signature by a separate document. Such request shall be addressed to our Sales department. An environmental fee for such additional service will be charged.

Test clauses with remark of \* are subcontracted to qualified subcontractors and descripted under the respective test clause in the report.

Deviations of testing specification(s) or customer requirements are listed in specific test clause in the report.

Unless otherwise agreed with the customer, a conformity assessment is always carried out based on the applied standards. At the customer's request, the statement on the conformity of the product tested in this test report is carried out according to the criteria/requirements of the applied standards.

Evaluation conditions deviating from these are documented separately in the respective chapters.







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# 1. General description of test item(s)

Description	Printer MP RANGER USB TH FI BLACK IT
Model	MP350
Serial number	ESB1026121280071
Part number	911MM010100P33
Manufacturer	CUSTOM S.p.A
Country of manufacturer	Italy
Trademark	CUST@M®
Power supply	DC Power
Supply voltage	Internal Battery (Technology: Lithium-ion)
Battery model name	INR18650-2S1P
Battery voltage-capacity	7.2V 2.6Ah 18.72Wh
Battery cycle	750
Battery life (print)	720 minutes x 300 tickets
Manufacturer (Battery)	Shenzhen Hypercell Co.,LTD
Equipment type	Intentional radiator
Hardware version	St145-c







Software version	1.22
Dimensions	149(L) x 53(H) x 122(P) mm
Weight	475gr (with battery included)
Printing width	76.2 mm and 80 mm
Operating temperature	From -10°C to +50°C
Operating humidity (RH)	Form 10% to 95%
EUT standing	Portable
Test sample obtaining:	☑ Sampling by customer ☐ Sampling by TÜV Rheinland Group ☐ others:







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# 2. Equipment using during test

Equ	pment under test			
No	Product type	Manufacturer	Model	Comments
1	Printer MP RANGER USB TH FI BLACK IT	CUSTOM S.p.A.	MP350	

Auxiliary Equipment / Peripherals

Nr.	Product type	Manufacturer	Model	Comments
1	Laboratory PC	DELL		- used to enable wireless communication (Bluetooth Low Energy, Bluetooth Enhanced Data Rate & Wi-Fi) on EUT, via software Printerset.
				- used ESP_RF_test_tool_v1.1.0, for setting the radio module in the following radio communications: BLE, BT EDR & Wi-Fi
2	Cradle 1 slot P-Ranger	CUSTOM S.p.A		- used to charge battery
3	Switching power adapter	CUSTOM S.p.A	POWER SUPPLY FOR CRADLE 4 SLOTS P-RANGER	- use to power supply cradle







Input/	Input/Output ports					
No.	Name	Туре	Cable length	Cable shielded	Comments	
1	Enclosure port	Plastic			closed by snaps	
2	AC power port				port not present	
3	DC power port	Internal battery			Battery model: INR18650-2S1P	
4	Signal control port				port not present	
5	Wired network port				port not present	
EUT m	odification					
None						







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## 3. Radio module identification

Wi-Fi module & Antenna technical data				
Module manufacturer	<b>SPRESSIF</b>			
Radio type	Transceiver			
Chip radio	ESP32-PICO-D4			
Type of equipment	☐ stand-alone equipment ☐ combined equipment ☐ multi-radio equipment			
Protocols	802.11 b/g/n (802.11n up to 150 Mbps)			
Frequency range	2400 – 2500GHz			
Channel bandwidth	22MHz			
Channel separation	5MHz			
Number of channel	11 channels in b / g / HT20 modes (channel 1 to 11) 9 channels in HT40 mode (channel 3 to 9)			
Modulation type	☐ Frequency hopping (FHSS) equipment ☐ Wideband data transmission (non-FHSS equipment) (DSS, CCK, OFDM, HT20, HT40, MCS32)			
Sensitivity	DSSS, 1 Mbps -98dBm CCK, 11 Mbps -91dBm OFDM, 6 Mbps -93dBm OFDM, 54 Mbps -75dBm HT20, MCS0 -93dBm HT20, MCS7 -73dBm HT40, MCS7 -73dBm HT40, MCS7 -89dBm HT40, MCS7 -89dBm			
Transmit operating mode	<ul> <li>☑ single antenna</li> <li>☐ multiple antennas, no beamforming</li> <li>☐ multiple antennas, with beamforming</li> </ul>			







With regard adaptivity, the type of equipment	<ul> <li>□ non-adaptive equipment</li> <li>□ adaptive equipment</li> <li>☑ Equipment that can operate in both an adaptive and non-adaptive mode;</li> </ul>
Spectrum access mechanism	☐ LBT (Listen Before Talk) Technique ☐ DAA (Detect And Avoid) Technique ☑ Duty cycle
Environmental equipment	☐ Test only in normal conditions ☐ Test in normal conditions and extreme conditions
Equipment that support a geo-location capability	☐ Yes ☑ No







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	Description:	AMCA31-2R450G-S1F-T3
	Peak Gain:	0.5 dBi
		☐ External antenna
	Туре:	☑ Dedicated antenna
		☐ Integral antenna
Antenna	Frequency	2450 MHz
	Impedance	50 Ω
	Manufacturer	ABRACON <sup>®</sup>

	Description:	Chip-Antenna WE-MCA
	Peak Gain:	0.5 dBi
	Туре:	☐ External antenna ☐ Dedicated antenna ☐ Integral antenna
Antenna	Frequency	2400 - 2500 MHz
	Impedance	50 Ω
	Manufacturer	WÜRTH ELEKTRONIK

Note: The test has been performed with Antenna AMCA31-2R450G-S1F-T3, manufacturer Abracon.







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## 4. Channel list Wi-Fi

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
1	2412	6	2437	11	2462
2	2417	7	2442		
3	2422	8	2447		
4	2427	9	2452	general section of the section of th	
5	2432	10	2457		







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# 5. Applied reference standards

47 CFR Part 15		Radio Frequency Device - General
Title 47 Part 1	L5 Subpart C	Radio Frequency Device – Intentional Radiators
Title 47 Part 15 Subpart C § 15.203		Radio frequency devices – Intentional Radiators Antenna requirement
Title 47 Part 15 Subpart C § 15.205		Radio frequency devices – Intentional Radiators Restricted bands of operation
Title 47 Part 15 Subpart C § 15.209		Radio frequency devices – Intentional Radiators Radiated Emissions Limits
Title 47 Part 15 Subpart C § 15.247		Radio Frequency Devices – Intentional Radiators Operation within the bands 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz
558074 D01 DTS Meas Guidance v05r02 - April 02,2019		Guidance for performing compliance measurements on digital transmission systems (DTS) operating under §15.247
ANSI C63.4 2014		Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz
ANSI C63.10	2020	American National Standard for Testing Unlicensed Wireless Devices







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# 6. Operating modes

No.	Description
1	Continuous Wi-Fi Modulation RF Transmission at maximum power, at low channel. Radio module (model ESP32-PICO-D4), set via ESP_RF_test_tool_v1.1.0, with the following parameters: ChipType: ESP32 BaudRate: 115200 Load bin: ESP32_RF_TEST_BIN_V1.4.6_20181019.bin Test Mode: Wi-Fi (TX continue) Wi-Fi Rate: 11b 1M, 11b 2M, 11b 5.5M, 11b 11M
2	Continuous Wi-Fi Modulation RF Transmission at maximum power, at low channel. Radio module (model ESP32-PICO-D4), set via ESP_RF_test_tool_v1.1.0, with the following parameters: ChipType: ESP32 BaudRate: 115200 Load bin: ESP32_RF_TEST_BIN_V1.4.6_20181019.bin Test Mode: Wi-Fi (TX continue) Wi-Fi Rate: 11n MCS0, 11n MCS1, 11n MCS2, 11n MCS3, 11n MCS4, 11n MCS5, 11n MCS6, 11n MCS7 BandWidth: 40M Channel: 3/2422MHz Attenuation: 0 dB







No.	Description
3	Continuous Wi-Fi Modulation RF Transmission at maximum power, at middle channel. Radio module (model ESP32-PICO-D4), set via ESP_RF_test_tool_v1.1.0, with the following parameters: ChipType: ESP32 BaudRate: 115200 Load bin: ESP32_RF_TEST_BIN_V1.4.6_20181019.bin Test Mode: Wi-Fi (TX continue) Wi-Fi Rate: 11b 1M, 11b 2M, 11b 5.5M, 11b 11M
4	Continuous Wi-Fi Modulation RF Transmission (duty cycle >98%) at maximum power, at high channel. Radio module (model ESP32-PICO-D4), set via ESP_RF_test_tool_v1.1.0, with the following parameters: ChipType: ESP32 BaudRate: 115200 Load bin: ESP32_RF_TEST_BIN_V1.4.6_20181019.bin Test Mode: Wi-Fi (TX continue) Wi-Fi Rate: 11b 1M, 11b 2M, 11b 5.5M, 11b 11M
5	Continuous Wi-Fi Modulation RF Transmission (duty cycle >98%) at maximum power, at high channel. Radio module (model ESP32-PICO-D4), set via ESP_RF_test_tool_v1.1.0, with the following parameters: ChipType: ESP32 BaudRate: 115200 Load bin: ESP32_RF_TEST_BIN_V1.4.6_20181019.bin Test Mode: Wi-Fi (TX continue) Wi-Fi Rate: 11n MCS0, 11n MCS1, 11n MCS2, 11n MCS3, 11n MCS4, 11n MCS5, 11n MCS6, 11n MCS7 BandWidth: 40M Channel: 9/2452MHz Attenuation: 0 dB







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## 7. EUT configuration

The test setup was made in accordance with mentioned FF standards.

Measurements and tests were executed under "worst case" conditions. Typical EUT arrangements or operating modes were chosen or assumed which let suspect maximum emission or susceptibility (a so called "unfavourable configuration").

Details of test setup or adjustments are (particularly) shown inside the photo documentation. As far as not mentioned otherwise these statements are valid for all following tests.

## 8. Climatic conditions

Ambient Temperature	10 - 40 °C				
Relative Humidity	10 – 90 %				
Air pressure	Not specified				
Note: According to ANSI C63.4					







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## 9. Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16-4 "Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements" and is documented in the quality system acc. to ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation.

The manufacturer has the sole responsibility of continued compliance of the device

## 10. Measurement uncertainty

Test Method	Uncertainty (95%)	Coverage factor k
RF Radiated emissions – range (30 – 1000) MHz	4,9 dB	2,0
RF Radiated emissions – range (1 – 8) GHz	5,1 dB	2,0
RF Radiated emissions – range (8 – 40) GHz	5,4 dB	2,0
TX Carrier Power – Conducted (1GHz – 8GHz)	1,5 dB	2,0
Occupied Bandwidth (OBW)	514.4 x 1.00E-9	2,0
Power Spectral Density (0 – 3.6) GHz	3,7 mW	2,0
TX Conducted Spurious Emissions (9KHz – 1GHz)	0.92 dB	2,0
TX Conducted Spurious Emissions (1 – 8)	1,5 dB	2,0
TX Conducted Spurious Emissions (8 – 40) GHz	2,4 dB	2,0
Measurement of Normalised Site Attenuation and VSWR	6,0 dB	2,0

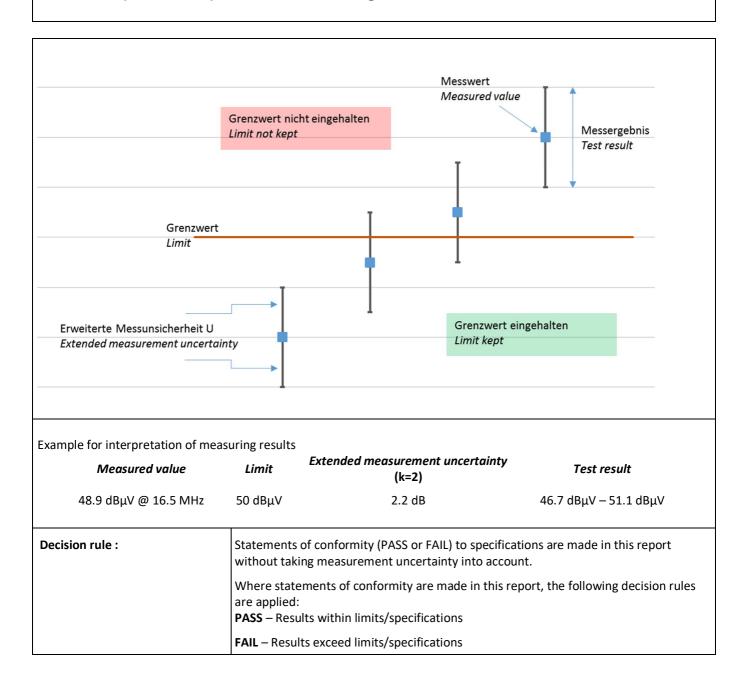






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## 11. Example for interpretation of measuring results









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## 12. Result summary section

Requirement – Test case	Operating modes	Result
Radiated emissions (9KHz – 26GHz) <sup>1</sup>	1, 2, 3, 4, 5	PASS
Restricted bands of operation	1, 2, 3, 4, 5	PASS
Antenna requirements		PASS
Maximum Conducted Peak Output Power	1, 2, 3, 4, 5	PASS
6db Bandwidth	1, 2, 3, 4, 5	PASS
Out-of-band emissions <sup>1</sup>	1, 2, 3, 4, 5	PASS
Band Edge <sup>1</sup>	1, 2, 4, 5	PASS
Power spectral density	1, 2, 3, 4, 5	PASS
Additional provisions to the general radiated emission limitations		PASS

<sup>&</sup>lt;sup>1</sup> Test has been performed only worst case data rate condition.

Worst case data rate condition has been established after maximum conducted peak output power test.

The field strength is calculated by subtracting the Amplifier Gain and adding the Cable Loss and Antenna Correction Factor to the measured reading. The basic equation is as follows:

Field Strength (dB $\mu$ V/m) = RAW - AMP + CBL + ACF

Where: RAW = Measured level before correction ( $dB\mu V$ )

AMP = Amplifier Gain (dB)

CBL = Cable Loss (dB)

ACF = Antenna Correction Factor (dB/m)

$$\mu V/m = 10^{\frac{dB\mu V/m}{20}}$$

Sample radiated emissions calculation @ 30 MHz

Measurement +Antenna Factor-Amplifier Gain+Cable loss=Radiated Emissions (dBuV/m)

25 dBuV/m + 17.5 dB - 20 dB + 1.0 dB = 23.5 dBuV/m

## 13. Change history

Test report number	List of revisions	Date
IT220WRF 001	First edition	16/09/2022







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## 14. Emission Test

Radiated emission test (9KHz – 26GHz)					
Test date	From 05/04/2022 to 06/04/2022				
Applied Standard	Title 47 Part 15 Subpart C §15.205; §15.209; §15.247				
Test method	Par. 8.6 of KDB 558074 D01 15.247 Meas Guidance v05r02 (and par. 11.12.1 Radiated emission measurements of ANSI C63.10)				
Temperature	23,1°				
Humidity	54%				
Tested by	Francesco Lombardi				
Model	MP350				
Internal Storage No.	1 (Storage no. A003216149-003)				
Operating mode	1, 2, 3, 4, 5				
Tested terminals	Enclosure				
Result	PASS				







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In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator 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 the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 Db instead of 20 Db. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

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

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

Remark: In accordance with part 15.31 (f) (2), where the measurement distance was specified to be 30 or 300 meters, a correction factor was applied in order to permit measurement to be performed at a separation distance. The applied formula for limits at 3 meter is:

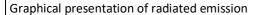
Limit  $3m(dB\mu V/m)$ =Limit  $300m(dB\mu V/m)$ +40Log(300m/3m) (Below 30MHz) Limit  $3m(dB\mu V/m)$ =Limit  $300m(dB\mu V/m)$ +40Log(30m/3m) (Below 30MHz)







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Operating mode: 1 (Channel 1 – Frequency 2412 MHz)

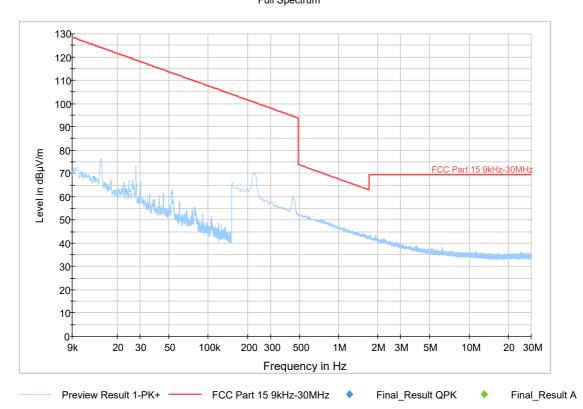
Frequency scan: 9KHz – 30MHz Data rate: 11b, 2M (worst case)

Trace: Peak (blue trace)

Measurement distance: 3m

Axis: Y (worst case)











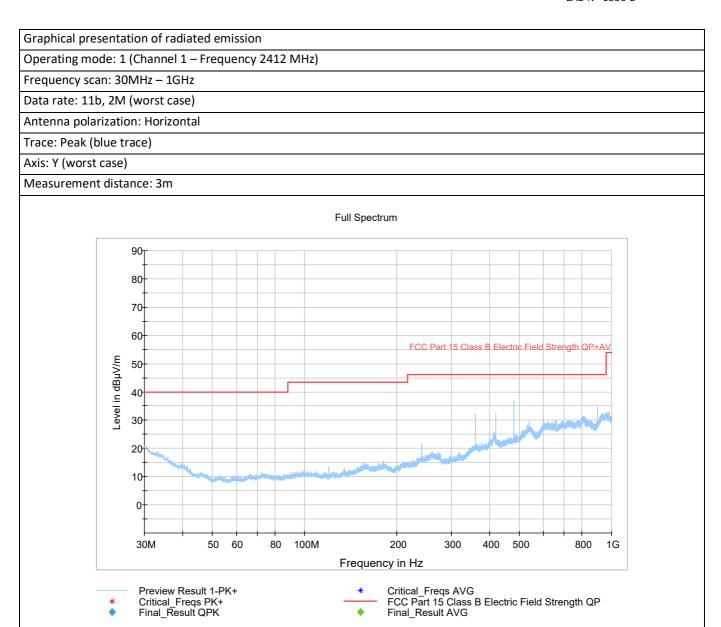
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Graphical presentation of radiated emission Operating mode: 1 (Channel 1 – Frequency 2412 MHz) Frequency scan: 30MHz - 1GHz Data rate: 11b, 2M (worst case) Antenna polarization: Vertical Trace: Peak (blue trace) Axis: Y (worst case) Measurement distance: 3m Full Spectrum 80 70 60 FCC Part 15 Class B Electric Field Strength QP+A 50 Level in dBµV/m 40 30 20 10 0--10 30M 200 300 400 500 Frequency in Hz Preview Result 1-PK+ Critical\_Freqs PK+ Final\_Result QPK Critical\_Freqs AVG FCC Part 15 Class B Electric Field Strength QP Final\_Result AVG















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Graphical presentation of radiated emission

Operating mode: 1 (Channel 1 – Frequency 2412 MHz)

Frequency scan: 1GHz – 3GHz

Data rate: 11b, 2M (worst case)

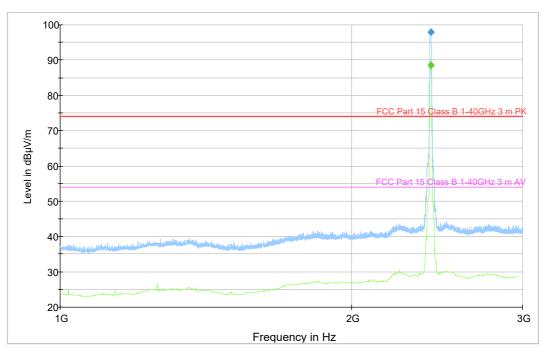
Antenna polarization: Vertical

Trace: Peak (blue trace); Average (green trace)

Axis: Y (worst case)

Measurement distance: 3m

#### Full Spectrum





### **Final Result**

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
2412.000000		88.64		-	1000.0	1000.000	180.0	V	270.0
2412.000000	97.97				1000.0	1000.000	180.0	V	270.0







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Graphical presentation of radiated emission

Operating mode: 1 (Channel 1 – Frequency 2412 MHz)

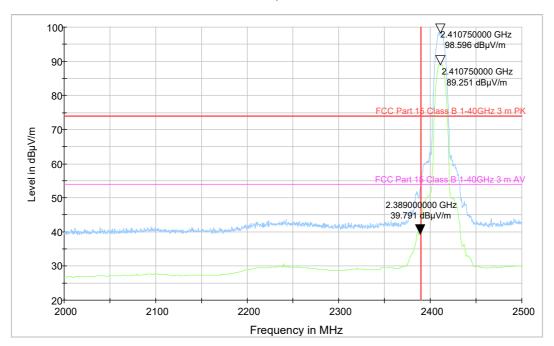
Frequency: Restricted band of operations near fundamental

Data rate: 11b, 2M (worst case) Antenna polarization: Vertical

Trace: Peak (blue trace); Average (green trace)

Measurement distance: 3m

#### Full Spectrum



Preview Result 2-AVG Preview Result 1-PK+
FCC Part 15 2390MHz FCC Part 15 Class B 1-40GHz 3 m PK
FCC Part 15 Class B 1-40GHz 3 m AV Final\_Result PK+
Final\_Result AVG

#### **Fundamental Level**

Frequency (MHz)		ng value uV/m)	Antenna Factor with pre-Amplifier	Cable Loss	Correct reading (dBμV/m)	
(2)	Peak	Average	(dB3/m)	(dB)		
2410.750000	109.31		-14.28	3.57	98.60	
2410.750000		99.96	-14.28	3.57	89.25	







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Graphical presentation of radiated emission

Operating mode: 1 (Channel 1 - Frequency 2412 MHz)

Frequency scan: 1GHz – 3GHz

Data rate: 11b, 2M (worst case)

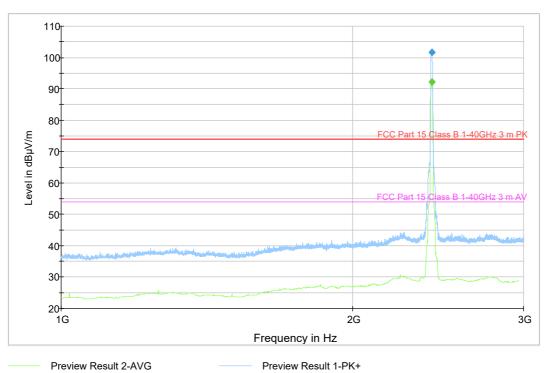
Antenna polarization: Horizontal

Trace: Peak (blue trace); Average (green trace)

Axis: Y (worst case)

Measurement distance: 3m

#### Full Spectrum



# Preview Result 2-AVG FCC Part 15 Class B 1-40GHz 3 m PK Final\_Result PK+ Preview Result 1-PK+ FCC Part 15 Class B 1-40GHz 3 m AV Final\_Result AVG

#### **Final Result**

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
2412.000000		92.20			1000.0	1000.000	180.0	Н	0.0
2412.000000	101.56				1000.0	1000.000	180.0	Н	0.0







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Graphical presentation of radiated emission

Operating mode: 1 (Channel 1 - Frequency 2412 MHz)

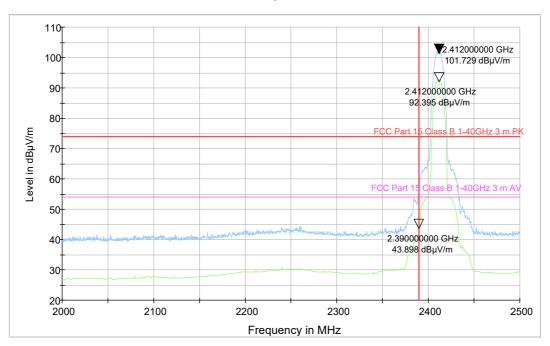
Frequency: Restricted band of operations near fundamental

Data rate: 11b, 2M (worst case)
Antenna polarization: Horizontal

Trace: Peak (blue trace); Average (green trace)

Measurement distance: 3m

#### Full Spectrum



Preview Result 2-AVG Preview Result 1-PK+
FCC Part 15 2390MHz FCC Part 15 Class B 1-40GHz 3 m PK
FCC Part 15 Class B 1-40GHz 3 m AV Final\_Result PK+
Final\_Result AVG

#### **Fundamental Level**

Frequency	Reading value (dBμV/m)		Antenna Factor with pre-Amplifier	Cable Loss	Correct reading	
(MHz)	Peak	Average	(dB3/m)	(dB)	(dBμV/m)	
2412.000000	112.44		-14.28	3.57	101.73	
2412.000000		103.11	-14.28	3.57	92.40	







Graphical presentation of radiated emission

Operating mode: 1 (Channel 1 – Frequency 2412 MHz)

Frequency scan: 3GHz -18GHz

Data rate: 11b, 2M (worst case)

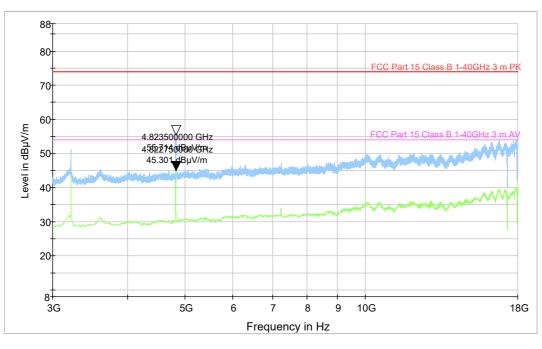
Antenna polarization: Vertical

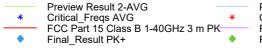
Trace: Peak (blue trace); Average (green trace)

Axis: Y (worst case)

Measurement distance: 3m

#### Full Spectrum





Preview Result 1-PK+ Critical\_Freqs PK+ FCC Part 15 Class B 1-40GHz 3 m AV Final\_Result AVG

Issue Date: 16/09/2022

#### **Final Result**

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
4823.500000	55.71		74.00	18.29	1000.0	1000.000	200.0	V	90.0
4822.750000		45.30	54.00	8.70	1000.0	1000.000	200.0	V	90.0







Graphical presentation of radiated emission

Operating mode: 1 (Channel 1 – Frequency 2412 MHz)

Frequency scan: 3GHz -18GHz

Data rate: 11b, 2M (worst case)

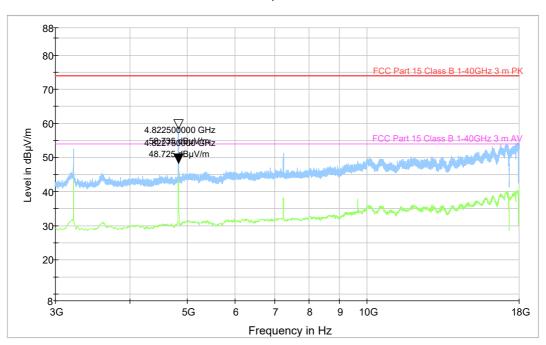
Antenna polarization: Horizontal

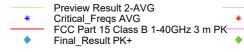
Trace: Peak (blue trace); Average (green trace)

Axis: Y (worst case)

Measurement distance: 3m

#### Full Spectrum





Preview Result 1-PK+ Critical\_Freqs PK+ FCC Part 15 Class B 1-40GHz 3 m AV Final Result AVG

Issue Date: 16/09/2022

#### **Final Result**

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
4822.500000	58.73		74.00	15.27	1000.0	1000.000	210.0	н	90.0
4822.750000		48.72	54.00	5.28	1000.0	1000.000	210.0	Н	90.0







Issue Date: 16/09/2022

Graphical presentation of radiated emission

Operating mode: 1 (Channel 1 – Frequency 2412 MHz)

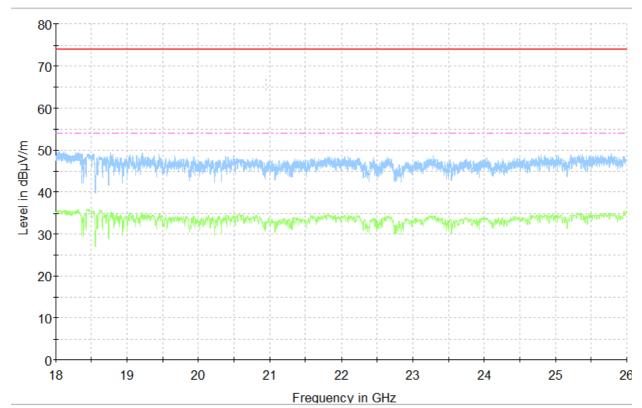
Frequency scan: 18GHz – 26GHz Data rate: 11b, 2M (worst case) Antenna polarization: Vertical

Trace: Peak (blue trace); Average (green trace)

Axis: Y (worst case)

Measurement distance: 3m











Issue Date: 16/09/2022

Graphical presentation of radiated emission

Operating mode: 1 (Channel 1 – Frequency 2412 MHz)

Frequency scan: 18GHz – 26GHz

Data rate: 11b, 2M (worst case)

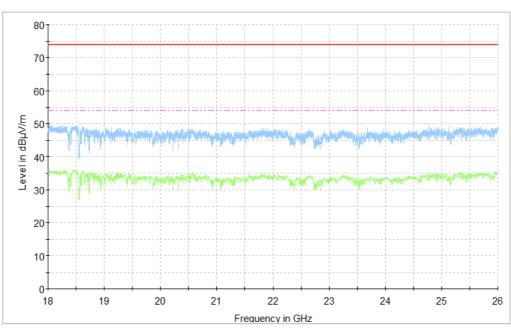
Antenna polarization: Horizontal

Trace: Peak (blue trace); Average (green trace)

Axis: Y (worst case)

Measurement distance: 3m



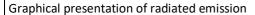




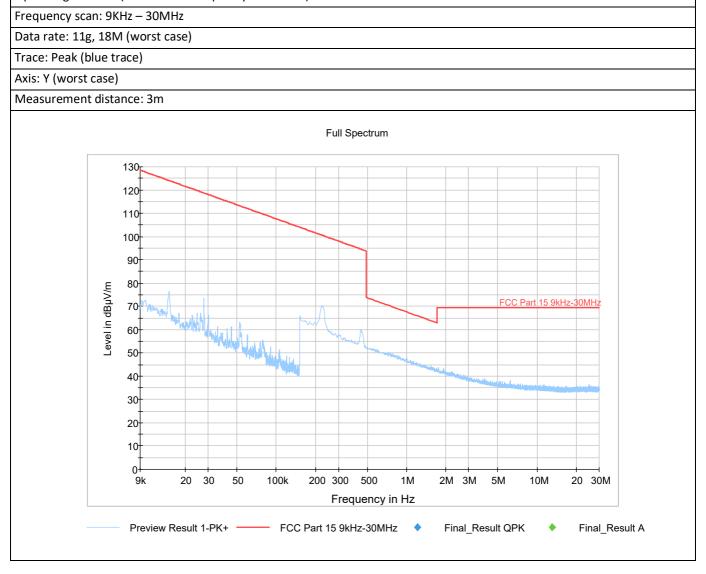




Issue Date: 16/09/2022



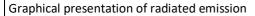
Operating mode: 1 (Channel 1 – Frequency 2412 MHz)











Operating mode: 1 (Channel 1 – Frequency 2412 MHz)

Frequency scan: 30MHz – 1GHz Data rate: 11g, 18M (worst case)

Trace: Peak (blue trace)

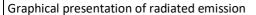
Measurement distance: 3m

# Antenna polarization: Vertical Axis: Y (worst case) Full Spectrum 80 70 60 FCC Part 15 Class B Electric Field Strength QP Level in dBµV/m 50 40 30 20 10 0-30M 50 60 100M 200 300 400 500 800 Frequency in Hz FCC Part 15 Class B Electric Field Strength QP Final\_Result AVG Preview Result 1-PK+ Final\_Result QPK









Operating mode: 1 (Channel 1 – Frequency 2412 MHz)

Frequency scan: 30MHz – 1GHz Data rate: 11g, 18M (worst case)

Trace: Peak (blue trace) Axis: Y (worst case)

Measurement distance: 3m

# Antenna polarization: Horizontal Full Spectrum 90 80 70 60 FCC Part 15 Class B Electric Field Strength QP Level in dBµV/m 50 40 30 20 10 0-30M 100M 300 400 500 800 50 60 200 Frequency in Hz FCC Part 15 Class B Electric Field Strength QP Final\_Result AVG Preview Result 1-PK+







Issue Date: 16/09/2022

Graphical presentation of radiated emission

Operating mode: 1 (Channel 1 – Frequency 2412 MHz)

Frequency scan: 1GHz – 3GHz

Data rate: 11g, 18M (worst case)

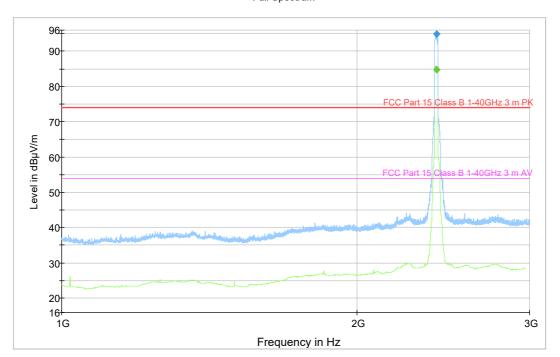
Antenna polarization: Vertical

Trace: Peak (blue trace); Average (green trace)

Axis: Y (worst case)

Measurement distance: 3m

#### Full Spectrum





#### **Final Result**

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
2412.000000		84.68			1000.0	1000.000	150.0	V	0.0
2412.000000	94.83				1000.0	1000.000	150.0	V	0.0







Issue Date: 16/09/2022

Graphical presentation of radiated emission

Operating mode: 1 (Channel 1 - Frequency 2412 MHz)

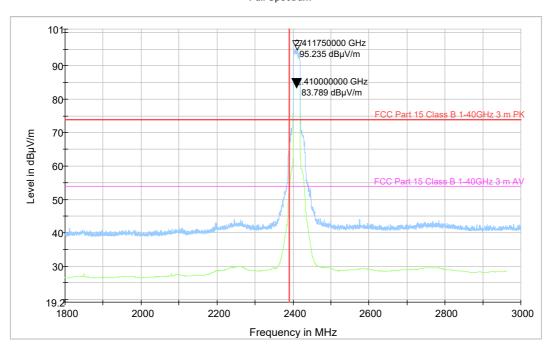
Frequency: Restricted band of operations near fundamental

Data rate: 11g, 18M (worst case)
Antenna polarization: Vertical

Trace: Peak (blue trace); Average (green trace)

Measurement distance: 3m

#### Full Spectrum



Preview Result 2-AVG
FCC Part 15 2390MHz
FCC Part 15 Class B 1-40GHz 3 m AV
Final\_Result AVG

Preview Result 1-PK+
FCC Part 15 Class B 1-40GHz 3 m PK
Final\_Result PK+

#### **Fundamental Level**

Frequency (MHz)		ng value uV/m)	Antenna Factor	Cable	Correct reading (dBμV/m)	
	Peak	Average	with pre-Amplifier (dB3/m)	Loss (dB)		
2411.750000	105.94		-14.28	3.57	95.23	
2410.000000		94,51	-14.28	3.57	83.80	







Issue Date: 16/09/2022

Graphical presentation of radiated emission

Operating mode: 1 (Channel 1 - Frequency 2412 MHz)

Frequency scan: 1GHz – 3GHz

Data rate: 11g, 18M (worst case)

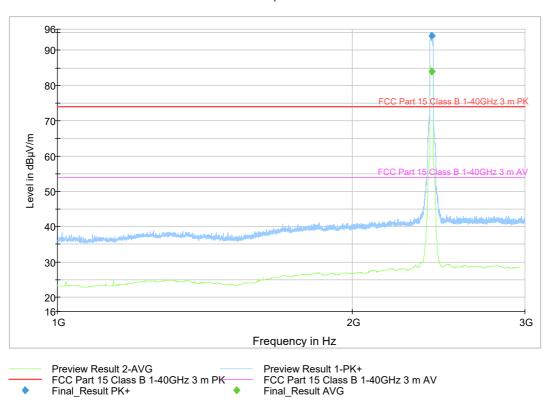
Antenna polarization: Horizontal

Trace: Peak (blue trace); Average (green trace)

Axis: Y (worst case)

Measurement distance: 3m

### Full Spectrum



### Final Result

Frequency (MHz)	MaxPeak (dBμV/m	Average (dBµV/m	Limit (dBμV/m	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
2412.000000	94.07		74.00		1000.0	1000.000	140.0	Н	0.0
2412.000000		83.98	54.00		1000.0	1000.000	140.0	Н	0.0







Issue Date: 16/09/2022

Graphical presentation of radiated emission

Operating mode: 1 (Channel 1 – Frequency 2412 MHz)

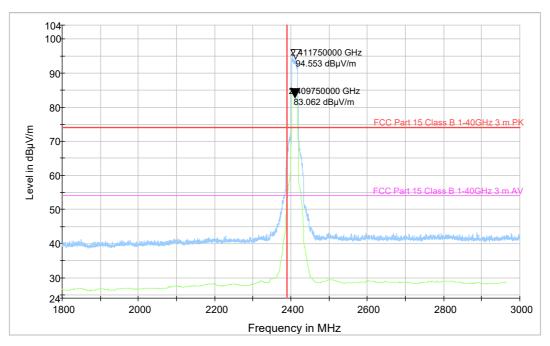
Frequency: Restricted band of operations near fundamental

Data rate: 11g, 18M (worst case)
Antenna polarization: Horizontal

Trace: Peak (blue trace); Average (green trace)

Measurement distance: 3m

#### Full Spectrum



Preview Result 2-AVG Preview Result 1-PK+
FCC Part 15 2390MHz FCC Part 15 Class B 1-40GHz 3 m PK
FCC Part 15 Class B 1-40GHz 3 m AV Final\_Result PK+
Final\_Result AVG

#### **Fundamental Level**

Frequency			ng value uV/m)	Antenna Factor with pre-Amplifier	Cable Loss	Correct reading	
	(MHz)	Peak	Average	(dB3/m)	(dB)	(dBμV/m)	
	2411.750000	105.26		-14.28	3.57	94.55	
	2409.750000		93.77	-14.28	3.57	83.06	







Graphical presentation of radiated emission

Operating mode: 1 (Channel 1 – Frequency 2412 MHz)

Frequency scan: 3GHz -18GHz

Data rate: 11g, 18M (worst case)

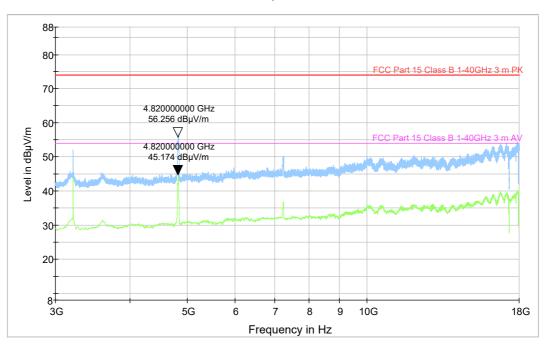
Antenna polarization: Vertical

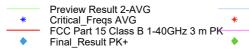
Trace: Peak (blue trace); Average (green trace)

Axis: Y (worst case)

Measurement distance: 3m

#### Full Spectrum





Preview Result 1-PK+ Critical\_Freqs PK+ FCC Part 15 Class B 1-40GHz 3 m AV Final Result AVG

Issue Date: 16/09/2022

# **Final Result**

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
4820.000000	56.25		74.00	17.75	1000.0	1000.000	140.0	V	90.0
4822.750000		45.17	54.00	8.83	1000.0	1000.000	140.0	V	90.0







Issue Date: 16/09/2022

Graphical presentation of radiated emission

Operating mode: 1 (Channel 1 – Frequency 2412 MHz)

Frequency scan: 3GHz -18GHz

Data rate: 11g, 18M (worst case)

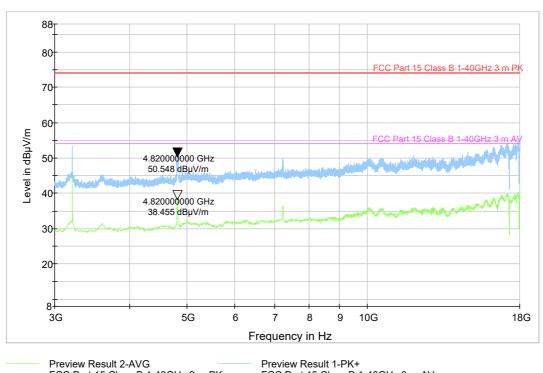
Antenna polarization: Horizontal

Trace: Peak (blue trace); Average (green trace)

Axis: Y (worst case)

Measurement distance: 3m

#### Full Spectrum





# **Final Result**

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
4820.000000	50.55		74.00	23.45	1000.0	1000.000	170.0	V	90.0
4820.000000		38.45	54.00	15.55	1000.0	1000.000	170.0	V	90.0





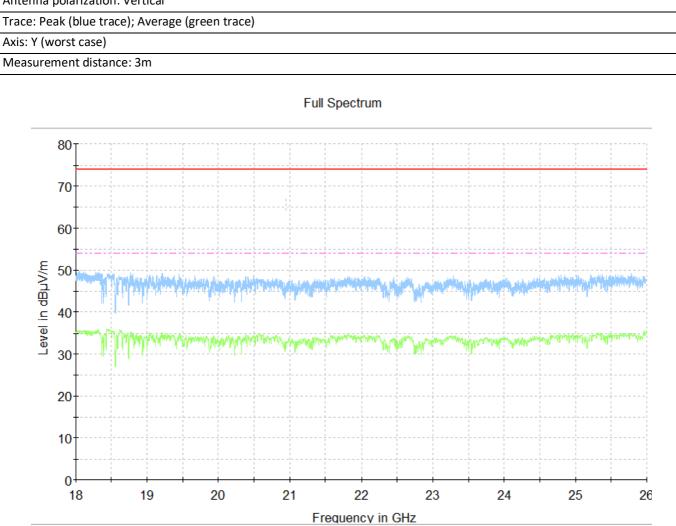


Issue Date: 16/09/2022

Graphical presentation of radiated emission

Operating mode: 1 (Channel 1 – Frequency 2412 MHz)

Frequency scan: 18GHz - 26GHz Data rate: 11g, 18M (worst case) Antenna polarization: Vertical









Issue Date: 16/09/2022

Graphical presentation of radiated emission

Operating mode: 1 (Channel 1 – Frequency 2412 MHz)

Frequency scan: 18GHz – 26GHz

Data rate: 11g, 18M (worst case)

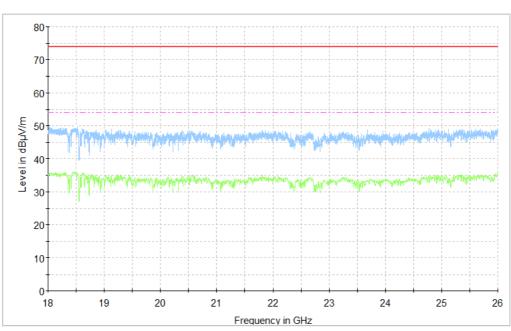
Antenna polarization: Horizontal

Trace: Peak (blue trace); Average (green trace)

Axis: Y (worst case)

Measurement distance: 3m



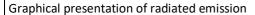






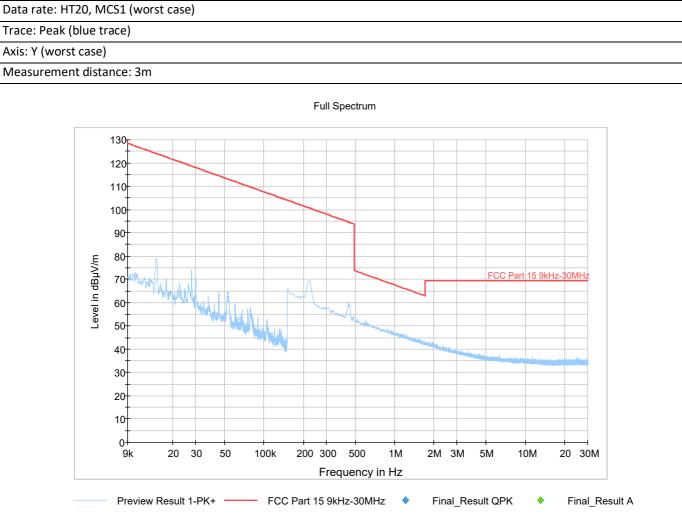


Issue Date: 16/09/2022



Operating mode: 1 (Channel 1 – Frequency 2412 MHz)

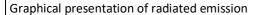
Frequency scan: 9KHz – 30MHz











Operating mode: 1 (Channel 1 – Frequency 2412 MHz)

Frequency scan: 30MHz – 1GHz Data rate: HT20, MCS1 (worst case)

Antenna polarization: Vertical

Trace: Peak (blue trace)

Measurement distance: 3m

# Axis: Y (worst case) Full Spectrum 100 90 80 70 Level in dBµV/m 60 FCC Part 15 Class B Electric Field Strength QP+AV 50 40 30 20 10 30M 50 60 80 100M 200 300 400 500 800 Frequency in Hz FCC Part 15 Class B Electric Field Strength QP Final\_Result AVG Preview Result 1-PK+ Final\_Result QPK

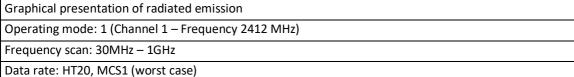
Issue Date: 16/09/2022







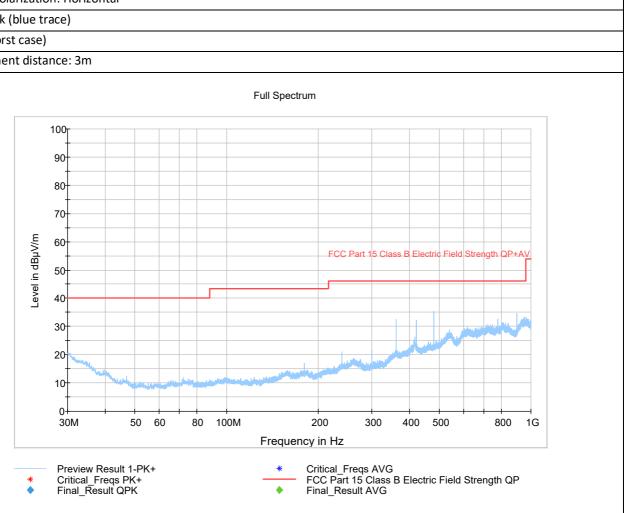
Issue Date: 16/09/2022



Antenna polarization: Horizontal

Trace: Peak (blue trace) Axis: Y (worst case)

Measurement distance: 3m



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Issue Date: 16/09/2022

Graphical presentation of radiated emission

Operating mode: 1 (Channel 1 – Frequency 2412 MHz)

Frequency scan: 1GHz – 3GHz

Data rate: HT20, MCS1 (worst case)

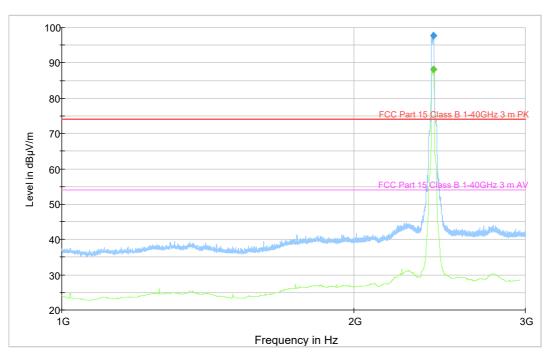
Antenna polarization: Vertical

Trace: Peak (blue trace); Average (green trace)

Axis: Y (worst case)

Measurement distance: 3m

#### Full Spectrum





# **Final Result**

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
2415.250000		88.23			1000.0	1000.000	230.0	V	0.0
2415.250000	97.62				1000.0	1000.000	230.0	V	0.0







Issue Date: 16/09/2022

Graphical presentation of radiated emission

Operating mode: 1 (Channel 1 - Frequency 2412 MHz)

Frequency: Restricted band of operations near fundamental

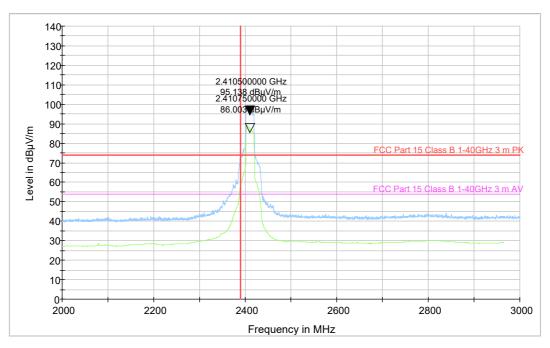
Data rate: HT20, MCS1 (worst case)

Antenna polarization: Vertical

Trace: Peak (blue trace); Average (green trace)

Measurement distance: 3m

#### Full Spectrum



Preview Result 2-AVG Preview Result 1-PK+
FCC Part 15 2390MHz FCC Part 15 Class B 1-40GHz 3 m PK
FCC Part 15 Class B 1-40GHz 3 m AV Final\_Result PK+
Final\_Result AVG

#### **Fundamental Level**

Frequency		ng value uV/m)	Antenna Factor with pre-Amplifier	Cable Loss	Correct reading (dBμV/m)	
(MHz)	Peak	Average	(dB3/m)	(dB)		
2410.500000	105.85		-14.28	3.57	95.14	
2410.750000		93.77	-14.28	3.57	83.06	







Graphical presentation of radiated emission

Operating mode: 1 (Channel 1 - Frequency 2412 MHz)

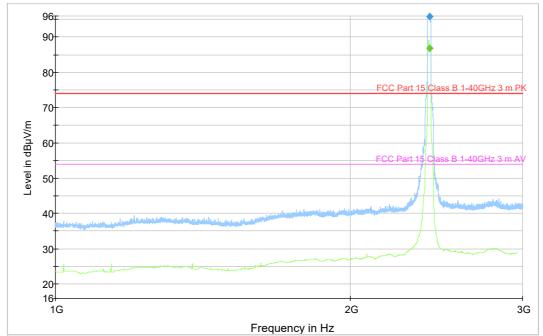
Frequency scan: 1GHz - 3GHz

Data rate: HT20, MCS1 (worst case) Antenna polarization: Horizontal

Trace: Peak (blue trace); Average (green trace)

Axis: Y (worst case)

Measurement distance: 3m



Full Spectrum

Preview Result 2-AVG FCC Part 15 Class B 1-40GHz 3 m PK Final\_Result PK+

Preview Result 1-PK+ FCC Part 15 Class B 1-40GHz 3 m AV Final\_Result AVG

Issue Date: 16/09/2022

# **Final Result**

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
2412.000000		86.76			1000.0	1000.000	230.0	Н	0.0
2412.000000	95.73				1000.0	1000.000	230.0	Н	0.0







Issue Date: 16/09/2022

Graphical presentation of radiated emission

Operating mode: 1 (Channel 1 - Frequency 2412 MHz)

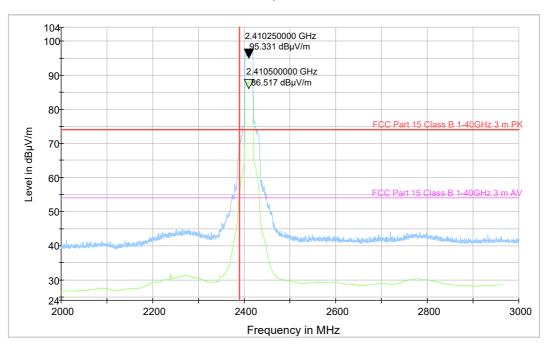
Frequency: Restricted band of operations near fundamental

Data rate: HT20, MCS1 (worst case)
Antenna polarization: Horizontal

Trace: Peak (blue trace); Average (green trace)

Measurement distance: 3m

# Full Spectrum



Preview Result 2-AVG
FCC Part 15 2390MHz
FCC Part 15 Class B 1-40GHz 3 m AV
Final\_Result AVG

Preview Result 1-PK+
FCC Part 15 Class B 1-40GHz 3 m PK
Final\_Result PK+

### **Fundamental Level**

Frequency		ng value uV/m)	Antenna Factor with pre-Amplifier	Cable Loss	Correct reading	
(MHz)	Peak Avera		(dB3/m)	(dB)	(dBμV/m)	
2410.250000	106.04		-14.28	3.57	95.33	
2410.500000		97.23	-14.28	3.57	86.52	







Graphical presentation of radiated emission

Operating mode: 1 (Channel 1 – Frequency 2412 MHz)

Frequency scan: 3GHz -18GHz

Data rate: HT20, MCS1 (worst case)

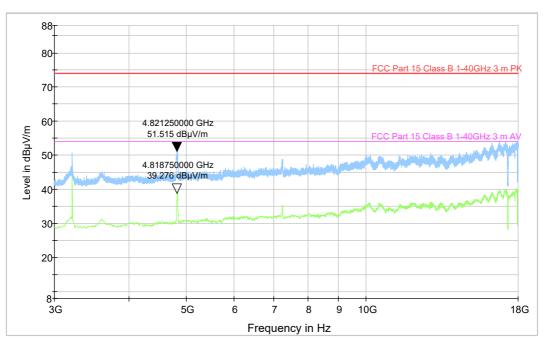
Antenna polarization: Vertical

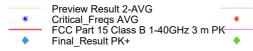
Trace: Peak (blue trace); Average (green trace)

Axis: Y (worst case)

Measurement distance: 3m

### Full Spectrum





Preview Result 1-PK+ Critical\_Freqs PK+ FCC Part 15 Class B 1-40GHz 3 m AV Final\_Result AVG

Issue Date: 16/09/2022

# **Final Result**

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
4821.250000	51.51		74.00	22.49	1000.0	1000.000	100.0	V	90.0
4818.750000		39.27	54.00	14.73	1000.0	1000.000	100.0	V	90.0







Graphical presentation of radiated emission

Operating mode: 1 (Channel 1 – Frequency 2412 MHz)

Frequency scan: 3GHz -18GHz Data rate: HT20, MCS1 (worst case)

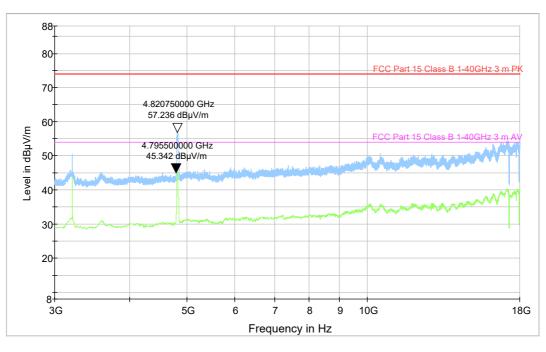
Antenna polarization: Horizontal

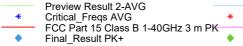
Trace: Peak (blue trace); Average (green trace)

Axis: Y (worst case)

Measurement distance: 3m

### Full Spectrum





Preview Result 1-PK+ Critical\_Freqs PK+ FCC Part 15 Class B 1-40GHz 3 m AV Final\_Result AVG

Issue Date: 16/09/2022

#### **Final Result**

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
4820.750000	57.23		74.00	16.77	1000.0	1000.000	100.0	Н	90.0
4795.500000		45.34	54.00	8.66	1000.0	1000.000	100.0	Н	90.0







Issue Date: 16/09/2022

Graphical presentation of radiated emission

Operating mode: 1 (Channel 1 – Frequency 2412 MHz)

Frequency scan: 18GHz – 26GHz

Data rate: HT20, MCS1 (worst case)

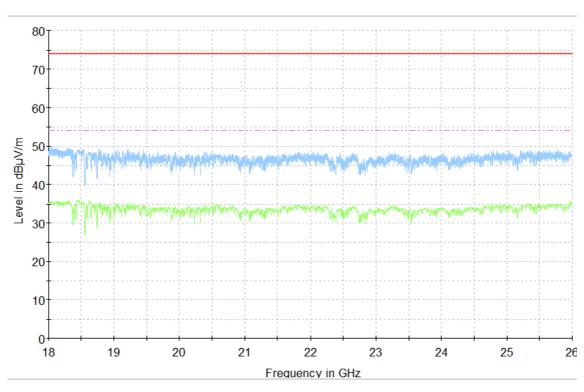
Antenna polarization: Vertical

Trace: Peak (blue trace); Average (green trace)

Axis: Y (worst case)

Measurement distance: 3m

# Full Spectrum









Issue Date: 16/09/2022

Graphical presentation of radiated emission

Operating mode: 1 (Channel 1 – Frequency 2412 MHz)

Frequency scan: 18GHz – 26GHz

Data rate: HT20, MCS1 (worst case)

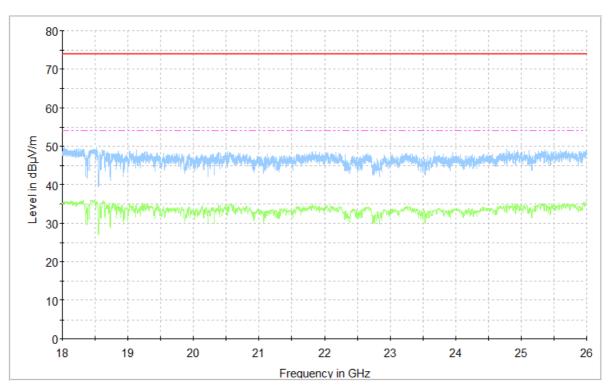
Antenna polarization: Horizontal

Trace: Peak (blue trace); Average (green trace)

Axis: Y (worst case)

Measurement distance: 3m

# Full Spectrum







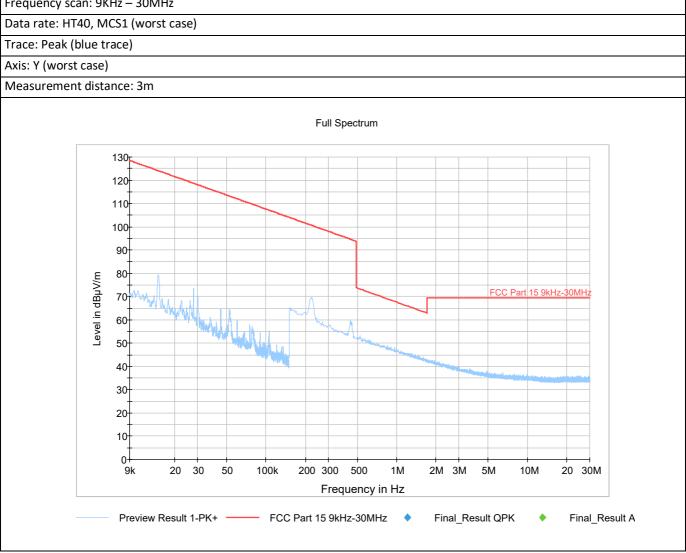


Issue Date: 16/09/2022

Graphical presentation of radiated emission

Operating mode: 2 (Channel 3 – Frequency 2422 MHz)

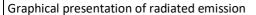
Frequency scan: 9KHz – 30MHz











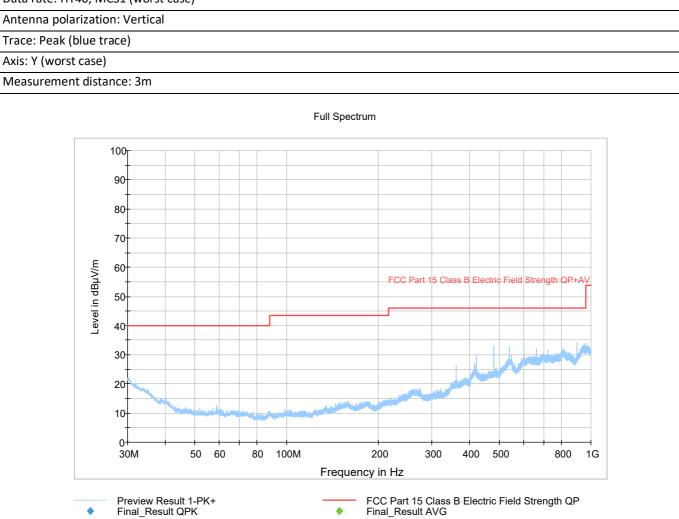
Operating mode: 2 (Channel 3 – Frequency 2422 MHz)

Frequency scan: 30MHz – 1GHz Data rate: HT40, MCS1 (worst case)

Antenna polarization: Vertical

Axis: Y (worst case)

Measurement distance: 3m



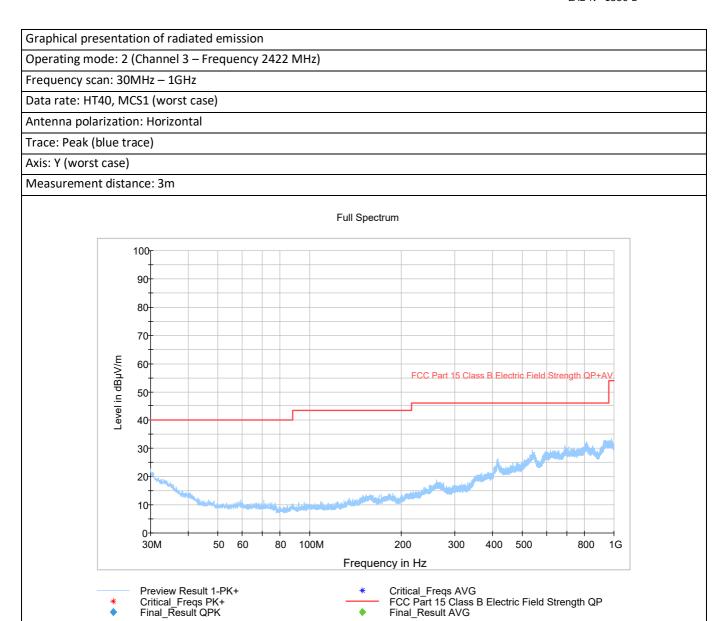
Issue Date: 16/09/2022







Issue Date: 16/09/2022









Issue Date: 16/09/2022

Graphical presentation of radiated emission

Operating mode: 2 (Channel 3 - Frequency 2422 MHz)

Frequency scan: 1GHz – 3GHz

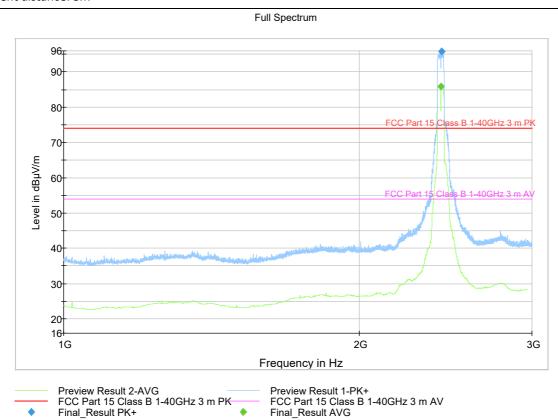
Data rate: HT40, MCS1 (worst case)

Antenna polarization: Vertical

Trace: Peak (blue trace); Average (green trace)

Axis: Y (worst case)

Measurement distance: 3m



# **Final Result**

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
2423.500000		85.96			1000.0	1000.000	110.0	V	0.0
2425.000000	95.77				1000.0	1000.000	110.0	٧	0.0







Graphical presentation of radiated emission

Operating mode: 2 (Channel 3 - Frequency 2422 MHz)

Frequency: Restricted band of operations near fundamental

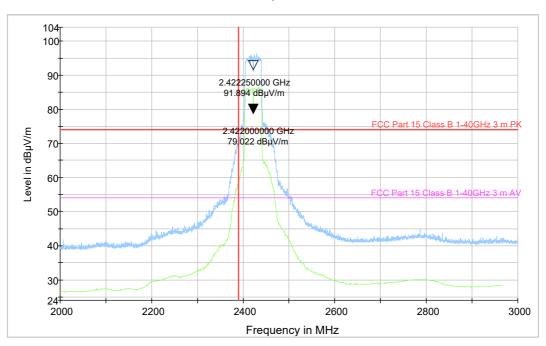
Data rate: HT40, MCS1 (worst case)

Antenna polarization: Vertical

Trace: Peak (blue trace); Average (green trace)

Measurement distance: 3m

# Full Spectrum



Preview Result 2-AVG
FCC Part 15 2390MHz
FCC Part 15 Class B 1-40GHz 3 m AV
Final\_Result AVG

Preview Result 1-I
FCC Part 15 Class
Final\_Result PK+

Preview Result 1-PK+ FCC Part 15 Class B 1-40GHz 3 m PK

Issue Date: 16/09/2022

### **Fundamental Level**

Frequency (MHz)		ng value uV/m)	Antenna Factor with pre-Amplifier	Cable Loss	Correct reading
	Peak	Average	(dB3/m)	(dB)	(dBμV/m)
2422.250000	101.66		-13.37	3.61	91.90
2422.000000		88.78	-13.37	3.61	79.02







Issue Date: 16/09/2022

Graphical presentation of radiated emission

Operating mode: 2 (Channel 3 – Frequency 2422 MHz)

Frequency scan: 1GHz - 3GHz Data rate: HT40, MCS1 (worst case) Antenna polarization: Horizontal

Trace: Peak (blue trace); Average (green trace)

Axis: Y (worst case)

Measurement distance: 3m

# Full Spectrum 100 90 80 FCC Part 15 Class B 1-40GHz 3 m PK 70 Level in dBµV/m 60 50 40 30 20 1G 2G 3G Frequency in Hz Preview Result 1-PK+ FCC Part 15 Class B 1-40GHz 3 m AV Final\_Result AVG



Preview Result 2-AVG

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
2418.250000	90.63		74.00		1000.0	1000.000	110.0	Н	180.0
2423.250000		80.31	54.00		1000.0	1000.000	110.0	Н	180.0







Issue Date: 16/09/2022

Graphical presentation of radiated emission

Operating mode: 2 (Channel 3 - Frequency 2422 MHz)

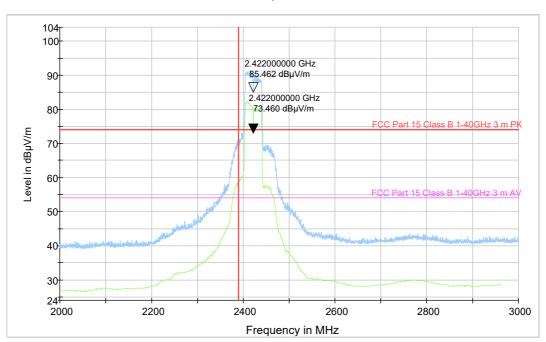
Frequency: Restricted band of operations near fundamental

Data rate: HT40, MCS1 (worst case)
Antenna polarization: Horizontal

Trace: Peak (blue trace); Average (green trace)

Measurement distance: 3m

# Full Spectrum



Preview Result 2-AVG
FCC Part 15 2390MHz
FCC Part 15 Class B 1-40GHz 3 m AV
Final\_Result AVG

Preview Result 1-PK+
FCC Part 15 Class B 1-40GHz 3 m PK
Final\_Result PK+
Final\_Result AVG

### **Fundamental Level**

Frequency		ng value uV/m)	Antenna Factor with pre-Amplifier	Cable Loss	Correct reading	
(IVIHZ)	(MHz) Peak Average		(dB3/m)	(dB)	(dBμV/m)	
2422.000000	95.22		-13.37	3.61	85.46	
2422.000000		83.22	-13.37	3.61	73.46	







Graphical presentation of radiated emission

Operating mode: 2 (Channel 3 - Frequency 2422 MHz)

Frequency scan: 3GHz -18GHz

Data rate: HT40, MCS1 (worst case)

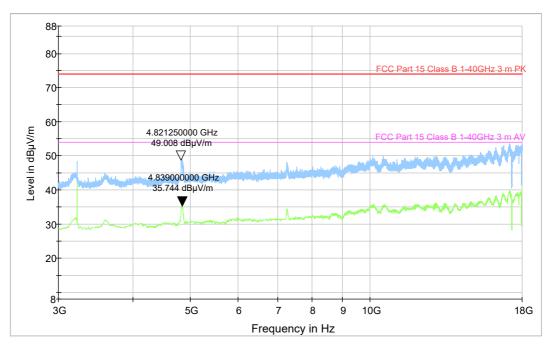
Antenna polarization: Vertical

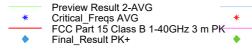
Trace: Peak (blue trace); Average (green trace)

Axis: Y (worst case)

Measurement distance: 3m

### Full Spectrum





Preview Result 1-PK+ Critical\_Freqs PK+ FCC Part 15 Class B 1-40GHz 3 m AV Final\_Result AVG

Issue Date: 16/09/2022

# **Final Result**

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
4821.250000	49.00		74.00	25.00	1000.0	1000.000	160.0	٧	90.0
4839.000000		35.74	54.00	18.26	1000.0	1000.000	160.0	V	90.0







Graphical presentation of radiated emission

Operating mode: 2 (Channel 3 - Frequency 2422 MHz)

Frequency scan: 3GHz -18GHz

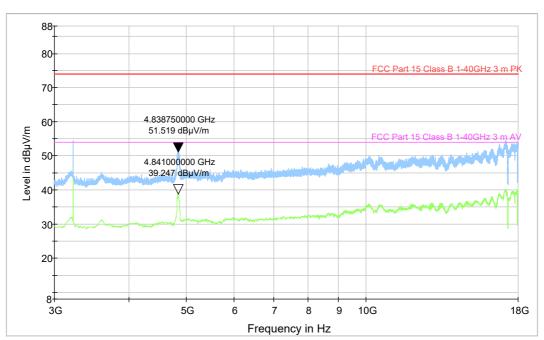
Data rate: HT40, MCS1 (worst case)
Antenna polarization: Horizontal

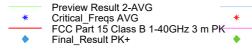
Trace: Peak (blue trace); Average (green trace)

Axis: Y (worst case)

Measurement distance: 3m

### Full Spectrum





Preview Result 1-PK+ Critical\_Freqs PK+ FCC Part 15 Class B 1-40GHz 3 m AV Final\_Result AVG

Issue Date: 16/09/2022

# **Final Result**

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
4838.750000	51.52		74.00	22.48	1000.0	1000.000	160.0	٧	180.0
4841.000000		39.25	54.00	14.75	1000.0	1000.000	160.0	V	180.0







Issue Date: 16/09/2022

Graphical presentation of radiated emission

Operating mode: 2 (Channel 3 – Frequency 2422 MHz)

Frequency scan: 18GHz – 26GHz

Data rate: HT40, MCS1 (worst case)

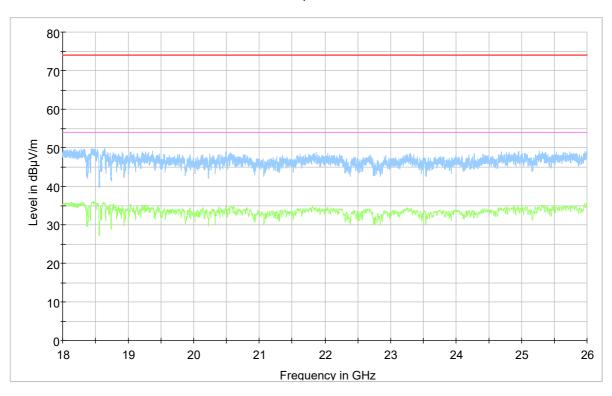
Antenna polarization: Vertical

Trace: Peak (blue trace); Average (green trace)

Axis: Y (worst case)

Measurement distance: 3m

# Full Spectrum









Issue Date: 16/09/2022

Graphical presentation of radiated emission

Operating mode: 2 (Channel 3 – Frequency 2422 MHz)

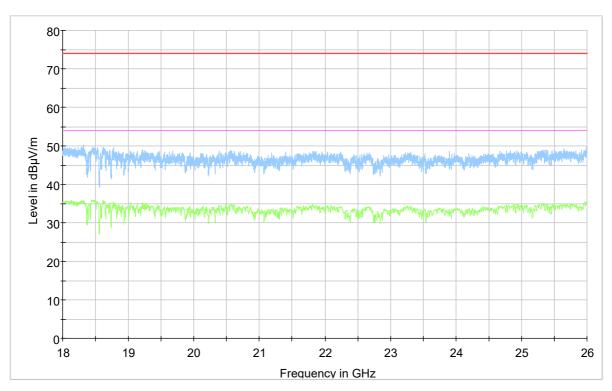
Frequency scan: 18GHz – 26GHz Antenna polarization: Horizontal Data rate: HT40, MCS1 (worst case)

Trace: Peak (blue trace); Average (green trace)

Axis: Y (worst case)

Measurement distance: 3m

# Full Spectrum

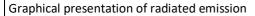








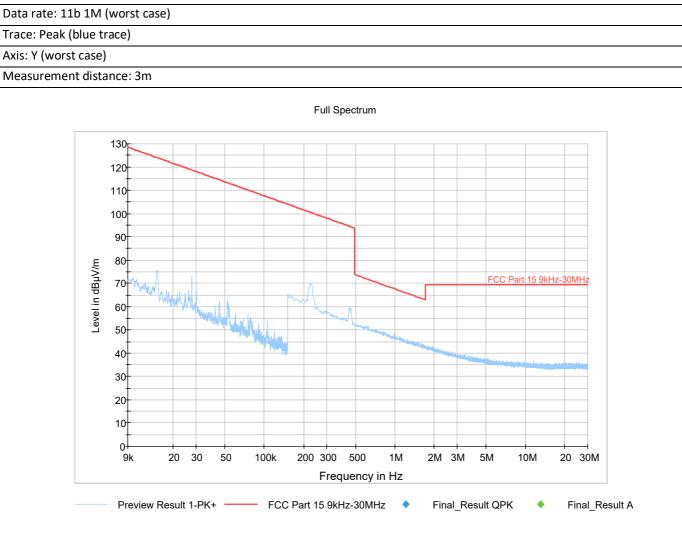
Issue Date: 16/09/2022



Operating mode: 3 (Channel 6 – Frequency 2437 MHz)

Frequency scan: 9KHz – 30MHz

Trace: Peak (blue trace)

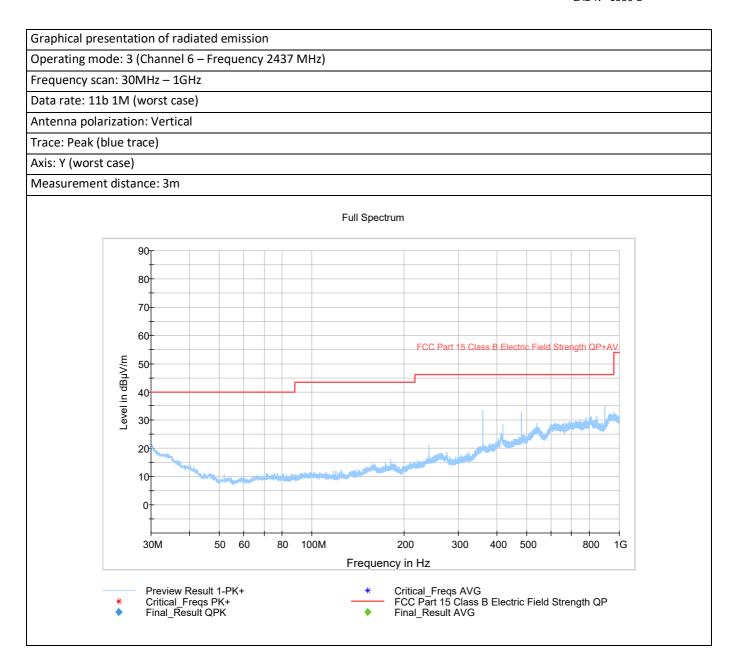








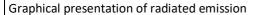
Issue Date: 16/09/2022











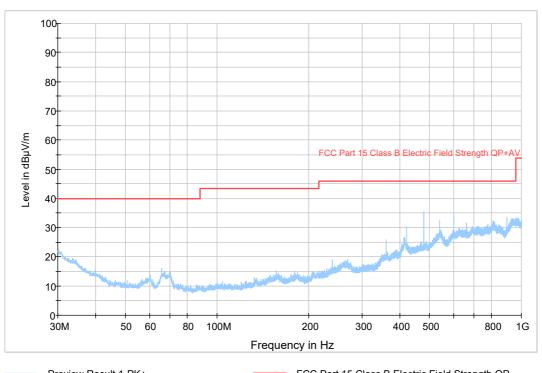
Operating mode: 3 (Channel 6 – Frequency 2437 MHz)

Frequency scan: 30MHz – 1GHz
Data rate: 11b 1M (worst case)
Antenna polarization: Horizontal

Trace: Peak (blue trace)
Axis: Y (worst case)

Measurement distance: 3m

# Full Spectrum



Preview Result 1-PK+

Final\_Result QPK

FCC Part 15 Class B Electric Field Strength QP Final\_Result AVG

Issue Date: 16/09/2022







Graphical presentation of radiated emission

Operating mode: 3 (Channel 6 - Frequency 2437 MHz)

Frequency scan: 1GHz – 3GHz

Data rate: 11b 1M (worst case)

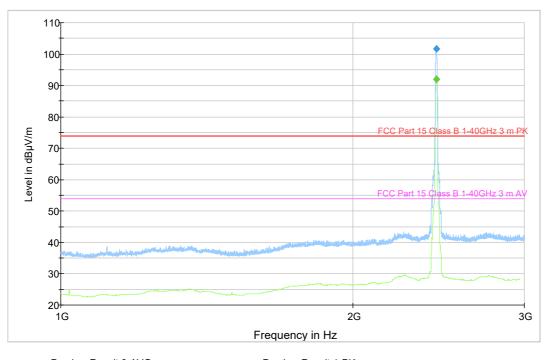
Antenna polarization: Vertical

Trace: Peak (blue trace); Average (green trace)

Axis: Y (worst case)

Measurement distance: 3m

#### Full Spectrum



Preview Result 2-AVG
FCC Part 15 Class B 1-40GHz 3 m PK
Final Result PK+

Preview Result 1-PK+ FCC Part 15 Class B 1-40GHz 3 m AV Final Result AVG

Issue Date: 16/09/2022

# **Final Result**

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBµV/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
2435.000000		92.01			1000.000	170.0	٧	0.0
2436.250000	101.52				1000.000	170.0	V	0.0







Issue Date: 16/09/2022

Graphical presentation of radiated emission

Operating mode: 3 (Channel 6 - Frequency 2437 MHz)

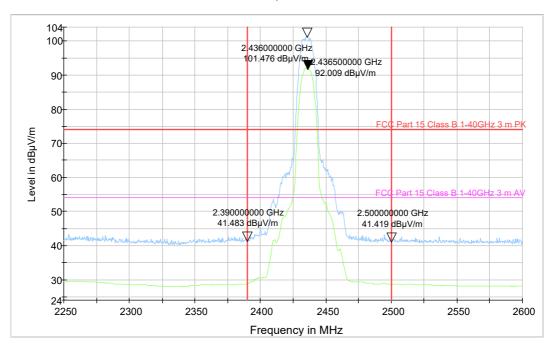
Frequency: Restricted band of operations near fundamental

Data rate: 11b 1M (worst case)
Antenna polarization: Vertical

Trace: Peak (blue trace); Average (green trace)

Measurement distance: 3m

#### Full Spectrum



Preview Result 2-AVG
FCC Part 15 2390MHz
FCC Part 15 Class B 1-40GHz 3 m PK
Final\_Result PK+

Preview Result 1-PK+
FCC Part 18 2500MHz ISM Band
FCC Part 15 Class B 1-40GHz 3 m AV
Final\_Result AVG

#### **Fundamental Level**

Frequency		ng value uV/m)	Antenna Factor with pre-Amplifier	Cable Loss	Correct reading
(MHz) Peak Average		(dB3/m)	(dB)	(dBμV/m)	
2436.000000	111.33		-13.24	3.38	101.47
2436.500000		101.86	-13.24	3.38	92.00







Issue Date: 16/09/2022

Graphical presentation of radiated emission

Operating mode: 3 (Channel 6 - Frequency 2437 MHz)

Frequency scan: 1GHz – 3GHz

Data rate: 11b 1M (worst case)

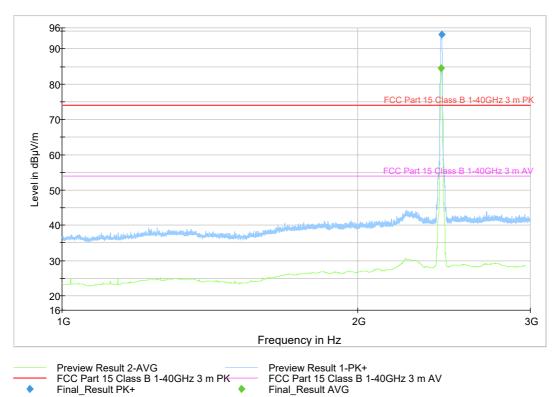
Antenna polarization: Horizontal

Trace: Peak (blue trace); Average (green trace)

Axis: Y (worst case)

Measurement distance: 3m

#### Full Spectrum



# **Final Result**

Frequency	MaxPeak	Average	Limit	Margin	Meas. Time	Bandwidth	Height	Pol	Azimuth
(MHz)	(dBµV/m)	(dBµV/m)	(dBµV/m)	(dB)	(ms)	(kHz)	(cm)	POI	(deg)
2435.000000		84.58			1000.0	1000.000	170.0	Н	0.0
2436.250000	94.05				1000.0	1000.000	170.0	Н	0.0







Issue Date: 16/09/2022

Graphical presentation of radiated emission

Operating mode: 3 (Channel 6 - Frequency 2437 MHz)

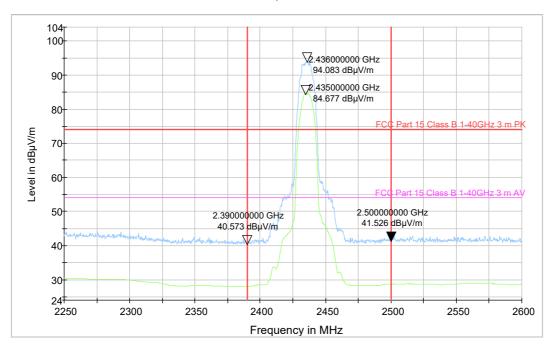
Frequency: Restricted band of operations near fundamental

Data rate: 11b 1M (worst case)
Antenna polarization: Horizontal

Trace: Peak (blue trace); Average (green trace)

Measurement distance: 3m

#### Full Spectrum





#### **Fundamental Level**

Frequency		ng value uV/m)	Antenna Factor with pre-Amplifier	Cable Loss	Correct reading
(MHz) Peak Average		(dB3/m)	(dB)	(dBμV/m)	
2436.000000	104.04		-13.24	3.38	94.08
2435.000000		94.53	-13.24	3.38	84.67







Graphical presentation of radiated emission

Operating mode: 3 (Channel 6 - Frequency 2437 MHz)

Frequency scan: 3GHz -18GHz

Data rate: 11b 1M (worst case)

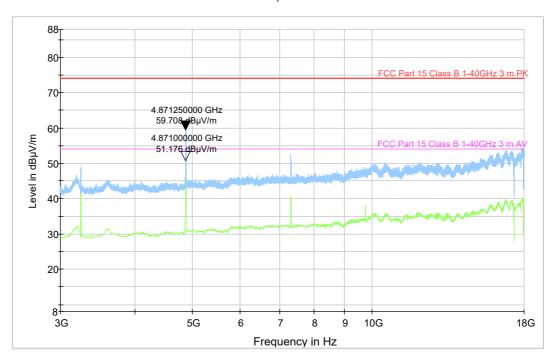
Antenna polarization: Vertical

Trace: Peak (blue trace); Average (green trace)

Axis: Y (worst case)

Measurement distance: 3m

#### Full Spectrum



Preview Result 2-AVG
FCC Part 15 Class B 1-40GHz 3 m PK
Final\_Result PK+

Preview Result 1-PK+ FCC Part 15 Class B 1-40GHz 3 m AV Final\_Result AVG

Issue Date: 16/09/2022

#### **Final Result**

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
4871.250000	59.70		74.00	14.30	1000.0	1000.000	180.0	V	180.0
4871.000000		51.17	54.00	2.83	1000.0	1000.000	180.0	٧	180.0







Issue Date: 16/09/2022

Graphical presentation of radiated emission

Operating mode: 3 (Channel 6 - Frequency 2437 MHz)

Frequency scan: 3GHz -18GHz

Data rate: 11b 1M (worst case)

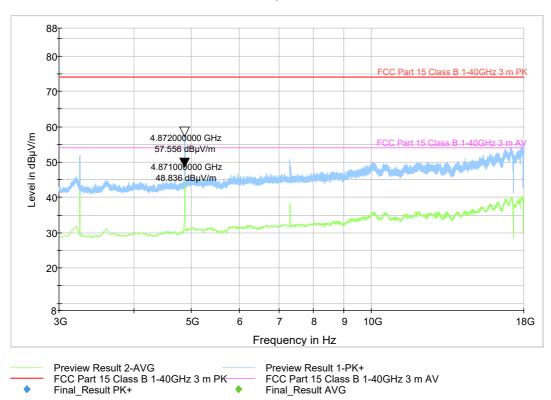
Antenna polarization: Horizontal

Trace: Peak (blue trace); Average (green trace)

Axis: Y (worst case)

Measurement distance: 3m

### Full Spectrum



## **Final Result**

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
4872.000000	57.55		74.00	16.45	1000.0	1000.000	165.0	V	180.0
4871.000000		48.83	54.00	5.17	1000.0	1000.000	165.0	V	180.0







Issue Date: 16/09/2022

Graphical presentation of radiated emission

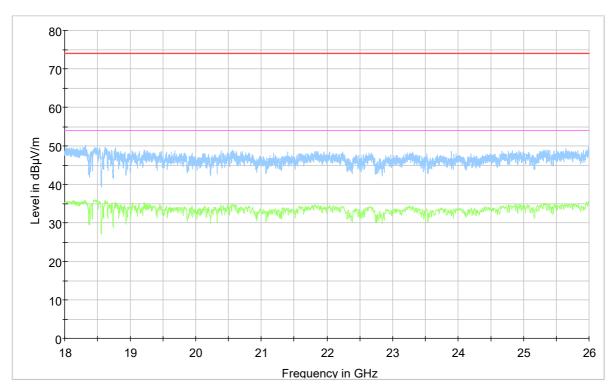
Operating mode: 3 (Channel 6 – Frequency 2437 MHz)

Frequency scan: 18GHz – 26GHz Data rate: 11b 1M (worst case) Antenna polarization: Vertical

Trace: Peak (blue trace); Average (green trace)

Axis: Y (worst case)

Measurement distance: 3m









Issue Date: 16/09/2022

Graphical presentation of radiated emission

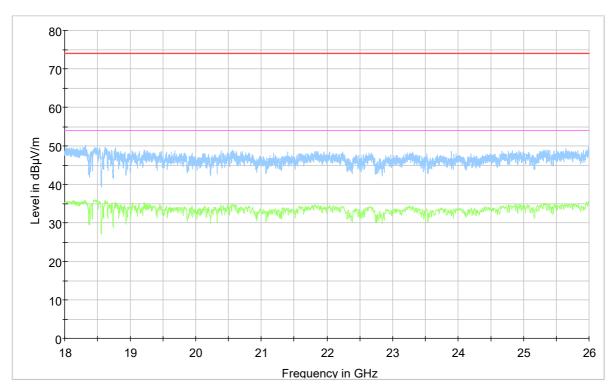
Operating mode: 3 (Channel 6 – Frequency 2437 MHz)

Frequency scan: 18GHz – 26GHz Data rate: 11b 1M (worst case) Antenna polarization: Horizontal

Trace: Peak (blue trace); Average (green trace)

Axis: Y (worst case)

Measurement distance: 3m

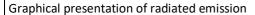








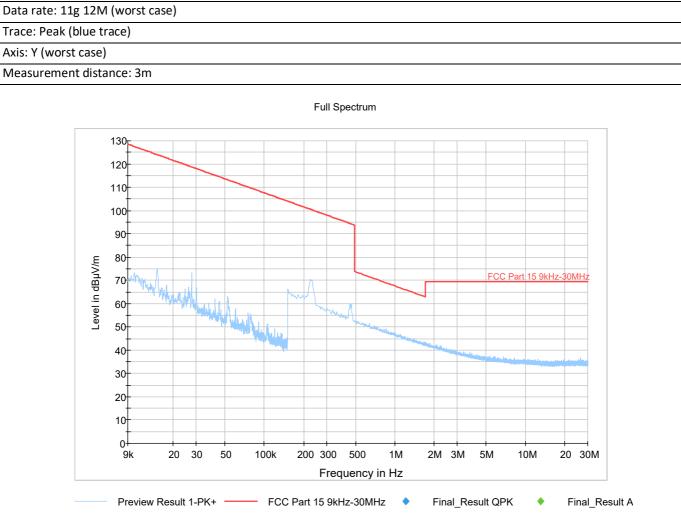
Issue Date: 16/09/2022



Operating mode: 3 (Channel 6 – Frequency 2437 MHz)

Frequency scan: 9KHz – 30MHz Data rate: 11g 12M (worst case)

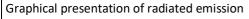
Trace: Peak (blue trace)











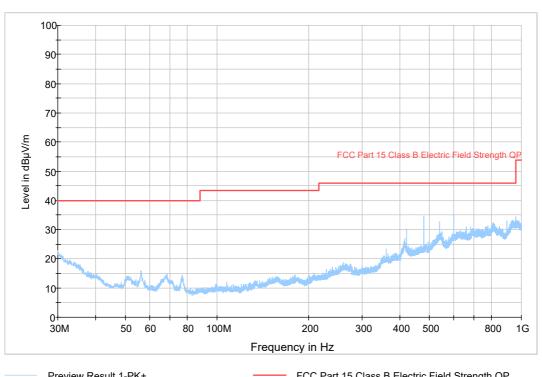
Operating mode: 3 (Channel 6 – Frequency 2437 MHz)

Frequency scan: 30MHz – 1GHz
Data rate: 11g 12M (worst case)
Antenna polarization: Vertical

Trace: Peak (blue trace)
Axis: Y (worst case)

Measurement distance: 3m

# Full Spectrum



Preview Result 1-PK+

Final\_Result QPK

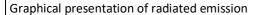
FCC Part 15 Class B Electric Field Strength QP Final\_Result AVG

Issue Date: 16/09/2022









Operating mode: 3 (Channel 6 – Frequency 2437 MHz)

Frequency scan: 30MHz – 1GHz Data rate: 11g 12M (worst case) Antenna polarization: Horizontal

Trace: Peak (blue trace) Axis: Y (worst case)

Measurement distance: 3m

# Full Spectrum 100 90 80 70 Level in dBµV/m 60 FCC Part 15 Class B Electric Field Strength QP 50-40 30-20 10 30M 100M 200 400 500 50 60 800 Frequency in Hz

FCC Part 15 Class B Electric Field Strength QP Final\_Result AVG

Issue Date: 16/09/2022







Graphical presentation of radiated emission

Operating mode: 3 (Channel 6 – Frequency 2437 MHz)

Frequency scan: 1GHz – 3GHz

Data rate: 11g 12M (worst case)

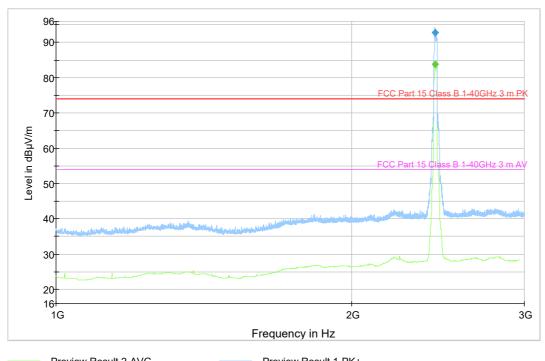
Antenna polarization: Vertical

Trace: Peak (blue trace); Average (green trace)

Axis: Y (worst case)

Measurement distance: 3m

### Full Spectrum



Preview Result 2-AVG
FCC Part 15 Class B 1-40GHz 3 m PK
Final\_Result PK+

Preview Result 1-PK+ FCC Part 15 Class B 1-40GHz 3 m AV Final Result AVG

Issue Date: 16/09/2022

## **Final Result**

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
2436.000000		83.78	54.00		1000.0	1000.000	185.0	V	0.0
2436.000000	92.78		74.00		1000.0	1000.000	185.0	V	0.0







Issue Date: 16/09/2022

Graphical presentation of radiated emission

Operating mode: 3 (Channel 6 - Frequency 2437 MHz)

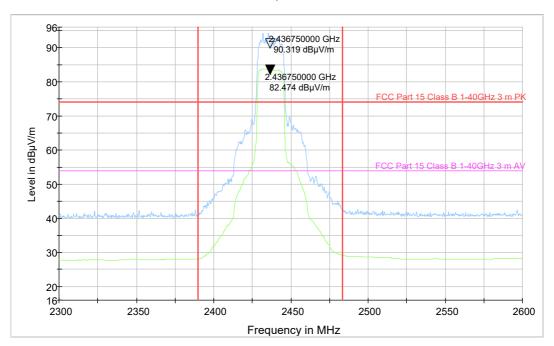
Frequency: Restricted band of operations near fundamental

Data rate: 11g 12M (worst case)
Antenna polarization: Vertical

Trace: Peak (blue trace); Average (green trace)

Measurement distance: 3m

## Full Spectrum





## **Fundamental Level**

Frequency		ng value uV/m)	Antenna Factor with pre-Amplifier	Cable Loss	Correct reading
(MHz) Peak Average		(dB3/m)	(dB)	(dBμV/m)	
2436.750000	100.18		-13.24	3.38	90.32
2436.750000		92.33	-13.24	3.38	82.47







Issue Date: 16/09/2022

Graphical presentation of radiated emission

Operating mode: 3 (Channel 6 - Frequency 2437 MHz)

Frequency scan: 1GHz – 3GHz

Data rate: 11g 12M (worst case)

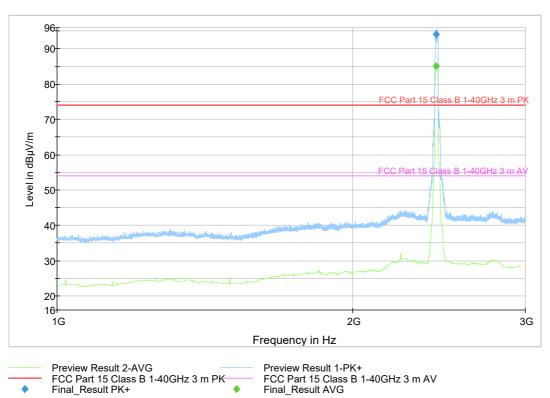
Antenna polarization: Horizontal

Trace: Peak (blue trace); Average (green trace)

Axis: Y (worst case)

Measurement distance: 3m

### Full Spectrum



## **Final Result**

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
2436.000000		85.14	54.00		1000.0	1000.000	190.0	Н	0.0
2436.000000	94.12		74.00		1000.0	1000.000	190.0	Н	0.0







Issue Date: 16/09/2022

Graphical presentation of radiated emission

Operating mode: 3 (Channel 6 - Frequency 2437 MHz)

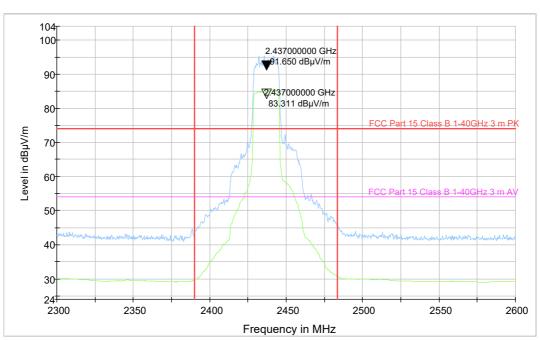
Frequency: Restricted band of operations near fundamental

Data rate: 11g 12M (worst case)
Antenna polarization: Horizontal

Trace: Peak (blue trace); Average (green trace)

Measurement distance: 3m

## Full Spectrum





## **Fundamental Level**

Frequency (dBµV/m)		_	Antenna Factor with pre-Amplifier	Cable Loss	Correct reading	
(IVIHZ)	Peak	Average	(dB3/m)	(dB)	(dBμV/m)	
2437.000000	101.51		-13.24	3.38	91.65	
2437.000000		93.17	-13.24	3.38	83.31	







Graphical presentation of radiated emission

Operating mode: 3 (Channel 6 - Frequency 2437 MHz)

Frequency scan: 3GHz -18GHz

Data rate: 11g 12M (worst case)

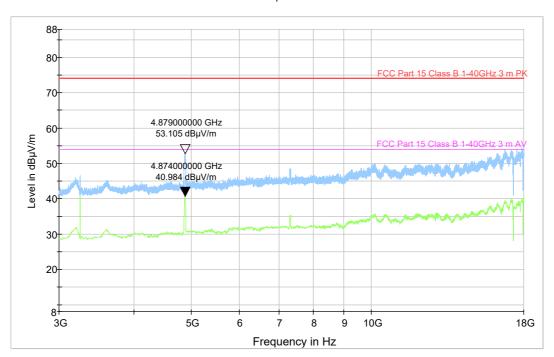
Antenna polarization: Vertical

Trace: Peak (blue trace); Average (green trace)

Axis: Y (worst case)

Measurement distance: 3m

## Full Spectrum



Preview Result 2-AVG
FCC Part 15 Class B 1-40GHz 3 m PK
Final\_Result PK+

Preview Result 1-PK+ FCC Part 15 Class B 1-40GHz 3 m AV Final\_Result AVG

Issue Date: 16/09/2022

## **Final Result**

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
4879.000000	53.10		74.00	20.90	1000.0	1000.000	155.0	V	0.0
4874.000000		40.99	54.00	13.01	1000.0	1000.000	155.0	V	0.0







Graphical presentation of radiated emission

Operating mode: 3 (Channel 6 - Frequency 2437 MHz)

Frequency scan: 3GHz -18GHz

Data rate: 11g 12M (worst case)

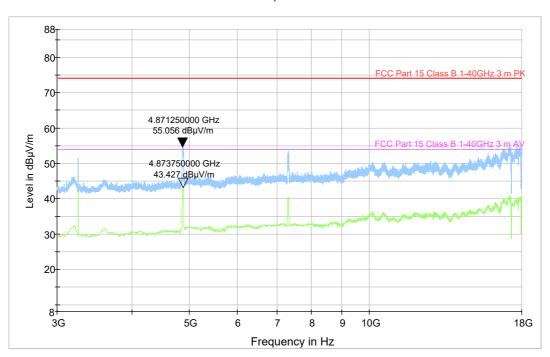
Antenna polarization: Horizontal

Trace: Peak (blue trace); Average (green trace)

Axis: Y (worst case)

Measurement distance: 3m

## Full Spectrum



Preview Result 2-AVG
FCC Part 15 Class B 1-40GHz 3 m PK
Final\_Result PK+

Preview Result 1-PK+ FCC Part 15 Class B 1-40GHz 3 m AV Final\_Result AVG

Issue Date: 16/09/2022

## **Final Result**

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
4871.250000	55.05		74.00	18.95	1000.0	1000.000	115.0	V	0.0
4873.750000		43.43	54.00	10.57	1000.0	1000.000	115.0	٧	0.0







Issue Date: 16/09/2022

Graphical presentation of radiated emission

Operating mode: 3 (Channel 6 – Frequency 2437 MHz)

Frequency scan: 18GHz – 26GHz

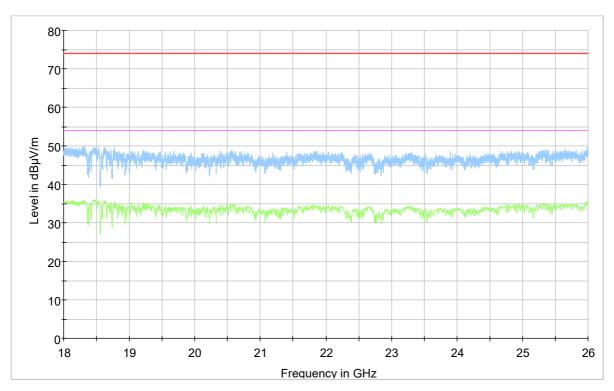
Data rate: 11g 12M (worst case)

Antenna polarization: Vertical

Trace: Peak (blue trace); Average (green trace)

Axis: Y (worst case)

Measurement distance: 3m









Issue Date: 16/09/2022

Graphical presentation of radiated emission

Operating mode: 3 (Channel 6 – Frequency 2437 MHz)

Frequency scan: 18GHz – 26GHz

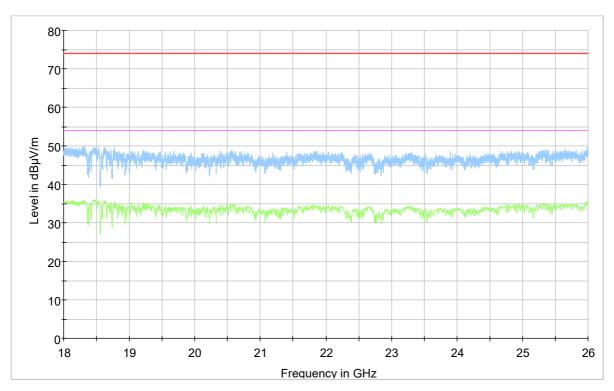
Data rate: 11g 12M (worst case)

Antenna polarization: Horizontal

Trace: Peak (blue trace); Average (green trace)

Axis: Y (worst case)

Measurement distance: 3m







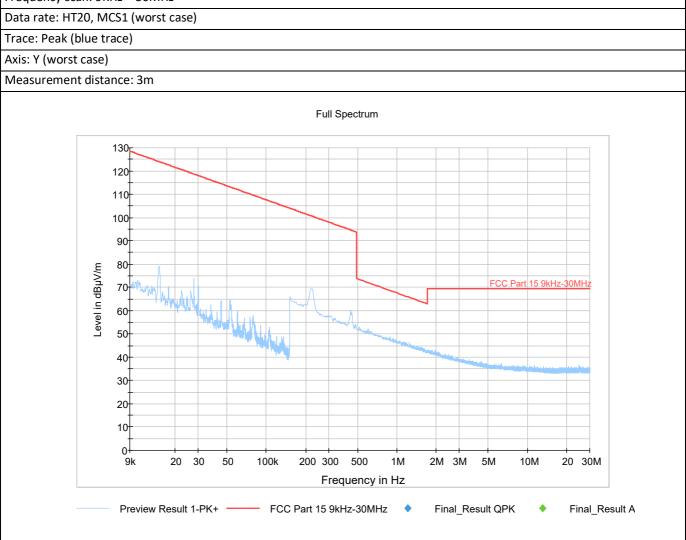


Issue Date: 16/09/2022

Graphical presentation of radiated emission

Operating mode: 3 (Channel 6 – Frequency 2437 MHz)

Frequency scan: 9KHz – 30MHz

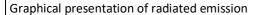








Issue Date: 16/09/2022



Operating mode: 3 (Channel 6 – Frequency 2437 MHz)

Frequency scan: 30MHz – 1GHz Data rate: HT20, MCS1 (worst case)

Antenna polarization: Vertical

Trace: Peak (blue trace)

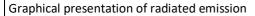
Measurement distance: 3m

# Axis: Y (worst case) Full Spectrum 100 90 80 70 Level in dBµV/m 60 FCC Part 15 Class B Electric Field Strength QP+AV 50 40 30-20 10 30M 50 60 100M 200 300 400 500 800 Frequency in Hz FCC Part 15 Class B Electric Field Strength QP Final\_Result AVG Preview Result 1-PK+ Final\_Result QPK









Operating mode: 3 (Channel 6 – Frequency 2437 MHz)

Frequency scan: 30MHz – 1GHz Data rate: HT20, MCS1 (worst case) Antenna polarization: Horizontal

Trace: Peak (blue trace) Axis: Y (worst case)

Measurement distance: 3m

# Full Spectrum 100 90 80 70 Level in dBµV/m 60 FCC Part 15 Class B Electric Field Strength QP+AV 50-40 30-20 10 30M 100M 300 400 500 50 60 200 800 Frequency in Hz

FCC Part 15 Class B Electric Field Strength QP Final\_Result AVG

Issue Date: 16/09/2022







Issue Date: 16/09/2022

Graphical presentation of radiated emission

Operating mode: 3 (Channel 6 - Frequency 2437 MHz)

Frequency scan: 1GHz – 3GHz

Data rate: HT20, MCS1 (worst case)

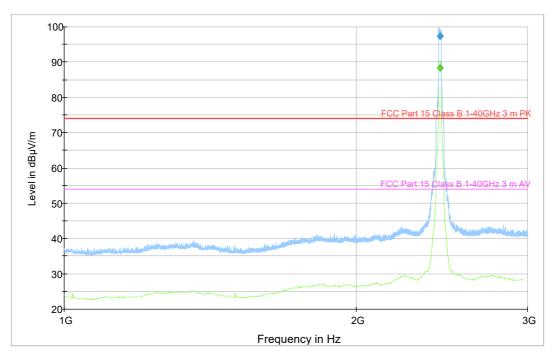
Antenna polarization: Vertical

Trace: Peak (blue trace); Average (green trace)

Axis: Y (worst case)

Measurement distance: 3m

## Full Spectrum





# **Final Result**

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
2437.000000		88.34	54.00		1000.0	1000.000	170.0	٧	0.0
2437.000000	97.39		74.00		1000.0	1000.000	170.0	V	0.0







Issue Date: 16/09/2022

Graphical presentation of radiated emission

Operating mode: 3 (Channel 6 - Frequency 2437 MHz)

Frequency: Restricted band of operations near fundamental

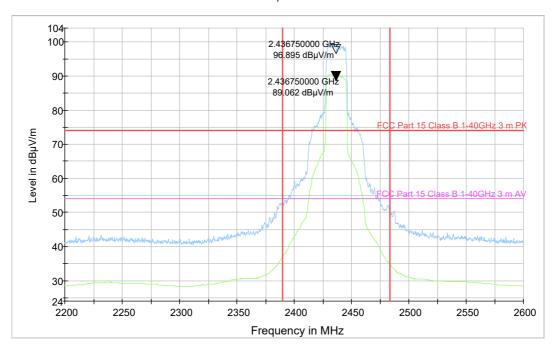
Data rate: HT20, MCS1 (worst case)

Antenna polarization: Vertical

Trace: Peak (blue trace); Average (green trace)

Measurement distance: 3m

## Full Spectrum



Preview Result 2-AVG Preview Result 1-PK+
FCC Part 15 2390MHz FCC Part 15 2483.5MHz
FCC Part 15 Class B 1-40GHz 3 m PK
Final\_Result PK+

Preview Result 1-PK+
FCC Part 15 2483.5MHz
FCC Part 15 Class B 1-40GHz 3 m AV
Final\_Result AVG

### **Fundamental Level**

Frequency		ng value uV/m)	Antenna Factor with pre-Amplifier	Cable Loss	Correct reading	
(MHz)	Peak	Average	(dB3/m)	(dB)	(dBμV/m)	
2436.750000	106.75		-13.24	3.38	96.89	
2436.750000		98.92	-13.24	3.38	89.06	







Issue Date: 16/09/2022

Graphical presentation of radiated emission

Operating mode: 3 (Channel 6 - Frequency 2437 MHz)

Frequency scan: 1GHz – 3GHz

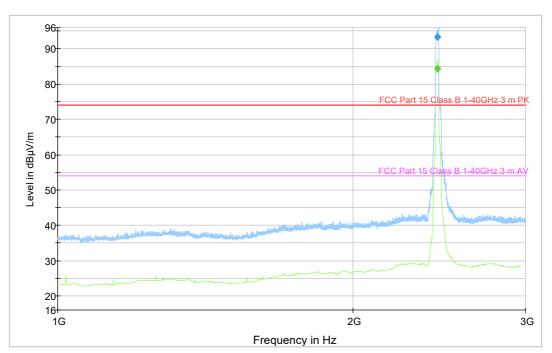
Data rate: HT20, MCS1 (worst case)
Antenna polarization: Horizontal

Trace: Peak (blue trace); Average (green trace)

Axis: Y (worst case)

Measurement distance: 3m

### Full Spectrum





# **Final Result**

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
2437.000000		84.33	54.00		1000.0	1000.000	170.0	Н	0.0
2437.000000	93.36		74.00		1000.0	1000.000	170.0	Н	0.0







Issue Date: 16/09/2022

Graphical presentation of radiated emission

Operating mode: 3 (Channel 6 - Frequency 2437 MHz)

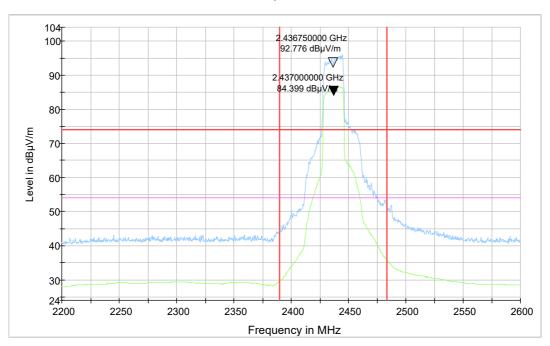
Frequency: Restricted band of operations near fundamental

Data rate: HT20, MCS1 (worst case)
Antenna polarization: Horizontal

Trace: Peak (blue trace); Average (green trace)

Measurement distance: 3m

## Full Spectrum





## **Fundamental Level**

Reading value (dBμV/m)		_	Antenna Factor with pre-Amplifier	Cable Loss	Correct reading	
(IVIHZ)	Peak	Average	(dB3/m)	(dB)	(dBμV/m)	
2436.750000	102.63		-13.24	3.38	92.77	
2436.750000		94.26	-13.24	3.38	84.40	







Issue Date: 16/09/2022

Graphical presentation of radiated emission

Operating mode: 3 (Channel 6 - Frequency 2437 MHz)

Frequency scan: 3GHz -18GHz

Data rate: HT20, MCS1 (worst case)

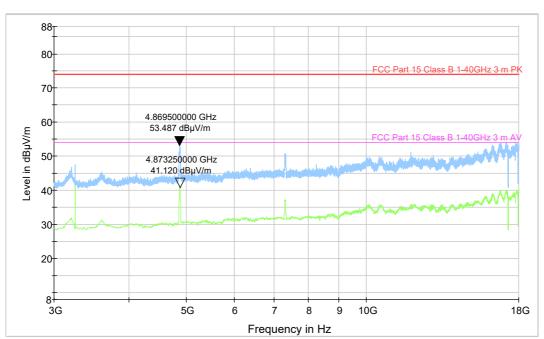
Antenna polarization: Vertical

Trace: Peak (blue trace); Average (green trace)

Axis: Y (worst case)

Measurement distance: 3m

## Full Spectrum





# **Final Result**

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
4869.500000	53.49		74.00	20.51	1000.0	1000.000	115.0	٧	90.0
4873.250000		41.12	54.00	12.88	1000.0	1000.000	115.0	٧	90.0







Graphical presentation of radiated emission

Operating mode: 3 (Channel 6 - Frequency 2437 MHz)

Frequency scan: 3GHz -18GHz

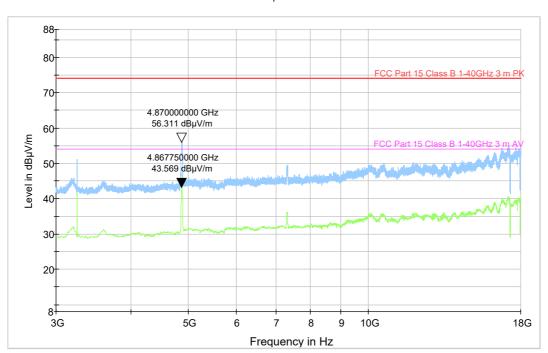
Data rate: HT20, MCS1 (worst case)
Antenna polarization: Horizontal

Trace: Peak (blue trace); Average (green trace)

Axis: Y (worst case)

Measurement distance: 3m

## Full Spectrum



Preview Result 2-AVG
FCC Part 15 Class B 1-40GHz 3 m PK
Final\_Result PK+

Preview Result 1-PK+ FCC Part 15 Class B 1-40GHz 3 m AV Final\_Result AVG

Issue Date: 16/09/2022

# **Final Result**

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
4870.000000	56.31		74.00	17.69	1000.0	1000.000	100.0	V	90.0
4867.750000		43.57	54.00	10.43	1000.0	1000.000	100.0	V	90.0







Issue Date: 16/09/2022

Graphical presentation of radiated emission

Operating mode: 3 (Channel 6 – Frequency 2437 MHz)

Frequency scan: 18GHz – 26GHz

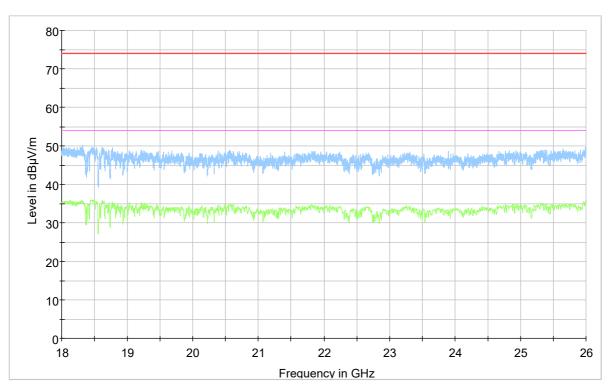
Data rate: HT20, MCS1 (worst case)

Antenna polarization: Vertical

Trace: Peak (blue trace); Average (green trace)

Axis: Y (worst case)

Measurement distance: 3m









Issue Date: 16/09/2022

Graphical presentation of radiated emission

Operating mode: 3 (Channel 6 – Frequency 2437 MHz)

Frequency scan: 18GHz – 26GHz

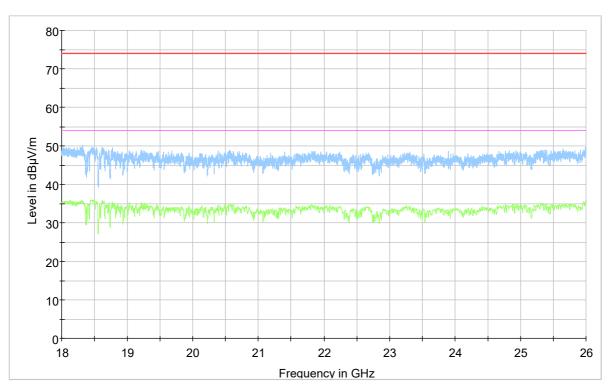
Data rate: HT20, MCS1 (worst case)

Antenna polarization: Horizontal

Trace: Peak (blue trace); Average (green trace)

Axis: Y (worst case)

Measurement distance: 3m

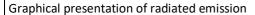






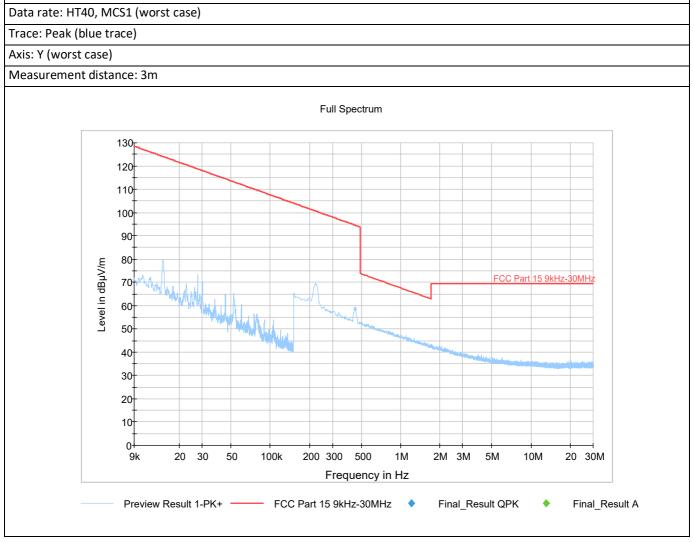


Issue Date: 16/09/2022



Operating mode: 3 (Channel 6 – Frequency 2437 MHz)

Frequency scan: 9KHz – 30MHz









Graphical presentation of radiated emission

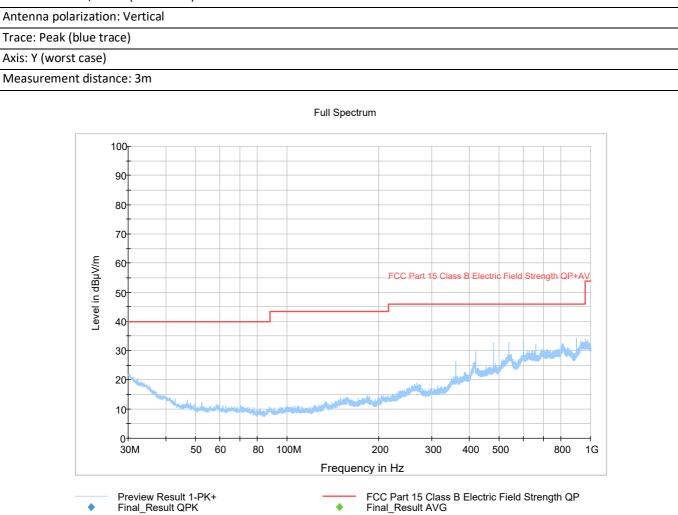
Operating mode: 3 (Channel 6 – Frequency 2437 MHz)

Frequency scan: 30MHz – 1GHz Data rate: HT40, MCS1 (worst case)

Antenna polarization: Vertical

Trace: Peak (blue trace)

Measurement distance: 3m



Preview Result 1-PK+ Final\_Result QPK

Issue Date: 16/09/2022







Graphical presentation of radiated emission

Operating mode: 3 (Channel 6 - Frequency 2437 MHz)

Frequency scan: 30MHz – 1GHz Data rate: HT40, MCS1 (worst case)

Trace: Peak (blue trace)

Measurement distance: 3m

# Antenna polarization: Horizontal Axis: Y (worst case) Full Spectrum 100<sub>T</sub> 90 80 70 Level in dBµV/m 60 FCC Part 15 Class B Electric Field Strength QP+AV 50 40 30 20 10 30M 100M 300 500 800 50 60 200 400 Frequency in Hz Preview Result 1-PK+

Final\_Result QPK

FCC Part 15 Class B Electric Field Strength QP Final\_Result AVG

Issue Date: 16/09/2022







Issue Date: 16/09/2022

Graphical presentation of radiated emission

Operating mode: 3 (Channel 6 - Frequency 2437 MHz)

Frequency scan: 1GHz - 3GHz

Data rate: HT40, MCS1 (worst case)

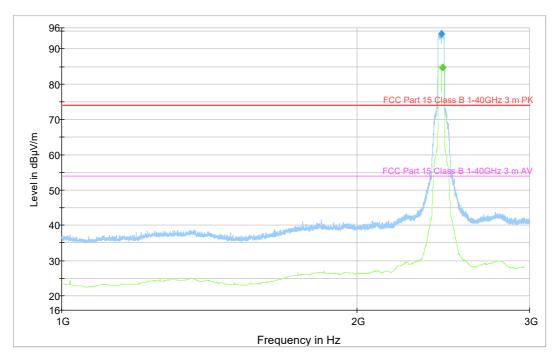
Antenna polarization: Vertical

Trace: Peak (blue trace); Average (green trace)

Axis: Y (worst case)

Measurement distance: 3m

## Full Spectrum





# **Final Result**

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
2439.500000	94.19		74.00		1000.0	1000.000	150.0	٧	0.0
2446.500000		84.73	54.00		1000.0	1000.000	150.0	٧	0.0







Issue Date: 16/09/2022

Graphical presentation of radiated emission

Operating mode: 3 (Channel 6 - Frequency 2437 MHz)

Frequency: Restricted band of operations near fundamental

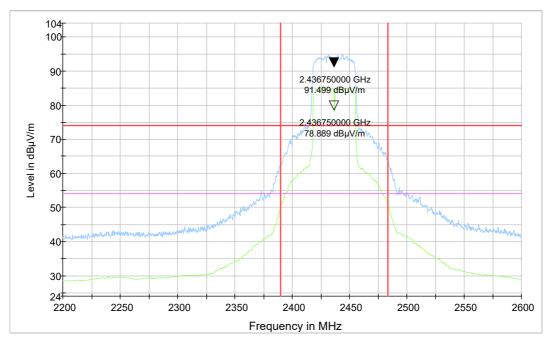
Data rate: HT40, MCS1 (worst case)

Antenna polarization: Vertical

Trace: Peak (blue trace); Average (green trace)

Measurement distance: 3m

## Full Spectrum



Preview Result 2-AVG Preview Result 1-PK+
FCC Part 15 2390MHz FCC Part 15 2483.5MHz
FCC Part 15 Class B 1-40GHz 3 m PK
Final\_Result PK+
FCC Part 15 Class B 1-40GHz 3 m AV
Final\_Result AVG

## **Fundamental Level**

Frequency (MHz)		ng value uV/m)	Antenna Factor with pre-Amplifier	Cable Loss	Correct reading (dBμV/m)	
	Peak	Average	(dB3/m)	(dB)	(ασμν/π)	
2436.750000	101.36		-13.24	3.38	91.50	
2436.750000		88.75	-13.24	3.38	78.89	







Issue Date: 16/09/2022

Graphical presentation of radiated emission

Operating mode: 3 (Channel 6 - Frequency 2437 MHz)

Frequency scan: 1GHz - 3GHz

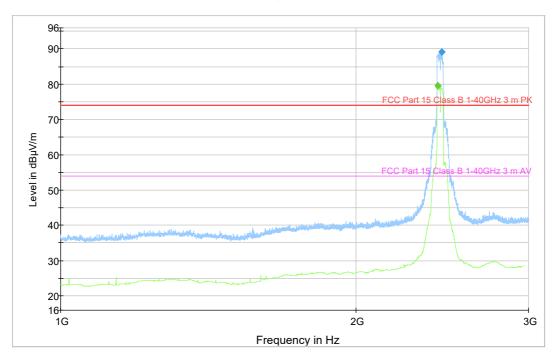
Data rate: HT40, MCS1 (worst case)
Antenna polarization: Horizontal

Trace: Peak (blue trace); Average (green trace)

Axis: Y (worst case)

Measurement distance: 3m

## Full Spectrum





# **Final Result**

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
2424.250000		79.61	54.00		1000.0	1000.000	150.0	Н	180.0
2444.250000	89.11		74.00		1000.0	1000.000	150.0	Н	180.0







Issue Date: 16/09/2022

Graphical presentation of radiated emission

Operating mode: 3 (Channel 6 - Frequency 2437 MHz)

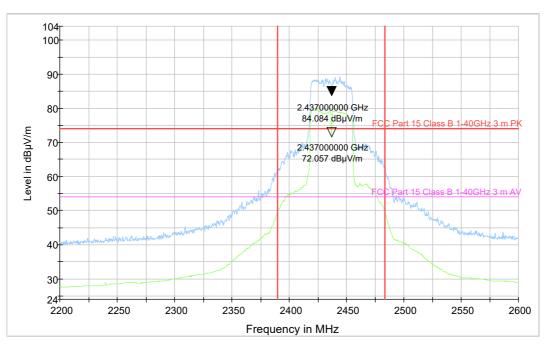
Frequency: Restricted band of operations near fundamental

Data rate: HT40, MCS1 (worst case)
Antenna polarization: Horizontal

Trace: Peak (blue trace); Average (green trace)

Measurement distance: 3m

## Full Spectrum



Preview Result 2-AVG
FCC Part 15 2390MHz
FCC Part 15 Class B 1-40GHz 3 m PK
Final\_Result PK+
Preview Result 1-PK+
FCC Part 15 2483.5MHz
FCC Part 15 Class B 1-40GHz 3 m AV
Final\_Result AVG

## **Fundamental Level**

Frequency (MHz)		ng value uV/m)	Antenna Factor with pre-Amplifier	Cable Loss	Correct reading	
	Peak	Average	(dB3/m)	(dB)	(dBμV/m)	
2436.750000	93.90		-13.24	3.38	84.04	
2436.750000		81.91	-13.24	3.38	72.05	







Graphical presentation of radiated emission

Operating mode: 3 (Channel 6 - Frequency 2437 MHz)

Frequency scan: 3GHz -18GHz

Data rate: HT40, MCS1 (worst case)

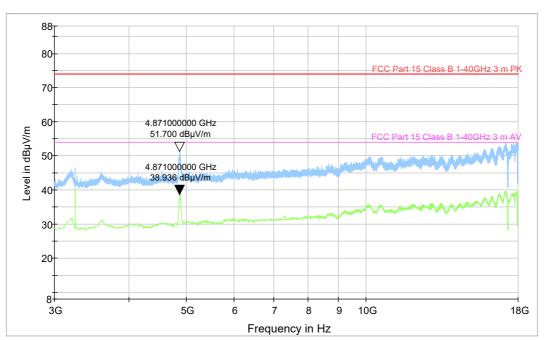
Antenna polarization: Vertical

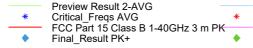
Trace: Peak (blue trace); Average (green trace)

Axis: Y (worst case)

Measurement distance: 3m

## Full Spectrum





Preview Result 1-PK+ Critical\_Freqs PK+ FCC Part 15 Class B 1-40GHz 3 m AV Final\_Result AVG

Issue Date: 16/09/2022

## **Final Result**

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
4871.000000	51.70		74.00	22.30	1000.0	1000.000	110.0	٧	90.0
4871.000000		38.94	54.00	15.06	1000.0	1000.000	110.0	V	90.0







Graphical presentation of radiated emission

Operating mode: 3 (Channel 6 - Frequency 2437 MHz)

Frequency scan: 3GHz -18GHz

Data rate: HT40, MCS1 (worst case)

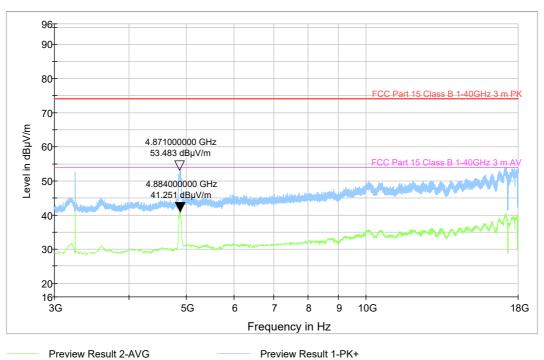
Antenna polarization: Horizontal

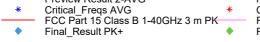
Trace: Peak (blue trace); Average (green trace)

Axis: Y (worst case)

Measurement distance: 3m

### Full Spectrum





Preview Result 1-PK+ Critical\_Freqs PK+ FCC Part 15 Class B 1-40GHz 3 m AV Final\_Result AVG

Issue Date: 16/09/2022

## **Final Result**

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
4871.000000	53.48		74.00	20.52	1000.0	1000.000	110.0	V	0.0
4884.000000		41.25	54.00	12.75	1000.0	1000.000	110.0	V	0.0







Issue Date: 16/09/2022

Graphical presentation of radiated emission

Operating mode: 3 (Channel 6 - Frequency 2437 MHz)

Frequency scan: 18GHz – 26GHz

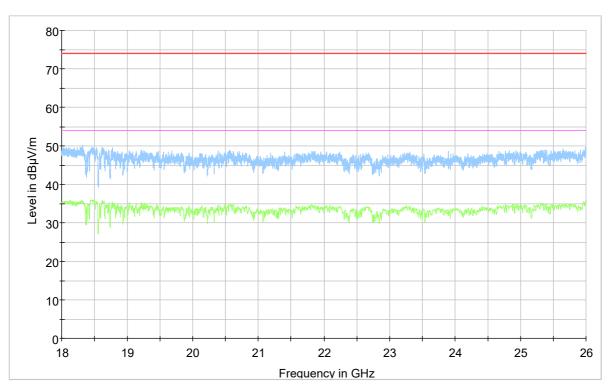
Data rate: HT40, MCS1 (worst case)

Antenna polarization: Vertical

Trace: Peak (blue trace); Average (green trace)

Axis: Y (worst case)

Measurement distance: 3m









Issue Date: 16/09/2022

Graphical presentation of radiated emission

Operating mode: 3 (Channel 6 - Frequency 2437 MHz)

Frequency scan: 18GHz – 26GHz

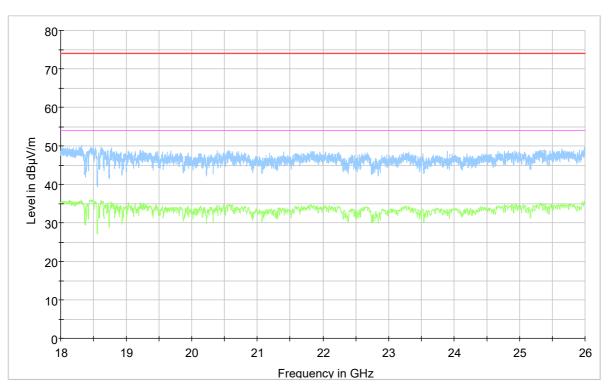
Data rate: HT40, MCS1 (worst case)

Antenna polarization: Horizontal

Trace: Peak (blue trace); Average (green trace)

Axis: Y (worst case)

Measurement distance: 3m

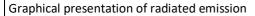




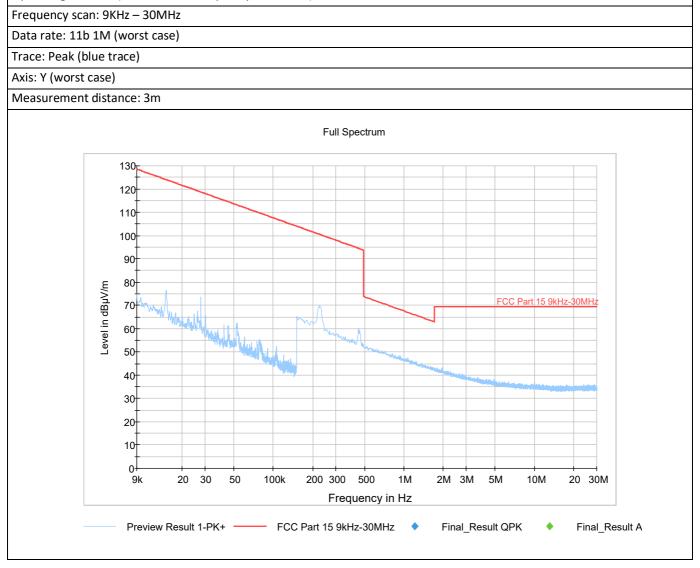




Issue Date: 16/09/2022



Operating mode: 4 (Channel 11 – Frequency 2462 MHz)

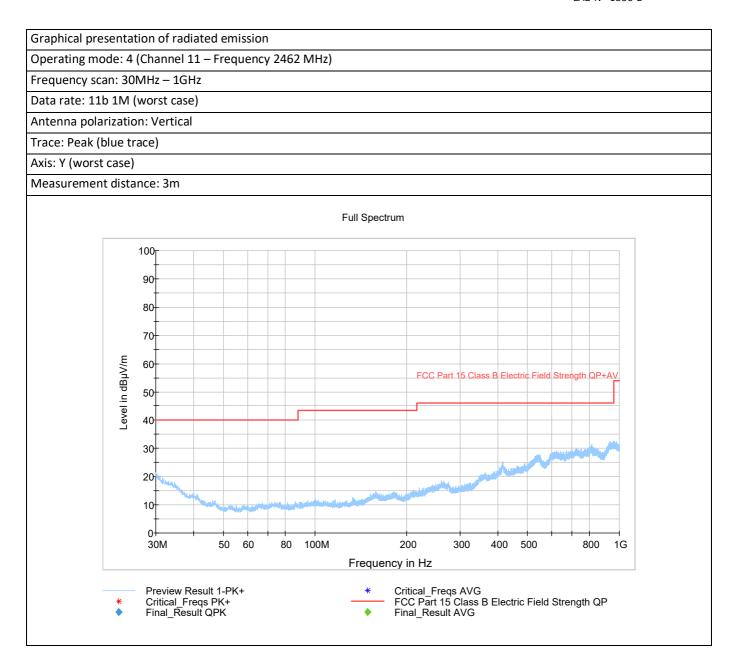








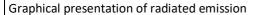
Issue Date: 16/09/2022









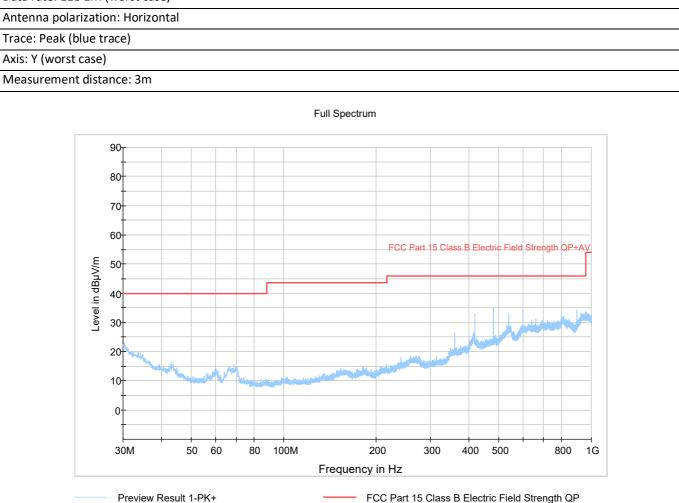


Operating mode: 4 (Channel 11 – Frequency 2462 MHz)

Frequency scan: 30MHz – 1GHz Data rate: 11b 1M (worst case)

Trace: Peak (blue trace)

Measurement distance: 3m



Issue Date: 16/09/2022







Issue Date: 16/09/2022

Graphical presentation of radiated emission

Operating mode: 4 (Channel 11 – Frequency 2462 MHz)

Frequency scan: 1GHz – 3GHz

Data rate: 11b 1M (worst case)

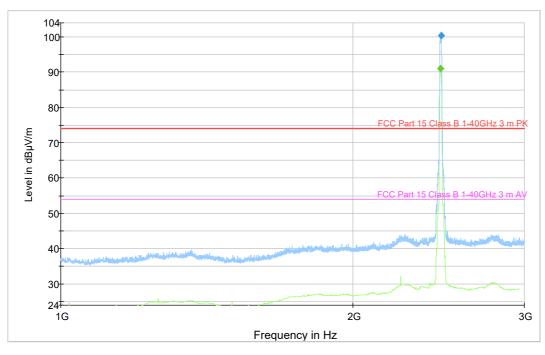
Antenna polarization: Vertical

Trace: Peak (blue trace); Average (green trace)

Axis: Y (worst case)

Measurement distance: 3m

### Full Spectrum





## **Final Result**

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
2461.250000		90.95	54.00		1000.0	1000.000	115.0	V	0.0
2462.500000	100.39		74.00		1000.0	1000.000	115.0	٧	0.0







Issue Date: 16/09/2022

Graphical presentation of radiated emission

Operating mode: 4 (Channel 11 – Frequency 2462 MHz)

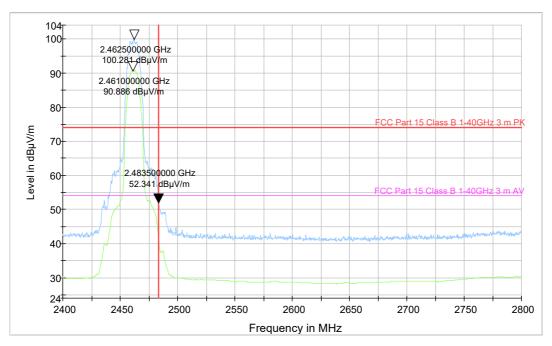
Frequency: Restricted band of operations near fundamental

Data rate: 11b 1M (worst case)
Antenna polarization: Vertical

Trace: Peak (blue trace); Average (green trace)

Measurement distance: 3m

### Full Spectrum



Preview Result 2-AVG Preview Result 1-PK+
FCC Part 15 Class B 1-40GHz 3 m AV Final\_Result AVG

Preview Result 1-PK+
FCC Part 15 Class B 1-40GHz 3 m PK
Final\_Result PK+
Final\_Result AVG

### **Fundamental Level**

Frequency (MHz)		ng value uV/m)	Antenna Factor with pre-Amplifier	Cable Loss	Correct reading		
(IVITIZ)	Peak Average		(dB3/m)	(dB)	(dBμV/m)		
2462.500000	110.62		-13.51	3.17	100.28		
2461.000000		101.22	-13.51	3.17	90.88		







Issue Date: 16/09/2022

Graphical presentation of radiated emission

Operating mode: 4 (Channel 11 – Frequency 2462 MHz)

Frequency scan: 1GHz – 3GHz

Data rate: 11b 1M (worst case)

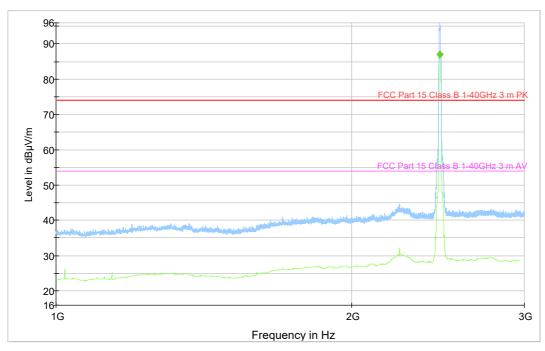
Antenna polarization: Horizontal

Trace: Peak (blue trace); Average (green trace)

Axis: Y (worst case)

Measurement distance: 3m

### Full Spectrum





## **Final Result**

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m )	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
2462.500000	96.46		74.00		1000.0	1000.000	115.0	Н	0.0
2462.750000		87.06	54.00		1000.0	1000.000	115.0	Н	0.0







Issue Date: 16/09/2022

Graphical presentation of radiated emission

Operating mode: 4 (Channel 11 - Frequency 2462 MHz)

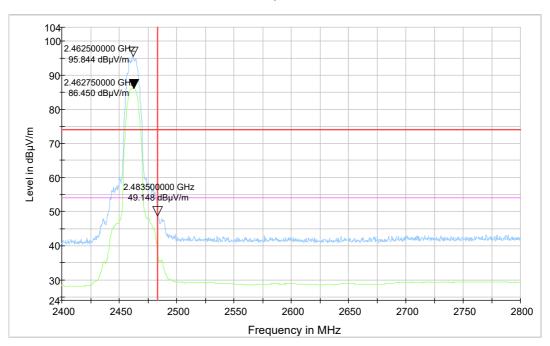
Frequency: Restricted band of operations near fundamental

Data rate: 11b 1M (worst case)
Antenna polarization: Horizontal

Trace: Peak (blue trace); Average (green trace)

Measurement distance: 3m

### Full Spectrum



Preview Result 2-AVG
FCC Part 15 2483.5MHz
FCC Part 15 Class B 1-40GHz 3 m AV
FINAL\_Result AVG

Preview Result 1-PK+
FCC Part 15 Class B 1-40GHz 3 m PK
Final\_Result PK+
Final\_Result AVG

### **Fundamental Level**

Frequency (MHz) 2462.500000		ng value uV/m)	Antenna Factor with pre-Amplifier	Cable Loss	Correct reading
	Peak	Average	(dB3/m)	(dB)	(dBμV/m)
2462.500000	106.18		-13.51	3.17	95.84
2462.750000		96.79	-13.51	3.17	86.45







Issue Date: 16/09/2022

Graphical presentation of radiated emission

Operating mode: 4 (Channel 11 – Frequency 2462 MHz)

Frequency scan: 3GHz -18GHz

Data rate: 11b 1M (worst case)

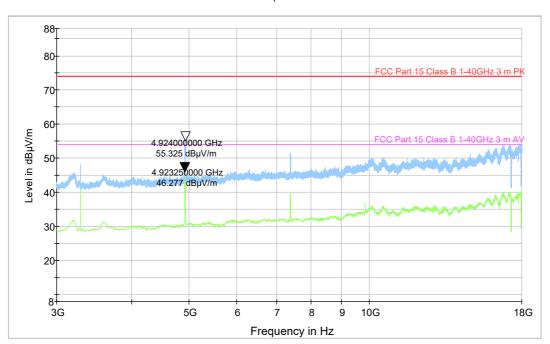
Antenna polarization: Vertical

Trace: Peak (blue trace); Average (green trace)

Axis: Y (worst case)

Measurement distance: 3m

### Full Spectrum





### **Final Result**

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
4924.000000	55.32		74.00	18.68	1000.0	1000.000	105.0	V	0.0
4923.250000		46.27	54.00	7.73	1000.0	1000.000	105.0	٧	0.0







Issue Date: 16/09/2022

Graphical presentation of radiated emission

Operating mode: 4 (Channel 11 – Frequency 2462 MHz)

Frequency scan: 3GHz -18GHz

Data rate: 11b 1M (worst case)

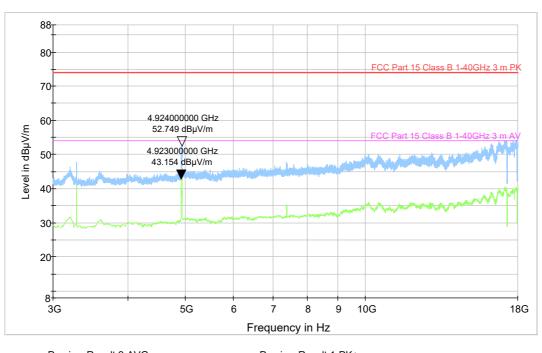
Antenna polarization: Horizontal

Trace: Peak (blue trace); Average (green trace)

Axis: Y (worst case)

Measurement distance: 3m

### Full Spectrum





### **Final Result**

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
4924.000000	52.75		74.00	21.25	1000.0	1000.000	110.0	٧	0.0
4923.000000		43.15	54.00	10.85	1000.0	1000.000	110.0	V	0.0







Issue Date: 16/09/2022

Graphical presentation of radiated emission

Operating mode: 4 (Channel 11 – Frequency 2462 MHz)

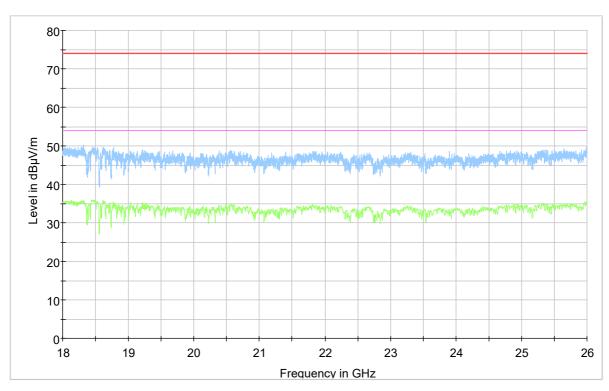
Frequency scan: 18GHz – 26GHz Data rate: 11b 1M (worst case) Antenna polarization: Vertical

Trace: Peak (blue trace); Average (green trace)

Axis: Y (worst case)

Measurement distance: 3m

### Full Spectrum









Issue Date: 16/09/2022

Graphical presentation of radiated emission

Operating mode: 4 (Channel 11 – Frequency 2462 MHz)

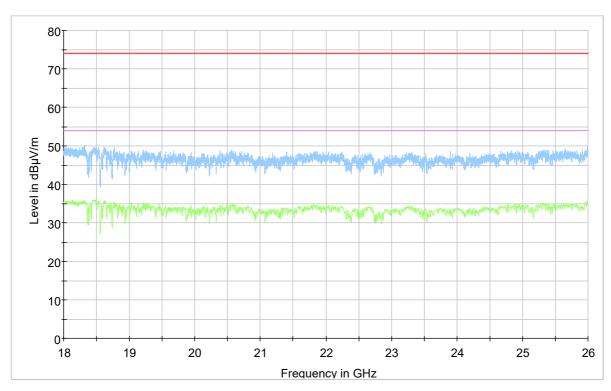
Frequency scan: 18GHz – 26GHz Data rate: 11b 1M (worst case) Antenna polarization: Horizontal

Trace: Peak (blue trace); Average (green trace)

Axis: Y (worst case)

Measurement distance: 3m

### Full Spectrum

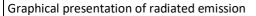








Issue Date: 16/09/2022

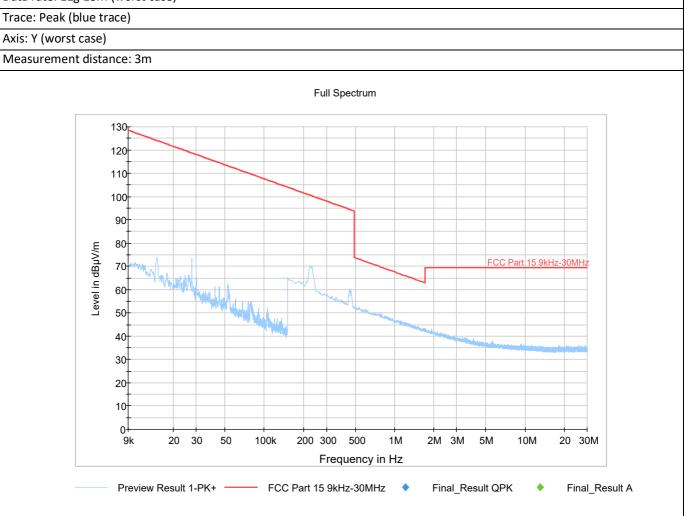


Operating mode: 4 (Channel 11 – Frequency 2462 MHz)

Frequency scan: 9KHz – 30MHz Data rate: 11g 18M (worst case)

Trace: Peak (blue trace)

Measurement distance: 3m





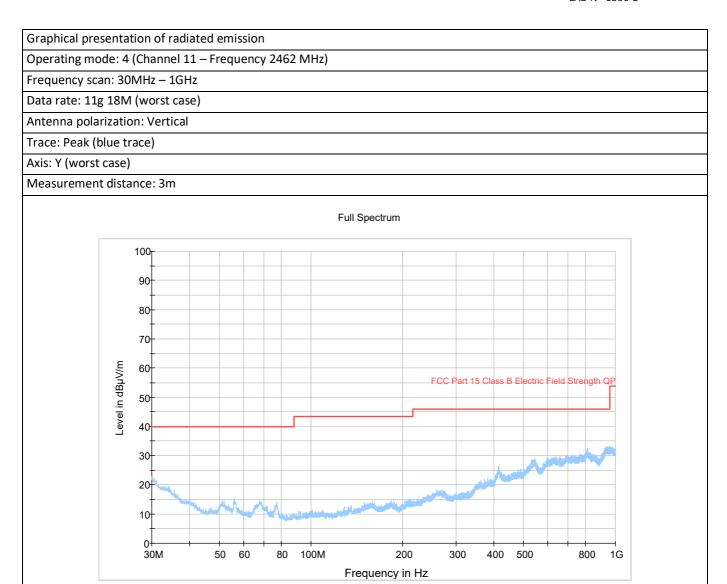


FCC Part 15 Class B Electric Field Strength QP Final\_Result AVG

Issue Date: 16/09/2022



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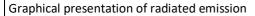


Preview Result 1-PK+ Final\_Result QPK









Operating mode: 4 (Channel 11 – Frequency 2462 MHz)

Frequency scan: 30MHz – 1GHz

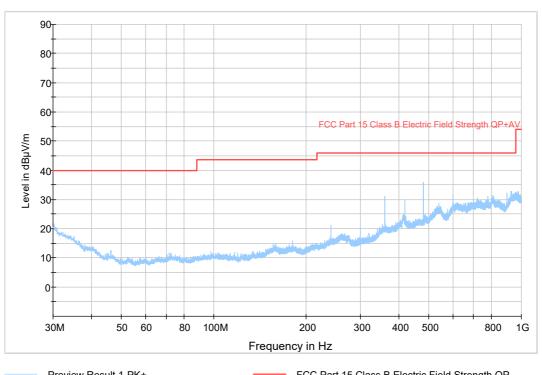
Data rate: 11g 18M (worst case)

Antenna polarization: Horizontal

Trace: Peak (blue trace)
Axis: Y (worst case)

Measurement distance: 3m

### Full Spectrum



Preview Result 1-PK+

Final\_Result QPK

FCC Part 15 Class B Electric Field Strength QP Final\_Result AVG

Issue Date: 16/09/2022







Issue Date: 16/09/2022

Graphical presentation of radiated emission

Operating mode: 4 (Channel 11 - Frequency 2462 MHz)

Frequency scan: 1GHz – 3GHz

Data rate: 11g 18M (worst case)

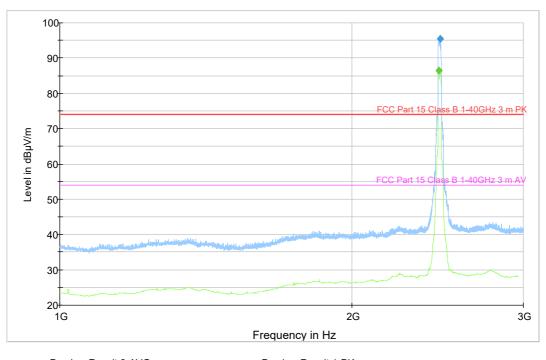
Antenna polarization: Vertical

Trace: Peak (blue trace); Average (green trace)

Axis: Y (worst case)

Measurement distance: 3m

### Full Spectrum





## **Final Result**

Frequency (MHz)	MaxPeak (dBμV/m	Average (dBμV/m	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
2457.750000		86.37	54.00		300.0	1000.000	150.0	٧	0.0
2464.000000	95.43		74.00		300.0	1000.000	150.0	٧	0.0







Issue Date: 16/09/2022

Graphical presentation of radiated emission

Operating mode: 4 (Channel 11 - Frequency 2462 MHz)

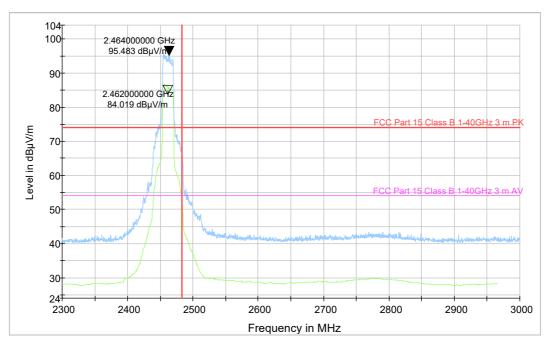
Frequency: Restricted band of operations near fundamental

Data rate: 11g 18M (worst case)
Antenna polarization: Vertical

Trace: Peak (blue trace); Average (green trace)

Measurement distance: 3m

### Full Spectrum



Preview Result 2-AVG Preview Result 1-PK+
FCC Part 15 2483.5MHz FCC Part 15 Class B 1-40GHz 3 m PK
FCC Part 15 Class B 1-40GHz 3 m AV Final\_Result PK+
Final\_Result AVG

### **Fundamental Level**

Frequency (MHz)		ng value uV/m)	Antenna Factor with pre-Amplifier	Cable Loss	Correct reading		
(IVITIZ)	Peak Average		(dB3/m)	(dB)	(dBμV/m)		
2464.000000	105.82		-13.51	3.17	95.48		
2462.000000		94.36	-13.51	3.17	84.02		







Issue Date: 16/09/2022

Graphical presentation of radiated emission

Operating mode: 4 (Channel 11 - Frequency 2462 MHz)

Frequency scan: 1GHz – 3GHz

Data rate: 11g 18M (worst case)

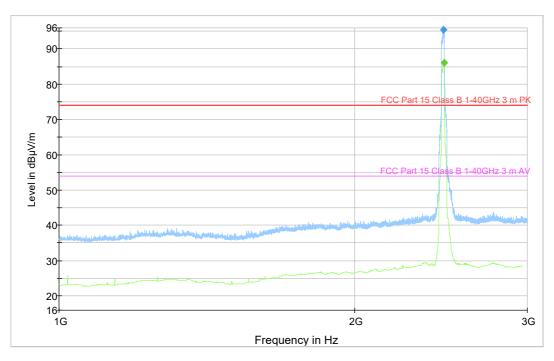
Antenna polarization: Horizontal

Trace: Peak (blue trace); Average (green trace)

Axis: Y (worst case)

Measurement distance: 3m

### Full Spectrum



Preview Result 2-AVG
FCC Part 15 Class B 1-40GHz 3 m PK
Final\_Result PK+

Preview Result 1-PK+
FCC Part 15 Class B 1-40GHz 3 m AV
Final\_Result AVG

## **Final Result**

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
2464.000000	95.50		74.00		1000.0	1000.000	165.0	Н	90.0
2467.500000		86.09	54.00		1000.0	1000.000	165.0	Н	90.0







Graphical presentation of radiated emission

Operating mode: 4 (Channel 11 - Frequency 2462 MHz)

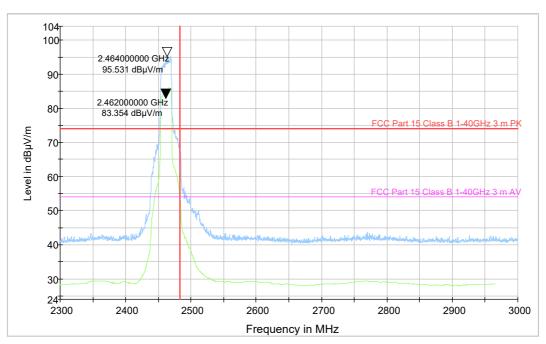
Frequency: Restricted band of operations near fundamental

Data rate: 11g 18M (worst case)
Antenna polarization: Horizontal

Trace: Peak (blue trace); Average (green trace)

Measurement distance: 3m

### Full Spectrum



Preview Result 2-AVG
FCC Part 15 2483.5MHz
FCC Part 15 Class B 1-40GHz 3 m AV
Final\_Result AVG

Preview Result 1-PK+ FCC Part 15 Class B 1-40GHz 3 m PK Final Result PK+

Issue Date: 16/09/2022

### **Fundamental Level**

Frequency (MHz)		ng value uV/m)	Antenna Factor with pre-Amplifier	Cable Loss	Correct reading
	Peak	Average	(dB3/m)	(dB)	(dBμV/m)
2464.000000	105.87		-13.51	3.17	95.53
2462.000000		93.69	-13.51	3.17	83.35







Graphical presentation of radiated emission

Operating mode: 4 (Channel 11 - Frequency 2462 MHz)

Frequency scan: 3GHz -18GHz

Data rate: 11g 18M (worst case)

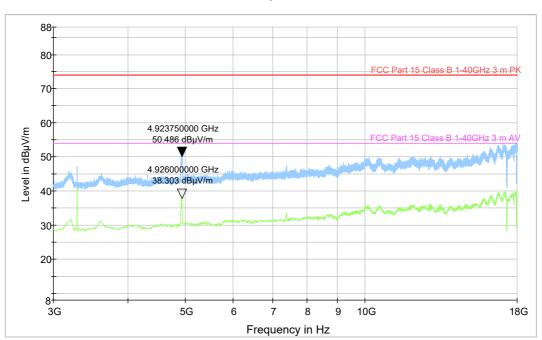
Antenna polarization: Vertical

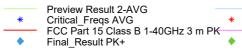
Trace: Peak (blue trace); Average (green trace)

Axis: Y (worst case)

Measurement distance: 3m

#### Full Spectrum





Preview Result 1-PK+ Critical\_Freqs PK+ FCC Part 15 Class B 1-40GHz 3 m AV Final Result AVG

Issue Date: 16/09/2022

# **Final Result**

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
4923.750000	50.48		74.00	23.52	1000.0	1000.000	120.0	٧	0.0
4926.000000		38.30	54.00	15.70	1000.0	1000.000	120.0	٧	0.0







Issue Date: 16/09/2022

Graphical presentation of radiated emission

Operating mode: 4 (Channel 11 - Frequency 2462 MHz)

Frequency scan: 3GHz -18GHz Data rate: 11g 18M (worst case)

Axis: Y (worst case)

