

TEST REPORT

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EUT DESCRIPTION CLINISCAPE with Wi-Fi 802.11a, 802.11g, 802.11n

EUT TRADEMARK Philips

EUT MODEL CliniScape mod. CMCA10 + CMCA10-DS

DERIVED MODEL CliniScape mod. CMCA10

REFERENCE STANDARDS : **FCC 47 CFR part 15 subpart C section 15.247**
FCC 47 CFR part 15 subpart E section 15.407
INDUSTRY CANADA RSS-210

TEST REPORT NUMBER **FCCTR_08.1122-4**

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TESTING LOCATION As Above

DATE OF TEST SAMPLE RECEIPT 5/11/2008

DATE OF TEST 06-28/11/2008

TESTED BY Massimiliano Tallariti

APPROVED BY Massimo Maltempo



The test results reported in this test report shall refer only to the sample actually tested and shall not refer or be deemed to refer to bulk from which such a sample may be said to have been obtained.

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0. CONTENTS

	Page
0. CONTENTS	2
1. TECHNICAL INFORMATION OF EQUIPMENT UNDER TEST (EUT)	3
1.1 Identification	3
1.2 Technical data	3
1.3 Modifications incorporated in E.U.T.	5
1.4 Ports identification	6
1.5 Auxiliary equipment	6
2. TEST CONDITIONS	7
2.1 Operating test modes and test conditions	7
2.2 Test overview	7
3. REFERENCE STANDARD FOR PERFORMED TESTS	8
4. Summary of test results	9
4.1 Emission tests	9
5. TEST RESULTS	10
6. Summary of test results	84
6.1 Photographic documentation	84
7. TEST EQUIPMENT LIST	88
7.1 Equipment List	88
7.2 FCC module certificates	89

1. TECHNICAL INFORMATION OF EQUIPMENT UNDER TEST (EUT)

1.1 Identification

Brand name: *PHILIPS*
Manufacturer: *FIMI S.R.L*
Equipment : *CliniScape mod. CMCA10 + CMCA10-DS*
Serial number : *Not present*
FCC ID : *GZM802170*
IC: *6319A-802170*
Country of manufacturer: *ITALY*

1.2 Technical data

FCC class: 47 CFR FCC Part 15 Subpart C § 15.247, subpart E § 15.407
(10–1–07 Edition)
Product type: WLAN
Radio type: Intentional transceiver
Power type : Power adapter
Modulation: DSS for IEEE 802.11b; OFDM for IEEE 802.11a/g/n;
Data Modulation : DSS (BPSK / QPSK / CCK) ; OFDM (BPSK / QPSK / 16QAM / 64 QAM)
Data Rate (Mbps) :
1/5.5/11 Mbps for 802.11b mode
6/36/54 Mbps for 802.11g and 802.11a modes
Up to 300 Mbps for 802.11n mode
Frequency range :
802.11a Mode (5745-5825 MHz)
802.11b Mode (2400-2483.5 MHz)
802.11g Mode (2400-2483.5 MHz)
802.11n Mode 20MHz Wide (2400-2483.5 MHz)
802.11n Mode 20MHz Wide (5745-5825 MHz)
802.11n Mode 40MHz Wide (5745-5825 MHz)
802.11a Mode (5150-5350 MHz)
802.11n Mode 20MHz Wide (5150-5350 MHz)
802.11n Mode 40MHz Wide (5150-5350 MHz)

Channel number :	802.11a mode (5725-5850 MHz) = 5	
	802.11b mode (2400-2483.5 MHz) = 11	
	802.11g mode (2400-2483.5 MHz) = 11	
	802.11n mode (5725-5850 MHz) = 5	
	802.11n mode (2400-2483.5 MHz) = 11	
Conducted Output Power :	802.11a (5745-5825 MHz) chain A	5745 MHz = 19.61 dBm = 91.40 mW 5785 MHz = 19.71 dBm = 93.53 mW 5825 MHz = 19.91 dBm = 97.94 mW
	802.11a (5745-5825 MHz) chain B	5745 MHz = 20.21 dBm = 104.94 mW 5785 MHz = 20.31 dBm = 107.39 mW 5825 MHz = 20.31 dBm = 107.39 mW
	802.11b (2400-2483.5 MHz) chain A	2412 MHz = 19.07 dBm = 80.68 mW 2437 MHz = 19.24 dBm = 83.90 mW 2462 MHz = 20.03 dBm = 100.64 mW
	802.11b (2400-2483.5 MHz) chain B	2412 MHz = 18.73 dBm = 74.61 mW 2437 MHz = 18.88 dBm = 77.23 mW 2462 MHz = 19.94 dBm = 98.58 mW
	802.11g (2400-2483.5 MHz) chain A	2412 MHz = 23.80 dBm = 239.86 mW 2437 MHz = 23.83 dBm = 241.52 mW 2462 MHz = 23.48 dBm = 222.82 mW
	802.11g (2400-2483.5 MHz) chain B	2412 MHz = 23.54 dBm = 225.92 mW 2437 MHz = 23.63 dBm = 230.65 mW 2462 MHz = 23.52 dBm = 224.88 mW
	802.11n 20MHz Wide (2400-2483.5 MHz) chain A	2412 MHz = 23.55 dBm = 226.44 mW 2437 MHz = 23.37 dBm = 217.25 mW 2462 MHz = 23.28 dBm = 212.79 mW
	802.11n 20MHz Wide (2400-2483.5 MHz) chain B	2412 MHz = 23.27 dBm = 212.30 mW 2437 MHz = 23.39 dBm = 218.25 mW 2462 MHz = 23.19 dBm = 208.43 mW
	802.11n 20MHz Wide (5745-5825 MHz) chain A	5745 MHz = 20.11 dBm = 102.56 mW 5785 MHz = 20.91 dBm = 123.30 mW 5825 MHz = 20.41 dBm = 109.89 mW
	802.11n 20MHz Wide (5745-5825 MHz) chain B	5745 MHz = 20.21 dBm = 104.94 mW 5785 MHz = 20.61 dBm = 115.07 mW 5825 MHz = 20.31 dBm = 107.39 mW
	802.11n 40MHz Wide (5745-5825 MHz) chain A	5755 MHz = 18.51 dBm = 70.95 mW 5795 MHz = 18.11 dBm = 64.70 mW
	802.11n 40MHz Wide (5745-5825 MHz) chain B	5755 MHz = 18.41 dBm = 69.33 mW 5795 MHz = 18.21 dBm = 66.21 mW
	802.11a (5150-5350 MHz) chain A	5.18 GHz = 16.61dBm (45.81mW) 5.24 GHz = 16.81dBm (47.97mW) 5.26 GHz = 18.61dBm (69.34mW) 5.32 GHz = 18.41dBm (72.60mW)
	802.11a (5150-5350 MHz) chain B	5.18 GHz = 16.81dBm (47.97mW) 5.24 GHz = 16.91dBm (49.09mW) 5.26 GHz = 19.41dBm (87.29mW) 5.32 GHz = 19.11dBm (81.46mW)
	802.11n 20MHz Wide (5150-5350 MHz) chain A	5.18 GHz = 16.91dBm (49.09mW) 5.26 GHz = 18.81dBm (76.03mW) 5.32 GHz = 18.41dBm (69.34mW)
	802.11n 20MHz Wide (5150-5350 MHz) chain B	5.18 GHz = 16.71dBm (46.88mW) 5.26 GHz = 19.21dBm (83.36mW) 5.32 GHz = 18.71dBm (74.29mW)
	802.11n 40MHz Wide (5150-5350 MHz) chain A	5.19 GHz = 15.41dBm (34.75mW) 5.27 GHz = 16.51dBm (44.76mW) 5.31 GHz = 15.41dBm (34.75mW)
	802.11n 40MHz Wide (5150-5350 MHz) chain B	5.19 GHz = 15.41dBm (34.75mW) 5.27 GHz = 16.91dBm (49.08mW)

5.31 GHz = 15.21dBm (33.18mW)

Field Antenna : Antenna Type: PIFA (Main/Aux)

Manufacturer: Tyco Electronics

Model: Chain A Antenna: P/N 1513628-2

Chain B Antenna: P/N 1513629-3

Chain C RX Antenna: P/N 1513628-4

Gain: see following table (Cetecom doc. N 3.8.05 rev.6.4)
(TX1=Chain A, TX2=chain B)

Max : ChainA= 1,14dBi, Chain B= 0,66dBi

Chain C RX only (antenna receives only, for RF WiFi module) then the information about gain is not required

Derived Model **CMCA10 is not equipped with docking station**

Antenna Peak Gain Table:

	Tx1 antenna		Tx2 Antenna	
Frequency (MHz)	Horizontal (dBi)	Vertical (dBi)	Horizontal (dBi)	Vertical (dBi)
2400	-7.02	+0.43	-4.80	-0.97
2450	-5.82	-0.08	-6.41	+0.06
2500	-5.44	+0.40	-7.52	-1.21
5150	-0.89	-0.62	-1.54	-0.93
5250	-1.79	-2.85	-2.90	-1.74
5350	+0.61	-1.29	-1.30	+0.66
5470	+1.15	-1.41	-2.05	-0.25
5600	-0.02	-2.28	-1.13	-1.72
5725	+1.14	-2.40	+0.11	-3.03
5785	-0.06	-3.33	-0.77	-4.50
5850	-1.74	-5.54	-1.50	-3.97

1.3 Modifications incorporated in E.U.T.

The following items are the modifications introduced in the equipment under test :

- None

1.4 Ports identification

This section contains descriptions of all signal ports and AC/DC power input/output ports, the length and the type of the cable provided by manufacturer needed for the tests.

Moreover it is specified if the ports are ever or optionally connected.

Port		Description	Connection
1	Enclosure	Plastic case	By screws and by pressure
2	AC power input/output ports	100-240Ac 1.2-0.6A 50/60Hz / 19Vdc 5.3A APS100EM-190530 LF	External power supply
3	DC power input/output ports	1 DC input Li-Ion battery pack 11.1V 3900mAh	jack Internal battery pack
4	Signals / control lines	4 Usb ports (Type 2.0) (how declared by the customer, cable < 3mt) 1 LAN	USB RJ-45
5	Telecommunication ports	Line not present	-----
<i>Note: During the tests all cables must be what provided the manufacturer or the same that used in the real employment of the EUT.</i>			

1.5 Auxiliary equipment

- none

2. TEST CONDITIONS

2.1 Operating test modes and test conditions

The equipment has been tested according to the operative conditions described in the user/installation manual provided by the manufacturer and by following reference standards :

Reference Standard:

- 47 CFR FCC Part 15 Subpart C § 15.207
- 47 CFR FCC Part 15 Subpart C § 15.209
- 47 CFR FCC Part 15 Subpart C § 15.247
- 47 CFR FCC Part 15 Subpart E § 15.407
- INDUSTRY CANADA RSS-210

In the following table there are the operating conditions adopted during tests identified by an indicator (#..) at which has been referred the item “Operating condition of the equipment under test” of all technical sheets of the tests (see Section 4)

Operating condition	Description
#1	Transmission mode in all different protocols

2.2 Test overview

The appliance is classified as “*Intentional radiator*” in conformity to FCC Part 15 Subpart C section 15.247, and subpart E section 15.407

The application is mainly: 12” XGA touch-screen with a built-in 802.11a/b/g/n WLAN interface and Windows XP embedded as thin client operating system. Called Cliniscape, this mobile display is the ideal workflow tool in environments where professionals work away from their desks. With its touch screen, rugged durability and wireless connectivity, it enables mobile users to stay in contact with their applications while saving time, increasing productivity and reducing errors

3. REFERENCE STANDARD FOR PERFORMED TESTS

The measurements and test results shown in this test report were made in accordance with the procedures and found in compliance with the limit given in ANSI C63.4-2003 and 47 CFR FCC Part 15 Subpart C and E.

4. SUMMARY OF TEST RESULTS

4.1 Emission tests

Phenomena		Basic standard FCC part 15 section	Operating condition ¹	Result
1	AC conducted emission	15.407 (b) (6) 15.207	#1	PASS
2	Radiated Emissions (30-1000 MHz)	15.407 (b) (6) 15.209	#1	PASS
3	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum 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 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)). (RADIATED SPURIUS EMISSION) All emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of – 27dBm/MHz (RADIATED SPURIUS EMISSION)	15.247(d) 15.407(b)(1) (2) (4)	#1	PASS
4	Radiated emission limits; general Requirements (FUNDAMENTAL EMISSION)	15.247(d) 15.407 (b) (7) 15.209 (a)	#1	PASS

Note:

The tests 6dB Spectrum Bandwidth , Maximum Peak Output Power, public exposure to radio frequency energy levels, Radiated emissions in the restricted bands, Radio frequency power in the 100 kHz bandwidth outside the frequency band Power Spectral Density, 26dB emissions bandwidth , conducted spurious emission, can be extended to the relationship of Report Number: INTEL-060907F and INTEL-060908F issued by Aegis Labs, Inc. : there are no modification on RF transmitter only antenna has been changed.

5. TEST RESULTS

AC CONDUCTED EMISSION	11
RADIATED EMISSIONS (30-1000 MHZ).....	15
RADIATED SPURIUS EMISSION	19
RADIATED EMISSION LIMITS; GENERAL REQUIREMENTS (FUNDAMENTAL EMISSION)	81

**TEST
1**

AC CONDUCTED EMISSION

REFERENCE FCC 47CFR Part 15
DOCUMENT Section 15.207

- **TEST SETUP:** According to reference standard
- **TEST LOCATION:** Semianechoic chamber
- **TEST EQUIPMENT USED FOR TEST:** EMI receiver Rohde & Schwarz Mod. ESU 40
Artificial Network Rohde & Schwarz Mod. ESH3-Z5

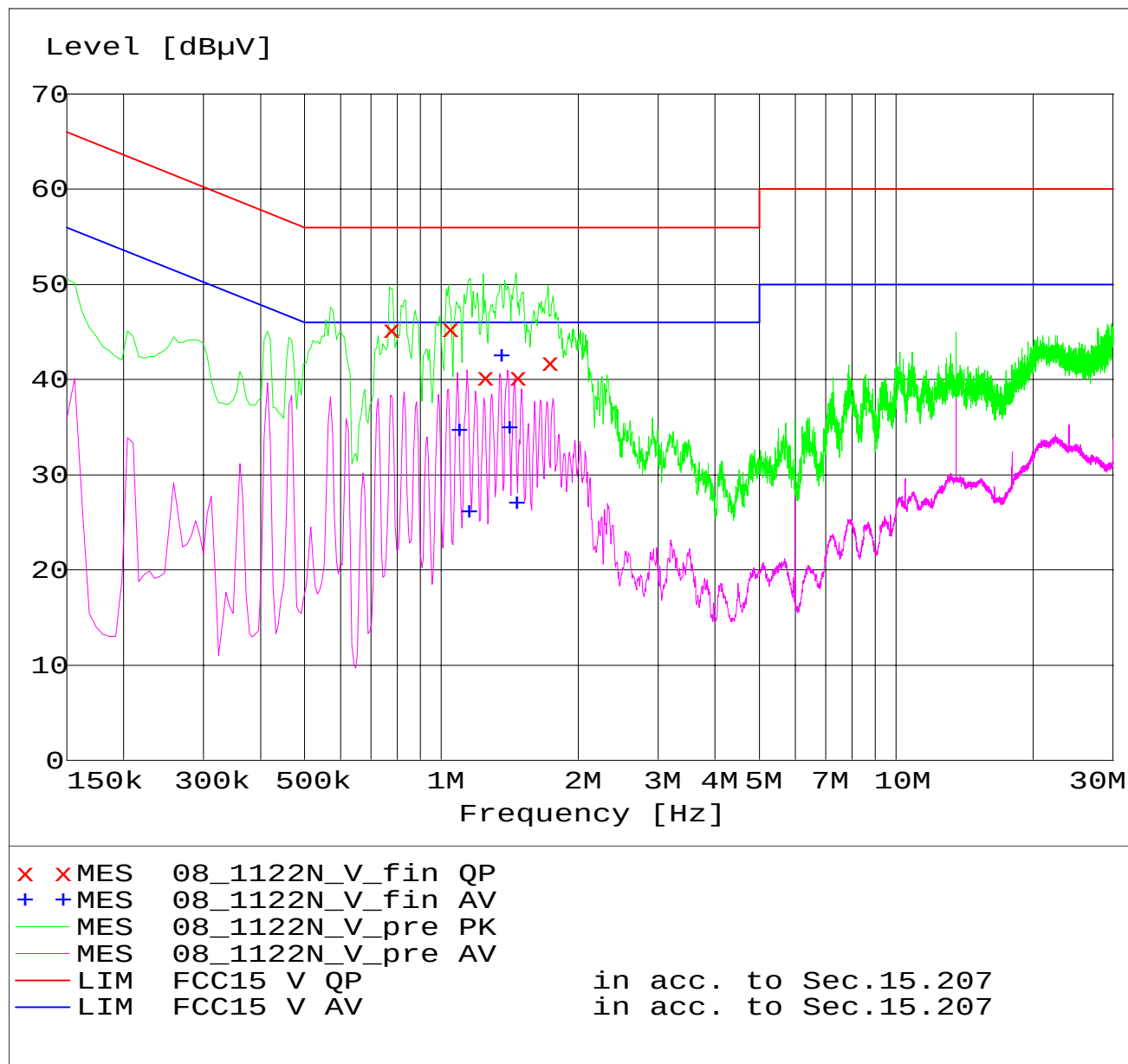
- **TESTED PORT:** AC mains : Phase and Neutral Line
- **FREQUENCY RANGE:** 0.15 - 30 MHz
- **EMISSION LIMITS:** Section 15.207 of Standard
- **MEASUREMENT UNCERTAINTY:** Total uncertainty (k=2) $\pm$ 2.5 dB

TEST CONDITIONS:		MEASURED
Ambient temperature :	15 - 35 °C	24 $\pm$ 3 °C
Ambient humidity :	25 - 75 %rH	38 $\pm$ 5 %rH
Pressure :	85 - 106 kPa (860 mbar - 1060 mbar)	975 $\pm$ 50 mbar

OPERATING CONDITION (Rif. Section. 2) : #1

RESULT: WITHIN THE LIMIT

Neutral



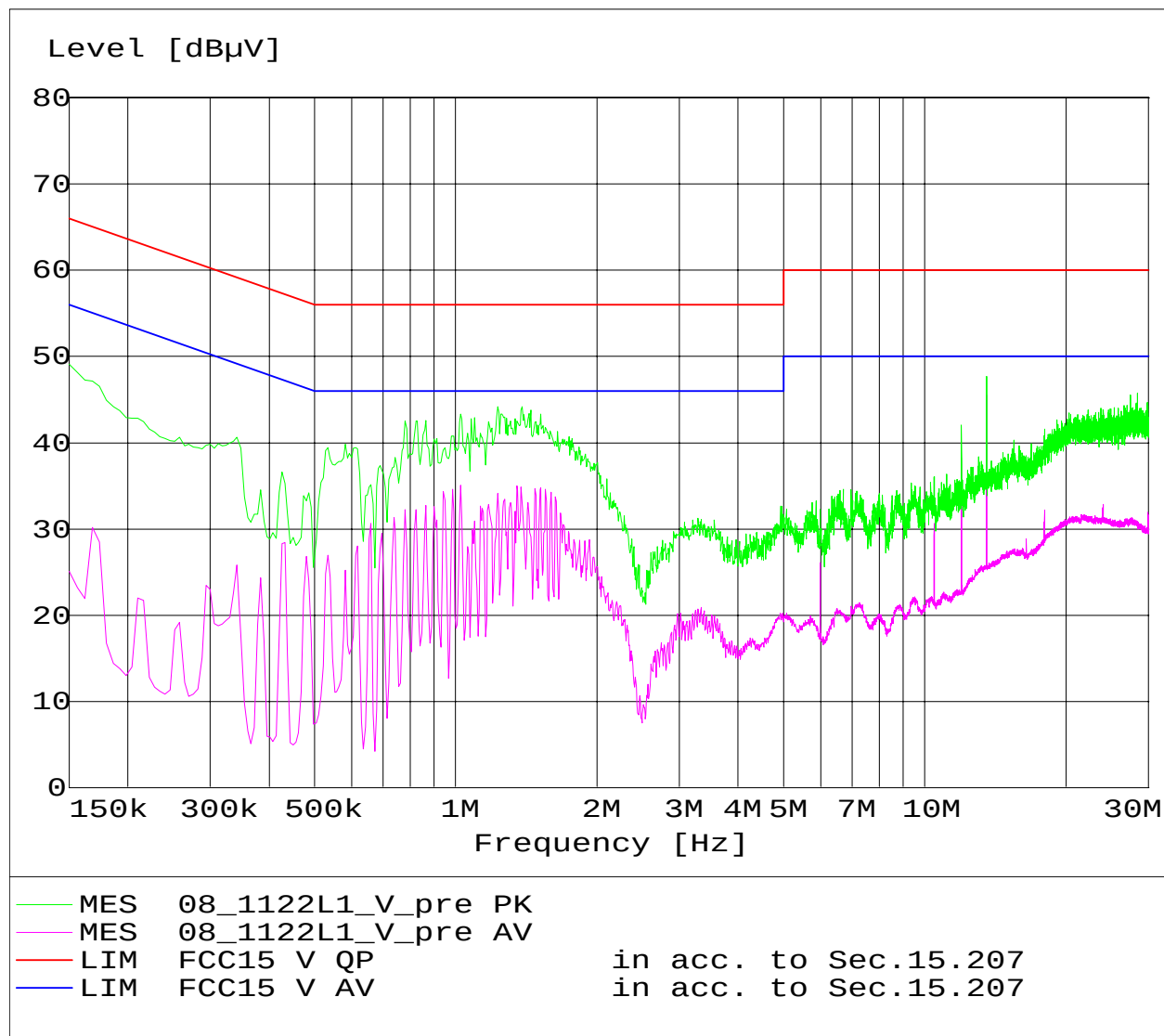
Final measurement in QP detector

Frequency	Level	Transd	Limit	Margin	Line	PE
MHz	dBμV	dB	dBμV	dB		
0.768000	45.20	0.20	56.00	10.80	N	GND
1.038000	45.30	0.20	56.00	10.70	N	GND
1.236000	40.20	0.20	56.00	15.80	N	GND
1.458000	40.20	0.20	56.00	15.80	N	GND
1.716000	41.80	0.20	56.00	14.20	N	GND

Final measurement in AV detector

Frequency	Level	Transd	Limit	Margin	Line	PE
MHz	dBμV	dB	dBμV	dB		
1.086000	34.70	0.20	46.00	11.30	N	GND
1.140000	26.10	0.20	46.00	19.90	N	GND
1.344000	42.40	0.20	46.00	3.60	N	GND
1.398000	34.90	0.20	46.00	11.10	N	GND
1.452000	27.00	0.20	46.00	19.00	N	GND

Phase



**TEST
2**

RADIATED EMISSIONS (30-1000 MHZ)

REFERENCE FCC 47CFR Part 15
DOCUMENT Section 15.209

- **TEST LOCATION:** Semi-anechoic chamber
- **TEST EQUIPMENT USED FOR TEST:** EMI receiver Rohde & Schwarz Mod. ESU 40
Chase Antenna Mod. CBL 6111 A
- **TESTED PORT:** Enclosure
- **EMISSION LIMITS:** Acc. to Section 15.209 of reference document
- **UNCERTAINTY OF MEASURE:** Combined uncertainty = ± 1.75 dB
Total uncertainty = (k=2) ± 3.5 dB

TEST CONDITIONS:		MEASURED
Ambient temperature :	15 - 35 °C	23,5 $\pm$ 3 °C
Ambient humidity :	25 - 75 %rH	39 $\pm$ 5 %rH
Pressure :	85 - 106 kPa (860 mbar - 1060 mbar)	950 $\pm$ 50 mbar

OPERATING CONDITION (Rif. Section. 2) : #1

RESULT: WITHIN THE LIMIT

Note for radiated emission (30MHz – 1000 MHz)

The radiated emissions for frequencies 30MHz-1000MHz are the same in all the operating modes, the spectrum not change if is activated the CHAIN A or the CHAIN B or if is activated one or other protocol of transmission. The following drawings show the spectrum of frequencies radiated for only one operating mode.

EMI Auto Test Template: Electric Field Strength FCC

Hardware Setup: Electric Field Strength FCC
Measurement Type: Open-Area-Test-Site
Frequency Range: 30 MHz - 1 GHz
Graphics Level Range: 0 dBμV/m - 80 dBμV/m

Preview Measurements:

Scan Test Template: Electric Field Strength FCC pre

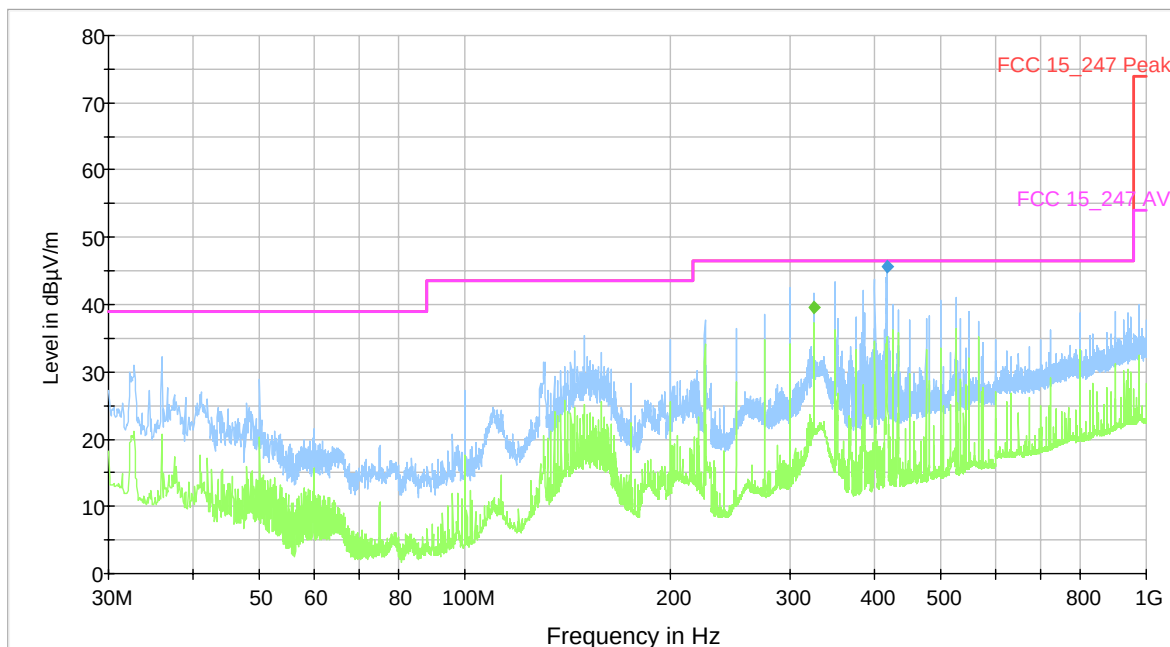
Data Reduction:

Limit Line #1: FCC 15 247 Peak
Limit Line #2: FCC 15 247 AV
Peak Search: 6 dB
Maximum Results: 4
Subrange Maxima: 0
Maxima per Subrange: 1
Acceptance Offset: -10 dB
Maximum Number of Results: 1

Subrange	Detectors	IF Bandwidth	Meas. Time	Receiver
30 MHz - 1 GHz	MaxPeak; Average	120 kHz	1 s	Receiver
1 GHz - 2.8 GHz	MaxPeak; Average	1 MHz	0.1 s	Receiver
2.8 GHz - 18 GHz	MaxPeak; Average	1 MHz	0.1 s	Receiver

Vertical polarization

Electric Field Strength FCC



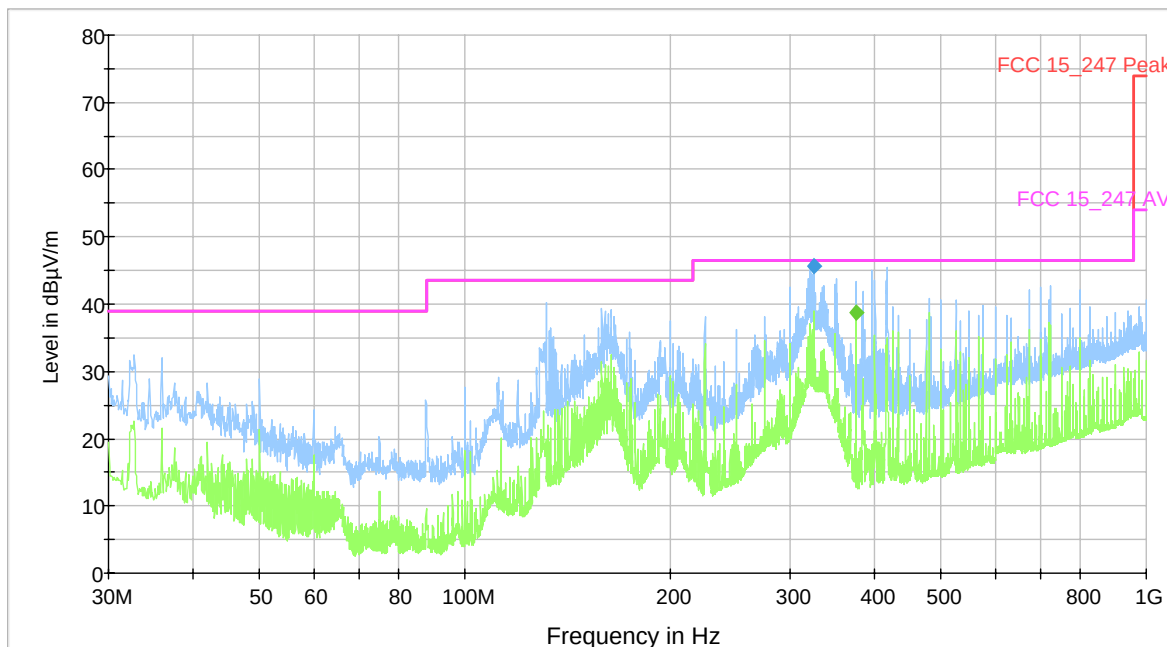
— FCC 15_247 Peak.LimitLine — FCC 15_247 AV.LimitLine — Preview Result 1
— Preview Result 2 ◆ Final Result 1 ◆ Final Result 2

RESULT

Frequency (MHz)	MaxPeak-ClearWrite (dBμV/m)	Average-ClearWrite (dBμV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Peak-Limit (dBμV/m)	Average-Limit (dBμV/m)	Comment
325.040000	42.15	39.51	100.0	V	16.0	46.40	46.40	Pass
350.080000	44.30	37.35	100.0	V	14.0	46.40	46.40	Pass
416.080000	45.7	38.11	100.0	V	-7.0	46.40	46.40	Pass
499.124000	41.22	34.19	100.0	V	11.0	46.40	46.40	Pass

Horizontal polarization

Electric Field Strength FCC



— FCC 15_247 Peak.LimitLine — FCC 15_247 AV.LimitLine — Preview Result 1
— Preview Result 2 ◆ Final Result 1 ◆ Final Result 2

RESULT

Frequency (MHz)	MaxPeak-ClearWrite (dBµV/m)	Average-ClearWrite (dBµV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Peak-Limit (dBµV/m)	Average-Limit (dBµV/m)	Comment
325.040000	45.6	35.44	100.0	H	177.0	46.40	46.40	Pass
375.050000	43.50	38.7	114.0	H	178.0	46.40	46.40	Pass
400.080000	44.65	37.13	118.0	H	167.0	46.40	46.40	Pass
425.174000	46.02	35.33	100.0	H	159.0	46.40	46.40	Pass

**TEST
3**

RADIATED SPURIUS EMISSION

**REFERENCE
DOCUMENT**

FCC 47CFR Part 15
15.247 (c)
15.407(b)(1), (2)

- **TEST LOCATION:** RF Semi-anechoic chamber
- **TEST EQUIPMENT USED FOR TEST:** EMI receiver Rohde & Schwarz mod. ESU40
Bonn elektronik blma 1840-1A
Bonn elektronik blma 0118-m
Chase Antenna Mod. CBL 6111 A
- **TESTED PORT:** Enclosure
- **EMISSION LIMITS:** Acc. to Section 15.247 (c) and 15.407(b)(1), (2) of reference document
- **UNCERTAINTY OF MEASURE:** Combined uncertainty = ± 1.75 dB
Total uncertainty = $(k=2) \pm 3.5$ dB

TEST CONDITIONS:		MEASURED
Ambient temperature :	15 - 35 °C	23,5 $\pm$ 3 °C
Ambient humidity :	25 - 75 %rH	39 $\pm$ 5 %rH
Pressure :	85 - 106 kPa (860 mbar - 1060 mbar)	950 $\pm$ 50 mbar

OPERATING CONDITION (Rif. Section. 2) : #1

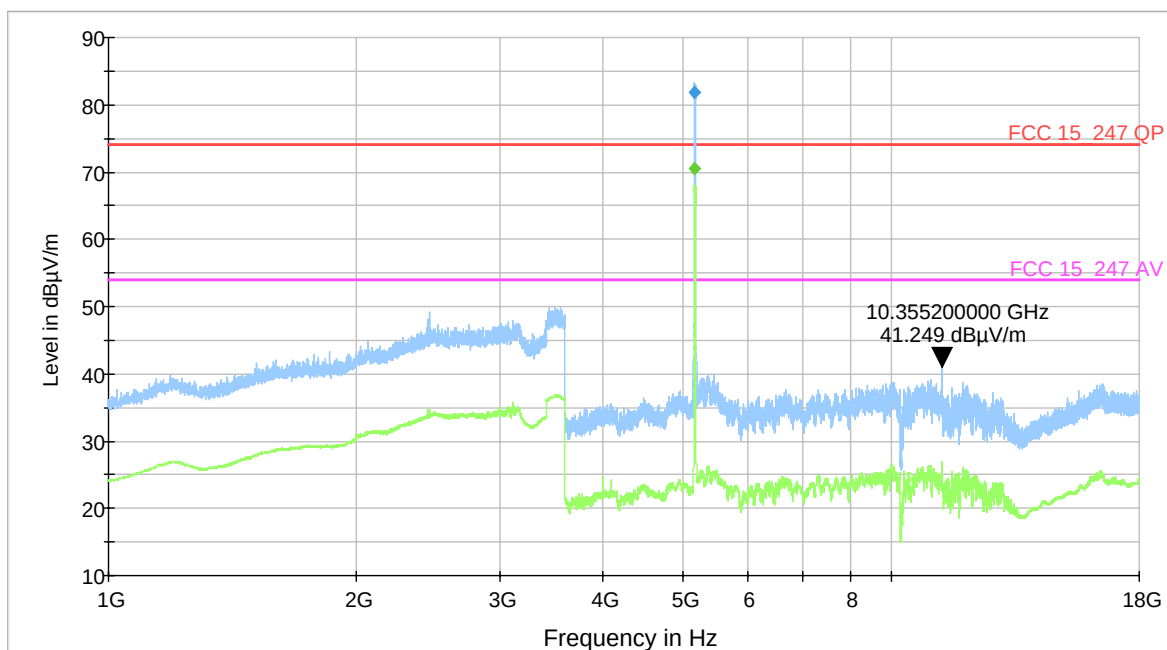
RESULT: WITHIN THE LIMIT

CHAIN A: Protocol a (20MHz bandwidth)

CH36	5180MHz
CH64	5320MHz
CH149	5745MHz
CH165	5825MHz

CH36 Vertical Polarization

Electric Field Strength FCC_5GHz



— FCC 15_247 QP.LimitLine — FCC 15_247 AV.LimitLine — Preview Result 1
— Preview Result 2 — Final Result 1 — Final Result 2

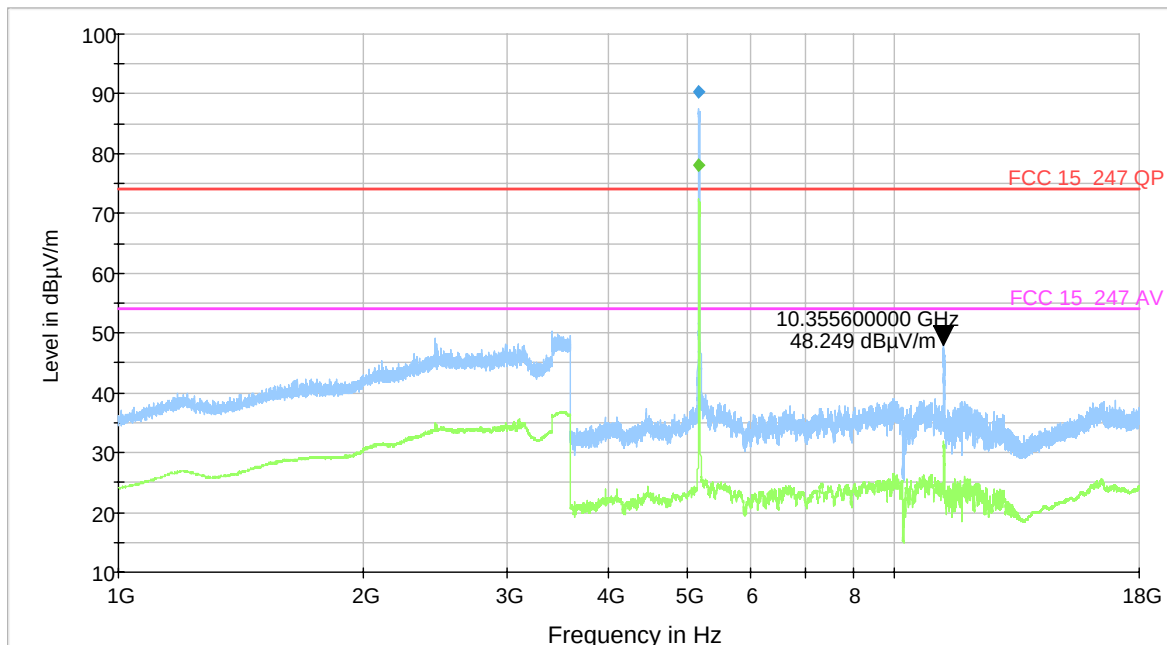
RESULT

Frequency (MHz)	MaxPeak-ClearWrite (dBμV/m)	Average-ClearWrite (dBμV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Peak-Limit (dBμV/m)	Average-Limit (dBμV/m)	Comment
5176.800000	81.80	70.66	100.0	V	168.0	74.00	54.00	Pass
10355.20000	41.25	25.15	100.0	V	14.0	74.00	54.00	Pass
>11000	θ	θ	-	V	-	74.00	54.00	Pass

θ = none significant spurious

CH36 Horizontal Polarization

Electric Field Strength FCC_5GHz



— FCC 15_247 QP.LimitLine — FCC 15_247 AV.LimitLine — Preview Result 1
— Preview Result 2 — Final Result 1 — Final Result 2

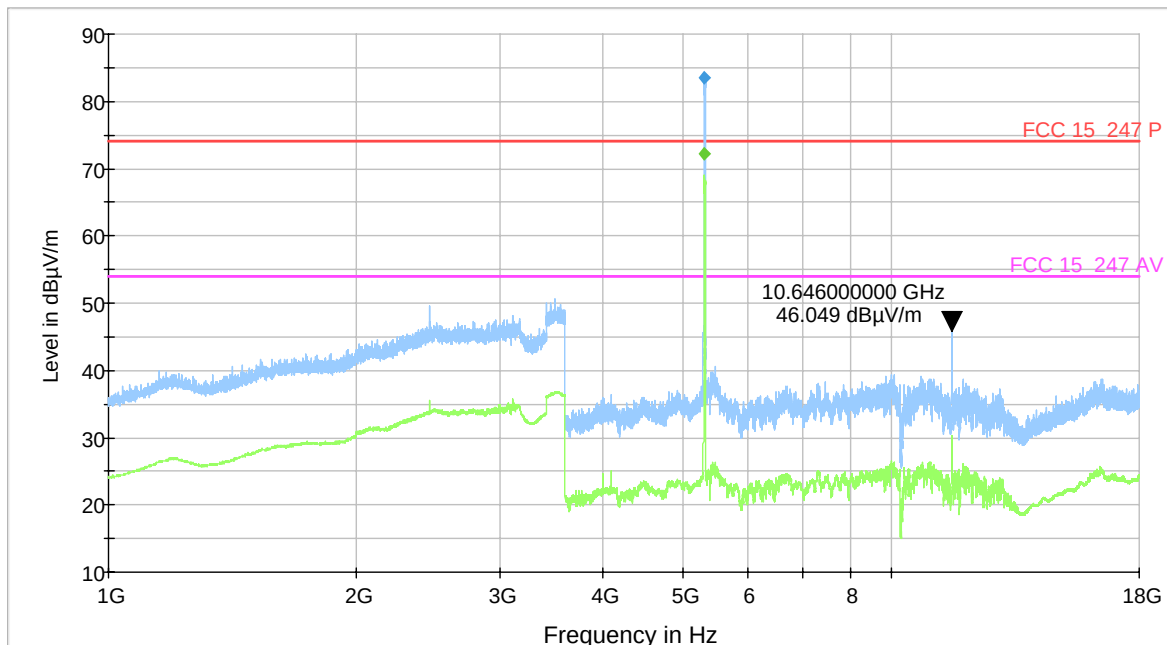
RESULT

Frequency (MHz)	MaxPeak-ClearWrite (dBμV/m)	Average-ClearWrite (dBμV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Peak-Limit (dBμV/m)	Average-Limit (dBμV/m)	Comment
5175.600000	90.4	78.1	106.0	H	203	74.00	54.00	Pass
10355.60000	48.25	33.75	100.0	H	14.0	74.00	54.00	Pass
>11000	Θ	Θ	-	H	-	74.00	54.00	Pass

Θ = none significant spurious

CH64 Vertical Polarization

Electric Field Strength FCC_5GHz



— FCC 15_247 OP.LimitLine — FCC 15_247 AV.LimitLine — Preview Result 1
— Preview Result 2 — Final Result 1 — Final Result 2

RESULT

Frequency (MHz)	MaxPeak-ClearWrite (dBμV/m)	Average-ClearWrite (dBμV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Peak-Limit (dBμV/m)	Average-Limit (dBμV/m)	Comment
5322.800000	83.70	72.33	107.0	V	203.0	74.00	54.00	Pass
10646.20000	46.05	30.02	104.0	V	201.0	74.00	54.00	Pass
>11000	Θ	Θ	-	V	-	74.00	54.00	Pass

Θ = none significant spurious



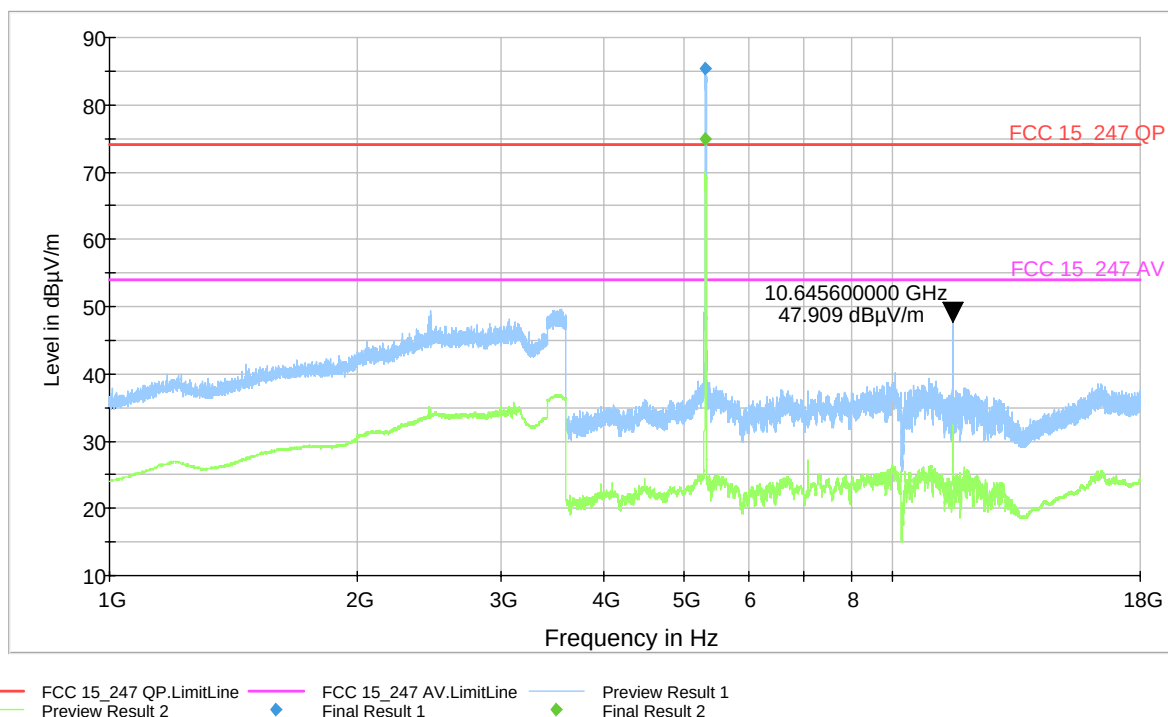
PRIMA

RICERCA & SVILUPPO

FCCTR_081122-4

CH64 Horizontal Polarization

Electric Field Strength FCC_5GHz



RESULT

Frequency (MHz)	MaxPeak-ClearWrite (dBμV/m)	Average-ClearWrite (dBμV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Peak-Limit (dBμV/m)	Average-Limit (dBμV/m)	Comment
5317.200000	90.4	75.0	122.0	H	203.0	74.00	54.00	Pass
10645.60000	47.90	33.97	100.0	H	184.0	74.00	54.00	Pass
>11000	Θ	Θ	-	H	-	74.00	54.00	Pass

Θ = none significant spurious



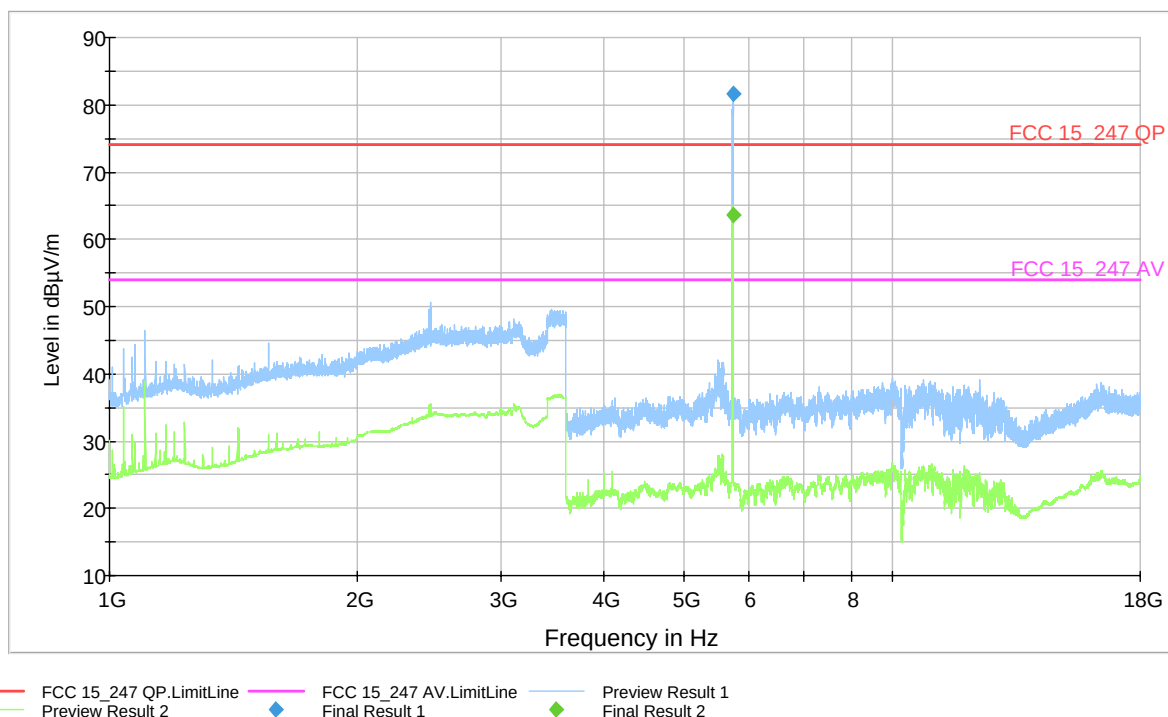
PRIMA

RICERCA & SVILUPPO

FCCTR_081122-4

CH149 Vertical Polarization

Electric Field Strength FCC_5GHz



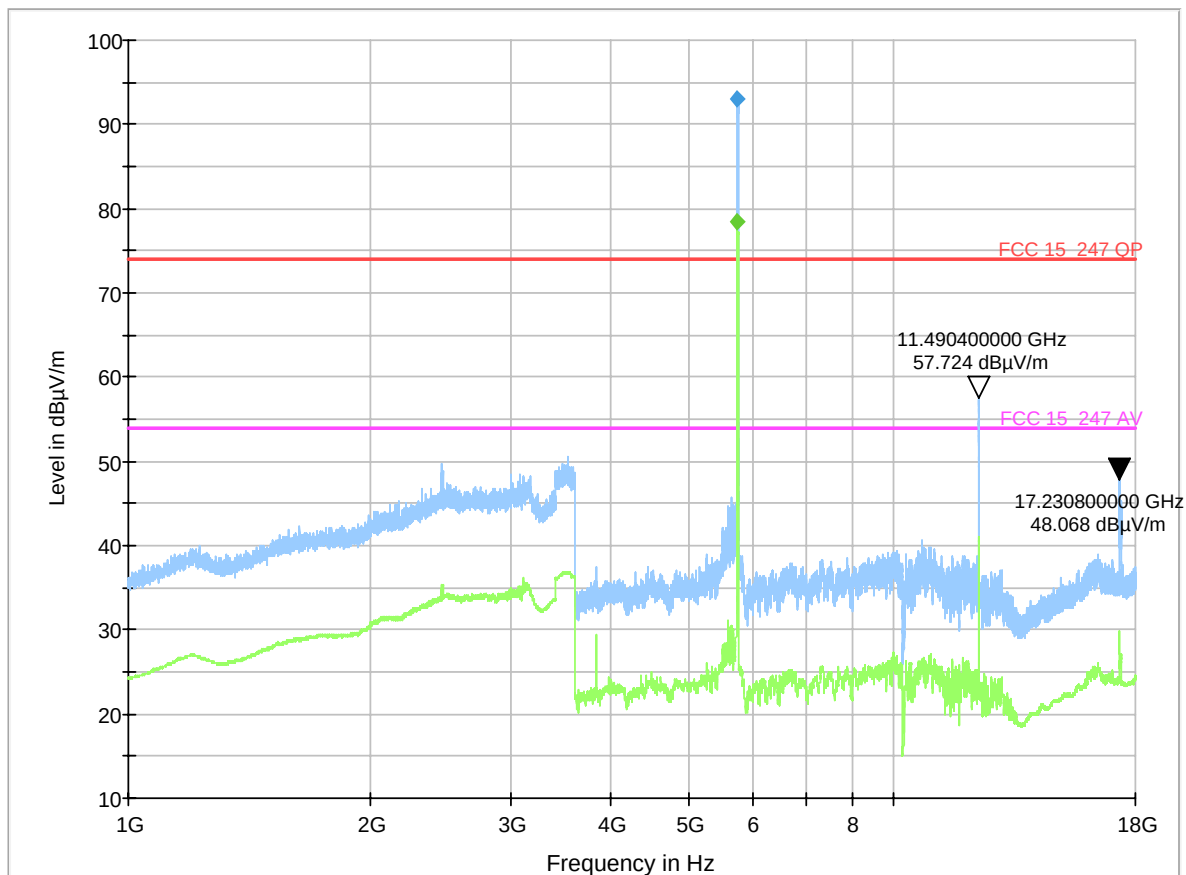
RESULT

Frequency (MHz)	MaxPeak-ClearWrite (dBμV/m)	Average-ClearWrite (dBμV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Peak-Limit (dBμV/m)	Average-Limit (dBμV/m)	Comment
5740.000000	81.6	63.7	108.0	V	207.0	74.00	54.00	Pass
>6000	Θ	Θ	-	V	-	74.00	54.00	Pass

Θ = none significant spurious

CH149 Horizontal Polarization

Electric Field Strength FCC_5GHz



— FCC 15_247 QP.LimitLine
— Preview Result 2

◆ FCC 15_247 AV.LimitLine
◆ Final Result 1

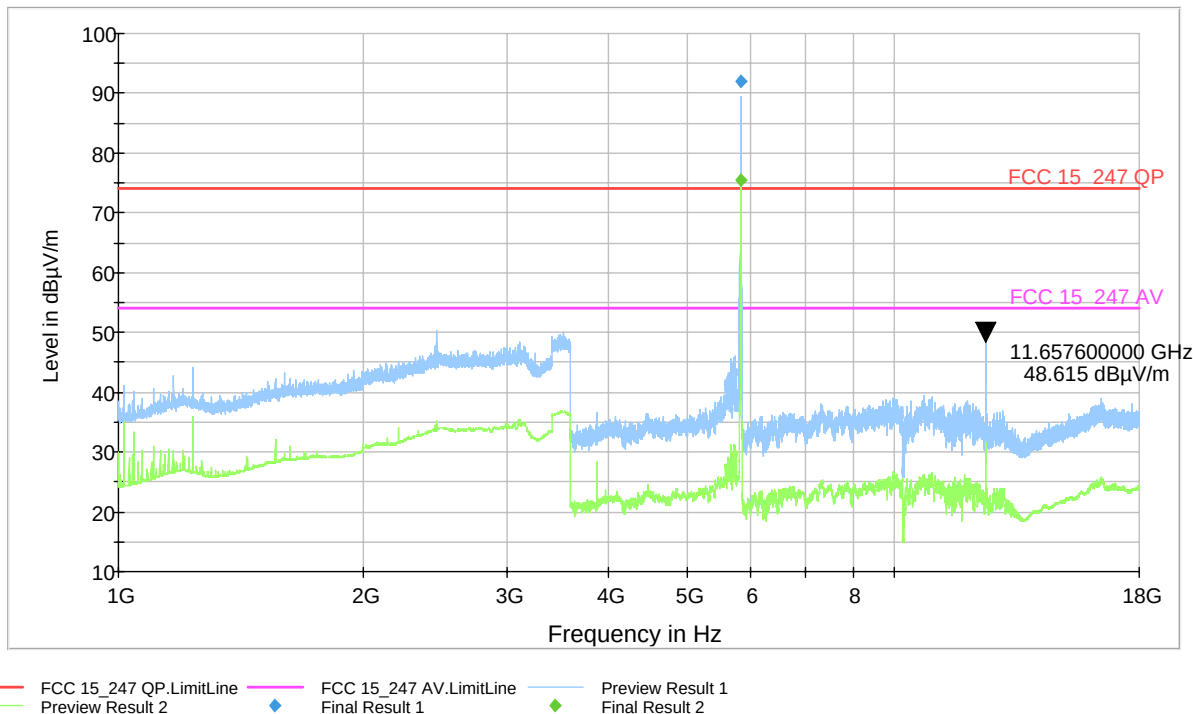
— Preview Result 1
◆ Final Result 2

RESULT

Frequency (MHz)	MaxPeak-ClearWrite (dBμV/m)	Average-ClearWrite (dBμV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Peak-Limit (dBμV/m)	Average-Limit (dBμV/m)	Comment
5740.200000	93.4	78.70	102.0	H	201.0	74.00	54.00	Pass
11490.40000	57.72	38.91	100.0	H	194.0	74.00	54.00	Pass
17230.80000	48.06	30.01	100.0	H	-	74.00	54.00	Pass

CH165 Vertical Polarization

Electric Field Strength FCC_5GHz



RESULT

Frequency (MHz)	MaxPeak-ClearWrite (dBμV/m)	Average-ClearWrite (dBμV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Peak-Limit (dBμV/m)	Average-Limit (dBμV/m)	Comment
5821.200000	91.90	75.5	109.0	V	200.0	74.00	54.00	Pass
11657.60000	48.61	35.62	102.0	V	195.0	74.00	54.00	Pass
>12000	Θ	Θ	-	V	-	74.00	54.00	Pass

Θ = none significant spurious



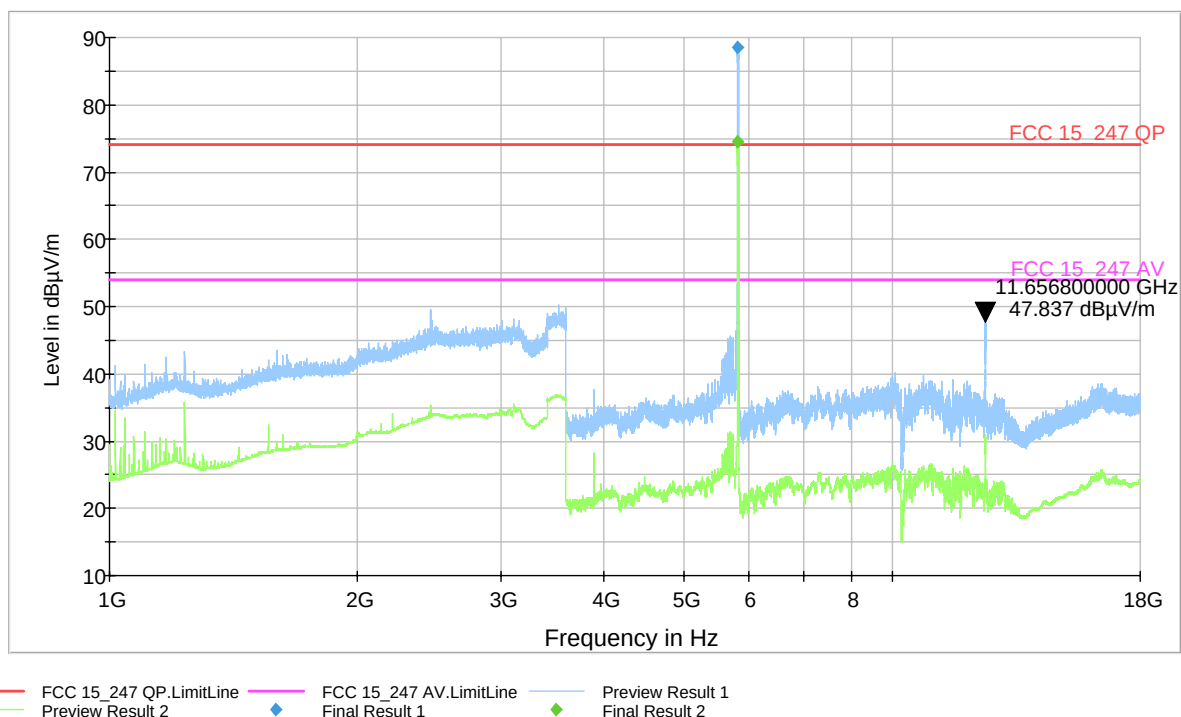
PRIMA

RICERCA & SVILUPPO

FCCTR_081122-4

CH165 horizontal Polarization

Electric Field Strength FCC_5GHz



RESULT

Frequency (MHz)	MaxPeak-ClearWrite (dBµV/m)	Average-ClearWrite (dBµV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Peak-Limit (dBµV/m)	Average-Limit (dBµV/m)	Comment
5829.200000	88.51	74.6	102.0	H	201.0	74.00	54.00	Pass
11656.80000	47.83	33.84	100.0	H	194.0	74.00	54.00	Pass
>12000	⌀	⌀	-	V	-	74.00	54.00	Pass

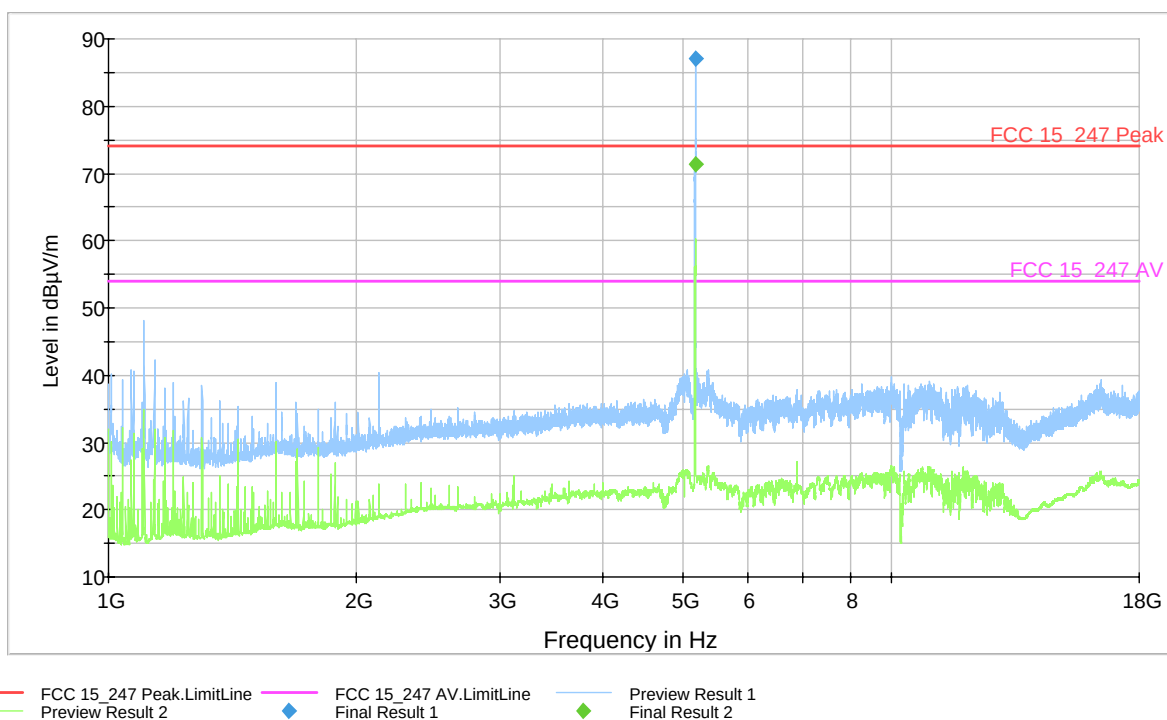
⌀ = none significant spurious

CHAIN B: Protocol a (20MHz bandwidth)

CH36	5180MHz
CH64	5320MHz
CH149	5745MHz
CH165	5825MHz

CH36 Vertical Polarization

Electric Field Strength FCC_5GHz



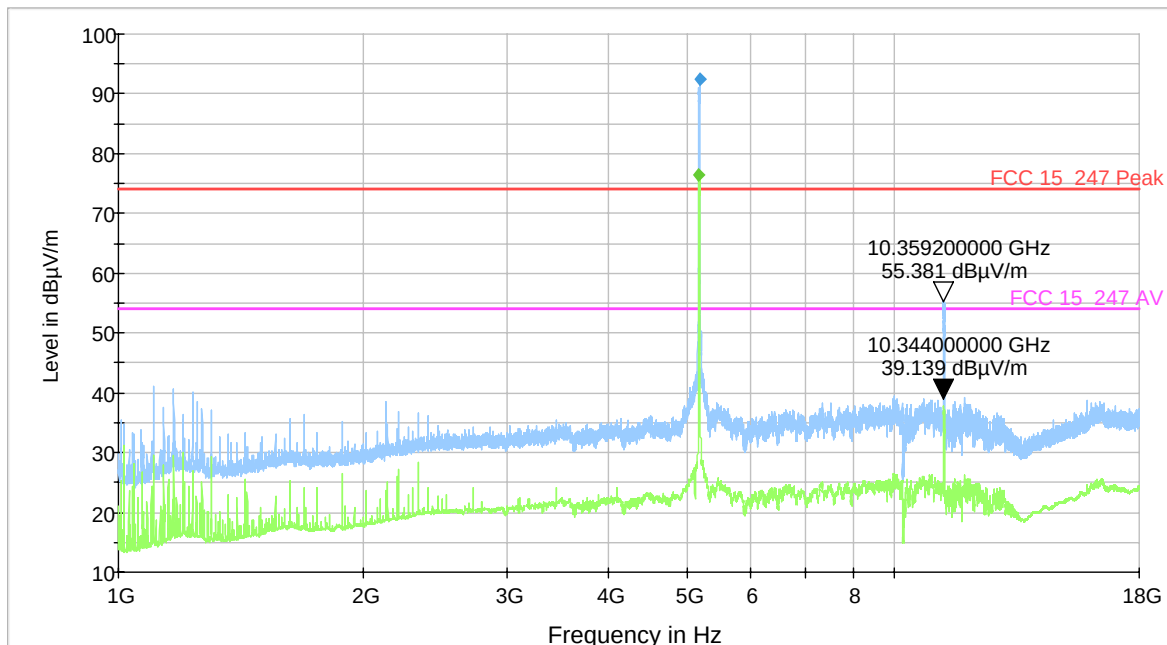
RESULT

Frequency (MHz)	MaxPeak-ClearWrite (dBµV/m)	Average-ClearWrite (dBµV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Peak-Limit (dBµV/m)	Average-Limit (dBµV/m)	Comment
5187.800000	87.00	71.30	100.0	V	201.0	74.00	54.00	Pass
>6000	⌀	⌀	-	V	-	74.00	54.00	Pass

⌀ = none significant spurious

CH36 Horizontal Polarization

Electric Field Strength FCC_5GHz



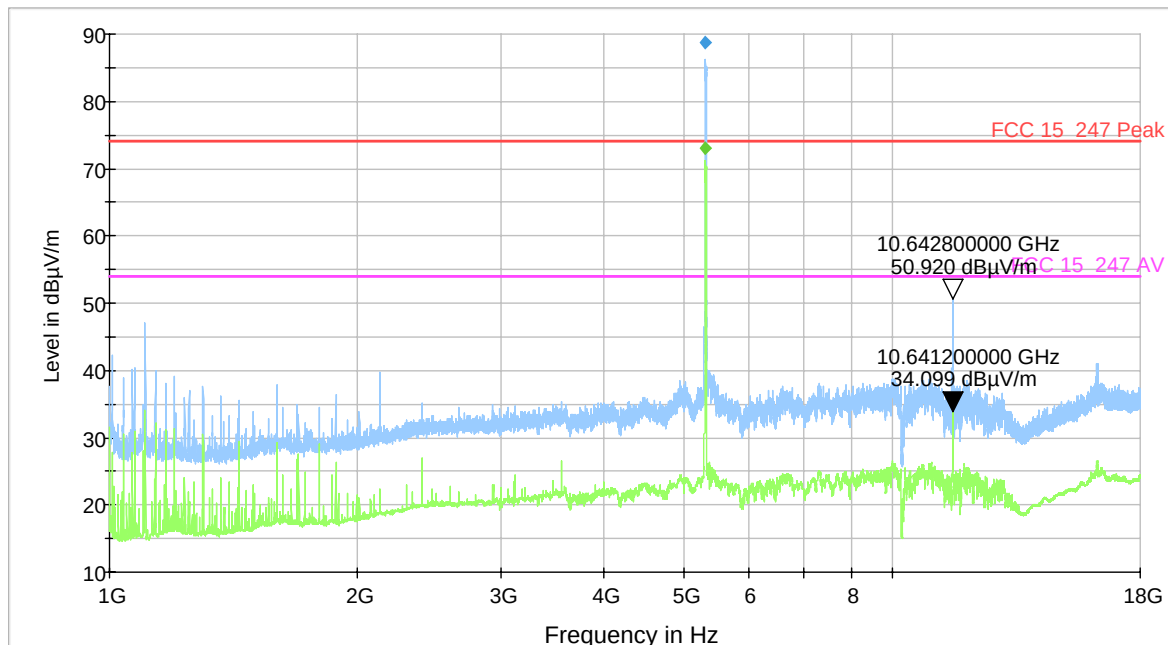
RESULT

Frequency (MHz)	MaxPeak-ClearWrite (dBμV/m)	Average-ClearWrite (dBμV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Peak-Limit (dBμV/m)	Average-Limit (dBμV/m)	Comment
5184.000000	92.4	76.4	100.0	H	169.0	74.00	54.00	Pass
10359.20000	55.38	39.13	100.0	H	14.0	74.00	54.00	Pass
>11000	Θ	Θ	-	H	-	74.00	54.00	Pass

Θ = none significant spurious

CH64 Vertical Polarization

Electric Field Strength FCC_5GHz



— FCC 15_247 Peak.LimitLine
 — FCC 15_247 AV.LimitLine
 — Preview Result 1
 — Preview Result 2
 ◆ Final Result 1
 ◆ Final Result 2

RESULT

Frequency (MHz)	MaxPeak-ClearWrite (dBμV/m)	Average-ClearWrite (dBμV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Peak-Limit (dBμV/m)	Average-Limit (dBμV/m)	Comment
5316.800000	88.72	73.11	100.0	V	199.0	74.00	54.00	Pass
10642.80000	50.92	34.09	100.0	V	200.0	74.00	54.00	Pass
>11000	Θ	Θ	-	V	-	74.00	54.00	Pass

Θ = none significant spurious



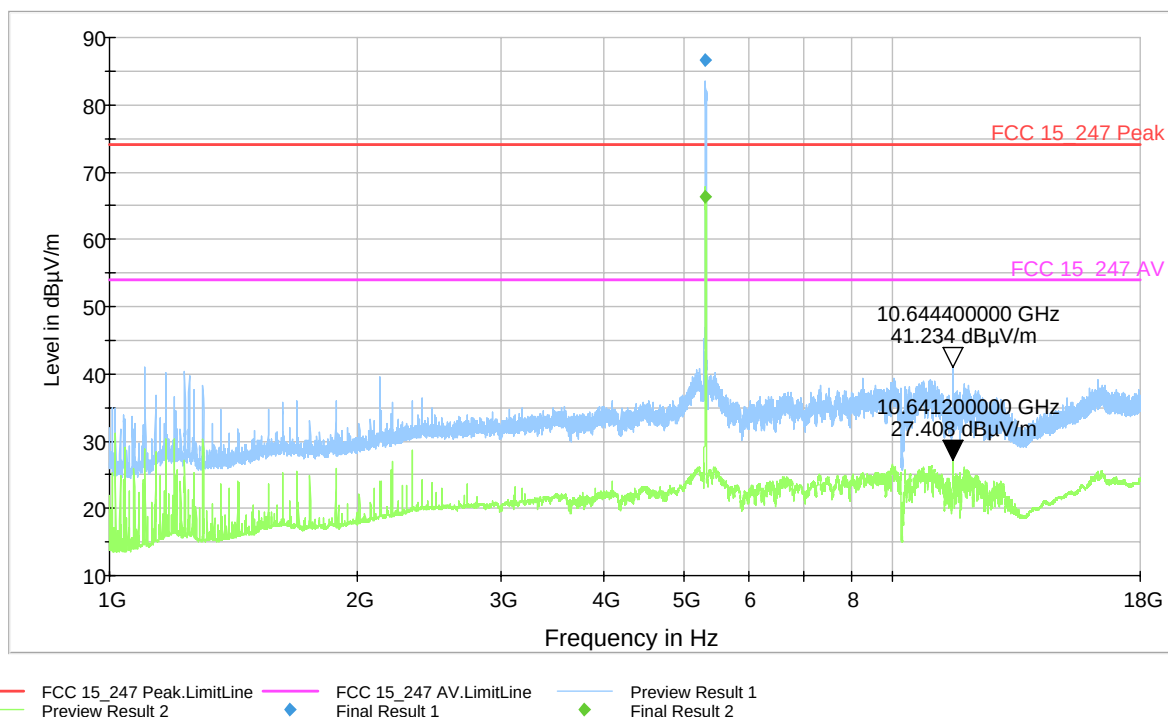
PRIMA

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CH64 Horizontal Polarization

Electric Field Strength FCC_5GHz



RESULT

Frequency (MHz)	MaxPeak-ClearWrite (dBμV/m)	Average-ClearWrite (dBμV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Peak-Limit (dBμV/m)	Average-Limit (dBμV/m)	Comment
5316.800000	86.6	66.4	109.0	H	168.0	74.00	54.00	Pass
10644.40000	41.23	27.41	100.0	H	165.0	74.00	54.00	Pass
>11000	Θ	Θ	-	H	-	74.00	54.00	Pass

Θ = none significant spurious



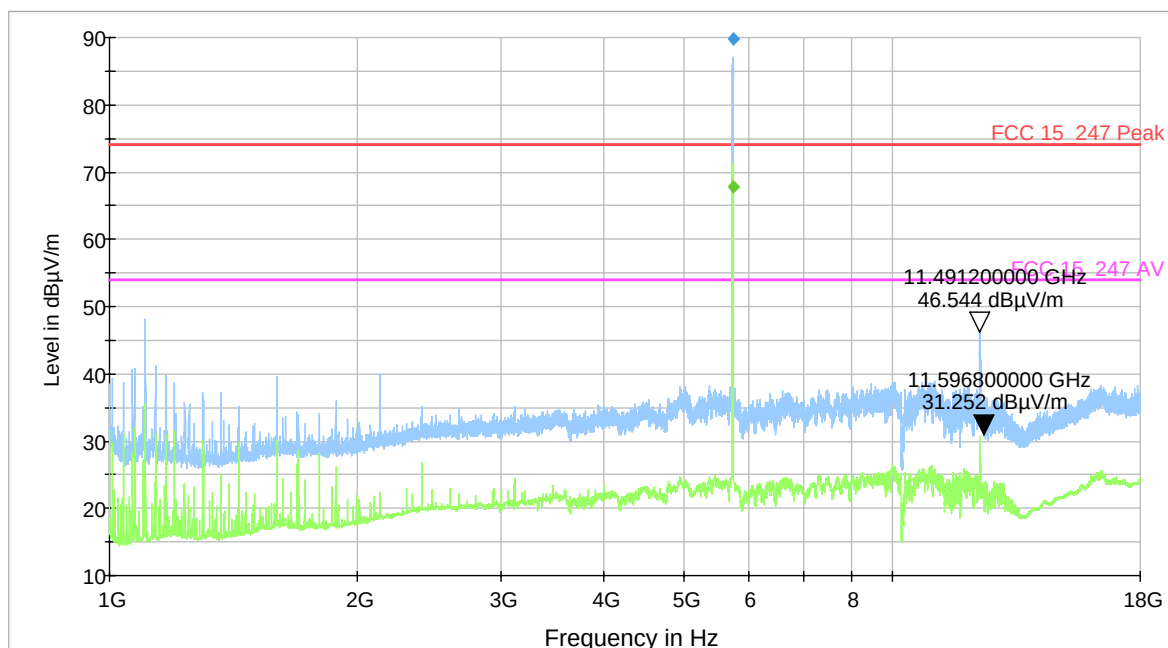
PRIMA

RICERCA & SVILUPPO

FCCTR_081122-4

CH149 Vertical Polarization

Electric Field Strength FCC_5GHz



— FCC 15_247 Peak.LimitLine — FCC 15_247 AV.LimitLine — Preview Result 1
— Preview Result 2 ◆ Final Result 1 ◆ Final Result 2

RESULT

Frequency (MHz)	MaxPeak-ClearWrite (dBµV/m)	Average-ClearWrite (dBµV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Peak-Limit (dBµV/m)	Average-Limit (dBµV/m)	Comment
5741.600000	89.7	67.9	131.0	V	188.0	74.00	54.00	Pass
11491.200000	46.55	31.25	122.0	V	179.0	74.00	54.00	Pass
>12000	Θ	Θ	-	V	-	74.00	54.00	Pass

Θ = none significant spurious



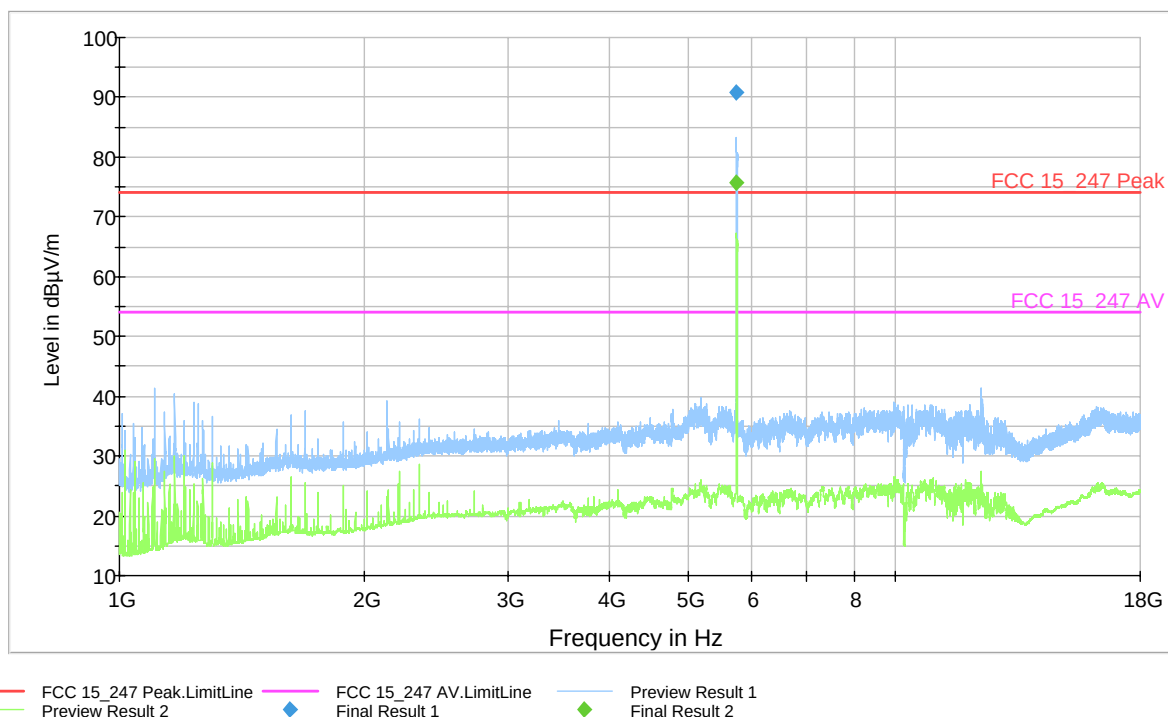
PRIMA

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FCCTR_081122-4

CH149 Horizontal Polarization

Electric Field Strength FCC_5GHz



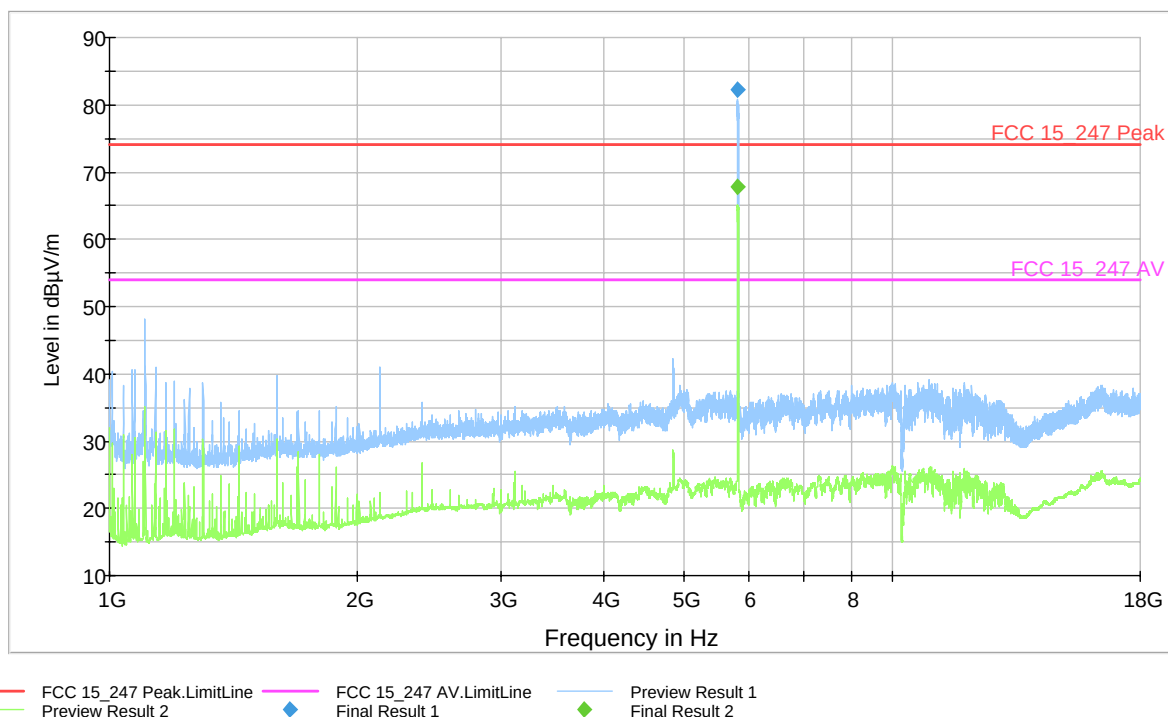
RESULT

Frequency (MHz)	MaxPeak-ClearWrite (dBμV/m)	Average-ClearWrite (dBμV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Peak-Limit (dBμV/m)	Average-Limit (dBμV/m)	Comment
5740.200000	90.9	75.80	102.0	H	167.0	74.00	54.00	Pass
>6000	Θ	Θ	100.0	H	166.0	74.00	54.00	Pass

Θ = none significant spurious

CH165 Vertical Polarization

Electric Field Strength FCC_5GHz



RESULT

Frequency (MHz)	MaxPeak-ClearWrite (dBµV/m)	Average-ClearWrite (dBµV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Peak-Limit (dBµV/m)	Average-Limit (dBµV/m)	Comment
5821.200000	82.3	67.7	150.0	V	202.0	74.00	54.00	Pass
>6000	Θ	Θ	-	V	-	74.00	54.00	Pass

Θ = none significant spurious



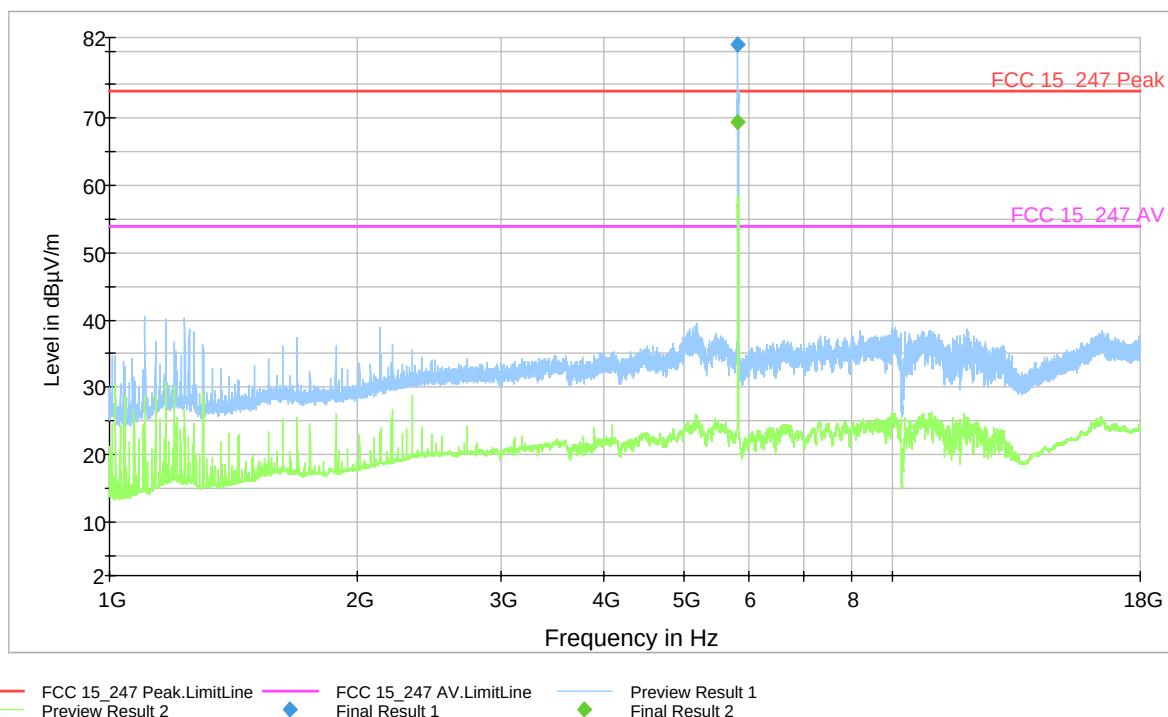
PRIMA

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FCCTR_081122-4

CH165 horizontal Polarization

Electric Field Strength FCC_5GHz



RESULT

Frequency (MHz)	MaxPeak-ClearWrite (dBµV/m)	Average-ClearWrite (dBµV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Peak-Limit (dBµV/m)	Average-Limit (dBµV/m)	Comment
5828.800000	80.9	69.5	109.0	H	167.0	74.00	54.00	Pass
>6000	Ø	Ø	-	V	-	74.00	54.00	Pass

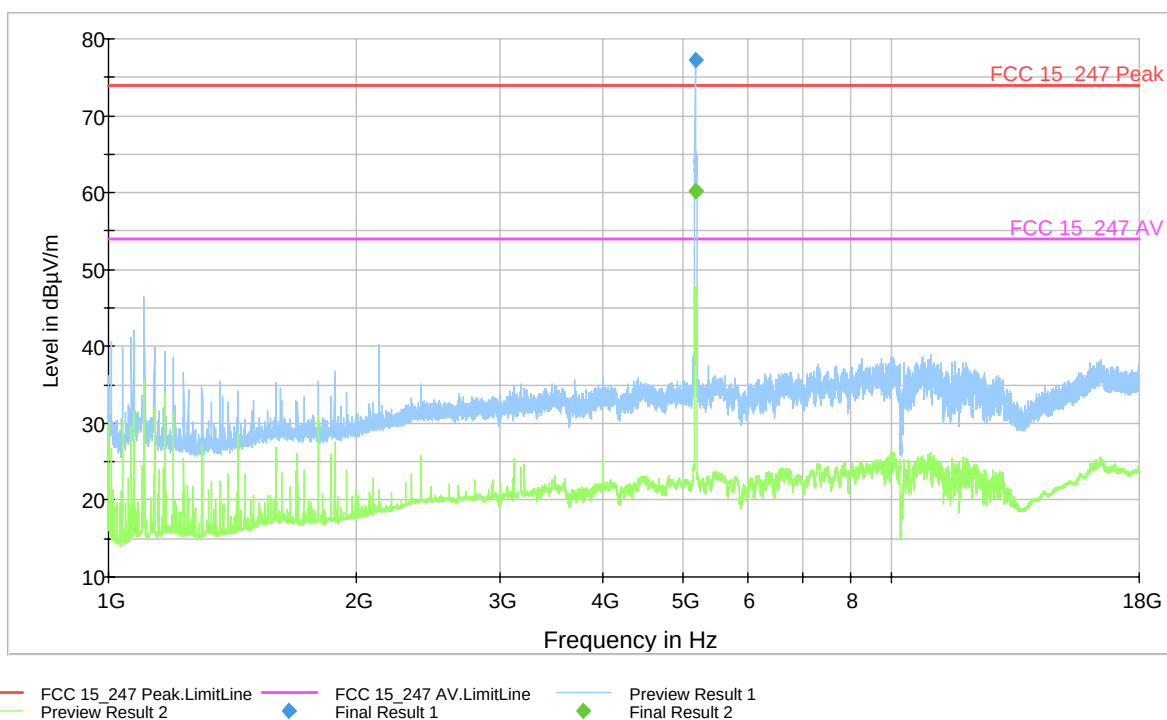
Ø = none significant spurious

CHAIN A: Protocol a (40MHz bandwidth)

CH38	5190MHz
CH62	5310MHz
CH151	5755MHz
CH159	5795MHz

CH38 Vertical Polarization

Electric Field Strength FCC_5GHz



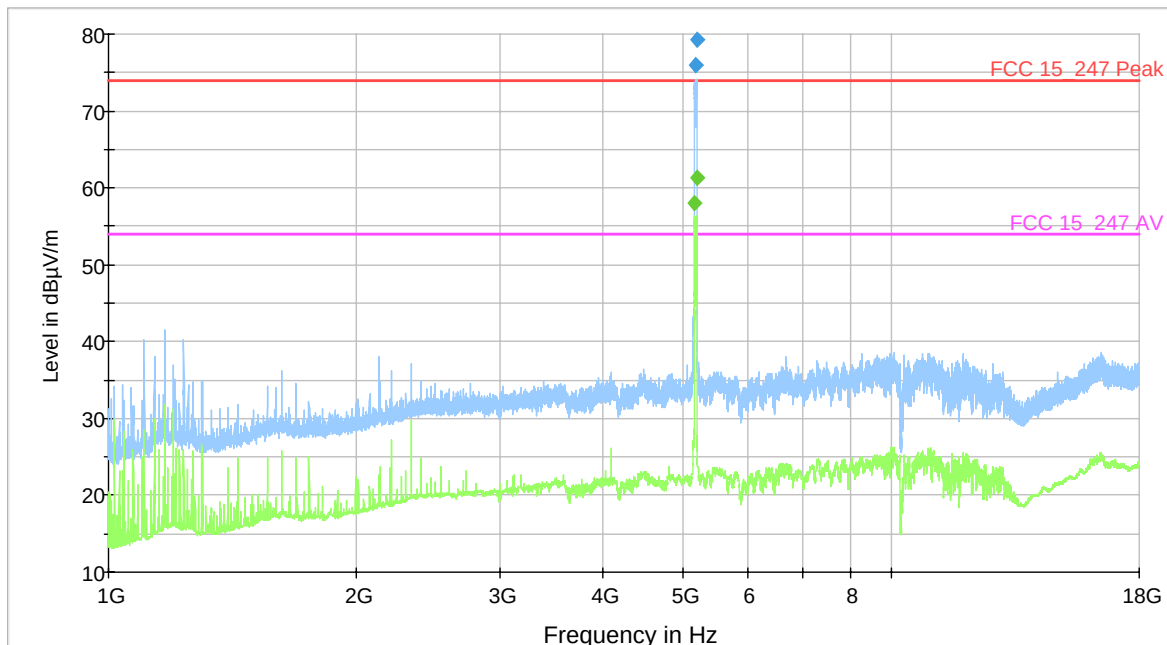
RESULT

Frequency (MHz)	MaxPeak-ClearWrite (dBµV/m)	Average-ClearWrite (dBµV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Peak-Limit (dBµV/m)	Average-Limit (dBµV/m)	Comment
5200.100000	77.00	60.20	128.0	V	169.0	74.00	54.00	Pass
>6000	⌀	⌀	-	V	-	74.00	54.00	Pass

⌀ = none significant spurious

CH38 Horizontal Polarization

Electric Field Strength FCC_5GHz



— FCC 15_247 Peak.LimitLine — FCC 15_247 AV.LimitLine — Preview Result 1
— Preview Result 2 ◆ Final Result 1 ◆ Final Result 2

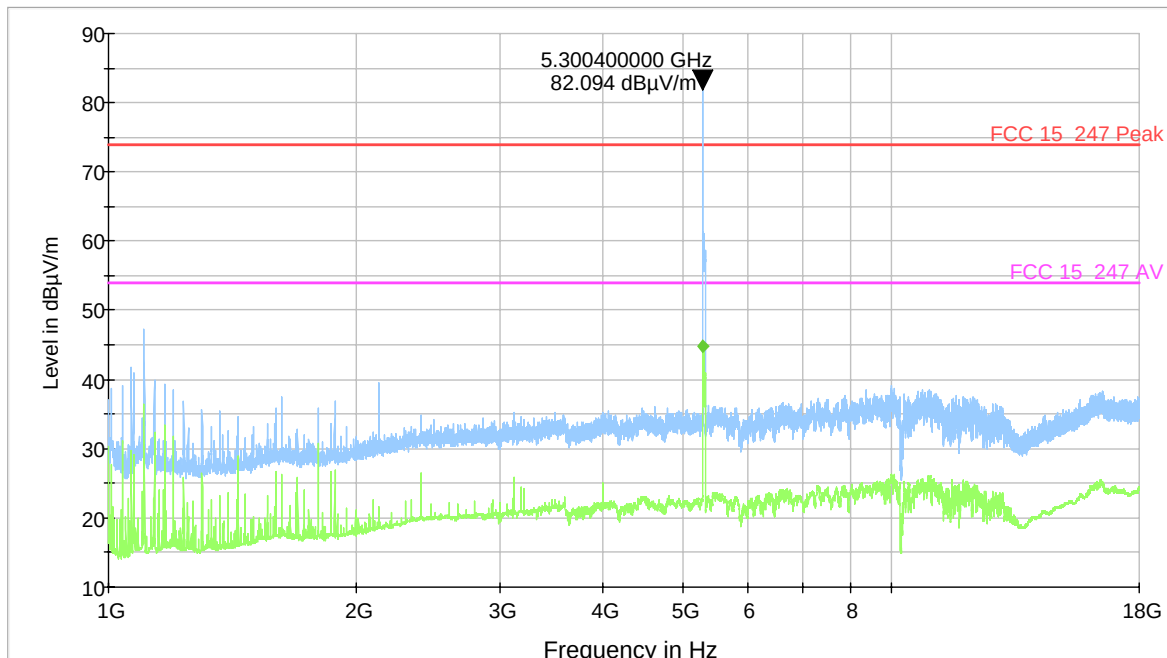
RESULT

Frequency (MHz)	MaxPeak-ClearWrite (dBμV/m)	Average-ClearWrite (dBμV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Peak-Limit (dBμV/m)	Average-Limit (dBμV/m)	Comment
5199.000000	79.0	61.4	150.0	H	201.0	74.00	54.00	Pass
>6000	Θ	Θ	-	-	-	74.00	54.00	Pass

Θ = none significant spurious

CH62 Vertical Polarization

Electric Field Strength FCC_5GHz



— FCC 15_247 Peak.LimitLine — FCC 15_247 AV.LimitLine — Preview Result 1 — Preview Result 2 ◆ Final Result 2

RESULT

Frequency (MHz)	MaxPeak-ClearWrite (dBμV/m)	Average-ClearWrite (dBμV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Peak-Limit (dBμV/m)	Average-Limit (dBμV/m)	Comment
5298.400000	82.09	44.20	100.0	V	177.0	74.00	54.00	Pass
>6000	Θ	Θ	-	-	-	74.00	54.00	Pass

Θ = none significant spurious



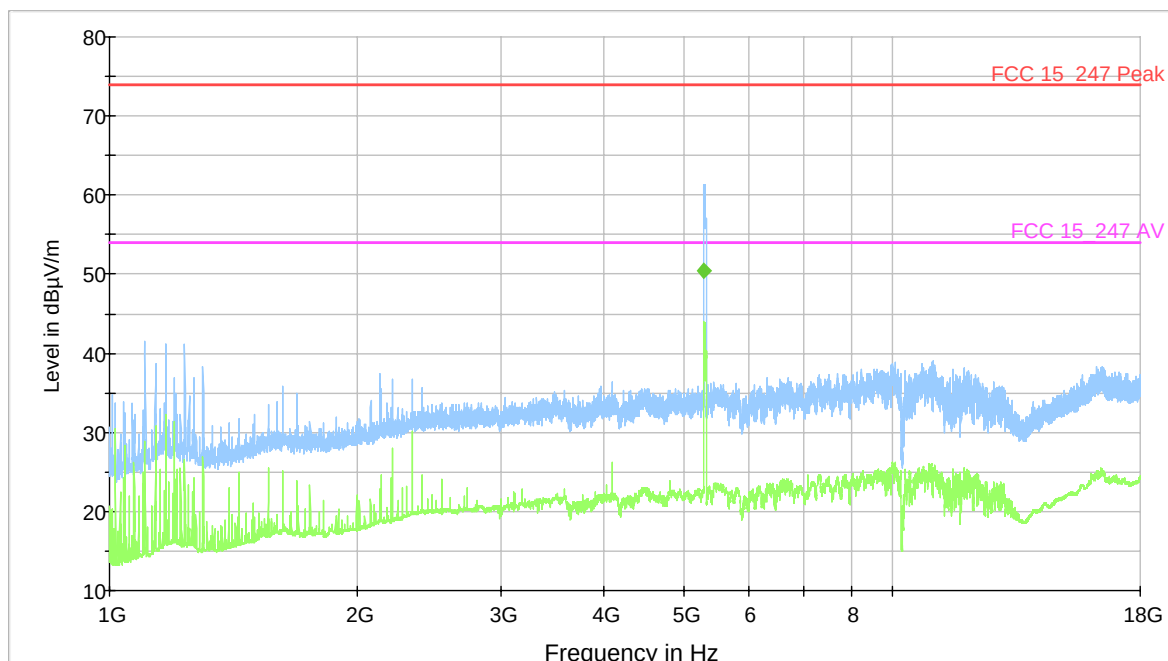
PRIMA

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FCCTR_081122-4

CH62 Horizontal Polarization

Electric Field Strength FCC_5GHz



— FCC 15_247 Peak.LimitLine — FCC 15_247 AV.LimitLine — Preview Result 1 — Preview Result 2 ◆ Final Result 2

RESULT

Frequency (MHz)	MaxPeak-ClearWrite (dBμV/m)	Average-ClearWrite (dBμV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Peak-Limit (dBμV/m)	Average-Limit (dBμV/m)	Comment
5298.800000	62.49	50.4	116.0	H	201.0	74.00	54.00	Pass
>6000	Θ	Θ	-	-	-	74.00	54.00	Pass

Θ = none significant spurious



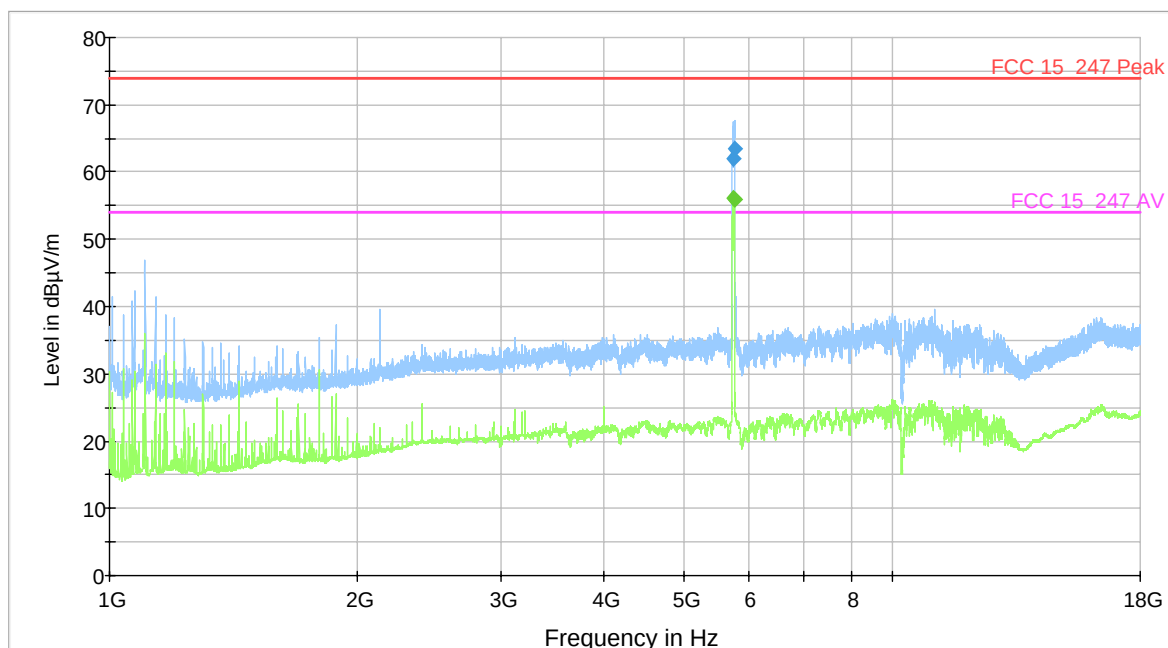
PRIMA

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FCCTR_081122-4

CH151 Vertical Polarization

Electric Field Strength FCC_5GHz



— FCC 15_247 Peak.LimitLine — FCC 15_247 AV.LimitLine — Preview Result 1
— Preview Result 2 ◆ Final Result 1 ◆ Final Result 2

RESULT

Frequency (MHz)	MaxPeak-ClearWrite (dBµV/m)	Average-ClearWrite (dBµV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Peak-Limit (dBµV/m)	Average-Limit (dBµV/m)	Comment
5767.600000	63.57	56.2	105.0	V	198.0	74.00	54.00	Pass
>6000	⌀	⌀	-	-	-	74.00	54.00	Pass

⌀ = none significant spurious



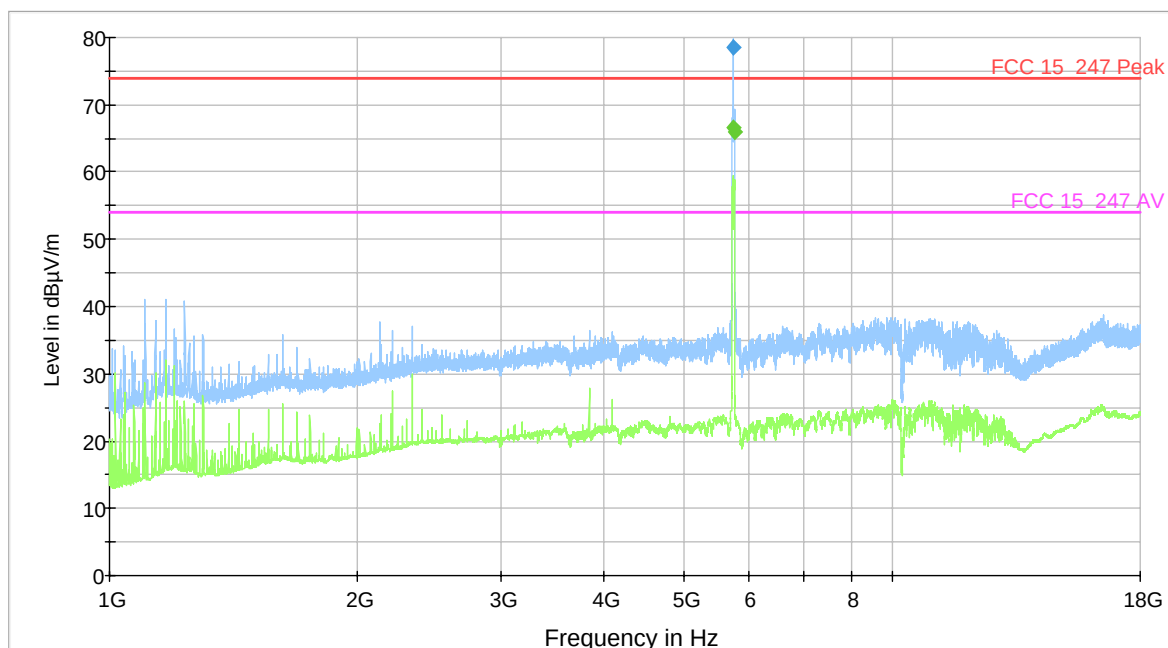
PRIMA

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FCCTR_081122-4

CH151 Horizontal Polarization

Electric Field Strength FCC_5GHz



— FCC 15_247 Peak.LimitLine — FCC 15_247 AV.LimitLine — Preview Result 1
— Preview Result 2 — Final Result 1 — Final Result 2

RESULT

Frequency (MHz)	MaxPeak-ClearWrite (dBμV/m)	Average-ClearWrite (dBμV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Peak-Limit (dBμV/m)	Average-Limit (dBμV/m)	Comment
5767.200000	78.4	66.80	102.0	H	191.0	74.00	54.00	Pass
>6000	Θ	Θ		-		74.00	54.00	Pass

Θ = none significant spurious



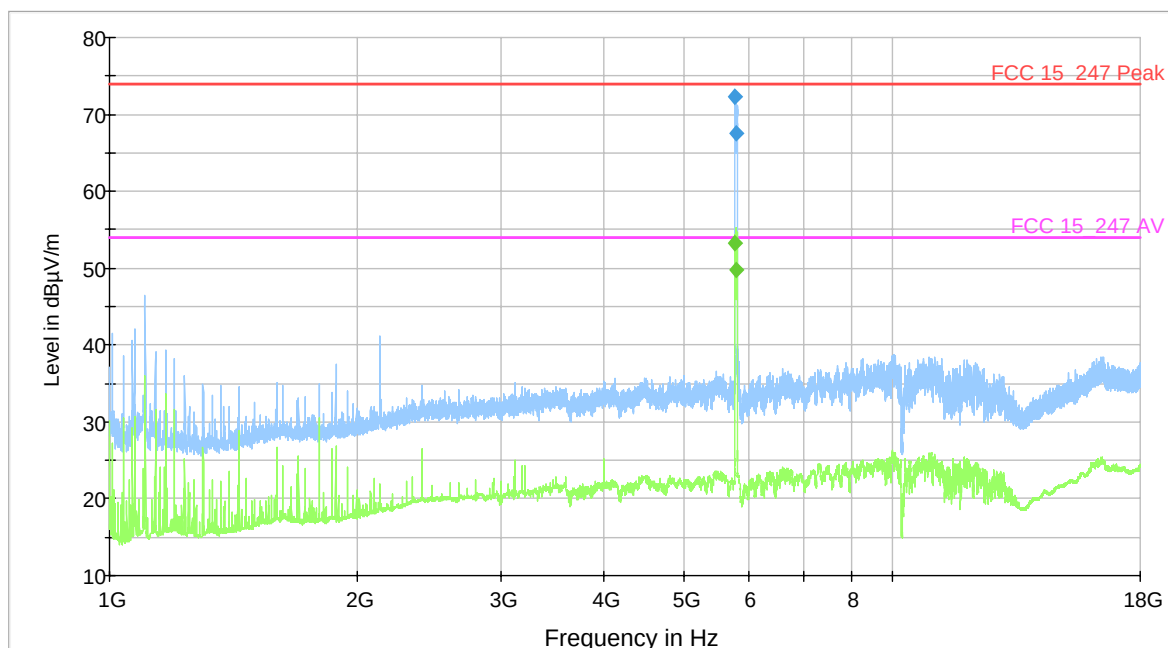
PRIMA

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CH159 Vertical Polarization

FCCTR_081122-4

Electric Field Strength FCC_5GHz



— FCC 15_247 Peak.LimitLine — FCC 15_247 AV.LimitLine — Preview Result 1
— Preview Result 2 — Final Result 1 — Final Result 2

RESULT

Frequency (MHz)	MaxPeak-ClearWrite (dBµV/m)	Average-ClearWrite (dBµV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Peak-Limit (dBµV/m)	Average-Limit (dBµV/m)	Comment
5800.200000	72.4	53.2	145.0	V	197.0	74.00	54.00	Pass
>6000	Θ	Θ	-	-	-	74.00	54.00	Pass

Θ = none significant spurious



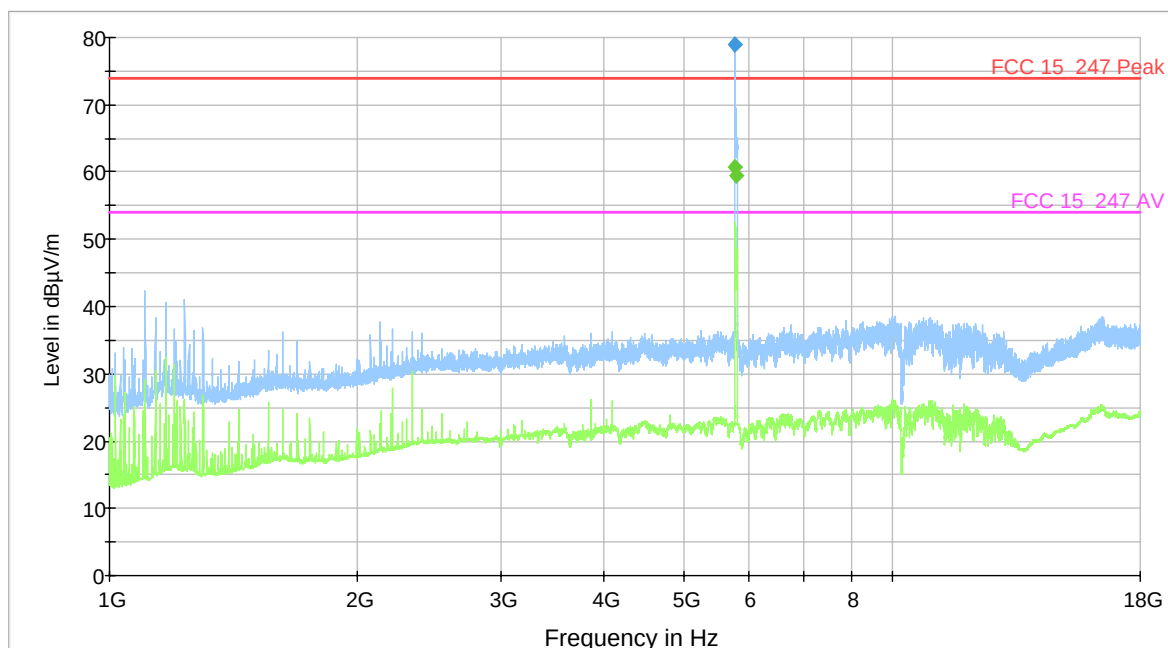
PRIMA

RICERCA & SVILUPPO

FCCTR_081122-4

CH159 horizontal Polarization

Electric Field Strength FCC_5GHz



— FCC 15_247 Peak.LimitLine — FCC 15_247 AV.LimitLine — Preview Result 1
— Preview Result 2 ◆ Final Result 1 ◆ Final Result 2

RESULT

Frequency (MHz)	MaxPeak-ClearWrite (dBµV/m)	Average-ClearWrite (dBµV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Peak-Limit (dBµV/m)	Average-Limit (dBµV/m)	Comment
5800.800000	79.9	60.7	100.0	H	200.0	74.00	54.00	Pass
>6000	⌀	⌀	-	-	-	74.00	54.00	Pass

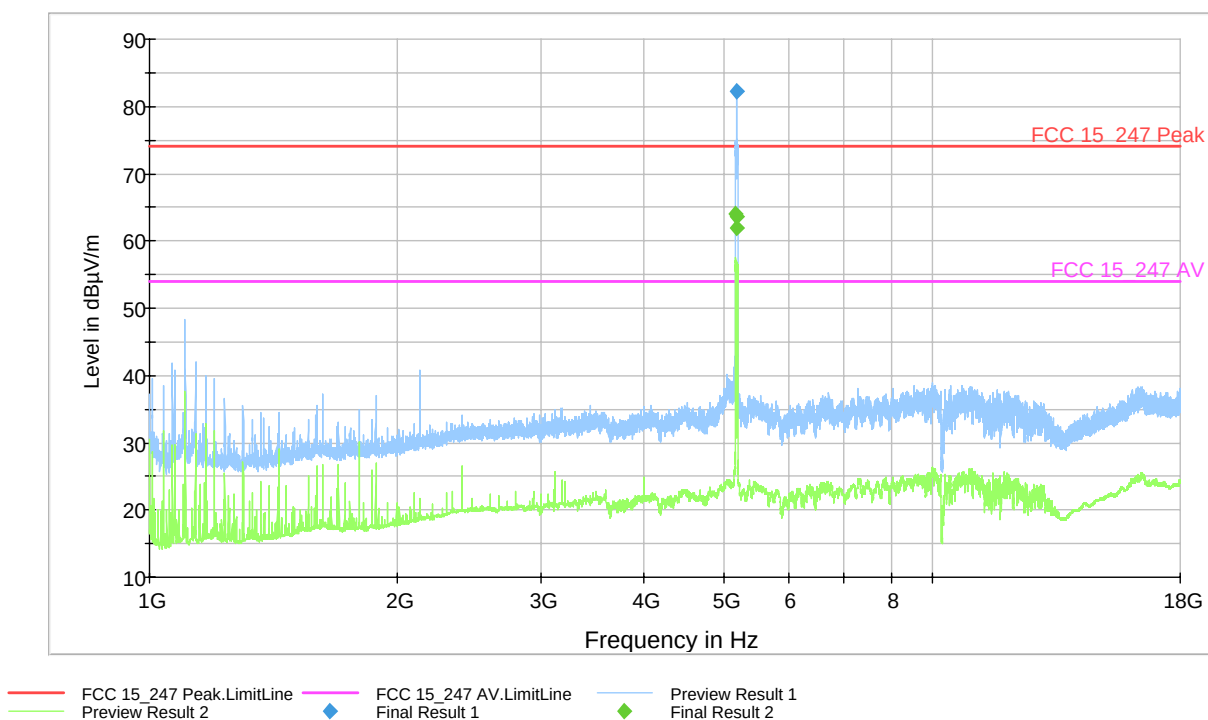
⌀ = none significant spurious

CHAIN B: Protocol a (40MHz bandwidth)

CH38	5190MHz
CH62	5310MHz
CH151	5755MHz
CH159	5795MHz

CH38 Vertical Polarization

Electric Field Strength FCC_5GHz


RESULT

Frequency (MHz)	MaxPeak-ClearWrite (dBμV/m)	Average-ClearWrite (dBμV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Peak-Limit (dBμV/m)	Average-Limit (dBμV/m)	Comment
5180.800000	82.2	62.0	109.0	V	168.0	74.00	54.00	Pass
>6000	Θ	Θ	-	V	-	74.00	54.00	Pass

Θ = none significant spurious



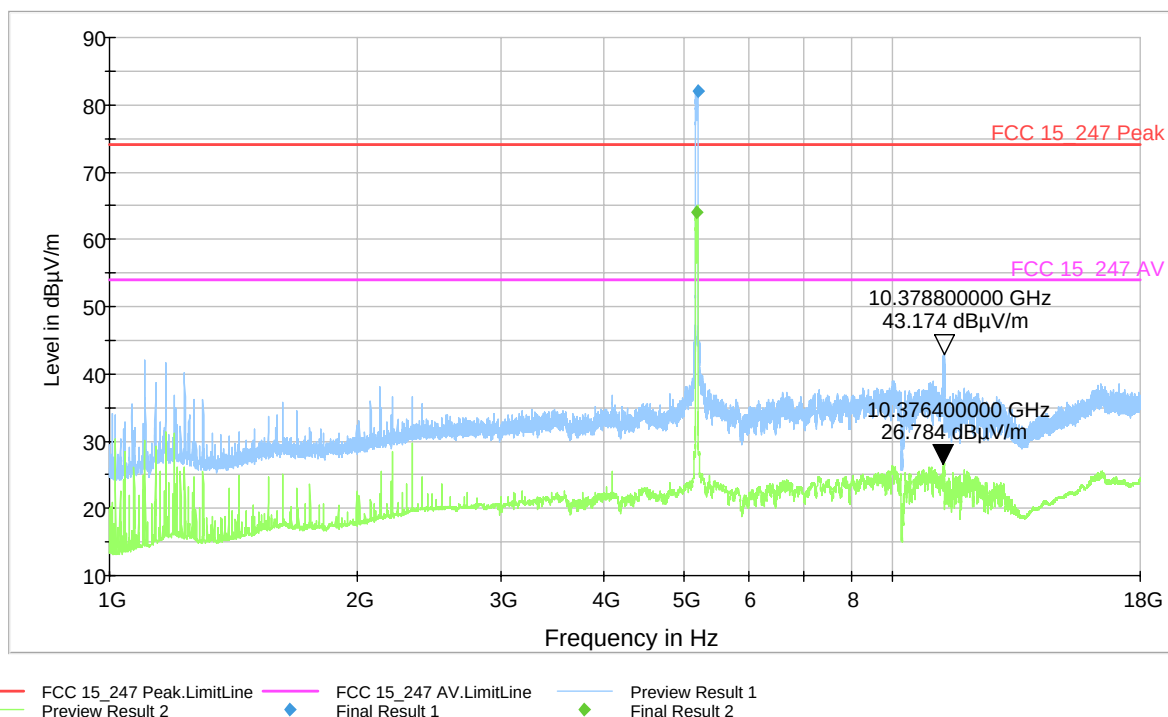
PRIMA

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FCCTR_081122-4

CH38 Horizontal Polarization

Electric Field Strength FCC_5GHz



RESULT

Frequency (MHz)	MaxPeak-ClearWrite (dBµV/m)	Average-ClearWrite (dBµV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Peak-Limit (dBµV/m)	Average-Limit (dBµV/m)	Comment
5198.9000	82.0	64.0	100.0	H	201.0	74.00	54.00	Pass
10378.8000	43.174	26.784	105.0	H	185.0	74.00	54.00	Pass
>10378.8000	Θ	Θ	-	-	-	74.00	54.00	Pass

Θ = none significant spurious



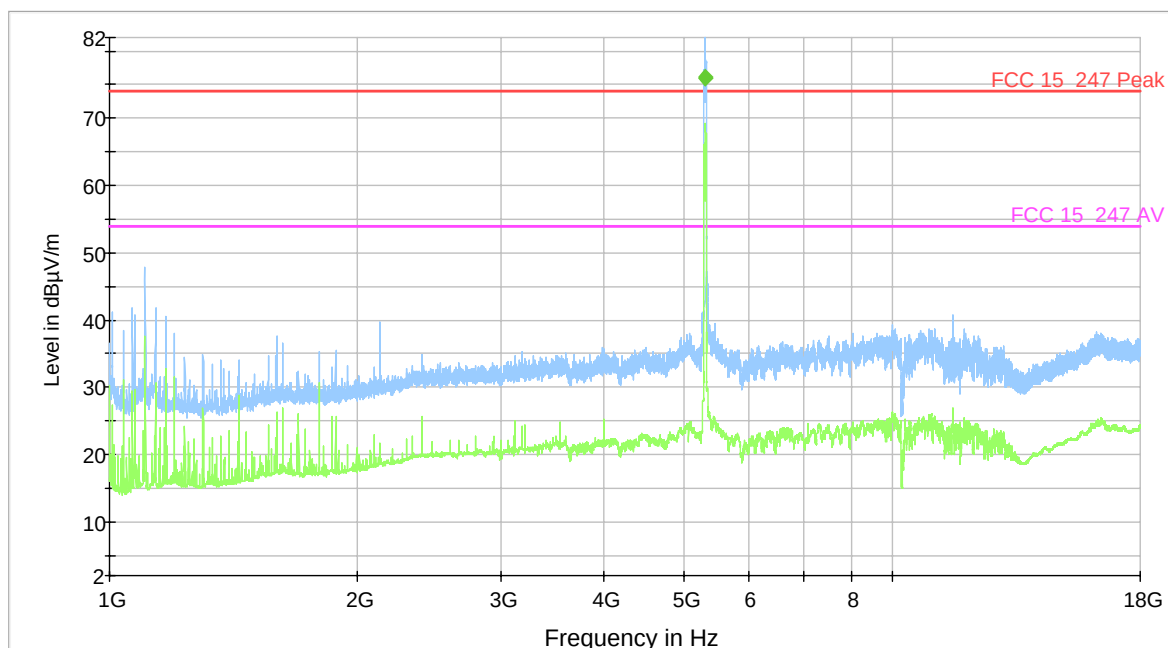
PRIMA

RICERCA & SVILUPPO

CH62 Vertical Polarization

FCCTR_081122-4

Electric Field Strength FCC_5GHz



— FCC 15_247 Peak.LimitLine — FCC 15_247 AV.LimitLine — Preview Result 1
— Preview Result 2 ◆ Final Result 1 ◆ Final Result 2

RESULT

Frequency (MHz)	MaxPeak-ClearWrite (dBµV/m)	Average-ClearWrite (dBµV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Peak-Limit (dBµV/m)	Average-Limit (dBµV/m)	Comment
5320.400000	87.62	76.10	100.0	V	201.0	74.00	54.00	Pass
>6000	⌀	⌀	-	V	-	74.00	54.00	Pass

⌀ = none significant spurious



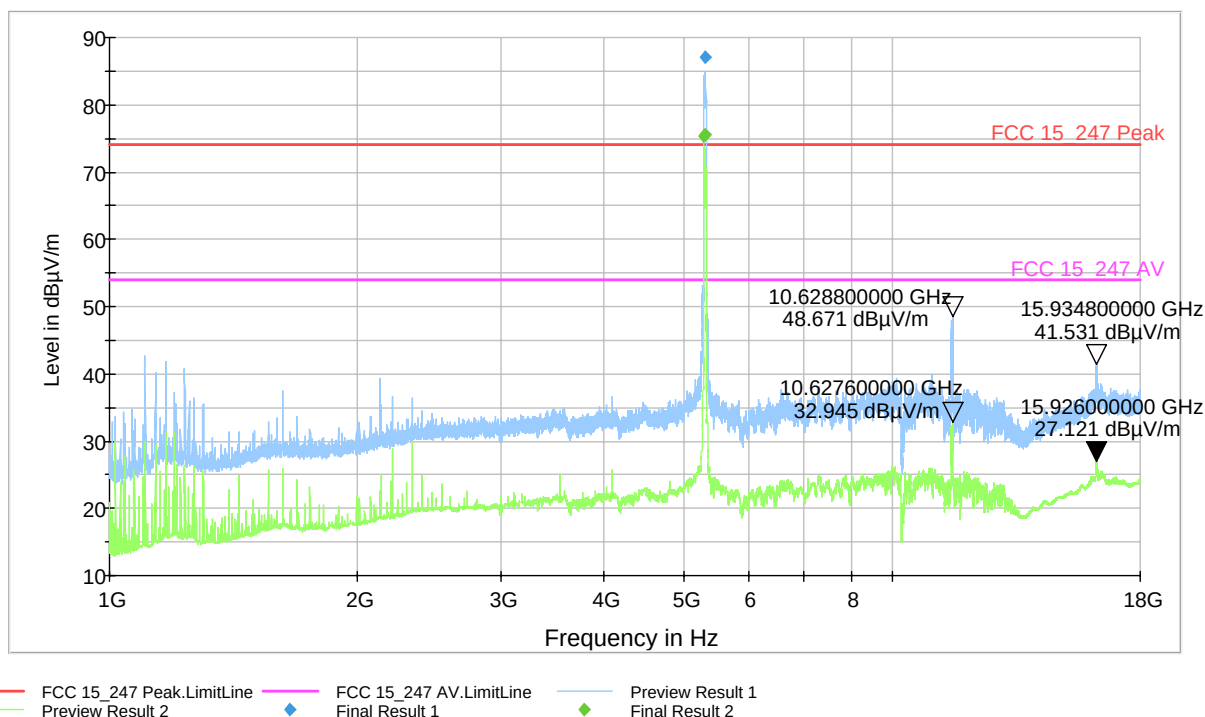
PRIMA

RICERCA & SVILUPPO

CH62 Horizontal Polarization

FCCTR_081122-4

Electric Field Strength FCC_5GHz



RESULT

Frequency (MHz)	MaxPeak-ClearWrite (dBµV/m)	Average-ClearWrite (dBµV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Peak-Limit (dBµV/m)	Average-Limit (dBµV/m)	Comment
5320.1000	87.20	75.6	145.0	H	166.0	74.00	54.00	Pass
10628.8000	48.671	32.945	165.0	H	185.0	74.00	54.00	Pass
15934.8000	41.531	27.121	167.0	H	199.0	74.00	54.00	Pass
>16000	Θ	Θ	-	-	-	74.00	54.00	Pass

Θ = none significant spurious



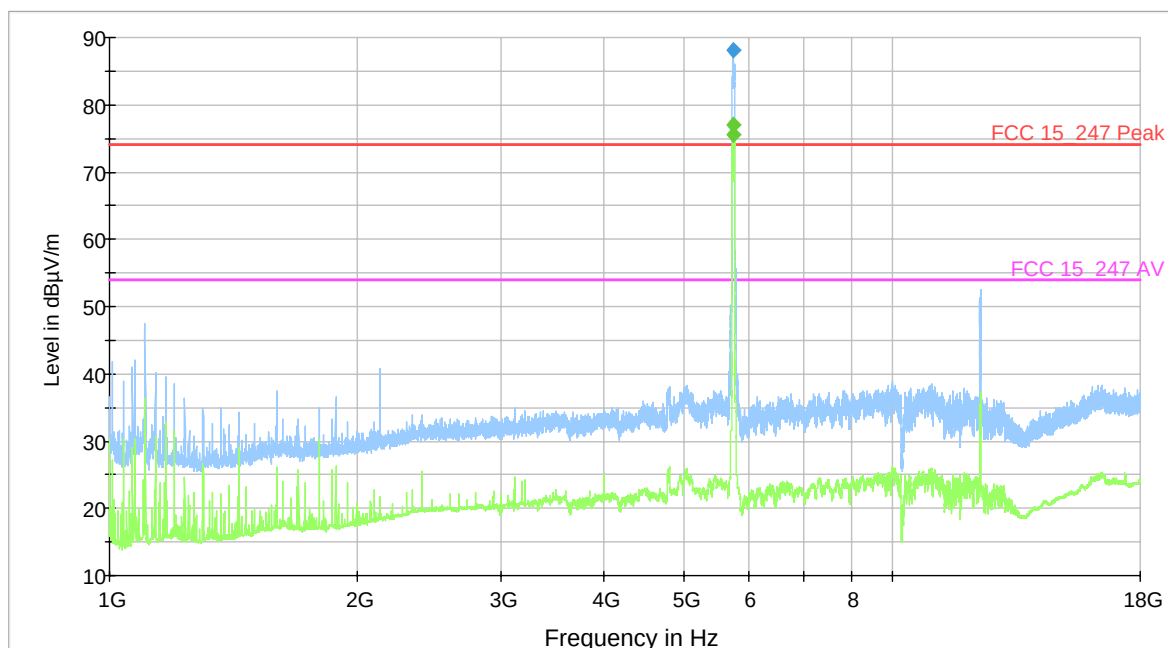
PRIMA

RICERCA & SVILUPPO

FCCTR_081122-4

CH151 Vertical Polarization

Electric Field Strength FCC_5GHz



— FCC 15_247 Peak.LimitLine — FCC 15_247 AV.LimitLine — Preview Result 1
— Preview Result 2 ◆ Final Result 1 ◆ Final Result 2

RESULT

Frequency (MHz)	MaxPeak-ClearWrite (dBµV/m)	Average-ClearWrite (dBµV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Peak-Limit (dBµV/m)	Average-Limit (dBµV/m)	Comment
5743.200000	88.11	76.90	138.0	V	186.0	74.00	54.00	Pass
11485.400	53.44	35.64	155.0	V	189.0	74.00	54.00	Pass
>12000	⌀	⌀	-	V	-	74.00	54.00	Pass

⌀ = none significant spurious



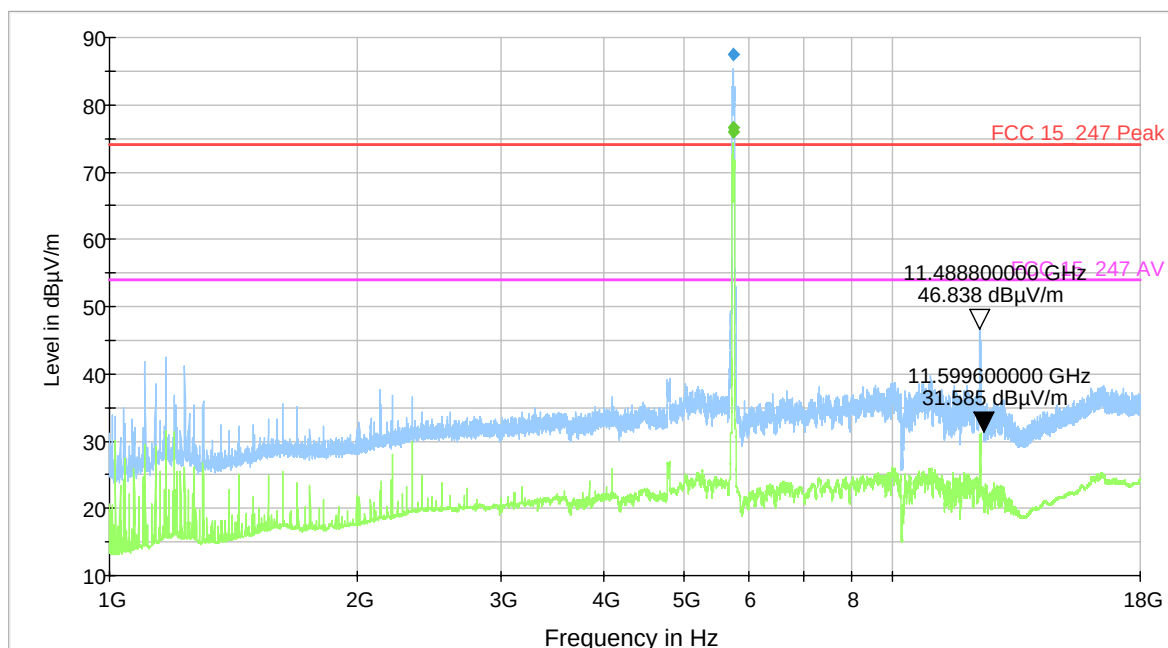
PRIMA

RICERCA & SVILUPPO

FCCTR_081122-4

CH151 Horizontal Polarization

Electric Field Strength FCC_5GHz



— FCC 15_247 Peak.LimitLine — FCC 15_247 AV.LimitLine — Preview Result 1
— Preview Result 2 ◆ Final Result 1 ◆ Final Result 2

RESULT

Frequency (MHz)	MaxPeak-ClearWrite (dBμV/m)	Average-ClearWrite (dBμV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Peak-Limit (dBμV/m)	Average-Limit (dBμV/m)	Comment
5744.800000	87.4	76.6	145.0	H	169.0	74.00	54.00	Pass
11488.8000	46.83	31.58	169.0	H	181.0	74.00	54.00	Pass
>12000	Θ	Θ	-	-	-	74.00	54.00	Pass

Θ = none significant spurious



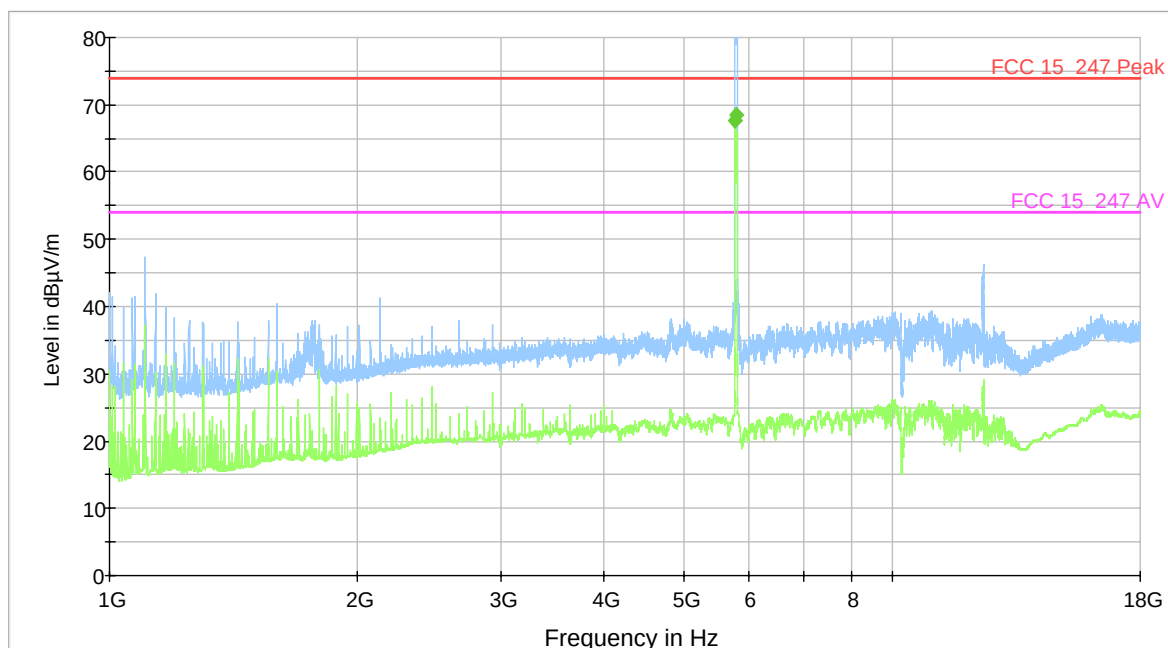
PRIMA

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CH159 Vertical Polarization

FCCTR_081122-4

Electric Field Strength FCC_5GHz



— FCC 15_247 Peak.LimitLine — FCC 15_247 AV.LimitLine — Preview Result 1
— Preview Result 2 ◆ Final Result 1 ◆ Final Result 2

RESULT

Frequency (MHz)	MaxPeak-ClearWrite (dBµV/m)	Average-ClearWrite (dBµV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Peak-Limit (dBµV/m)	Average-Limit (dBµV/m)	Comment
5799.000000	85.4	67.70	138.0	V	186.0	74.00	54.00	Pass
11598.400	46.4	29.14	145.0	V	159.0	74.00	54.00	Pass
>12000	Θ	Θ	-	V	-	74.00	54.00	Pass

Θ = none significant spurious



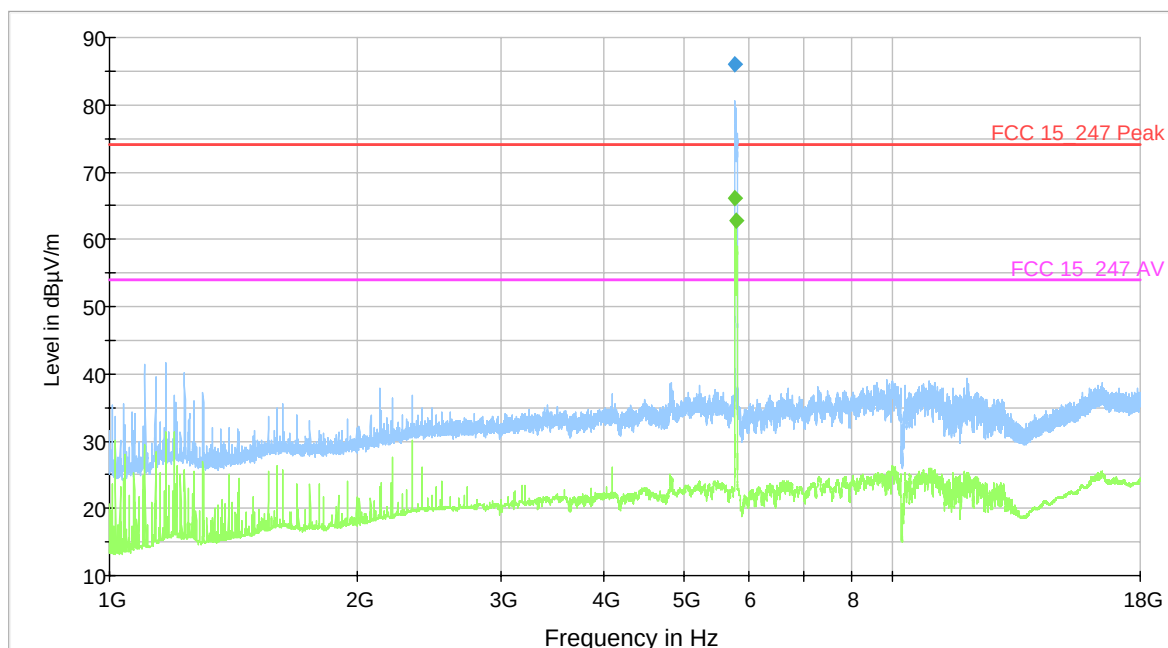
PRIMA

RICERCA & SVILUPPO

FCCTR_081122-4

CH159 Horizontal Polarization

Electric Field Strength FCC_5GHz



— FCC 15_247 Peak.LimitLine — FCC 15_247 AV.LimitLine — Preview Result 1
— Preview Result 2 ◆ Final Result 1 ◆ Final Result 2

RESULT

Frequency (MHz)	MaxPeak-ClearWrite (dBµV/m)	Average-ClearWrite (dBµV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Peak-Limit (dBµV/m)	Average-Limit (dBµV/m)	Comment
5797.600000	86.0	62.8	138.0	H	177.0	74.00	54.00	Pass
>6000	Θ	Θ	-	-	-	74.00	54.00	Pass

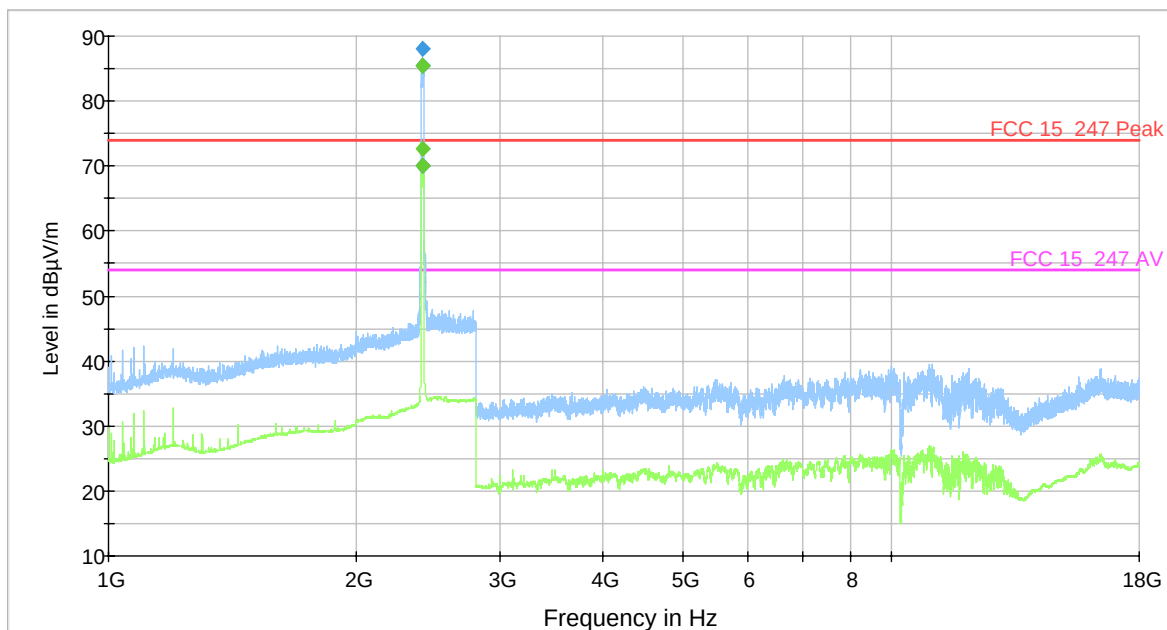
Θ = none significant spurious

CHAIN A: Protocol g

CH1	2412MHz
CH11	2462MHz

CH1 Vertical Polarization

Electric Field Strength FCC



— FCC 15_247 Peak.LimitLine
— FCC 15_247 AV.LimitLine
— Preview Result 1
— Preview Result 2
◆ Final Measurement Result 1
◆ Final Measurement Result 2
◆ Final Result 1
◆ Final Result 2 +

RESULT

Frequency (MHz)	MaxPeak-ClearWrite (dBμV/m)	Average-ClearWrite (dBμV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Peak-Limit (dBμV/m)	Average-Limit (dBμV/m)	Comment
2412.600000	85.5	70.2	111.0	V	181.0	74.00	54.00	Pass
>3000	⊖	⊖	-	V	-	74.00	54.00	Pass

⊖ = none significant spurious



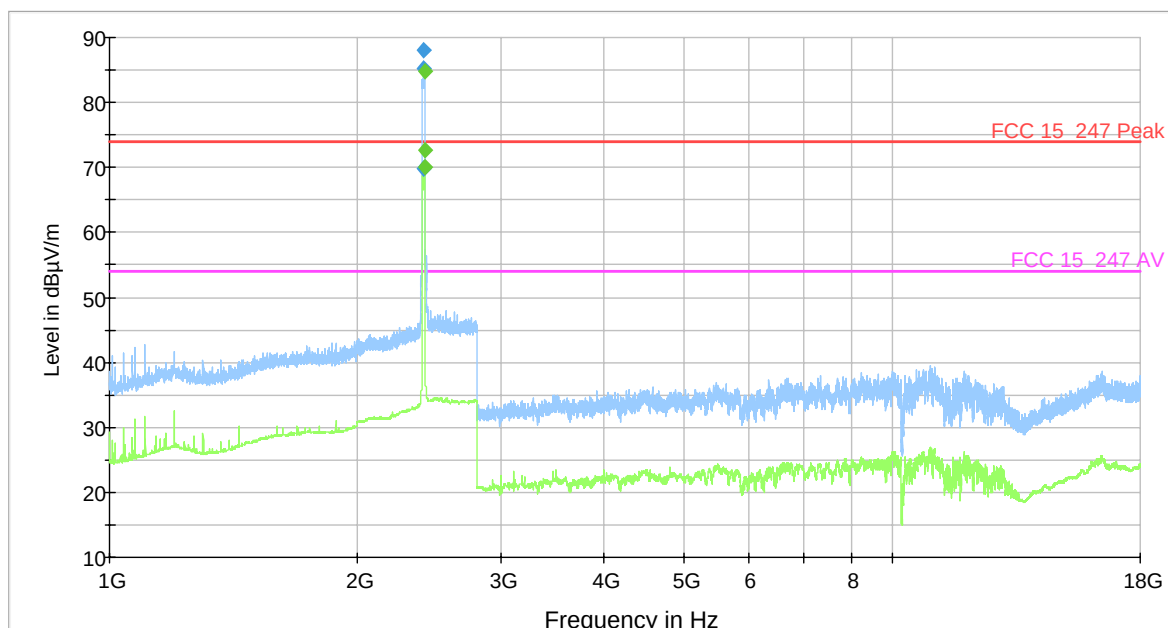
PRIMA

RICERCA & SVILUPPO

CH1 Horizontal Polarization

FCCTR_081122-4

Electric Field Strength FCC



— FCC 15_247 Peak.LimitLine — FCC 15_247 AV.LimitLine — Preview Result 1 — Preview Result 2
◆ Final Measurement Result 1 ◆ Final Measurement Result 2 ◆ Final Result 1 ◆ Final Result 1 +
◆ Final Result 2 ◆ Final Result 2 +

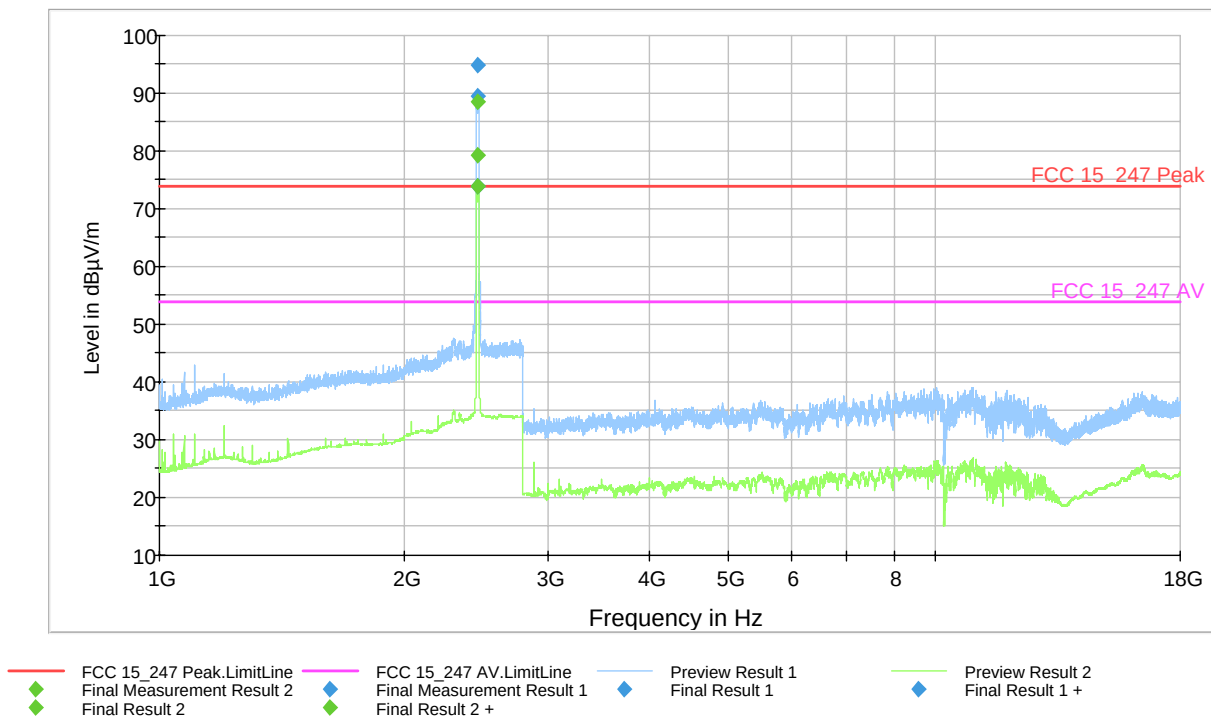
RESULT

Frequency (MHz)	MaxPeak-ClearWrite (dBµV/m)	Average-ClearWrite (dBµV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Peak-Limit (dBµV/m)	Average-Limit (dBµV/m)	Comment
2415.200000	85.3	69.8	108.0	H	187.0	74.00	54.00	Pass
>3000	Θ	Θ	-	-	-	74.00	54.00	Pass

Θ = none significant spurious

CH11 Vertical Polarization

Electric Field Strength FCC



RESULT

Frequency (MHz)	MaxPeak-ClearWrite (dBμV/m)	Average-ClearWrite (dBμV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Peak-Limit (dBμV/m)	Average-Limit (dBμV/m)	Comment
2466.000000	89.5	73.9	101.0	V	181.0	74.00	54.00	Pass
>3000	Θ	Θ	-	V	-	74.00	54.00	Pass

Θ = none significant spurious



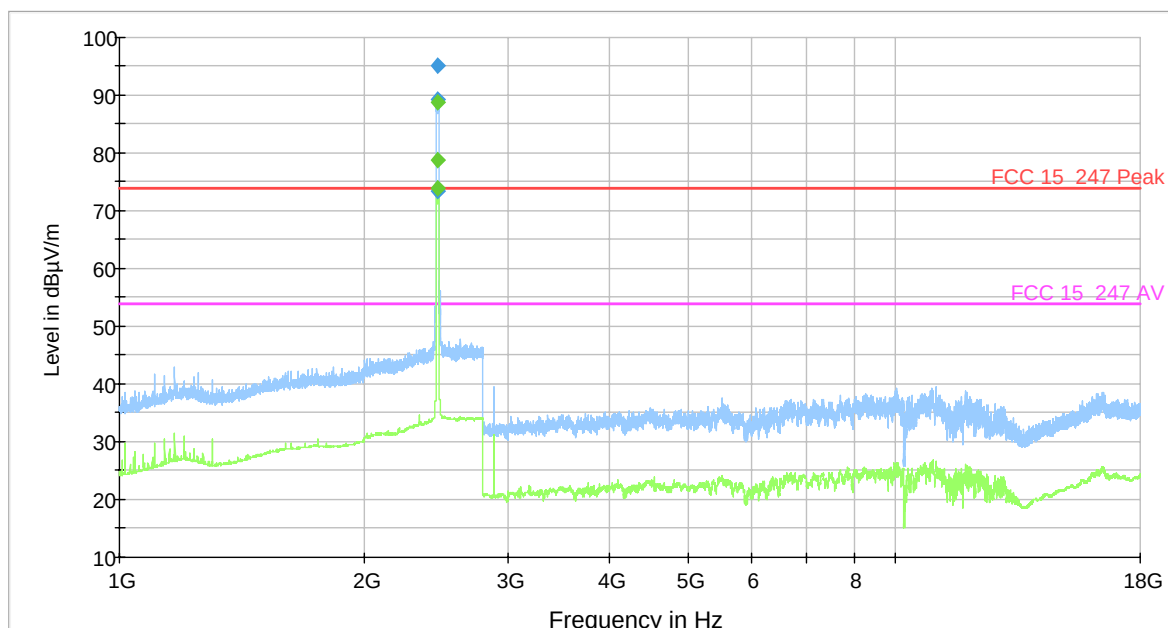
PRIMA

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FCCTR_081122-4

CH11 Horizontal Polarization

Electric Field Strength FCC



— FCC 15_247 Peak.LimitLine — FCC 15_247 AV.LimitLine — Preview Result 1 — Preview Result 2
◆ Final Measurement Result 1 ◆ Final Measurement Result 2 ◆ Final Result 1 ◆ Final Result 1 +
◆ Final Result 2 ◆ Final Result 2 +

RESULT

Frequency (MHz)	MaxPeak-ClearWrite (dBµV/m)	Average-ClearWrite (dBµV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Peak-Limit (dBµV/m)	Average-Limit (dBµV/m)	Comment
2458.800000	89.2	73.5	108.0	H	187.0	74.00	54.00	Pass
>3000	Θ	Θ	-	-	-	74.00	54.00	Pass

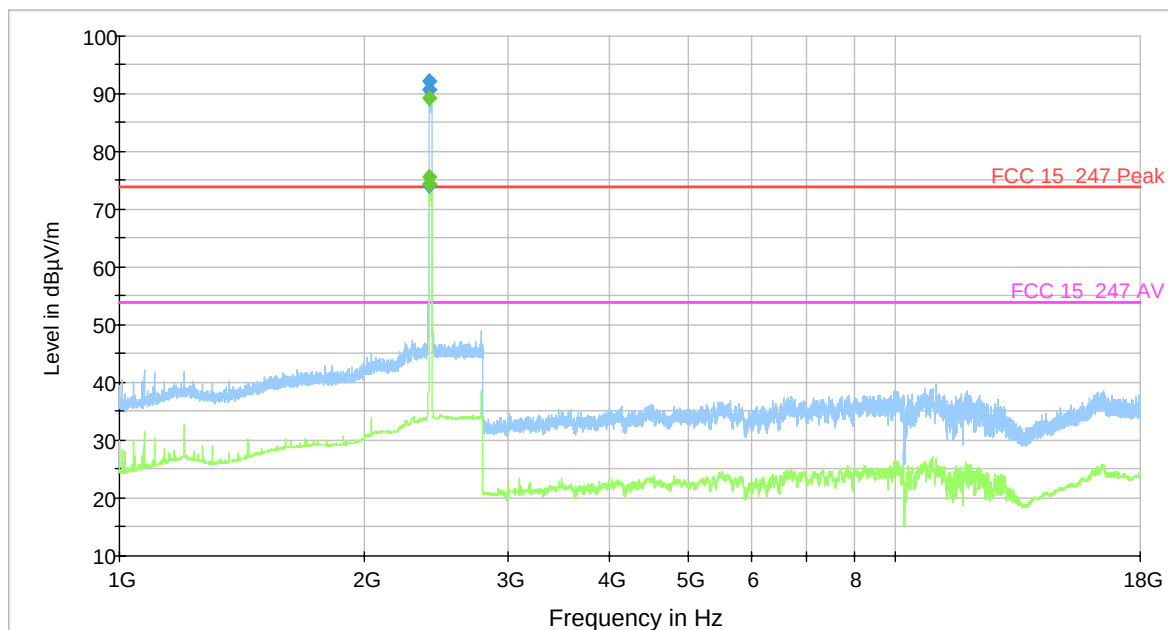
Θ = none significant spurious

CHAIN B: Protocol g

CH1	2412MHz
CH11	2462MHz

CH1 Vertical Polarization

Electric Field Strength FCC



◆ FCC 15_247 Peak.LimitLine
◆ FCC 15_247 AV.LimitLine
◆ Preview Result 1
◆ Preview Result 2
◆ Final Measurement Result 1
◆ Final Measurement Result 2
◆ Final Result 1
◆ Final Result 1 +

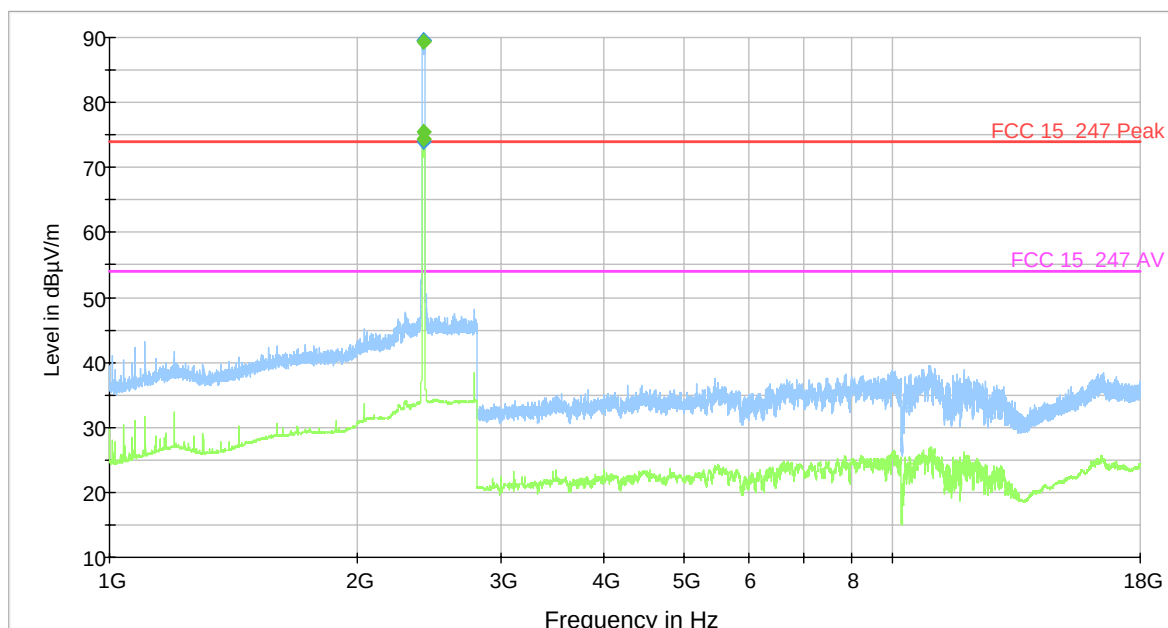
RESULT

Frequency (MHz)	MaxPeak-ClearWrite (dBμV/m)	Average-ClearWrite (dBμV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Peak-Limit (dBμV/m)	Average-Limit (dBμV/m)	Comment
2407.600000	90.6	74.2	100.0	V	181.0	74.00	54.00	Pass
>3000	Θ	Θ	-	V	-	74.00	54.00	Pass

Θ = none significant spurious

CH1 Horizontal Polarization

Electric Field Strength FCC



— FCC 15_247 Peak.LimitLine
— FCC 15_247 AV.LimitLine
— Preview Result 1
— Preview Result 2
◆ Final Measurement Result 1
◆ Final Measurement Result 2
◆ Final Result 1
◆ Final Result 2 +

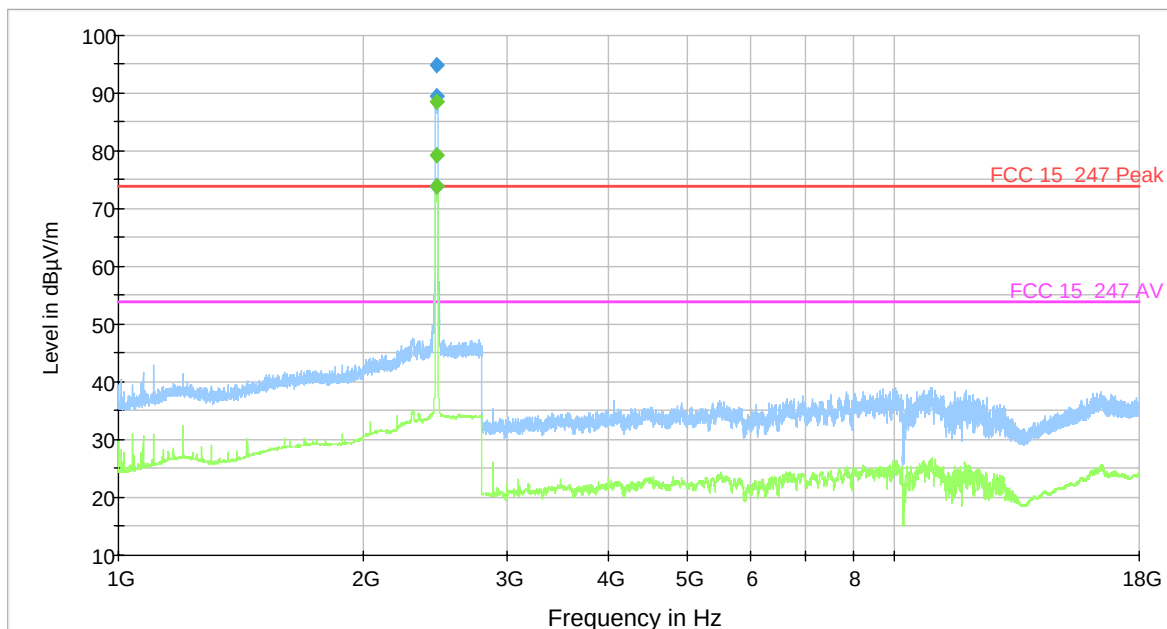
RESULT

Frequency (MHz)	MaxPeak-ClearWrite (dBµV/m)	Average-ClearWrite (dBµV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Peak-Limit (dBµV/m)	Average-Limit (dBµV/m)	Comment
2413.600000	89.5	74.0	100.0	H	180.0	74.00	54.00	Pass
>3000	Θ	Θ	-	-	-	74.00	54.00	Pass

Θ = none significant spurious

CH11 Vertical Polarization

Electric Field Strength FCC



◆ FCC 15_247 Peak.LimitLine
◆ Final Measurement Result 2
◆ Final Result 2
◆ FCC 15_247 AV.LimitLine
◆ Final Measurement Result 1
◆ Final Result 2 +
◆ Preview Result 1
◆ Final Result 1
◆ Preview Result 2
◆ Final Result 1 +

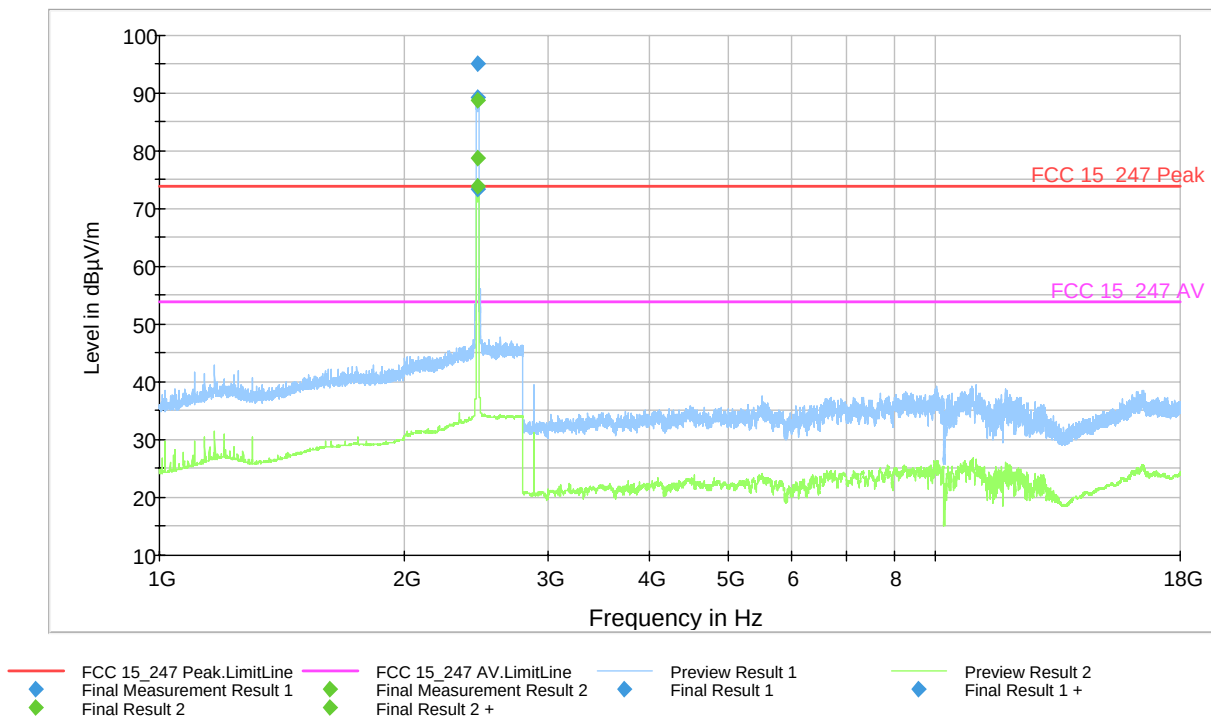
RESULT

Frequency (MHz)	MaxPeak-ClearWrite (dBμV/m)	Average-ClearWrite (dBμV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Peak-Limit (dBμV/m)	Average-Limit (dBμV/m)	Comment
2466.00	89.5	63.9	100.0	V	181.0	74.00	54.00	Pass
>3000	Θ	Θ	-	V	-	74.00	54.00	Pass

Θ = none significant spurious

CH11 Horizontal Polarization

Electric Field Strength FCC



RESULT

Frequency (MHz)	MaxPeak-ClearWrite (dBμV/m)	Average-ClearWrite (dBμV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Peak-Limit (dBμV/m)	Average-Limit (dBμV/m)	Comment
2458.800000	89.2	73.5	100.0	H	180.0	74.00	54.00	Pass
>3000	Θ	Θ	-	-	-	74.00	54.00	Pass

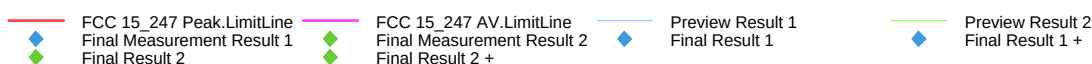
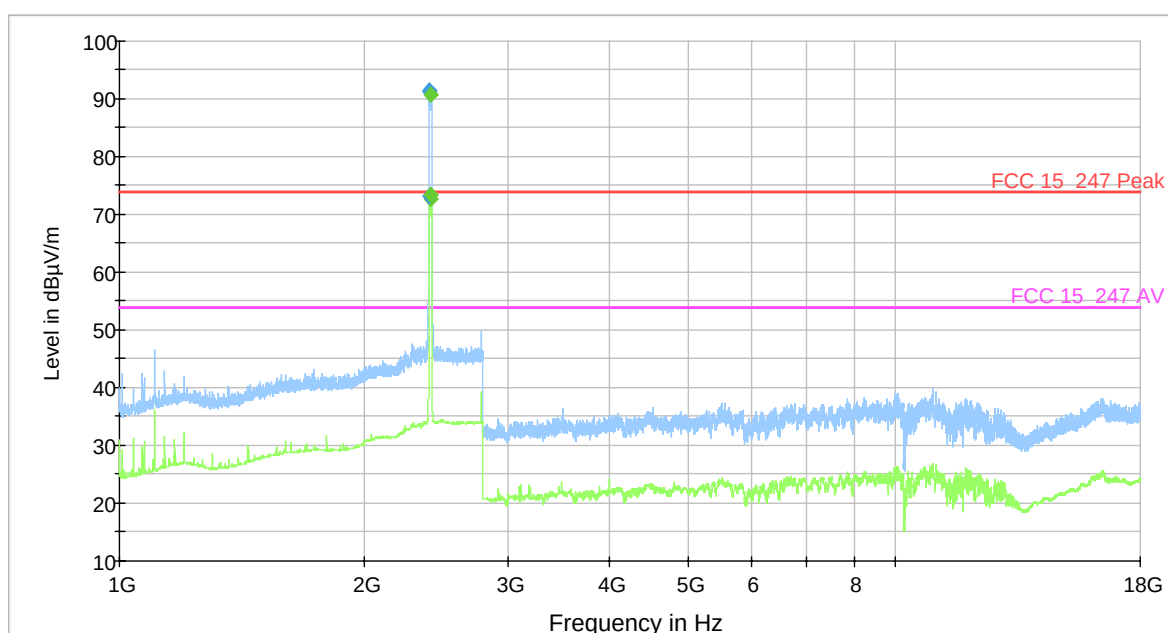
Θ = none significant spurious

CHAIN AB: Protocol n (20MHz bandwidth)

CH1	2412MHz
CH11	2462MHz
CH36	5180MHz
CH64	5320MHz
CH149	5745MHz
CH165	5825MHz

CH1 Vertical Polarization

Electric Field Strength FCC



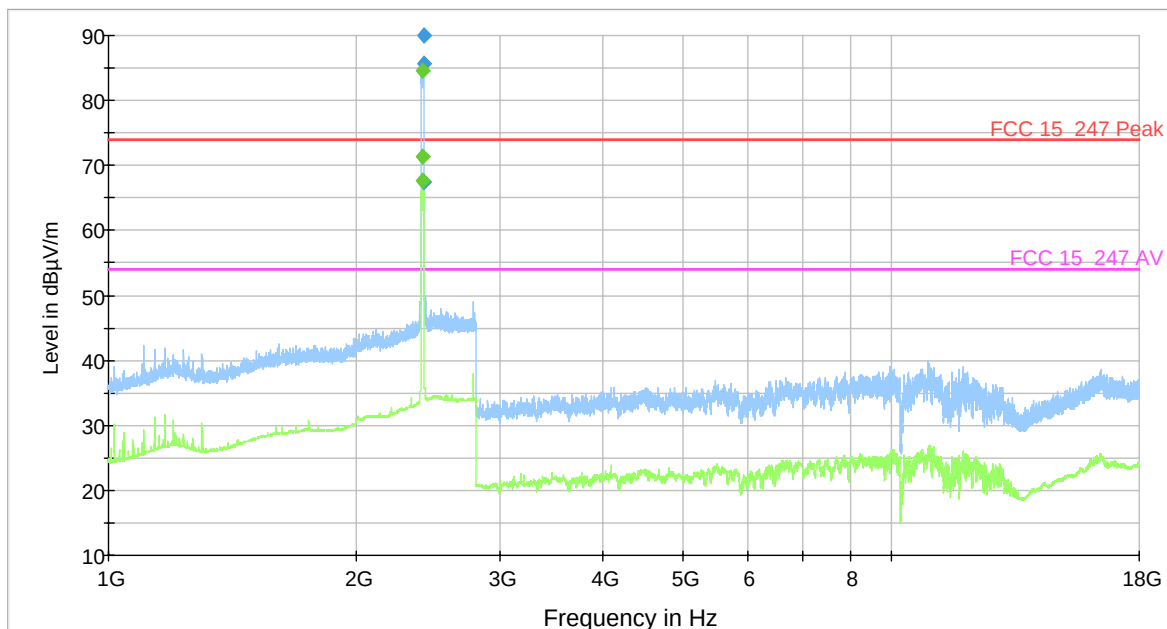
RESULT

Frequency (MHz)	MaxPeak-ClearWrite (dBμV/m)	Average-ClearWrite (dBμV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Peak-Limit (dBμV/m)	Average-Limit (dBμV/m)	Comment
2408.400000	91.4	73.2	100.0	V	181.0	74.00	54.00	Pass
>3000	θ	θ	-	V	-	74.00	54.00	Pass

θ = none significant spurious

CH1 Horizontal Polarization

Electric Field Strength FCC



—◆— FCC 15_247 Peak.LimitLine
—◆— FCC 15_247 AV.LimitLine
—◆— Preview Result 1
—◆— Preview Result 2
◆ Final Measurement Result 1
◆ Final Measurement Result 2
◆ Final Result 1
◆ Final Result 2 +

RESULT

Frequency (MHz)	MaxPeak-ClearWrite (dBμV/m)	Average-ClearWrite (dBμV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Peak-Limit (dBμV/m)	Average-Limit (dBμV/m)	Comment
2418.000000	85.8	67.5	100.0	H	180.0	74.00	54.00	Pass
>3000	⊖	⊖	-	-	-	74.00	54.00	Pass

⊖ = none significant spurious



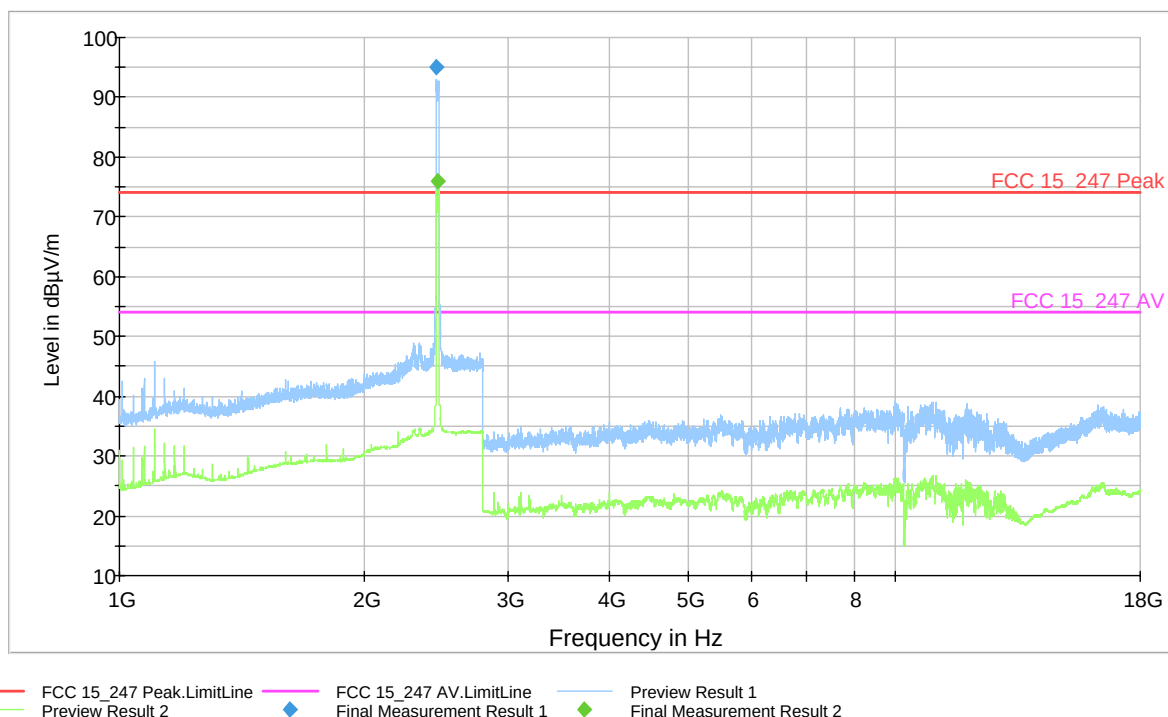
PRIMA

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FCCTR_081122-4

CH11 Vertical Polarization

Electric Field Strength FCC



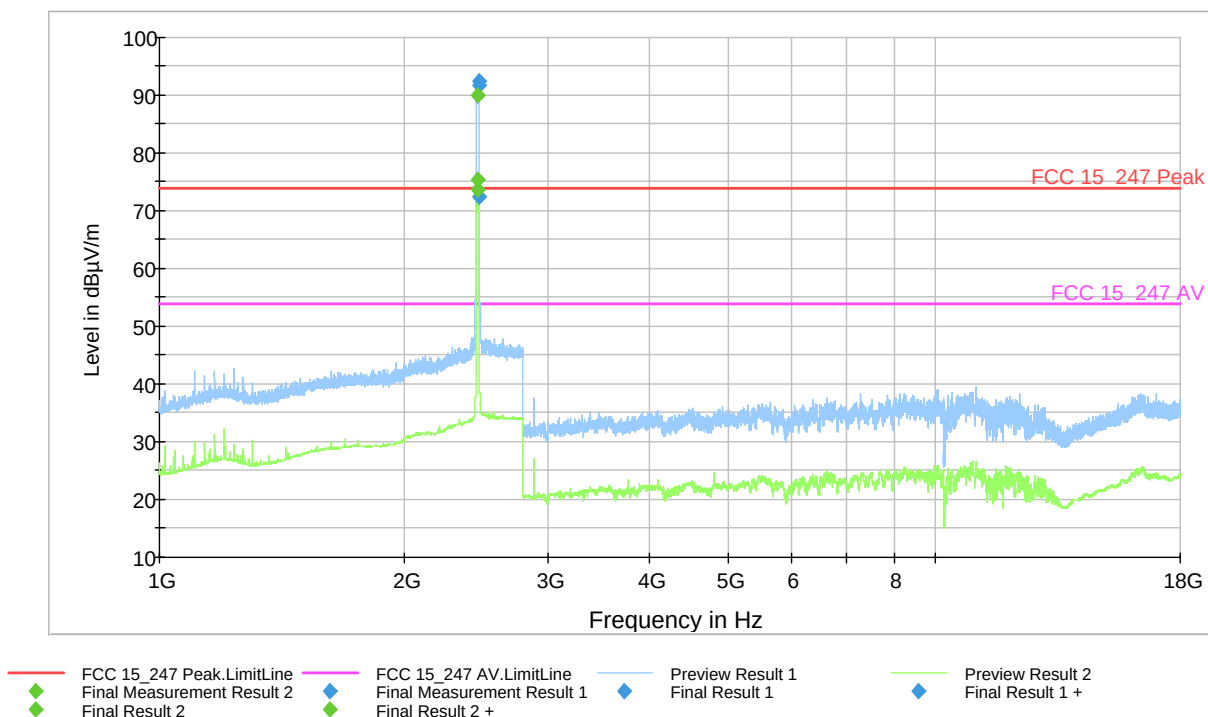
RESULT

Frequency (MHz)	MaxPeak-ClearWrite (dBµV/m)	Average-ClearWrite (dBµV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Peak-Limit (dBµV/m)	Average-Limit (dBµV/m)	Comment
2461.400000	95.4	76.2	100.0	V	181.0	74.00	54.00	Pass
>3000	Ø	Ø	-	V	-	74.00	54.00	Pass

Ø = none significant spurious

CH11 Horizontal Polarization

Electric Field Strength FCC



RESULT

Frequency (MHz)	MaxPeak-ClearWrite (dBμV/m)	Average-ClearWrite (dBμV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Peak-Limit (dBμV/m)	Average-Limit (dBμV/m)	Comment
2467.600000	91.6	72.6	100.0	H	180.0	74.00	54.00	Pass
>3000	Θ	Θ	-	-	-	74.00	54.00	Pass

Θ = none significant spurious



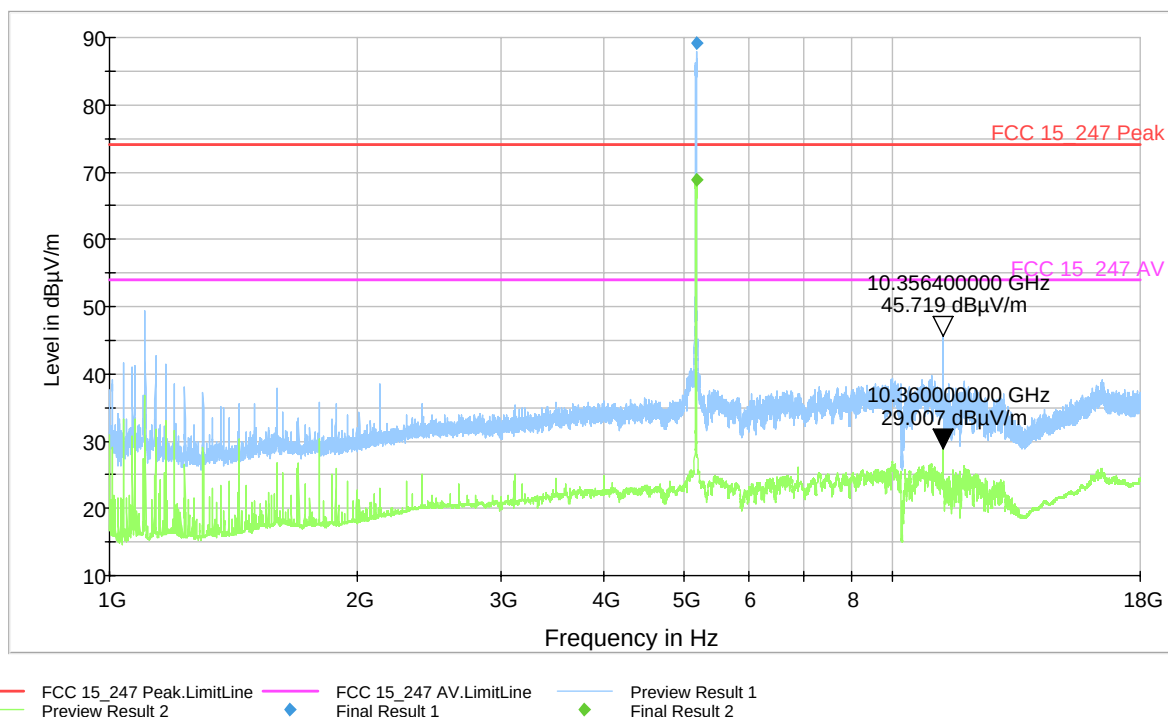
PRIMA

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CH36 Vertical Polarization

FCCTR_081122-4

Electric Field Strength FCC_5GHz



RESULT

Frequency (MHz)	MaxPeak-ClearWrite (dBµV/m)	Average-ClearWrite (dBµV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Peak-Limit (dBµV/m)	Average-Limit (dBµV/m)	Comment
5184.400000	89.3	68.8	100.0	V	168.0	74.00	54.00	Pass
10356.400000	45.72	29.1	100.0	V	166.0	74.00	54.00	Pass
>11000	Θ	Θ	-	-	-	74.00	54.00	Pass

Θ = none significant spurious



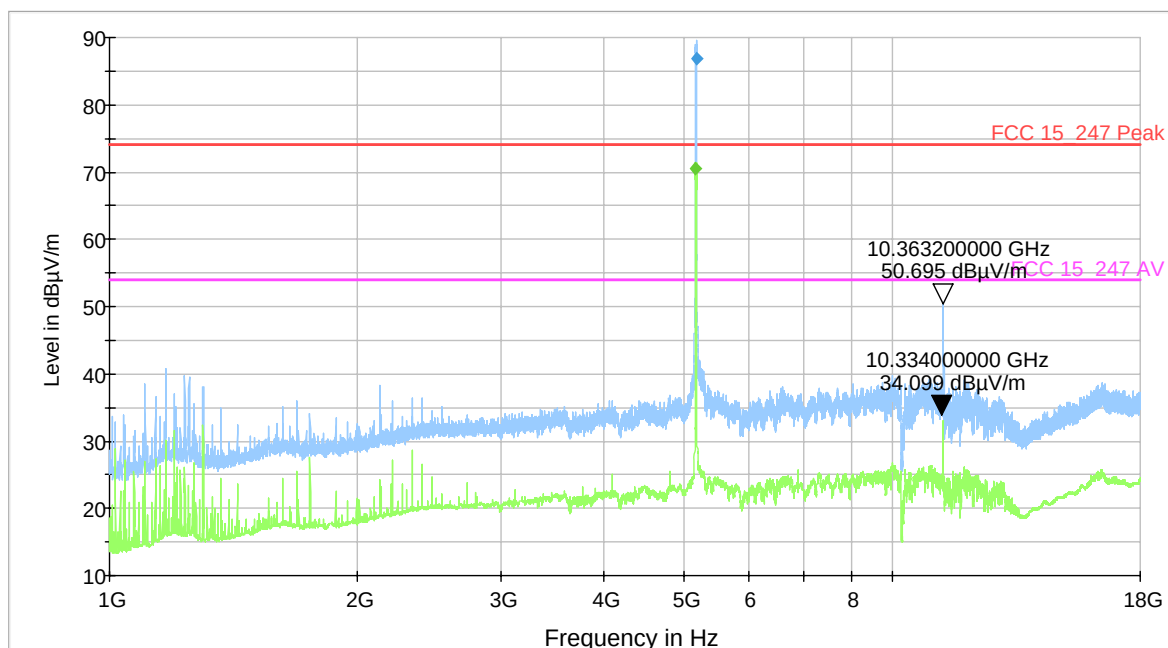
PRIMA

RICERCA & SVILUPPO

FCCTR_081122-4

CH36 Horizontal Polarization

Electric Field Strength FCC_5GHz



— FCC 15_247 Peak.LimitLine — FCC 15_247 AV.LimitLine — Preview Result 1
— Preview Result 2 ◆ Final Result 1 ◆ Final Result 2

RESULT

Frequency (MHz)	MaxPeak-ClearWrite (dBμV/m)	Average-ClearWrite (dBμV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Peak-Limit (dBμV/m)	Average-Limit (dBμV/m)	Comment
5184.800000	86.9	70.6	116.0	H	189.0	74.00	54.00	Pass
10362.20000	50.69	34.09	118.0	H	188.0	74.00	54.00	Pass
>11000	Θ	Θ	-	-	-	74.00	54.00	Pass

Θ = none significant spurious



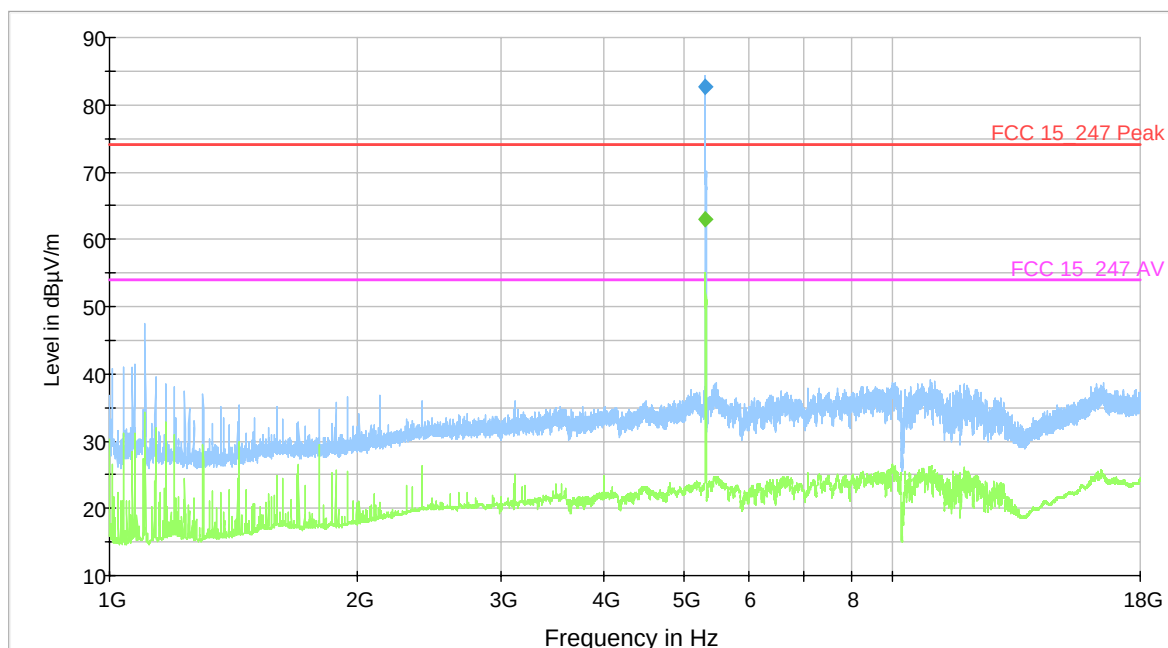
PRIMA

RICERCA & SVILUPPO

FCCTR_081122-4

CH64 Vertical Polarization

Electric Field Strength FCC_5GHz



— FCC 15_247 Peak.LimitLine — FCC 15_247 AV.LimitLine — Preview Result 1
— Preview Result 2 — Final Result 1 — Final Result 2

RESULT

Frequency (MHz)	MaxPeak-ClearWrite (dBµV/m)	Average-ClearWrite (dBµV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Peak-Limit (dBµV/m)	Average-Limit (dBµV/m)	Comment
5316.400000	82.6	62.9	107.0	V	202.0	74.00	54.00	Pass
>6000	Θ	Θ	-	-	-	74.00	54.00	Pass

Θ = none significant spurious



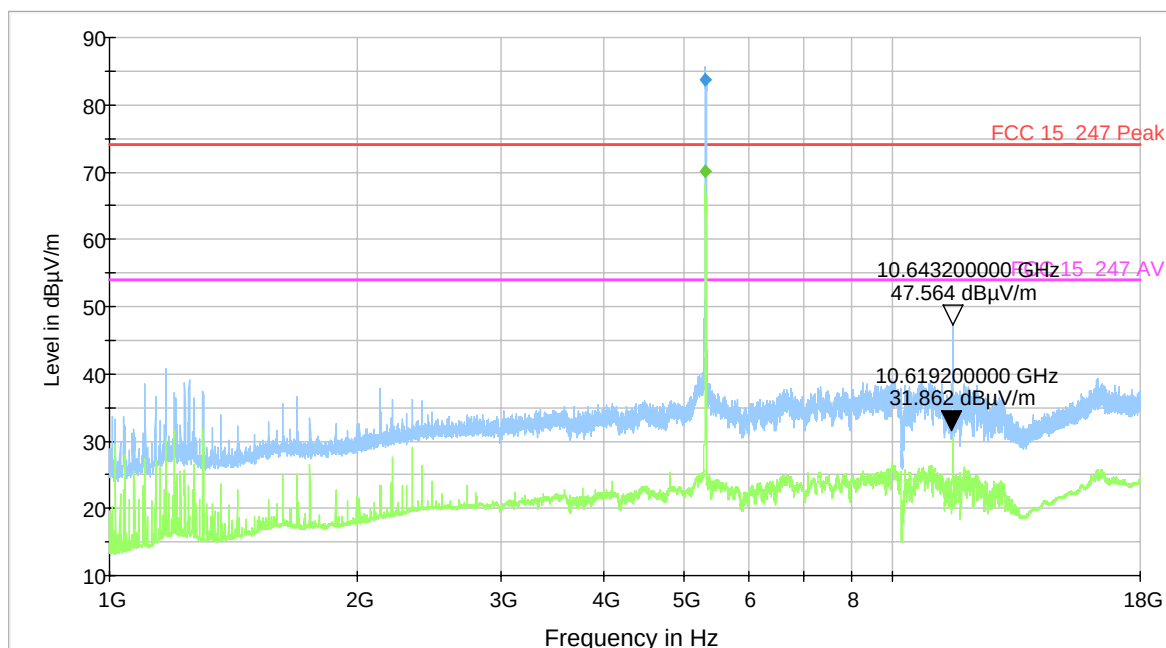
PRIMA

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FCCTR_081122-4

CH64 Horizontal Polarization

Electric Field Strength FCC_5GHz



— FCC 15_247 Peak.LimitLine — FCC 15_247 AV.LimitLine — Preview Result 1
— Preview Result 2 ◆ Final Result 1 ◆ Final Result 2

RESULT

Frequency (MHz)	MaxPeak-ClearWrite (dBμV/m)	Average-ClearWrite (dBμV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Peak-Limit (dBμV/m)	Average-Limit (dBμV/m)	Comment
5317.200000	83.7	70.1	124.0	H	179.0	74.00	54.00	Pass
10643.20000	47.56	31.86	120.0	H	178.0	74.00	54.00	Pass
>11000	Θ	Θ	-	-	-	74.00	54.00	Pass

Θ = none significant spurious



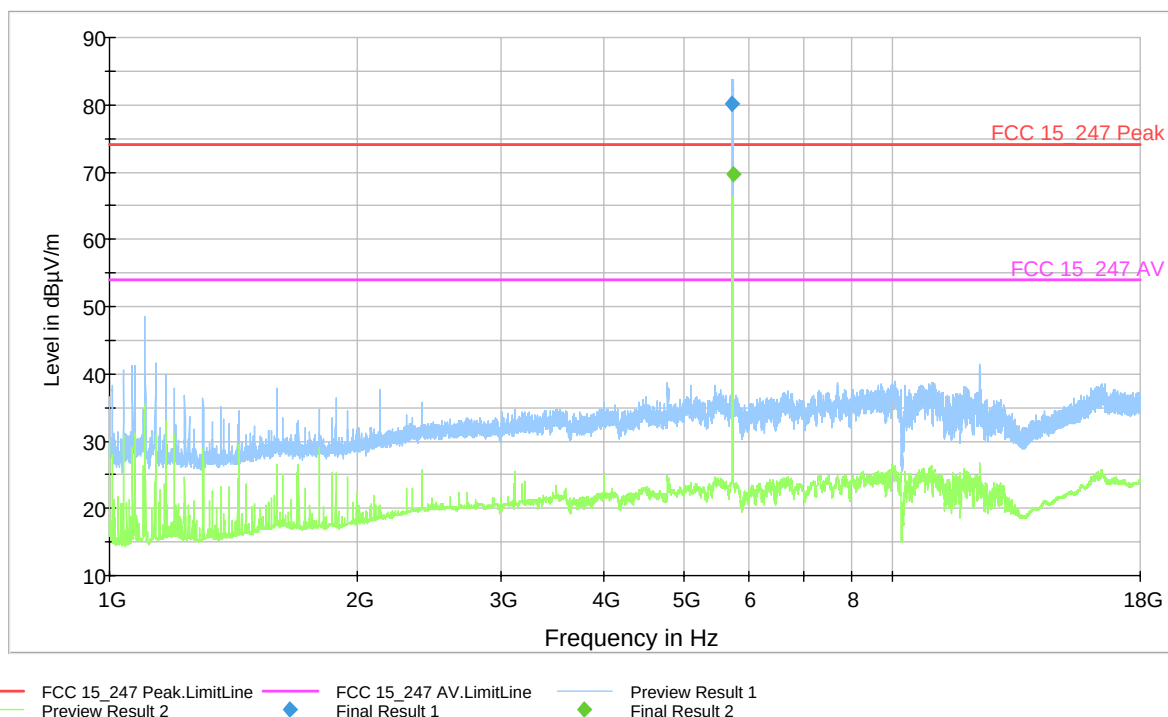
PRIMA

RICERCA & SVILUPPO

FCCTR_081122-4

CH149 Vertical Polarization

Electric Field Strength FCC_5GHz



RESULT

Frequency (MHz)	MaxPeak-ClearWrite (dBµV/m)	Average-ClearWrite (dBµV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Peak-Limit (dBµV/m)	Average-Limit (dBµV/m)	Comment
5743.000000	80.1	69.7	130.0	V	200.0	74.00	54.00	Pass
>6000	Θ	Θ	-	-	-	74.00	54.00	Pass

Θ = none significant spurious



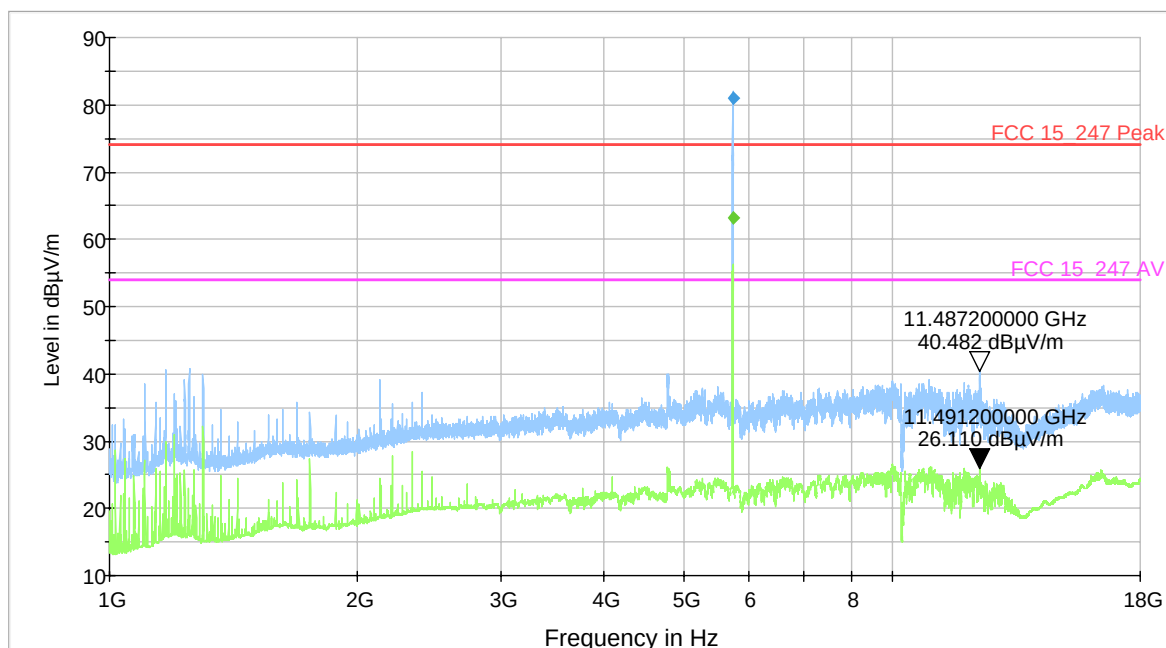
PRIMA

RICERCA & SVILUPPO

FCCTR_081122-4

CH149 Horizontal Polarization

Electric Field Strength FCC_5GHz



— FCC 15_247 Peak.LimitLine — FCC 15_247 AV.LimitLine — Preview Result 1
— Preview Result 2 ◆ Final Result 1 ◆ Final Result 2

RESULT

Frequency (MHz)	MaxPeak-ClearWrite (dBµV/m)	Average-ClearWrite (dBµV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Peak-Limit (dBµV/m)	Average-Limit (dBµV/m)	Comment
5739.200000	81.0	63.2	116.0	H	166.0	74.00	54.00	Pass
11487.20000	40.48	26.11	120.0	H	172.0	74.00	54.00	Pass
>12000	Θ	Θ	-	-	-	74.00	54.00	Pass

Θ = none significant spurious



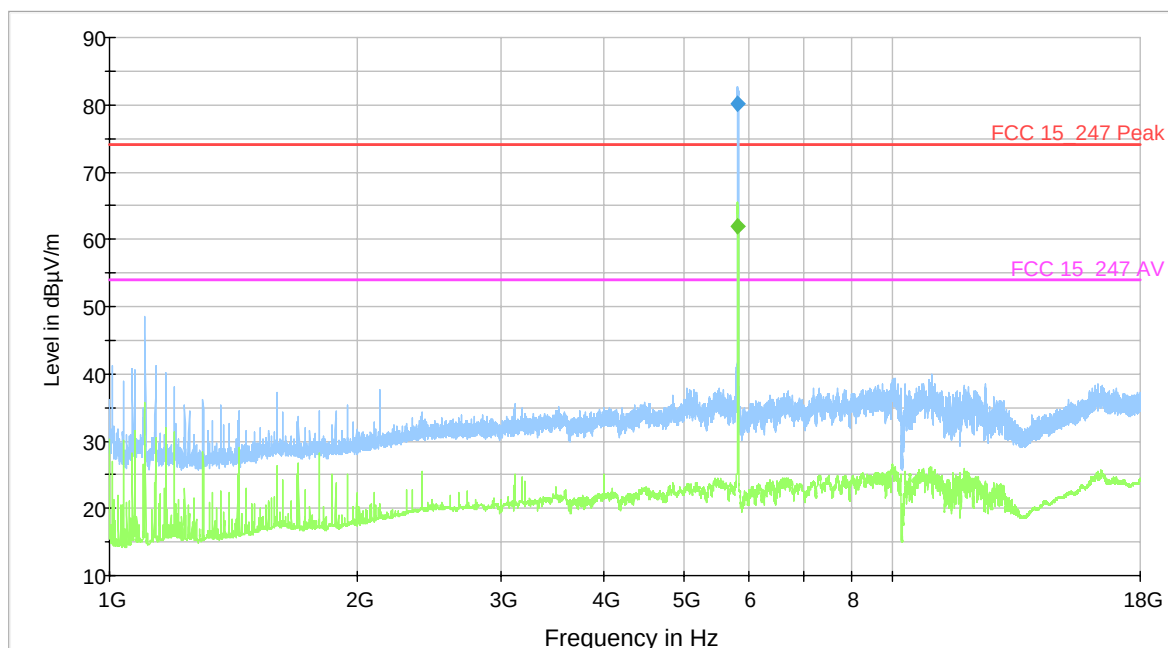
PRIMA

RICERCA & SVILUPPO

FCCTR_081122-4

CH165 Vertical Polarization

Electric Field Strength FCC_5GHz



— FCC 15_247 Peak.LimitLine — FCC 15_247 AV.LimitLine — Preview Result 1
— Preview Result 2 ◆ Final Result 1 ◆ Final Result 2

RESULT

Frequency (MHz)	MaxPeak-ClearWrite (dBµV/m)	Average-ClearWrite (dBµV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Peak-Limit (dBµV/m)	Average-Limit (dBµV/m)	Comment
5820.800000	80.2	61.9	137.0	V	187.0	74.00	54.00	Pass
>6000	⌀	⌀	-	-	-	74.00	54.00	Pass

⌀ = none significant spurious



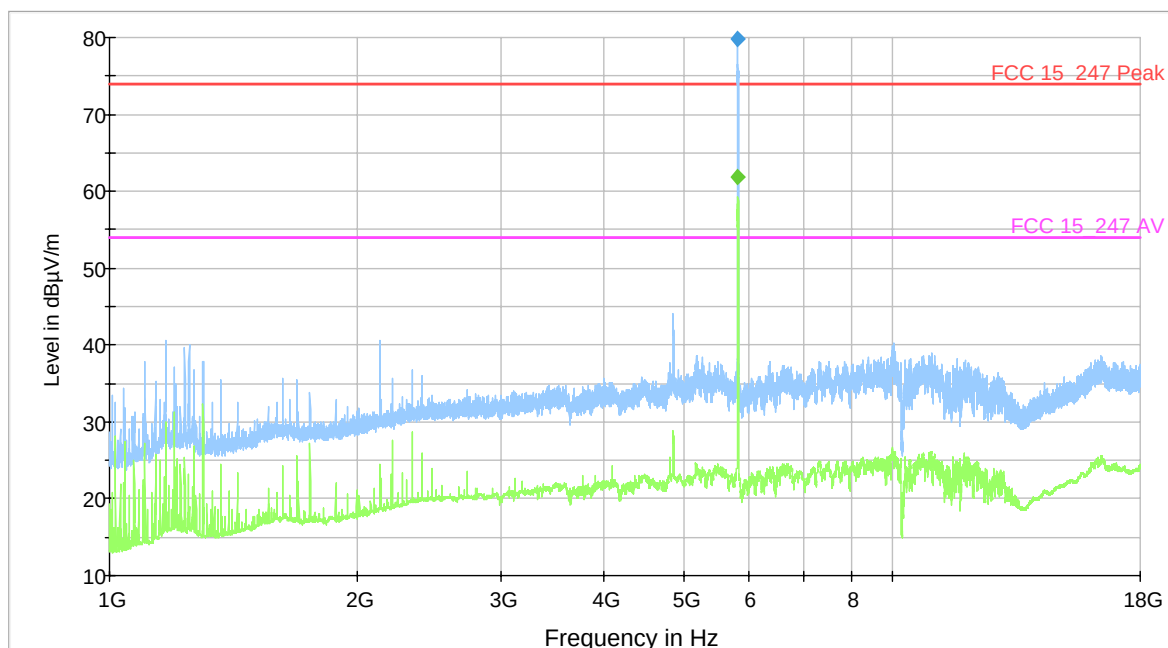
PRIMA

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FCCTR_081122-4

CH165 Horizontal Polarization

Electric Field Strength FCC_5GHz



— FCC 15_247 Peak.LimitLine — FCC 15_247 AV.LimitLine — Preview Result 1
— Preview Result 2 — Final Result 1 — Final Result 2

RESULT

Frequency (MHz)	MaxPeak-ClearWrite (dBµV/m)	Average-ClearWrite (dBµV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Peak-Limit (dBµV/m)	Average-Limit (dBµV/m)	Comment
5829.600000	79.8	61.9	100.0	H	170.0	74.00	54.00	Pass
11487.20000	40.48	26.11	101.0	H	172.0	74.00	54.00	Pass
>12000	Θ	Θ	-	-	-	74.00	54.00	Pass

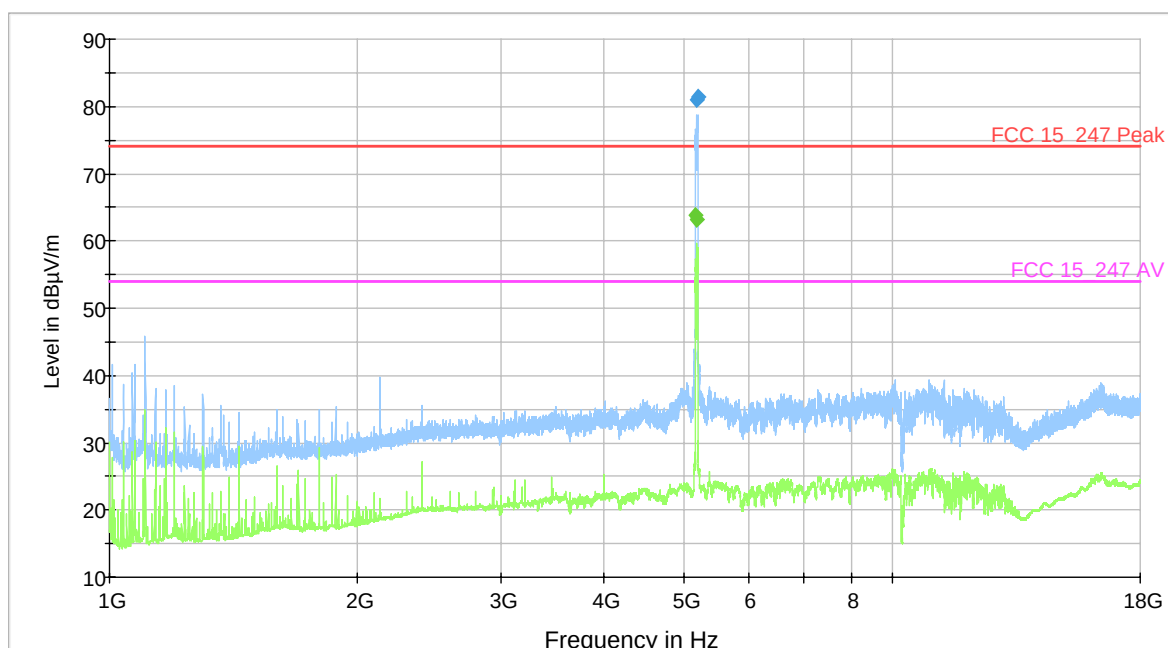
Θ = none significant spurious

CHAIN AB: Protocol n (40MHz bandwidth)

CH38	5190MHz
CH62	5310MHz
CH151	5755MHz
CH159	5795MHz

CH38 Vertical Polarization

Electric Field Strength FCC_5GHz



— FCC 15_247 Peak.LimitLine
 — FCC 15_247 AV.LimitLine
 — Preview Result 1
 ◆ Final Result 1
 — Preview Result 2
 ◆ Final Result 2

RESULT

Frequency (MHz)	MaxPeak-ClearWrite (dBμV/m)	Average-ClearWrite (dBμV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Peak-Limit (dBμV/m)	Average-Limit (dBμV/m)	Comment
5195.600000	81.4	63.9	117.0	V	187.0	74.00	54.00	Pass
>6000	Θ	Θ	-	-	-	74.00	54.00	Pass

Θ = none significant spurious



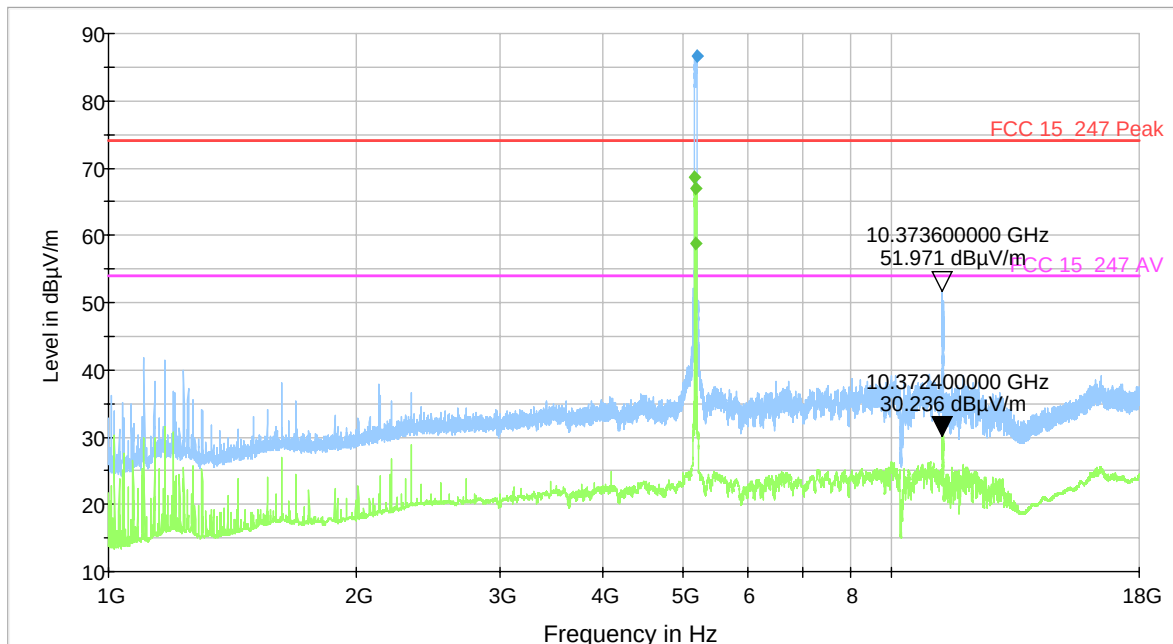
PRIMA

RICERCA & SVILUPPO

CH38 Horizontal Polarization

FCCTR_081122-4

Electric Field Strength FCC_5GHz



— FCC 15_247 Peak.LimitLine — FCC 15_247 AV.LimitLine — Preview Result 1
— Preview Result 2 — Final Result 1 — Final Result 2

RESULT

Frequency (MHz)	MaxPeak-ClearWrite (dBµV/m)	Average-ClearWrite (dBµV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Peak-Limit (dBµV/m)	Average-Limit (dBµV/m)	Comment
5200.600000	86.7	68.9	100.0	H	170.0	74.00	54.00	Pass
10373.20000	51.98	30.23	101.0	H	168.0	74.00	54.00	Pass
>11000	Θ	Θ	-	-	-	74.00	54.00	Pass

Θ = none significant spurious



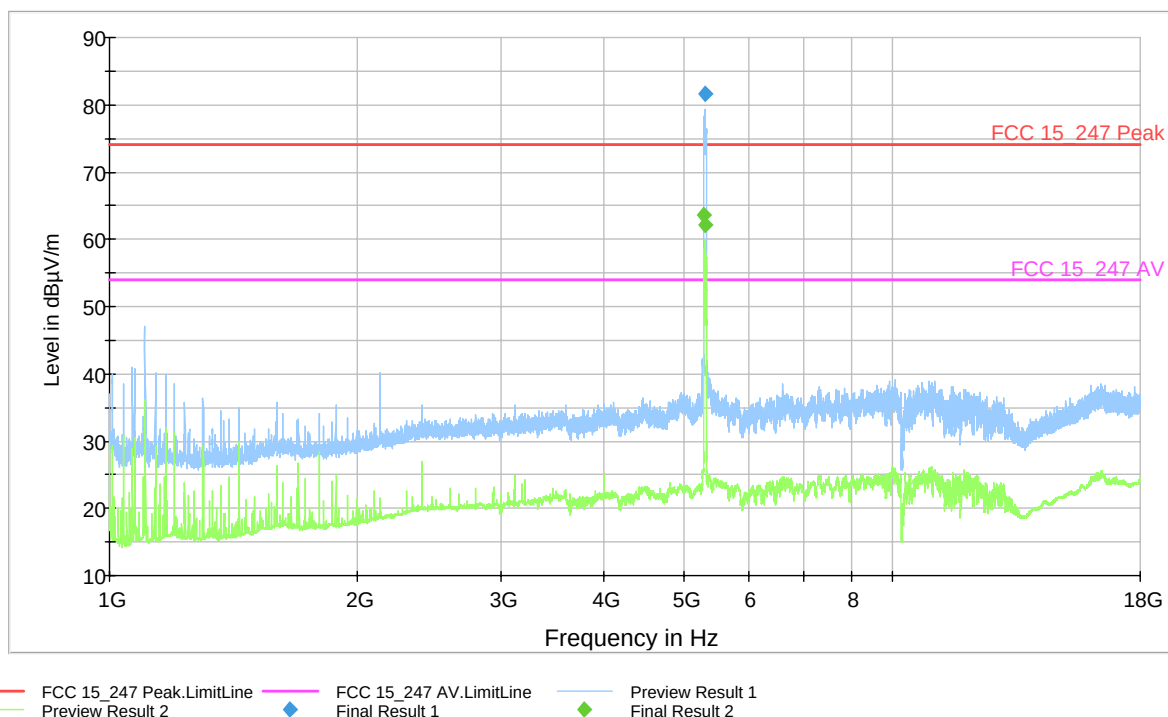
PRIMA

RICERCA & SVILUPPO

FCCTR_081122-4

CH62 Vertical Polarization

Electric Field Strength FCC_5GHz



RESULT

Frequency (MHz)	MaxPeak-ClearWrite (dBµV/m)	Average-ClearWrite (dBµV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Peak-Limit (dBµV/m)	Average-Limit (dBµV/m)	Comment
5319.600000	81.6	63.7	100.0	V	201.0	74.00	54.00	Pass
>6000	Ø	Ø	-	-	-	74.00	54.00	Pass

Ø = none significant spurious



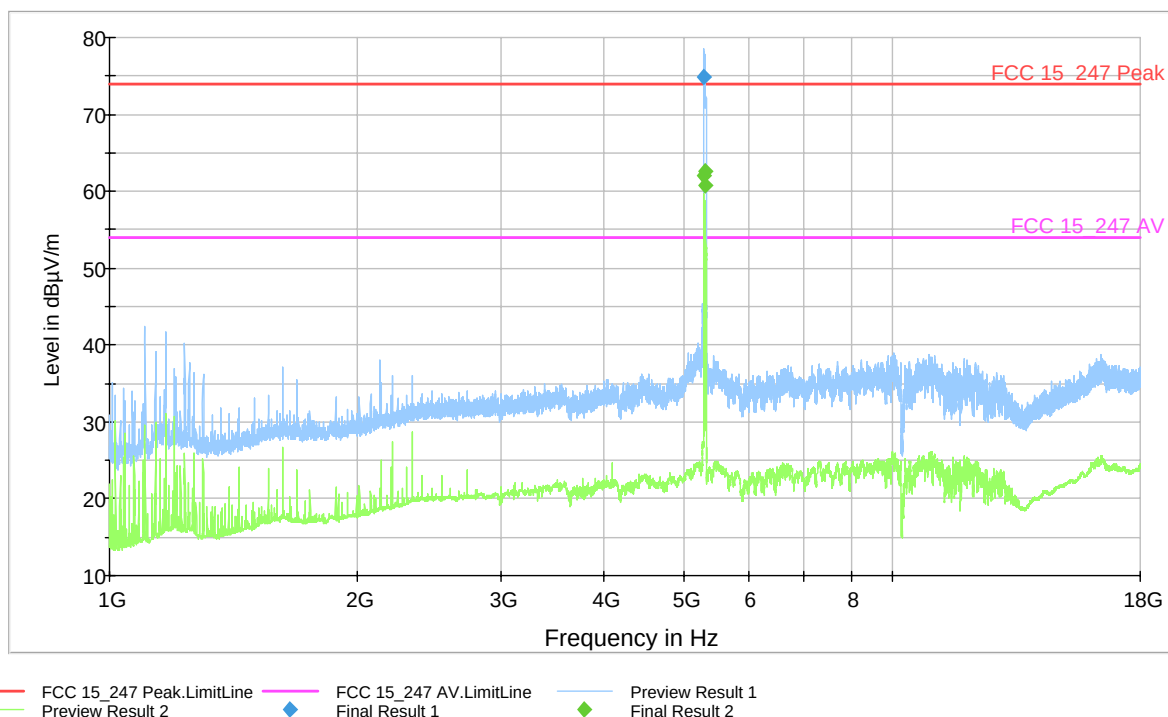
PRIMA

RICERCA & SVILUPPO

FCCTR_081122-4

CH62 Horizontal Polarization

Electric Field Strength FCC_5GHz



RESULT

Frequency (MHz)	MaxPeak-ClearWrite (dBµV/m)	Average-ClearWrite (dBµV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Peak-Limit (dBµV/m)	Average-Limit (dBµV/m)	Comment
5299.600000	74.9	62.6	100.0	H	170.0	74.00	54.00	Pass
>6000	Θ	Θ	-	-	-	74.00	54.00	Pass

Θ = none significant spurious



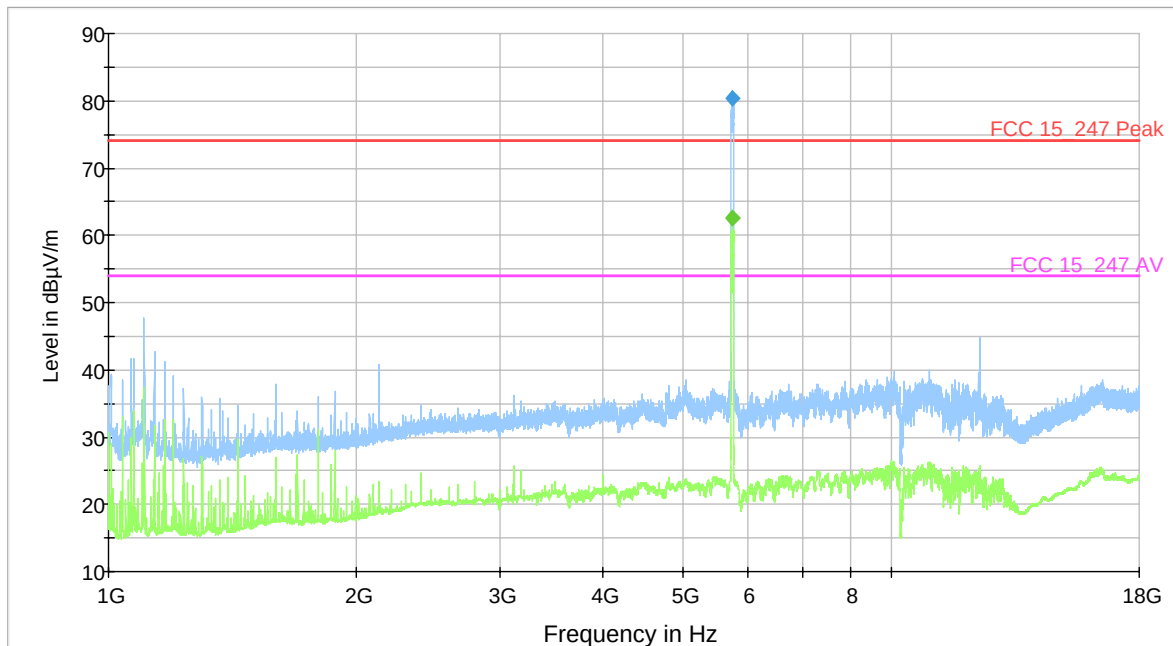
PRIMA

RICERCA & SVILUPPO

CH151 Vertical Polarization

FCCTR_081122-4

Electric Field Strength FCC_5GHz



— FCC 15_247 Peak.LimitLine — FCC 15_247 AV.LimitLine — Preview Result 1
— Preview Result 2 — Final Result 1 — Final Result 2

RESULT

Frequency (MHz)	MaxPeak-ClearWrite (dBμV/m)	Average-ClearWrite (dBμV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Peak-Limit (dBμV/m)	Average-Limit (dBμV/m)	Comment
5753.600000	80.3	62.6	150.0	V	201.0	74.00	54.00	Pass
11506.6000	45.2	24.5	145.0	V	200.0	74.00	54.00	Pass
>12000	Θ	Θ	-	-	-	74.00	54.00	Pass

Θ = none significant spurious



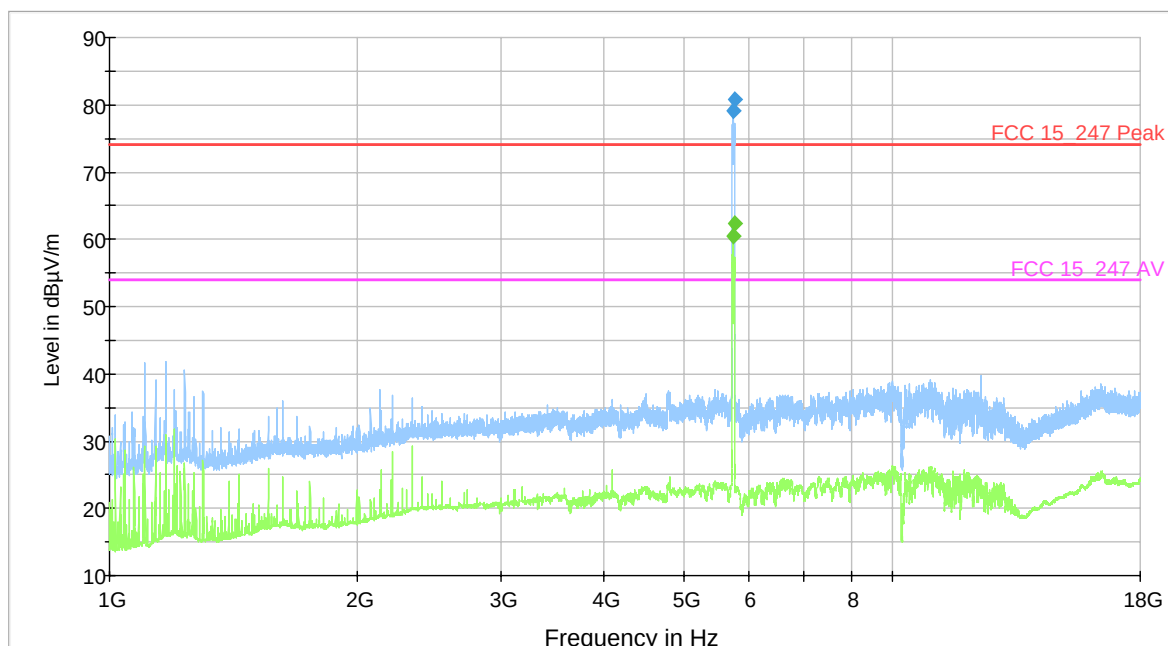
PRIMA

RICERCA & SVILUPPO

FCCTR_081122-4

CH151 Horizontal Polarization

Electric Field Strength FCC_5GHz



— FCC 15_247 Peak.LimitLine — FCC 15_247 AV.LimitLine — Preview Result 1
— Preview Result 2 ◆ Final Result 1 ◆ Final Result 2

RESULT

Frequency (MHz)	MaxPeak-ClearWrite (dBµV/m)	Average-ClearWrite (dBµV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Peak-Limit (dBµV/m)	Average-Limit (dBµV/m)	Comment
5766.400000	80.7	62.4	139.0	H	179.0	74.00	54.00	Pass
>6000	Θ	Θ	-	-	-	74.00	54.00	Pass

Θ = none significant spurious



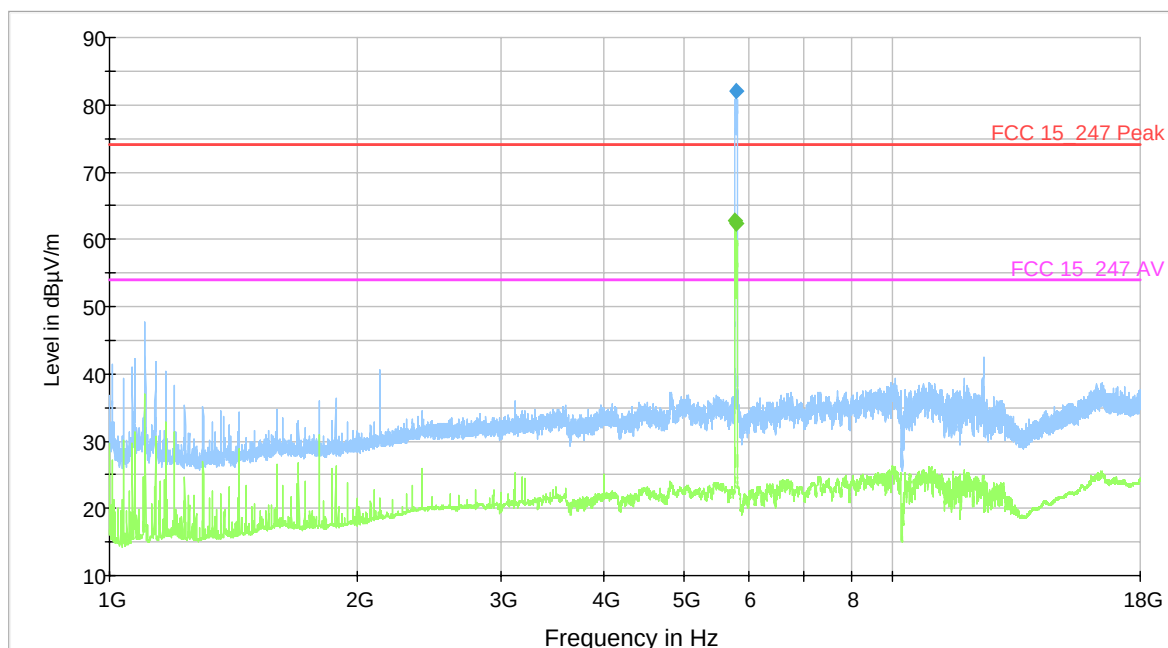
PRIMA

RICERCA & SVILUPPO

FCCTR_081122-4

CH159 Vertical Polarization

Electric Field Strength FCC_5GHz



— FCC 15_247 Peak.LimitLine — FCC 15_247 AV.LimitLine — Preview Result 1
— Preview Result 2 ◆ Final Result 1 ◆ Final Result 2

RESULT

Frequency (MHz)	MaxPeak-ClearWrite (dBµV/m)	Average-ClearWrite (dBµV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Peak-Limit (dBµV/m)	Average-Limit (dBµV/m)	Comment
5785.600000	82.0	62.8	139.0	V	187.0	74.00	54.00	Pass
11572.6000	43.2	22.5	145.0	V	220.0	74.00	54.00	Pass
>12000	Θ	Θ	-	-	-	74.00	54.00	Pass

Θ = none significant spurious



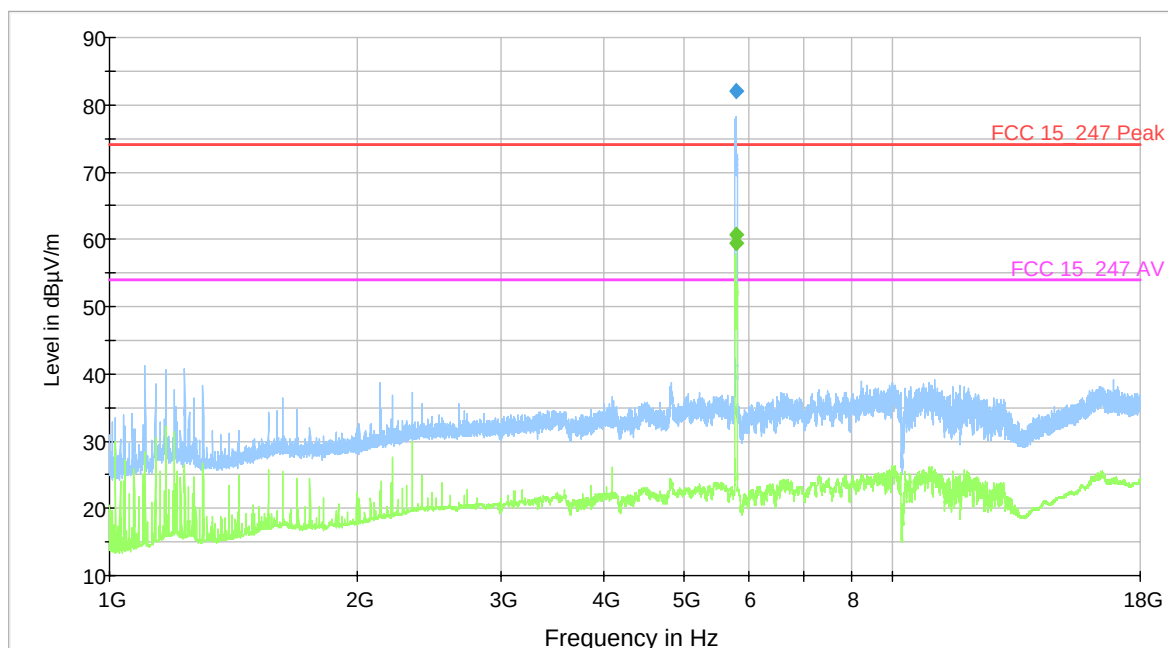
PRIMA

RICERCA & SVILUPPO

FCCTR_081122-4

CH159 Horizontal Polarization

Electric Field Strength FCC_5GHz



— FCC 15_247 Peak.LimitLine — FCC 15_247 AV.LimitLine — Preview Result 1
— Preview Result 2 ◆ Final Result 1 ◆ Final Result 2

RESULT

Frequency (MHz)	MaxPeak-ClearWrite (dBµV/m)	Average-ClearWrite (dBµV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Peak-Limit (dBµV/m)	Average-Limit (dBµV/m)	Comment
5784.400000	82.1	59.5	149.0	H	159.0	74.00	54.00	Pass
>6000	Θ	Θ	-	-	-	74.00	54.00	Pass

Θ = none significant spurious

**TEST
5**

**RADIATED EMISSION LIMITS; GENERAL REQUIREMENTS
(FUNDAMENTAL EMISSION)**

**REFERENCE
DOCUMENT**

FCC 47CFR Part 15
Section 15.209

- **TEST LOCATION:** Semi-anechoic chamber
- **TEST EQUIPMENT USED FOR TEST:** EMI receiver Rohde & Schwarz Mod. ESU 40
Chase Antenna Mod. CBL 6111 A
- **TESTED PORT:** Enclosure
- **EMISSION LIMITS:** Acc. to Section 15.209 of reference document
- **UNCERTAINTY OF MEASURE:** Combined uncertainty = ± 1.75 dB
Total uncertainty = (k=2) ± 3.5 dB

TEST CONDITIONS:		MEASURED
Ambient temperature :	15 - 35 °C	23,5 $\pm$ 3 °C
Ambient humidity :	25 - 75 %rH	39 $\pm$ 5 %rH
Pressure :	85 - 106 kPa (860 mbar - 1060 mbar)	950 $\pm$ 50 mbar

OPERATING CONDITION (Rif. Section. 2) : #1

RESULT: WITHIN THE LIMIT

Radiated emission test results

Mode	Frequency	Polarization	dB μ V/m
802.11a (5745-5825 MHz) chain A	5745 MHz		98.8
	5785 MHz	H	97,5
	5825 MHz		99,4
	5745 MHz		101.7
	5785 MHz	V	99,4
802.11a (5745-5825 MHz) chain B	5825 MHz		102,3
	5745 MHz		101.8
	5785 MHz	H	99,5
	5825 MHz		102,3
	5745 MHz		104.5
802.11b (2400-2483.5 MHz) chain A	5785 MHz	V	102,4
	5825 MHz		103,3
	2412 MHz		101.3
	2437 MHz	H	101.4
	2462 MHz		102.8
802.11b (2400-2483.5 MHz) chain B	2412 MHz		100.4
	2437 MHz	V	100.2
	2462 MHz		99.4
	2412 MHz		103.5
	2437 MHz	H	102.9
802.11g (2400-2483.5 MHz) chain A	2462 MHz		104.1
	2412 MHz		99.4
	2437 MHz	V	98.7
	2462 MHz		99.2
	2412 MHz		111.4
802.11g (2400-2483.5 MHz) chain B	2437 MHz	H	110.3
	2462 MHz		109.6
	2412 MHz		108.3
	2437 MHz	V	109.2
	2462 MHz		109.1
802.11n 20MHz Wide (2400-2483.5 MHz) chain A	2412 MHz		108.9
	2437 MHz	H	109.1
	2462 MHz		108.3
	2412 MHz		107.9
	2437 MHz	V	108.2
802.11n 20MHz Wide (2400-2483.5 MHz) chain B	2462 MHz		108.4
	2412 MHz		110.4
	2437 MHz	H	110.8
	2462 MHz		110.3
	2412 MHz		110.2
802.11n 20MHz Wide (5745-5825 MHz) chain A	2437 MHz	V	109.3
	2462 MHz		108.8
	5745 MHz		99.3
	5785 MHz	H	98.8
	5825 MHz		98.7
802.11n 20MHz Wide (5745-5825 MHz) chain B	5745 MHz		98.5
	5785 MHz	V	98.4
	5825 MHz		98.3
	5745 MHz		101.3
	5785 MHz	H	101.2
802.11n 20MHz Wide (5745-5825 MHz) chain B	5825 MHz		100.9
	5745 MHz		100.6
	5785 MHz	V	100.5
	5825 MHz		100.1

Mode	Frequency	Polarization	dB μ V/m
802.11n 40MHz Wide (5745-5825 MHz) chain A	5755 MHz	H	97.5
	5795 MHz		97.2
	5755 MHz	V	97.8
	5795 MHz		96.4
802.11n 40MHz Wide (5745-5825 MHz) chain B	5755 MHz	H	96.5
	5795 MHz	V	96.6
	5755 MHz		97.0
	5795 MHz		97.3
802.11a (5150-5350 MHz) chain A	5.18 GHz	H	100.2
	5.24 GHz		100.6
	5.26 GHz		100.3
	5.32 GHz		
	5.18 GHz	V	100.4
	5.24 GHz		101.0
	5.26 GHz		100.8
	5.32 GHz		
802.11a (5150-5350 MHz) chain B	5.18 GHz	H	100.1
	5.24 GHz		99.8
	5.26 GHz		99.9
	5.32 GHz		
	5.18 GHz	V	99.6
	5.24 GHz		99.9
	5.26 GHz		100.1
	5.32 GHz		
802.11n 20MHz Wide (5150-5350 MHz) chain A	5.18 GHz	H	96.5
	5.26 GHz		97.4
	5.32 GHz		97.2
	5.18 GHz		98.3
	5.26 GHz	V	98.2
	5.32 GHz		97.9
	5.18 GHz		98.2
	5.26 GHz		98.0
802.11n 20MHz Wide (5150-5350 MHz) chain B	5.32 GHz	H	98.3
	5.18 GHz		97.5
	5.26 GHz		99.0
	5.32 GHz		98.5
	5.19 GHz	V	98.0
	5.27 GHz		98.1
	5.31 GHz		97.9
	5.19 GHz		98.6
802.11n 40MHz Wide (5150-5350 MHz) chain A	5.27 GHz	H	97.9
	5.31 GHz		98.6
	5.19 GHz		97.9
	5.27 GHz		97.8
	5.31 GHz	V	99.7
	5.19 GHz		99.7
	5.27 GHz		100.0
	5.31 GHz		99.8
802.11n 40MHz Wide (5150-5350 MHz) chain B	5.19 GHz	H	100.4
	5.27 GHz		100.3
	5.31 GHz	V	99.8
	5.19 GHz		99.8

6. SUMMARY OF TEST RESULTS

6.1 Photographic documentation

PHOTO 1 – E.U.T. IDENTIFICATION



PHOTO 2 – E.U.T. IDENTIFICATION



PHOTO 3 – EXTERNAL POWER SUPPLY

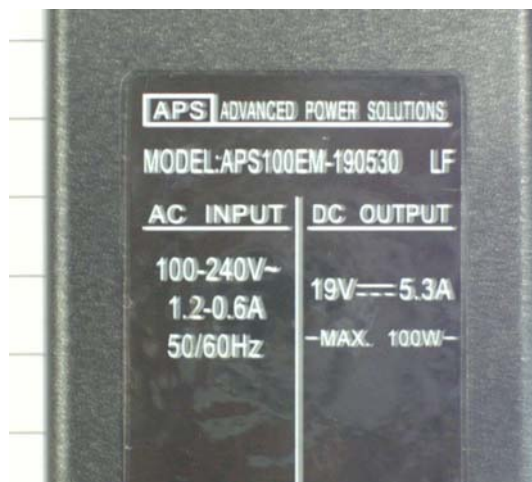


PHOTO 4 – SET-UP FOR EMISSION RADIATED TEST



7. TEST EQUIPMENT LIST

7.1 Equipment List

EQUIPMENT	MANUFACTURER	MODEL	SERIAL N.	CAL. DUE
EMI TEST RECEIVER 20HZ 40GHZ	ROHDE & SCHWARZ	ESU40	100111	JUL 2009
ARTIFICIAL MAINS NETWORK	ROHDE & SCHWARZ	ESH 2 - Z5	841887/011	SEPT.2009
ABSORBING CLAMP	ROHDE & SCHWARZ	MDS21	840031/005	JUL.2009
RF SEMI-ANECHOIC CHAMBER (CSSA)	SIEMENS	B83117-D6019-T232	003-005-134/94C	APR.2010
BILOG ANTENNA	CHASE	CBL6111A	1798	JUL.2009
BILOG ANTENNA	CHASE	CBL6111C	2717	JUL.2009
ESD GENERATOR	SCHAFFNER	NSG435-01	1063	APR.2009
RF SIGNAL GENERATOR 9 KHZ - 6 GHZ	ROHDE & SCHWARZ	SMB100A	100831	JUN 2011
LOG PERIODIC ANTENNA BROAD BAND 1-18 GHZ	ROHDE & SCHWARZ	HL025	350380/007	DEC.2009
SPECTRUM ANALYZER	ROHDE & SCHWARZ	FSP40	100038	DEC.2009
PROGRAMMABLE DC POWER SUPPLY	HEWLETT PACKARD	6623A	3448A04501	SEPT.2009
RF PREAMPLIFIER	BONN ELEKTRONIK	BLMA 1840-1A	087084B	AUG 2009
RF PREAMPLIFIER	BONN ELEKTRONIK	BLMA 0118-M	087084A	AUG 2009
RF SIGNAL GENERATOR 40 GHZ	ROHDE & SCHWARZ	SMP 04	825007/005	AUG 2009
DOUBLE RIDGED GUIDE ANTENNA	ELECTRO-METRICS	EM-6961	6278	JUL.2009
DIGITAL OSCILLOSCOPE	TEKTRONIX	TDS 680B	B010130	MAY.2009

7.2 FCC module certificates

TCB

GRANT OF EQUIPMENT AUTHORIZATION

TCB

Certification

Issued Under the Authority of the
Federal Communications Commission

By:

American TCB, Inc.
6731 Whittier Avenue Suite C110
McLean, VA 22101

Date of Grant: 11/17/2006

Application Dated: 11/02/2006

Intel Corporation
2111 NE 25th Avenue
JF3-302
Hillsboro, OR 97124

Attention: Robert Paxman , Sr. Compliance Engineer

NOT TRANSFERABLE

EQUIPMENT AUTHORIZATION is hereby issued to the named GRANTEE, and is
VALID ONLY for the equipment identified hereon for use under the Commission's
Rules and Regulations listed below.

FCC IDENTIFIER: PD94965AGN

Name of Grantee: Intel Corporation

Equipment Class: Digital Transmission System

Notes: Intel PRO/Wireless 4965AGN Network Connection

<u>Grant Notes</u>	<u>FCC Rule Parts</u>	<u>Frequency Range (MHZ)</u>	<u>Output Watts</u>	<u>Frequency Tolerance</u>	<u>Emission Designator</u>
CC	15C	2412.0 - 2462.0	0.242		
CC	15C	5745.0 - 5825.0	0.123		

Power Output listed is Conducted. Modular approval. This module is approved for use in mobile only configurations. This module must be installed by the OEM or OEM integrator. Instructions on installation of this module may not be provided to the end user. Only those antenna(s) tested with the device or similar antenna(s) with equal or lesser gain may be used with this transmitter. The antenna used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter. End-users and installers must be provided with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance.

CC: This device is certified pursuant to two different Part 15 rules sections.

TCB

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Hillsboro, OR 97124**

Attention: Robert Paxman , Sr. Compliance Engineer

NOT TRANSFERABLE

EQUIPMENT AUTHORIZATION is hereby issued to the named GRANTEE, and is VALID ONLY for the equipment identified hereon for use under the Commission's Rules and Regulations listed below.

FCC IDENTIFIER: PD94965AG
Name of Grantee: Intel Corporation
Equipment Class: Digital Transmission System
Notes: Intel PRO/Wireless 3945AG_ Network Connection

<u>Grant Notes</u>	<u>FCC Rule Parts</u>	<u>Frequency Range (MHZ)</u>	<u>Output Watts</u>	<u>Frequency Tolerance</u>	<u>Emission Designator</u>
CC	15C	2412.0 - 2462.0	0.242		
CC	15C	5745.0 - 5825.0	0.107		

Power Output listed is Conducted. Modular approval. This module is approved for use in mobile only configurations. This module must be installed by the OEM or OEM integrator. Instructions on installation of this module may not be provided to the end user. Only those antenna(s) tested with the device or similar antenna(s) with equal or lesser gain may be used with this transmitter. The antenna used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter. End-users and installers must be provided with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance.

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Hillsboro, OR 97124

Attention: Robert Paxman , Sr. Compliance Engineer

NOT TRANSFERABLE

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FCC IDENTIFIER: PD94965AGN
Name of Grantee: Intel Corporation
Equipment Class: Unlicensed National Information Infrastructure TX
Notes: Intel PRO/Wireless 4965AGN Network Connection

<u>Grant Notes</u>	<u>FCC Rule Parts</u>	<u>Frequency Range (MHZ)</u>	<u>Output Watts</u>	<u>Frequency Tolerance</u>	<u>Emission Designator</u>
CC	15E	5180.0 - 5240.0	0.049		
CC	15E	5260.0 - 5320.0	0.087		

Power Output listed is Conducted. Modular approval. This module is approved for use in mobile only configurations. This module must be installed by the OEM or OEM integrator. Instructions on installation of this module may not be provided to the end user. Only those antenna(s) tested with the device or similar antenna(s) with equal or lesser gain may be used with this transmitter. This transmitter is restricted to indoor use in the 5150MHz to 5250MHz frequency range. The antenna used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter. End-users and installers must be provided with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance.

This device complies with the Dynamic Frequency Selection (DFS) requirements of Report and Order FCC 03-287 as a Client only without Radar Detection.

CC: This device is certified pursuant to two different Part 15 rules sections.

TCB

**GRANT OF EQUIPMENT
AUTHORIZATION**

TCB

Certification

Issued Under the Authority of the
Federal Communications Commission
By:

American TCB, Inc.
6731 Whittier Avenue Suite C110
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Date of Grant: 11/15/2006

Application Dated: 11/15/2006

Intel Corporation
2111 NE 25th Avenue
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Hillsboro, OR 97124

Attention: Robert Paxman , Sr. Compliance Engineer

NOT TRANSFERABLE

EQUIPMENT AUTHORIZATION is hereby issued to the named GRANTEE, and is
VALID ONLY for the equipment identified hereon for use under the Commission's
Rules and Regulations listed below.

FCC IDENTIFIER: PD94965AG

Name of Grantee: Intel Corporation

Equipment Class: Unlicensed National Information Infrastructure TX

Notes: Intel PRO/Wireless 3945AG_ Network Connection

<u>Grant Notes</u>	<u>FCC Rule Parts</u>	<u>Frequency Range (MHZ)</u>	<u>Output Watts</u>	<u>Frequency Tolerance</u>	<u>Emission Designator</u>
CC	15E	5180.0 - 5240.0	0.049		
CC	15E	5260.0 - 5320.0	0.087		

Power Output listed is Conducted. Modular approval. This module is approved for use in mobile only configurations. This module must be installed by the OEM or OEM integrator. Instructions on installation of this module may not be provided to the end user. Only those antenna(s) tested with the device or similar antenna(s) with equal or lesser gain may be used with this transmitter. This transmitter is restricted to indoor use in the 5150MHz to 5250MHz frequency range. The antenna used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter. End-users and installers must be provided with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance.

This device complies with the Dynamic Frequency Selection (DFS) requirements of Report and Order FCC 03-287 as a Client only without Radar Detection. 5250MHz frequency range.

CC: This device is certified pursuant to two different Part 15 rules sections.