FCC TEST REPORT

(Part 15, Subpart E)

Applicant:	BARTEC GmbH
Address:	Max-Eyth-Str.16 , 97980 Bad Mergentheim, Germany

Manufacturer or Supplier:	BARTEC GmbH
Address:	Max-Eyth-Str.16 , 97980 Bad Mergentheim, Germany
Product:	Smartscanner / Smartphone
Brand Name:	BARTEC
Model Name:	SP9EX1/SC9EX1/SP9EX2/SC9EX2
FCC ID:	TBUSX9EX
Date of tests:	Jan. 02, 2024~ Jul. 26, 2024

The tests have been carried out according to the requirements of the following standard:

☒ **FCC Part 15, Subpart E, Section 15.407**

CONCLUSION: The submitted sample was found to COMPLY with the test requirement

Prepared by Hanwen Xu Engineer / Mobile Department	Approved by Peibo Sun Manager / Mobile Department
 Date: Jul. 26, 2024	 Date: Jul. 26, 2024

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
PSU-QSU2312140113RF11	Original release	Jul. 26, 2024

1 SUMMARY OF TEST RESULTS

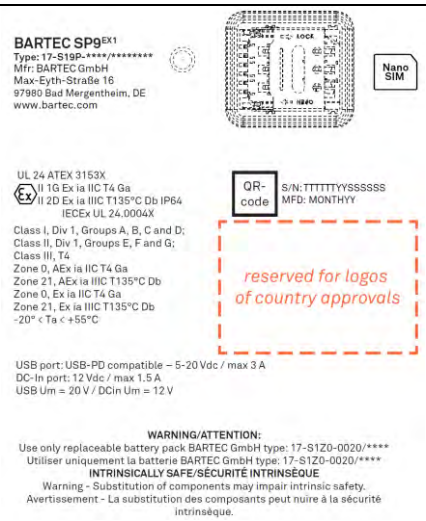
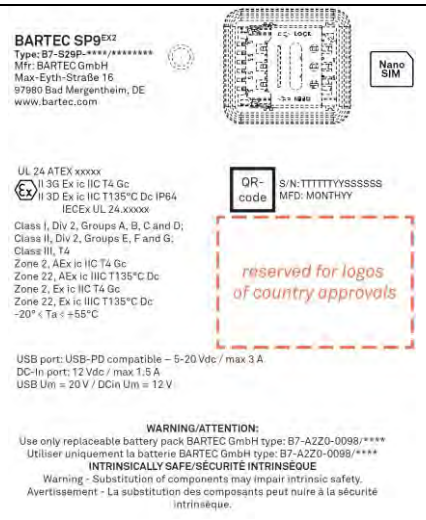
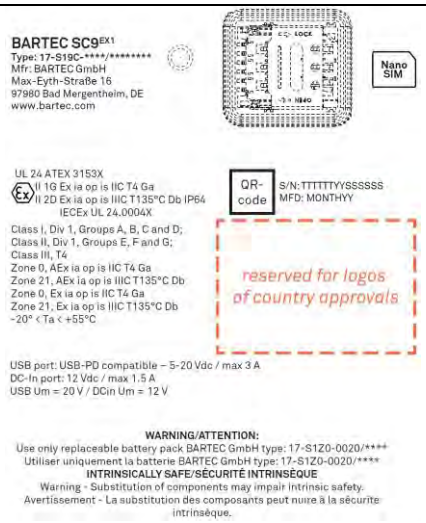
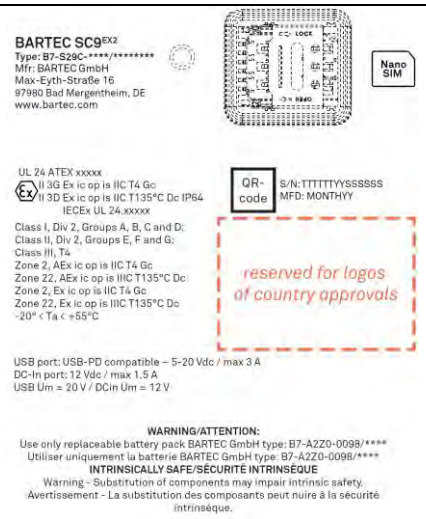
The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC PART 15, SUBPART E			TEST LAB
STANDARD SECTION	TEST TYPE AND LIMIT	RESULT	
15.407(b)(9)	AC Power Conducted Emission	Compliance	A
15.407(b) (1/2/3/4/5)	Radiated Emission & Band Edge Measurement	Compliance	A
15.407(a/1/2/3)	Maximum conducted output Power	Compliance	A/B
15.407(a/1/2/3)	Peak Power Spectral Density	Compliance	A/B
15.407(a)(2)(12)	26 dB Bandwidth	Compliance	A/B
15.407(e)	6 dB Bandwidth	Compliance	A/B
15.203	Antenna Requirement	Compliance	A/B

NOTE:

1. Except the data of RSE and Band Edge Measurement, other data please refer to Appendix D.
2. RLAN 5G supports SISO&MIMO mode，the whole testing has assessed the MIMO mode by referring to their maximum conducted power. and the 802.11ax HE40/80/160MHz RU26T/52T/106T/242T modes are cover by the 11ax HE20MHz modes, the 802.11ax HE80/160MHz RU484T modes are cover by the 11ax HE40MHz modes, the 802.11ax HE160MHz RU996T modes are cover by the 11ax HE80MHz modes.
3. For 802.11n HT20/ ac VHT20 and 802.11n HT40 / ac VHT40 mode, the whole testing is assessed only 802.11ac VHT20/ VHT40 by referring to their higher conducted power.
4. RSE had been tested on SISO&MIMO mode of EUT. The worst case was found on MIMO mode, only the worst case data had been reported in the report.
5. In this report, the test EUT version is EVT, after the test is completed, the customer optimizes the product to DVT, and the final customer's shipment is PVT. For differences between EVT and DVT and PVT, please refer to the documentation provided by the customer (SC9EX1_SP9EX1 PCBA HW Release Note rev 2_0).
6. There are no differences on the PCBA between the Model SC9EX1 (FCC ID: TBUSX9EX) and the variants SP9EX1 (FCC ID: TBUSX9EX). All mounted components are the same. No functionality related to any radio interface is affected. The only difference is the presence of the barcode scanner module and the “bump” on the back cover that incorporates the barcode scanner module.Testing has been run on parent product SC9EX1 and the worst cases of power and RSE have been verified also on SP9EX1 variant. Only the worst-case data (SC9EX1) have been reported.

7. The devices BARTEC SP9EX1 Smartphone and BARTEC SP9EX2 Smartphone share the same hardware and software. The same applies for the devices BARTEC SC9EX1 Smartscanner and BARTEC SC9EX2 Smartscanner. The only difference are the hazardous area marking of the devices, see table for clarification.

BARTEC SP9EX1 Smartphone	BARTEC SP9EX2 Smartphone
	
BARTEC SC9EX1 Smartscanner	BARTEC SC9EX2 Smartscanner
	

***Test Lab Information Reference**

Lab A:

Huarui 7Layers High Technology (Suzhou) Co., Ltd.

Lab Address:

Tower N, Innovation Center, 88 Zuyi Road, High-tech District, Suzhou City, Anhui Province

Accredited Test Lab Cert 6613.01

The FCC Site Registration No. is 434559; The Designation No. is CN1325.

Lab B:

BV 7Layers Communications Technology (Shenzhen) Co. Ltd

Lab Address:

Room B37, Warehouse A5, No.3 Chiwan 4th Road, Zhaoshang Street, Nanshan District Shenzhen, Guangdong, People's Republic of China

Accredited Test Lab Cert 3939.01

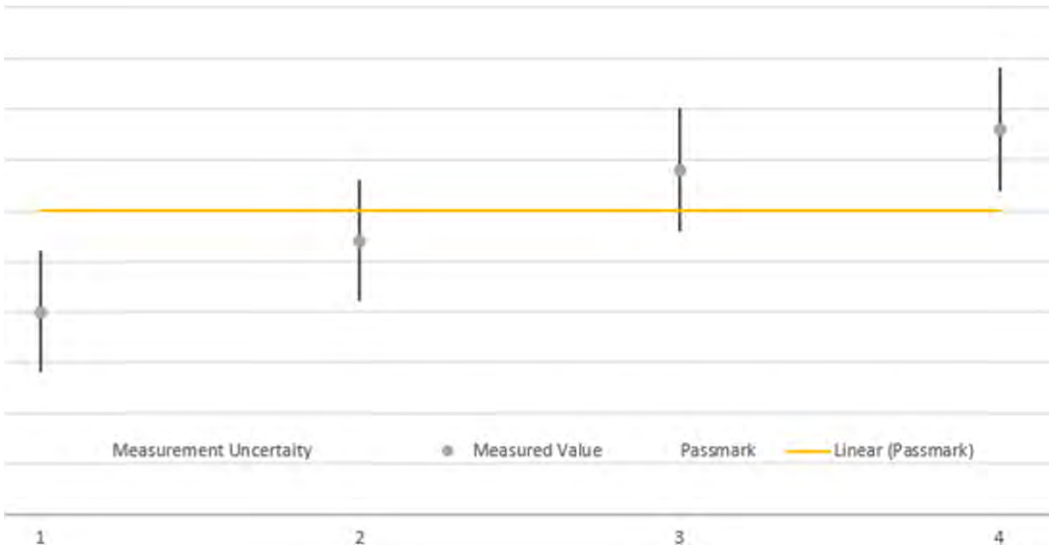
The FCC Site Registration No. is 525120; The Designation No. is CN1171.

1.1 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

MEASUREMENT	UNCERTAINTY
AC Power Conducted emissions	±2.70dB
Radiated emissions (9KHz~30MHz)	±2.68dB
Radiated emissions (30MHz~1GHz)	±4.98dB
Radiated emissions (1GHz ~6GHz)	±4.70dB
Radiated emissions (6GHz ~18GHz)	±4.60dB
Radiated emissions (18GHz ~40GHz)	±4.12dB
Conducted emissions	±4.01dB
Occupied Channel Bandwidth	±43.58KHz
Conducted Output power	±2.06dB
Power Spectral Density	±0.85 dB

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k = 2.



The verdicts in this test report are given according the above diagram:

Case	Measured Value	Uncertainty Range	Verdict
1	below pass mark	below pass mark	Passed
2	below pass mark	within pass mark	Passed
3	above pass mark	within pass mark	Failed
4	above pass mark	above pass mark	Failed

That means, the laboratory applies, as decision rule (see ISO/IEC 17025:2017), the so-called shared risk principle.

2 GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

PRODUCT*	Smartscanner / Smartphone
BRAND NAME*	BARTEC
MODEL NAME*	SP9EX1/SC9EX1/SP9EX2/SC9EX2
NOMINAL VOLTAGE*	5.0V/9.0V/12.0Vdc (adapter) 3.2V/3.8V/4.2V/dc (battery)
MODULATION	OFDM, OFDMA
TRANSFER RATE	802.11a: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0Mbps 802.11n: up to 300.0Mbps 802.11ac: up to 1733.3Mbps 802.11ax: up to 2401.9Mbps
OPERATING FREQUENCY	5180 ~ 5240MHz, 5260 ~ 5320MHz, 5500 ~ 5720MHz, 5745 ~ 5825MHz,
NUMBER OF CHANNEL	5180 ~ 5240MHz: 4 for 802.11a, 802.11n/ac/ax (20MHz)/ 802.11ax(20M RU 26/52/106/242) 2 for 802.11n/ac/ax (40MHz)/ 802.11ax(40M RU 484) 1 for 802.11ac/ax (80MHz)/ 802.11ax(80MRU996) 1 for 802.11ac/ax (160MHz)/ 802.11ax(160MRU1992) 5260 ~ 5320MHz: 4 for 802.11a, 802.11n/ac/ax (20MHz)/ 802.11ax(20M RU 26/52/106/242) 2 for 802.11n/ac/ax (40MHz)/ 802.11ax(40M RU 484) 1 for 802.11ac/ax (80MHz)/ 802.11ax(80M RU 996) 5500 ~ 5720MHz: 12 for 802.11a, 802.11n/ac/ax (20MHz)/ 802.11ax(20M RU 26/52/106/242) 6 for 802.11n/ac/ax (40MHz)/ 802.11ax(40M RU 484) 3 for 802.11ac/ax (80MHz)/ 802.11ax(80M RU 996) 1 for 802.11ac/ax (160MHz)/ 802.11ax(160MRU1992) 5745 ~ 5825MHz: 5 for 802.11a, 802.11n/ac/ax (20MHz)/ 802.11ax(20M RU 26/52/106/242) 2 for 802.11n/ac/ax (40MHz)/ 802.11ax(40M RU 484) 1 for 802.11ac/ax (80MHz)/802.11ax(80MRU 996)

AVERAGE POWER	66.99mW for 5180 ~ 5250MHz 67.61mW for 5260 ~ 5320MHz 71.45mW for 5500 ~ 5700MHz 65.01mW for 5745 ~ 5825MHz
ANTENNA TYPE*	Monopole Antenna
ANTENNA GAIN*	ANT 5: -1.5dBi for 5180 ~ 5240MHz -1.5dBi for 5260 ~ 5320MHz -1.5dBi for 5500 ~ 5720MHz -1.5dBi for 5745 ~ 5825MHz ANT 6: -0.1dBi for 5180 ~ 5240MHz -0.1dBi for 5260 ~ 5320MHz -0.1dBi for 5500 ~ 5720MHz -0.1dBi for 5745 ~ 5825MHz
HW VERSION*	E
SW VERSION*	TWG1.240820.261
I/O PORTS	Refer to user's manual
CABLE SUPPLIED*	USB cable: non-shielded cable, with w/o ferrite core, 0.8 meter

NOTE:

1. ***Since the above data and/or information is provided by the client relevant results or conclusions of this report are only made for these data and/or information, Test Lab is not responsible for the authenticity, integrity and results of the data and information and/or the validity of the conclusion.

2. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.

3. The EUT incorporates a MIMO function. Physically, the EUT provides two completed transmitter and two receiver.

MODULATION MODE	TX FUNCTION
802.11a	2TX/2RX
802.11n/802.11ac/ax (20MHz)	2TX/2RX
802.11n/802.11ac/ax (40MHz)	2TX/2RX
802.11ac/ax (80MHz)	2TX/2RX
802.11ax (20MHz RU 26/52/106/242)	2TX/2RX
802.11ax (40MHz RU 484)	2TX/2RX
802.11ax (80MHz RU 996)	2TX/2RX
802.11ax (160MHz RU 996)	2TX/2RX

4. For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.
5. Antenna gain and EUT conducted cable loss are provided by the customer, and the laboratory will record the results based on these items that involve these two parameters.

6. **List of Accessory:**

ACCESSORIES	BRAND	MANUFACTURER	MODEL	SPECIFICATION
Display(AMOLED)	Xiao Xin	N/A	XX611OLED-A002.1	N/A
Back cover	IV Techmould	N/A	N/A	N/A
Bezel	IV Techmould	N/A	N/A	N/A
Photo/Video Camera 1	Sunny Optical	N/A	F48N03A (Auto focus)	N/A
Photo/Video Camera 2	TrulyOpto	N/A	CSF208-B8BF-E(Fix focus)	N/A
CPU	Qualcomm	N/A	QCM6490	N/A
UFS	Kioxia	N/A	THGJFAT0T44BAIL	N/A
BT/WLAN Module	Murata	N/A	LBEE5QG2CX-830	N/A
NFC chipset	NXP	N/A	SN110TUK1	N/A
Battery	BARTEC	N/A	17-S1Z0-0020/****	4300 mAh, 3.68V
USB-C Cable	BARTEC	N/A	G7-A0Z0-0010	Length: 0.8m

2.2 DESCRIPTION OF TEST MODES

FOR 5180 ~ 5240MHz

4 channels are provided for 802.11a, 802.11n, 802.11ac/ax (20MHz)/ 802.11ax (20MHz RU 26/52/106/242):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
36	5180 MHz	44	5220 MHz
40	5200 MHz	48	5240 MHz

2 channels are provided for 802.11n, 802.11ac/ax (40MHz)/ 802.11ax (40MHz RU 484):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
38	5190 MHz	46	5230 MHz

1 channel is provided for 802.11ac/ax (80MHz)/ 802.11ax (80MHz RU 996):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
42	5210 MHz		

1 channel is provided for 802.11ac/ax (160MHz)/ 802.11ax (160MHz RU 1992):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
50	5250 MHz		

FOR 5260 ~ 5320MHz

4 channels are provided for 802.11a, 802.11n, 802.11ac/ax (20MHz)/ 802.11ax (20MHz RU 26/52/106/242):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
52	5260 MHz	60	5300 MHz
56	5280 MHz	64	5320 MHz

2 channels are provided for 802.11n, 802.11ac/ax (40MHz)/ 802.11ax (40MHz RU 484):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
54	5270 MHz	62	5310 MHz

1 channel is provided for 802.11ac/ax (80MHz)/ 802.11ax (80MHz RU 996):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
58	5290 MHz		

FOR 5500 ~ 5700MHz

12 channels are provided for 802.11a, 802.11n, 802.11ac/ax (20MHz)/ 802.11ax (20MHz RU 26/52/106/242):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
100	5500 MHz	124	5620MHz
104	5520 MHz	128	5640MHz
108	5540 MHz	132	5660 MHz
112	5560 MHz	136	5680 MHz
116	5580 MHz	140	5700 MHz
120	5600 MHz	144	5720 MHz

6 channels are provided for 802.11n, 802.11ac/ax (40MHz)/ 802.11ax (40MHz RU 484):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
102	5510 MHz	126	5630MHz
110	5550 MHz	134	5670 MHz
118	5590 MHz	142	5710 MHz

3 channel is provided for 802.11ac/ax (80MHz)/ 802.11ax (80MHz RU 996):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
106	5530 MHz	122	5610 MHz
138	5690 MHz		

1 channel is provided for 802.11ac/ax (160MHz)/ 802.11ax (160MHz RU 1992):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
114	5570 MHz		

FOR 5745 ~ 5825MHz

5 channels are provided for 802.11a, 802.11n, 802.11ac/ax (20MHz)/ 802.11ax (20MHz RU 26/52/106/242):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
149	5745 MHz	161	5805 MHz
153	5765 MHz	165	5825 MHz
157	5785 MHz		

2 channels are provided for 802.11n, 802.11ac/ax (40MHz)/ 802.11ax (40MHz RU 484):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
142	5710 MHz	159	5795 MHz
151	5755 MHz		

1 channel is provided for 802.11ac/ax (80MHz)/ 802.11ax (80MHz RU 996):

CHANNEL	FREQUENCY
155	5775 MHz

2.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE≥1G	RE<1G	PLC	APCM	
A	√	√	√	-	**Powered by Adapter with wifi(5G) link**
B	-	-	-	√	Powered by Battery with wifi(5G) link
C	-	-	-	-	Powered by USB with wifi(5G) link

Where **RE≥1G:** Radiated Emission above 1GHz **RE<1G:** Radiated Emission below 1GHz
PLC: Power Line Conducted Emission **APCM:** Antenna Port Conducted Measurement

NOTE:
The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **X-plane.**
NOTE: "-"means no effect

RADIATED EMISSION TEST (BELOW 1GHz):

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
☒ The following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)
A	802.11a	5180-5250	36 to 48	36	OFDM	MCS0

RADIATED EMISSION TEST (ABOVE 1GHz):

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ The following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)
A	802.11a	5180-5250	36 to 48	36, 40, 48	OFDM	6.0
A	802.11n/ax (20MHz)/ 802.11ax (20MHz RU 26/52/106)		36 to 48	36, 40, 48	OFDM, OFDMA	MCS0
A	802.11n/ax (40MHz)		38 to 46	38, 46	OFDM, OFDMA	MCS0
A	802.11ac/ax (80MHz)		42	42	OFDM, OFDMA	MCS0
A	802.11ac/ax (160MHz)		50	50	OFDM, OFDMA	MCS0
A	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	6.0
A	802.11n/ax (20MHz)/ 802.11ax (20MHz RU 26/52/106)		52 to 64	52, 60, 64	OFDM, OFDMA	MCS0
A	802.11n/ax (40MHz)		54 to 62	54, 62	OFDM, OFDMA	MCS0
A	802.11ac/ax (80MHz)		58	58	OFDM, OFDMA	MCS0
A	802.11a	5500-5720	100 to 144	100, 116, 140, 144	OFDM	6.0
A	802.11n/ax (20MHz)/ 802.11ax (20MHz RU 26/52/106)		100 to 144	100, 116, 140, 144	OFDM, OFDMA	MCS0
A	802.11n/ax (40MHz)		102 to 142	102, 110, 134,142	OFDM, OFDMA	MCS0
A	802.11ac/ax (80MHz)		106 to 138	106, 122, 138	OFDM, OFDMA	MCS0
A	802.11ac/ax (160MHz)		114	114	OFDM, OFDMA	MCS0
A	802.11a	5745-5825	149 to 165	149, 157,165	OFDM	6.0
A	802.11n/ax (20MHz)/ 802.11ax (20MHz RU 26/52/106)		149 to 165	149, 157,165	OFDM, OFDMA	MCS0
A	802.11n/ax (40MHz)		151 to 159	151, 159	OFDM, OFDMA	MCS0
A	802.11ac/ax (80MHz)		155	155	OFDM, OFDMA	MCS0

POWER LINE CONDUCTED EMISSION TEST:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ The following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)
A	802.11a	5180-5250	36 to 48	36	OFDM	MCS0

BANDEDGE MEASUREMENT:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ The following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)
A	802.11a	5180-5250	36 to 48	36, 40, 48	OFDM	6.0
A	802.11n/ax (20MHz)/ 802.11ax (20MHz RU 26/52/106)		36 to 48	36, 40, 48	OFDM, OFDMA	MCS0
A	802.11n/ax (40MHz)		38 to 46	38, 46	OFDM, OFDMA	MCS0
A	802.11ac/ax (80MHz)		42	42	OFDM, OFDMA	MCS0
A	802.11ac/ax (160MHz)		50	50	OFDM, OFDMA	MCS0
A	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	6.0
A	802.11n/ax (20MHz)/ 802.11ax (20MHz RU 26/52/106)		52 to 64	52, 60, 64	OFDM, OFDMA	MCS0
A	802.11n/ax (40MHz)		54 to 62	54, 62	OFDM, OFDMA	MCS0
A	802.11ac/ax (80MHz)		58	58	OFDM, OFDMA	MCS0
A	802.11a	5500-5720	100 to 144	100, 116, 140, 144	OFDM	6.0
A	802.11n/ax (20MHz)/ 802.11ax (20MHz RU 26/52/106)		100 to 144	100, 116, 140, 144	OFDM, OFDMA	MCS0
A	802.11n/ax (40MHz)		102 to 142	102, 110, 134,142	OFDM, OFDMA	MCS0
A	802.11ac/ax (80MHz)		106 to 138	106, 122, 138	OFDM, OFDMA	MCS0
A	802.11ac/ax (160MHz)		114	114	OFDM, OFDMA	MCS0
A	802.11a	5745-5825	149 to 165	149, 157,165	OFDM	6.0
A	802.11n/ax (20MHz)/ 802.11ax (20MHz RU 26/52/106)		149 to 165	149, 157,165	OFDM, OFDMA	MCS0

A	802.11n/ax (40MHz)		151 to 159	151, 159	OFDM, OFDMA	MCS0
A	802.11ac/ax (80MHz)		155	155	OFDM, OFDMA	MCS0

ANTENNA PORT CONDUCTED MEASUREMENT:

☒ This item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.
☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
☒ The following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)
A	802.11a	5180-5250	36 to 48	36, 40, 48	OFDM	6.0
A	802.11n/ax (20MHz)/ 802.11ax (20MHz RU 26/52/106)		36 to 48	36, 40, 48	OFDM, OFDMA	MCS0
A	802.11n/ax (40MHz)		38 to 46	38, 46	OFDM, OFDMA	MCS0
A	802.11ac/ax (80MHz)		42	42	OFDM, OFDMA	MCS0
A	802.11ac/ax (160MHz)		50	50	OFDM, OFDMA	MCS0
A	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	6.0
A	802.11n/ax (20MHz)/ 802.11ax (20MHz RU 26/52/106)		52 to 64	52, 60, 64	OFDM, OFDMA	MCS0
A	802.11n/ax (40MHz)		54 to 62	54, 62	OFDM, OFDMA	MCS0
A	802.11ac/ax (80MHz)		58	58	OFDM, OFDMA	MCS0
A	802.11a	5500-5720	100 to 144	100, 116, 140, 144	OFDM	6.0
A	802.11n/ax (20MHz)/ 802.11ax (20MHz RU 26/52/106)		100 to 144	100, 116, 140, 144	OFDM, OFDMA	MCS0
A	802.11n/ax (40MHz)		102 to 142	102, 110, 134,142	OFDM, OFDMA	MCS0
A	802.11ac/ax (80MHz)		106 to 138	106, 122, 138	OFDM, OFDMA	MCS0
A	802.11ac/ax (160MHz)		114	114	OFDM, OFDMA	MCS0
A	802.11a	5745-5825	149 to 165	149, 157,165	OFDM	6.0
A	802.11n/ax (20MHz)/ 802.11ax (20MHz RU 26/52/106)		149 to 165	149, 157,165	OFDM, OFDMA	MCS0
A	802.11n/ax (40MHz)		151 to 159	151, 159	OFDM, OFDMA	MCS0
A	802.11ac/ax (80MHz)		155	155	OFDM, OFDMA	MCS0

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE<1G	23deg. C, 70%RH	DC 5.0V/ 9.0V/ 12.0V By Adapter	Hanwen Xu
RE≥1G	23deg. C, 70%RH	DC 5.0V/ 9.0V/ 12.0V By Adapter	Hanwen Xu
PLC	25deg. C, 52%RH	DC 5.0V/ 9.0V/ 12.0V By Adapter	Hanwen Xu
APCM	25deg. C, 60%RH	DC 5.0V/ 9.0V/ 12.0V By Adapter	Hanwen Xu

2.3 DUTY CYCLE OF TEST SIGNAL

Please Refer to Appendix D Of this test report.

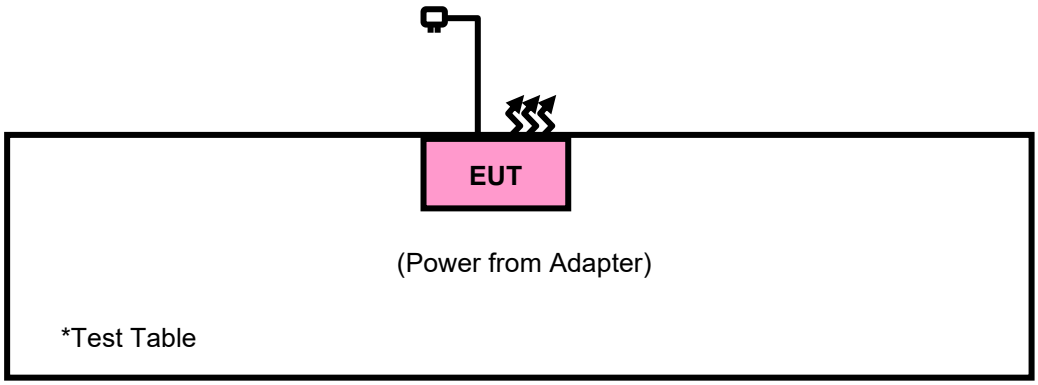
2.4 DESCRIPTION OF SUPPORT UNITS

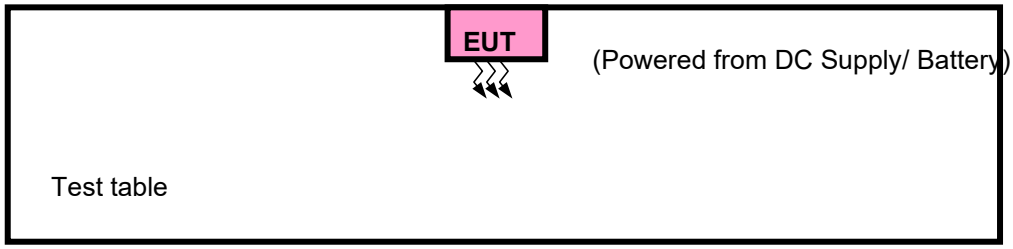
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

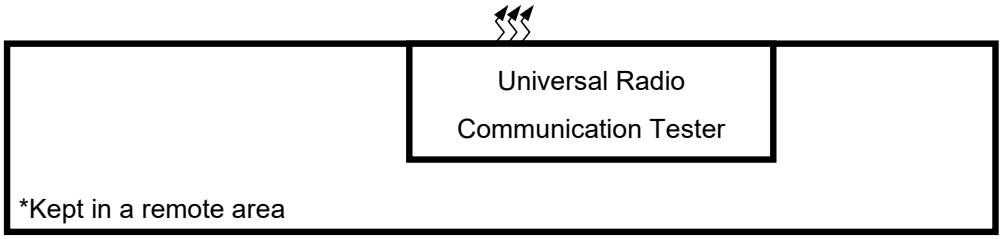
NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	Adapter	N/A	N/A	N/A	N/A

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	USB Line: Shielded, Detachable 0.8m;

2.4.1 CONFIGURATION OF SYSTEM UNDER TEST







2.5 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a RF Product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC Part 15, Subpart E (15.407)
KDB 789033 D02 General U-NII Test Procedures New Rules v02r01
ANSI C63.10-2020

All test items have been performed and recorded as per the above standards.

NOTE: The EUT is also considered as a kind of computer peripheral, because the connection to computer is necessary for typical use. It has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B (Certification). The test report has been issued separately.

3 TEST TYPES AND RESULTS

3.1 RADIATED EMISSION AND BANDEDGE MEASUREMENT

3.1.1 LIMITS OF RADIATED EMISSION AND BANDEDGE MEASUREMENT

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table:

FREQUENCIES (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

NOTE:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. For frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

3.1.2 LIMITS OF UNWANTED EMISSION

<table>
<tr><td rowspan="2">RESTRICTED BANDS</td><td>APPLICABLE TO</td><td colspan="2">LIMIT</td></tr>
<tr><td rowspan="2">789033 D02 General UNII Test Procedures New Rules v02r01</td><td colspan="2">FIELD STRENGTH AT 3m (dBµV/m)</td></tr>
<tr><td>PK : 74</td><td>AV : 54</td></tr>
<tr><td rowspan="5">OUT OF THE RESTRICTED BANDS</td><td>APPLICABLE TO</td><td>EIRP LIMIT (dBm/MHz)</td><td>EQUIVALENT FIELD STRENGTH AT 3m (dBµV/m)</td></tr>
<tr><td>15.407(b)(1)</td><td rowspan="3">PK : -27</td><td rowspan="3">PK : 68.2</td></tr>
<tr><td>15.407(b)(2)</td></tr>
<tr><td>15.407(b)(3)</td></tr>
<tr><td>15.407(b)(4)</td><td colspan="2">See note 2 (FCC 16-24)</td></tr>
</table>

NOTE: The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength:

$$E = \frac{1000000\sqrt{30P}}{3}$$ μV/m, where P is the eirp (Watts).

2. All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

3.1.3 TEST INSTRUMENTS

Lab A:

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Pre-Amplifier	R&S	SCU18F1	100815	Aug.30,22	Aug.29,24
Pre-Amplifier	R&S	SCU08F1	101028	Sep.16,22	Sep.15,24
Signal Generator	R&S	SMB100A	182185	Feb.16,22	Feb.15,24
Signal Generator	R&S	SMB100A	182185	Feb.15,24	Feb.14,26
3m Fully-anechoic Chamber	TDK	9m*6m*6m	HRSW-SZ-EMC-01Chamber	Nov.25,22	Nov.24,25
3m Semi-anechoic Chamber	TDK	9m*6m*6m	HRSW-SZ-EMC-02Chamber	Nov.25,22	Nov.24,25
EMI TEST Receiver	R&S	ESW44	101973	Feb.25,22	Feb.24,24
EMI TEST Receiver	R&S	ESW44	101973	Feb.24,24	Feb.23,26
Bilog Antenna	SCHWARZBECK	VULB 9163	1264	Feb.28,22	Feb.27,24
Bilog Antenna	SCHWARZBECK	VULB 9163	1264	Feb.27,24	Feb.26,26
Horn Antenna	ETS-LINDGREN	3117	227836	Aug.22,22	Aug.21,24
Horn Antenna (18GHz-40GHz)	Steatite Q-par Antennas	QMS 00880	23486	Feb.23,22	Feb.22,24
Horn Antenna (18GHz-40GHz)	Steatite Q-par Antennas	QMS 00880	23486	Feb.22,24	Feb.21,26
Horn Antenna	Steatite Q-par Antennas	QMS 00208	23485	Aug.22,22	Aug.21,24
Loop Antenna	SCHWARZ	HFH2-Z2/Z2E	100976	Feb.23,22	Feb.22,24
Loop Antenna	SCHWARZ	HFH2-Z2/Z2E	100976	Feb.22,24	Feb.21,26
WIDEBANDRADIO COMMUNICATION TESTER	R&S	CMW500	169399	Jun.27,22	Jun.26,24
Test Software	ELEKTRA	ELEKTRA4.32	N/A	N/A	N/A
Open Switch and Control Unit	R&S	OSP220	101964	N/A	N/A
DC Source	HYELEC	HY3010B	551016	Aug.31,22	Aug.30,24

Hygrothermograph	DELI	20210528	SZ014	Sep.06,22	Sep.05,24
6DB attenuator	Tonscend Technology Co., Ltd	N/A	23062787	N/A	N/A
PC	LENOVO	E14	HRSW0024	N/A	N/A
TMC-AMI18843A(CABLE)	R&S	HF290-NMNM-7.00M	N/A	N/A	N/A
TMC-AMI18843A(CABLE)	R&S	HF290-NMNM-4.00M	N/A	N/A	N/A
CABLE	R&S	W13.02	N/A	Apr.28,23	Apr.27,24
CABLE	R&S	W13.02	N/A	Apr.27,24	Apr.26,25
CABLE	R&S	W12.14	N/A	Apr.28,23	Apr.27,24
CABLE	R&S	W12.14	N/A	Apr.27,24	Apr.26,25

NOTE: 1. The calibration interval of the above test instruments is 12/ 24/ 36 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.

2. The test was performed in 3m Chamber.

3. The FCC Site Registration No. is 434559; The Designation No. is CN1325.

3.1.4 TEST PROCEDURES

a. The EUT was placed on the top of a rotating table 0.8 meters (for below 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

NOTE:

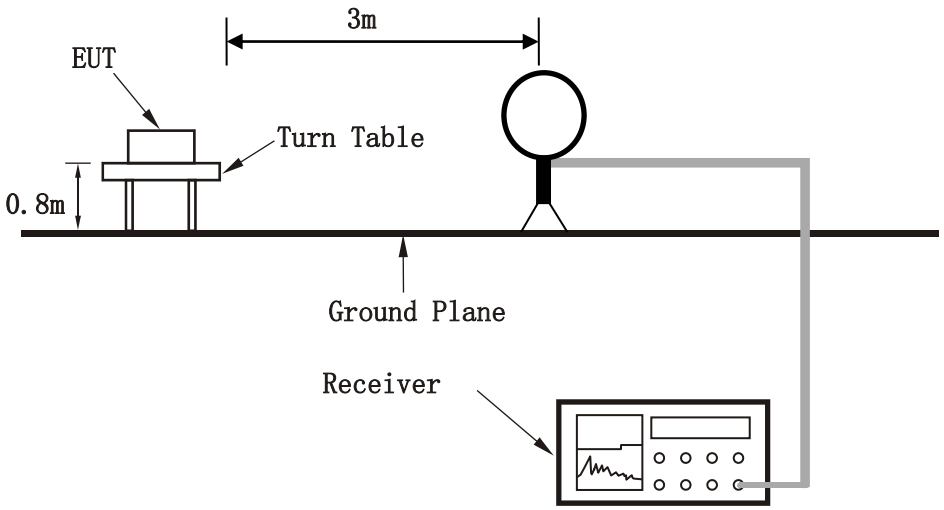
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 3MHz for RMS Average (Duty cycle < 98%) for Average detection (AV) at frequency above 1GHz, then the measurement results was added to a correction factor (10 log(1/duty cycle)).
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz (Duty cycle ≥ 98%) for Average detection (AV) at frequency above 1GHz.
5. All modes of operation were investigated and the worst-case emissions are reported.

3.1.5 DEVIATION FROM TEST STANDARD

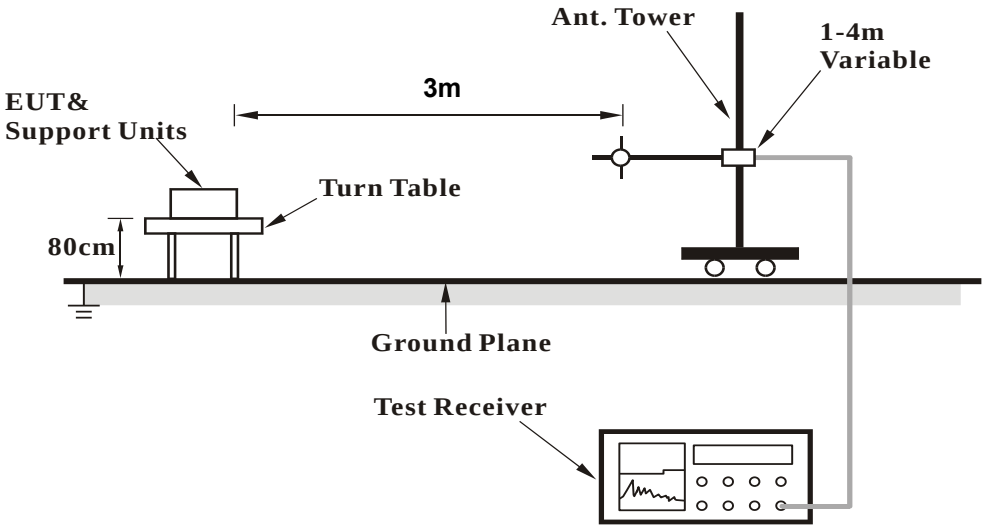
No deviation.

3.1.6 TEST SETUP

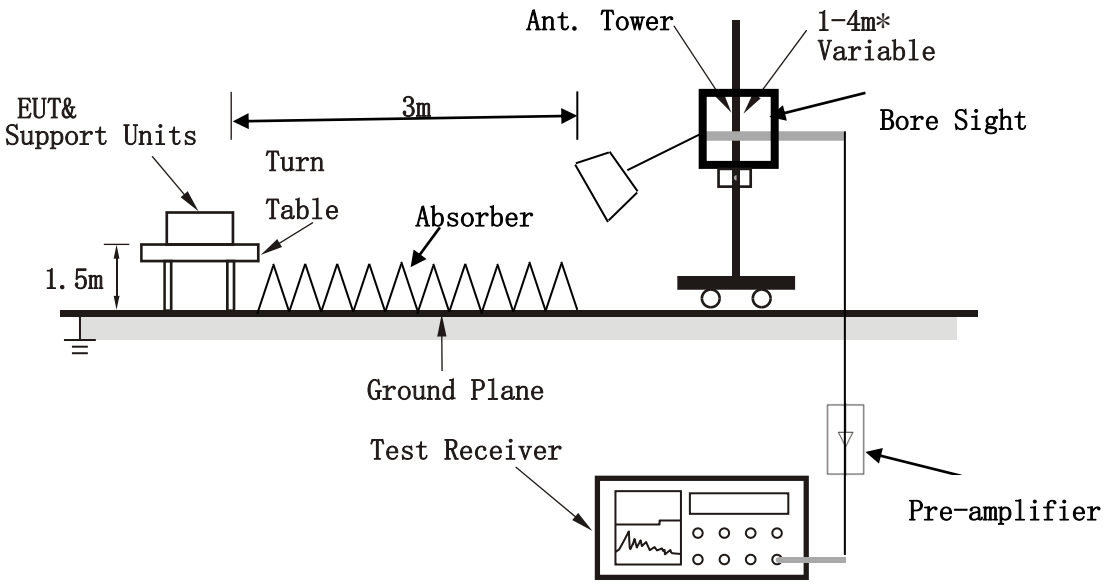
<Frequency Range 9KHz~30MHz >



< Frequency Range 30MHz~1GHz >



<Frequency Range above 1GHz>



Note: Above 1G is a directional antenna

Depends on the EUT height and the antenna 3dB beamwidth both, refer to section 7.3 of CISPR 16-2-3.

For the actual test configuration, please refer to the attached file (Test Setup Photo).

3.1.7 EUT OPERATING CONDITION

a. Set the EUT under full load condition and placed them on a testing table.

b. Set the transmitter part of EUT under transmission condition continuously at specific channel frequency.

c. The necessary accessories enable the EUT in full functions.

3.1.8 TEST RESULTS

NOTE ： The 9K~30MHz amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required in the report.

BAND EDGE MEASUREMENT

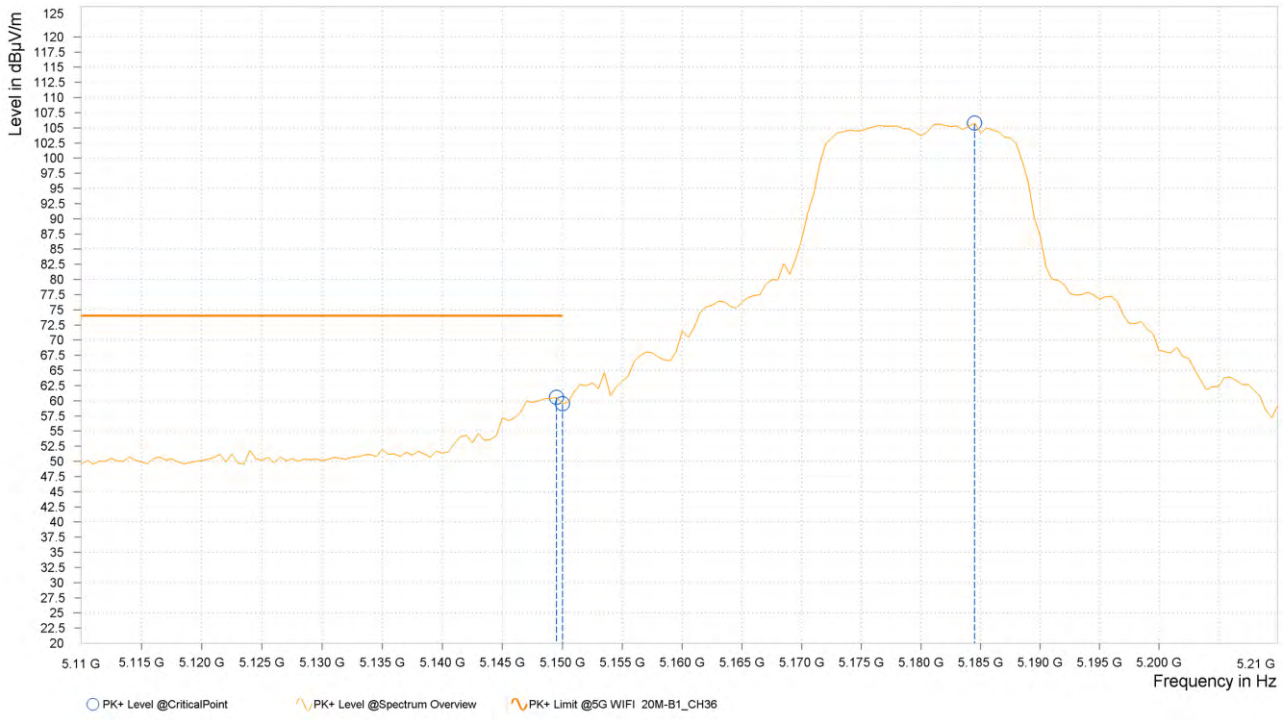
Band 1

802.11a

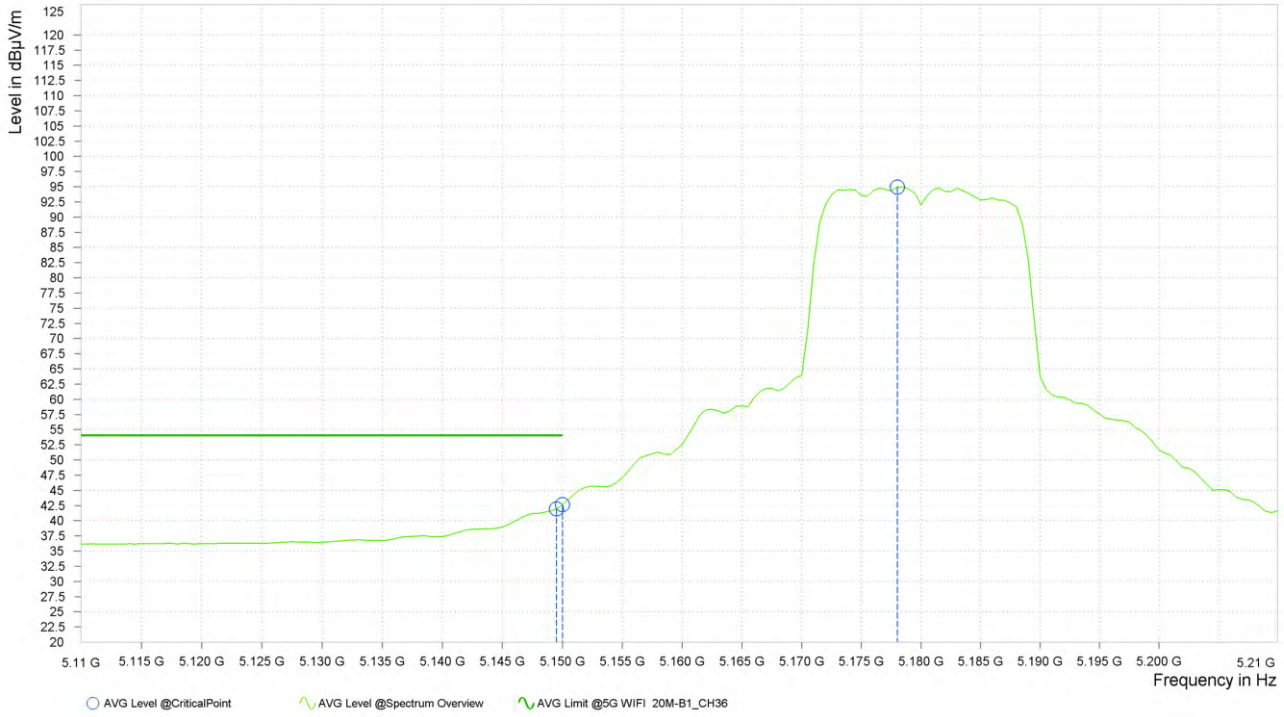
CHANNEL	TX Channel 36	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	5,149.500	60.57	74.00	13.43	10.77	H	179	2.00
1	5,150.000	59.50	74.00	14.50	10.77	H	179	2.00
1	5,184.500	105.79			10.88	H	326.8	1.00

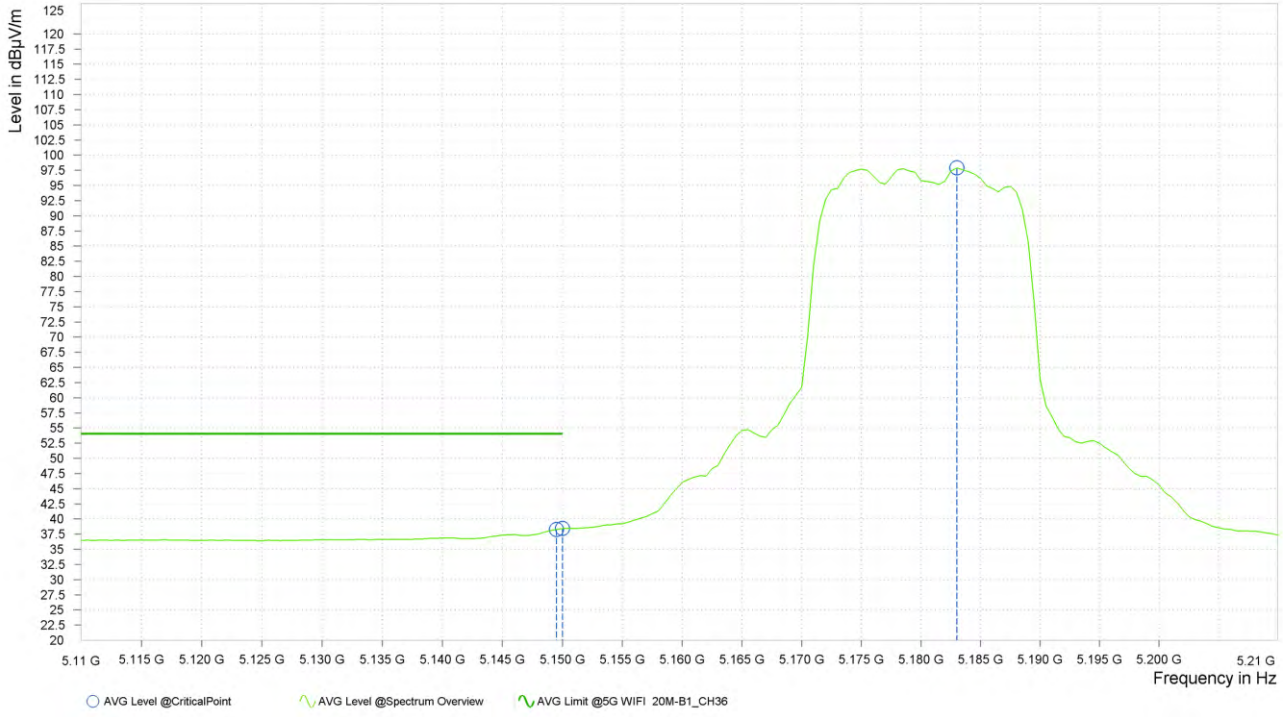


Rg	Frequency [MHz]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	5,149.500	41.93	54.00	12.07	10.77	H	178.9	2.00
1	5,150.000	42.65	54.00	11.35	10.77	H	178.9	2.00
1	5,178.000	94.95			10.86	H	104.5	1.00

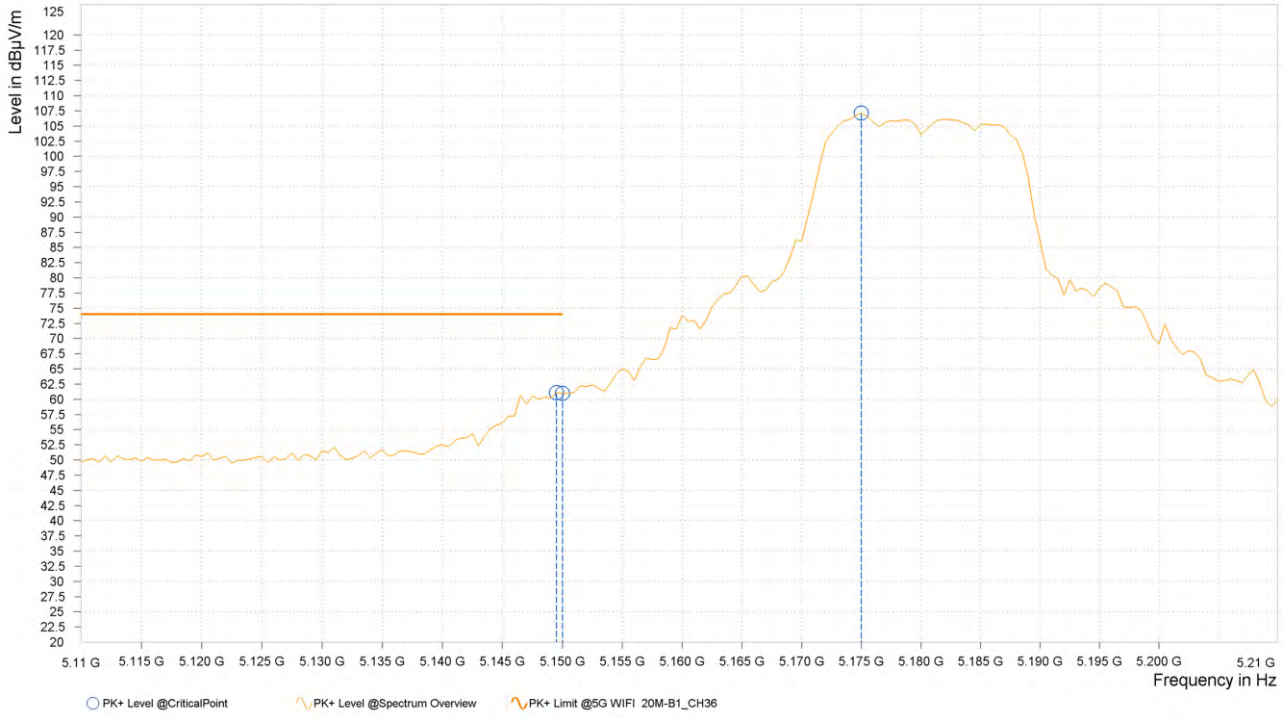


ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	5,149.500	38.27	54.00	15.73	10.77	V	320.4	1.00
1	5,150.000	38.42	54.00	15.58	10.77	V	320.4	1.00
1	5,183.000	97.90			10.87	V	193.7	1.00



Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	5,149.500	61.10	74.00	12.90	10.77	V	326.8	1.00
1	5,150.000	60.99	74.00	13.01	10.77	V	355	2.00
1	5,175.000	107.13			10.85	V	355	2.00



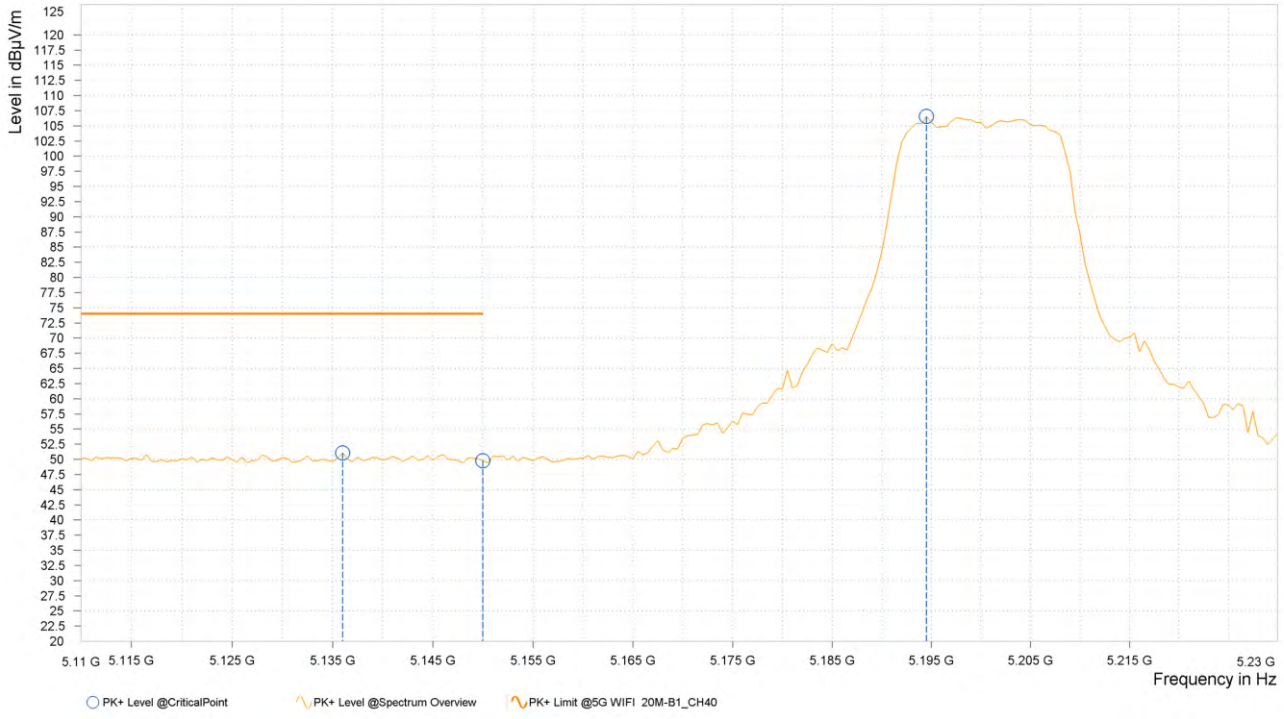
REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Limit value- Emission level.
2. 5180MHz: Fundamental frequency.

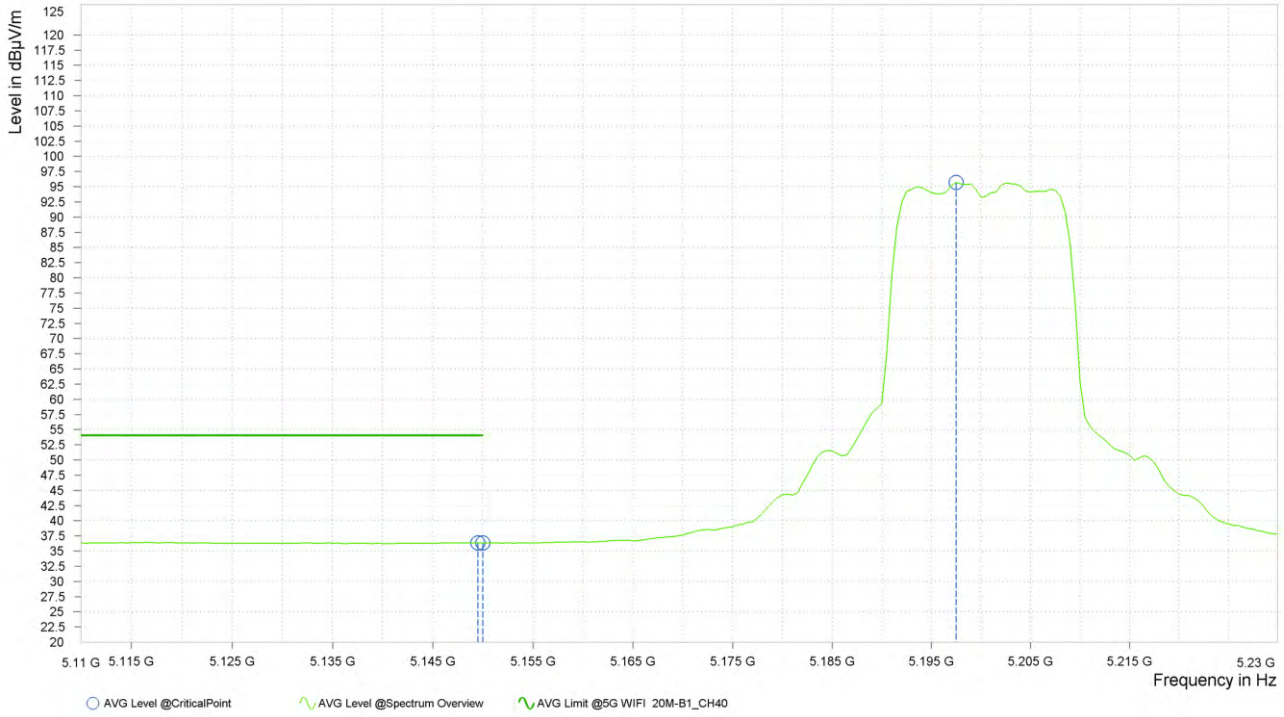
CHANNEL	TX Channel 40	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	5,136.000	51.07	74.00	22.93	10.75	H	35.5	2.00
2	5,150.000	49.79	74.00	24.21	10.77	H	359	2.00
2	5,194.500	106.53			10.91	H	322.1	1.00

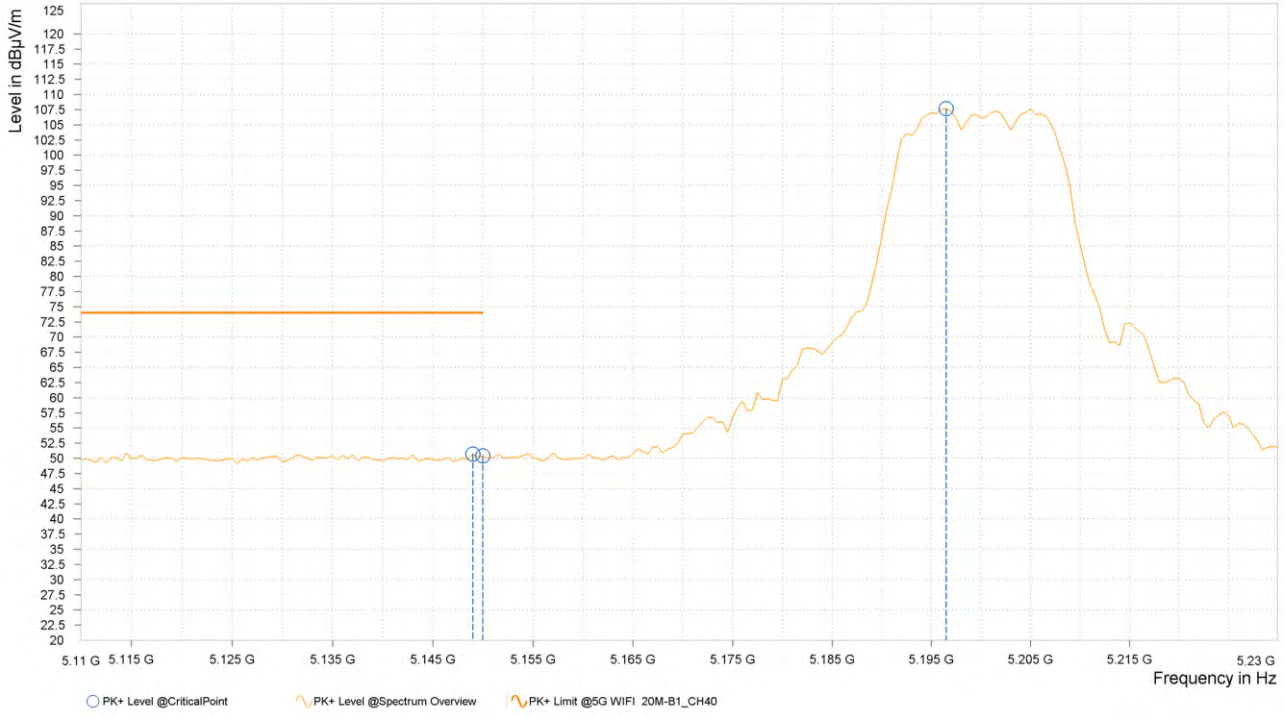


Rg	Frequency [MHz]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	5,149.500	36.34	54.00	17.66	10.77	H	0.9	2.00
2	5,150.000	36.33	54.00	17.67	10.77	H	0.9	2.00
2	5,197.500	95.72			10.92	H	220.8	2.00



ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	5,149.000	50.71	74.00	23.29	10.76	V	17.8	2.00
2	5,150.000	50.40	74.00	23.60	10.77	V	289.8	1.00
2	5,196.500	107.69			10.92	V	113.2	2.00



Rg	Frequency [MHz]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	5,149.000	36.28	54.00	17.72	10.76	V	149.1	2.00
2	5,150.000	36.23	54.00	17.77	10.77	V	281.4	1.00
2	5,204.500	97.62			10.93	V	281.4	1.00

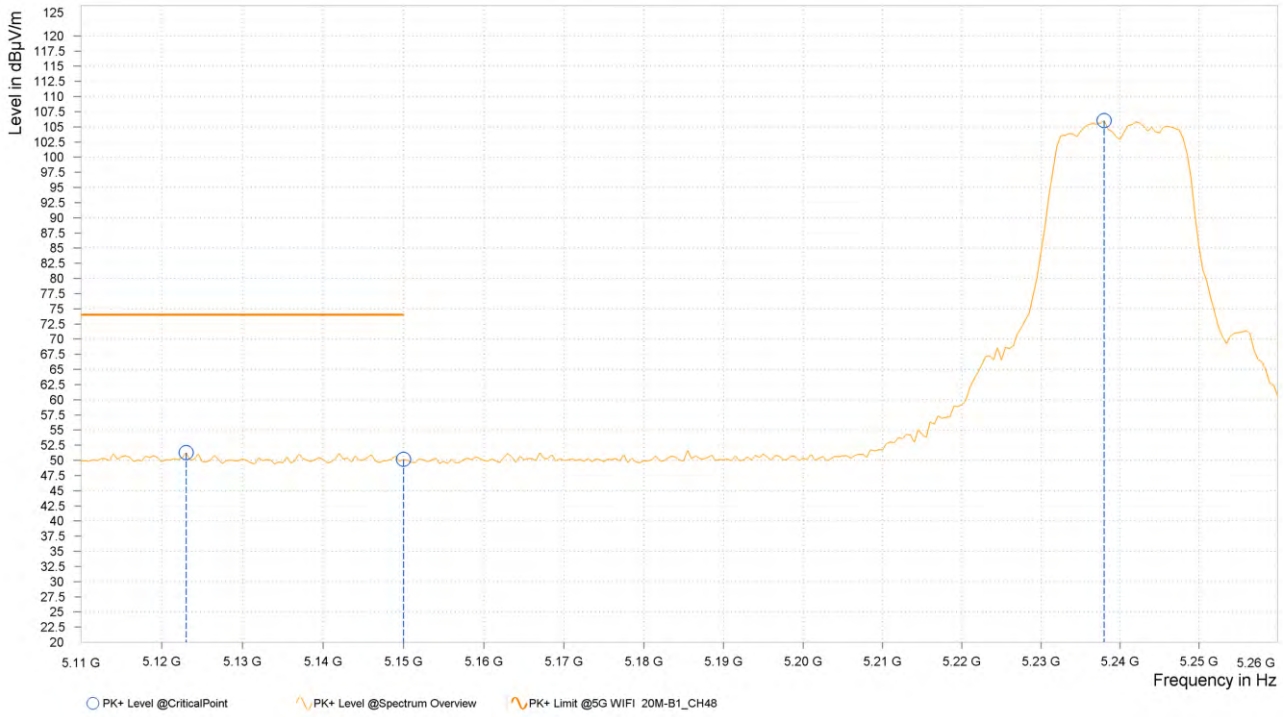
REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Limit value- Emission level.
2. 5200MHz: Fundamental frequency.

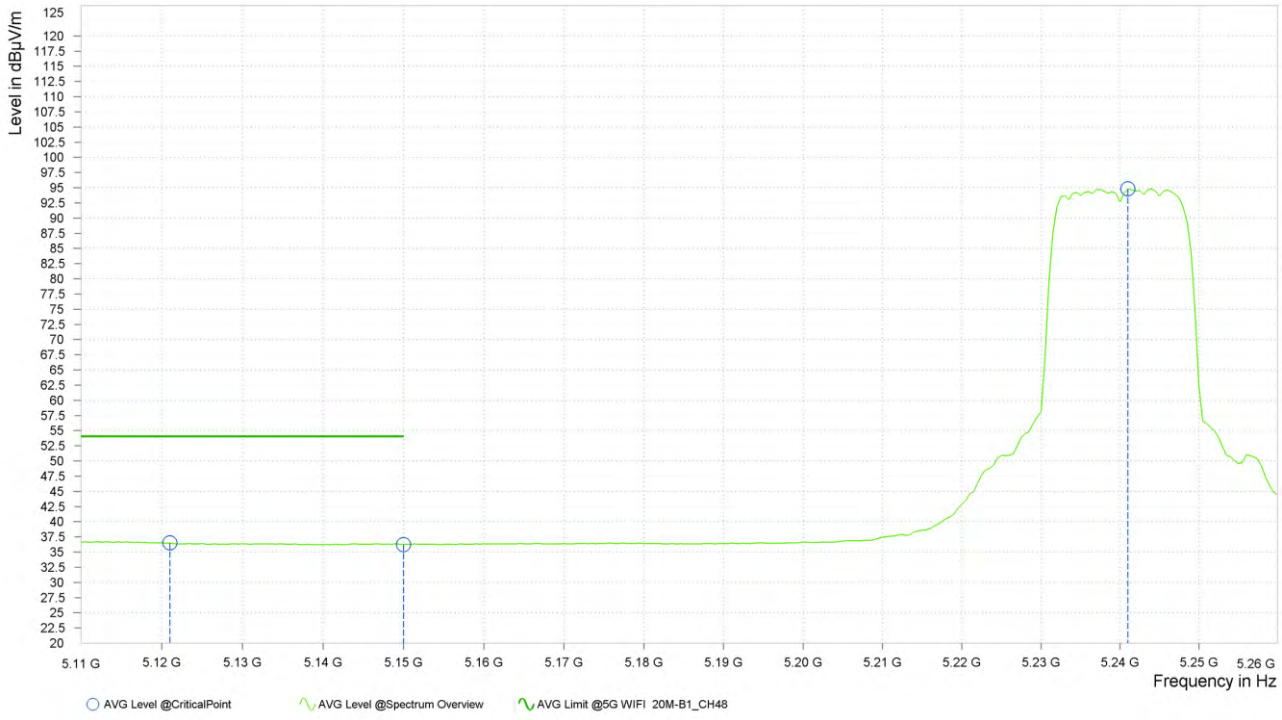
CHANNEL	TX Channel 48	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
3	5,123.000	51.26	74.00	22.74	10.73	H	174.2	2.00
3	5,150.000	50.17	74.00	23.83	10.77	H	3.6	2.00
3	5,238.000	106.04			10.91	H	81	2.00

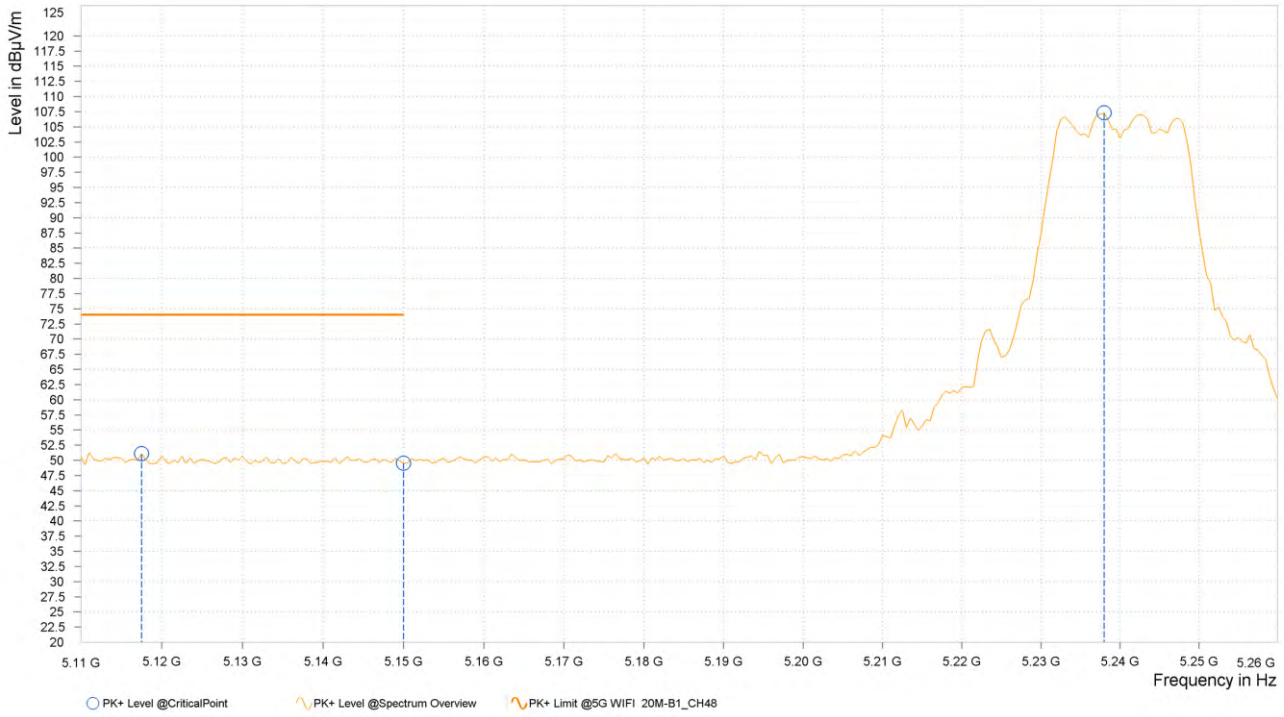


Rg	Frequency [MHz]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
3	5,121.000	36.50	54.00	17.50	10.73	H	140.3	1.00
3	5,150.000	36.25	54.00	17.75	10.77	H	0.9	2.00
3	5,241.000	94.81			10.90	H	67.4	1.00

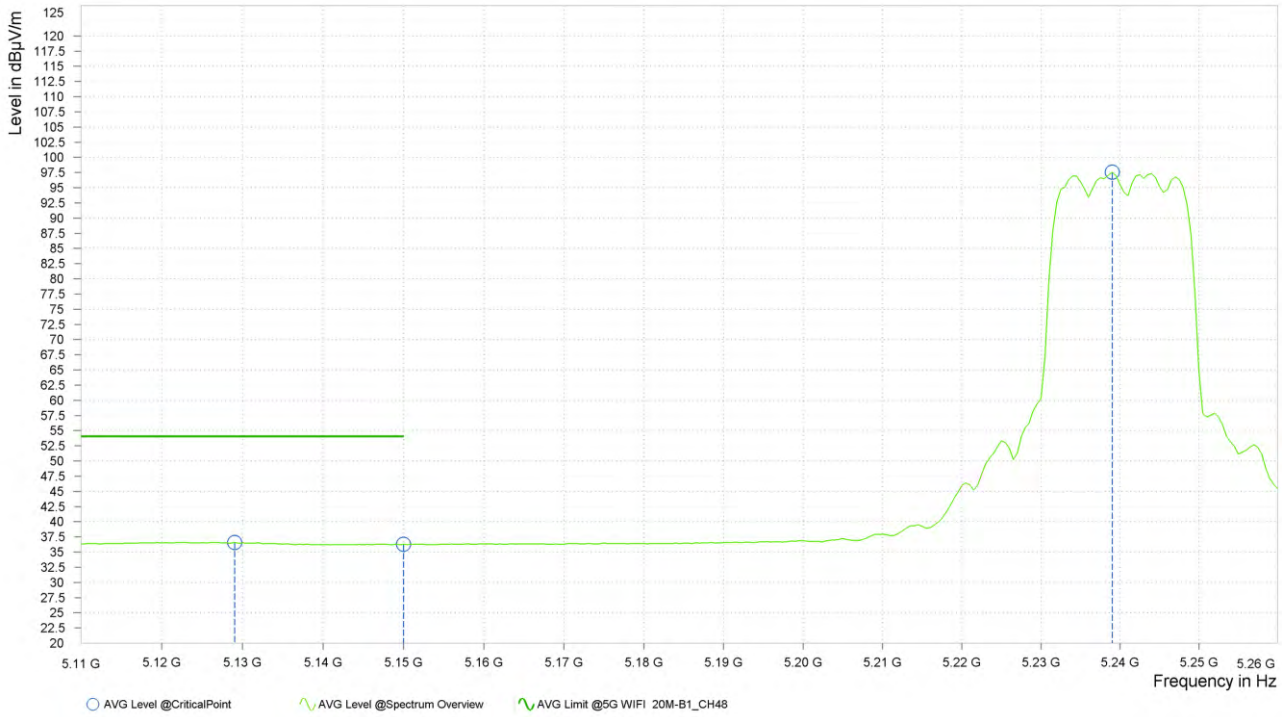


ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
3	5,117.500	51.09	74.00	22.91	10.72	V	128.8	2.00
3	5,150.000	49.55	74.00	24.45	10.77	V	174.2	2.00
3	5,238.000	107.30			10.91	V	268.3	1.00



Rg	Frequency [MHz]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
3	5,129.000	36.58	54.00	17.42	10.74	V	355.7	2.00
3	5,150.000	36.27	54.00	17.73	10.77	V	285	1.00
3	5,239.000	97.57			10.91	V	285	1.00



REMARKS:

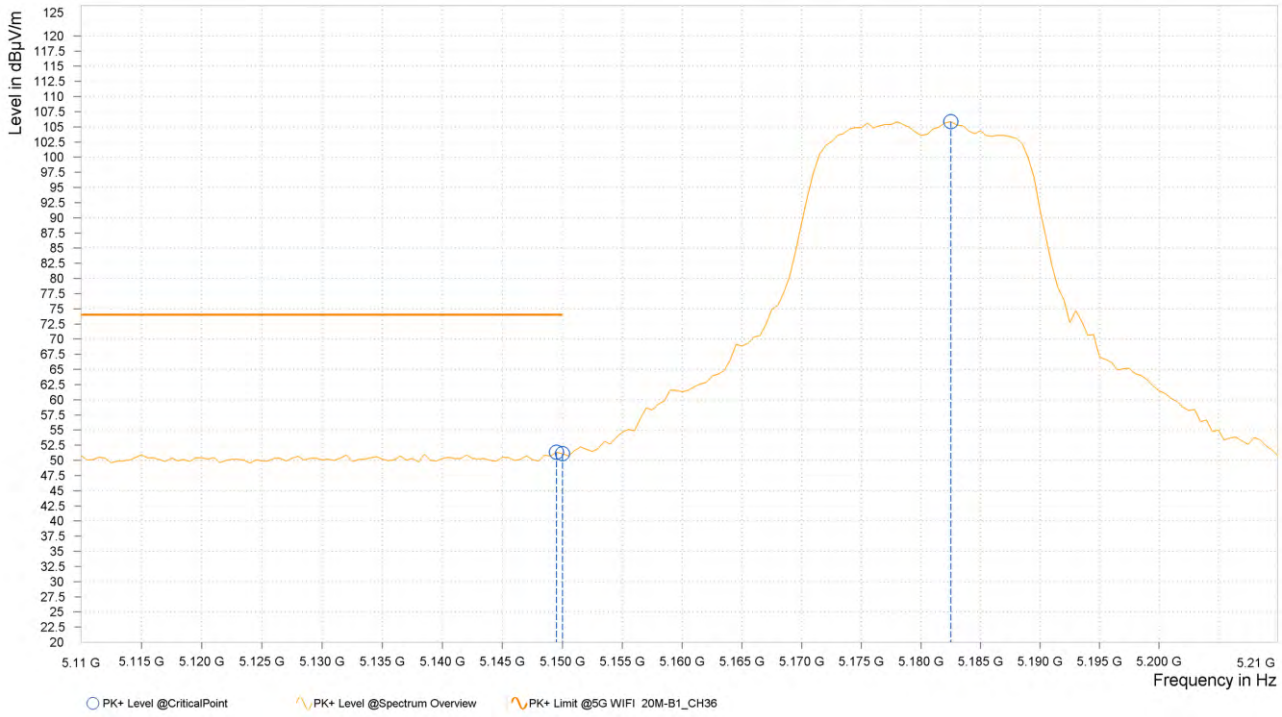
1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Limit value- Emission level.
2. 5240MHz: Fundamental frequency.

802.11n (20MHz)

CHANNEL	TX Channel 36	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

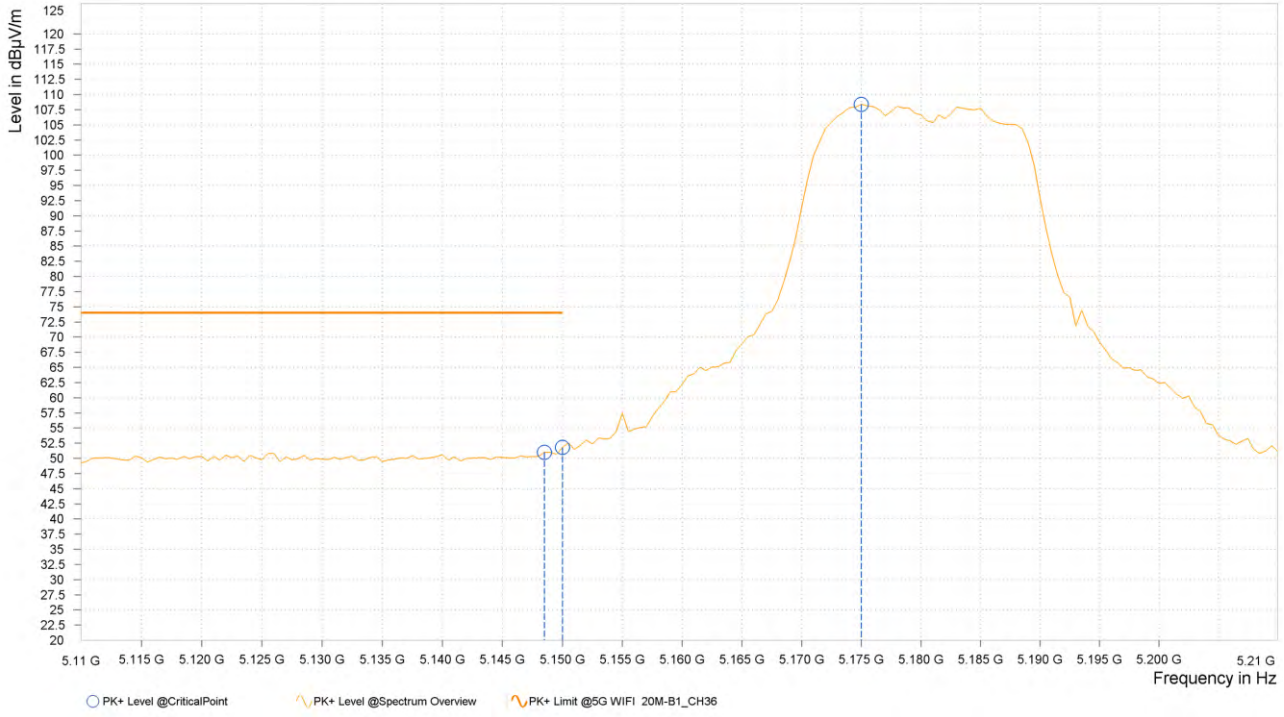
Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	5,149.500	51.32	74.00	22.68	10.77	H	162.2	2.00
1	5,150.000	51.10	74.00	22.90	10.77	H	145.1	1.00
1	5,182.500	105.86			10.87	H	94.9	1.00



Rg	Frequency [MHz]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	5,149.500	36.49	54.00	17.51	10.77	H	183.7	2.00
1	5,150.000	36.57	54.00	17.43	10.77	H	183.7	2.00
1	5,177.500	94.55			10.86	H	359	2.00

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	5,148.500	51.01	74.00	22.99	10.76	V	317.3	1.00
1	5,150.000	51.78	74.00	22.22	10.77	V	317.3	1.00
1	5,175.000	108.39			10.85	V	114.4	2.00



Rg	Frequency [MHz]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	5,149.000	36.48	54.00	17.52	10.76	V	295.7	1.00
1	5,150.000	36.74	54.00	17.26	10.77	V	295.7	1.00
1	5,185.500	96.60			10.88	V	138.4	2.00

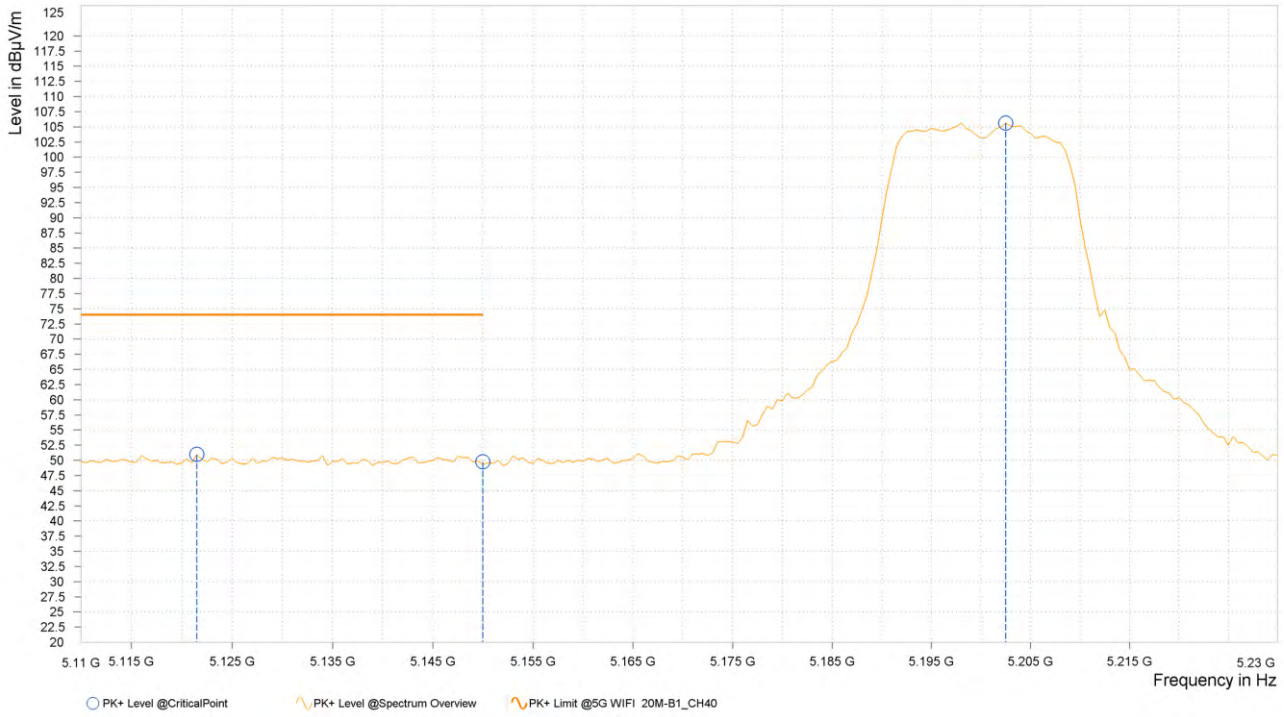
REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Limit value- Emission level.
2. 5180MHz: Fundamental frequency.

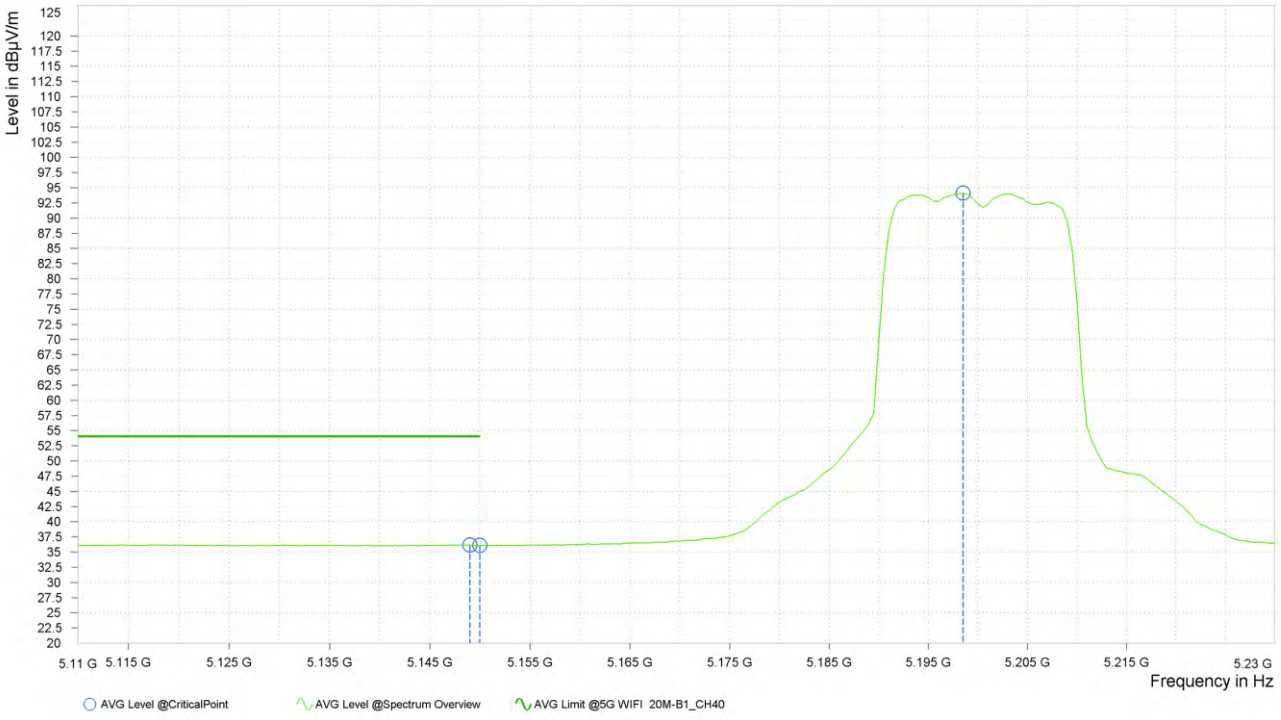
CHANNEL	TX Channel 40	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	5,121.500	50.97	74.00	23.03	10.73	H	359.1	1.00
2	5,150.000	49.75	74.00	24.25	10.77	H	0.9	2.00
2	5,202.500	105.64			10.93	H	96.2	1.00

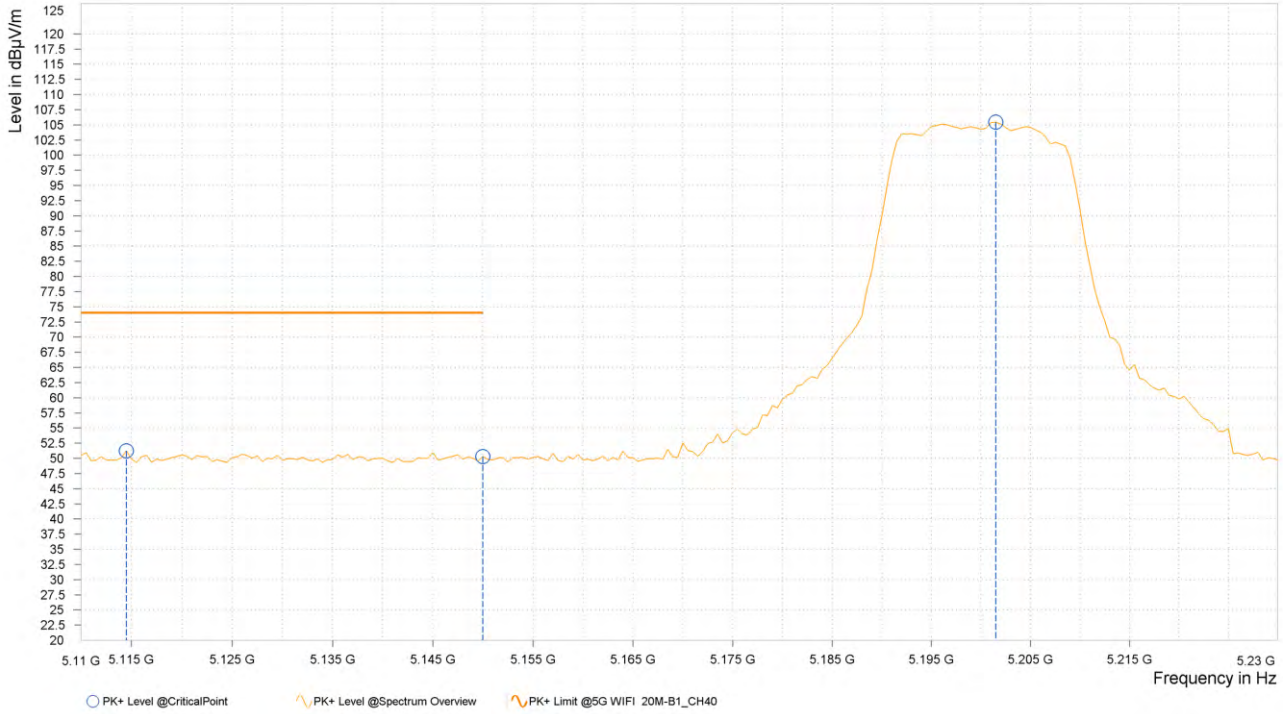


Rg	Frequency [MHz]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	5,149.000	36.14	54.00	17.86	10.76	H	3.9	2.00
2	5,150.000	36.12	54.00	17.88	10.77	H	0.9	2.00
2	5,198.500	94.12			10.93	H	7.8	1.00



ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	5,114.500	51.25	74.00	22.75	10.72	V	355.1	2.00
2	5,150.000	50.31	74.00	23.69	10.77	V	47.1	1.00
2	5,201.500	105.42			10.93	V	107.3	2.00



Rg	Frequency [MHz]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	5,119.000	36.46	54.00	17.54	10.73	V	298.2	1.00
2	5,150.000	36.20	54.00	17.80	10.77	V	298.2	1.00
2	5,203.000	96.57			10.93	V	137.2	2.00

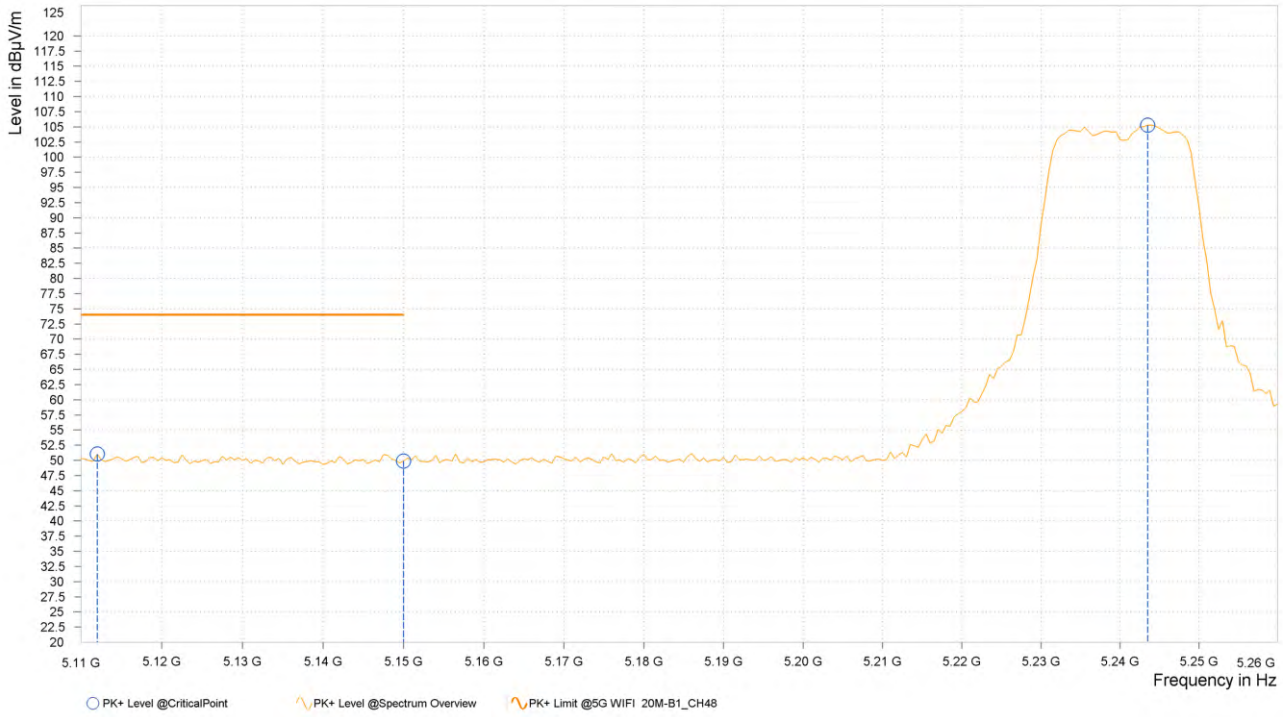
REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Limit value- Emission level.
2. 5200MHz: Fundamental frequency.

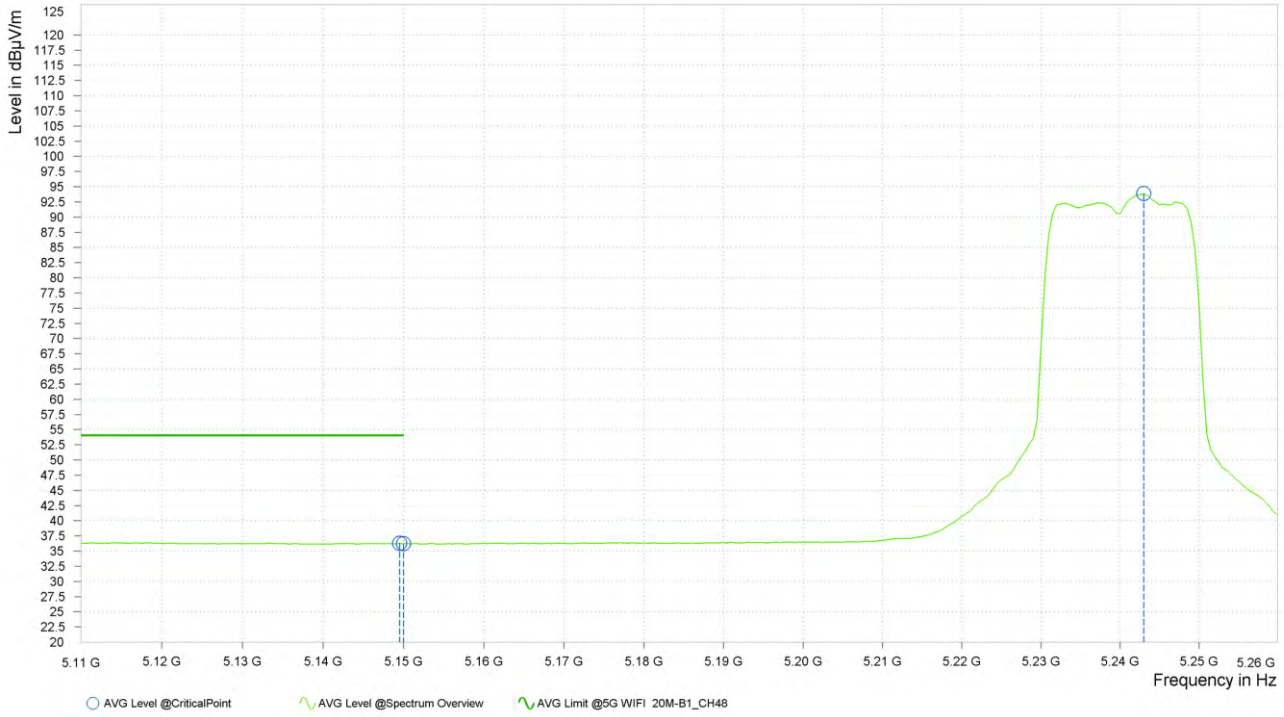
CHANNEL	TX Channel 48	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
3	5,112.000	51.03	74.00	22.97	10.72	H	359	2.00
3	5,150.000	49.90	74.00	24.10	10.77	H	1.3	2.00
3	5,243.500	105.27			10.90	H	99.7	1.00

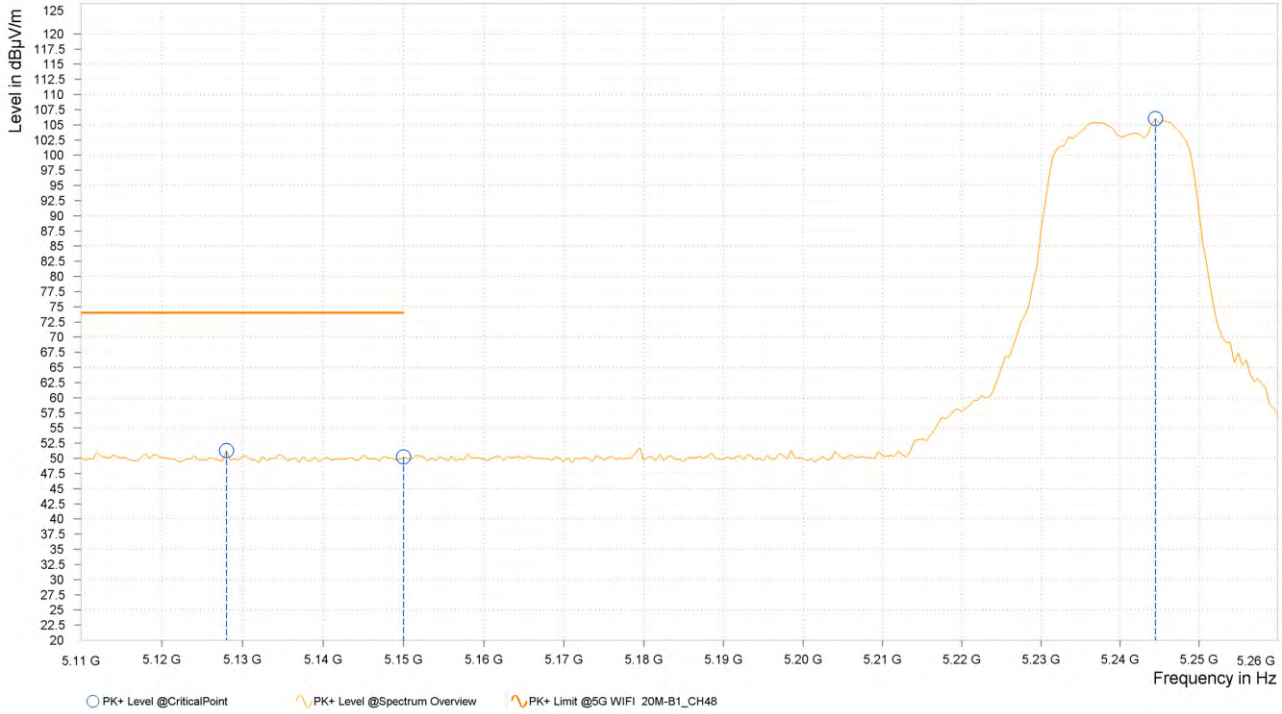


Rg	Frequency [MHz]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
3	5,149.500	36.29	54.00	17.71	10.77	H	3.3	2.00
3	5,150.000	36.21	54.00	17.79	10.77	H	0.9	2.00
3	5,243.000	93.87			10.90	H	212.4	2.00



ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
3	5,128.000	51.27	74.00	22.73	10.74	V	359	1.00
3	5,150.000	50.22	74.00	23.78	10.77	V	78.5	2.00
3	5,244.500	106.04			10.90	V	264.7	1.00



Rg	Frequency [MHz]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
3	5,148.500	36.55	54.00	17.45	10.76	V	300.5	1.00
3	5,150.000	36.46	54.00	17.54	10.77	V	300.5	1.00
3	5,242.000	96.27			10.90	V	137.1	2.00

REMARKS:

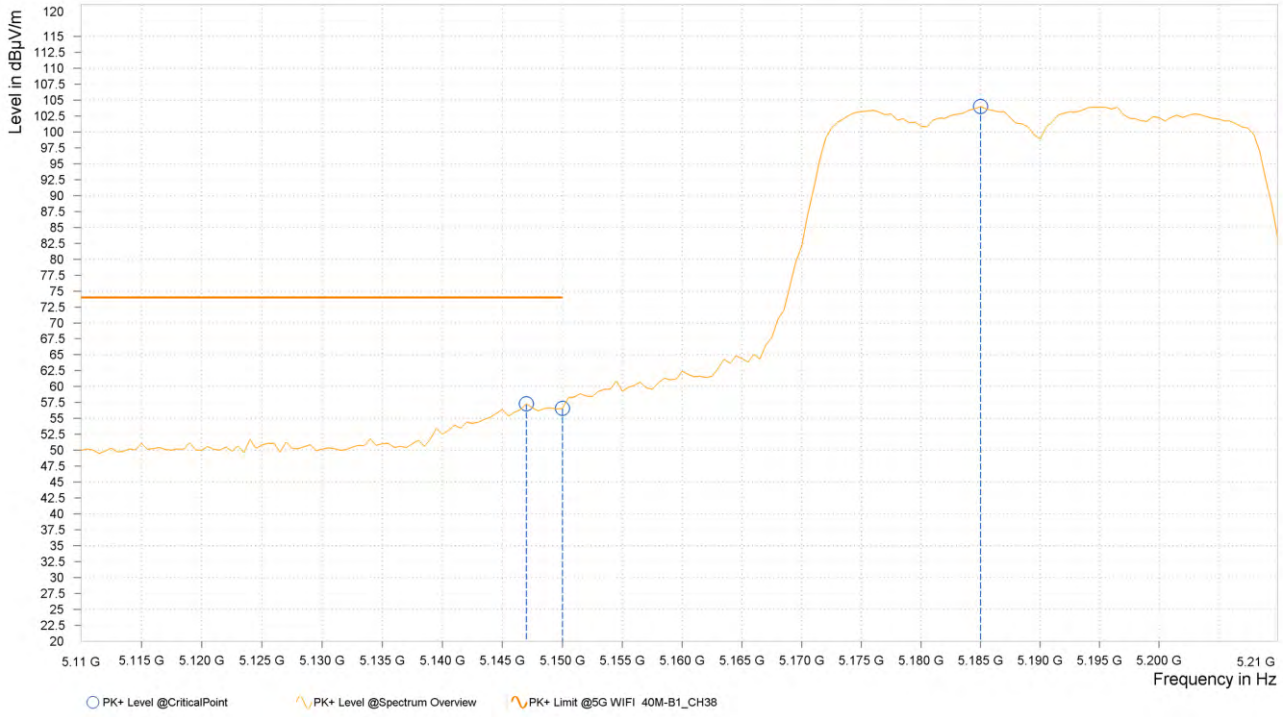
1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Limit value- Emission level.
2. 5240MHz: Fundamental frequency.

802.11n (40MHz)

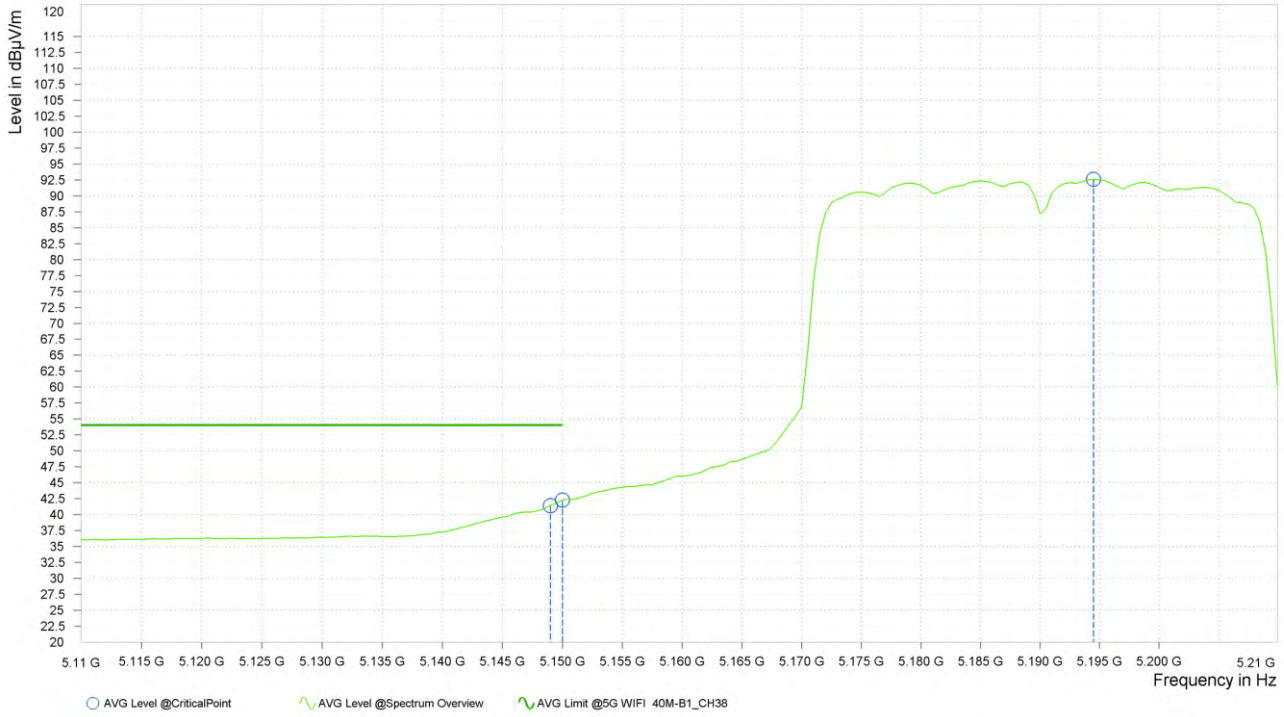
CHANNEL	TX Channel 38	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	5,147.000	57.30	74.00	16.70	10.76	H	359	2.00
1	5,150.000	56.57	74.00	17.43	10.77	H	355.8	2.00
1	5,185.000	103.98			10.88	H	111.7	1.00

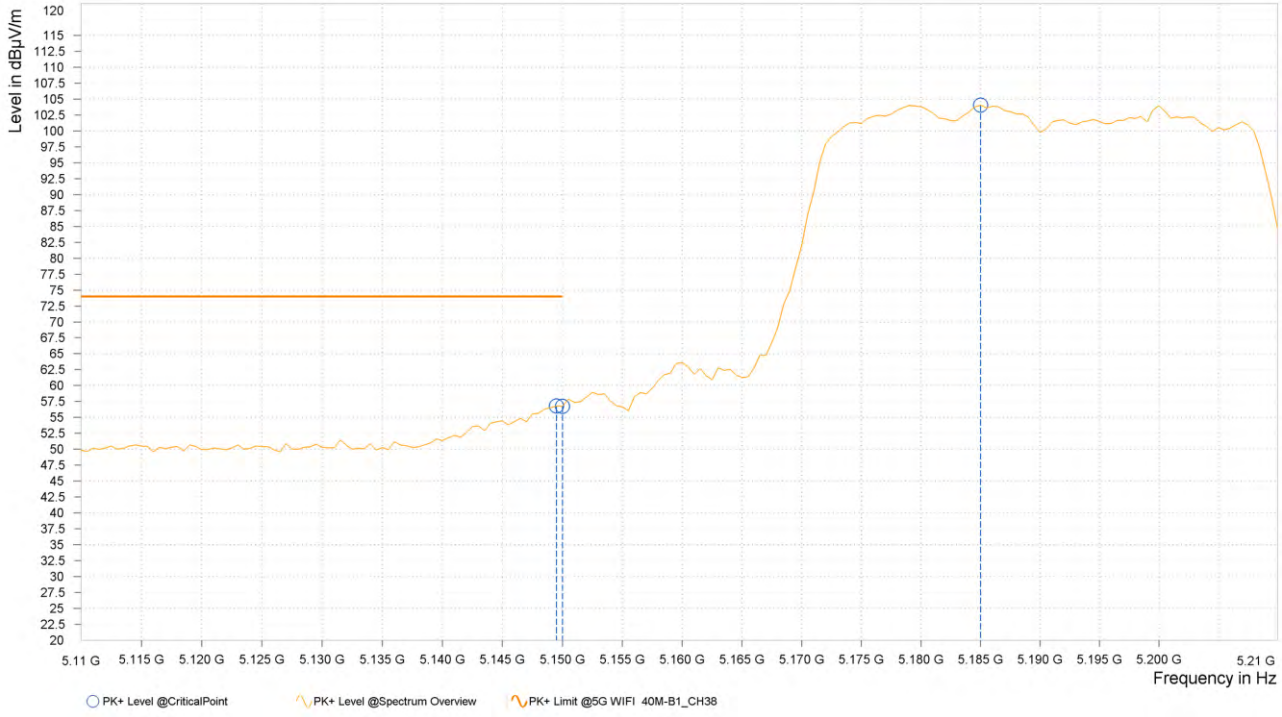


Rg	Frequency [MHz]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	5,149.000	41.42	54.00	12.58	10.76	H	310.1	1.00
1	5,150.000	42.27	54.00	11.73	10.77	H	310.1	1.00
1	5,194.500	92.59			10.91	H	189.8	2.00

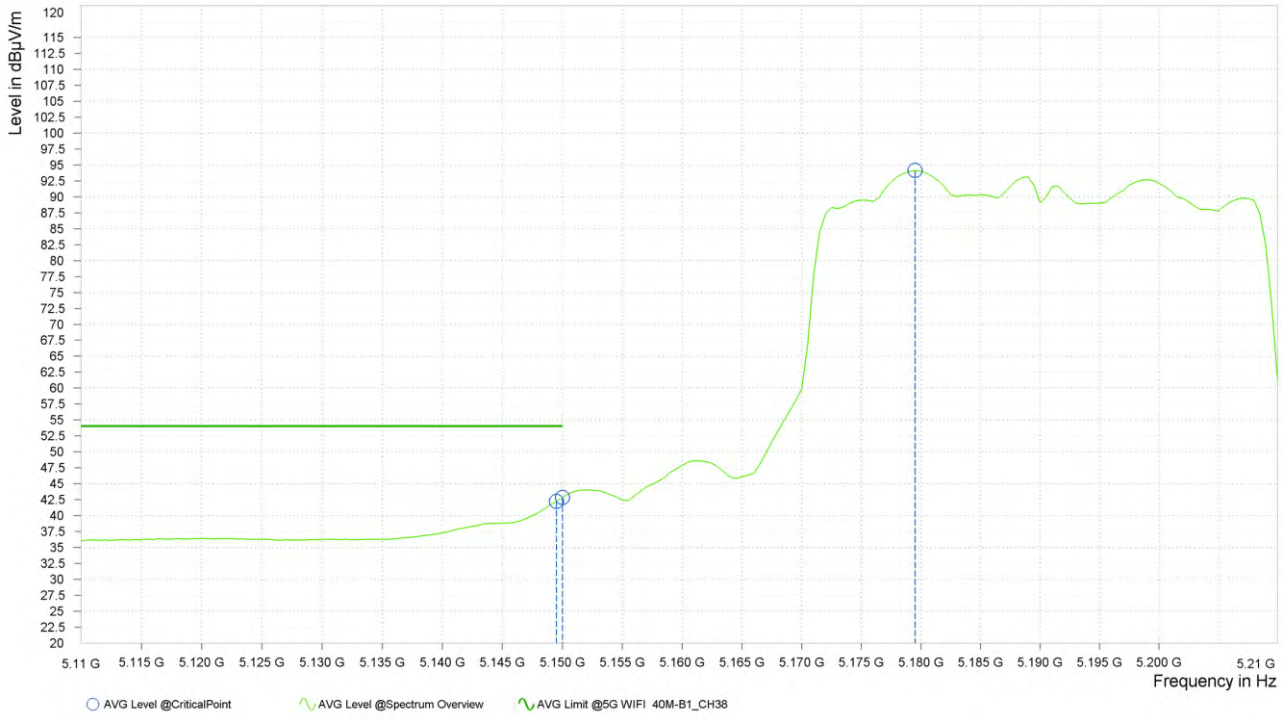


ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	5,149.500	56.78	74.00	17.22	10.77	V	355	2.00
1	5,150.000	56.77	74.00	17.23	10.77	V	355	2.00
1	5,185.000	104.05			10.88	V	268.2	1.00



Rg	Frequency [MHz]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	5,149.500	42.23	54.00	11.77	10.77	V	296.9	1.00
1	5,150.000	42.86	54.00	11.14	10.77	V	296.9	1.00
1	5,179.500	94.13			10.86	V	296.9	1.00



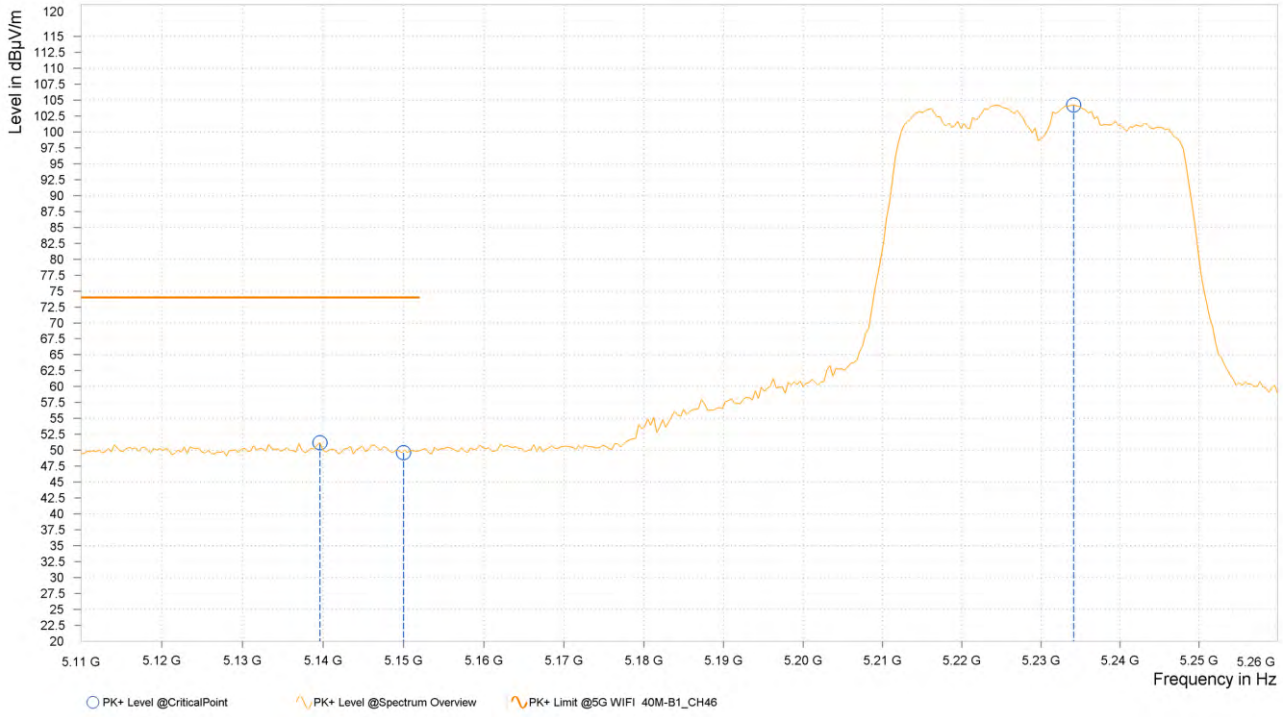
REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Limit value- Emission level.
2. 5190MHz: Fundamental frequency.

CHANNEL	TX Channel 46	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

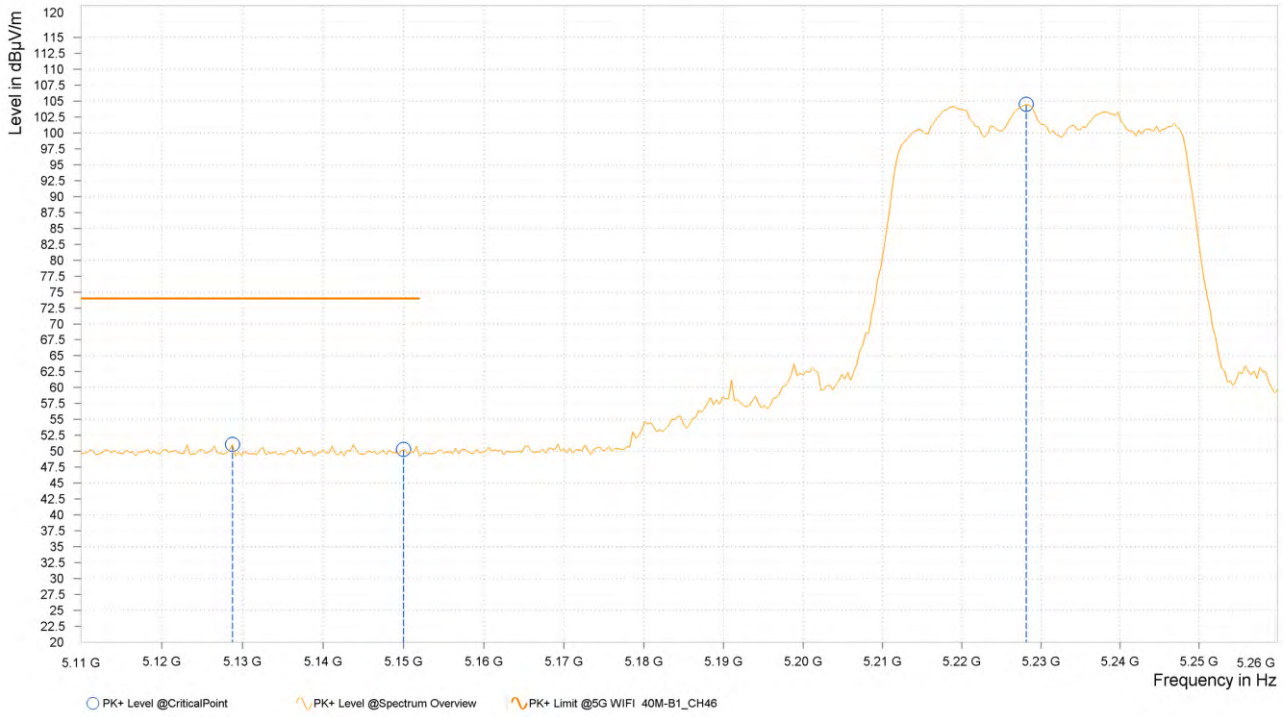
Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	5,139.625	51.18	74.00	22.82	10.75	H	112.8	1.00
2	5,150.000	49.62	74.00	24.38	10.77	H	355.1	2.00
2	5,234.130	104.23			10.91	H	187.4	2.00



Rg	Frequency [MHz]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	5,150.000	36.40	54.00	17.60	10.76	H	112.9	1.00
2	5,150.125	36.36	54.00	17.64	10.77	H	112.9	1.00
2	5,234.500	93.20			10.91	H	189.8	2.00

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	5,128.750	51.09	74.00	22.91	10.74	V	127.6	2.00
2	5,150.000	50.27	74.00	23.73	10.77	V	4.2	1.00
2	5,228.130	104.48			10.91	V	179.8	1.00



Rg	Frequency [MHz]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	5,148.250	36.21	54.00	17.79	10.76	V	128.9	2.00
2	5,150.000	36.23	54.00	17.77	10.77	V	54.2	1.00
2	5,228.500	94.14			10.91	V	293.4	1.00

REMARKS:

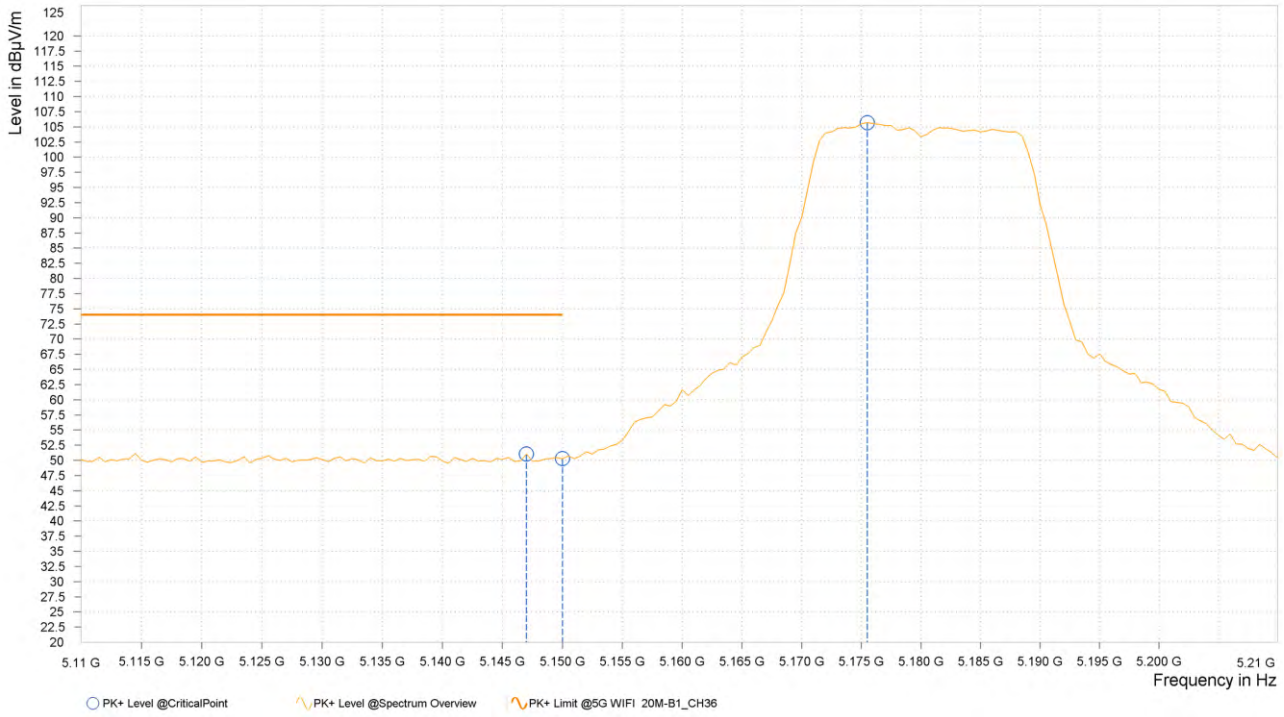
1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Limit value- Emission level.
2. 5230MHz: Fundamental frequency.

802.11ac (20MHz)

CHANNEL	TX Channel 36	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

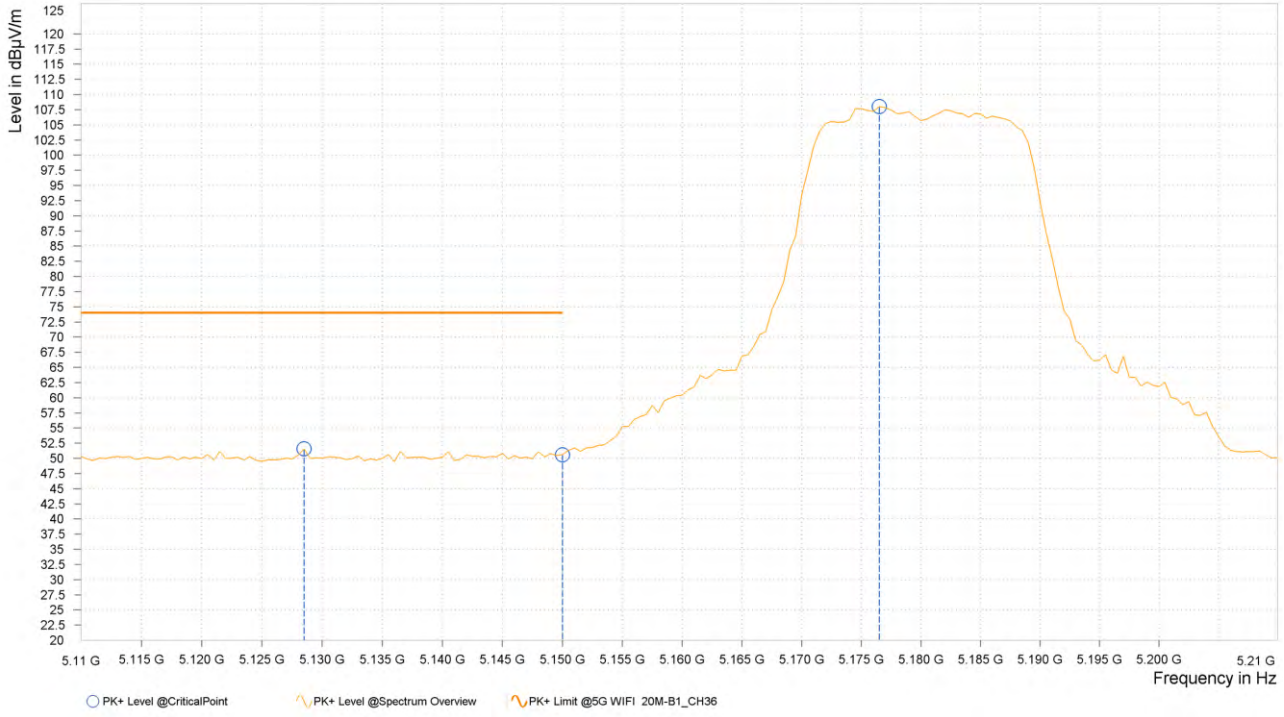
Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	5,147.000	51.04	74.00	22.96	10.76	H	4.9	1.00
1	5,150.000	50.27	74.00	23.73	10.77	H	160.6	1.00
1	5,175.500	105.70			10.85	H	105.6	1.00



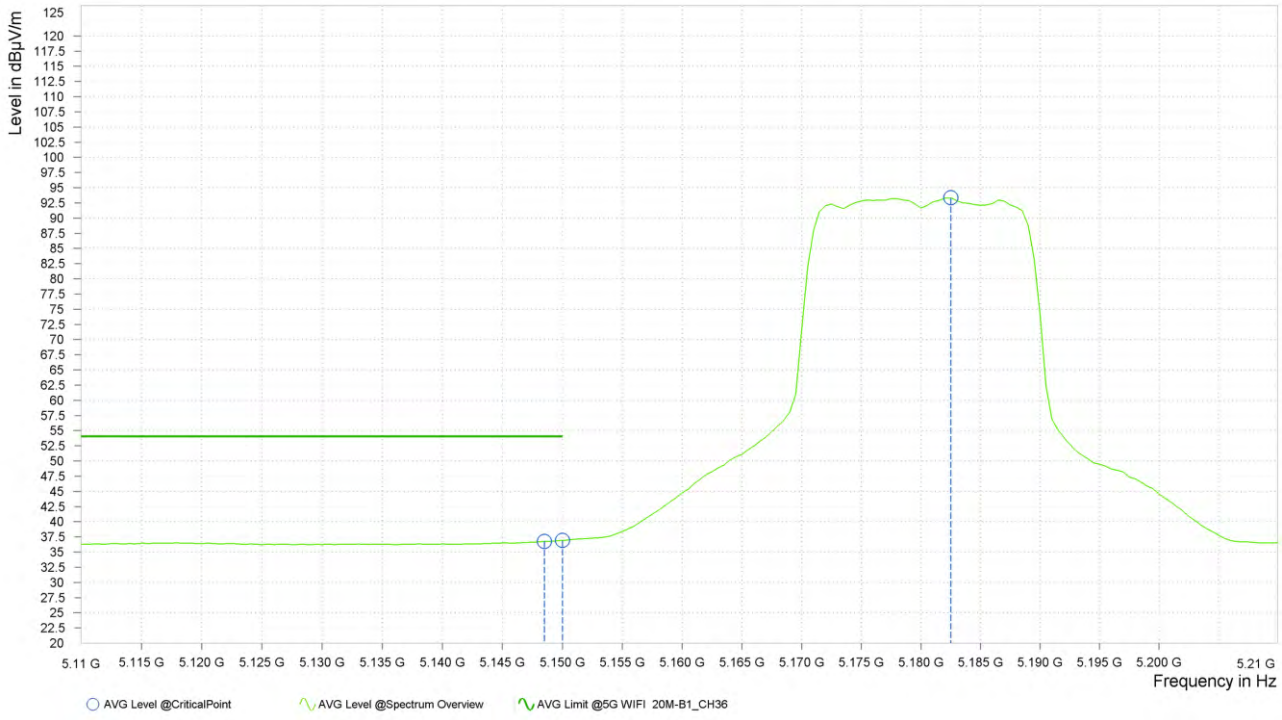
Rg	Frequency [MHz]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	5,148.000	36.47	54.00	17.53	10.76	H	128.4	1.00
1	5,150.000	36.76	54.00	17.24	10.77	H	128.4	1.00
1	5,186.500	93.08			10.89	H	199.4	2.00

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	5,128.500	51.55	74.00	22.45	10.74	V	359.1	1.00
1	5,150.000	50.60	74.00	23.40	10.77	V	308.9	1.00
1	5,176.500	108.01			10.85	V	308.9	1.00



Rg	Frequency [MHz]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	5,148.500	36.75	54.00	17.25	10.76	V	325.6	1.00
1	5,150.000	36.92	54.00	17.08	10.77	V	325.6	1.00
1	5,182.500	93.34			10.87	V	325.6	1.00



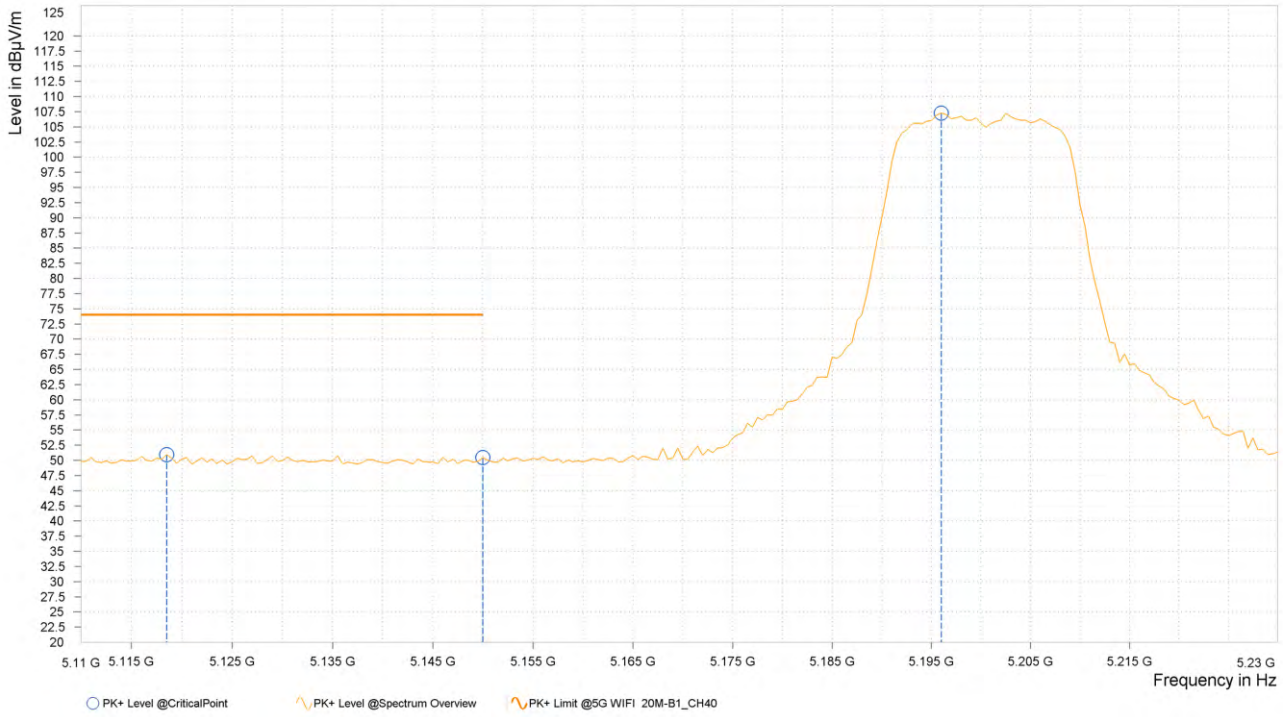
REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Limit value- Emission level.
2. 5180MHz: Fundamental frequency.

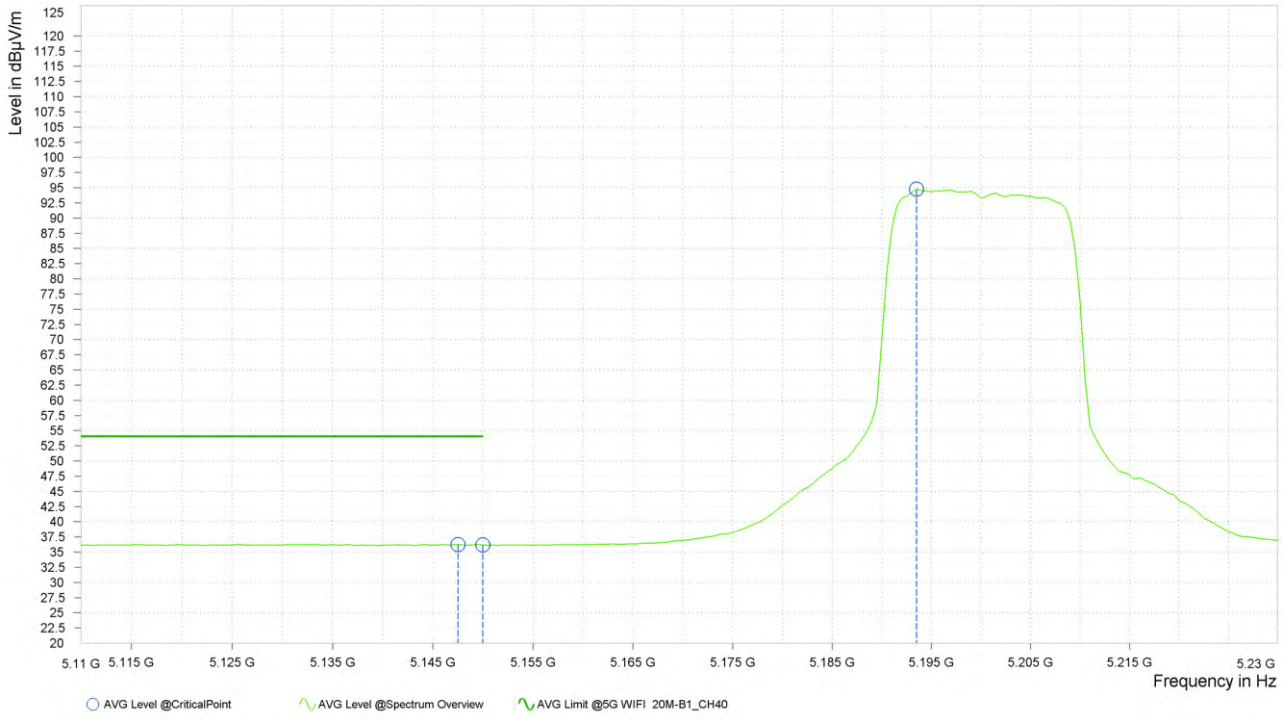
CHANNEL	TX Channel 40	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	5,118.500	50.95	74.00	23.05	10.73	H	2.6	2.00
2	5,150.000	50.47	74.00	23.53	10.77	H	328.1	1.00
2	5,196.000	107.28			10.92	H	105.8	1.00

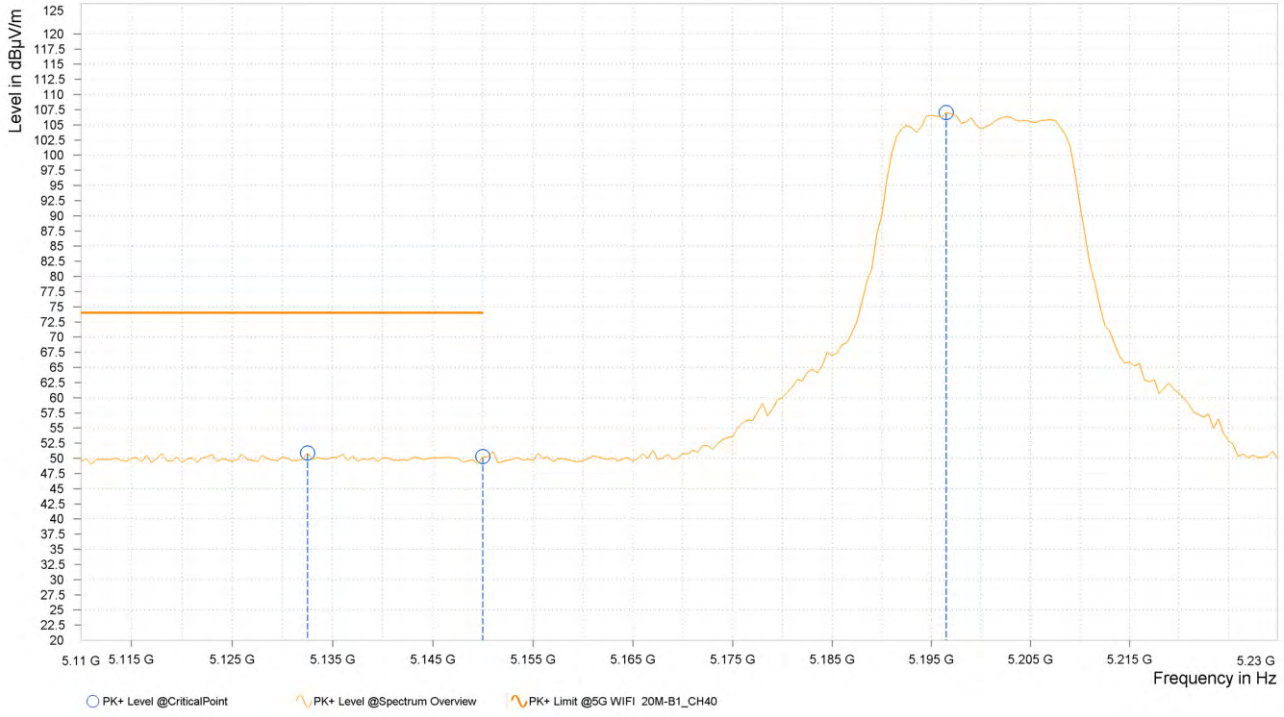


Rg	Frequency [MHz]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	5,147.500	36.21	54.00	17.79	10.76	H	108	1.00
2	5,150.000	36.16	54.00	17.84	10.77	H	108	1.00
2	5,193.500	94.75			10.91	H	108	1.00



ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	5,132.500	50.85	74.00	23.15	10.74	V	1	1.00
2	5,150.000	50.28	74.00	23.72	10.77	V	355	1.00
2	5,196.500	107.02			10.92	V	307.7	1.00



Rg	Frequency [MHz]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	5,147.500	36.25	54.00	17.75	10.76	V	328	1.00
2	5,150.000	36.17	54.00	17.83	10.77	V	273	1.00
2	5,198.000	93.30			10.92	V	144.3	2.00

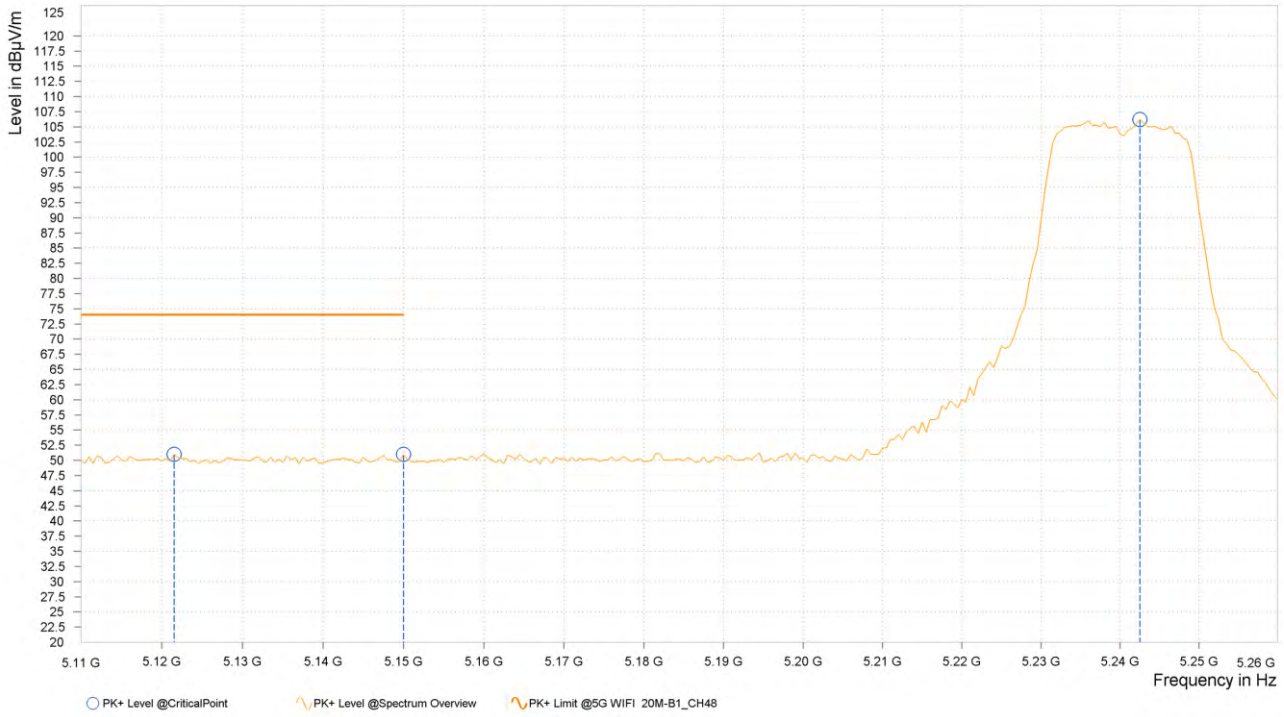
REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Limit value- Emission level.
2. 5200MHz: Fundamental frequency.

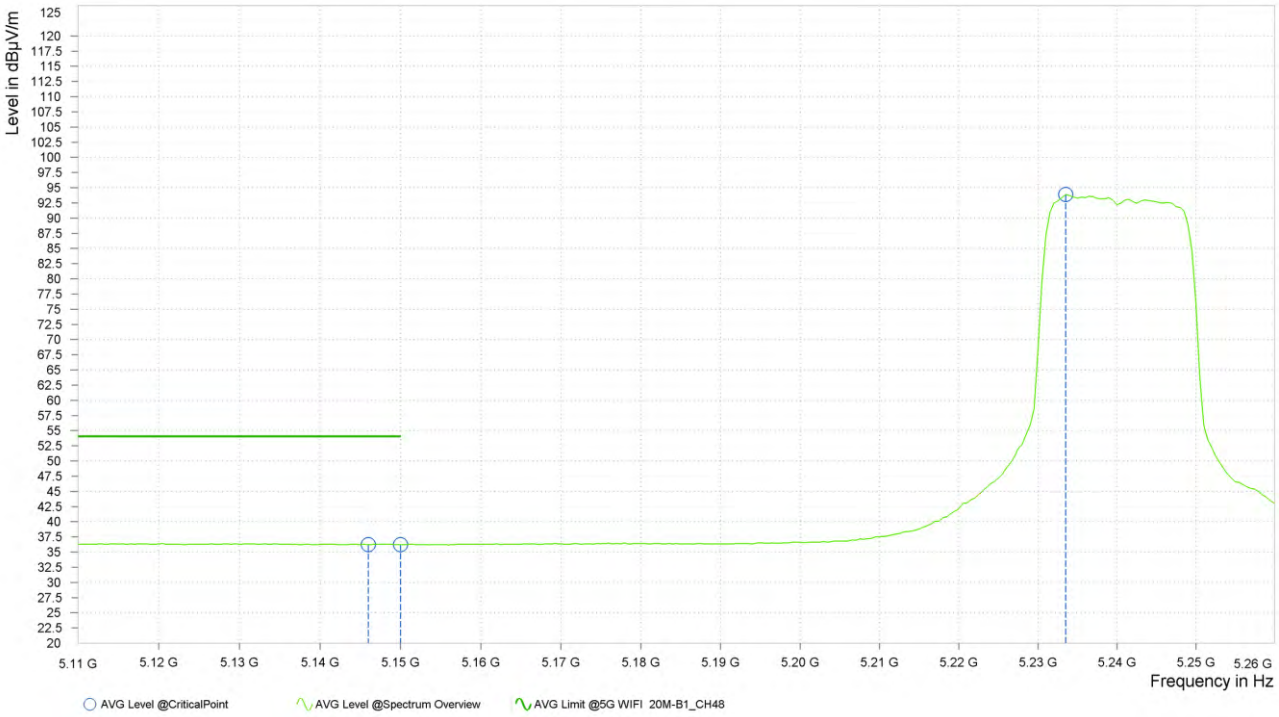
CHANNEL	TX Channel 48	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
3	5,121.500	51.00	74.00	23.00	10.73	H	2.2	2.00
3	5,150.000	50.97	74.00	23.03	10.77	H	1	1.00
3	5,242.500	106.21			10.90	H	105.8	1.00

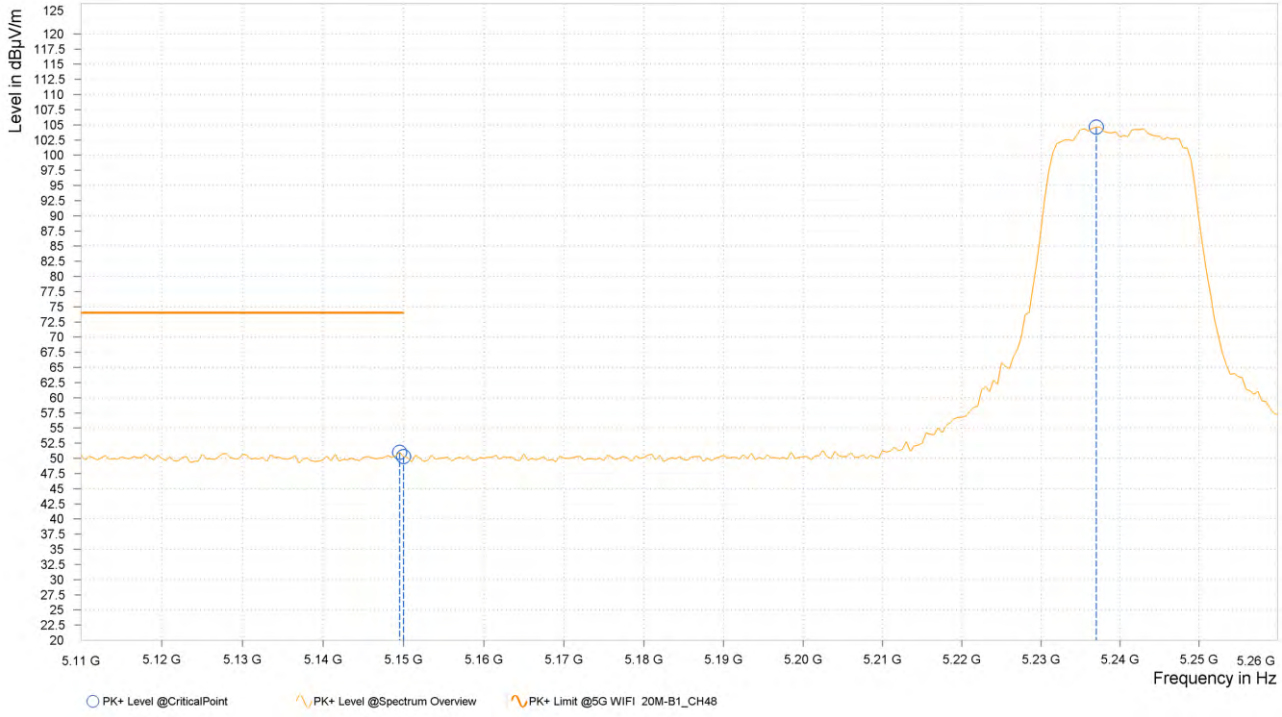


Rg	Frequency [MHz]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
3	5,146.000	36.22	54.00	17.78	10.76	H	106.9	1.00
3	5,150.000	36.23	54.00	17.77	10.77	H	106.9	1.00
3	5,233.500	93.88			10.91	H	106.9	1.00

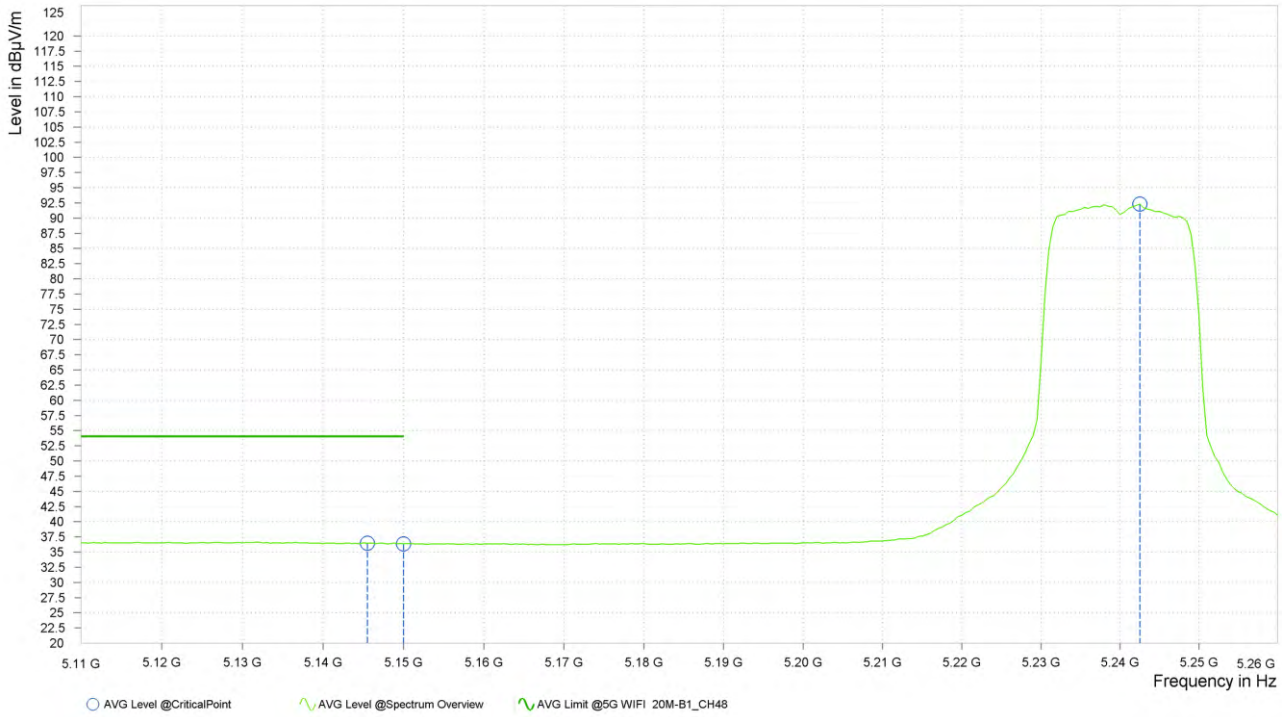


ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
3	5,149.500	51.00	74.00	23.00	10.77	V	308	2.00
3	5,150.000	50.31	74.00	23.69	10.77	V	140.7	2.00
3	5,237.000	104.63			10.91	V	140.7	2.00



Rg	Frequency [MHz]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
3	5,145.500	36.47	54.00	17.53	10.76	V	355	2.00
3	5,150.000	36.37	54.00	17.63	10.77	V	330.4	1.00
3	5,242.500	92.31			10.90	V	143.1	2.00



REMARKS:

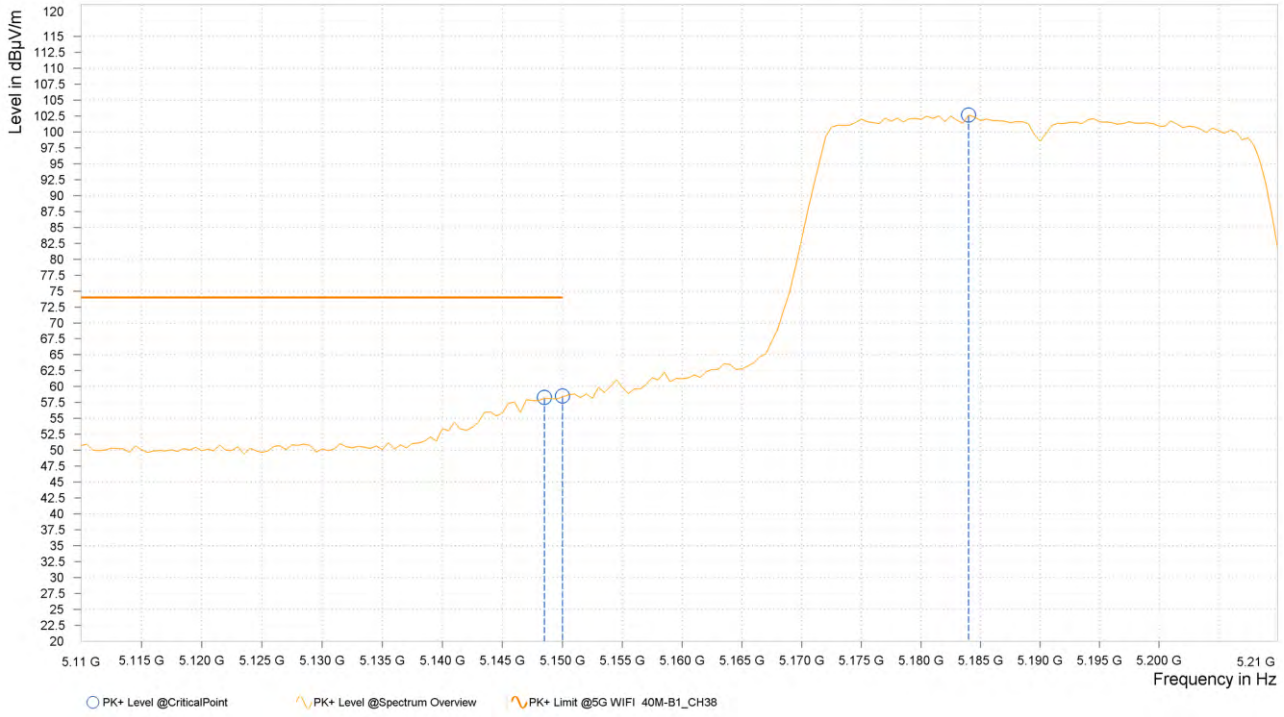
1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Limit value- Emission level.
2. 5240MHz: Fundamental frequency.

802.11ac (40MHz)

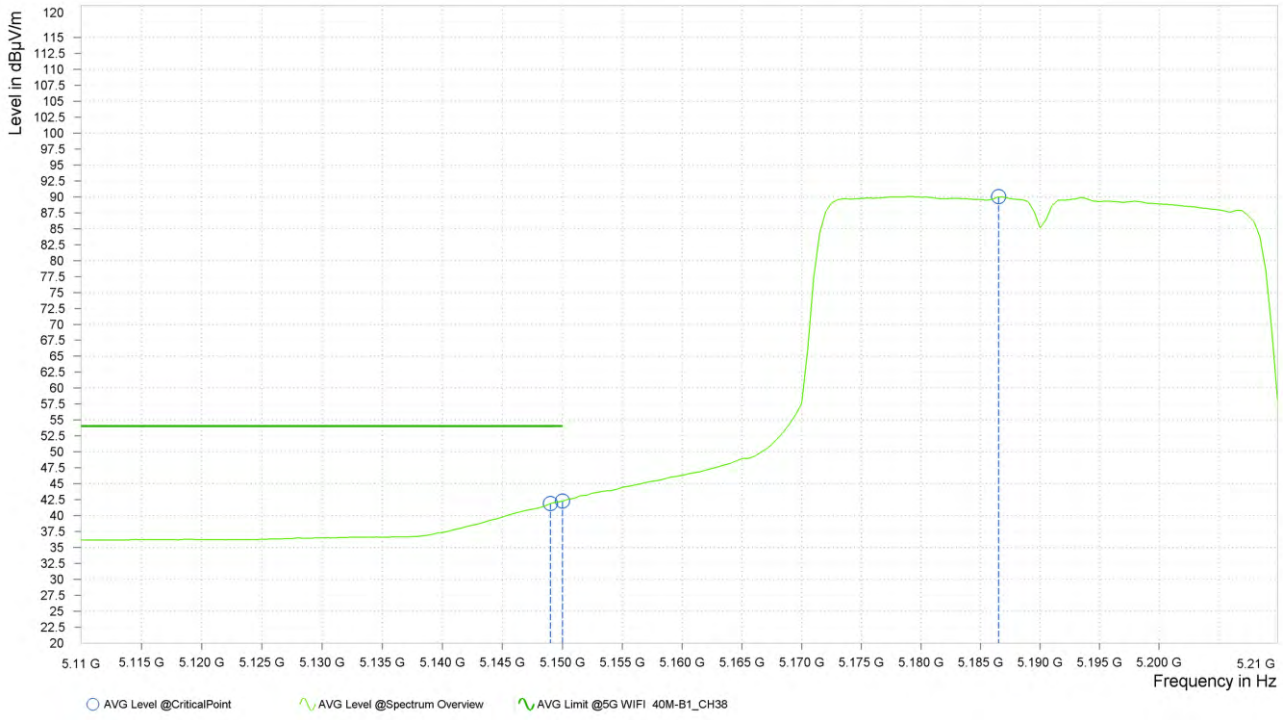
CHANNEL	TX Channel 38	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	5,148.500	58.28	74.00	15.72	10.76	H	0.9	2.00
1	5,150.000	58.50	74.00	15.50	10.77	H	0.9	2.00
1	5,184.000	102.65			10.88	H	6.2	2.00

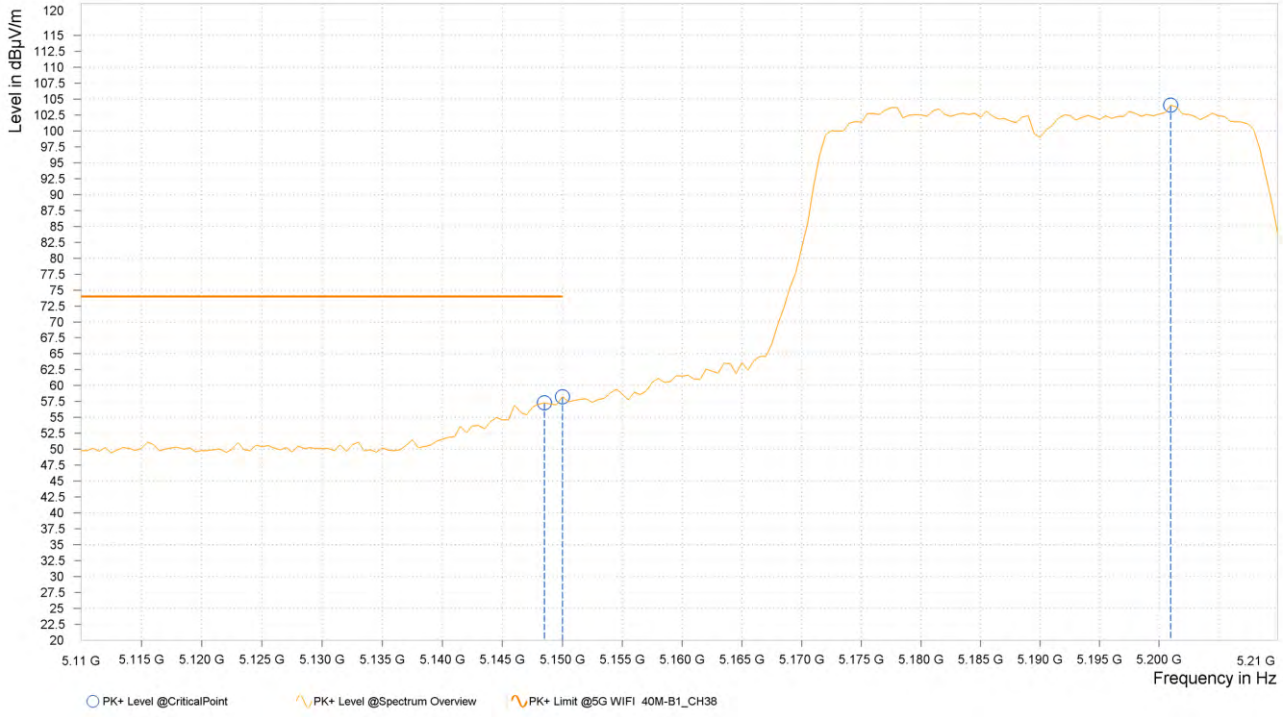


Rg	Frequency [MHz]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	5,149.000	41.91	54.00	12.09	10.76	H	5.4	2.00
1	5,150.000	42.26	54.00	11.74	10.77	H	5.4	2.00
1	5,186.500	90.01			10.89	H	302.9	1.00



ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	5,148.500	57.28	74.00	16.72	10.76	V	305.3	1.00
1	5,150.000	58.27	74.00	15.73	10.77	V	305.3	1.00
1	5,201.000	104.05			10.93	V	118	2.00



Rg	Frequency [MHz]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	5,149.500	41.42	54.00	12.58	10.77	V	316.1	1.00
1	5,150.000	41.82	54.00	12.18	10.77	V	316.1	1.00
1	5,193.500	92.67			10.91	V	115.7	2.00

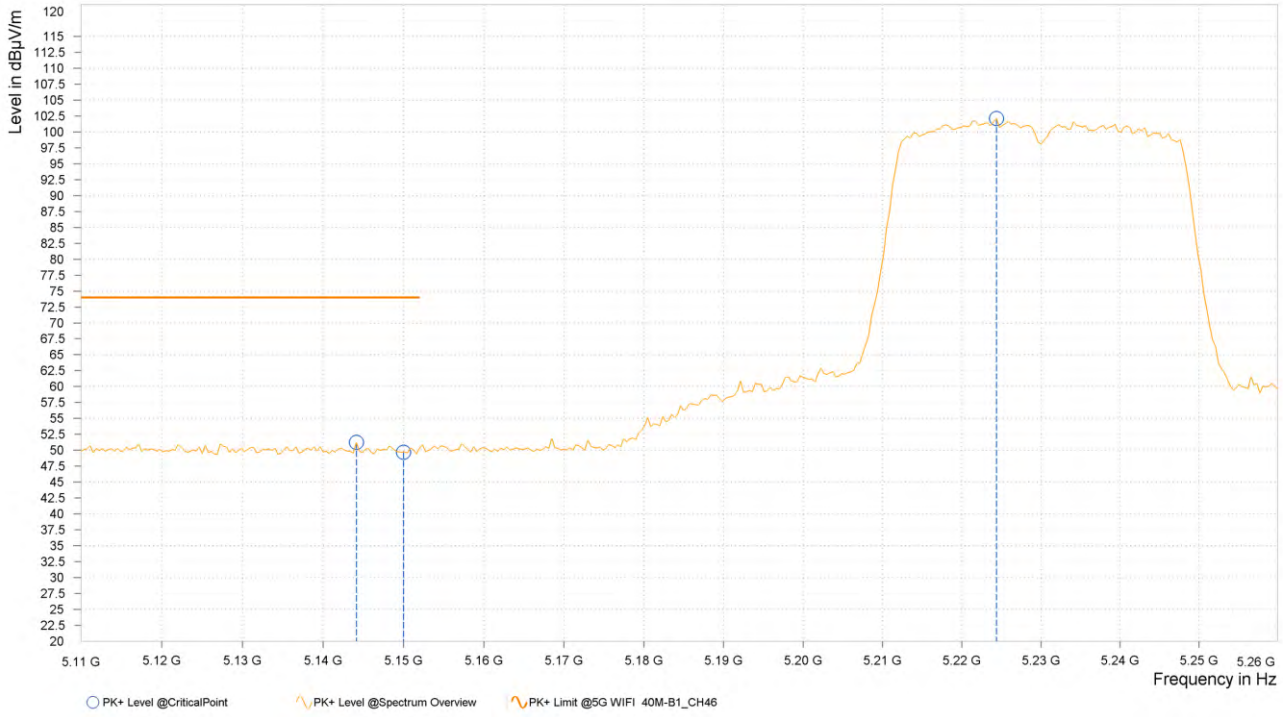
REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Limit value- Emission level.
2. 5190MHz: Fundamental frequency.

CHANNEL	TX Channel 46	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

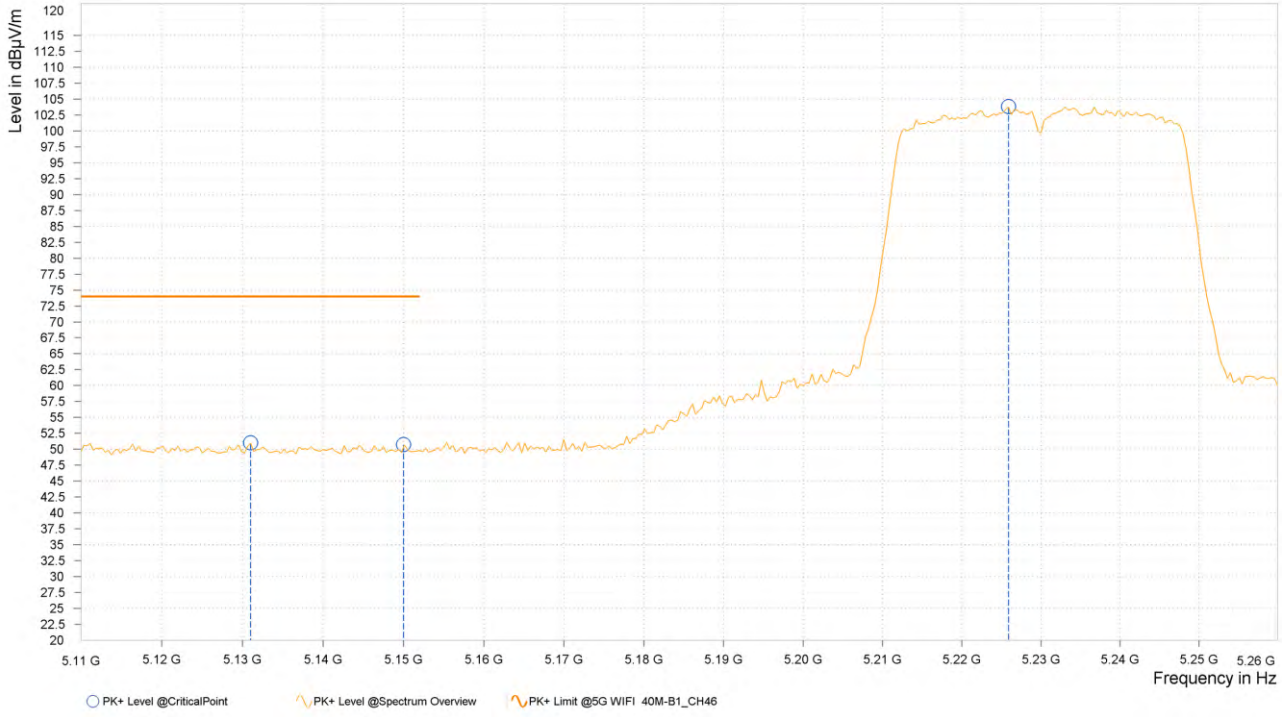
Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	5,144.125	51.24	74.00	22.76	10.76	H	121.3	1.00
2	5,150.000	49.69	74.00	24.31	10.77	H	184.6	1.00
2	5,224.380	102.11			10.92	H	1	1.00



Rg	Frequency [MHz]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	5,145.625	36.61	54.00	17.39	10.76	H	121.2	1.00
2	5,150.000	36.42	54.00	17.58	10.77	H	176.6	2.00
2	5,226.625	89.59			10.91	H	308.9	1.00

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	5,131.000	51.00	74.00	23.01	10.74	V	355.1	2.00
2	5,150.000	50.73	74.00	23.27	10.77	V	307.7	1.00
2	5,225.880	103.81			10.91	V	113.2	2.00



Rg	Frequency [MHz]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	5,146.750	36.56	54.00	17.44	10.76	V	307.7	1.00
2	5,150.000	36.48	54.00	17.52	10.77	V	307.7	1.00
2	5,233.375	92.68			10.91	V	112	2.00

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Limit value- Emission level.
2. 5230MHz: Fundamental frequency.

802.11ac (80MHz)

CHANNEL	TX Channel 42	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	5,141.875	59.63	74.00	14.37	10.76	H	359.2	1.00
1	5,150.000	57.86	74.00	16.14	10.77	H	359.2	1.00
1	5,198.400	98.83			10.93	H	33.2	2.00