Prüfbericht - Produkte
Test Report - Products

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Prüfbericht-Nr.: *Test Report No.:*	**JP211UTZ 001**	**Auftrags-Nr.:** *Order No.:*	**150246456**	**Seite 1 von 342** *Page 1 of 342*
Kunden-Referenz-Nr.: *Client Reference No.:*	N/A	**Auftragsdatum:** *Order Date:*	2021-08-31	
Auftraggeber: *Client:*	Panasonic Corporation 4261 Ikonobe-cho, Tsuzuki-ku, Yokohama-shi, Kanagawa-ken 224-8520, Japan			
Prüfgegenstand: *Test Item:*	Car Navigation			
Bezeichnung / Typ-Nr.: *Identification / Type No.:*	AT2201	**Serien-Nr.:** *Serial No.:*	No. 002	
Auftrags-Inhalt: *Order Content:*	Radio Testing			
Prüfgrundlage: *Test Specification:*	**FCC 47 CFR Part 15, Subpart E** **RSS-Gen (Issue 5): 2018+A1:2019** **RSS-247 (Issue 2): 2017** ANSI C63.10-2013 KDB Publication No. 789033 D02 (v02r01): Guidelines for compliance testing of Unlicensed National Information Infrastructure (U-NII) devices Part 15, Subpart E			
Wareneingangsdatum: *Date of Receipt:*	2021-09-06			
Prüfmuster-Nr.: *Test Sample No.:*	A003125761, A003125757			
Prüfzeitraum: *Testing Period:*	2021-09-16 - 2022-01-28			
Ort der Prüfung: *Place of Testing:*	Yokohama EMC Laboratory			
Prüflaboratorium: *Testing Laboratory:*	TÜV Rheinland Japan Ltd.			
Prüfergebnis*: *Test Result*:*	Pass			

Überprüft von: *Reviewed by:*		**Genehmigt von:** *Authorized by:*	
Datum: 2022-02-18 *Date:*	Daisuke Watanuki	**Datum:** 2022-02-18 *Date:*	Pin Zhang
***Stellung** / Position:*	Inspector	***Stellung** / Position:*	Reviewer

Sonstiges / *Other:*

Zustand des Prüfgegenstandes bei Anlieferung: *Condition of the Test Item at Delivery:*	Prüfmuster vollständig und unbeschädigt *Test item complete and undamaged*

* Legende:	P(ass) = entspricht o.g. Prüfgrundlage(n)	F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	N/A = nicht anwendbar	N/T = nicht getestet
** Legend:*	*P(ass) = passed a.m. test specification(s)*	*F(ail) = failed a.m. test specification(s)*	*N/A = not applicable*	*N/T = not tested*

REVISIONS

Report No.	Issue date	Changes / Remarks
JP211UTZ 001	2022-02-18	Original document for WLAN 5GHz

Contents

1. General Remarks

1.1 Test Specifications

Table 1: Test Summary

Test	Specifications	Result
Radio: FCC 47 CFR Part 15, Subpart E RSS-Gen (Issue 5): 2018+A1:2019 RSS-247 (Issue 2): 2017 ANSI C63.10-2013 KDB Publication No. 789033 D02 (v02r01): Guidelines for compliance testing of Unlicensed National Information Infrastructure (U-NII) devices Part 15, Subpart E		
Maximum Output Power	FCC 15.407 (a)(1)-(3) RSS-247 Section 6.2	Pass
26dB Bandwidth	FCC 15.407(a)(1)(iv), (2)	N/A
6dB Bandwidth	FCC 15.407(e) RSS-247 Section 6.2.4.1	Pass
99% Bandwidth	For reference	Performed
Maximum Power Spectral Density	FCC 15.407 (a)(1)-(3) RSS-247 Section 6.2	Pass
Duty Cycle	For reference	Performed
Radiated Spurious Emissions of Transmitter and Band Edge	FCC 15.205, FCC 15.209, FCC 15.407(b) RSS-Gen Section 8.10, 8.9, RSS-247 Section 6.2	Pass
Conducted Emission on AC Power Ports	FCC 15.207 RSS-Gen Section 8.8 Not applicable since the EUT is not the device that is designed to be connected to the public utility (AC) power line.	N/A

1.2 Test Report Purpose

The purpose of this test report is to show compliance of the EUT (Equipment Under Test) with the requirements of the FCC rules and ISED standards listed in section 1.1.

This test report covers WLAN (5GHz) part of the product, who has multiple wireless connectivity: Bluetooth, WLAN (2.4GHz and 5GHz).

1.3 Complementary Materials

There is no attachment to this test report.

2. Test Sites

2.1 Test Facilities

TÜV Rheinland Japan Ltd. – Global Technology Assessment Center
4-25-2 Kita-Yamata, Tsuzuki-ku, Yokohama 224-0021, Japan

The test facility is accredited by VLAC (member of ILAC) under number VLAC-017-1 according to ISO/IEC 17025:2017.

The test facility is recognized by the Federal Communications Commission (FCC) as a Conformity Assessment Body under designation number JP0017 and test firm registration number 386498.

The test site is registered by Innovation, Science and Economic Development Canada (ISED) under OATS filing number 3466B-1.

2.2 List of Test and Measurement Instruments

Table 2: List of Test and Measurement Equipment

Kind of Equipment	Manufacturer	Model Name	Serial Number	Equip. ID	Cal. Interval	Cal. Date	Next Cal.
For Antenna Port Conducted Emission							
EMI Receiver	Rohde & Schwarz	ESU 40	100029	RF-0021	1 year	2021-08-25	2022-08-25
EMI Receiver	Rohde & Schwarz	ESW 26	101316	RF-0812	1 year	2021-05-21	2022-05-21
EMI Receiver	Rohde & Schwarz	ESW 44	101751	RF-0809	1 year	2021-09-27	2022-09-27
10dB Attenuator	Huber + Suhner	6610_SMA -50- 1/199_NE	-	RF-0762	1 year	2021-03-17	2022-03-17
For Radiated Emission (RE)							
Radiated Emission Measurement Soft-ware (above 30MHz)	Toyo Corporation	EP7/RE	VER. 8.0.90	RF-0026	1 year	2021-02-16	2022-02-16
EMI Receiver	Rohde & Schwarz	ESU 8	100025	RF-0020	1 year	2021-03-12	2022-03-12
EMI Receiver	Rohde & Schwarz	ESU 40	100029	RF-0021	1 year	2021-08-25	2022-08-25
RF Selector (10m Chamber)	Toyo Corporation	NS4900	0703-182	RF-0029	1 year	2021-02-16	2022-02-16
Loop Antenna with Amplifier, 9kHz-30MHz	Rohde & Schwarz	HFH2-Z2	100139	RF-0048	1 year	2021-04-27	2022-04-27

Kind of Equipment	Manufacturer	Model Name	Serial Number	Equip. ID	Cal. Interval	Cal. Date	Next Cal.
Trilog Antenna No. 2, 30-1000MHz	Schwarzbeck	VULB 9168	9168-475	RF-0462	1 year	2021-05-18	2022-05-18
5dB Attenuator	Pasternack	PE7047-5	-	RF-0731	1 year	2021-05-18	2022-05-18
Low Noise Preamplifier, 9kHz-1GHz	TSJ	MLA-10K01-B01-35	1370750	RF-0253	1 year	2021-01-06	2022-01-06
Low Pass Filter, DC-1GHz	R&K	LP1000CH3	12104001	RF-0515	1 year	2021-01-06	2022-01-06
Horn Antenna, 1-8GHz	Schwarzbeck	BBHA 9120 D	1059	RF-0553	1 year	2021-04-03	2022-04-03
Microwave Preamplifier, 1-8GHz	Toyo Corporation	TPA0108-40	0634	RF-0052	1 year	2021-01-06	2022-01-06
Band Reject Filter, 1-8GHz	Nitsuki	NF-49BT	027	RF-0131	1 year	2021-01-06	2022-01-06
Horn Antenna with Preamplifier, 8-18GHz (RX)	Toyo Corporation	HAP06-18W	00000025	RF-0065	1 year	2021-04-03	2022-04-03
High Pass Filter, 8-18GHz	Micro-Tronics	HPM50107	006	RF-0334	1 year	2021-04-03	2022-04-03
Horn Antenna with Preamplifier, 18-26.5GHz (RX)	Toyo Corporation	HAP18-26N	00000010	RF-0070	1 year	2021-04-03	2022-04-03
Horn Antenna with Preamplifier, 26.5 -40GHz (RX)	Toyo Corporation	HAP26-40N	00000007	RF-0069	1 year	2021-04-03	2022-04-03
20dB Attenuator	Weinschel Associates	WA54-20-12	-	RF-0560	1 year	2021-07-15	2022-07-15
Band Reject filter	MICRO-TRONICS	BRM50702	G488	RF-0933	1 year	2021-09-14	2022-09-14
Band Reject filter	MICRO-TRONICS	BRC50703	027	RF-0408	1 year	2021-07-16	2022-07-16
Constant Voltage Constant Frequency Stabilizers and Power Accessories							
CVCF (10m Chamber)	NF Corporation	ES2000U	9067307	RF-0212	1 year	2021-03-12	2022-03-12
CVCF Booster (10m Chamber)	NF Corporation	ES2000B	9074408	RF-0213	1 year	2021-03-12	2022-03-12
DC Power Supply	Kikusui	PWR800L	NA003235	PV-0039	N/A	N/A	N/A
True RMS Multimeter	Fluke	87V	97680445	RF-0281	1 year	2020-12-15	2021-12-15
True RMS Multimeter	Fluke	87V	97680450	RF-0282	1 year	2021-03-23	2022-03-23
True RMS Multimeter	Fluke	87V	16110176	RF-0414	1 year	2021-06-10	2022-06-10
AC,DC Power Source	NF Corporation	EC1000SA	9364678	RF-0940	1 year	2021-09-21	2022-09-21

Conformance of the used measurement and test equipment with the requirements of ISO/IEC 17025 has been confirmed before testing.

2.3 Measurement Uncertainty

Table 3: Emission Measurement Uncertainty

Measurement Type	Frequency	Uncertainty
AC Power Line Conducted Emission	150kHz - 30MHz	±2.0dB
Antenna Port Conducted Emission	20Hz - 40GHz	±1.5dB
Radiated Emission	150kHz - 30MHz	±4.7dB
	30MHz - 1GHz	±3.8dB at 3m ±5.0dB at 10m
	> 1GHz	±4.5dB

Note:

The measurement instrumentation uncertainty (MIU) was determined according to CISPR 16-4-2 and ETSI TR 100-028. All MIU values mentioned in the above table are smaller than the uncertainty budgets specified by CISPR 16-4-2 and ETSI TR 100-028, therefore compliance for all emission measurements is deemed to occur if no measured disturbance level exceeds the disturbance limit.

3. General Product Information

3.1 Product Function and Intended Use

The **EUT** (**E**quipment **U**nder **T**est) is a car navigation to be installed in vehicles with wireless connectivity of Bluetooth, WLAN (2.4GHz and 5GHz) and GNSS.

3.2 Ratings and System Details

Radio standard:	IEEE 802.11a, IEEE 802.11n (20HT), IEEE 802.11n (40HT) IEEE 802.11ac (20HT), IEEE 802.11ac (40HT) IEEE 802.11ac (80HT)
Frequency range:	IEEE 802.11a, IEEE 802.11n (20HT), IEEE 802.11ac (20HT): 5180 - 5240MHz, 5745 - 5825MHz IEEE 802.11n (40HT), IEEE 802.11ac (40HT): 5190, 5230MHz, 5755, 5795MHz IEEE 802.11ac (80HT): 5210MHz, 5775MHz
Association:	Client Device
Antenna gain:	RF0: +2.14dBi for U-NII-1, +1.00dBi for U-NII-3 RF1: +2.43dBi for U-NII-1, +2.59dBi for U-NII-3
Antenna type:	Inverted F Type Antenna (2 antennas)
Antenna mounting type:	Internal
Modulation type:	BPSK, QPSK, 16 QAM, 64QAM, 256QAM
Signal spreading:	OFDM
Simultaneous transmission:	CDD, MIMO for WLAN 5GHz WLAN 5GHz, WLAN 2.4GHz and Bluetooth can simultaneously transmit.
FCC classification:	NII
ISED classification:	WLAN, Vehicle Device, RSS-247 Non-DFS
Emission designator:	D1D
Rated temperature:	-30 to +65°C
Rated voltage:	DC 12V
Rated input Current:	13.11A (Max.)
Protection class:	III
Test voltage:	DC 13.2V for radio testing

3.3 Noise Generating and Noise Suppressing Parts

The highest frequency generated or used by the EUT is 5825MHz as intentional radiator portion.

3.4 Submitted Documents and Information

Following documents have been submitted by the client:

Block Diagram, BOM, Label and location.

Following information provided in this test report has been submitted by the client:

- client name and address;
- EUT identification, ratings, system details, and description of product function and intended use;
- information related to noise generating and noise suppressing parts (if any).

4. Test Setup and Operation Modes

4.1 Test Methodology

The test methodology used is based on the requirements of 47 CFR Part 15, Sections 15.31, 15.33, 15.35, 15.205, 15.207, 15.209, 15.407, RSS-247 and RSS-Gen.

The test methods, which have been used, are based on ANSI C63.10 and KDB 789033 D02.

For details, see under each test item.

4.2 Operation Modes

The basic operation mode used for testing is:

T. EUT transmits a continuous modulated signal at specified channel (low, middle and high channels)

Configurations:

IEEE 802.11a SISO:	6Mbps (RF0, RF1), PN9 (*)
IEEE 802.11a CDD:	6Mbps (RF0 + RF1), PN9 (*)
IEEE 802.11n (20HT) SISO:	MCS 0 (RF0, RF1), PN9 (*)
IEEE 802.11n (20HT) CDD:	MCS 0 (RF0 + RF1), PN9 (*)
IEEE 802.11n (20HT) MIMO:	MCS 8 (RF0 + RF1), PN9 (*)
IEEE 802.11ac (20HT) SISO:	MCS 0 (RF0, RF1), PN9 (*)
IEEE 802.11ac (20HT) CDD:	MCS 0 (RF0 + RF1), PN9 (*)
IEEE 802.11ac (20HT) MIMO:	MCS 0 (RF0 + RF1), PN9 (*)
IEEE 802.11n (40HT) SISO:	MCS 0 (RF0, RF1), PN9 (*)
IEEE 802.11n (40HT) CDD:	MCS 0 (RF0 + RF1), PN9 (*)
IEEE 802.11n (40HT) MIMO:	MCS 8 (RF0 + RF1), PN9 (*)
IEEE 802.11ac (40HT) SISO:	MCS 0 (RF0, RF1), PN9 (*)
IEEE 802.11ac (40HT) CDD:	MCS 0 (RF0 + RF1), PN9 (*)
IEEE 802.11ac (40HT) MIMO:	MCS 0 (RF0 + RF1), PN9 (*)
IEEE 802.11ac (80HT) SISO:	MCS 0 (RF0, RF1), PN9 (*)
IEEE 802.11ac (80HT) CDD:	MCS 0 (RF0 + RF1), PN9 (*)
IEEE 802.11ac (80HT) MIMO:	MCS 0 (RF0 + RF1), PN9 (*) **(**)**

Power setting: +4dBm

Note: **(*)** The worst condition was determined based on the test result of Maximum Output Power.
(**) Overall highest e.i.r.p. was observed at the 5.15-5.25 GHz band.

4.3 Physical Configuration for Testing

The test system was configured in a typical fashion (as a customer would normally use it).

The justification and manipulation of cables and equipment in order to simulate a worst-case behavior of the test setup has been carried out as prescribed in ANSI C63.10.

Figure 1: Block Diagram

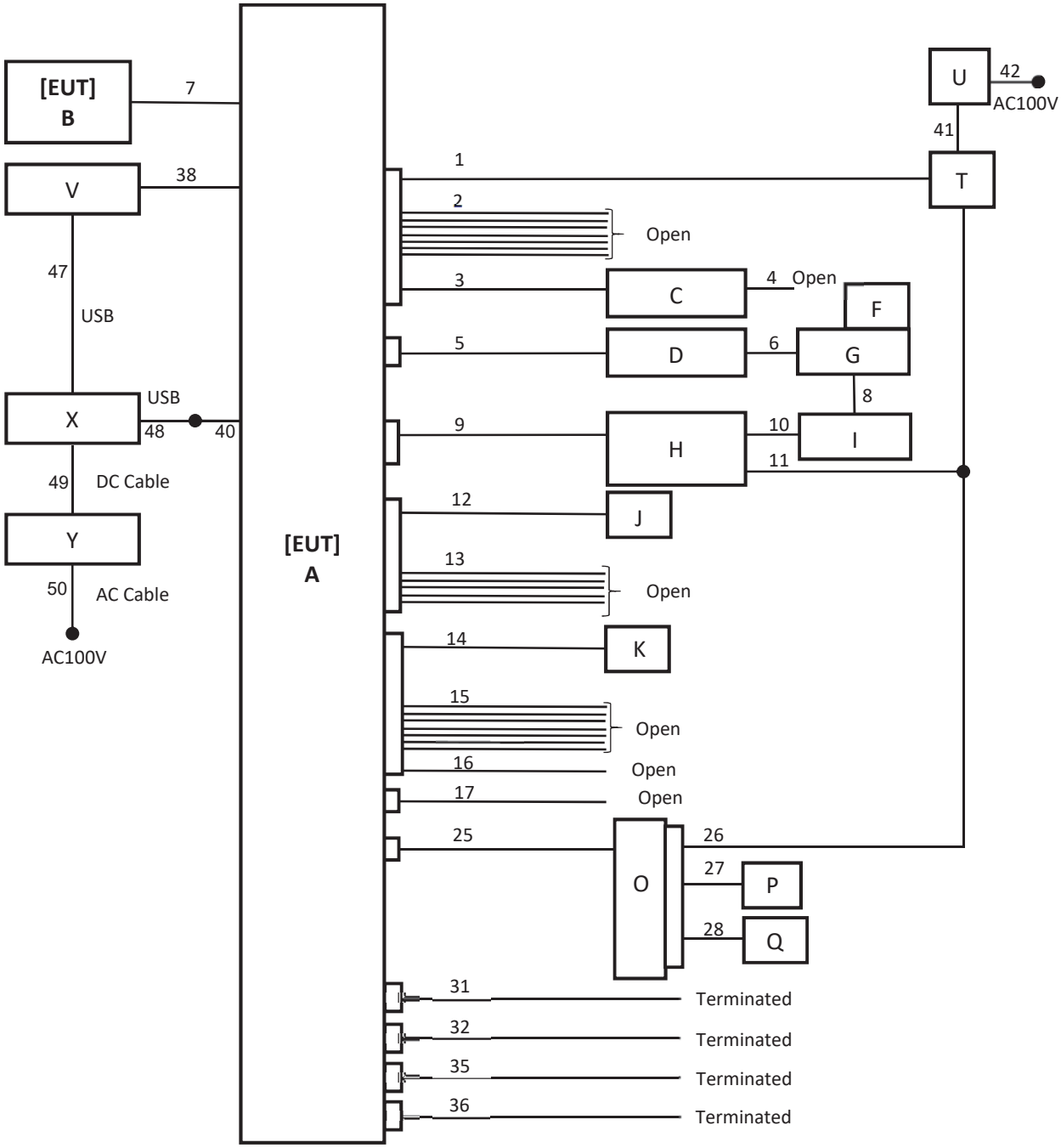


Table 4: The System consists of the Following Units

No.	Item	Model No.	Serial Number	Manufacturer	Remark
A	Car Navigation	AT2201	No. 002	Panasonic Corporation	EUT
B	GNSS Antenna	3498778-10	06D30023	Panasonic Corporation	EUT
C	Steering Switch	-/-	1143	Panasonic Corporation	-/-
D	IF Box	DEP32-10078	035	Panasonic Corporation	-/-
F	USB memory	RUF3-KS	-/-	Buffalo Inc.	-/-
G	USB Hub	U3H-A422BX	0600235	ELECOM	-/-
H	JIG Board	GVIF2HDJIG	15	Panasonic Corporation	-/-
I	Separate Display	ON-LAP 11021	-/-	TEKWIND	-/-
J	Mic	GP-SDA3510A	0DC062856	Panasonic Corporation	-/-
K	Mic	GP-SDA3510A	0DC062519	Panasonic Corporation	-/-
O	MOST AMP	CL-DL47X2AJ Rev.A	513263	Panasonic Corporation	-/-
P	Speaker	TS-X180	-/-	Pioneer	-/-
Q	Dummy load	-/-	Unspecified	Panasonic Corporation	-/-
T	Terminal Block	-/-	-/-	-/-	-/-
U *1)	Power Supply (DC) CVCF+Booster	ES2000U, ES2000B	9067307, 9074408	NF Corporation, NF Corporation	-/-
U *2)	Power Supply (DC)	PWR800L	NA003235	Kikusui	-/-
V	Jig board	WR12-3224	-/-	WESTEK	-/-

No.	Item	Model No.	Serial Number	Manufacturer	Remark
X	Laptop PC	20U2S5M60Q	PF2YP1PV	Lenovo	-/-
Y	AC adapter for Laptop PC	ADLX65YDC2 D	8SSA10R16918D1S G 16B0 1H7	Lenovo	-/-

Note:

*1) Used for Radiated Emission test
*2) Used for Conducted test

For more details, refer to section: Photographs of the Test Set-Up.

Table 5: Interfaces present on the EUT

No.	Name	Length(m)	Shield		Remarks
			Cable	Connector	
1	DC cable	2.0m	Unshielded	Unshielded	-
2	Signal cable	2.0m	Unshielded	Unshielded	-
3	Signal cable	2.0+0.1m	Unshielded	Unshielded	-
4	IF Box Power	0.3m	Unshielded	Unshielded	-
5	Signal cable	1.0m	Shielded	Shielded	-
6	USB cable	0.07m	Shielded	Shielded	-
7	GPS cable	3.7m	Shielded	Shielded	-
8	USB cable	1.2m	Shielded	Shielded	-
9	GBIF (Separate Display)	1.9m	Shielded	Shielded	-
10	HDMI cable	1.2m	Shielded	Shielded	-
11	DC cable	2.0+0.5m	Unshielded	Unshielded	-
12	Mic	2.0m	Unshielded	Unshielded	-
13	Signal cable	2.0m	Unshielded	Unshielded	-
14	Mic	2.0m	Unshielded	Unshielded	-
15	Signal cable	2.0m	Unshielded	Unshielded	-
16	Signal cable	2.0m	Unshielded	Unshielded	-
17	RSE	2.0m	Shielded	Shielded	-
25	MOST AMP	2.5m	Unshielded	Unshielded	-
26	DC cable	1.0m	Unshielded	Unshielded	-
27	Speaker cable	1.0+4.8m	Unshielded	Unshielded	-
28	Speaker cable	1.0m	Unshielded	Unshielded	-
31	A2B	3.0m	Unshielded	Unshielded	-
32	DCM	3.0m	Unshielded	Unshielded	-
35	FM	2.0m	Shielded	Shielded	-
36	FM	2.0m	Shielded	Shielded	-
38	Signal cable	0.1m	Unshielded	Unshielded	*3)
40	UART	0.3m	Unshielded	Unshielded	*3)
47	USB	1.1m	Shielded	Shielded	*3)
48	UART-USB	1.8m	Shielded	Shielded	*3)

No.	Name	Length(m)	Shield		Remarks
			Cable	Connector	
49	DC cable of AC adapter	1.8m	Shielded	Shielded	*3)
50	AC cable of AC adapter	1.0m	Unshielded	Unshielded	*3)

Note:

*3) This cable is for testing and is not included with products.

For more details, refer to section: Photographs of the Test Setup.

4.4 Test Software

The EUT was provided by the manufacturer with suitable software to allow operation in all the required modes.

Software used for testing:

Tera term version 4.106 (SVN# 9298) by TeraTerm Project
CCD_WiFi_TxPower_3dB_UP_Procedure manual_00.xlsx by Panasonic
BT_BLE_Procedure manual version.xls by Panasonic

These software were running on external PC. It was used to enable the operation modes listed in section 4.2 as appropriate.

4.5 Special Accessories and Auxiliary Equipment

The product has been tested together with the following additional accessories:

1. Product: Laptop PC
   Manufacturer: Lenovo
   Model: 20U2S5M60Q
   Rated Voltage: DC 20V
   Input Current: 2.25A
   Protection Class: III
   Serial Number: PF2YP1PV

2. Product: AC adapter for Laptop PC
   Manufacturer: Lenovo
   Model: ADLX65YDC2D
   Rated Voltage: AC 100-240V
   Input Current: 1.8A
   Frequency: 50-60Hz
   Protection Class: II
   Serial Number: 8SSA10R16918D1SG 16B0 1H7

3. Product: Steering Switch
   Manufacturer: Panasonic Corporation
   Protection Class: III
   Serial Number: 1143

Note: See section 6 for more details of this Steering Switch as test jig.

4. Product: IF Box
   Manufacturer: Panasonic Corporation
   Model: DEP32-10078
   Protection Class: III
   Serial Number: 035

5. Product: USB Memory
   Manufacturer: Buffalo Inc.
   Model: RUF3-KS
   Protection Class: III

6. Product: USB Hub
   Manufacturer: ELECOM
   Model: U3H-A422BX
   Protection Class: III
   Serial Number: 0600235

7. Product: JIG Board
   Manufacturer: Panasonic Corporation
   Model: GVIF2HDJIG
   Protection Class: III
   Serial Number: 15

8. Product: Separate Display
   Manufacturer: TEKWIND
   Model: ON-LAP 11021
   Rated Voltage: DC 5V
   Input Current: 1.7A
   Protection Class: III

9. Product: Mic
   Manufacturer: Panasonic Corporation
   Model: GP-SDA3510A
   Protection Class: III
   Serial Number: 0DC062856

10. Product: Mic
    Manufacturer: Panasonic Corporation
    Model: GP-SDA3510A
    Protection Class: III
    Serial Number: 0DC062519

11. Product: MOST AMP
    Manufacturer: Panasonic Corporation
    Model: CL-DL47X2AJ Rev.A
    Protection Class: III
    Serial Number: 513263

12. Product: Speaker
    Manufacturer: Pioneer
    Model: TS-X180
    Protection Class: III

13. Product: Dummy Load for Speaker
    Manufacturer: Panasonic Corporation

Note: See section 6 for more details of this Dummy Load as test jig.

14. Product: Jig board
    Manufacturer: WESTEK
    Model: WR12-3224
    Protection Class: III

4.6 Countermeasures to achieve Compliance

No additional measures were employed to achieve compliance.

5. Test Results RADIO

5.1 Technical Requirements

5.1.1 Supply Voltage Requirements

RESULT: **PASS**

Requirements:

FCC 15.31(e)

For intentional radiators, measurements of the variation of the input power or the radiated signal level of the fundamental frequency component of the emission, as appropriate, shall be performed with the supply voltage varied between 85% and 115% of the nominal rated supply voltage. For battery operated equipment, the equipment tests shall be performed using a new battery.

Verdict:

The EUT has an internal voltage regulator to supply the RF circuit. Hence it complies with the supply voltage requirements.

5.1.2 Antenna Requirements

RESULT: **PASS**

Requirements:

FCC 15.203

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

Verdict:

The EUT has an internal antenna which is not user accessible. Hence it complies with the antenna requirements.

5.1.3 Restricted Bands of Operation

RESULT: **PASS**

Requirements:

FCC 15.205 and RSS-Gen 8.10

Only spurious emissions are permitted in any of the restricted frequency bands, unless otherwise specified.

Verdict:

The EUT operation frequency ranges are 5150-5250MHz and 5725-5850MHz. Therefore only spurious emissions may be found in the restricted bands of operation and the EUT complies with the restricted frequency band requirement.

5.2 Conducted Measurements at Antenna Port

5.2.1 Maximum Output Power

RESULT: **PASS**

Date of testing: 2021-09-28, 2021-10-05, 2021-10-19

Ambient temperature: 24, 23, 22°C
Relative humidity: 51, 58, 51%
Atmospheric pressure: 1015, 1014, 1007hPa

Requirements:

FCC 15.407 (a)(1)-(3)

For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

RSS-247 §6.2.1.1, 6.2.4.1

For OEM devices installed in vehicles in the 5.15-5.25 GHz band, the maximum e.i.r.p. shall not exceed 30 mW or 1.76 + 10 $\log_{10}$B dBm, whichever is less. Device shall implement Transmitter Power Control (TPC) in order to have the capability to operate at least 3 dB below the maximum permitted e.i.r.p. of 30 mW.

For the band 5.725-5.85 GHz, the maximum conducted output power shall not exceed 1 W. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the output power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Test procedure:

ANSI C63.10 §12.3.2.2 and KDB 789033 D02 §E.2.b), Method SA-1.

The maximum average output power was measured at the antenna port with a spectrum analyzer using a RMS detector. The resolution bandwidth was set to 1MHz and the video bandwidth were set to 3 MHz. The power was integrated over the 99% bandwidth for each item to calculate the maximum output power.

The readings of the measurements take into account the loss generated by all the involved cables.

As sweep trigger function of the spectrum analyzer was used in order to measure only the full power pulses, no duty cycle correction was required.

OET 13TR1003 (KDB 662911) was applied for CDD.

Conclusion:

All test results in this section are below both FCC and ISED limits.

Further, for the 5.15-5.25 GHz band, the overall highest conducted output power was +6.82dBm, e.i.r.p. +9.12dBm at the configuration of IEEE 802.11ac-80, MIMO, RF0+RF1, MCS0. Therefore all test results of e.i.r.p. were more than 3 dB below the maximum permitted e.i.r.p. of 30 mW (+14.8dBm), the requirement of TPC is also met.

Table 6: Maximum Output Power, 802.11a, SISO, RF0, 6Mbps

Freq. [MHz]	99% OBW [MHz]	Cond. Power [dBm]	Cond. Power Limit [dBm]	Cond. Power Margin [dB]	Antenna Gain [dBi]	e.i.r.p. [dBm]	e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
5180	16.727	3.37	24	20.63	2.14	5.51	13.99	8.48
5220	16.713	3.59	24	20.41	2.14	5.73	13.99	8.26
5240	16.724	3.59	24	20.41	2.14	5.73	13.99	8.26
5745	16.720	3.13	30	26.87	1.00	4.13	36	31.87
5785	16.725	2.92	30	27.08	1.00	3.92	36	32.08
5825	16.723	1.92	30	28.08	1.00	2.92	36	33.08

Note:
Cable (including temporary RF cable) and attenuator loss has been compensated for Cond. Power.
e.i.r.p. [dBm] = Cond. Power [dBm] + Antenna Gain [dBi]

Table 7: Maximum Output Power, 802.11a, SISO, RF1, 6Mbps

Freq. [MHz]	99% OBW [MHz]	Cond. Power [dBm]	Cond. Power Limit [dBm]	Cond. Power Margin [dB]	Antenna Gain [dBi]	e.i.r.p. [dBm]	e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
5180	16.727	2.72	24	21.28	2.43	5.15	13.99	8.84
5220	16.713	2.84	24	21.16	2.43	5.27	13.99	8.72
5240	16.724	2.59	24	21.41	2.43	5.02	13.99	8.97
5745	16.720	2.69	30	27.31	2.59	5.28	36	30.72
5785	16.725	2.61	30	27.39	2.59	5.20	36	30.80
5825	16.723	2.03	30	27.97	2.59	4.62	36	31.38

Note:
Cable (including temporary RF cable) and attenuator loss has been compensated for Cond. Power.
e.i.r.p. [dBm] = Cond. Power [dBm] + Antenna Gain [dBi]

Table 8: Maximum Conducted Output Power, 802.11a, SISO, 5180MHz, all Data Rates

RF Port	Data Rate [Mbps]	Cond. Power [dBm]	Remark
RF0	6	3.37	Worst
	9	3.27	
	12	3.22	
	18	3.09	
	24	2.97	
	36	2.72	
	48	2.50	
	54	2.38	
RF1	6	2.72	
	9	2.71	
	12	2.65	
	18	2.63	
	24	2.38	
	36	2.30	
	48	2.09	
	54	2.08	

Note:
Cable (including temporary RF cable) and attenuator loss has been compensated for Cond. Power.

Table 9: Maximum Output Power, 802.11a, CDD, RF0+RF1, 6Mbps

Freq. [MHz]	Cond. Power [dBm]	Cond. Power Limit [dBm]	Cond. Power Margin [dB]	e.i.r.p. [dBm]	e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
5180	6.21	24	17.79	8.48	14.00	5.52
5220	6.32	24	17.68	8.59	13.99	5.40
5240	6.23	24	17.77	8.50	14.00	5.50
5745	6.07	30	23.93	7.89	36	28.11
5785	5.84	30	24.16	7.68	36	28.32
5825	5.12	30	24.88	6.99	36	29.01

Table 10: Individual - Maximum Output Power, 802.11a, CDD, RF0, 6Mbps

Freq. [MHz]	99% OBW [MHz]	Cond. Power [dBm]	Directional Gain [dBi]	e.i.r.p. [dBm]
5180	16.734	3.62	2.14	5.76
5220	16.719	3.71	2.14	5.85
5240	16.732	3.71	2.14	5.85
5745	16.718	3.33	1.00	4.33
5785	16.704	2.97	1.00	3.97
5825	16.709	2.09	1.00	3.09

Table 11: Individual - Maximum Output Power, 802.11a, CDD, RF1, 6Mbps

Freq. [MHz]	99% OBW [MHz]	Cond. Power [dBm]	Directional Gain [dBi]	e.i.r.p. [dBm]
5180	16.734	2.73	2.43	5.16
5220	16.719	2.87	2.43	5.30
5240	16.732	2.66	2.43	5.09
5745	16.718	2.77	2.59	5.36
5785	16.704	2.69	2.59	5.28
5825	16.709	2.13	2.59	4.72

Note:
Cable (including temporary RF cable) and attenuator loss has been compensated for Cond. Power.
e.i.r.p. [dBm] = Cond. Power [dBm] + Directional Gain [dBi]
Directional Gain [dBi] = Individual Antenna Gain [dBi] + Array Gain [dB]
Array Gain = 0 [dB] for $N_{ANT} < 4$, here $N_{ANT} = 2$

Table 12: Maximum Conducted Output Power, 802.11a, CDD, 5180MHz, all Data Rates

Data Rate [Mbps]	RF0 Cond. Power [dBm]	RF1 Cond. Power [dBm]	Sum. Cond. Power [dBm]	Remark
6	3.62	2.73	6.21	Worst
9	3.60	2.67	6.17	
12	3.55	2.70	6.16	
18	3.62	2.73	6.21	
24	3.47	2.62	6.08	
36	3.44	2.59	6.05	
48	3.46	2.60	6.06	
54	3.43	2.60	6.05	

Note:
Cable (including temporary RF cable) and attenuator loss has been compensated for Cond. Power.

Table 13: Maximum Output Power, 802.11n-20, SISO, RF0, MCS0

Freq. [MHz]	99% OBW [MHz]	Cond. Power [dBm]	Cond. Power Limit [dBm]	Cond. Power Margin [dB]	Antenna Gain [dBi]	e.i.r.p. [dBm]	e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
5180	17.751	3.93	24	20.07	2.14	6.07	14.25	8.18
5220	17.739	4.05	24	19.95	2.14	6.19	14.25	8.06
5240	17.760	4.06	24	19.94	2.14	6.20	14.25	8.05
5745	17.745	3.63	30	26.37	1.00	4.63	36	31.37
5785	17.742	3.51	30	26.49	1.00	4.51	36	31.49
5825	17.746	2.44	30	27.56	1.00	3.44	36	32.56

Note:
Cable (including temporary RF cable) and attenuator loss has been compensated for Cond. Power.
e.i.r.p. [dBm] = Cond. Power [dBm] + Antenna Gain [dBi]

Table 14: Maximum Output Power, 802.11n-20, SISO, RF1, MCS0

Freq. [MHz]	99% OBW [MHz]	Cond. Power [dBm]	Cond. Power Limit [dBm]	Cond. Power Margin [dB]	Antenna Gain [dBi]	e.i.r.p. [dBm]	e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
5180	17.751	3.03	24	20.97	2.43	5.46	14.25	8.79
5220	17.739	3.26	24	20.74	2.43	5.69	14.25	8.56
5240	17.760	3.13	24	20.87	2.43	5.56	14.25	8.69
5745	17.745	3.19	30	26.81	2.59	5.78	36	30.22
5785	17.742	3.07	30	26.93	2.59	5.66	36	30.34
5825	17.746	2.54	30	27.46	2.59	5.13	36	30.87

Note:
Cable (including temporary RF cable) and attenuator loss has been compensated for Cond. Power.
e.i.r.p. [dBm] = Cond. Power [dBm] + Antenna Gain [dBi]

Table 15: Maximum Conducted Output Power, 802.11n-20, SISO, 5180MHz, all Data Rates

RF Port	MCS	Cond. Power [dBm]	Remark
RF0	0	3.93	Worst
	1	3.86	
	2	3.83	
	3	3.92	
	4	3.92	
	5	3.85	
	6	3.79	
	7	3.93	
RF1	0	3.12	
	1	3.04	
	2	3.02	
	3	3.08	
	4	3.03	
	5	3.03	
	6	3.06	
	7	3.12	

Note:
Cable (including temporary RF cable) and attenuator loss has been compensated for Cond. Power.

Table 16: Maximum Output Power, 802.11n-20, CDD, RF0+RF1, MCS0

Freq. [MHz]	Cond. Power [dBm]	Cond. Power Limit [dBm]	Cond. Power Margin [dB]	e.i.r.p. [dBm]	e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
5180	6.57	24	17.43	8.84	14.23	5.39
5220	6.76	24	17.24	9.03	14.23	5.20
5240	6.70	24	17.30	8.97	14.23	5.26
5745	6.44	30	23.56	8.27	36	27.73
5785	6.32	30	23.68	8.16	36	27.84
5825	5.50	30	24.50	7.37	36	28.63

Table 17: Individual - Maximum Output Power, 802.11n-20, CDD, RF0, MCS0

Freq. [MHz]	99% OBW [MHz]	Cond. Power [dBm]	Directional Gain [dBi]	e.i.r.p. [dBm]
5180	17.677	3.98	2.14	6.12
5220	17.670	4.18	2.14	6.32
5240	17.668	4.2	2.14	6.34
5745	17.673	3.67	1.00	4.67
5785	17.673	3.48	1.00	4.48
5825	17.675	2.47	1.00	3.47

Table 18: Individual - Maximum Output Power, 802.11n-20, CDD, RF1, MCS0

Freq. [MHz]	99% OBW [MHz]	Cond. Power [dBm]	Directional Gain [dBi]	e.i.r.p. [dBm]
5180	17.677	3.09	2.43	5.52
5220	17.670	3.27	2.43	5.70
5240	17.668	3.12	2.43	5.55
5745	17.673	3.18	2.59	5.77
5785	17.673	3.14	2.59	5.73
5825	17.675	2.51	2.59	5.10

Note:
Cable (including temporary RF cable) and attenuator loss has been compensated for Cond. Power.
e.i.r.p. [dBm] = Cond. Power [dBm] + Directional Gain [dBi]
Directional Gain [dBi] = Individual Antenna Gain [dBi] + Array Gain [dB]
Array Gain = 0 [dB] for $N_{ANT} < 4$, here $N_{ANT} = 2$

Table 19: Maximum Conducted Output Power, 802.11n-20, CDD, 5180MHz, all Data Rates

MCS Index	RF0 Cond. Power [dBm]	RF1 Cond. Power [dBm]	Sum. Cond. Power [dBm]	Remark
0	3.98	3.09	6.57	Worst
1	3.96	3.03	6.53	
2	3.88	3.05	6.50	
3	3.84	2.98	6.44	
4	3.84	3.05	6.47	
5	3.87	3.09	6.51	
6	3.87	3.01	6.47	
7	3.83	3.05	6.47	

Note:
Cable (including temporary RF cable) and attenuator loss has been compensated for Cond. Power.

Table 20: Maximum Output Power, 802.11n-20, MIMO, RF0+RF1, MCS8

Freq. [MHz]	Cond. Power [dBm]	Cond. Power Limit [dBm]	Cond. Power Margin [dB]	e.i.r.p. [dBm]	e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
5180	6.50	24	17.50	8.77	14.23	5.46
5220	6.63	24	17.37	8.90	14.23	5.34
5240	6.74	24	17.26	9.01	14.23	5.22
5745	6.47	30	23.53	8.28	36	27.72
5785	6.30	30	23.70	8.14	36	27.86
5825	5.54	30	24.46	7.42	36	28.58

Table 21: Individual - Maximum Output Power, 802.11n-20, MIMO, RF0, MCS8

Freq. [MHz]	99% OBW [MHz]	Cond. Power [dBm]	Antenna Gain [dBi]	e.i.r.p. [dBm]
5180	17.679	3.91	2.14	6.05
5220	17.672	4.16	2.14	6.30
5240	17.671	4.18	2.14	6.32
5745	17.667	3.76	1.00	4.76
5785	17.670	3.49	1.00	4.49
5825	17.676	2.49	1.00	3.49

Table 22: Individual - Maximum Output Power, 802.11n-20, MIMO, RF1, MCS8

Freq. [MHz]	99% OBW [MHz]	Cond. Power [dBm]	Antenna Gain [dBi]	e.i.r.p. [dBm]
5180	17.679	3.02	2.43	5.45
5220	17.672	3.00	2.43	5.43
5240	17.671	3.22	2.43	5.65
5745	17.667	3.14	2.59	5.73
5785	17.670	3.09	2.59	5.68
5825	17.676	2.57	2.59	5.16

Note:
Cable (including temporary RF cable) and attenuator loss has been compensated for Cond. Power.
e.i.r.p. [dBm] = Cond. Power [dBm] + Antenna Gain [dBi]

Table 23: Maximum Conducted Output Power, 802.11n-20, MIMO, 5180MHz, all Data Rates

MCS Index	RF0 Cond. Power [dBm]	RF1 Cond. Power [dBm]	Sum. Cond. Power [dBm]	Remark
8	3.91	3.02	6.50	Worst
9	3.88	2.99	6.47	
10	3.84	3.01	6.46	
11	3.86	2.94	6.43	
12	3.89	3.02	6.49	
13	3.89	3.00	6.48	
14	3.87	2.98	6.46	
15	3.80	2.98	6.42	

Note:
Cable (including temporary RF cable) and attenuator loss has been compensated for Cond. Power.

Table 24: Maximum Output Power, 802.11ac-20, SISO, RF0, MCS0

Freq. [MHz]	99% OBW [MHz]	Cond. Power [dBm]	Cond. Power Limit [dBm]	Cond. Power Margin [dB]	Antenna Gain [dBi]	e.i.r.p. [dBm]	e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
5180	17.734	3.99	24	20.01	2.14	6.13	14.25	8.12
5220	17.735	4.21	24	19.79	2.14	6.35	14.25	7.90
5240	17.736	4.15	24	19.85	2.14	6.29	14.25	7.96
5745	17.731	3.71	30	26.29	1.00	4.71	36	31.29
5785	17.742	3.47	30	26.53	1.00	4.47	36	31.53
5825	17.744	2.54	30	27.46	1.00	3.54	36	32.46

Note:
Cable (including temporary RF cable) and attenuator loss has been compensated for Cond. Power.
e.i.r.p. [dBm] = Cond. Power [dBm] + Antenna Gain [dBi]

Table 25: Maximum Output Power, 802.11ac-20, SISO, RF1, MCS0

Freq. [MHz]	99% OBW [MHz]	Cond. Power [dBm]	Cond. Power Limit [dBm]	Cond. Power Margin [dB]	Antenna Gain [dBi]	e.i.r.p. [dBm]	e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
5180	17.734	3.07	24	20.93	2.43	5.50	14.25	8.75
5220	17.735	3.32	24	20.68	2.43	5.75	14.25	8.50
5240	17.736	2.99	24	21.01	2.43	5.42	14.25	8.83
5745	17.731	3.15	30	26.85	2.59	5.74	36	30.26
5785	17.742	3.07	30	26.93	2.59	5.66	36	30.34
5825	17.744	2.51	30	27.49	2.59	5.10	36	30.90

Note:
Cable (including temporary RF cable) and attenuator loss has been compensated for Cond. Power.
e.i.r.p. [dBm] = Cond. Power [dBm] + Antenna Gain [dBi]

Table 26: Maximum Conducted Output Power, 802.11ac-20, SISO, 5180MHz, all Data Rates

RF Port	MCS Index	Cond. Power [dBm]	Remark
RF0	0	3.99	Worst
	1	3.93	
	2	3.90	
	3	3.87	
	4	3.90	
	5	3.92	
	6	3.86	
	7	3.88	
	8	3.83	
RF1	0	3.07	
	1	3.02	
	2	3.03	
	3	3.05	
	4	3.02	
	5	3.00	
	6	3.04	
	7	3.02	
	8	2.94	

Note:
Cable (including temporary RF cable) and attenuator loss has been compensated for Cond. Power.

Table 27: Maximum Output Power, 802.11ac-20, CDD, RF0+RF1, MCS0

Freq. [MHz]	Cond. Power [dBm]	Cond. Power Limit [dBm]	Cond. Power Margin [dB]	e.i.r.p. [dBm]	e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
5180	6.58	24	17.42	8.86	14.23	5.38
5220	6.73	24	17.27	9.01	14.23	5.22
5240	6.58	24	17.42	8.85	14.23	5.38
5745	6.47	30	23.53	8.30	36	27.70
5785	6.30	30	23.70	8.14	36	27.86
5825	5.50	30	24.50	7.38	36	28.62

Table 28: Individual - Maximum Output Power, 802.11ac-20, CDD, RF0, MCS0

Freq. [MHz]	99% OBW [MHz]	Cond. Power [dBm]	Directional Gain [dBi]	e.i.r.p. [dBm]
5180	17.671	3.99	2.14	6.13
5220	17.670	4.11	2.14	6.25
5240	17.670	4.03	2.14	6.17
5745	17.670	3.67	1.00	4.67
5785	17.676	3.44	1.00	4.44
5825	17.676	2.42	1.00	3.42

Table 29: Individual - Maximum Output Power, 802.11ac-20, CDD, RF1, MCS0

Freq. [MHz]	99% OBW [MHz]	Cond. Power [dBm]	Directional Gain [dBi]	e.i.r.p. [dBm]
5180	17.671	3.11	2.43	5.54
5220	17.670	3.30	2.43	5.73
5240	17.670	3.06	2.43	5.49
5745	17.670	3.24	2.59	5.83
5785	17.676	3.13	2.59	5.72
5825	17.676	2.56	2.59	5.15

Note:
Cable (including temporary RF cable) and attenuator loss has been compensated for Cond. Power.
e.i.r.p. [dBm] = Cond. Power [dBm] + Directional Gain [dBi]
Directional Gain [dBi] = Individual Antenna Gain [dBi] + Array Gain [dB]
Array Gain = 0 [dB] for $N_{ANT} < 4$, here $N_{ANT} = 2$

Table 30: Maximum Conducted Output Power, 802.11ac-20, CDD, 5180MHz, all Data Rates

MCS Index	RF0 Cond. Power [dBm]	RF1 Cond. Power [dBm]	Sum. Cond. Power [dBm]	Remark
0	3.99	3.11	6.58	Worst
1	3.91	3.01	6.49	
2	3.94	3.02	6.51	
3	3.97	3.10	6.57	
4	3.92	3.05	6.52	
5	3.89	3.04	6.50	
6	3.88	3.04	6.49	
7	3.98	3.02	6.54	
8	3.80	2.96	6.41	

Note:
Cable (including temporary RF cable) and attenuator loss has been compensated for Cond. Power.

Table 31: Maximum Output Power, 802.11ac-20, MIMO, RF0+RF1, MCS0

Freq. [MHz]	Cond. Power [dBm]	Cond. Power Limit [dBm]	Cond. Power Margin [dB]	e.i.r.p. [dBm]	e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
5180	6.58	24	17.42	8.85	14.23	5.38
5220	6.70	24	17.30	8.98	14.23	5.26
5240	6.62	24	17.38	8.89	14.23	5.35
5745	6.38	30	23.62	8.21	36	27.79
5785	6.31	30	23.69	8.16	36	27.84
5825	5.51	30	24.49	7.38	36	28.62

Table 32: Individual - Maximum Output Power, 802.11ac-20, MIMO, RF0, MCS0

Freq. [MHz]	99% OBW [MHz]	Cond. Power [dBm]	Antenna Gain [dBi]	e.i.r.p. [dBm]
5180	17.678	4.01	2.14	6.15
5220	17.669	4.04	2.14	6.18
5240	17.679	4.10	2.14	6.24
5745	17.675	3.61	1.00	4.61
5785	17.675	3.39	1.00	4.39
5825	17.675	2.50	1.00	3.50

Table 33: Individual - Maximum Output Power, 802.11ac-20, MIMO, RF1, MCS0

Freq. [MHz]	99% OBW [MHz]	Cond. Power [dBm]	Antenna Gain [dBi]	e.i.r.p. [dBm]
5180	17.678	3.08	2.43	5.51
5220	17.669	3.31	2.43	5.74
5240	17.679	3.05	2.43	5.48
5745	17.675	3.12	2.59	5.71
5785	17.675	3.20	2.59	5.79
5825	17.675	2.50	2.59	5.09

Note:
Cable (including temporary RF cable) and attenuator loss has been compensated for Cond. Power.
e.i.r.p. [dBm] = Cond. Power [dBm] + Antenna Gain [dBi]

Table 34: Maximum Conducted Output Power, 802.11ac-20, MIMO, 5180MHz, all Data Rates

MCS Index	RF0 Cond. Power [dBm]	RF1 Cond. Power [dBm]	Sum. Cond. Power [dBm]	Remark
0	4.01	3.08	6.58	Worst
1	3.94	2.99	6.50	
2	3.90	2.98	6.47	
3	3.84	3.06	6.48	
4	3.88	2.99	6.47	
5	3.90	2.98	6.47	
6	3.90	3.03	6.50	
7	3.92	3.00	6.49	
8	3.80	2.88	6.37	

Note:
Cable (including temporary RF cable) and attenuator loss has been compensated for Cond. Power.

Table 35: Maximum Output Power, 802.11n-40, SISO, RF0, MCS0

Freq. [MHz]	99% OBW [MHz]	Cond. Power [dBm]	Cond. Power Limit [dBm]	Cond. Power Margin [dB]	Antenna Gain [dBi]	e.i.r.p. [dBm]	e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
5190	36.760	4.08	24	19.92	2.14	6.22	14.77	8.55
5230	36.722	4.18	24	19.82	2.14	6.32	14.77	8.45
5755	36.753	3.72	30	26.28	1.00	4.72	36	31.28
5795	36.741	3.51	30	26.49	1.00	4.51	36	31.49

Note:
Cable (including temporary RF cable) and attenuator loss has been compensated for Cond. Power.
e.i.r.p. [dBm] = Cond. Power [dBm] + Antenna Gain [dBi]

Table 36: Maximum Output Power, 802.11n-40, SISO, RF1, MCS0

Freq. [MHz]	99% OBW [MHz]	Cond. Power [dBm]	Cond. Power Limit [dBm]	Cond. Power Margin [dB]	Antenna Gain [dBi]	e.i.r.p. [dBm]	e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
5190	36.760	3.24	24	20.76	2.43	5.67	14.77	9.10
5230	36.722	3.19	24	20.81	2.43	5.62	14.77	9.15
5755	36.753	3.23	30	26.77	2.59	5.82	36	30.18
5795	36.741	3.07	30	26.93	2.59	5.66	36	30.34

Note:
Cable (including temporary RF cable) and attenuator loss has been compensated for Cond. Power.
e.i.r.p. [dBm] = Cond. Power [dBm] + Antenna Gain [dBi]

Table 37: Maximum Conducted Output Power, 802.11n-40, SISO, 5190MHz, all Data Rates

RF Port	MCS	Cond. Power [dBm]	Remark
RF0	0	4.08	Worst
	1	4.04	
	2	4.01	
	3	4.05	
	4	4.02	
	5	3.95	
	6	4.06	
	7	3.97	
RF1	0	3.24	
	1	3.14	
	2	3.21	
	3	3.13	
	4	3.18	
	5	3.12	
	6	3.10	
	7	3.23	

Note:
Cable (including temporary RF cable) and attenuator loss has been compensated for Cond. Power.

Table 38: Maximum Output Power, 802.11n-40, CDD, RF0+RF1, MCS0

Freq. [MHz]	Cond. Power [dBm]	Cond. Power Limit [dBm]	Cond. Power Margin [dB]	e.i.r.p. [dBm]	e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
5190	6.37	24	17.63	8.67	14.77	6.10
5230	6.42	24	17.58	8.73	14.77	6.04
5755	6.17	30	23.83	8.09	36	27.91
5795	5.97	30	24.03	7.88	36	28.12

Table 39: Individual - Maximum Output Power, 802.11n-40, CDD, RF0, MCS0

Freq. [MHz]	99% OBW [MHz]	Cond. Power [dBm]	Directional Gain [dBi]	e.i.r.p. [dBm]
5190	36.388	2.88	2.14	5.02
5230	36.378	2.85	2.14	4.99
5755	36.410	2.82	1.00	3.82
5795	36.407	2.71	1.00	3.71

Table 40: Individual - Maximum Output Power, 802.11n-40, CDD, RF1, MCS0

Freq. [MHz]	99% OBW [MHz]	Cond. Power [dBm]	Directional Gain [dBi]	e.i.r.p. [dBm]
5190	36.388	3.79	2.43	6.22
5230	36.378	3.91	2.43	6.34
5755	36.410	3.47	2.59	6.06
5795	36.407	3.19	2.59	5.78

Note:
Cable (including temporary RF cable) and attenuator loss has been compensated for Cond. Power.
e.i.r.p. [dBm] = Cond. Power [dBm] + Directional Gain [dBi]
Directional Gain [dBi] = Individual Antenna Gain [dBi] + Array Gain [dB]
Array Gain = 0 [dB] for $N_{ANT} < 4$, here $N_{ANT} = 2$

Table 41: Maximum Conducted Output Power, 802.11n-40, CDD, 5190MHz, all Data Rates

MCS Index	RF0 Cond. Power [dBm]	RF1 Cond. Power [dBm]	Sum. Cond. Power [dBm]	Remark
0	2.88	3.79	6.37	Worst
1	2.84	3.76	6.33	
2	2.87	3.75	6.34	
3	2.85	3.73	6.32	
4	2.86	3.76	6.34	
5	2.79	3.67	6.26	
6	2.80	3.70	6.28	
7	2.80	3.70	6.28	

Note:
Cable (including temporary RF cable) and attenuator loss has been compensated for Cond. Power.

Table 42: Maximum Output Power, 802.11n-40, MIMO, RF0+RF1, MCS8

Freq. [MHz]	Cond. Power [dBm]	Cond. Power Limit [dBm]	Cond. Power Margin [dB]	e.i.r.p. [dBm]	e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
5190	6.33	24	17.67	8.63	14.77	6.14
5230	6.39	24	17.61	8.70	14.77	6.08
5755	6.05	30	23.95	7.96	36	28.04
5795	5.85	30	24.15	7.75	36	28.25

Table 43: Individual - Maximum Output Power, 802.11n-40, MIMO, RF0, MCS8

Freq. [MHz]	99% OBW [MHz]	Cond. Power [dBm]	Antenna Gain [dBi]	e.i.r.p. [dBm]
5190	36.780	2.88	2.14	5.02
5230	36.382	2.87	2.14	5.01
5755	36.403	2.78	1.00	3.78
5795	36.393	2.66	1.00	3.66

Table 44: Individual - Maximum Output Power, 802.11n-40, MIMO, RF1, MCS8

Freq. [MHz]	99% OBW [MHz]	Cond. Power [dBm]	Antenna Gain [dBi]	e.i.r.p. [dBm]
5190	36.780	3.71	2.43	6.14
5230	36.382	3.84	2.43	6.27
5755	36.403	3.28	2.59	5.87
5795	36.393	3.01	2.59	5.60

Note:
Cable (including temporary RF cable) and attenuator loss has been compensated for Cond. Power.
e.i.r.p. [dBm] = Cond. Power [dBm] + Antenna Gain [dBi]

Table 45: Maximum Conducted Output Power, 802.11n-40, MIMO, 5190MHz, all Data Rates

MCS Index	RF0 Cond. Power [dBm]	RF1 Cond. Power [dBm]	Sum. Cond. Power [dBm]	Remark
8	2.88	3.71	6.33	Worst
9	2.82	3.69	6.29	
10	2.87	3.67	6.30	
11	2.83	3.66	6.28	
12	2.81	3.69	6.28	
13	2.80	3.63	6.25	
14	2.79	3.67	6.26	
15	2.82	3.60	6.24	

Note:
Cable (including temporary RF cable) and attenuator loss has been compensated for Cond. Power.

Table 46: Maximum Output Power, 802.11ac-40, SISO, RF0, MCS0

Freq. [MHz]	99% OBW [MHz]	Cond. Power [dBm]	Cond. Power Limit [dBm]	Cond. Power Margin [dB]	Antenna Gain [dBi]	e.i.r.p. [dBm]	e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
5190	36.725	2.94	24	21.06	2.14	5.08	14.77	9.69
5230	36.711	2.86	24	21.14	2.14	5.00	14.77	9.77
5755	36.728	2.85	30	27.15	1.00	3.85	36	32.15
5795	36.727	2.78	30	27.22	1.00	3.78	36	32.22

Note:
Cable (including temporary RF cable) and attenuator loss has been compensated for Cond. Power.
e.i.r.p. [dBm] = Cond. Power [dBm] + Antenna Gain [dBi]

Table 47: Maximum Output Power, 802.11ac-40, SISO, RF1, MCS0

Freq. [MHz]	99% OBW [MHz]	Cond. Power [dBm]	Cond. Power Limit [dBm]	Cond. Power Margin [dB]	Antenna Gain [dBi]	e.i.r.p. [dBm]	e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
5190	36.725	3.74	24	20.26	2.43	6.17	14.77	8.60
5230	36.711	3.86	24	20.14	2.43	6.29	14.77	8.48
5755	36.728	3.34	30	26.66	2.59	5.93	36	30.07
5795	36.727	3.13	30	26.87	2.59	5.72	36	30.28

Note:
Cable (including temporary RF cable) and attenuator loss has been compensated for Cond. Power.
e.i.r.p. [dBm] = Cond. Power [dBm] + Antenna Gain [dBi]

Table 48: Maximum Conducted Output Power, 802.11ac-40, SISO, 5190MHz, all Data Rates

RF Port	MCS Index	Cond. Power [dBm]	Remark
RF0	0	2.94	
	1	2.94	
	2	2.91	
	3	2.87	
	4	2.86	
	5	2.81	
	6	2.82	
	7	2.81	
	8	2.78	
	9	2.77	
RF1	0	3.74	Worst
	1	3.73	
	2	3.74	
	3	3.69	
	4	3.66	
	5	3.66	
	6	3.65	
	7	3.65	
	8	3.68	
	9	3.64	

Note:
Cable (including temporary RF cable) and attenuator loss has been compensated for Cond. Power.

Table 49: Maximum Output Power, 802.11ac-40, CDD, RF0+RF1, MCS0

Freq. [MHz]	Cond. Power [dBm]	Cond. Power Limit [dBm]	Cond. Power Margin [dB]	e.i.r.p. [dBm]	e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
5190	6.31	24	17.69	8.61	14.77	6.16
5230	6.40	24	17.60	8.70	14.77	6.07
5755	6.11	30	23.89	8.02	36	27.98
5795	5.95	30	24.05	7.85	36	28.15

Table 50: Individual - Maximum Output Power, 802.11ac-40, CDD, RF0, MCS0

Freq. [MHz]	99% OBW [MHz]	Cond. Power [dBm]	Directional Gain [dBi]	e.i.r.p. [dBm]
5190	36.480	2.85	2.14	4.99
5230	36.500	2.87	2.14	5.01
5755	36.485	2.85	1.00	3.85
5795	36.488	2.72	1.00	3.72

Table 51: Individual - Maximum Output Power, 802.11ac-40, CDD, RF1, MCS0

Freq. [MHz]	99% OBW [MHz]	Cond. Power [dBm]	Directional Gain [dBi]	e.i.r.p. [dBm]
5190	36.480	3.71	2.43	6.14
5230	36.500	3.85	2.43	6.28
5755	36.485	3.34	2.59	5.93
5795	36.488	3.14	2.59	5.73

Note:
Cable (including temporary RF cable) and attenuator loss has been compensated for Cond. Power.
e.i.r.p. [dBm] = Cond. Power [dBm] + Directional Gain [dBi]
Directional Gain [dBi] = Individual Antenna Gain [dBi] + Array Gain [dB]
Array Gain = 0 [dB] for $N_{ANT} < 4$, here $N_{ANT} = 2$

Table 52: Maximum Conducted Output Power, 802.11ac-40, CDD, 5190MHz, all Data Rates

MCS Index	RF0 Cond. Power [dBm]	RF1 Cond. Power [dBm]	Sum. Cond. Power [dBm]	Remark
0	2.85	3.71	6.31	Worst
1	2.82	3.66	6.27	
2	2.86	3.69	6.31	
3	2.79	3.62	6.24	
4	2.80	3.60	6.23	
5	2.74	3.60	6.20	
6	2.72	3.59	6.19	
7	2.75	3.60	6.21	
8	2.78	3.60	6.22	
9	2.76	3.62	6.22	

Note:
Cable (including temporary RF cable) and attenuator loss has been compensated for Cond. Power.

Table 53: Maximum Output Power, 802.11ac-40, MIMO, RF0+RF1, MCS0

Freq. [MHz]	Cond. Power [dBm]	Cond. Power Limit [dBm]	Cond. Power Margin [dB]	e.i.r.p. [dBm]	e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
5190	6.32	24	17.68	8.62	14.77	6.15
5230	6.18	24	17.82	8.48	14.77	6.29
5755	5.99	30	24.01	7.90	36	28.10
5795	5.77	30	24.23	7.67	36	28.33

Table 54: Individual - Maximum Output Power, 802.11ac-40, MIMO, RF0, MCS0

Freq. [MHz]	99% OBW [MHz]	Cond. Power [dBm]	Antenna Gain [dBi]	e.i.r.p. [dBm]
5190	36.488	2.86	2.14	5.00
5230	36.510	2.65	2.14	4.79
5755	36.495	2.70	1.00	3.70
5795	36.487	2.53	1.00	3.53

Table 55: Individual - Maximum Output Power, 802.11ac-40, MIMO, RF1, MCS0

Freq. [MHz]	99% OBW [MHz]	Cond. Power [dBm]	Antenna Gain [dBi]	e.i.r.p. [dBm]
5190	36.488	3.72	2.43	6.15
5230	36.510	3.63	2.43	6.06
5755	36.495	3.24	2.59	5.83
5795	36.487	2.97	2.59	5.56

Note:
Cable (including temporary RF cable) and attenuator loss has been compensated for Cond. Power.
e.i.r.p. [dBm] = Cond. Power [dBm] + Antenna Gain [dBi]

Table 56: Maximum Conducted Output Power, 802.11ac-40, MIMO, 5190MHz, all Data Rates

MCS Index	RF0 Cond. Power [dBm]	RF1 Cond. Power [dBm]	Sum. Cond. Power [dBm]	Remark
0	2.86	3.72	6.32	Worst
1	2.80	3.66	6.26	
2	2.85	3.69	6.30	
3	2.80	3.60	6.23	
4	2.81	3.56	6.21	
5	2.84	3.56	6.23	
6	2.74	3.57	6.19	
7	2.75	3.55	6.18	
8	2.79	3.54	6.19	
9	2.74	3.57	6.19	

Note:
Cable (including temporary RF cable) and attenuator loss has been compensated for Cond. Power.

Table 57: Maximum Output Power, 802.11ac-80, SISO, RF0, MCS0

Freq. [MHz]	99% OBW [MHz]	Cond. Power [dBm]	Cond. Power Limit [dBm]	Cond. Power Margin [dB]	Antenna Gain [dBi]	e.i.r.p. [dBm]	e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
5210	76.564	3.31	24	20.69	2.14	5.45	14.77	9.32
5775	76.563	3.21	30	26.79	1.00	4.21	36	31.79

Note:
Cable (including temporary RF cable) and attenuator loss has been compensated for Cond. Power.
e.i.r.p. [dBm] = Cond. Power [dBm] + Antenna Gain [dBi]

Table 58: Maximum Output Power, 802.11ac-80, SISO, RF1, MCS0

Freq. [MHz]	99% OBW [MHz]	Cond. Power [dBm]	Cond. Power Limit [dBm]	Cond. Power Margin [dB]	Antenna Gain [dBi]	e.i.r.p. [dBm]	e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
5210	76.564	4.19	24	19.81	2.43	6.62	14.77	8.15
5775	76.563	3.68	30	26.32	2.59	6.27	36	29.73

Note:
Cable (including temporary RF cable) and attenuator loss has been compensated for Cond. Power.
e.i.r.p. [dBm] = Cond. Power [dBm] + Antenna Gain [dBi]

Table 59: Maximum Conducted Output Power, 802.11ac-80, SISO, 5210MHz, all Data Rates

RF Port	MCS Index	Cond. Power [dBm]	Remark
RF0	0	3.31	
	1	3.27	
	2	3.29	
	3	3.24	
	4	3.25	
	5	3.22	
	6	3.22	
	7	3.25	
	8	3.24	
	9	3.23	
RF1	0	4.19	Worst
	1	4.15	
	2	4.14	
	3	4.16	
	4	4.17	
	5	4.11	
	6	4.17	
	7	4.17	
	8	4.11	
	9	4.10	

Note:
Cable (including temporary RF cable) and attenuator loss has been compensated for Cond. Power.

Table 60: Maximum Output Power, 802.11ac-80, CDD, RF0+RF1, MCS0

Freq. [MHz]	Cond. Power [dBm]	Cond. Power Limit [dBm]	Cond. Power Margin [dB]	e.i.r.p. [dBm]	e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
5210	6.80	24	17.20	9.10	14.77	5.67
5775	6.31	30	23.69	8.21	36	27.79

Table 61: Individual - Maximum Output Power, 802.11ac-80, CDD, RF0, MCS0

Freq. [MHz]	99% OBW [MHz]	Cond. Power [dBm]	Directional Gain [dBi]	e.i.r.p. [dBm]
5210	76.162	3.38	2.14	5.52
5775	76.199	3.12	1.00	4.12

Table 62: Individual - Maximum Output Power, 802.11ac-80, CDD, RF1, MCS0

Freq. [MHz]	99% OBW [MHz]	Cond. Power [dBm]	Directional Gain [dBi]	e.i.r.p. [dBm]
5210	76.162	4.17	2.43	6.60
5775	76.199	3.47	2.59	6.06

Note:
Cable (including temporary RF cable) and attenuator loss has been compensated for Cond. Power.
e.i.r.p. [dBm] = Cond. Power [dBm] + Directional Gain [dBi]
Directional Gain [dBi] = Individual Antenna Gain [dBi] + Array Gain [dB]
Array Gain = 0 [dB] for $N_{ANT} < 4$, here $N_{ANT} = 2$

Table 63: Maximum Conducted Output Power, 802.11ac-80, CDD, 5210MHz, all Data Rates

MCS Index	RF0 Cond. Power [dBm]	RF1 Cond. Power [dBm]	Sum. Cond. Power [dBm]	Remark
0	3.38	4.17	6.80	Worst
1	3.32	4.12	6.75	
2	3.31	4.12	6.74	
3	3.35	4.12	6.76	
4	3.35	4.13	6.77	
5	3.26	4.16	6.74	
6	3.33	4.09	6.74	
7	3.31	4.09	6.73	
8	3.26	4.10	6.71	
9	3.28	4.06	6.70	

Note:
Cable (including temporary RF cable) and attenuator loss has been compensated for Cond. Power.

Table 64: Maximum Output Power, 802.11ac-80, MIMO, RF0+RF1, MCS0

Freq. [MHz]	Cond. Power [dBm]	Cond. Power Limit [dBm]	Cond. Power Margin [dB]	e.i.r.p. [dBm]	e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
5210	6.82	24	17.18	9.12	14.77	5.65
5775	6.31	30	23.69	8.21	36	27.79

Table 65: Individual - Maximum Output Power, 802.11ac-80, MIMO, RF0, MCS0

Freq. [MHz]	99% OBW [MHz]	Cond. Power [dBm]	Antenna Gain [dBi]	e.i.r.p. [dBm]
5210	76.188	3.33	2.14	5.47
5775	76.214	3.12	1.00	4.12

Table 66: Individual - Maximum Output Power, 802.11ac-80, MIMO, RF1, MCS0

Freq. [MHz]	99% OBW [MHz]	Cond. Power [dBm]	Antenna Gain [dBi]	e.i.r.p. [dBm]
5210	76.188	4.24	2.43	6.67
5775	76.214	3.48	2.59	6.07

Note:
Cable (including temporary RF cable) and attenuator loss has been compensated for Cond. Power.
e.i.r.p. [dBm] = Cond. Power [dBm] + Antenna Gain [dBi]

Table 67: Maximum Conducted Output Power, 802.11ac-80, MIMO, 5210MHz, all Data Rates

MCS Index	RF0 Cond. Power [dBm]	RF1 Cond. Power [dBm]	Sum. Cond. Power [dBm]	Remark
0	3.33	4.24	6.82	Worst
1	3.31	4.16	6.77	
2	3.29	4.16	6.76	
3	3.26	4.12	6.72	
4	3.20	4.11	6.69	
5	3.25	4.11	6.71	
6	3.29	4.13	6.74	
7	3.19	4.16	6.71	
8	3.22	4.10	6.69	
9	3.29	4.08	6.71	

Note:
Cable (including temporary RF cable) and attenuator loss has been compensated for Cond. Power.

5.2.2 26dB Bandwidth

RESULT: **N/A**

Requirements:

FCC 15.407 (2)

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Test procedure:

ANSI C63.10 §12.4, KDB 789033 D02 §C.1

Note:

Not applicable since the EUT does not support the 5.25-5.35 GHz and 5.47-5.725 GHz bands.

5.2.3 6dB Bandwidth

RESULT: **PASS**

Date of testing: 2021-10-21, 2022-01-28

Ambient temperature: 23, 23°C
Relative humidity: 47, 49%
Atmospheric pressure: 1013, 1008hPa

Requirements:

FCC 15.407(e)

RSS-247 §6.2.4.1

Within the 5.725-5.850 GHz band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

Test procedure:

ANSI C63.10 §12.4, KDB 789033 D02 §II. C. 2.

The 6dB bandwidth was measured at the antenna port with a spectrum analyzer using a peak detector. Markers placed at the lowest and highest intersections of the trace with a 6dBc line were used to calculate the emission bandwidth.

Table 68: 6dB Bandwidth, 802.11a, SISO, RF0

Operating Frequency [MHz]	6dB Bandwidth [MHz]	Limit [MHz]
5745	16.492	>0.5
5785	16.467	>0.5
5825	16.492	>0.5

Figure 2: 6dB Bandwidth, 802.11a, SISO, RF0, 5745MHz

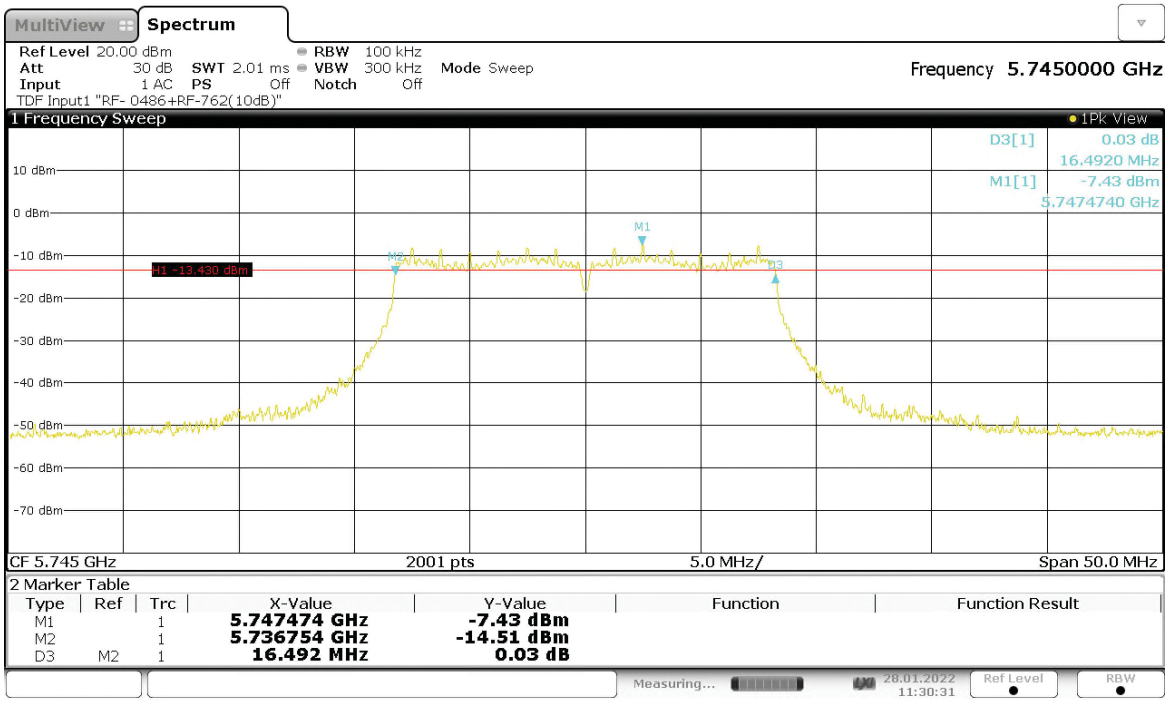
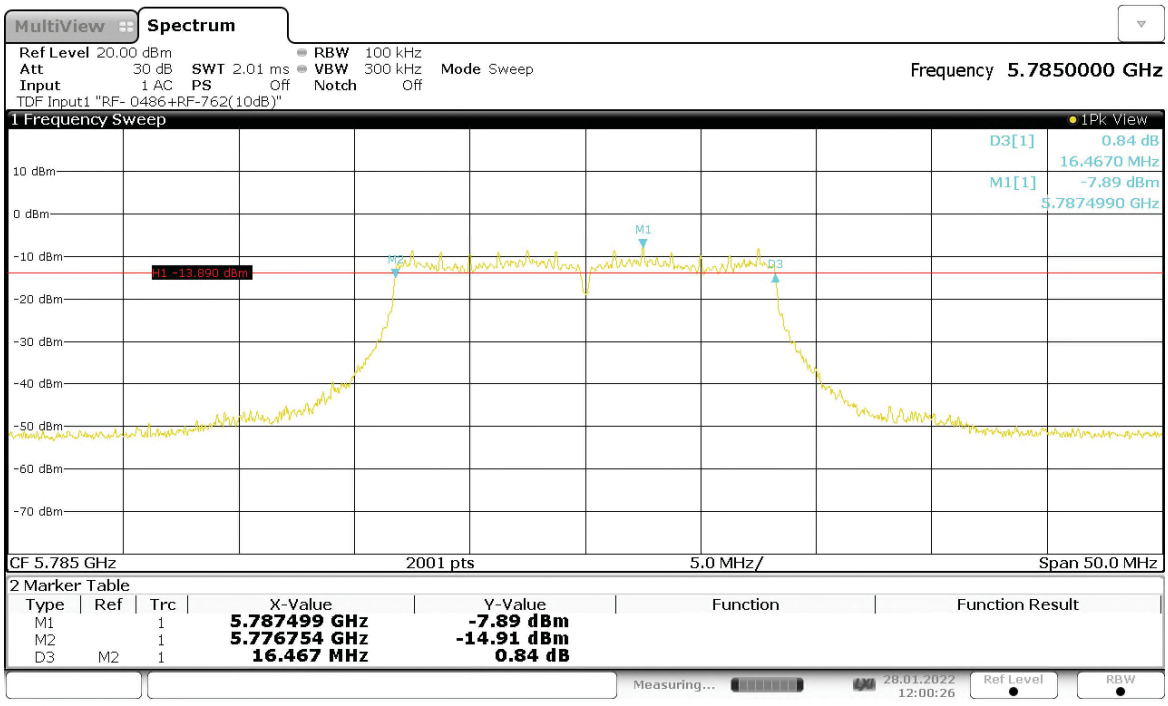


Figure 3: 6dB Bandwidth, 802.11a, SISO, RF0, 5785MHz



12:00:27 28.01.2022

Figure 4: 6dB Bandwidth, 802.11a, SISO, RF0, 5825MHz

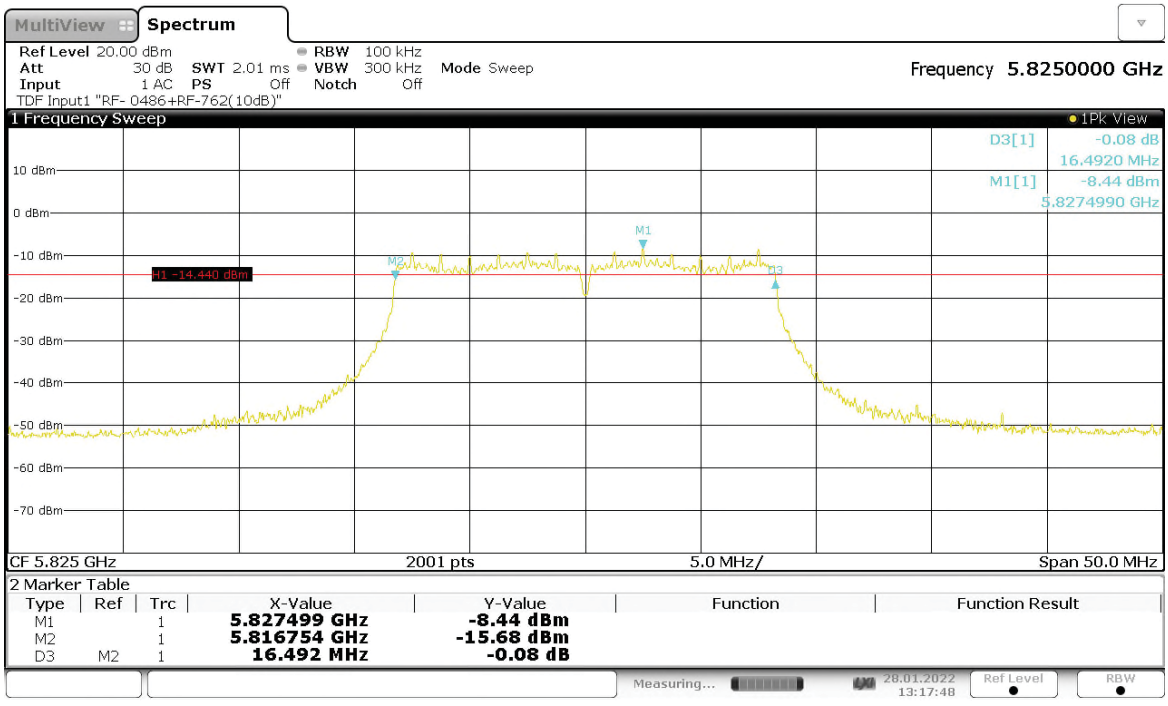


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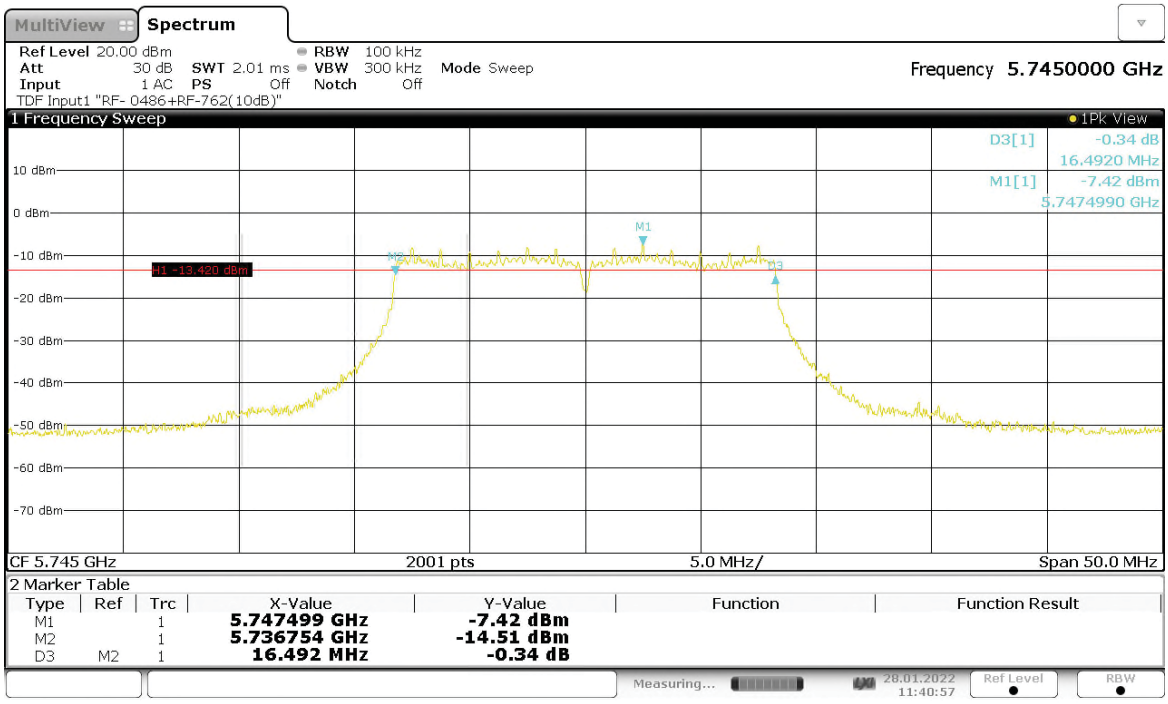
Table 69: 6dB Bandwidth, 802.11a, CDD, RF0

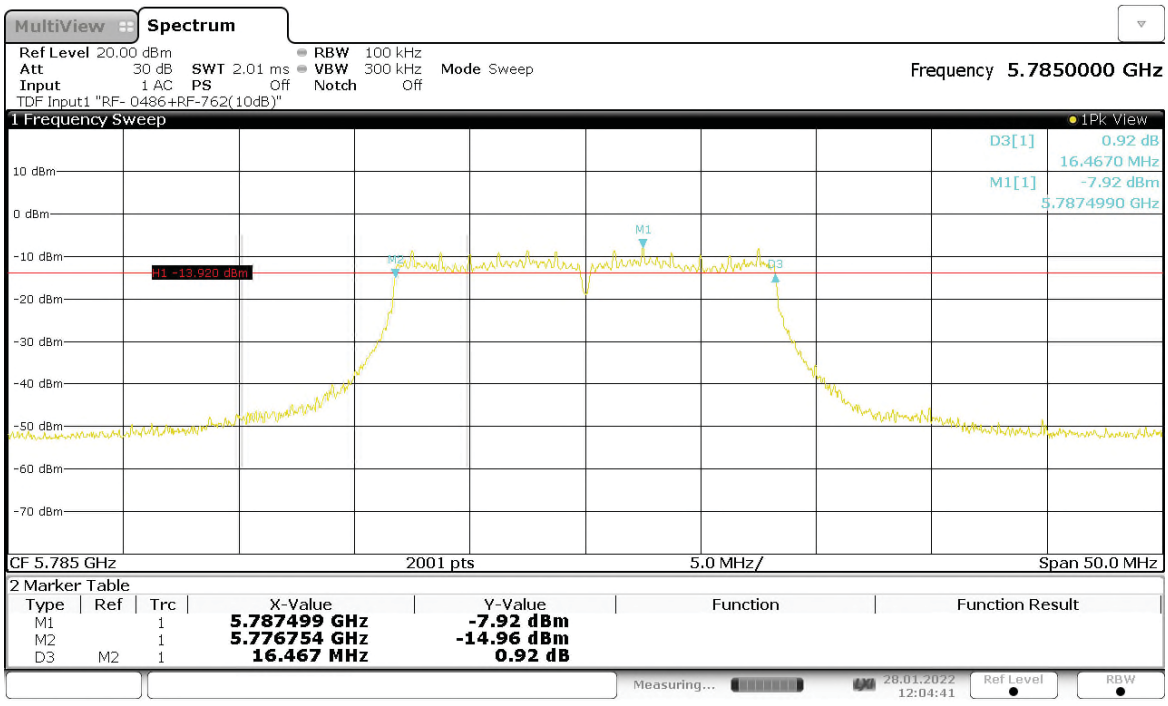
Operating Frequency [MHz]	6dB Bandwidth [MHz]	Limit [MHz]
5745	16.492	>0.5
5785	16.467	>0.5
5825	16.467	>0.5

Figure 5: 6dB Bandwidth, 802.11a, CDD, RF0, 5745MHz



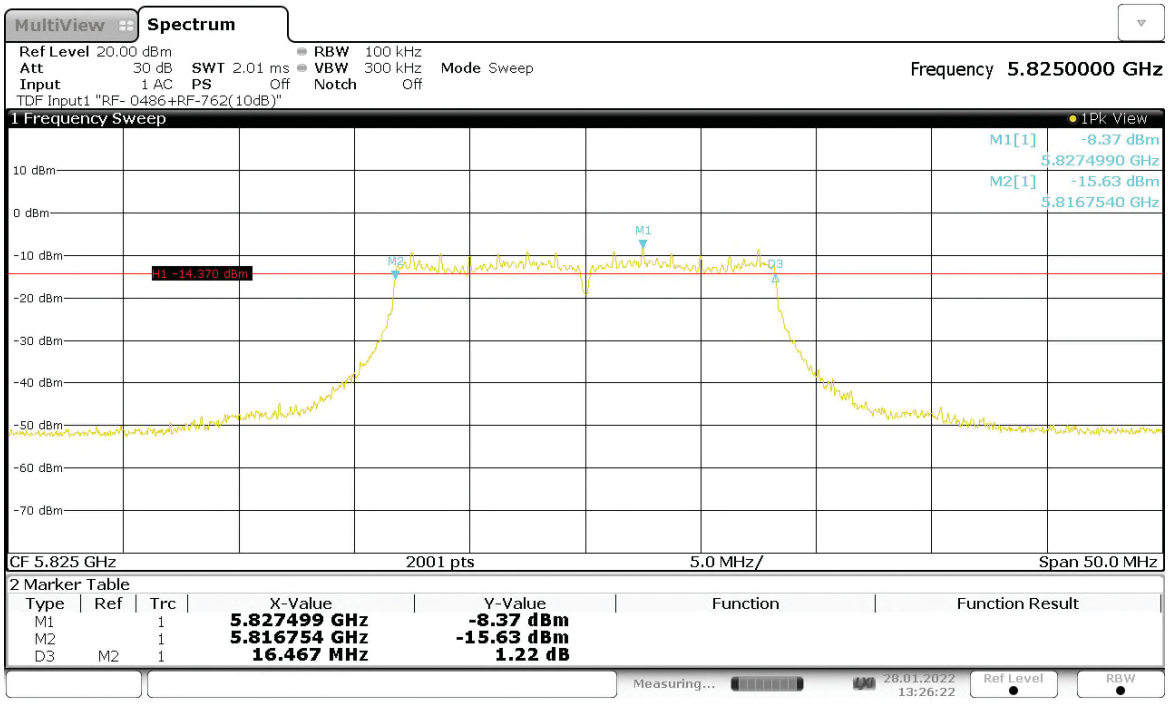
11:40:57 28.01.2022

Figure 6: 6dB Bandwidth, 802.11a, CDD, RF0, 5785MHz



12:04:42 28.01.2022

Figure 7: 6dB Bandwidth, 802.11a, CDD, RF0, 5825MHz

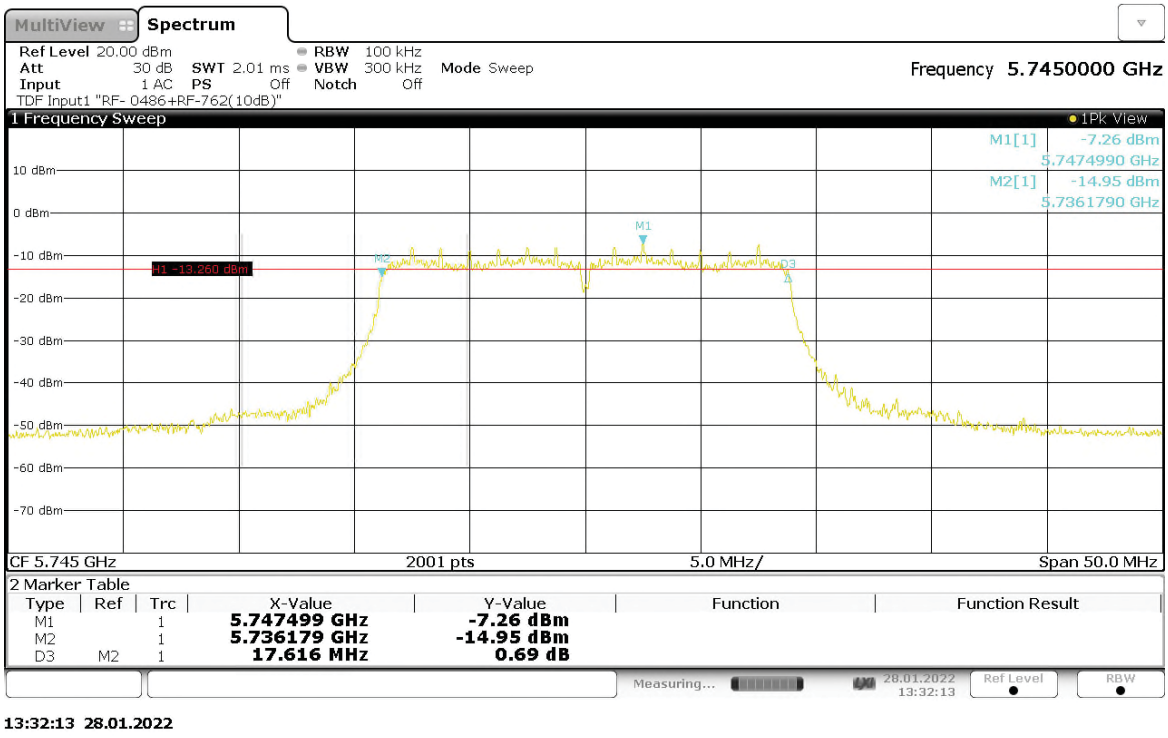


13:26:22 28.01.2022

Table 70: 6dB Bandwidth, 802.11n-20, SISO, RF0

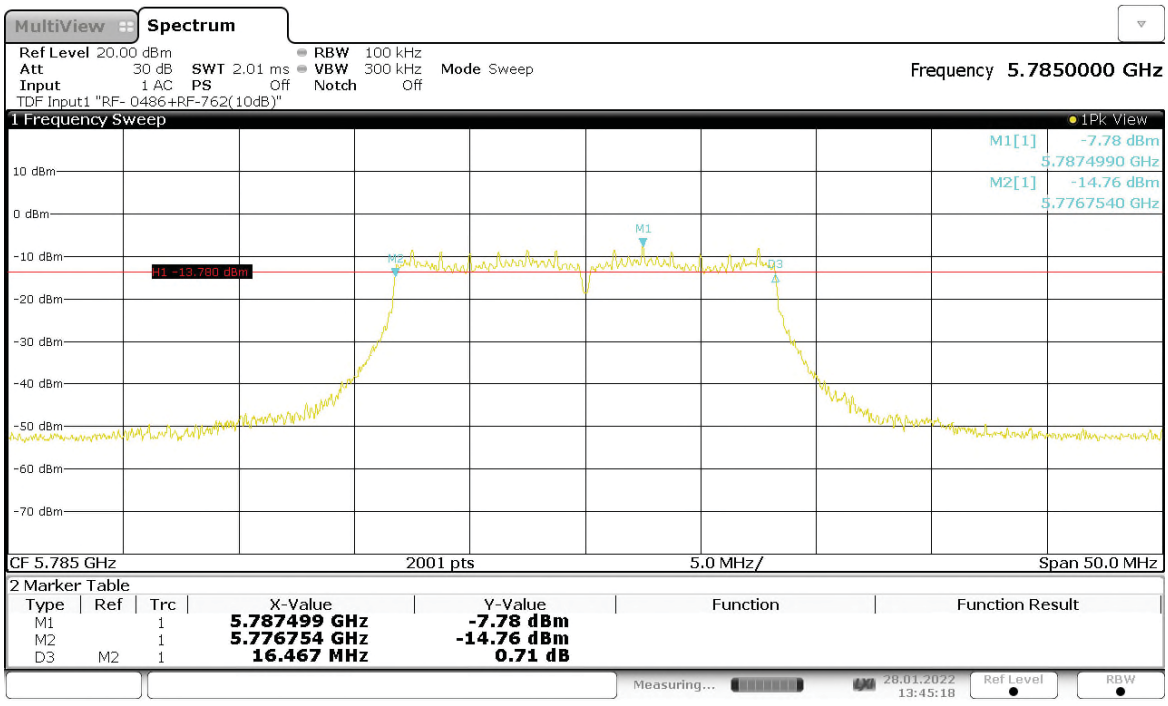
Operating Frequency [MHz]	6dB Bandwidth [MHz]	Limit [MHz]
5745	17.616	>0.5
5785	16.467	>0.5
5825	17.566	>0.5

Figure 8: 6dB Bandwidth, 802.11n-20, SISO, RF0, 5745MHz



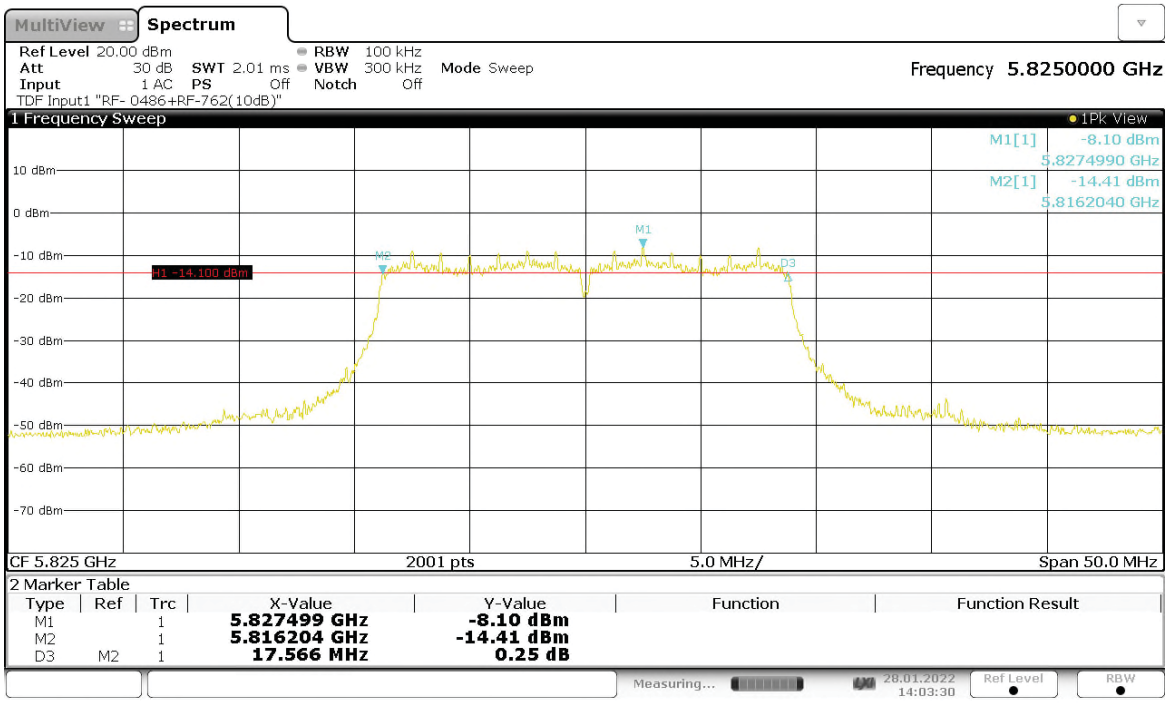
13:32:13 28.01.2022

Figure 9: 6dB Bandwidth, 802.11n-20, SISO, RF0, 5785MHz



13:45:18 28.01.2022

Figure 10: 6dB Bandwidth, 802.11n-20, SISO, RF0, 5825MHz



14:03:31 28.01.2022

Table 71: 6dB Bandwidth, 802.11n-20, CDD, RF0

Operating Frequency [MHz]	6dB Bandwidth [MHz]	Limit [MHz]
5745	17.616	>0.5
5785	16.467	>0.5
5825	17.591	>0.5

Figure 11: 6dB Bandwidth, 802.11n-20, CDD, RF0, 5745MHz

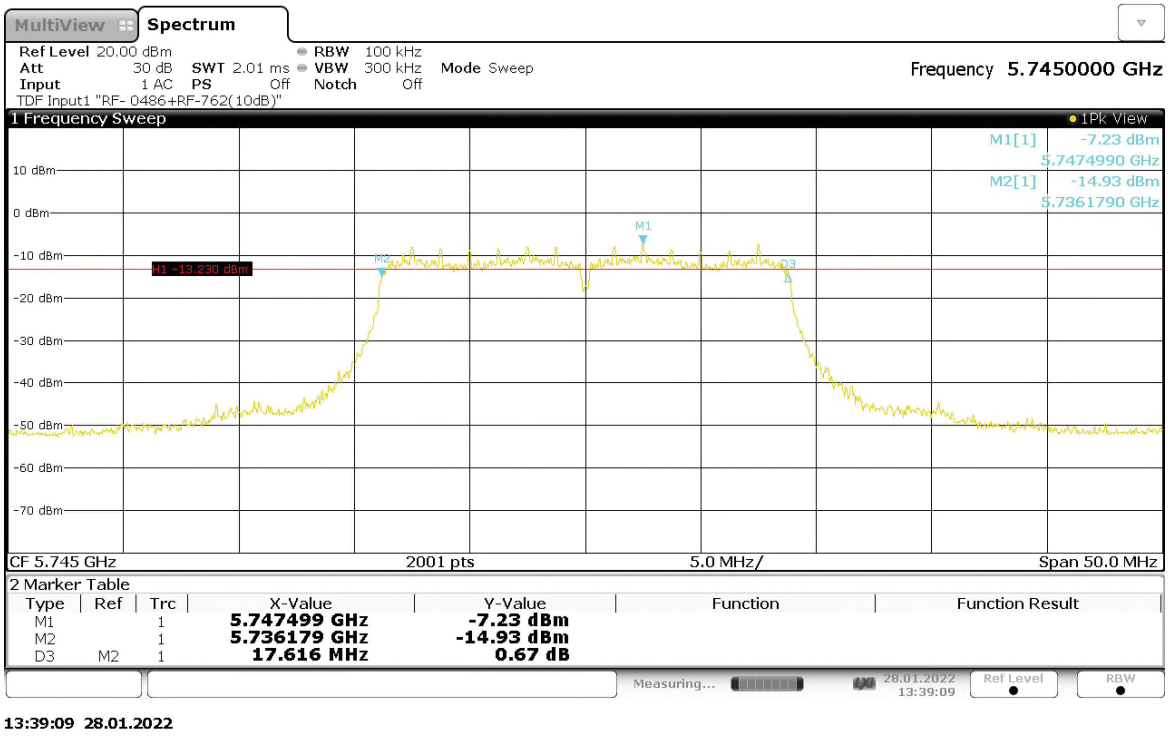
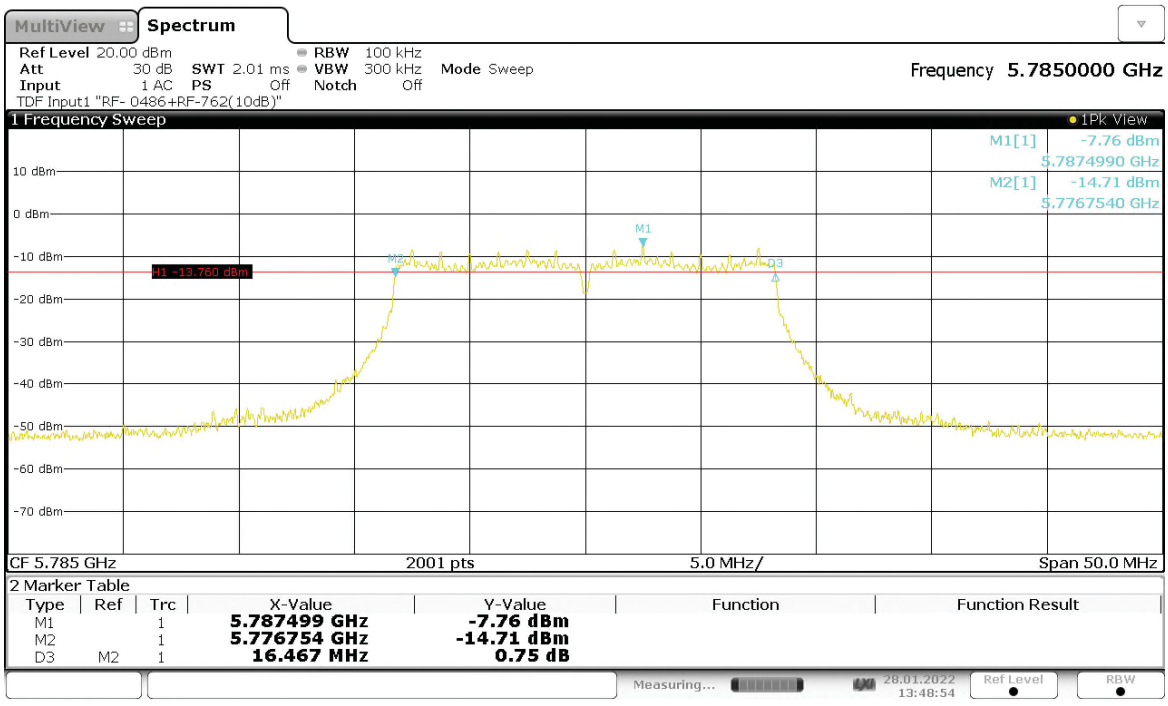
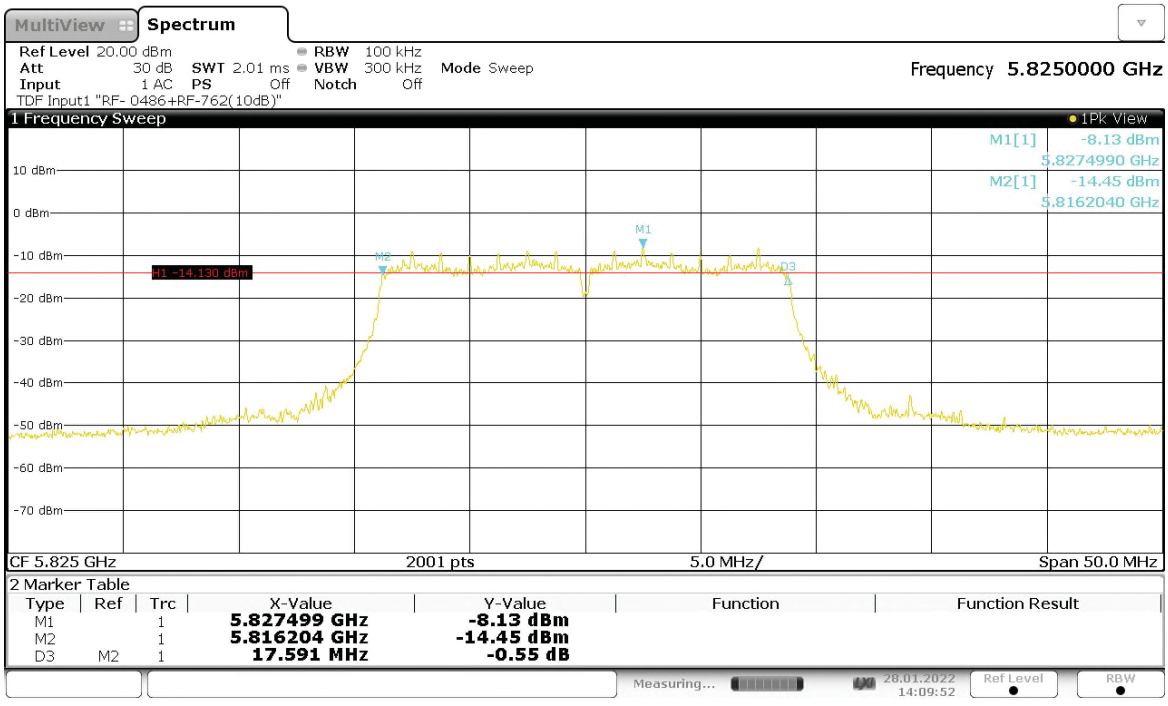


Figure 12: 6dB Bandwidth, 802.11n-20, CDD, RF0, 5785MHz



13:48:54 28.01.2022

Figure 13: 6dB Bandwidth, 802.11n-20, CDD, RF0, 5825MHz

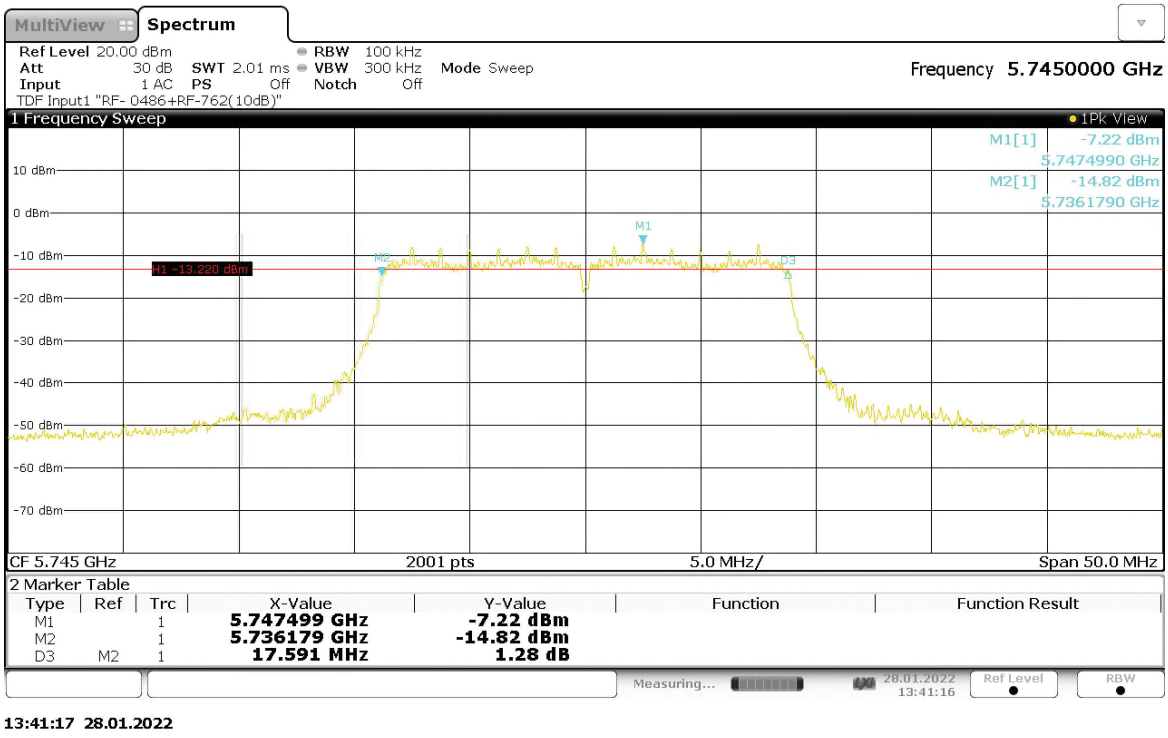


14:09:53 28.01.2022

Table 72: 6dB Bandwidth, 802.11n-20, MIMO, RF0

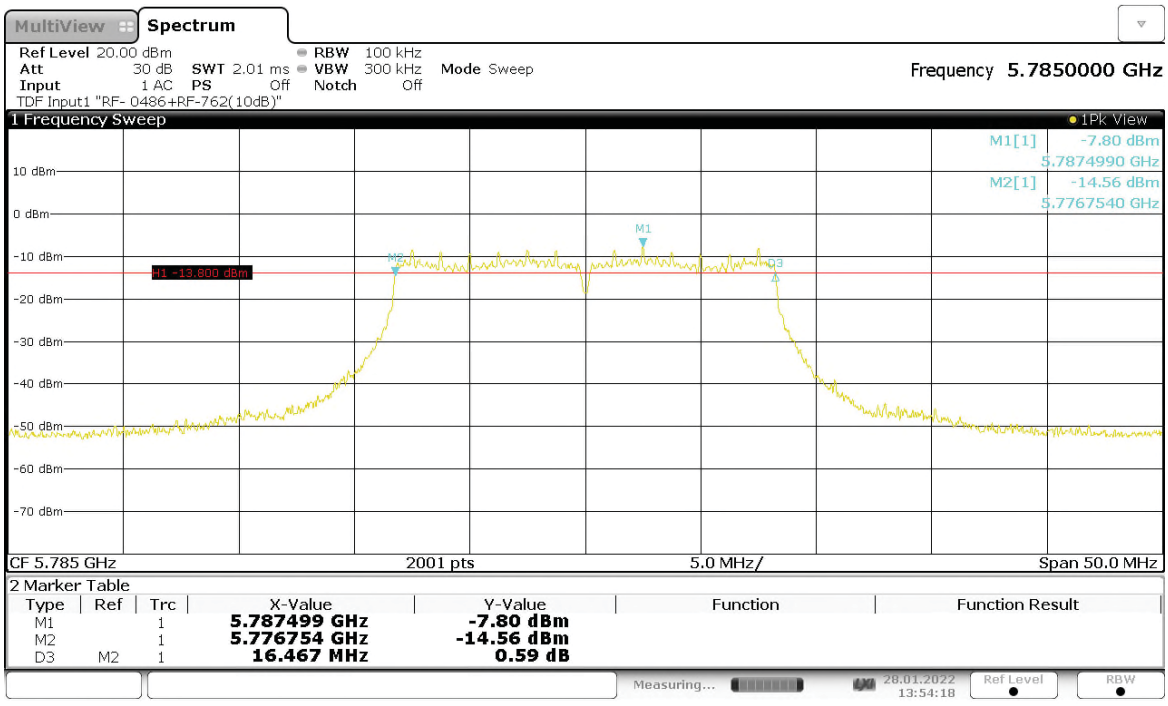
Operating Frequency [MHz]	6dB Bandwidth [MHz]	Limit [MHz]
5745	17.591	>0.5
5785	16.467	>0.5
5825	17.566	>0.5

Figure 14: 6dB Bandwidth, 802.11n-20, MIMO, RF0, 5745MHz



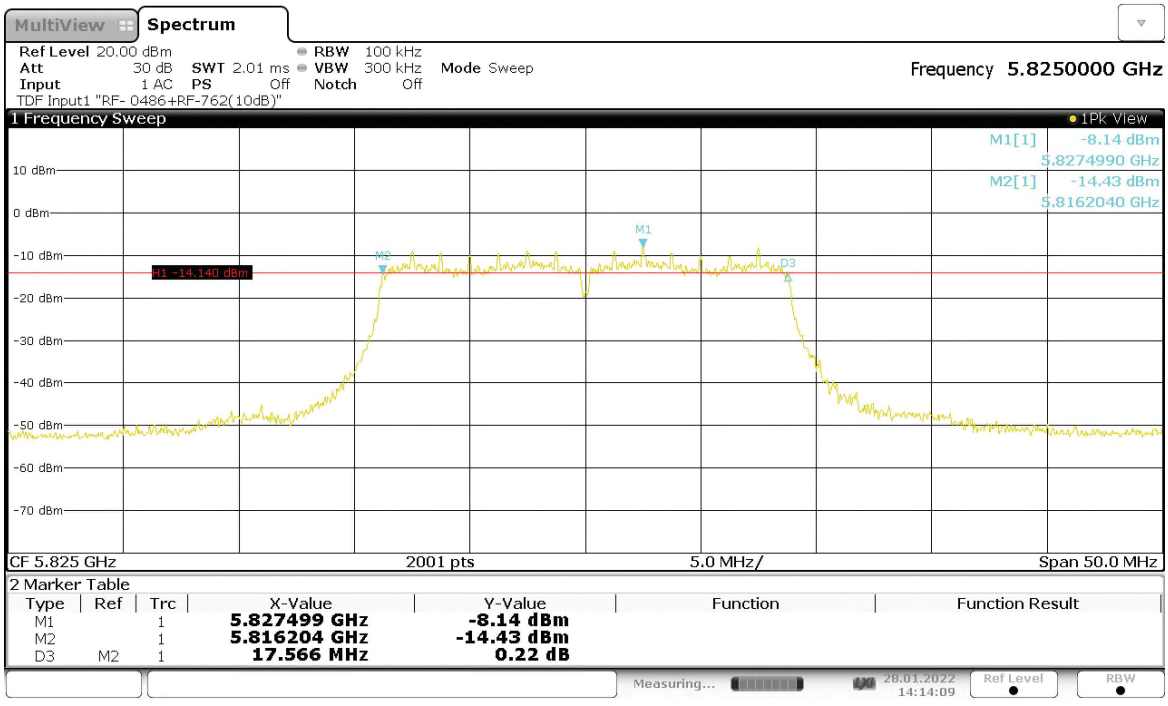
13:41:17 28.01.2022

Figure 15: 6dB Bandwidth, 802.11n-20, MIMO, RF0, 5785MHz



13:54:19 28.01.2022

Figure 16: 6dB Bandwidth, 802.11n-20, MIMO, RF0, 5825MHz



14:14:10 28.01.2022

Table 73: 6dB Bandwidth, 802.11ac-20, SISO, RF0

Operating Frequency [MHz]	6dB Bandwidth [MHz]	Limit [MHz]
5745	17.716	>0.5
5785	17.716	>0.5
5825	17.716	>0.5

Figure 17: 6dB Bandwidth, 802.11ac-20, SISO, RF0, 5745MHz

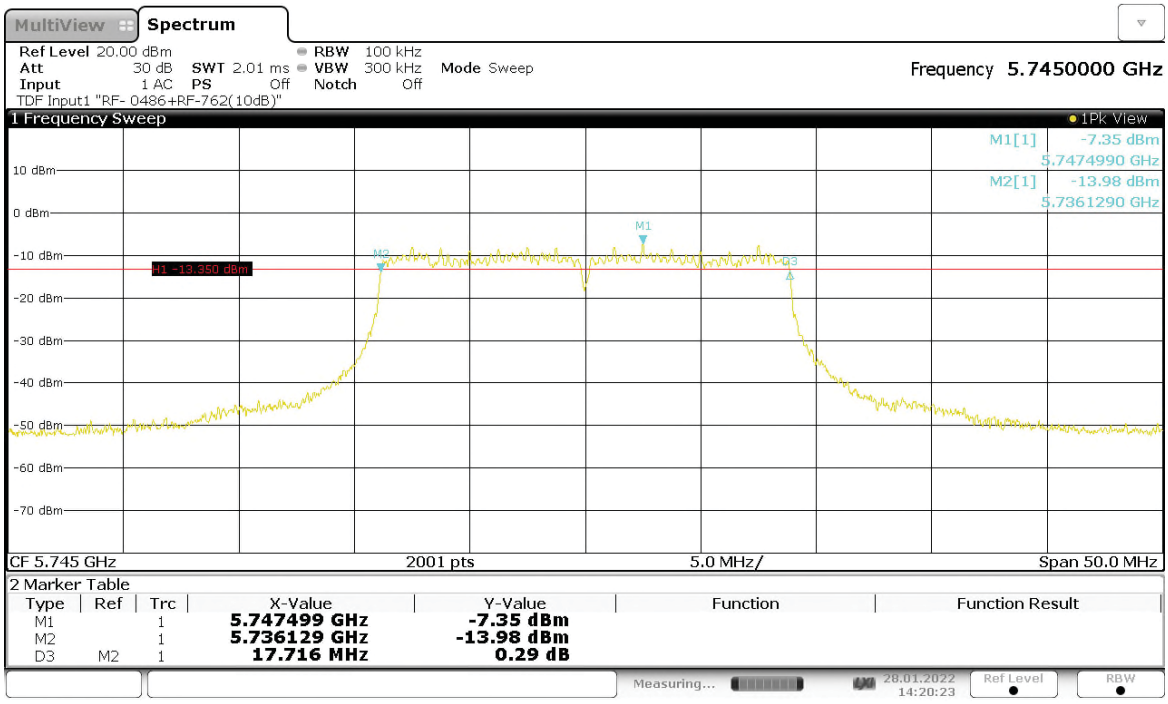
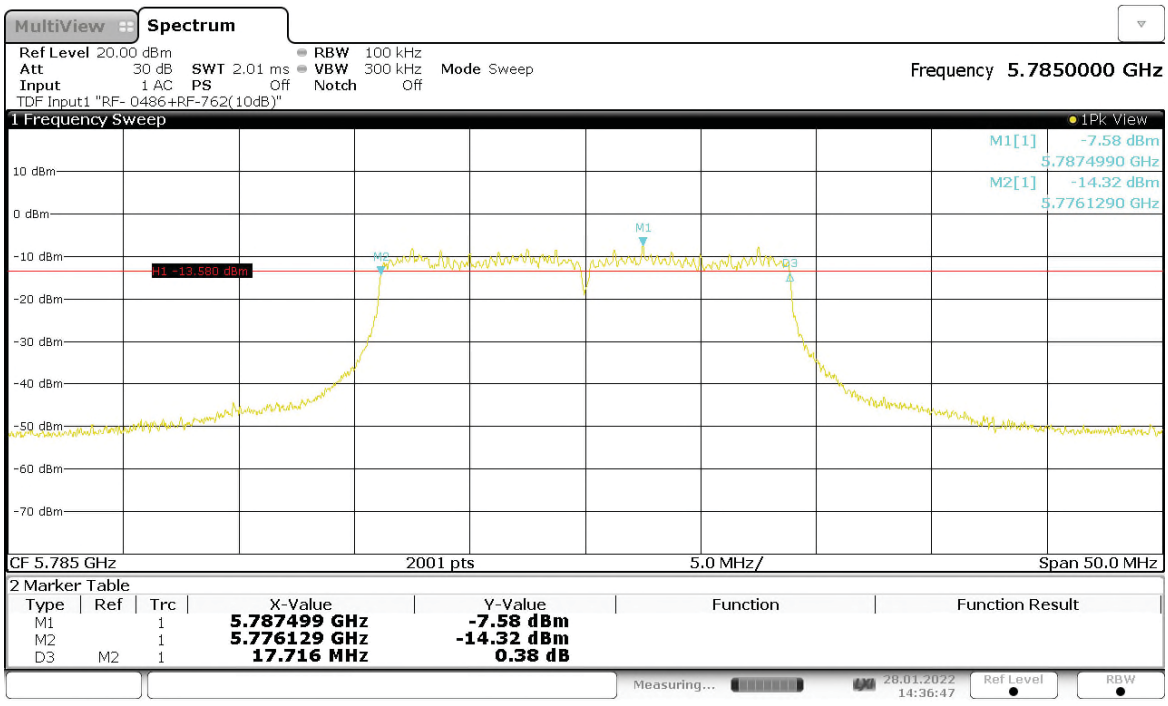
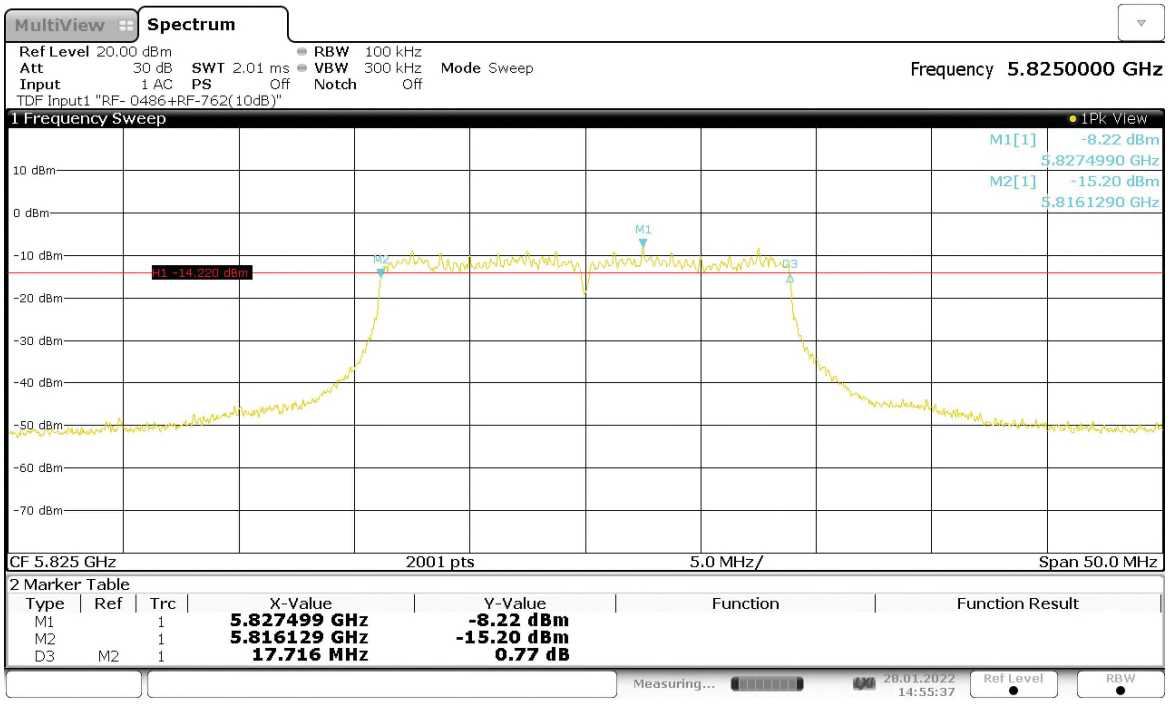


Figure 18: 6dB Bandwidth, 802.11ac-20, SISO, RF0, 5785MHz



14:36:47 28.01.2022

Figure 19: 6dB Bandwidth, 802.11ac-20, SISO, RF0, 5825MHz



14:55:38 28.01.2022

Table 74: 6dB Bandwidth, 802.11ac-20, CDD, RF0

Operating Frequency [MHz]	6dB Bandwidth [MHz]	Limit [MHz]
5745	17.716	>0.5
5785	17.716	>0.5
5825	17.716	>0.5

Figure 20: 6dB Bandwidth, 802.11ac-20, CDD, RF0, 5745MHz

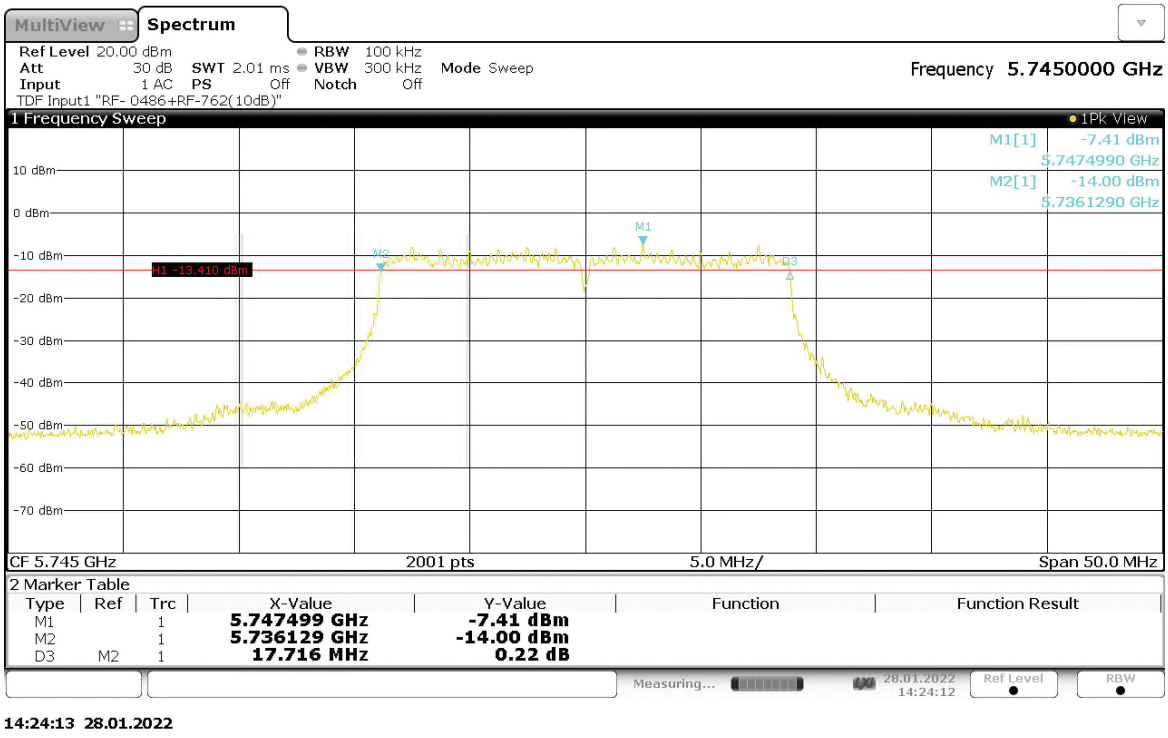
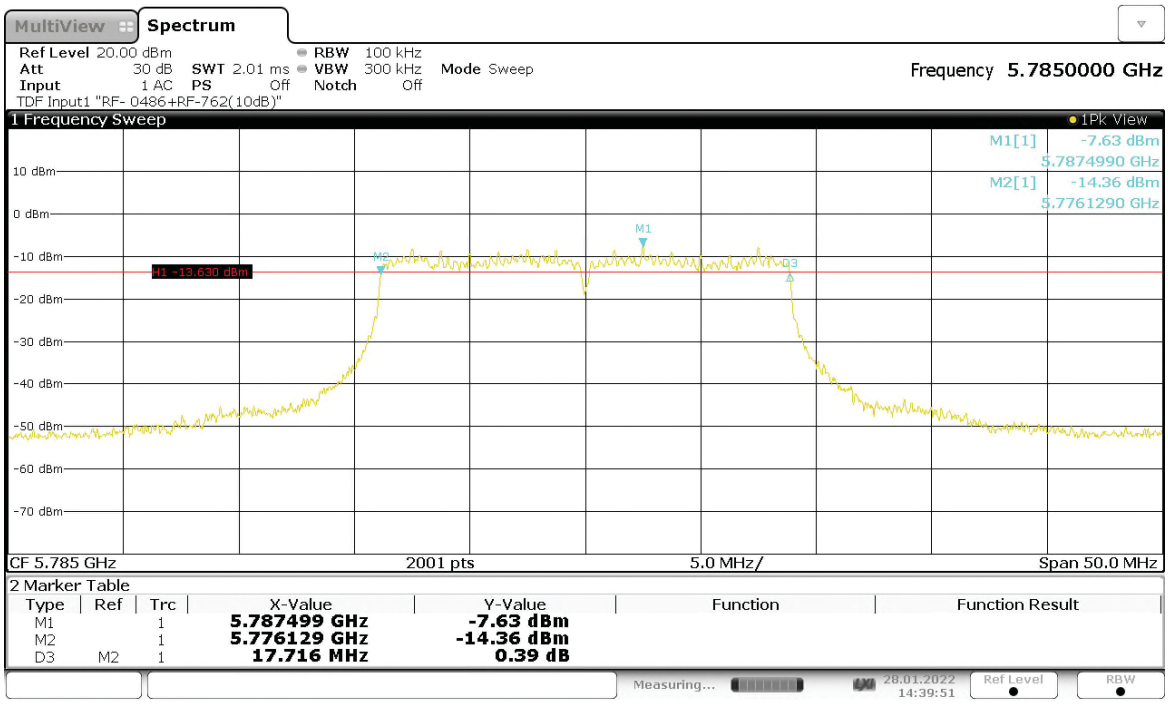
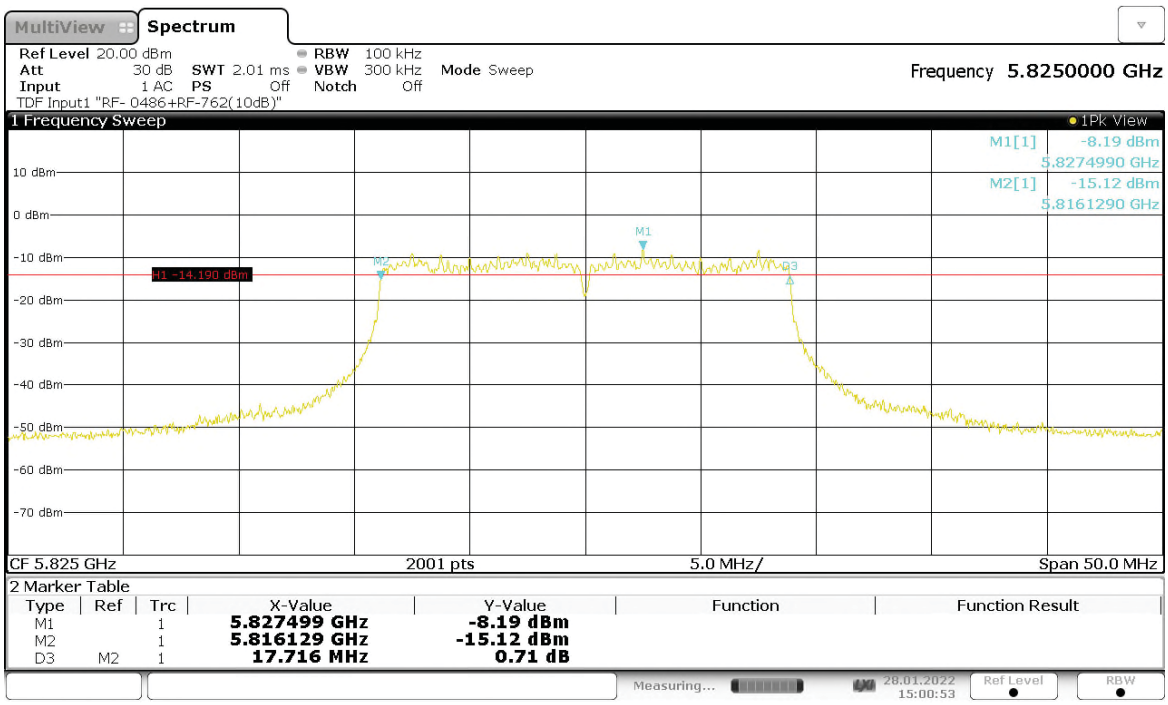


Figure 21: 6dB Bandwidth, 802.11ac-20, CDD, RF0, 5785MHz



14:39:51 28.01.2022

Figure 22: 6dB Bandwidth, 802.11ac-20, CDD, RF0, 5825MHz



15:00:53 28.01.2022

Table 75: 6dB Bandwidth, 802.11ac-20, MIMO, RF0

Operating Frequency [MHz]	6dB Bandwidth [MHz]	Limit [MHz]
5745	17.716	>0.5
5785	17.716	>0.5
5825	17.716	>0.5

Figure 23: 6dB Bandwidth, 802.11ac-20, MIMO, RF0, 5745MHz