DEKRA Certification, Inc.
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United States of America

FCC LISTED, REGISTRATION NUMBER: 2764.01

ISED LISTED REGISTRATION NUMBER: 23595-1

Test report No:
3428ERM.010A4

Test report

USA FCC Part 15.407 (U-NII), 15.209
CANADA RSS-210, RSS-Gen
Unlicensed National Information Infrastructure Devices. General technical requirements.
Licence-Exempt Radio Apparatus (All Frequency Bands): Category I Equipment. General Requirements and Information for the Certification of Radio Apparatus.

() Identification of item tested	Infotainment Head Unit
() Trademark	Garmin
() Model and /or type reference tested	IDC23 High 8155
Other identification of the product	FCC ID: IPH-03911 IC:1792A-03911
() Features	Bluetooth classic; BLE; Wi-Fi 2.4GHz; Wi-Fi 5GHz; GNSS
Manufacturer	Garmin International, Inc. 1200 E. 151st Street, Olathe, Kansas 66062, USA
Test method requested, standard	USA FCC Part 15.407 10-1-20 Edition : Unlicensed National Information Infrastructure Devices. General technical requirements. USA FCC Part 15.209 10-1-20 Edition: Radiated emission limits; general requirements. CANADA RSS-247 Issue 2 (February 2017). CANADA RSS-Gen Issue 5 (April 2018). 789033 D02 General UNII Test Procedures New Rules v02r01 Guidance for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices ANSI C63.10-2013: American National Standard for Testing Unlicensed Wireless Devices.
Summary	IN COMPLIANCE
Approved by (name / position & signature)	Domingo Galvez EMC&RF Lab Manager Digitally signed by Domingo Galvez DN: cn=Domingo Galvez, o=DEKRA Certification Inc., ou=Regulatory Lab, email=dgalvez@dekra.com, c=US
Date of issue	12-09-2022
Report template No	FDT08_23 () "Data provided by the client"

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Competences and guarantees

DEKRA Certification Inc. is a testing laboratory accredited by A2LA (The American Association for Laboratory Accreditation), to perform the tests indicated in the Certificate 2764.01

DEKRA Certification Inc. is a testing laboratory competent to carry out the tests described in this report.

In order to assure the traceability to other national and international laboratories, DEKRA Certification Inc. has a calibration and maintenance program for its measurement equipment.

DEKRA Certification Inc. guarantees the reliability of the data presented in this report, which is the result of the measurements and the tests performed to the item under test on the date and under the conditions stated on the report and, it is based on the knowledge and technical facilities available at DEKRA Certification at the time of performance of the test.

DEKRA Certification Inc. is liable to the client for the maintenance of the confidentiality of all information related to the item under test and the results of the test.

The results presented in this Test Report apply only to the particular item under test established in this document.

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Uncertainty

Uncertainty (factor k=2) was calculated according to the DEKRA Certification internal document PODT000.

Test case	Frequency (MHz)	U (k=2)	Units
RF Power and PSD	5150-5850	0.88	dB
Occupied Bandwidth		1.87	%
Band Edge		0.64	dB
Radiated Spurious Emission	30-180	4.27	dB
	180-1000	3.14	dB
	1000-18000	3.30	dB
	18000-40000	3.49	dB

Data provided by the client

The main functionalities are Navigation, USB, voice recognition and several interfaces to the vehicle and Bluetooth / WLAN. The Head-unit provides different interfaces like: AR-CAM input, Video-out APIX3 (for the connection of an external Display), 3 USB interfaces.

DEKRA declines any responsibility with respect to the information provided by the client and that may affect the validity of results.

Usage of samples

Samples used for test have been selected by: The client.

Sample S/01 is composed of the following elements:

Control Nº	Description	Model	Serial Nº	Date of reception
3428/05	Garmin IDC23 beam forming mode sample	IDC23 High 8155	GAB443N0001212	03/16/2022
3428/02	Garmin IDC23 non-beam forming mode sample	IDC23 High 8155	GAB443N0001055	03/16/2022

Sample S/01 is composed of the following accessories:

Control Nº	Description	Model	Serial Nº	Date of reception
2874/72	Harness	--	--	03/26/2021
2874/09	Fakra to SMA Connector	--	--	03/26/2021
2874/13	OABR Connector Cable	--	--	03/26/2021
3171/05	CAN Interface	--	--	03/05/2021
3171/11	Ethernet Cable	--	--	03/05/2021

1. Sample S/01 was used for the following test(s): All conducted tests indicated in appendix B, C, D and E.

Sample S/02 is composed of the following elements:

Control Nº	Description	Model	Serial Nº	Date of reception
3428/04	Garmin IDC23 non-beam forming mode sample	IDC23 High 8155	GAB443N0001134	03/16/2022
3428/05	Garmin IDC23 beam forming mode sample	IDC23 High 8155	GAB443N0001212	03/16/2022
2874/73	Antenna	--	--	10/22/2021

Sample S/02 is composed of the following accessories:

Control Nº	Description	Model	Serial Nº	Date of reception
2874/06	Harness	--	--	03/26/2021
2874/07	Antenna Wave Fakra 5G-GNSS	--	8705915-04	03/26/2021
2874/08	BMW Antenna-DA Fakra 5G-GNSS	--	6520 8705915-04	03/26/2021
2874/12	OABR Connector Cable	--	--	03/26/2021
3171/05	CAN Interface	--	--	03/05/2021
3171/11	Ethernet Cable	--	--	03/05/2021

. Sample S/02 was used for the following test(s): All Radiated tests indicated in appendix B, C, D and E.

Test sample description

<table>
<tr><td rowspan="8">Ports…… :</td><td rowspan="2">Port name and description</td><td colspan="3">Cable</td></tr>
<tr><td>Specified length [m]</td><td>Attached during test</td><td>Shielded</td></tr>
<tr><td>BT/Wi-fi Antenna</td><td>2</td><td>☒</td><td>☐</td></tr>
<tr><td>USB1/2/3</td><td>2</td><td>☒</td><td>☐</td></tr>
<tr><td>Power</td><td>2</td><td>☒</td><td>☐</td></tr>
<tr><td>CID</td><td>2</td><td>☒</td><td>☐</td></tr>
<tr><td>AR-Cam</td><td>2</td><td>☒</td><td>☐</td></tr>
<tr><td>100 Base T1/1G Base T1/GPS/DCS/HUD/DFE</td><td>2</td><td>☒</td><td>☐</td></tr>
<tr><td>Supplementary information to the ports……</td><td colspan="4">No Data Provided</td></tr>
<tr><td rowspan="5">Rated power supply .....:</td><td colspan="2" rowspan="2">Voltage and Frequency</td><td colspan="5">Reference poles</td></tr>
<tr><td>L1</td><td>L2</td><td>L3</td><td>N</td><td>PE</td></tr>
<tr><td>☐</td><td>AC:</td><td>☐</td><td>☐</td><td>☐</td><td>☐</td><td>☐</td></tr>
<tr><td>☐</td><td>AC:</td><td>☐</td><td>☐</td><td>☐</td><td>☐</td><td>☐</td></tr>
<tr><td>☒</td><td colspan="6">DC: 8V to 16V</td></tr>
<tr><td></td><td>☐</td><td colspan="6">DC:</td></tr>
<tr><td>Rated Power .....:</td><td colspan="7">No Data Provided</td></tr>
<tr><td>Clock frequencies.....:</td><td colspan="7">No Data Provided</td></tr>
<tr><td>Other parameters .....:</td><td colspan="7">No Data Provided</td></tr>
<tr><td>Software version .....:</td><td colspan="7">No Data Provided</td></tr>
<tr><td>Hardware version .....:</td><td colspan="7">No Data Provided</td></tr>
<tr><td>Dimensions in cm (W x H x D) ....:</td><td colspan="7">No Data Provided</td></tr>
<tr><td rowspan="5">Mounting position .....:</td><td>☐</td><td colspan="6">Tabletop equipment</td></tr>
<tr><td>☐</td><td colspan="6">Wall/Ceiling mounted equipment</td></tr>
<tr><td>☐</td><td colspan="6">Floor standing equipment</td></tr>
<tr><td>☐</td><td colspan="6">Hand-held equipment</td></tr>
<tr><td>☒</td><td colspan="6">Other: Automotive</td></tr>
<tr><td rowspan="3">Modules/parts.....:</td><td colspan="2">Module/parts of test item</td><td colspan="3">Type</td><td>Manufacturer</td></tr>
<tr><td colspan="2">No Data Provided</td><td colspan="3"></td><td></td></tr>
<tr><td colspan="2"></td><td colspan="3"></td><td></td></tr>
</table>

Accessories (not part of the test item) .....:	Description	Type	Manufacturer
	USB drives		
	APIX 3 Box		
	AR-CAM		
	OptoLan-Gb		
	OptoLan- BCM89811		
	OptoCAN		
Documents as provided by the applicant .....:	Description	File name	Issue date
	Declaration Equipment Data	FDT30_18 Declaration Equipment Data IDC23_8155_20220318	05/24/2022

Copy of marking plate:

Identification of the client

Garmin International, Inc.
1200 E. 151st Street,
Olathe, Kansas 66062, USA

Testing period and place

Test Location	DEKRA Certification Inc.
Date (start)	03-01-2022
Date (finish)	06-17-2022

Document history

Report number	Date	Description
3428ERM.010	07-28-2022	First release
3428ERM.010A1	08-19-2022	Second release
3428ERM.010A2	09-23-2022	Third release
3248ERM.010A3	11-30-2022	Fourth release
3248ERM.010A4	12-05-2022	Fifth release

Modifications to the reference test report

It was introduced the following modifications in respect to the test report number 3428ERM.010A2 related with the same samples:

Clauses/ Sub-Clauses	Modification	Justification
Page 14-15 - DUT Description	Modulation information updated	To show additional information
Appendix B: Test results 5.15 GHz – 5.25 GHz Band 16	Ax mode resource units statement added	To provide additional information
Appendix C: Test results 5.25 GHz – 5.35 GHz Band 305	Ax mode resource units statement added	To provide additional information
Appendix D: Test results 5.47 GHz – 5.725 GHz Band 585	Ax mode resource units statement added	To provide additional information
Appendix E: Test results 5.725 GHz – 5.85 GHz Band 889	Ax mode resource units statement added	To provide additional information

This modification test report cancels and replaces the test report 3428ERM.010A2.

Environmental conditions

In the control chamber, the following limits were not exceeded during the test:

Temperature	Min. = 15 ºC Max. = 35 ºC
Relative humidity	Min. = 30 % Max. = 75 %
Air pressure	Min. = 860 mbar Max. = 1060 mbar

In the semi-anechoic chamber, the following limits were not exceeded during the test.

Temperature	Min. = 15 ºC Max. = 35 ºC
Relative humidity	Min. = 30 % Max. = 75 %
Air pressure	Min. = 860 mbar Max. = 1060 mbar

In the chamber for conducted measurements, the following limits were not exceeded during the test:

Temperature	Min. = 15 ºC Max. = 35 ºC
Relative humidity	Min. = 30 % Max. = 60 %
Air pressure	Min. = 860 mbar Max. = 1060 mbar

Remarks and comments

The tests have been performed by the technical personnel: Lakshmi Gollamudi, Juliana Cherry, Yuri Barone and Nasir Khan.

Testing verdicts

Not applicable :	N/A
Pass :	P
Fail :	F
Not measured :	N/M

Summary

FCC PART 15 PARAGRAPH / RSS-407(Wi-Fi 5GHz) 5.15 GHz -5.25 GHz Band					
Report Section	**15.407 Spec Clause**	**RSS Spec Clause**	**Test Description**	**Verdict**	**Remark**
B.1 / F.5 / F.6	§ 15.403 KDB 789033 D02	RSS 247 6.2.1	26dB Emission Bandwidth & Occupied Bandwidth	P	N/A
B.2 / F.1	§ 15.407 (a) (1) (iv)	RSS 247 6.2.1.1	Power Limits. Maximum Output Power	P	N/A
B.3 / F.2	§ 15.407 (a) (1) (iv)	RSS-247 6.2.1.1	Maximum Power Spectral Density	P	N/A
B.4 / F.4	§ 15.407 (b) (1)	RSS-247 6.2.1.2	Band-edge conducted emissions compliance (Transmitter)	P	N/A
--	§ 15.407 (b)(6) § 15.207	RSS-Gen 8.8	Emission limitations Conducted (Transmitter)	N/A	N/A
B.5	§ 15.407 (b) (1) § 15.209 § 15.205	RSS-Gen 8.9 & 8.10	Undesirable radiated emissions (Transmitter)	P	N/A
--	§ 15.407 (g)	RSS-Gen 6.11 & 8.11	Frequency Stability	N/M	Refer 1

Supplementary information and remarks:

The test set-up was made in accordance to the general provisions of ANSI C63.10: 2013 and FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01 dated 12/14/2017

1) The compliance is checked through a description of how this requirement is met that is provided by the applicant.

FCC PART 15 PARAGRAPH / RSS-247 (WIFI 5GHz) 5.25 GHz -5.35 GHz Band					
Report Section	**FCC Spec Clause**	**RSS Spec Clause**	**Test Description**	**Verdict**	**Remark**
C.1 / F.5 / F.6	§ 15.403 (i) KDB 789033 D02	RSS 247 6.2.2	26dB Emission Bandwidth & Occupied Bandwidth	P	N/A
C.2 / F.1	§ 15.407 (a)(2)(4)	RSS 247 6.2.2.1	Power Limits. Maximum Output Power	P	N/A
C.3 / F.2	§ 15.407 (a)(2)(5)	RSS-247 6.2.2.1	Power Spectral Density	P	N/A
C.4 / F.4	§ 15.407 (b)(2)	RSS-247 6.2.2.2	Band-edge conducted emissions compliance (Transmitter)	P	N/A
--	§ 15.407 (b)(6) § 15.207	RSS-Gen 8.8	Emission limitations Conducted (Transmitter)	N/A	N/A
C.5	§ 15.407 (b)(2)(6)(7) § 15.209 § 15.205	RSS-247 6.2.2.2 RSS-Gen 8.9 & 8.10	Undesirable radiated emissions (Transmitter)	P	N/A
--	§ 15.407 (g)	RSS-Gen 6.11 & 8.11	Frequency Stability	N/M	Refer 1

Supplementary information and remarks:

The test set-up was made in accordance to the general provisions of ANSI C63.10: 2013 and FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01 dated 12/14/2017

1) The compliance is checked through a description of how this requirement is met that is provided by the applicant.

FCC PART 15 PARAGRAPH / RSS-247 (WIFI 5GHz) 5.47 GHz -5.725 GHz Band					
Report Section	**FCC Spec Clause**	**RSS Spec Clause**	**Test Description**	**Verdict**	**Remark**
D.1 / F.5 / F.6	§ 15.403 (i) KDB 789033 D02	RSS 247 6.2.3	26dB Emission Bandwidth & Occupied Bandwidth	P	N/A
D.2 / F.1	§ 15.407 (a)(2)(4)	RSS 247 6.2.3.1	Power Limits. Maximum Output Power	P	N/A
D.3 / F.2	§ 15.407 (a)(2)(5)	RSS-247 6.2.3.1	Power Spectral Density	P	N/A
D.4 / F.4	§ 15.407 (b)(3)	RSS-247 6.2.3.2	Band-edge conducted emissions compliance (Transmitter)	P	N/A
--	§ 15.407 (b)(6) § 15.207	RSS-Gen 8.8	Emission limitations Conducted (Transmitter)	N/A	N/A
D.5	§ 15.407 (b)(3)(6)(7) § 15.209 § 15.205	RSS-247 6.2.3.2 RSS-Gen 8.9 & 8.10	Undesirable radiated emissions (Transmitter)	P	N/A
--	§ 15.407 (g)	RSS-Gen 6.11 & 8.11	Frequency Stability	N/M	Refer 1

Supplementary information and remarks:

The test set-up was made in accordance to the general provisions of ANSI C63.10: 2013 and FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01 dated 12/14/2017

1) The compliance is checked through a description of how this requirement is met that is provided by the applicant.

FCC PART 15 PARAGRAPH / RSS-247 (Wi-Fi 5GHz) 5.725 GHz -5.825 GHz Band					
Report Section	**15.407 Spec Clause**	**RSS Spec Clause**	**Test Description**	**Verdict**	**Remark**
E.1 / F5 / F.6	§ 15.403 KDB 789033 D02	RSS 247 6.2.4	26dB Emission Bandwidth & Occupied Bandwidth	P	N/A
E.2 / F.3	§ 15.407 (e)	RSS 247 6.2.4.1	6dB Bandwidth	P	N/A
E.3 / F.1	§ 15.407 (a)(3)	RSS 247 6.2.4.1	Power Limits. Maximum Output Power	P	N/A
E.4 / F.2	§ 15.407 (a)(3)	RSS-247 6.2.4.1	Maximum Power Spectral Density	P	N/A
E.5 / F.4	§ 15.407 (b)(4)	RSS-247 6.2.4.2	Band-edge conducted emissions compliance (Transmitter)	P	N/A
--	§ 15.407 (b)(6) § 15.207	RSS-Gen 8.8	Emission limitations Conducted (Transmitter)	N/A	N/A
E.6	§ 15.407 (b)(4),(7) § 15.209 § 15.205	RSS-Gen 8.9 & 8.10	Undesirable radiated emissions (Transmitter)	P	N/A
--	§ 15.407 (g)	RSS-Gen 6.11 & 8.11	Frequency Stability	N/M	Refer 1

Supplementary information and remarks:

The test set-up was made in accordance to the general provisions of ANSI C63.10: 2013 and FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01 dated 12/14/2017

1. Acc. To FCC, Manufacturers of UNII devices are responsible for frequency stability compliance.

FCC PART 15 PARAGRAPH / RSS-247 (Wi-Fi 5GHz) Common Requirements for all bands					
Report Section	**15.247 Spec Clause**	**RSS Spec Clause**	**Test Description**	**Verdict**	**Remark**
--	§ 15.407 (c)	RSS 247 6.4	Transmission in case of absence of information to transmit, or operational failure.	N/M	Refer 1

Supplementary information and remarks:

1) The compliance is checked through a description of how this requirement is met that is provided by the applicant.

List of equipment used during the test

Conducted Measurements

CONTROL NUMBER	DESCRIPTION	MANUFACTURER	MODEL	LAST CALIBRATION	NEXT CALIBRATION
1038	TS8997 TEST SYSTEM	Rohde & Schwarz	TS8997	N/A	N/A
0101	Climatic chamber	ESPEC North America	ESL-2CA	2022/02	2023/02
1107	ETHERNET SNMP THERMOMETER	HW GROUP	HWg-STE Plain	2020/08	2022/08
1313	WIRELESS MEASUREMENT SOFTWARE R&S WMS32	Rohde & Schwarz	N/A	N/A	N/A

Radiated Measurements

CONTROL NUMBER	DESCRIPTION	MANUFACTURER	MODEL	LAST CALIBRATION	NEXT CALIBRATION
0981	RF pre-amplifier 1-18 GHz	Bonn Elektronik	BLMA 0118-2A	2020/11	2022/11
0982	RF pre-amplifier 18-40 GHz	Bonn Elektronik	BLMA 1840-1M	2020/11	2022/11
1012	EMI TEST RECEIVER	Rohde & Schwarz	ESR 26	2022/04	2024/04
1014	Spectrum analyzer	Rohde & Schwarz	FSV40	2021/05	2023/05
1056	Double-ridge Waveguide Horn antenna 18-40 GHz	ETS LINDGREN	3116C	2020/01	2023/01
1057	Double-ridge Waveguide Horn antenna 1-18 GHz	ETS LINDGREN	3115	2020/06	2023/06
1065	Biconical Log antenna	ETS LINDGREN	3142E	2020/08	2023//08
1111	ETHERNET SNMP THERMOMETER	HW GROUP	HWg-STE Plain	2020/08	2022/08
1179	Semi anechoic Absorber Lined Chamber	Frankonia	SAC 3 plus “L”	N/A	N/A

Appendix A: DUT Description

DUT Description

The following information is provided by the client

Information	Description
Equipment type	Wi-Fi 5GHz
DFS Operating Mode	---
TPC Function	Yes
Antenna Specification	Equipment with two antennas (1/4 wave coax)
Operating Frequency Range	5150 - 5250 MHz 5250 – 5350 MHz 5470 – 5725 MHz 5725 – 5825 MHz
Nominal Channel Bandwidth	20/ 40/ 80 MHz
Antenna type	SISO: Radio A SISO Radio B MIMO Radio A+ Radio B
RF Output Power	14 dBm
Antenna gain	-2.8 dBi
Supply Voltage	12 Vdc
Modulation:	OFDM (QPSK, BPSK,16QAM,64QAM,256QAM,1024QAM)
Communication Mode:	IP Based (Load Based)
Transmit Data Rate:	802 .11 a/n/ac/ax Rates: IEEE 802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps IEEE 802.11n: MCS0-7 IEEE 802.11ac: VHT SS1 MCS 0-9 VHT SS2 MCS 0-9 IEEE 802.11ax: HE SS1 MCS8 HE SS1 MCS9 HE SS1 MCS11
Geo-location capability	No

Appendix B: Test results
5.15 GHz – 5.25 GHz Band

Appendix B Content

DESCRIPTION OF TEST CONDITIONS

TEST CONDITIONS	DESCRIPTION
TC#01[1] **(a mode)**	Power supply (V): $V_{nominal}$ = 12 Vdc Channel Bandwidth: 20 MHz Test Frequencies for Conducted/Radiated tests: (SISO Radio A, MIMO Radio A+B) Lowest range: 5180 MHz Middle channel: 5200 MHz Highest range: 5240 MHz
TC#02[1] **(n mode)**	Power supply (V): $V_{nominal}$ = 12 Vdc Channel Bandwidth: 20 MHz Test Frequencies for Conducted/Radiated tests: (SISO Radio A, SISO Radio B and Radio A+B) Lowest channel: 5180 MHz Middle channel: 5200 MHz Highest channel: 5240 MHz Channel Bandwidth: 40 MHz Test Frequencies for Conducted/Radiated tests: (SISO Radio A, SISO Radio B and Radio A+B) Lowest channel: 5190 MHz Highest channel: 5230 MHz

TEST CONDITIONS	DESCRIPTION
TC#03(1) **(ac mode)**	Power supply (V): $V_{nominal}$ = 12 Vdc Channel Bandwidth: 20 MHz Test Frequencies for Conducted/Radiated tests: (SISO Radio A, SISO Radio B and Radio A+B) Lowest channel: 5180 MHz Middle channel: 5200 MHz Highest channel: 5240 MHz Channel Bandwidth:40 MHz Test Frequencies for Conducted/Radiated tests: (SISO Radio A, SISO Radio B and Radio A+B) Lowest channel: 5190 MHz Highest channel: 5230 MHz Channel Bandwidth: 80 MHz Test Frequencies for Conducted/Radiated tests: (SISO Radio A, SISO Radio B and Radio A+B) Lowest channel: 5210 MHz
TC#04(1)(2) **(ax mode)**	Power supply (V): $V_{nominal}$ = 12 Vdc Channel Bandwidth: 20 MHz Test Frequencies for Conducted/Radiated tests: (SISO Radio A, SISO Radio B and Radio A+B) Lowest channel: 5180 MHz Middle channel: 5200 MHz Highest channel: 5240 MHz Channel Bandwidth:40 MHz Test Frequencies for Conducted/Radiated tests: (SISO Radio A, SISO Radio B and Radio A+B) Lowest channel: 5190 MHz Highest channel: 5230 MHz Channel Bandwidth: 80 MHz Test Frequencies for Conducted/Radiated tests: (SISO Radio A, SISO Radio B and Radio A+B) Lowest channel: 5210 MHz

TEST CONDITIONS	DESCRIPTION
TC#05(1) **(ac mode Beam forming)**	Power supply (V): $V_{nominal}$ = 12 Vdc Channel Bandwidth: 20 MHz Test Frequencies for Conducted/Radiated tests (MIMO Radio A+B): Lowest channel: 5180 MHz Middle channel: 5200 MHz Highest channel: 5240 MHz Channel Bandwidth:40 MHz Test Frequencies for Conducted/Radiated tests (MIMO Radio A+B): Lowest channel: 5190 MHz Highest channel: 5230 MHz Channel Bandwidth: 80 MHz Test Frequencies for Conducted/Radiated tests (MIMO Radio A+B): Lowest channel: 5210 MHz

Note (1): The test set-up was made in accordance to the general provisions of FCC Unlicensed National Information Infrastructure (U-NII) Devices 789033 D02 General U-NII Test Procedures New Rules v02r01 dated Dec 14, 2017.

The EUT was tested in the following operating mode:

- Continuously transmitting with a modulated carrier at maximum power in all required channels using the supported data rates/modulation types.
- Preliminary tests for 26 dB and Occupied bandwidth determined the SISO worst case: Port A.
- For spurious emissions for OFDM modes 802.11a, 802.11n20/40, 802.11ac20/40/80, and 11ax20/40/80 a preliminary scan was performed to determine the worst case. The following tables and plots show the results for the worst case in 802.11ac mode.
- The data rates of 54Mb/s for 802.11a, MCS 7 for 802.11n, MCS8 for 802.11ac20 and MCS9 for 802.11ac40/80, and MCS8 for ax20/40/80 were selected based on preliminary testing that identified those rates corresponding to the worst cases.
- For all modes, the EUT was configured in test mode using a software application. The application was used to enable a continuous transmission and to select the test channels as required. The client supplied instructions to configure the EUT. The customer supplied a document containing the setup instructions.
- Beamforming mode is only supported with OFDMA Full RU according to manufacturer specifications (see annex F).

Note (2): Preliminary measurements determined the PSD levels of partial RU is higher than the full RU in ax mode. RU 26 tone was identified as the worst-case RU (Resource Unit) carrier allocation for all non-beamforming ax mode testing.

The worst-case RU combinations used in the ax mode SISO/MIMO measurement (all test cases except Band Edge testing) are indicated as follows:

- 20 MHz BW - RU26 offset 0
- 40 MHz BW - RU26 offset 8
- 80 MHz BW - RU26 offset 0

The worst-case RU combinations used in the ax mode SISO/MIMO measurement (Band Edge testing) are indicated as follows:

- 20 MHz BW - RU26 offset 0 & 8
- 40 MHz BW - RU26 offset 0 & 17
- 80 MHz BW - RU26 offset 0 & 36

Directional Antenna Gain Calculations for CDD MIMO In-Band Measurements:

For 2Tx CDD MIMO modes, in accordance with KDB 662911 D01 v02r01 Section F)2)f)i), directional gain was calculated as follows:

• For power spectral density (PSD) measurements:
Directional gain $_{PSD}$ = G_{ANT} + 10 log(N_{ANT}/N_{SS}) dBi
N_{SS} = 1 (worst case), N_{ANT} = 2, G_{ANT} = -2.8 dBi
Directional gain $_{PSD}$ = 2 + 10 log(2/1) = 2 + 10log(2) = -2.8 + 3.01 = + 0.21 dBi
PSD Antenna Gain MIMO Chain 0 & 1: + 0.21 dBi

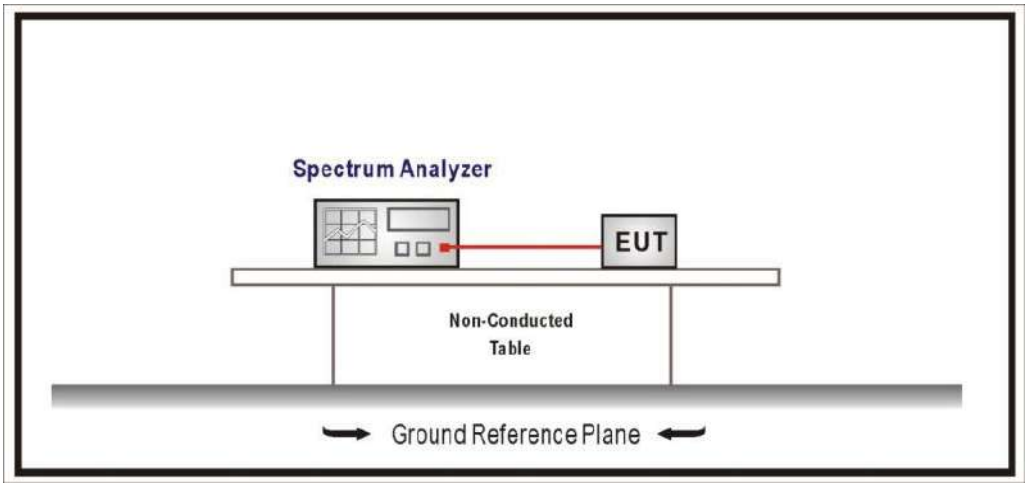
• For power measurements:
Directional gain $_{POWER}$ = G_{ANT} dBi (N_{ANT} < 4)
Directional gain $_{POWER}$ = G_{ANT} =- 2.8 dBi
Power Antenna Gain MIMO Chain 0 & 1: - 2.8 dBi

SECTION B.1: 26DB EMISSION BANDWIDTH AND OCCUPIED BANDWIDTH

LIMITS:	Product standard:	Part 15 Subpart C §15.403 and RSS-247
	Test standard:	Part 15 Subpart C §15.403 and RSS-247 6.2.1

No requirements requested.

TEST SETUP:	



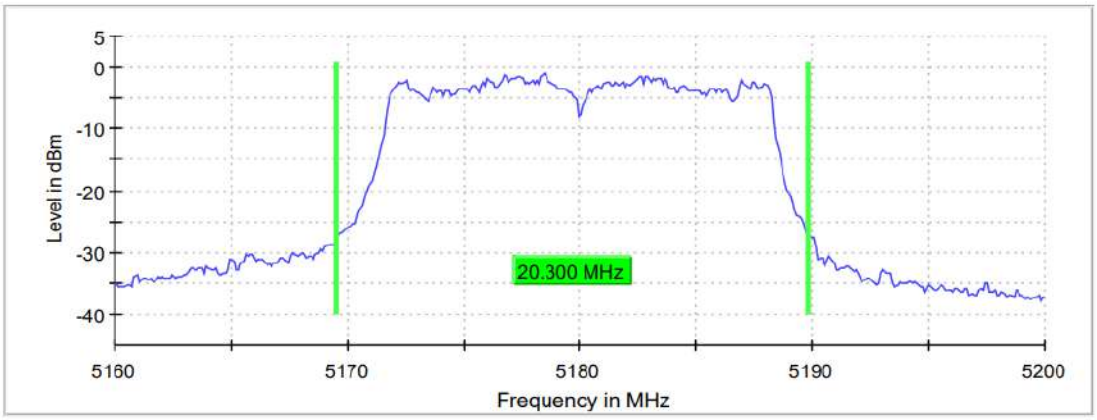
TESTED SAMPLES:	S/01
TESTED CONDITIONS MODES:	TC#01 (a mode SISO Radio A)
TEST RESULTS:	PASS

Bandwidth: 20 MHz

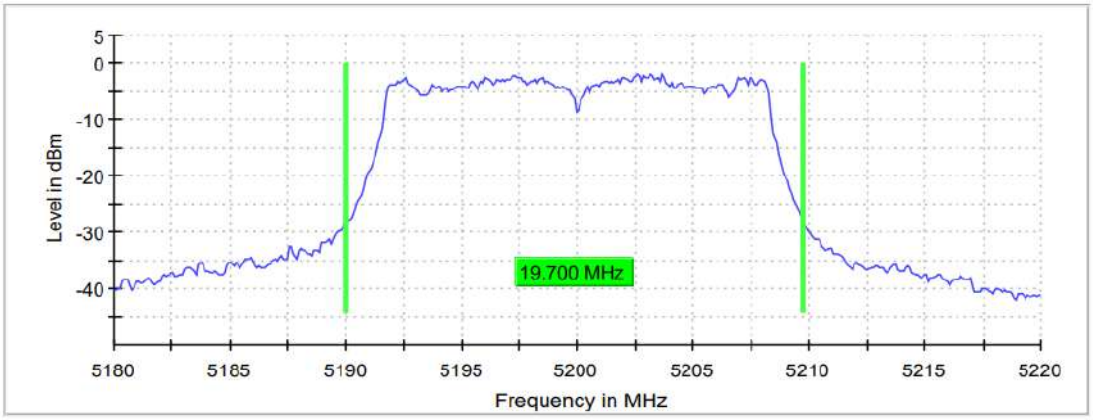
	Lowest frequency 5180 MHz	Middle frequency 5200 MHz	Highest frequency 5240 MHz
26dB Bandwidth (MHz)	20.300	19.700	19.900
Occupied bandwidth (MHz)	16.600	16.600	16.500

TEST RESULTS (Cont.):	26 dB BANDWIDTH

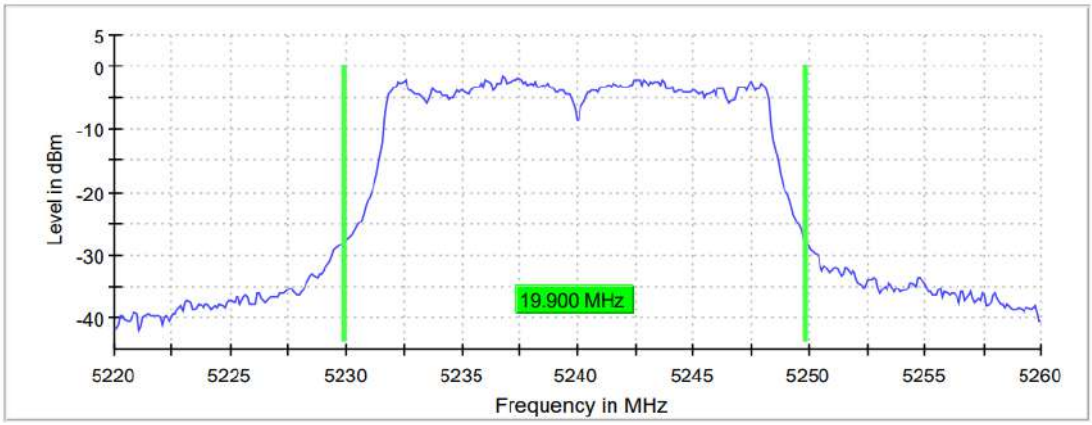
Lowest Channel



Middle Channel



Highest Channel



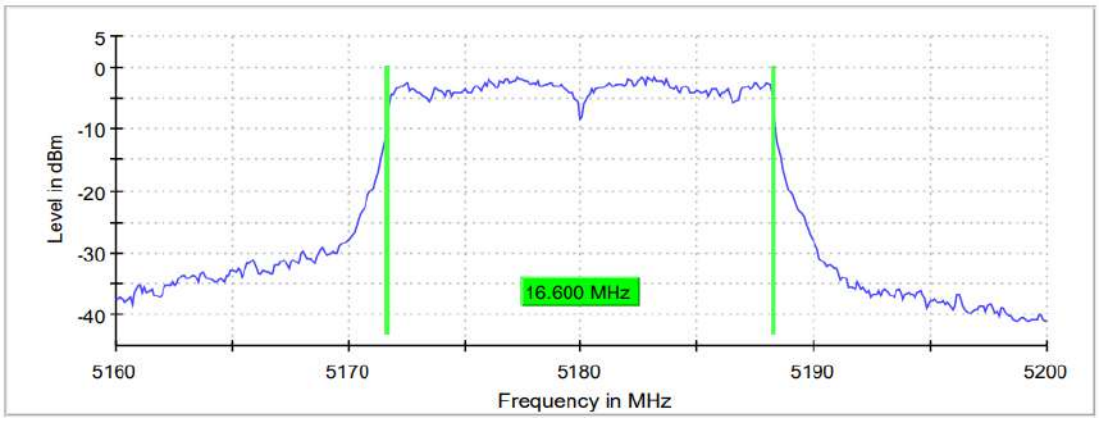
TEST RESULTS (Cont.)	

Measurement

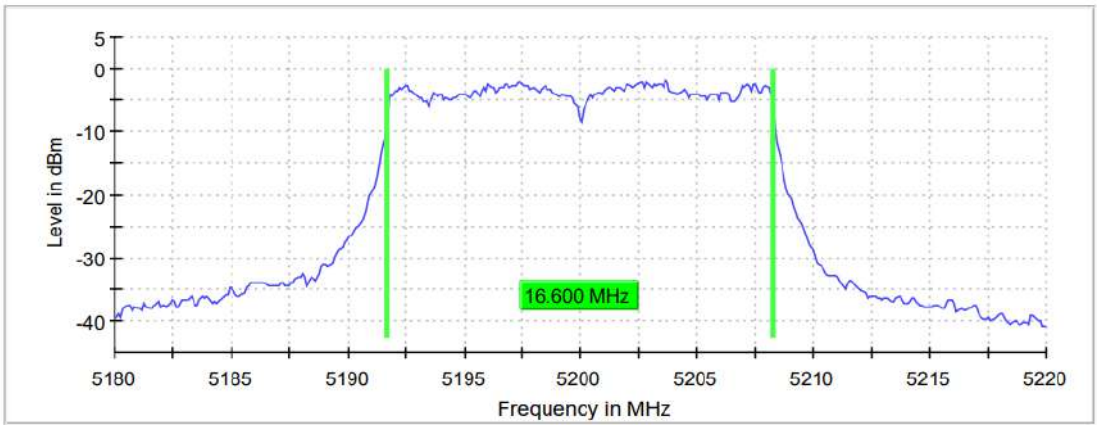
Setting	Instrument Value	Instrument Value	Instrument Value
Start Frequency	5.16000 GHz	5.18000 GHz	5.22000 GHz
Stop Frequency	5.20000 GHz	5.22000 GHz	5.26000 GHz
Span	40.000 MHz	40.000 MHz	40.000 MHz
RBW	200.000 kHz	200.000 kHz	200.000 kHz
VBW	1.000 MHz	1.000 MHz	1.000 MHz
Sweep Points	400	400	400
Sweep time	28.477 µs	28.477 µs	28.477 µs
Reference Level	10.000 dBm	0.000 dBm	0.000 dBm
Attenuation	30.000 dB	20.000 dB	20.000 dB
Detector	Max Peak	Max Peak	Max Peak
Sweep Count	200	200	200
Filter	3 dB	3 dB	3 dB
Trace Mode	Max Hold	Max Hold	Max Hold
Sweep type	FFT	FFT	FFT
Preamp	off	off	off
Stable mode	Trace	Trace	Trace
Stable value	0.30 dB	0.30 dB	0.30 dB
Run	48 / max. 150	41 / max. 150	37 / max. 150
Stable	5 / 5	5 / 5	5 / 5
Max Stable Difference	-2.87 dB	0.09 dB	0.19 dB

TEST RESULTS (Cont.):	OCCUPIED BANDWIDTH

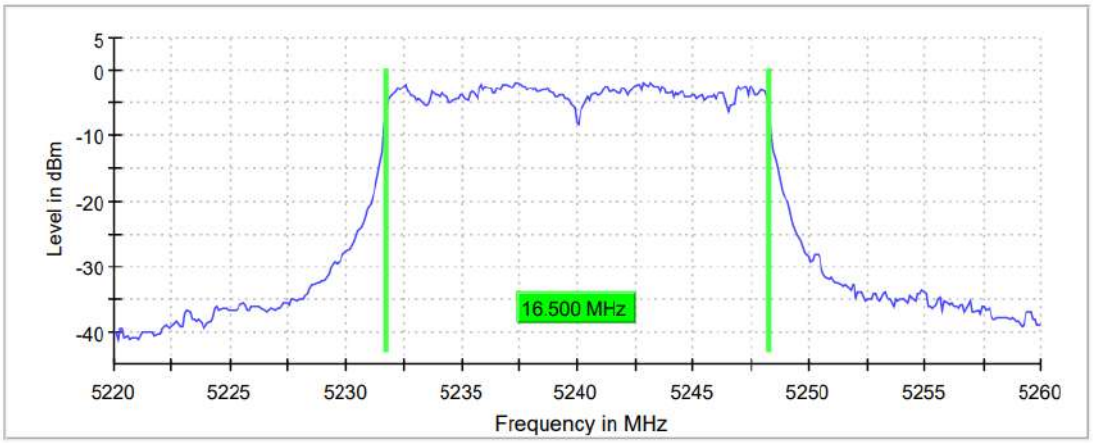
Lowest Channel



Middle Channel



Highest Channel



TEST RESULTS (Cont.)	

Measurement

Setting	Instrument Value	Instrument Value	Instrument Value
Start Frequency	5.16000 GHz	5.18000 GHz	5.22000 GHz
Stop Frequency	5.20000 GHz	5.22000 GHz	5.26000 GHz
Span	40.000 MHz	40.000 MHz	40.000 MHz
RBW	200.000 kHz	200.000 kHz	200.000 kHz
VBW	1.000 MHz	1.000 MHz	1.000 MHz
Sweep Points	400	400	400
Sweep time	28.477 µs	28.477 µs	28.477 µs
Reference Level	0.000 dBm	0.000 dBm	0.000 dBm
Attenuation	20.000 dB	20.000 dB	20.000 dB
Detector	Max Peak	Max Peak	Max Peak
Sweep Count	200	200	200
Filter	3 dB	3 dB	3 dB
Trace Mode	Max Hold	Max Hold	Max Hold
Sweep type	FFT	FFT	FFT
Preamp	off	off	off
Stable mode	Trace	Trace	Trace
Stable value	0.30 dB	0.30 dB	0.30 dB
Run	52 / max. 150	50 / max. 150	46 / max. 150
Stable	5 / 5	5 / 5	5 / 5
Max Stable Difference	0.08 dB	0.14 dB	0.16 dB

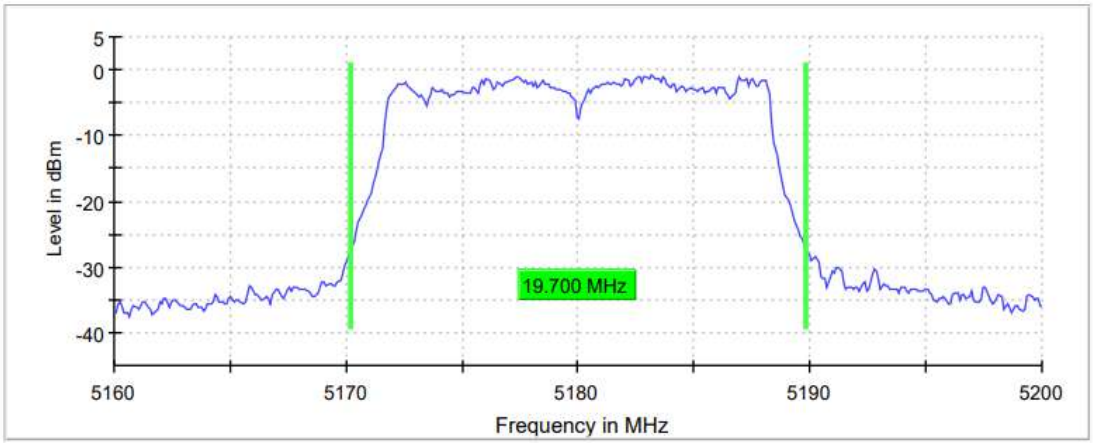
TESTED SAMPLES:	S/01
TESTED CONDITIONS MODES:	TC#01 (a mode SISO Radio B)
TEST RESULTS:	PASS

Bandwidth: 20 MHz

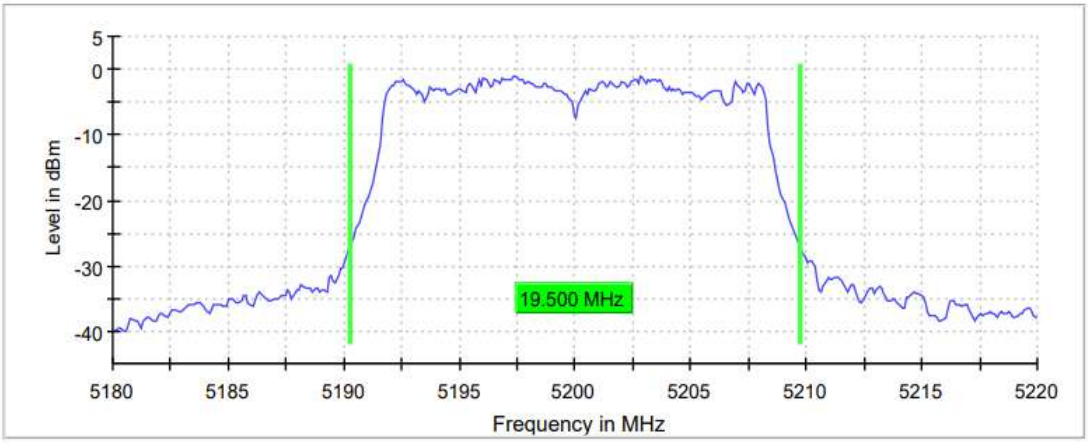
	Lowest frequency 5180 MHz	Middle frequency 5200 MHz	Highest frequency 5240 MHz
26dB Bandwidth (MHz)	19.700	19.500	19.700
Occupied bandwidth (MHz)	16.600	16.600	16.600

26 dB Bandwidth:

Lowest Channel

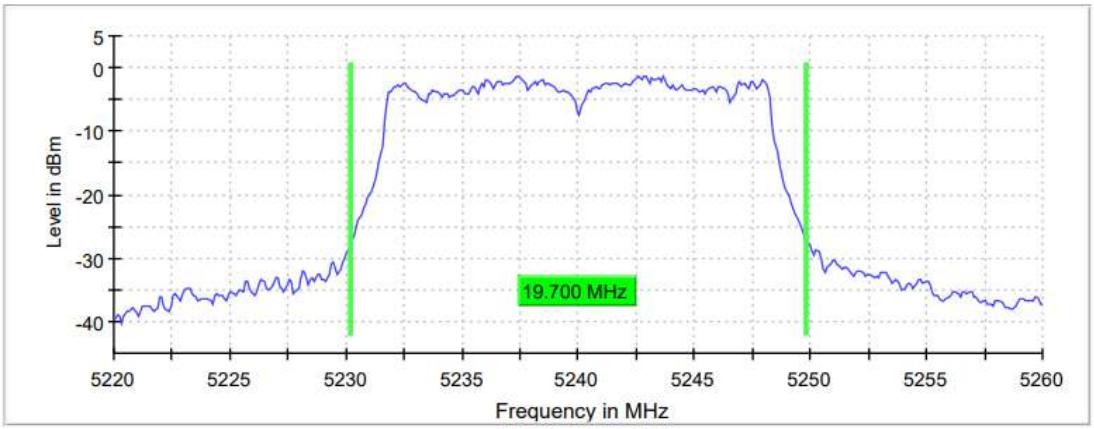


Middle Channel



TEST RESULTS (Cont.)	

Highest Channel

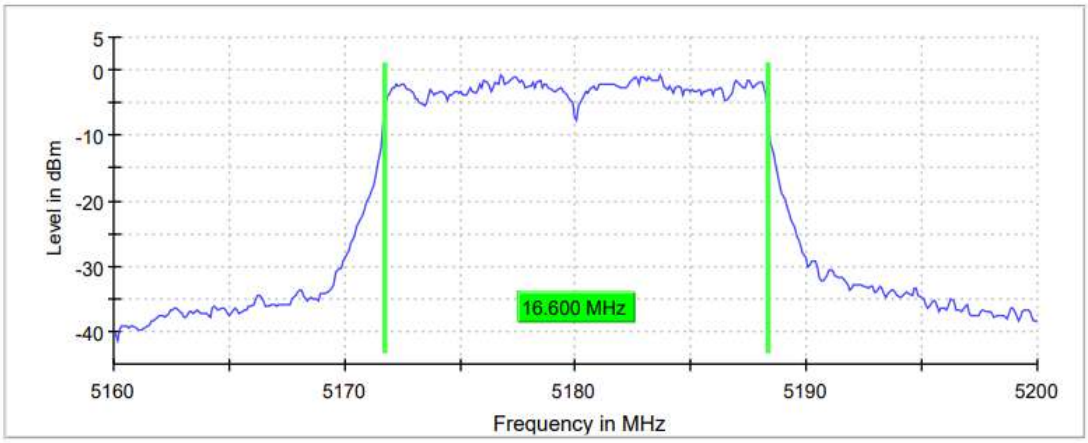


Measurement

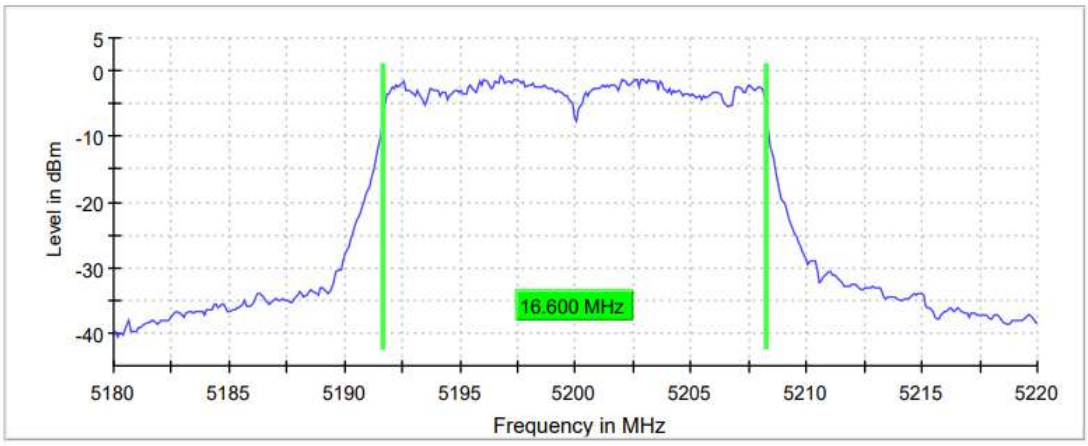
Setting	Instrument Value	Instrument Value	Instrument Value
Start Frequency	5.16000 GHz	5.18000 GHz	5.22000 GHz
Stop Frequency	5.20000 GHz	5.22000 GHz	5.26000 GHz
Span	40.000 MHz	40.000 MHz	40.000 MHz
RBW	200.000 kHz	200.000 kHz	200.000 kHz
VBW	1.000 MHz	1.000 MHz	1.000 MHz
Sweep Points	400	400	400
Sweep time	28.477 µs	28.477 µs	28.477 µs
Reference Level	10.000 dBm	0.000 dBm	0.000 dBm
Attenuation	30.000 dB	20.000 dB	20.000 dB
Detector	Max Peak	Max Peak	Max Peak
Sweep Count	200	200	200
Filter	3 dB	3 dB	3 dB
Trace Mode	Max Hold	Max Hold	Max Hold
Sweep type	FFT	FFT	FFT
Preamp	off	off	off
Stable mode	Trace	Trace	Trace
Stable value	0.30 dB	0.30 dB	0.30 dB
Run	38 / max. 150	72/ max. 150	48 / max. 150
Stable	5 / 5	5 / 5	5 / 5
Max Stable Difference	0.28 dB	0.18 dB	0.13 dB

TEST RESULTS (Cont.):	OCCUPIED BANDWIDTH

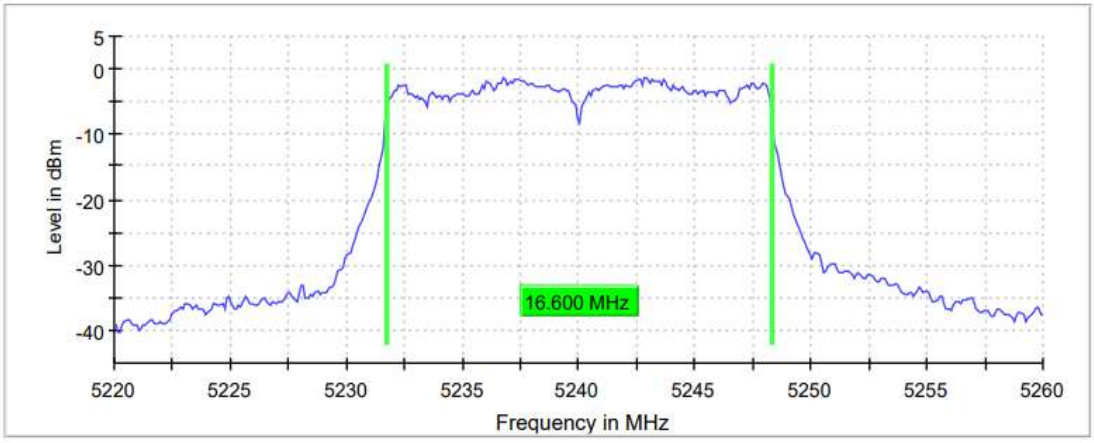
Lowest Channel



Middle Channel



Highest Channel



TEST RESULTS (Cont.)	

Measurement

Setting	Instrument Value	Instrument Value	Instrument Value
Start Frequency	5.16000 GHz	5.18000 GHz	5.22000 GHz
Stop Frequency	5.20000 GHz	5.22000 GHz	5.26000 GHz
Span	40.000 MHz	40.000 MHz	40.000 MHz
RBW	200.000 kHz	200.000 kHz	200.000 kHz
VBW	1.000 MHz	1.000 MHz	1.000 MHz
Sweep Points	400	400	400
Sweep time	28.477 µs	28.477 µs	28.477 µs
Reference Level	0.000 dBm	0.000 dBm	0.000 dBm
Attenuation	20.000 dB	20.000 dB	20.000 dB
Detector	Max Peak	Max Peak	Max Peak
Sweep Count	200	200	200
Filter	3 dB	3 dB	3 dB
Trace Mode	Max Hold	Max Hold	Max Hold
Sweep type	FFT	FFT	FFT
Preamp	off	off	off
Stable mode	Trace	Trace	Trace
Stable value	0.30 dB	0.30 dB	0.30 dB
Run	50 / max. 150	74 / max. 150	38 / max. 150
Stable	5 / 5	5 / 5	5 / 5
Max Stable Difference	0.11 dB	0.12 dB	0.25 dB

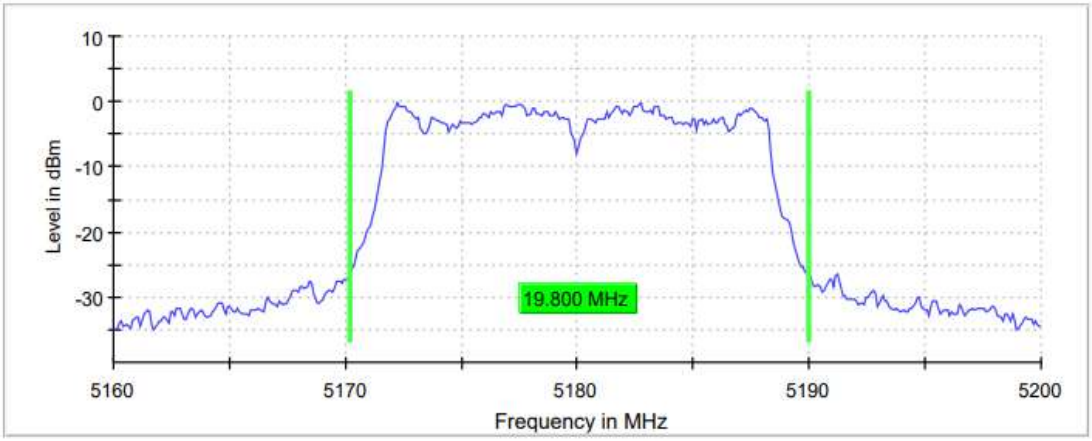
TESTED SAMPLES:	S/01
TESTED CONDITIONS MODES:	TC#01 (a mode MIMO Radio A+B)
TEST RESULTS:	PASS

Bandwidth: 20 MHz

	Lowest frequency 5180 MHz	Middle frequency 5200 MHz	Highest frequency 5240 MHz
26dB Bandwidth (MHz)	19.800	22.100	19.900
Occupied bandwidth (MHz)	16.700	16.700	16.700

26 dB Bandwidth:

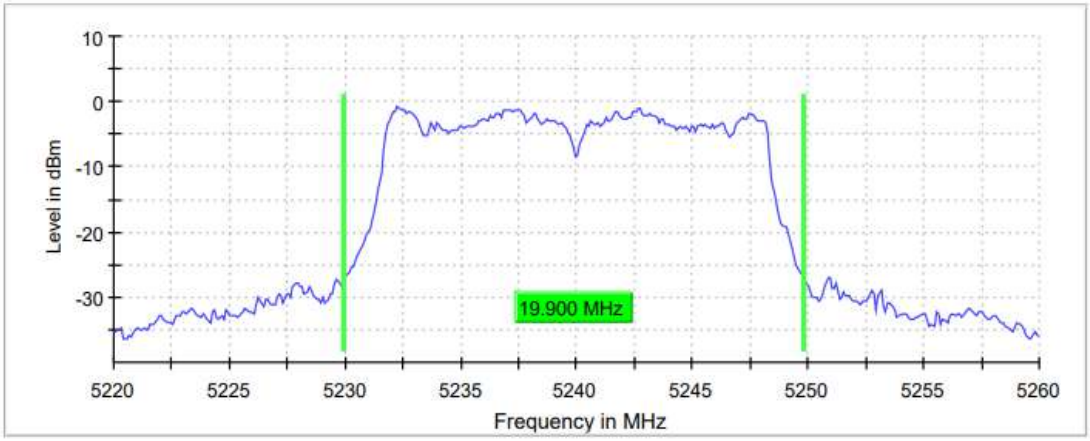
Lowest Channel



Middle Channel

TEST RESULTS (Cont.)	

Highest Channel

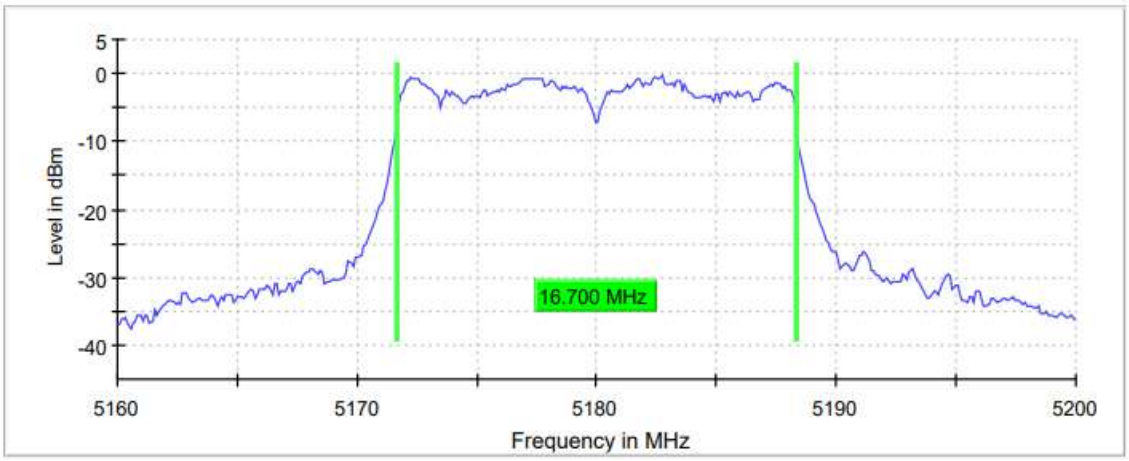


Measurement

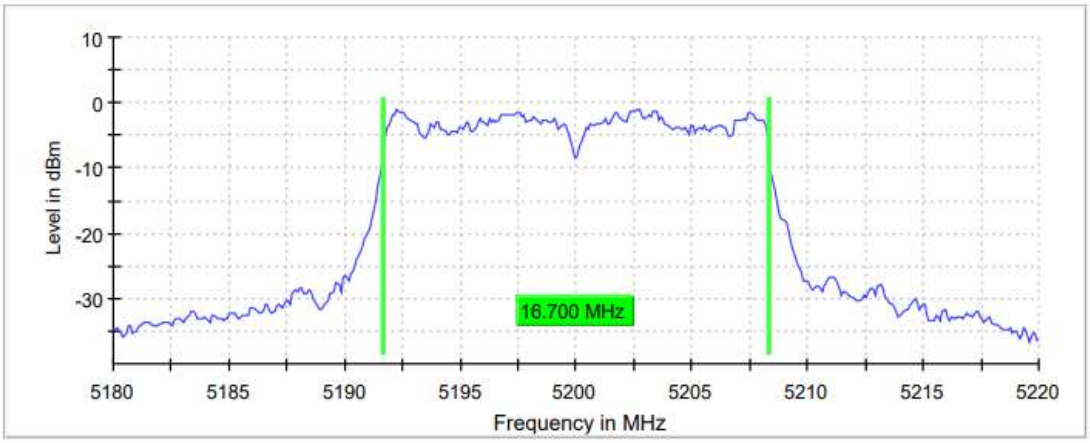
Setting	Instrument Value	Instrument Value	Instrument Value
Start Frequency	5.16000 GHz	5.18000 GHz	5.22000 GHz
Stop Frequency	5.20000 GHz	5.22000 GHz	5.26000 GHz
Span	40.000 MHz	40.000 MHz	40.000 MHz
RBW	200.000 kHz	200.000 kHz	200.000 kHz
VBW	1.000 MHz	1.000 MHz	1.000 MHz
Sweep Points	400	400	400
Sweep time	28.477 µs	28.477 µs	28.477 µs
Reference Level	10.000 dBm	10.000 dBm	10.000 dBm
Attenuation	30.000 dB	30.000 dB	30.000 dB
Detector	Max Peak	Max Peak	Max Peak
Sweep Count	200	200	200
Filter	3 dB	3 dB	3 dB
Trace Mode	Max Hold	Max Hold	Max Hold
Sweep type	FFT	FFT	FFT
Preamp	off	off	off
Stable mode	Trace	Trace	Trace
Stable value	0.30 dB	0.30 dB	0.30 dB
Run	57 / max. 150	52 / max. 150	82 / max. 150
Stable	5 / 5	5 / 5	5 / 5
Max Stable Difference	0.26 dB	0.01 dB	0.12 dB

TEST RESULTS (Cont.):	OCCUPIED BANDWIDTH

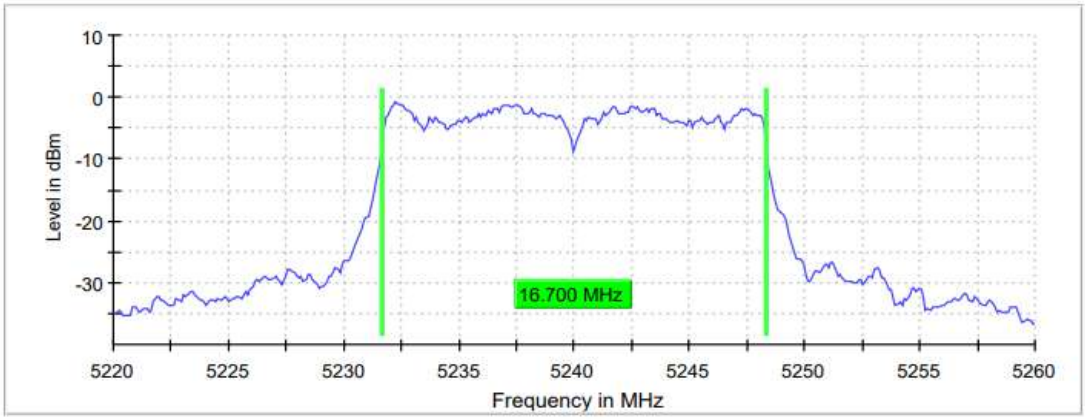
Lowest Channel



Middle Channel



Highest Channel



TEST RESULTS (Cont.)	

Measurement

Setting	Instrument Value	Instrument Value	Instrument Value
Start Frequency	5.16000 GHz	5.18000 GHz	5.22000 GHz
Stop Frequency	5.20000 GHz	5.22000 GHz	5.26000 GHz
Span	40.000 MHz	40.000 MHz	40.000 MHz
RBW	200.000 kHz	200.000 kHz	200.000 kHz
VBW	1.000 MHz	1.000 MHz	1.000 MHz
Sweep Points	400	400	400
Sweep time	28.477 µs	28.477 µs	28.477 µs
Reference Level	10.000 dBm	10.000 dBm	10.000 dBm
Attenuation	30.000 dB	30.000 dB	30.000 dB
Detector	Max Peak	Max Peak	Max Peak
Sweep Count	200	200	200
Filter	3 dB	3 dB	3 dB
Trace Mode	Max Hold	Max Hold	Max Hold
Sweep type	FFT	FFT	FFT
Preamp	off	off	off
Stable mode	Trace	Trace	Trace
Stable value	0.30 dB	0.30 dB	0.30 dB
Run	36 / max. 150	66 / max. 150	59 / max. 150
Stable	5 / 5	5 / 5	5 / 5
Max Stable Difference	0.27 dB	0.08 dB	0.00 dB

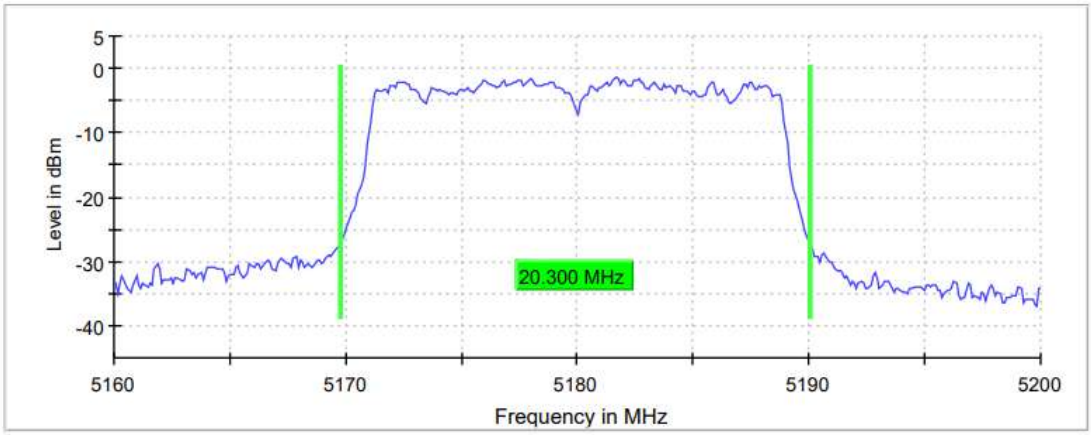
TESTED SAMPLES:	S/01
TESTED CONDITIONS MODES:	TC#02 (n Mode SISO Radio A)
TEST RESULTS:	PASS

Bandwidth: 20 MHz

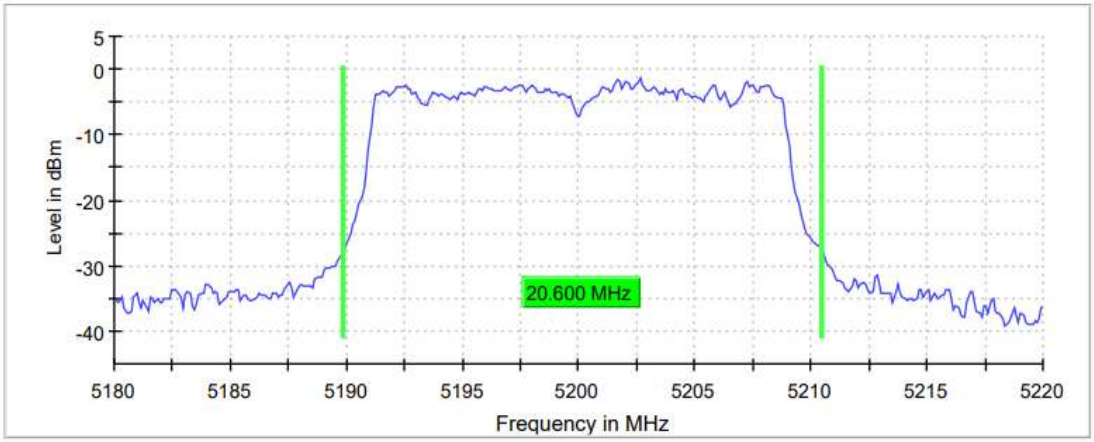
	Lowest frequency 5180 MHz	Middle frequency 5200 MHz	Highest frequency 5240 MHz
26dB bandwidth (MHz)	20.300	20.600	20.500
Occupied bandwidth (MHz)	17.700	17.700	17.700

26 dB Bandwidth:

Lowest Channel

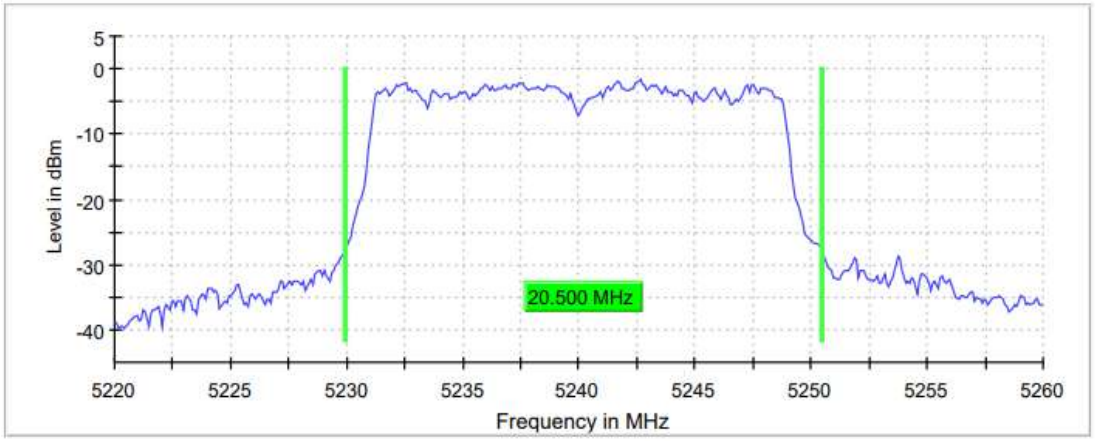


Middle Channel



TEST RESULTS (Cont.)	

Highest Channel

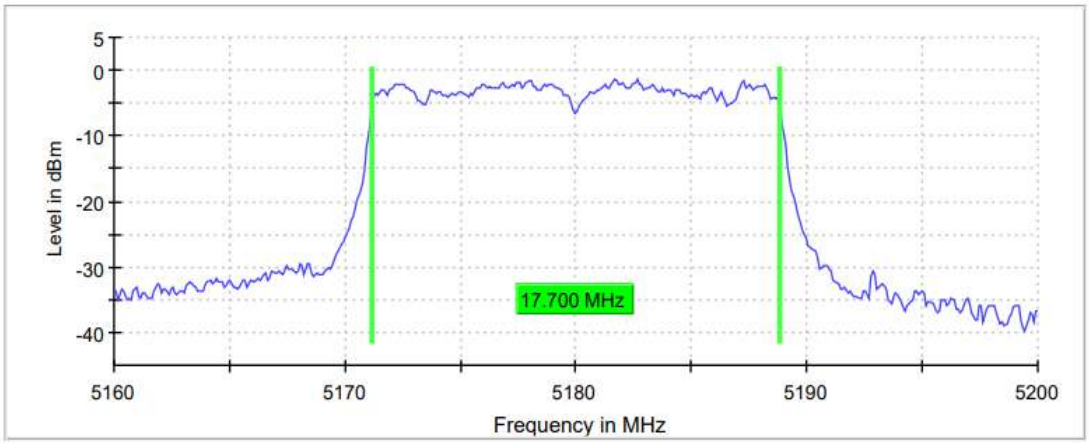


Measurement

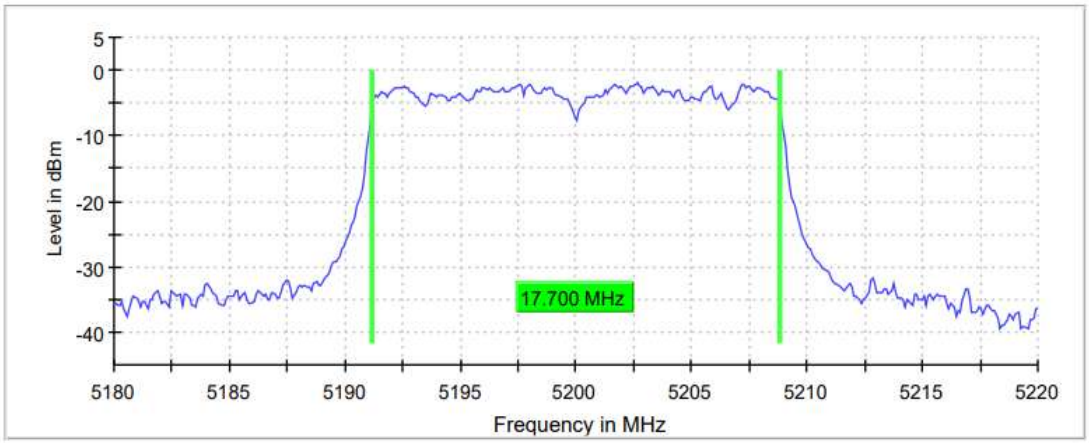
Setting	Instrument Value	Instrument Value	Instrument Value
Start Frequency	5.16000 GHz	5.18000 GHz	5.22000 GHz
Stop Frequency	5.20000 GHz	5.22000 GHz	5.26000 GHz
Span	40.000 MHz	40.000 MHz	40.000 MHz
RBW	200.000 kHz	200.000 kHz	200.000 kHz
VBW	1.000 MHz	1.000 MHz	1.000 MHz
Sweep Points	400	400	400
Sweep time	28.477 µs	28.477 µs	28.477 µs
Reference Level	10.000 dBm	0.000 dBm	0.000 dBm
Attenuation	30.000 dB	20.000 dB	20.000 dB
Detector	Max Peak	Max Peak	Max Peak
Sweep Count	200	200	200
Filter	3 dB	3 dB	3 dB
Trace Mode	Max Hold	Max Hold	Max Hold
Sweep type	FFT	FFT	FFT
Preamp	off	off	off
Stable mode	Trace	Trace	Trace
Stable value	0.30 dB	0.30 dB	0.30 dB
Run	47 / max. 150	79 / max. 150	51 / max. 150
Stable	5 / 5	5 / 5	5 / 5
Max Stable Difference	0.07 dB	0.20 dB	0.00 dB

TEST RESULTS (Cont.):	OCCUPIED BANDWIDTH

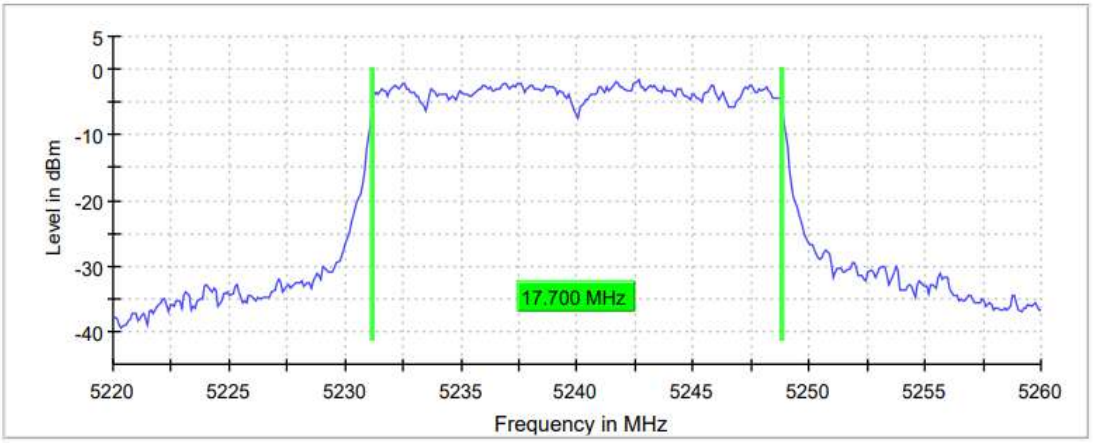
Lowest Channel



Middle Channel



Highest Channel



TEST RESULTS (Cont.)	

Measurement

Setting	Instrument Value	Instrument Value	Instrument Value
Start Frequency	5.16000 GHz	5.18000 GHz	5.22000 GHz
Stop Frequency	5.20000 GHz	5.22000 GHz	5.26000 GHz
Span	40.000 MHz	40.000 MHz	40.000 MHz
RBW	200.000 kHz	200.000 kHz	200.000 kHz
VBW	1.000 MHz	1.000 MHz	1.000 MHz
Sweep Points	400	400	400
Sweep time	28.477 µs	28.477 µs	28.477 µs
Reference Level	0.000 dBm	0.000 dBm	0.000 dBm
Attenuation	20.000 dB	20.000 dB	20.000 dB
Detector	Max Peak	Max Peak	Max Peak
Sweep Count	200	200	200
Filter	3 dB	3 dB	3 dB
Trace Mode	Max Hold	Max Hold	Max Hold
Sweep type	FFT	FFT	FFT
Preamp	off	off	off
Stable mode	Trace	Trace	Trace
Stable value	0.30 dB	0.30 dB	0.30 dB
Run	70 / max. 150	58 / max. 150	62/ max. 150
Stable	5 / 5	5 / 5	5 / 5
Max Stable Difference	0.00 dB	0.02 dB	0.24 dB

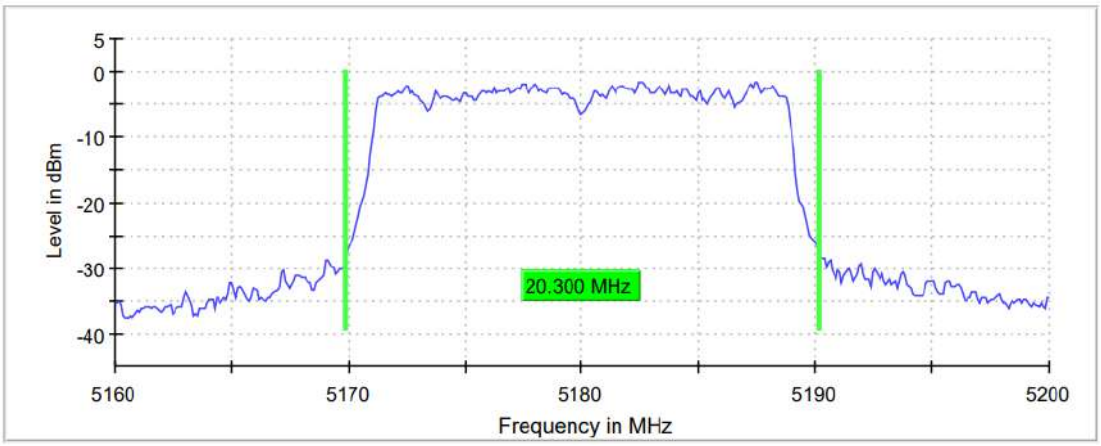
TESTED SAMPLES:	S/01
TESTED CONDITIONS MODES:	TC#02 (n Mode SISO Radio B)
TEST RESULTS:	PASS

Bandwidth: 20 MHz

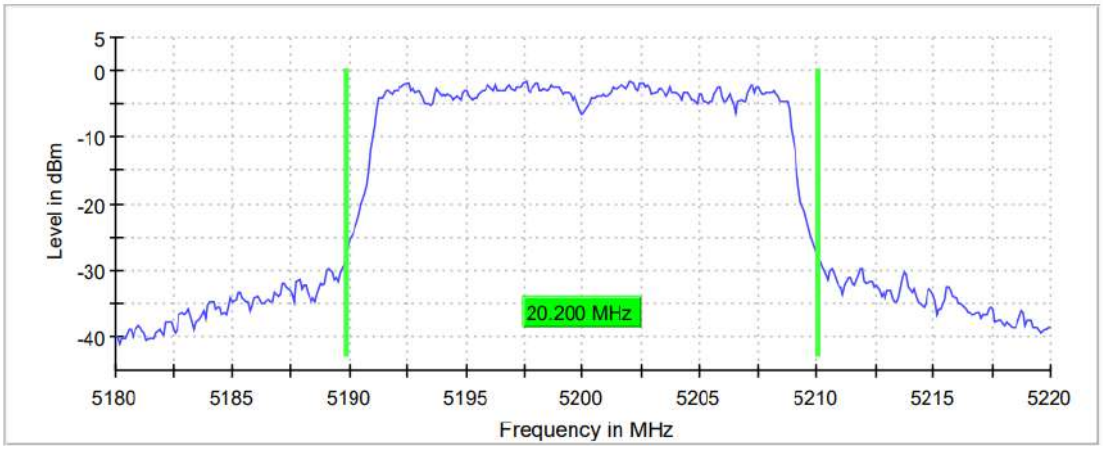
	Lowest frequency 5180 MHz	Middle frequency 5200 MHz	Highest frequency 5240 MHz
26dB Bandwidth (MHz)	20.300	20.200	20.100
Occupied bandwidth (MHz)	17.700	17.700	17.700

26 dB Bandwidth:

Lowest Channel

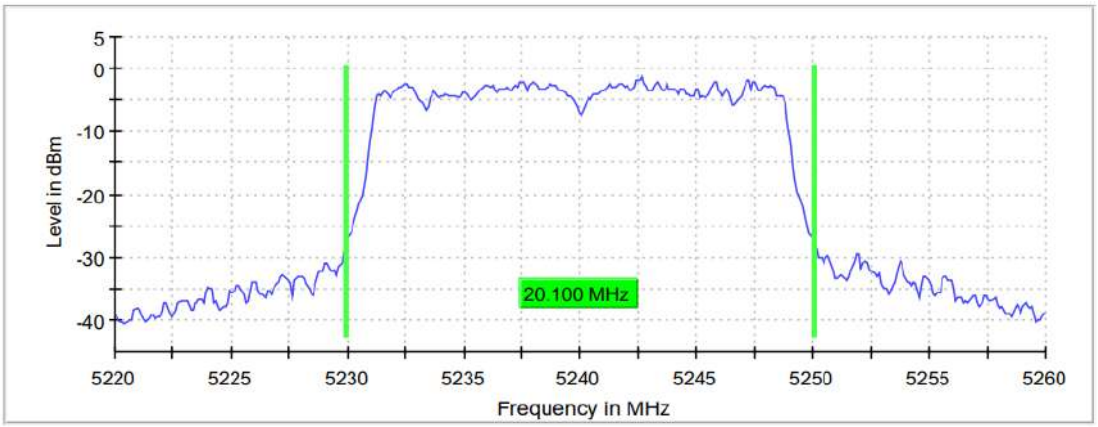


Middle Channel



TEST RESULTS (Cont.)	

Highest Channel

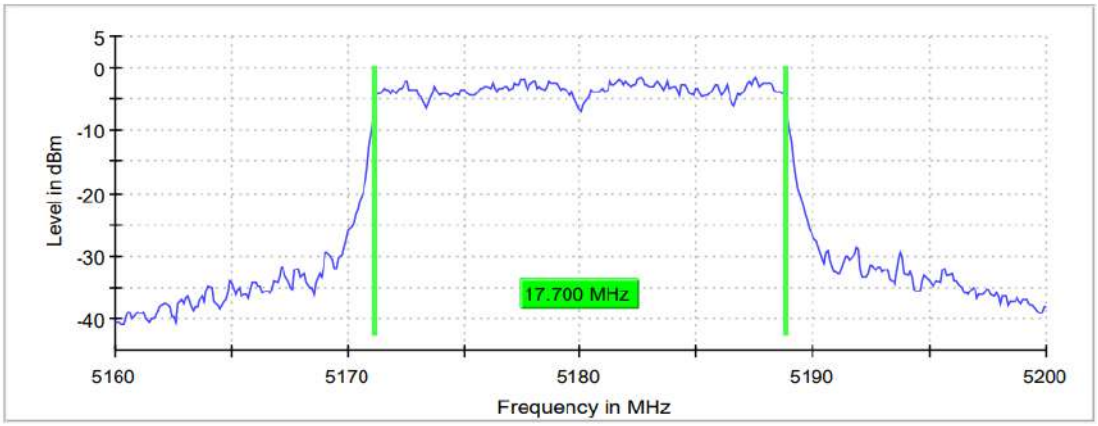


Measurement

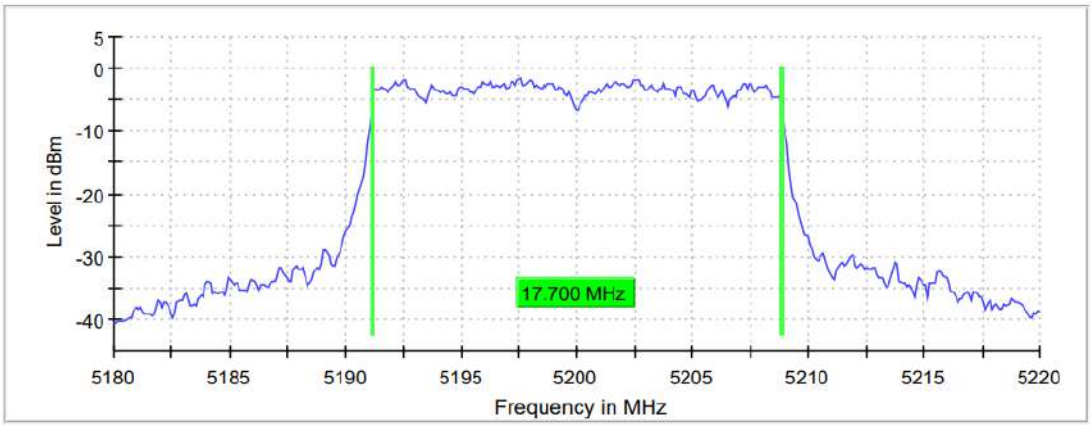
Setting	Instrument Value	Instrument Value	Instrument Value
Start Frequency	5.16000 GHz	5.18000 GHz	5.22000 GHz
Stop Frequency	5.20000 GHz	5.22000 GHz	5.26000 GHz
Span	40.000 MHz	40.000 MHz	40.000 MHz
RBW	200.000 kHz	200.000 kHz	200.000 kHz
VBW	1.000 MHz	1.000 MHz	1.000 MHz
Sweep Points	400	400	400
Sweep time	28.477 µs	28.477 µs	28.477 µs
Reference Level	10.000 dBm	0.000 dBm	0.000 dBm
Attenuation	30.000 dB	20.000 dB	20.000 dB
Detector	Max Peak	Max Peak	Max Peak
Sweep Count	200	200	200
Filter	3 dB	3 dB	3 dB
Trace Mode	Max Hold	Max Hold	Max Hold
Sweep type	FFT	FFT	FFT
Preamp	off	off	off
Stable mode	Trace	Trace	Trace
Stable value	0.30 dB	0.30 dB	0.30 dB
Run	62 / max. 150	57 / max. 150	54/ max. 150
Stable	5 / 5	5 / 5	5 / 5
Max Stable Difference	0.30 dB	0.04 dB	0.00 dB

TEST RESULTS (Cont.):	OCCUPIED BANDWIDTH

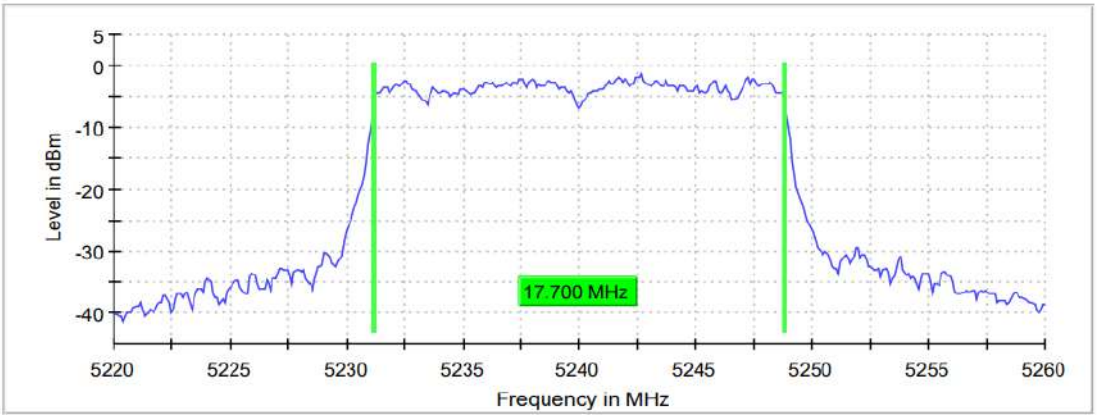
Lowest Channel



Middle Channel



Highest Channel



TEST RESULTS (Cont.)	

Measurement

Setting	Instrument Value	Instrument Value	Instrument Value
Start Frequency	5.16000 GHz	5.18000 GHz	5.22000 GHz
Stop Frequency	5.20000 GHz	5.22000 GHz	5.26000 GHz
Span	40.000 MHz	40.000 MHz	40.000 MHz
RBW	200.000 kHz	200.000 kHz	200.000 kHz
VBW	1.000 MHz	1.000 MHz	1.000 MHz
Sweep Points	400	400	400
Sweep time	28.477 µs	28.477 µs	28.477 µs
Reference Level	0.000 dBm	0.000 dBm	20.000 dBm
Attenuation	20.000 dB	20.000 dB	20.000 dB
Detector	Max Peak	Max Peak	Max Peak
Sweep Count	200	200	200
Filter	3 dB	3 dB	3 dB
Trace Mode	Max Hold	Max Hold	Max Hold
Sweep type	FFT	FFT	FFT
Preamp	off	off	off
Stable mode	Trace	Trace	Trace
Stable value	0.30 dB	0.30 dB	0.30 dB
Run	97 / max. 150	50 / max. 150	66 / max. 150
Stable	5 / 5	5 / 5	5 / 5
Max Stable Difference	0.00 dB	0.00 dB	0.00 dB

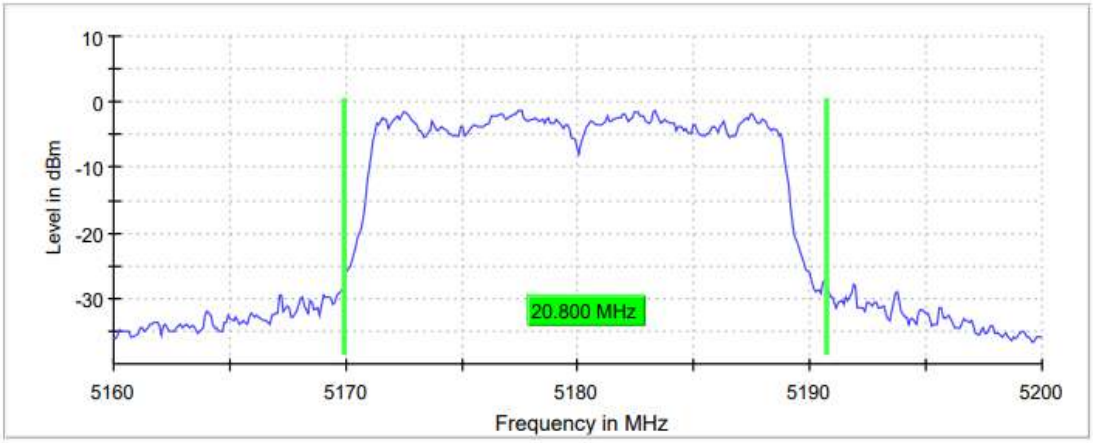
TESTED SAMPLES:	S/01
TESTED CONDITIONS MODES:	TC#02 (n Mode MIMO Radio A+B)
TEST RESULTS:	PASS

Bandwidth: 20 MHz

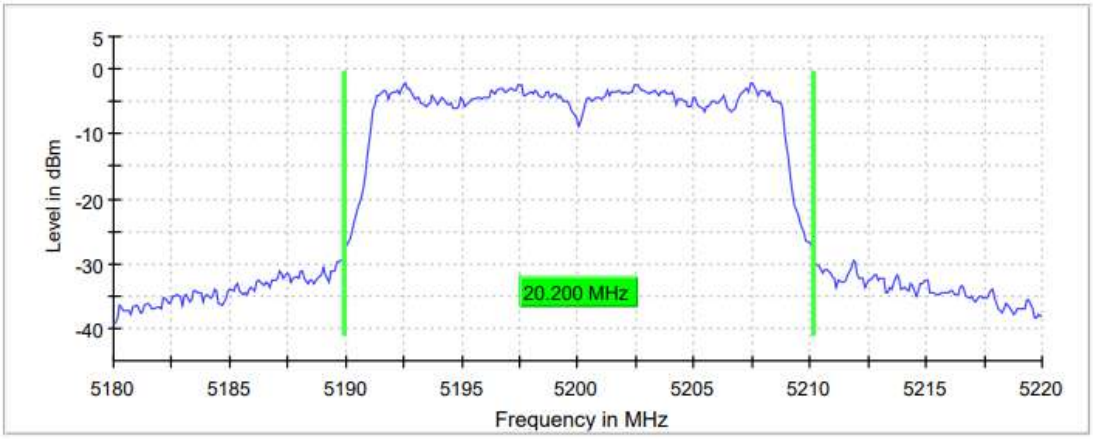
	Lowest frequency 5180 MHz	Middle frequency 5200 MHz	Highest frequency 5240 MHz
26dB Bandwidth (MHz)	20.800	20.200	22.400
Occupied bandwidth (MHz)	17.700	17.700	17.700

26 dB Bandwidth:

Lowest Channel

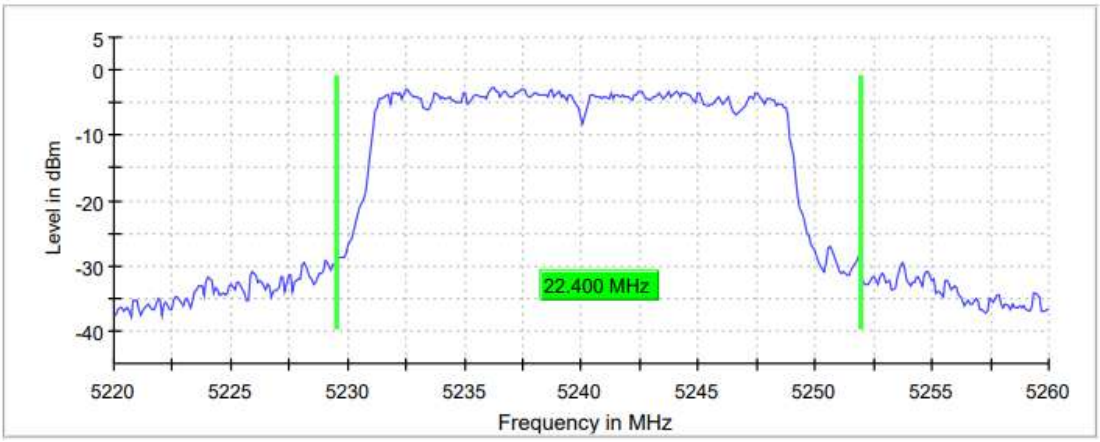


Middle Channel



TEST RESULTS (Cont.)	

Highest Channel

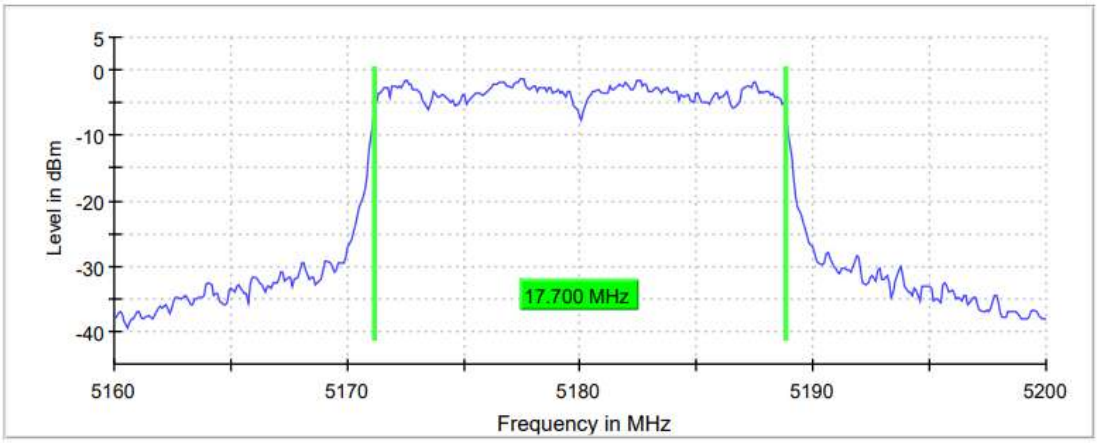


Measurement

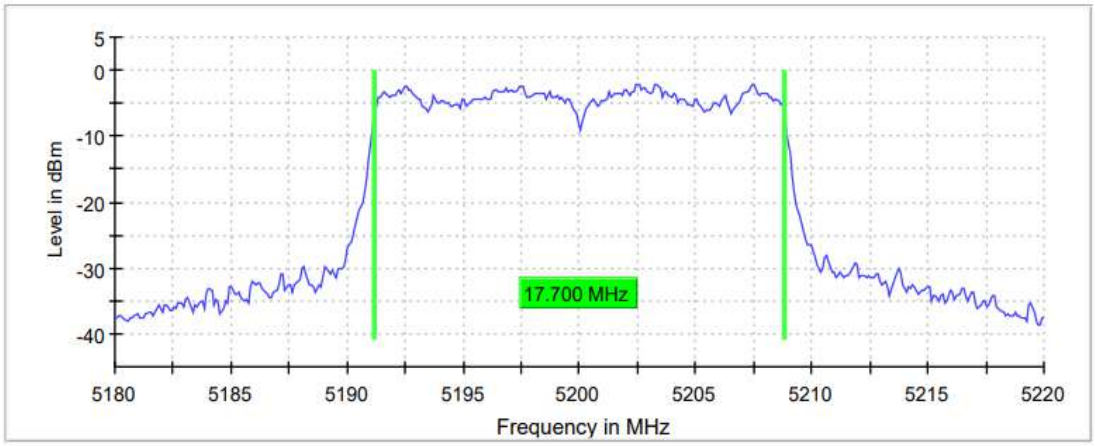
Setting	Instrument Value	Instrument Value	Instrument Value
Start Frequency	5.16000 GHz	5.18000 GHz	5.22000 GHz
Stop Frequency	5.20000 GHz	5.22000 GHz	5.26000 GHz
Span	40.000 MHz	40.000 MHz	40.000 MHz
RBW	200.000 kHz	200.000 kHz	200.000 kHz
VBW	1.000 MHz	1.000 MHz	1.000 MHz
Sweep Points	400	400	400
Sweep time	28.477 µs	28.477 µs	28.477 µs
Reference Level	10.000 dBm	10.000 dBm	10.000 dBm
Attenuation	30.000 dB	30.000 dB	30.000 dB
Detector	Max Peak	Max Peak	Max Peak
Sweep Count	200	200	200
Filter	3 dB	3 dB	3 dB
Trace Mode	Max Hold	Max Hold	Max Hold
Sweep type	FFT	FFT	FFT
Preamp	off	off	off
Stable mode	Trace	Trace	Trace
Stable value	0.30 dB	0.30 dB	0.30 dB
Run	56 / max. 150	36 / max. 150	77 / max. 150
Stable	5 / 5	5 / 5	5 / 5
Max Stable Difference	0.00 dB	0.24 dB	0.05 dB

TEST RESULTS (Cont.):	OCCUPIED BANDWIDTH

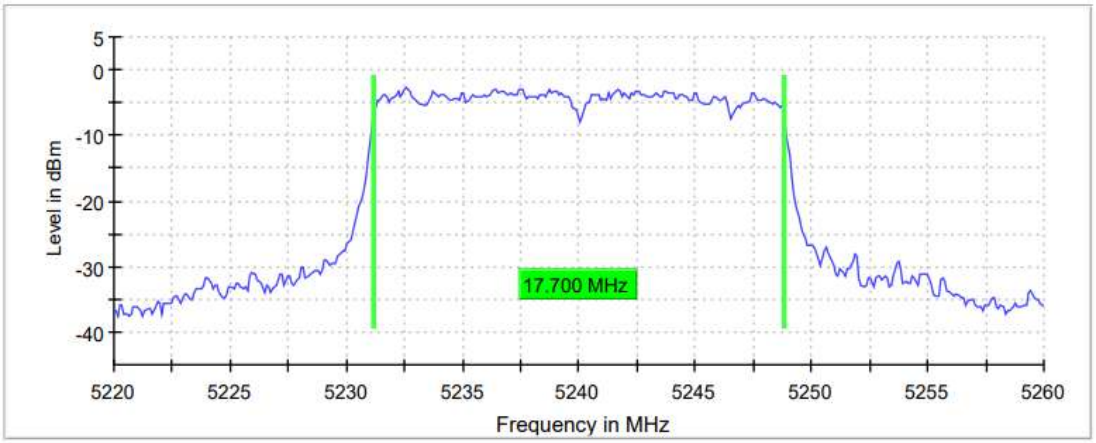
Lowest Channel



Middle Channel



Highest Channel



TEST RESULTS (Cont.)	

Measurement

Setting	Instrument Value	Instrument Value	Instrument Value
Start Frequency	5.16000 GHz	5.18000 GHz	5.22000 GHz
Stop Frequency	5.20000 GHz	5.22000 GHz	5.26000 GHz
Span	40.000 MHz	40.000 MHz	40.000 MHz
RBW	200.000 kHz	200.000 kHz	200.000 kHz
VBW	1.000 MHz	1.000 MHz	1.000 MHz
Sweep Points	400	400	400
Sweep time	28.477 µs	28.477 µs	28.477 µs
Reference Level	10.000 dBm	0.000 dBm	10.000 dBm
Attenuation	30.000 dB	20.000 dB	30.000 dB
Detector	Max Peak	Max Peak	Max Peak
Sweep Count	200	200	200
Filter	3 dB	3 dB	3 dB
Trace Mode	Max Hold	Max Hold	Max Hold
Sweep type	FFT	FFT	FFT
Preamp	off	off	off
Stable mode	Trace	Trace	Trace
Stable value	0.30 dB	0.30 dB	0.30 dB
Run	82 / max. 150	53/ max. 150	63 / max. 150
Stable	5 / 5	5 / 5	5 / 5
Max Stable Difference	0.00 dB	0.14 dB	0.16 dB

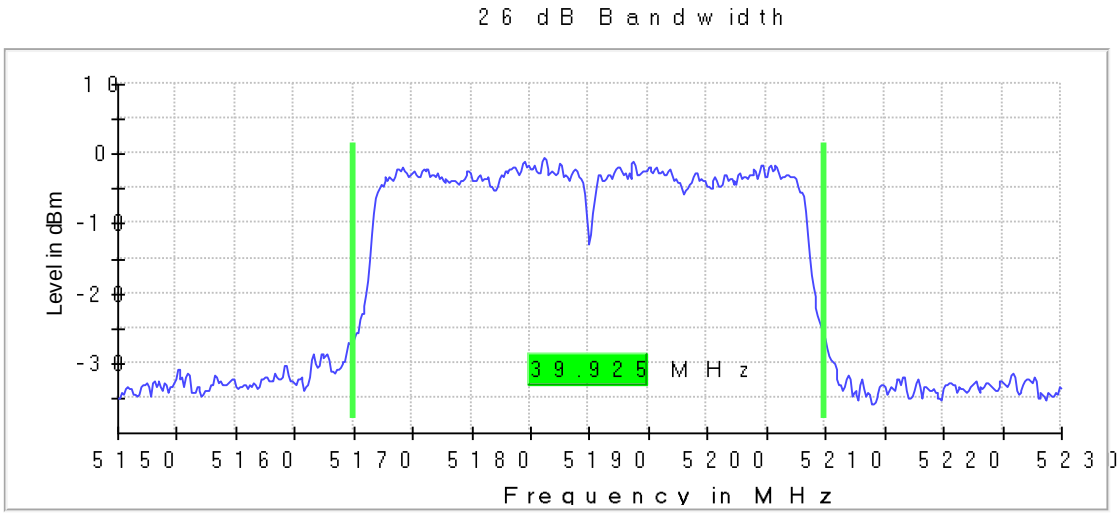
TESTED SAMPLES:	S/01
TESTED CONDITIONS MODES:	TC#02 (n Mode SISO Radio A)
TEST RESULTS:	PASS

Bandwidth: 40 MHz

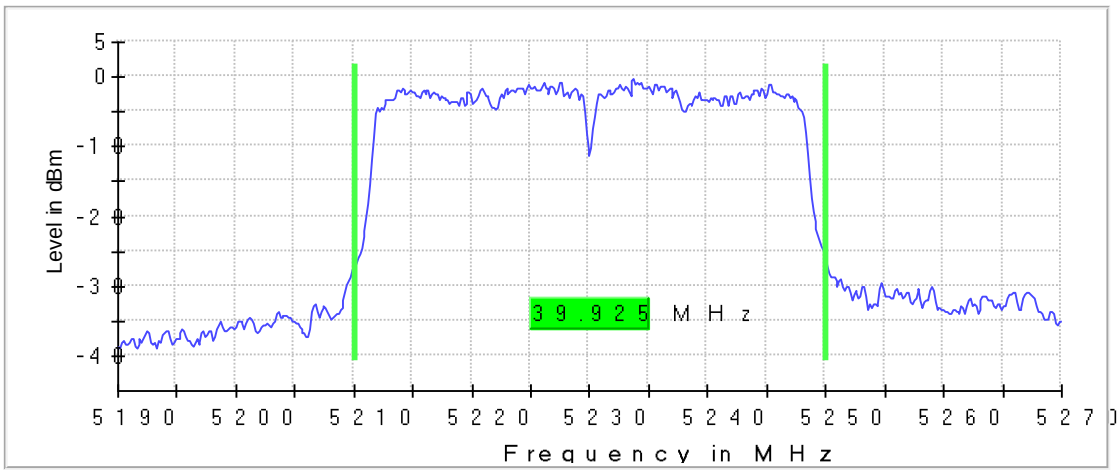
	Lowest frequency 5190 MHz	Highest frequency 5230 MHz
26dB bandwidth (MHz)	39.925	39.925
Occupied bandwidth (MHz)	36.250	36.250

26 dB Bandwidth

Lowest Channel



Highest Channel



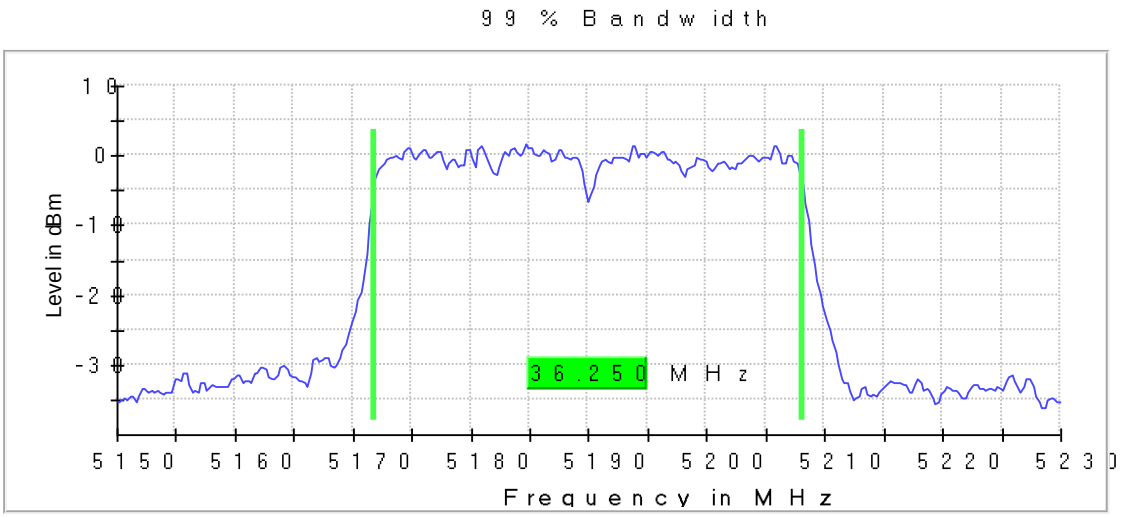
TEST RESULTS (Cont.)	

Measurement

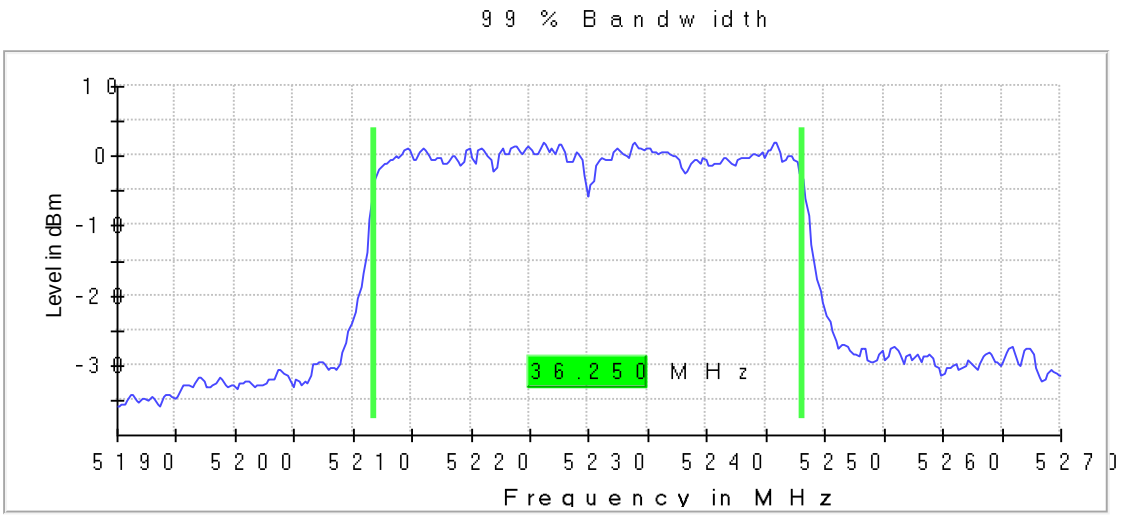
Setting	Instrument Value	Instrument Value
Start Frequency	5.15000 GHz	5.19000 GHz
Stop Frequency	5.23000 GHz	5.27000 GHz
Span	80.000 MHz	80.000 MHz
RBW	300.000 kHz	300.000 kHz
VBW	1.000 MHz	1.000 MHz
Sweep Points	533	533
Sweep time	31.621 µs	31.621 µs
Reference Level	10.000 dBm	0.000 dBm
Attenuation	30.000 dB	20.000 dB
Detector	Max Peak	Max Peak
Sweep Count	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweep type	FFT	FFT
Preamp	off	off
Stable mode	Trace	Trace
Stable value	0.30 dB	0.30 dB
Run	98 / max. 150	104/ max. 150
Stable	5 / 5	5 / 5
Max Stable Difference	0.13 dB	0.04 dB

TEST RESULTS (Cont.):	OCCUPIED BANDWIDTH

Lowest Channel



Highest Channel



TEST RESULTS (Cont.)	

Measurement

Setting	Instrument Value	Instrument Value
Start Frequency	5.15000 GHz	5.19000 GHz
Stop Frequency	5.23000 GHz	5.27000 GHz
Span	80.000 MHz	80.000 MHz
RBW	500.000 kHz	500.000 kHz
VBW	2.000 MHz	2.000 MHz
Sweep Points	320	320
Sweep time	18.906 µs	18.906 µs
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 dB	20.000 dB
Detector	Max Peak	Max Peak
Sweep Count	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweep type	FFT	FFT
Preamp	Off	off
Stable mode	Trace	Trace
Stable value	0.30 dB	0.30 dB
Run	60 / max. 150	74 / max. 150
Stable	5 / 5	5 / 5
Max Stable Difference	0.07 dB	0.18 dB

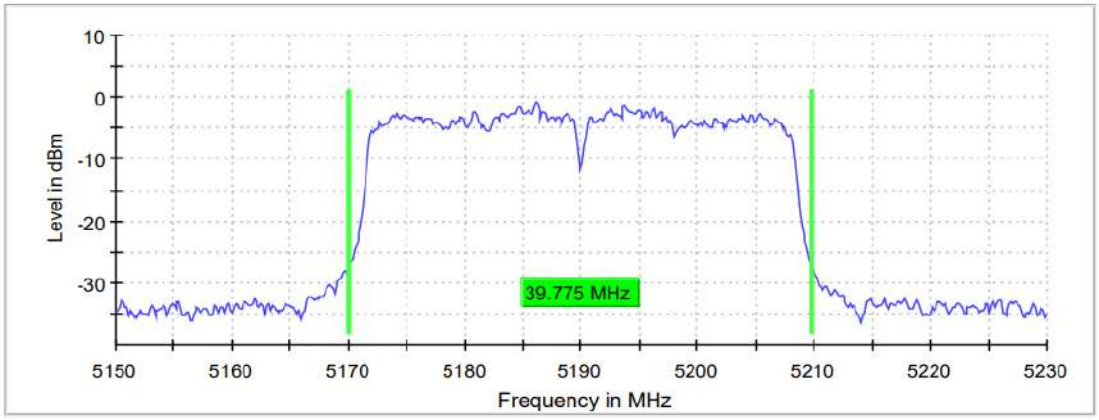
TESTED SAMPLES:	S/01
TESTED CONDITIONS MODES:	TC#02 (n Mode SISO Radio **B**)
TEST RESULTS:	PASS

Bandwidth: 40 MHz

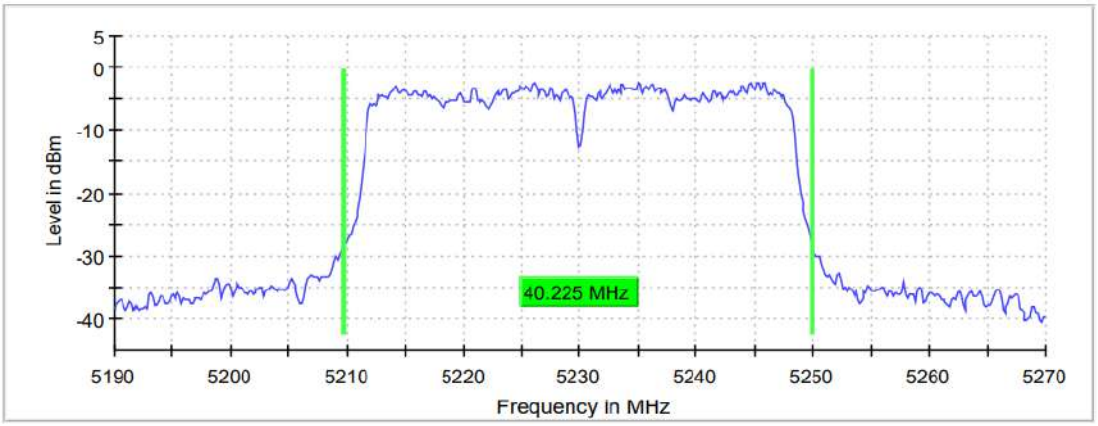
	Lowest frequency 5190 MHz	Highest frequency 5230 MHz
26dB bandwidth (MHz)	39.775	40.225
Occupied bandwidth (MHz)	36.250	36.250

26 dB Bandwidth

Lowest Channel



Highest Channel



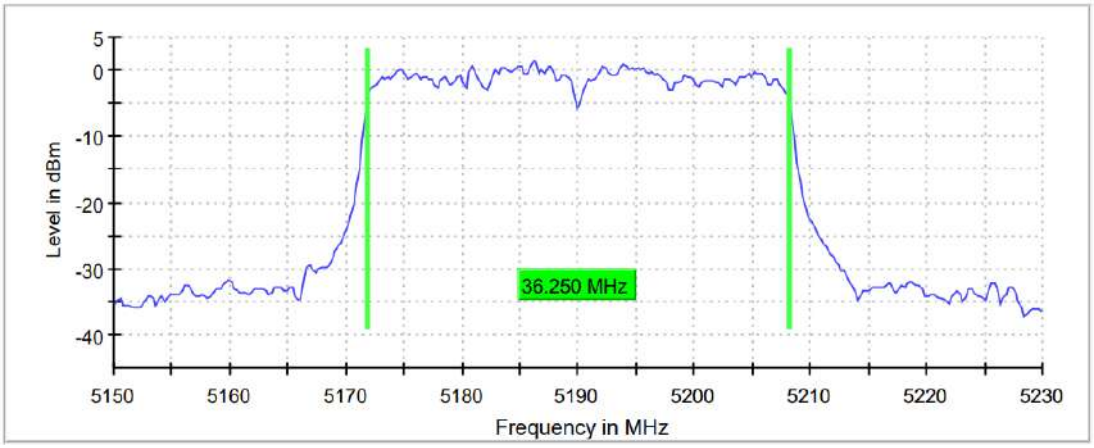
TEST RESULTS (Cont.)	

Measurement

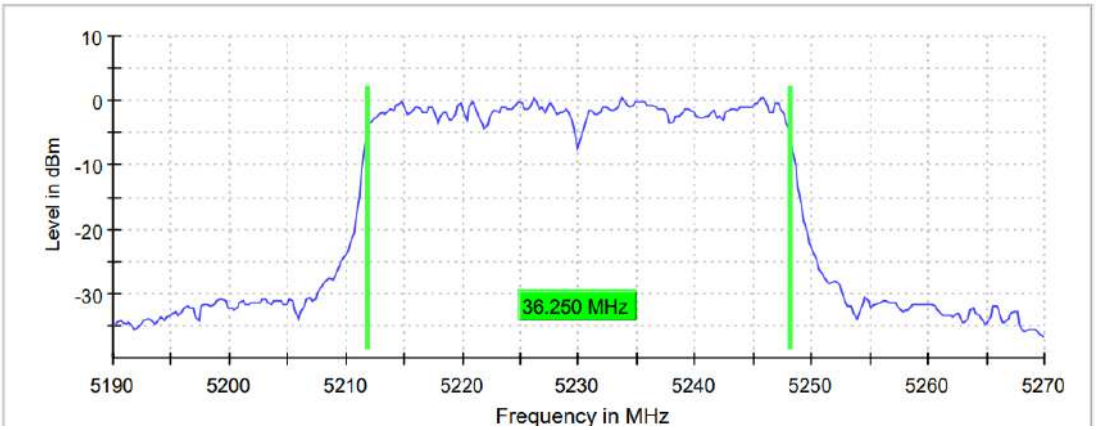
Setting	Instrument Value	Instrument Value
Start Frequency	5.15000 GHz	5.19000 GHz
Stop Frequency	5.23000 GHz	5.27000 GHz
Span	80.000 MHz	80.000 MHz
RBW	300.000 kHz	300.000 kHz
VBW	1.000 MHz	1.000 MHz
Sweep Points	533	533
Sweep time	31.621 µs	31.621 µs
Reference Level	10.000 dBm	0.000 dBm
Attenuation	30.000 dB	20.000 dB
Detector	Max Peak	Max Peak
Sweep Count	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweep type	FFT	FFT
Preamp	off	off
Stable mode	Trace	Trace
Stable value	0.30 dB	0.30 dB
Run	93 / max. 150	81/ max. 150
Stable	5 / 5	5 / 5
Max Stable Difference	0.27 dB	0.00 dB

TEST RESULTS (Cont.):	OCCUPIED BANDWIDTH

Lowest Channel



Highest Channel



TEST RESULTS (Cont.)	

Measurement

Setting	Instrument Value	Instrument Value
Start Frequency	5.15000 GHz	5.19000 GHz
Stop Frequency	5.23000 GHz	5.27000 GHz
Span	80.000 MHz	80.000 MHz
RBW	500.000 kHz	500.000 kHz
VBW	2.000 MHz	2.000 MHz
Sweep Points	320	320
Sweep time	18.906 µs	18.906 µs
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 dB	20.000 dB
Detector	Max Peak	Max Peak
Sweep Count	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweep type	FFT	FFT
Preamp	Off	off
Stable mode	Trace	Trace
Stable value	0.30 dB	0.30 dB
Run	105 / max. 150	98 / max. 150
Stable	5 / 5	5 / 5
Max Stable Difference	0.00 dB	0.00 dB

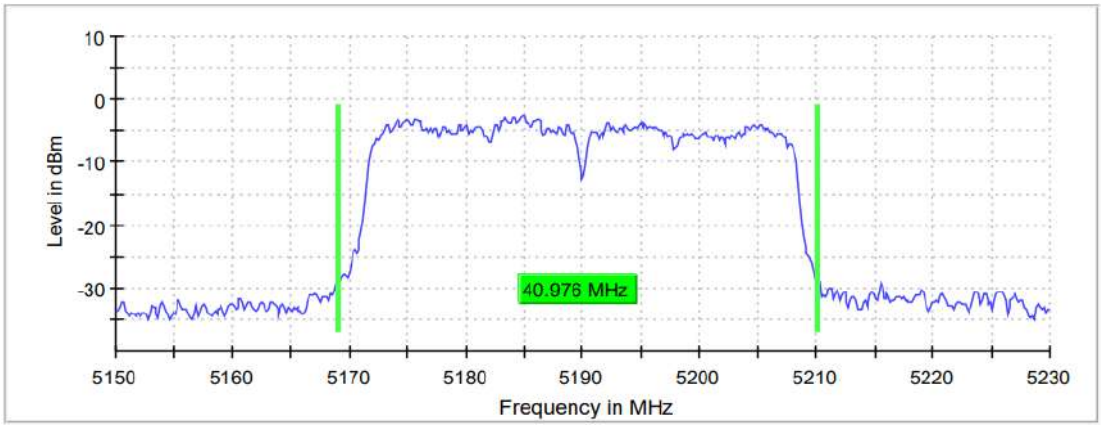
TESTED SAMPLES:	S/01
TESTED CONDITIONS MODES:	TC#02 (n Mode MIMO Radio A+B)
TEST RESULTS:	PASS

Bandwidth: 40 MHz

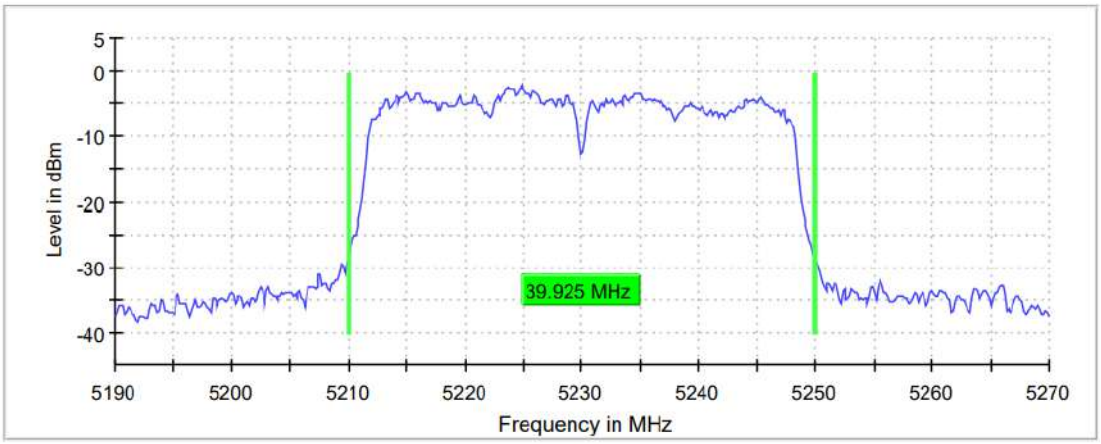
	Lowest frequency 5190 MHz	Highest frequency 5230 MHz
26dB bandwidth (MHz)	40.976	39.925
Occupied bandwidth (MHz)	36.250	36.250

26 dB Bandwidth

Lowest Channel



Highest Channel



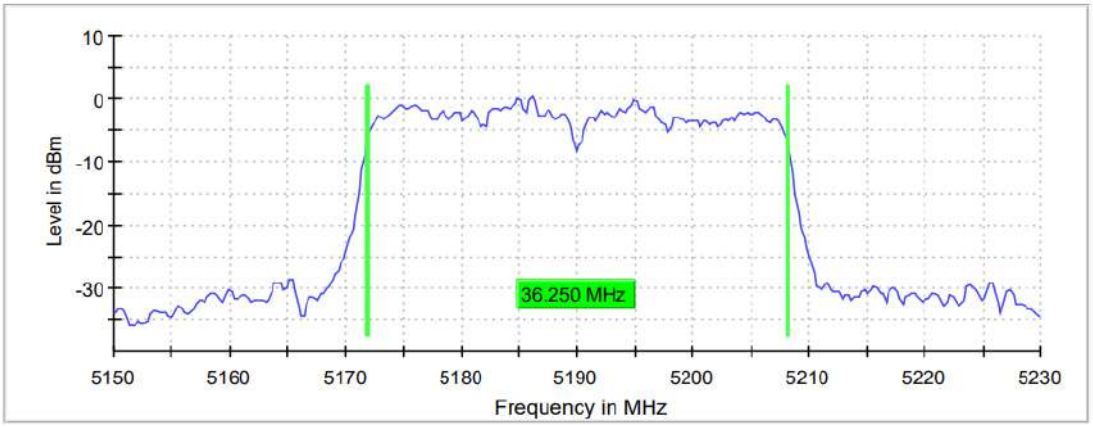
TEST RESULTS (Cont.)	

Measurement

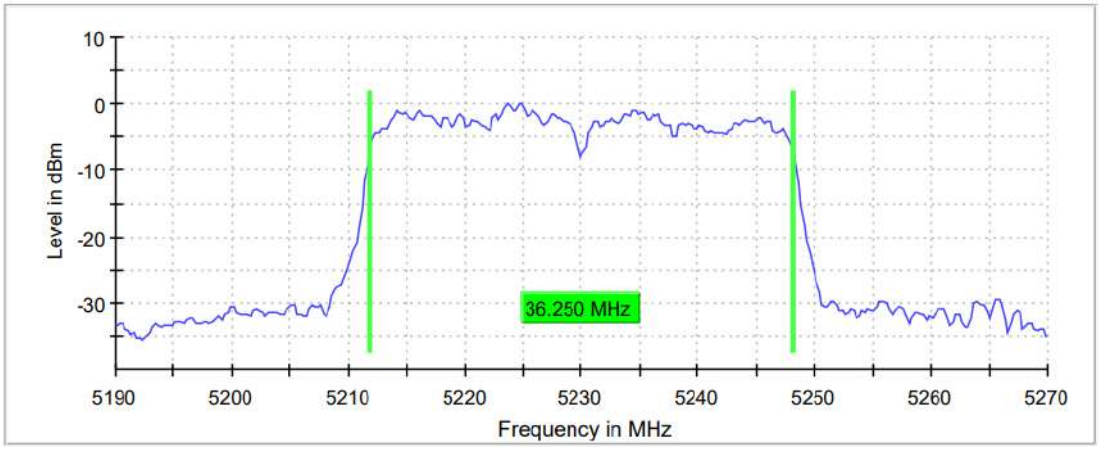
Setting	Instrument Value	Instrument Value
Start Frequency	5.15000 GHz	5.19000 GHz
Stop Frequency	5.23000 GHz	5.27000 GHz
Span	80.000 MHz	80.000 MHz
RBW	300.000 kHz	300.000 kHz
VBW	1.000 MHz	1.000 MHz
Sweep Points	533	533
Sweep time	31.621 µs	31.621 µs
Reference Level	10.000 dBm	0.000 dBm
Attenuation	30.000 dB	20.000 dB
Detector	Max Peak	Max Peak
Sweep Count	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweep type	FFT	FFT
Preamp	off	off
Stable mode	Trace	Trace
Stable value	0.30 dB	0.30 dB
Run	106 / max. 150	109/ max. 150
Stable	5 / 5	5 / 5
Max Stable Difference	0.00 dB	0.00 dB

TEST RESULTS (Cont.):	OCCUPIED BANDWIDTH

Lowest Channel



Highest Channel



TEST RESULTS (Cont.)	

Measurement

Setting	Instrument Value	Instrument Value
Start Frequency	5.15000 GHz	5.19000 GHz
Stop Frequency	5.23000 GHz	5.27000 GHz
Span	80.000 MHz	80.000 MHz
RBW	500.000 kHz	500.000 kHz
VBW	2.000 MHz	2.000 MHz
Sweep Points	320	320
Sweep time	18.906 µs	18.906 µs
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 dB	20.000 dB
Detector	Max Peak	Max Peak
Sweep Count	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweep type	FFT	FFT
Preamp	off	off
Stable mode	Trace	Trace
Stable value	0.30 dB	0.30 dB
Run	75 / max. 150	92 / max. 150
Stable	5 / 5	5 / 5
Max Stable Difference	0.13 dB	0.05 dB

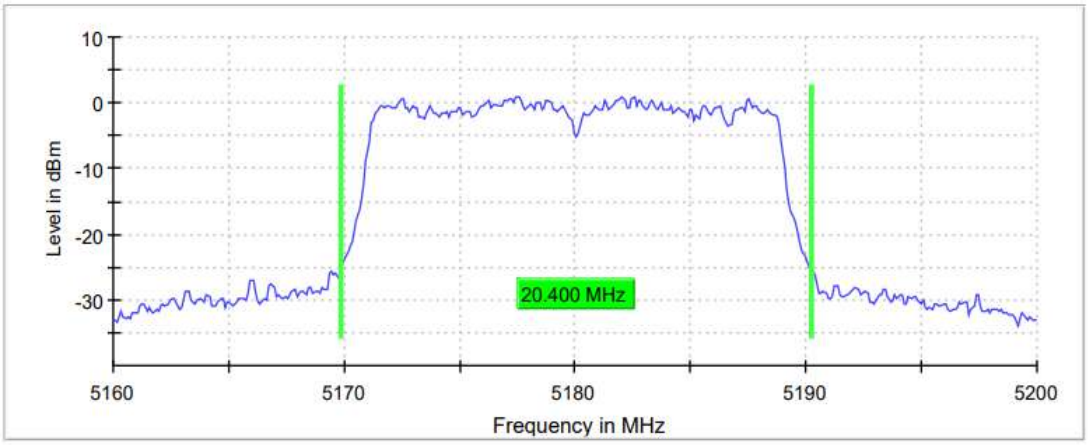
TESTED SAMPLES:	S/01
TESTED CONDITIONS MODES:	TC#02 (ac Mode SISO Radio A)
TEST RESULTS:	PASS

Bandwidth: 20 MHz

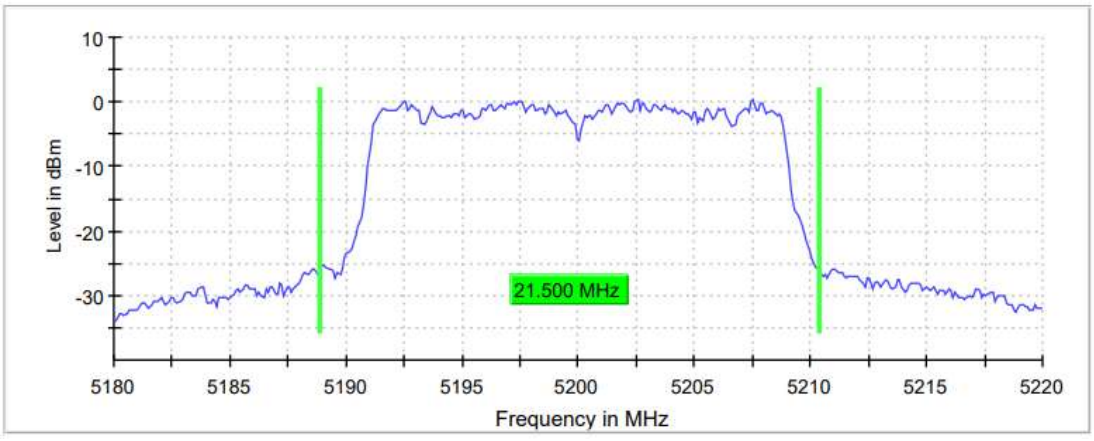
	Lowest frequency 5180 MHz	Middle frequency 5200 MHz	Highest frequency 5240 MHz
26dB bandwidth (MHz)	20.400	21.500	26.800
Occupied bandwidth (MHz)	17.700	17.700	17.800

26 dB Bandwidth:

Lowest Channel

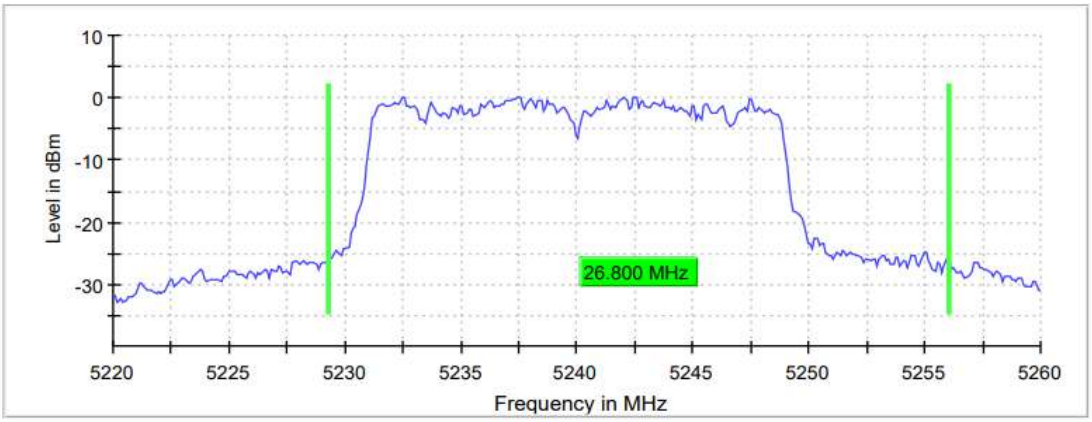


Middle Channel



TEST RESULTS (Cont.)	

Highest Channel

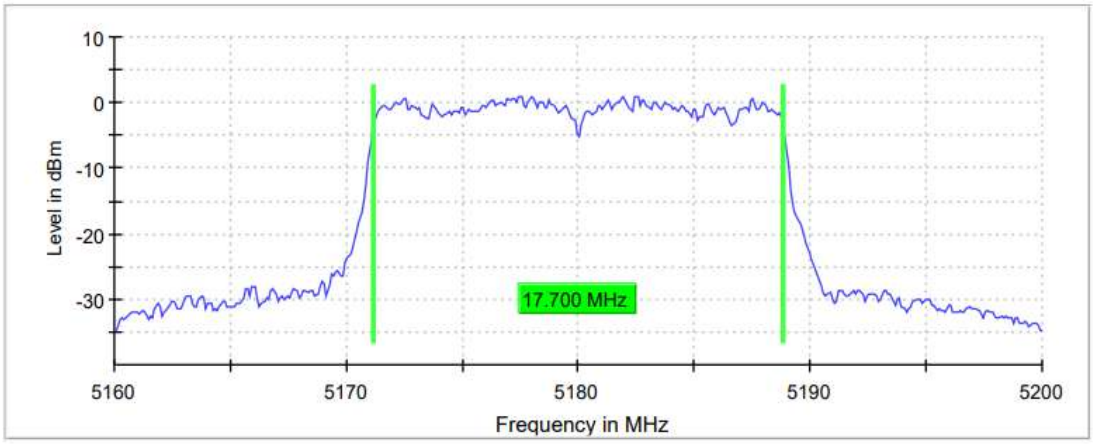


Measurement

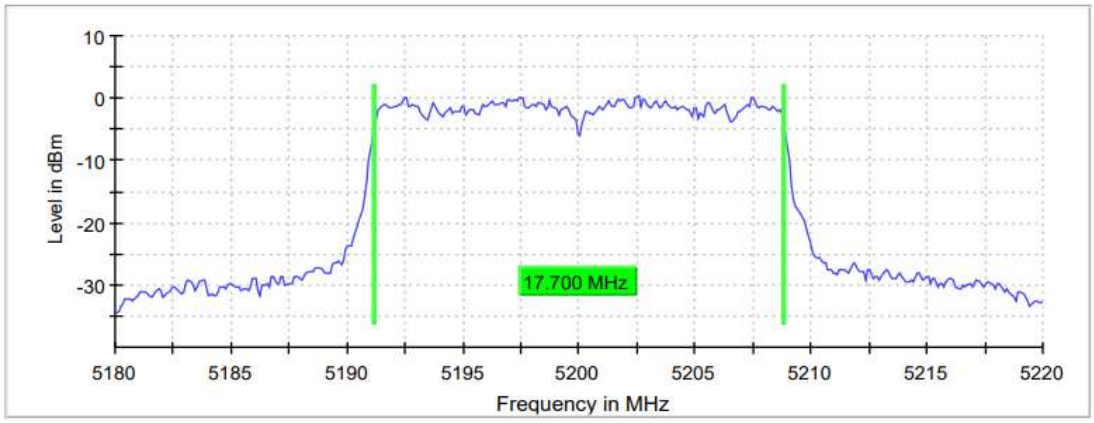
Setting	Instrument Value	Instrument Value	Instrument Value
Start Frequency	5.16000 GHz	5.18000 GHz	5.22000 GHz
Stop Frequency	5.20000 GHz	5.22000 GHz	5.26000 GHz
Span	40.000 MHz	40.000 MHz	40.000 MHz
RBW	200.000 kHz	200.000 kHz	200.000 kHz
VBW	1.000 MHz	1.000 MHz	1.000 MHz
Sweep Points	400	400	400
Sweep time	28.477 µs	28.477 µs	28.477 µs
Reference Level	10.000 dBm	0.000 dBm	0.000 dBm
Attenuation	30.000 dB	20.000 dB	20.000 dB
Detector	Max Peak	Max Peak	Max Peak
Sweep Count	200	200	200
Filter	3 dB	3 dB	3 dB
Trace Mode	Max Hold	Max Hold	Max Hold
Sweep type	FFT	FFT	FFT
Preamp	off	off	off
Stable mode	Trace	Trace	Trace
Stable value	0.30 dB	0.30 dB	0.30 dB
Run	70 / max. 150	101 / max. 150	66 / max. 150
Stable	5 / 5	5 / 5	5 / 5
Max Stable Difference	0.16 dB	0.00 dB	0.00 dB

TEST RESULTS (Cont.):	OCCUPIED BANDWIDTH

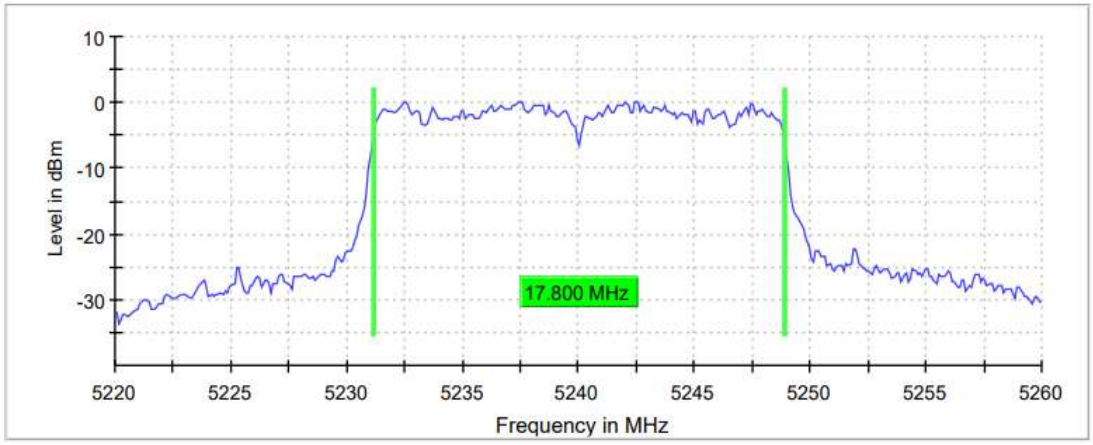
Lowest Channel



Middle Channel



Highest Channel



TEST RESULTS (Cont.)	

Measurement

Setting	Instrument Value	Instrument Value	Instrument Value
Start Frequency	5.16000 GHz	5.18000 GHz	5.22000 GHz
Stop Frequency	5.20000 GHz	5.22000 GHz	5.26000 GHz
Span	40.000 MHz	40.000 MHz	40.000 MHz
RBW	200.000 kHz	200.000 kHz	200.000 kHz
VBW	1.000 MHz	1.000 MHz	1.000 MHz
Sweep Points	400	400	400
Sweep time	28.477 µs	28.477 µs	28.477 µs
Reference Level	0.000 dBm	0.000 dBm	0.000 dBm
Attenuation	20.000 dB	20.000 dB	20.000 dB
Detector	Max Peak	Max Peak	Max Peak
Sweep Count	200	200	200
Filter	3 dB	3 dB	3 dB
Trace Mode	Max Hold	Max Hold	Max Hold
Sweep type	FFT	FFT	FFT
Preamp	off	off	off
Stable mode	Trace	Trace	Trace
Stable value	0.30 dB	0.30 dB	0.30 dB
Run	57 / max. 150	61 / max. 150	74/ max. 150
Stable	5 / 5	5 / 5	5 / 5
Max Stable Difference	0.02 dB	0.02 dB	0.24 dB

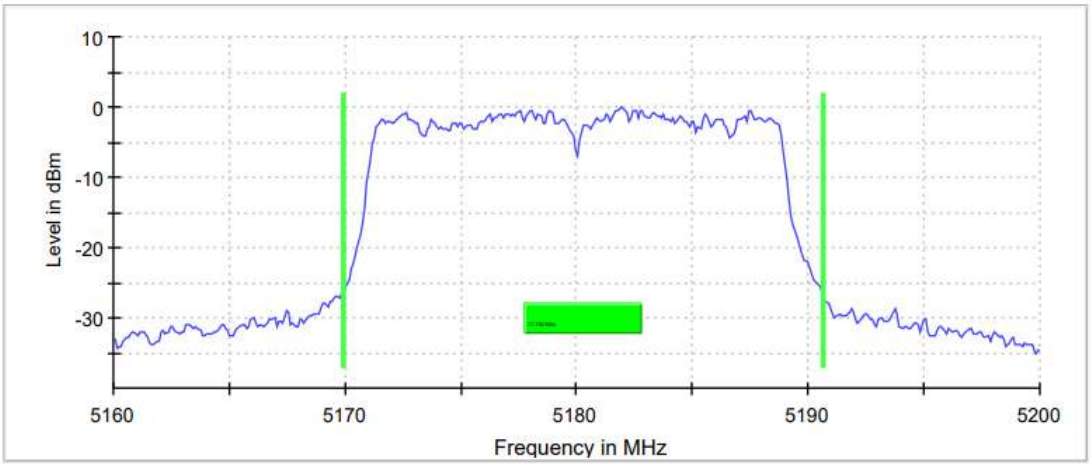
TESTED SAMPLES:	S/01
TESTED CONDITIONS MODES:	TC#02 (ac Mode SISO Radio B)
TEST RESULTS:	PASS

Bandwidth: 20 MHz

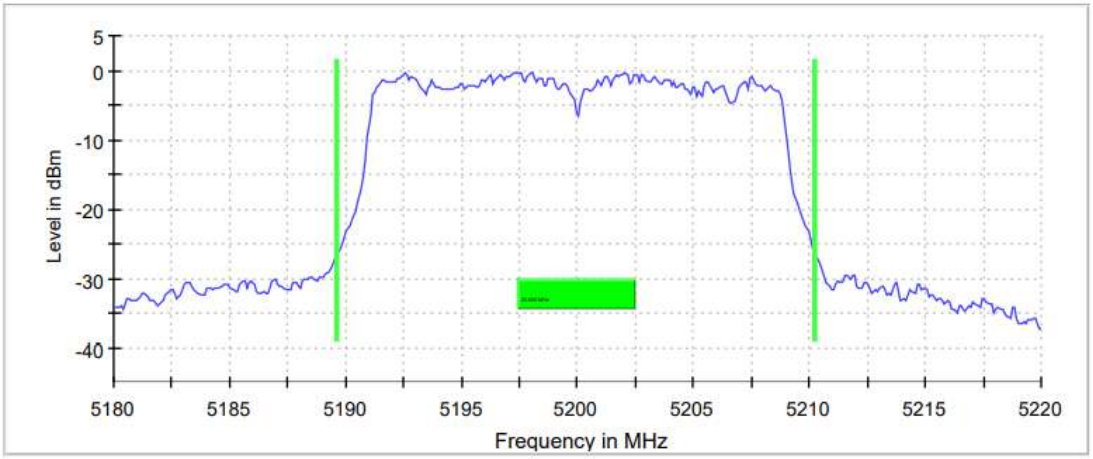
	Lowest frequency 5180 MHz	Middle frequency 5200 MHz	Highest frequency 5240 MHz
26dB Bandwidth (MHz)	20.700	20.600	20.400
Occupied bandwidth (MHz)	17.800	17.700	17.700

26 dB Bandwidth:

Lowest Channel

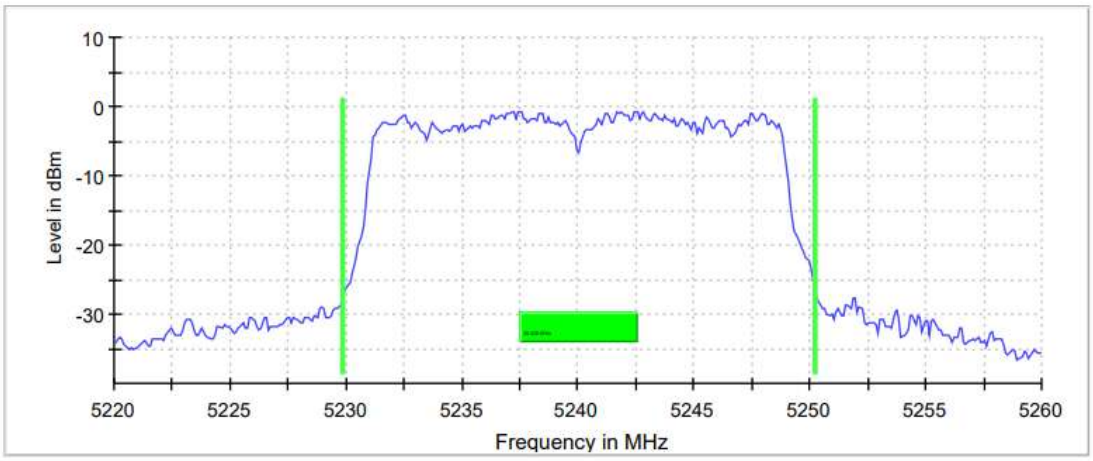


Middle Channel



TEST RESULTS (Cont.)	

Highest Channel

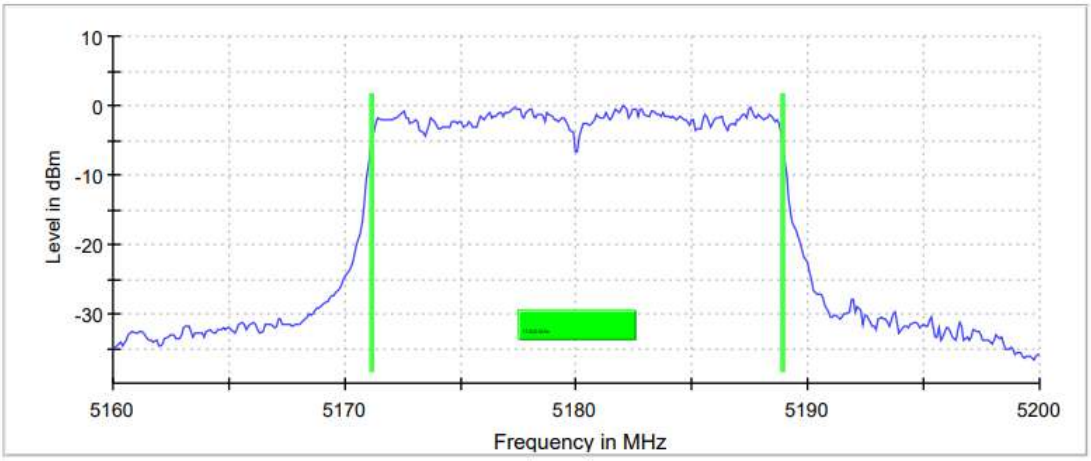


Measurement

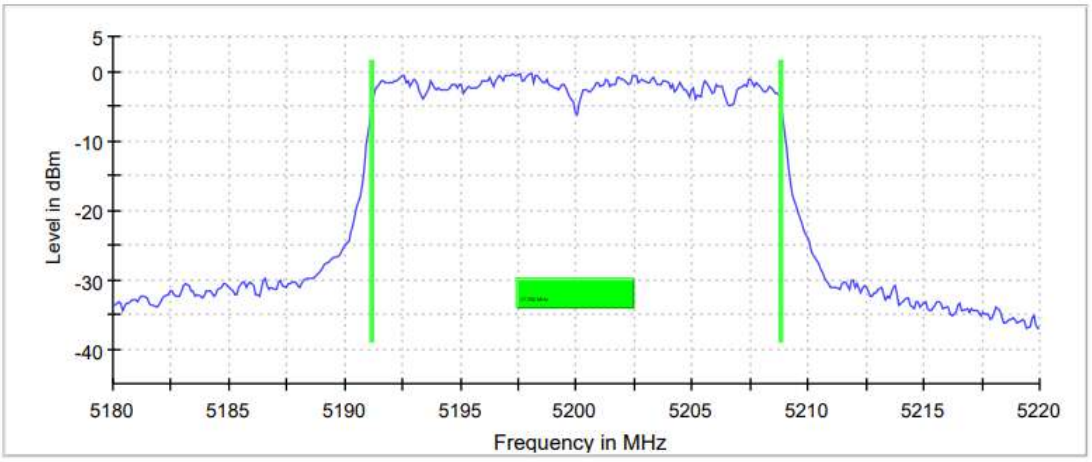
Setting	Instrument Value	Instrument Value	Instrument Value
Start Frequency	5.16000 GHz	5.18000 GHz	5.22000 GHz
Stop Frequency	5.20000 GHz	5.22000 GHz	5.26000 GHz
Span	40.000 MHz	40.000 MHz	40.000 MHz
RBW	200.000 kHz	200.000 kHz	200.000 kHz
VBW	1.000 MHz	1.000 MHz	1.000 MHz
Sweep Points	400	400	400
Sweep time	28.477 µs	28.477 µs	28.477 µs
Reference Level	10.000 dBm	0.000 dBm	0.000 dBm
Attenuation	30.000 dB	20.000 dB	20.000 dB
Detector	Max Peak	Max Peak	Max Peak
Sweep Count	200	200	200
Filter	3 dB	3 dB	3 dB
Trace Mode	Max Hold	Max Hold	Max Hold
Sweep type	FFT	FFT	FFT
Preamp	off	off	off
Stable mode	Trace	Trace	Trace
Stable value	0.30 dB	0.30 dB	0.30 dB
Run	46 / max. 150	61 / max. 150	77/ max. 150
Stable	5 / 5	5 / 5	5 / 5
Max Stable Difference	0.05 dB	0.06 dB	0.00 dB

TEST RESULTS (Cont.):	OCCUPIED BANDWIDTH

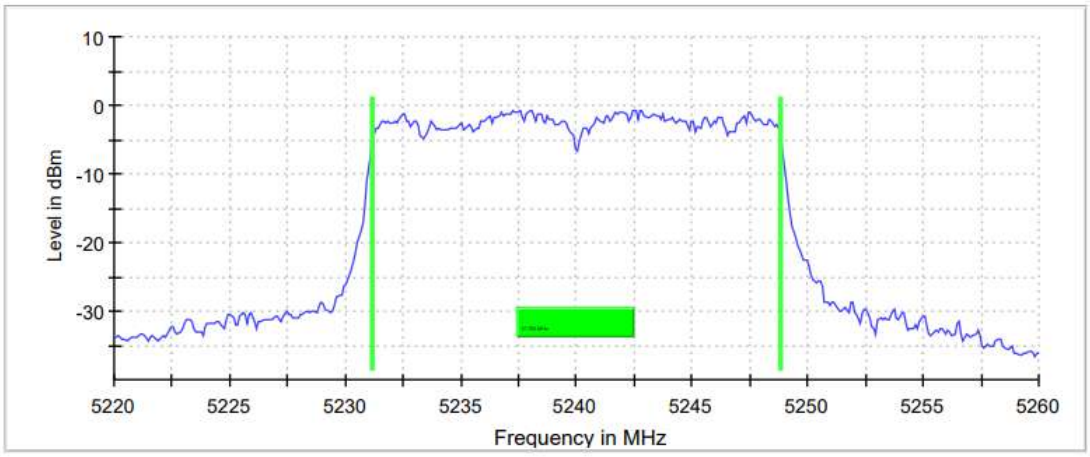
Lowest Channel



Middle Channel



Highest Channel



TEST RESULTS (Cont.)	

Measurement

Setting	Instrument Value	Instrument Value	Instrument Value
Start Frequency	5.16000 GHz	5.18000 GHz	5.22000 GHz
Stop Frequency	5.20000 GHz	5.22000 GHz	5.26000 GHz
Span	40.000 MHz	40.000 MHz	40.000 MHz
RBW	200.000 kHz	200.000 kHz	200.000 kHz
VBW	1.000 MHz	1.000 MHz	1.000 MHz
Sweep Points	400	400	400
Sweep time	28.477 µs	28.477 µs	28.477 µs
Reference Level	0.000 dBm	0.000 dBm	20.000 dBm
Attenuation	20.000 dB	20.000 dB	20.000 dB
Detector	Max Peak	Max Peak	Max Peak
Sweep Count	200	200	200
Filter	3 dB	3 dB	3 dB
Trace Mode	Max Hold	Max Hold	Max Hold
Sweep type	FFT	FFT	FFT
Preamp	off	off	off
Stable mode	Trace	Trace	Trace
Stable value	0.30 dB	0.30 dB	0.30 dB
Run	66 / max. 150	61 / max. 150	57 / max. 150
Stable	5 / 5	5 / 5	5 / 5
Max Stable Difference	0.00 dB	0.02 dB	0.07 dB

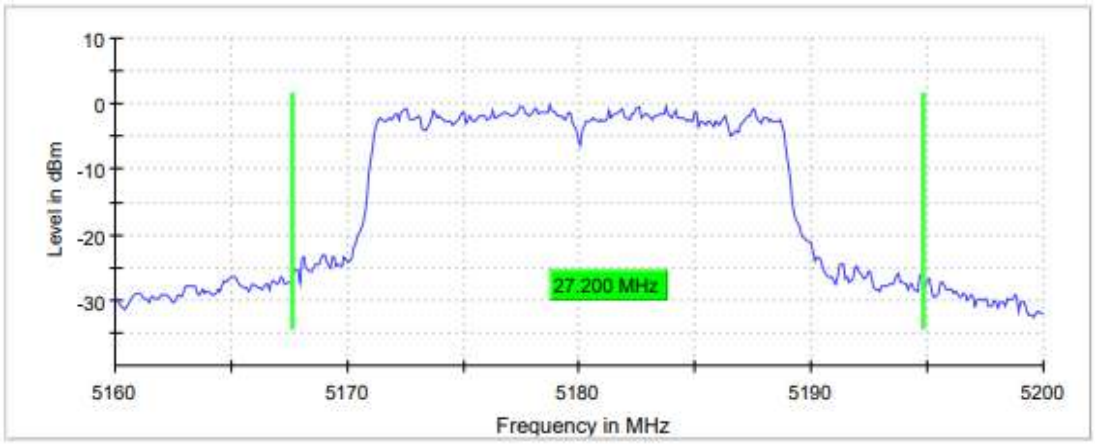
TESTED SAMPLES:	S/01
TESTED CONDITIONS MODES:	TC#02 (ac Mode MIMO Radio A+B)
TEST RESULTS:	PASS

Bandwidth: 20 MHz

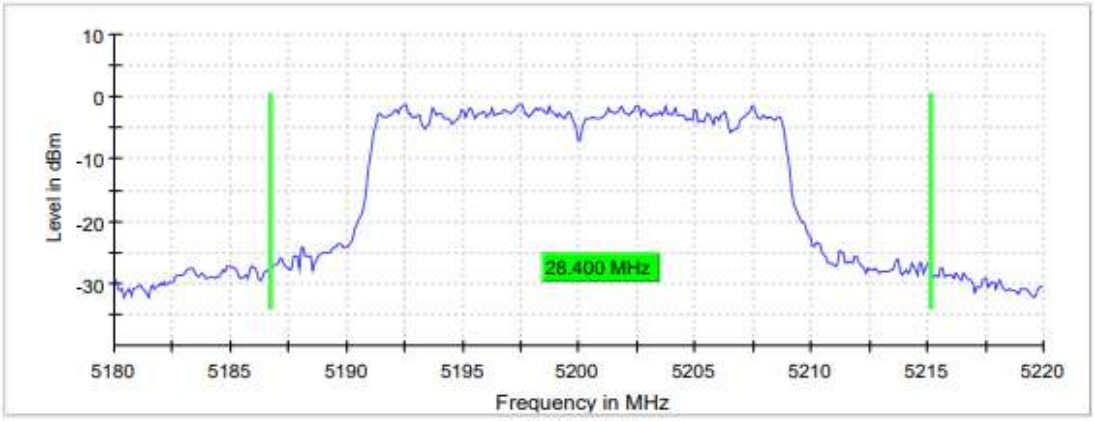
	Lowest frequency 5180 MHz	Middle frequency 5200 MHz	Highest frequency 5240 MHz
26dB Bandwidth (MHz)	27.200	28.400	30.400
Occupied bandwidth (MHz)	17.700	17.900	17.900

26 dB Bandwidth:

Lowest Channel

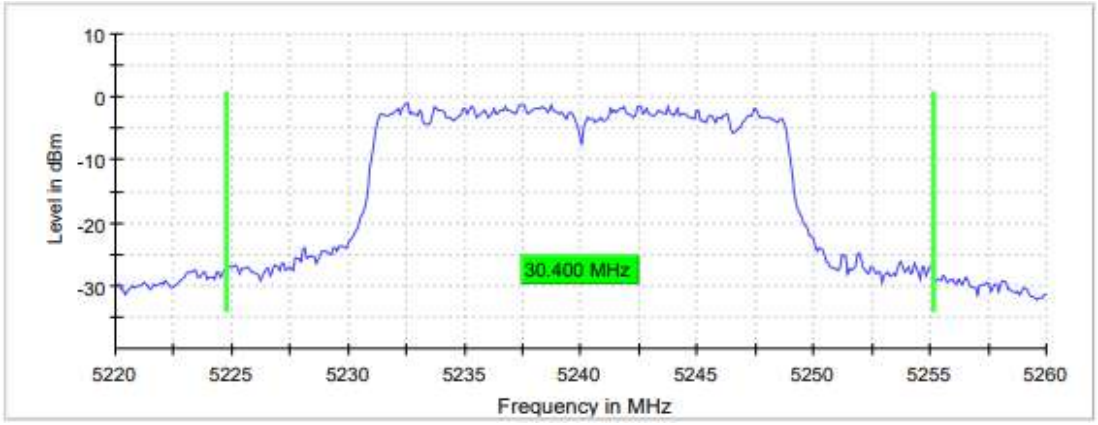


Middle Channel



TEST RESULTS (Cont.)	

Highest Channel

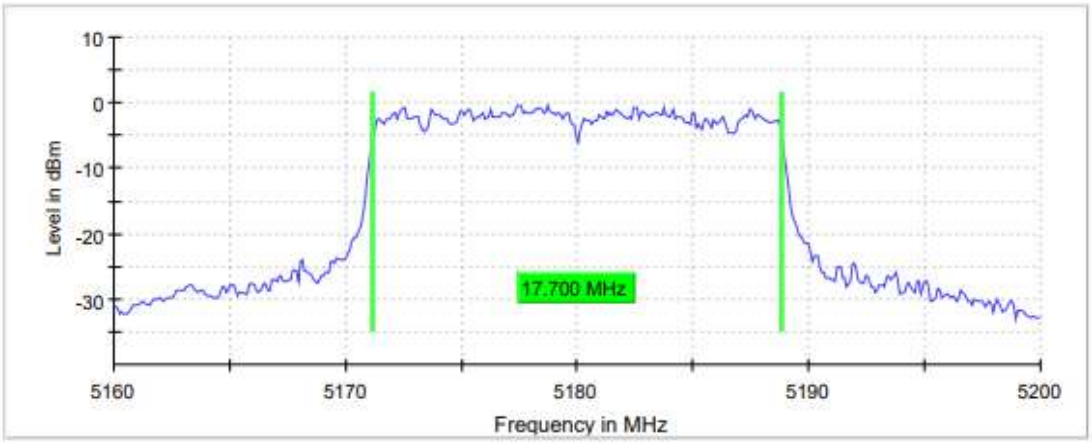


Measurement

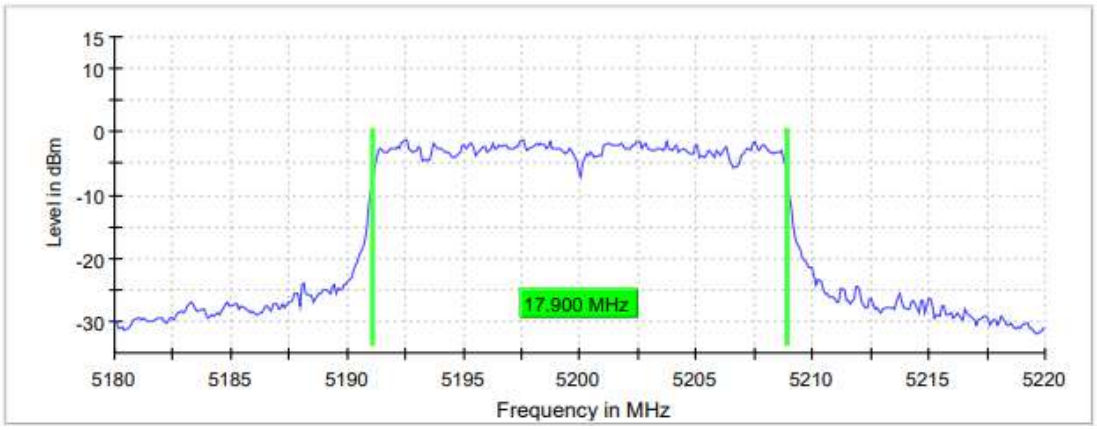
Setting	Instrument Value	Instrument Value	Instrument Value
Start Frequency	5.16000 GHz	5.18000 GHz	5.22000 GHz
Stop Frequency	5.20000 GHz	5.22000 GHz	5.26000 GHz
Span	40.000 MHz	40.000 MHz	40.000 MHz
RBW	200.000 kHz	200.000 kHz	200.000 kHz
VBW	1.000 MHz	1.000 MHz	1.000 MHz
Sweep Points	400	400	400
Sweep time	28.477 µs	28.477 µs	28.477 µs
Reference Level	10.000 dBm	10.000 dBm	10.000 dBm
Attenuation	30.000 dB	30.000 dB	30.000 dB
Detector	Max Peak	Max Peak	Max Peak
Sweep Count	200	200	200
Filter	3 dB	3 dB	3 dB
Trace Mode	Max Hold	Max Hold	Max Hold
Sweep type	FFT	FFT	FFT
Preamp	off	off	off
Stable mode	Trace	Trace	Trace
Stable value	0.30 dB	0.30 dB	0.30 dB
Run	51 / max. 150	45 / max. 150	48 / max. 150
Stable	5 / 5	5 / 5	5 / 5
Max Stable Difference	0.23 dB	0.19 dB	0.12 dB

TEST RESULTS (Cont.):	OCCUPIED BANDWIDTH

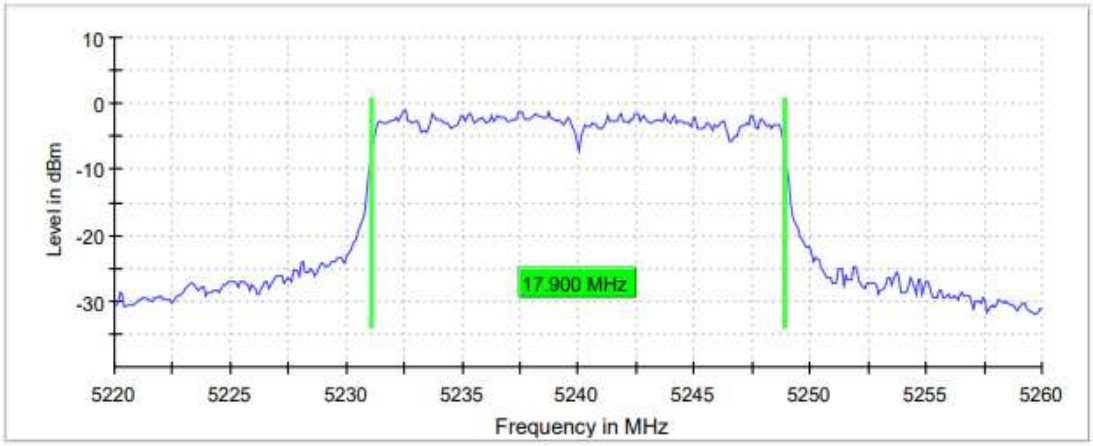
Lowest Channel



Middle Channel



Highest Channel



TEST RESULTS (Cont.)	

Measurement

Setting	Instrument Value	Instrument Value	Instrument Value
Start Frequency	5.16000 GHz	5.18000 GHz	5.22000 GHz
Stop Frequency	5.20000 GHz	5.22000 GHz	5.26000 GHz
Span	40.000 MHz	40.000 MHz	40.000 MHz
RBW	200.000 kHz	200.000 kHz	200.000 kHz
VBW	1.000 MHz	1.000 MHz	1.000 MHz
Sweep Points	400	400	400
Sweep time	28.477 µs	28.477 µs	28.477 µs
Reference Level	10.000 dBm	10.000 dBm	10.000 dBm
Attenuation	30.000 dB	30.000 dB	30.000 dB
Detector	Max Peak	Max Peak	Max Peak
Sweep Count	200	200	200
Filter	3 dB	3 dB	3 dB
Trace Mode	Max Hold	Max Hold	Max Hold
Sweep type	FFT	FFT	FFT
Preamp	off	off	off
Stable mode	Trace	Trace	Trace
Stable value	0.30 dB	0.30 dB	0.30 dB
Run	40 / max. 150	66 / max. 150	43 / max. 150
Stable	5 / 5	5 / 5	5 / 5
Max Stable Difference	0.00 dB	0.23 dB	0.18 dB

TESTED SAMPLES:	S/01
TESTED CONDITIONS MODES:	TC#03 (ac Mode SISO Radio A)
TEST RESULTS:	PASS

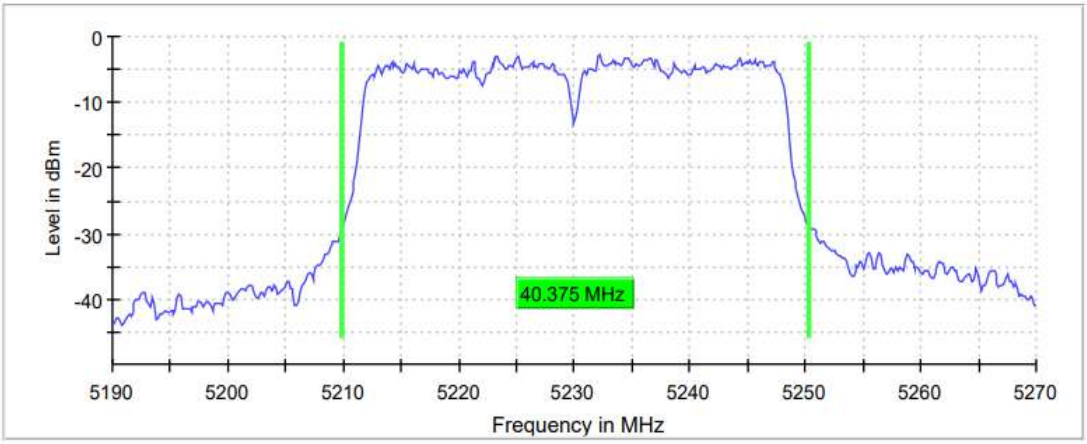
Bandwidth: 40 MHz

	Lowest frequency 5190 MHz	Highest frequency 5230 MHz
26dB bandwidth (MHz)	40.675	40.375
Occupied bandwidth (MHz)	36.250	36.250

26 dB Bandwidth

Lowest Channel

Highest Channel



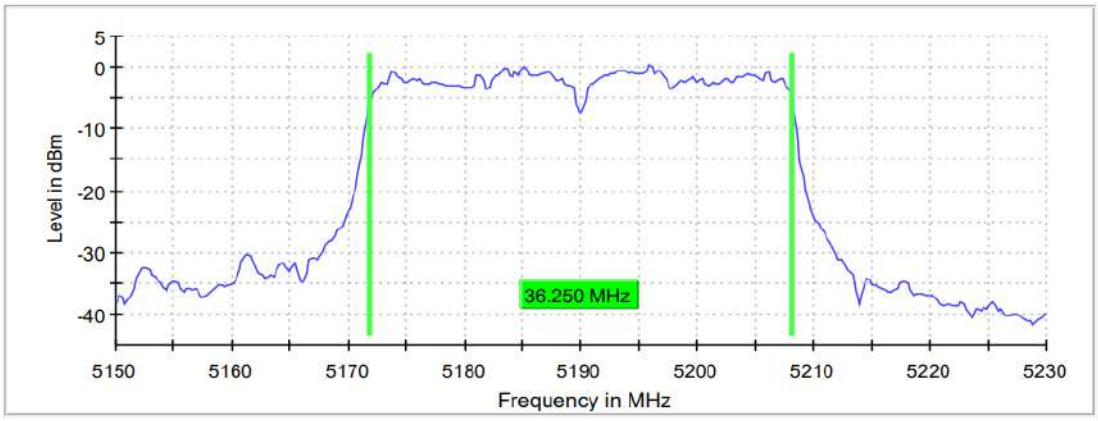
TEST RESULTS (Cont.)	

Measurement

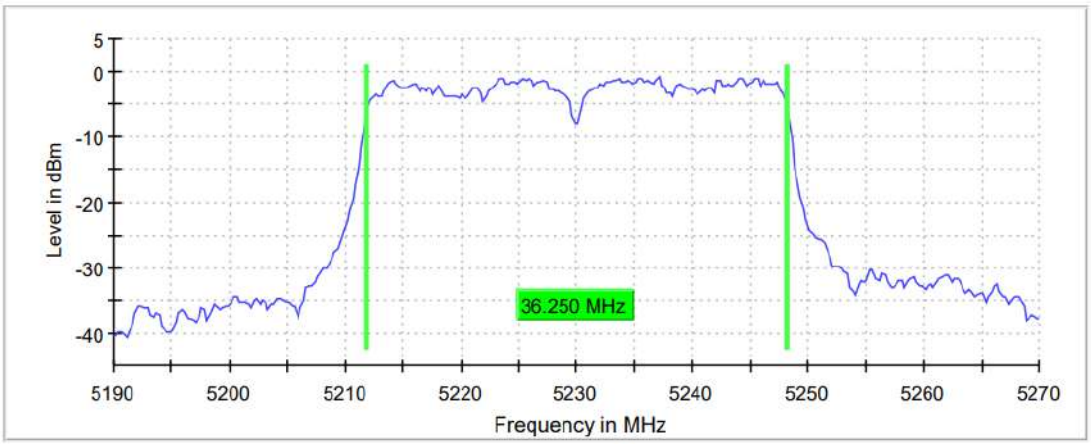
Setting	Instrument Value	Instrument Value
Start Frequency	5.15000 GHz	5.19000 GHz
Stop Frequency	5.23000 GHz	5.27000 GHz
Span	80.000 MHz	80.000 MHz
RBW	300.000 kHz	300.000 kHz
VBW	1.000 MHz	1.000 MHz
Sweep Points	533	533
Sweep time	31.621 µs	31.621 µs
Reference Level	10.000 dBm	0.000 dBm
Attenuation	30.000 dB	20.000 dB
Detector	Max Peak	Max Peak
Sweep Count	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweep type	FFT	FFT
Preamp	off	off
Stable mode	Trace	Trace
Stable value	0.30 dB	0.30 dB
Run	103 / max. 150	113 / max. 150
Stable	5 / 5	5 / 5
Max Stable Difference	0.13 dB	0.00dB

TEST RESULTS (Cont.):	OCCUPIED BANDWIDTH

Lowest Channel



Highest Channel



TEST RESULTS (Cont.)	

Measurement

Setting	Instrument Value	Instrument Value
Start Frequency	5.15000 GHz	5.19000 GHz
Stop Frequency	5.23000 GHz	5.27000 GHz
Span	80.000 MHz	80.000 MHz
RBW	500.000 kHz	500.000 kHz
VBW	2.000 MHz	2.000 MHz
Sweep Points	320	320
Sweep time	18.906 µs	18.906 µs
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 dB	20.000 dB
Detector	Max Peak	Max Peak
Sweep Count	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweep type	FFT	FFT
Preamp	Off	off
Stable mode	Trace	Trace
Stable value	0.30 dB	0.30 dB
Run	65 / max. 150	71 / max. 150
Stable	5 / 5	5 / 5
Max Stable Difference	0.00 dB	0.00 dB

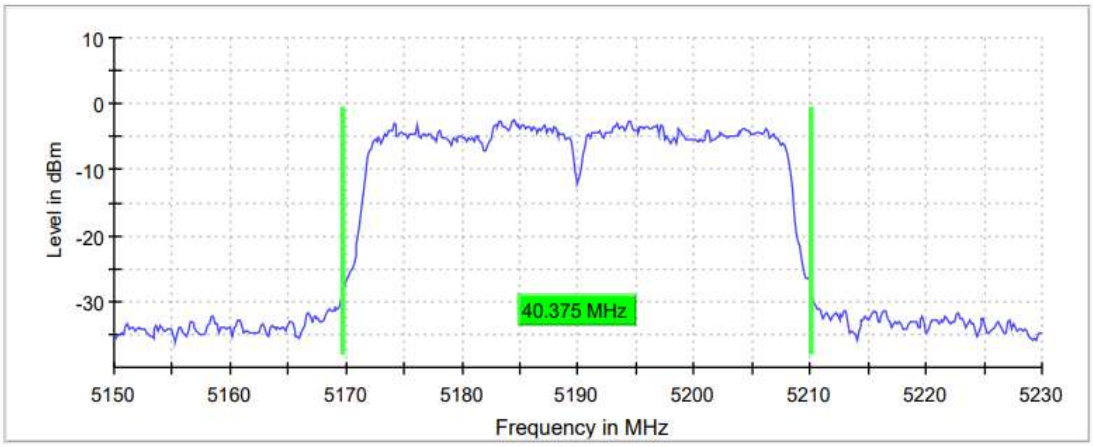
TESTED SAMPLES:	S/01
TESTED CONDITIONS MODES:	TC#03 (ac Mode SISO Radio B)
TEST RESULTS:	PASS

Bandwidth: 40 MHz

	Lowest frequency 5190 MHz	Highest frequency 5230 MHz
26dB bandwidth (MHz)	40.375	40.225
Occupied bandwidth (MHz)	36.250	36.250

26 dB Bandwidth

Lowest Channel



Highest Channel

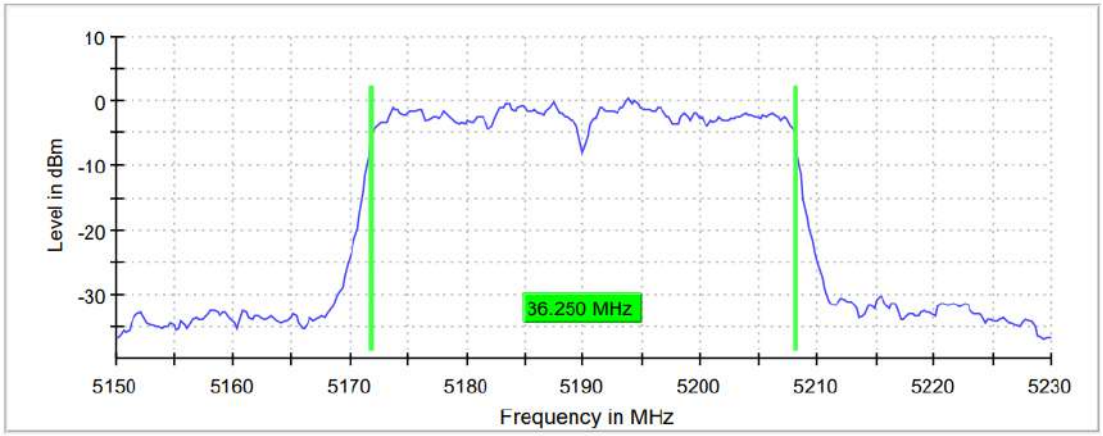
TEST RESULTS (Cont.)	

Measurement

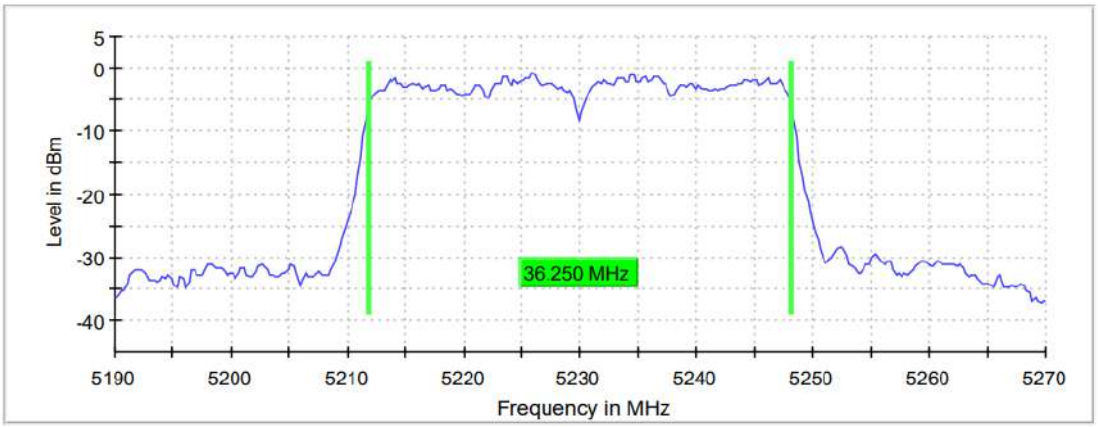
Setting	Instrument Value	Instrument Value
Start Frequency	5.15000 GHz	5.19000 GHz
Stop Frequency	5.23000 GHz	5.27000 GHz
Span	80.000 MHz	80.000 MHz
RBW	300.000 kHz	300.000 kHz
VBW	1.000 MHz	1.000 MHz
Sweep Points	533	533
Sweep time	31.621 µs	31.621 µs
Reference Level	10.000 dBm	0.000 dBm
Attenuation	30.000 dB	20.000 dB
Detector	Max Peak	Max Peak
Sweep Count	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweep type	FFT	FFT
Preamp	off	off
Stable mode	Trace	Trace
Stable value	0.30 dB	0.30 dB
Run	86 / max. 150	95 / max. 150
Stable	5 / 5	5 / 5
Max Stable Difference	0.19 dB	0.00 dB

TEST RESULTS (Cont.):	OCCUPIED BANDWIDTH

Lowest Channel



Highest Channel



TEST RESULTS (Cont.)	

Measurement

Setting	Instrument Value	Instrument Value
Start Frequency	5.15000 GHz	5.19000 GHz
Stop Frequency	5.23000 GHz	5.27000 GHz
Span	80.000 MHz	80.000 MHz
RBW	500.000 kHz	500.000 kHz
VBW	2.000 MHz	2.000 MHz
Sweep Points	320	320
Sweep time	18.906 µs	18.906 µs
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 dB	20.000 dB
Detector	Max Peak	Max Peak
Sweep Count	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweep type	FFT	FFT
Preamp	Off	off
Stable mode	Trace	Trace
Stable value	0.30 dB	0.30 dB
Run	63 / max. 150	43 / max. 150
Stable	5 / 5	5 / 5
Max Stable Difference	0.07 dB	0.00 dB

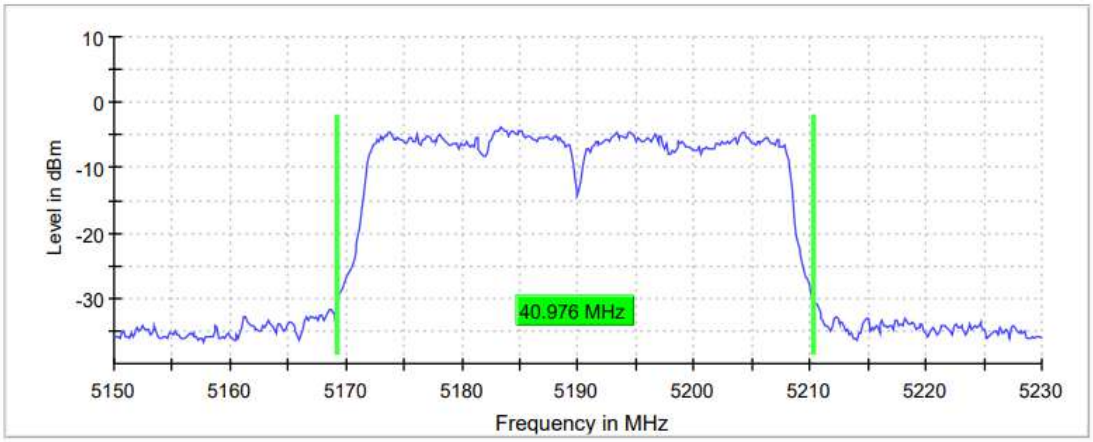
TESTED SAMPLES:	S/01
TESTED CONDITIONS MODES:	TC#03 (ac Mode MIMO Radio A+B)
TEST RESULTS:	PASS

Bandwidth: 40 MHz

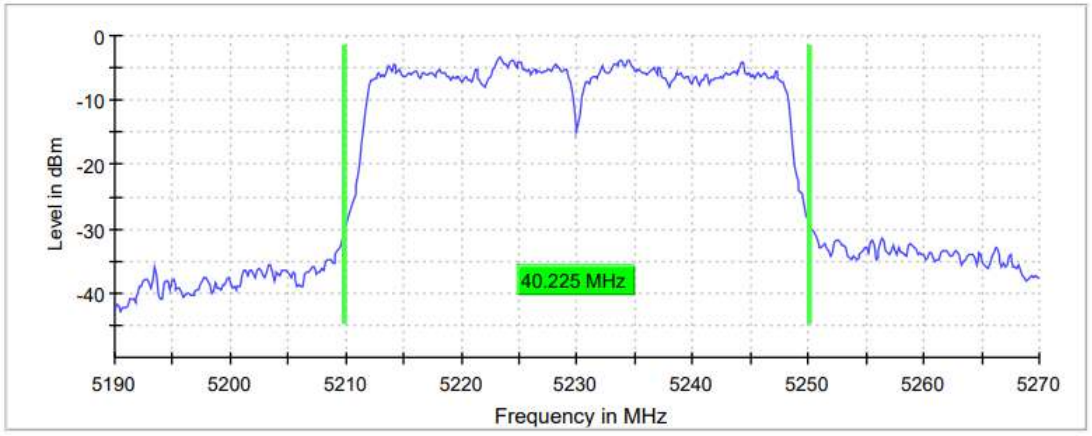
	Lowest frequency 5190 MHz	Highest frequency 5230 MHz
26dB bandwidth (MHz)	40.976	40.225
Occupied bandwidth (MHz)	36.250	36.500

26 dB Bandwidth

Lowest Channel



Highest Channel



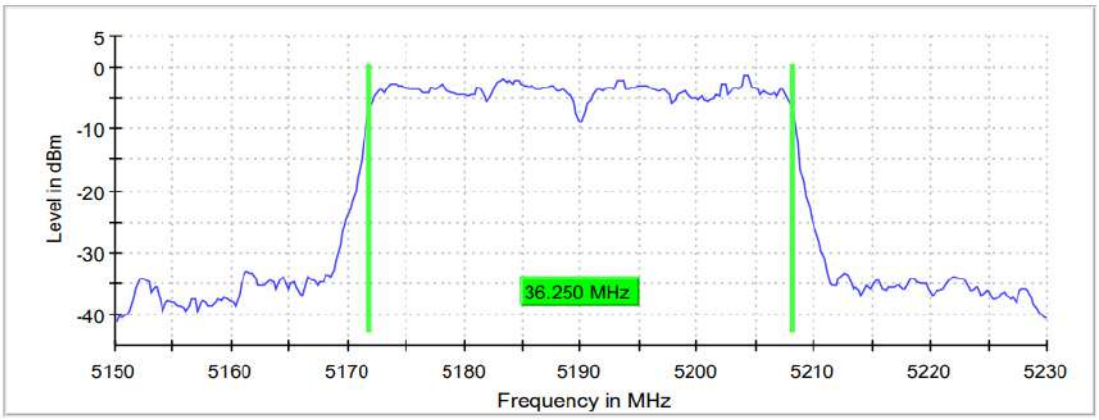
TEST RESULTS (Cont.)	

Measurement

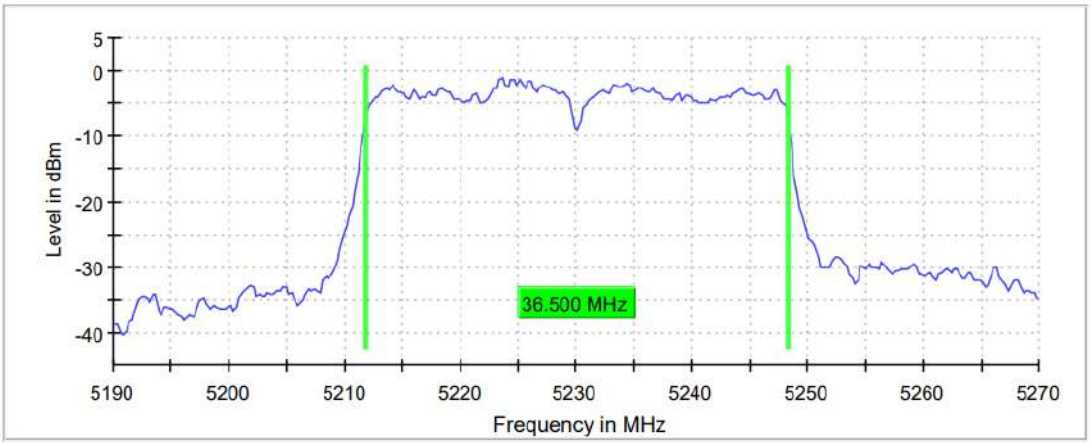
Setting	Instrument Value	Instrument Value
Start Frequency	5.15000 GHz	5.19000 GHz
Stop Frequency	5.23000 GHz	5.27000 GHz
Span	80.000 MHz	80.000 MHz
RBW	300.000 kHz	300.000 kHz
VBW	1.000 MHz	1.000 MHz
Sweep Points	533	533
Sweep time	31.621 µs	31.621 µs
Reference Level	10.000 dBm	10.000 dBm
Attenuation	30.000 dB	30.000 dB
Detector	Max Peak	Max Peak
Sweep Count	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweep type	FFT	FFT
Preamp	off	off
Stable mode	Trace	Trace
Stable value	0.30 dB	0.30 dB
Run	103 / max. 150	54 / max. 150
Stable	5 / 5	5 / 5
Max Stable Difference	018 dB	0.23 dB

TEST RESULTS (Cont.):	OCCUPIED BANDWIDTH

Lowest Channel



Highest Channel



TEST RESULTS (Cont.)	

Measurement

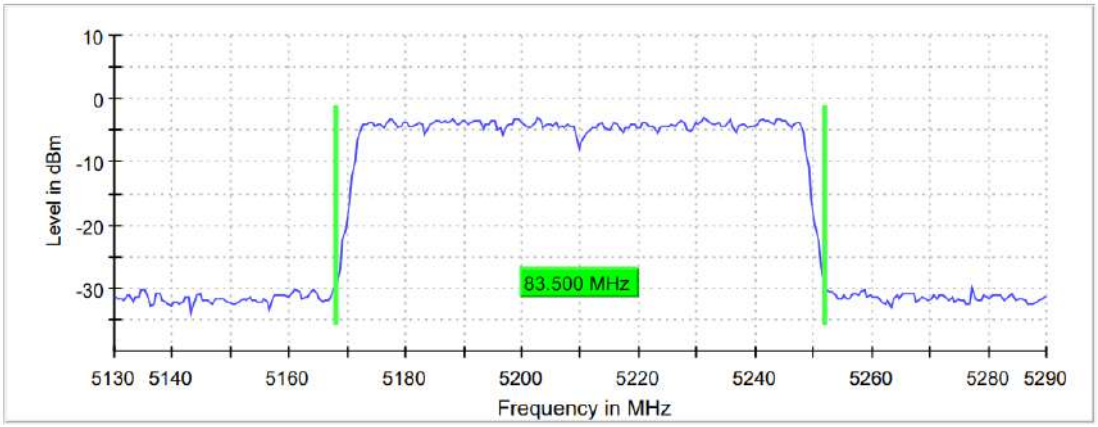
Setting	Instrument Value	Instrument Value
Start Frequency	5.15000 GHz	5.19000 GHz
Stop Frequency	5.23000 GHz	5.27000 GHz
Span	80.000 MHz	80.000 MHz
RBW	500.000 kHz	500.000 kHz
VBW	2.000 MHz	2.000 MHz
Sweep Points	320	320
Sweep time	18.906 µs	18.906 µs
Reference Level	10.000 dBm	10.000 dBm
Attenuation	30.000 dB	30.000 dB
Detector	Max Peak	Max Peak
Sweep Count	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweep type	FFT	FFT
Preamp	Off	off
Stable mode	Trace	Trace
Stable value	0.30 dB	0.30 dB
Run	87 / max. 150	55 / max. 150
Stable	5 / 5	5 / 5
Max Stable Difference	0.00 dB	0.08 dB

TESTED SAMPLES:	S/01
TESTED CONDITIONS MODES:	TC#03 (ac Mode SISO Radio A)
TEST RESULTS:	PASS

Bandwidth: 80 MHz

	Lowest frequency 5210 MHz
26dB bandwidth (MHz)	83.500
Occupied bandwidth (MHz)	76.500

26 dB Bandwidth
Lowest Channel



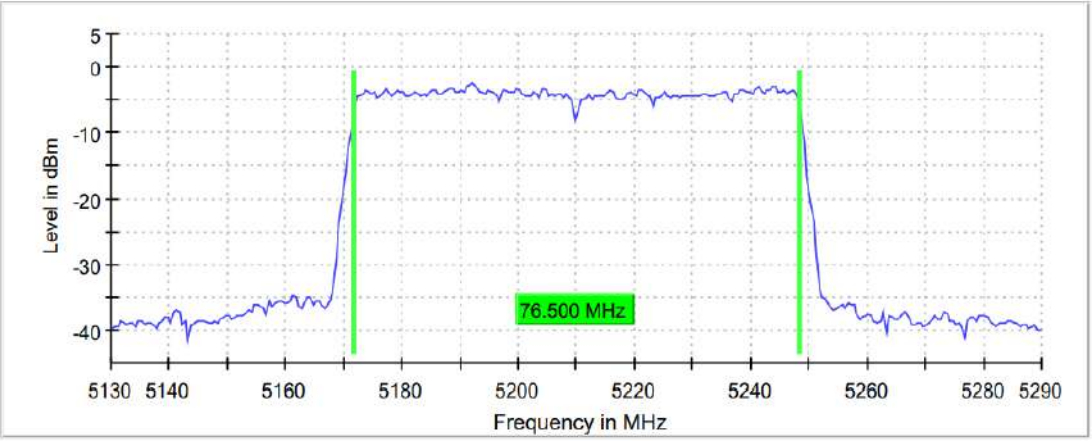
TEST RESULTS (Cont.)	

Measurement

Setting	Instrument Value
Start Frequency	5.13000 GHz
Stop Frequency	5.29000 GHz
Span	160.000 MHz
RBW	1.000 MHz
VBW	3.000 MHz
Sweep Points	320
Sweep time	22.875 µs
Reference Level	10.000 dBm
Attenuation	30.000 dB
Detector	Max Peak
Sweep Count	200
Filter	3 dB
Trace Mode	Max Hold
Sweep type	FFT
Preamp	off
Stable mode	Trace
Stable value	0.30 dB
Run	65 / max. 150
Stable	5 / 5
Max Stable Difference	0.00 dB

TEST RESULTS (Cont.):	OCCUPIED BANDWIDTH

Lowest Channel



Measurement

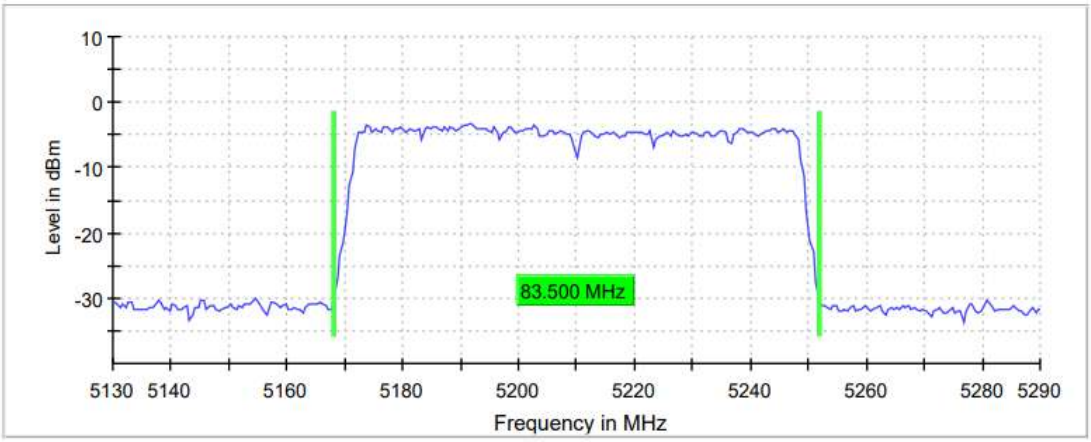
Setting	Instrument Value
Start Frequency	5.13000 GHz
Stop Frequency	5.29000 GHz
Span	160.000 MHz
RBW	1.000 MHz
VBW	3.000 MHz
Sweep Points	320
Sweep time	22.875 µs
Reference Level	0.000 dBm
Attenuation	20.000 dB
Detector	Max Peak
Sweep Count	200
Filter	3 dB
Trace Mode	Max Hold
Sweep type	FFT
Preamp	Off
Stable mode	Trace
Stable value	0.30 dB
Run	49 / max. 150
Stable	5 / 5
Max Stable Difference	0.09 dB

TESTED SAMPLES:	S/01
TESTED CONDITIONS MODES:	TC#03 (ac Mode SISO Radio B)
TEST RESULTS:	PASS

Bandwidth: 80 MHz

	Lowest frequency 5210 MHz
26dB bandwidth (MHz)	83.500
Occupied bandwidth (MHz)	76.500

26 dB Bandwidth
Lowest Channel



TEST RESULTS (Cont.)	

Measurement

Setting	Instrument Value
Start Frequency	5.13000 GHz
Stop Frequency	5.29000 GHz
Span	160.000 MHz
RBW	1.000 MHz
VBW	3.000 MHz
Sweep Points	320
Sweep time	22.875 µs
Reference Level	10.000 dBm
Attenuation	30.000 dB
Detector	Max Peak
Sweep Count	200
Filter	3 dB
Trace Mode	Max Hold
Sweep type	FFT
Preamp	off
Stable mode	Trace
Stable value	0.30 dB
Run	59 / max. 150
Stable	5 / 5
Max Stable Difference	0.11 dB

TEST RESULTS (Cont.):	OCCUPIED BANDWIDTH

Lowest Channel

Measurement

Setting	Instrument Value
Start Frequency	5.13000 GHz
Stop Frequency	5.29000 GHz
Span	160.000 MHz
RBW	1.000 MHz
VBW	3.000 MHz
Sweep Points	320
Sweep time	22.875 µs
Reference Level	0.000 dBm
Attenuation	20.000 dB
Detector	Max Peak
Sweep Count	200
Filter	3 dB
Trace Mode	Max Hold
Sweep type	FFT
Preamp	Off
Stable mode	Trace
Stable value	0.30 dB
Run	65 / max. 150
Stable	5 / 5
Max Stable Difference	0.00 dB

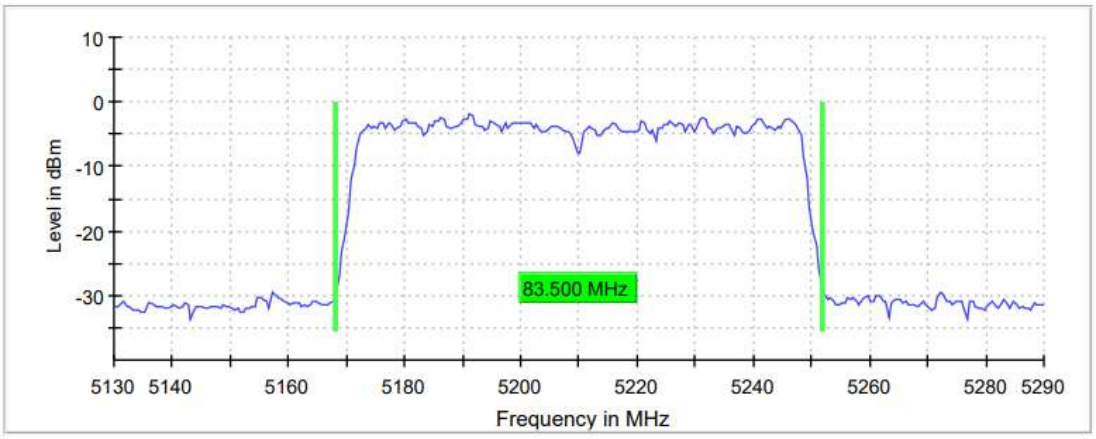
TESTED SAMPLES:	S/01

TESTED CONDITIONS MODES:	TC#03 (ac Mode MIMO Radio A+B)
TEST RESULTS:	PASS

Bandwidth: 80 MHz

	Lowest frequency 5210 MHz
26dB bandwidth (MHz)	83.500
Occupied bandwidth (MHz)	76.500

26 dB Bandwidth
Lowest Channel



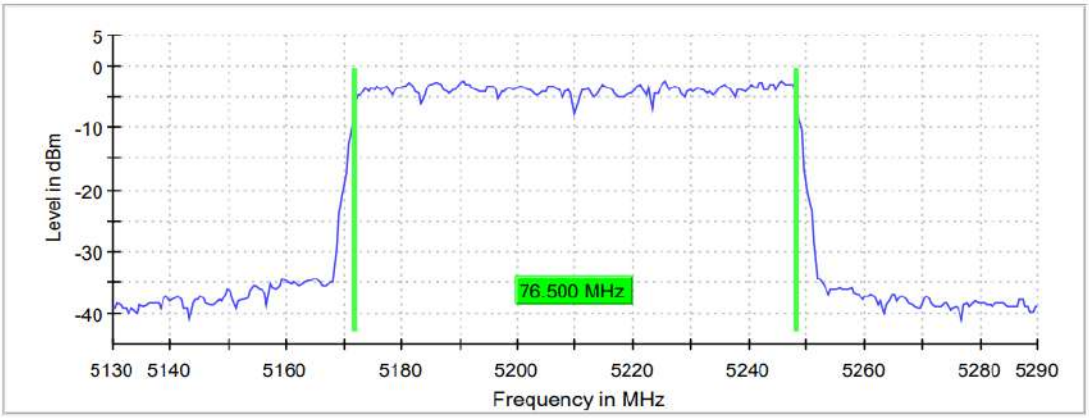
TEST RESULTS (Cont.)	

Measurement

Setting	Instrument Value
Start Frequency	5.13000 GHz
Stop Frequency	5.29000 GHz
Span	160.000 MHz
RBW	1.000 MHz
VBW	3.000 MHz
Sweep Points	320
Sweep time	22.875 µs
Reference Level	10.000 dBm
Attenuation	30.000 dB
Detector	Max Peak
Sweep Count	200
Filter	3 dB
Trace Mode	Max Hold
Sweep type	FFT
Preamp	off
Stable mode	Trace
Stable value	0.30 dB
Run	96/ max. 150
Stable	5 / 5
Max Stable Difference	0.05 dB

TEST RESULTS (Cont.):	OCCUPIED BANDWIDTH

Lowest Channel



Measurement

Setting	Instrument Value
Start Frequency	5.13000 GHz
Stop Frequency	5.29000 GHz
Span	160.000 MHz
RBW	1.000 MHz
VBW	3.000 MHz
Sweep Points	320
Sweep time	22.875 µs
Reference Level	0.000 dBm
Attenuation	20.000 dB
Detector	Max Peak
Sweep Count	200
Filter	3 dB
Trace Mode	Max Hold
Sweep type	FFT
Preamp	Off
Stable mode	Trace
Stable value	0.30 dB
Run	77 / max. 150
Stable	5 / 5
Max Stable Difference	0.03 dB

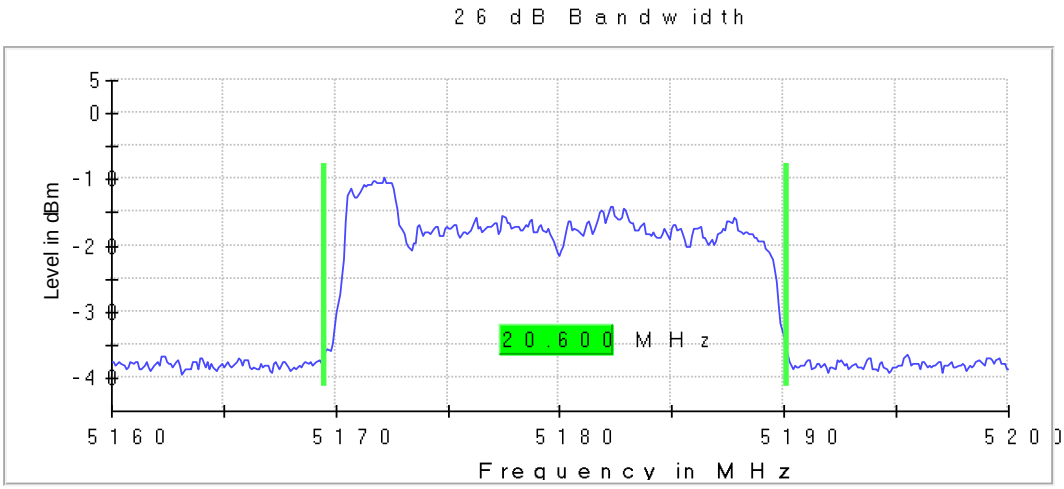
TESTED SAMPLES:	S/01
TESTED CONDITIONS MODES:	TC#04 (ax Mode SISO Radio A)
TEST RESULTS:	PASS

Bandwidth: 20 MHz

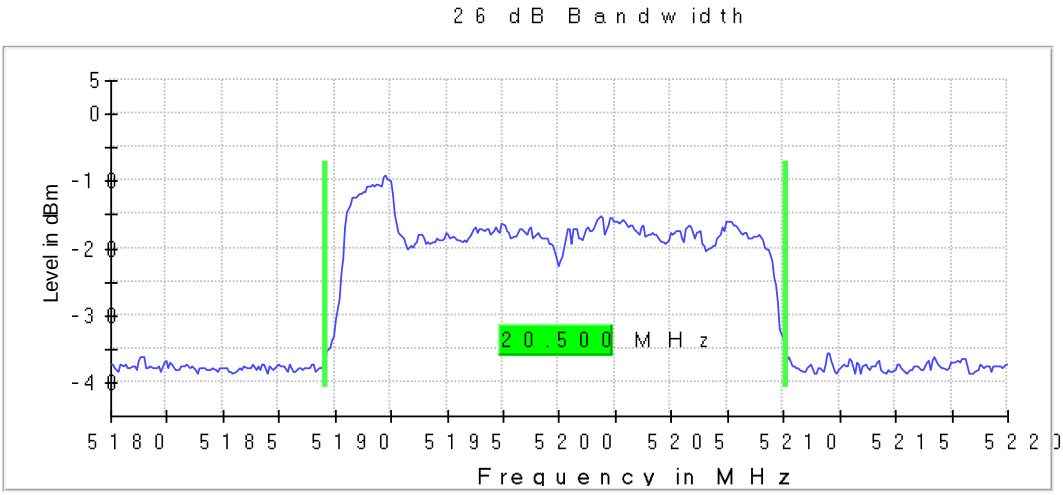
	Lowest frequency 5180 MHz	Middle frequency 5200 MHz	Highest frequency 5240 MHz
26dB bandwidth (MHz)	20.600	20.500	20.200
Occupied bandwidth (MHz)	19.200	19.200	19.100

26 dB Bandwidth:

Lowest Channel

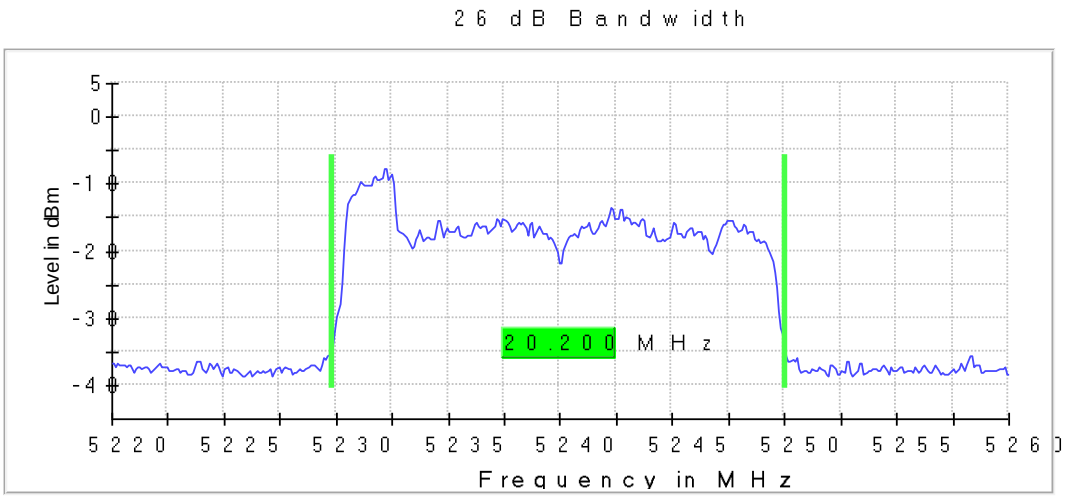


Middle Channel



TEST RESULTS (Cont.)	

Highest Channel

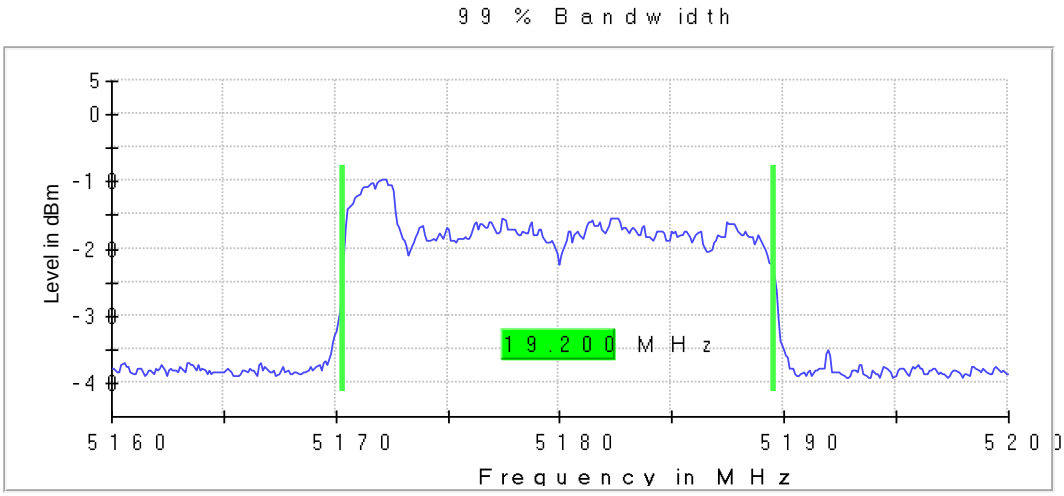


Measurement

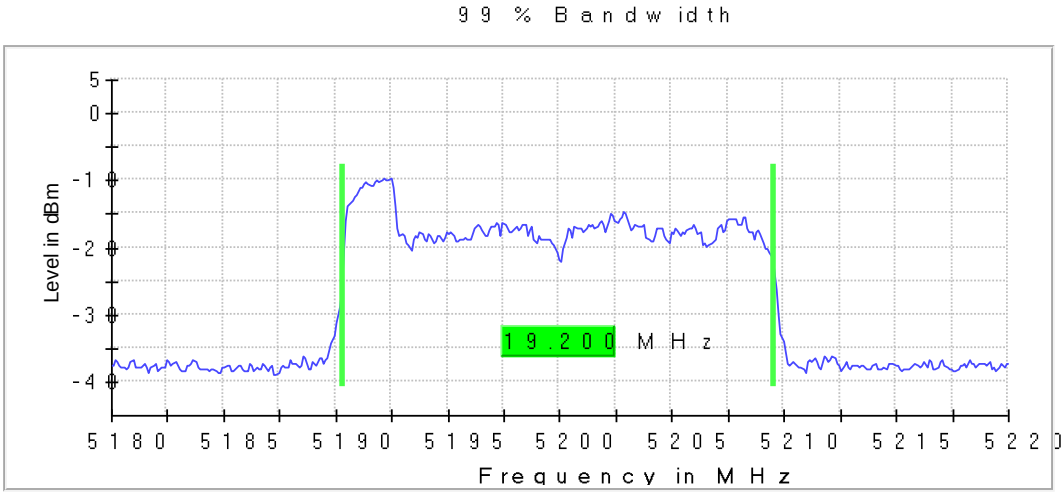
Setting	Instrument Value	Instrument Value	Instrument Value
Start Frequency	5.16000 GHz	5.18000 GHz	5.22000 GHz
Stop Frequency	5.20000 GHz	5.22000 GHz	5.26000 GHz
Span	40.000 MHz	40.000 MHz	40.000 MHz
RBW	200.000 kHz	200.000 kHz	200.000 kHz
VBW	1.000 MHz	1.000 MHz	1.000 MHz
Sweep Points	400	400	400
Sweep time	28.477 µs	28.477 µs	28.477 µs
Reference Level	10.000 dBm	0.000 dBm	0.000 dBm
Attenuation	30.000 dB	20.000 dB	20.000 dB
Detector	Max Peak	Max Peak	Max Peak
Sweep Count	200	200	200
Filter	3 dB	3 dB	3 dB
Trace Mode	Max Hold	Max Hold	Max Hold
Sweep type	FFT	FFT	FFT
Preamp	off	off	off
Stable mode	Trace	Trace	Trace
Stable value	0.30 dB	0.30 dB	0.30 dB
Run	59 / max. 150	78 / max. 150	120 / max. 150
Stable	5 / 5	5 / 5	5 / 5
Max Stable Difference	0.00 dB	0.24 dB	0.00 dB

TEST RESULTS (Cont.):	OCCUPIED BANDWIDTH

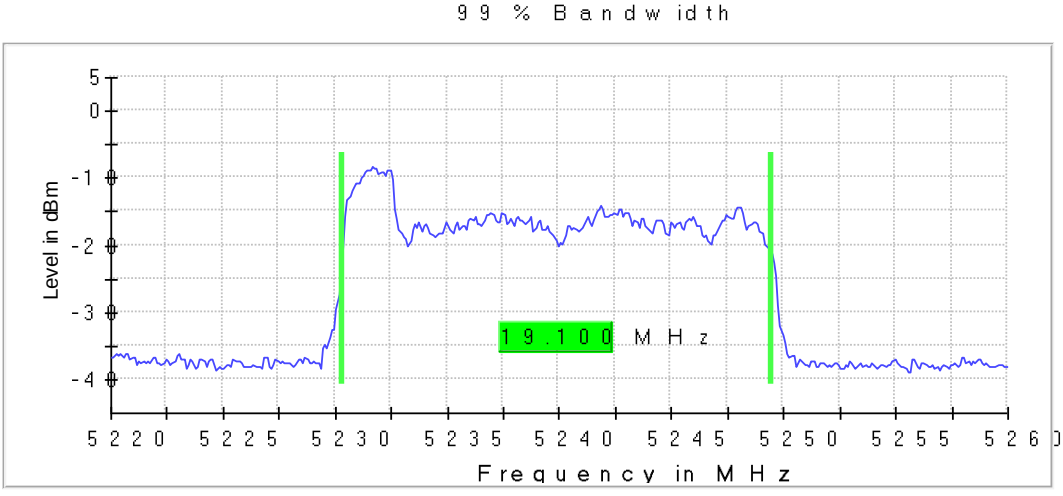
Lowest Channel



Middle Channel



Highest Channel



TEST RESULTS (Cont.)	

Measurement

Setting	Instrument Value	Instrument Value	Instrument Value
Start Frequency	5.16000 GHz	5.18000 GHz	5.22000 GHz
Stop Frequency	5.20000 GHz	5.22000 GHz	5.26000 GHz
Span	40.000 MHz	40.000 MHz	40.000 MHz
RBW	200.000 kHz	200.000 kHz	200.000 kHz
VBW	1.000 MHz	1.000 MHz	1.000 MHz
Sweep Points	400	400	400
Sweep time	28.477 µs	28.477 µs	28.477 µs
Reference Level	0.000 dBm	0.000 dBm	0.000 dBm
Attenuation	20.000 dB	20.000 dB	20.000 dB
Detector	Max Peak	Max Peak	Max Peak
Sweep Count	200	200	200
Filter	3 dB	3 dB	3 dB
Trace Mode	Max Hold	Max Hold	Max Hold
Sweep type	FFT	FFT	FFT
Preamp	off	off	off
Stable mode	Trace	Trace	Trace
Stable value	0.30 dB	0.30 dB	0.30 dB
Run	42 / max. 150	76 / max. 150	123/ max. 150
Stable	5 / 5	5 / 5	5 / 5
Max Stable Difference	0.18 dB	0.04 dB	0.00 dB

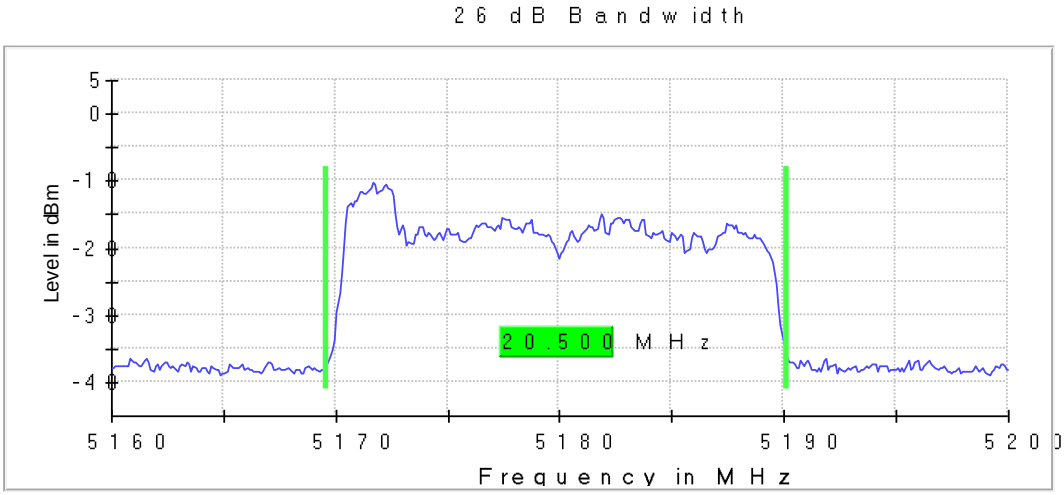
TESTED SAMPLES:	S/01
TESTED CONDITIONS MODES:	TC#04 (ax Mode MIMO Radio A+B)
TEST RESULTS:	PASS

Bandwidth: 20 MHz

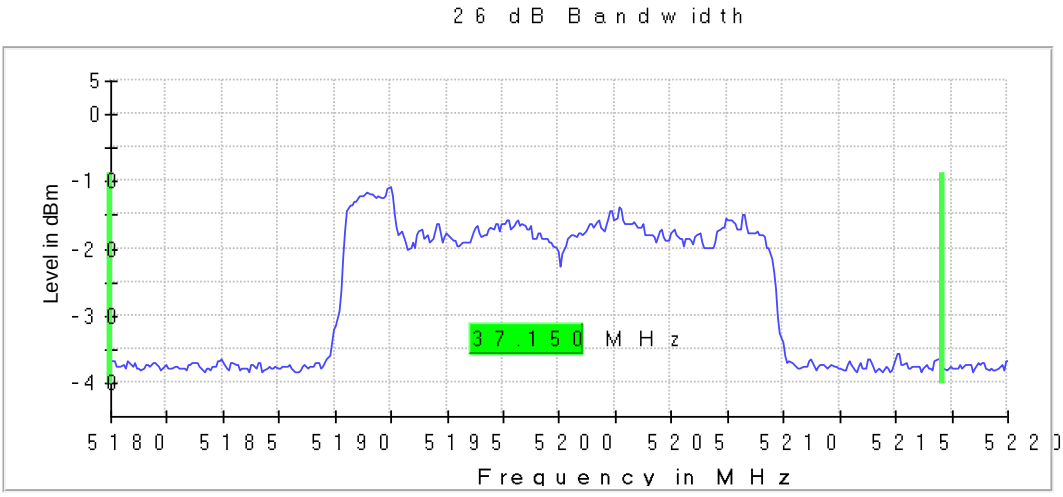
	Lowest frequency 5180 MHz	Middle frequency 5200 MHz	Highest frequency 5240 MHz
26dB Bandwidth (MHz)	20.500	37.150	28.200
Occupied bandwidth (MHz)	19.200	19.400	19.200

26 dB Bandwidth:

Lowest Channel

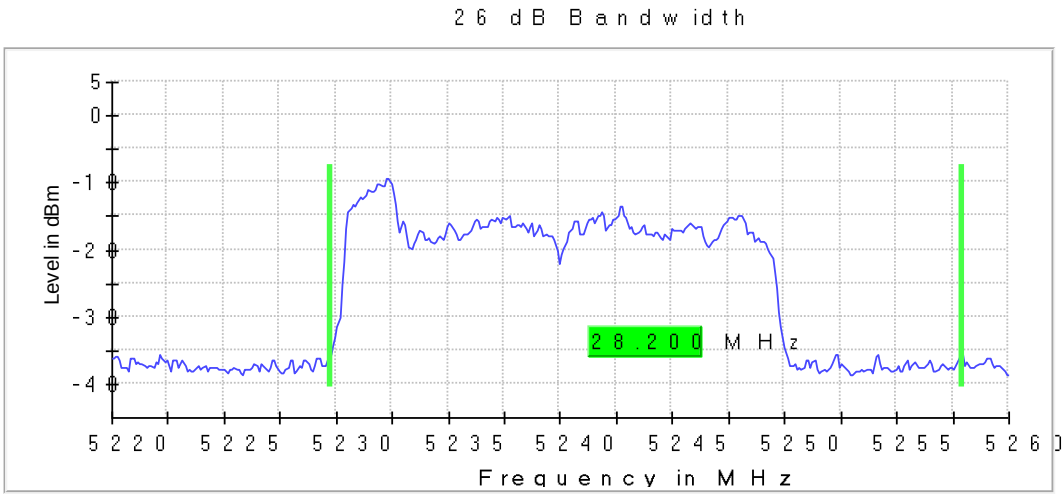


Middle Channel



TEST RESULTS (Cont.)	

Highest Channel

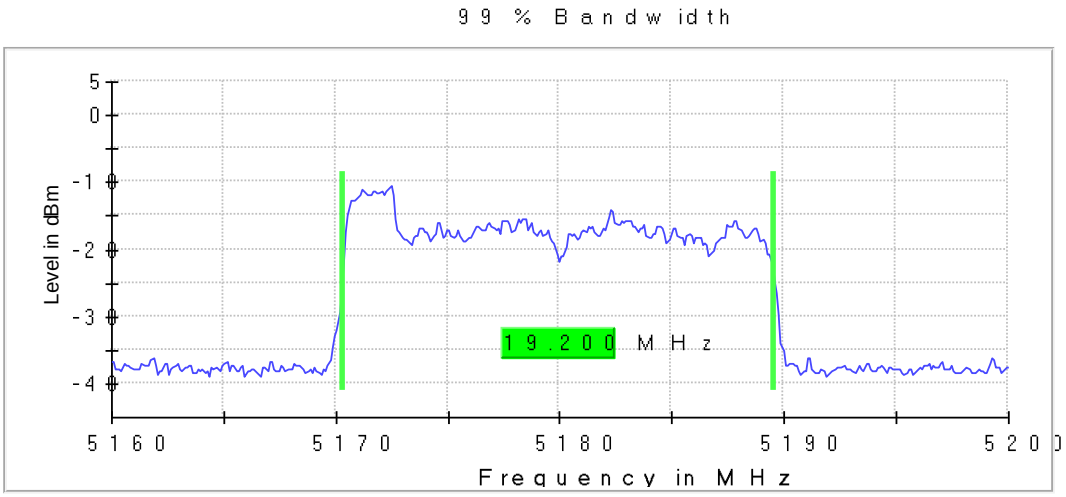


Measurement

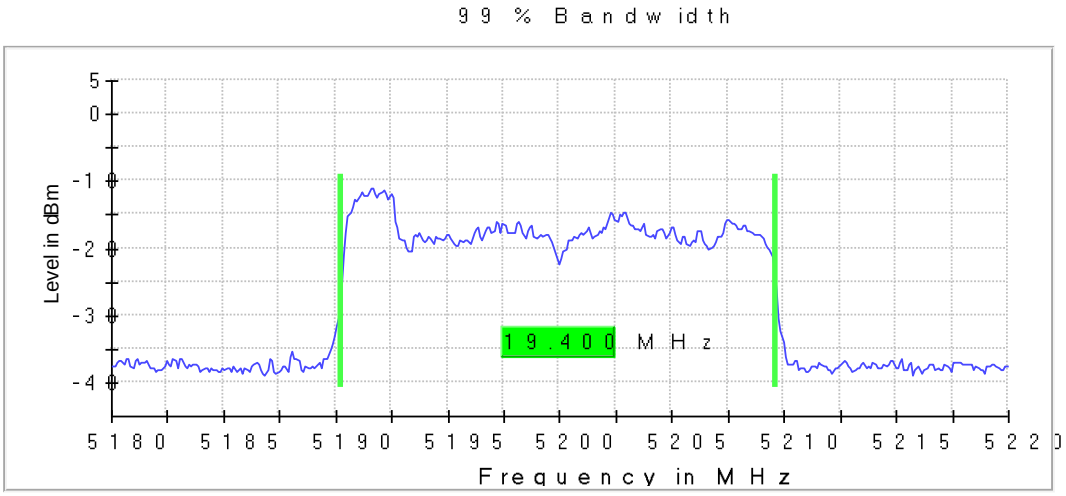
Setting	Instrument Value	Instrument Value	Instrument Value
Start Frequency	5.16000 GHz	5.18000 GHz	5.22000 GHz
Stop Frequency	5.20000 GHz	5.22000 GHz	5.26000 GHz
Span	40.000 MHz	40.000 MHz	40.000 MHz
RBW	200.000 kHz	200.000 kHz	200.000 kHz
VBW	1.000 MHz	1.000 MHz	1.000 MHz
Sweep Points	400	400	400
Sweep time	28.477 µs	28.477 µs	28.477 µs
Reference Level	10.000 dBm	10.000 dBm	10.000 dBm
Attenuation	30.000 dB	30.000 dB	30.000 dB
Detector	Max Peak	Max Peak	Max Peak
Sweep Count	200	200	200
Filter	3 dB	3 dB	3 dB
Trace Mode	Max Hold	Max Hold	Max Hold
Sweep type	FFT	FFT	FFT
Preamp	off	off	off
Stable mode	Trace	Trace	Trace
Stable value	0.30 dB	0.30 dB	0.30 dB
Run	67 / max. 150	82 / max. 150	92 / max. 150
Stable	5 / 5	5 / 5	5 / 5
Max Stable Difference	0.00 dB	0.01 dB	0.19 dB

TEST RESULTS (Cont.):	OCCUPIED BANDWIDTH

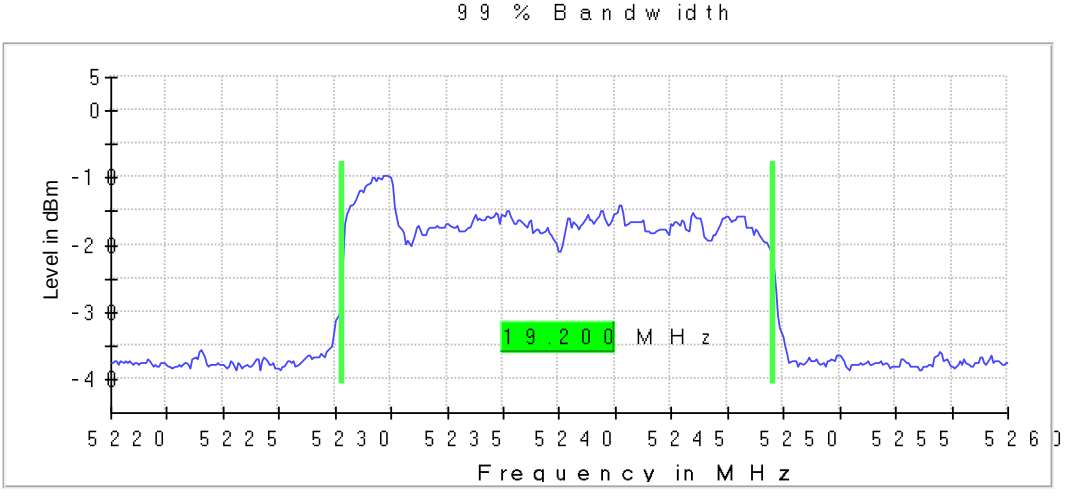
Lowest Channel



Middle Channel



Highest Channel



TEST RESULTS (Cont.)	

Measurement

Setting	Instrument Value	Instrument Value	Instrument Value
Start Frequency	5.16000 GHz	5.18000 GHz	5.22000 GHz
Stop Frequency	5.20000 GHz	5.22000 GHz	5.26000 GHz
Span	40.000 MHz	40.000 MHz	40.000 MHz
RBW	200.000 kHz	200.000 kHz	200.000 kHz
VBW	1.000 MHz	1.000 MHz	1.000 MHz
Sweep Points	400	400	400
Sweep time	28.477 µs	28.477 µs	28.477 µs
Reference Level	10.000 dBm	0.000 dBm	10.000 dBm
Attenuation	30.000 dB	20.000 dB	30.000 dB
Detector	Max Peak	Max Peak	Max Peak
Sweep Count	200	200	200
Filter	3 dB	3 dB	3 dB
Trace Mode	Max Hold	Max Hold	Max Hold
Sweep type	FFT	FFT	FFT
Preamp	off	off	off
Stable mode	Trace	Trace	Trace
Stable value	0.30 dB	0.30 dB	0.30 dB
Run	87 / max. 150	82 / max. 150	92 / max. 150
Stable	5 / 5	5 / 5	5 / 5
Max Stable Difference	0.00 dB	0.16 dB	0.19 dB

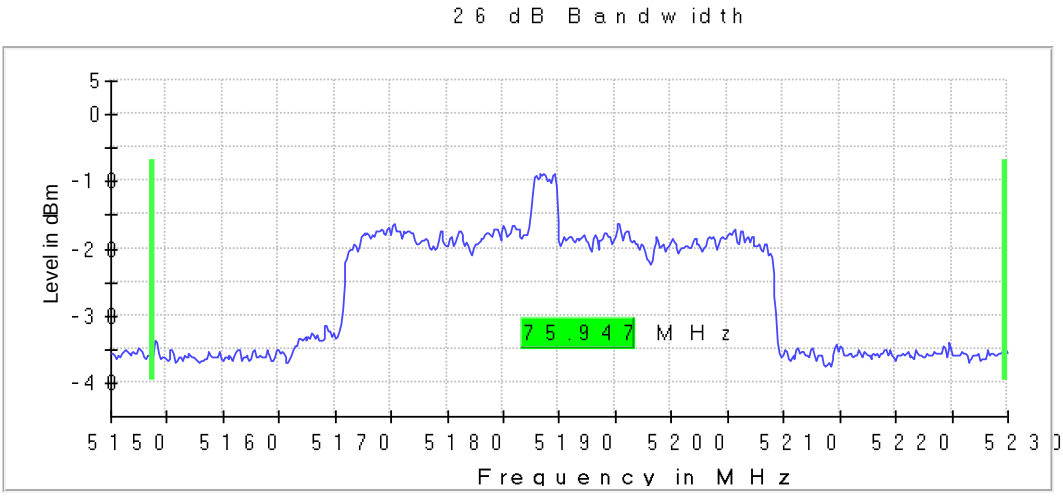
TESTED SAMPLES:	S/01
TESTED CONDITIONS MODES:	TC#04 (ax Mode SISO Radio A)
TEST RESULTS:	PASS

Bandwidth: 40 MHz

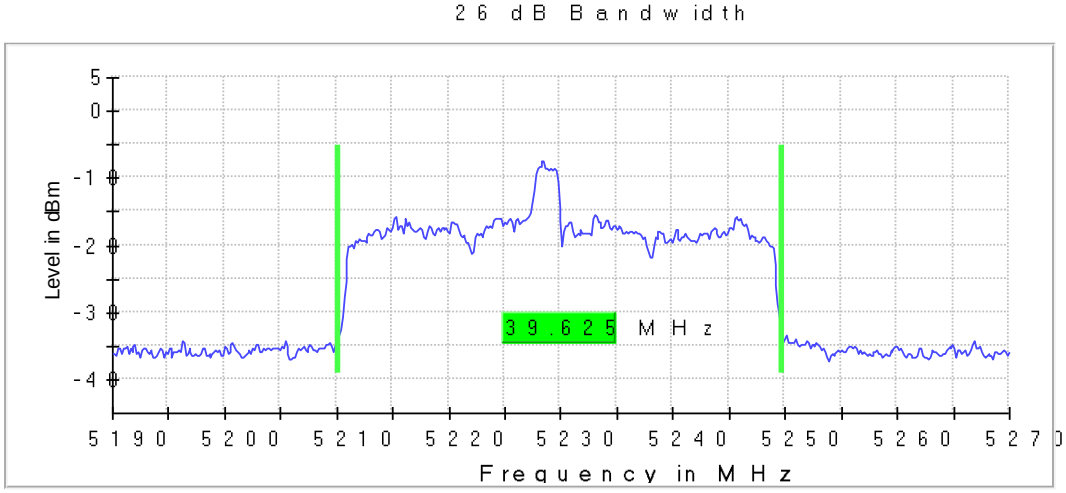
	Lowest frequency 5190 MHz	Highest frequency 5230 MHz
26dB bandwidth (MHz)	75.947	39.625
Occupied bandwidth (MHz)	48.500	43.000

26 dB Bandwidth

Lowest Channel



Highest Channel



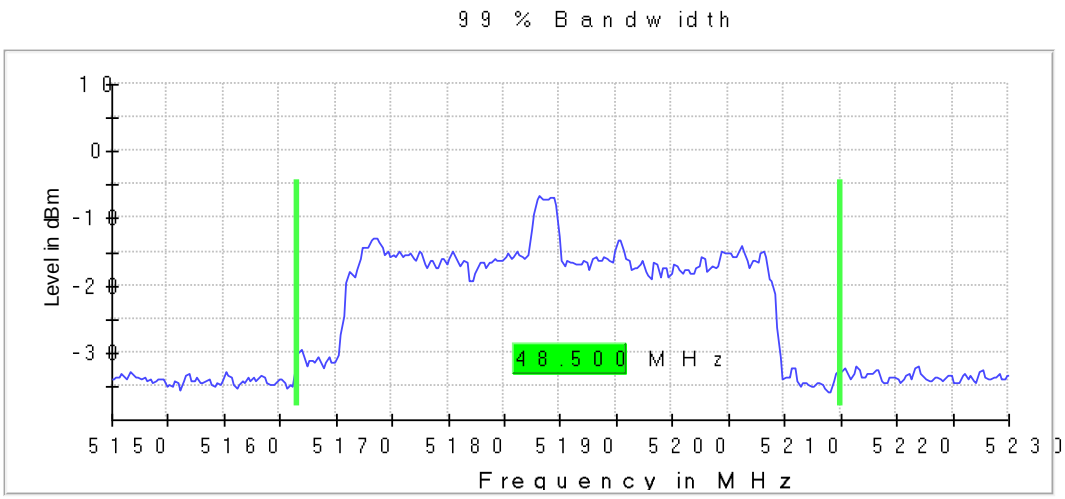
TEST RESULTS (Cont.)	

Measurement

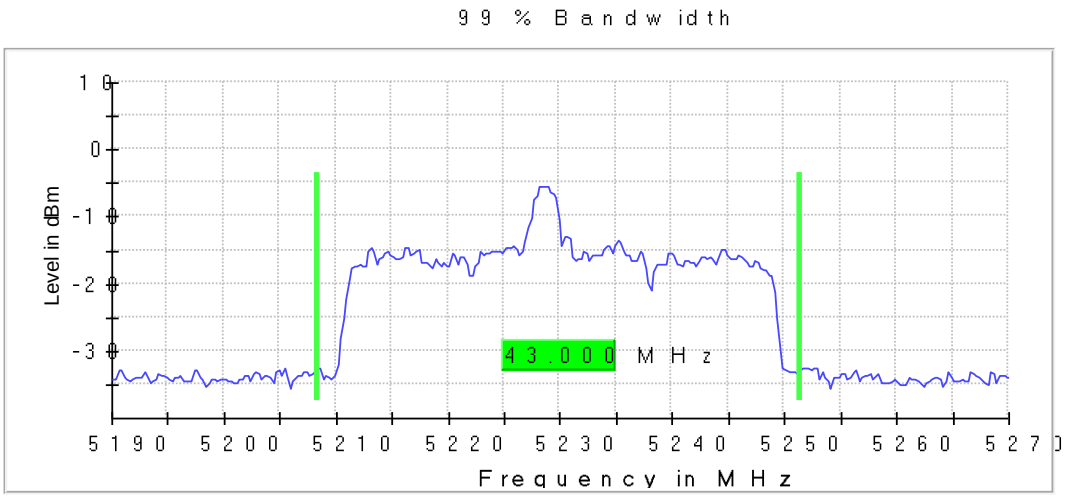
Setting	Instrument Value	Instrument Value
Start Frequency	5.15000 GHz	5.19000 GHz
Stop Frequency	5.23000 GHz	5.27000 GHz
Span	80.000 MHz	80.000 MHz
RBW	300.000 kHz	300.000 kHz
VBW	1.000 MHz	1.000 MHz
Sweep Points	533	533
Sweep time	31.621 µs	31.621 µs
Reference Level	10.000 dBm	0.000 dBm
Attenuation	30.000 dB	20.000 dB
Detector	Max Peak	Max Peak
Sweep Count	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweep type	FFT	FFT
Preamp	off	off
Stable mode	Trace	Trace
Stable value	0.30 dB	0.30 dB
Run	96 / max. 150	119 / max. 150
Stable	5 / 5	5 / 5
Max Stable Difference	0.00 dB	0.00dB

TEST RESULTS (Cont.):	OCCUPIED BANDWIDTH

Lowest Channel



Highest Channel



TEST RESULTS (Cont.)	

Measurement

Setting	Instrument Value	Instrument Value
Start Frequency	5.15000 GHz	5.19000 GHz
Stop Frequency	5.23000 GHz	5.27000 GHz
Span	80.000 MHz	80.000 MHz
RBW	500.000 kHz	500.000 kHz
VBW	2.000 MHz	2.000 MHz
Sweep Points	320	320
Sweep time	18.906 µs	18.906 µs
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 dB	20.000 dB
Detector	Max Peak	Max Peak
Sweep Count	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweep type	FFT	FFT
Preamp	Off	off
Stable mode	Trace	Trace
Stable value	0.30 dB	0.30 dB
Run	75 / max. 150	71 / max. 150
Stable	5 / 5	5 / 5
Max Stable Difference	0.10 dB	0.23 dB

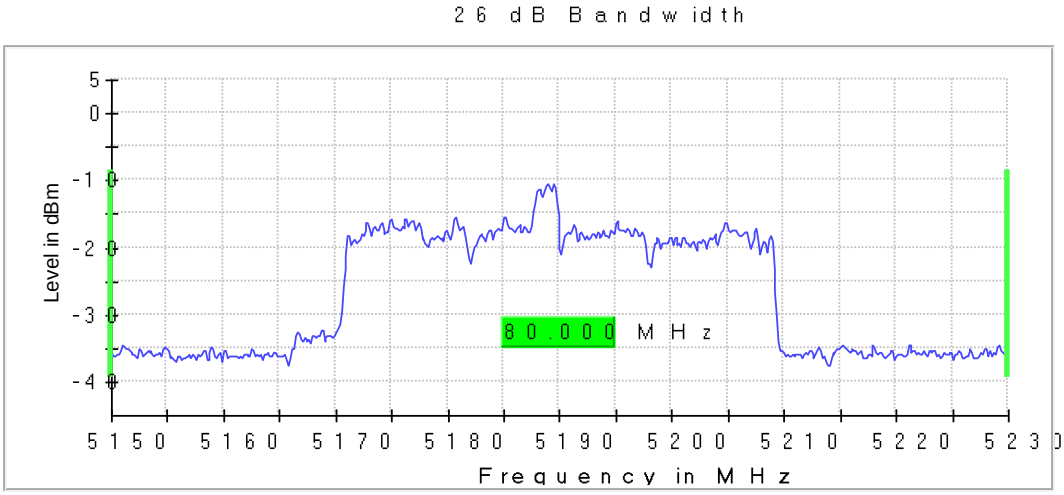
TESTED SAMPLES:	S/01
TESTED CONDITIONS MODES:	TC#04 (ax Mode MIMO Radio A+B)
TEST RESULTS:	PASS

Bandwidth: 40 MHz

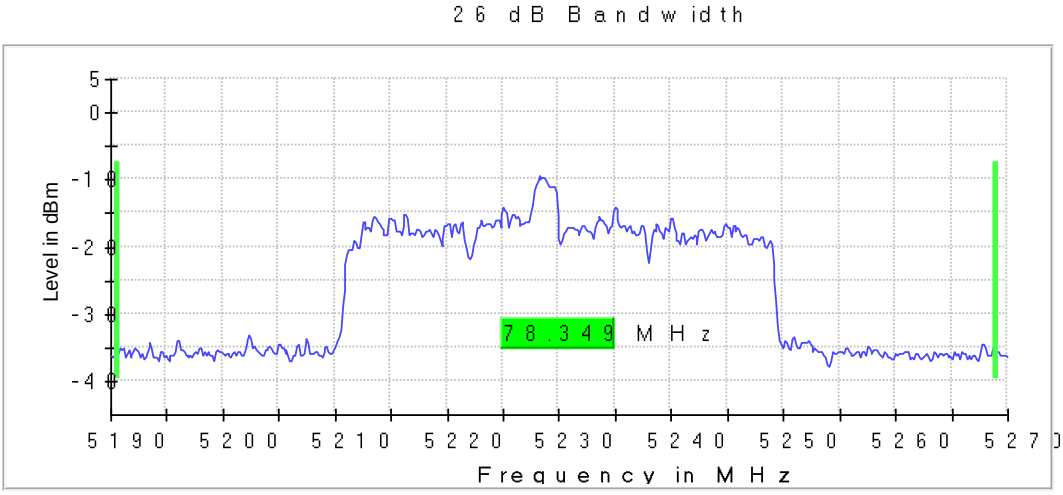
	Lowest frequency 5190 MHz	Highest frequency 5230 MHz
26dB bandwidth (MHz)	80.000	78.349
Occupied bandwidth (MHz)	50.250	46.750

26 dB Bandwidth

Lowest Channel



Highest Channel



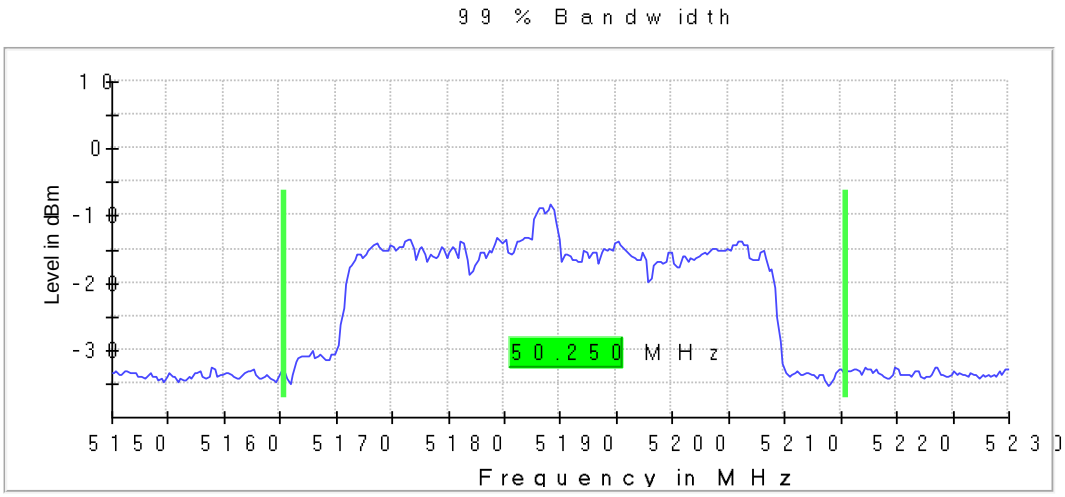
TEST RESULTS (Cont.)	

Measurement

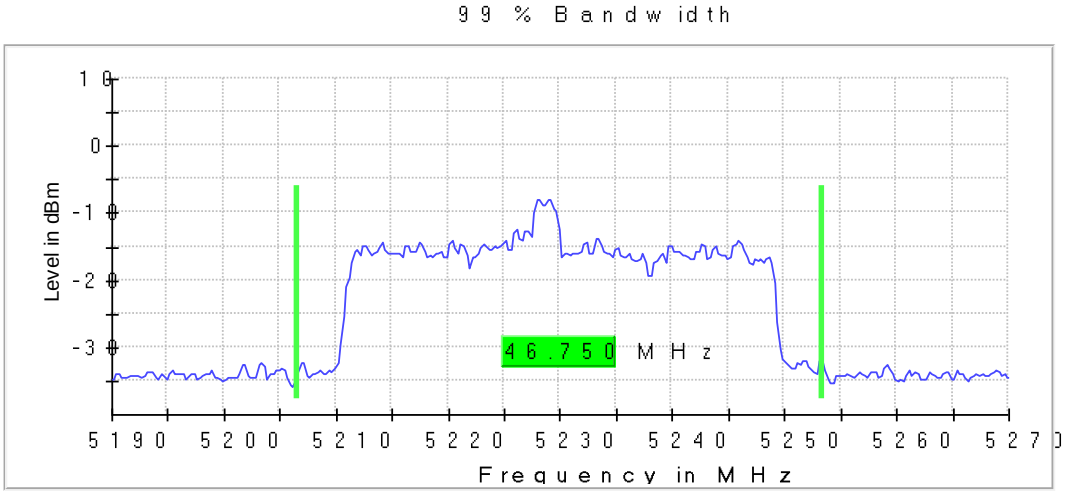
Setting	Instrument Value	Instrument Value
Start Frequency	5.15000 GHz	5.19000 GHz
Stop Frequency	5.23000 GHz	5.27000 GHz
Span	80.000 MHz	80.000 MHz
RBW	300.000 kHz	300.000 kHz
VBW	1.000 MHz	1.000 MHz
Sweep Points	533	533
Sweep time	31.621 µs	31.621 µs
Reference Level	10.000 dBm	0.000 dBm
Attenuation	30.000 dB	20.000 dB
Detector	Max Peak	Max Peak
Sweep Count	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweep type	FFT	FFT
Preamp	off	off
Stable mode	Trace	Trace
Stable value	0.30 dB	0.30 dB
Run	93 / max. 150	83 / max. 150
Stable	5 / 5	5 / 5
Max Stable Difference	0.00 dB	0.14 dB

TEST RESULTS (Cont.):	OCCUPIED BANDWIDTH

Lowest Channel



Highest Channel



TEST RESULTS (Cont.)	

Measurement

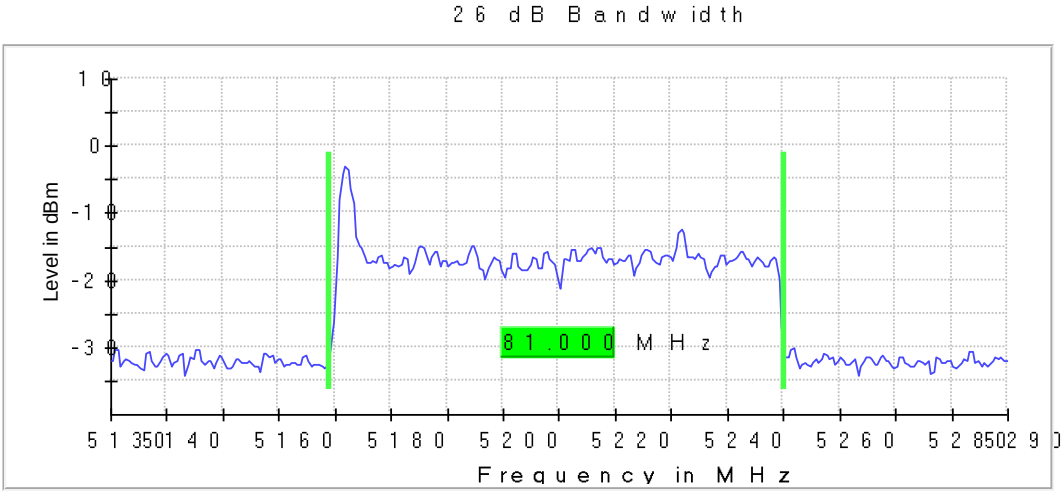
Setting	Instrument Value	Instrument Value
Start Frequency	5.15000 GHz	5.19000 GHz
Stop Frequency	5.23000 GHz	5.27000 GHz
Span	80.000 MHz	80.000 MHz
RBW	500.000 kHz	500.000 kHz
VBW	2.000 MHz	2.000 MHz
Sweep Points	320	320
Sweep time	18.906 µs	18.906 µs
Reference Level	10.000 dBm	10.000 dBm
Attenuation	30.000 dB	30.000 dB
Detector	Max Peak	Max Peak
Sweep Count	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweep type	FFT	FFT
Preamp	Off	off
Stable mode	Trace	Trace
Stable value	0.30 dB	0.30 dB
Run	71 / max. 150	35 / max. 150
Stable	5 / 5	5 / 5
Max Stable Difference	0.07 dB	0.00 dB

TESTED SAMPLES:	S/01
TESTED CONDITIONS MODES:	TC#04 (ax Mode SISO Radio A)
TEST RESULTS:	PASS

Bandwidth: 80 MHz

	Lowest frequency 5210 MHz
26dB bandwidth (MHz)	81.000
Occupied bandwidth (MHz)	119.500

26 dB Bandwidth
Lowest Channel



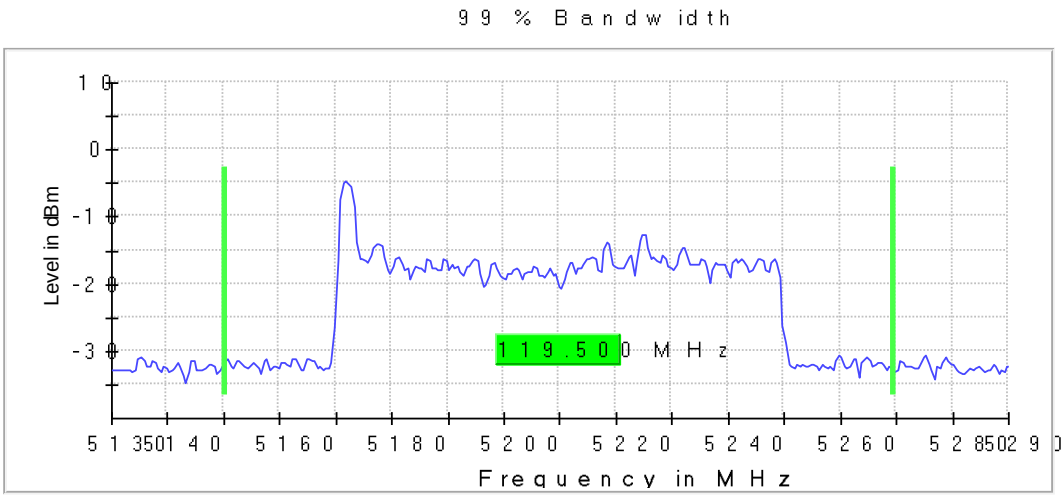
TEST RESULTS (Cont.)	

Measurement

Setting	Instrument Value
Start Frequency	5.13000 GHz
Stop Frequency	5.29000 GHz
Span	160.000 MHz
RBW	1.000 MHz
VBW	3.000 MHz
Sweep Points	320
Sweep time	22.875 µs
Reference Level	10.000 dBm
Attenuation	30.000 dB
Detector	Max Peak
Sweep Count	200
Filter	3 dB
Trace Mode	Max Hold
Sweep type	FFT
Preamp	off
Stable mode	Trace
Stable value	0.30 dB
Run	120 / max. 150
Stable	5 / 5
Max Stable Difference	0.00 dB

TEST RESULTS (Cont.):	OCCUPIED BANDWIDTH

Lowest Channel



Measurement

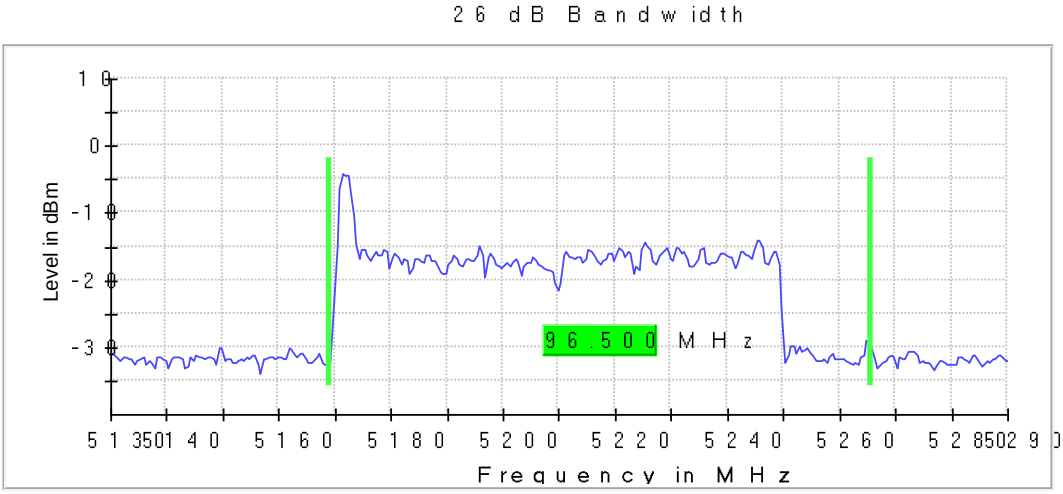
Setting	Instrument Value
Start Frequency	5.13000 GHz
Stop Frequency	5.29000 GHz
Span	160.000 MHz
RBW	1.000 MHz
VBW	3.000 MHz
Sweep Points	320
Sweep time	22.875 µs
Reference Level	0.000 dBm
Attenuation	20.000 dB
Detector	Max Peak
Sweep Count	200
Filter	3 dB
Trace Mode	Max Hold
Sweep type	FFT
Preamp	Off
Stable mode	Trace
Stable value	0.30 dB
Run	78 / max. 150
Stable	5 / 5
Max Stable Difference	0.08 dB

TESTED SAMPLES:	S/01
TESTED CONDITIONS MODES:	TC#04 (ax Mode MIMO Radio A+B)
TEST RESULTS:	PASS

Bandwidth: 80 MHz

	Lowest frequency 5210 MHz
26dB bandwidth (MHz)	96.500
Occupied bandwidth (MHz)	124.500

26 dB Bandwidth
Lowest Channel



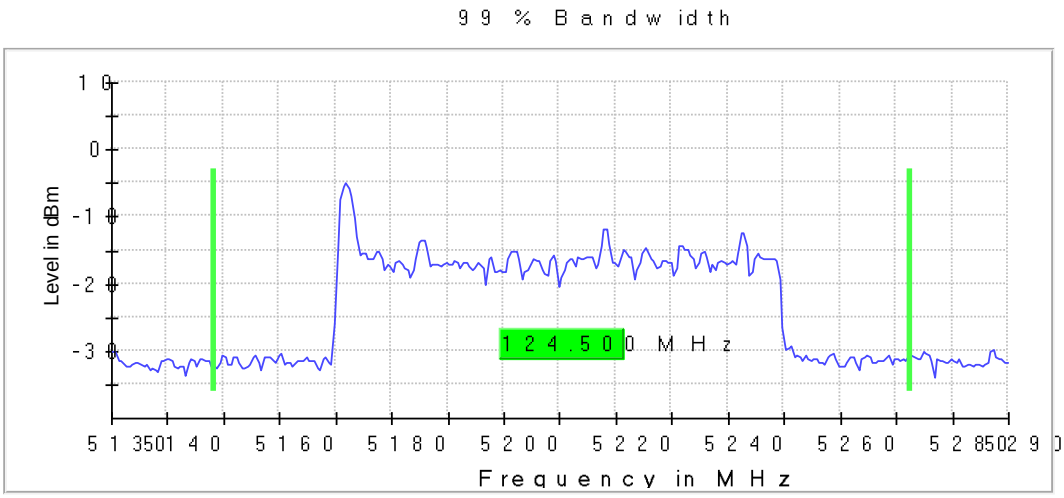
TEST RESULTS (Cont.)	

Measurement

Setting	Instrument Value
Start Frequency	5.13000 GHz
Stop Frequency	5.29000 GHz
Span	160.000 MHz
RBW	1.000 MHz
VBW	3.000 MHz
Sweep Points	320
Sweep time	22.875 µs
Reference Level	10.000 dBm
Attenuation	30.000 dB
Detector	Max Peak
Sweep Count	200
Filter	3 dB
Trace Mode	Max Hold
Sweep type	FFT
Preamp	off
Stable mode	Trace
Stable value	0.30 dB
Run	103/ max. 150
Stable	5 / 5
Max Stable Difference	0.17 dB

TEST RESULTS (Cont.):	OCCUPIED BANDWIDTH

Lowest Channel



Measurement

Setting	Instrument Value
Start Frequency	5.13000 GHz
Stop Frequency	5.29000 GHz
Span	160.000 MHz
RBW	1.000 MHz
VBW	3.000 MHz
Sweep Points	320
Sweep time	189.453 µs
Reference Level	0.000 dBm
Attenuation	20.000 dB
Detector	Max Peak
Sweep Count	200
Filter	3 dB
Trace Mode	Max Hold
Sweep type	FFT
Preamp	Off
Stable mode	Trace
Stable value	0.30 dB
Run	114 / max. 150
Stable	5 / 5
Max Stable Difference	0.00 dB

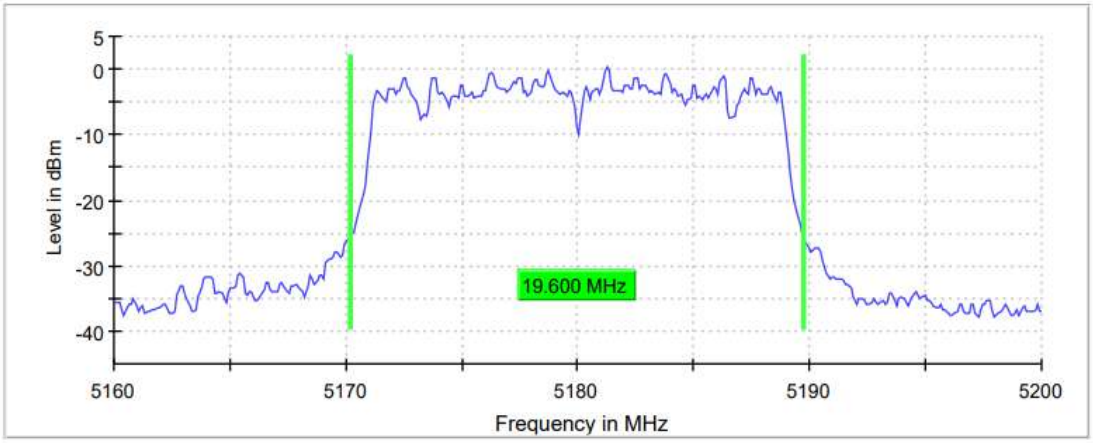
TESTED SAMPLES:	S/01
TESTED CONDITIONS MODES:	TC#05 (ac Mode Beam forming)
TEST RESULTS:	PASS

Bandwidth: 20 MHz

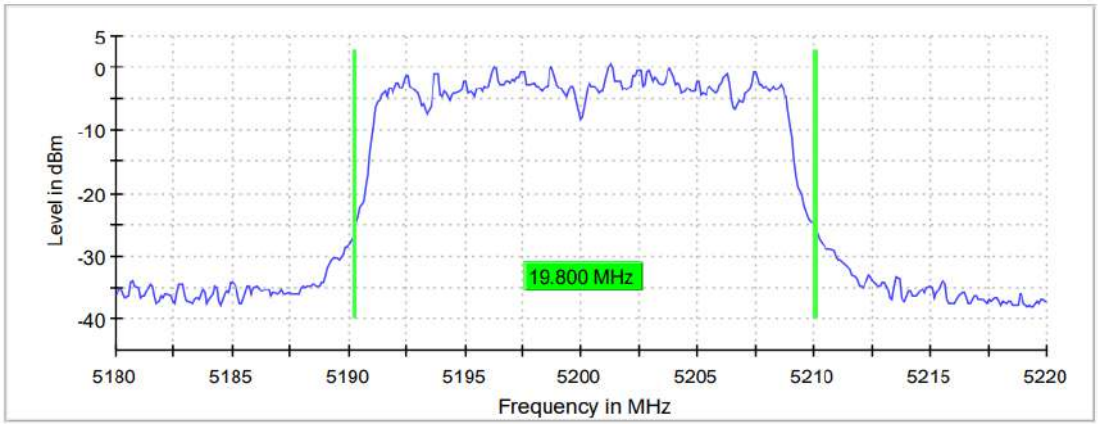
	Lowest frequency 5180 MHz	Middle frequency 5200 MHz	Highest frequency 5240 MHz
26dB bandwidth (MHz)	19.600	19.800	19.900
Occupied bandwidth (MHz)	17.500	17.700	17.600

26 dB Bandwidth:

Lowest Channel

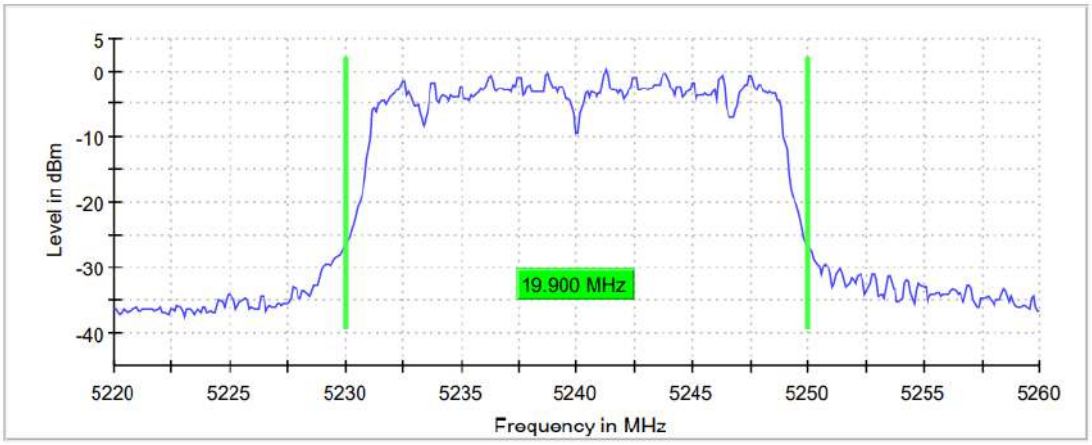


Middle Channel



TEST RESULTS (Cont.)	

Highest Channel

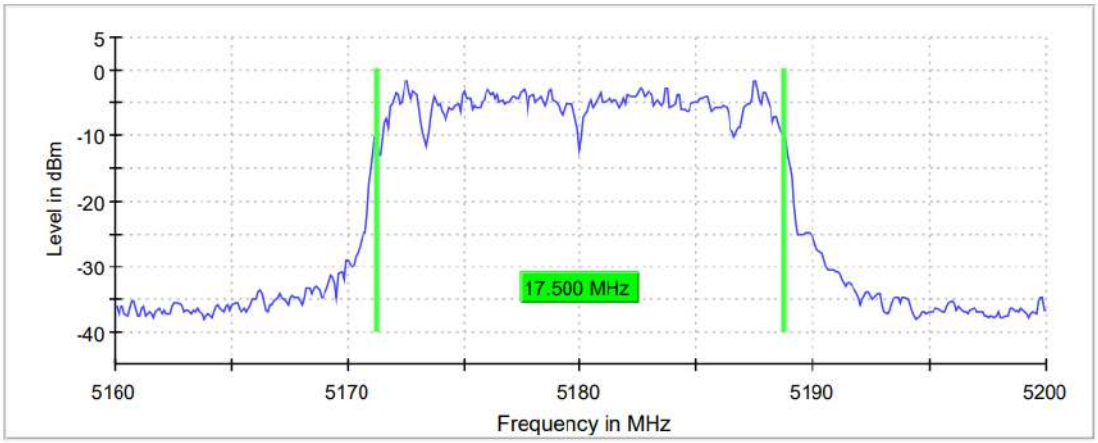


Measurement

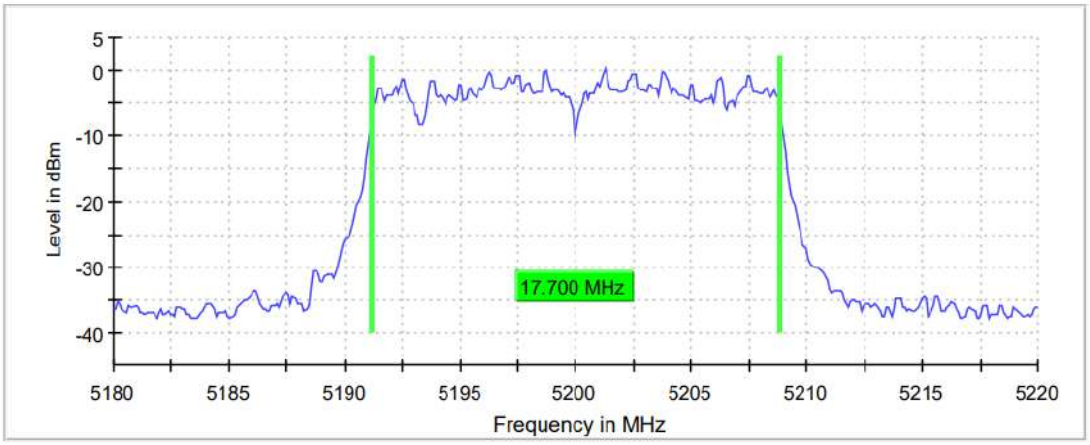
Setting	Instrument Value	Instrument Value	Instrument Value
Start Frequency	5.16000 GHz	5.18000 GHz	5.22000 GHz
Stop Frequency	5.20000 GHz	5.22000 GHz	5.26000 GHz
Span	40.000 MHz	40.000 MHz	40.000 MHz
RBW	200.000 kHz	200.000 kHz	200.000 kHz
VBW	1.000 MHz	1.000 MHz	1.000 MHz
Sweep Points	400	400	400
Sweep time	28.477 µs	28.477 µs	28.477 µs
Reference Level	10.000 dBm	10.000 dBm	10.000 dBm
Attenuation	30.000 dB	30.000 dB	30.000 dB
Detector	Max Peak	Max Peak	Max Peak
Sweep Count	200	200	200
Filter	3 dB	3 dB	3 dB
Trace Mode	Max Hold	Max Hold	Max Hold
Sweep type	FFT	FFT	FFT
Preamp	off	off	off
Stable mode	Trace	Trace	Trace
Stable value	0.30 dB	0.30 dB	0.30 dB
Run	109 / max. 150	71 / max. 150	84 / max. 150
Stable	5 / 5	5 / 5	5 / 5
Max Stable Difference	0.00 dB	0.09 dB	0.27 dB

TEST RESULTS (Cont.):	OCCUPIED BANDWIDTH

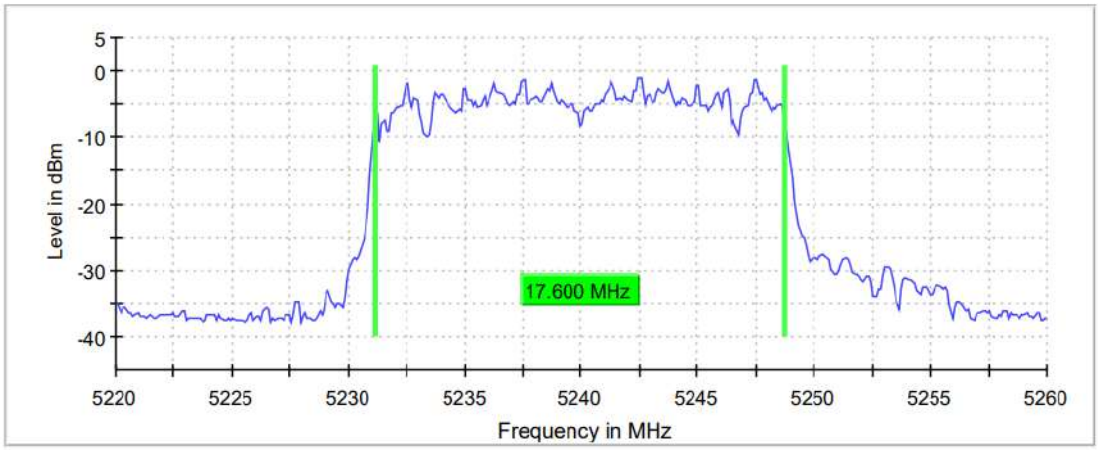
Lowest Channel



Middle Channel



Highest Channel



TEST RESULTS (Cont.)	

Measurement

Setting	Instrument Value	Instrument Value	Instrument Value
Start Frequency	5.16000 GHz	5.18000 GHz	5.22000 GHz
Stop Frequency	5.20000 GHz	5.22000 GHz	5.26000 GHz
Span	40.000 MHz	40.000 MHz	40.000 MHz
RBW	200.000 kHz	200.000 kHz	200.000 kHz
VBW	1.000 MHz	1.000 MHz	1.000 MHz
Sweep Points	400	400	400
Sweep time	28.477 µs	28.477 µs	28.477 µs
Reference Level	10.000 dBm	10.000 dBm	10.000 dBm
Attenuation	30.000 dB	30.000 dB	30.000 dB
Detector	Max Peak	Max Peak	Max Peak
Sweep Count	200	200	200
Filter	3 dB	3 dB	3 dB
Trace Mode	Max Hold	Max Hold	Max Hold
Sweep type	FFT	FFT	FFT
Preamp	off	off	off
Stable mode	Trace	Trace	Trace
Stable value	0.30 dB	0.30 dB	0.30 dB
Run	126 / max. 150	108 / max. 150	126/ max. 150
Stable	5 / 5	5 / 5	5 / 5
Max Stable Difference	0.00 dB	0.02 dB	0.00 dB

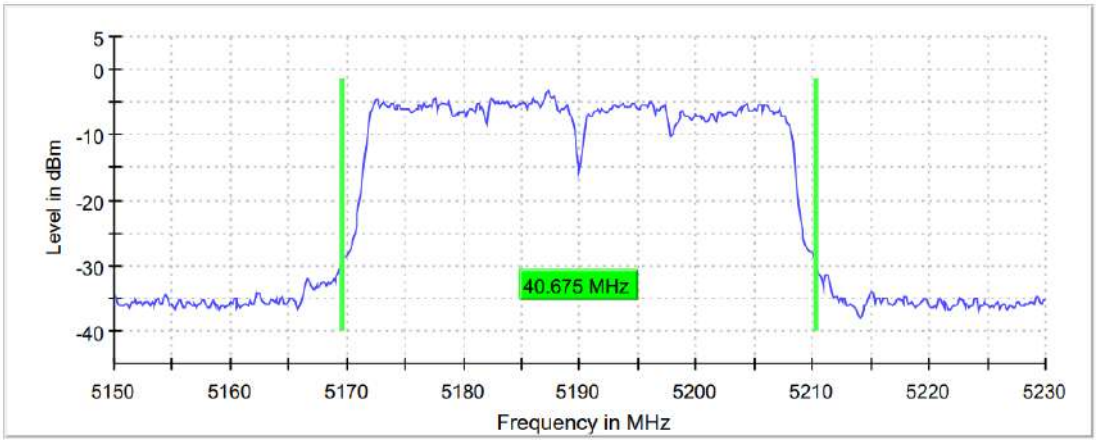
TESTED SAMPLES:	S/01
TESTED CONDITIONS MODES:	TC#05 (ac Mode Beam forming)
TEST RESULTS:	PASS

Bandwidth: 40 MHz

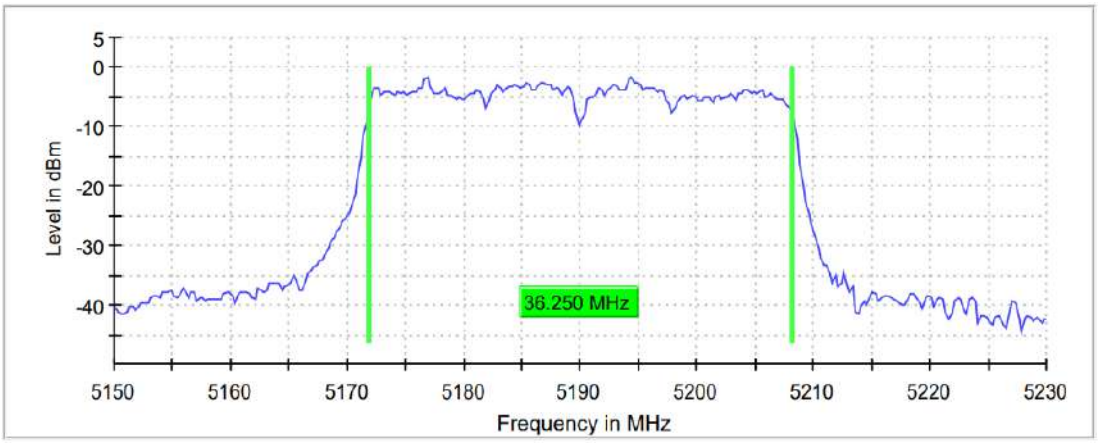
	Lowest frequency 5190 MHz	Highest frequency 5230 MHz
26dB bandwidth (MHz)	40.675	39.250
Occupied bandwidth (MHz)	36.250	36.500

26 dB Bandwidth

Lowest Channel



Highest Channel

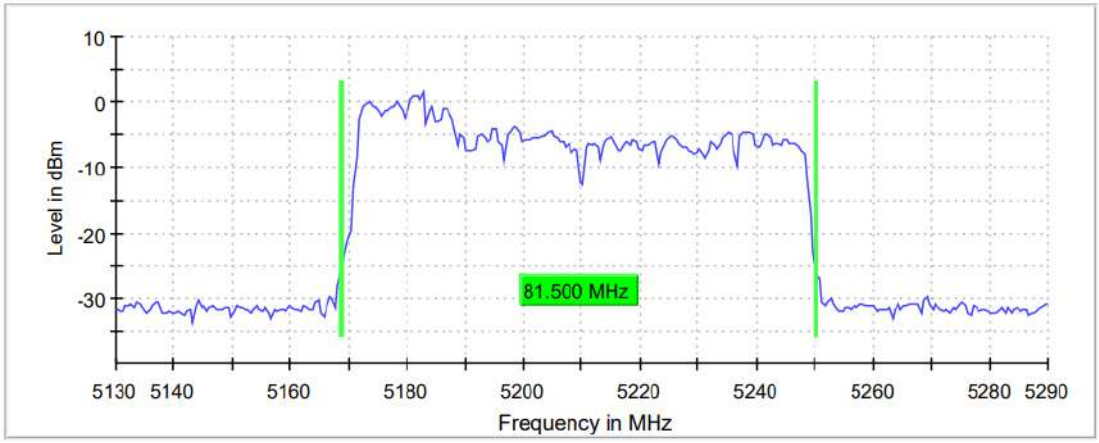


TESTED SAMPLES:	S/01
TESTED CONDITIONS MODES:	TC#05 (ac Mode Beam forming)
TEST RESULTS:	PASS

Bandwidth: 80 MHz

	Lowest frequency 5210 MHz
26dB bandwidth (MHz)	81.500
Occupied bandwidth (MHz)	76.000

26 dB Bandwidth
Lowest Channel



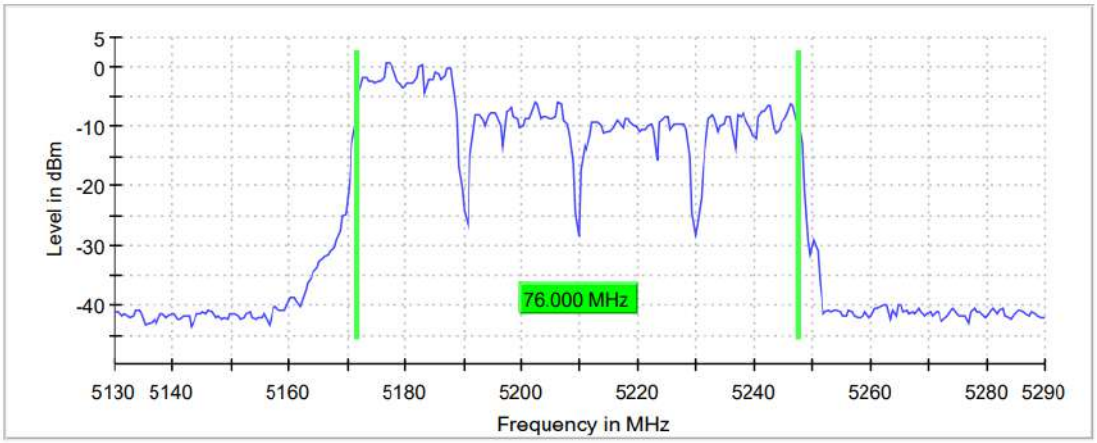
TEST RESULTS (Cont.)	

Measurement

Setting	Instrument Value
Start Frequency	5.13000 GHz
Stop Frequency	5.29000 GHz
Span	160.000 MHz
RBW	1.000 MHz
VBW	3.000 MHz
Sweep Points	320
Sweep time	22.875 µs
Reference Level	10.000 dBm
Attenuation	30.000 dB
Detector	Max Peak
Sweep Count	200
Filter	3 dB
Trace Mode	Max Hold
Sweep type	FFT
Preamp	off
Stable mode	Trace
Stable value	0.30 dB
Run	42 / max. 150
Stable	5 / 5
Max Stable Difference	0.00 dB

TEST RESULTS (Cont.):	OCCUPIED BANDWIDTH

Lowest Channel

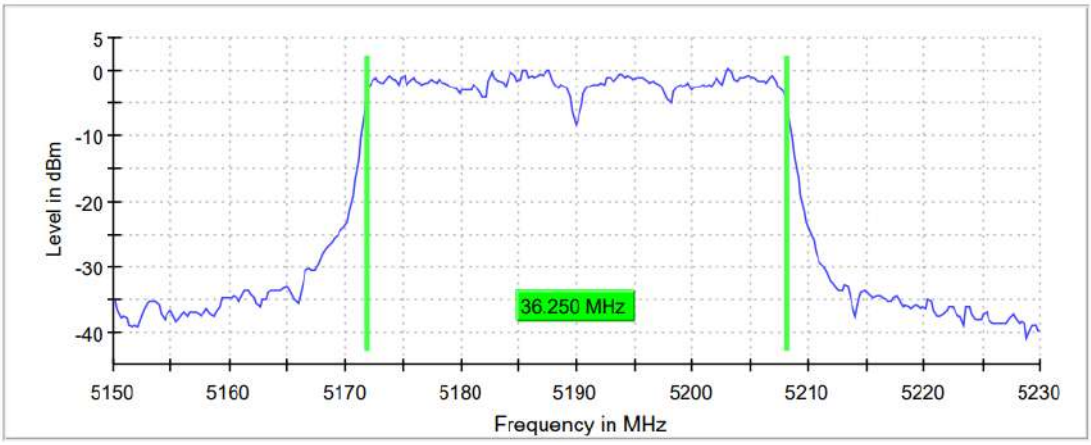


Measurement

Setting	Instrument Value
Start Frequency	5.13000 GHz
Stop Frequency	5.29000 GHz
Span	160.000 MHz
RBW	1.000 MHz
VBW	3.000 MHz
Sweep Points	320
Sweep time	22.875 µs
Reference Level	0.000 dBm
Attenuation	20.000 dB
Detector	Max Peak
Sweep Count	200
Filter	3 dB
Trace Mode	Max Hold
Sweep type	FFT
Preamp	Off
Stable mode	Trace
Stable value	0.30 dB
Run	80 / max. 150
Stable	5 / 5
Max Stable Difference	0.05 dB

TEST RESULTS (Cont.):	

Lowest Channel



Highest Channel

TEST RESULTS (Cont.)	

Measurement

Setting	Instrument Value	Instrument Value
Start Frequency	5.15000 GHz	5.19000 GHz
Stop Frequency	5.23000 GHz	5.27000 GHz
Span	80.000 MHz	80.000 MHz
RBW	500.000 kHz	500.000 kHz
VBW	2.000 MHz	2.000 MHz
Sweep Points	320	320
Sweep time	18.906 µs	18.906 µs
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 dB	20.000 dB
Detector	Max Peak	Max Peak
Sweep Count	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweep type	FFT	FFT
Preamp	Off	off
Stable mode	Trace	Trace
Stable value	0.30 dB	0.30 dB
Run	52 / max. 150	106 / max. 150
Stable	5 / 5	5 / 5
Max Stable Difference	0.00 dB	0.00 dB

SECTION B.2: POWER LIMITS. MAXIMUM OUTPUT POWER

LIMITS:	Product standard:	Part 15 Subpart C §15.407 and RSS-247
	Test standard:	Part 15 Subpart C §15.407(a) (1) (iv) and RSS-247 6.2.1.1

LIMITS

In band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 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. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

For OEM devices installed in vehicles, the maximum e.i.r.p. shall not exceed 30 mW or 1.76 + 10 log10B, dBm, whichever is less. Devices 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.

TEST SETUP

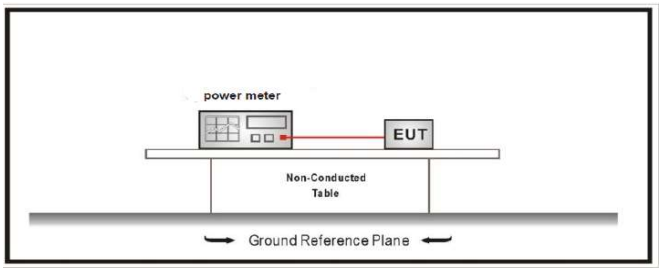
Measured according to ANSI C63.10, Section 11.9.2.3.2 Method AVGPM-G

The EIRP power (dBm) is calculated by adding the declared maximum antenna gain to the measured conducted power.

Note: The following test results are shown based on KDB 662911 D01 Multiple Transmitter Output v02r01 E) 1) In-Band Power Measurements.

As Per KDB 662911 D01 Multiple Transmitter Output v02r01, for 802.11ac and ax Beam forming mode the directional gain for 2 TX antennas are calculated as follows:

Directional Gain = Antenna gain + 10log(N_{ANT})



TESTED SAMPLES:	S/01
TESTED CONDITIONS MODES:	TC#01 (a mode SISO Radio A)
TEST RESULTS:	PASS

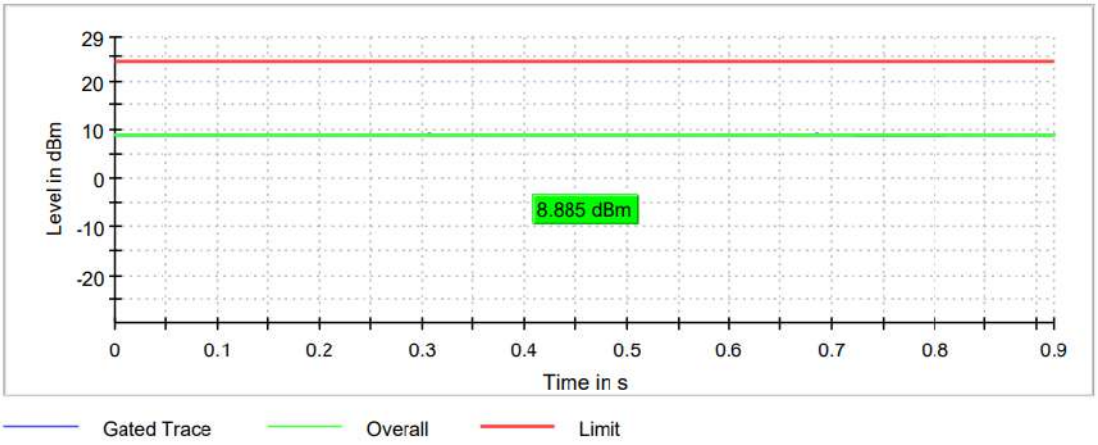
Bandwidth: 20 MHz

Maximum declared antenna gain: -2.8 dBi

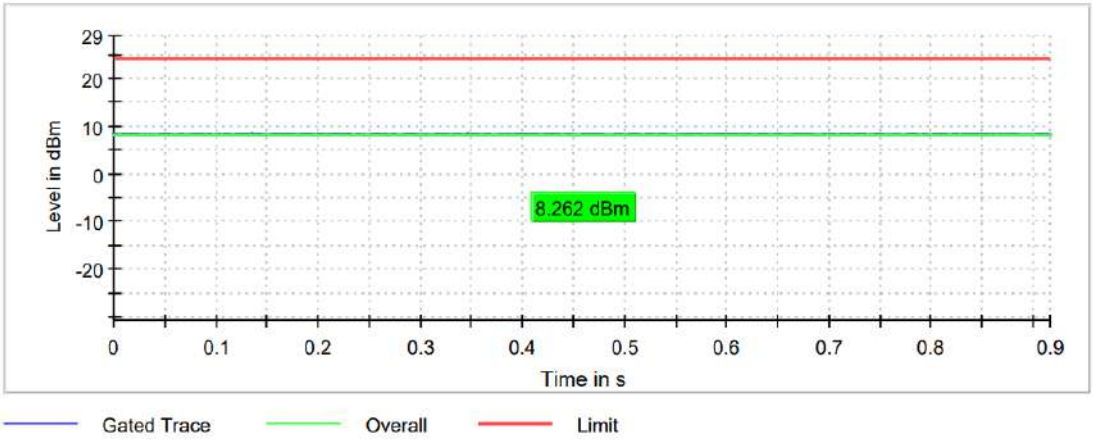
	Lowest frequency 5180 MHz	Middle frequency 5200 MHz	Highest frequency 5240 MHz
Maximum conducted power (dBm)	8.885	8.262	8.371
Maximum EIRP power (dBm)	6.085	5.462	5.571

The maximum directional gain of the antenna is less than 6 dBi and therefore the maximum output power is not required to be reduced from the stated values.

Lowest Channel

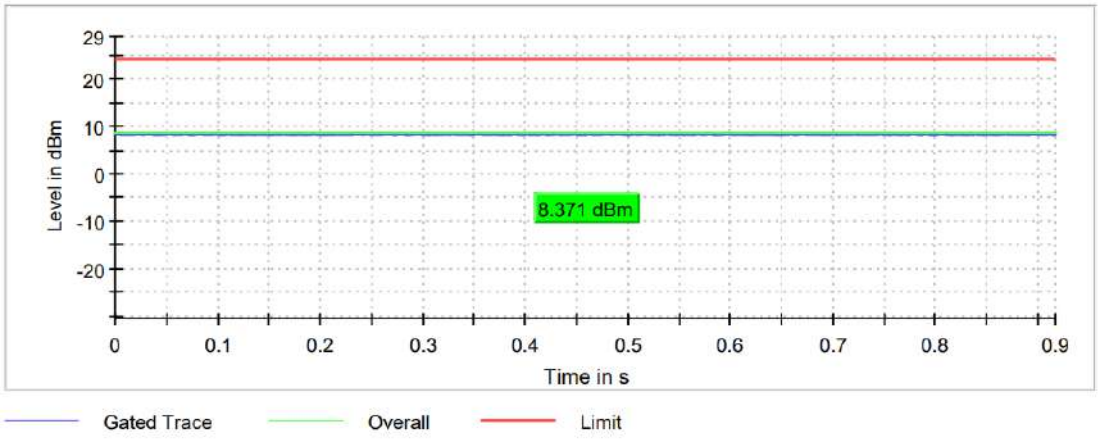


Middle Channel



TEST RESULTS (Cont.):	CONDUCTED OUTPUT POWER

Highest Channel



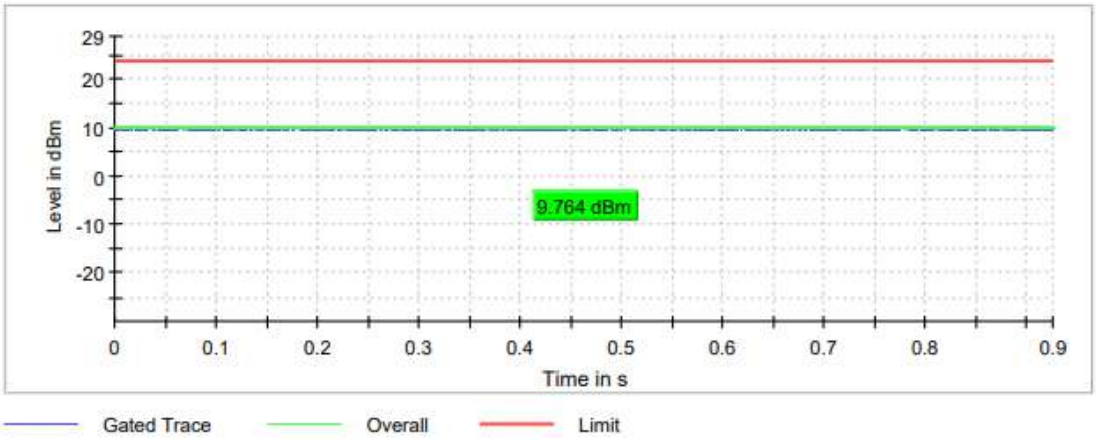
TESTED SAMPLES:	S/01
TESTED CONDITIONS MODES:	TC#01 (a mode SISO Radio B)
TEST RESULTS:	PASS

Maximum declared antenna gain: -2.8 dBi

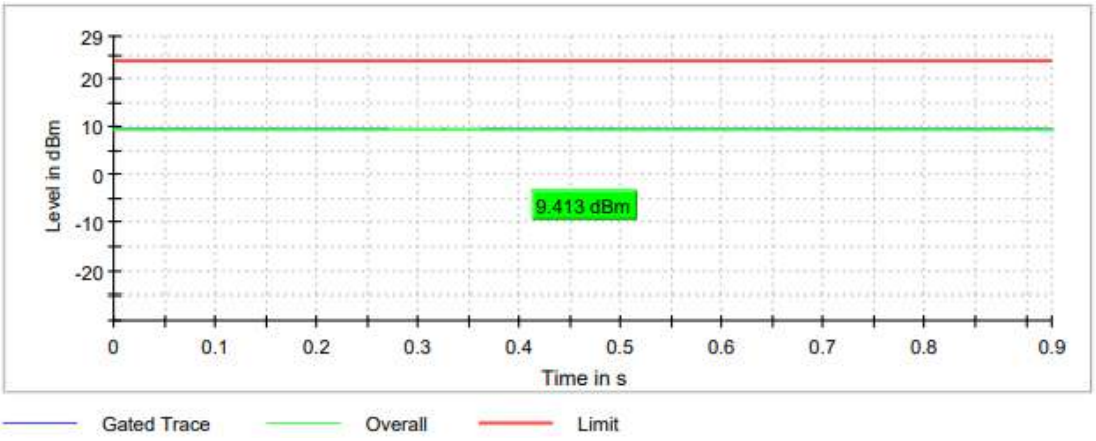
	Lowest frequency 5180 MHz	Middle frequency 5200 MHz	Highest frequency 5240 MHz
Maximum conducted power (dBm)	9.764	9.413	9.226
Maximum EIRP power (dBm)	6.964	6.613	6.426

The maximum directional gain of the antenna is less than 6 dBi and therefore the maximum output power is not required to be reduced from the stated values.

Lowest Channel

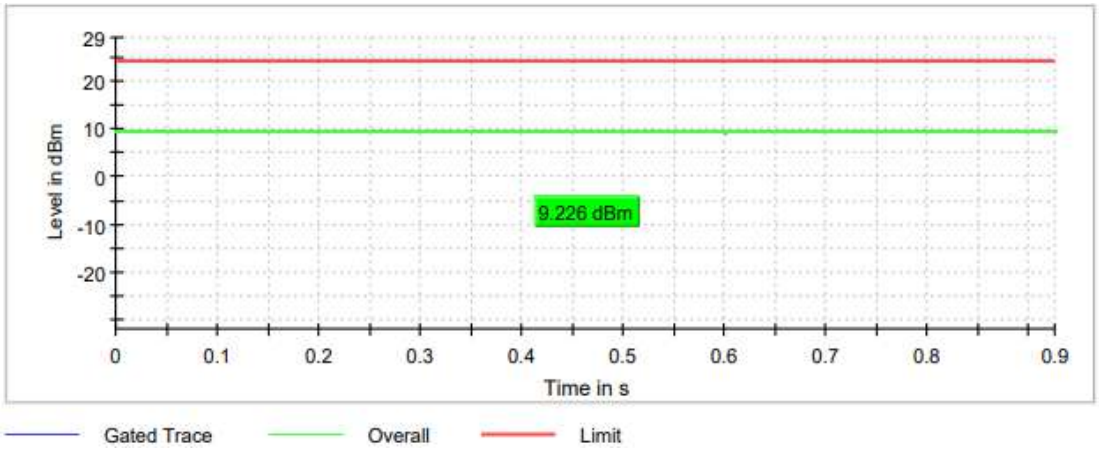


Middle Channel



TEST RESULTS (Cont.):	CONDUCTED OUTPUT POWER

Highest Channel



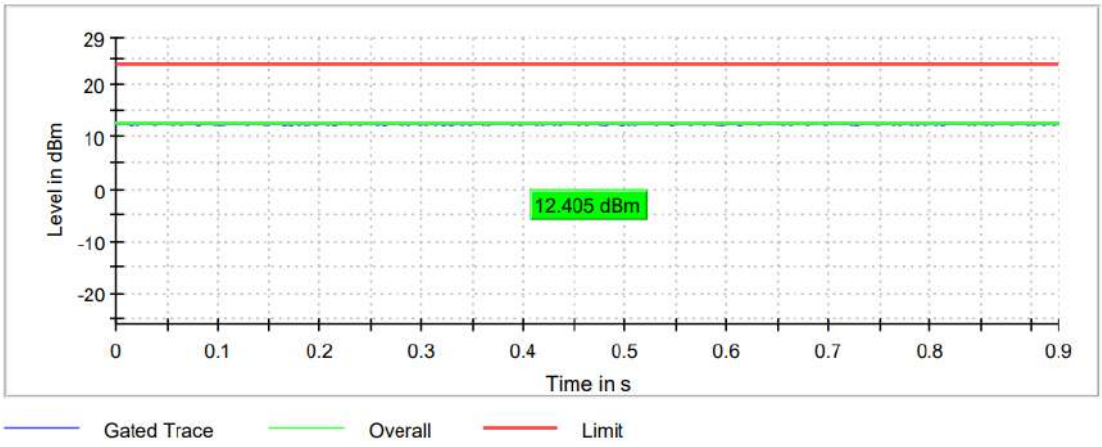
TESTED SAMPLES:	S/01
TESTED CONDITIONS MODES:	TC#01 (a mode MIMO Radio A+B)
TEST RESULTS:	PASS

Maximum declared antenna gain: -2.8 dBi

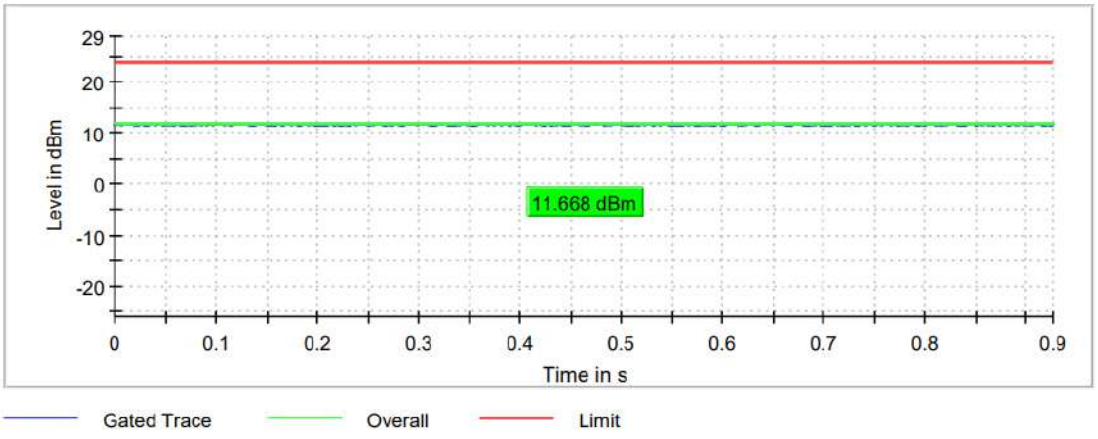
	Lowest frequency 5180 MHz	Middle frequency 5200 MHz	Highest frequency 5240 MHz
Maximum conducted power (dBm)	12.405	11.668	11.895
Maximum EIRP power (dBm)	9.605	8.868	9.095

The maximum directional gain of the antenna is less than 6 dBi and therefore the maximum output power is not required to be reduced from the stated values.

Lowest Channel

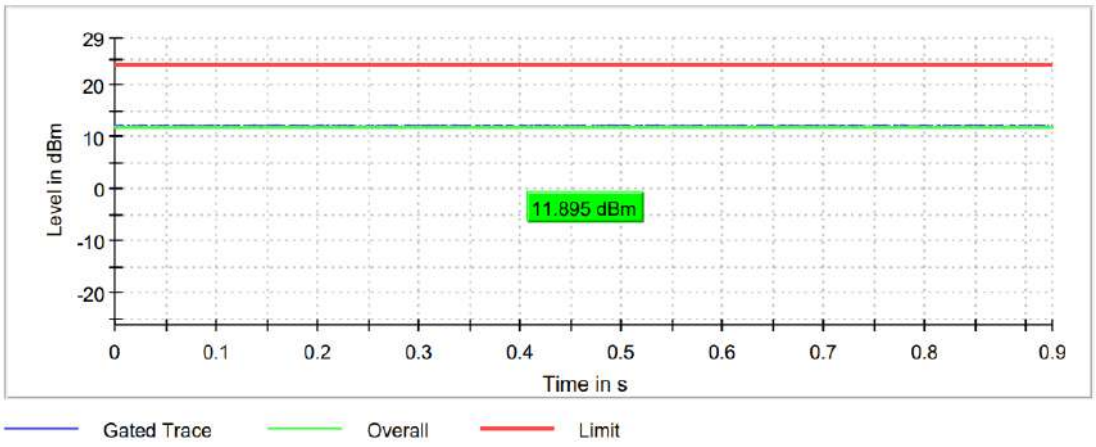


Middle Channel



TEST RESULTS (Cont.):	CONDUCTED OUTPUT POWER

Highest Channel



TESTED SAMPLES:	S/01
TESTED CONDITIONS MODES:	TC#02 (n mode SISO Radio A)
TEST RESULTS:	PASS

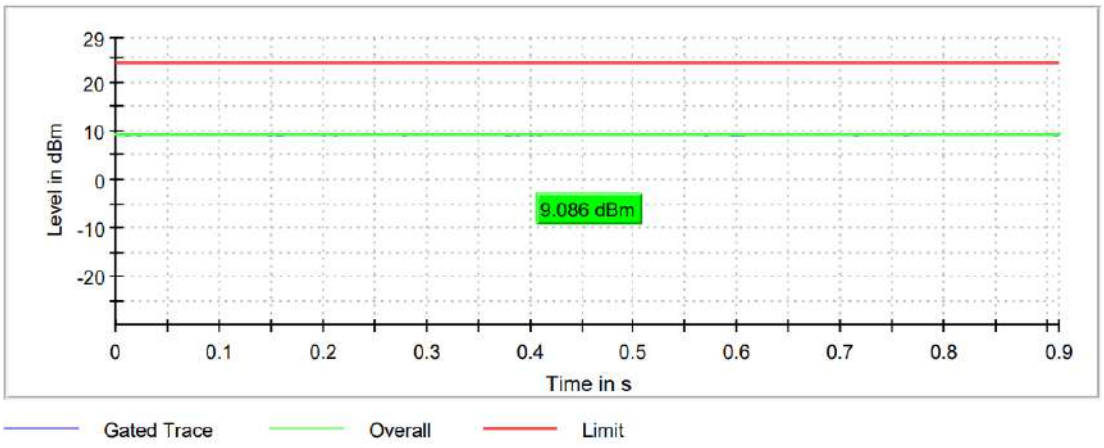
Bandwidth: 20 MHz

Maximum declared antenna gain: -2.8 dBi

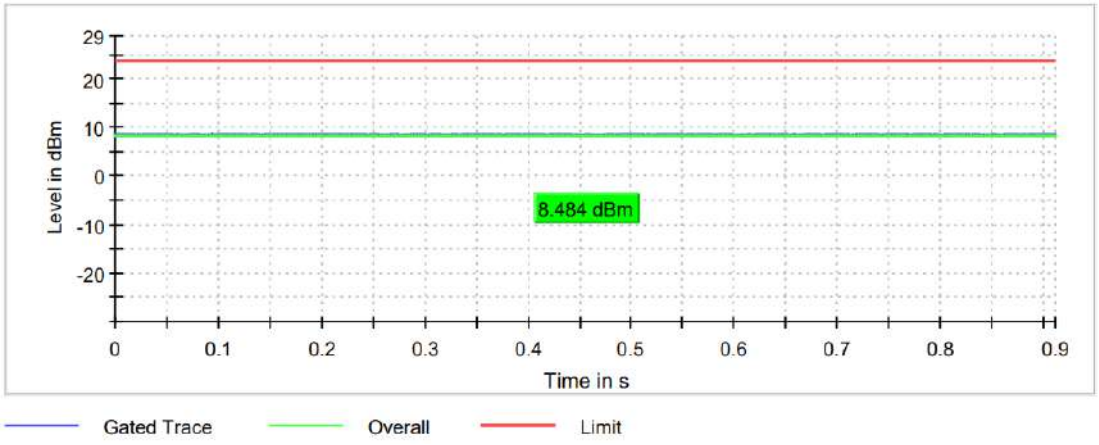
	Lowest frequency 5180 MHz	Middle frequency 5200 MHz	Highest frequency 5240 MHz
Maximum conducted power (dBm)	9.086	8.484	8.535
Maximum EIRP power (dBm)	6.286	5.684	5.735

The maximum directional gain of the antenna is less than 6 dBi and therefore the maximum output power is not required to be reduced from the stated values.

Lowest Channel

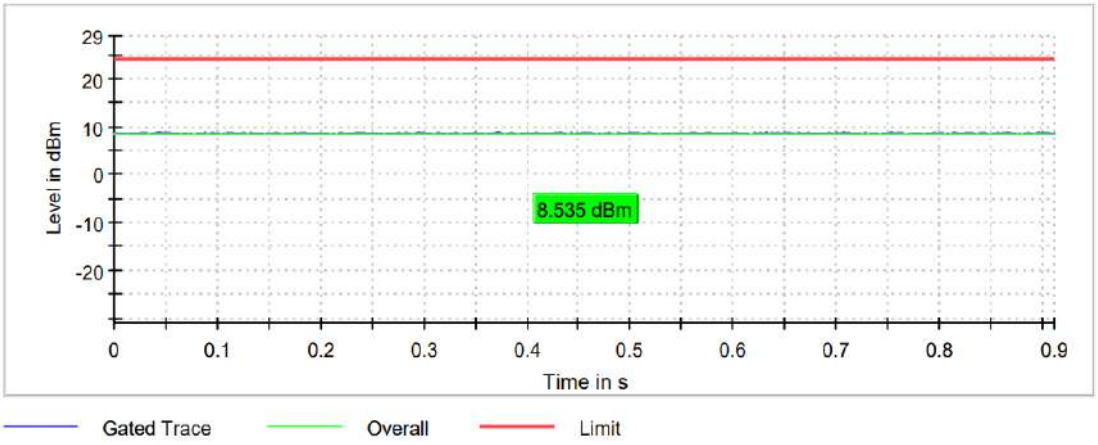


Middle Channel



TEST RESULTS (Cont.):	CONDUCTED OUTPUT POWER

Highest Channel



TESTED SAMPLES:	S/01
TESTED CONDITIONS MODES:	TC#02 (n mode SISO Radio B)
TEST RESULTS:	PASS

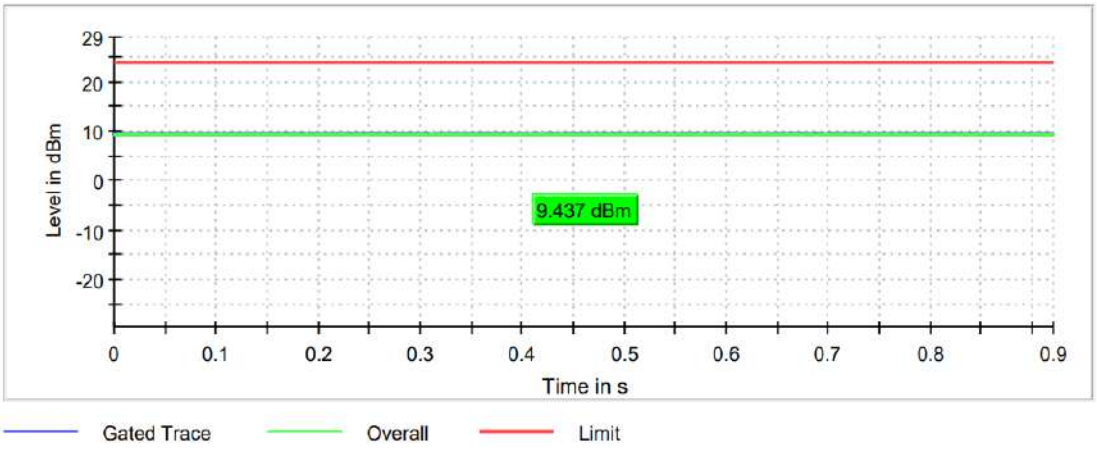
Bandwidth: 20 MHz

Maximum declared antenna gain: -2.8 dBi

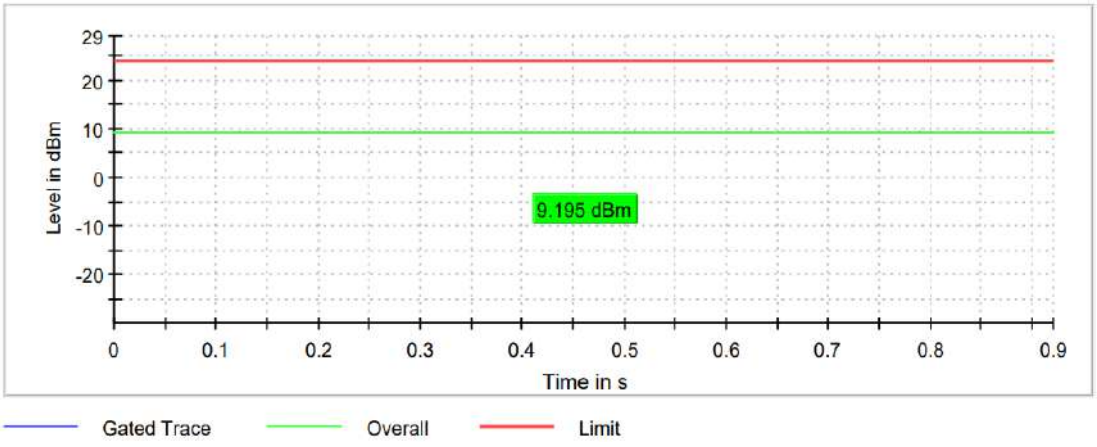
	Lowest frequency 5180 MHz	Middle frequency 5200 MHz	Highest frequency 5240 MHz
Maximum conducted power (dBm)	9.437	9.195	9.005
Maximum EIRP power (dBm)	6.637	6.395	6.205

The maximum directional gain of the antenna is less than 6 dBi and therefore the maximum output power is not required to be reduced from the stated values.

Lowest Channel

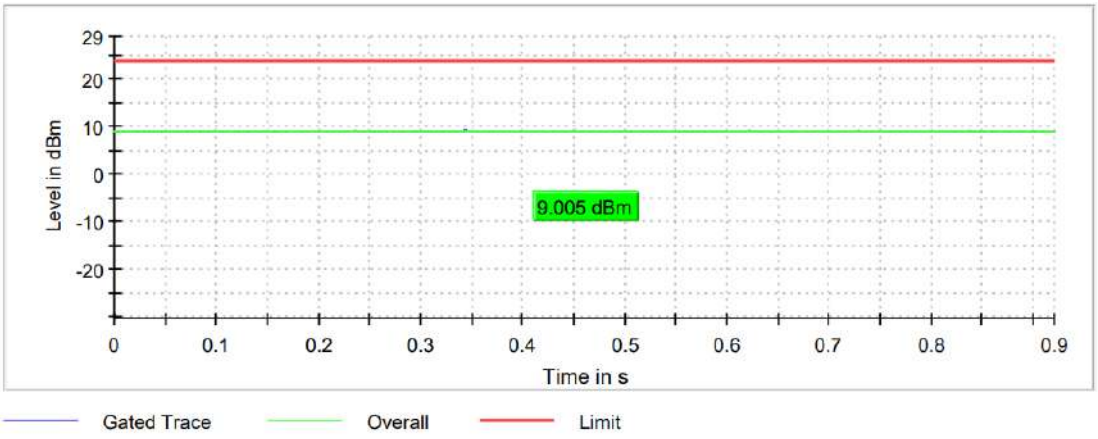


Middle Channel



TEST RESULTS (Cont.):	CONDUCTED OUTPUT POWER

Highest Channel



TESTED SAMPLES:	S/01
TESTED CONDITIONS MODES:	TC#02 (n mode MIMO Radio A+B)
TEST RESULTS:	PASS

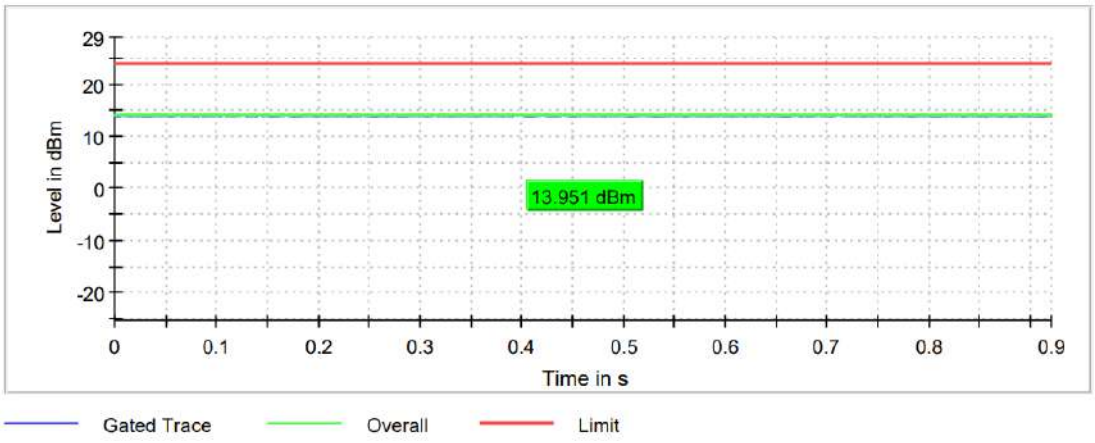
Bandwidth: 20 MHz

Maximum declared antenna gain: -2.8 dBi

	Lowest frequency 5180 MHz	Middle frequency 5200 MHz	Highest frequency 5240 MHz
Maximum conducted power (dBm)	13.951	10.803	10.947
Maximum EIRP power (dBm)	11.151	8.003	8.147

The maximum directional gain of the antenna is less than 6 dBi and therefore the maximum output power is not required to be reduced from the stated values.

Lowest Channel



Middle Channel