TEST REPORT

Test Report No. : UL-RPT-RP14614880JD04A

Customer	:	Apple Inc.
Model No.	:	A2918
FCC ID	:	BCGA2918
Technology	:	NB-FHSS
Test Standard(s)	:	FCC Parts 15.209(a) & 15.407
Test Laboratory	:	UL International (UK) Ltd, Basingstoke, Hampshire, RG24 8AH, United Kingdom

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2. The results in this report apply only to the sample(s) tested.
3. The sample tested is in compliance with the above standard(s).
4. The test results in this report are traceable to the national or international standards.
5. Version 1.0

Date of Issue: 05 June 2023

Checked by:

Sarah Williams
RF Operations Leader, Radio Laboratory

Company Signatory:

Ben Mercer
Lead Project Engineer, Radio Laboratory

5772

Customer Information

Company Name:	Apple Inc.
Address:	One Apple Park Way Cupertino, California 95014 U.S.A.
Contact Name:	Stuart Thomas

Report Revision History

Version Number	Issue Date	Revision Details	Revised By
1.0	05/06/2023	Initial Version	Sarah Williams

Table of Contents

1 Attestation of Test Results

1.1 Description of EUT

The equipment under test was a portable laptop computer.

1.2 General Information

Specification Reference:	47CFR15.407 and 47CFR15.403
Specification Title:	Code of Federal Regulations Volume 47 (Telecommunications): Part 15 Subpart E (Unlicensed National Information Infrastructure Devices) – Sections 15.403 and 15.407
Specification Reference:	47CFR15.209
Specification Title:	Code of Federal Regulations Volume 47 (Telecommunications): Part 15 Subpart C (Intentional Radiators) - Section 15.209
Site Registration:	685609
Lab. Designation No.:	UK2011
Location of Testing:	Unit 3 Horizon, Wade Road, Kingsland Business Park, Basingstoke, Hampshire, RG24 8AH, United Kingdom
Test Dates:	23 March 2023 to 26 April 2023

1.3 Summary of Test Results

FCC Reference (47CFR)	Measurement	Result
Part 15.35(c)	Transmitter Duty Cycle	Note 1
Part 15.403	Transmitter 26 dB Emission Bandwidth	Complied
Part 15.407(e)	Transmitter Minimum 6 dB Bandwidth (5.725-5.85 GHz band)	Complied
Part 15.407(a)(1)(iv)	Transmitter Maximum Conducted Output Power (5.15-5.25 GHz band)	Complied
Part 15.407(a)(3)(i)	Transmitter Maximum Conducted Output Power (5.725-5.85 GHz band)	Complied
Part 15.407(a)(1)(iv)	Transmitter Maximum Power Spectral Density (5.15-5.25 GHz band)	Complied
Part 15.407(a)(3)(i)	Transmitter Maximum Power Spectral Density (5.725-5.85 GHz band)	Complied
Part 15.407(b) & 15.209(a)	Transmitter Out of Band Radiated Emissions	Complied
Part 15.407(b) & 15.209(a)	Transmitter Band Edge Radiated Emissions	Complied
Part 15.407(g)	Transmitter Frequency Stability (Temperature & Voltage Variation)	Note 2

Note(s):

1. The measurement was performed to assist in the calculation of the level of average output power, power spectral density and emissions as the EUT employs pulsed operation.
2. Frequency stability is better than 20 ppm which ensures that the signal remains in the allocated bands under all operational conditions stated in the user manual

1.4 Deviations from the Test Specification

For the measurements contained within this test report, there were no deviations from, additions to, or exclusions from the test specifications identified above.

2 Summary of Testing

2.1 Facilities and Accreditation

The test site and measurement facilities used to collect data are located at Unit 3 Horizon, Wade Road, Kingsland Business Park, Basingstoke, Hampshire, RG24 8AH, United Kingdom. The following table identifies which facilities were utilised for radiated emission measurements documented in this report. Specific facilities are also identified in the test results sections.

Site 1	X
Site 2	-
Site 17	X

UL International (UK) Ltd is accredited by the United Kingdom Accreditation Service (UKAS). UKAS is one of the signatories to the International Laboratory Accreditation Co-operation (ILAC) Arrangement for the mutual recognition of test reports. The tests reported herein have been performed in accordance with its terms of accreditation.

2.2 Methods and Procedures

Reference:	ANSI C63.10-2013
Title:	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices
Reference:	KDB 789033 D02 General U-NII Test Procedures New Rules v02r01 December 14, 2017
Title:	Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices (Part 15, Subpart E)
Reference:	KDB 662911 D01 Multiple Transmitter Output v02r01 October 31, 2013
Title:	Emissions Testing of Transmitters with Multiple Outputs in the Same Band

2.3 Calibration and Uncertainty

Measuring Instrument Calibration

In accordance with UKAS requirements all the measurement equipment is on a calibration schedule. All equipment was within the calibration period on the date of testing.

Measurement Uncertainty & Decision Rule

Overview

No measurement or test can ever be perfect and the imperfections give rise to error of measurement in the results. Consequently the result of a measurement is only an approximation to the value of the measurand (the specific quantity subject to measurement) and is only complete when accompanied by a statement of the uncertainty of the approximation.

The expression of uncertainty of a measurement result allows realistic comparison of results with reference values and limits given in specifications and standards.

Decision Rule

The decision rule applied is based upon the accuracy method criteria. The measurement uncertainty is met and the result is considered in conformance with the requirement criteria if the observed value is within the prescribed limit.

Measurement Uncertainty

The reported expanded uncertainties below are based on a standard uncertainty multiplied by an appropriate coverage factor such that a confidence level of approximately 95% is maintained. For the purposes of this document “approximately” is interpreted as meaning “effectively” or “for most practical purposes”.

Measurement Type	Range	Confidence Level (%)	Calculated Uncertainty
Duty Cycle	5.15 GHz to 5.850 GHz	95%	±1.14 %
26 dB Emission Bandwidth	5.15 GHz to 5.850 GHz	95%	±4.59 %
Minimum 6 dB Emission Bandwidth	5.15 GHz to 5.850 GHz	95%	±4.59 %
Maximum Conducted Output Power	5.15 GHz to 5.850 GHz	95%	±1.13 dB
Maximum Power Spectral Density	5.15 GHz to 5.850 GHz	95%	±1.13 dB
Radiated Spurious Emissions	9 KHz to 30 MHz	95%	±5.32 dB
Radiated Spurious Emissions	30 MHz to 1 GHz	95%	±3.30 dB
Radiated Spurious Emissions	1 GHz to 40 GHz	95%	±3.16 dB

The methods used to calculate the above uncertainties are in line with those recommended within the various measurement specifications. Where measurement specifications do not include guidelines for the evaluation of measurement uncertainty the published guidance of the appropriate accreditation body is followed.

2.4 Test and Measurement Equipment

Test Equipment Used for Transmitter Duty Cycle, Minimum 6 dB Bandwidth (5.725-5.85 GHz band), Maximum Conducted Output Power and Power Spectral Density

Asset No.	Instrument	Manufacturer	Type No.	Serial No.	Date Calibration Due	Cal. Interval (Months)
M2037	Thermohygrometer	Testo	608-H1	45124925	08 Dec 2023	12
M2018	Signal Analyser	Rohde & Schwarz	FSV7	102699	05 Oct 2023	12
G207635	Signal Geneator	Rohde & Schwarz	SMCV100B	103200	07 Oct 2025	36
A213953	Attenuator	Atlantic Microwave	ATT10KXP-483082-N4N5	21415050	Calibrated before use	-

Test Equipment Used for Transmitter 26 dB Emission Bandwidth

Asset No.	Instrument	Manufacturer	Type No.	Serial No.	Date Calibration Due	Cal. Interval (Months)
M2037	Thermohygrometer	Testo	608-H1	45124925	08 Dec 2023	12
M231905	Signal Analyser	Keysight	N9020B	MY63430222	25 Dec 2023	12
G207635	Signal Geneator	Rohde & Schwarz	SMCV100B	103200	07 Oct 2025	36
A213953	Attenuator	Atlantic Microwave	ATT10KXP-483082-N4N5	21415050	Calibrated before use	-

Test and Measurement Equipment (continued)

Test Equipment Used for Transmitter Radiated Emissions

Asset No.	Instrument	Manufacturer	Type No.	Serial No.	Date Calibration Due	Cal. Interval (Months)
M2040	Thermohygrometer	Testo	608-H1	45124934	09 Dec 2023	12
K0001	3m RSE Chamber	Rainford EMC	N/A	N/A	05 Sep 2023	12
M1874	Test Receiver	Rohde & Schwarz	ESU26	100553	19 May 2023	12
A3165	Magnetic Loop Antenna	ETS-Lindgren	6502	224383	13 Apr 2024	12
A3161	Antenna	Teseq, Inc	CBL6111D	50859	03 May 2023	12
A3113	Attenuator	AtlanTecRF	AN18-06	219706#3	03 May 2023	12
A3085	Low Pass Filter	AtlanTecRF	AFL-02000	18051600014	26 Jan 2024	12
A3154	Pre-Amplifier	Com-Power	PAM-103	18020012	18 Aug 2023	12
K0017	3m RSE Chamber	Rainford EMC	N/A	N/A	08 Nov 2023	12
M2003	Thermohygrometer	Testo	608-H1	45046641	09 Dec 2023	12
M1995	Test Receiver	Rohde & Schwarz	ESU40	100428	02 Nov 2023	12
A2863	Pre-Amplifier	Keysight	8449B	3008A02100	07 Nov 2023	12
A2889	Horn Antenna	Schwarzbeck	BBHA 9120 B	653	02 Nov 2023	12
A2916	Attenuator	AtlanTecRF	AN18W5-10	832827#2	25 Jan 2024	12
A212038	High Pass Filter	Micro-Tronics	HPS20723	4	25 Jan 2024	12
A212035	High Pass Filter	Micro-Tronics	HPS20722	1	25 Jan 2024	12
A2890	Horn Antenna	Schwarzbeck	HWRD 750	14	02 Nov 2023	12
A223628	Pre-Amplifier	Atlantic Microwave	A-LNAKX-380116-S5S5	210837001	03 Nov 2023	12
A2892	Horn Antenna	Schwarzbeck	BBHA 9170	9170-727	31 Oct 2023	12
A3265	Pre-Amplifier	Schwarzbeck	BBV 9721	9721-069	31 Oct 2023	12

Test Equipment Used for Transmitter Band Edge Radiated Emissions

Asset No.	Instrument	Manufacturer	Type No.	Serial No.	Date Calibration Due	Cal. Interval (Months)
K0017	3m RSE Chamber	Rainford EMC	N/A	N/A	08 Nov 2023	12
M2003	Thermohygrometer	Testo	608-H1	45046641	09 Dec 2023	12
M1995	Test Receiver	Rohde & Schwarz	ESU40	100428	02 Nov 2023	12
A2916	Attenuator	AtlanTecRF	AN18W5-10	832827#2	25 Jan 2024	12
A2889	Horn Antenna	Schwarzbeck	BBHA 9120 B	653	02 Nov 2023	12

3 Equipment Under Test (EUT)

3.1 Identification of Equipment Under Test (EUT)

Brand Name:	Apple
Model Name or Number:	A2918
Test Sample Serial Number:	J5047MKVKJ *(Radiated sample)*
Hardware Version:	REV 1.0
Software Version:	22E21820r
FCC ID:	BCGA2918
Date of Receipt:	14 March 2023

Brand Name:	Apple
Model Name or Number:	A2918
Test Sample Serial Number:	YFLFCJ6Y31 *(Conducted sample #1)*
Hardware Version:	REV 1.0
Software Version:	22E21820r
FCC ID:	BCGA2918
Date of Receipt:	06 April 2023

Brand Name:	Apple
Model Name or Number:	A2918
Test Sample Serial Number:	QW2GRQFJHY *(Conducted sample #2)*
Hardware Version:	REV 1.0
Software Version:	22E21820r
FCC ID:	BCGA2918
Date of Receipt:	20 April 2023

3.2 Modifications Incorporated in the EUT

No modifications were applied to the EUT during testing.

3.3 Additional Information Related to Testing

Technology Tested:	NarrowBand FHSS		
Type of Unit:	Transceiver		
Mode:	Basic Rate	High Data Rate	
Modulation:	GFSK	π/4-DQPSK	
Packet Type (Maximum Payload):	DH5	4DH5	8DH5
Data Rate (Mbit/s):	1	4	8
Power Supply Requirement:	Nominal	12 VDC via 120 VAC 60 Hz adaptor	
Maximum Conducted Output Power:	DH5	13.2 dBm	
	4DH5	17.2 dBm	
	8DH5	17.2 dBm	
Channel Bandwidth(s):	1, 2 & 4 MHz		
Transmit Frequency Range:	5150 MHz to 5250 MHz		
Transmit Channels Tested:	**Channel ID**	**Channel Frequency (MHz)**	
	Bottom	5162	
	Middle	5203	
	Top	5245	
Transmit Frequency Range:	5725 MHz to 5850 MHz		
Transmit Channels Tested:	**Channel ID**	**Channel Frequency (MHz)**	
	Bottom	5733	
	Middle	5788	
	Top	5844	

3.4 Description of Available Antennas

The radio utilizes two integrated antennas, with the following maximum gains:

Antenna Port	Frequency Range (MHz)	Antenna Gain (dBi)
Core 0	5150 to 5250	6.6
	5725 to 5850	5.6
Core 1	5150 to 5250	4.2
	5725 to 5850	4.7

The EUT also supports TxBF with unequal gains and equal transmit powers. Calculations for directional gain were in accordance with KDB 662911 D01 v02r01 Section F)2)d)(i). Directional gain of Core 0 & Core 1 was calculated as:

Frequency Band 5150-5250 MHz

N_{SS}=1, N_{ANT}=2, G_1 = $G_{Core\ 0}$ = 6.6 dBi, G_2 = $G_{Core\ 1}$ = 4.2 dBi:

$$\text{Directional Gain} = 10\log\left[\frac{\left(10^{\frac{G_1}{20}} + 10^{\frac{G_2}{20}} + \cdots + 10^{\frac{G_N}{20}}\right)^2}{N_{ANT}}\right] = 10\log\left[\frac{\left(10^{\frac{G_1}{20}} + 10^{\frac{G_2}{20}}\right)^2}{2}\right]$$

$$= 10\log\left[\frac{\left(10^{\frac{6.6}{20}} + 10^{\frac{4.2}{20}}\right)^2}{2}\right] = 8.5\ \text{dBi}$$

Frequency Band 5725-5850 MHz

N_{SS}=1, N_{ANT}=2, G_1 = $G_{ANTENNA\ Core\ 0}$ = 5.6 dBi, G_2 = $G_{ANTENNA\ Core\ 1}$ = 4.7 dBi:

$$\text{Directional Gain} = 10\log\left[\frac{\left(10^{\frac{G_1}{20}} + 10^{\frac{G_2}{20}} + \cdots + 10^{\frac{G_N}{20}}\right)^2}{N_{ANT}}\right] = 10\log\left[\frac{\left(10^{\frac{G_1}{20}} + 10^{\frac{G_2}{20}}\right)^2}{2}\right]$$

$$= 10\log\left[\frac{\left(10^{\frac{5.6}{20}} + 10^{\frac{4.7}{20}}\right)^2}{2}\right] = 8.2\ \text{dBi}$$

3.5 Description of Test Setup

Support Equipment

The following support equipment was used to exercise the EUT during testing:

Description:	USB Diagnostic Cable
Brand Name:	Apple
Model Name or Number:	Chimp
Serial Number:	30ACBB

Description:	Test Laptop
Brand Name:	Apple
Model Name or Number:	MacBook Pro
Serial Number:	C02DJ05D0HDF

Description:	Power Adaptor
Brand Name:	Apple
Model Name or Number:	A1632
Serial Number:	Not marked or stated

Description:	USB Diagnostic Cable
Brand Name:	Apple
Model Name or Number:	Chimp
Serial Number:	30A99B

Description:	Test Laptop
Brand Name:	Apple
Model Name or Number:	MacBook Pro
Serial Number:	FVFDH03JQ05G

Description:	MicroSD Card
Brand Name:	Sandisk Edge
Model Name or Number:	Not marked or stated
Serial Number:	Not marked or stated

Description:	SC Card Adaptor
Brand Name:	Verbatim
Model Name or Number:	Not marked or stated
Serial Number:	Not marked or stated

Support Equipment (continued)

Description:	Personal Hands Free (PHF)
Brand Name:	Not marked or stated
Model Name or Number:	Not marked or stated
Serial Number:	Not marked or stated

Description:	HDMI Cable. Length 3 m.
Brand Name:	Not marked or stated
Model Name or Number:	Not marked or stated
Serial Number:	Not marked or stated

Description:	USB-C Dock Termination Hub
Brand Name:	Lenovo
Model Name or Number:	LDC-G2
Serial Number:	ZKW1XQR0

Description:	USB-C to A Adaptor. Quantity 2.
Brand Name:	Not marked or stated
Model Name or Number:	Not marked or stated
Serial Number:	Not marked or stated

Description:	USB-C Cable. Length 3 m. Quantity 2.
Brand Name:	Not marked or stated
Model Name or Number:	Not marked or stated
Serial Number:	Not marked or stated

Operating Modes

The EUT was tested in the following operating mode(s):

- Continuously transmitting with a modulated carrier at maximum power on the bottom, middle and top channels as required using the supported packet types.
- Transmitting on Core 0 or Core 1 in SISO configuration or Core 0 + Core 1 in Transmitter Beamforming configuration, on either the iPA or ePA path.

Configuration and Peripherals

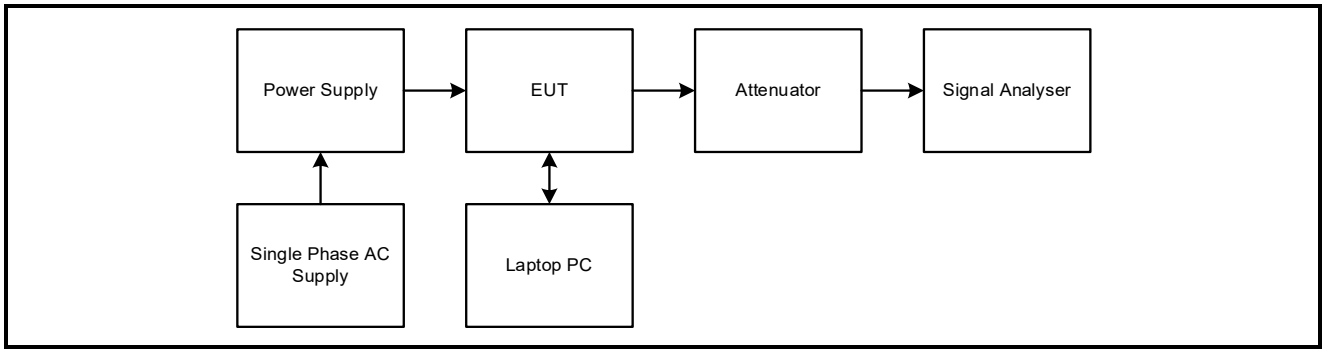
The EUT was tested in the following configuration(s):

- A test laptop with the customer's test application was used to place the EUT into NarrowBand test mode. The application was used to enable continuous transmission and to select the test channels & packet types as required.
- The customer supplied U.FL RF cables with the EUT in order to perform conducted measurements. The measured additional path loss was included in any path loss calculations.
- RF cables and attenuators connecting the test equipment to the EUT were calibrated before use and the calibration data incorporated into the conducted measurement results.
- The EUT was powered from an AC to DC Power Supply. The input was connected to a 120 VAC 60 Hz single phase mains supply.
- Transmitter radiated spurious emissions tests were performed with the EUT transmitting in 4DH5 Beamforming / Core 0 + Core 1 / ePA, as this mode was found to transmit the highest spectral density.
- Radiated spurious emissions were performed with the EUT in the position that produced worst case with respect to emissions. All ports were terminated into suitable terminations and placed under the turntable.

Test Setup Diagrams

Conducted Tests:

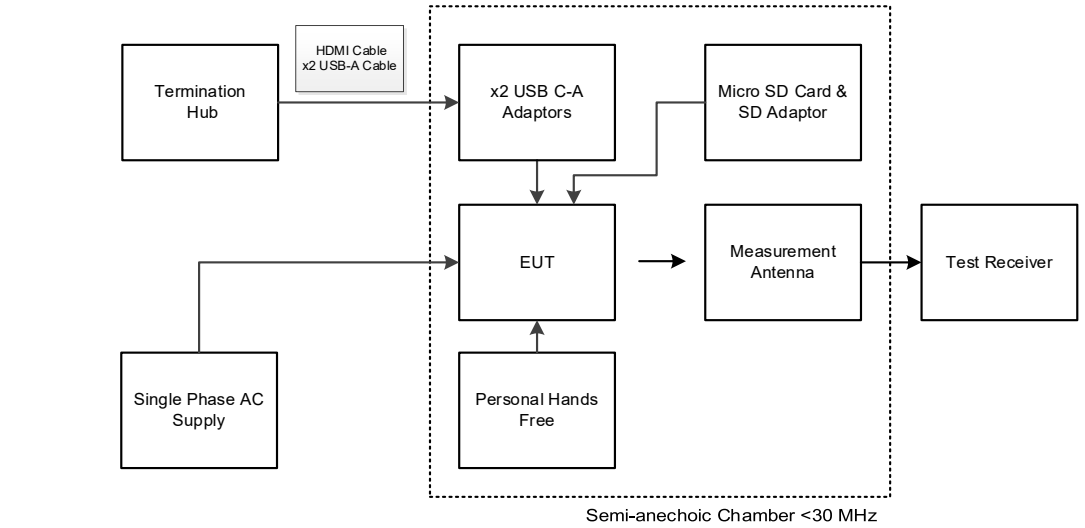
Test Setup for Transmitter Conducted Tests

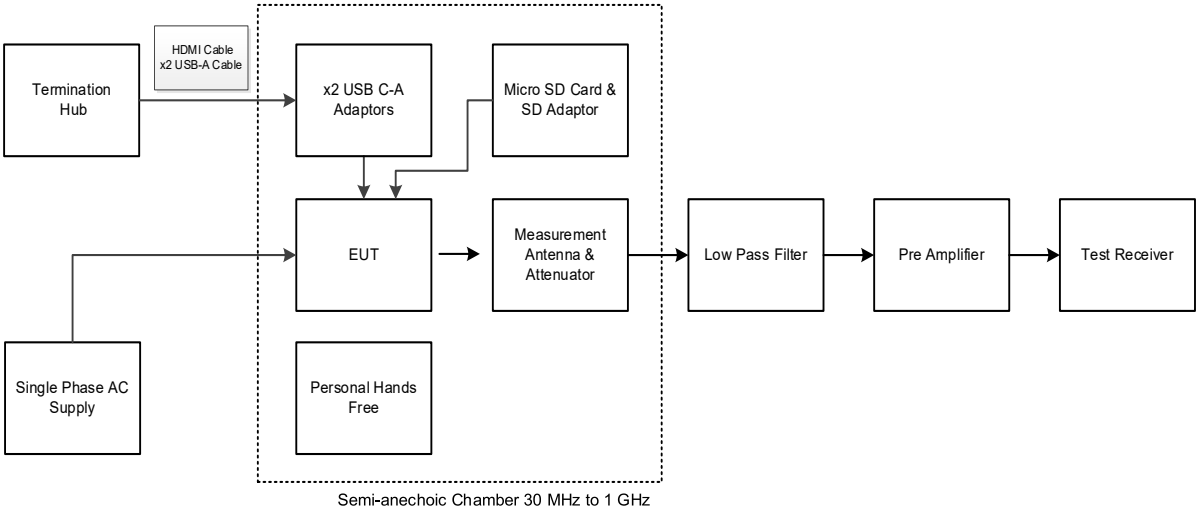


Test Setup Diagrams (continued)

Radiated Tests:

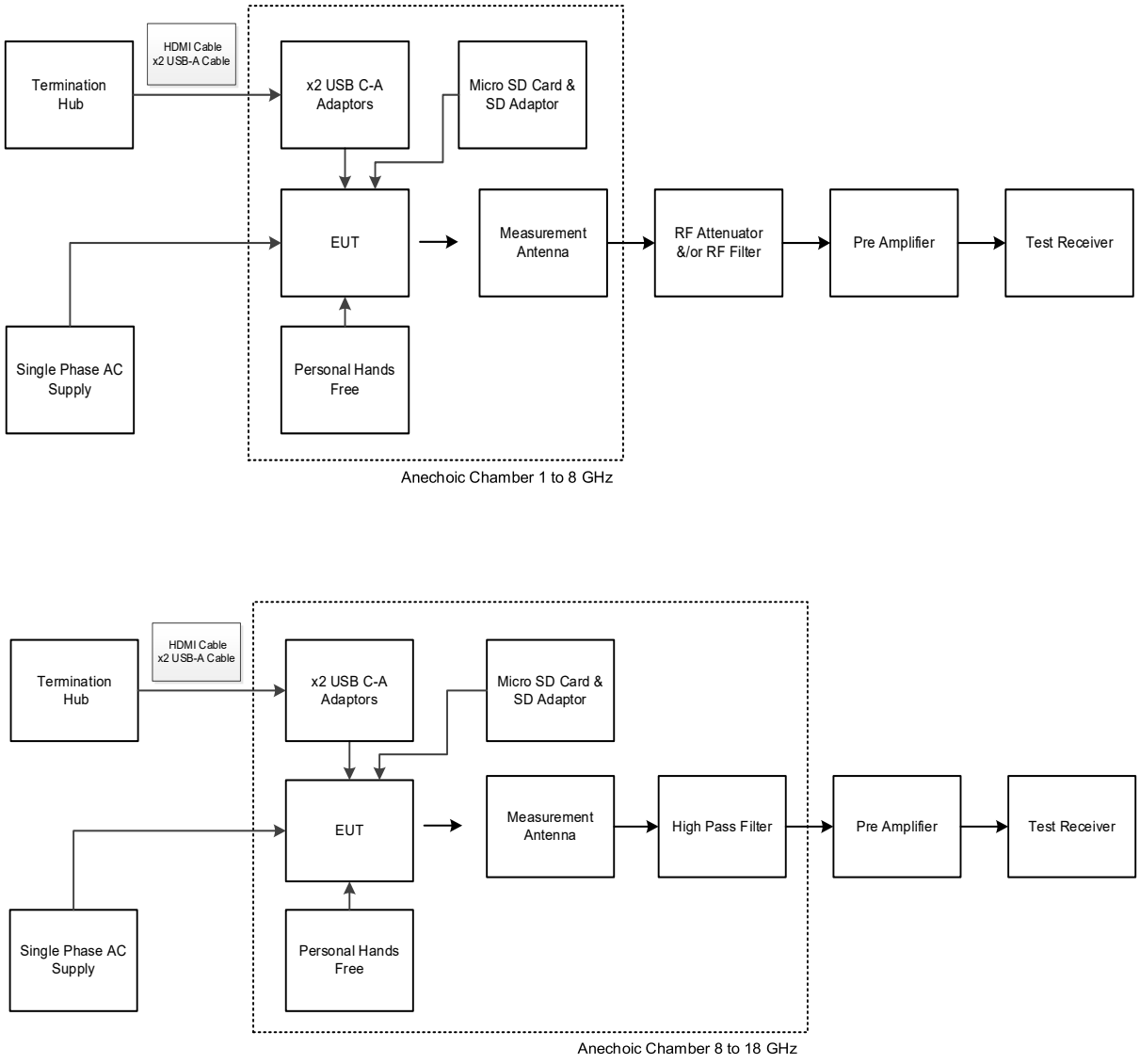
Test Setup for Transmitter Radiated Emissions





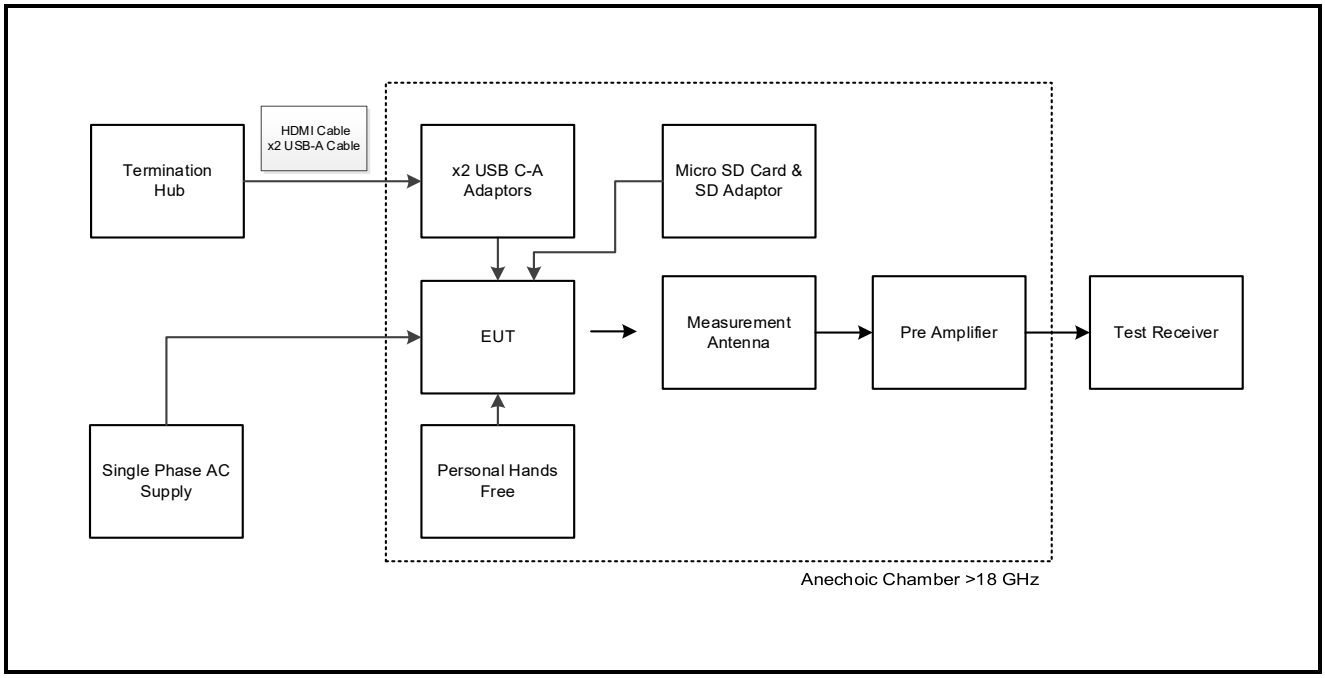
Test Setup Diagrams (continued)

Test Setup for Transmitter Radiated Emissions (continued)



Test Setup Diagrams (continued)

Test Setup for Transmitter Radiated Emissions (continued)



4 Antenna Port Test Results

4.1 Transmitter Duty Cycle

Test Summary:

Test Engineers:	Luis Pazos Perez & Jose Bayona	**Test Date:**	18 April 2023
Test Sample Serial Number:	YFLFCJ6Y3		

FCC Reference:	Part 15.35(c)
Test Method Used:	KDB 789033 D02 Section II.B.2.b)

Environmental Conditions:

Temperature (°C):	23
Relative Humidity (%):	35

Note(s):

1. In order to assist with the determination of the average level of fundamental and spurious emissions field strength, measurements were made of duty cycle to determine the transmission duration and the silent period time of the transmitter. The transmitter duty cycle was measured using a spectrum analyser in the time domain and calculated by using the following calculation:

10 log 1 / (On Time / [Period or 100ms whichever is the lesser]).

DH5 duty cycle: 10 log (1 / (2.880/3.740)) = 1.1 dB

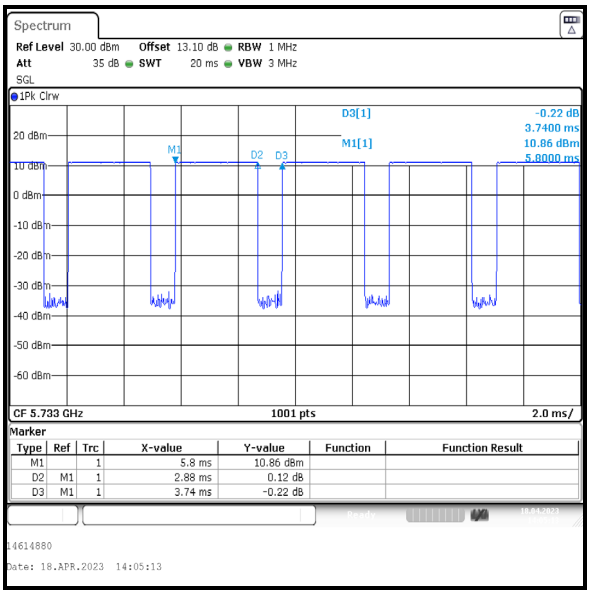
2. 4DH5 and 8DH5 modes duty cycle were measured and found to be greater than 98%. No duty cycle correction is required to assist with calculating the average emission levels.

3. The signal analyser was connected to the RF port on the EUT using an RF switch, suitable attenuation and RF cables. An RF level offset was entered on the signal analyser to compensate for the loss of the switch, attenuators and RF cables.

Transmitter Duty Cycle (continued)

Results: DH5

Pulse Duration (ms)	Period (ms)	Duty Cycle (dB)
2.880	3.740	1.1



4.2 Transmitter 26 dB Emission Bandwidth

Test Summary:

Test Engineer:	Jose Bayona	**Test Dates:**	13 April 2023 & 18 April 2023
Test Sample Serial Number:	YFLFCJ6Y31		

FCC Reference:	Part 15.403
Test Method Used:	KDB 789033 D02 Section II.C.1.

Environmental Conditions:

Temperatures (°C):	22 to 23
Relative Humidity (%):	33 to 35

Note(s):

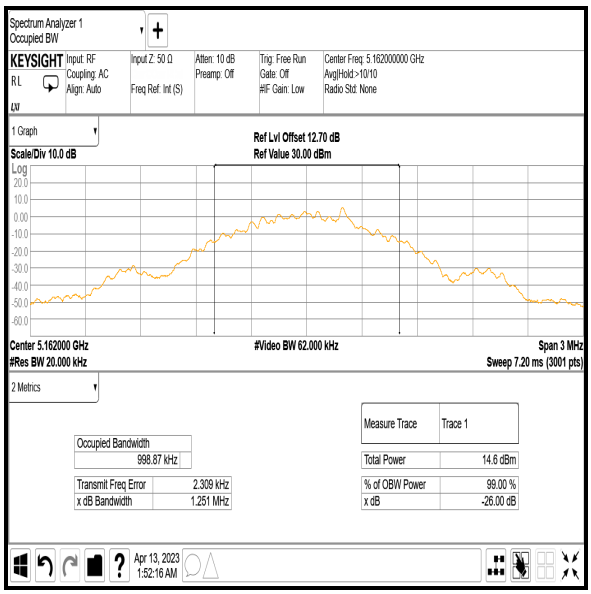
1. The signal analyser's resolution bandwidth was set to approximately 1% of the measured 26 dB emission bandwidth.
2. The signal analyser was connected to the RF port on the EUT using suitable attenuation and RF cable.

Transmitter 26 dB Emission Bandwidth (5.15-5.25 GHz band) (continued)

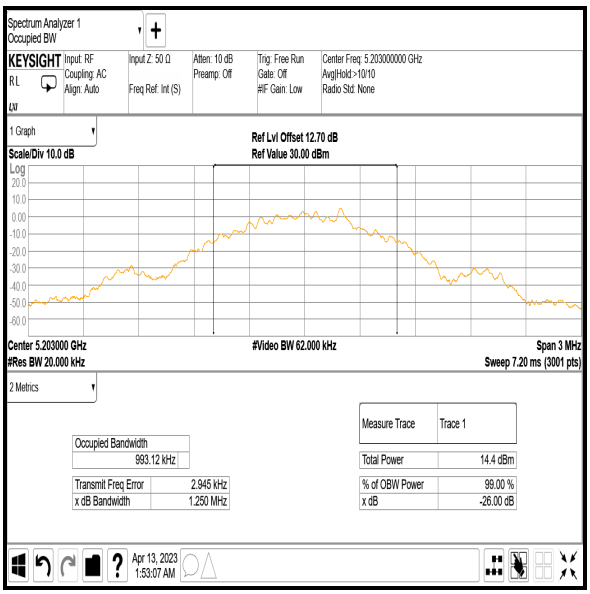
4.2.1 5.15-5.25 GHz band

Results: DH5 / SISO / Core 0 / iPA

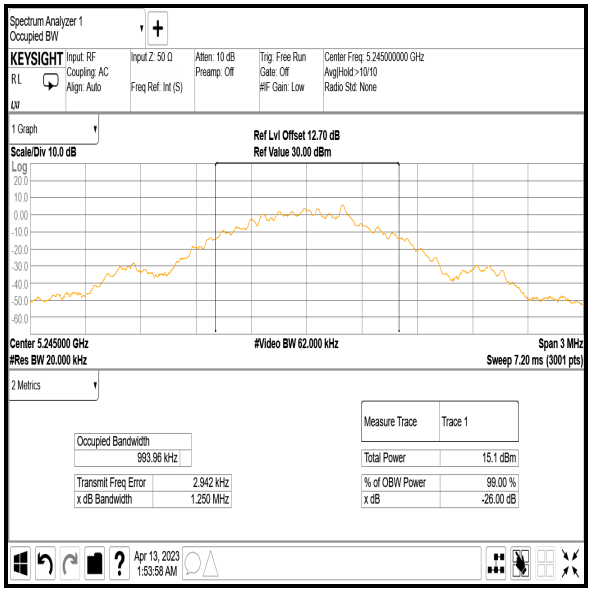
Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)
Bottom	5162	1.251
Middle	5203	1.250
Top	5245	1.250



Bottom Channel



Middle Channel

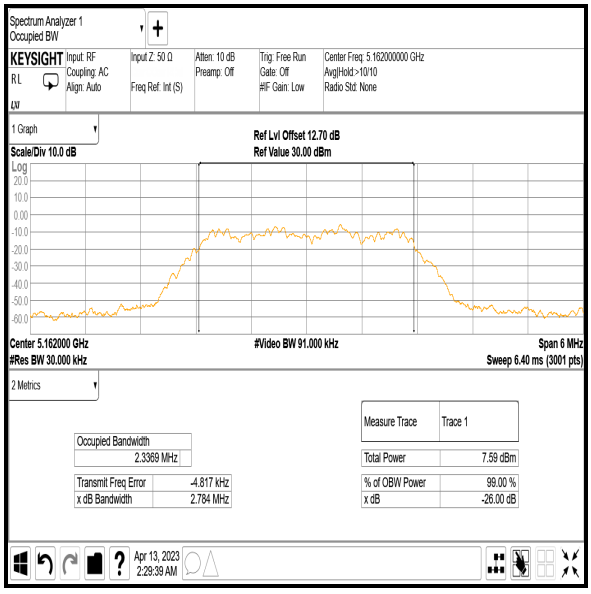


Top Channel

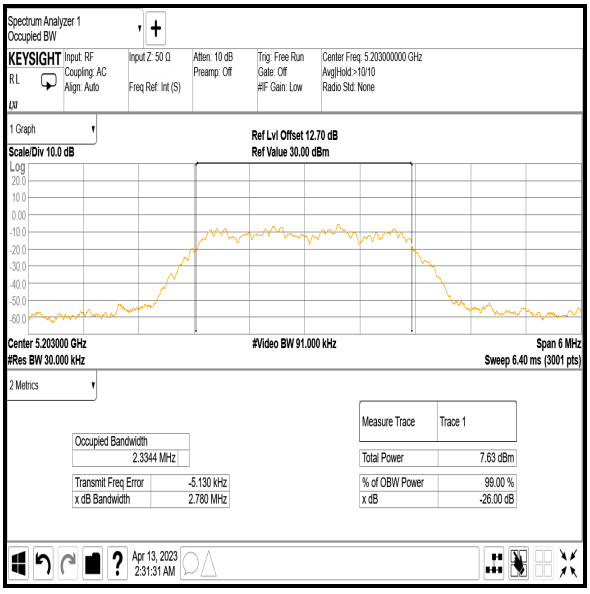
Transmitter 26 dB Emission Bandwidth (5.15-5.25 GHz band) (continued)

Results: 4DH5 / SISO / Core 0 / iPA

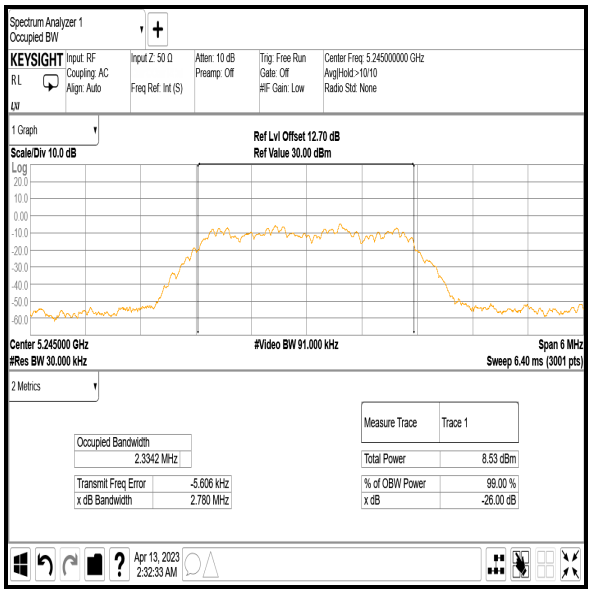
Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)
Bottom	5162	2.784
Middle	5203	2.780
Top	5245	2.780



Bottom Channel



Middle Channel

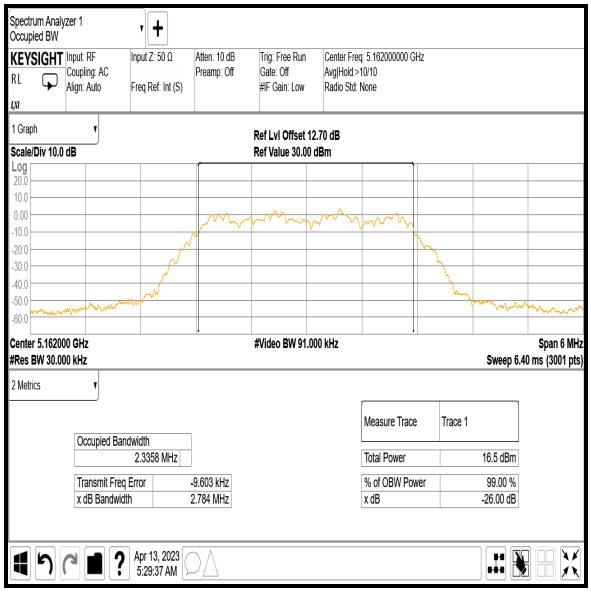


Top Channel

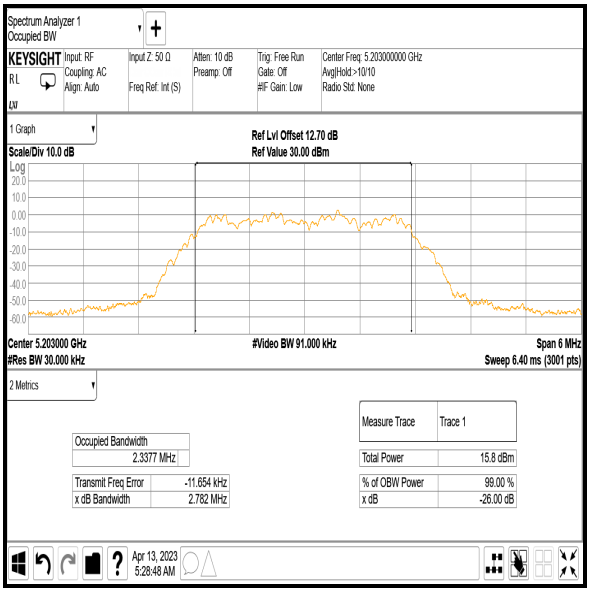
Transmitter 26 dB Emission Bandwidth (5.15-5.25 GHz band) (continued)

Results: 4DH5 / SISO / Core 0 / ePA

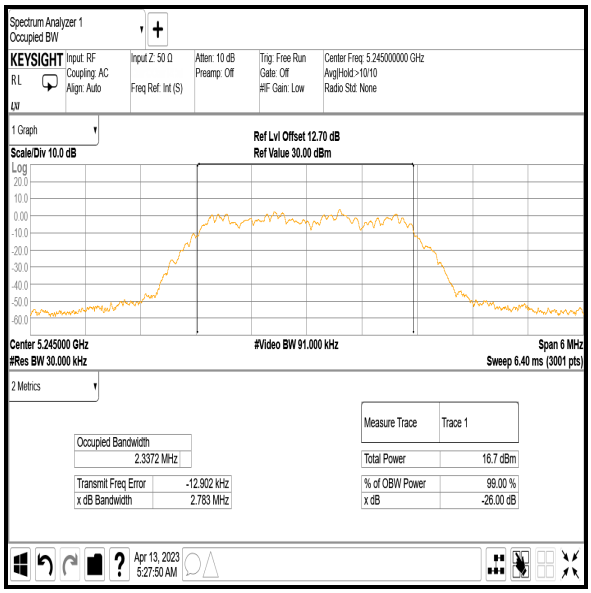
Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)
Bottom	5162	2.784
Middle	5203	2.782
Top	5245	2.783



Bottom Channel



Middle Channel

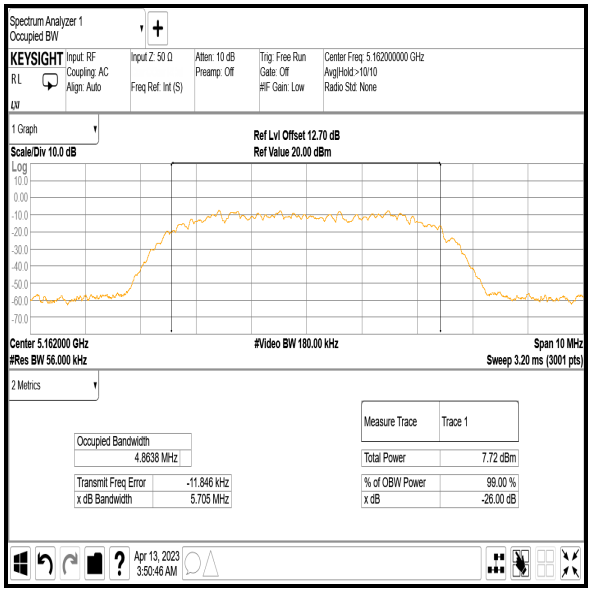


Top Channel

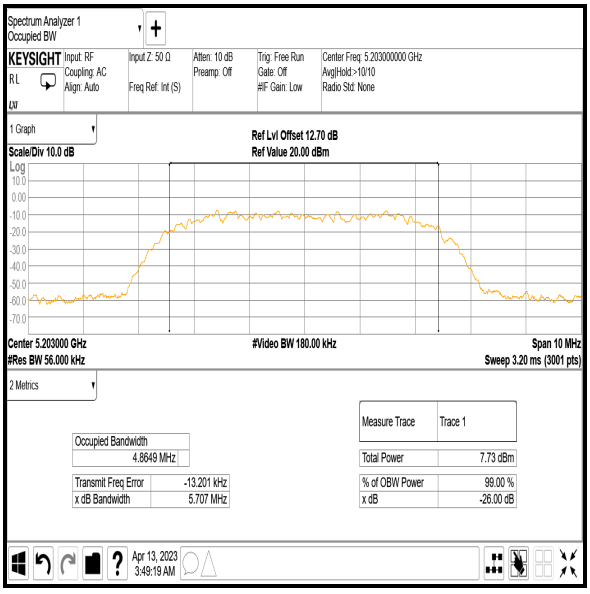
Transmitter 26 dB Emission Bandwidth (5.15-5.25 GHz band) (continued)

Results: 8DH5 / SISO / Core 0 / iPA

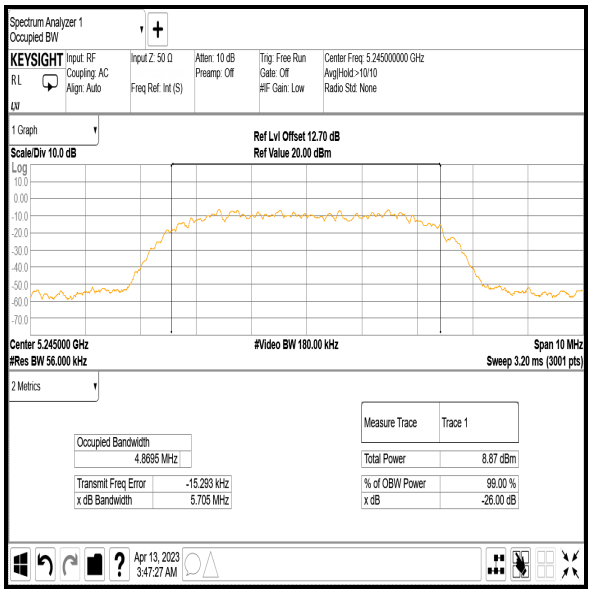
Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)
Bottom	5162	5.705
Middle	5203	5.707
Top	5245	5.705



Bottom Channel



Middle Channel

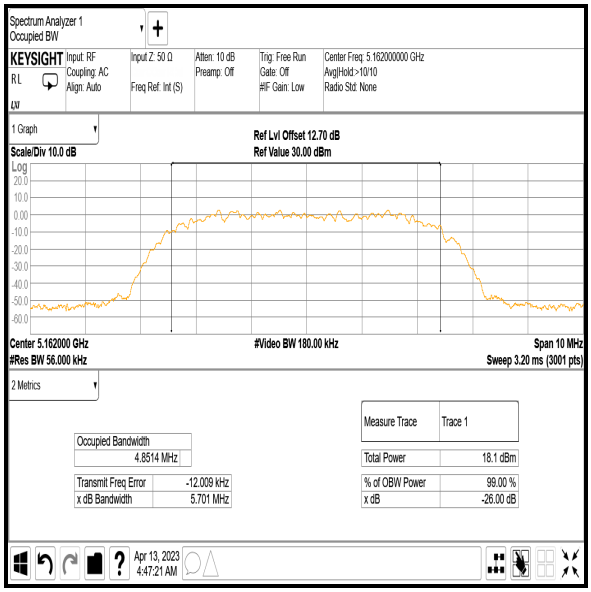


Top Channel

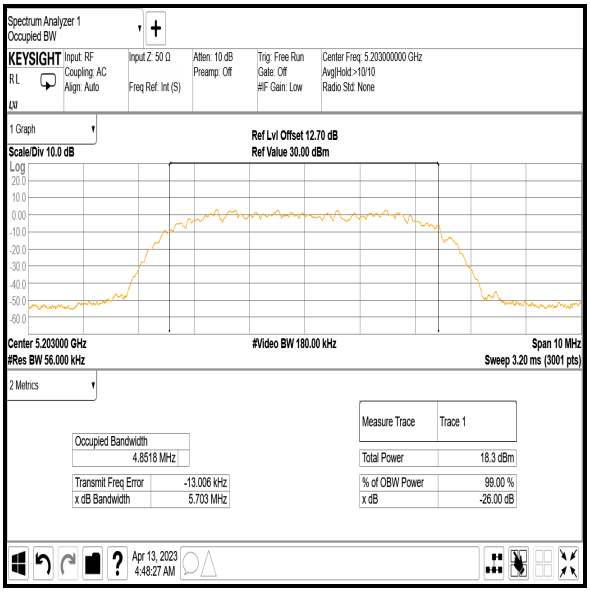
Transmitter 26 dB Emission Bandwidth (5.15-5.25 GHz band) (continued)

Results: 8DH5 / SISO / Core 0 / ePA

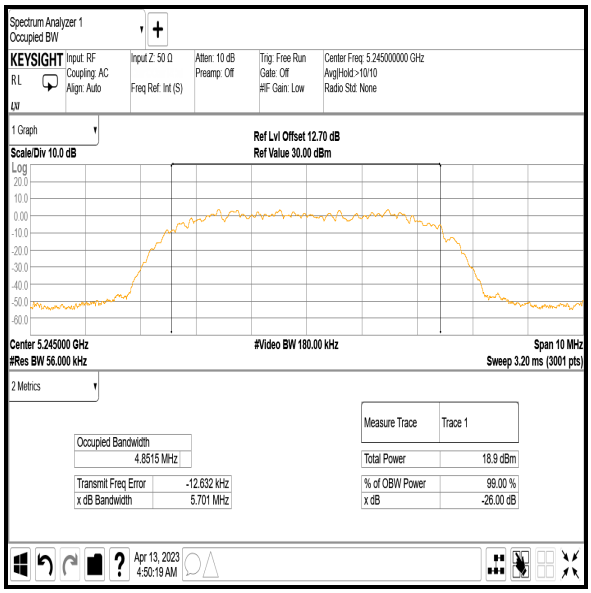
Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)
Bottom	5162	5.701
Middle	5203	5.703
Top	5245	5.701



Bottom Channel



Middle Channel

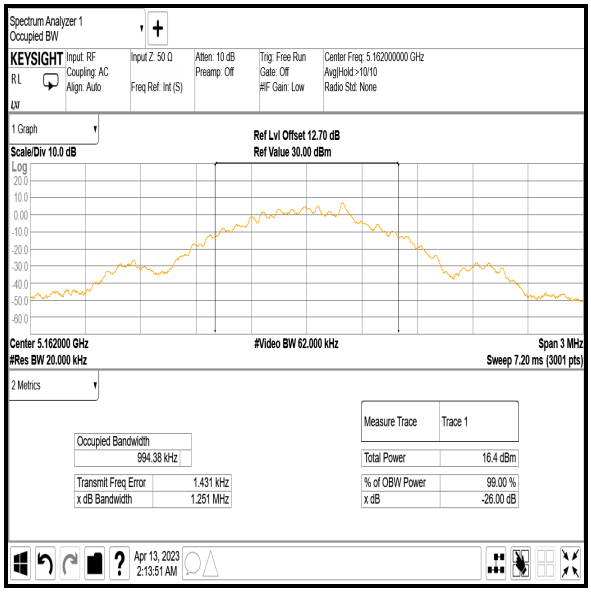


Top Channel

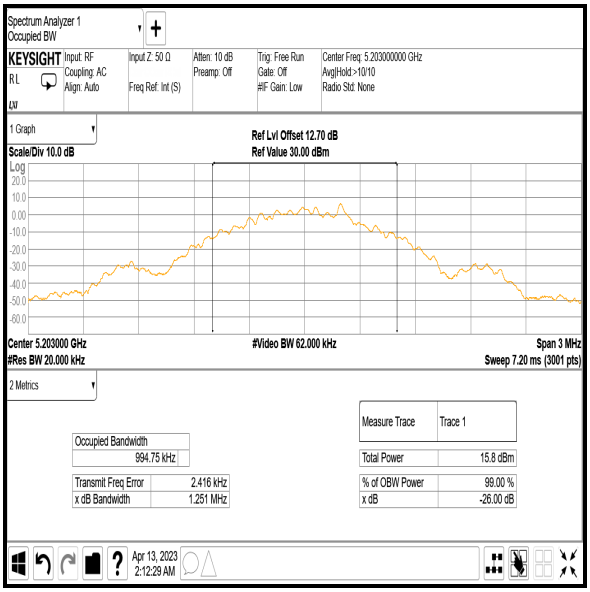
Transmitter 26 dB Emission Bandwidth (5.15-5.25 GHz band) (continued)

Results: DH5 / SISO / Core 1 / iPA

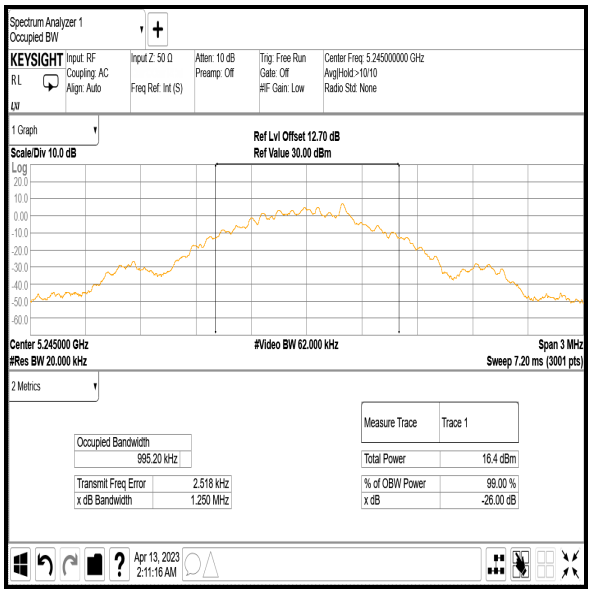
Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)
Bottom	5162	1.251
Middle	5203	1.251
Top	5245	1.250



Bottom Channel



Middle Channel

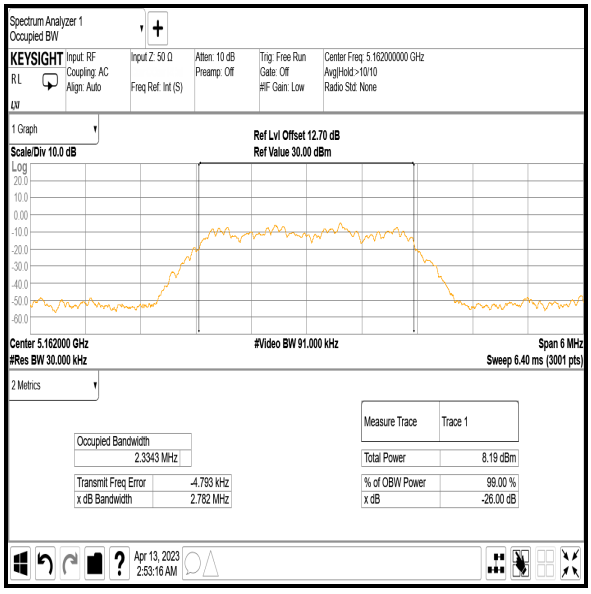


Top Channel

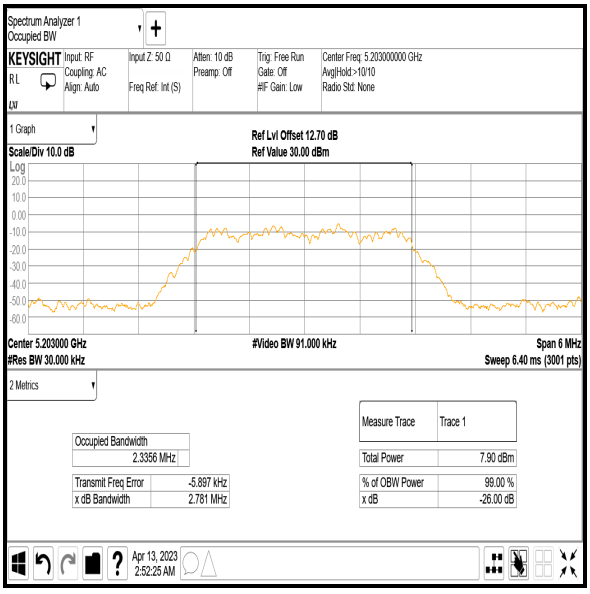
Transmitter 26 dB Emission Bandwidth (5.15-5.25 GHz band) (continued)

Results: 4DH5 / SISO / Core 1 / iPA

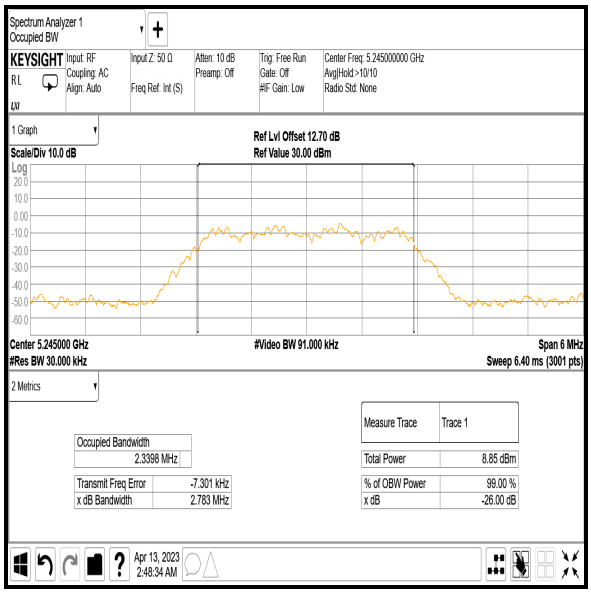
Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)
Bottom	5162	2.782
Middle	5203	2.781
Top	5245	2.783



Bottom Channel



Middle Channel

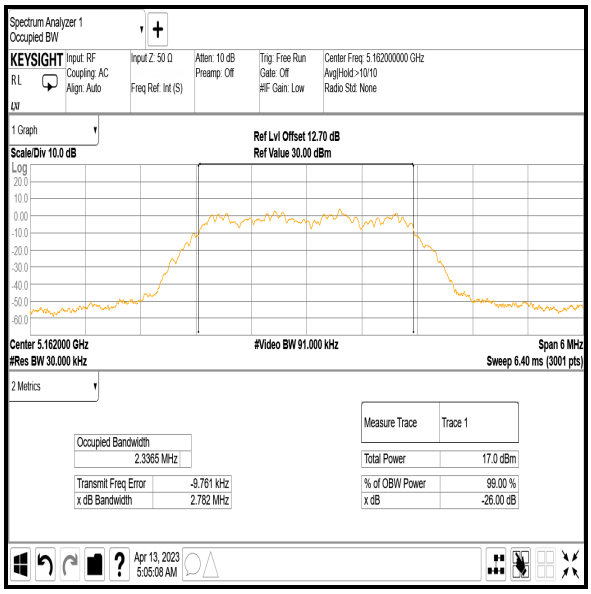


Top Channel

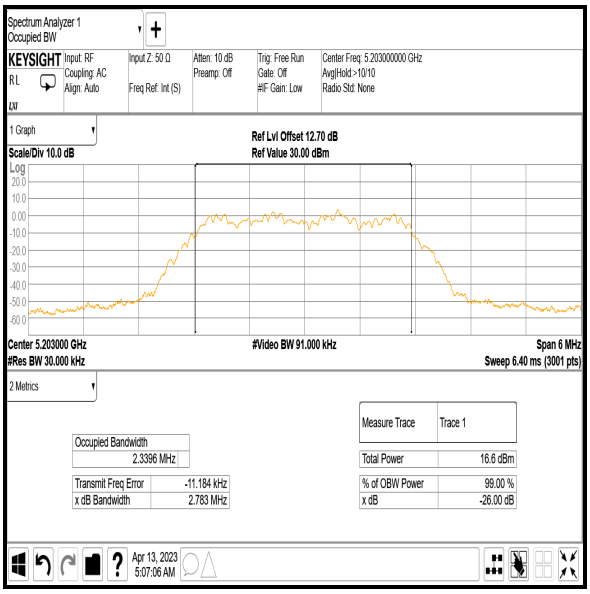
Transmitter 26 dB Emission Bandwidth (5.15-5.25 GHz band) (continued)

Results: 4DH5 / SISO / Core 1 / ePA

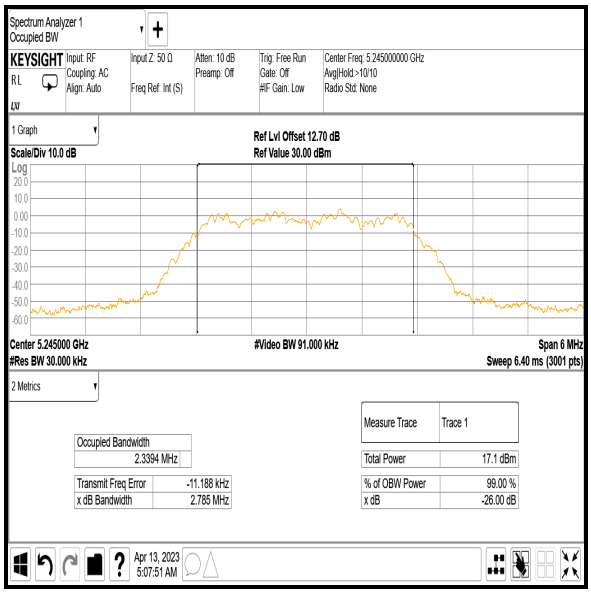
Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)
Bottom	5162	2.782
Middle	5203	2.783
Top	5245	2.785



Bottom Channel



Middle Channel

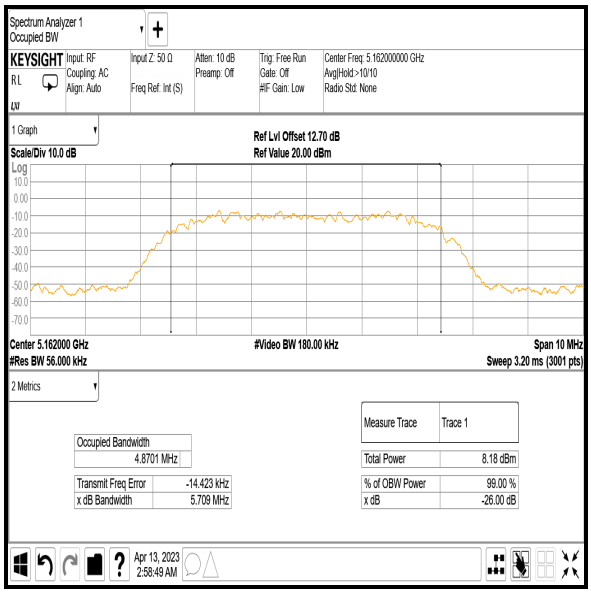


Top Channel

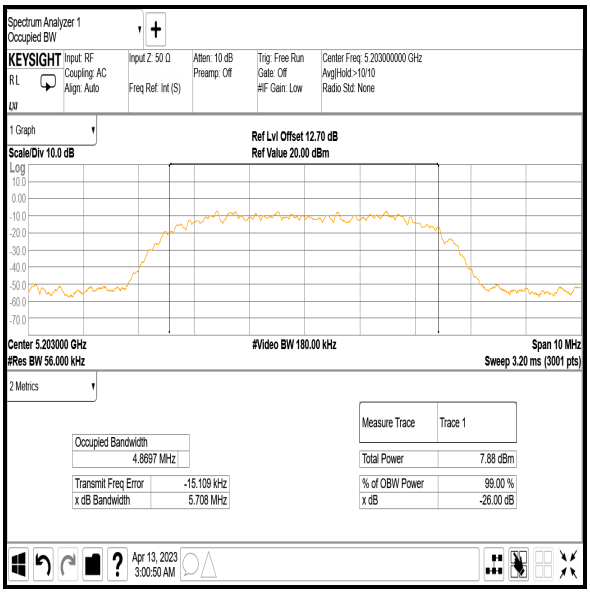
Transmitter 26 dB Emission Bandwidth (5.15-5.25 GHz band) (continued)

Results: 8DH5 / SISO / Core 1 / iPA

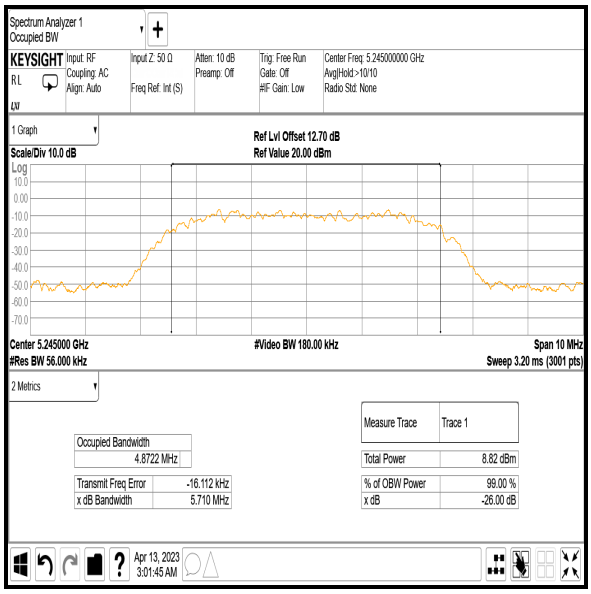
Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)
Bottom	5162	5.709
Middle	5203	5.708
Top	5245	5.710



Bottom Channel



Middle Channel

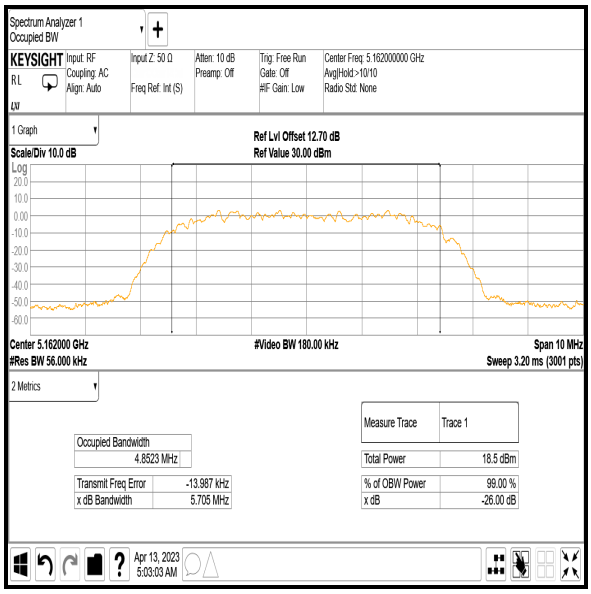


Top Channel

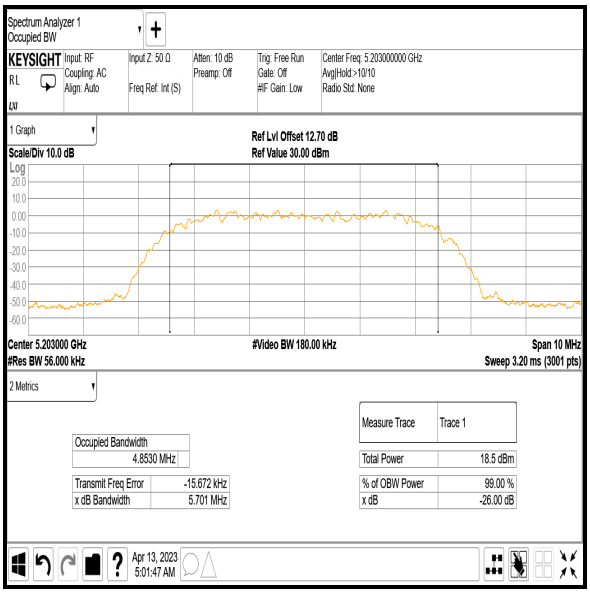
Transmitter 26 dB Emission Bandwidth (5.15-5.25 GHz band) (continued)

Results: 8DH5 / SISO / Core 1 / ePA

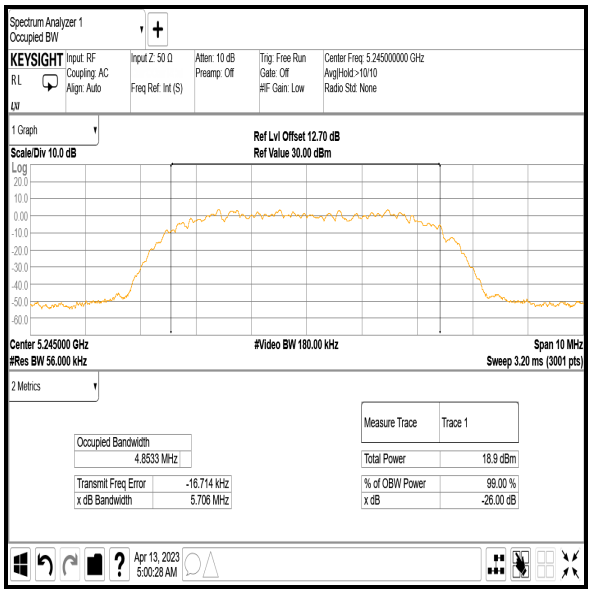
Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)
Bottom	5162	5.705
Middle	5203	5.701
Top	5245	5.706



Bottom Channel



Middle Channel



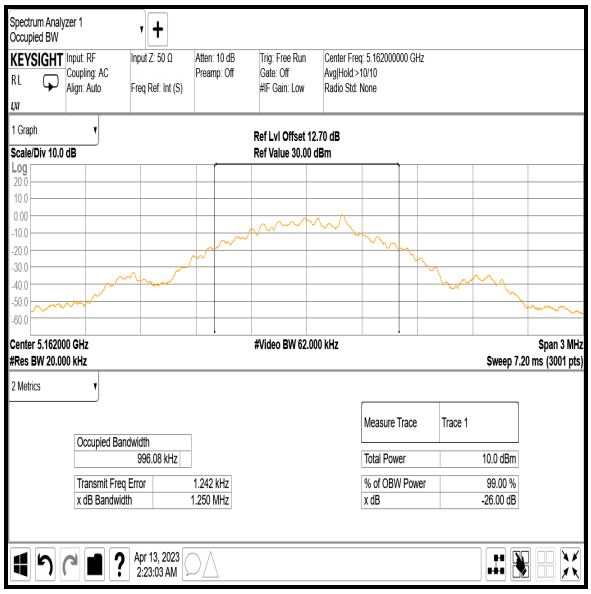
Top Channel

Transmitter 26 dB Emission Bandwidth (5.15-5.25 GHz band) (continued)

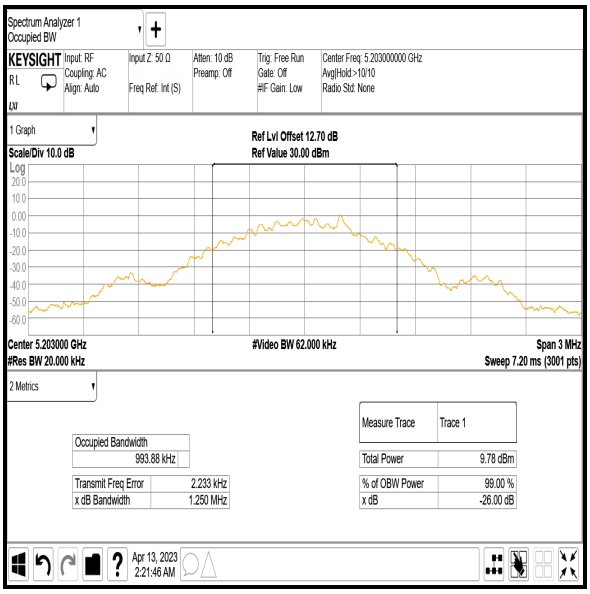
Results: DH5 / Beamforming / Core 0 + Core 1 / iPA

Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)	
		Core 0	Core 1
Bottom	5162	1.250	1.250
Middle	5203	1.250	1.250
Top	5245	1.250	1.250

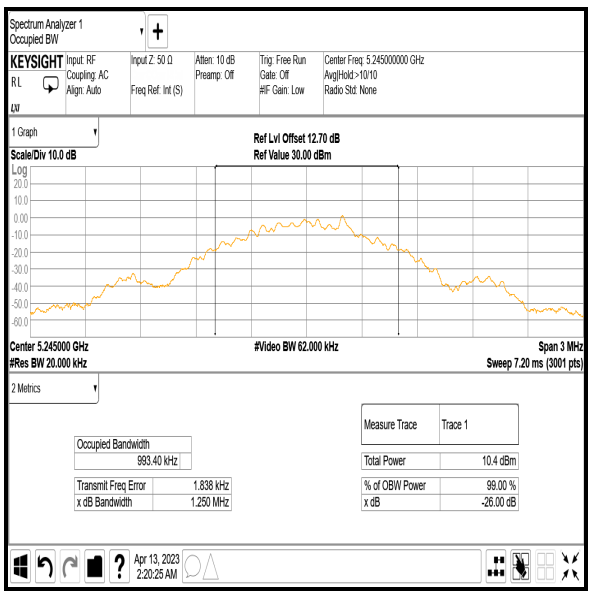
Results: Core 0



Bottom Channel



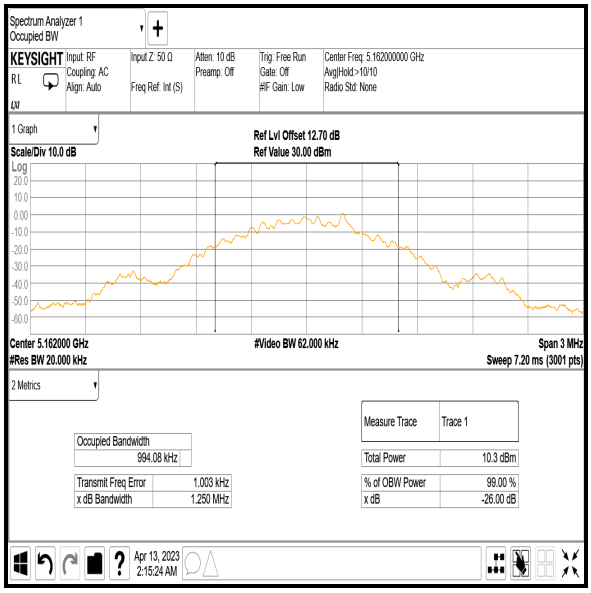
Middle Channel



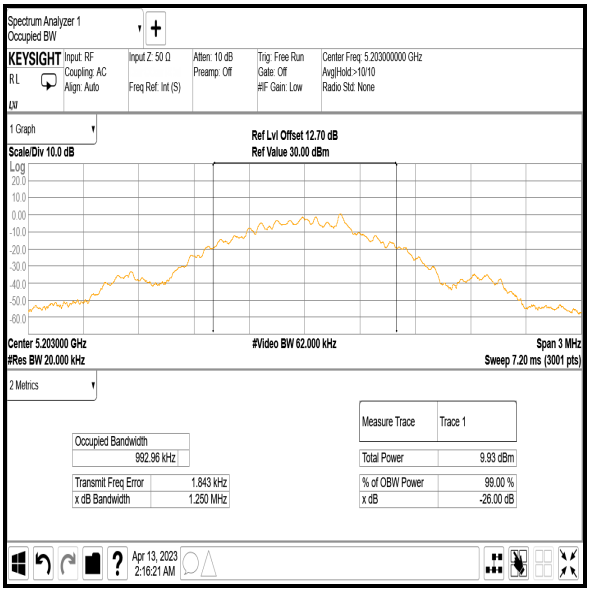
Top Channel

Transmitter 26 dB Emission Bandwidth (5.15-5.25 GHz band) (continued)

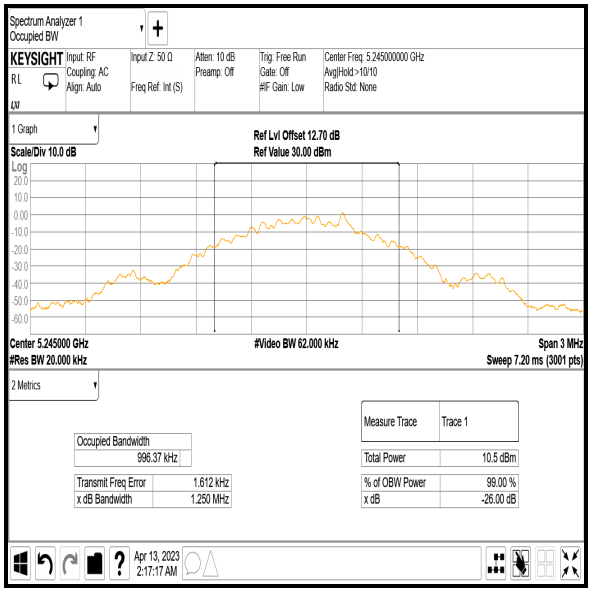
Results: Core 1



Bottom Channel



Middle Channel



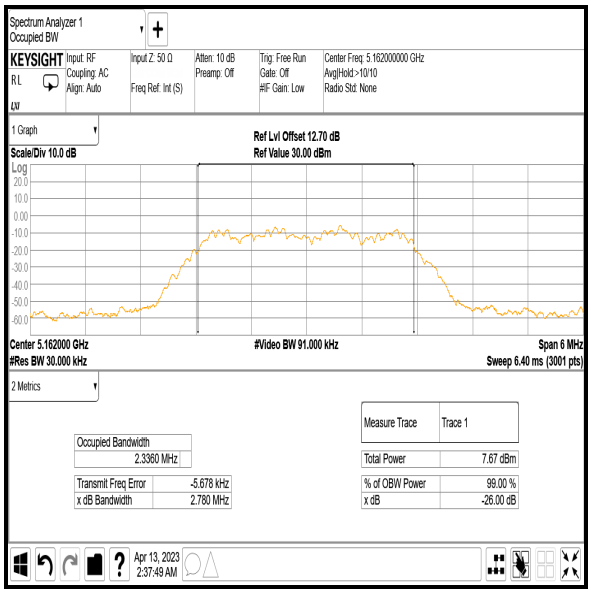
Top Channel

Transmitter 26 dB Emission Bandwidth (5.15-5.25 GHz band) (continued)

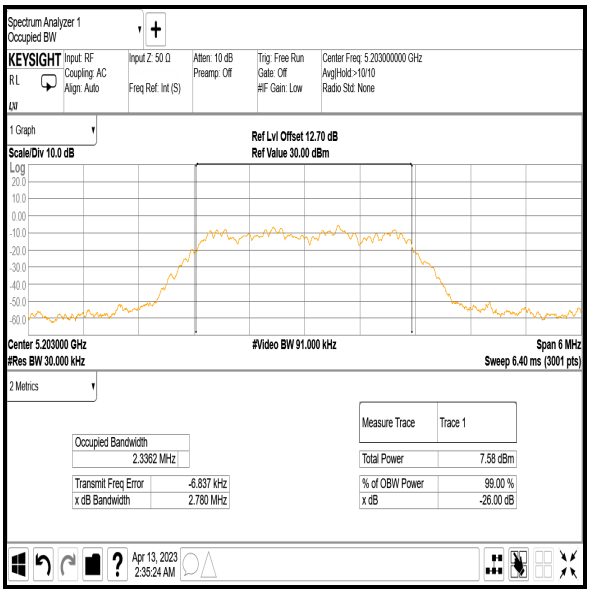
Results: 4DH5 / Beamforming / Core 0 + Core 1 / iPA

Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)	
		Core 0	Core 1
Bottom	5162	2.780	2.781
Middle	5203	2.780	2.781
Top	5245	2.782	2.784

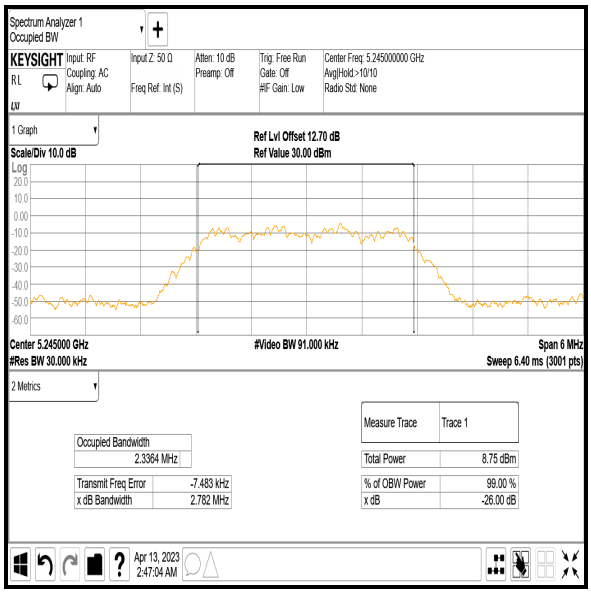
Results: Core 0



Bottom Channel



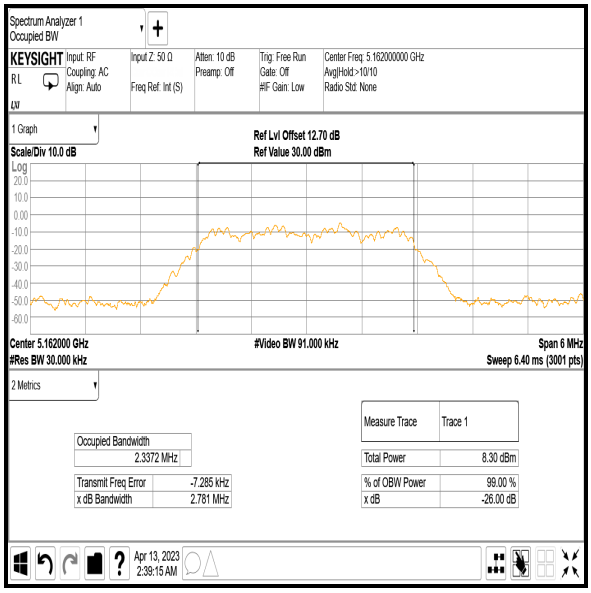
Middle Channel



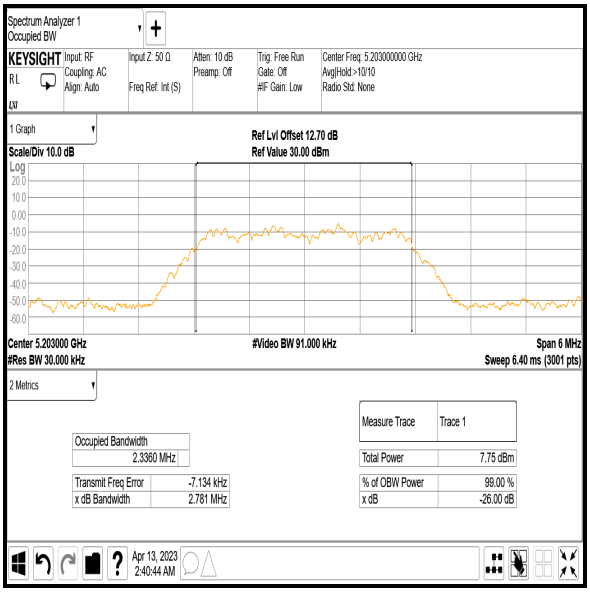
Top Channel

Transmitter 26 dB Emission Bandwidth (5.15-5.25 GHz band) (continued)

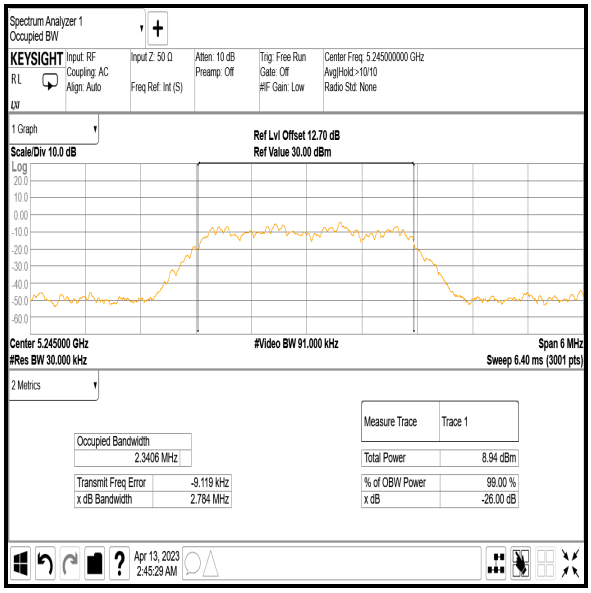
Results: Core 1



Bottom Channel



Middle Channel



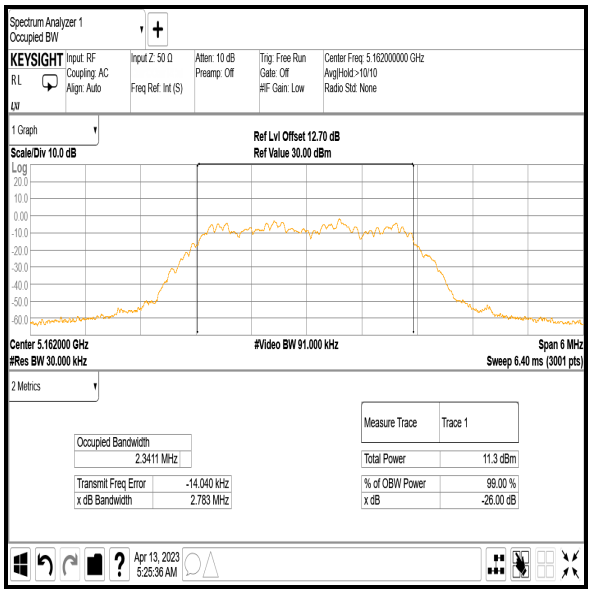
Top Channel

Transmitter 26 dB Emission Bandwidth (5.15-5.25 GHz band) (continued)

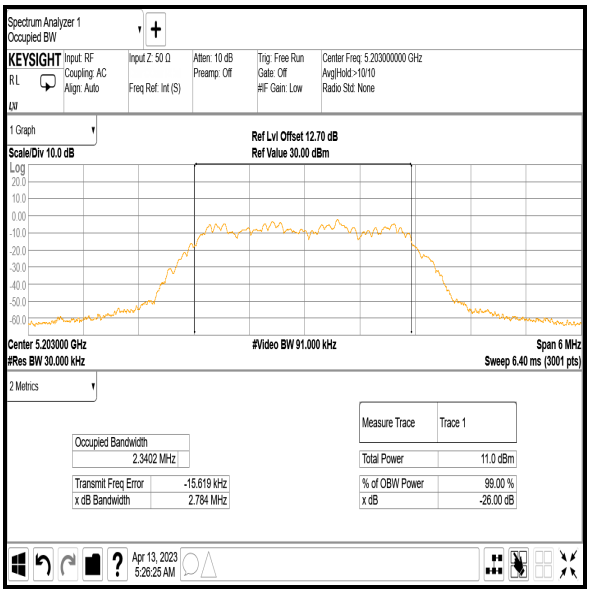
Results: 4DH5 / Beamforming / Core 0 + Core 1 / ePA

Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)	
		Core 0	Core 1
Bottom	5162	2.783	2.785
Middle	5203	2.784	2.783
Top	5245	2.783	2.783

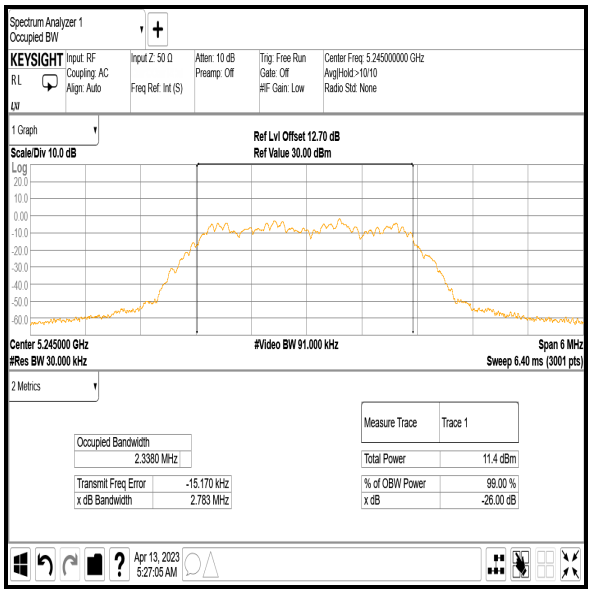
Results: Core 0



Bottom Channel



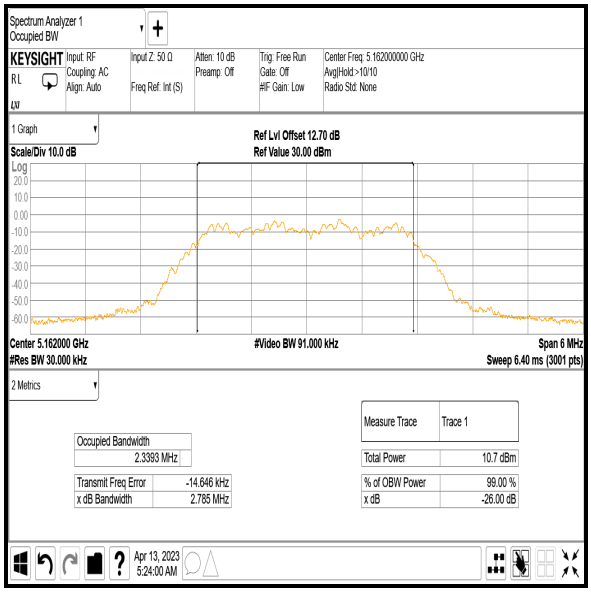
Middle Channel



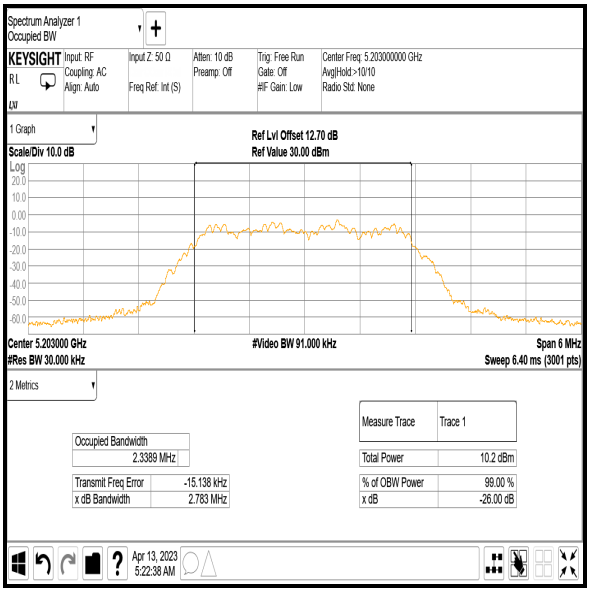
Top Channel

Transmitter 26 dB Emission Bandwidth (5.15-5.25 GHz band) (continued)

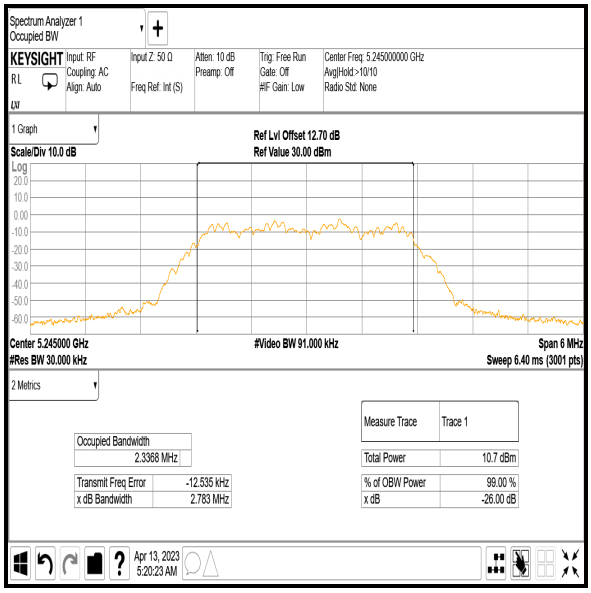
Results: Core 1



Bottom Channel



Middle Channel



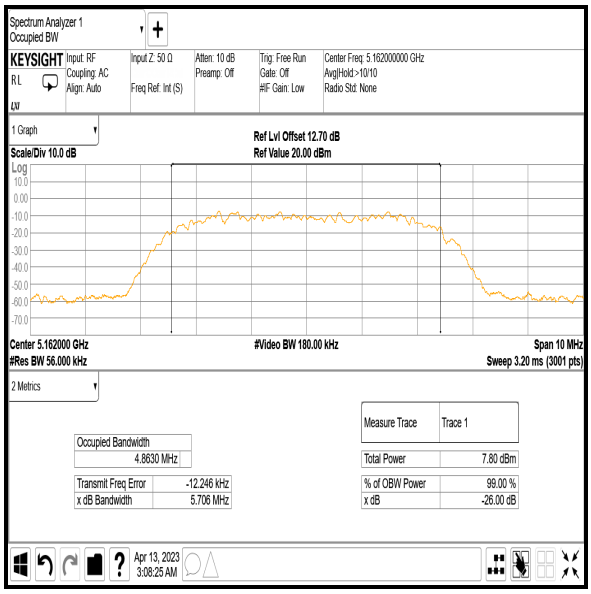
Top Channel

Transmitter 26 dB Emission Bandwidth (5.15-5.25 GHz band) (continued)

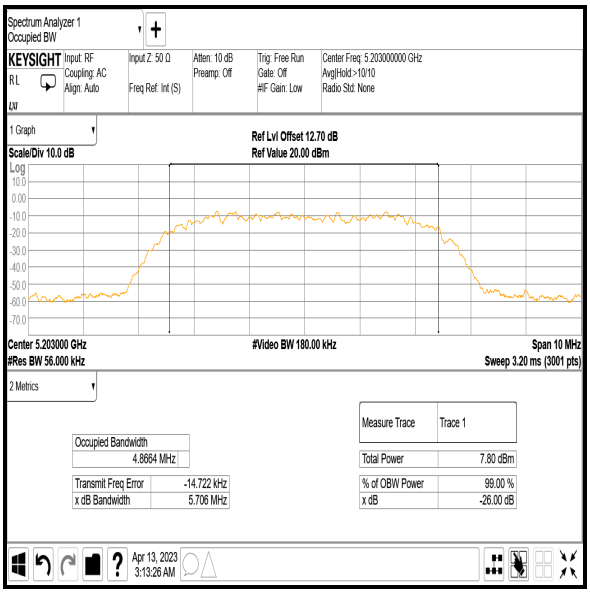
Results: 8DH5 / Beamforming / Core 0 + Core 1 / iPA

Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)	
		Core 0	Core 1
Bottom	5162	5.706	5.710
Middle	5203	5.706	5.712
Top	5245	5.705	5.709

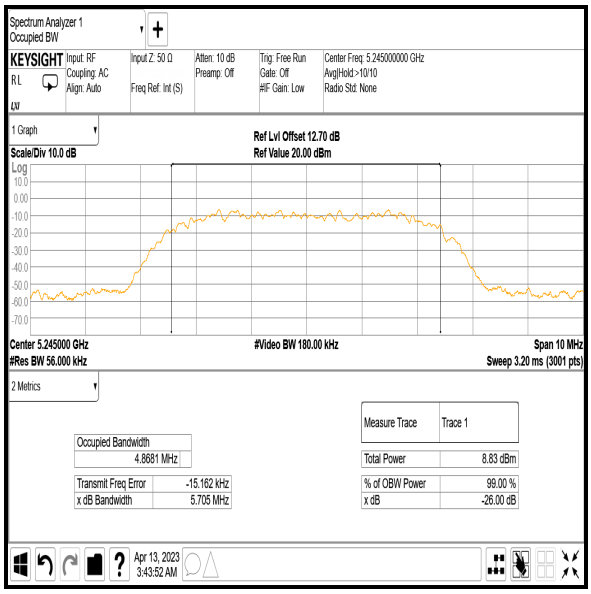
Results: Core 0



Bottom Channel



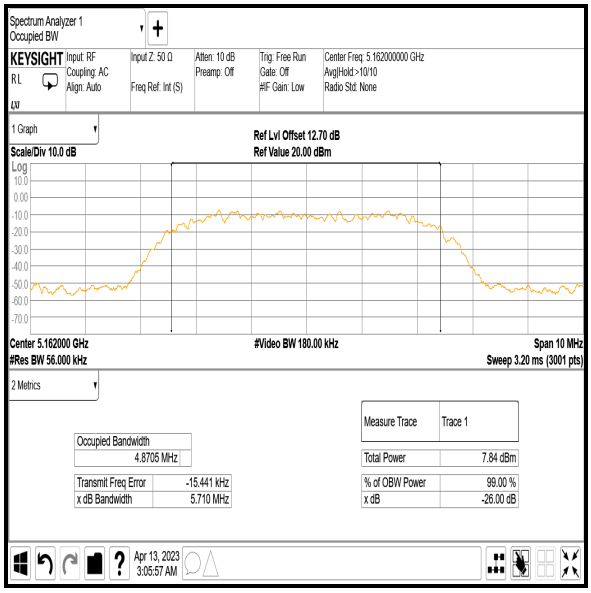
Middle Channel



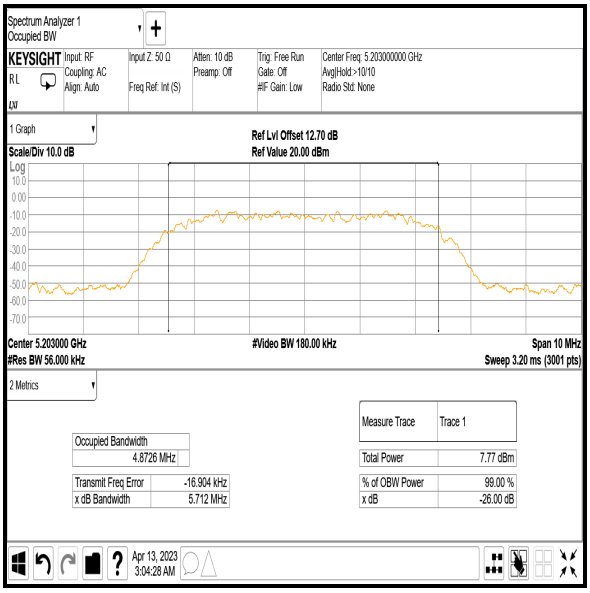
Top Channel

Transmitter 26 dB Emission Bandwidth (5.15-5.25 GHz band) (continued)

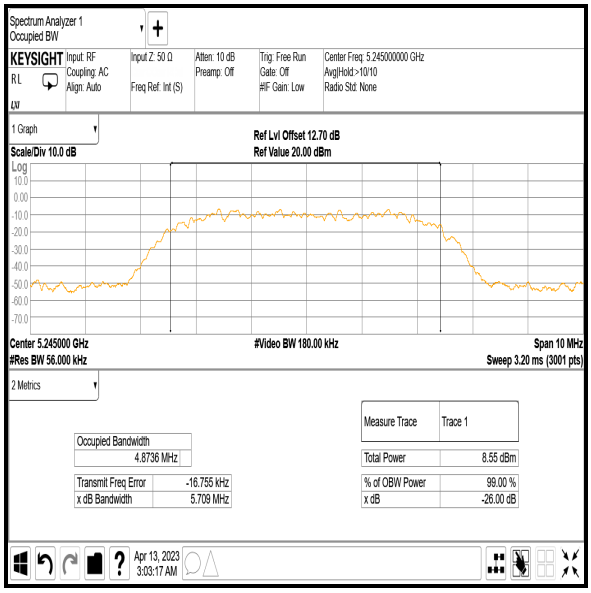
Results: Core 1



Bottom Channel



Middle Channel



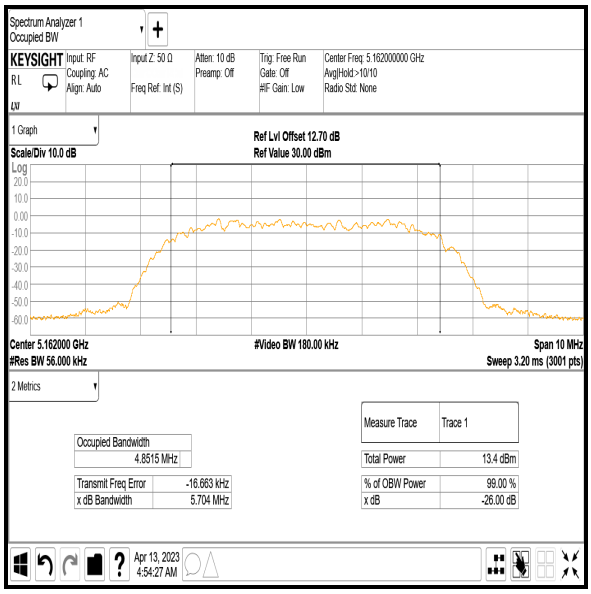
Top Channel

Transmitter 26 dB Emission Bandwidth (5.15-5.25 GHz band) (continued)

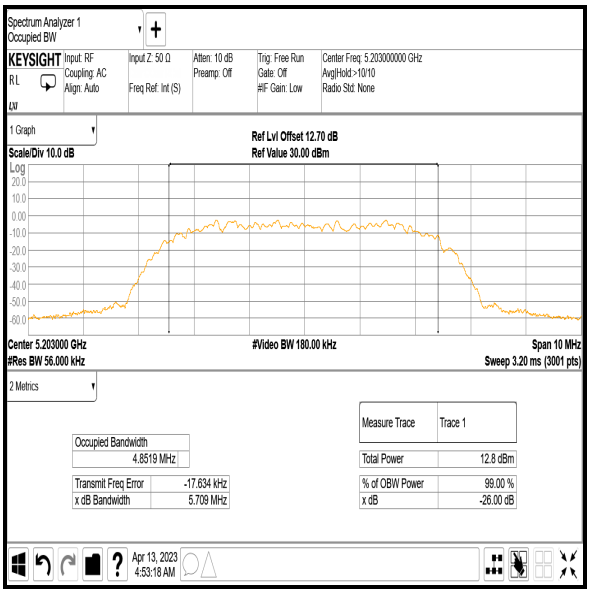
Results: 8DH5 / Beamforming / Core 0 + Core 1 / ePA

Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)	
		Core 0	Core 1
Bottom	5162	5.704	5.710
Middle	5203	5.709	5.709
Top	5245	5.703	5.704

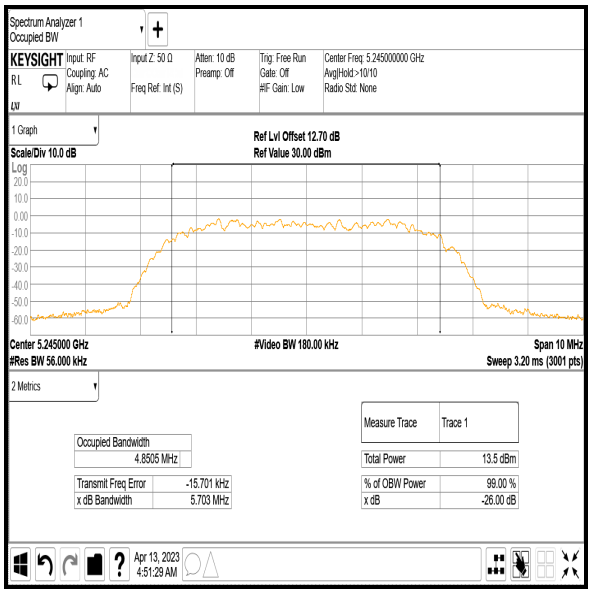
Results: Core 0



Bottom Channel



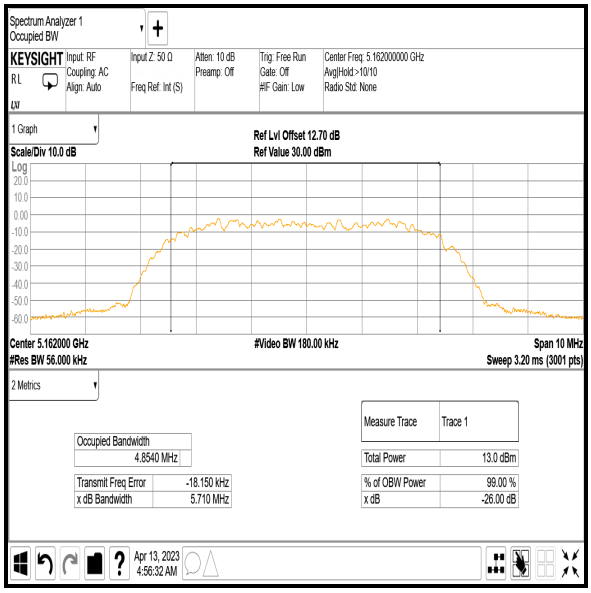
Middle Channel



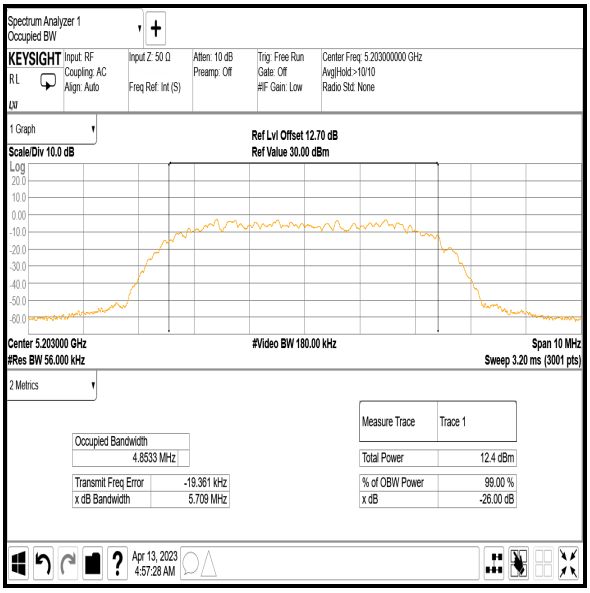
Top Channel

Transmitter 26 dB Emission Bandwidth (5.15-5.25 GHz band) (continued)

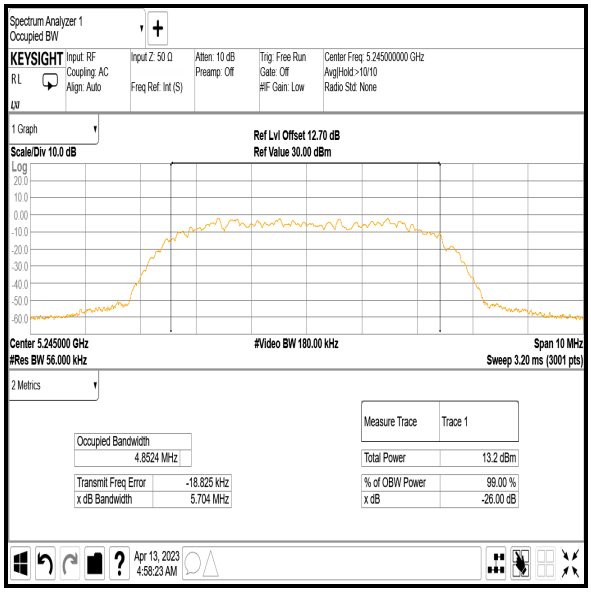
Results: Core 1



Bottom Channel



Middle Channel



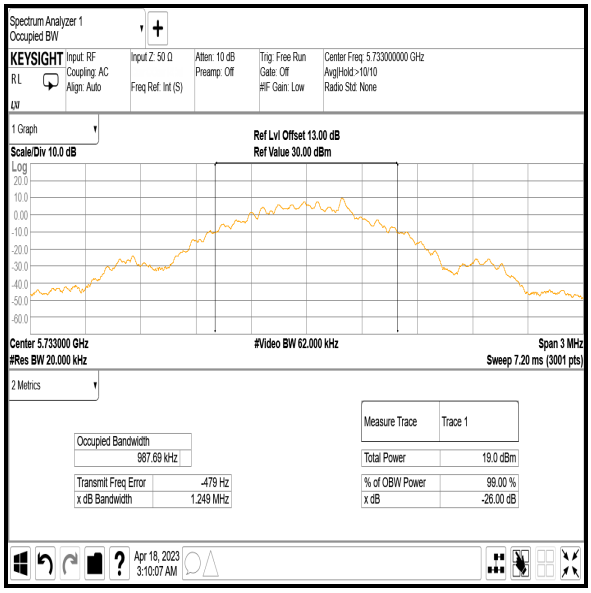
Top Channel

Transmitter 26 dB Emission Bandwidth (5.725-5.85 GHz band) (continued)

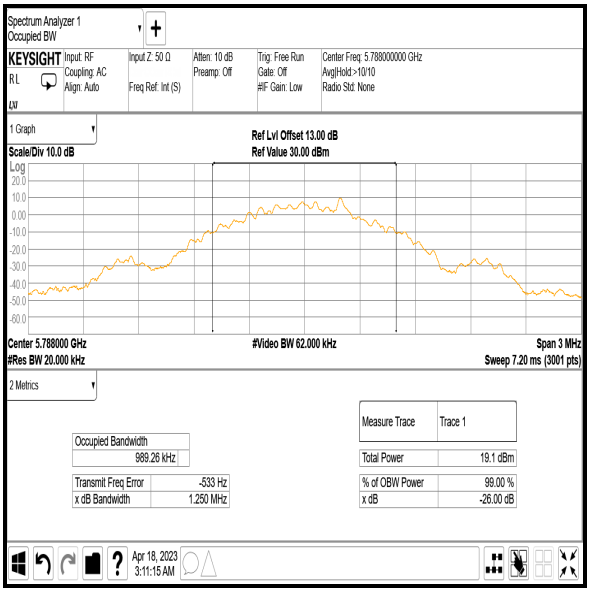
4.2.2 5.725-5.85 GHz band

Results: DH5 / SISO / Core 0 / iPA

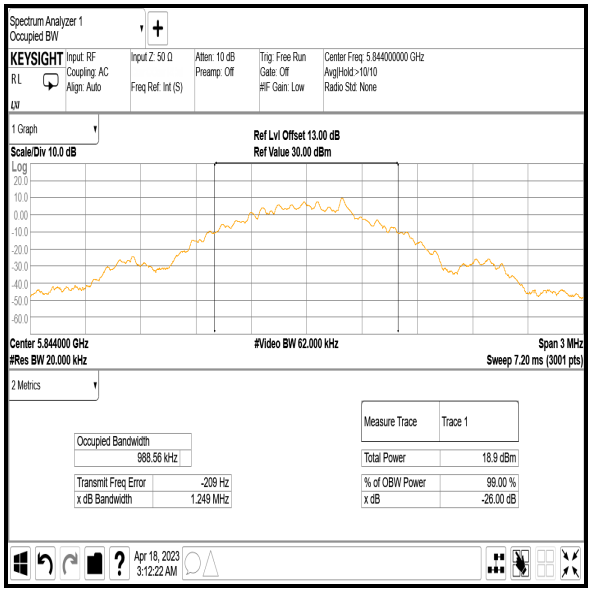
Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)
Bottom	5733	1.249
Middle	5788	1.250
Top	5844	1.249



Bottom Channel



Middle Channel

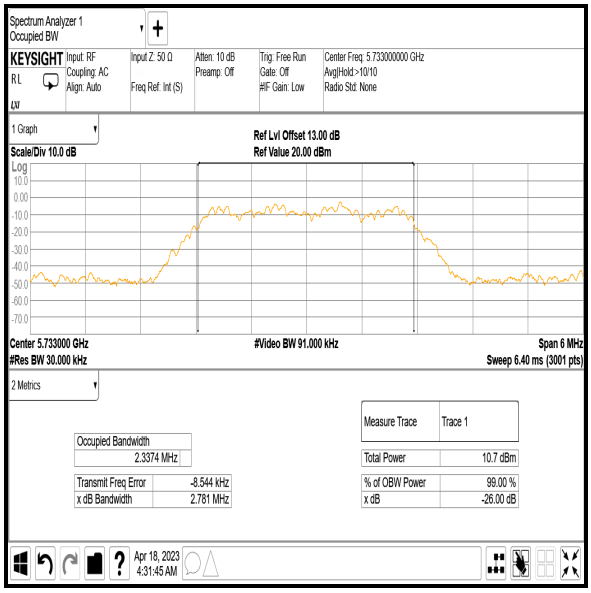


Top Channel

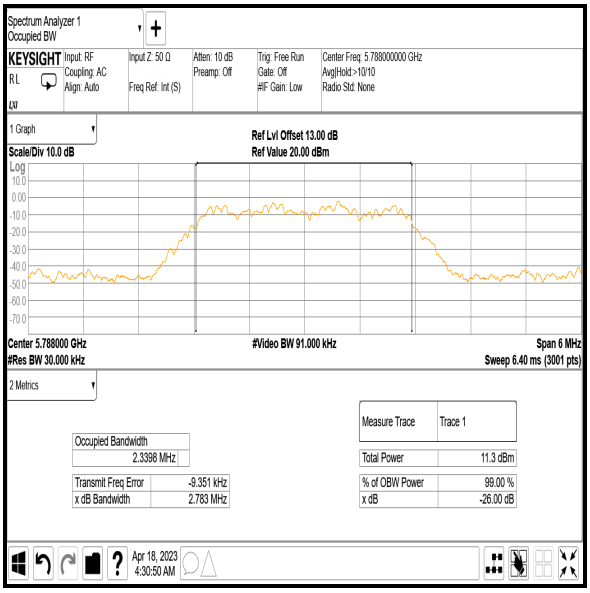
Transmitter 26 dB Emission Bandwidth (5.725-5.85 GHz band) (continued)

Results: 4DH5 / SISO / Core 0 / iPA

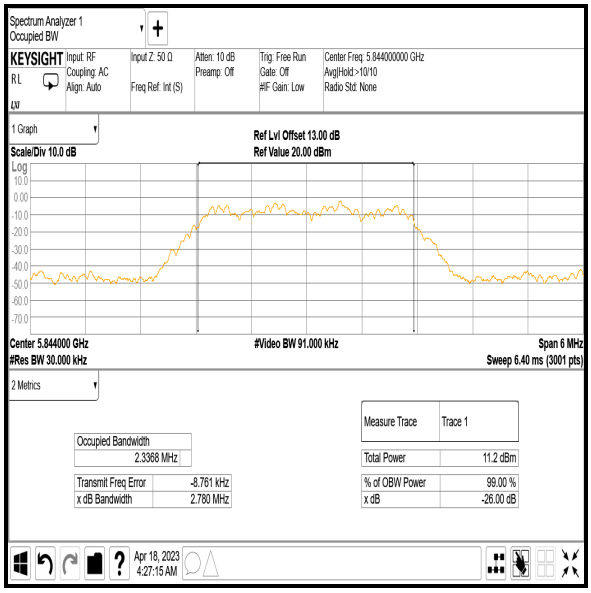
Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)
Bottom	5733	2.781
Middle	5788	2.783
Top	5844	2.780



Bottom Channel



Middle Channel

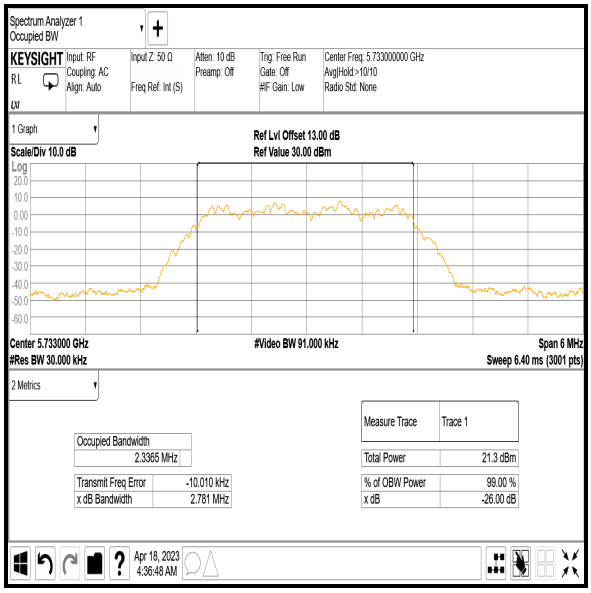


Top Channel

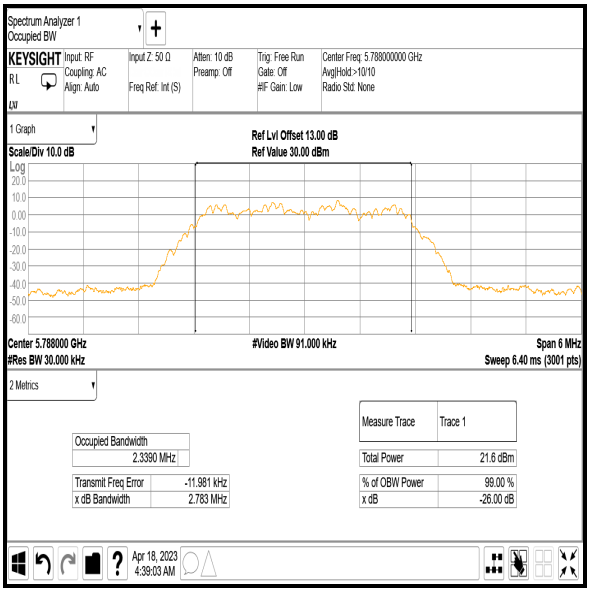
Transmitter 26 dB Emission Bandwidth (5.725-5.85 GHz band) (continued)

Results: 4DH5 / SISO / Core 0 / ePA

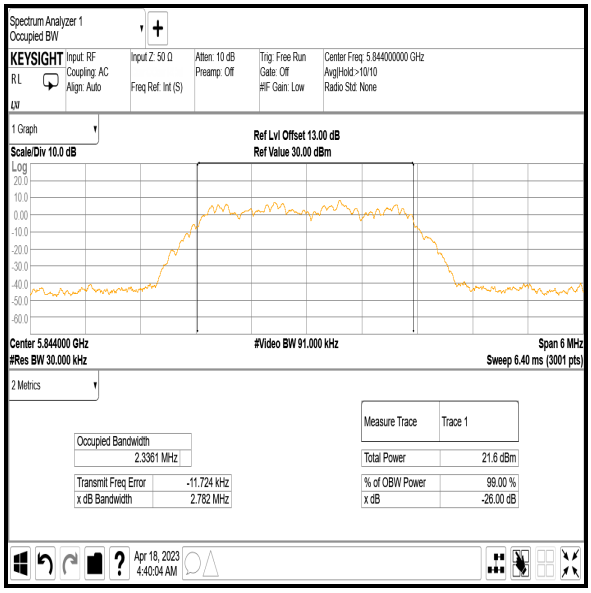
Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)
Bottom	5733	2.781
Middle	5788	2.783
Top	5844	2.782



Bottom Channel



Middle Channel

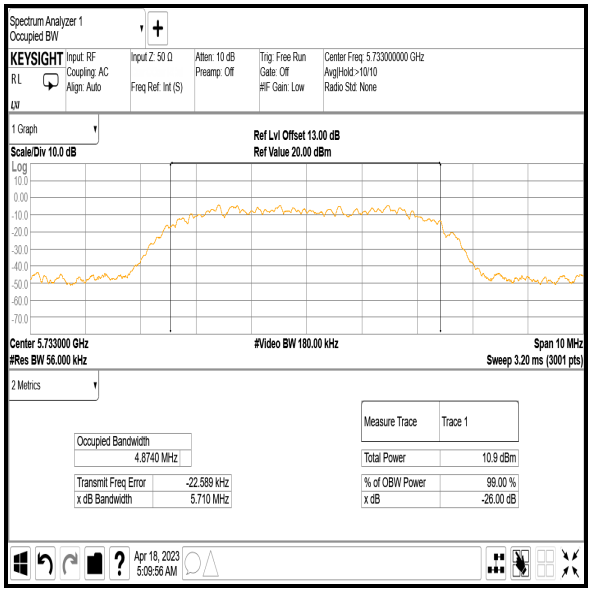


Top Channel

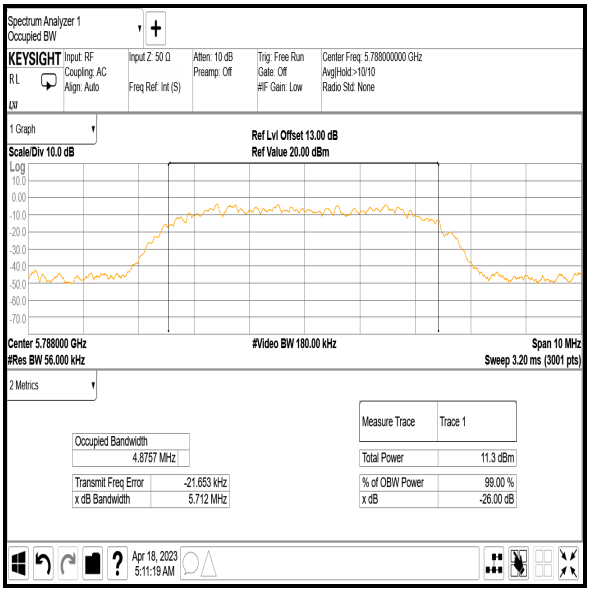
Transmitter 26 dB Emission Bandwidth (5.725-5.85 GHz band) (continued)

Results: 8DH5 / SISO / Core 0 / iPA

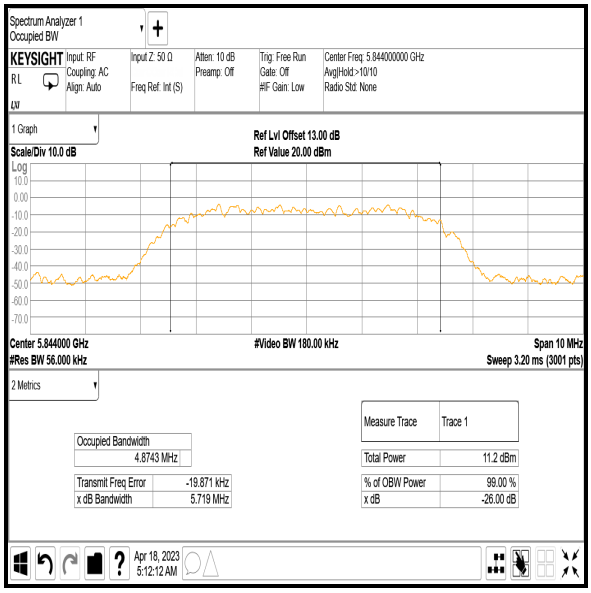
Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)
Bottom	5733	5.710
Middle	5788	5.712
Top	5844	5.719



Bottom Channel



Middle Channel

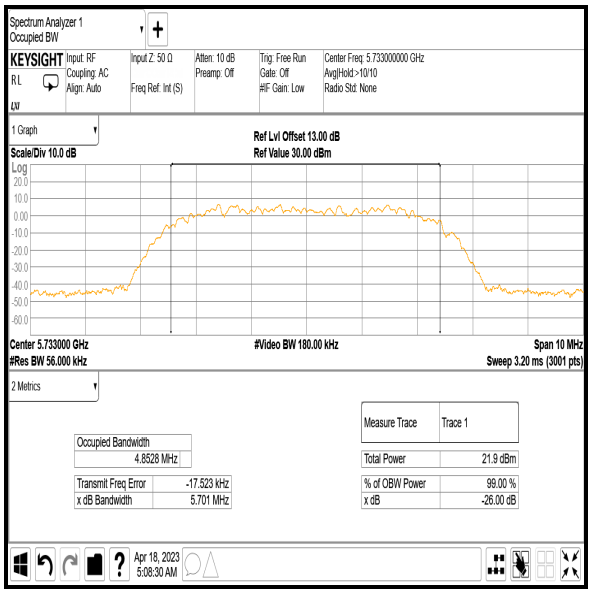


Top Channel

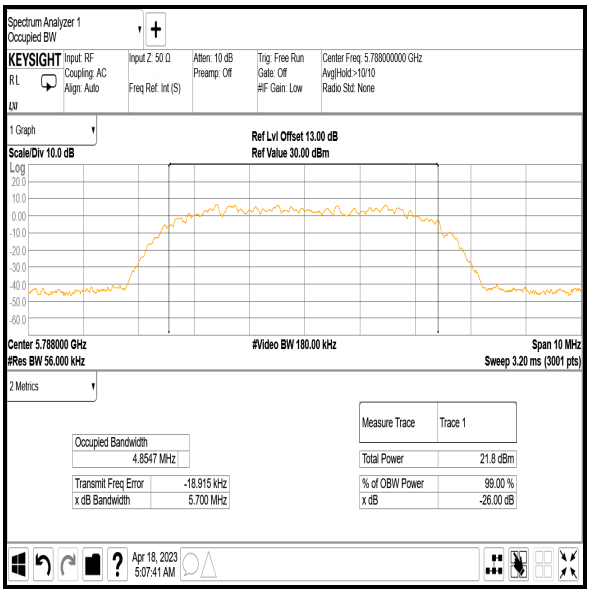
Transmitter 26 dB Emission Bandwidth (5.725-5.85 GHz band) (continued)

Results: 8DH5 / SISO / Core 0 / ePA

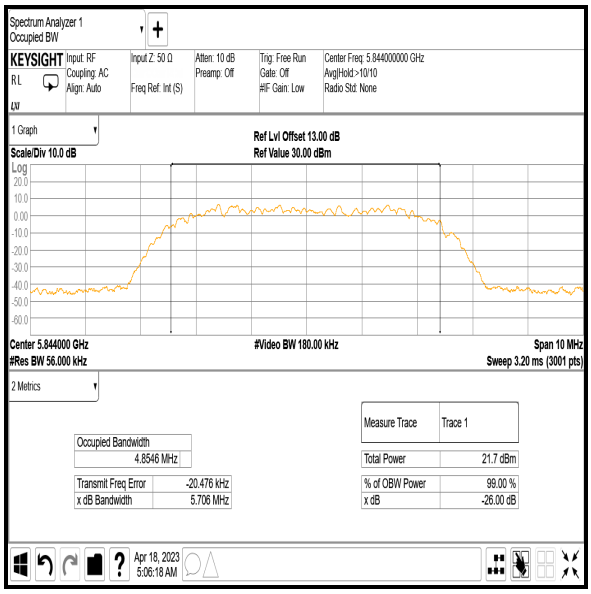
Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)
Bottom	5733	5.701
Middle	5788	5.700
Top	5844	5.706



Bottom Channel



Middle Channel



Top Channel