

# OUTPUT POWER



XMIT 2019.09.05

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

## TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Power Supply - DC	Agilent	U8002A	TPZ	NCR	NCR
Block - DC	Fairview Microwave	SD3379	AMI	6-Aug-19	6-Aug-20
Attenuator	S.M. Electronics	SA26B-20	TZP	9-Nov-19	9-Nov-20
Generator - Signal	Keysight	N5171B (EXG)	TEY	31-Dec-19	31-Dec-22
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFN	23-Dec-19	23-Dec-20
Cable	Micro-Coax	UFD150A-1-0720-200200	MNL	15-Sep-19	15-Sep-20

## TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The peak output power was measured with the EUT set to low, medium and high transmit frequencies. The EUT was transmitting in a no hop mode at the data rate(s) listed in the datasheet.

The method found in ANSI C63.10:2013 Section 7.8.5 was used for a FHSS radio.

# OUTPUT POWER



TbTx 2019.08.30.0

XMI 2019.08.05

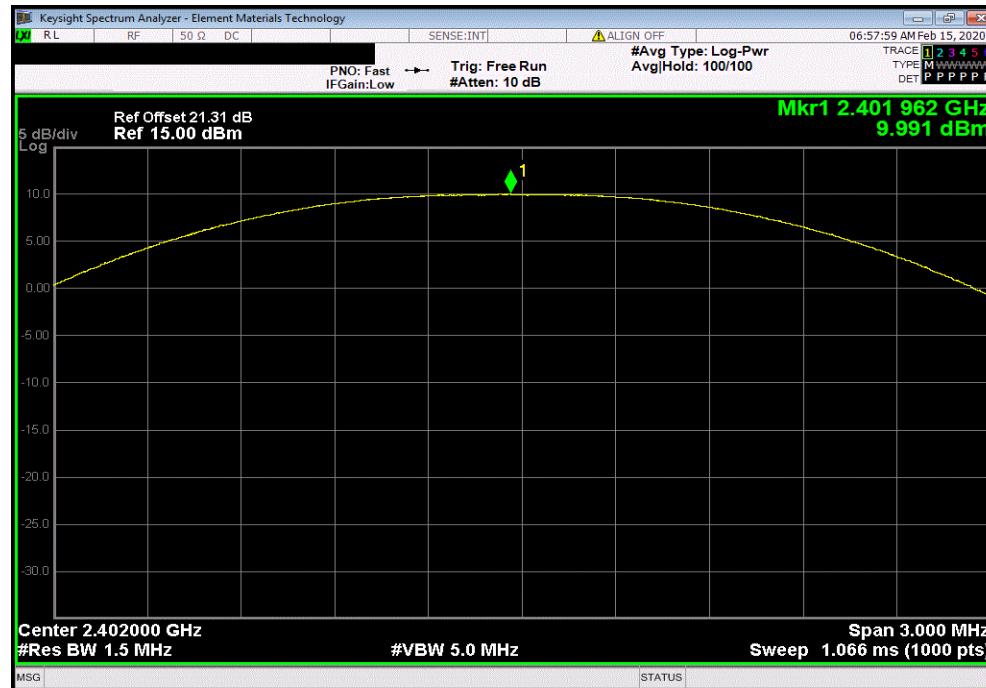
EUT:	C2-03CPU	Work Order:	KOYO0001	
Serial Number:	N/A	Date:	14-Feb-20	
Customer:	Koyo Electronics Industries Co., LTD	Temperature:	22 °C	
Attendees:	None	Humidity:	14.7% RH	
Project:	None	Barometric Pres.:	1025 mbar	
Tested by:	Andrew Rogstad	Power:	24 VDC	
TEST SPECIFICATIONS		Test Method	ANSI C63.10:2013	
FCC 15.247:2020				
COMMENTS				
Reference level offset includes 20 dB attenuator, DC block, and measurement cable.				
DEVIATIONS FROM TEST STANDARD				
None				
Configuration #	10	Signature		
		Out Pwr (dBm)	Limit (dBm)	Result
DH5, GFSK	Low Channel (2402 MHz)	9.991	21	Pass
	Mid Channel (2441 MHz)	9.749	21	Pass
	High Channel (2480 MHz)	9.835	21	Pass
2DH5, pi/4-DQPSK	Low Channel (2402 MHz)	12.022	21	Pass
	Mid Channel (2441 MHz)	12.099	21	Pass
	High Channel (2480 MHz)	12.213	21	Pass
3DH5, 8-DPSK	Low Channel (2402 MHz)	12.492	21	Pass
	Mid Channel (2441 MHz)	12.477	21	Pass
	High Channel (2480 MHz)	12.403	21	Pass

# OUTPUT POWER

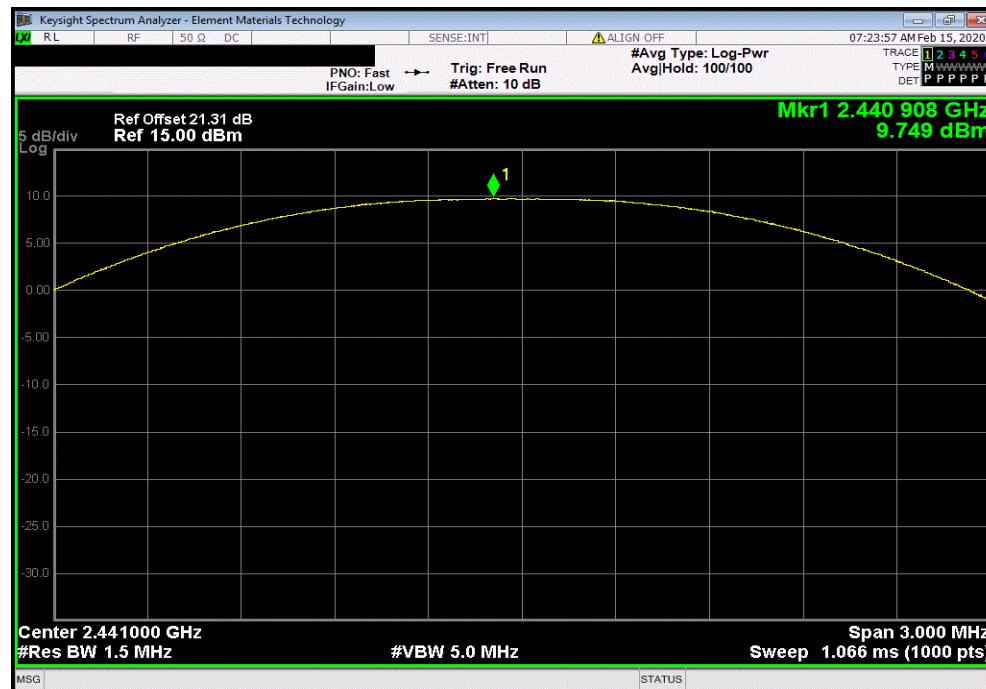


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DH5, GFSK, Low Channel (2402 MHz)				Out Pwr (dBm)	Limit (dBm)	Result
				9.991	21	Pass



DH5, GFSK, Mid Channel (2441 MHz)				Out Pwr (dBm)	Limit (dBm)	Result
				9.749	21	Pass

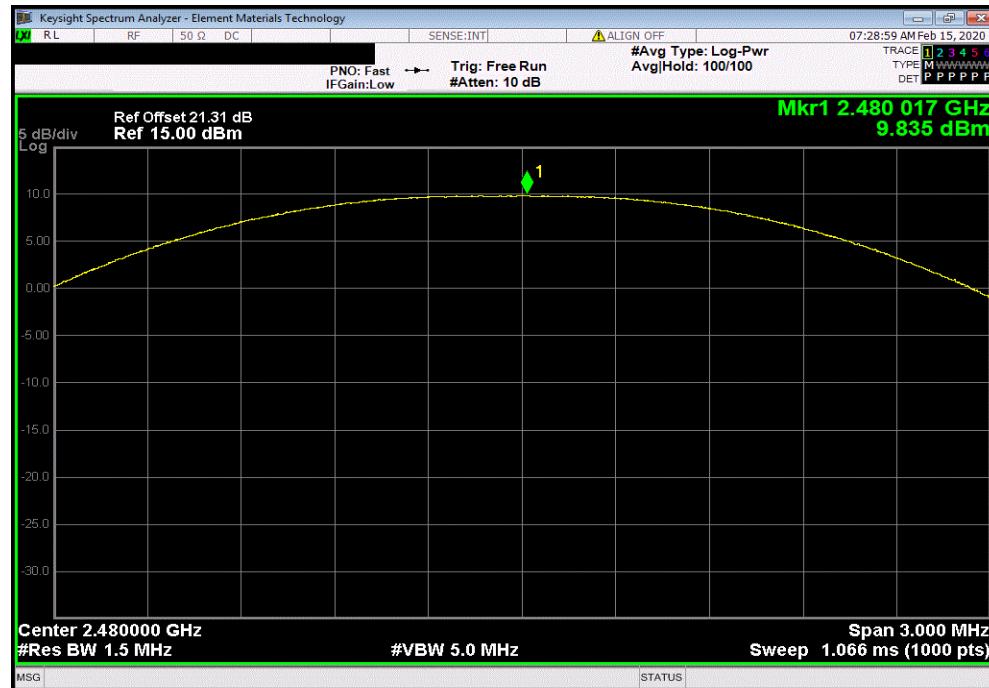


# OUTPUT POWER

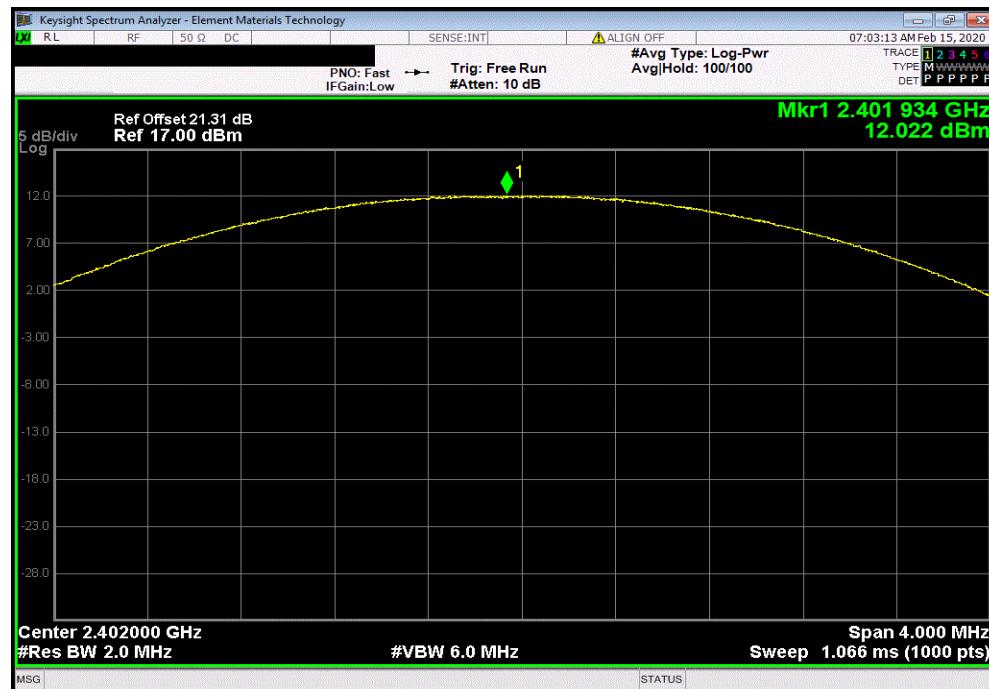


TbtTx 2019.08.30.0 XMT 2019.09.05

DH5, GFSK, High Channel (2480 MHz)			Out Pwr (dBm)	Limit (dBm)	Result
			9.835	21	Pass



2DH5, pi/4-DQPSK, Low Channel (2402 MHz)			Out Pwr (dBm)	Limit (dBm)	Result
			12.022	21	Pass

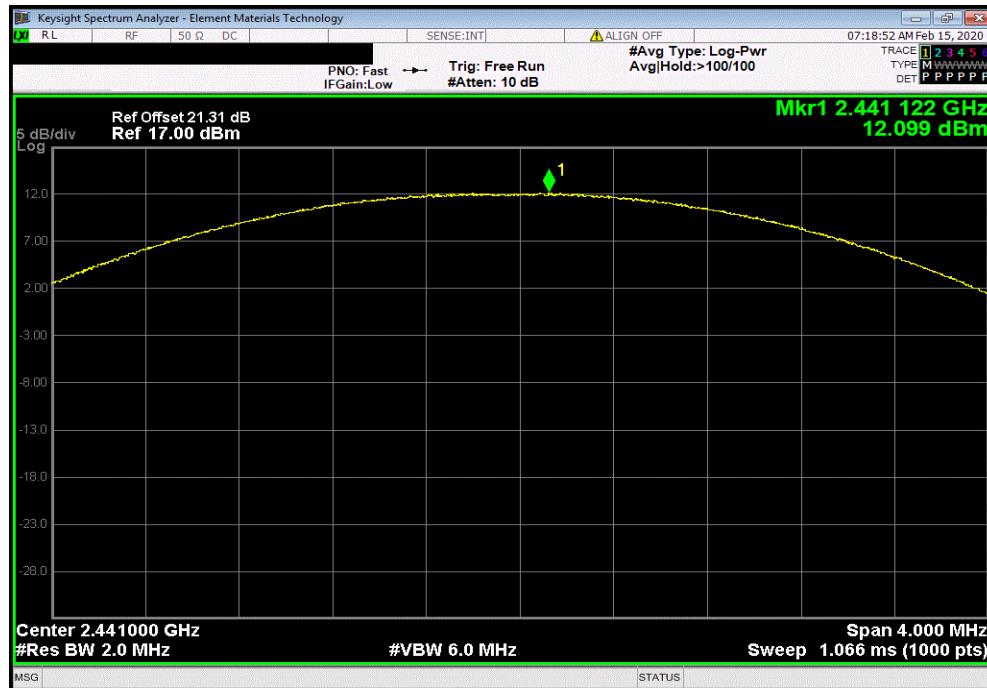


# OUTPUT POWER

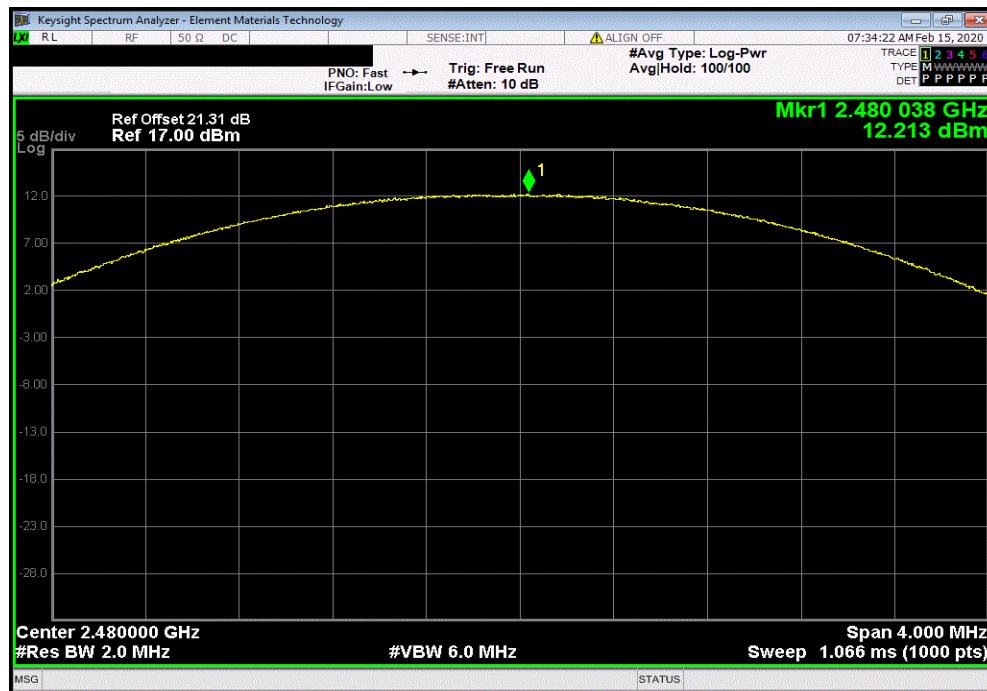


TbtTx 2019.08.30.0 XMT 2019.09.05

2DH5, pi/4-DQPSK, Mid Channel (2441 MHz)				Out Pwr (dBm)	Limit (dBm)	Result
				12.099	21	Pass



2DH5, pi/4-DQPSK, High Channel (2480 MHz)				Out Pwr (dBm)	Limit (dBm)	Result
				12.213	21	Pass

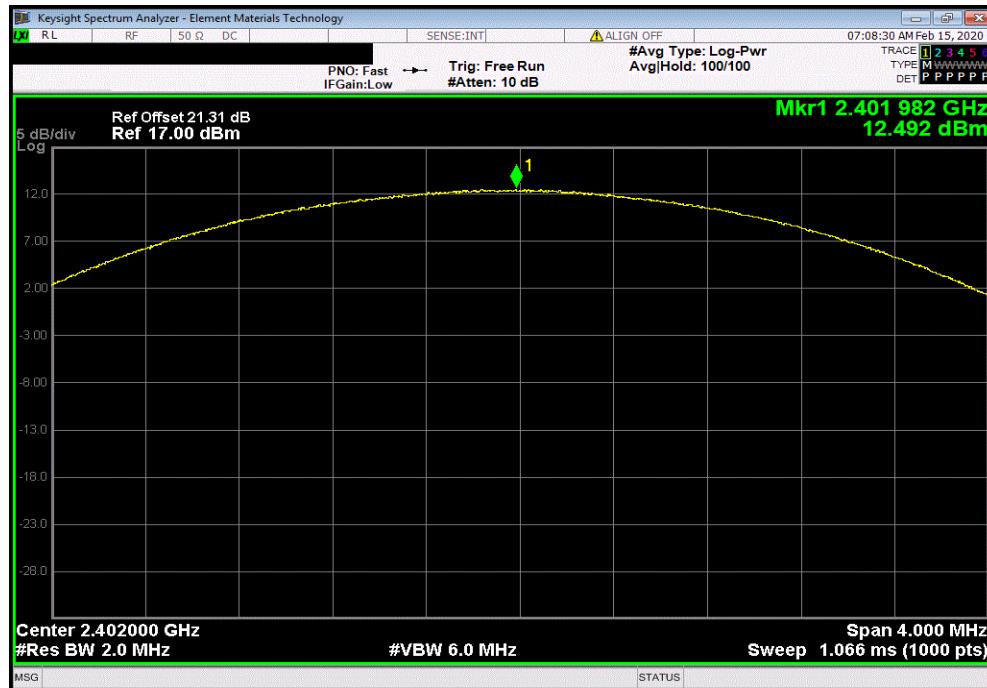


# OUTPUT POWER

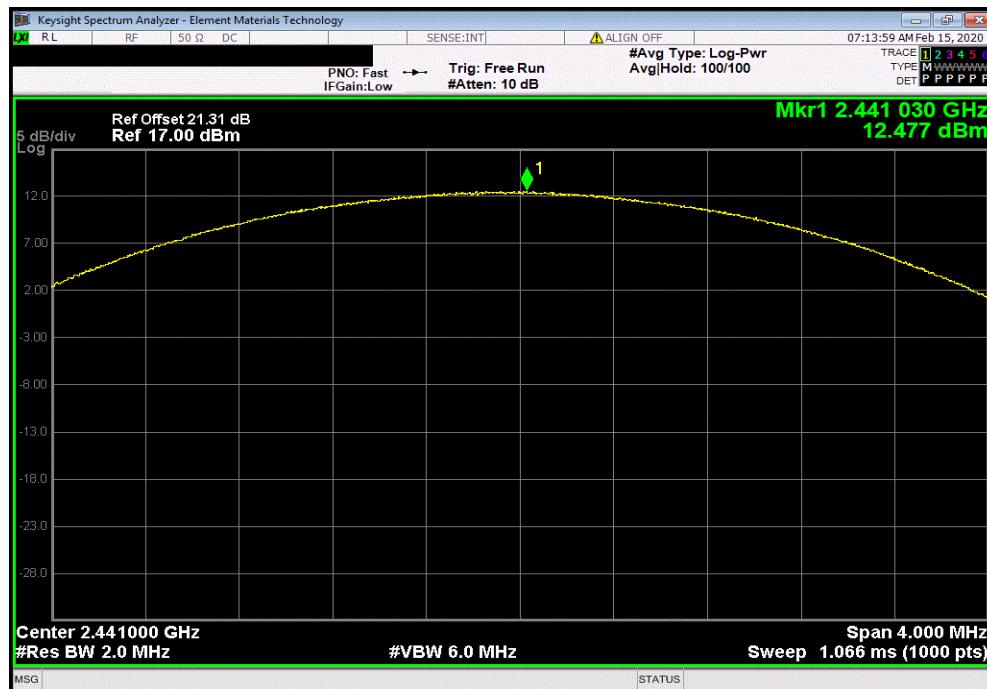


TbtTx 2019.08.30.0 XMI 2019.09.05

3DH5, 8-DPSK, Low Channel (2402 MHz)				Out Pwr (dBm)	Limit (dBm)	Result
				12.492	21	Pass



3DH5, 8-DPSK, Mid Channel (2441 MHz)				Out Pwr (dBm)	Limit (dBm)	Result
				12.477	21	Pass

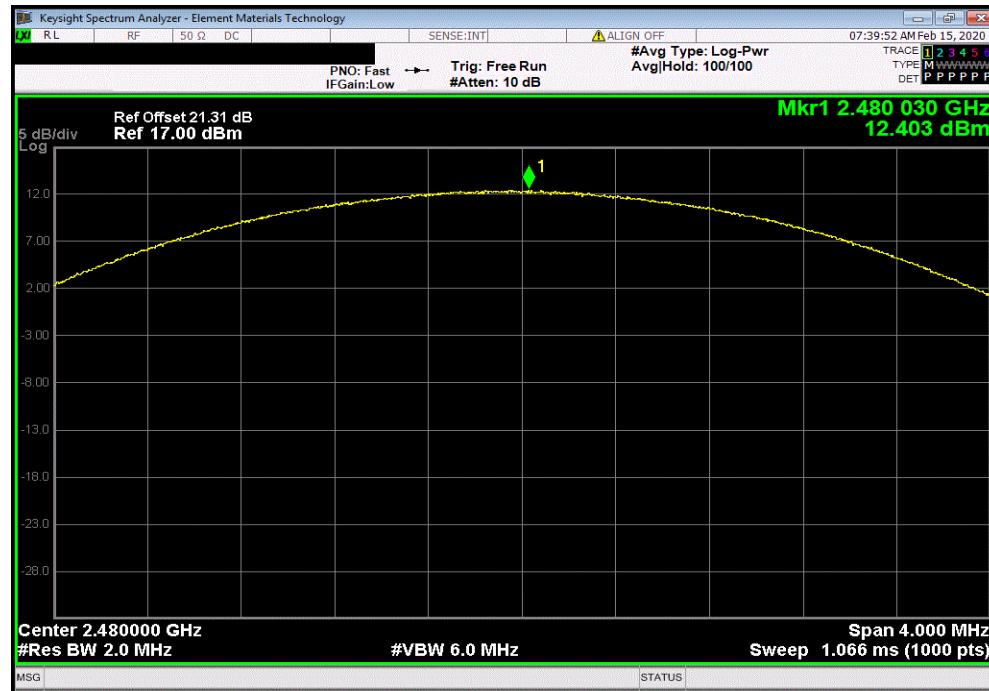


# OUTPUT POWER



TbtTx 2019.08.30.0 XM1 2019.09.05

3DH5, 8-DPSK, High Channel (2480 MHz)			Out Pwr (dBm)	Limit (dBm)	Result
			12.403	21	Pass



# EQUIVALENT ISOTROPIC RADIATED POWER (EIRP)



XMit 2019.09.05

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

## TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Power Supply - DC	Agilent	U8002A	TPZ	NCR	NCR
Block - DC	Fairview Microwave	SD3379	AMI	6-Aug-19	6-Aug-20
Attenuator	S.M. Electronics	SA26B-20	TZP	9-Nov-19	9-Nov-20
Generator - Signal	Keysight	N5171B (EXG)	TEY	31-Dec-19	31-Dec-22
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFN	23-Dec-19	23-Dec-20
Cable	Micro-Coax	UFD150A-1-0720-200200	MNL	15-Sep-19	15-Sep-20

## TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The peak output power was measured with the EUT set to low, medium and high transmit frequencies. The EUT was transmitting in a no hop mode at the data rate(s) listed in the datasheet.

The method found in ANSI C63.10:2013 Section 7.8.5 was used for a FHSS radio.

# EQUIVALENT ISOTROPIC RADIATED POWER (EIRP)



TbTx 2019.08.30.0

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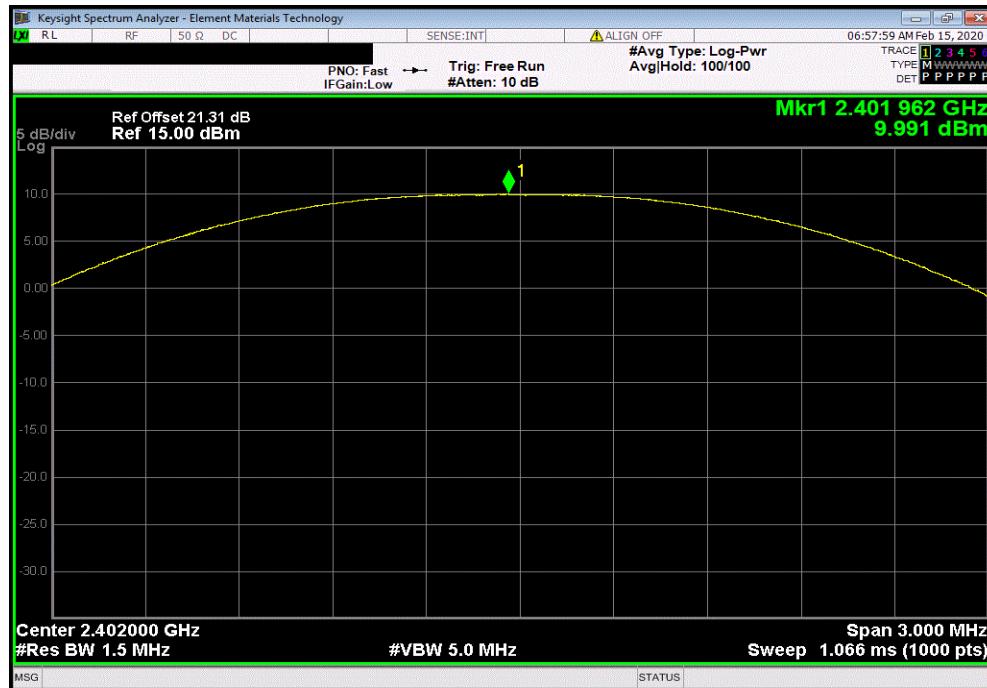
EUT:	C2-03CPU	Work Order:	KOYO0001			
Serial Number:	N/A	Date:	14-Feb-20			
Customer:	Koyo Electronics Industries Co., LTD	Temperature:	22.1 °C			
Attendees:	None	Humidity:	14.6% RH			
Project:	None	Barometric Pres.:	1025 mbar			
Tested by:	Andrew Rogstad	Power:	24 VDC			
TEST SPECIFICATIONS		Test Method	ANSI C63.10:2013			
FCC 15.247:2020						
COMMENTS	Reference level offset includes 20 dB attenuator, DC block, and measurement cable. Data shown with highest gain antenna variant.					
DEVIATIONS FROM TEST STANDARD						
None						
Configuration #	10	Signature				
DH5, GFSK		Out Pwr (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result
	Low Channel (2402 MHz)	9.991	1.8	11.791	27	Pass
	Mid Channel (2441 MHz)	9.749	1.8	11.549	27	Pass
	High Channel (2480 MHz)	9.835	1.8	11.635	27	Pass
2DH5, pi/4-DQPSK		Out Pwr (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result
	Low Channel (2402 MHz)	12.022	1.8	13.822	27	Pass
	Mid Channel (2441 MHz)	12.099	1.8	13.899	27	Pass
	High Channel (2480 MHz)	12.213	1.8	14.013	27	Pass
3DH5, 8-DPSK		Out Pwr (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result
	Low Channel (2402 MHz)	12.492	1.8	14.292	27	Pass
	Mid Channel (2441 MHz)	12.477	1.8	14.277	27	Pass
	High Channel (2480 MHz)	12.403	1.8	14.203	27	Pass

# EQUIVALENT ISOTROPIC RADIATED POWER (EIRP)

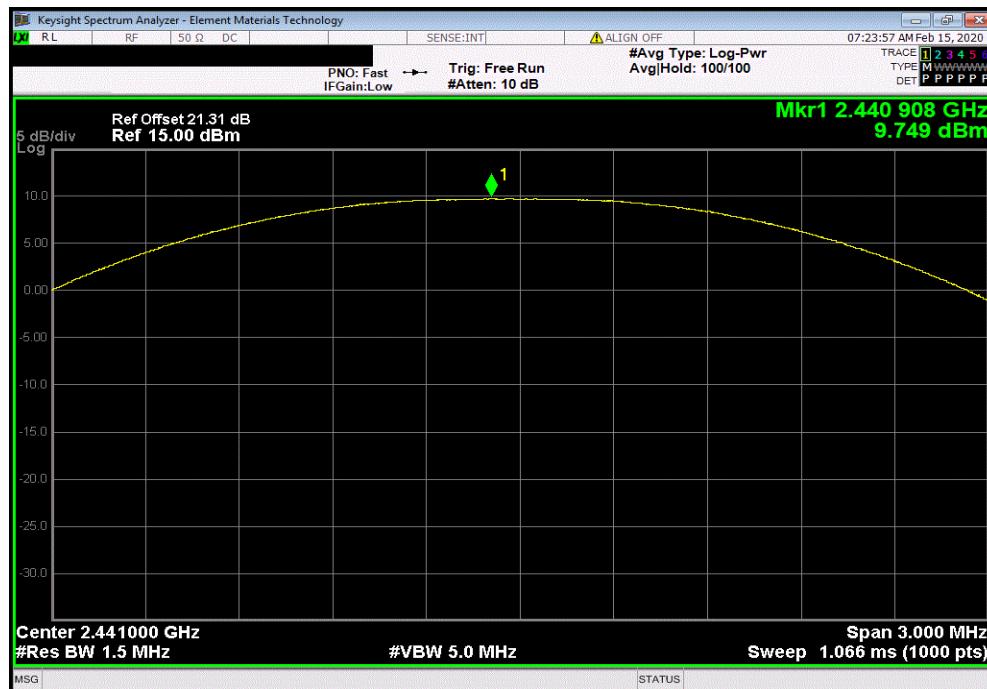


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DH5, GFSK, Low Channel (2402 MHz)					
Out Pwr (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result	
9.991	1.8	11.791	27	Pass	



DH5, GFSK, Mid Channel (2441 MHz)					
Out Pwr (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result	
9.749	1.8	11.549	27	Pass	

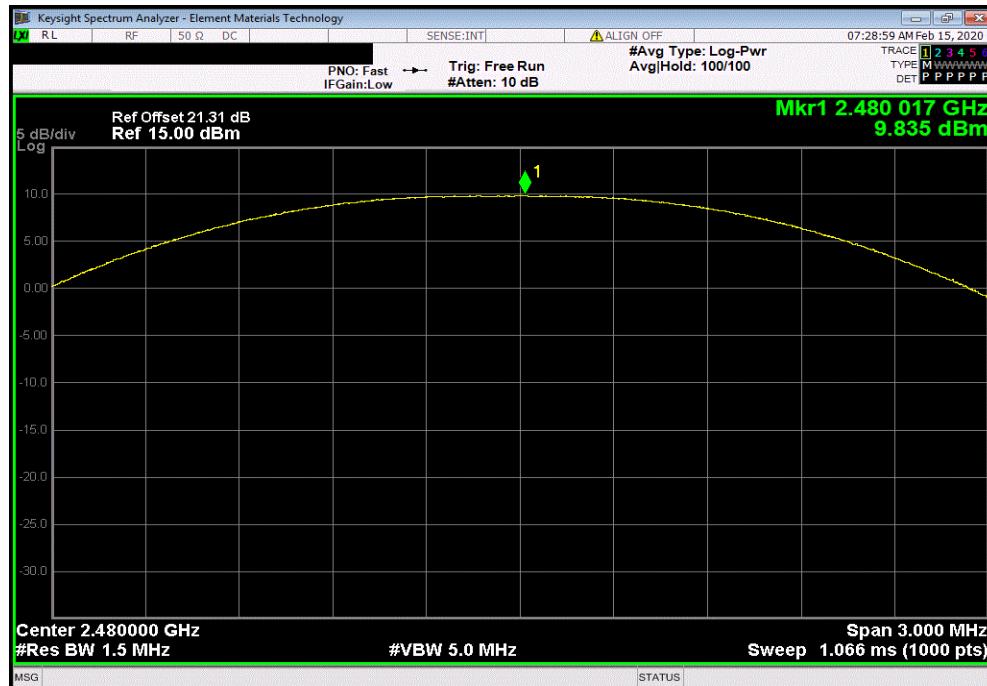


# EQUIVALENT ISOTROPIC RADIATED POWER (EIRP)

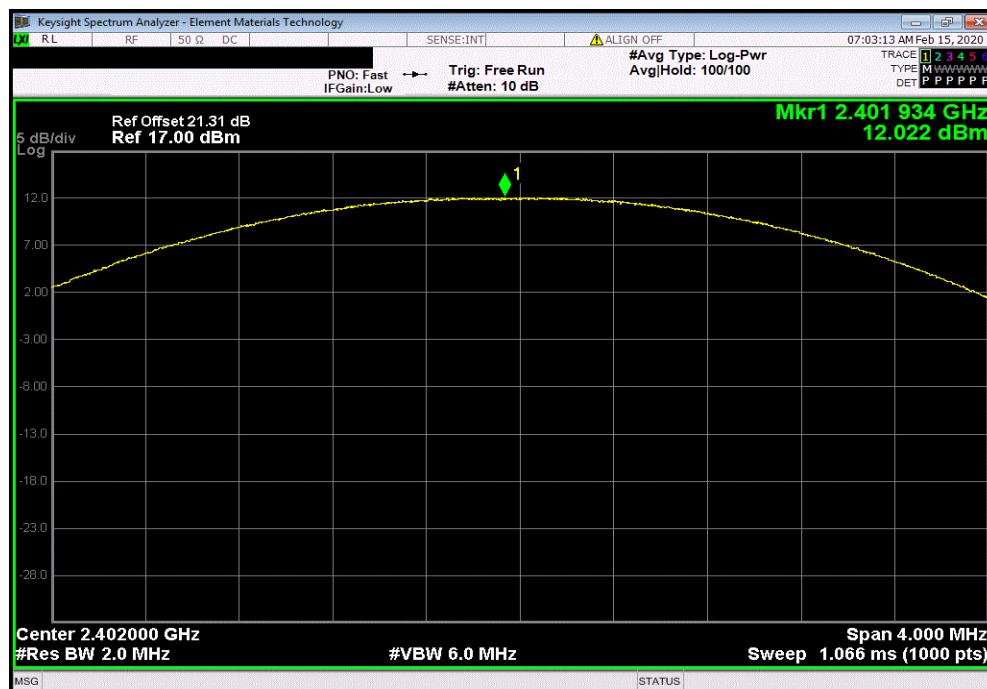


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DH5, GFSK, High Channel (2480 MHz)					
Out Pwr (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result	
9.835	1.8	11.635	27	Pass	



2DH5, pi/4-DQPSK, Low Channel (2402 MHz)					
Out Pwr (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result	
12.022	1.8	13.822	27	Pass	

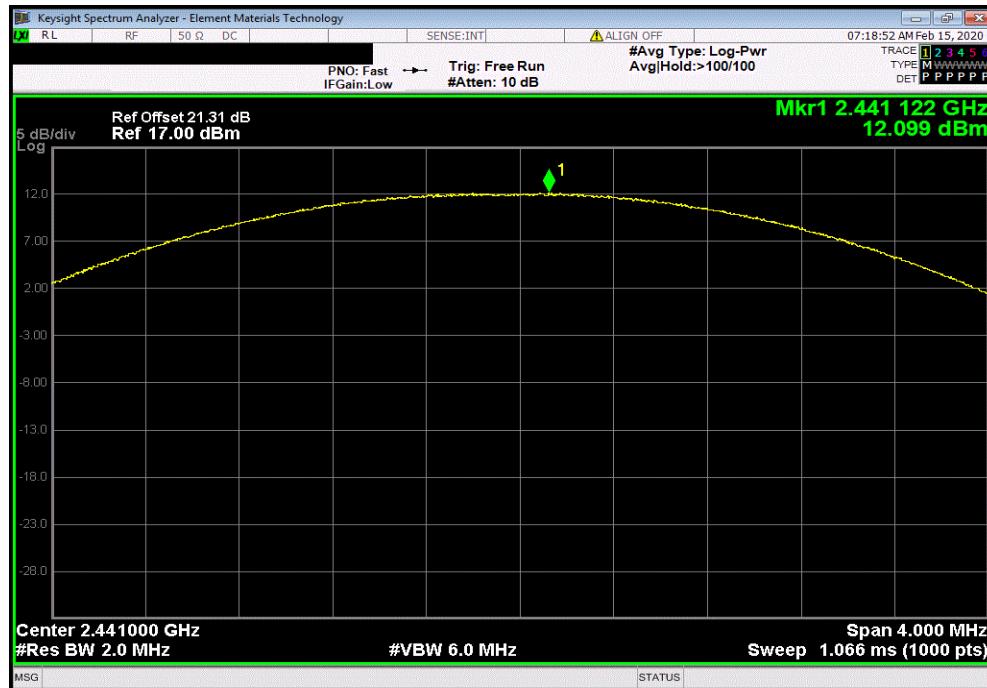


# EQUIVALENT ISOTROPIC RADIATED POWER (EIRP)

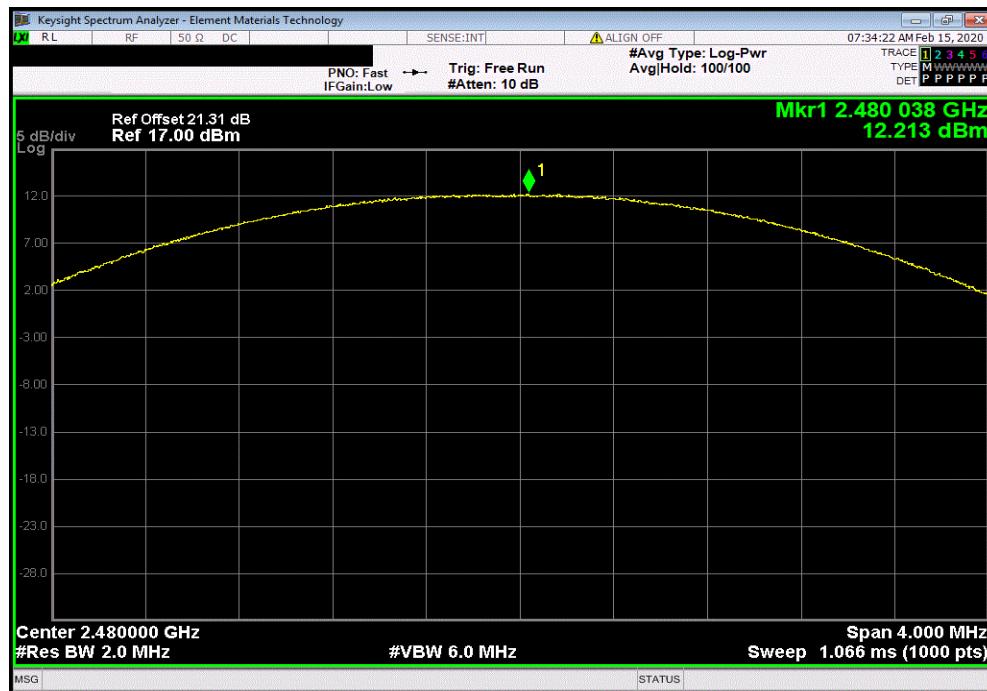


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2DH5, pi/4-DQPSK, Mid Channel (2441 MHz)					
Out Pwr (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result	
12.099	1.8	13.899	27	Pass	



2DH5, pi/4-DQPSK, High Channel (2480 MHz)					
Out Pwr (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result	
12.213	1.8	14.013	27	Pass	

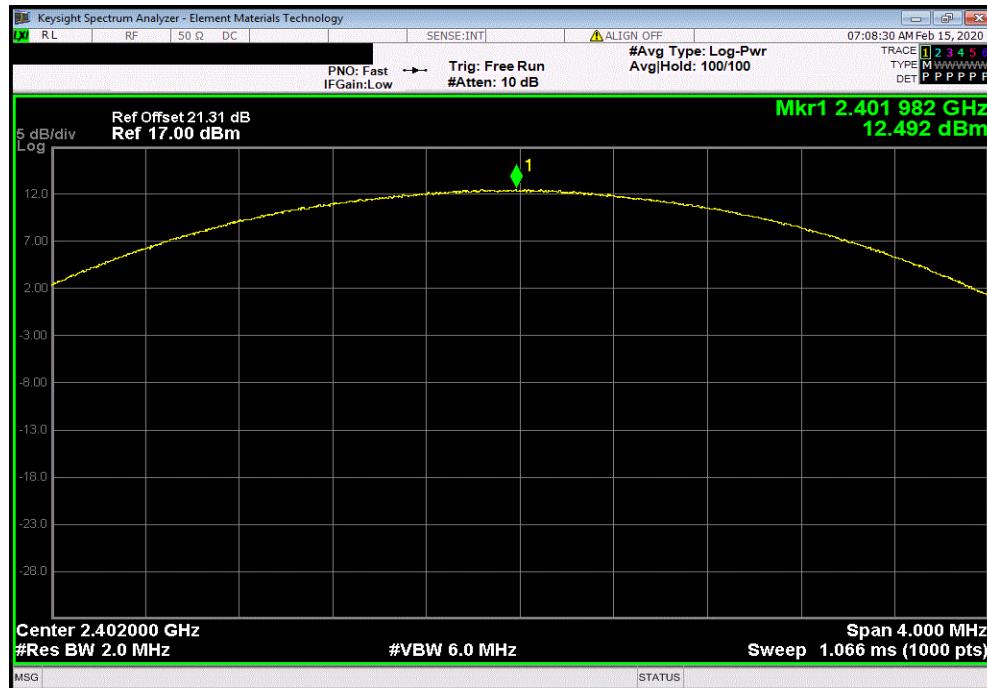


# EQUIVALENT ISOTROPIC RADIATED POWER (EIRP)

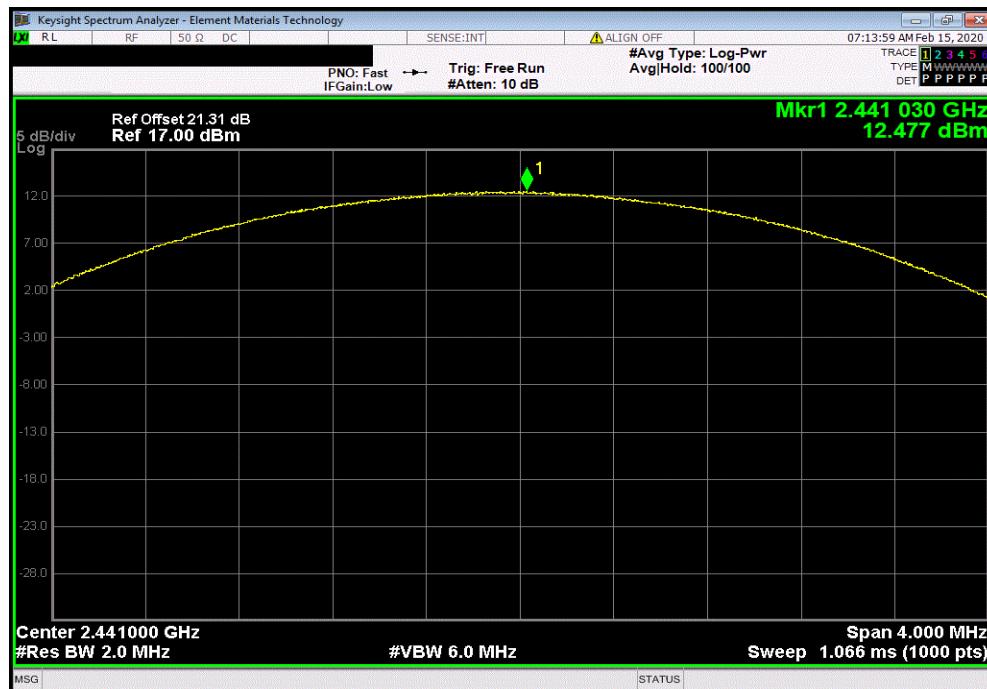


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3DH5, 8-DPSK, Low Channel (2402 MHz)					
Out Pwr (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result	
12.492	1.8	14.292	27	Pass	



3DH5, 8-DPSK, Mid Channel (2441 MHz)					
Out Pwr (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result	
12.477	1.8	14.277	27	Pass	

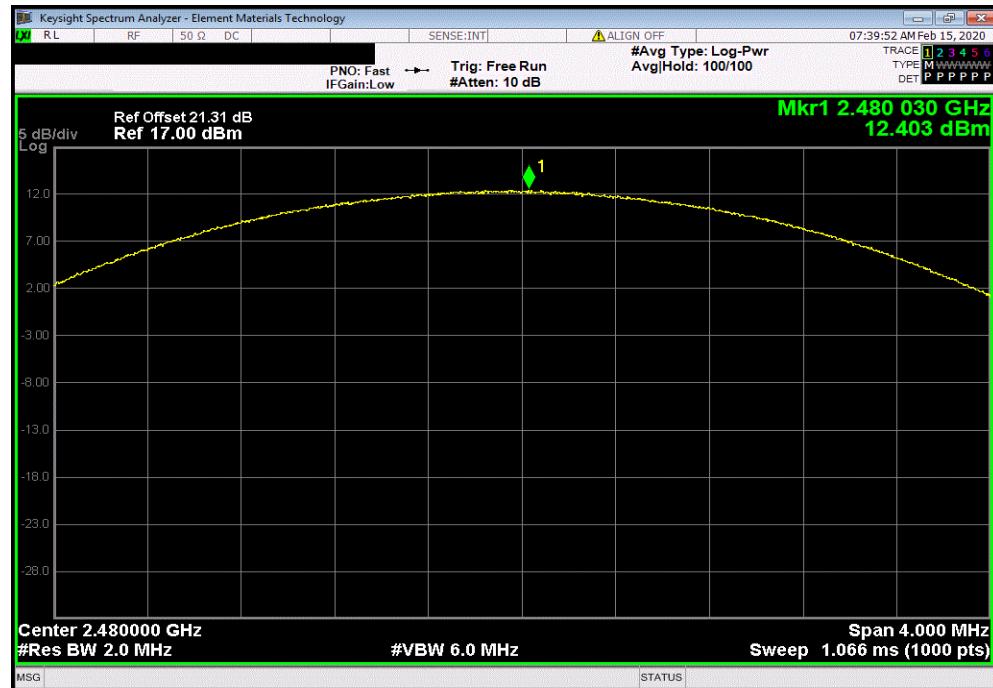


# EQUIVALENT ISOTROPIC RADIATED POWER (EIRP)



TbtTx 2019.08.30.0 XM1 2019.09.05

3DH5, 8-DPSK, High Channel (2480 MHz)					
Out Pwr (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result	
12.403	1.8	14.203	27	Pass	



# BAND EDGE COMPLIANCE -HOPPING MODE



XMIT 2019.09.05

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

## TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Power Supply - DC	Agilent	U8002A	TPZ	NCR	NCR
Block - DC	Fairview Microwave	SD3379	AMI	6-Aug-19	6-Aug-20
Attenuator	S.M. Electronics	SA26B-20	TZP	9-Nov-19	9-Nov-20
Generator - Signal	Keysight	N5171B (EXG)	TEY	31-Dec-19	31-Dec-22
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFN	23-Dec-19	23-Dec-20
Cable	Micro-Coax	UFD150A-1-0720-200200	MNL	15-Sep-19	15-Sep-20

## TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The spurious RF conducted emissions at the edges of the authorized band were measured with the EUT set to its normal pseudo-random hopping sequence. The EUT was transmitting at the data rate(s) listed in the datasheet.

The spectrum was scanned below the lower band edge and above the higher band edge.

# BAND EDGE COMPLIANCE -HOPPING MODE



TbTx 2019.08.30.0

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EUT:	C2-03CPU		Work Order:	KOYO0001	
Serial Number:	N/A		Date:	14-Feb-20	
Customer:	Koyo Electronics Industries Co., LTD		Temperature:	22.3 °C	
Attendees:	None		Humidity:	14.6% RH	
Project:	None		Barometric Pres.:	1026 mbar	
Tested by:	Andrew Rogstad	Power:	24 VDC	Job Site:	MN08
TEST SPECIFICATIONS			Test Method		
FCC 15.247:2020			ANSI C63.10:2013		
COMMENTS					
Reference level offset includes 20 dB attenuator, DC block, and measurement cable.					
DEVIATIONS FROM TEST STANDARD					
None					
Configuration #	10	Signature	<i>Andrew Rogstad</i>	Value (dBc)	Limit ≤ (dBc)
Hopping Mode (All Channels)					
DH5, GFSK					
Low Channel, 2402 MHz				-53.06	-20
High Channel, 2480 MHz				-50.36	-20
2DH5, pi/4-DQPSK					
Low Channel, 2402 MHz				-53.47	-20
High Channel, 2480 MHz				-51.55	-20
3DH5, 8-DPSK					
Low Channel, 2402 MHz				-50.57	-20
High Channel, 2480 MHz				-50.39	-20

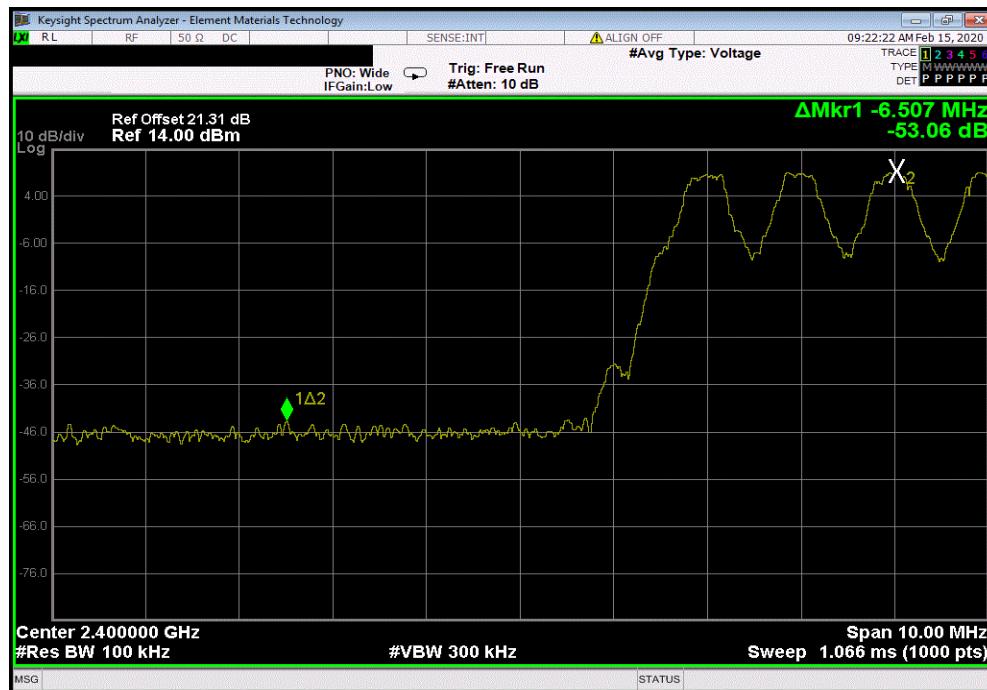
# BAND EDGE COMPLIANCE -HOPPING MODE



TbtTx 2019.08.30.0 XMI 2019.09.05

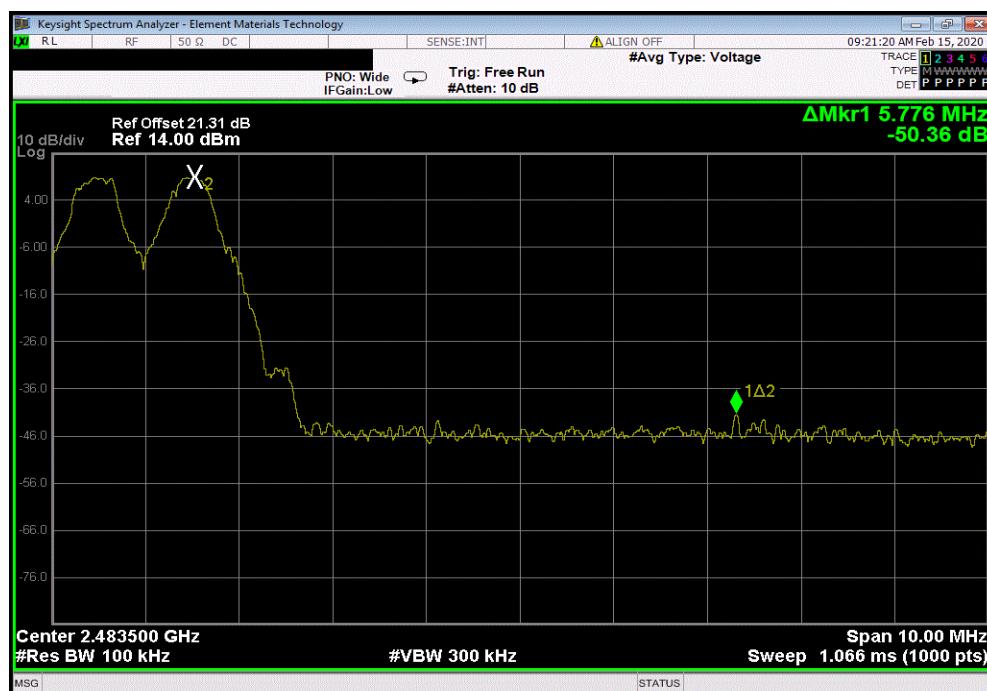
Hopping Mode (All Channels), DH5, GFSK, Low Channel, 2402 MHz

	Value (dBc)	Limit ≤ (dBc)	Result
	-53.06	-20	Pass



Hopping Mode (All Channels), DH5, GFSK, High Channel, 2480 MHz

	Value (dBc)	Limit ≤ (dBc)	Result
	-50.36	-20	Pass

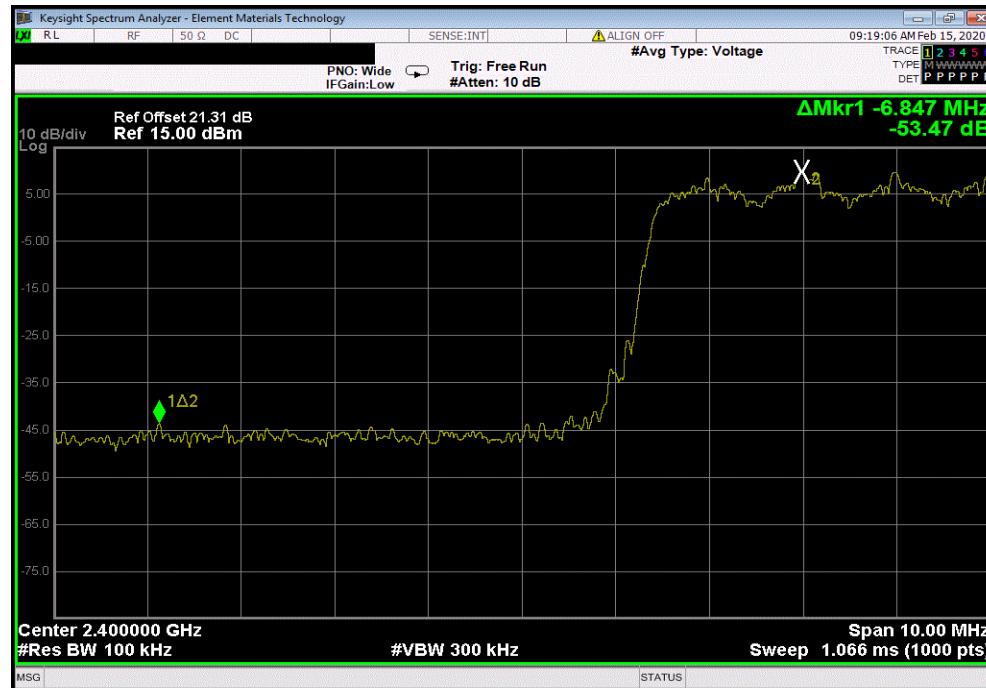


# BAND EDGE COMPLIANCE -HOPPING MODE

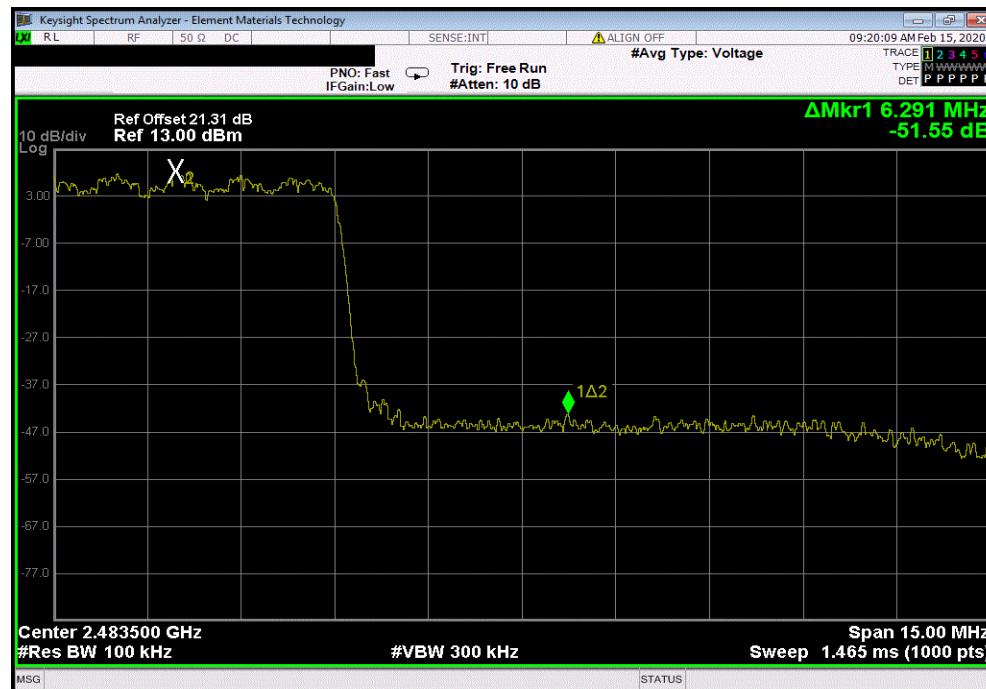


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Hopping Mode (All Channels), 2DH5, pi/4-DQPSK, Low Channel, 2402 MHz			
Value (dBc)	Limit ≤ (dBc)	Result	
-53.47	-20	Pass	



Hopping Mode (All Channels), 2DH5, pi/4-DQPSK, High Channel, 2480 MHz			
Value (dBc)	Limit ≤ (dBc)	Result	
-51.55	-20	Pass	

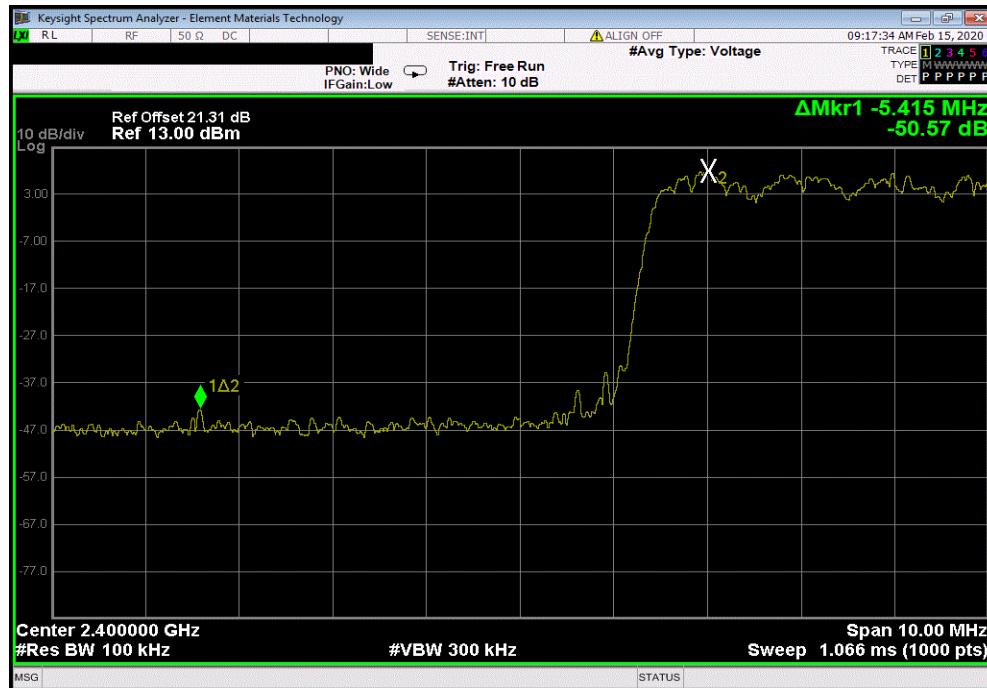


# BAND EDGE COMPLIANCE -HOPPING MODE

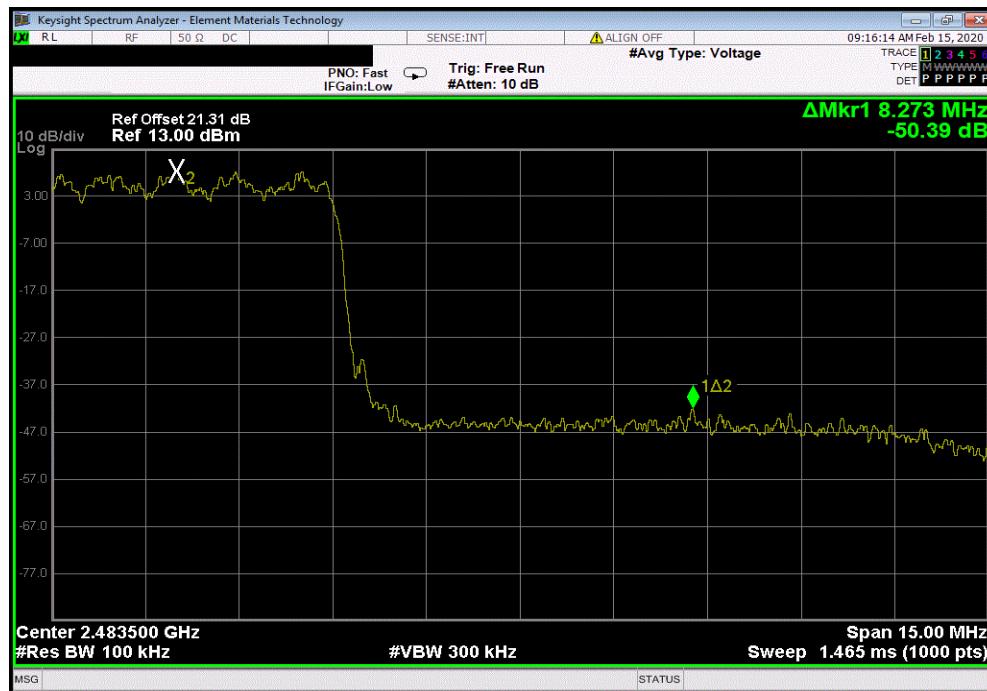


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Hopping Mode (All Channels), 3DH5, 8-DPSK, Low Channel, 2402 MHz			
	Value (dBc)	Limit ≤ (dBc)	Result
	-50.57	-20	Pass



Hopping Mode (All Channels), 3DH5, 8-DPSK, High Channel, 2480 MHz			
	Value (dBc)	Limit ≤ (dBc)	Result
	-50.39	-20	Pass



# BAND EDGE COMPLIANCE



XMIT 2019.09.05

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## TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Power Supply - DC	Agilent	U8002A	TPZ	NCR	NCR
Block - DC	Fairview Microwave	SD3379	AMI	6-Aug-19	6-Aug-20
Attenuator	S.M. Electronics	SA26B-20	TZP	9-Nov-19	9-Nov-20
Generator - Signal	Keysight	N5171B (EXG)	TEY	31-Dec-19	31-Dec-22
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFN	23-Dec-19	23-Dec-20
Cable	Micro-Coax	UFD150A-1-0720-200200	MNL	15-Sep-19	15-Sep-20

## TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The spurious RF conducted emissions at the edges of the authorized band were measured with the EUT set to low and high transmit frequencies. The EUT was transmitting at the data rate(s) listed in the datasheet in a no hop mode. The channels closest to the band edges were selected.

The spectrum was scanned below the lower band edge and above the higher band edge.

# BAND EDGE COMPLIANCE



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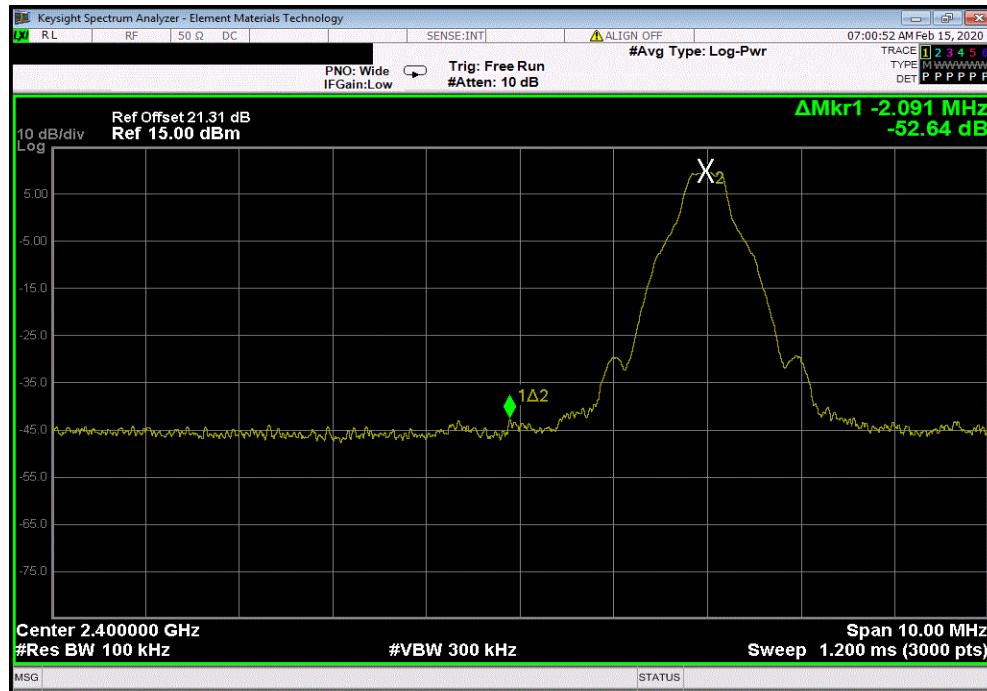
EUT:	C2-03CPU		Work Order:	KOYO0001	
Serial Number:	N/A		Date:	14-Feb-20	
Customer:	Koyo Electronics Industries Co., LTD		Temperature:	22.1 °C	
Attendees:	None		Humidity:	14.6% RH	
Project:	None		Barometric Pres.:	1025 mbar	
Tested by:	Andrew Rogstad	Power:	24 VDC	Job Site:	MN08
TEST SPECIFICATIONS			Test Method		
FCC 15.247:2020			ANSI C63.10:2013		
COMMENTS					
Reference level offset includes 20 dB attenuator, DC block, and measurement cable.					
DEVIATIONS FROM TEST STANDARD					
None					
Configuration #	10	Signature			
			Value (dBc)	Limit ≤ (dBc)	Result
DH5, GFSK			-52.65	-20	Pass
Low Channel (2402 MHz)			-50.91	-20	Pass
High Channel (2480 MHz)					
2DH5, pi/4-DQPSK			-51.73	-20	Pass
Low Channel (2402 MHz)			-51.4	-20	Pass
High Channel (2480 MHz)					
3DH5, 8-DPSK			-51.7	-20	Pass
Low Channel (2402 MHz)			-51.31	-20	Pass
High Channel (2480 MHz)					

# BAND EDGE COMPLIANCE

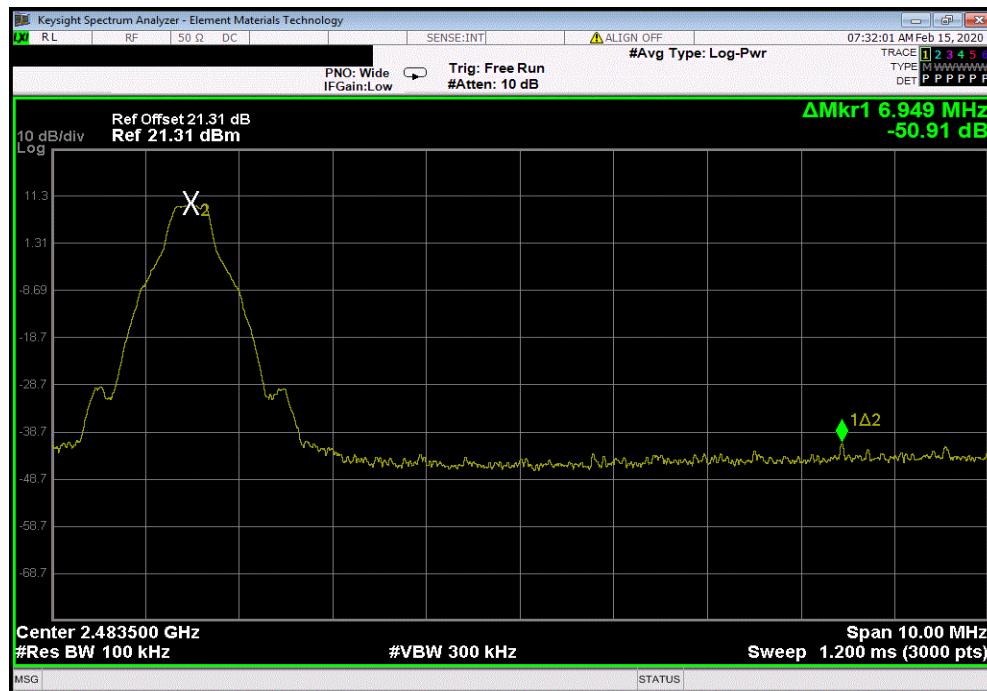


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DH5, GFSK, Low Channel (2402 MHz)				Value (dBc)	Limit ≤ (dBc)	Result
				-52.65	-20	Pass



DH5, GFSK, High Channel (2480 MHz)				Value (dBc)	Limit ≤ (dBc)	Result
				-50.91	-20	Pass

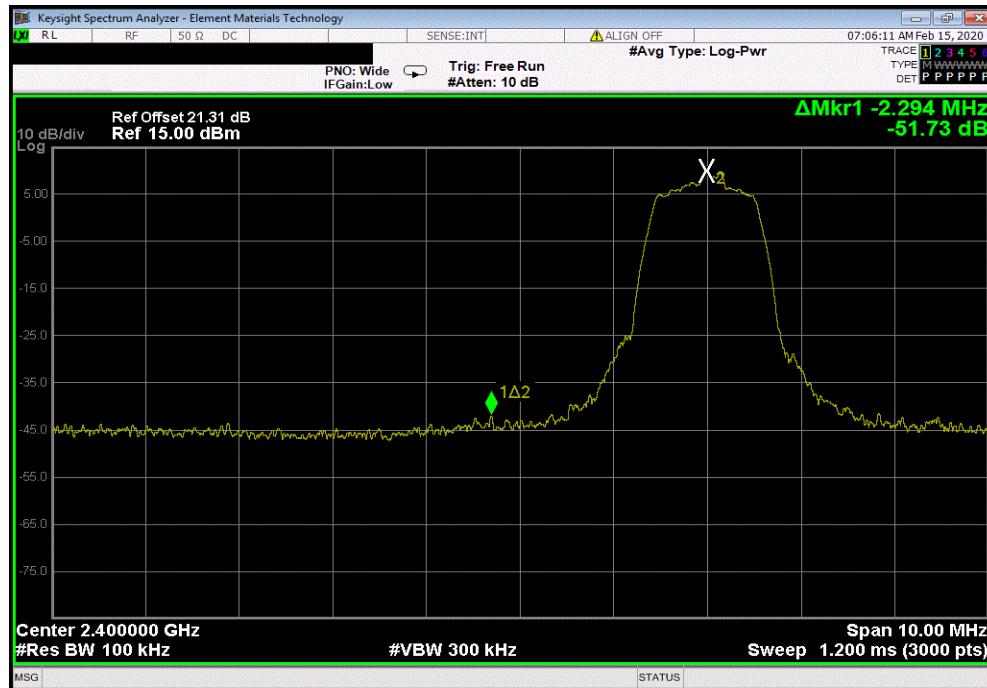


# BAND EDGE COMPLIANCE

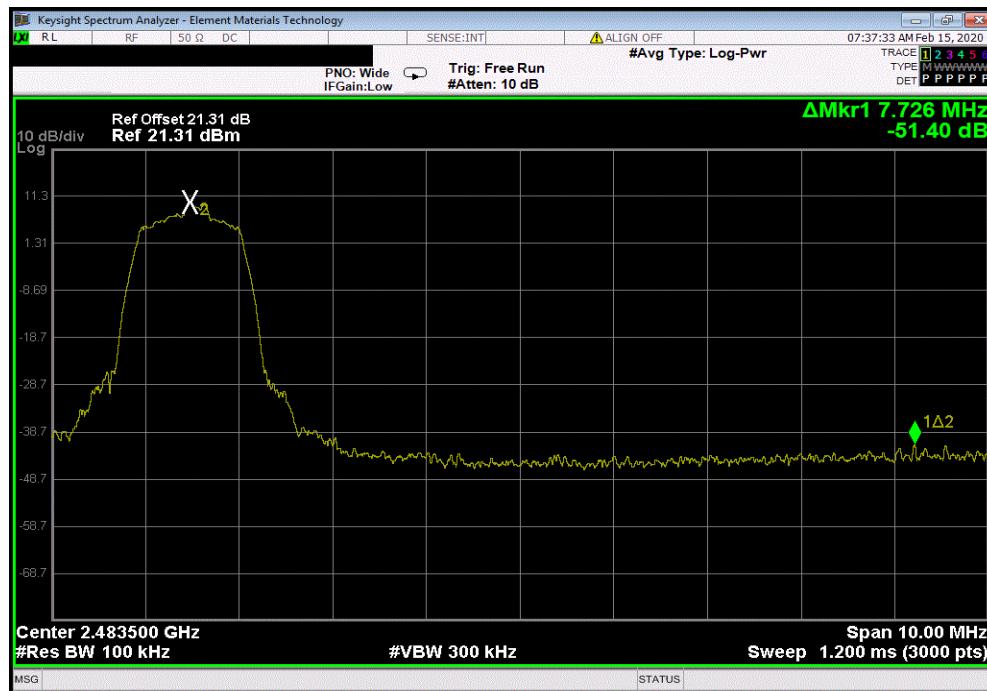


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2DH5, pi/4-DQPSK, Low Channel (2402 MHz)				Value (dBc)	Limit $\leq$ (dBc)	Result
				-51.73	-20	Pass



2DH5, pi/4-DQPSK, High Channel (2480 MHz)				Value (dBc)	Limit $\leq$ (dBc)	Result
				-51.4	-20	Pass

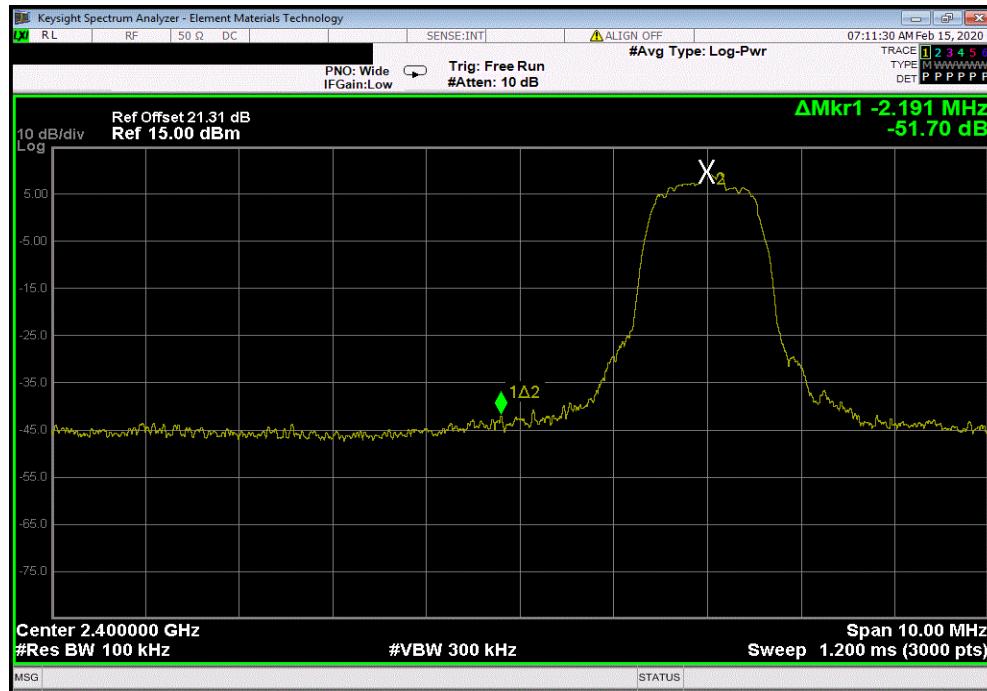


# BAND EDGE COMPLIANCE

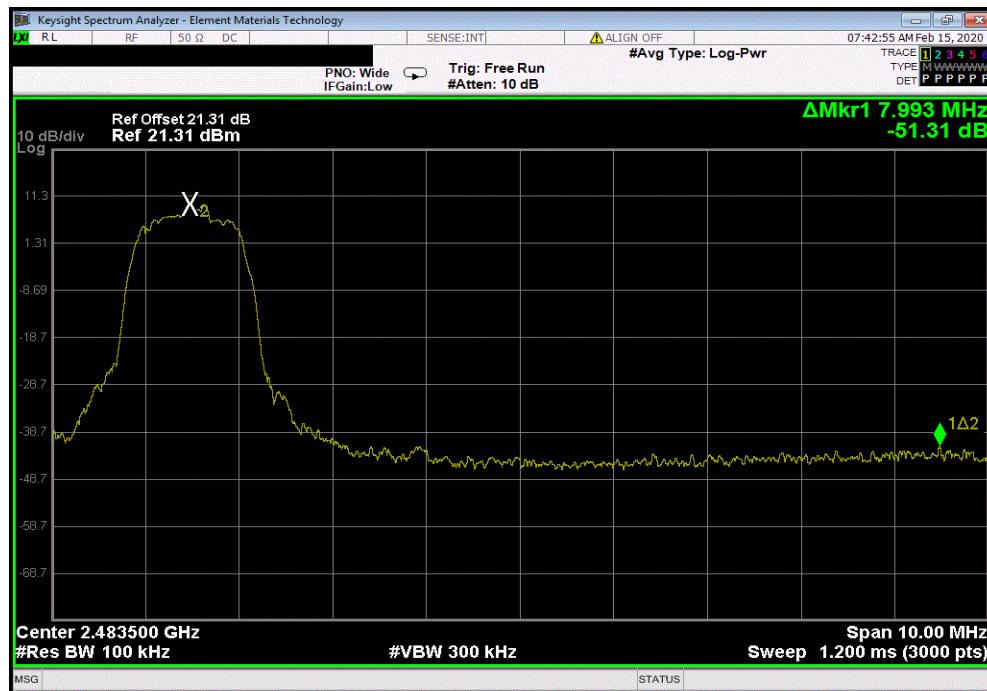


TbtTx 2019.08.30.0 XM1 2019.09.05

3DH5, 8-DPSK, Low Channel (2402 MHz)				Value (dBc)	Limit ≤ (dBc)	Result
				-51.7	-20	Pass



3DH5, 8-DPSK, High Channel (2480 MHz)				Value (dBc)	Limit ≤ (dBc)	Result
				-51.31	-20	Pass



# OCCUPIED BANDWIDTH



XMit 2019.09.05

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

## TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Power Supply - DC	Agilent	U8002A	TPZ	NCR	NCR
Block - DC	Fairview Microwave	SD3379	AMI	6-Aug-19	6-Aug-20
Attenuator	S.M. Electronics	SA26B-20	TZP	9-Nov-19	9-Nov-20
Generator - Signal	Keysight	N5171B (EXG)	TEY	31-Dec-19	31-Dec-22
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFN	23-Dec-19	23-Dec-20
Cable	Micro-Coax	UFD150A-1-0720-200200	MNL	15-Sep-19	15-Sep-20

## TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The 20 dB occupied bandwidth was measured with the EUT set to low, medium and high transmit frequencies in the band. The EUT was transmitting at the data rate(s) listed in the datasheet in a no-hop mode.

# OCCUPIED BANDWIDTH



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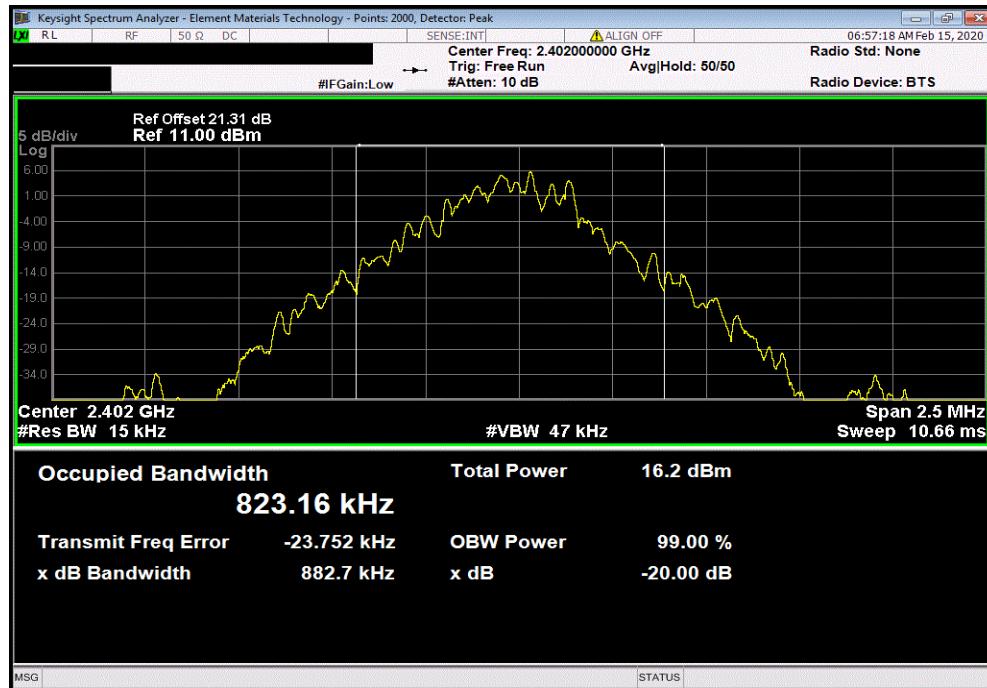
EUT:	C2-03CPU	Work Order:	KOYO0001	
Serial Number:	N/A	Date:	14-Feb-20	
Customer:	Koyo Electronics Industries Co., LTD	Temperature:	22.1 °C	
Attendees:	None	Humidity:	14.7% RH	
Project:	None	Barometric Pres.:	1025 mbar	
Tested by:	Andrew Rogstad	Power:	24 VDC	
TEST SPECIFICATIONS		Test Method	ANSI C63.10:2013	
FCC 15.247:2020				
COMMENTS				
Reference level offset includes 20 dB attenuator, DC block, and measurement cable.				
DEVIATIONS FROM TEST STANDARD				
None				
Configuration #	10	Signature		
		Value	Limit (<)	
DH5, GFSK			Result	
	Low Channel (2402 MHz)	882.656 kHz	1.5 MHz	Pass
	Mid Channel (2441 MHz)	918.687 kHz	1.5 MHz	Pass
	High Channel (2480 MHz)	881.615 kHz	1.5 MHz	Pass
2DH5, pi/4-DQPSK				
	Low Channel (2402 MHz)	1.322 MHz	1.5 MHz	Pass
	Mid Channel (2441 MHz)	1.321 MHz	1.5 MHz	Pass
	High Channel (2480 MHz)	1.32 MHz	1.5 MHz	Pass
3DH5, 8-DPSK				
	Low Channel (2402 MHz)	1.308 MHz	1.5 MHz	Pass
	Mid Channel (2441 MHz)	1.307 MHz	1.5 MHz	Pass
	High Channel (2480 MHz)	1.308 MHz	1.5 MHz	Pass

# OCCUPIED BANDWIDTH

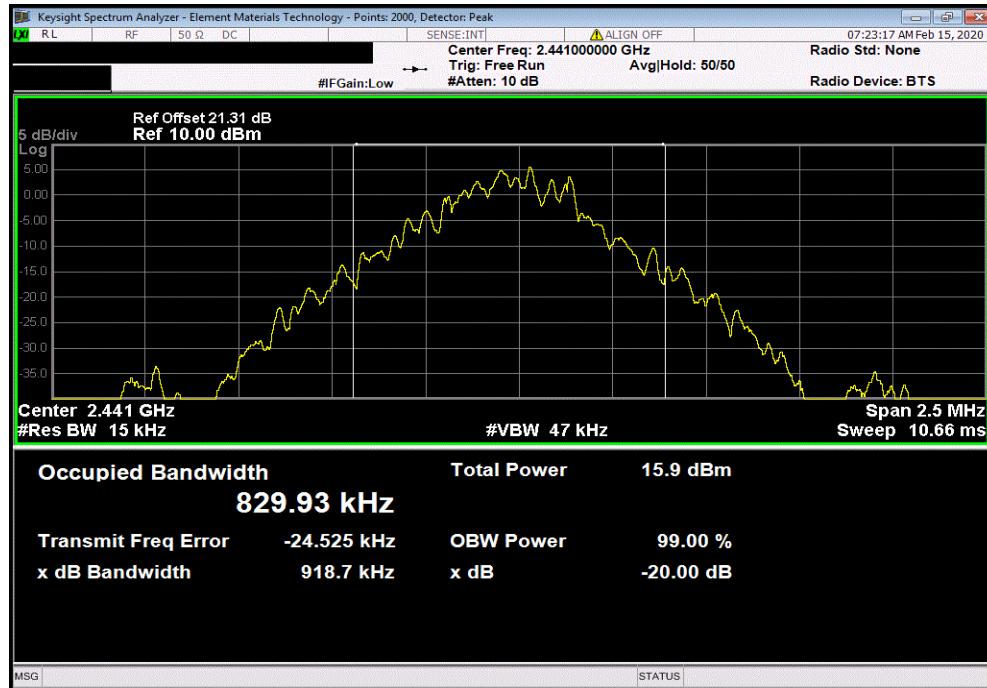


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DH5, GFSK, Low Channel (2402 MHz)			Value	Limit	Result
			(<)		
	882.656 kHz	1.5 MHz		Pass	



DH5, GFSK, Mid Channel (2441 MHz)			Value	Limit	Result
			(<)		
	918.687 kHz	1.5 MHz		Pass	

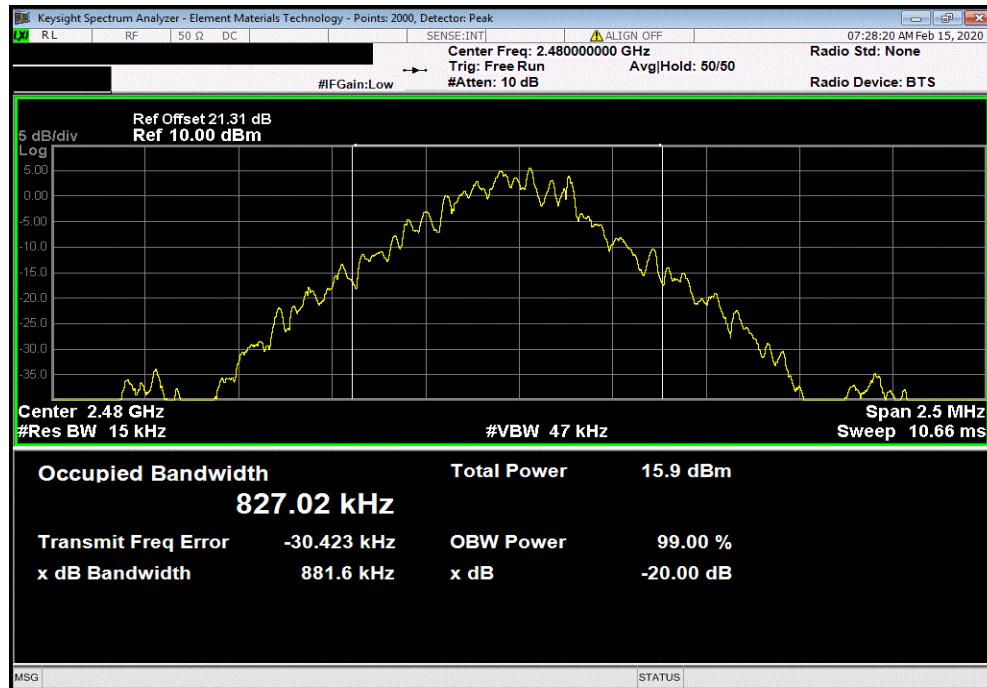


# OCCUPIED BANDWIDTH

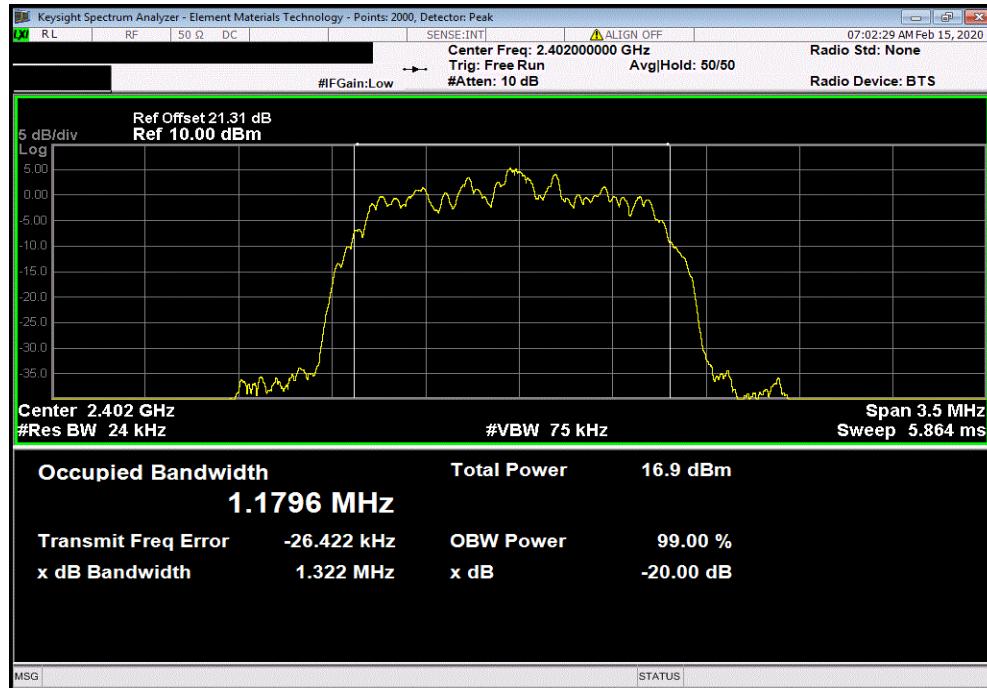


TbtTx 2019.08.30.0 XMI 2019.09.05

DH5, GFSK, High Channel (2480 MHz)			Value	Limit (≤)	Result
			881.615 kHz	1.5 MHz	Pass



2DH5, pi/4-DQPSK, Low Channel (2402 MHz)			Value	Limit (≤)	Result
			1.322 MHz	1.5 MHz	Pass

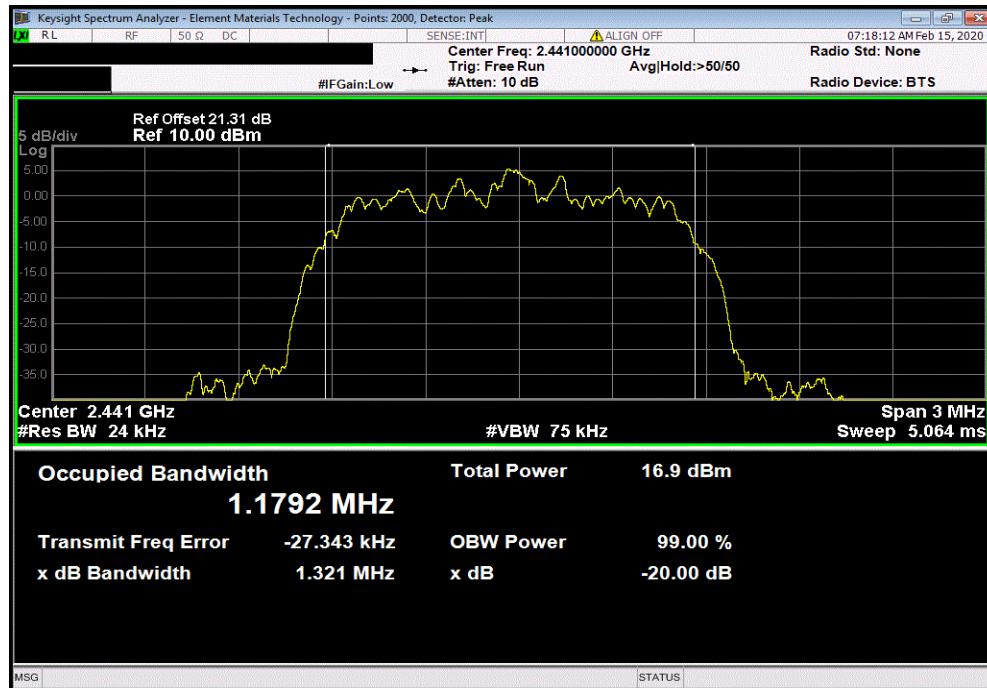


# OCCUPIED BANDWIDTH

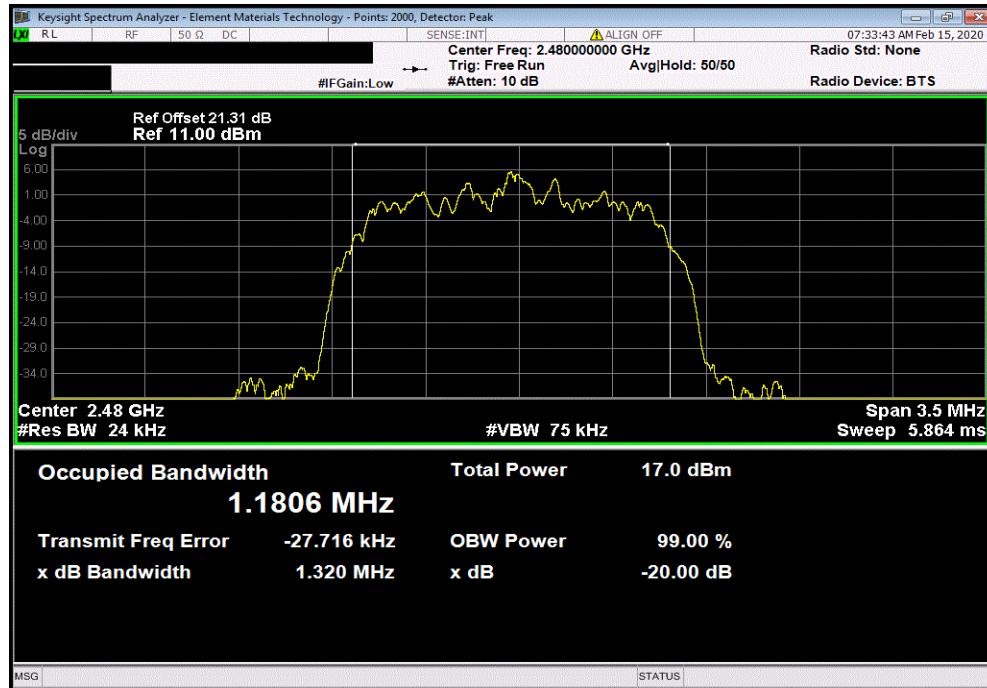


TbtTx 2019.08.30.0 XMI 2019.09.05

2DH5, pi/4-DQPSK, Mid Channel (2441 MHz)			Value	Limit (≤)	Result
	1.321 MHz	1.5 MHz	Pass		



2DH5, pi/4-DQPSK, High Channel (2480 MHz)			Value	Limit (≤)	Result
	1.32 MHz	1.5 MHz	Pass		

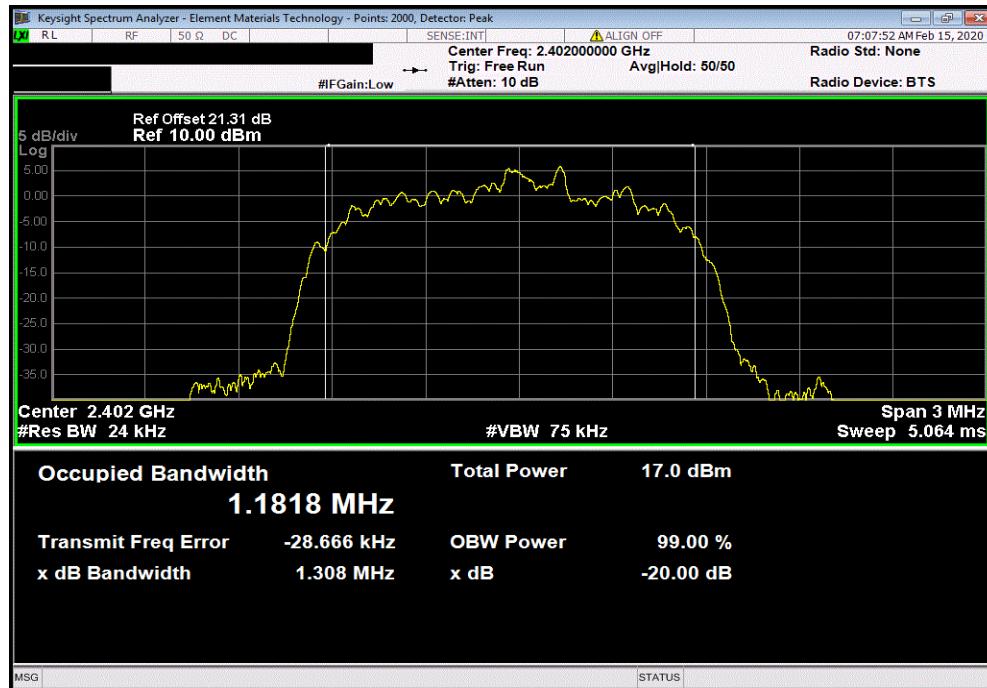


# OCCUPIED BANDWIDTH

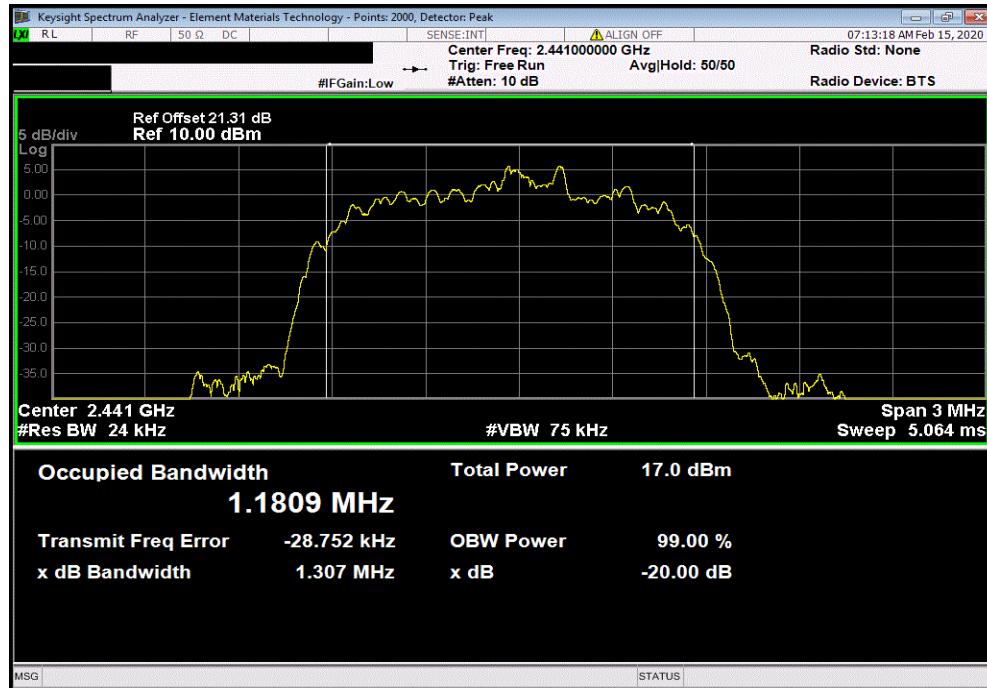


TbtTx 2019.08.30.0 XMI 2019.09.05

3DH5, 8-DPSK, Low Channel (2402 MHz)			Value	Limit (≤)	Result
			1.308 MHz	1.5 MHz	Pass



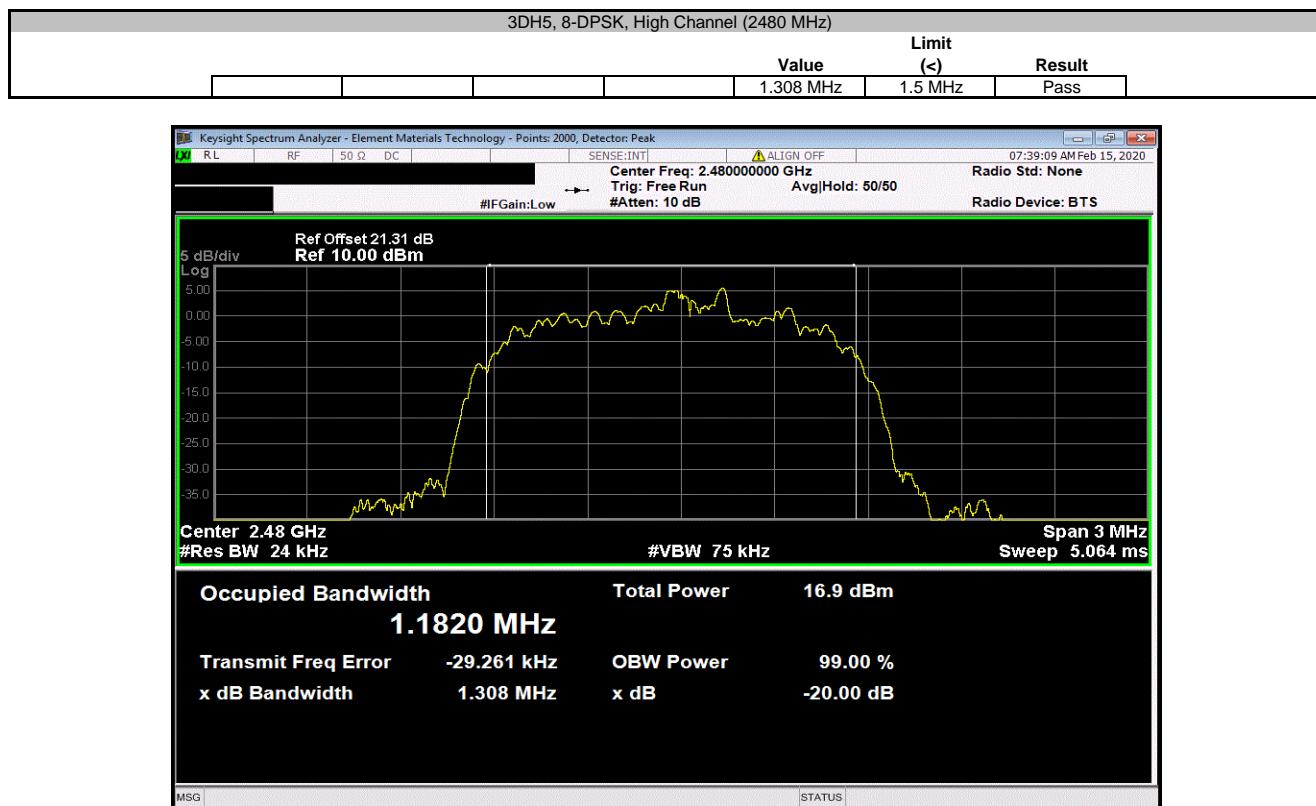
3DH5, 8-DPSK, Mid Channel (2441 MHz)			Value	Limit (≤)	Result
			1.307 MHz	1.5 MHz	Pass



# OCCUPIED BANDWIDTH



TbtTx 2019.08.30.0 XMI 2019.09.05



# SPURIOUS CONDUCTED EMISSIONS



XMIT 2019.09.05

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

## TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Power Supply - DC	Agilent	U8002A	TPZ	NCR	NCR
Block - DC	Fairview Microwave	SD3379	AMI	6-Aug-19	6-Aug-20
Attenuator	S.M. Electronics	SA26B-20	TZP	9-Nov-19	9-Nov-20
Generator - Signal	Keysight	N5171B (EXG)	TEY	31-Dec-19	31-Dec-22
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFN	23-Dec-19	23-Dec-20
Cable	Micro-Coax	UFD150A-1-0720-200200	MNL	15-Sep-19	15-Sep-20

## TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The spurious RF conducted emissions were measured with the EUT set to low, medium and high transmit frequencies. The EUT was transmitting at the data rate(s) listed in the datasheet in a no-hop mode. For each transmit frequency, the spectrum was scanned throughout the specified frequency range.

# SPURIOUS CONDUCTED EMISSIONS



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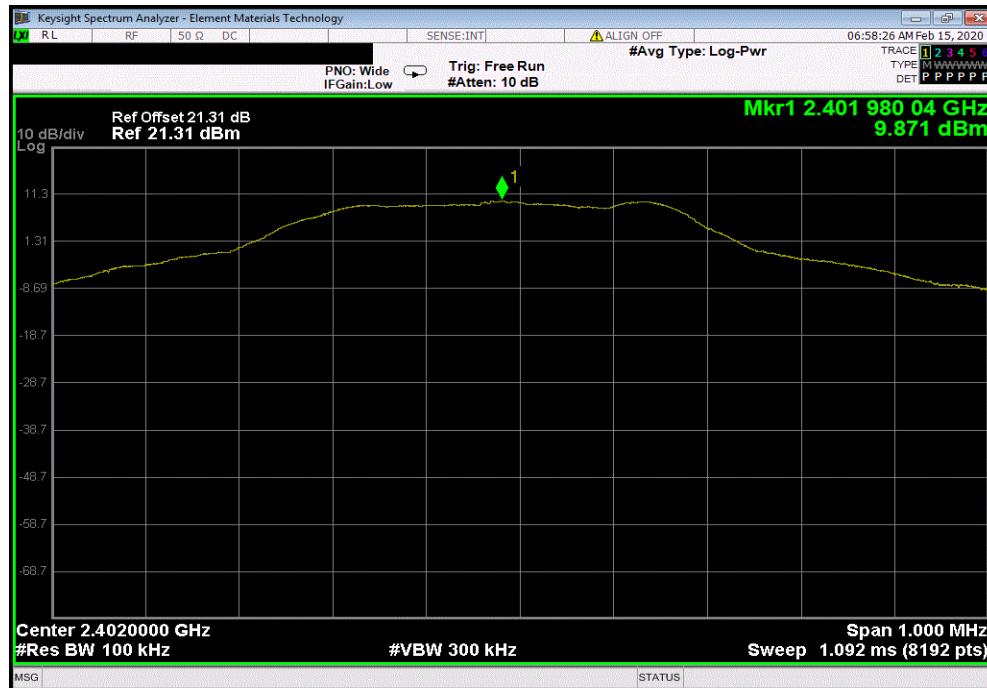
EUT:	C2-03CPU	Work Order:	KOYO0001			
Serial Number:	N/A	Date:	14-Feb-20			
Customer:	Koyo Electronics Industries Co., LTD	Temperature:	22 °C			
Attendees:	None	Humidity:	15% RH			
Project:	None	Barometric Pres.:	1025 mbar			
Tested by:	Andrew Rogstad	Power:	24 VDC			
TEST SPECIFICATIONS		Test Method	ANSI C63.10:2013			
FCC 15.247:2020						
COMMENTS	Reference level offset includes 20 dB attenuator, DC block, and measurement cable.					
DEVIATIONS FROM TEST STANDARD						
None						
Configuration #	10	Signature				
		Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
DH5, GFSK						
Low Channel (2402 MHz)	Fundamental	2401.98	N/A	N/A	N/A	Pass
Low Channel (2402 MHz)	30 MHz - 12.5 GHz	3202.69	-48.22	-20	Pass	
Low Channel (2402 MHz)	12.5 GHz - 25 GHz	24381.94	-60.96	-20	Pass	
Mid Channel (2441 MHz)	Fundamental	2440.97	N/A	N/A	N/A	Pass
Mid Channel (2441 MHz)	30 MHz - 12.5 GHz	3254.45	-50.57	-20	Pass	
Mid Channel (2441 MHz)	12.5 GHz - 25 GHz	24993.9	-61.05	-20	Pass	
High Channel (2480 MHz)	Fundamental	2479.98	N/A	N/A	N/A	Pass
High Channel (2480 MHz)	30 MHz - 12.5 GHz	3306.21	-52.58	-20	Pass	
High Channel (2480 MHz)	12.5 GHz - 25 GHz	24653.58	-61.14	-20	Pass	
2DH5, pi/4-DQPSK						
Low Channel (2402 MHz)	Fundamental	2401.98	N/A	N/A	N/A	Pass
Low Channel (2402 MHz)	30 MHz - 12.5 GHz	3202.69	-47.53	-20	Pass	
Low Channel (2402 MHz)	12.5 GHz - 25 GHz	24073.68	-60.75	-20	Pass	
Mid Channel (2441 MHz)	Fundamental	2440.98	N/A	N/A	N/A	Pass
Mid Channel (2441 MHz)	30 MHz - 12.5 GHz	3254.45	-50.12	-20	Pass	
Mid Channel (2441 MHz)	12.5 GHz - 25 GHz	23672.32	-60.48	-20	Pass	
High Channel (2480 MHz)	Fundamental	2479.98	N/A	N/A	N/A	Pass
High Channel (2480 MHz)	30 MHz - 12.5 GHz	3306.21	-52.67	-20	Pass	
High Channel (2480 MHz)	12.5 GHz - 25 GHz	25000	-60.59	-20	Pass	
3DH5, 8-DPSK						
Low Channel (2402 MHz)	Fundamental	2401.97	N/A	N/A	N/A	Pass
Low Channel (2402 MHz)	30 MHz - 12.5 GHz	3202.69	-47.86	-20	Pass	
Low Channel (2402 MHz)	12.5 GHz - 25 GHz	23817.3	-60.86	-20	Pass	
Mid Channel (2441 MHz)	Fundamental	2440.98	N/A	N/A	N/A	Pass
Mid Channel (2441 MHz)	30 MHz - 12.5 GHz	3254.45	-50.25	-20	Pass	
Mid Channel (2441 MHz)	12.5 GHz - 25 GHz	24119.46	-60.88	-20	Pass	
High Channel (2480 MHz)	Fundamental	2479.97	N/A	N/A	N/A	Pass
High Channel (2480 MHz)	30 MHz - 12.5 GHz	2487.16	-51.86	-20	Pass	
High Channel (2480 MHz)	12.5 GHz - 25 GHz	24989.32	-60.68	-20	Pass	

# SPURIOUS CONDUCTED EMISSIONS

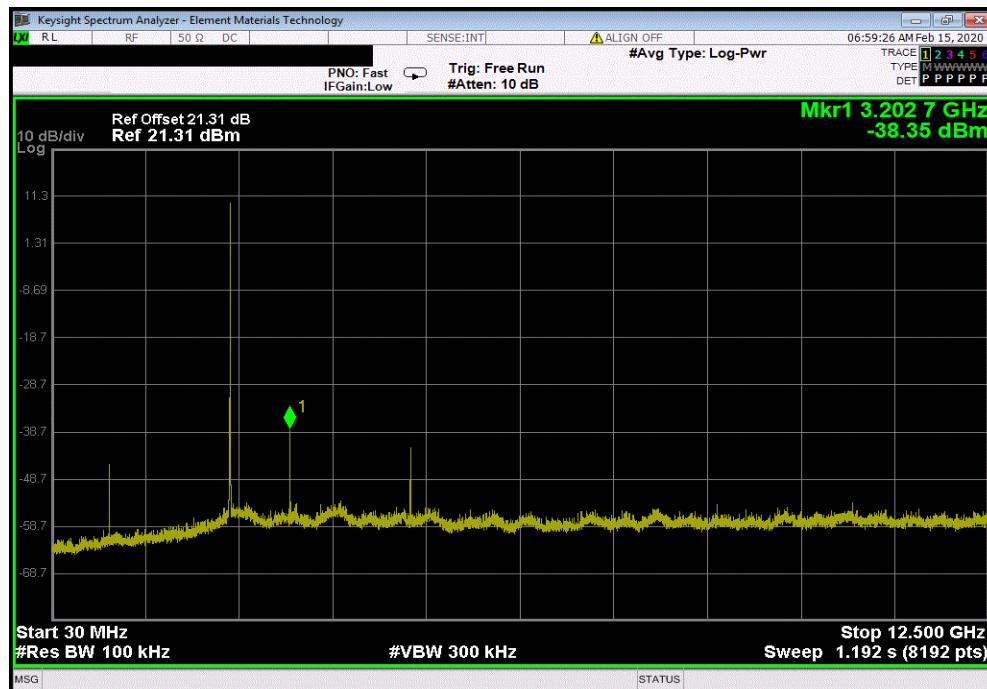


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DH5, GFSK, Low Channel (2402 MHz)					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
Fundamental	2401.98	N/A	N/A	N/A	



Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
30 MHz - 12.5 GHz	3202.69	-48.22	-20	Pass

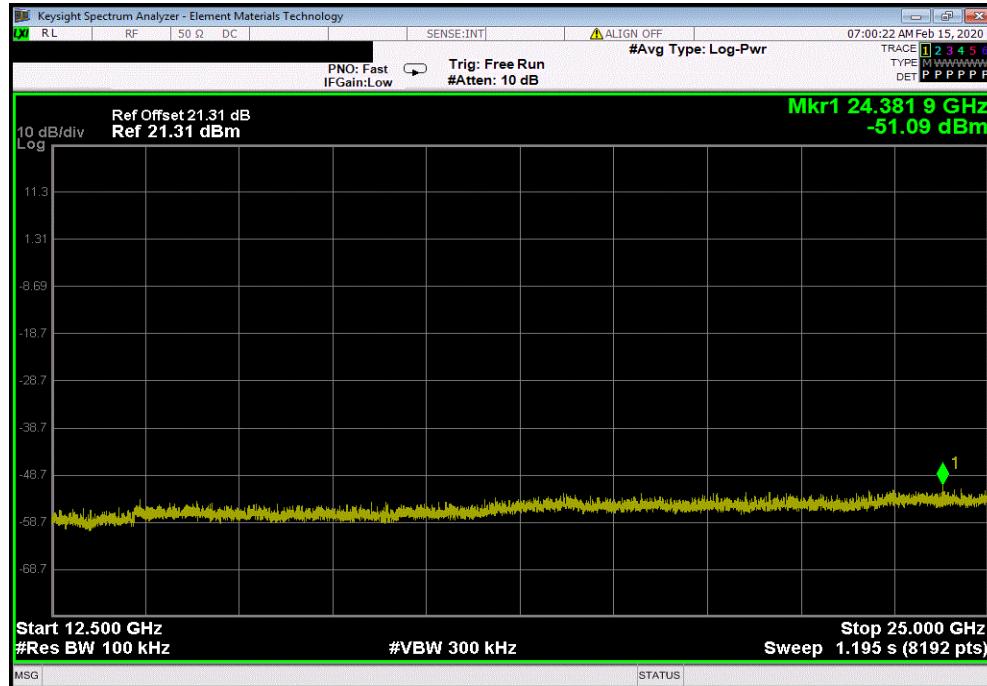


# SPURIOUS CONDUCTED EMISSIONS

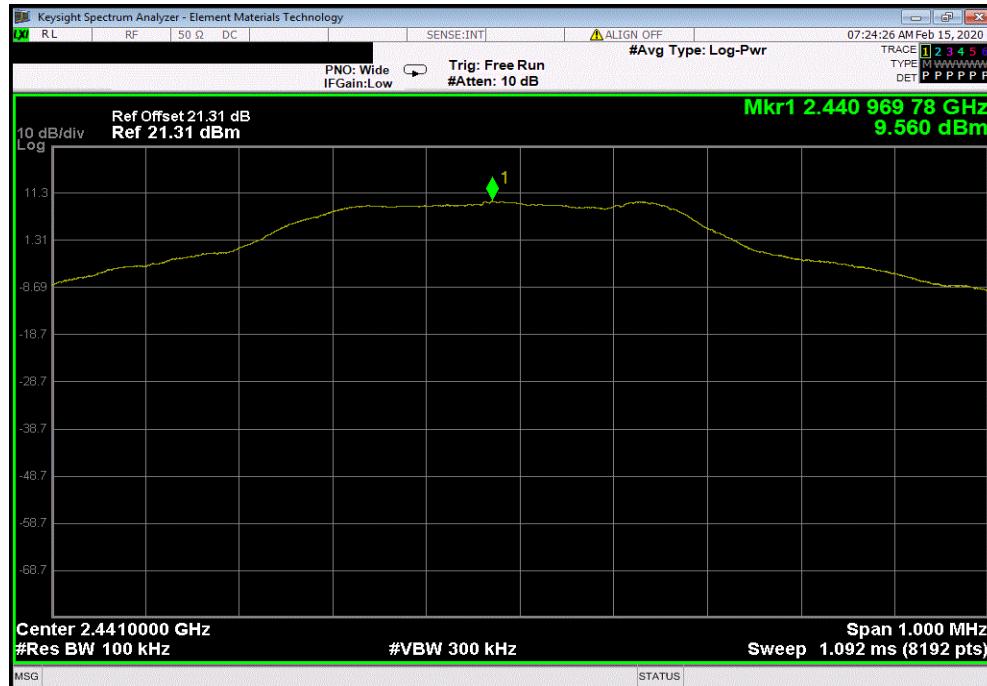


TbtTx 2019.08.30.0 XM1 2019.09.05

DH5, GFSK, Low Channel (2402 MHz)					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
12.5 GHz - 25 GHz	24381.94	-60.96	-20	Pass	



DH5, GFSK, Mid Channel (2441 MHz)					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
Fundamental	2440.97	N/A	N/A	N/A	

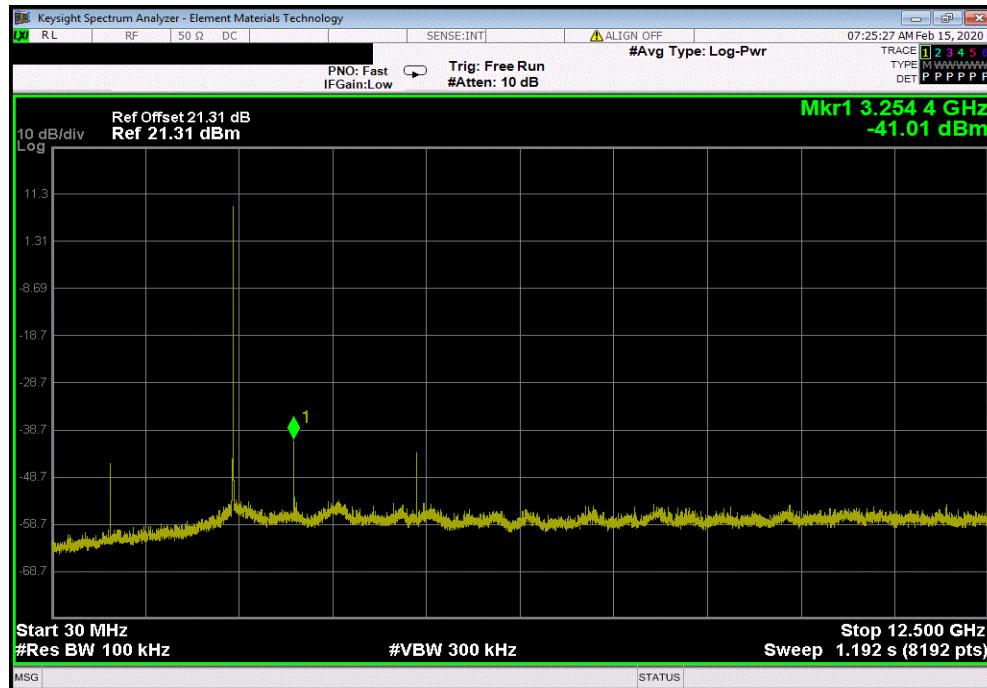


# SPURIOUS CONDUCTED EMISSIONS

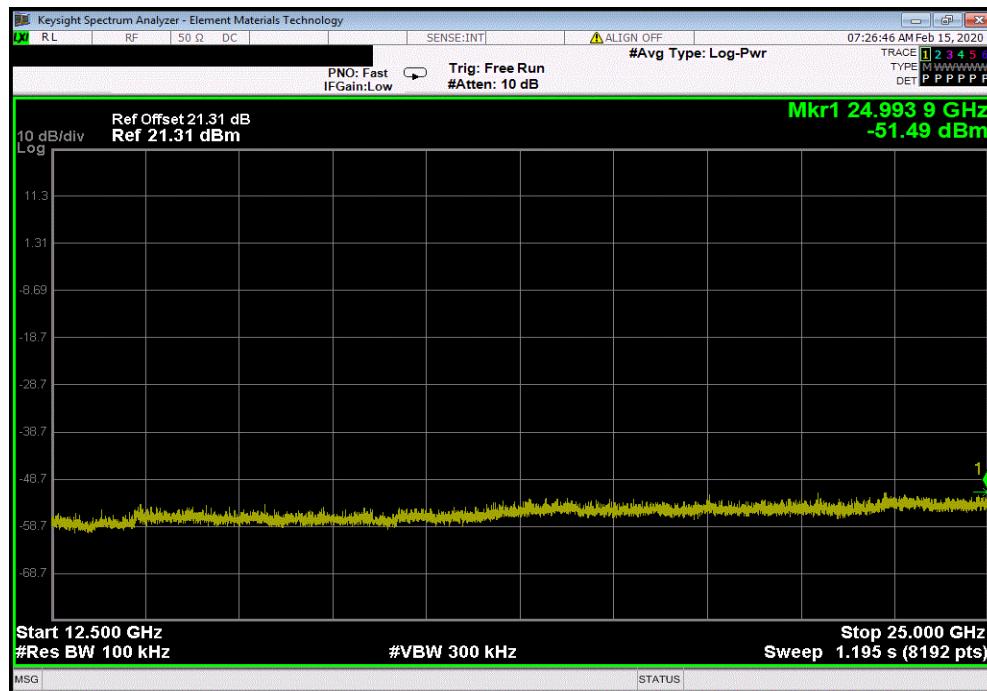


TbtTx 2019.08.30.0 XM1 2019.09.05

DH5, GFSK, Mid Channel (2441 MHz)				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
30 MHz - 12.5 GHz	3254.45	-50.57	-20	Pass



DH5, GFSK, Mid Channel (2441 MHz)				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
12.5 GHz - 25 GHz	24993.9	-61.05	-20	Pass

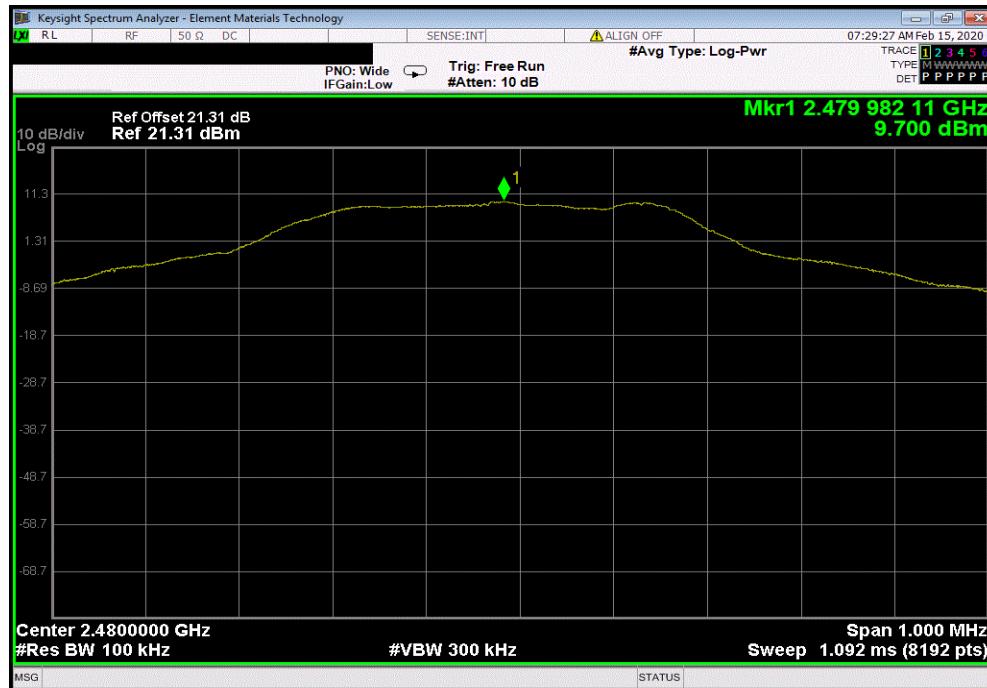


# SPURIOUS CONDUCTED EMISSIONS

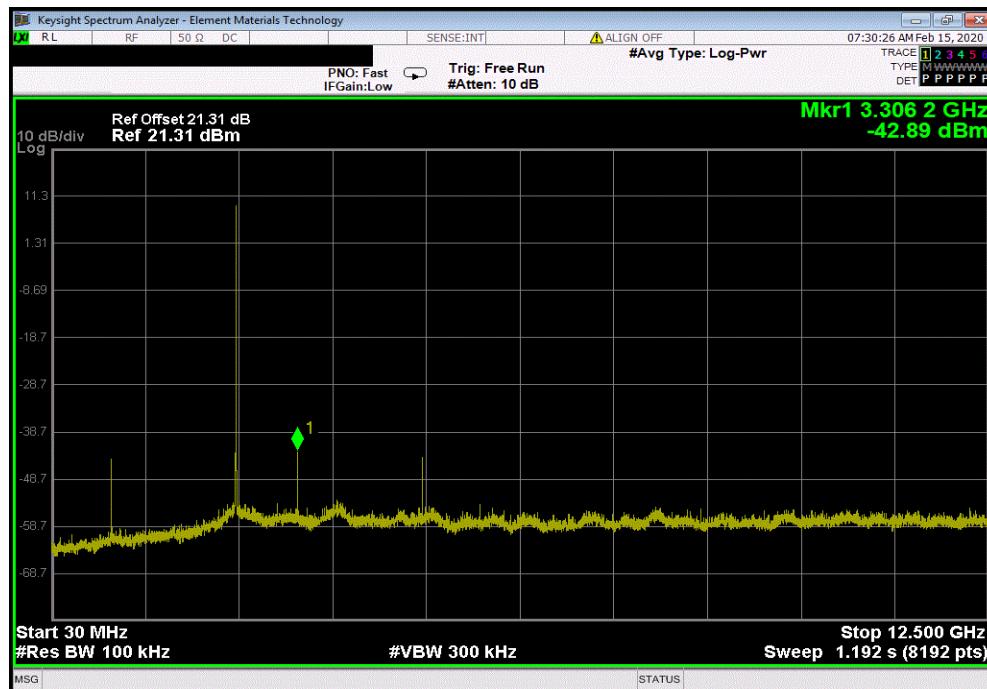


TbtTx 2019.08.30.0 XM1 2019.09.05

DH5, GFSK, High Channel (2480 MHz)					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
Fundamental	2479.98	N/A	N/A	N/A	



DH5, GFSK, High Channel (2480 MHz)					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
30 MHz - 12.5 GHz	3306.21	-52.58	-20	Pass	

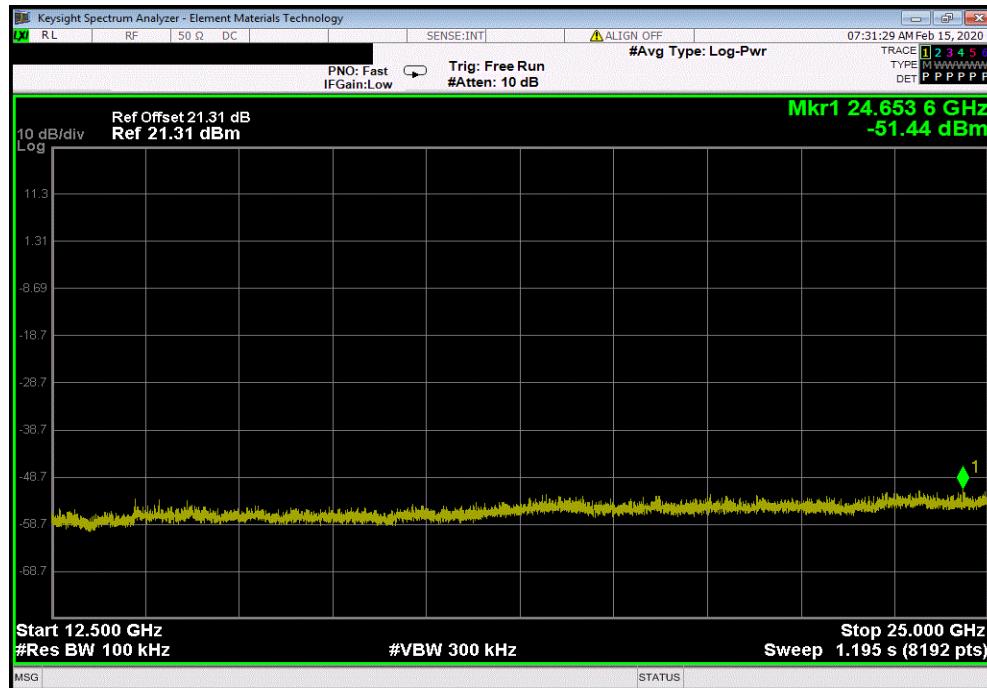


# SPURIOUS CONDUCTED EMISSIONS

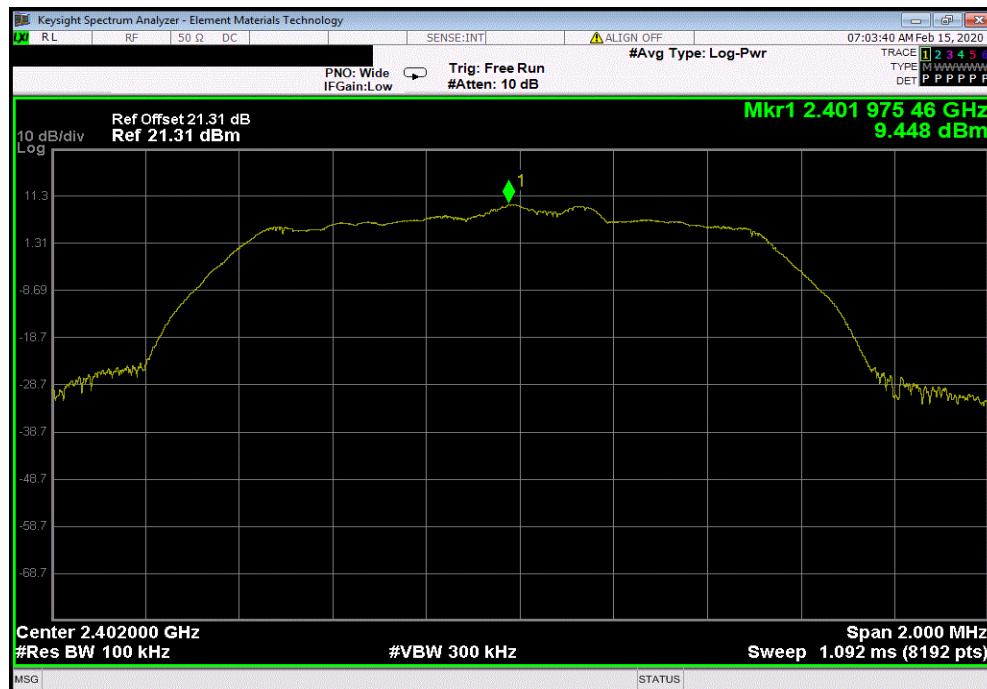


TbtTx 2019.08.30.0 XM1 2019.09.05

DH5, GFSK, High Channel (2480 MHz)					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
12.5 GHz - 25 GHz	24653.58	-61.14	-20	Pass	



2DH5, pi/4-DQPSK, Low Channel (2402 MHz)					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
Fundamental	2401.98	N/A	N/A	N/A	

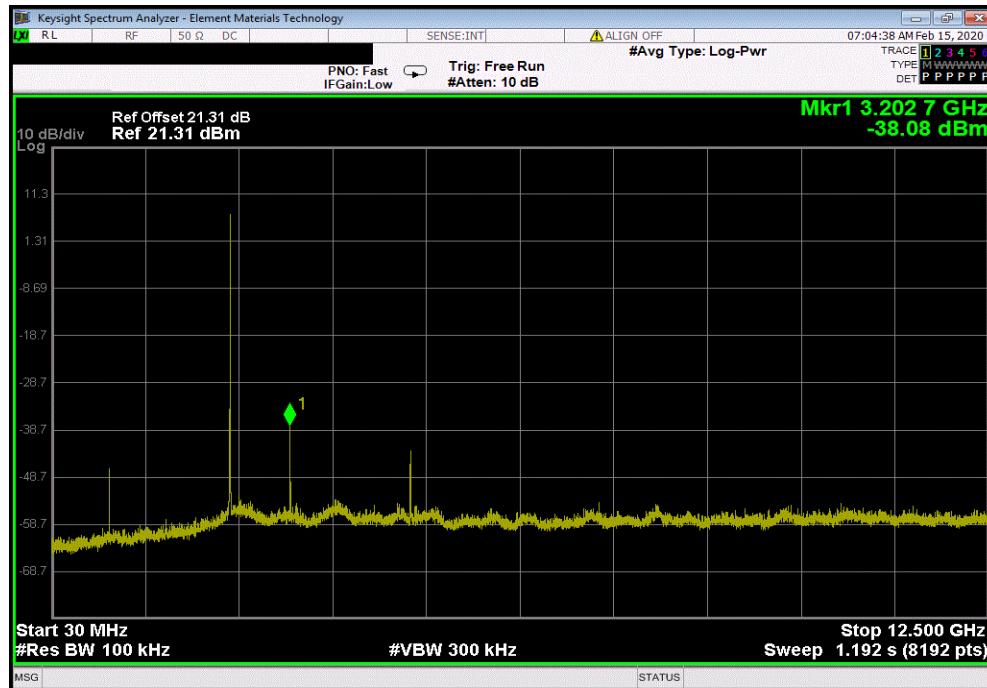


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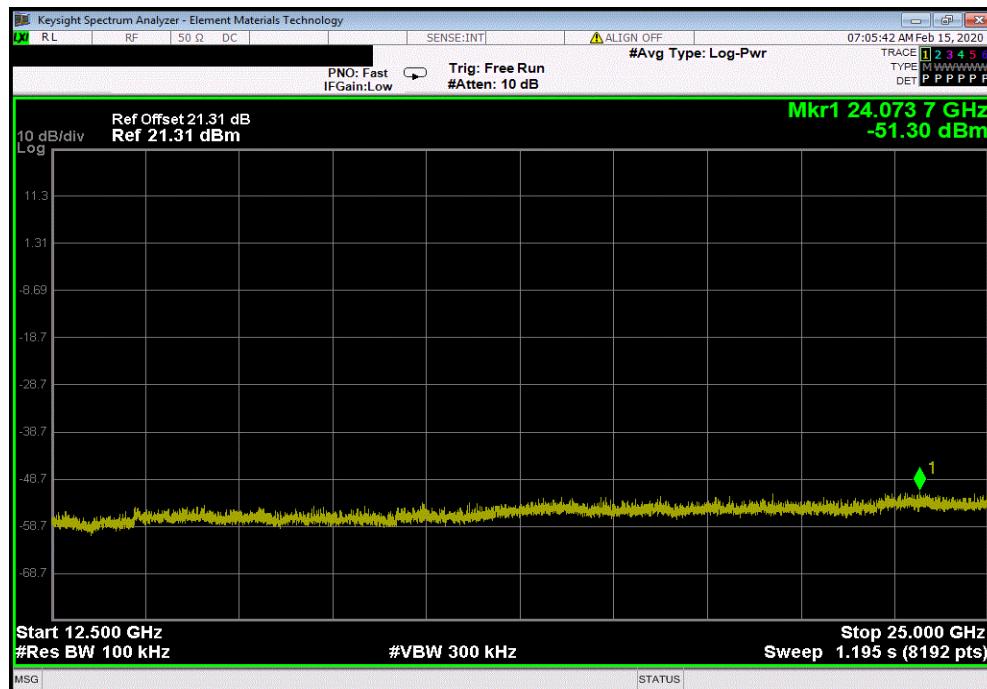


TbtTx 2019.08.30.0 XM1 2019.09.05

2DH5, pi/4-DQPSK, Low Channel (2402 MHz)				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
30 MHz - 12.5 GHz	3202.69	-47.53	-20	Pass



2DH5, pi/4-DQPSK, Low Channel (2402 MHz)				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
12.5 GHz - 25 GHz	24073.68	-60.75	-20	Pass

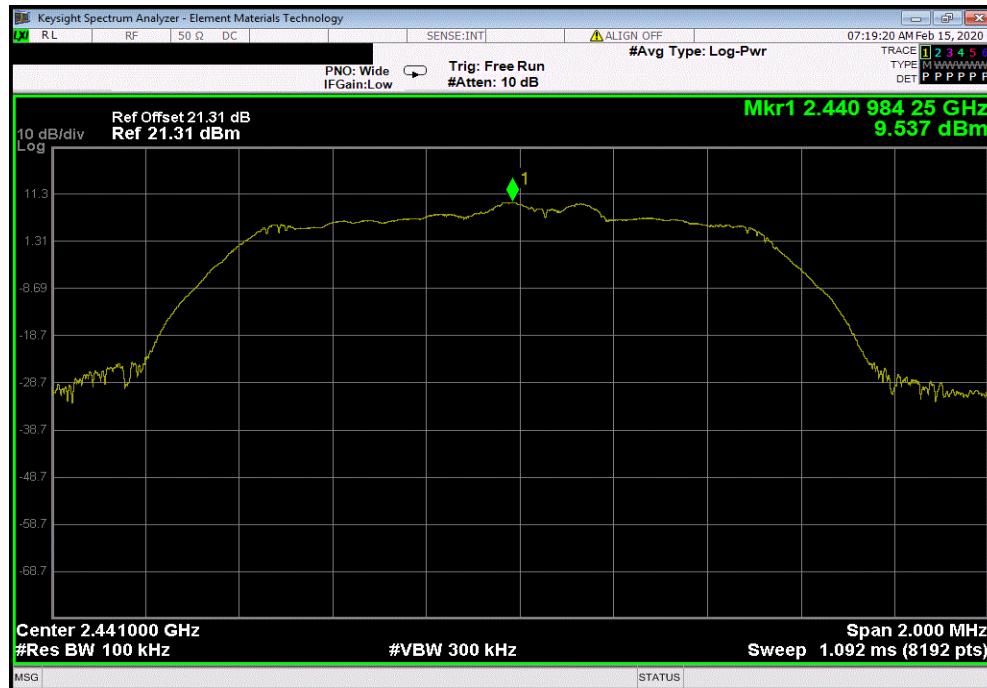


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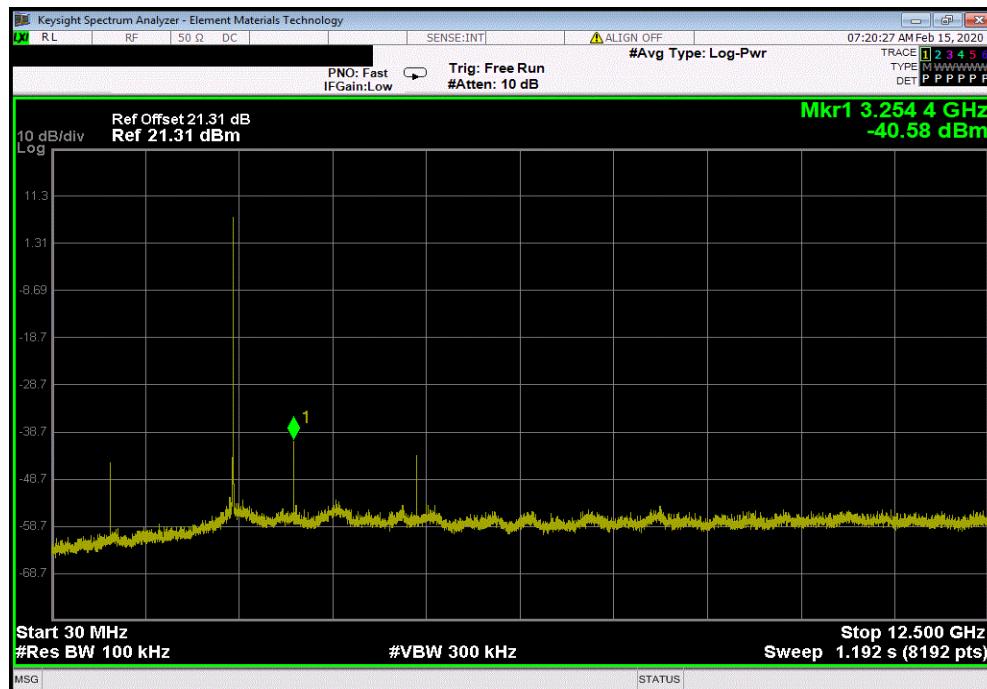


TbtTx 2019.08.30.0 XM1 2019.09.05

2DH5, pi/4-DQPSK, Mid Channel (2441 MHz)					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
Fundamental	2440.98	N/A	N/A	N/A	



2DH5, pi/4-DQPSK, Mid Channel (2441 MHz)					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
30 MHz - 12.5 GHz	3254.45	-50.12	-20	Pass	

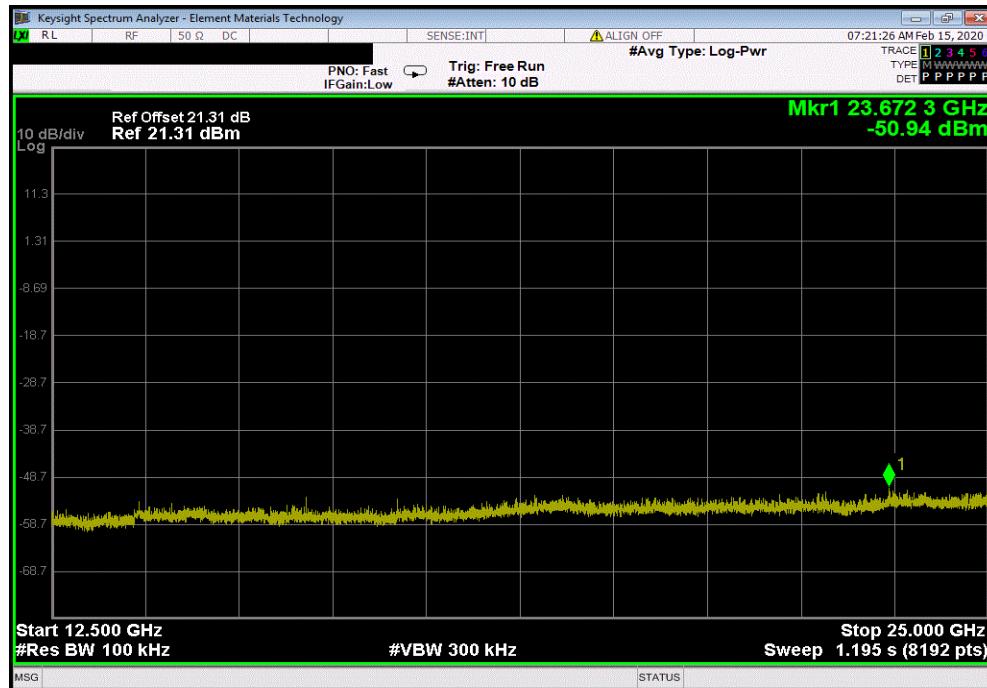


# SPURIOUS CONDUCTED EMISSIONS

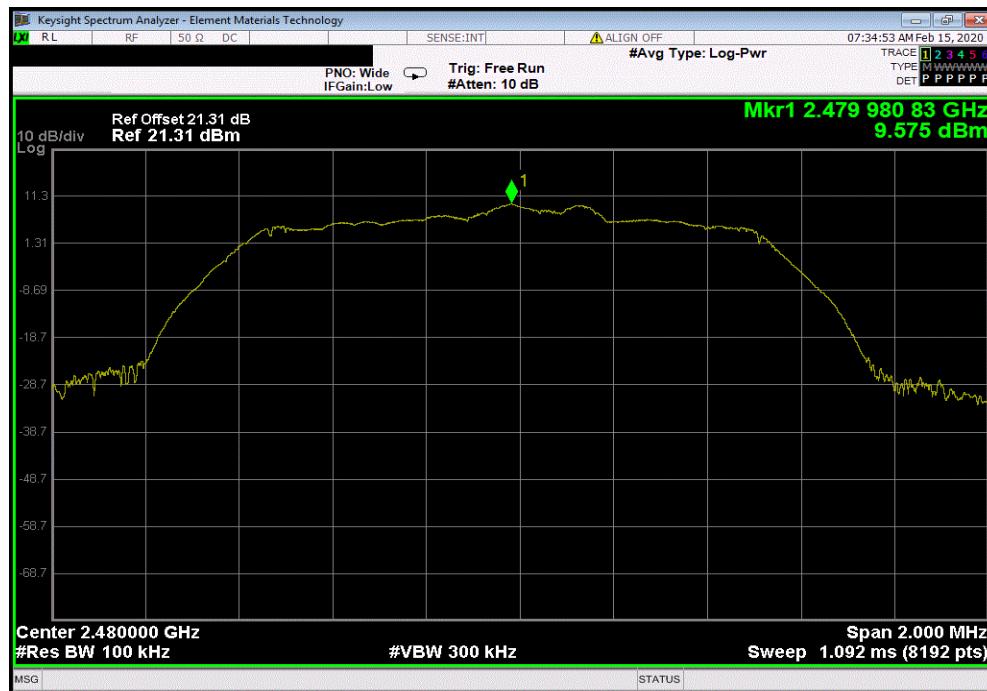


TbtTx 2019.08.30.0 XM1 2019.09.05

2DH5, pi/4-DQPSK, Mid Channel (2441 MHz)					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
12.5 GHz - 25 GHz	23672.32	-60.48	-20	Pass	



2DH5, pi/4-DQPSK, High Channel (2480 MHz)					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
Fundamental	2479.98	N/A	N/A	N/A	

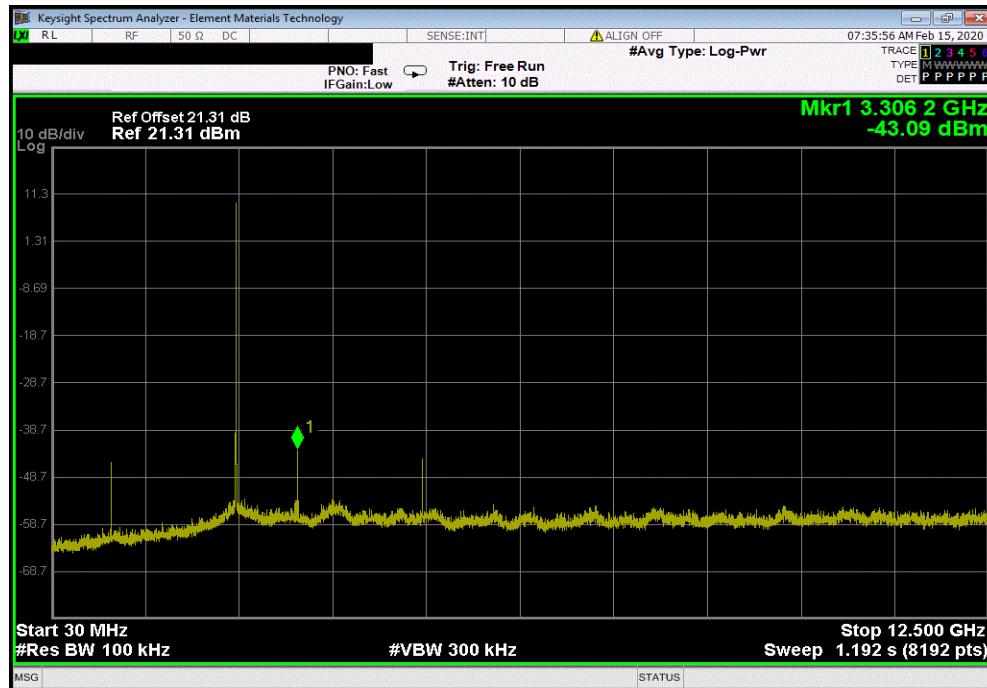


# SPURIOUS CONDUCTED EMISSIONS

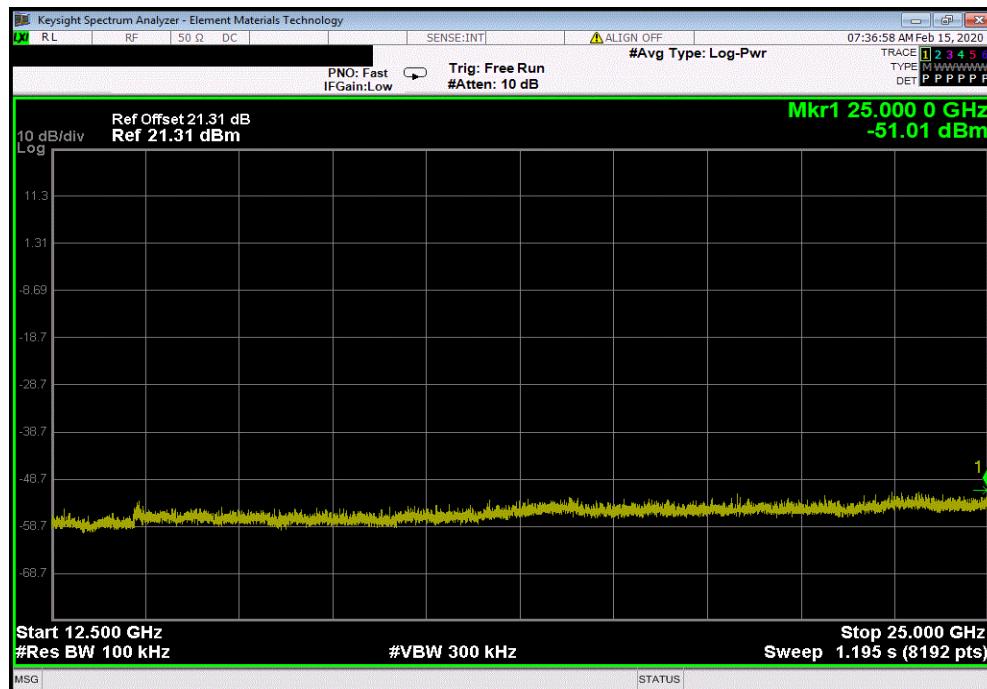


TbtTx 2019.08.30.0 XM1 2019.09.05

2DH5, pi/4-DQPSK, High Channel (2480 MHz)				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
30 MHz - 12.5 GHz	3306.21	-52.67	-20	Pass



2DH5, pi/4-DQPSK, High Channel (2480 MHz)				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
12.5 GHz - 25 GHz	25000	-60.59	-20	Pass

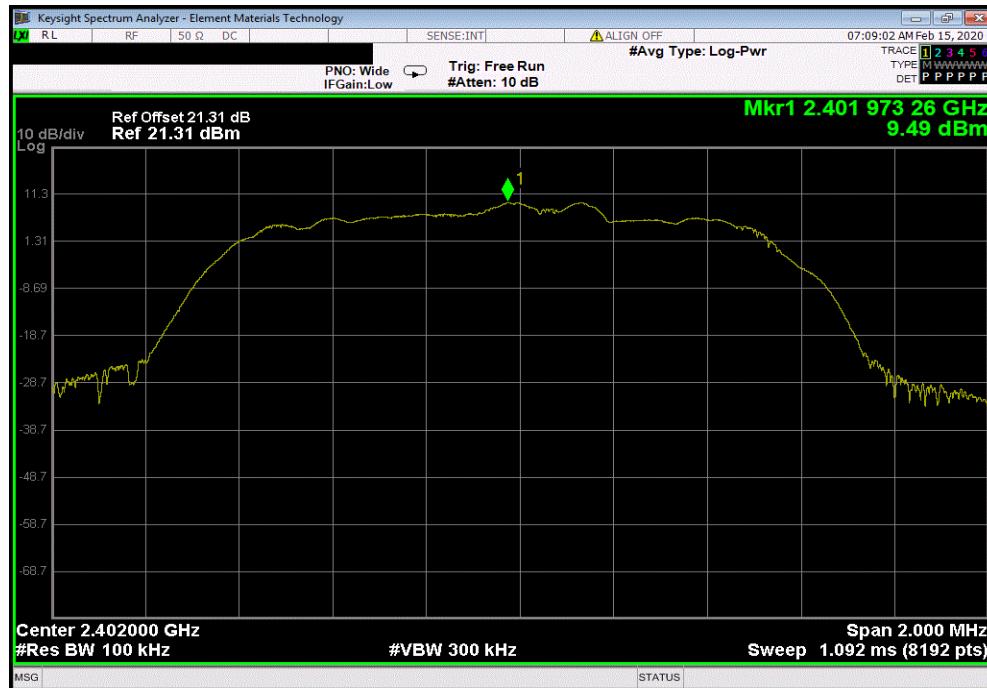


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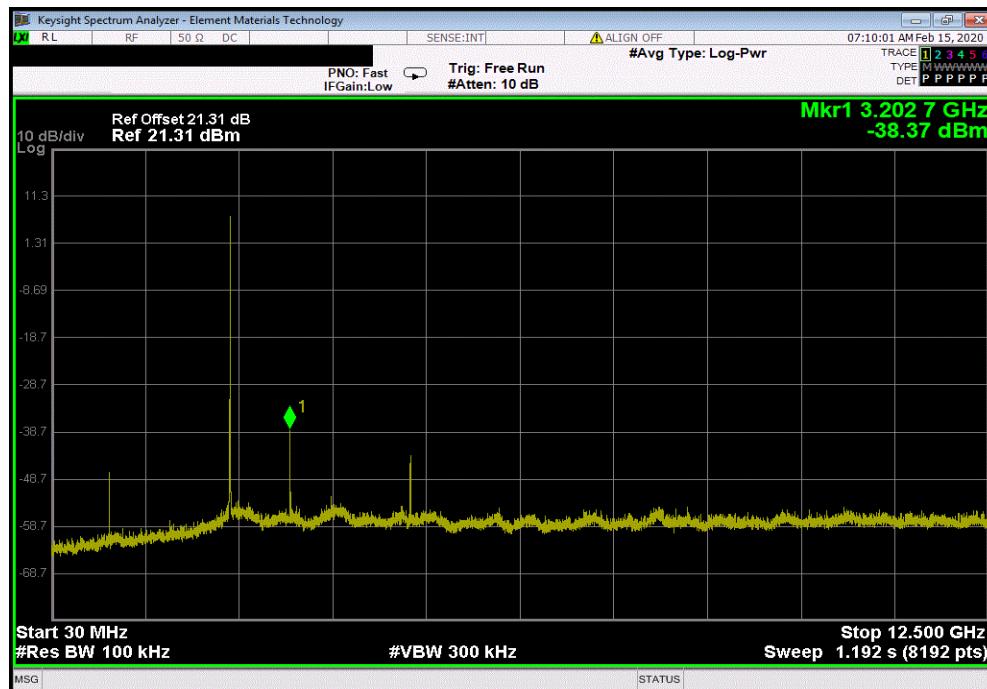


TbtTx 2019.08.30.0 XM1 2019.09.05

3DH5, 8-DPSK, Low Channel (2402 MHz)					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit $\leq$ (dBc)	Result	
Fundamental	2401.97	N/A	N/A	N/A	



3DH5, 8-DPSK, Low Channel (2402 MHz)					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit $\leq$ (dBc)	Result	
30 MHz - 12.5 GHz	3202.69	-47.86	-20	Pass	

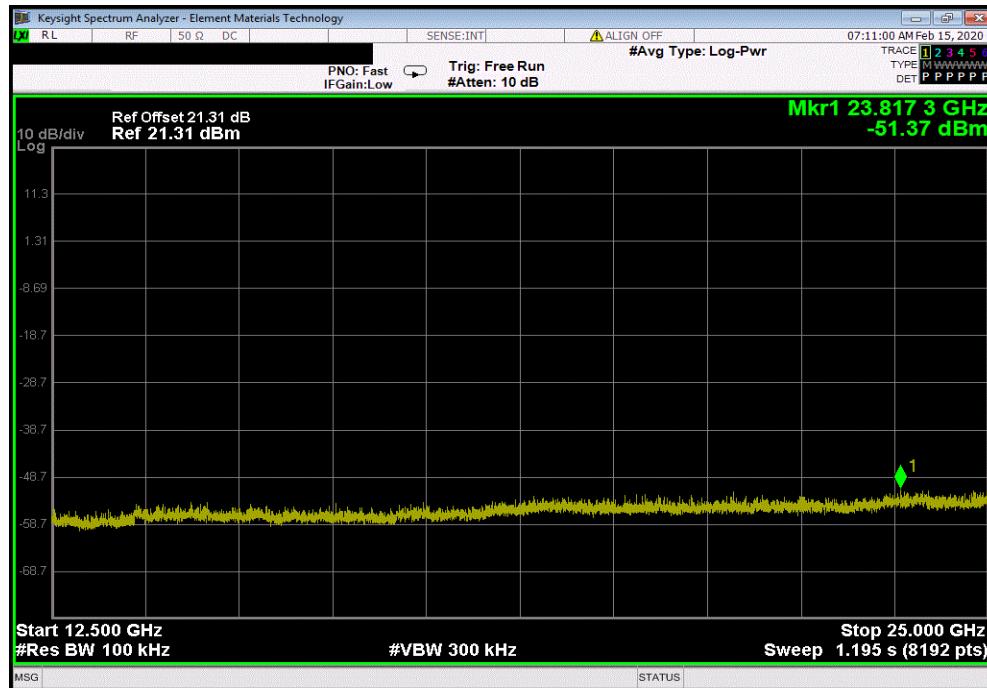


# SPURIOUS CONDUCTED EMISSIONS

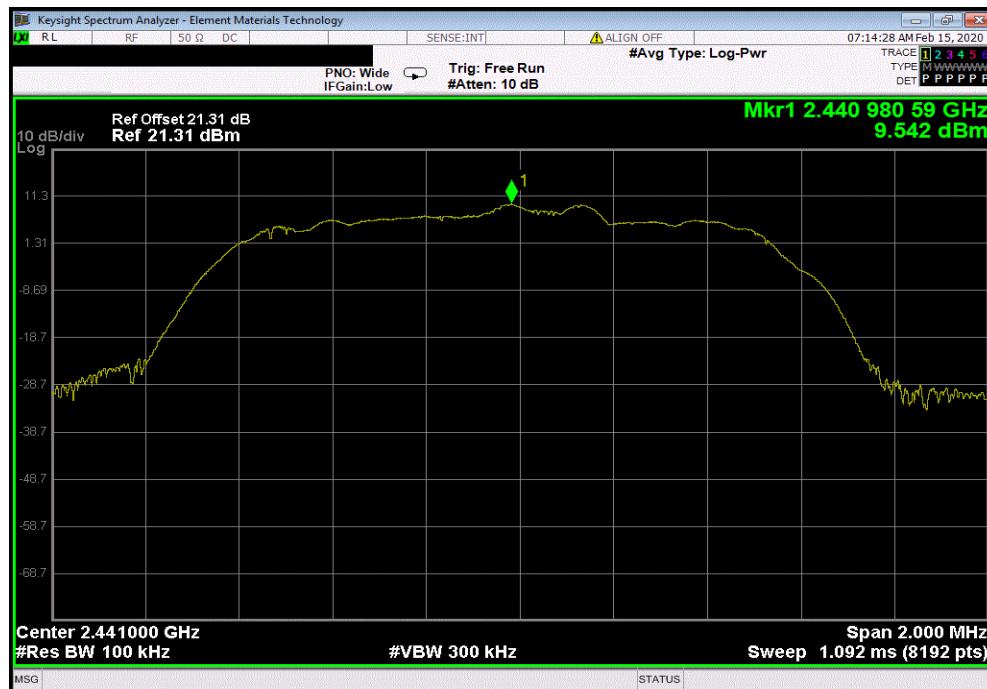


TbtTx 2019.08.30.0 XM1 2019.09.05

3DH5, 8-DPSK, Low Channel (2402 MHz)					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
12.5 GHz - 25 GHz	23817.3	-60.86	-20	Pass	



3DH5, 8-DPSK, Mid Channel (2441 MHz)					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
Fundamental	2440.98	N/A	N/A	N/A	



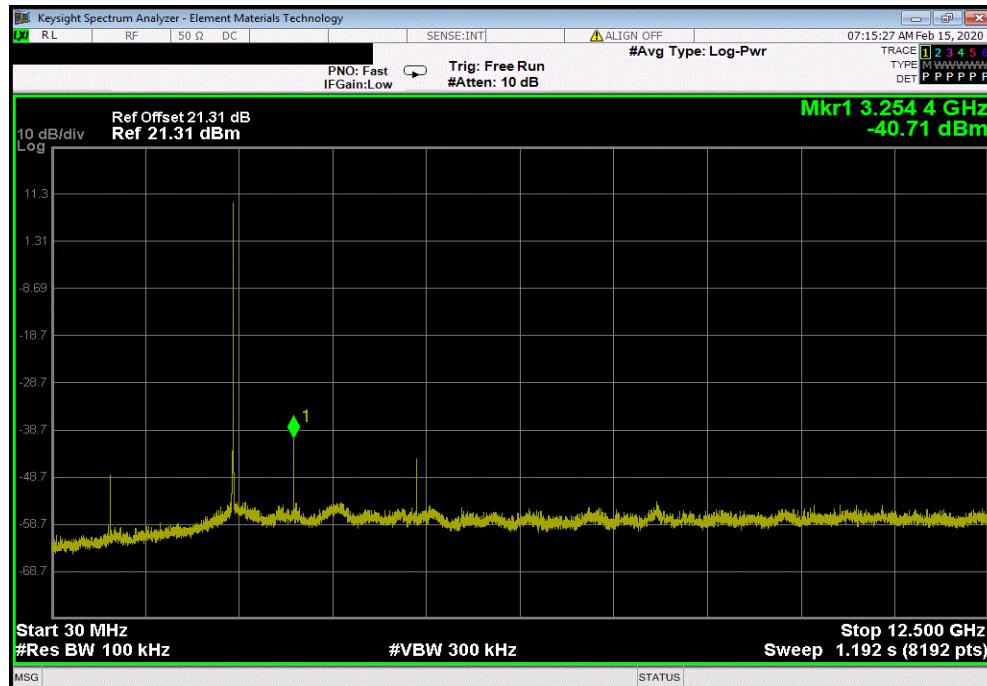
## SPURIOUS CONDUCTED EMISSIONS



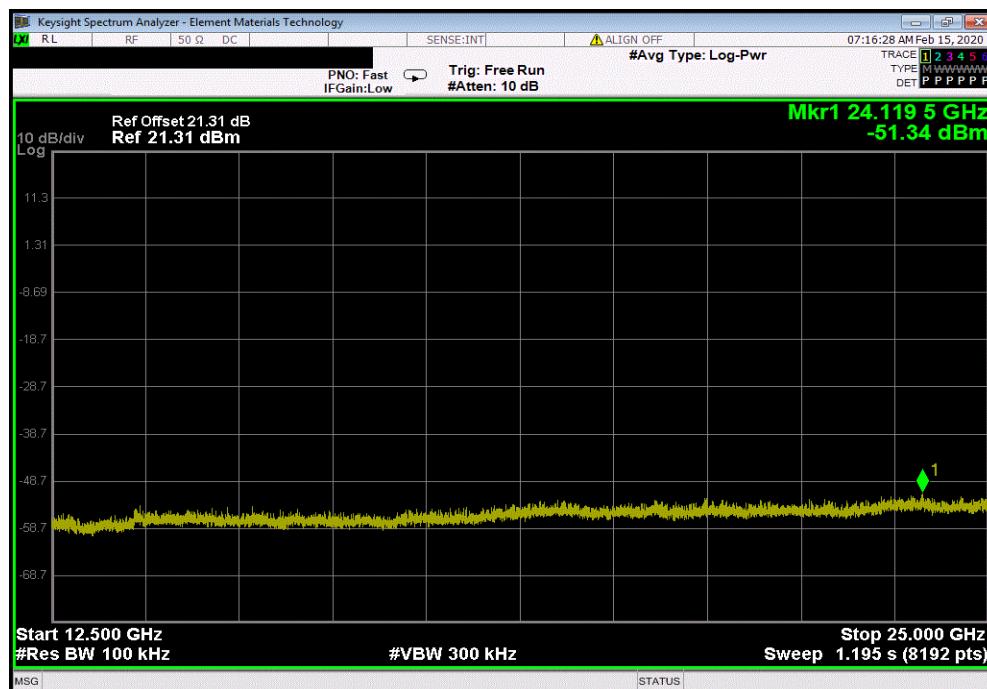
TbtTx 2019.08.30.0

XMit 2019.09.05

3DH5, 8-DPSK, Mid Channel (2441 MHz)				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
30 MHz - 12.5 GHz	3254.45	-50.25	-20	Pass



3DH5, 8-DPSK, Mid Channel (2441 MHz)				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
12.5 GHz - 25 GHz	24119.46	-60.88	-20	Pass

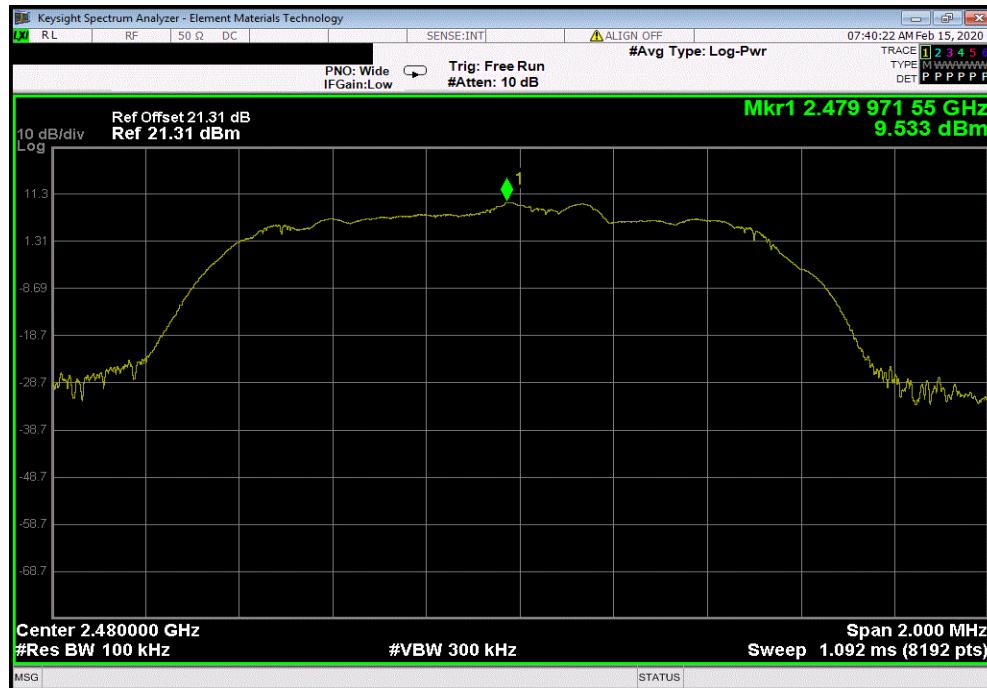


# SPURIOUS CONDUCTED EMISSIONS

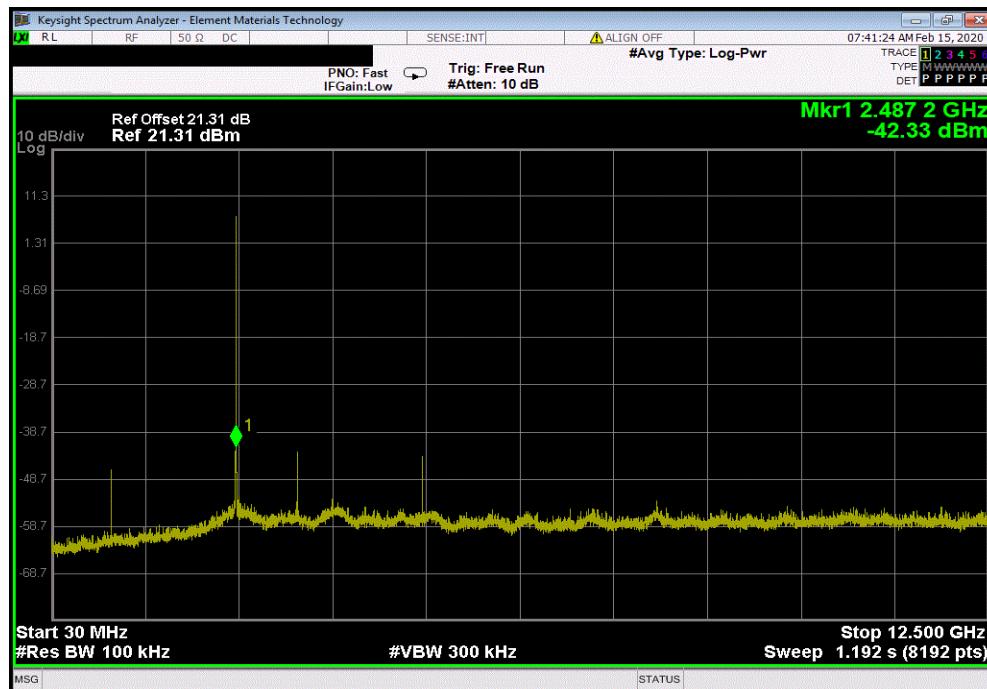


TbtTx 2019.08.30.0 XM1 2019.09.05

3DH5, 8-DPSK, High Channel (2480 MHz)					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
Fundamental	2479.97	N/A	N/A	N/A	



3DH5, 8-DPSK, High Channel (2480 MHz)					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
30 MHz - 12.5 GHz	2487.16	-51.86	-20	Pass	



# SPURIOUS CONDUCTED EMISSIONS



TbtTx 2019.08.30.0 XM1 2019.09.05

3DH5, 8-DPSK, High Channel (2480 MHz)				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
12.5 GHz - 25 GHz	24989.32	-60.68	-20	Pass

