

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.



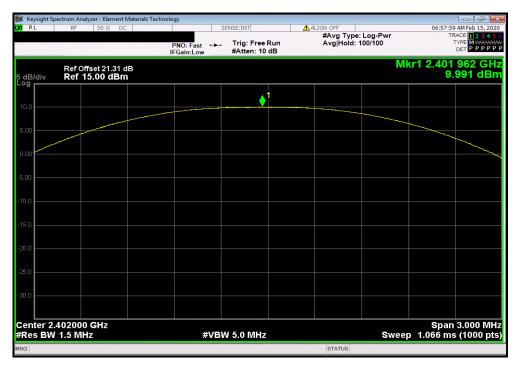
							TbtTx 2019.08.30.0	
	C2-03CPU					Work Order:		
Serial Number:							14-Feb-20	
	Koyo Electronics Industri	es Co., LTD				Temperature:		
Attendees:						Humidity:		
Project:						Barometric Pres.:		
	Andrew Rogstad		Power:	24 VDC		Job Site:	MN08	
TEST SPECIFICATI	IONS			Test Method				
FCC 15.247:2020				ANSI C63.10:2013				
COMMENTS								
Reference level offs	set includes 20 dB attenua	or, DC block, and measurement cab	ole.		·			
	// TEST STANDARD							
	12010174127412							
DEVIATIONS FROM None								
None			/ 5 4	46				
	10	Signature Chap	Roger	tall				
None		Signature Chap	Roger	tal		Out Pwr	Limit	
None		Signature Chy	Roger	tall		Out Pwr (dBm)	Limit (dBm)	Result
None Configuration #		Signature A	Roger	tal		Out Pwr (dBm)	Limit (dBm)	Result
None Configuration # DH5, GFSK	10	Signature Org	Roga	tol		(dBm)	(dBm)	
None Configuration # DH5, GFSK	10 Low Channel (2402 MHz)	Signature Chy	Rogan	tall			(dBm) 21	Pass
None Configuration # DH5, GFSK	Low Channel (2402 MHz) Mid Channel (2441 MHz)	Signature A. S	Roger	tal		(dBm) 9.991	(dBm)	
None Configuration # DH5, GFSK	10 Low Channel (2402 MHz)	Signature Asia	Roger	tol		9.991 9.749	(dBm) 21 21	Pass Pass
None Configuration # DH5, GFSK 2DH5, pi/4-DQPSK	Low Channel (2402 MHz) Mid Channel (2441 MHz)	Signature Chy	Roger	toll		9.991 9.749	(dBm) 21 21	Pass Pass
None Configuration # DH5, GFSK 2DH5, pi/4-DQPSK	Low Channel (2402 MHz) Mid Channel (2441 MHz) High Channel (2480 MHz)	Signature Ang	Rogar	tal		(dBm) 9.991 9.749 9.835	(dBm) 21 21 21	Pass Pass Pass
None Configuration # DH5, GFSK 2DH5, pi/4-DQPSK	Low Channel (2402 MHz) Mid Channel (2441 MHz) High Channel (2480 MHz) Low Channel (2402 MHz)	Signature Ass	Roger	tal		9.991 9.749 9.835	21 21 21 21	Pass Pass Pass
None Configuration # DH5, GFSK 2DH5, pi/4-DQPSK	Low Channel (2402 MHz) Mid Channel (2441 MHz) High Channel (2480 MHz) Low Channel (2402 MHz) Mid Channel (2441 MHz)	Signature Chap	Roger	toll		9.991 9.749 9.835 12.022 12.099	(dBm) 21 21 21 21 21	Pass Pass Pass Pass Pass
None Configuration # DH5, GFSK 2DH5, pi/4-DQPSK 3DH5, 8-DPSK	Low Channel (2402 MHz) Mid Channel (2441 MHz) High Channel (2480 MHz) Low Channel (2402 MHz) Mid Channel (2441 MHz)	Signature Ang	Rogar	tall		9.991 9.749 9.835 12.022 12.099	(dBm) 21 21 21 21 21	Pass Pass Pass Pass Pass
None Configuration # DH5, GFSK 2DH5, pi/4-DQPSK 3DH5, 8-DPSK	Low Channel (2402 MHz) Mid Channel (2441 MHz) High Channel (2480 MHz) Low Channel (2402 MHz) Mid Channel (2441 MHz) High Channel (2480 MHz)	Signature Ass	Roger	tol		9.991 9.749 9.835 12.022 12.099 12.213	21 21 21 21 21 21 21	Pass Pass Pass Pass Pass Pass



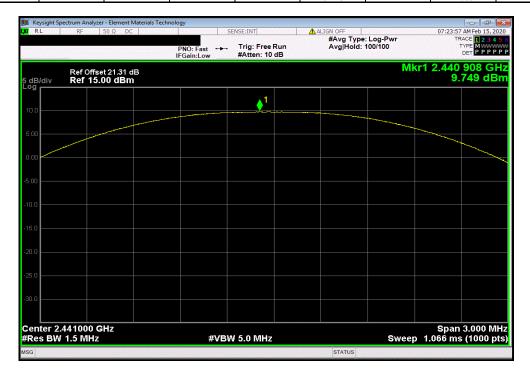
DH5, GFSK, Low Channel (2402 MHz)

Out Pwr Limit
(dBm) (dBm) Result

9.991 21 Pass



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

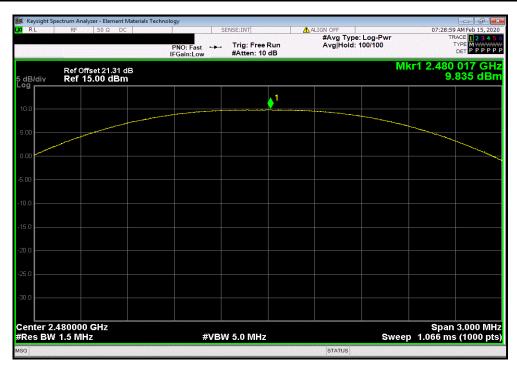




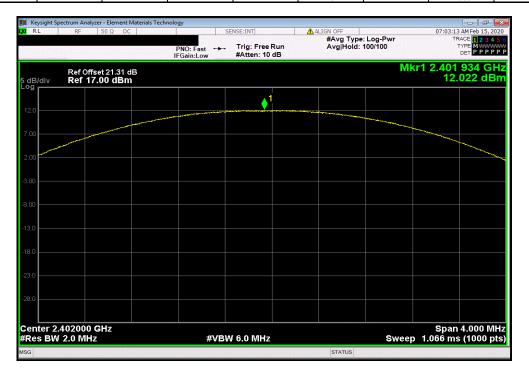
DH5, GFSK, High Channel (2480 MHz)

Out Pwr Limit
(dBm) (dBm) Result

9.835 21 Pass



	2DH5, pi/4-DC	PSK, Low Chann	nel (2402 MHz)		
			Out Pwr	Limit	
			(dBm)	(dBm)	Result
			12.022	21	Pass

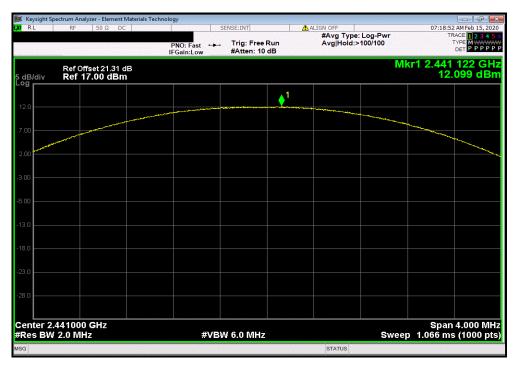




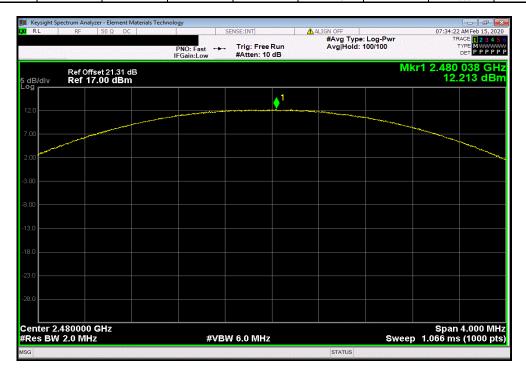
2DH5, pi/4-DQPSK, Mid Channel (2441 MHz)

Out Pwr Limit
(dBm) (dBm) Result

12.099 21 Pass



	2DH5, pi/4-DQ	PSK, High Chanr	nel (2480 MHz)		
			Out Pwr	Limit	
			(dBm)	(dBm)	Result
			12.213	21	Pass

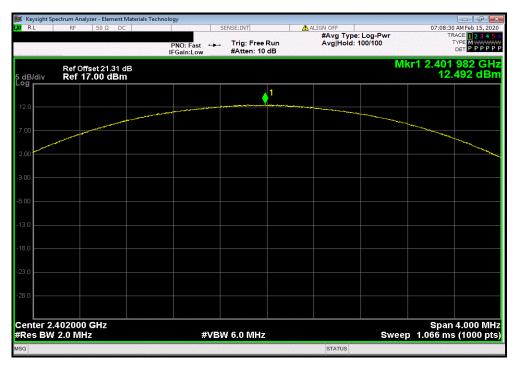




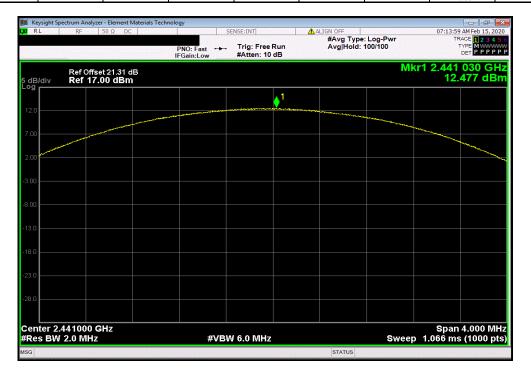
3DH5, 8-DPSK, Low Channel (2402 MHz)

Out Pwr Limit
(dBm) (dBm) Result

12.492 21 Pass



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

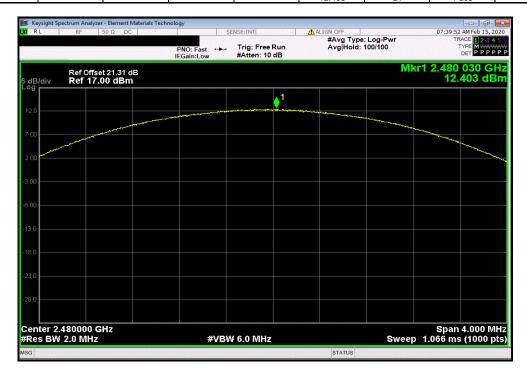




3DH5, 8-DPSK, High Channel (2480 MHz)

Out Pwr Limit
(dBm) (dBm) Result

12.403 21 Pass





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.

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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

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



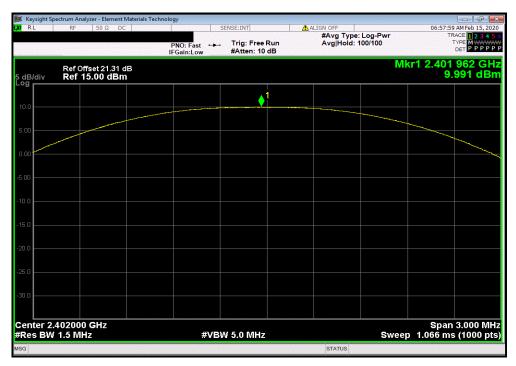
Comments Comments										
Customer: Koyo Electronics Industries Co., LTD										
Attendees: None										
Project: None Barometric Pres. 1025 mbar			es Co., LTD							
Tested by: Andrew Rogstad Power: 24 VDC Job Site: MN08 ST SPECIFICATIONS Test Method										
Test Method Cr 15.247:2020 ANSI C63.10:2013										
ANSI C63.10:2013				Power:				Job Site:	MN08	
Comment Comm	TEST SPECIFICATI	IONS								
Content Cont	FCC 15.247:2020				ANSI C63.10:2013					
Content Cont										
Signature From TEST STANDARD Signature Signatu	COMMENTS									
Note	Reference level off	set includes 20 dB attenua	tor, DC block, and measurement of	cable. Data shown wit	h highest gain ante	nna variant.				
Note										
This is a second of the content of	DEVIATIONS EDON	M TEST STANDARD								
Out Pwr (dBm) Antenna (dBr) (dBm) Result 15, GFSK	DEVIATIONS FROM									
	None									
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 H5, pi/4-DQPSK 12.022 1.8 13.822 27 Pass Mid 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 (2408 MHz) 12.213 1.8 14.013 27 Pass H5, 8-DPSK 12.492 1.8 14.292 27 Pass Mid Channel (2402 MHz) 12.492 1.8 14.292 27 Pass Mid Channel (2404 MHz) 12.477 1.8 14.277 27 Pass Mid Channel (2404 MHz) 12.477 1.8 14.277 27 Pass Mid Channel (2404 MHz) 12.477 1.8 14.277 27 Pass Mid Channel (2404 MHz) 12.477 1.8 14.277 27 Pass Mid Channel (2404 MHz) 12.477 1.8 14.277 27 Pass Mid Channel (2404 MHz) 12.477 1.8 14.277 27 Pass Mid Channel (2404 MHz) 12.477 1.8 14.277 27 Pass Mid Channel (2404 MHz) 12.477 1.8 14.277 27 Pass Mid Channel (2404 MHz) 12.477 1.8 14.277 27 Pass Mid Channel (2404 MHz) 12.477 1.8 14.277 27 Pass Mid Channel (2404 MHz) 12.477 1.8 14.277 27 Pass Mid Channel (2404 MHz) 12.477 1.8 14.277 27 Pass Mid Channel (2404 MHz) 12.477 1.8 14.277 27 Pass Mid Channel (2404 MHz) 12.477 1.8 14.277 27 Pass Mid Channel (2404 MHz) 12.477 1.8 14.277 18 14			Signature Cl	Roge	tall					
Mid Channel (2441 MHz) 9.749 1.8 11.549 27 Pass	None Configuration #		Signature A	Roge	tall					Result
High Channel (2480 MHz) 9.835 1.8 11.635 27 Pass H5, pi/4-DQPSK	None	10	Signature A	Roge	tall	(dBm)	Gain (dBi)	(dBm)	(dBm)	
H5, pi/4-DQPSK Low Channel (2402 MHz)	None Configuration #	10 Low Channel (2402 MHz)	Signature <i>O</i>	Roge	tak	(dBm) 9.991	Gain (dBi)	(dBm) 11.791	(dBm) 27	Pass
Low Channel (2402 MHz) 12.022 1.8 13.822 27 Pass Mid Channel (2441 MHz) 12.099 1.8 13.899 27 Pass Pigh Channel (2480 MHz) 12.213 1.8 14.013 27 Pass Pass Pass Pass Pass Pass Pass Pas	None Configuration #	Low Channel (2402 MHz) Mid Channel (2411 MHz)	Signature A	Roge	tal	9.991 9.749	1.8 1.8	(dBm) 11.791 11.549	(dBm) 27 27	Pass Pass
Mid Channel (2441 MHz) 12.099 1.8 13.899 27 Pass Pass Pass High Channel (2480 MHz) 12.213 1.8 14.013 27 Pass Pass Pass Pass H5, 8-DPSK Low Channel (2402 MHz) 12.492 1.8 14.292 27 Pass Pass Pass Pass Pass Pass Pass Pass	None Configuration # DH5, GFSK	Low Channel (2402 MHz) Mid Channel (2411 MHz)	Signature A	Rope	tol	9.991 9.749	1.8 1.8	(dBm) 11.791 11.549	(dBm) 27 27	Pass Pass
High Channel (2480 MHz) 12.213 1.8 14.013 27 Pass H5, 8-DPSK Low Channel (2402 MHz) 12.492 1.8 14.292 27 Pass Mid Channel (2441 MHz) 12.477 1.8 14.277 27 Pass	None Configuration #	Low Channel (2402 MHz) Mid Channel (2441 MHz) High Channel (2480 MHz)	Signature <i>A</i>	Roge	tak	9.991 9.749 9.835	1.8 1.8 1.8 1.8	(dBm) 11.791 11.549 11.635	(dBm) 27 27 27 27	Pass Pass Pass
H5, 8-DPSK Low Channel (2402 MHz) Low Channel (2441 MHz) 12,492 1,8 14,292 27 Pass Mid Channel (2441 MHz) 12,477 1,8 14,277 27 Pass	None Configuration # DH5, GFSK	Low Channel (2402 MHz) Mid Channel (2441 MHz) High Channel (2480 MHz) Low Channel (2402 MHz)	Signature <i>Ob</i>	Ros	to R	9.991 9.749 9.835	1.8 1.8 1.8 1.8	11.791 11.549 11.635	(dBm) 27 27 27 27	Pass Pass Pass
Low Channel (2402 MHz) 12.492 1.8 14.292 27 Pass Mid Channel (2441 MHz) 12.477 1.8 14.277 27 Pass	None Configuration # DH5, GFSK	Low Channel (2402 MHz) Mid Channel (2441 MHz) High Channel (2480 MHz) Low Channel (2402 MHz) Mid Channel (2441 MHz)	Signature A	Rope	to R	9.991 9.749 9.835 12.022 12.099	1.8 1.8 1.8 1.8	(dBm) 11.791 11.549 11.635 13.822 13.899	(dBm) 27 27 27 27 27 27	Pass Pass Pass Pass Pass
Mid Channel (2441 MHz) 12.477 1.8 14.277 27 Pass	None Configuration # DH5, GFSK 2DH5, pi/4-DQPSK	Low Channel (2402 MHz) Mid Channel (2441 MHz) High Channel (2480 MHz) Low Channel (2402 MHz) Mid Channel (2441 MHz)	Signature <i>A</i>	Roge	to R	9.991 9.749 9.835 12.022 12.099	1.8 1.8 1.8 1.8	(dBm) 11.791 11.549 11.635 13.822 13.899	(dBm) 27 27 27 27 27 27	Pass Pass Pass Pass Pass
	None Configuration # DH5, GFSK	Low Channel (2402 MHz) Mid Channel (2441 MHz) High Channel (2480 MHz) Low Channel (2402 MHz) Mid Channel (2411 MHz) High Channel (2480 MHz)	Signature <i>A</i>	Roge	to R	9.991 9.749 9.835 12.022 12.099 12.213	1.8 1.8 1.8 1.8 1.8 1.8	(dBm) 11.791 11.549 11.635 13.822 13.899 14.013	27 27 27 27 27 27 27 27	Pass Pass Pass Pass Pass Pass
High Channel (2480 MHz) 12.403 1.8 14.203 27 Pass	None Configuration # DH5, GFSK 2DH5, pi/4-DQPSK	Low Channel (2402 MHz) Mid Channel (2441 MHz) High Channel (2480 MHz) Low Channel (2402 MHz) Mid Channel (2441 MHz) High Channel (2480 MHz) Low Channel (2402 MHz)	Signature A	Rope	to R	9.991 9.749 9.835 12.022 12.099 12.213	1.8 1.8 1.8 1.8 1.8 1.8 1.8	(dBm) 11.791 11.649 11.635 13.822 13.899 14.013	(dBm) 27 27 27 27 27 27 27 27 27	Pass Pass Pass Pass Pass Pass
	None Configuration # DH5, GFSK 2DH5, pi/4-DQPSK	Low Channel (2402 MHz) Mid Channel (2441 MHz) High Channel (2480 MHz) Low Channel (2402 MHz) Mid Channel (2480 MHz) Low Channel (2480 MHz) Low Channel (2402 MHz) Mid Channel (2401 MHz) Mid Channel (2401 MHz)	Signature A	Roge	to R	9.991 9.749 9.835 12.022 12.099 12.213 12.492 12.477	1.8 1.8 1.8 1.8 1.8 1.8 1.8 1.8 1.8 1.8	(dBm) 11.791 11.549 11.635 13.822 13.899 14.013 14.292 14.277	27 27 27 27 27 27 27 27 27 27	Pass Pass Pass Pass Pass Pass Pass Pass



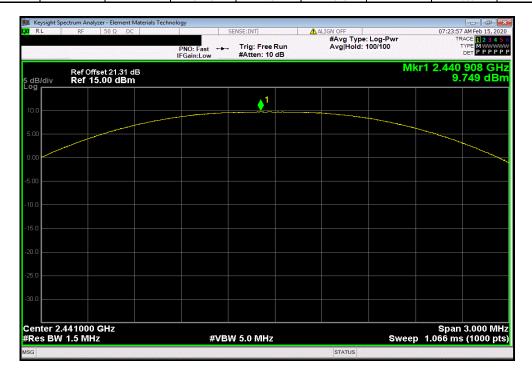
DH5, GFSK, Low Channel (2402 MHz)

Out Pwr Antenna EIRP EIRP Limit
(dBm) Gain (dBi) (dBm) (dBm) Result

9.991 1.8 11.791 27 Pass



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

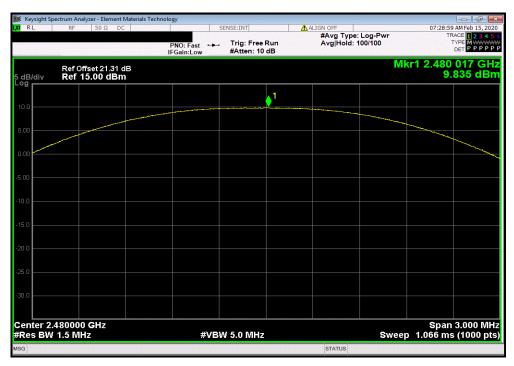




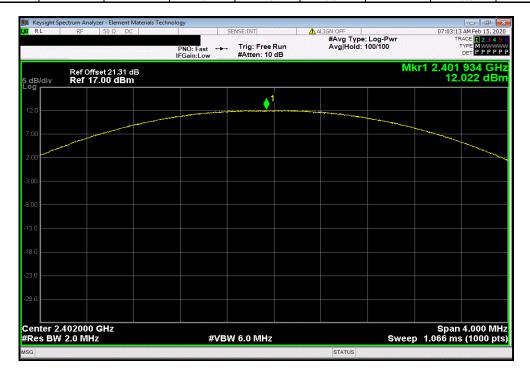
DH5, GFSK, High Channel (2480 MHz)

Out Pwr Antenna EIRP EIRP Limit
(dBm) Gain (dBi) (dBm) (dBm) Result

9.835 1.8 11.635 27 Pass



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

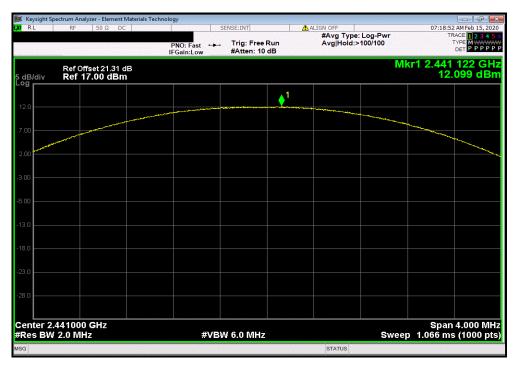




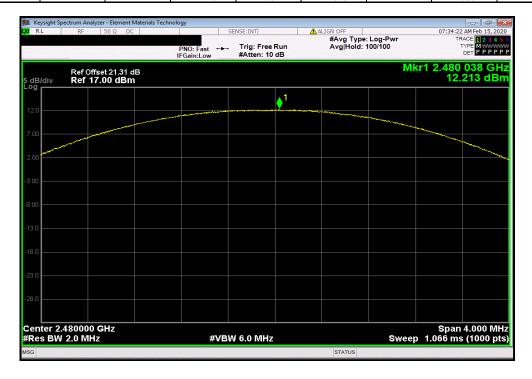
2DH5, pi/4-DQPSK, Mid Channel (2441 MHz)

Out Pwr Antenna EIRP EIRP Limit
(dBm) Gain (dBi) (dBm) (dBm) Result

12.099 1.8 13.899 27 Pass



		2DH5, pi/4-DQ	PSK, High Chani	nel (2480 MHz)			
		Out Pwr	Antenna	EIRP	EIRP Limit		
		(dBm)	Gain (dBi)	(dBm)	(dBm)	Result	
•	<u> </u>	12.213	1.8	14.013	27	Pass	I

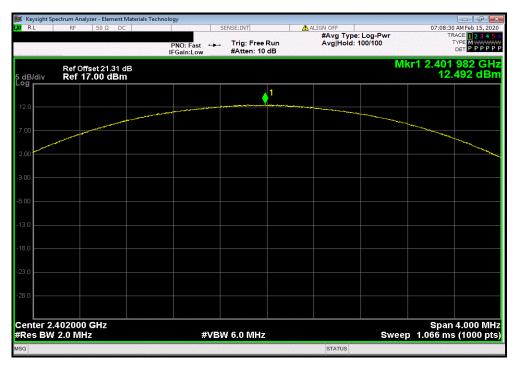




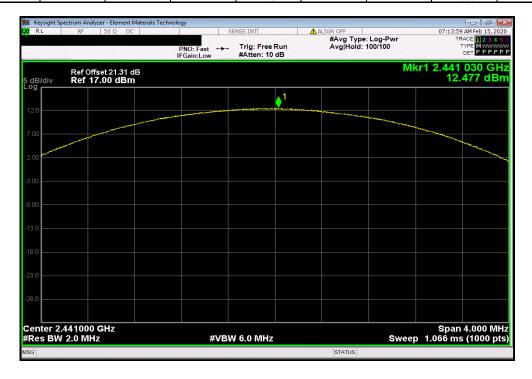
3DH5, 8-DPSK, Low Channel (2402 MHz)

Out Pwr Antenna EIRP EIRP Limit
(dBm) Gain (dBi) (dBm) (dBm) Result

12.492 1.8 14.292 27 Pass



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

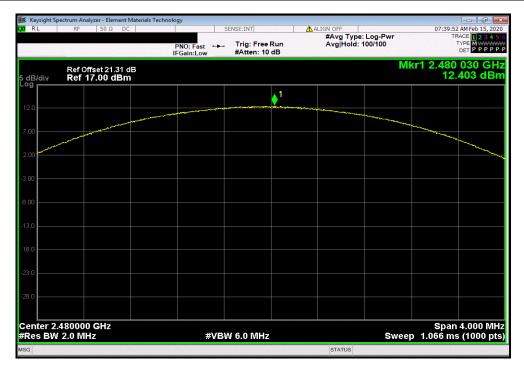




3DH5, 8-DPSK, High Channel (2480 MHz)

Out Pwr Antenna EIRP EIRP Limit
(dBm) Gain (dBi) (dBm) (dBm) Result

12.403 1.8 14.203 27 Pass





XMit 2019.09.0

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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

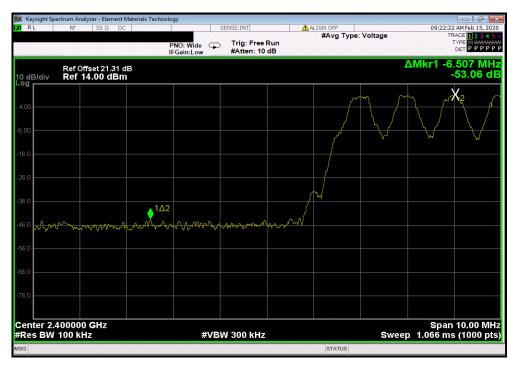
The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The spurious RF conducted emissions at the edges of the authorized band were measured with the EUT set to its normal pseudo-random hopping sequence. The EUT was transmitting at the data rate(s)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

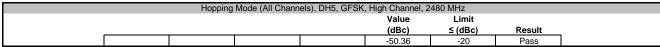
The spectrum was scanned below the lower band edge and above the higher band edge.



						XMit 2019.09.
	2-03CPU			Work Order:		
Serial Number: N					14-Feb-20	
Customer: K	Coyo Electronics Industrie	s Co., LTD		Temperature:	22.3 °C	
Attendees: No					14.6% RH	
Project: No				Barometric Pres.:		
	ndrew Rogstad		24 VDC	Job Site:	MN08	
TEST SPECIFICATION	NS		Test Method			
CC 15.247:2020			ANSI C63.10:2013			
COMMENTS						
Reference level offset	t includes 20 dB attenuat	or, DC block, and measurement cable.				
DEVIATIONS FROM T	TEST STANDARD					
None						
Configuration #	10	Signature Roger	tol			
		•		Value (dBc)	Limit ≤ (dBc)	Result
Hopping Mode (All Cha		·				Result
	H5, GFSK			(dBc)	≤ (dBc)	
	PH5, GFSK Low Channel,	2402 MHz		(dBc) -53.06	≤ (dBc)	Pass
DI	Low Channel, High Channel,	2402 MHz		(dBc)	≤ (dBc)	
DI	DH5, GFSK Low Channel, High Channel, DH5, pi/4-DQPSK	2402 MHz 2480 MHz		(dBc) -53.06 -50.36	≤ (dBc) -20 -20	Pass Pass
DI	DH5, GFSK Low Channel, High Channel, DH5, pi/4-DQPSK Low Channel,	2402 MHz 2480 MHz 2402 MHz		-53.06 -50.36 -53.47	≤ (dBc) -20 -20 -20	Pass Pass
DI 21	DH5, GFSK Low Channel, High Channel, DH5, pi/4-DQPSK Low Channel, High Channel,	2402 MHz 2480 MHz 2402 MHz		(dBc) -53.06 -50.36	≤ (dBc) -20 -20	Pass Pass
DI 21	DH5, GFSK Low Channel, High Channel, DH5, pi/4-DQPSK Low Channel, High Channel, DH5, 8-DPSK	2402 MHz 2480 MHz 2402 MHz 2480 MHz		-53.06 -50.36 -50.47 -51.55	-20 -20 -20 -20	Pass Pass Pass Pass
DI 21	DH5, GFSK Low Channel, High Channel, DH5, pi/4-DQPSK Low Channel, High Channel,	2402 MHz 2480 MHz 2402 MHz 2402 MHz 2480 MHz		-53.06 -50.36 -53.47	≤ (dBc) -20 -20 -20	Pass Pass











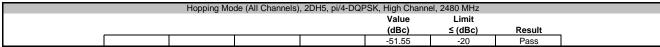
Hopping Mode (All Channels), 2DH5, pi/4-DQPSK, Low Channel, 2402 MHz

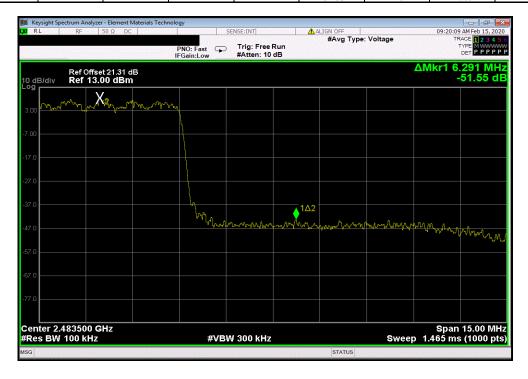
Value

(dBc) ≤ (dBc) Result

-53.47 -20 Pass

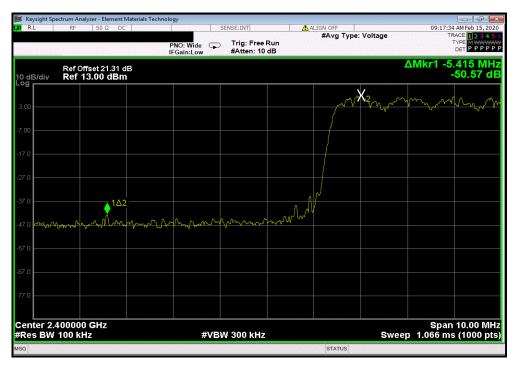


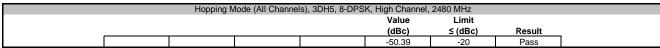


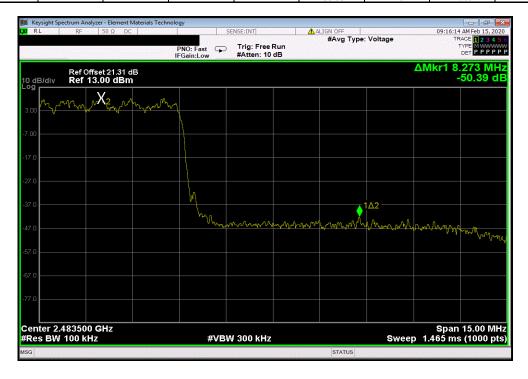




| Hopping Mode (All Channels), 3DH5, 8-DPSK, Low Channel, 2402 MHz
| Value Limit (dBc) ≤ (dBc) Result | -50.57 -20 Pass









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 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.



EUT: C2-03CPU

Serial Number: N/A

Customer: Koyo Electronics Industries Co., LTD

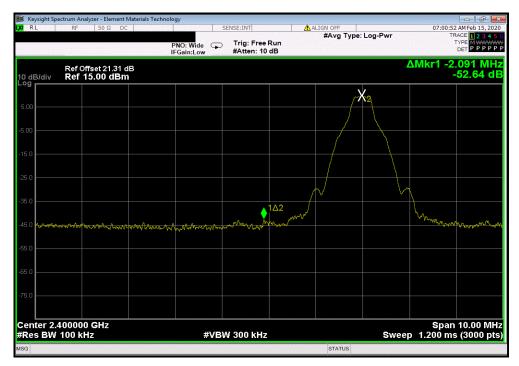
Attendees: None Work Order: KOYO0001
Date: 14-Feb-20
Temperature: 22.1 °C Humidity: 14.6% RH Barometric Pres.: 1025 mbar Project: None
Tested by: Andrew Rogstad
TEST SPECIFICATIONS Power: 24 VDC Test Method Job Site: MN08 FCC 15.247:2020 ANSI C63.10:2013 COMMENTS Reference level offset includes 20 dB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



DH5, GFSK, Low Channel (2402 MHz)

Value Limit
(dBc) ≤ (dBc) Result

-52.65 -20 Pass



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

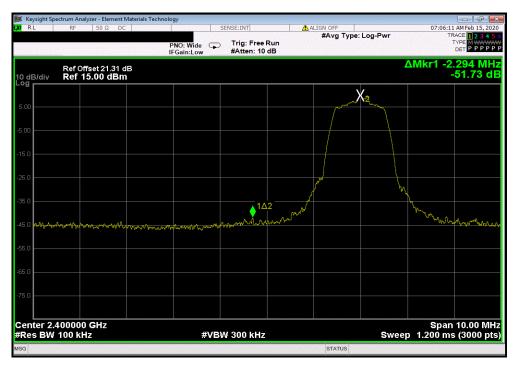




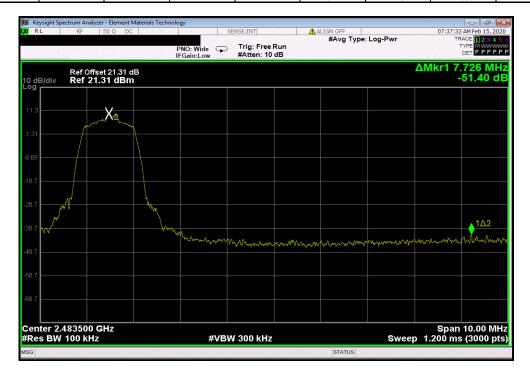
2DH5, pi/4-DQPSK, Low Channel (2402 MHz)

Value Limit
(dBc) ≤ (dBc) Result

-51.73 -20 Pass



	2DH5, pi/4-DQ	PSK, High Chani	nel (2480 MHz)			
			Value	Limit		
			(dBc)	≤ (dBc)	Result	
			-51.4	-20	Pass	

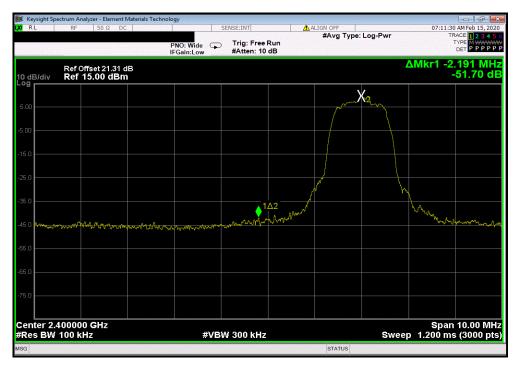


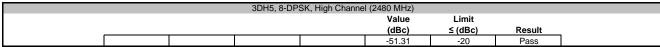


3DH5, 8-DPSK, Low Channel (2402 MHz)

Value Limit
(dBc) ≤ (dBc) Result

-51.7 -20 Pass









XMit 2019.09.0

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

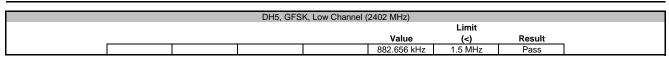
TEST DESCRIPTION

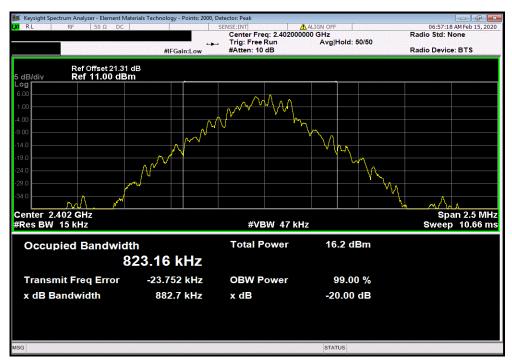
The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The 20 dB occupied bandwidth was measured with the EUT set to low, medium and high transmit frequencies in the band. The EUT was transmitting at the data rate(s) listed in the datasheet in a no-hop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

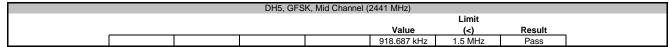


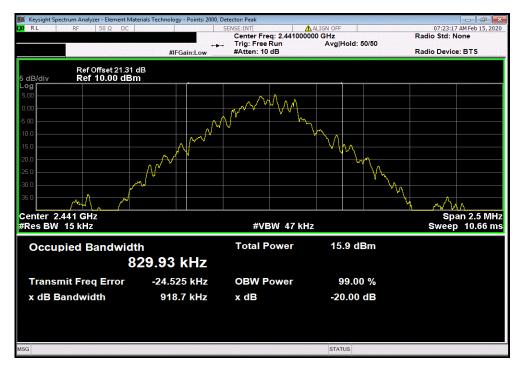
EUT: C2-03CPU
Serial Number: N/A
Customer: Koyo Electronics Industries Co., LTD
Attendees: None Work Order: KOYO0001
Date: 14-Feb-20
Temperature: 22.1 °C Humidity: 14.7% RH
Barometric Pres.: 1025 mbar Project: None
Tested by: Andrew Rogstad
TEST SPECIFICATIONS Power: 24 VDC Test Method Job Site: MN08 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 Chy Rogalash Configuration # 10 Signature Value Result (<) DH5, GFSK Low Channel (2402 MHz) Mid Channel (2441 MHz) 1.5 MHz 1.5 MHz 882.656 kHz Pass 918.687 kHz Pass 1.5 MHz High Channel (2480 MHz) 881.615 kHz Pass 2DH5, pi/4-DQPSK Low Channel (2402 MHz) Mid Channel (2441 MHz) 1.322 MHz 1.5 MHz Pass 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) Mid Channel (2441 MHz) 1.5 MHz 1.5 MHz 1.308 MHz Pass 1.307 MHz Pass High Channel (2480 MHz) 1.308 MHz 1.5 MHz Pass



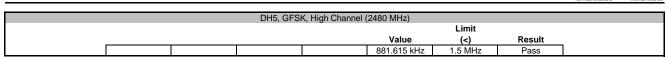


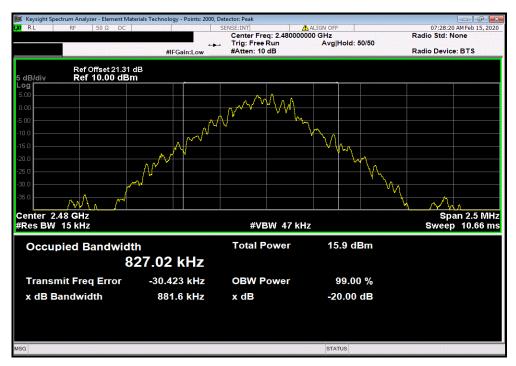


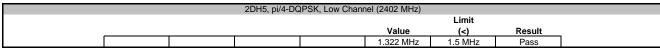


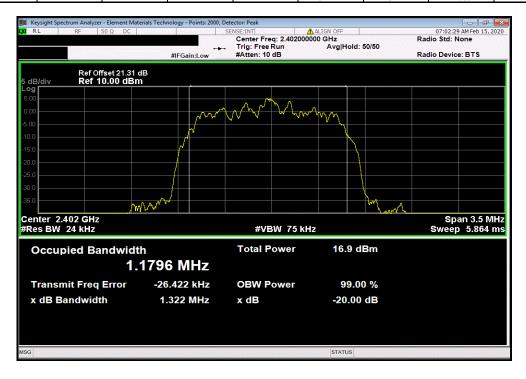












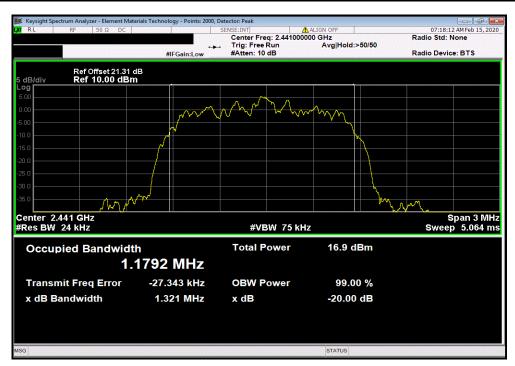


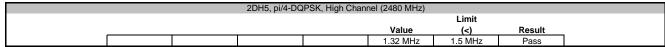
2DH5, pi/4-DQPSK, Mid Channel (2441 MHz)

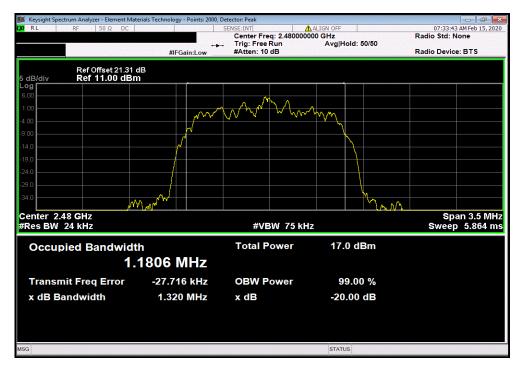
Limit

Value (<) Result

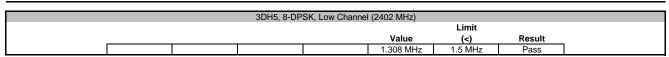
1.321 MHz 1.5 MHz Pass

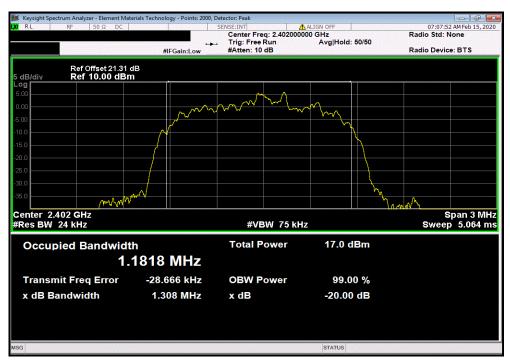




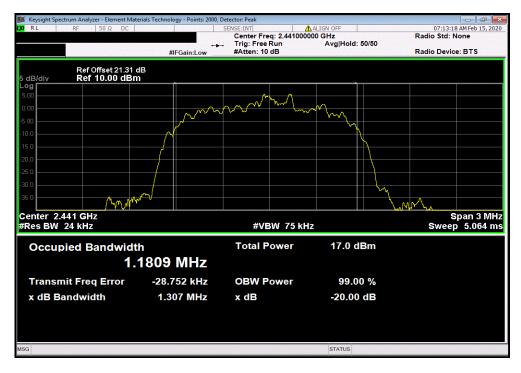












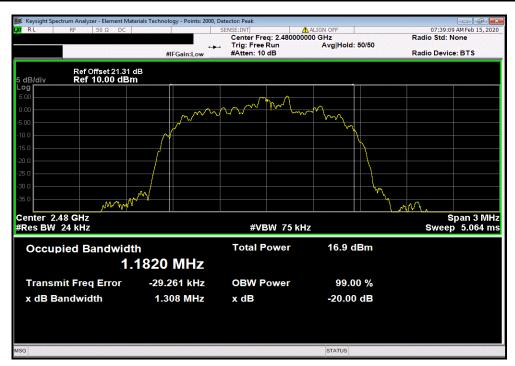


3DH5, 8-DPSK, High Channel (2480 MHz)

Limit

Value (<) Result

1.308 MHz 1.5 MHz Pass





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

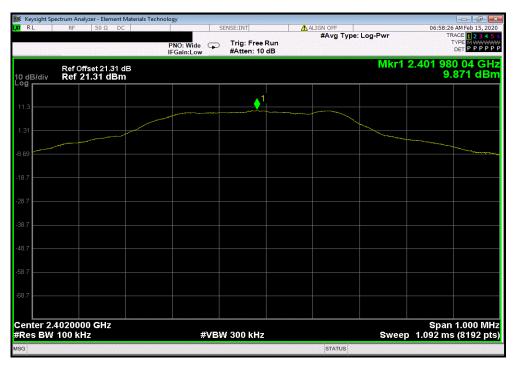
The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The spurious RF conducted emissions were measured with the EUT set to low, medium and high transmit frequencies. The EUT was transmitting at the data rate(s) listed in the datasheet in a no-hop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



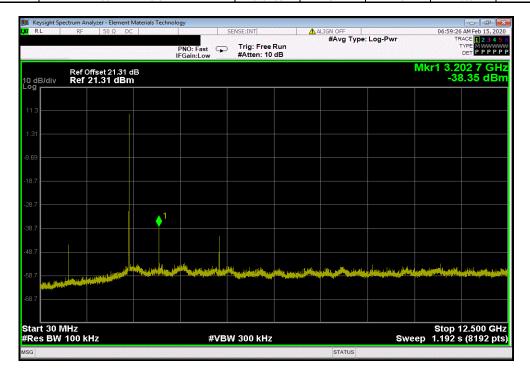
EUT: C2-03CPU Serial Number: N/A Work Order: KOYO0001 Temperature: 22 °C Customer: Koyo Electronics Industries Co., LTD Humidity: 15% RH Barometric Pres.: 1025 mba Project: None
Tested by: Andrew Rogstad
TEST SPECIFICATIONS Power: 24 VDC Test Method Job Site: MN08 FCC 15.247:2020 ANSI C63.10:2013 COMMENTS Reference level offset includes 20 dB attenuator, DC block, and measurement cable. DEVIATIONS FROM TEST STANDARD Configuration # 10 Measured Freq (MHz) (dBc) Result ≤ (dBc) Range DH5, GFSK Fundamental 30 MHz - 12.5 GHz Low Channel (2402 MHz) 2401.98 N/A N/A N/A Low Channel (2402 MHz) 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) 2440.97 N/A N/A Fundamental N/A 30 MHz - 12.5 GHz -50.57 -20 -20 Pass Pass Mid Channel (2441 MHz) 3254.45 Mid Channel (2441 MHz) 12.5 GHz - 25 GHz 24993.9 -61.05 Fundamental 30 MHz - 12.5 GHz N/A -20 High Channel (2480 MHz) 2479.98 N/A N/A High Channel (2480 MHz) 3306.21 Pass High Channel (2480 MHz) 12.5 GHz - 25 GHz 24653 58 -61 14 -20 Pass 2DH5, pi/4-DQPSK Low Channel (2402 MHz) Low Channel (2402 MHz) Fundamental 30 MHz - 12.5 GHz N/A -20 N/A Pass 2401.98 N/A 3202.69 -47.53 Low Channel (2402 MHz) 12 5 GHz - 25 GHz 24073 68 -60 75 -20 Pass Mid Channel (2441 MHz) 2440.98 N/A Fundamental N/A N/A Pass Pass Mid Channel (2441 MHz) 30 MHz - 12.5 GHz 3254.45 -50.12 -20 Mid Channel (2441 MHz) 12.5 GHz - 25 GHz -60.48 -20 23672.32 High Channel (2480 MHz) High Channel (2480 MHz) Fundamental 30 MHz - 12.5 GHz N/A -20 2479.98 N/A N/A 3306.21 -52.67 Pass High Channel (2480 MHz) 12.5 GHz - 25 GHz 25000 -60.59 -20 Pass 3DH5, 8-DPSK Low Channel (2402 MHz) Low Channel (2402 MHz) Fundamental 30 MHz - 12.5 GHz 2401.97 N/A N/A N/A 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) 2440.98 N/A N/A Fundamental N/A Mid Channel (2441 MHz) Mid Channel (2441 MHz) 30 MHz - 12.5 GHz -20 -20 Pass Pass 3254.45 -50.25 12.5 GHz - 25 GHz 24119.46 -60.88 High Channel (2480 MHz) High Channel (2480 MHz) Fundamental 30 MHz - 12.5 GHz N/A -20 N/A Pass 2479.97 N/A High Channel (2480 MHz) 12.5 GHz - 25 GHz 24989 32 -60.68 -20 Pass



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



	DH5, 0	FSK, Low Channel ((2402 MHz)		
	Frequency	Measured	Max Value	Limit	
_	Range	Freq (MHz)	(dBc)	≤ (dBc)	Result
,	30 MHz - 12.5 GHz	3202.69	-48.22	-20	Pass



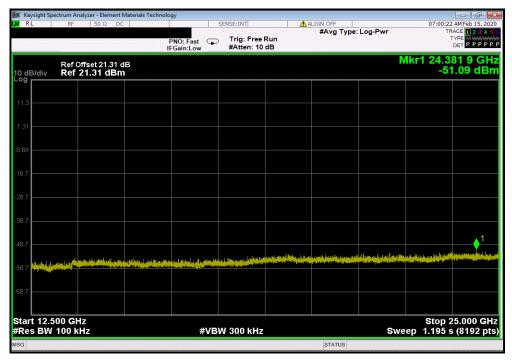


DH5, GFSK, Low Channel (2402 MHz)

Frequency Measured Max Value Limit

Range Freq (MHz) (dBc) ≤ (dBc) Result

12.5 GHz - 25 GHz 24381.94 -60.96 -20 Pass



DH5,	GFSK, Mid Channel (2	2441 MHz)		
Frequency	Measured	Max Value	Limit	
Range	Freq (MHz)	(dBc)	≤ (dBc)	Result
Fundamental	2440.97	N/A	N/A	N/A



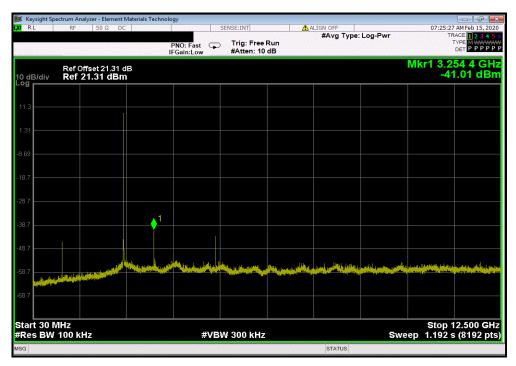


DH5, GFSK, Mid Channel (2441 MHz)

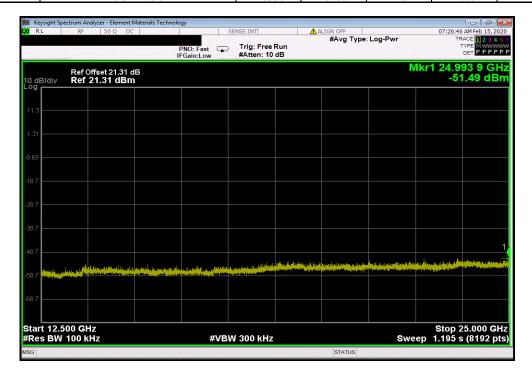
Frequency Measured Max Value Limit

Range Freq (MHz) (dBc) ≤ (dBc) Result

30 MHz - 12.5 GHz 3254.45 -50.57 -20 Pass



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



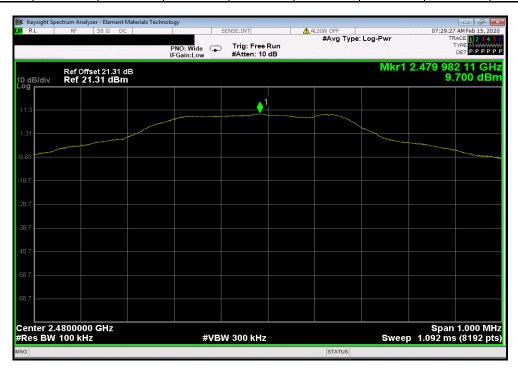


DH5, GFSK, High Channel (2480 MHz)

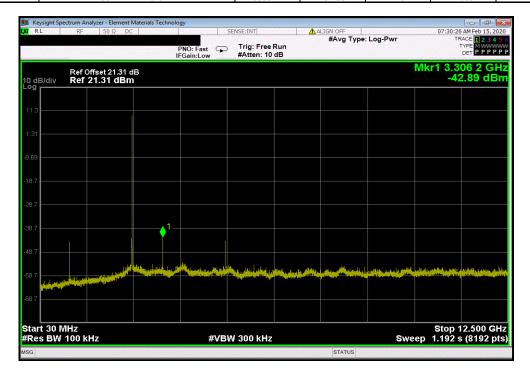
Frequency Measured Max Value Limit

Range Freq (MHz) (dBc) ≤ (dBc) Result

Fundamental 2479.98 N/A N/A N/A



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



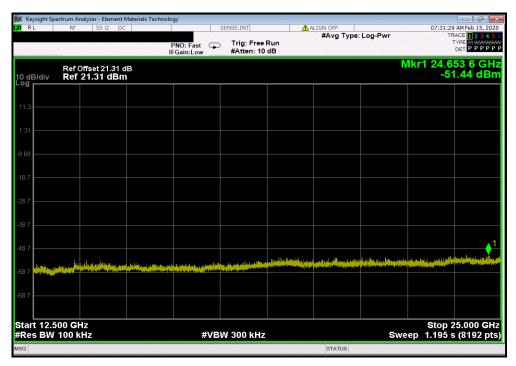


 DH5, GFSK, High Channel (2480 MHz)

 Frequency
 Measured
 Max Value
 Limit

 Range
 Freq (MHz)
 (dBc)
 ≤ (dBc)
 Result

 12.5 GHz - 25 GHz
 24653.58
 -61.14
 -20
 Pass



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



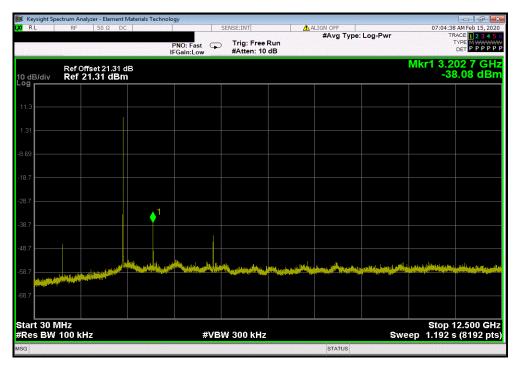


2DH5, pi/4-DQPSK, Low Channel (2402 MHz)

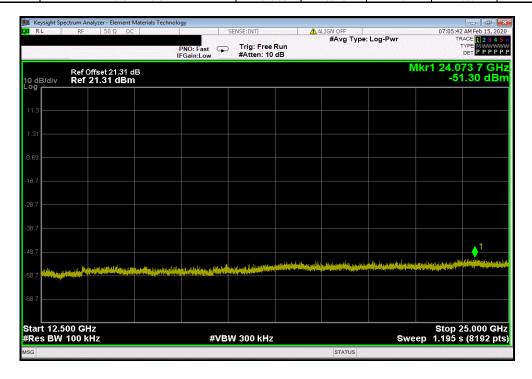
Frequency Measured Max Value Limit

Range Freq (MHz) (dBc) ≤ (dBc) Result

30 MHz - 12.5 GHz 3202.69 -47.53 -20 Pass



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



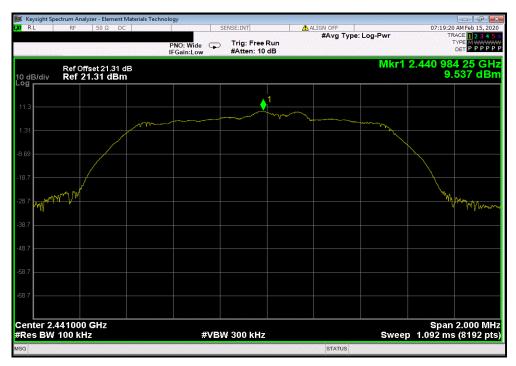


2DH5, pi/4-DQPSK, Mid Channel (2441 MHz)

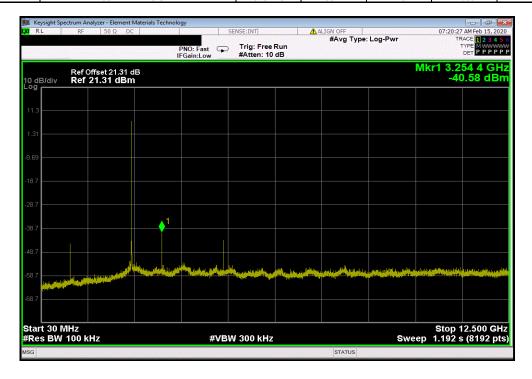
Frequency Measured Max Value Limit

Range Freq (MHz) (dBc) ≤ (dBc) Result

Fundamental 2440.98 N/A N/A N/A



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



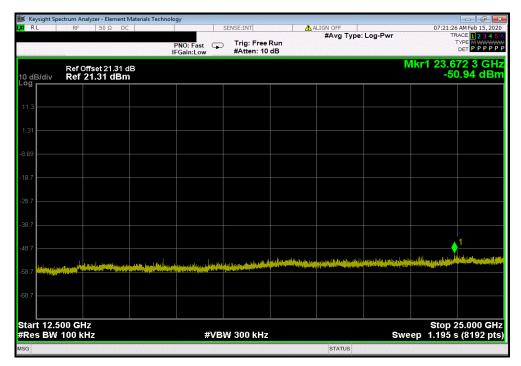


2DH5, pi/4-DQPSK, Mid Channel (2441 MHz)

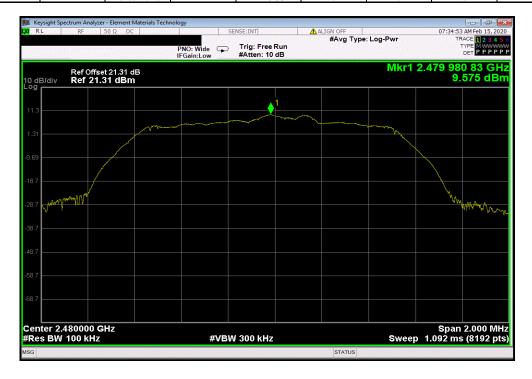
Frequency Measured Max Value Limit

Range Freq (MHz) (dBc) ≤ (dBc) Result

12.5 GHz - 25 GHz 23672.32 -60.48 -20 Pass



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



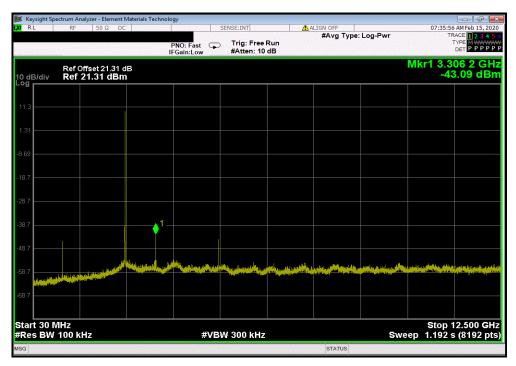


2DH5, pi/4-DQPSK, High Channel (2480 MHz)

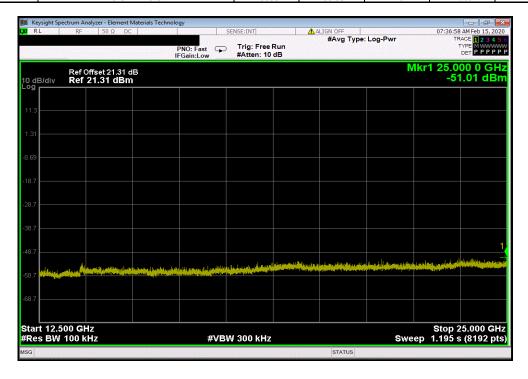
Frequency Measured Max Value Limit

Range Freq (MHz) (dBc) ≤ (dBc) Result

30 MHz - 12.5 GHz 3306.21 -52.67 -20 Pass



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





3DH5, 8-DPSK, Low Channel (2402 MHz)

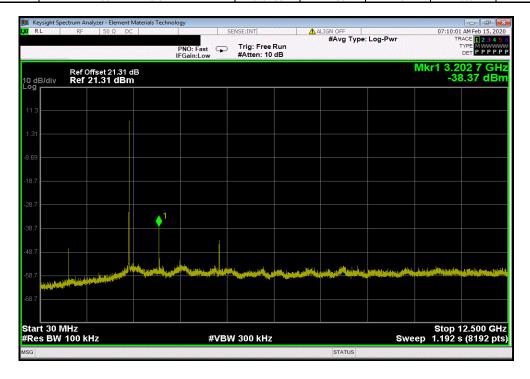
Frequency Measured Max Value Limit

Range Freq (MHz) (dBc) ≤ (dBc) Result

Fundamental 2401.97 N/A N/A N/A



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



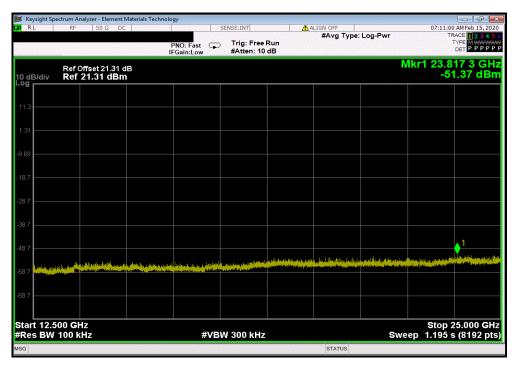


3DH5, 8-DPSK, Low Channel (2402 MHz)

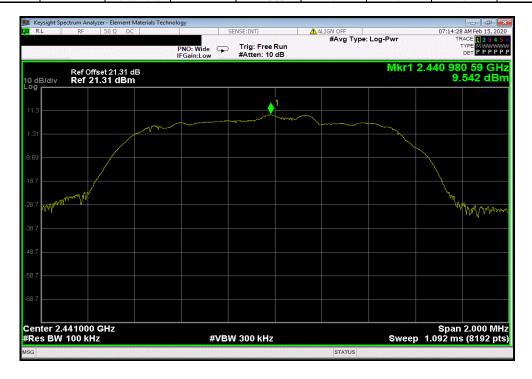
Frequency Measured Max Value Limit

Range Freq (MHz) (dBc) ≤ (dBc) Result

12.5 GHz - 25 GHz 23817.3 -60.86 -20 Pass



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



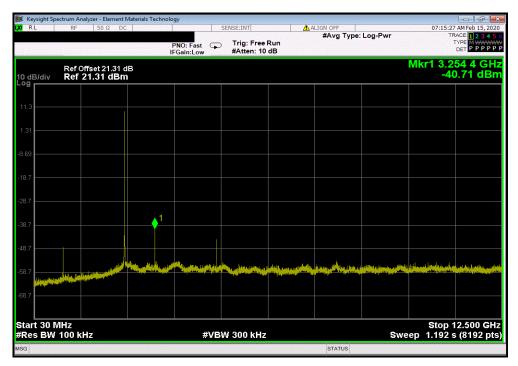


3DH5, 8-DPSK, Mid Channel (2441 MHz)

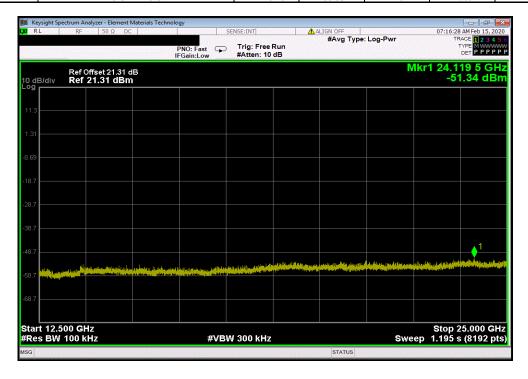
Frequency Measured Max Value Limit

Range Freq (MHz) (dBc) ≤ (dBc) Result

30 MHz - 12.5 GHz 3254.45 -50.25 -20 Pass



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





3DH5, 8-DPSK, High Channel (2480 MHz)

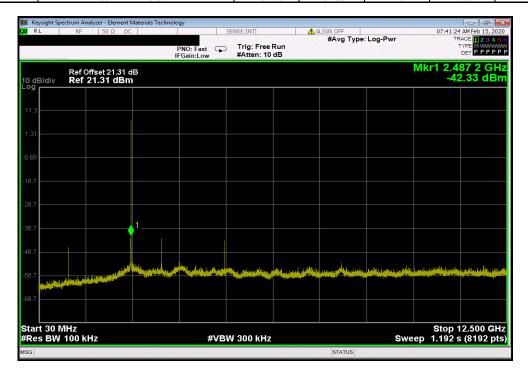
Frequency Measured Max Value Limit

Range Freq (MHz) (dBc) ≤ (dBc) Result

Fundamental 2479.97 N/A N/A N/A



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





3DH5, 8-DPSK, High Channel (2480 MHz)

Frequency Measured Max Value Limit

Range Freq (MHz) (dBc) ≤ (dBc) Result

12.5 GHz - 25 GHz 24989.32 -60.68 -20 Pass

