

SPURIOUS CONDUCTED EMISSIONS



XMit 2017.02.08

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	Topward	TPS-2000	TPD	NCR	NCR
Meter - Multimeter	Fluke	8846A	MMZ	10/22/2015	10/22/2018
Meter - Multimeter	Tektronix	DMM912	MMH	2/17/2016	2/17/2019
Cable	Micro-Coax	UFD150A-1-0720-200200	EVH	5/30/2017	5/30/2018
Attenuator	Fairview Microwave	SA26B-10	TWG	4/15/2017	4/15/2018
Attenuator	S.M. Electronics	SA26B-20	AUY	5/30/2017	5/30/2018
Block - DC	Fairview Microwave	SD3379	AMW	6/5/2017	6/5/2018
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFP	8/10/2016	8/10/2017

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. For each transmit frequency, the spectrum was scanned throughout the specified frequency range.

SPURIOUS CONDUCTED EMISSIONS



THxTx 2017.04.18 XMM 2017.02.08

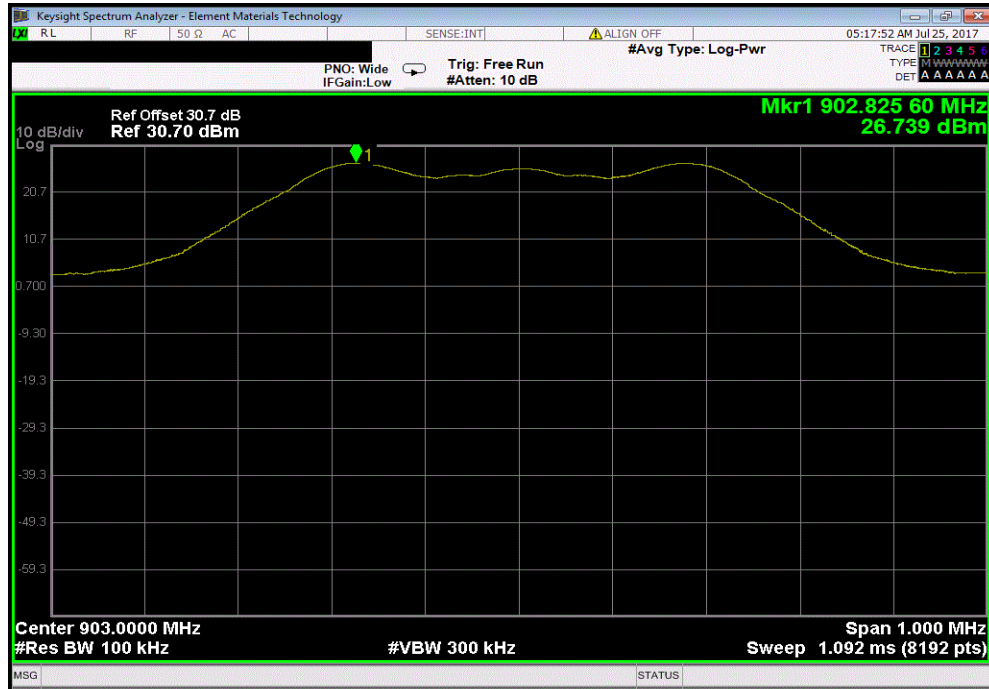
EUT: 9630-9110		Work Order: SCHW0219	
Serial Number: A02654144		Date: 07/24/17	
Customer: Schweitzer Engineering Laboratories, Inc.		Temperature: 23.8 °C	
Attendees: Allan Davis		Humidity: 44.2% RH	
Project: None		Barometric Pres.: 1016 mbar	
Tested by: Mark Baytan		Power: 3.5 VDC	
Job Site: EV06			
TEST SPECIFICATIONS		Test Method	
FCC 15.247:2017		ANSI C63.10:2013	
COMMENTS			
Total reference level offset (DC Block + 20dB Attenuator + 10dB Attenuator + RF Cable) = 30.7 dB. Power level setting: 27 dBm			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	1	Signature 	
		Frequency Range	Max Value (dBc)
			Limit ≤ (dBc)
			Result
Nominal Voltage: 3.5 VDC at Voltage Regulator, 3.0 VDC at RF Module			
		Fundamental	N/A
		Low Channel, 903 MHz	N/A
		30 MHz - 12.5 GHz	-70.18
		12.5 GHz - 25 GHz	-64.92
		Fundamental	N/A
		Mid Channel, 915 MHz	N/A
		30 MHz - 12.5 GHz	-64.75
		12.5 GHz - 25 GHz	-65.11
		Fundamental	N/A
		High Channel, 927 MHz	N/A
		30 MHz - 12.5 GHz	-60.98
		12.5 GHz - 25 GHz	-64.93
Extreme Voltage Condition, Low: 2.7 VDC at Voltage Regulator, 2.7 VDC at RF Module			
		Fundamental	N/A
		Low Channel, 903 MHz	N/A
		30 MHz - 12.5 GHz	-67.59
		12.5 GHz - 25 GHz	-64.44
		Fundamental	N/A
		Mid Channel, 915 MHz	N/A
		30 MHz - 12.5 GHz	-61.97
		12.5 GHz - 25 GHz	-63.51
		Fundamental	N/A
		High Channel, 927 MHz	N/A
		30 MHz - 12.5 GHz	-57.76
		12.5 GHz - 25 GHz	-63.48
Extreme Voltage Condition, High: 5.025 VDC at Voltage Regulator, 3.465 VDC at RF Module			
		Fundamental	N/A
		Low Channel, 903 MHz	N/A
		30 MHz - 12.5 GHz	-70.34
		12.5 GHz - 25 GHz	-64.31
		Fundamental	N/A
		Mid Channel, 915 MHz	N/A
		30 MHz - 12.5 GHz	-65.68
		12.5 GHz - 25 GHz	-64.18
		Fundamental	N/A
		High Channel, 927 MHz	N/A
		30 MHz - 12.5 GHz	-61.39
		12.5 GHz - 25 GHz	-64.18

SPURIOUS CONDUCTED EMISSIONS

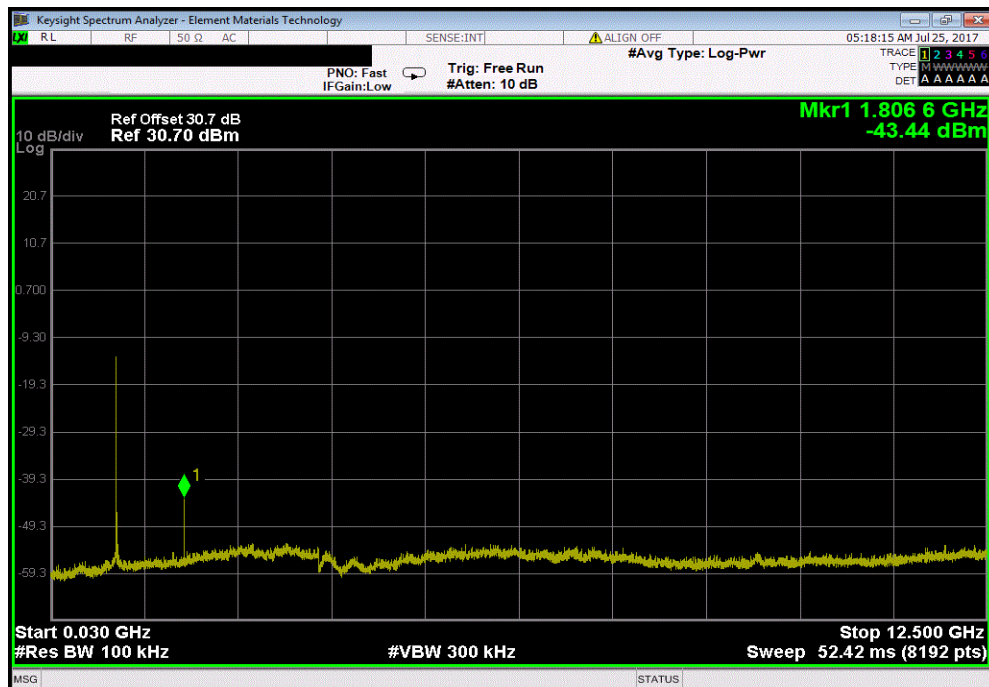


TMTx 2017.04.18 XMM 2017.02.08

Nominal Voltage: 3.5 VDC at Voltage Regulator, 3.0 VDC at RF Module at Voltage Regulator, 3.0 VDC at RF Module, Low Channel, 903 MHz						
Frequency Range	Max Value (dBc)	Limit ≤ (dBc)	Result			
Fundamental	N/A	N/A	N/A			



Nominal Voltage: 3.5 VDC at Voltage Regulator, 3.0 VDC at RF Module at Voltage Regulator, 3.0 VDC at RF Module, Low Channel, 903 MHz						
Frequency Range	Max Value (dBc)	Limit ≤ (dBc)	Result			
30 MHz - 12.5 GHz	-70.18	-30	Pass			



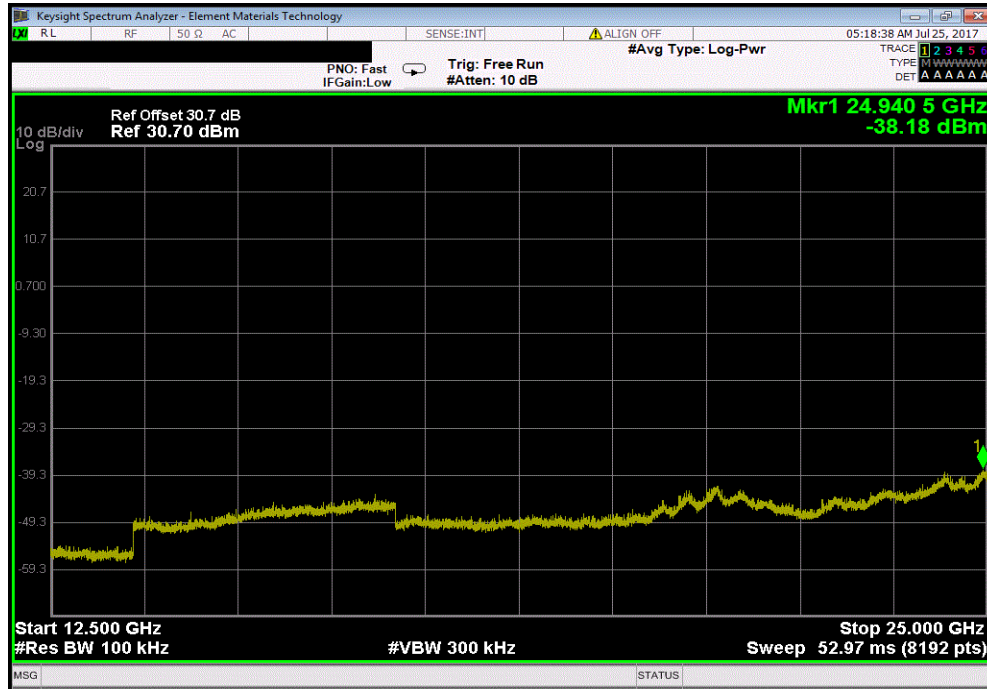
SPURIOUS CONDUCTED EMISSIONS



TMTx 2017.04.18 XMM 2017.02.08

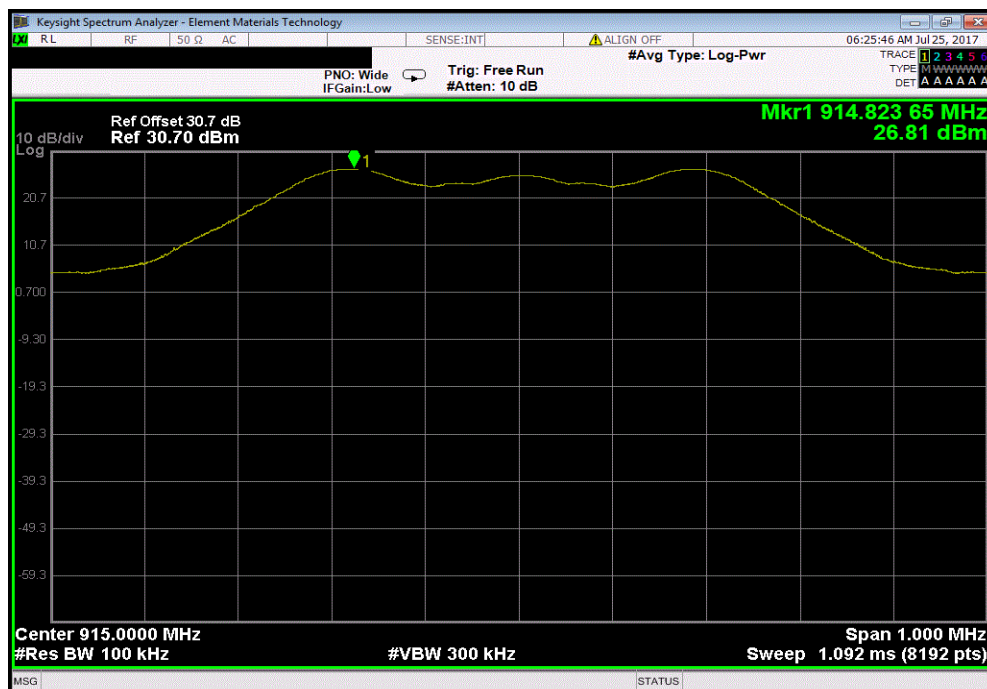
Nominal Voltage: 3.5 VDC at Voltage Regulator, 3.0 VDC at RF Module at Voltage Regulator, 3.0 VDC at RF Module, Low Channel, 903 MHz

Frequency Range	Max Value (dBc)	Limit ≤ (dBc)	Result
12.5 GHz - 25 GHz	-64.92	-30	Pass



Nominal Voltage: 3.5 VDC at Voltage Regulator, 3.0 VDC at RF Module at Voltage Regulator, 3.0 VDC at RF Module, Mid Channel, 915 MHz

Frequency Range	Max Value (dBc)	Limit ≤ (dBc)	Result
Fundamental	N/A	N/A	N/A



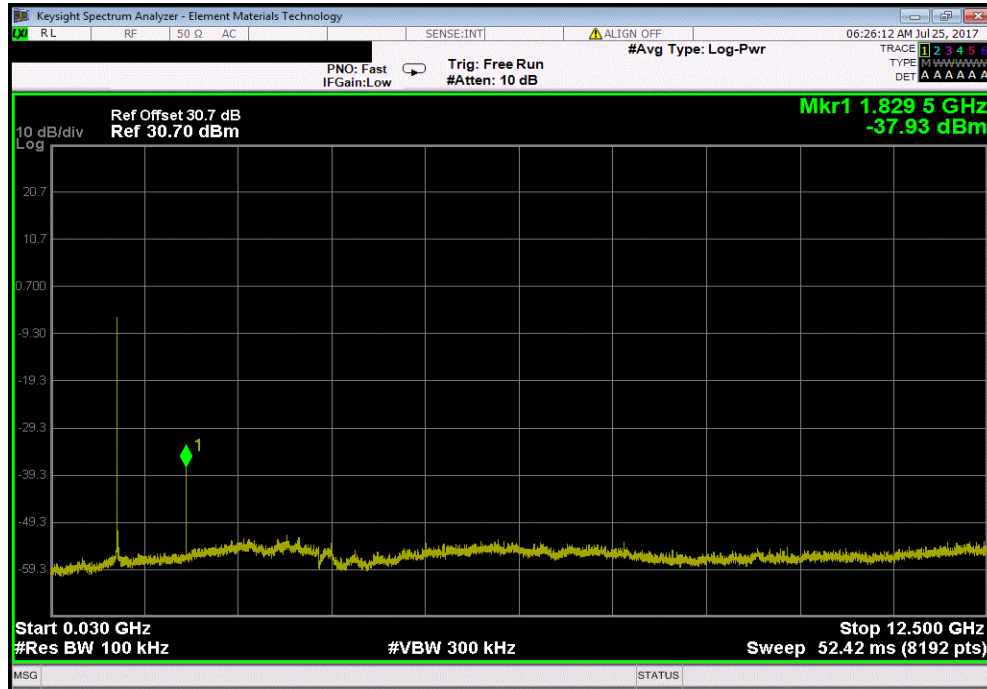
SPURIOUS CONDUCTED EMISSIONS



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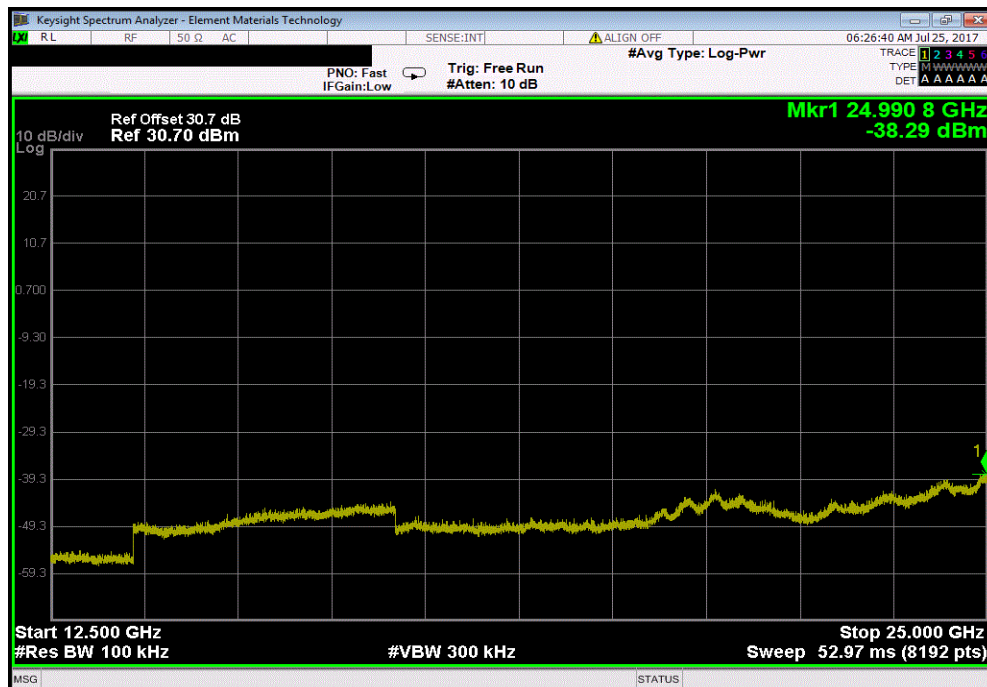
Nominal Voltage: 3.5 VDC at Voltage Regulator, 3.0 VDC at RF Module at Voltage Regulator, 3.0 VDC at RF Module, Mid Channel, 915 MHz

Frequency Range	Max Value (dBc)	Limit ≤ (dBc)	Result
30 MHz - 12.5 GHz	-64.75	-30	Pass



Nominal Voltage: 3.5 VDC at Voltage Regulator, 3.0 VDC at RF Module, Mid Channel, 915 MHz

Frequency Range	Max Value (dBc)	Limit ≤ (dBc)	Result
12.5 GHz - 25 GHz	-65.11	-30	Pass

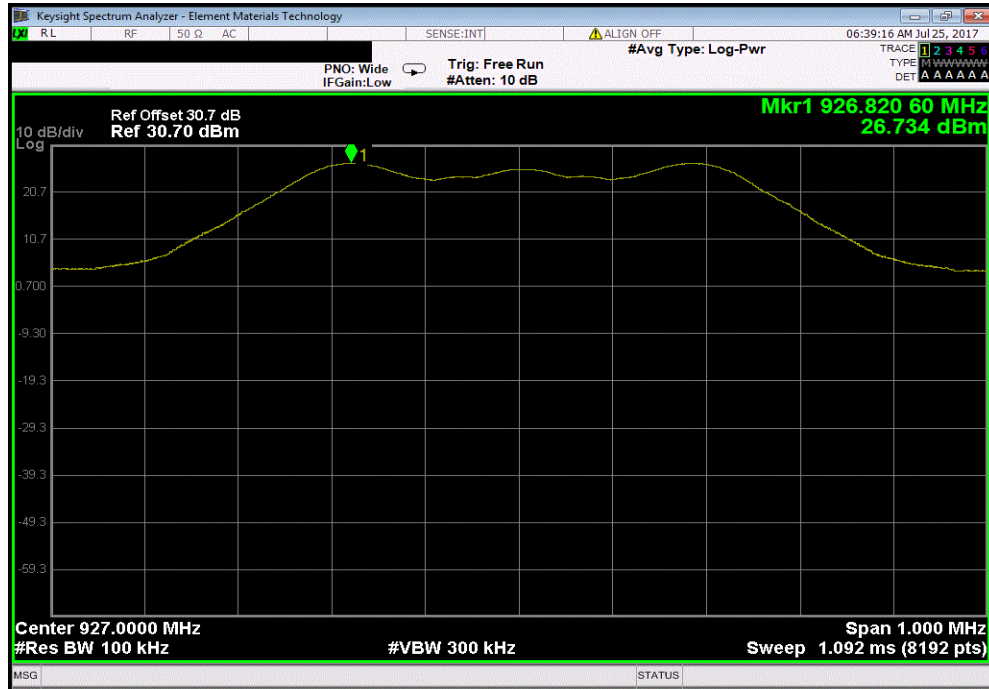


SPURIOUS CONDUCTED EMISSIONS

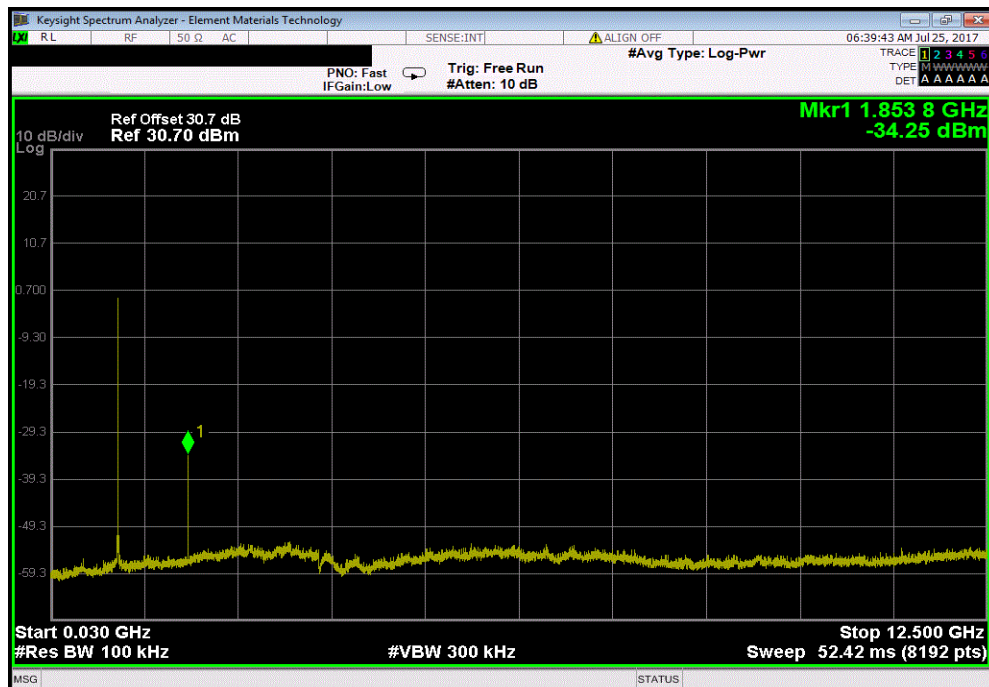


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Nominal Voltage: 3.5 VDC at Voltage Regulator, 3.0 VDC at RF Module, High Channel, 927 MHz						
Frequency Range		Max Value (dBc)	Limit ≤ (dBc)	Result		
Fundamental		N/A	N/A	N/A		



Nominal Voltage: 3.5 VDC at Voltage Regulator, 3.0 VDC at RF Module, High Channel, 927 MHz						
Frequency Range		Max Value (dBc)	Limit ≤ (dBc)	Result		
30 MHz - 12.5 GHz		-60.98	-30	Pass		

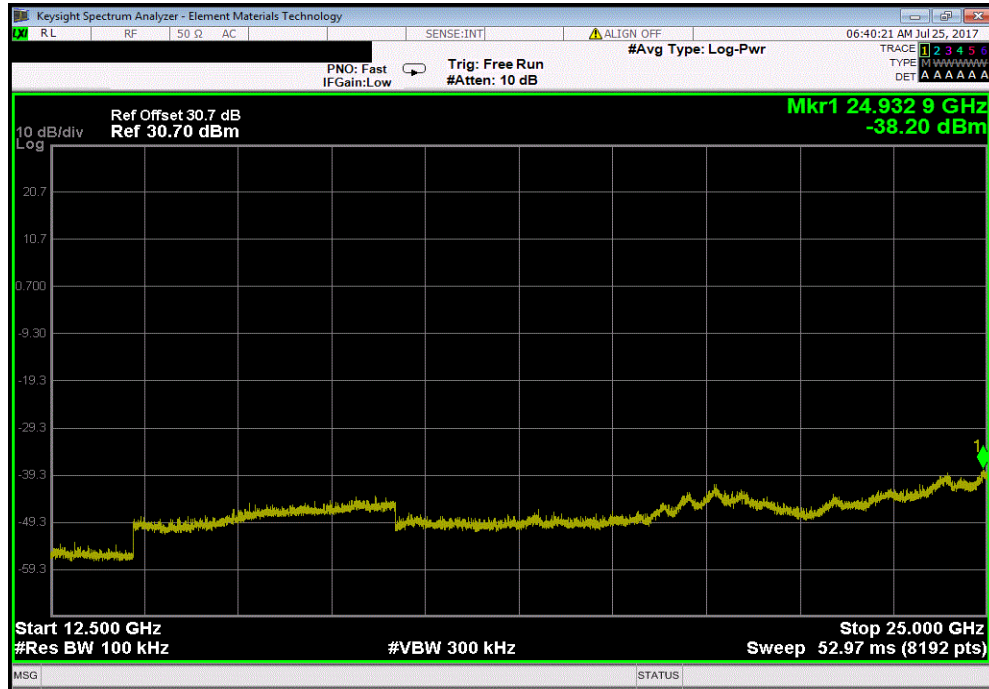


SPURIOUS CONDUCTED EMISSIONS

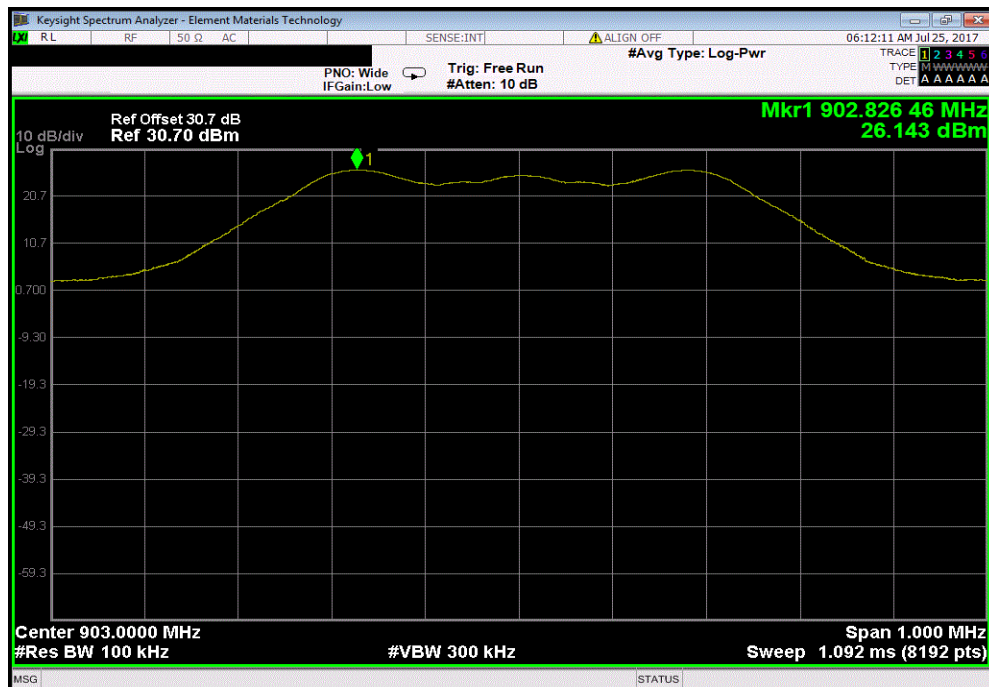


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Nominal Voltage: 3.5 VDC at Voltage Regulator, 3.0 VDC at RF Module, High Channel, 927 MHz				
Frequency Range	Max Value (dBc)	Limit ≤ (dBc)	Result	
12.5 GHz - 25 GHz	-64.93	-30	Pass	



Extreme Voltage Condition, Low: 2.7 VDC at Voltage Regulator, 2.7 VDC at RF Module, Low Channel, 903 MHz				
Frequency Range	Max Value (dBc)	Limit ≤ (dBc)	Result	
Fundamental	N/A	N/A	N/A	

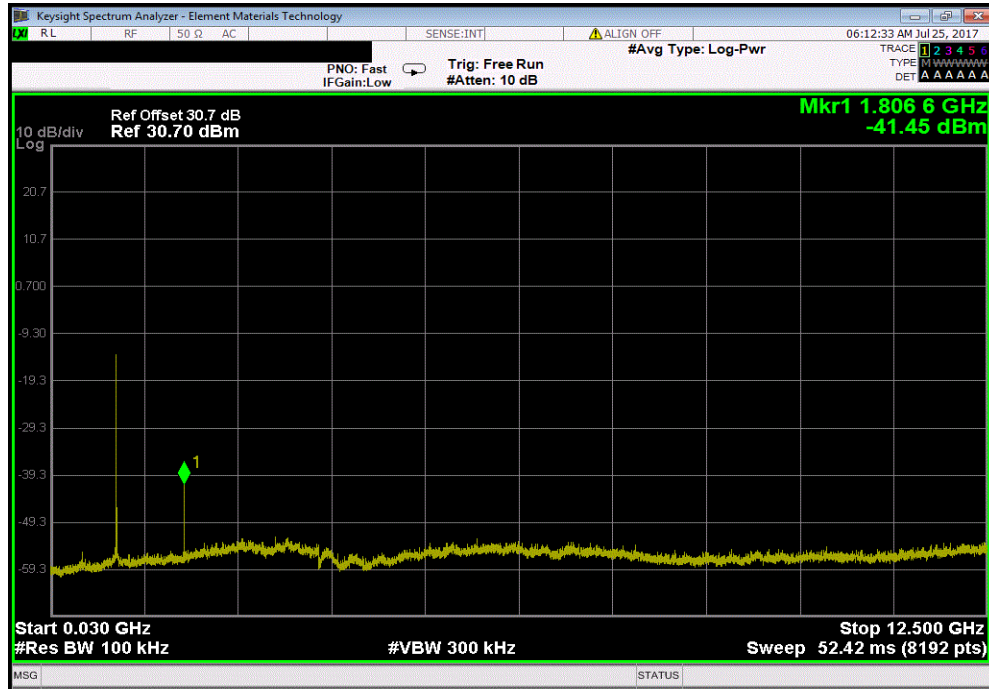


SPURIOUS CONDUCTED EMISSIONS

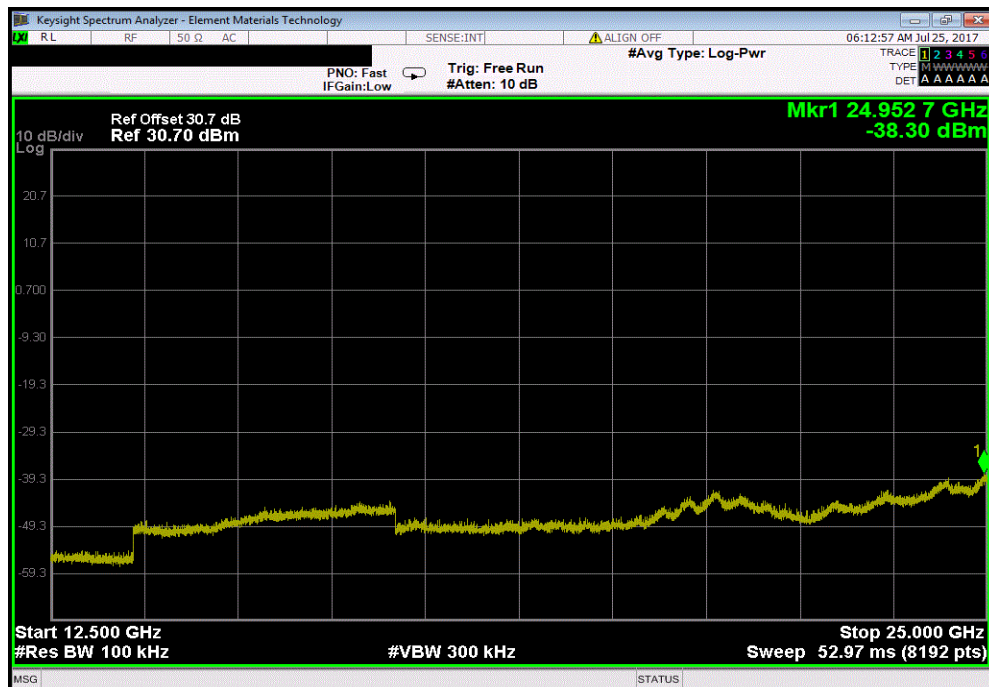


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Extreme Voltage Condition, Low: 2.7 VDC at Voltage Regulator, 2.7 VDC at RF Module, Low Channel, 903 MHz				
Frequency Range	Max Value (dBc)	Limit ≤ (dBc)	Result	
30 MHz - 12.5 GHz	-67.59	-30	Pass	



Extreme Voltage Condition, Low: 2.7 VDC at Voltage Regulator, 2.7 VDC at RF Module, Low Channel, 903 MHz				
Frequency Range	Max Value (dBc)	Limit ≤ (dBc)	Result	
12.5 GHz - 25 GHz	-64.44	-30	Pass	

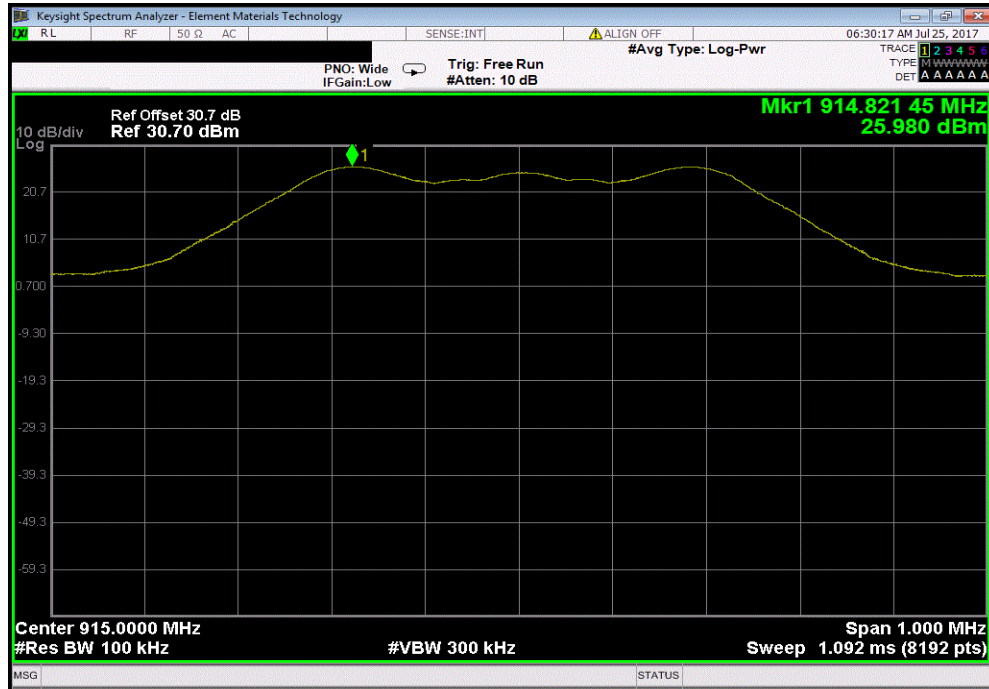


SPURIOUS CONDUCTED EMISSIONS

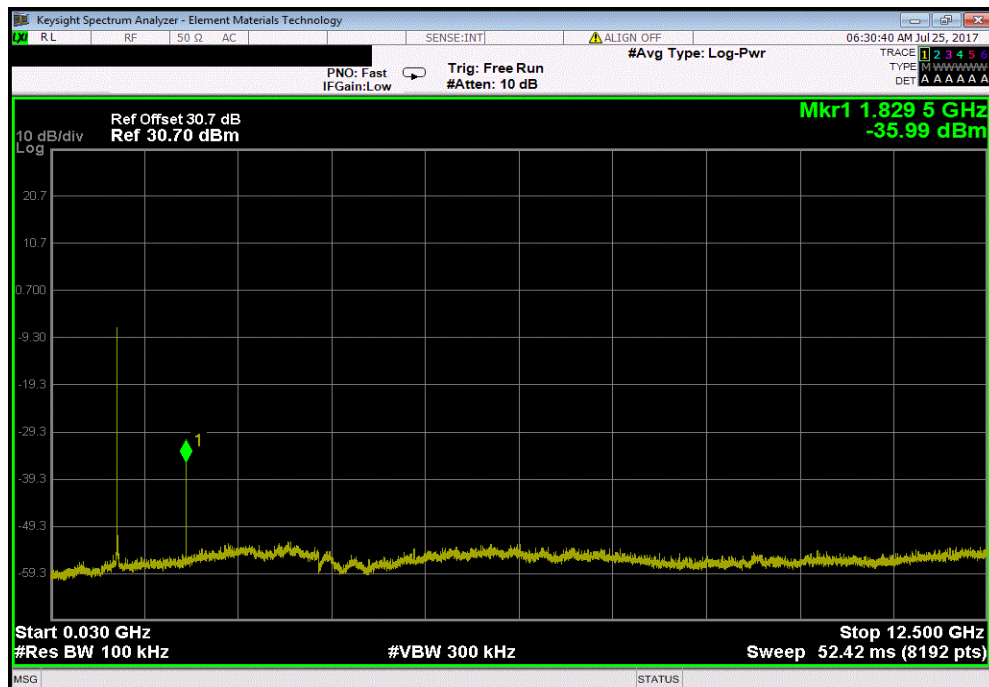


TMTx 2017.04.18 XMM 2017.02.08

Extreme Voltage Condition, Low: 2.7 VDC at Voltage Regulator, 2.7 VDC at RF Module, Mid Channel, 915 MHz						
Frequency Range		Max Value (dBc)		Limit ≤ (dBc)	Result	
Fundamental		N/A		N/A	N/A	



Extreme Voltage Condition, Low: 2.7 VDC at Voltage Regulator, 2.7 VDC at RF Module, Mid Channel, 915 MHz						
Frequency Range		Max Value (dBc)		Limit ≤ (dBc)	Result	
30 MHz - 12.5 GHz		-61.97		-30	Pass	

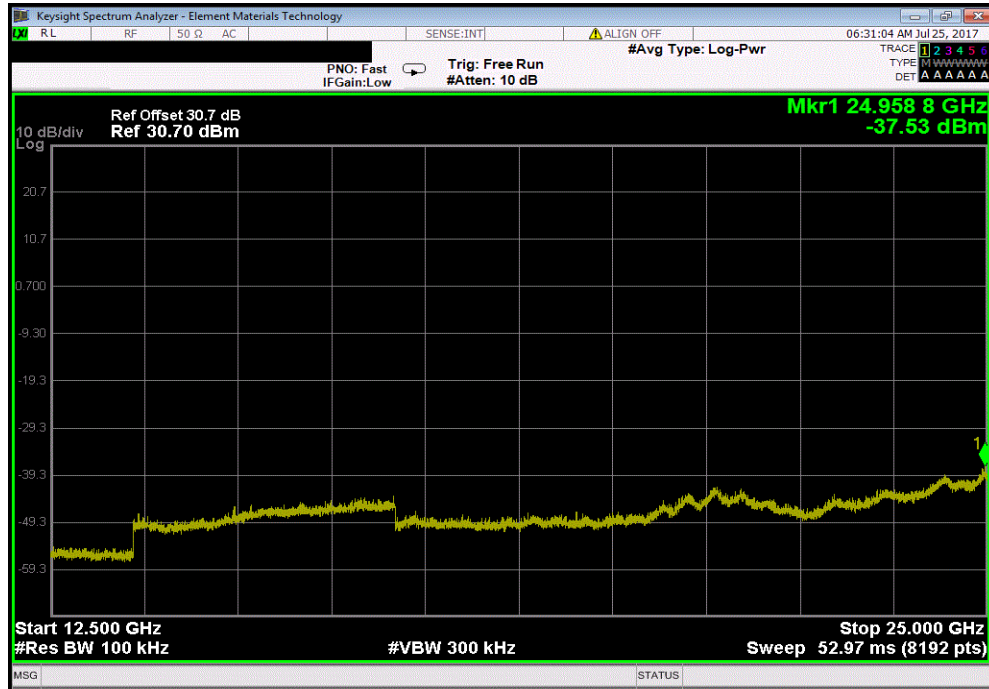


SPURIOUS CONDUCTED EMISSIONS

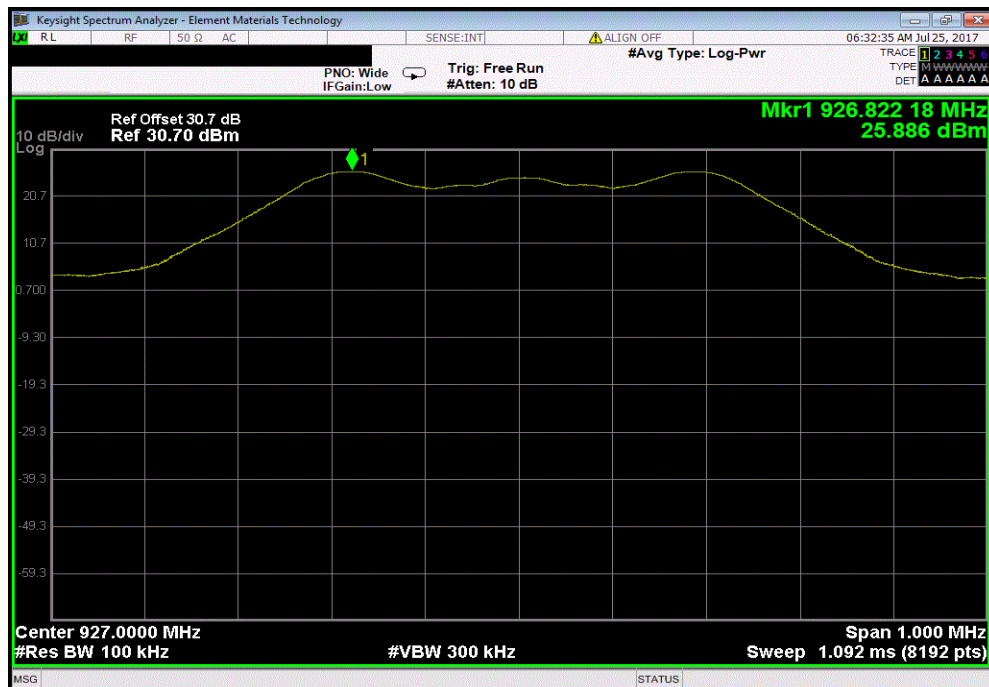


TMTx 2017.04.18 XMM 2017.02.08

Extreme Voltage Condition, Low: 2.7 VDC at Voltage Regulator, 2.7 VDC at RF Module, Mid Channel, 915 MHz				
Frequency Range	Max Value (dBc)	Limit ≤ (dBc)	Result	
12.5 GHz - 25 GHz	-63.51	-30	Pass	



Extreme Voltage Condition, Low: 2.7 VDC at Voltage Regulator, 2.7 VDC at RF Module, High Channel, 927 MHz				
Frequency Range	Max Value (dBc)	Limit ≤ (dBc)	Result	
Fundamental	N/A	N/A	N/A	

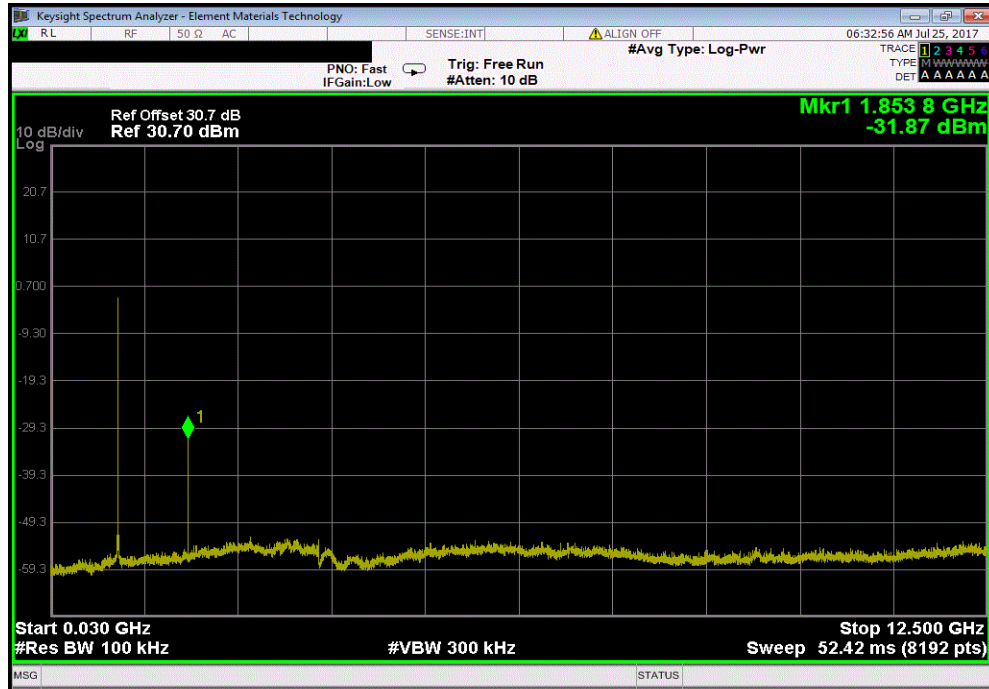


SPURIOUS CONDUCTED EMISSIONS

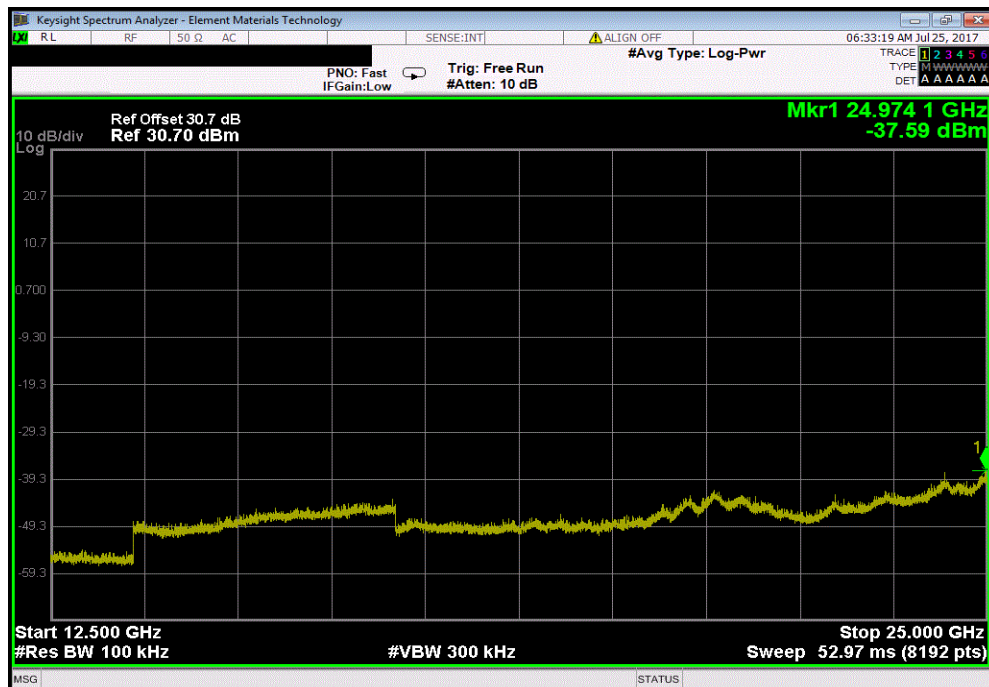


TMTx 2017.04.18 XMI 2017.02.08

Extreme Voltage Condition, Low: 2.7 VDC at Voltage Regulator, 2.7 VDC at RF Module, High Channel, 927 MHz				
Frequency Range	Max Value (dBc)	Limit ≤ (dBc)	Result	
30 MHz - 12.5 GHz	-57.76	-30	Pass	



Extreme Voltage Condition, Low: 2.7 VDC at Voltage Regulator, 2.7 VDC at RF Module, High Channel, 927 MHz				
Frequency Range	Max Value (dBc)	Limit ≤ (dBc)	Result	
12.5 GHz - 25 GHz	-63.48	-30	Pass	

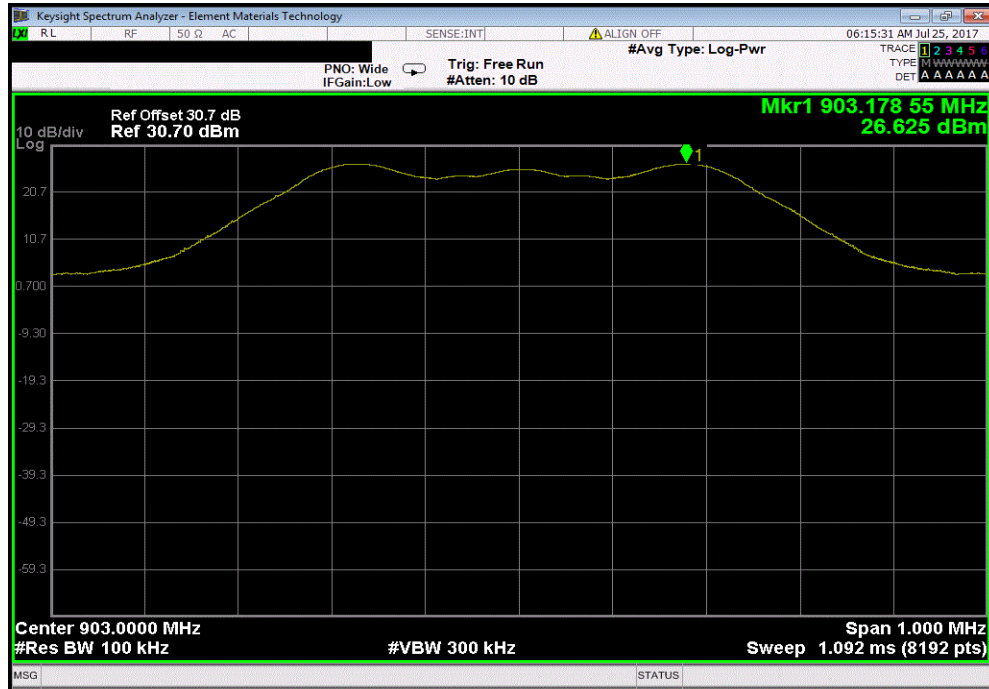


SPURIOUS CONDUCTED EMISSIONS

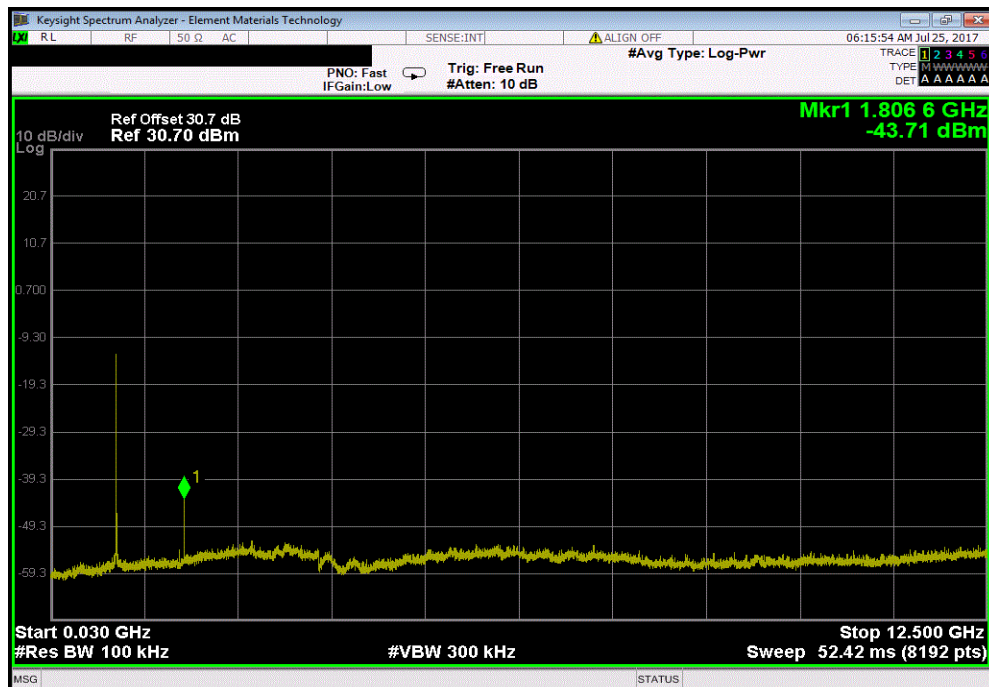


TMTx 2017.04.18 XMM 2017.02.08

Extreme Voltage Condition, High: 5.025 VDC at Voltage Regulator, 3.465 VDC at RF Module, Low Channel, 903 MHz						
Frequency Range		Max Value (dBc)		Limit ≤ (dBc)	Result	
Fundamental		N/A		N/A	N/A	



Extreme Voltage Condition, High: 5.025 VDC at Voltage Regulator, 3.465 VDC at RF Module, Low Channel, 903 MHz						
Frequency Range		Max Value (dBc)		Limit ≤ (dBc)	Result	
30 MHz - 12.5 GHz		-70.34		-30	Pass	

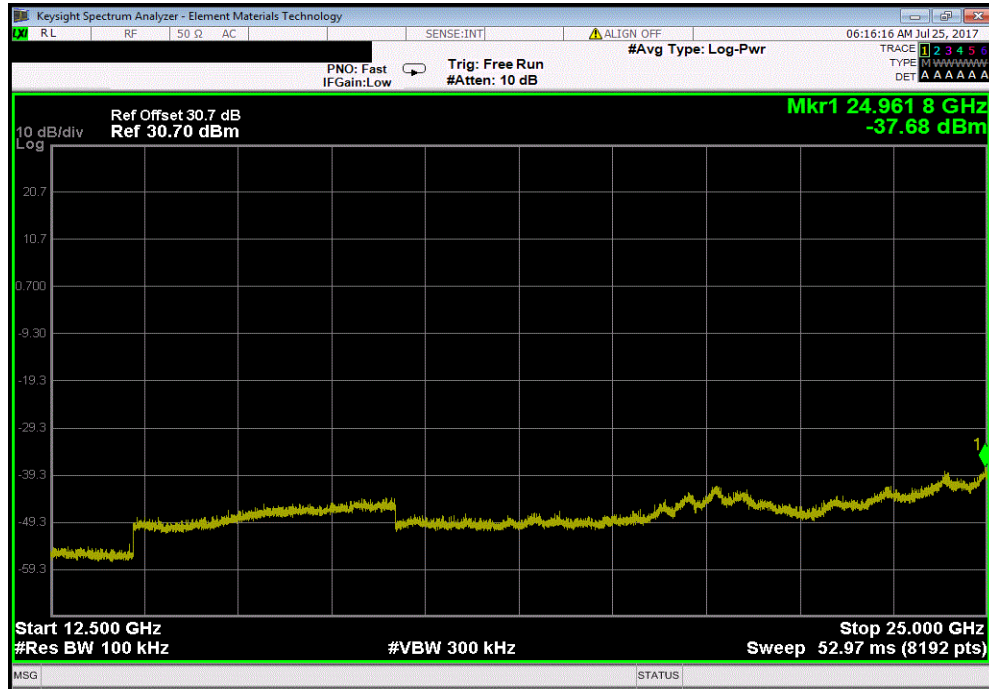


SPURIOUS CONDUCTED EMISSIONS

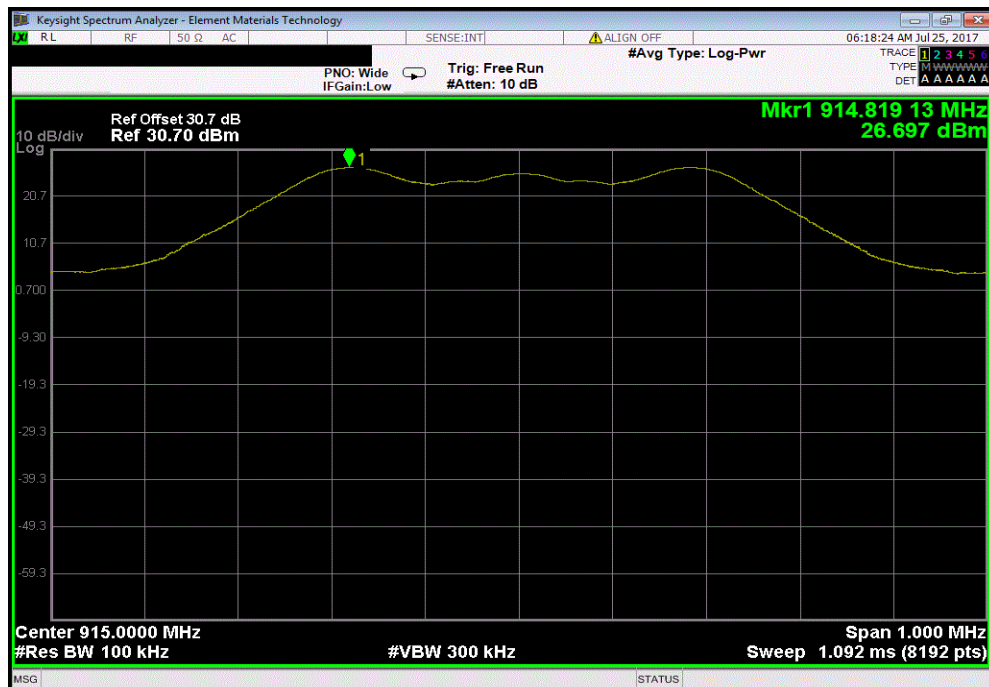


TMTx 2017.04.18 XMTx 2017.02.08

Extreme Voltage Condition, High: 5.025 VDC at Voltage Regulator, 3.465 VDC at RF Module, Low Channel, 903 MHz				
Frequency Range	Max Value (dBc)	Limit ≤ (dBc)	Result	
12.5 GHz - 25 GHz	-64.31	-30	Pass	



Extreme Voltage Condition, High: 5.025 VDC at Voltage Regulator, 3.465 VDC at RF Module, Mid Channel, 915 MHz				
Frequency Range	Max Value (dBc)	Limit ≤ (dBc)	Result	
Fundamental	N/A	N/A	N/A	

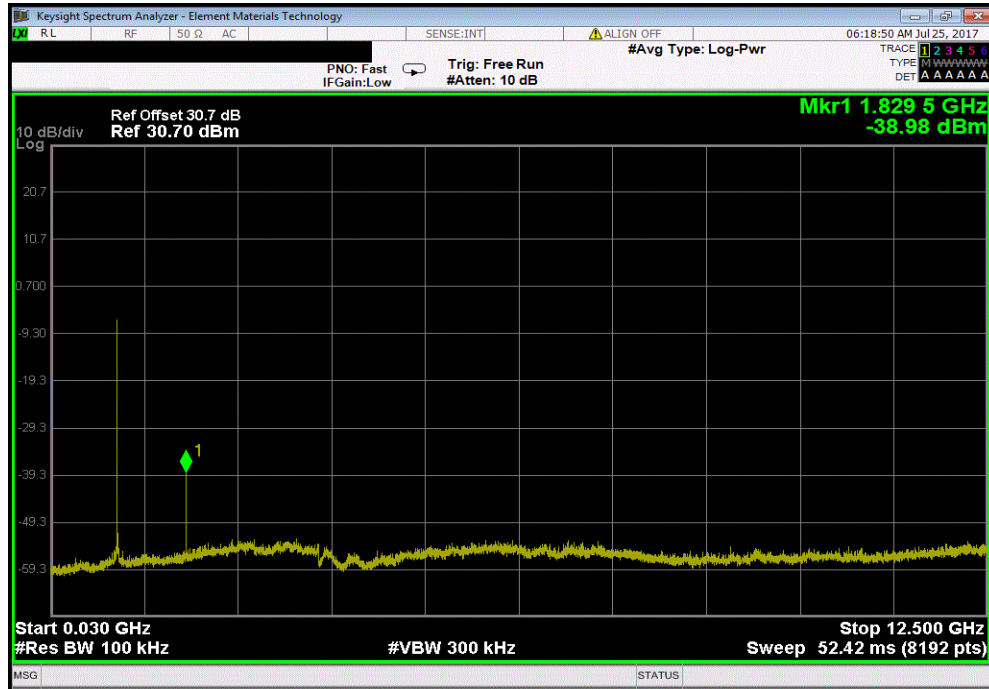


SPURIOUS CONDUCTED EMISSIONS

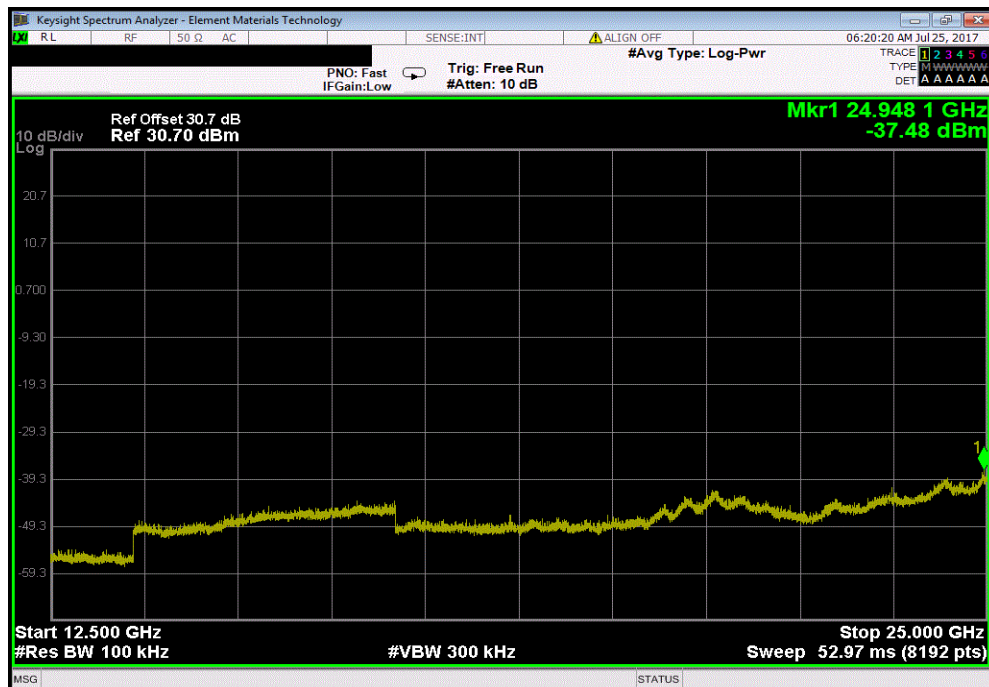


TMTx 2017.04.18 XMM 2017.02.08

Extreme Voltage Condition, High: 5.025 VDC at Voltage Regulator, 3.465 VDC at RF Module, Mid Channel, 915 MHz				
Frequency Range	Max Value (dBc)	Limit ≤ (dBc)	Result	
30 MHz - 12.5 GHz	-65.68	-30	Pass	



Extreme Voltage Condition, High: 5.025 VDC at Voltage Regulator, 3.465 VDC at RF Module, Mid Channel, 915 MHz				
Frequency Range	Max Value (dBc)	Limit ≤ (dBc)	Result	
12.5 GHz - 25 GHz	-64.18	-30	Pass	

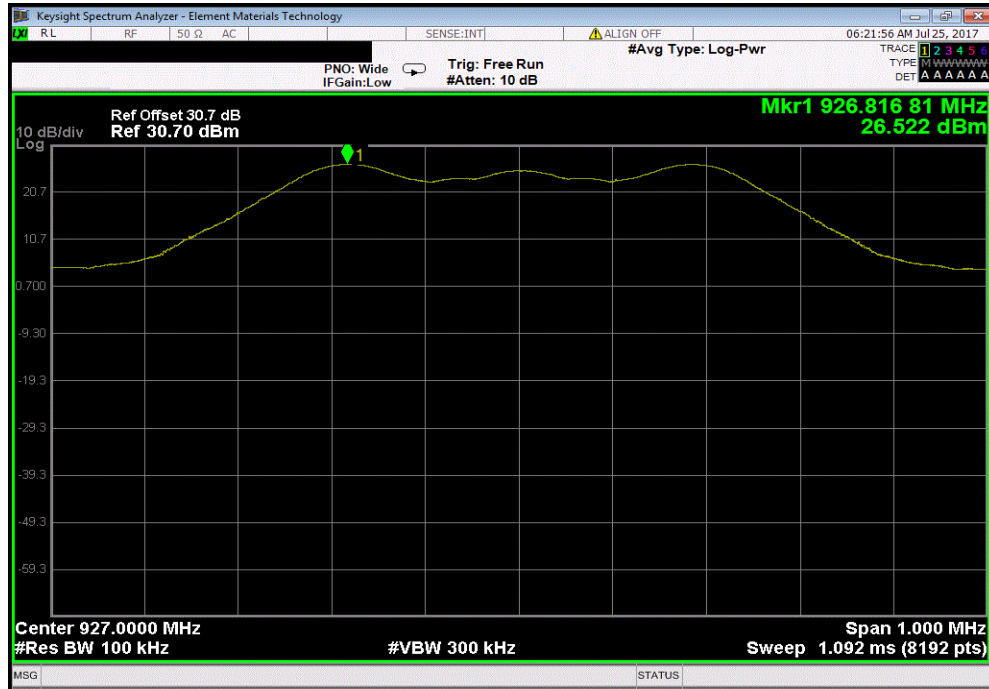


SPURIOUS CONDUCTED EMISSIONS

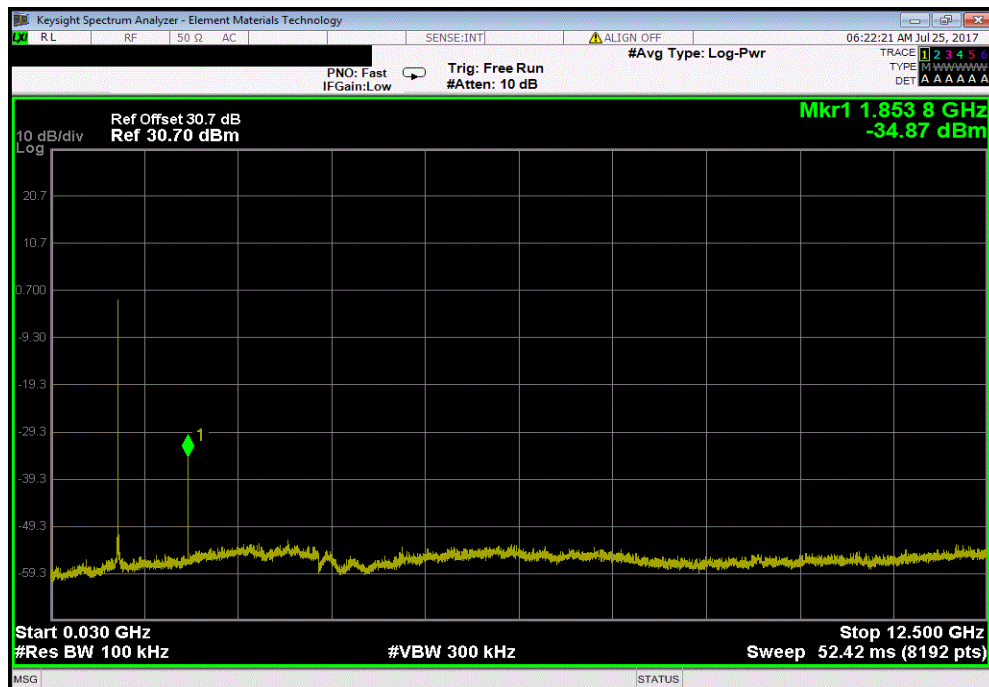


TMTx 2017.04.18 XMM 2017.02.08

Extreme Voltage Condition, High: 5.025 VDC at Voltage Regulator, 3.465 VDC at RF Module, High Channel, 927 MHz						
Frequency Range		Max Value (dBc)		Limit ≤ (dBc)	Result	
Fundamental		N/A		N/A	N/A	



Extreme Voltage Condition, High: 5.025 VDC at Voltage Regulator, 3.465 VDC at RF Module, High Channel, 927 MHz						
Frequency Range		Max Value (dBc)		Limit ≤ (dBc)	Result	
30 MHz - 12.5 GHz		-61.39		-30	Pass	

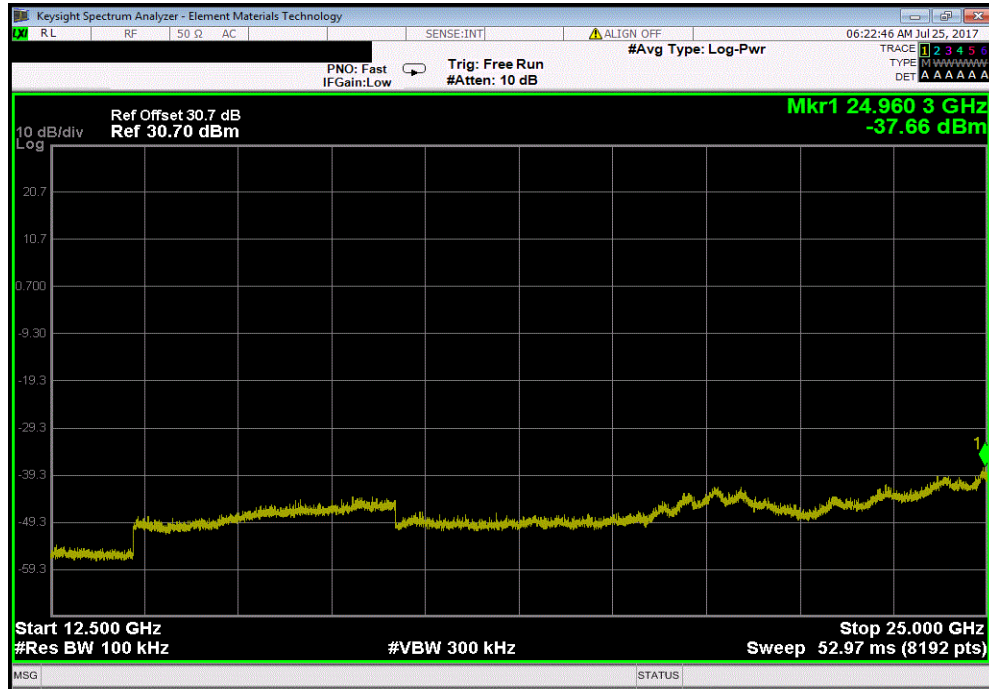


SPURIOUS CONDUCTED EMISSIONS



TMTx 2017.04.18 XMI 2017.02.08

Extreme Voltage Condition, High: 5.025 VDC at Voltage Regulator, 3.465 VDC at RF Module, High Channel, 927 MHz				
Frequency	Max Value	Limit		
Range	(dBc)	≤ (dBc)	Result	
12.5 GHz - 25 GHz	-64.18	-30	Pass	



POWER SPECTRAL DENSITY



XMit 2017.02.08

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	Topward	TPS-2000	TPD	NCR	NCR
Meter - Multimeter	Fluke	8846A	MMZ	10/22/2015	10/22/2018
Meter - Multimeter	Tektronix	DMM912	MMH	2/17/2016	2/17/2019
Cable	Micro-Coax	UFD150A-1-0720-200200	EVH	5/30/2017	5/30/2018
Attenuator	Fairview Microwave	SA26B-10	TWG	4/15/2017	4/15/2018
Attenuator	S.M. Electronics	SA26B-20	AUY	5/30/2017	5/30/2018
Block - DC	Fairview Microwave	SD3379	AMW	6/5/2017	6/5/2018
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFP	8/10/2016	8/10/2017

TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The power spectral density was measured using the channels as called out on the following data sheets. The transmit power was set to its default maximum.

The method AVGPS-1 in section 11.10.3 of ANSI C63.10:2013 was used to make the measurement. This method uses trace averaging and RMS detection across the full power of the burst. This method is allowed as the same method has been used to determine the conducted output power.

POWER SPECTRAL DENSITY



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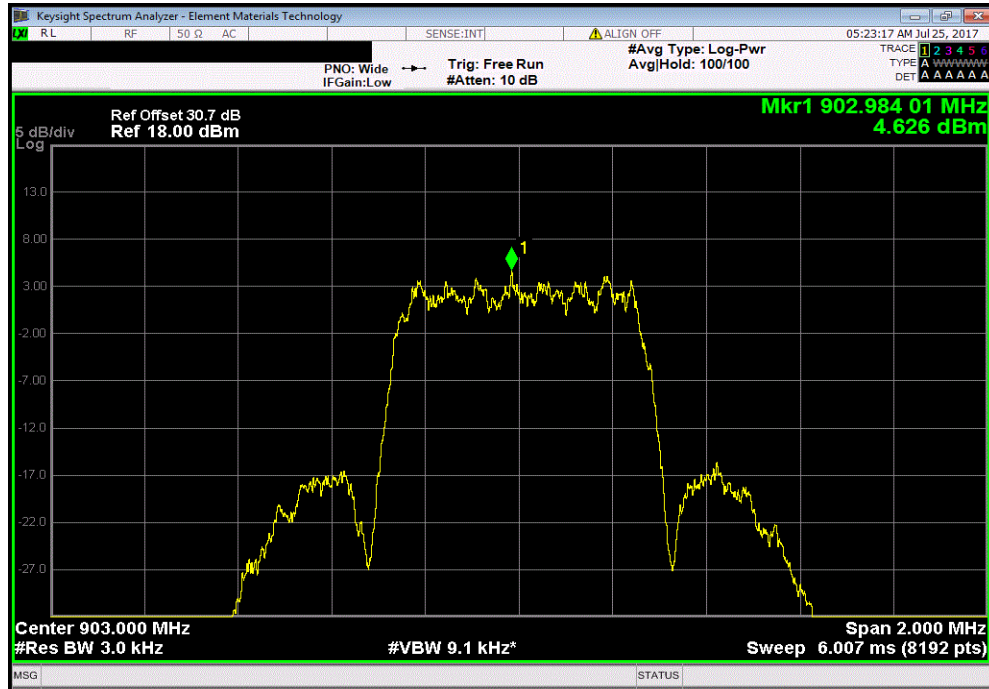
EUT: 9630-9110		Work Order: SCHW0219	
Serial Number: A02654144		Date: 07/24/17	
Customer: Schweitzer Engineering Laboratories, Inc.		Temperature: 23.8 °C	
Attendees: Allan Davis		Humidity: 44.2% RH	
Project: None		Barometric Pres.: 1016 mbar	
Tested by: Mark Baytan		Power: 3.5 VDC	
Job Site: EV06			
TEST SPECIFICATIONS		Test Method	
FCC 15.247:2017		ANSI C63.10:2013	
COMMENTS			
Total reference level offset (DC Block + 20dB Attenuator + 10dB Attenuator + RF Cable) = 30.7 dB. Power level setting: 27 dBm			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	1	Signature 	
		Value dBm/3kHz	Limit < dBm/3kHz
Nominal Voltage: 3.5 VDC			Results
Low Channel, 903 MHz		4.626	8 Pass
Mid Channel, 915 MHz		4.378	8 Pass
High Channel, 927 MHz		4.051	8 Pass

POWER SPECTRAL DENSITY

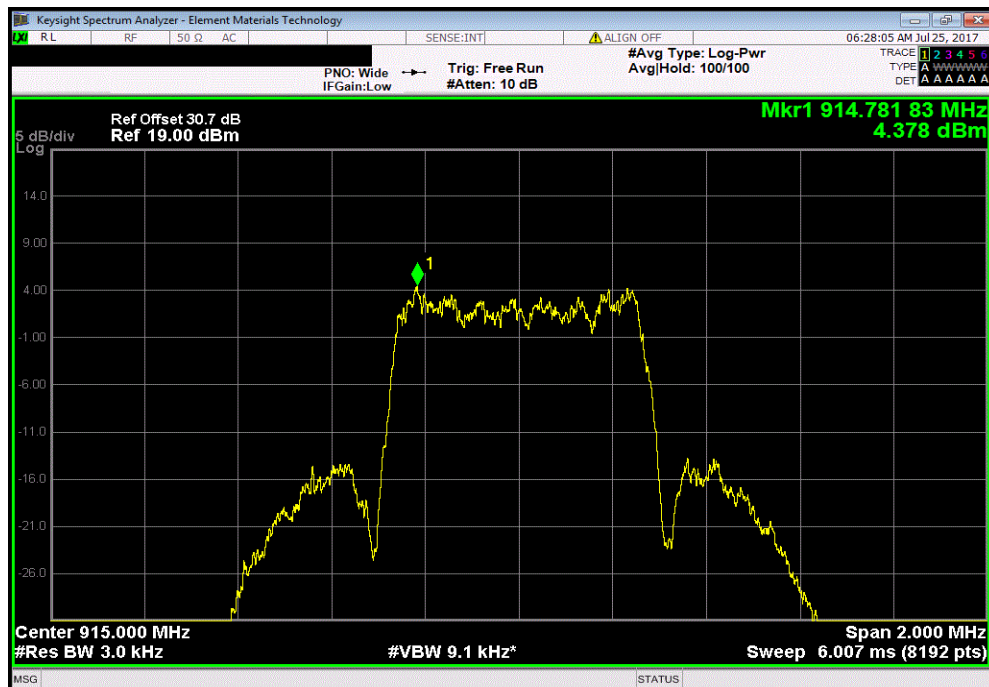


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Nominal Voltage: 3.5 VDC, Low Channel, 903 MHz						
	Value	Limit				
	dBm/3kHz	< dBm/3kHz	Results			
	4.626	8	Pass			



Nominal Voltage: 3.5 VDC, Mid Channel, 915 MHz						
	Value	Limit				
	dBm/3kHz	< dBm/3kHz	Results			
	4.378	8	Pass			

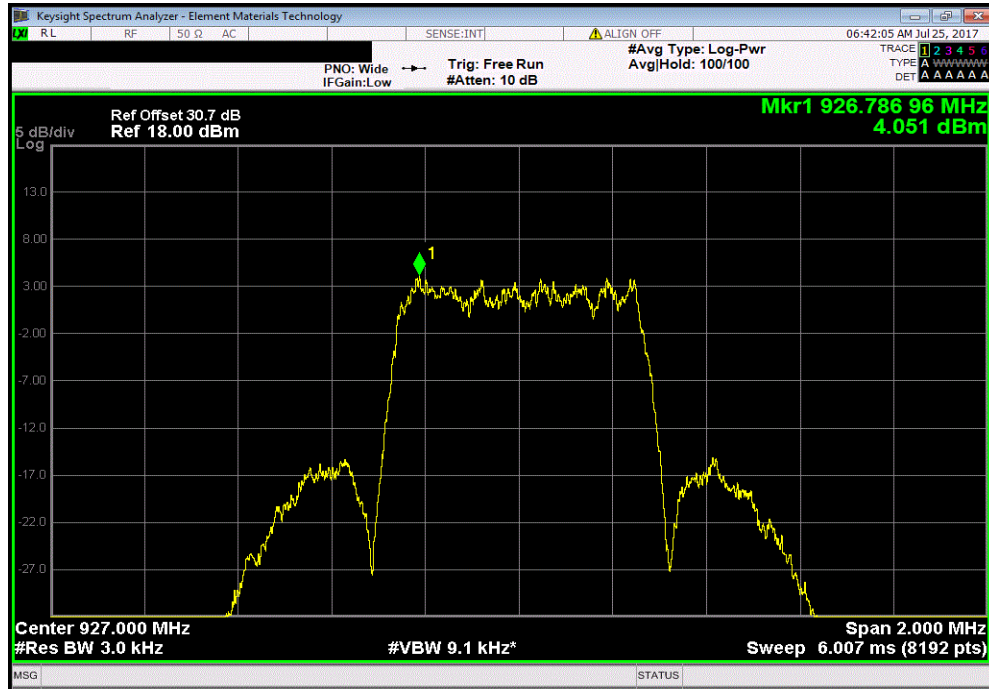


POWER SPECTRAL DENSITY



TMTx 2017.04.18 XMI 2017.02.08

Nominal Voltage: 3.5 VDC, High Channel, 927 MHz						
				Value dBm/3kHz	Limit < dBm/3kHz	Results
				4.051	8	Pass



RADIATED EMISSIONS FOR RECEIVER



PSA-ESCI 2017.06.01

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. The test data represents the configuration / operating mode/ model that produced the highest emission levels as compared to the specification limit.

MODES OF OPERATION

Continuous Rx

POWER SETTINGS INVESTIGATED

3.5 VDC

CONFIGURATIONS INVESTIGATED

SCHW0228 - 2

SCHW0228 - 3

FREQUENCY RANGE INVESTIGATED

Start Frequency	30 MHz	Stop Frequency	12.4 GHz
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SAMPLE CALCULATIONS

Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Cable	None	Standard Gain Horns Cable	EVF	2/6/2017	12 mo
Amplifier - Pre-Amplifier	L-3 Narda-MITEQ	AMF-6F-08001200-30-10P	PAO	2/7/2017	12 mo
Antenna - Standard Gain	ETS Lindgren	3160-07	AHU	NCR	0 mo
Cable	N/A	Double Ridge Horn Cables	EVB	7/20/2017	12 mo
Amplifier - Pre-Amplifier	Miteq	AMF-3D-00100800-32-13P	PAG	7/20/2017	12 mo
Antenna - Double Ridge	ETS Lindgren	3115	AIZ	2/3/2016	24 mo
Cable	N/A	Bilog Cables	EVA	2/6/2017	12 mo
Amplifier - Pre-Amplifier	Miteq	AM-1616-1000	AOL	2/6/2017	12 mo
Antenna - Biconilog	Teseq	CBL 6141B	AXR	6/30/2016	24 mo
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFN	4/13/2017	12 mo

TEST DESCRIPTION

The highest gain antenna of each type to be used with the EUT was tested. The EUT was configured for the required transmit frequencies and the modes as showed in the data sheets.

For each configuration, the spectrum was scanned throughout the specified range as part of the exploratory investigation of the emissions. These "pre-scans" are not included in the report. Final measurements on individual emissions were then made and included in this test report.

The individual emissions from the EUT were maximized by rotating the EUT on a turntable, adjusting the position of the EUT and EUT antenna in three orthogonal axis if required, and adjusting the measurement antenna height and polarization (per ANSI C63.10). A preamp and high pass filter (and notch filter) were used for this test in order to provide sufficient measurement sensitivity.

Measurements were made with the required detectors and annotated on the data for each individual point using the following annotation:

QP = Quasi-Peak Detector

PK = Peak Detector

AV = RMS Detector

Measurements were made to satisfy the specific requirements of the test specification for out of band emissions as well as the restricted band requirements.

If there are no detectable emissions above the noise floor, the data included may show noise floor measurements for reference only.

Measurements at the edges of the allowable band may be presented in an alternative method as provided for in the ANSI C63.10 Marker-Delta method. This method involves performing an in-band fundamental measurement followed by a screen capture of the fundamental and out-of-band emission using reduced measurement instrumentation bandwidths. The amplitude delta measured on this screen capture is applied to the fundamental emission value to show the out-of-band emission level as applied to the limit.

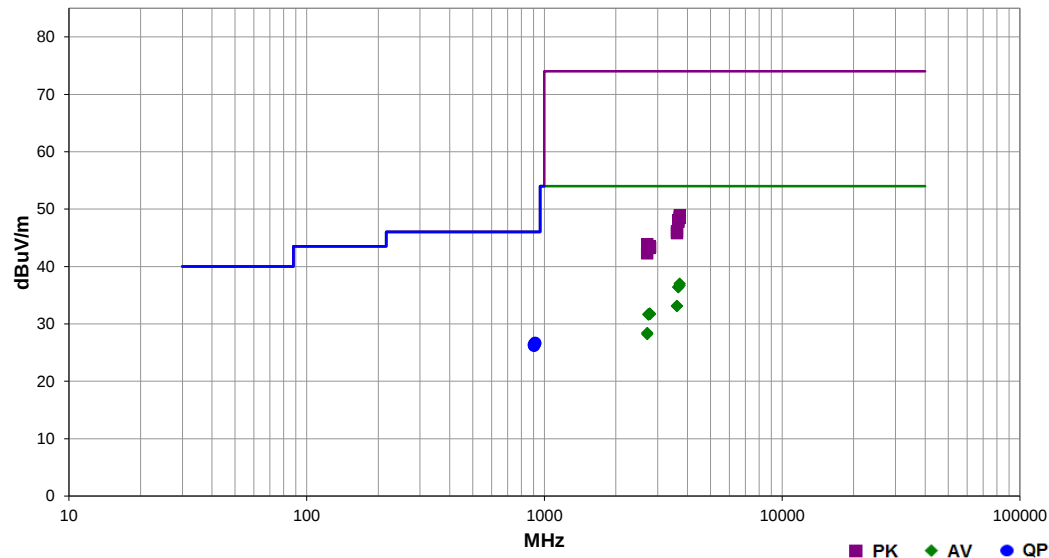
RADIATED EMISSIONS FOR RECEIVER



Work Order:	SCHW0228	Date:	10/20/17	<i>Relay to Relay</i>
Project:	None	Temperature:	23.8 °C	
Job Site:	EV01	Humidity:	40.3% RH	
Serial Number:	See Config	Barometric Pres.:	1012 mbar	
EUT:	9630-9110	Tested by:	Jeff Alcock and Rod Peloquin	
Configuration:	2			
Customer:	Schweitzer Engineering Laboratories, Inc.			
Attendees:	Allan Davis			
EUT Power:	3.5 VDC			
Operating Mode:	Continuous Rx			
Deviations:	None			
Comments:	See comments below for Channel, Frequency, and EUT orientation.			

Test Specifications	Class B	Test Method
FCC 15.109:2017		ANSI C63.4:2014

Run #	17	Test Distance (m)	3	Antenna Height(s)	1 to 4(m)	Results	Pass
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Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
3710.283	29.8	7.2	1.0	143.0	3.0	0.0	Horz	AV	0.0	37.0	54.0	-17.0	High Ch. EUT Horizontal
3707.367	29.6	7.1	1.0	156.0	3.0	0.0	Vert	AV	0.0	36.7	54.0	-17.3	High Ch. EUT on Side
3662.183	29.5	6.9	1.0	34.0	3.0	0.0	Vert	AV	0.0	36.4	54.0	-17.6	Mid Ch. EUT on Side
3662.150	29.5	6.9	3.9	142.0	3.0	0.0	Horz	AV	0.0	36.4	54.0	-17.6	Mid Ch. EUT Horizontal
913.858	16.4	10.3	1.0	205.0	3.0	0.0	Vert	QP	0.0	26.7	46.0	-19.3	Mid Ch. EUT on Side
915.478	16.3	10.3	3.5	280.0	3.0	0.0	Horz	QP	0.0	26.6	46.0	-19.4	Mid Ch. EUT Horizontal
902.340	16.4	10.0	1.2	130.0	3.0	0.0	Vert	QP	0.0	26.4	46.0	-19.6	Low Ch. EUT on Side
903.818	16.3	9.9	3.0	333.0	3.0	0.0	Horz	QP	0.0	26.2	46.0	-19.8	Low Ch. EUT Horizontal
3610.425	26.2	6.9	2.5	81.0	3.0	0.0	Horz	AV	0.0	33.1	54.0	-20.9	Low Ch. EUT Horizontal
3610.275	26.2	6.9	1.0	201.0	3.0	0.0	Vert	AV	0.0	33.1	54.0	-20.9	Low Ch. EUT on Side
2778.525	30.2	1.6	1.0	296.0	3.0	0.0	Horz	AV	0.0	31.8	54.0	-22.2	High Ch. EUT Horizontal
2782.392	30.1	1.6	1.0	260.0	3.0	0.0	Vert	AV	0.0	31.7	54.0	-22.3	High Ch. EUT on Side
2743.058	30.4	1.3	1.0	39.0	3.0	0.0	Vert	AV	0.0	31.7	54.0	-22.3	Mid Ch. EUT on Side
2743.225	30.3	1.3	2.7	2.0	3.0	0.0	Horz	AV	0.0	31.6	54.0	-22.4	Mid Ch. EUT Horizontal
3707.100	41.8	7.1	1.0	156.0	3.0	0.0	Vert	PK	0.0	48.9	74.0	-25.1	High Ch. EUT on Side
3706.592	41.4	7.1	1.0	143.0	3.0	0.0	Horz	PK	0.0	48.5	74.0	-25.5	High Ch. EUT Horizontal
2709.192	27.3	1.1	1.0	149.0	3.0	0.0	Horz	AV	0.0	28.4	54.0	-25.6	Low Ch. EUT Horizontal
2707.858	27.2	1.0	1.0	329.0	3.0	0.0	Vert	AV	0.0	28.2	54.0	-25.8	Low Ch. EUT on Side
3659.400	41.2	6.9	1.0	34.0	3.0	0.0	Vert	PK	0.0	48.1	74.0	-25.9	Mid Ch. EUT on Side
3659.858	40.9	6.9	3.9	142.0	3.0	0.0	Horz	PK	0.0	47.8	74.0	-26.2	Mid Ch. EUT Horizontal
3612.642	39.2	6.9	1.0	201.0	3.0	0.0	Vert	PK	0.0	46.1	74.0	-27.9	Low Ch. EUT on Side
3610.383	38.9	6.9	2.5	81.0	3.0	0.0	Horz	PK	0.0	45.8	74.0	-28.2	Low Ch. EUT Horizontal
2710.233	42.7	1.2	1.0	149.0	3.0	0.0	Horz	PK	0.0	43.9	74.0	-30.1	Low Ch. EUT on Side
2779.775	41.9	1.6	1.0	296.0	3.0	0.0	Horz	PK	0.0	43.5	74.0	-30.5	High Ch. EUT Horizontal
2781.608	41.7	1.6	1.0	260.0	3.0	0.0	Vert	PK	0.0	43.3	74.0	-30.7	High Ch. EUT on Side
2745.158	42.0	1.3	1.0	39.0	3.0	0.0	Vert	PK	0.0	43.3	74.0	-30.7	Mid Ch. EUT on Side
2744.267	41.9	1.3	2.7	2.0	3.0	0.0	Horz	PK	0.0	43.2	74.0	-30.8	Mid Ch. EUT Horizontal
2707.200	41.3	1.0	1.0	329.0	3.0	0.0	Vert	PK	0.0	42.3	74.0	-31.7	Low Ch. EUT on Side

RADIATED EMISSIONS FOR RECEIVER



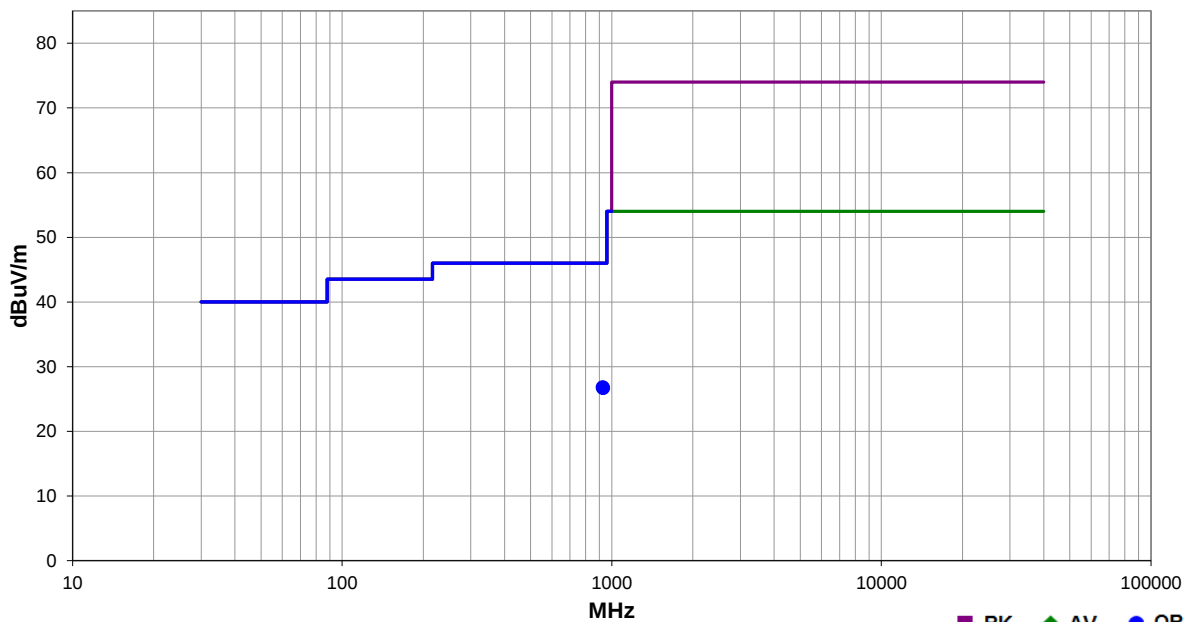
EmiRS 2017.07.11

PSA-ESCI 2017.06.01

Work Order:	SCHW0228	Date:	10/20/17	
Project:	None	Temperature:	23.7 °C	
Job Site:	EV01	Humidity:	40.2% RH	
Serial Number:	See Config	Barometric Pres.:	1015 mbar	
EUT:	9630-9110			
Configuration:	3			
Customer:	Schweitzer Engineering Laboratories, Inc.			
Attendees:	Allan Davis			
EUT Power:	3.5 VDC			
Operating Mode:	Continuous Rx			
Deviations:	None			
Comments:	See comments below for Channel, Frequency, and EUT orientation.			

Test Specifications	Class B	Test Method
FCC 15.109:2017		ANSI C63.4:2014

Run #	20	Test Distance (m)	3	Antenna Height(s)	1 to 4(m)	Results	Pass
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Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
925.328	16.7	10.1	1.0	347.0	3.0	0.0	Horz	QP	0.0	26.8	46.0	-19.2	High Ch. EUT Horizontal
928.102	16.6	10.1	1.0	347.0	3.0	0.0	Vert	QP	0.0	26.7	46.0	-19.3	High Ch. EUT on Side