



SPURIOUS CONDUCTED EMISSIONS

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
Generator - Signal	Keysight	N5182B	TFU	2020-11-20	2022-11-20
Cable	Micro-Coax	UFD150A-1-0720-200200	EVI	2021-12-05	2022-12-05
Attenuator	S.M. Electronics	SA26B-20	AUY	2022-03-15	2023-03-15
Block - DC	Fairview Microwave	SD3379	AMW	2022-03-14	2023-03-14
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFO	2022-09-08	2023-09-08

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 fundamental was measured with a 100 kHz resolution bandwidth and the highest value was recorded. The rest of the spectrum was then measured with a 100 kHz resolution bandwidth and the highest value was found. The difference between the value found on the fundamental and the rest of the spectrum was compared against the limit to determine compliance.

The reference level offset for the fundamental screen capture was based on a measured value of the loss between the spectrum analyzer and the EUT which was verified at the time of test. The remaining screen capture(s) use an internal transducer factor on the analyzer to correct the displayed trace based on the cable loss over frequency. The reference level offset for the additional screen capture(s) is then based on the expected attenuator value and any other losses.

Fundamental Offset = Ref Lvl Offset showing measured composite factor of all losses

Remaining Screen capture(s) Offset = "Internal" cable loss factor not shown on screen capture + Ref Lvl Offset showing expected attenuator value and any other losses

SPURIOUS CONDUCTED EMISSIONS



TxDx 2022.06.03.0 XMI 2022.02.07.0

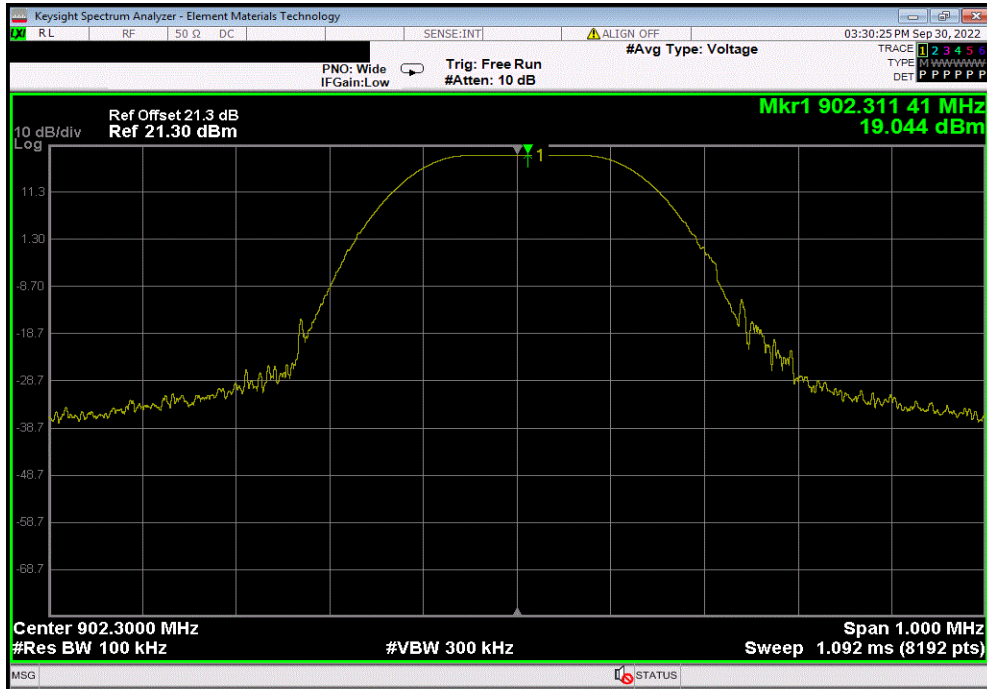
EUT: Passport		Work Order: ONIT0091	
Serial Number: 44594524		Date: 30-Sep-22	
Customer: Onity Inc.		Temperature: 21.9 °C	
Attendees: Ali Elmi		Humidity: 48.3% RH	
Project: None		Barometric Pres.: 1020 mbar	
Tested by: Jeff Alcock		Power: Battery	
		Job Site: EV06	
TEST SPECIFICATIONS		Test Method	
FCC 15.247:2022		ANSI C63.10:2013	
COMMENTS			
Reference level offset includes: DC Block, 20 dB attenuator, measurement cable and manufacturers provided SMA patch cable.			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	3	Signature	
		Frequency Range	Measured Freq (MHz)
			Max Value (dBc)
			Limit ≤ (dBc)
			Result
Single Channel Mode			
LoRa, 125 kHz BW			
SF 10			
	Ch. 0, 902.3 MHz	Fundamental	902.31
	Ch. 0, 902.3 MHz	30 MHz - 1 GHz	901.59
	Ch. 0, 902.3 MHz	1 GHz - 10 GHz	1804.3
	Ch. 32, 908.7 MHz	Fundamental	908.65
	Ch. 32, 908.7 MHz	30 MHz - 1 GHz	876.72
	Ch. 32, 908.7 MHz	1 GHz - 10 GHz	1817.48
	Ch. 63, 914.9 MHz	Fundamental	914.85
	Ch. 63, 914.9 MHz	30 MHz - 1 GHz	883
	Ch. 63, 914.9 MHz	1 GHz - 10 GHz	1829.57
SF 7			
	Ch. 0, 902.3 MHz	Fundamental	902.26
	Ch. 0, 902.3 MHz	30 MHz - 1 GHz	901.59
	Ch. 0, 902.3 MHz	1 GHz - 10 GHz	1804.3
	Ch. 32, 908.7 MHz	Fundamental	908.65
	Ch. 32, 908.7 MHz	30 MHz - 1 GHz	876.72
	Ch. 32, 908.7 MHz	1 GHz - 10 GHz	1817.48
	Ch. 63, 914.9 MHz	Fundamental	914.86
	Ch. 63, 914.9 MHz	30 MHz - 1 GHz	883
	Ch. 63, 914.9 MHz	1 GHz - 10 GHz	1829.57

SPURIOUS CONDUCTED EMISSIONS

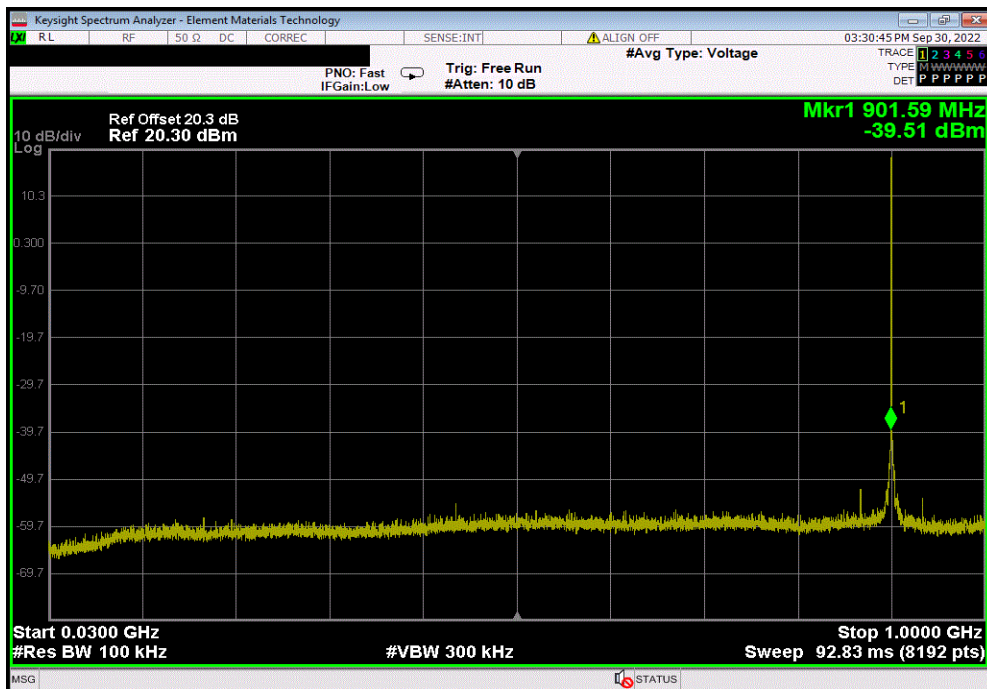


TbTx 2022.06.03.0 XMI 2022.02.07.0

Single Channel Mode, LoRa, 125 kHz BW, SF 10, Ch. 0, 902.3 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
Fundamental	902.31	N/A	N/A	N/A	



Single Channel Mode, LoRa, 125 kHz BW, SF 10, Ch. 0, 902.3 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
30 MHz - 1 GHz	901.59	-58.55	-30	Pass	

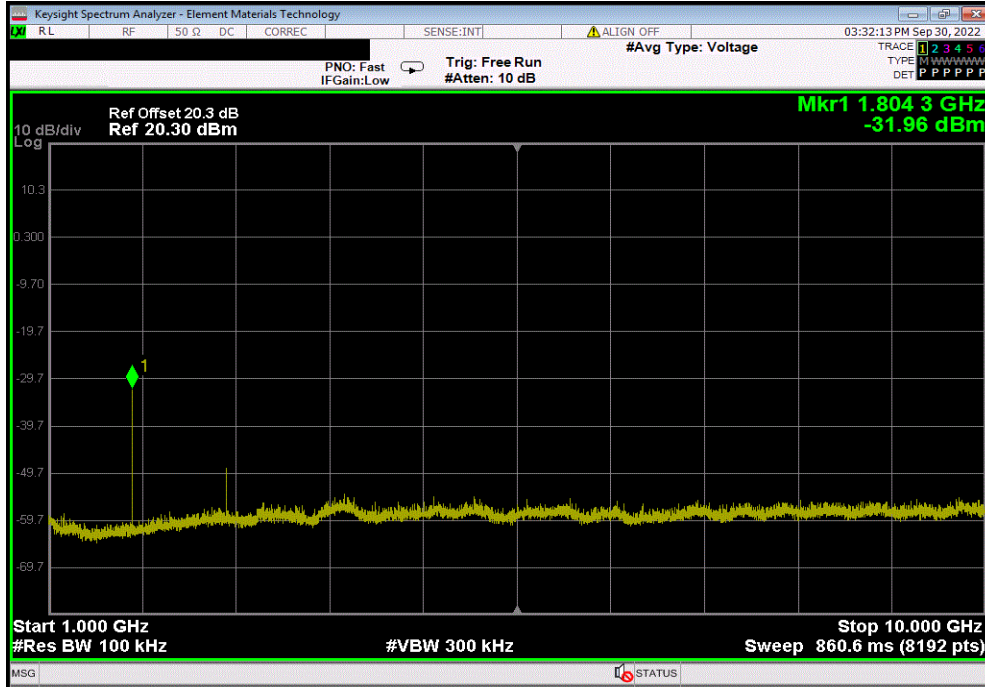


SPURIOUS CONDUCTED EMISSIONS

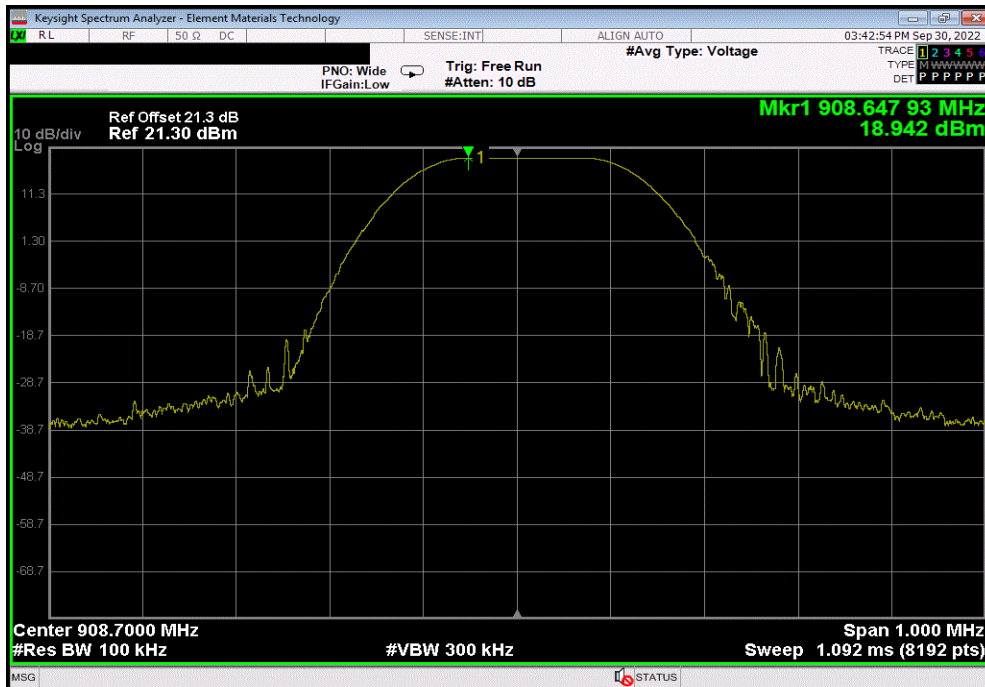


TbTx 2022.06.03.0 XbM 2022.02.07.0

Single Channel Mode, LoRa, 125 kHz BW, SF 10, Ch. 0, 902.3 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
1 GHz - 10 GHz	1804.3	-51.01	-30	Pass	



Single Channel Mode, LoRa, 125 kHz BW, SF 10, Ch. 32, 908.7 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
Fundamental	908.65	N/A	N/A	N/A	

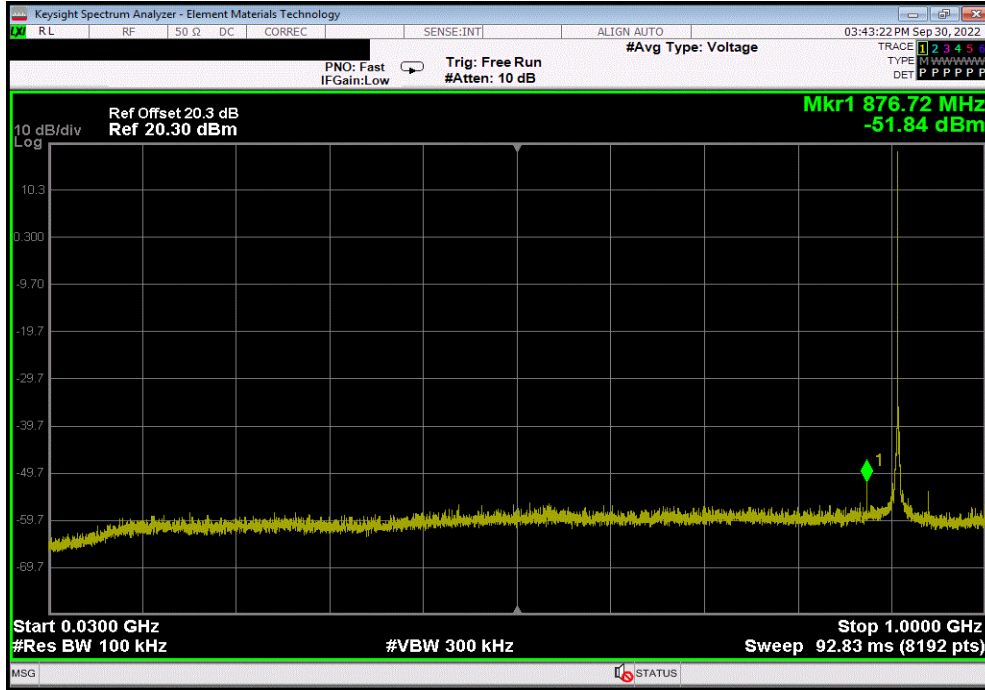


SPURIOUS CONDUCTED EMISSIONS

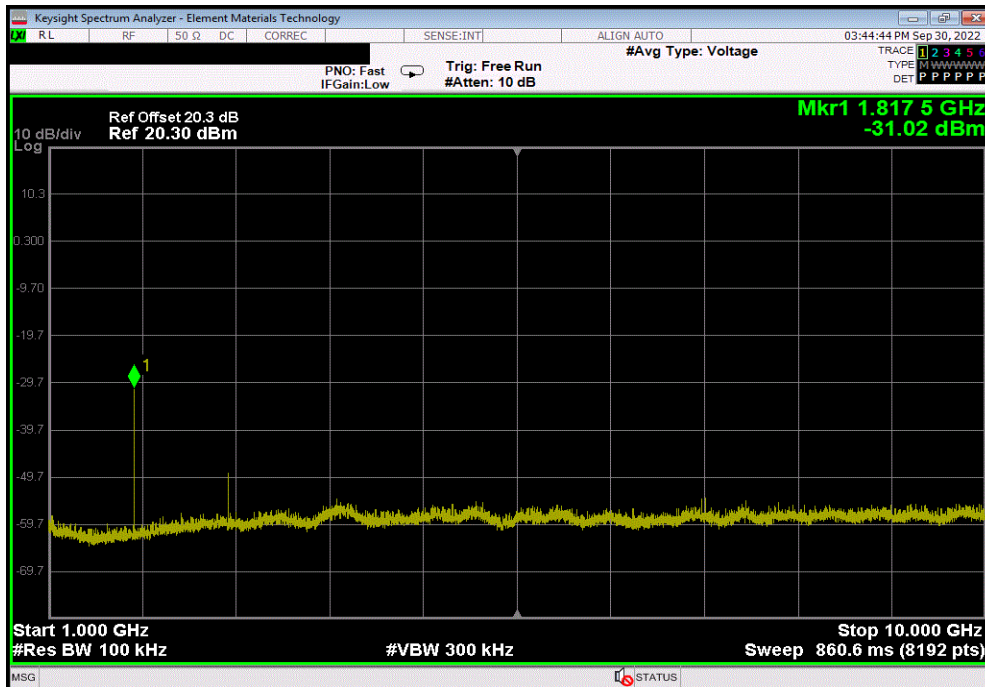


TbTx 2022.06.03.0 XMI 2022.02.07.0

Single Channel Mode, LoRa, 125 kHz BW, SF 10, Ch. 32, 908.7 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
30 MHz - 1 GHz	876.72	-70.78	-30	Pass	



Single Channel Mode, LoRa, 125 kHz BW, SF 10, Ch. 32, 908.7 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
1 GHz - 10 GHz	1817.48	-49.96	-30	Pass	

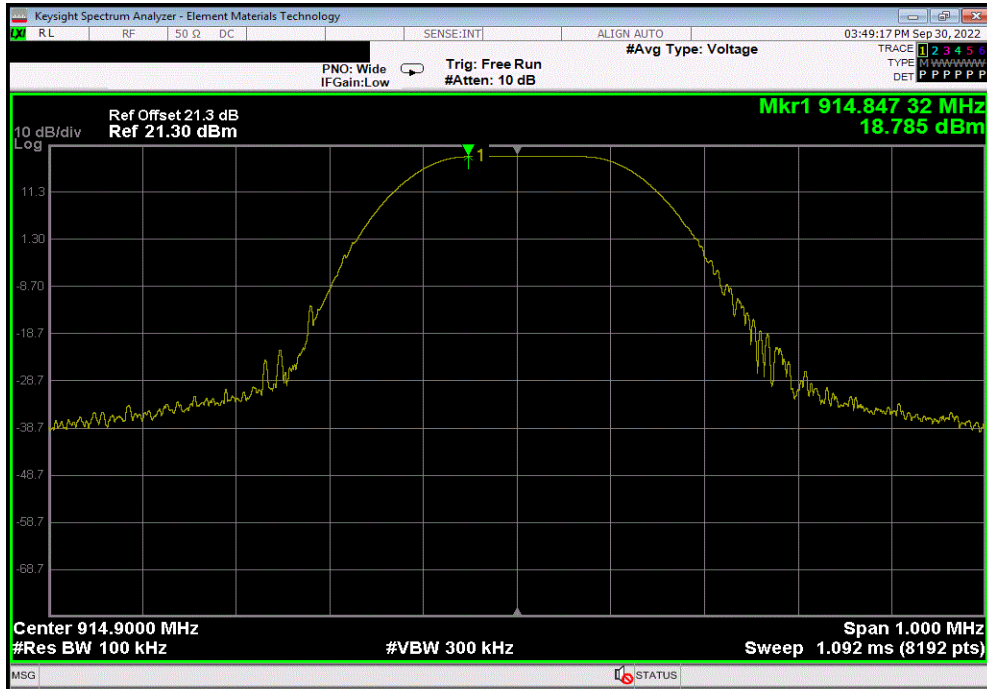


SPURIOUS CONDUCTED EMISSIONS

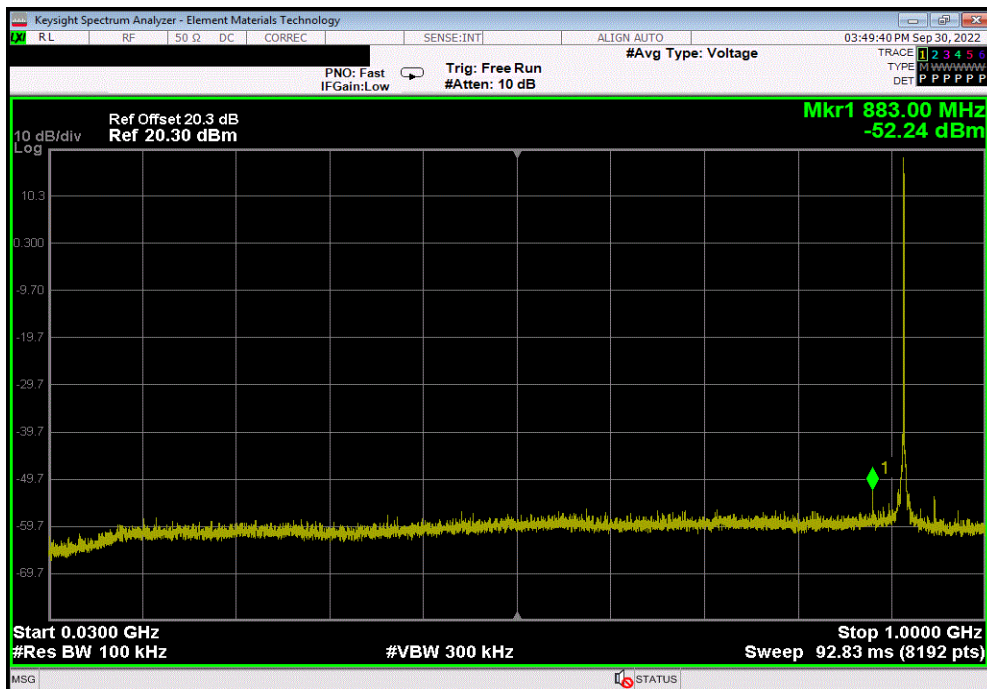


TbTx 2022.06.03.0 XMI 2022.02.07.0

Single Channel Mode, LoRa, 125 kHz BW, SF 10, Ch. 63, 914.9 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result		
Fundamental	914.85	N/A	N/A	N/A		



Single Channel Mode, LoRa, 125 kHz BW, SF 10, Ch. 63, 914.9 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result		
30 MHz - 1 GHz	883	-71.03	-30	Pass		

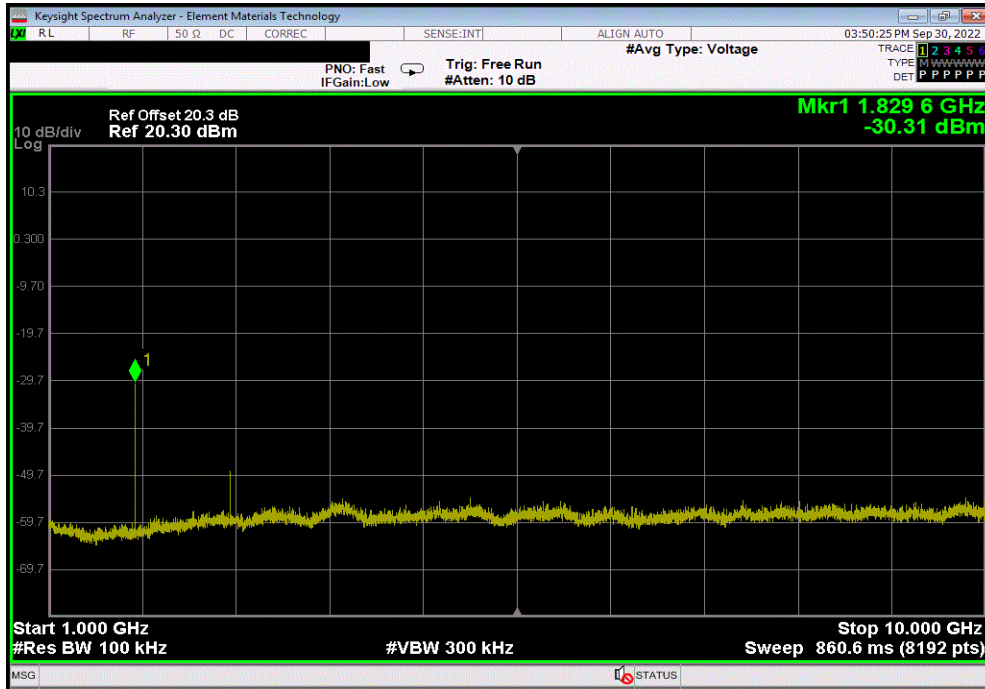


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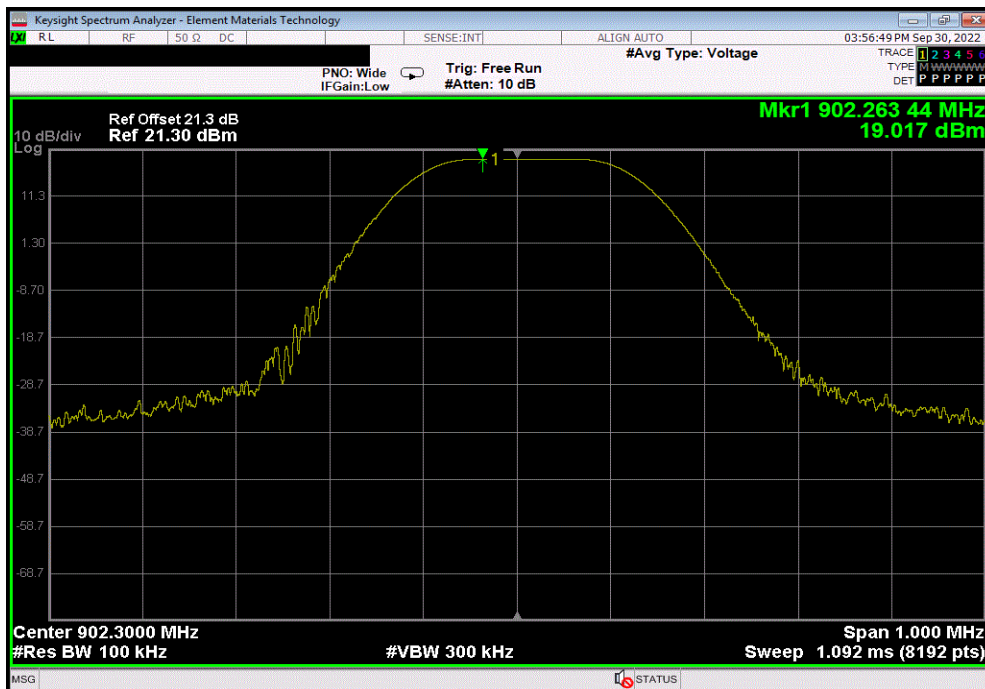


TbTx 2022.06.03.0 XMI 2022.02.07.0

Single Channel Mode, LoRa, 125 kHz BW, SF 10, Ch. 63, 914.9 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
1 GHz - 10 GHz	1829.57	-49.1	-30	Pass	



Single Channel Mode, LoRa, 125 kHz BW, SF 7, Ch. 0, 902.3 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
Fundamental	902.26	N/A	N/A	N/A	

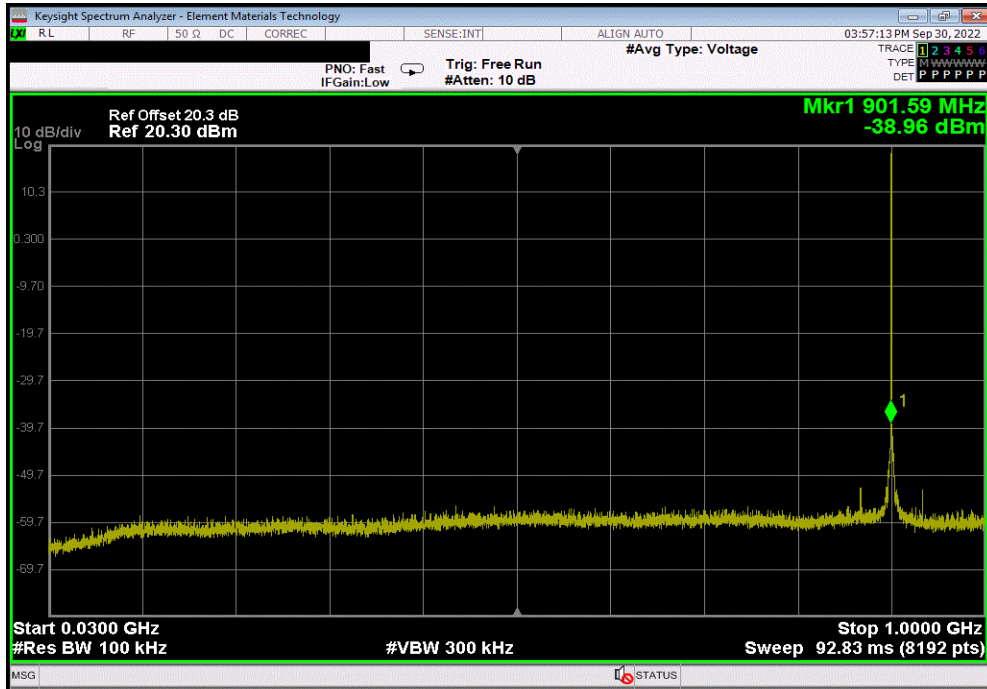


SPURIOUS CONDUCTED EMISSIONS

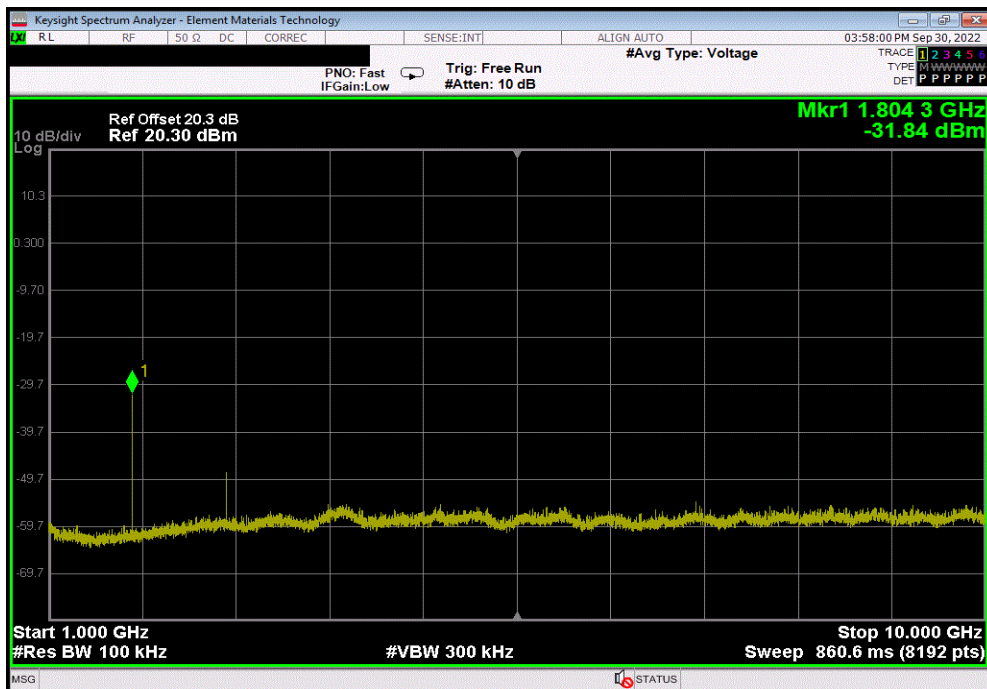


TbTx 2022.06.03.0 XMI 2022.02.07.0

Single Channel Mode, LoRa, 125 kHz BW, SF 7, Ch. 0, 902.3 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
30 MHz - 1 GHz	901.59	-57.98	-30	Pass	



Single Channel Mode, LoRa, 125 kHz BW, SF 7, Ch. 0, 902.3 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
1 GHz - 10 GHz	1804.3	-50.86	-30	Pass	

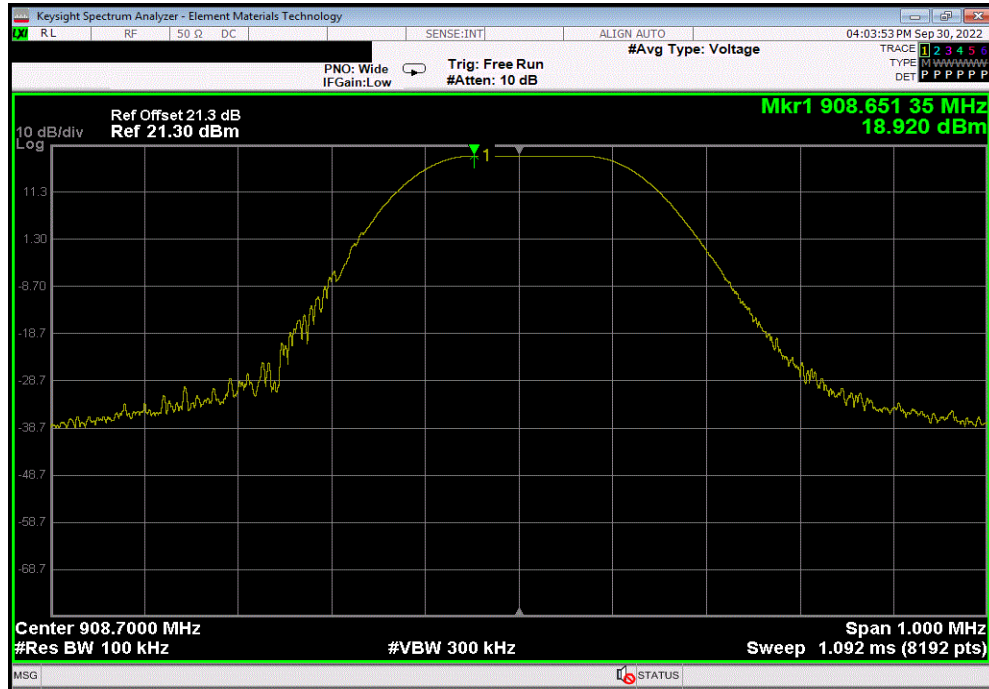


SPURIOUS CONDUCTED EMISSIONS

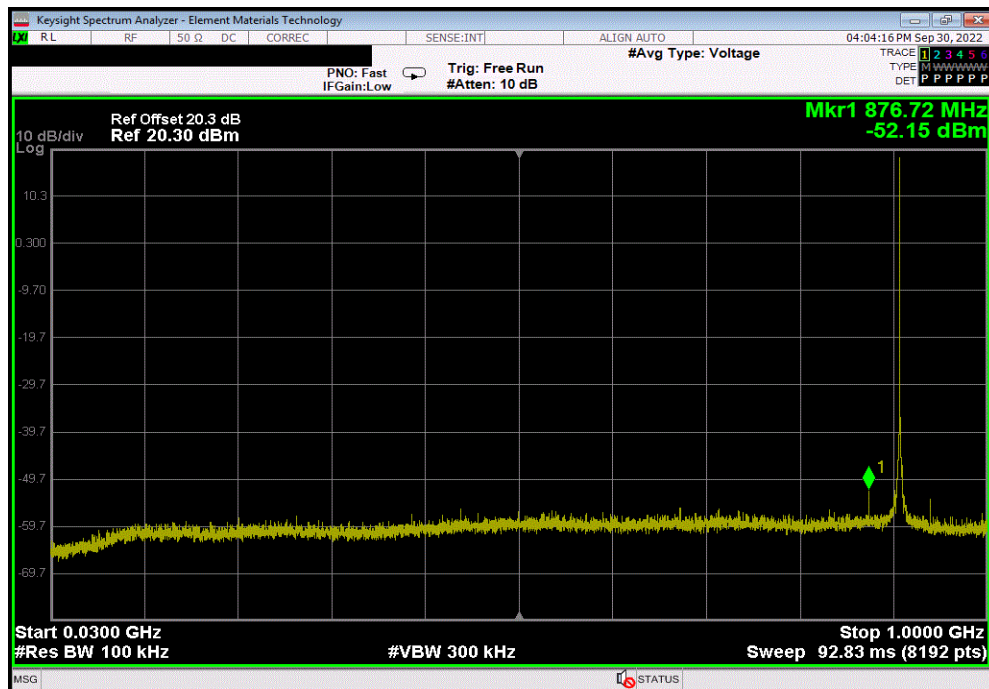


TbTx 2022.06.03.0 XbM 2022.02.07.0

Single Channel Mode, LoRa, 125 kHz BW, SF 7, Ch. 32, 908.7 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
Fundamental	908.65	N/A	N/A	N/A	



Single Channel Mode, LoRa, 125 kHz BW, SF 7, Ch. 32, 908.7 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
30 MHz - 1 GHz	876.72	-71.07	-30	Pass	

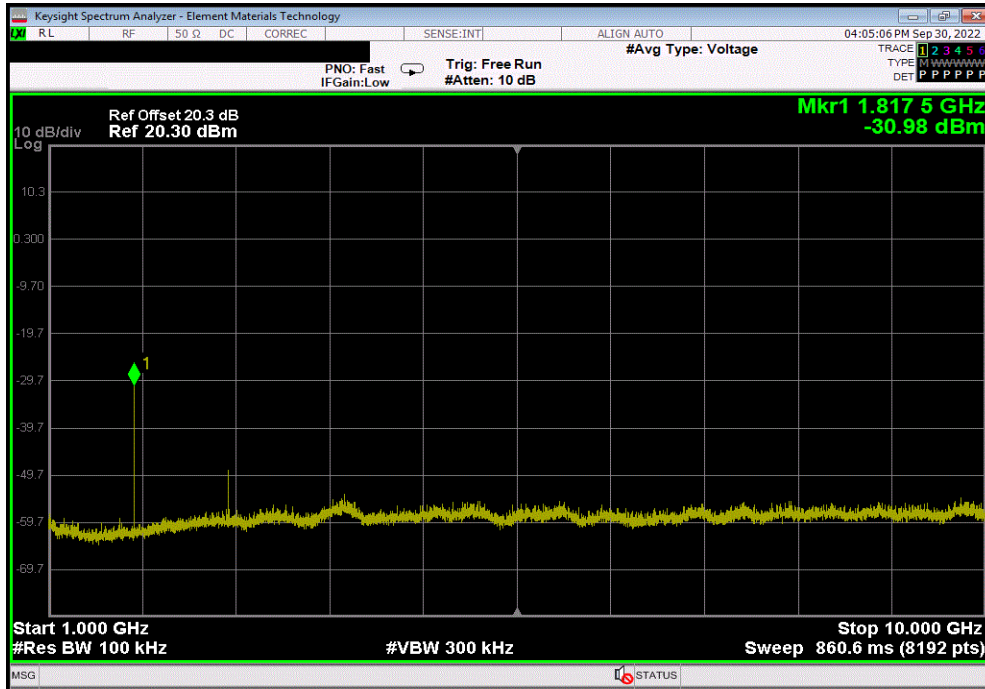


SPURIOUS CONDUCTED EMISSIONS

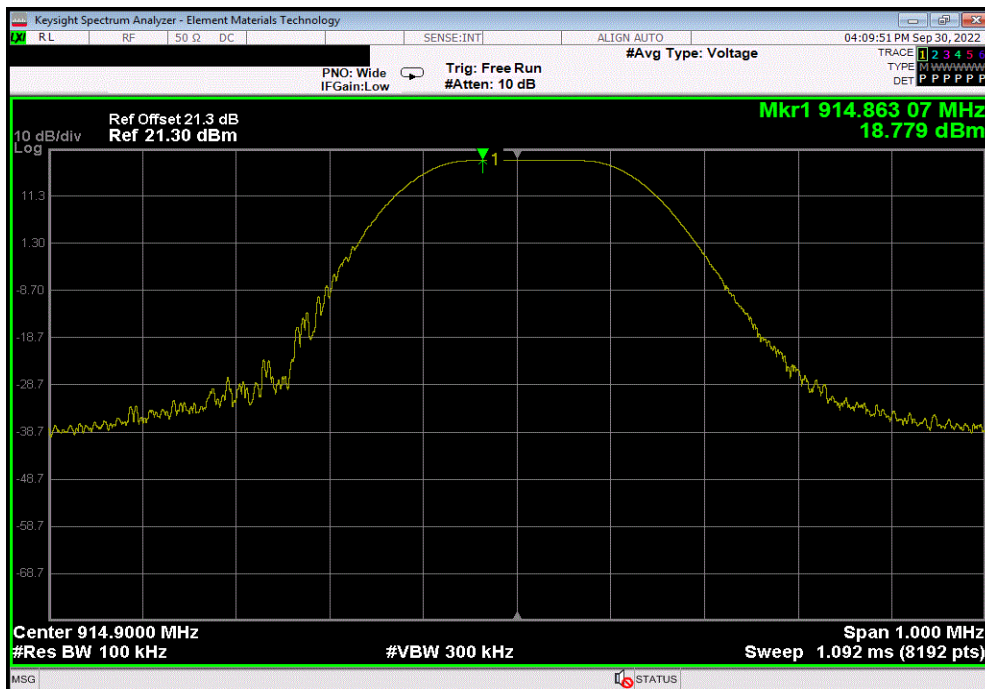


TbTx 2022.06.03.0 XMI 2022.02.07.0

Single Channel Mode, LoRa, 125 kHz BW, SF 7, Ch. 32, 908.7 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
1 GHz - 10 GHz	1817.48	-49.9	-30	Pass	



Single Channel Mode, LoRa, 125 kHz BW, SF 7, Ch. 63, 914.9 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
Fundamental	914.86	N/A	N/A	N/A	

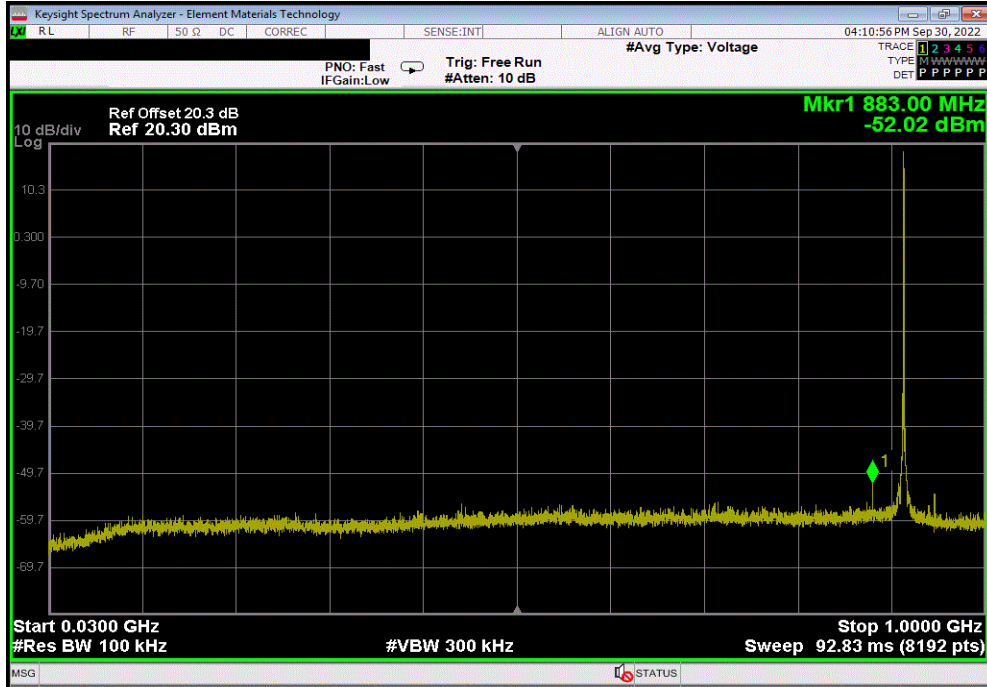


SPURIOUS CONDUCTED EMISSIONS

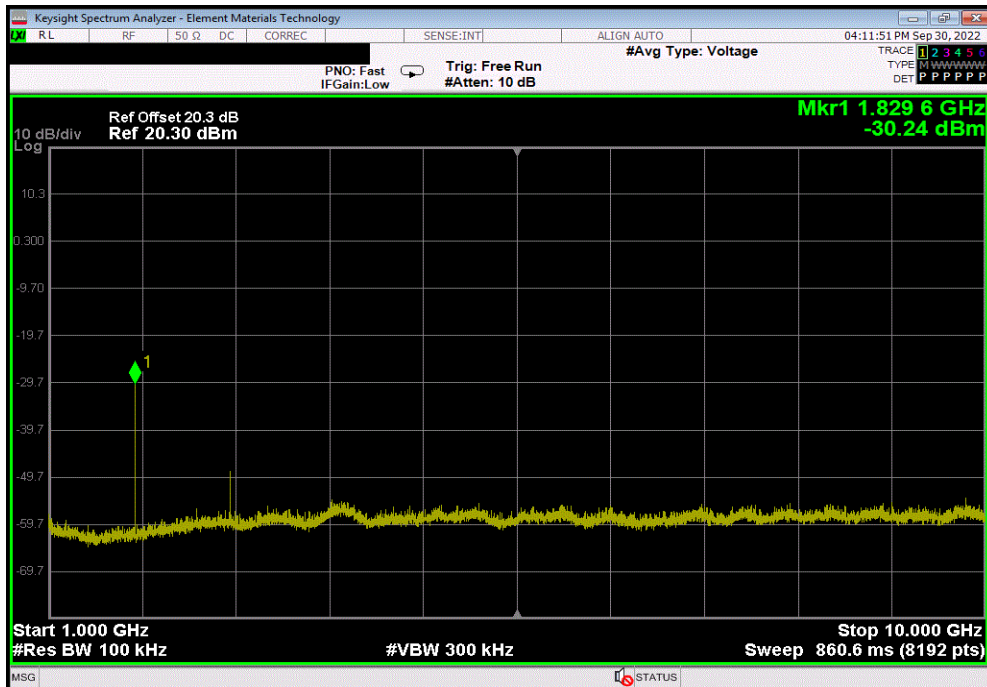


TbTx 2022.06.03.0 XMI 2022.02.07.0

Single Channel Mode, LoRa, 125 kHz BW, SF 7, Ch. 63, 914.9 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
30 MHz - 1 GHz	883	-70.8	-30	Pass	



Single Channel Mode, LoRa, 125 kHz BW, SF 7, Ch. 63, 914.9 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
1 GHz - 10 GHz	1829.57	-49.02	-30	Pass	



POWER SPECTRAL DENSITY

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
Generator - Signal	Keysight	N5182B	TFU	2020-11-20	2022-11-20
Cable	None	10m Test Distance Cable	EVL	2021-11-30	2022-11-30
Attenuator	S.M. Electronics	SA26B-20	AUY	2022-03-15	2023-03-15
Block - DC	Fairview Microwave	SD3379	AMW	2022-03-14	2023-03-14
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFO	2022-09-08	2023-09-08

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 and modes as called out on the following data sheets. The transmit power was set to its default maximum.

The method AVGPSD-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.

POWER SPECTRAL DENSITY



TelTx 2022.06.03.0 XMI 2023.02.14.0

EUT: Passport		Work Order: ONIT0091	
Serial Number: 44594524		Date: 30-Sep-22	
Customer: Onity Inc.		Temperature: 22.7°C	
Attendees: Ali Elmi		Humidity: 47.2%	
Project: None		Barometric Pres.: 1017 mbar	
Tested by: Jeff Alcock		Power: Battery	
		Job Site: EV06	
TEST SPECIFICATIONS		Test Method	
FCC 15.247:2023		ANSI C63.10:2013	
COMMENTS			
Reference level offset includes: DC Block, 20 dB attenuator, measurement cable, and manufacturers SMA patch cable.			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	ONIT0091-3	Signature	

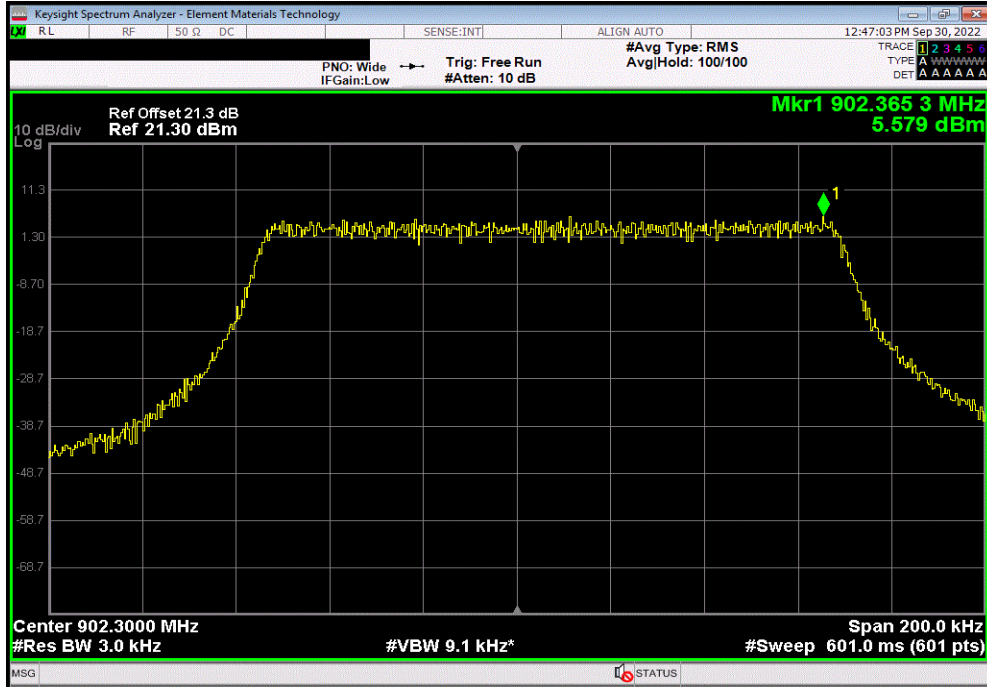
	Value dBm/3kHz	Limit < dBm/3kHz	Results
Single Channel Mode			
LoRa, 125 kHz BW			
SF 10			
Ch. 0, 902.3 MHz	5.579	8	Pass
Ch. 32, 908.7 MHz	5.565	8	Pass
Ch. 63, 914.9 MHz	2.439	8	Pass
SF 7			
Ch. 0, 902.3 MHz	4.584	8	Pass
Ch. 32, 908.7 MHz	4.778	8	Pass
Ch. 63, 914.9 MHz	4.158	8	Pass

POWER SPECTRAL DENSITY

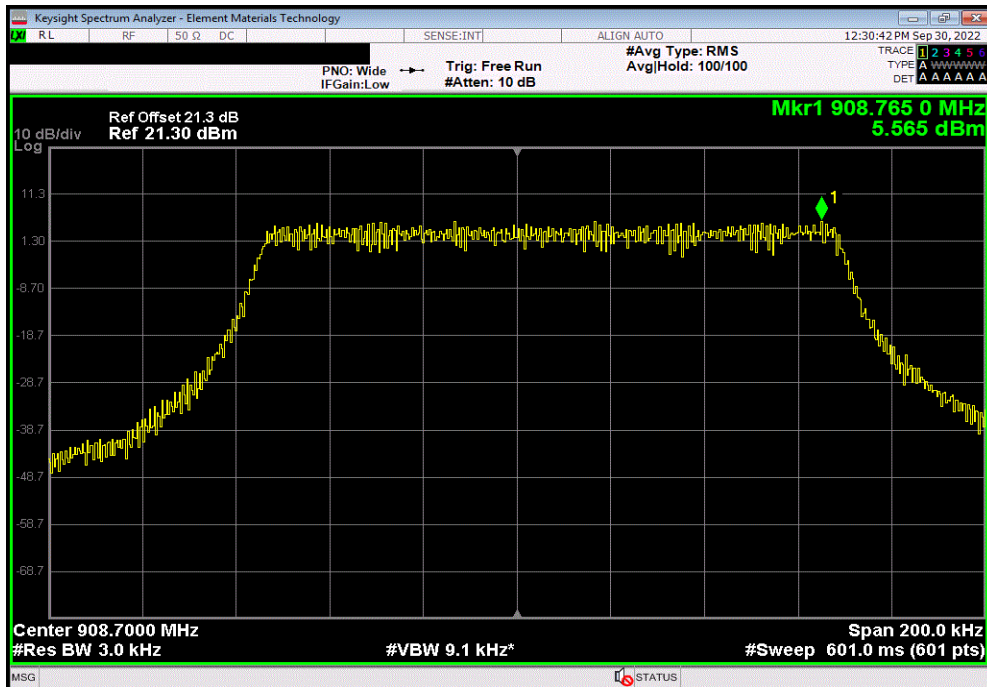


TbTx 2022.06.03.0 XMt 2023.02.14.0

Single Channel Mode, LoRa, 125 kHz BW, SF 10, Ch. 0, 902.3 MHz						
	Value	Limit	Results			
	dBm/3kHz	< dBm/3kHz				
	5.579	8	Pass			



Single Channel Mode, LoRa, 125 kHz BW, SF 10, Ch. 32, 908.7 MHz						
	Value	Limit	Results			
	dBm/3kHz	< dBm/3kHz				
	5.565	8	Pass			

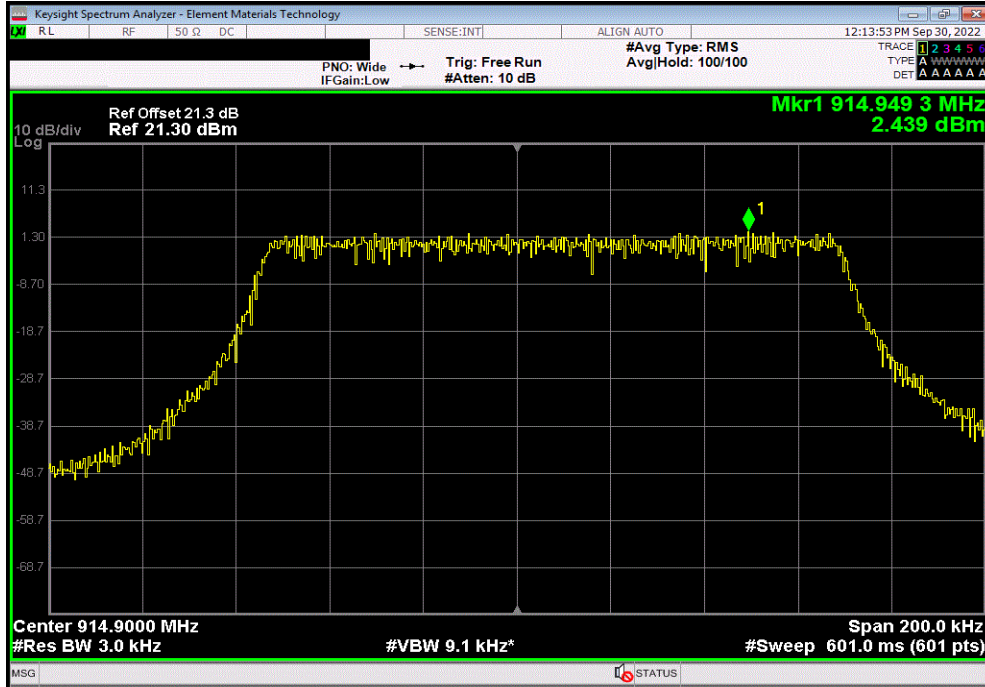


POWER SPECTRAL DENSITY

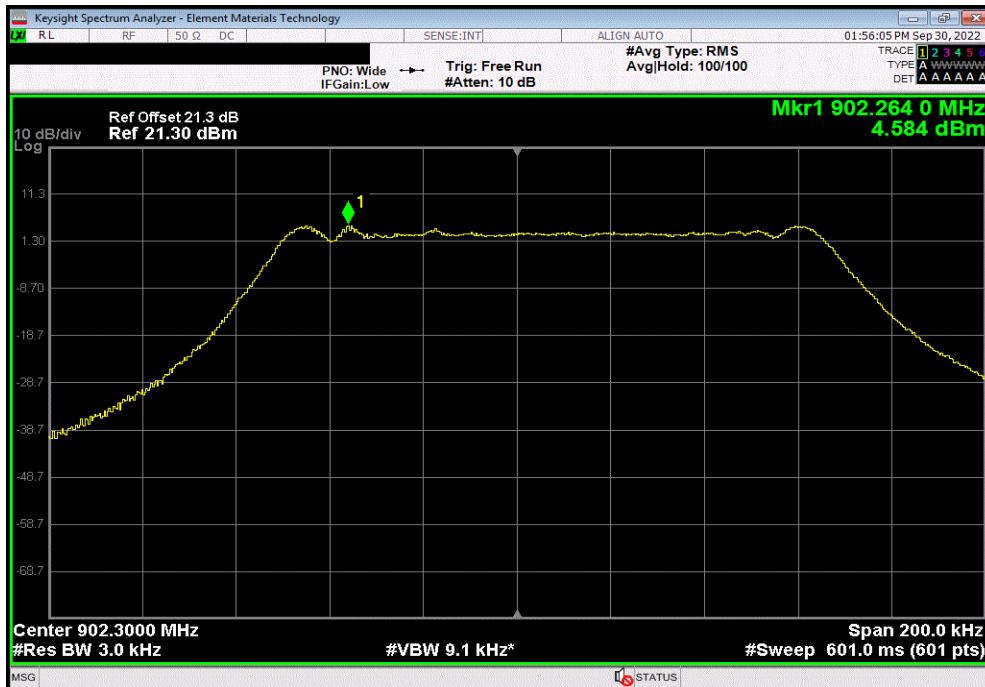


TbTx 2022.06.03.0 XMt 2023.02.14.0

Single Channel Mode, LoRa, 125 kHz BW, SF 10, Ch. 63, 914.9 MHz						
	Value	Limit	Results			
	dBm/3kHz	< dBm/3kHz				
	2.439	8	Pass			



Single Channel Mode, LoRa, 125 kHz BW, SF 7, Ch. 0, 902.3 MHz						
	Value	Limit	Results			
	dBm/3kHz	< dBm/3kHz				
	4.584	8	Pass			

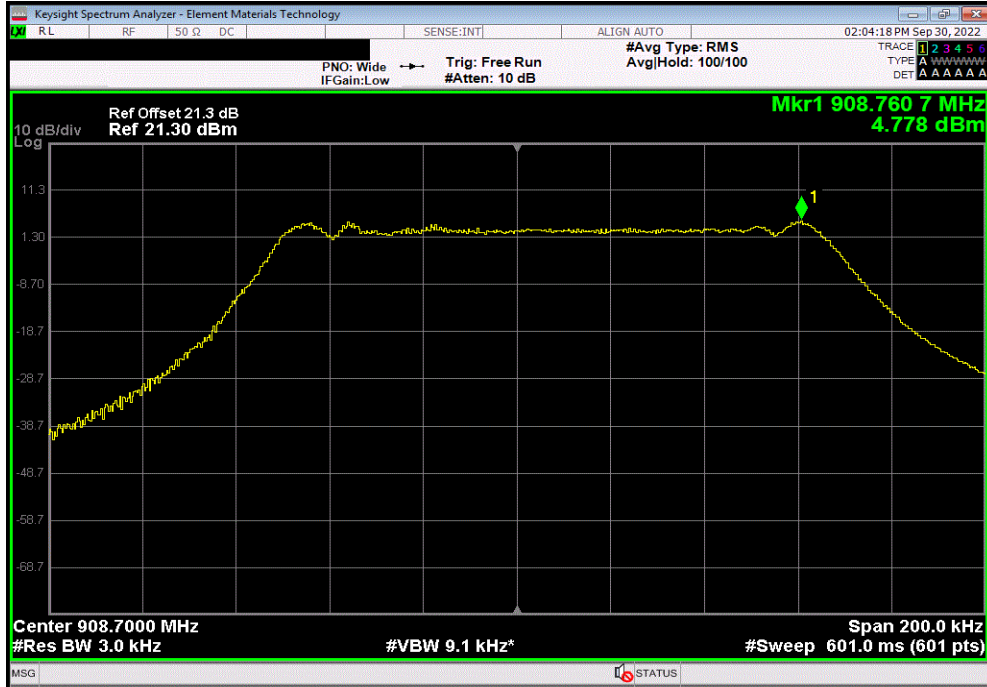


POWER SPECTRAL DENSITY

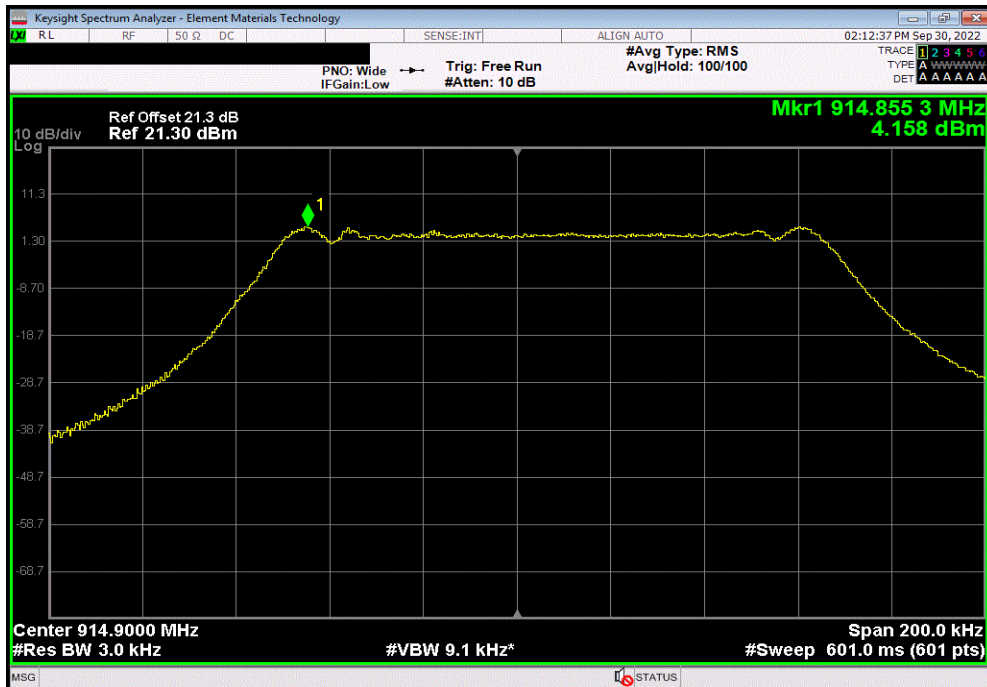


TbTx 2022.06.03.0 XMI 2023.02.14.0

Single Channel Mode, LoRa, 125 kHz BW, SF 7, Ch. 32, 908.7 MHz			
	Value	Limit	Results
	dBm/3kHz	< dBm/3kHz	
	4.778	8	Pass



Single Channel Mode, LoRa, 125 kHz BW, SF 7, Ch. 63, 914.9 MHz			
	Value	Limit	Results
	dBm/3kHz	< dBm/3kHz	
	4.158	8	Pass



End of Test Report