



1100 E Chalk Creek Road
 Coalville, UT 84017
 (435) 336-4433
 FAX (435) 336-4436

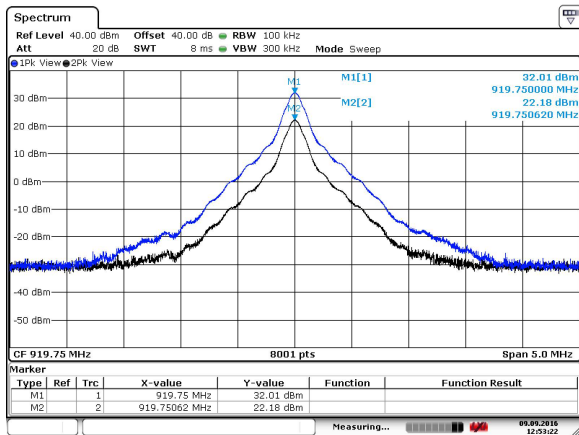
RF Power Output

DNB Job Number:	76033	Date:	7-9 Sep 2016	Conformance Standard FCC Part 90 RSS-137
Customer:	Transcore			
Model Number:	MPRX			
Description:	Multiprotocol Reader Extreme			Clause 90.205(1) RSS-137 cl 6.4

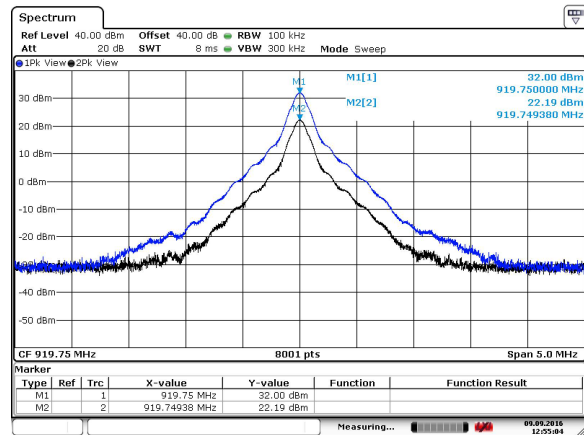
LEGEND TO PLOTS BELOW

SeGo - Port 0 - High Channel	SeGo - Port 1 - High Channel
SeGo - Port 2 - High Channel	SeGo - Port 3 - High Channel

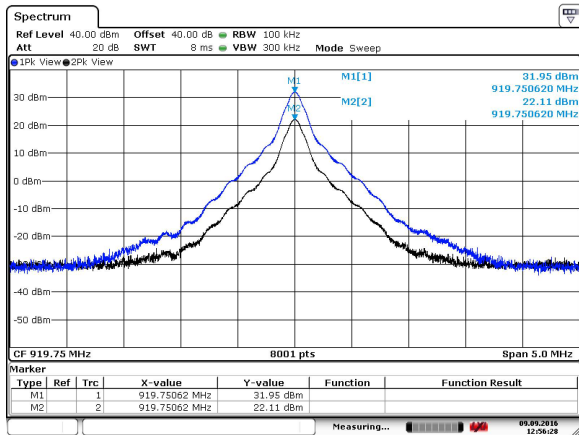
Note: Plots below show maximum and minimum power levels.



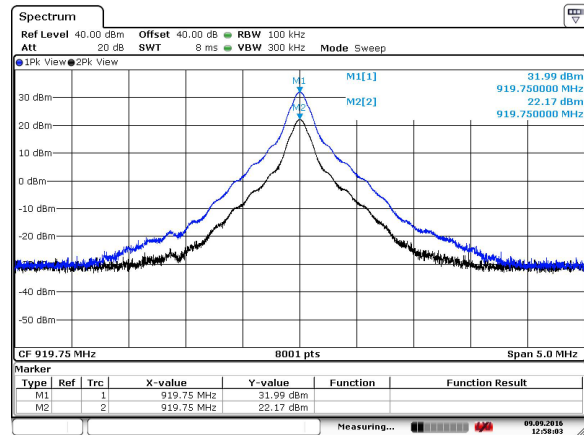
Date: 9.SEP.2016 12:53:23



Date: 9.SEP.2016 12:55:05



Date: 9.SEP.2016 12:56:29



Date: 9.SEP.2016 12:58:04



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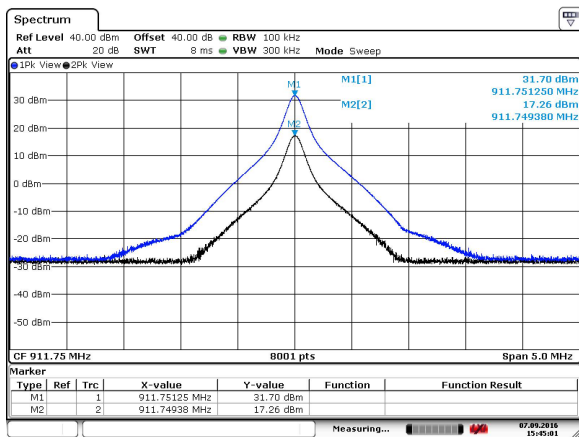
RF Power Output

DNB Job Number:	76033	Date:	7-9 Sep 2016	Conformance Standard FCC Part 90 RSS-137
Customer:	Transcore			
Model Number:	MPRX			
Description:	Multiprotocol Reader Extreme			Clause 90.205(1)
				RSS-137 cl 6.4

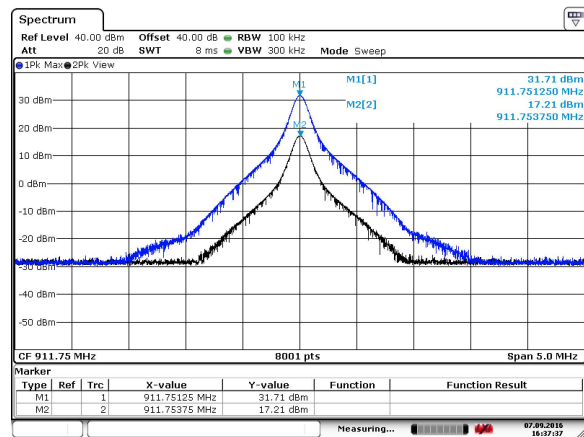
LEGEND TO PLOTS BELOW

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IAG - Port 2 - Low Channel	IAG - Port 3 - Low Channel

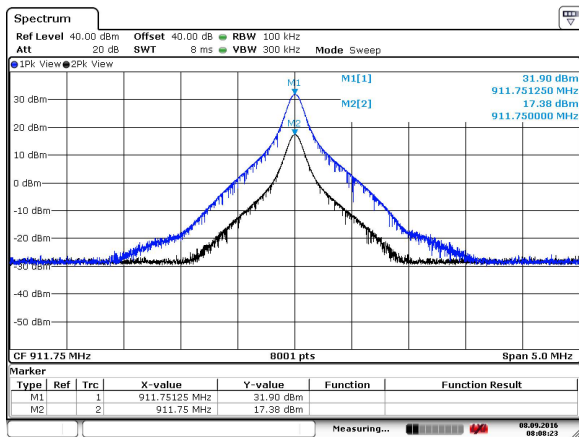
Note: Plots below show maximum and minimum power levels.



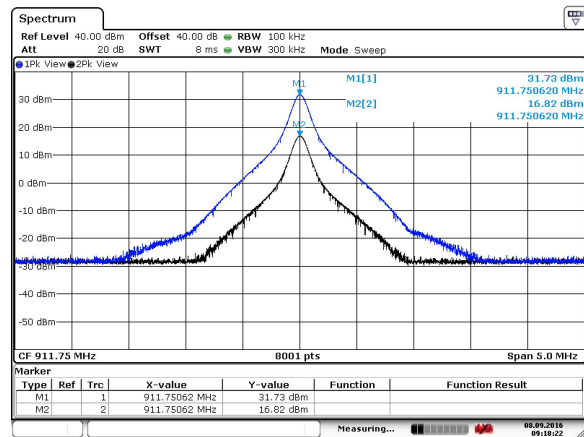
Date: 7.SEP.2016 15:45:01



Date: 7.SEP.2016 16:37:37



Date: 8.SEP.2016 08:08:23



Date: 8.SEP.2016 09:18:23



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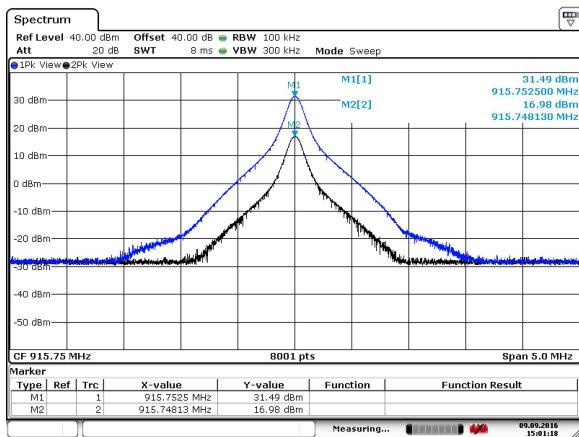
RF Power Output

DNB Job Number:	76033	Date:	7-9 Sep 2016	Conformance Standard FCC Part 90 RSS-137
Customer:	Transcore			
Model Number:	MPRX			
Description:	Multiprotocol Reader Extreme			Clause 90.205(1) RSS-137 cl 6.4

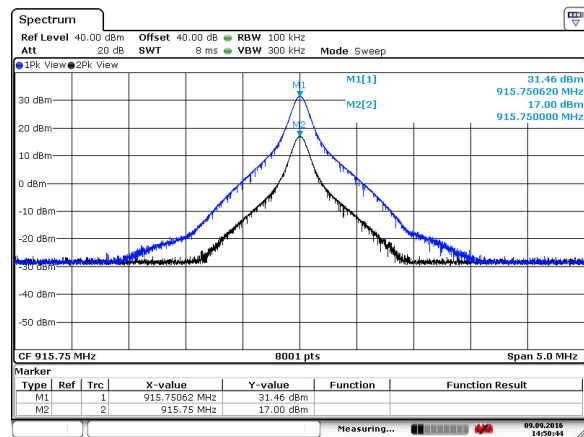
LEGEND TO PLOTS BELOW

IAG - Port 0 - Middle Channel	IAG - Port 1 - Middle Channel
IAG - Port 2 - Middle Channel	IAG - Port 3 - Middle Channel

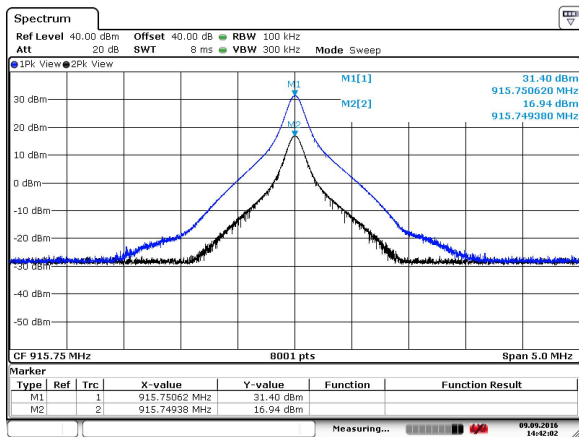
Note: Plots below show maximum and minimum power levels.



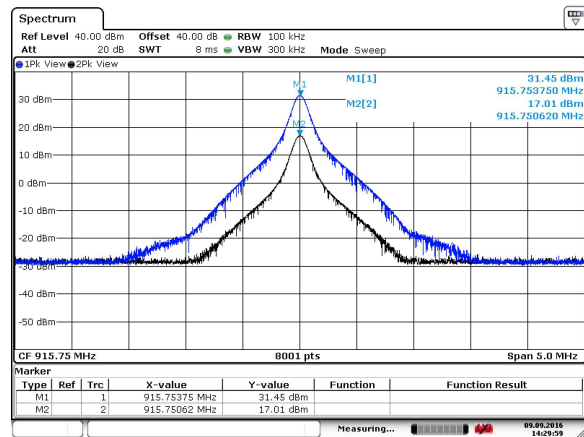
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Date: 9.SEP.2016 14:50:45



Date: 9.SEP.2016 14:42:03



Date: 9.SEP.2016 14:29:59



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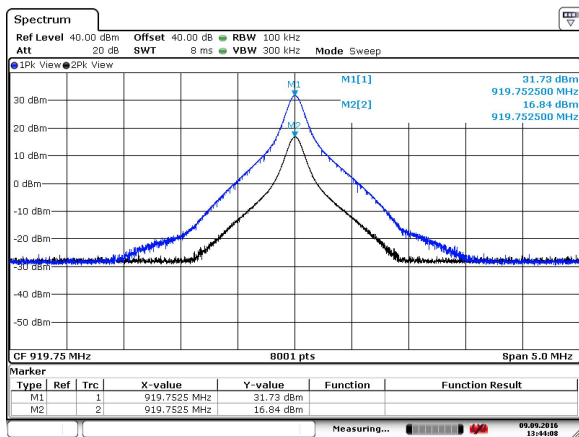
RF Power Output

DNB Job Number:	76033	Date:	7-9 Sep 2016	Conformance Standard FCC Part 90 RSS-137
Customer:	Transcore			
Model Number:	MPRX			
Description:	Multiprotocol Reader Extreme			Clause 90.205(1) RSS-137 cl 6.4

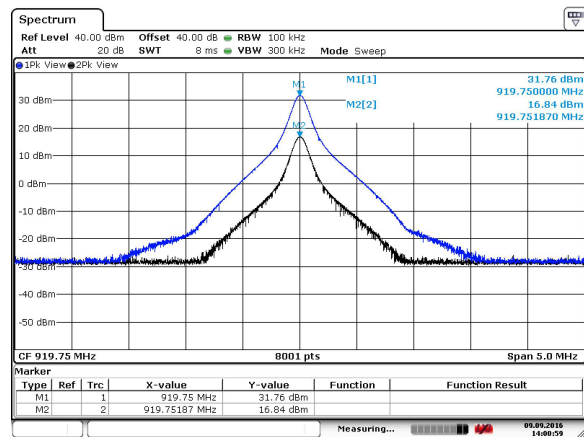
LEGEND TO PLOTS BELOW

IAG - Port 0 - High Channel	IAG - Port 1 - High Channel
IAG - Port 2 - High Channel	IAG - Port 3 - High Channel

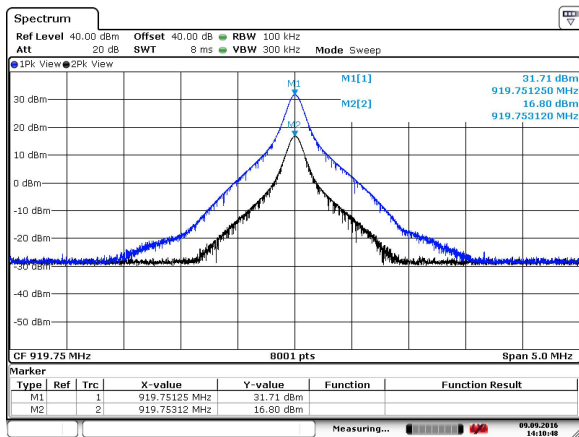
Note: Plots below show maximum and minimum power levels.



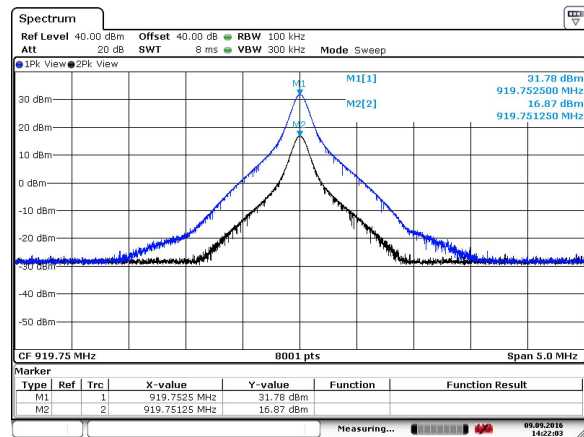
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Date: 9.SEP.2016 14:00:59



Date: 9.SEP.2016 14:10:49



Date: 9.SEP.2016 14:22:04

Measurements shall be made to establish the modulation characteristics delivered by the transmitter into the standard output termination. The modulation characteristics shall be monitored and recorded and no adjustment shall be made to the transmitter after the test has begun.

The modulation characteristics were measured at the antenna terminal by replacing the antenna with cabling, spectrum analyzer and appropriate attenuation. The spectrum analyzer offered impedance of 50 Ω to match the impedance of the standard antenna. A Spectrum Analyzer was used to measure the modulation characteristics at the antenna port. Reference plots can be reviewed in the Occupied Bandwidth and Emission Mask sections.

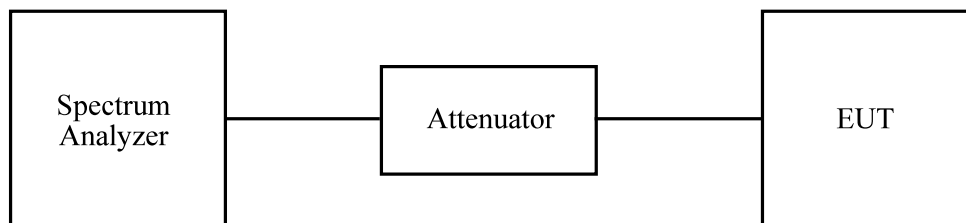
Data was taken per Paragraph FCC 2.1047(d) and applicable paragraphs of FCC Part 90.207 and Industry Canada RSS-137 paragraph 6.2.


The transmitter operates in continuous wave (CW) and/or offering data transmitted signals modulated in amplitude/width/duration. All operating channels fall within the Non-Multilateral Occupied Bandwidth limitations. Emission Designators have been provided below.

EUT operating conditions:


The software provided by the client to enable the EUT to transmit continuously at the each channel respectively.

Test Set Up:



		1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Modulation Characteristics	
DNB Job Number:	76033	Date:	9 Sep 2016	Conformance Standard FCC Part 90 RSS-137	
Customer:	Transcore				
Model Number:	MPRX				
Description:	Multiprotocol Reader Extreme			Clause Part 90.207 RSS-137 cl. 6.2	
Ambient Temperature		Relative Humidity			
19 °C		28 %		101.8 kPa	
EUT performed within the requirements of the applicable standard <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>Les Payne</i>					

Band	Channel	Freq in MHz	Modulation	OBW kHz	Designator	Maximum Authorized Bandwidth (MHz)	Result
Low	Low	902.250	ATA (CW)	65.742	NON	902.000 to 904.000	Pass
Low	Middle	903.000	ATA (CW)	65.742	NON	902.000 to 904.000	Pass
Low	High	903.750	ATA (CW)	65.742	NON	902.000 to 904.000	Pass
High	Low	910.000	ATA (CW)	65.992	NON	909.750 to 921.750	Pass
High	Middle	915.750	ATA (CW)	65.992	NON	909.750 to 921.750	Pass
High	High	921.500	ATA (CW)	65.992	NON	909.750 to 921.750	Pass
High	Low	911.750	eGo	353.706	353K7L1D	909.750 to 921.750	Pass
High	Middle	915.750	eGo	355.956	356K0L1D	909.750 to 921.750	Pass
High	High	919.750	eGo	352.956	353K0L1D	909.750 to 921.750	Pass
High	Low	911.750	SeGo	506.187	506K2L1D	909.750 to 921.750	Pass
High	Middle	915.750	SeGo	506.437	506K4L1D	909.750 to 921.750	Pass
High	High	919.750	SeGo	506.437	506K4L1D	909.750 to 921.750	Pass
High	Low	911.750	IAG	379.953	380K0L1D	909.750 to 921.750	Pass
High	Middle	915.750	IAG	379.703	379K7L1D	909.750 to 921.750	Pass
High	High	919.750	IAG	378.703	378K7L1D	909.750 to 921.750	Pass
High	Low	911.750	EPC	455.693	455K7L1D	909.750 to 921.750	Pass
High	Middle	915.750	EPC	453.693	453K7L1D	909.750 to 921.750	Pass
High	High	919.750	EPC	450.194	450K2L1D	909.750 to 921.750	Pass

	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Emission Mask	
DNB Job Number:	76033	Date:	12 Sep 2016	Conformance Standard FCC Part 90 RSS-137
Customer:	Transcore			
Model Number:	MPRX			
Description:	Multiprotocol Reader Extreme			Clause 90.210 (k) RSS-137 cl. 6.5.3

90.210 (k) Emission Mask K

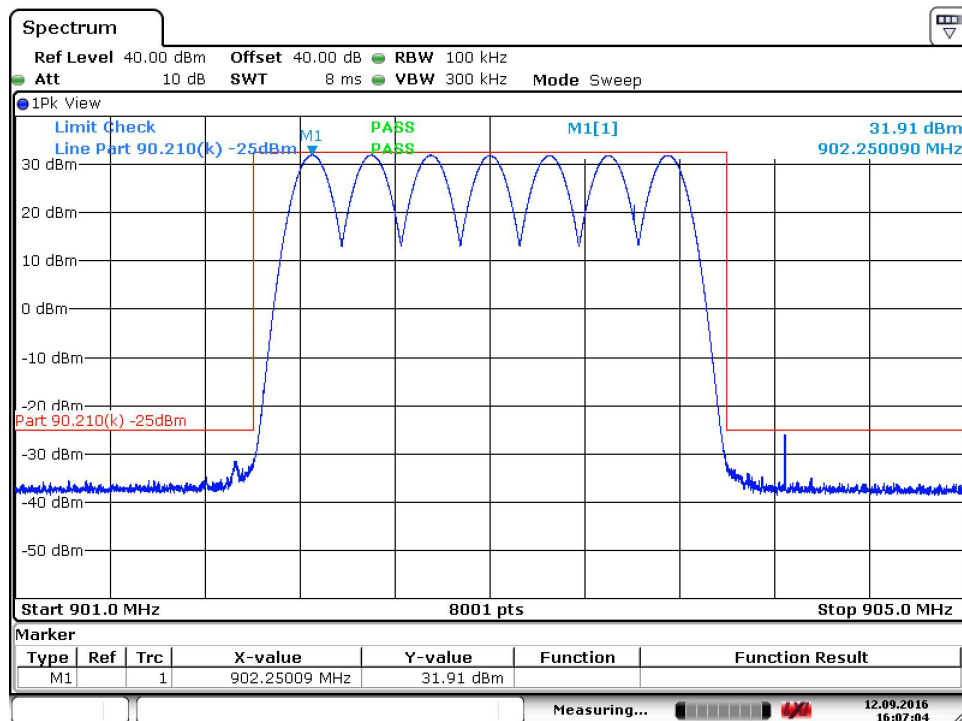
- (3) Other transmitters. For all other transmitters authorized under subpart M that operate in the 902-928 MHz band, the peak power of any emission shall be attenuated below the power of the highest emission contained within the licensee's sub-band in accordance with the following schedule:
 - (i) On any frequency within the authorized bandwidth: Zero dB.
 - (ii) On any frequency outside the licensee's sub-band edges: $55 + 10 \log(P)$ dB, where (P) is the highest emission (watts) of the transmitter inside the licensee's sub-band.
- (4) In the 902-928 MHz band, the resolution bandwidth of the instrumentation used to measure the emission power shall be 100 kHz, except that, in regard to paragraph (2) of this section, a minimum spectrum analyzer resolution bandwidth of 300 Hz shall be used for measurement center frequencies with 1 MHz of the edge of the authorized subband. The video filter bandwidth shall not be less than the resolution bandwidth.
- (5) Emission power shall be measured in peak values.
- (6) The LMS sub-band edges for non-multilateration systems for which emissions must be attenuated are 902.00, 904.00, 909.5 and 921.75 MHz.



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Emission Mask

DNB Job Number:	76033	Date:	12 Sep 2016	Conformance Standard FCC Part 90 RSS-137
Customer:	Transcore			
Model Number:	MPRX			
Description:	Multiprotocol Reader Extreme			Clause 90.210 (k) RSS-137 cl. 6.5.3
Environmental Conditions				
Ambient Temperature		Relative Humidity		Barometric Pressure
21 °C		25 %		101.2 kPa
EUT performed within the requirements of the applicable standard <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>Les Payne</i>				
Modulation	Freq Band (MHz)	Mask	Pass/Fail	
ATA	902.000 to 904.000	90.210 (k)	Pass	



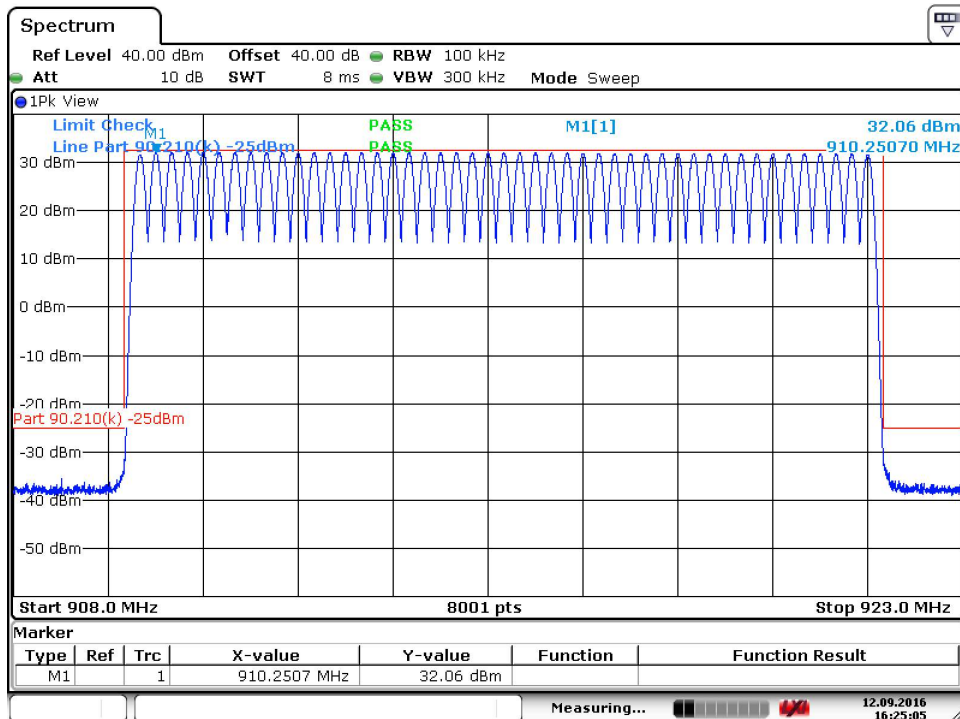
Date: 12.SEP.2016 16:07:04



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Emission Mask

DNB Job Number:	76033	Date:	12 Sep 2016	Conformance Standard FCC Part 90 RSS-137
Customer:	Transcore			
Model Number:	MPRX			
Description:	Multiprotocol Reader Extreme			Clause 90.210 (k) RSS-137 cl. 6.5.3
Environmental Conditions				
Ambient Temperature		Relative Humidity		Barometric Pressure
21 °C		25 %		101.2 kPa
EUT performed within the requirements of the applicable standard <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>Les Payne</i>				
Modulation	Freq Band (MHz)	Mask	Pass/Fail	
ATA	909.750 to 921.750	90.210 (k)	Pass	



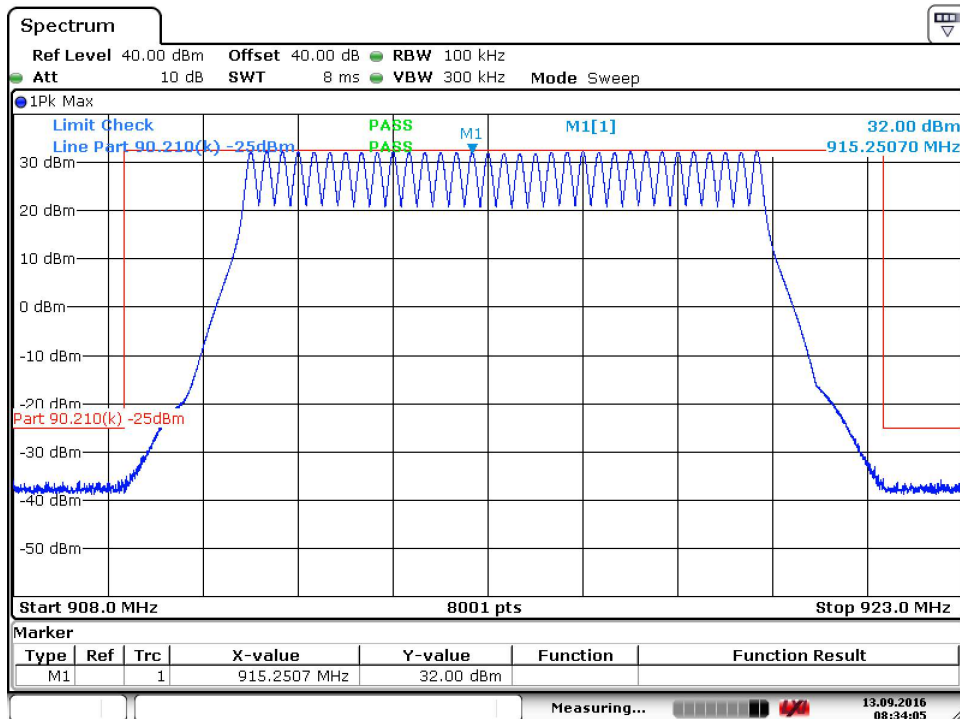
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Emission Mask

DNB Job Number:	76033	Date:	12 Sep 2016	Conformance Standard FCC Part 90 RSS-137
Customer:	Transcore			
Model Number:	MPRX			
Description:	Multiprotocol Reader Extreme			Clause 90.210 (k) RSS-137 cl. 6.5.3
Environmental Conditions				
Ambient Temperature		Relative Humidity		Barometric Pressure
21 °C		25 %		101.2 kPa
EUT performed within the requirements of the applicable standard <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>Les Payne</i>				
Modulation	Freq Band (MHz)	Mask	Pass/Fail	
eGo	909.750 to 921.750	90.210 (k)	Pass	



Date: 13.SEP.2016 08:34:05



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Emission Mask

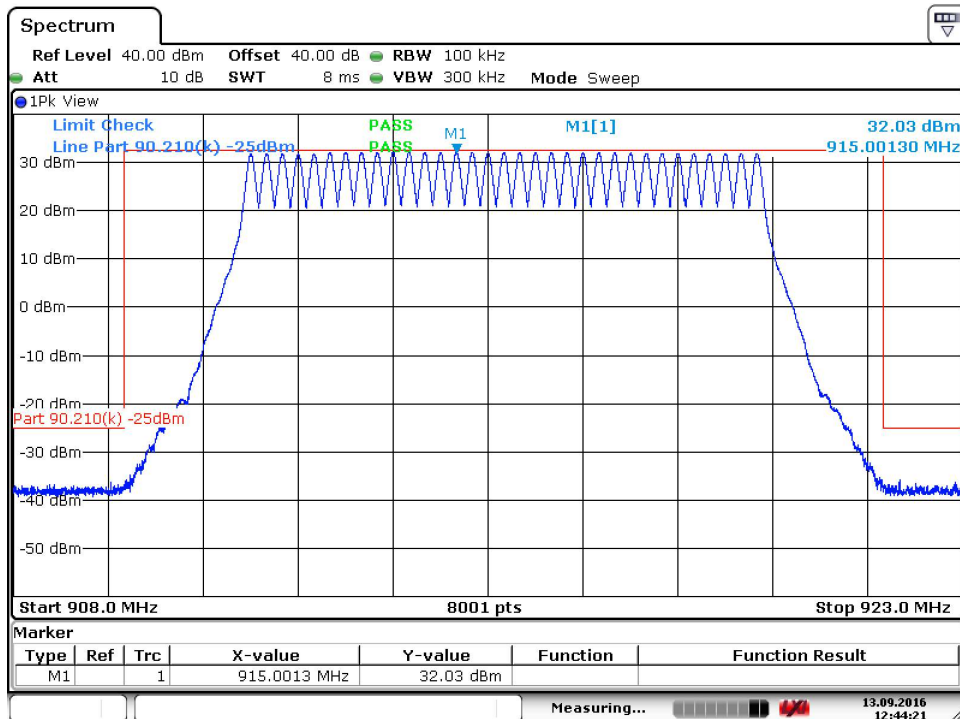
DNB Job Number:	76033	Date:	12 Sep 2016	Conformance Standard FCC Part 90 RSS-137
Customer:	Transcore			
Model Number:	MPRX			
Description:	Multiprotocol Reader Extreme			Clause 90.210 (k) RSS-137 cl. 6.5.3

Environmental Conditions

Ambient Temperature	Relative Humidity	Barometric Pressure
21 °C	25 %	101.2 kPa

EUT performed within the requirements of the applicable standard Yes No *Les Payne*

Modulation	Freq Band (MHz)	Mask	Pass/Fail
EPC	909.750 to 921.750	90.210 (k)	Pass



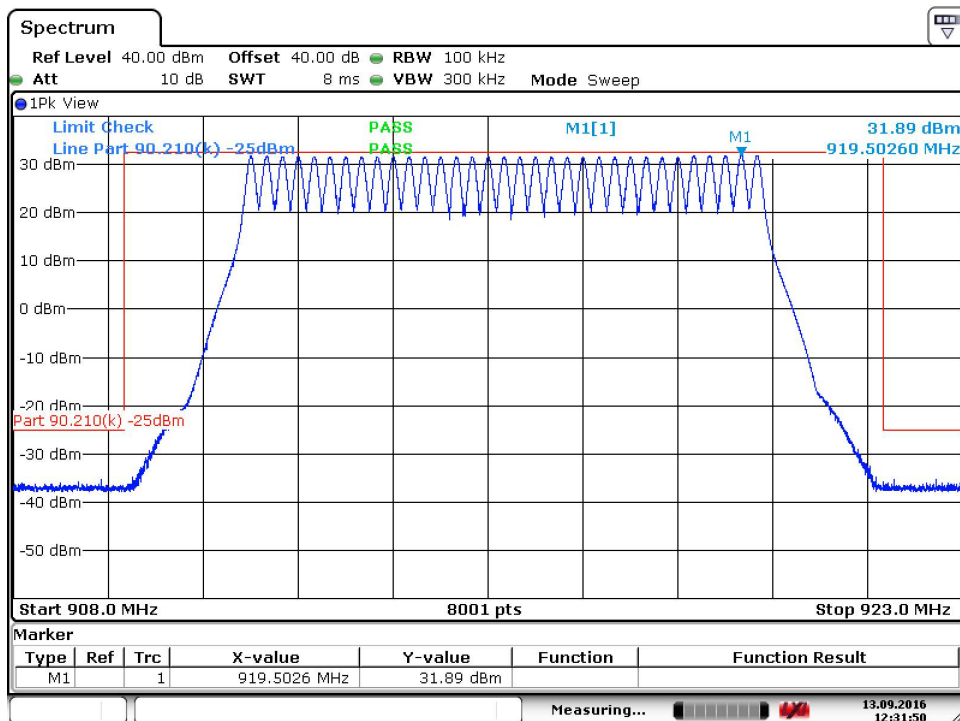
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Emission Mask

DNB Job Number:	76033	Date:	12 Sep 2016	Conformance Standard FCC Part 90 RSS-137
Customer:	Transcore			
Model Number:	MPRX			
Description:	Multiprotocol Reader Extreme			Clause 90.210 (k) RSS-137 cl. 6.5.3
Environmental Conditions				
Ambient Temperature		Relative Humidity		Barometric Pressure
21 °C		25 %		101.2 kPa
EUT performed within the requirements of the applicable standard <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>Les Payne</i>				
Modulation	Freq Band (MHz)	Mask	Pass/Fail	
IAG	909.750 to 921.750	90.210 (k)	Pass	



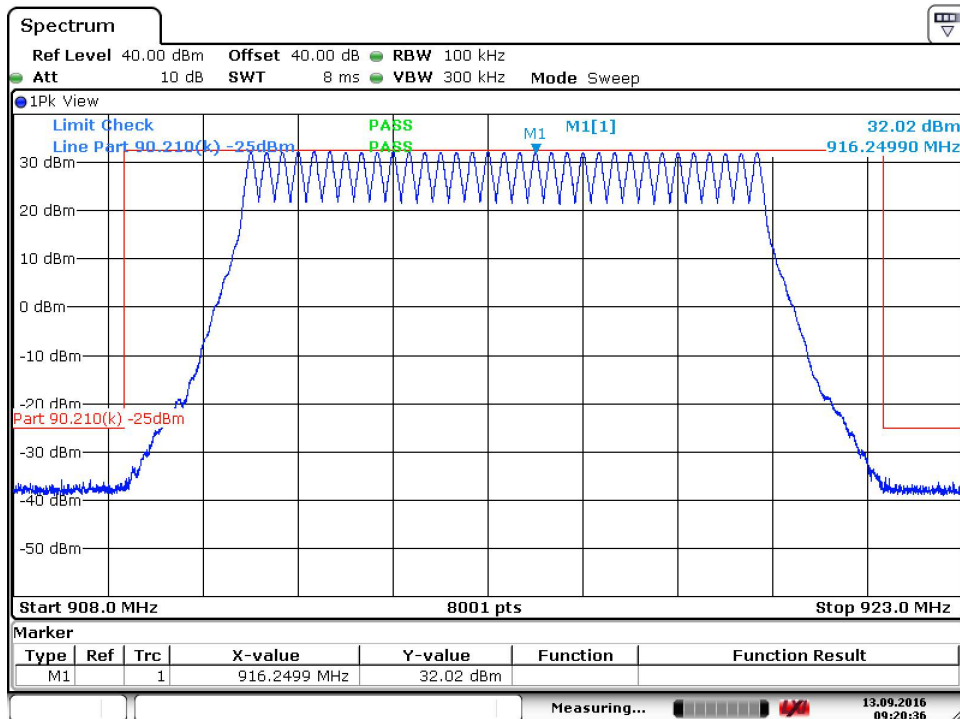
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Emission Mask

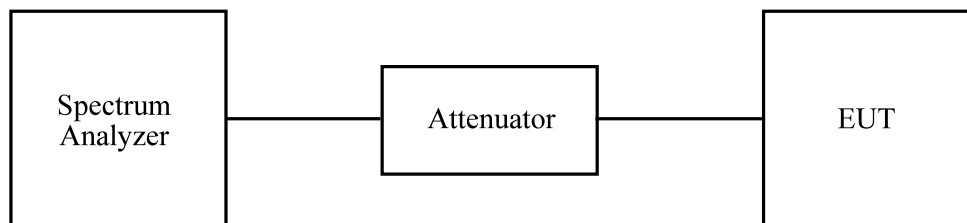
DNB Job Number:	76033	Date:	12 Sep 2016	Conformance Standard FCC Part 90 RSS-137
Customer:	Transcore			
Model Number:	MPRX			
Description:	Multiprotocol Reader Extreme			Clause 90.210 (k) RSS-137 cl. 6.5.3
Environmental Conditions				
Ambient Temperature		Relative Humidity		Barometric Pressure
21 °C		25 %		101.2 kPa
EUT performed within the requirements of the applicable standard <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>Les Payne</i>				
Modulation	Freq Band (MHz)	Mask	Pass/Fail	
SeGo	909.750 to 921.750	90.210 (k)	Pass	




Date: 13.SEP.2016 09:20:36

The occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission.

Test Set Up:





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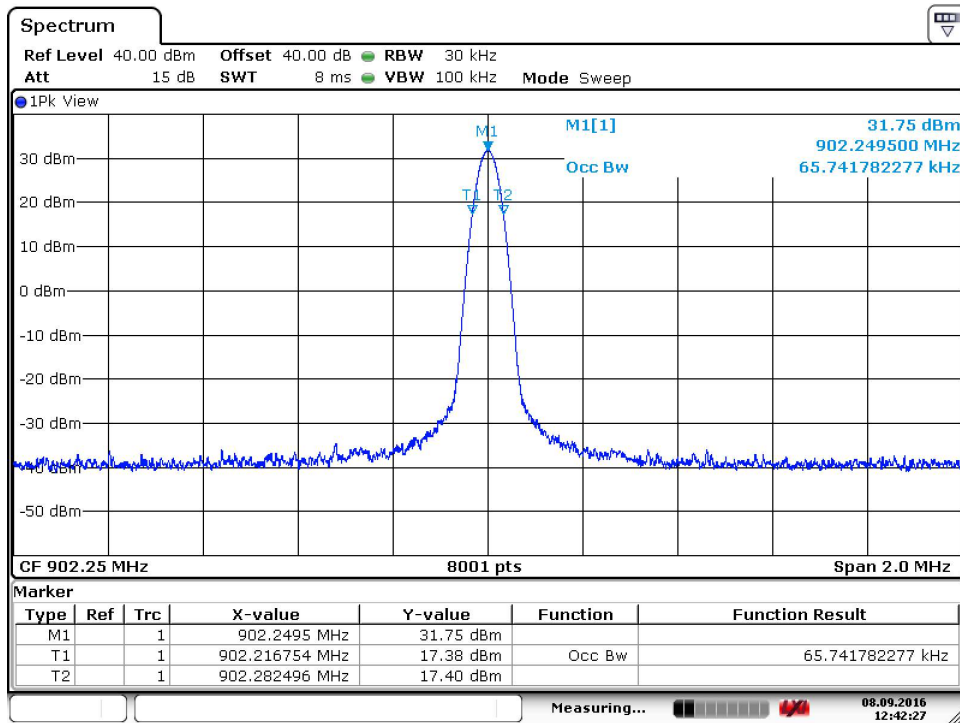
Occupied Bandwidth

DNB Job Number:	76033	Date:	8 Sep 2016	Conformance Standard FCC Part 90 RSS-137
Customer:	Transcore			
Model Number:	MPRX			
Description:	Multiprotocol Reader Extreme			Clause Part 90.209 RSS-137 cl. 6.1

Ambient Temperature	Relative Humidity	Barometric Pressure
19 °C	28 %	101.8 kPa

EUT performed within the requirements of the applicable standard Yes No *Les Payne*

BAND	CHANNEL	FREQ IN MHZ	MODULATION	OBW in kHz	RESULT
Low	Low	902.250	ATA (CW)	65.741782277	Pass



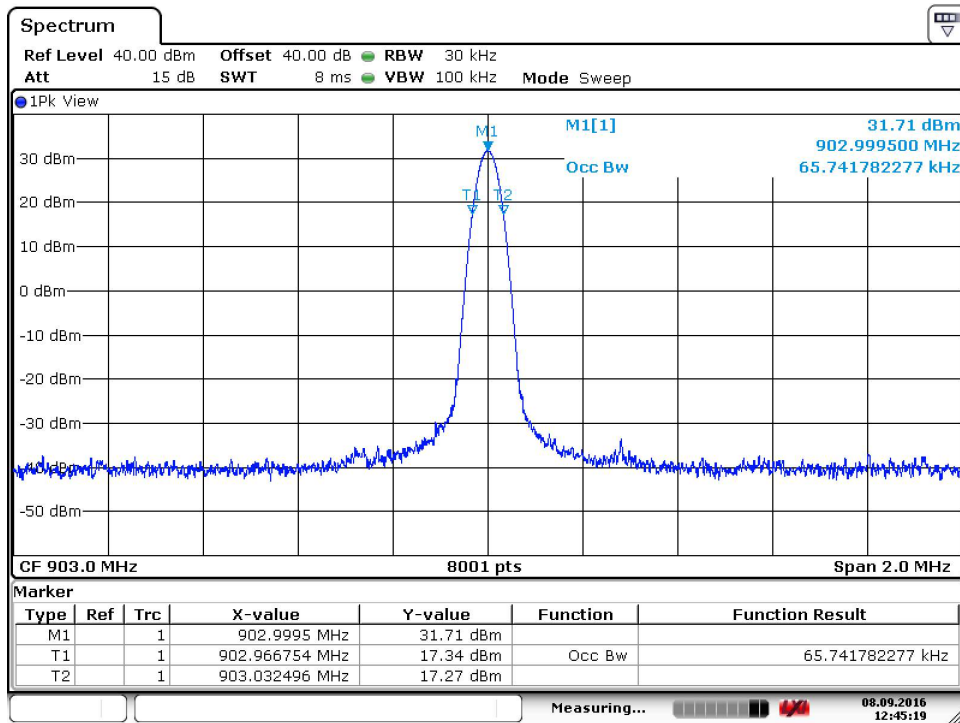
Date: 8.SEP.2016 12:42:27




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Occupied Bandwidth

DNB Job Number:	76033	Date:	8 Sep 2016	Conformance Standard FCC Part 90 RSS-137	
Customer:	Transcore				
Model Number:	MPRX				
Description:	Multiprotocol Reader Extreme				
				Clause Part 90.209 RSS-137 cl. 6.1	
Ambient Temperature		Relative Humidity		Barometric Pressure	
19 °C		28 %		101.8 kPa	
EUT performed within the requirements of the applicable standard <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>Les Payne</i>					
BAND	CHANNEL	FREQ IN MHZ	MODULATION	OBW in kHz	RESULT
Low	Middle	903.000	ATA (CW)	65.741782277	Pass



Date: 8.SEP.2016 12:45:19



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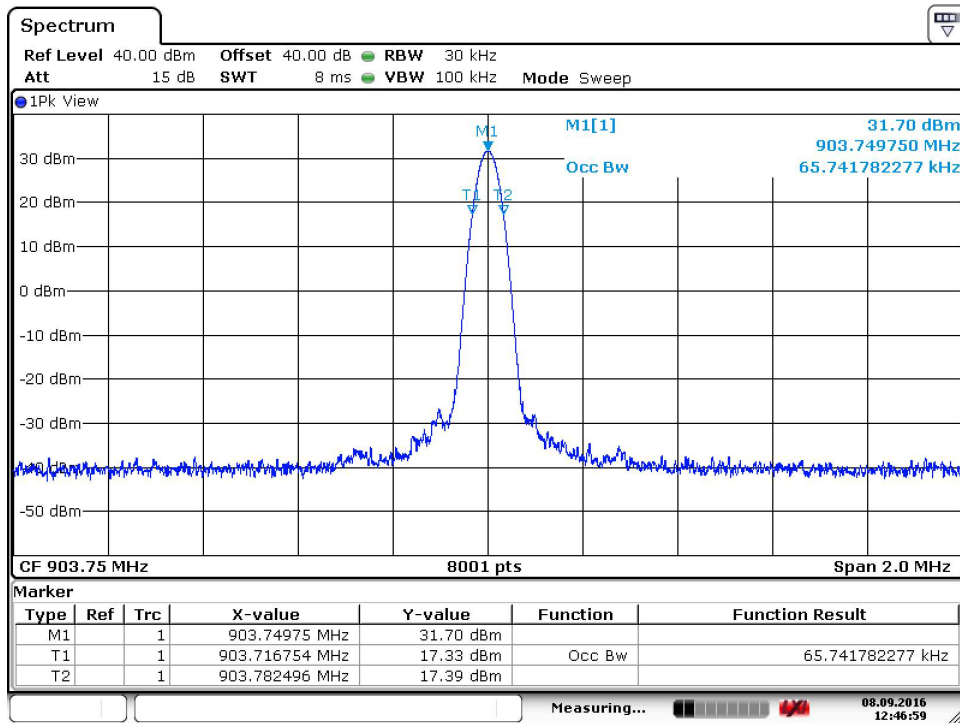
Occupied Bandwidth

DNB Job Number:	76033	Date:	8 Sep 2016	Conformance Standard FCC Part 90 RSS-137
Customer:	Transcore			
Model Number:	MPRX			
Description:	Multiprotocol Reader Extreme			Clause Part 90.209 RSS-137 cl. 6.1

Ambient Temperature	Relative Humidity	Barometric Pressure
19 °C	28 %	101.8 kPa

EUT performed within the requirements of the applicable standard Yes No *Les Payne*

BAND	CHANNEL	FREQ IN MHZ	MODULATION	OBW in kHz	RESULT
Low	High	9030.750	ATA (CW)	65.741782277	Pass



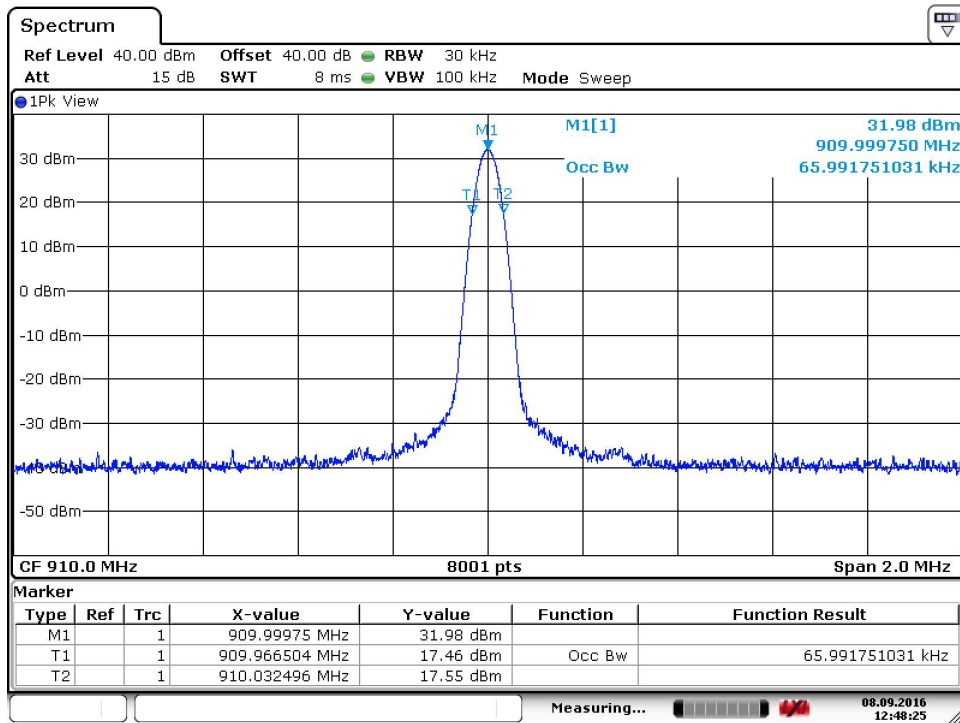
Date: 8.SEP.2016 12:46:59



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Occupied Bandwidth

DNB Job Number:	76033	Date:	8 Sep 2016	Conformance Standard FCC Part 90 RSS-137	
Customer:	Transcore				
Model Number:	MPRX				
Description:	Multiprotocol Reader Extreme				
				Clause Part 90.209 RSS-137 cl. 6.1	
Ambient Temperature		Relative Humidity		Barometric Pressure	
19 °C		28 %		101.8 kPa	
EUT performed within the requirements of the applicable standard <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>Les Payne</i>					
BAND	CHANNEL	FREQ IN MHZ	MODULATION	OBW in kHz	RESULT
High	Low	910.000	ATA (CW)	65.991751031	Pass



Date: 8.SEP.2016 12:48:25