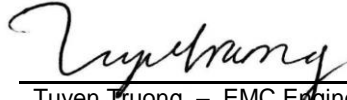
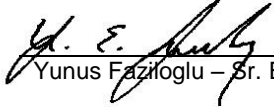




Test Report



Curtis-Straus LLC, a wholly owned subsidiary of BV CPS

Report No	EQ3029-2
Client	Hirschmann Car Communication GmbH
Address	Stuttgarter Str. 45-51 72654 Neckartenzlingen Germany
Phone	+49 7127 14 1005
Items tested	Emerson RMM-W (MN# 920536)
FCC ID	XTJ-RMM-W-26187
IC	8653A-RMMW26187
Equipment Type	Digital Transmission System
Equipment Code	DTS
Emission Designator	1M06F1D
FCC/IC Rule Parts	CFR Title 47 FCC Part 15.247, ISED Canada RSS-247 Issue 1
Test Dates	October 6 and 7, 2016
Results	As detailed within this report
Prepared by	 Tuyen Truong – EMC Engineer
Authorized by	 Yunus Fazioglu – Sr. EMC Engineer
Issue Date	11/28/2016
Conditions of Issue	This Test Report is issued subject to the conditions stated in the 'Conditions of Testing' section on page 26 of this report.

Curtis-Straus LLC is accredited by the American Association for Laboratory Accreditation for the specific scope of accreditation under Certificate Number 1627-01. This report may contain data which is not covered by the A2LA accreditation.



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Form Final Report REV 7-20-07 (DW)



Summary

This test report supports an application for certification of a transmitter operating pursuant to: CFR Title 47 FCC Part 15.247, ISED Canada RSS-247 Issue 1

The product is the “Emerson RMM-W (MN# 920536)”. It is a digitally modulated transmitter that operates in the 2402 to 2480 MHz frequency range. Product was set up and tested with an external “GPS-Cellular-WLAN Band Integrated Antenna” with 6.25dBi gain.

We found that the product met the above requirements without modification. The test samples were received in good condition.

Issue No.	Reason for change	Date Issued
1	Original Release	November 28, 2016



Test Methodology

All testing was performed according to the following rules/procedures/documents;
CFR 47 Part 15.247, RSS-247 Issue 1, RSS-Gen Issue 4, FCC KDB 558074 D01 DTS
Measurement Guidance v03r05 and ANSI C63.10-2013.

Radiated emissions were maximized by rotating the external antenna around 3 orthogonal planes (X, Y and Z) as well as varying the test antenna's height and polarity.

RF measurements were performed at the antenna port on 3 channels as follows:

- 2402 MHz: Low Channel
- 2440 MHz: Mid Channel
- 2480 MHz: High Channel

The EUT operating voltage is 24VAC from the refrigerated container power source. Client has declared that it has no provisions to be powered directly or indirectly from AC power lines. Therefore AC line conducted emissions testing was not performed.

Following bandwidths were used during radiated spurious emissions testing:

Frequency	RBW	VBW
30-1000MHz	120kHz	1MHz
1-25GHz	1MHz	3MHz

Product Tested - Configuration Documentation

EUT Configuration											
Work Order:	Q3029										
Company:	Hirschmann Car Communication GmbH										
Company Address:	Stuttgarter Str. 45-51 Neckartenzlingen, 72654 Germany										
Contact:	Syed Ul Haq										
	MN			PN			SN				
EUT:	Emerson RMM-W 920536			7916-004			ABH791600416320034				
	Emerson RMM-W 920536			7916-004			ABH791600416320040				
Emerson Antenna	--			--			--				
EUT Description:	Emerson RMM-W										
EUT Max Frequency:	2480 MHz										
EUT Min Frequency:	0.032768 MHz										
	MN			SN							
Support Equipment	SAMSUNG			RF2D80WM7QW							
	Dell LATITUDE Laptop			CFG2000							
	Port Label	Port Type	# ports	# populated	cable type	shielded	ferrites	length (m)	in/out	under test	comment
	24VAC	Power AC	1	1	Power AC				in	yes	
	Antenna	other	1	1	other	No	No	2.5	out	yes	
	7-pin adapter with SUB-D 9 interface	RS-232	1	1	RS-232	Yes	No		in	yes	
	7-pin adapter with switch	other	1	1	other	No	No		in	yes	
	6 pin adapter	other	1	1	other	No	No		in	yes	
	2-pin adapter	other	1	1	other	No	No		in	yes	
Software Operating Mode Description:											
Running RMM-W Client software via support laptop to exercise EUT. EUT is set to transmit on Low (2402 MHz), Mid (2440 MHz) and High (2480 MHz).											



Statement of Conformity

RSS-GEN	RSP-100	RSS 247	Part 15	Comments
6.3			15.15(b)	There are no controls accessible to the user that varies the output power to operate in violation of the regulatory requirements.
	3.1		15.19	The label is shown in the label exhibit.
	4		15.21	Information to the user is shown in the instruction manual exhibit.
			15.27	No special accessories are required for compliance.
3, 6.1			15.31	The EUT was tested in accordance with the measurement standards in this section.
6.13			15.33	Frequency range was investigated according to this section, unless noted in specific rule section under which the equipment operates.
8.1			15.35	The EUT emissions were measured using the measurement detector and bandwidth specified in this section, unless noted in specific rule section under which the equipment operates.
8.3			15.203	EUT has an external "GPS-Cellular-WLAN Band Integrated Antenna" with 6.25dBi gain.
8.10			15.205 15.209	The fundamental is not in a Restricted band and the spurious and harmonic emissions in the Restricted bands comply with the general emission limits of 15.209 or RSS-Gen as applicable
8.8			15.207	Not applicable. No connection to AC power lines.
			15.247	The unit complies with the requirements of 15.247
		RSS 247		The unit complies with the requirements of RSS-247
6.6				Occupied Bandwidth measurements were made.

Test Results

DTS Bandwidth

Limit: The minimum 6 dB bandwidth shall be at least 500 kHz. [15.247(a)(2)]

MEASUREMENTS / RESULTS

6dB Bandwidth				
Date: Oct-06-2016		Company: Hirschmann Car Communication GmbH		Work Order: Q3029
Engineer: Yunus Faziloglu		EUT: RMM-W		EUT Operating Voltage/Frequency: 24VAC
Temp: 21.9°C		Humidity: 40%		Pressure: 1016mbar
Frequency Range: 2402-2480 MHz			Measurement Type: Conducted	
Measurement Method: FCC KDB 558074 D01 DTS Meas Guidance v03r05 Section 8.2				
Notes:				
Frequency (MHz)	Reading (kHz)	6dB Bandwidth		
		Limit (kHz)	Margin (kHz)	Result (Pass/Fail)
2402	704	≥500	204	Pass
2440	720	≥500	220	Pass
2480	719	≥500	219	Pass
Test Site: Wireless Test Room		Cable 1: Custom SMA Adapter		Attenuator A2121
Analyzer: A2200		Copyright Curtis-Straus LLC 2000		

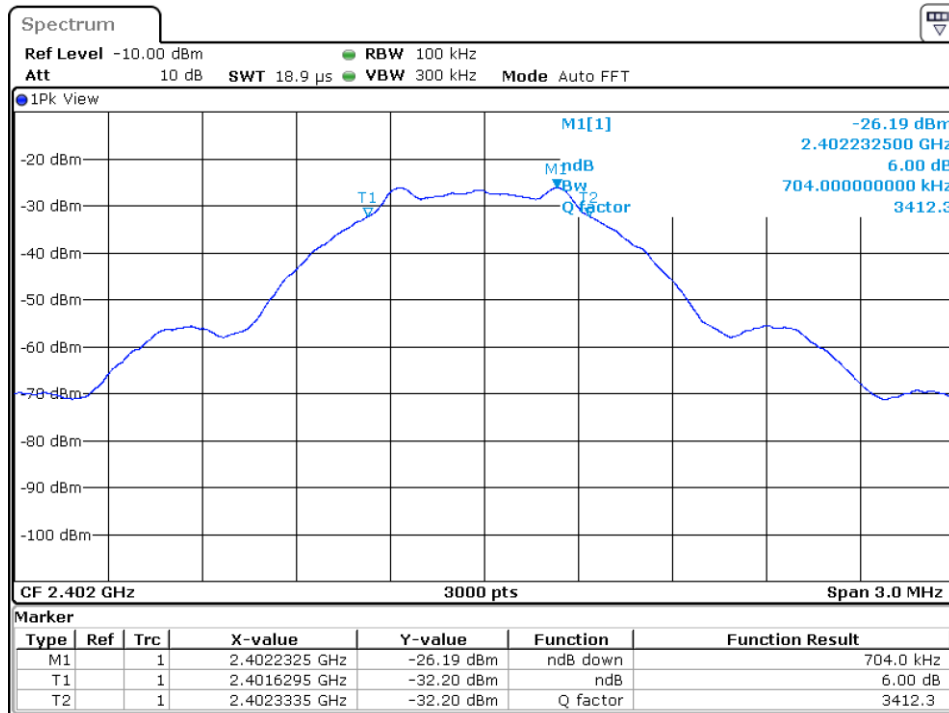
Rev. 10/2/2016

Signal Generators	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
FSV40 Signal/Spectrum Analyzer	10Hz-40GHz	FSV40	ROHDE & SCHWARZ	101551	2200	I	6/1/2017	6/1/2016
Preamps/Couplers Attenuators / Filters	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
API - 30dB 20W Attenuator	9KHz-40GHz	89-30-11	API Weinschel	703	2121	I	2/10/2017	2/10/2016
Meteorological Meters		MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
Weather Clock (Pressure Only)		BA928	Oregon Scientific	C3166-1	831	I	4/28/2018	4/28/2016
TH A#2082		HTC-1	HDE		2082	II	4/5/2017	4/5/2016

All equipment is calibrated using standards traceable to NIST or other nationally recognized calibration standard.

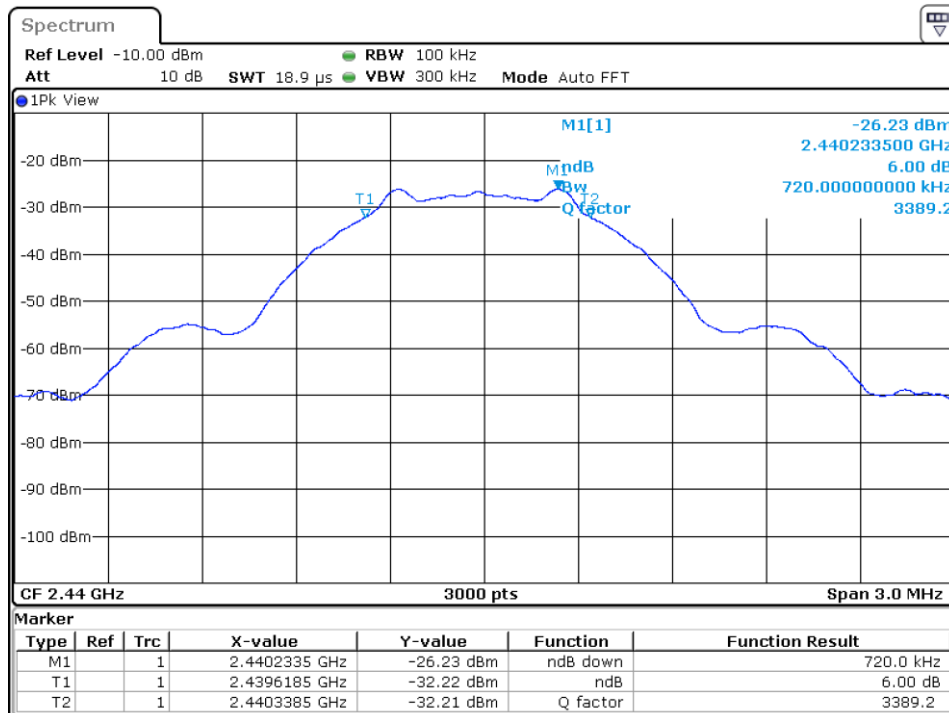


PLOT(s)



Date: 6.OCT.2016 14:34:46

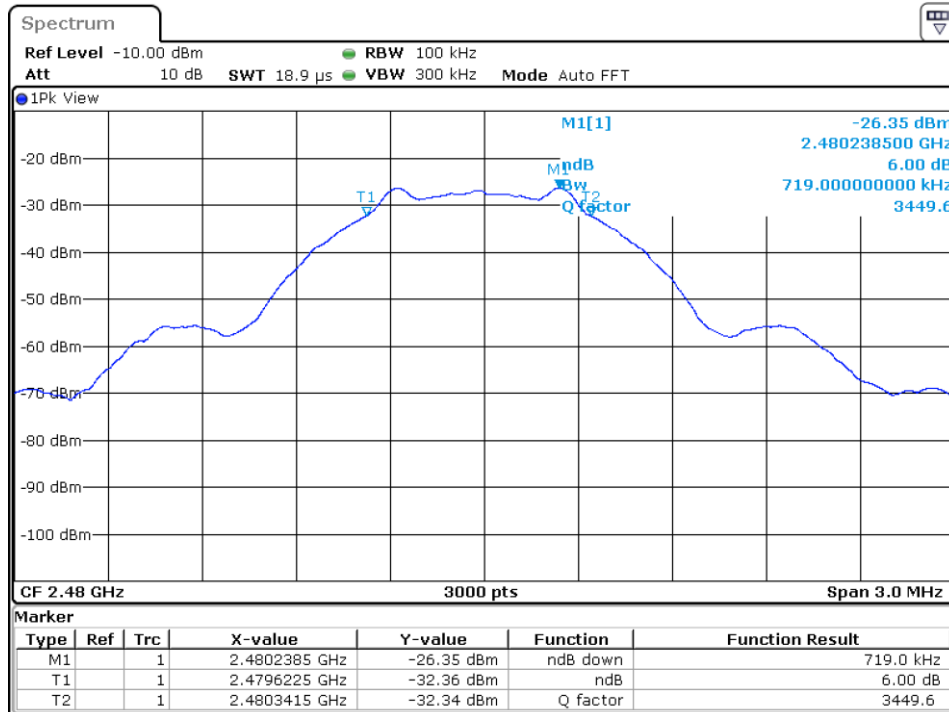
6dB Bandwidth – 2402 MHz



Date: 6.OCT.2016 14:52:59

6dB Bandwidth - 2440 MHz





Date: 6.OCT.2016 14:50:42

6dB Bandwidth – 2480 MHz

Output Power

Limit: 1 Watt Conducted Output Power [15.247(b)(3)]

Per 558074 D01 DTS Measurement Guidance v03r05 Section 9.1.2 (Maximum Peak Conducted Output Power)

MEASUREMENTS / RESULTS

Peak Output Power							
Date: Oct-06-2016		Company: Hirschmann Car Communication GmbH			Work Order: Q3029		
Engineer: Yunus Faziloglu		EUT: RMM-W		EUT Operating Voltage/Frequency: 24VAC			
Temp: 21.9°C		Humidity: 40%		Pressure: 1016mbar			
Frequency Range: 2402-2480 MHz		Measurement Type: Conducted					
Measurement Method: FCC KDB 558074 D01 DTS Meas Guidance v03r05 Section 9.1.2							
Notes:							
Frequency (MHz)	Peak Reading (dBm)	Cable Loss (dB)	Attenuator Loss (dB)	Peak Output Power (dBm)	Limit (dBm)	Margin (dB)	Result (Pass/Fail)
2402.0	-24.71	1.0	29.44	5.74	30.0	-24.27	Pass
2440.0	-24.76	1.0	29.44	5.68	30.0	-24.32	Pass
2480.0	-24.76	1.0	29.44	5.68	30.0	-24.32	Pass
Test Site: Wireless Test Room		Cable: Custom SMA Adapter			Power Sensor: Boonton A2108		
Peak Output Power (dBm) = Peak Reading (dBm) + Cable Loss (dB) + Attenuator Loss (dB)							

Rev. 10/2/2016

Power/Noise Meters	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on	
2108 Power sensor	55006	Boonton	9529	2108	I	12/8/2016	12/8/2015	
Preamps/Couplers Attenuators / Filters	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
API - 30dB 20W Attenuator	9KHz-40GHz	89-30-11	API Weinschel	703	2121	I	2/10/2017	2/10/2016
Meteorological Meters	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on	
Weather Clock (Pressure Only)	BA928	Oregon Scientific	C3166-1	831	I	4/28/2018	4/28/2016	
TH A#2082	HTC-1	HDE		2082	II	4/5/2017	4/5/2016	

All equipment is calibrated using standards traceable to NIST or other nationally recognized calibration standard.

Radiated Spurious Emissions

LIMITS

Radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a). [15.247(d)]

Radiated emissions were maximized by rotating the external antenna around 3 orthogonal planes (X, Y and Z) worst case emissions were observed in X orientation. All the results below are for the worst case.

MEASUREMENTS / RESULTS

Band Edge

Radiated Emissions Table														
Date: 07-Oct-16			Company: Hirschmann Car Communication GmbH						Work Order: Q3029					
Engineer: Yunus Faziloglu			EUT Desc: RMM-W						EUT Operating Voltage/Frequency: 24VAC					
Temp: 24.8°C			Humidity: 34%						Pressure: 1002mbar					
Frequency Range: Band Edge									Measurement Distance: 3 m					
Notes: Bandedge									EUT Max Freq: 2480MHz					
2483.5MHz bandedge when transmitting at highest channel (2480MHz), 2390MHz bandedge when transmitting at lowest channel (2402MHz)														
Antenna Polarization (H/V)	Frequency (MHz)	Peak Reading (dBµV)	Average Reading (dBµV)	Preamp Factor (dB)	Antenna Factor (dB/m)	Cable Factor (dB)	Adjusted Peak Reading (dBµV/m)	Adjusted Avg Reading (dBµV/m)	FCC 15.209 High Frequency - Peak			FCC 15.209 High Frequency - Average		
									Limit (dBµV/m)	Margin (dB)	Result (Pass/Fail)	Limit (dBµV/m)	Margin (dB)	Result (Pass/Fail)
V - NF	2483.5	27.7	16.5	0.0	28.6	4.2	60.5	49.3	74.0	-13.5	Pass	54.0	-4.7	Pass
H - NF	2483.5	28.9	16.8	0.0	28.6	4.2	61.7	49.6	74.0	-12.3	Pass	54.0	-4.4	Pass
V - NF	2390.0	28.0	16.3	0.0	28.4	4.3	60.7	49.0	74.0	-13.3	Pass	54.0	-5.0	Pass
H - NF	2390.0	27.8	16.2	0.0	28.4	4.3	60.5	48.9	74.0	-13.5	Pass	54.0	-5.1	Pass
Table Result:			Pass by -4.4 dB						Worst Freq: 2483.5 MHz					
Test Site: EMI Chamber 2			Cable 1: Asset #2052						Cable 2: Asset #1784			Cable 3: ---		
Analyzer: Rental SA#1			Preamp: none						Antenna: Black Horn			Preselector: ---		
CSsoft Radiated Emissions Calculator v 1.017.174 Adjusted Reading = Reading - Preamp Factor + Antenna Factor + Cable Factor														

Rev. 11/2/2016

Spectrum Analyzers / Receivers / Preselectors	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
SA #2 (1860)	9kHz-26.5 GHz	E7405A	Agilent	MY45104916	1860	I	12/23/2016	12/23/2015
Radiated Emissions Sites	FCC Code	IC Code	VCCI Code	Range	Cat	Calibration Due	Calibrated on	
EMI Chamber 2	719150	2762A-7	A-0015	1-18GHz	I	4/29/2017	4/29/2015	
Antennas	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
Black Horn	1-18GHz	3115	EMCO	9703-5148	56	I	8/29/2018	8/29/2016
Meteorological Meters	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on	
Weather Clock (Pressure Only)	BA928	Oregon Scientific	C3166-1	831	I	4/28/2018	4/28/2016	
TH A#2081	HTC-1	HDE		2081	II	4/5/2017	4/5/2016	
Cables	Range	Mfr	Cat	Calibration Due	Calibrated on			
Asset #1784	9kHz - 18GHz	Florida RF	II	3/7/2017	3/7/2016			
Asset #2052	9kHz - 18GHz	Florida RF	II	3/2/2017	3/2/2016			

All equipment is calibrated using standards traceable to NIST or other nationally recognized calibration standard.



Spurious Radiated Emissions

Radiated Emissions Table												
Date: 08-Oct-16			Company: Hirschmann Car Communication GmbH				Work Order: Q3029					
Engineer: Ahmed Ahmed			EUT Desc: RMM-W				EUT Operating Voltage/Frequency: 25Vac					
Temp: 24°C			Humidity: 30%				Pressure: 1002mBar					
Frequency Range: 30-1000MHz						Measurement Distance: 3 m						
Notes:						EUT Max Freq:						
Antenna Polarization (H/V)	Frequency (MHz)	Reading (dBµV)	Preamp Factor (dB)	Antenna Factor (dB/m)	Cable Factor (dB)	Adjusted Reading (dBµV/m)	FCC 15.209					
							Limit (dBµV/m)	Margin (dB)	Result (Pass/Fail)			
V	54.15	41.6	22.5	7.3	0.5	26.9	40.0	-13.1	Pass			
V	59.61	41.1	22.5	7.6	0.6	26.8	40.0	-13.2	Pass			
V	118.2	41.3	22.5	14.0	0.9	33.7	43.5	-9.8	Pass			
V	122.4	39.0	22.5	14.3	0.9	31.7	43.5	-11.8	Pass			
V	134.3	41.8	22.5	13.9	1.0	34.2	43.5	-9.3	Pass			
H	197.65	34.3	22.5	12.7	1.1	25.6	43.5	-17.9	Pass			
H	368.8	46.1	22.3	15.0	1.4	40.2	46.0	-5.8	Pass			
H	395.05	38.6	22.6	15.3	1.7	33.0	46.0	-13.0	Pass			
H	399.95	35.8	22.5	15.6	1.6	30.5	46.0	-15.5	Pass			
H	402.4	35.0	22.4	15.7	1.6	29.9	46.0	-16.1	Pass			
Table Result: Pass						by -5.8 dB		Worst Freq: 368.8 MHz				
Test Site: EMI Chamber 2			Cable 1: Asset #2052			Cable 2: Asset #1784						
Analyzer: Gold			Preamp: Blue			Antenna: Red-White						
CSsoft Radiated Emissions Calculator v 1.017.174						Copyright Curtis-Straus LLC 2000						
Adjusted Reading = Reading - Preamp Factor + Antenna Factor + Cable Factor												

Rev. 10/2/2016											
Spectrum Analyzers / Receivers / Preselectors		Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on		
Gold		100Hz-26.5 GHz	E4407B	Agilent	MY45113816	1284	I	1/13/2017	1/13/2016		
Radiated Emissions Sites		FCC Code	IC Code	VCCI Code	Range		Cat	Calibration Due	Calibrated on		
EMI Chamber 2		719150	2762A-7	A-0015	30-1000MHz		II	3/22/2017	3/22/2015		
Preamps / Couplers Attenuators / Filters		Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on		
Blue		0.009-2000MHz	ZFL-1000-LN	CS	N/A	759	II	5/13/2017	5/13/2016		
Antennas		Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on		
Red-White Bilog		30-2000MHz	JB1	Sunol	A091604-1	1105	I	8/12/2017	8/12/2015		
Meteorological Meters			MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on		
Weather Clock (Pressure Only)			BA928	gon Scient	C3166-1	831	I	4/28/2018	4/28/2016		
TH A#2078			HTC-1	HDE		2078	II	4/5/2017	4/5/2016		
Cables		Range		Mfr			Cat	Calibration Due	Calibrated on		
Asset #1784		9kHz - 18GHz		Florida RF			II	3/7/2017	3/7/2016		
Asset #2052		9kHz - 18GHz		Florida RF			II	3/2/2017	3/2/2016		

All equipment is calibrated using standards traceable to NIST or other nationally recognized calibration standard.

Radiated Emissions Table														
Date: 07-Oct-16			Company: Hirschmann Car Communication GmbH				Work Order: Q3029							
Engineer: Ahmed Ahmed			EUT Desc: RMM-W				EUT Operating Voltage/Frequency: 24VAC							
Temp: 24°C			Humidity: 34%				Pressure: 1002mBar							
Frequency Range: 1-6GHz						Measurement Distance: 3 m								
Notes: tx on low channel						EUT Max Freq: 2402-2440-2480MHz								
Antenna Polarization (H/V)	Frequency (MHz)	Peak Reading (dBµV)	Average Reading (dBµV)	Preamp Factor (dB)	Antenna Factor (dB/m)	Cable Factor (dB)	Adjusted Peak Reading (dBµV/m)	Adjusted Avg Reading (dBµV/m)	FCC 15.209 High Frequency - Peak			FCC 15.209 High Frequency - Average		
									Limit (dBµV/m)	Margin (dB)	Result (Pass/Fail)	Limit (dBµV/m)	Margin (dB)	Result (Pass/Fail)
H	4804.0	35.2	28.0	17.7	33.1	5.9	56.5	49.3	74.0	-17.5	Pass	54.0	-4.7	Pass
Table Result: Pass						by -4.7 dB		Worst Freq: 4804.0 MHz						
Test Site: EMI Chamber 2			Cable 1: Asset #2052			Cable 2: Asset #1784								
Analyzer: Gold			Preamp: Brown			Antenna: Black Horn								
CSsoft Radiated Emissions Calculator v 1.017.174						Copyright Curtis-Straus LLC 2000								
Adjusted Reading = Reading - Preamp Factor + Antenna Factor + Cable Factor														



Radiated Emissions Table														
Date: 07-Oct-16				Company: Hirschmann Car Communication GmbH				Work Order: Q3029						
Engineer: Ahmed Ahmed				EUT Desc: RMM-W				EUT Operating Voltage/Frequency: 24VAC						
Temp: 24°C				Humidity: 34%				Pressure: 1002mBar						
Frequency Range: 1-6GHz							Measurement Distance: 3 m							
Notes: tx on mid channel							EUT Max Freq: 2402-2440-2480MHz							
Antenna Polarization (H/V)	Frequency (MHz)	Peak Reading (dBuV)	Average Reading (dBuV)	Preamp Factor (dB)	Antenna Factor (dB/m)	Cable Factor (dB)	Adjusted Peak Reading (dBuV/m)	Adjusted Avg Reading (dBuV/m)	FCC 15.209 High Frequency - Peak			FCC 15.209 High Frequency - Average		
									Limit (dBuV/m)	Margin (dB)	Result (Pass/Fail)	Limit (dBuV/m)	Margin (dB)	Result (Pass/Fail)
H	4880.0	40.0	31.0	17.4	33.2	5.8	61.6	52.6	74.0	-12.4	Pass	54.0	-1.4	Pass
Table Result: Pass by -1.4 dB Worst Freq: 4880.0 MHz														
Test Site: EMI Chamber 2				Cable 1: Asset #2052				Cable 2: Asset #1784						
Analyzer: Gold				Preamp: Brown				Antenna: Black Horn						
CSsoft Radiated Emissions Calculator v 1.017.174														
Adjusted Reading = Reading - Preamp Factor + Antenna Factor + Cable Factor														

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Radiated Emissions Table														
Date: 07-Oct-16				Company: Hirschmann Car Communication GmbH				Work Order: Q3029						
Engineer: Ahmed Ahmed				EUT Desc: RMM-W				EUT Operating Voltage/Frequency: 24VAC						
Temp: 24°C				Humidity: 34%				Pressure: 1002mBar						
Frequency Range: 1-6GHz							Measurement Distance: 3 m							
Notes: tx on high channel							EUT Max Freq: 2402-2440-2480MHz							
Antenna Polarization (H/V)	Frequency (MHz)	Peak Reading (dBuV)	Average Reading (dBuV)	Preamp Factor (dB)	Antenna Factor (dB/m)	Cable Factor (dB)	Adjusted Peak Reading (dBuV/m)	Adjusted Avg Reading (dBuV/m)	FCC 15.209 High Frequency - Peak			FCC 15.209 High Frequency - Average		
									Limit (dBuV/m)	Margin (dB)	Result (Pass/Fail)	Limit (dBuV/m)	Margin (dB)	Result (Pass/Fail)
H	4960.0	40.0	30.8	17.3	33.3	6.2	62.2	53.0	74.0	-11.8	Pass	54.0	-1.0	Pass
Table Result: Pass by -1.0 dB Worst Freq: 4960.0 MHz														
Test Site: EMI Chamber 2				Cable 1: Asset #2052				Cable 2: Asset #1784						
Analyzer: Gold				Preamp: Brown				Antenna: Black Horn						
CSsoft Radiated Emissions Calculator v 1.017.174														
Adjusted Reading = Reading - Preamp Factor + Antenna Factor + Cable Factor														

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Radiated Emissions Table														
Date: 07-Oct-16				Company: Hirschmann Car Communication GmbH				Work Order: Q3029						
Engineer: Ahmed Ahmed				EUT Desc: RMM-W				EUT Operating Voltage/Frequency: 24VAC						
Temp: 24°C				Humidity: 34%				Pressure: 1002mBar						
Frequency Range: 6-18GHz							Measurement Distance: 1 m							
Notes:							EUT Max Freq: 2402-2440-2480MHz							
Antenna Polarization (H/V)	Frequency (MHz)	Peak Reading (dBuV)	Average Reading (dBuV)	Preamp Factor (dB)	Antenna Factor (dB/m)	Cable Factor (dB)	Adjusted Peak Reading (dBuV/m)	Adjusted Avg Reading (dBuV/m)	FCC 15.209 High Frequency - Peak			FCC 15.209 High Frequency - Average		
									Limit (dBuV/m)	Margin (dB)	Result (Pass/Fail)	Limit (dBuV/m)	Margin (dB)	Result (Pass/Fail)
No emissions found.														
Table Result: Pass by dB Worst Freq: MHz														
Test Site: EMI Chamber 2				Cable 1: Asset #2052				Cable 2: Asset #1784				Cable 3: ---		
Analyzer: Gold				Preamp: Brown				Antenna: Black Horn				Preselector: ---		
CSsoft Radiated Emissions Calculator v 1.017.174														
Adjusted Reading = Reading - Preamp Factor + Antenna Factor + Cable Factor														

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Spectrum Analyzers / Receivers /Preselectors		Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
Gold		100Hz-26.5 GHz	E4407B	Agilent	MY45113816	1284	I	1/13/2017	1/13/2016
Radiated Emissions Sites		FCC Code	IC Code	VCCI Code	Range		Cat	Calibration Due	Calibrated on
EMI Chamber 2		719150	2762A-7	A-0015	1-18GHz		I	4/29/2017	4/29/2015
Preamps /Couplers Attenuators / Filters		Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
Brown		1-10GHz	CS	CS	N/A	1523	II	9/25/2017	9/25/2016
Antennas		Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
Black Horn		1-18GHz	3115	EMCO	9703-5148	56	I	8/29/2018	8/29/2016
Meteorological Meters			MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
Weather Clock (Pressure Only)			BA928	Oregon Scientific	C3166-1	831	I	4/28/2018	4/28/2016
TH A#2078			HTC-1	HDE		2078	II	4/5/2017	4/5/2016
Cables		Range		Mfr			Cat	Calibration Due	Calibrated on
Asset #1784		9kHz - 18GHz		Florida RF			II	3/7/2017	3/7/2016
Asset #2052		9kHz - 18GHz		Florida RF			II	3/2/2017	3/2/2016

All equipment is calibrated using standards traceable to NIST or other nationally recognized calibration standard.



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Radiated Emissions Table														
Date: 07-Oct-16 Engineer: Ahmed Ahmed Temp: 24°C					Company: Hirschmann Car Communication GmbH EUT Desc: RMM-W Humidity: 34% Pressure: 1002mBar					Work Order: Q3029 EUT Operating Voltage/Frequency: 24VAC				
Frequency Range: 18-25GHz										Measurement Distance: 0.1 m				
Notes: EUT Max Freq: 2402-2440-2480MHz														
Antenna Polarization (H/V)	Frequency (MHz)	Peak Reading (dBuV)	Average Reading (dBuV)	Preamp Factor (dB)	Antenna Factor (dB/m)	Cable Factor (dB)	Adjusted Peak Reading (dBuV/m)	Adjusted Avg Reading (dBuV/m)	FCC 15.209 High Frequency - Peak			FCC 15.209 High Frequency - Average		
									Limit (dBuV/m)	Margin (dB)	Result (Pass/Fail)	Limit (dBuV/m)	Margin (dB)	Result (Pass/Fail)
No emissions found.														
Table Result: --- by --- dB Worst Freq: --- MHz														
Test Site: EMI Chamber 2					Cable 1: EMIR-HIGH-06					Cable 2: ---				
Analyzer: Gold					Preamp: 18-26.5GHz					Cable 3: ---				
Antenna: 18-26.5GHz Horn					Preselector: ---					Copyright Curtis-Straus LLC 2000				
CSsoft Radiated Emissions Calculator v 1.017.174 Adjusted Reading = Reading - Preamp Factor + Antenna Factor + Cable Factor														

Rev.	10/2/2016																
Spectrum Analyzers / Receivers / Preselectors	Gold	Range	100Hz-26.5 GHz	MN	E4407B	Mfr	Agilent	SN	MY45113816	Asset	1284	Cat	I	Calibration Due	1/13/2017	Calibrated on	1/13/2016
Radiated Emissions Sites	EMI Chamber 2	FCC Code	719150	IC Code	2762A-7	VCCI Code	A-0015	Range	1-18GHz	Cat	I	Calibration Due	4/29/2017	Calibrated on	4/29/2015		
Preamps / Couplers / Attenuators / Filters	HF (Yellow)	Range	18-26.5GHz	MN	S4-18002650-60-8F	Mfr	CS	SN	467559	Asset	1266	Cat	II	Calibration Due	9/16/2017	Calibrated on	9/16/2016
Antennas	HF (White) Horn	Range	18-26.5GHz	MN	801-WLM	Mfr	Waveline	SN	758	Asset	758	Cat	III	Calibration Due	Verify before Use	Calibrated on	date of test
Meteorological Meters	Weather Clock (Pressure Only)			MN	BA928	Mfr	Oregon Scientific	SN	C3166-1	Asset	831	Cat	I	Calibration Due	4/28/2018	Calibrated on	4/28/2016
	TH A#2078				HTC-1		HDE		2078				II	Calibration Due	4/5/2017	Calibrated on	4/5/2016
Cables	REM-High-06	Range	1 - 26.5GHz		TRU-21B0707-120	Mfr	TRU					Cat	II	Calibration Due	8/14/2017	Calibrated on	8/14/2016

All equipment is calibrated using standards traceable to NIST or other nationally recognized calibration standard.



Conducted Spurious Emissions

LIMITS

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth that contains the highest level of desired power based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. [15.247(d)]

MEASUREMENTS / RESULTS

Conducted Band Edges

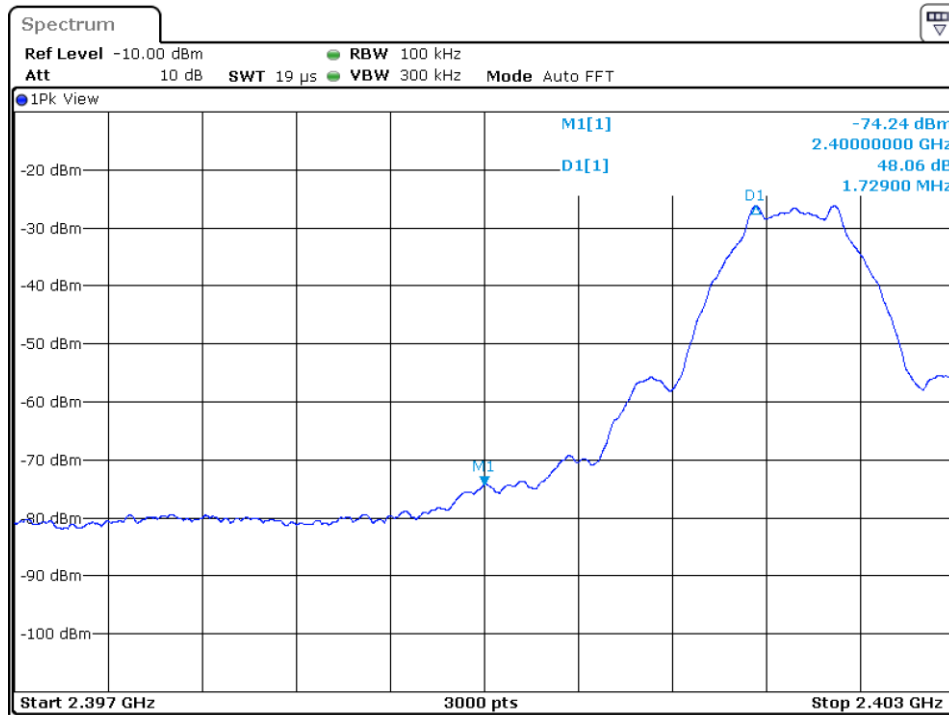
Conducted Bandedge				
Date: Oct-06-2016	Company: Hirschmann Car Communication GmbH	Work Order: Q3029		
Engineer: Yunus Faziloglu	EUT: RMM-W	EUT Operating Voltage/Frequency: 24VAC		
Temp: 21.9°C	Humidity: 40%	Pressure: 1016mbar		
Frequency Range: 2402-2480 MHz		Measurement Type: Conducted		
Notes:				
	Bandedge (dBm)	Delta (dB)	Limit (dB)	(Pass/Fail)
Low Bandedge	-74.24	48.06	≥ 20	Pass
High Bandedge	-79.94	53.64	≥ 20	Pass
Test Site: Wireless Test Room	Cable 1: Custom SMA Adapter	Attenuator	A2121	
Analyzer: A2200	Copyright Curtis-Straus LLC 2000			

Rev. 7/4/2016									
Spectrum Analyzers / Receivers / Preselectors	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on	
FSV40 Signal/Spectrum Analyzer	10Hz-40GHz	FSV40	R&S	101551	2200	I	6/1/2017	6/1/2016	
Preamps/Couplers Attenuators / Filters	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on	
API - 30dB 20W Attenuator	9KHz-40GHz	89-30-11	API Weinschel	703	2121	I	2/10/2017	2/10/2016	
Meteorological Meters		MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on	
Weather Clock (Pressure Only)		BA928	Oregon Scientific	C3166-1	831	I	4/28/2018	4/28/2016	
TH A#2085		HTC-1	HDE		2085	II	4/5/2017	4/5/2016	

All equipment is calibrated using standards traceable to NIST or other nationally recognized calibration standard.

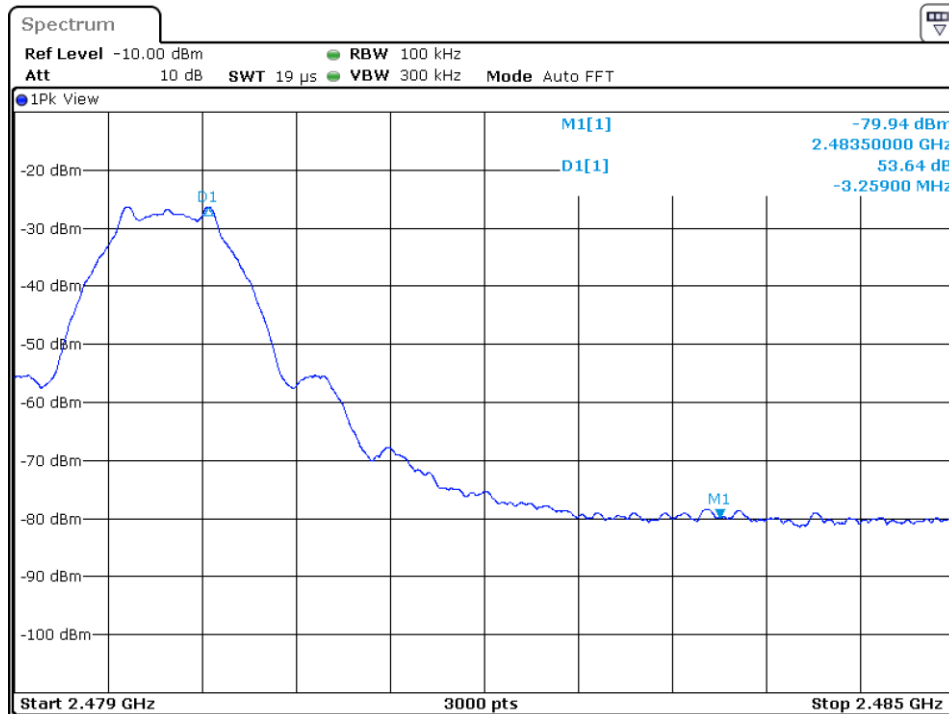


Plot(s)



Date: 6.OCT.2016 16:22:18

Lower Channel - Band Edge



Date: 6.OCT.2016 16:18:22

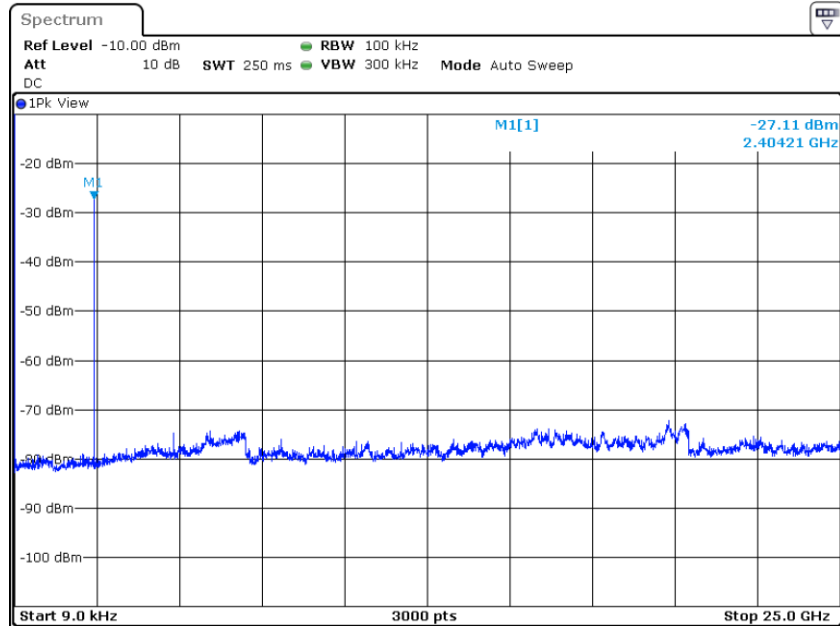
Upper Channel - Band Edge



Conducted Spurious Emission

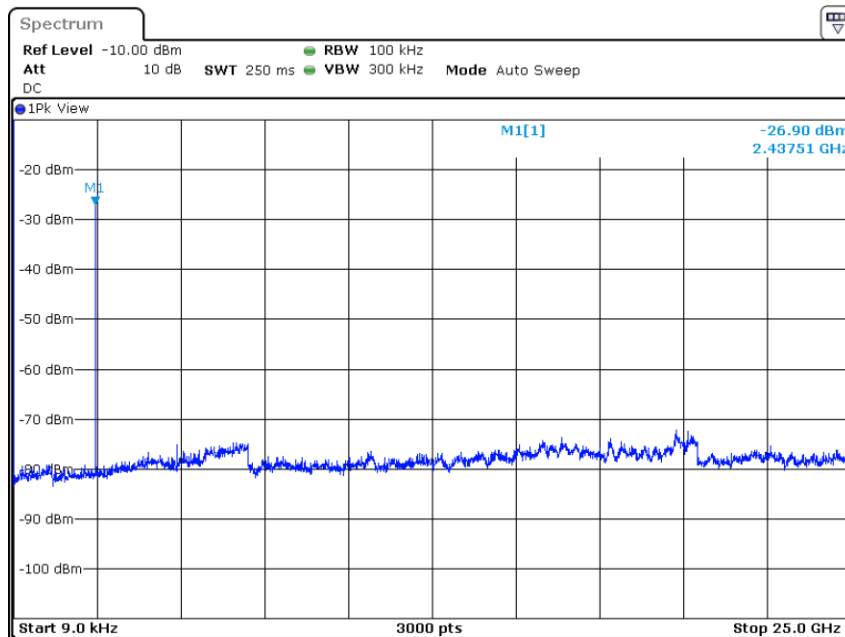
Note: 9 kHz - 25 GHz frequency range was investigated for all 3 channels (low, middle and high) at the EUT antenna port. All emissions and noise floor were more than 20dB below the fundamental.

Plot(s)



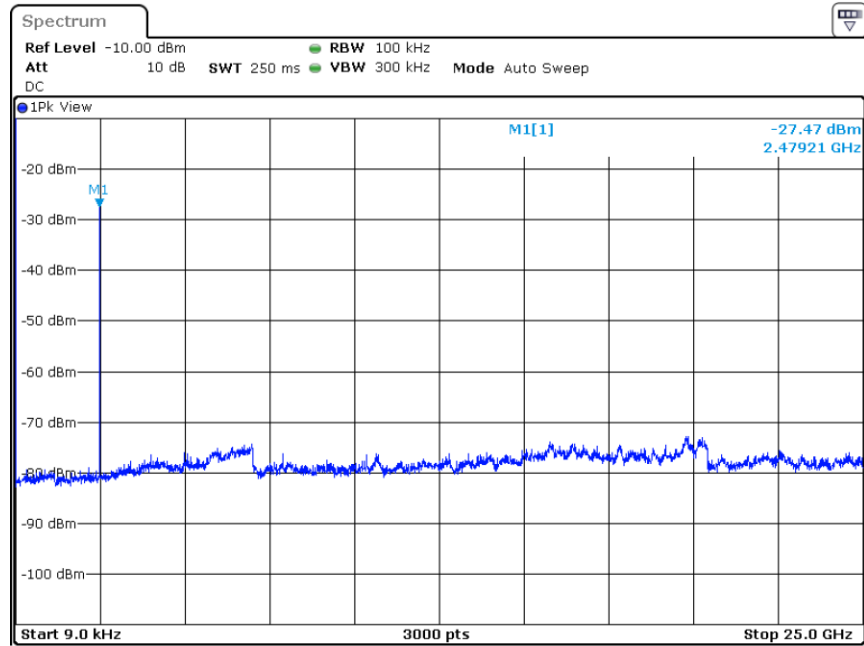
Date: 6.OCT.2016 16:44:43

Conducted Spurious Emissions - 9 KHz to 25 GHz (2402 MHz)



Date: 6.OCT.2016 16:40:44

Conducted Spurious Emissions - 9 KHz to 25 GHz (2440 MHz)



Date: 6.OCT.2016 16:37:49

Conducted Spurious Emissions - 9 KHz to 25 GHz (2480 MHz)



Power Spectral Density

Limit: Power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3 kHz band during any time interval of continuous transmission. [15.247(e)]

Per 558074 D01 DTS Measurement Guidance v03r05 Section 10.2 (Peak PSD)

MEASUREMENTS / RESULTS

Peak Power Spectral Density							
Date: Oct-06-2016		Company: Hirschmann Car Communication GmbH			Work Order: Q3029		
Engineer: Yunus Faziloglu		EUT: RMM-W		EUT Operating Voltage/Frequency: 24VAC			
Temp: 21.9°C		Humidity: 40%		Pressure: 1016mbar			
Frequency Range: 2402-2480 MHz		Measurement Type: Conducted					
		Measurement Method: FCC KDB 558074 D01 DTS Meas Guidance v03r05 Section 10.2					
Notes:							
Frequency (MHz)	Peak Reading (dBm)	Cable Loss (dB)	Attenuator Loss (dB)	Peak PSD (dBm)	Limit (dBm)	Margin (dB)	Result
2402.0	-30.51	1.0	29.44	-0.07	8.0	-8.07	Pass
2440.0	-30.57	1.0	29.44	-0.13	8.0	-8.13	Pass
2480.0	-30.73	1.0	29.44	-0.29	8.0	-8.29	Pass
Test Site: Wireless Test Room Cable 1: Custom SMA Adapter Attenuator: A2121							
Analyzer: A2200							
PSD(dBm) = Reading (dBm) + Cable Loss (dB) + Attenuator Loss (dBm)							

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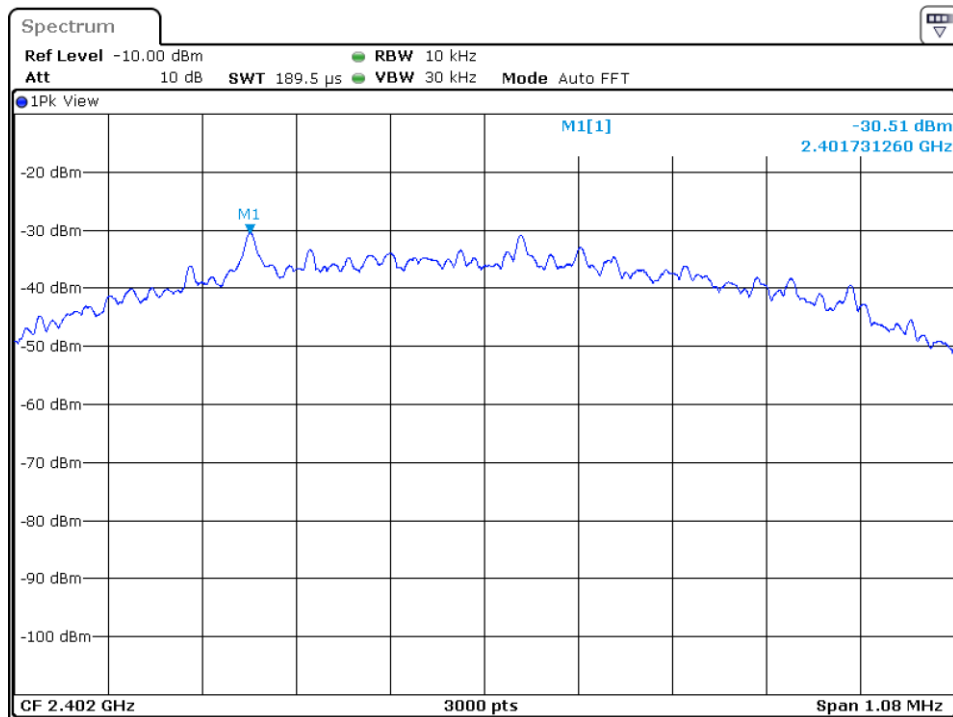
Rev. 10/2/2016

Signal Generators	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
FSV40 Signal/Spectrum Analyzer	10Hz-40GHz	FSV40	ROHDE & SCHWARZ	101551	2200	I	6/1/2017	6/1/2016
Preamps /Couplers Attenuators / Filters	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
API - 30dB 20W Attenuator	9KHz-40GHz	89-30-11	API Weinschel	703	2121	I	2/10/2017	2/10/2016
Meteorological Meters	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on	
Weather Clock (Pressure Only)	BA928	Oregon Scientific	C3166-1	831	I	4/28/2018	4/28/2016	
TH A#2082	HTC-1	HDE		2082	II	4/5/2017	4/5/2016	

All equipment is calibrated using standards traceable to NIST or other nationally recognized calibration standard.

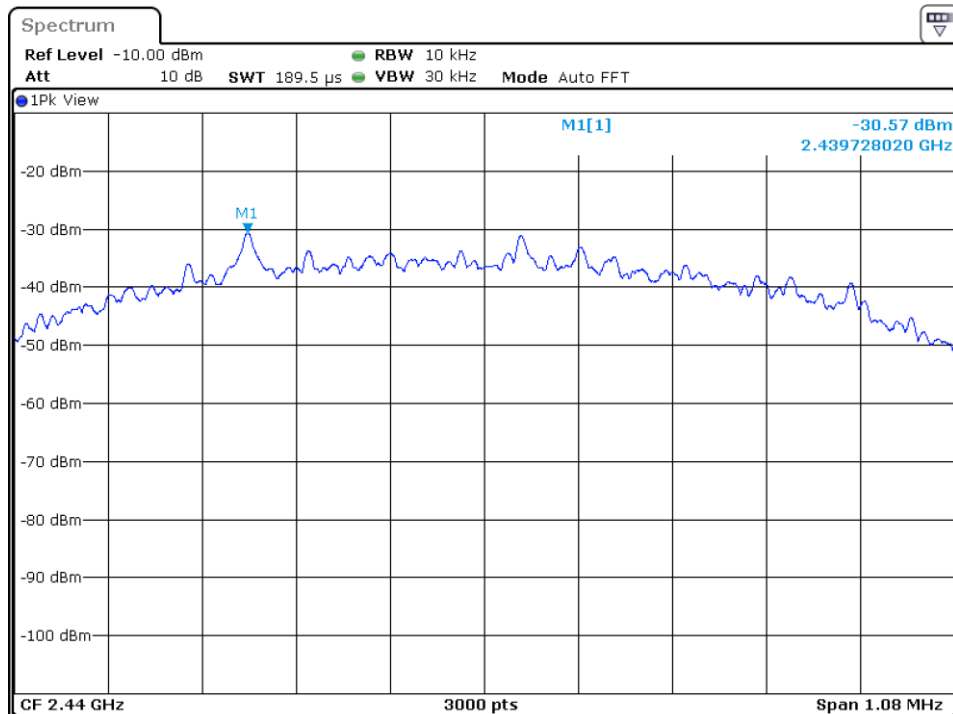


PLOTS



Date: 6.OCT.2016 16:09:09

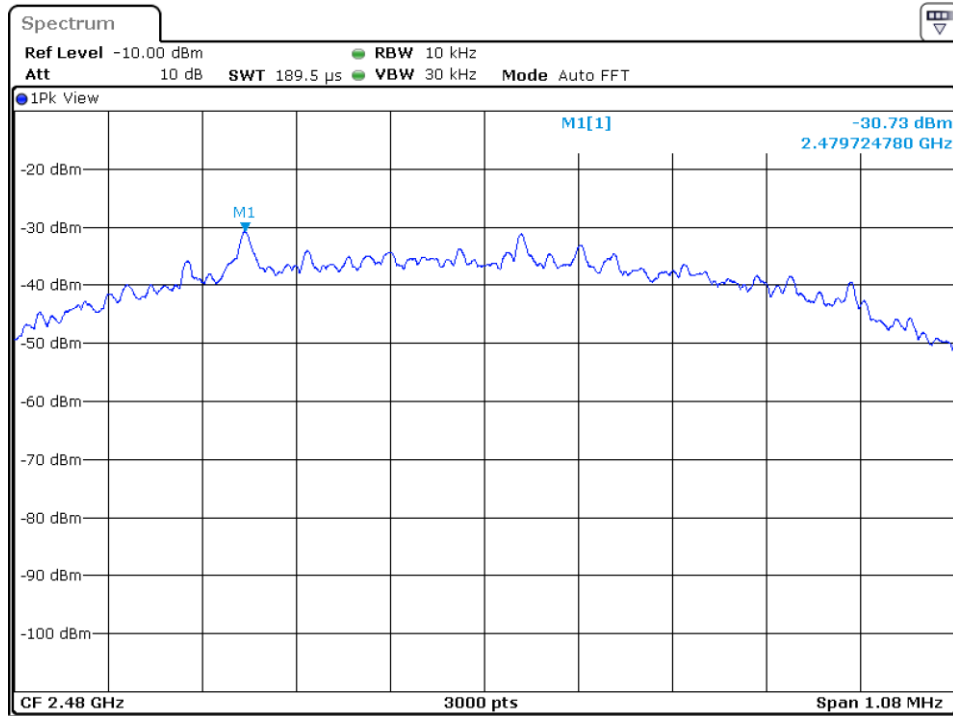
PSD – 2402 MHz



Date: 6.OCT.2016 16:11:07

PSD – 2440 MHz





Date: 6.OCT.2016 16:13:46

PSD – 2480 MHz



Occupied Bandwidth

Requirement: When an occupied bandwidth is not specified in the applicable RSS, the transmitted signal bandwidth to be reported is its 99% emission bandwidth, as calculated or measured. [RSS-GEN 6.6]

MEASUREMENTS / RESULTS

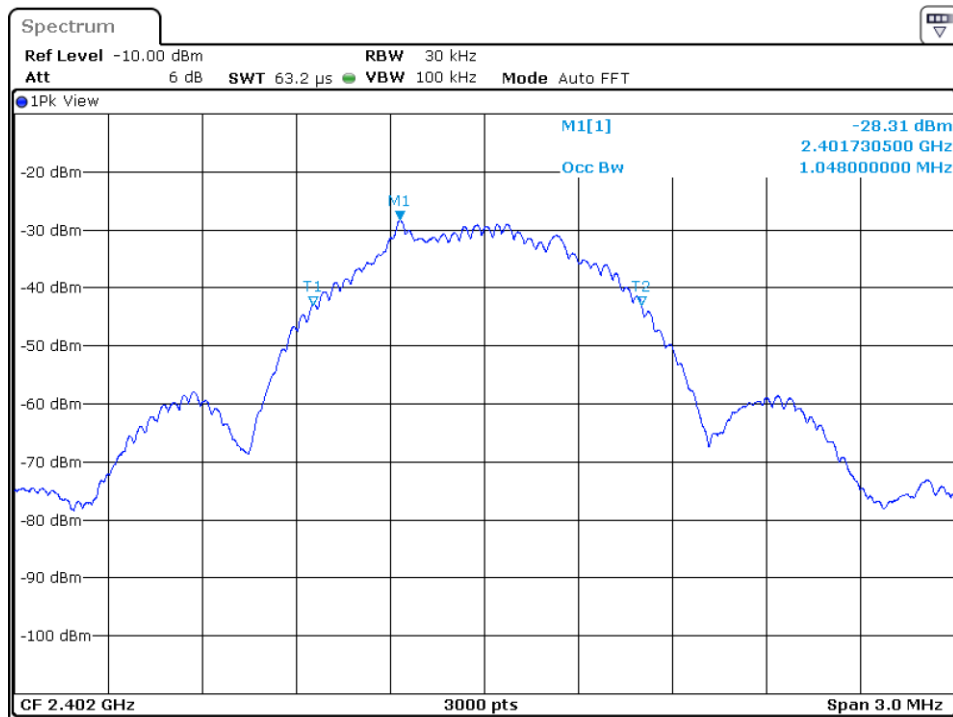
99% Occupied Bandwidth			
Date: Oct-06-2016	Company: Hirschmann Car Communication GmbH	Work Order: Q3029	
Engineer: Yunus Faziloglu	EUT: RMM-W	EUT Operating Voltage/Frequency: 24VAC	
Temp: 21.9°C	Humidity: 40%	Pressure: 1016mbar	
Frequency Range: 2402-2480 MHz		Measurement Type: Conducted	
Measurement Method: RSS-Gen Issue 4 Section 6.6			
Notes:			
Frequency (MHz)	99% OBW (kHz)		
2402	1048		
2440	1060		
2480	1053		
Test Site: Wireless Test Room	Cable 1: Custom SMA Adapter	Attenuator: A2121	
Analyzer: A2200			
<small>Copyright Curtis-Straus LLC 2000</small>			

Rev. 10/2/2016

Signal Generators	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
FSV40 Signal/Spectrum Analyzer	10Hz-40GHz	FSV40	ROHDE & SCHWARZ	101551	2200	I	6/1/2017	6/1/2016
Preamps /Couplers Attenuators / Filters	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
API - 30dB 20W Attenuator	9KHz-40GHz	89-30-11	API Weinschel	703	2121	I	2/10/2017	2/10/2016
Meteorological Meters		MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
Weather Clock (Pressure Only)		BA928	Oregon Scientific	C3166-1	831	I	4/28/2018	4/28/2016
TH A#2082		HTC-1	HDE		2082	II	4/5/2017	4/5/2016

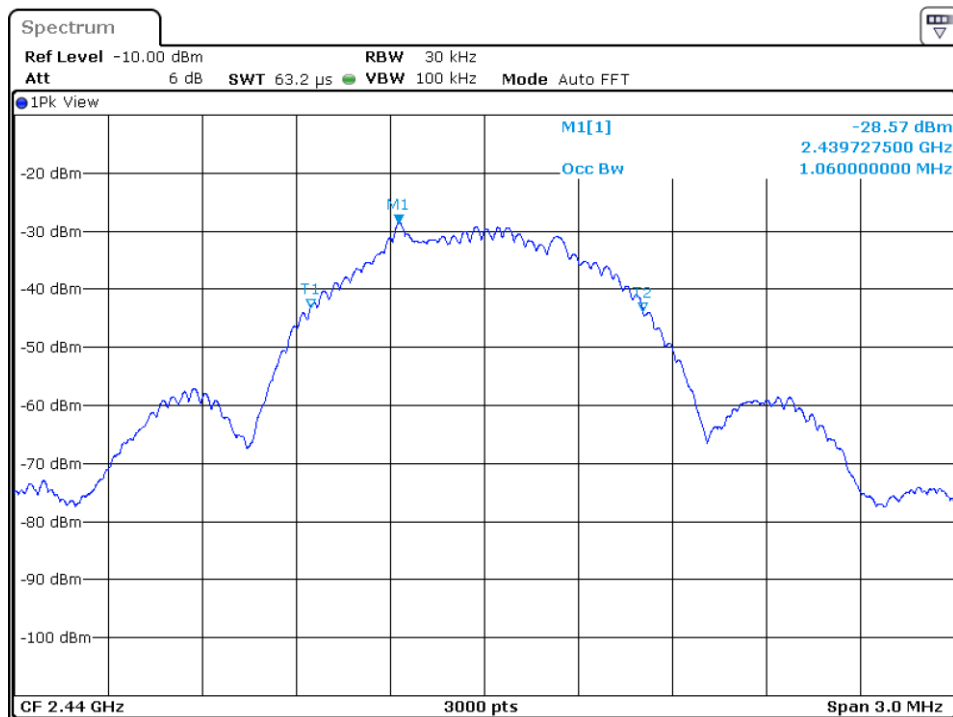
All equipment is calibrated using standards traceable to NIST or other nationally recognized calibration standard.

Plot(s)



Date: 6.OCT.2016 14:43:01

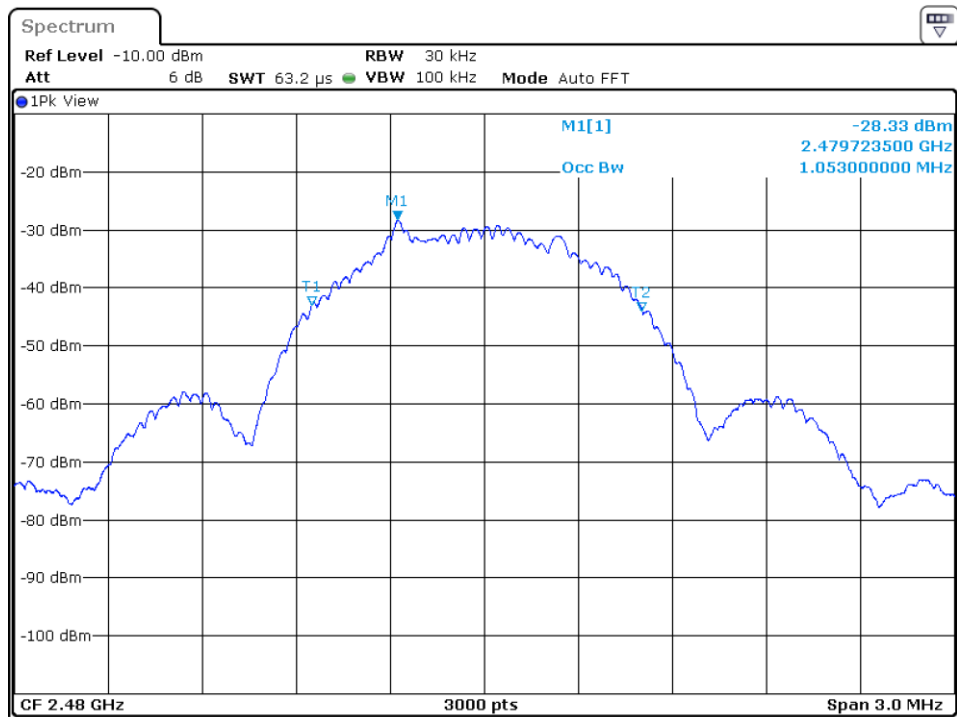
Occupied Bandwidth – 2402 MHz



Date: 6.OCT.2016 14:45:25

Occupied Bandwidth – 2440 MHz





Date: 6.OCT.2016 14:46:53

Occupied Bandwidth – 2480 MHz

Measurement Uncertainty

The listed uncertainties are the worst case uncertainty for the entire range of measurement. Please note that the uncertainty values are provided for informational purposes only and are not used in determining the PASS/FAIL results.

Measurement	Expanded Uncertainty k=2	Maximum allowable uncertainty
Radiated Emissions (30-1000MHz)		
NIST	5.6dB	N/A
CISPR	4.6dB	5.2dB (Ucisp)
Radiated Emissions (1-26.5GHz)	4.6dB	N/A
Radiated Emissions (above 26.5GHz)	4.9dB	N/A
Magnetic Radiated Emissions	5.6dB	N/A
Conducted Emissions		
NIST	3.9dB	N/A
CISPR	3.6dB	3.6dB (Ucisp)
Telco Conducted Emissions (Current)	2.9dB	N/A
Telco Conducted Emissions (Voltage)	4.4dB	N/A
Electrostatic Discharge	11.5%	N/A
Radiated RF Immunity (Uniform Field)	1.6dB	N/A
Electrical Fast Transients	23.1%	N/A
Surge	23.1%	N/A
Conducted RF Immunity	3dB	N/A
Magnetic Immunity	12.8%	N/A
Dips and Interrupts	2.3V	N/A
Harmonics	3.5%	N/A
Flicker	3.5%	N/A
Radio frequency (@ 2.4GHz)	3.23×10^{-8}	1×10^{-7}
RF power, conducted	0.40dB	0.75dB
Maximum frequency deviation:		
• Within 300Hz and 6kHz of audio frequency / Within 6kHz and 25kHz of audio frequency	3.4% 0.3dB	5% 3dB
Adjacent channel power	1.9dB	3dB
Conducted spurious emission of transmitter, valid up to 12.75GHz	2.39dB	3dB
Conducted emission of receivers	1.3dB	3dB
Radiated emission of transmitter, valid up to 26.5GHz	3.9dB	6dB
Radiated emission of transmitter, valid up to 80GHz	3.3dB	6dB
Radiated emission of receiver, valid up to 26.5GHz	3.9dB	6dB
Radiated emission of receiver, valid up to 80GHz	3.3dB	6dB
Humidity	2.37%	5%
Temperature	0.7°C	1.0°C
Time	4.1%	10%
RF Power Density, Conducted	0.4dB	3dB
DC and low frequency voltages	1.3%	3%
Voltage (AC, <10kHz)	1.3%	2%
Voltage (DC)	0.62%	1%
The above reflects a 95% confidence level		



Conditions Of Testing

[Bureau Veritas Consumer Products Services, Inc., a Massachusetts corporation], and/or its affiliates (collectively, the "Company") will conduct, at the request of the Submitter ("Client"), the tests specified on the submitted Test Request Form or equivalent in accordance with, and subject to, the following terms and conditions (collectively, "Conditions"):

1. All orders for tests are subject to acceptance by the Company, and no order will constitute a binding commitment of the Company unless and until such order is accepted by it, as evidenced by the issuance of a written report ("Test Report") by the Company. The Test Report is issued solely by the Company, is intended for the exclusive use of Client and shall not be published, used for advertising purposes, copied or replicated for distribution to any other person or entity or otherwise publicly disclosed without the prior written consent of the Company. By submitting a request for services to the Company, Client consents to the disclosure to accreditation bodies of those records of Client relevant to the accreditation body's assessment of the Company's competence and compliance with relevant accreditation criteria. The Company shall not be liable for any loss or damage whatsoever resulting from the failure of the Company to provide its services within any time period for completion estimated by the Company. If Client anticipates using the Test Report in any legal proceeding, arbitration, dispute resolution forum or other proceeding, it shall so notify the Company prior to submitting the Test Report in such proceeding. The Company has no obligation to provide a fact or expert witness at such proceeding unless the Company agrees in advance to do so for a separate and additional fee.
2. The Test Report will set forth the findings of the Company solely with respect to the test samples identified therein. Unless specifically and expressly indicated in the Test Report, the results set forth in such Test Report are not intended to be indicative or representative of the quality or characteristics of the lot from which a test sample is taken, and Client shall not rely upon the Test Report as being so indicative or representative of the lot or of the tested product in general. The Test Report will reflect the findings of the Company at the time of testing only, and the Company shall have no obligation to update the Test Report after its issuance. The Test Report will set forth the results of the tests performed by the Company based upon the written information provided to the Company. The Test Report will be based solely on the samples and written information submitted to the Company by Client, and the Company shall not be obligated to conduct any independent investigation or inquiry with respect thereto.
3. The Company may, in its sole discretion, destroy samples which have been furnished to the Company for testing and which have not been destroyed in the course of testing. The Company may delegate the performance of all or a portion of the services contemplated hereunder to an affiliate, agent or subcontractor of the Company, and Client consents to such delegation.
4. These Conditions and the Test Report represent the entire understanding of the parties hereto with respect to the subject matter hereof and of the Test Report, and no modification, variance or extrapolation with respect thereto shall be permitted without the prior written consent of the Company.
5. The names, service marks, trademarks and copyrights of the Company and its affiliates, including the names "**BUREAU VERITAS**," "**BUREAU VERITAS CONSUMER PRODUCTS SERVICES**," "**BVCPS**," "**MTL**," "**ACTS**," "**MTL-ACTS**" and "**CURTIS-STRAUS**" (collectively, the "Marks") are and shall remain the sole property of the Company or its affiliates and shall not be used by Client except solely to the extent that Client obtains the prior written approval of the Company and then only in the manner prescribed by the Company. Client shall not contest the validity of the Marks or take any action that might impair the value or goodwill associated with the Marks or the image or reputation of the Company or its affiliates.
6. Payment in full shall be due 30 days after the date of invoice. Interest shall be due on overdue amounts from the due date until paid at an interest rate of 1.5% per month or, if less, the maximum rate permitted by law. The Company reserves the right, at any time and from time to time, to revoke any credit extended to Client. Client shall reimburse the Company for any costs it incurs in collecting past due amounts, including court costs and fees and expenses of attorneys and collection agencies. The Test Report may not be used or relied upon by Client if and for so long as Client fails to pay when due any invoice issued by the Company or any affiliate of it to Client or any affiliate or subsidiary of Client together with interest and penalties, if any, accrued thereon.
7. The Company disclaims any and all responsibility or liability arising out of or in connection with e-mail transmissions of such information.
8. Client understands and agrees that the Company is neither an insurer nor a guarantor, that the Company does not take the place of Client or any designer, manufacturer, agent, buyer, distributor or transportation or shipping company, and that the Company disclaims all liability in such capacities. Client further understands that if it seeks assurance against loss or damage, it should obtain appropriate insurance.
9. Client agrees that the Company, by providing the services, does not take the place of Client nor any third party, nor does the Company release them from any of their obligations, nor does the Company otherwise assume, abridge, abrogate or undertake to discharge any duty of any third party to Client or any duty of Client or any third party to any other third party, and Client will not release any third party from its obligations and duties with respect to the tested goods.
10. Client shall, on a timely basis, (a) provide adequate instructions to the Company in order to enable the Company to perform properly its services, (b) provide, or cause Client's suppliers and contractors to provide, the Company with all documents necessary to enable the Company to perform its services, (c) furnish the Company with all relevant information regarding Client's intended use and purposes of the tested goods, (d) advise the Company of essential dates and deadlines relevant to the tested goods and (e) fully exercise all rights and remedies available to Client against third parties in respect of the tested goods.
11. The Company shall undertake due care and ordinary skill in the performance of its services to Client, and the Company shall accept responsibility only were such skill has not been exercised and, even in such event, only to the extent of the limitation of liability set forth herein.
12. If Client desires to assert a claim arising from or relating to (i) the performance, purported performance or non-performance of any services by the Company or (ii) the sale, resale, manufacture, distribution or use of any tested goods, it must submit that claim to the Company in a writing that sets forth with particularity the basis for such claim within 60 days from discovery of the potential claim and not more than six months after the date of issuance of the Test Report to Client. Client waives any and all such claims including, without limitation, claims that the Test Report is inaccurate, incomplete or misleading or that additional or different testing is required, unless and then only to the extent that Client submits a written claim to the Company within both such time periods.
13. CLIENT SHALL, EXCEPT TO THE EXTENT OF COMPANY'S LIABILITY TO CLIENT HEREUNDER (WHICH IN NO EVENT SHALL EXCEED THE LIMITATION OF LIABILITY HEREIN), HOLD HARMLESS AND INDEMNIFY THE COMPANY, ITS AFFILIATES AND THEIR RESPECTIVE DIRECTORS, OFFICERS, EMPLOYEES, AGENTS AND SUBCONTRACTORS AGAINST ALL ACTUAL OR ALLEGED THIRD PARTY CLAIMS FOR LOSS, DAMAGE OR EXPENSE OF WHATSOEVER NATURE AND HOWSOEVER ARISING FROM OR RELATING TO (i) THE PERFORMANCE, PURPORTED PERFORMANCE OR NON-PERFORMANCE OF ANY SERVICES BY THE COMPANY OR (ii) THE SALE, RESALE, MANUFACTURE, DISTRIBUTION OR USE OF ANY TESTED GOODS.
14. EXCEPT AS MAY OTHERWISE BE EXPRESSLY AGREED TO IN WRITING BY THE COMPANY AND NOTWITHSTANDING ANY PROVISION TO THE CONTRARY CONTAINED HEREIN OR IN ANY TEST REPORT, NO WARRANTY OR GUARANTEE, EXPRESS OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR USE, IS MADE.



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15. (A) IN NO EVENT WHATSOEVER SHALL THE COMPANY BE LIABLE FOR ANY CONSEQUENTIAL, SPECIAL, INCIDENTAL, EXEMPLARY OR PUNITIVE DAMAGES IN CONNECTION WITH, RELATING TO OR ARISING OUT OF THE TEST REPORT OR THE SERVICES PROVIDED BY THE COMPANY HEREUNDER, INCLUDING WITHOUT LIMITATION LOSS OF OR DAMAGE TO PROPERTY; LOSS OF INCOME, PROFIT OR USE; OR ANY CLAIMS OR DEMANDS MADE AGAINST CLIENT OR ANY OTHER PERSON BY ANY THIRD PARTY IN CONNECTION WITH, RELATING TO OR ARISING OUT OF THE SERVICES PROVIDED BY THE COMPANY HEREUNDER.

(B) NOTWITHSTANDING ANY PROVISION TO THE CONTRARY CONTAINED HEREIN, AND IN RECOGNITION OF THE RELATIVE RISKS AND BENEFITS TO CLIENT AND THE COMPANY ASSOCIATED WITH THE TESTING SERVICES CONTEMPLATED HEREBY, THE RISKS HAVE BEEN ALLOCATED SUCH THAT UNDER NO CIRCUMSTANCES WHATSOEVER SHALL THE LIABILITY OF THE COMPANY TO CLIENT OR ANY THIRD PARTY IN RESPECT OF ANY CLAIM FOR LOSS, DAMAGE OR EXPENSE, OF WHATSOEVER NATURE OR MAGNITUDE, AND HOWSOEVER ARISING, EXCEED AN AMOUNT EQUAL TO FIVE (5) TIMES THE AMOUNT OF THE FEES PAID TO THE COMPANY FOR THE SPECIFIC SERVICES WHICH GAVE RISE TO SUCH CLAIM OR U.S.\$10,000, WHICHEVER IS THE LESSER AMOUNT.

16. The Company shall not be liable for any loss or damage resulting from any delay or failure in performance of its obligations hereunder resulting directly or indirectly from any event of force majeure or any event outside the control of the Company. If any such event occurs, the Company may immediately cancel or suspend its performance hereunder without incurring any liability whatsoever to Client.

17. Company's services, including these Conditions, shall be governed by, and construed in accordance with, the local laws of the country where the Company performs the tests or, in the case of tests performed in the United States of America, the laws of Massachusetts without regard to conflicts of laws principles. If any aspect(s) of these Conditions is found to be illegal or unenforceable, the validity, legality and enforceability of all remaining aspects of these Conditions shall not in any way be affected or impaired thereby. Any proceeding related to the subject matter hereof shall be brought, if at all, in the courts of the country where the Company performs the tests or, in the case of tests performed in the United States of America, in the courts of Massachusetts. Client waives the right to interpose any counterclaim or setoffs of any nature in any litigation arising hereunder.

The complete list of the Approved Subcontractors Curtis-Straus may use to delegate the performance of work can be provided upon request.
Rev.160009121(2)_#684340 v14CS