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Testing of

Electromagnetic Emissions

per

USA: CFR Title 47, Part 15.231
Canada: IC RSS-210/GENe

are herein reported for

Delphi Electronics & Safety FO4-AM902TRB

Test Report No.: 20160205-RPTWAC010016Br2

Applicant/Provider:
Delphi Electronics & Safety
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Measured by: Dr. Joseph Brunett, EMC-002790-NE

Report Approved by: Dr. Joseph Brunett, EMC-002790-NE

Report by: Dr. Joseph Brunett, EMC-002790-NE

Report Date of Issue: February 5, 2016

Results of testing completed on (or before) February 2, 2016 are as follows.

Emissions: The transmitter intentional emissions **COMPLY** with the regulatory limit(s) by no less than 0.4 dB. Transmit chain spurious or harmonic emissions **COMPLY** by no less than 17.6 dB. Radiated spurious emissions associated with the receive chain of this device **COMPLY** the regulatory limit(s) by no less than 18.1 dB.

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1 Test Specifications, General Procedures, and Location

1.1 Test Specification and General Procedures

The ultimate goal of Delphi Electronics & Safety is to demonstrate that the Equipment Under Test (EUT) complies with the Rules and/or Directives below. Detailed in this report are the results of testing the Delphi Electronics & Safety FO4-AM902TRB for compliance to:

Country/Region	**Rules or Directive**	**Referenced Section(s)**
United States	Code of Federal Regulations	CFR Title 47, Part 15.231
Canada	Industry Canada	IC RSS-210/GENe

Delphi Electronics & Safety has determined that the equipment under test is subject to the rules and directives above at the date of this testing. In conjunction with these rules and directives, the following specifications and procedures are followed herein to demonstrate compliance (in whole or in part) with these regulations.

ANSI C63.4:2014	"Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz"
ANSI C63.10:2013 (USA)	"American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices"
Industry Canada	"The Measurement of Occupied Bandwidth"

1.2 Test Location and Equipment Used

Test Location The EUT was fully tested by **Willow Run Test Labs, LLC**, 8501 Beck Road, Building 2227, Belleville, Michigan 48111 USA. The Test Facility description and attenuation characteristics are on file with the FCC Laboratory, Columbia, Maryland (FCC Reg. No: 688478) and with Industry Canada, Ottawa, ON (File Ref. No: IC 8719A-1).

Test Equipment Pertinent test equipment used for measurements at this facility is listed in Table 1. The quality system employed at Willow Run Test Labs, LLC has been established to ensure all equipment has a clearly identifiable classification, calibration expiry date, and that all calibrations are traceable to the SI through NIST, other recognized national laboratories, accepted fundamental or natural physical constants, ratio type of calibration, or by comparison to consensus standards.

Table 1: Willow Run Test Labs, LLC Equipment List

Description	Manufacturer/Model	SN	Quality Num.	Last Cal By / Date Due
Spectrum Analyzer	Rhode-Schwarz / FSV30	101660	RSFSV30001	RS / Apr-2016
Dipole Set (20-1000 MHz)	EMCO / 3121C	9504-1121	DIPEMC001	Liberty Labs / Sep-2016
Biconical	EMCO / 93110B	9802-3039	BICEMCO01	Lib. Labs / April-2016
Log Periodic Antenna	EMCO / 3146	9305-3614	LOGEMCO01	Lib. Labs/ April-2016
Quad Ridge Horn	ETS Lind. / 3164-04	00066988	HRNQR316401	Lib. Labs / Apr-2016
Quad Ridge Horn	Singer / A6100	C35200	HQR2TO18S01	Lib. Labs / Apr-2016

2 Configuration and Identification of the Equipment Under Test

2.1 Description and Declarations

The equipment under test is an automotive Remote Keyless Entry and Passive Start transceiver. The EUT is approximately 4 x 4 x 24 cm (approx.) in dimension, and is depicted in Figure 1. It is powered by a 12.8 VDC vehicle power system. In use, this device is permanently installed in a motor vehicle. Table 2 outlines provider declared EUT specifications.

Figure 1: Photos of EUT.

Table 2: EUT Declarations.

General Declarations			
Equipment Type:	Transceiver	**Country of Origin:**	Mexico, Germany
Nominal Supply:	12.8 VDC	**Oper. Temp Range:**	-40^{o}C to $+85^{o}$C
Frequency Range:	RX:315 MHz, — TXR:902.375, 903.425 MHz	**Antenna Dimension:**	230 mm
Antenna Type:	metal frame (integral)	**Antenna Gain:**	Not Declared (Integral)
Number of Channels:	TXR:2	**Channel Spacing:**	TXR:1050 kHz
Alignment Range:	Not Declared	**Type of Modulation:**	TXR:OOK (AM)
United States			
FCC ID Number:	L2C0062TR	**Classification:**	DSC
Canada			
IC Number:	3432A-0062TR	**Classification:**	Remote Control Device, Vehicular Device

2.1.1 EUT Configuration

The EUT is configured for testing as depicted in Figure 2.

2.1.2 Modes of Operation

There are two modes of operation for this device. This EUT employs 3 antennas, ANTENNA 1 is used for 315 MHz reception only (MODE 1), ANTENNA 2 and ANTENNA 3 are used for both transmission and reception in the 902 MHz band (MODE 2). ANTENNA 2 and ANTENNA 3 share a single transceiver path and are selected for use by an RF switch. When the EUT receives a 315 MHZ normal door lock / unlock or Tire Pressure Monitor Sensor transmission via ANTENNA 1 (MODE 1) it simply communicates over the vehicle bus. When the EUT receives a

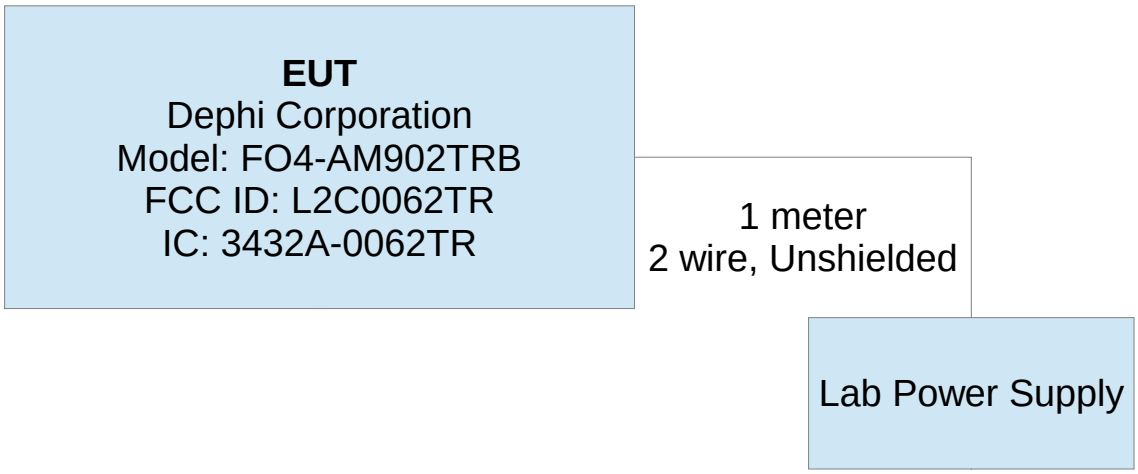


Figure 2: EUT Test Configuration Diagram.

transmission from a paired KEYFOB on either ANTENNA 2 or ANTENNA 3, indicating a remote start request (MODE 2), the EUT automatically responds back on the same antenna indicating whether or not the request was received properly and the vehicle started. This response is an automatic response consisting of a single transmitted frame (alternating between the low and high channels based on the inquiry frequency). The EUT is also capable of two transmit power configurations within MODE2, selected by the manufacturer, to enable optimal performance upon installation in the motor vehicle. These configurations are designated as the RED configuration and a BLUE configuration, both of which are fully tested herein.

2.1.3 Variants

There is only a single variant of the EUT, as tested.

2.1.4 Test Samples

Eleven samples in total were provided. Four samples programmed for CW transmission in each of 2 configurations (e.g. one set for low channel on antenna 2, one set for low channel on antenna 3, one set for high channel on antenna 2, one set for high channel on antenna 3 for each of the RED and BLUE configurations), one normal transmitting sample responding to a paired transmitter inquiry, and one sample to be dismantled for testing and photographs.

2.1.5 Functional Exerciser

EUT functionality was verified by observation of transmitted signal.

2.1.6 Modifications Made

There were no modifications made to the EUT by this laboratory.

2.1.7 Production Intent

The EUT appears to be a production ready sample.

2.1.8 Declared Exemptions and Additional Product Notes

Worst case (highest field strength) fundamental and harmonic emissions were observed on the continuous wave samples. The EUT is permanently installed in a transportation vehicle. As such, digital emissions are exempt from US and Canadian digital emissions regulations (per FCC 15.103(a) and IC correspondence on ICES-003). The

315 MHz receiver employed in this device is co-located with the 902 MHz transceiver and subject only to emissions verification.

3 Emissions

3.1 General Test Procedures

3.1.1 Radiated Test Setup and Procedures

Radiated electromagnetic emissions from the EUT are first pre-scanned in our shielded anechoic chamber. Spectrum and modulation characteristics of all emissions are recorded. Instrumentation, including spectrum analyzers and other test equipment as detailed in Section 1.2 are employed. After indoor pre-scans, emission measurements are made on our outdoor 3-meter Open Area Test Site (OATS). If the EUT connects to auxiliary equipment and is table or floor standing, the configurations prescribed in relevant test standards are followed. Alternatively, a layout closest to normal use (as declared by the provider) is employed if the resulting emissions appear to be worst-case in such a configuration. See Figure 3. All intentionally radiating elements that are not fixed-mounted in use are placed on the test table lying flat, on their side, and on their end (3-axes) and the resulting worst case emissions are recorded. If the EUT is fixed-mounted in use, measurements are made with the device oriented in the manner consistent with installation and then emissions are recorded.

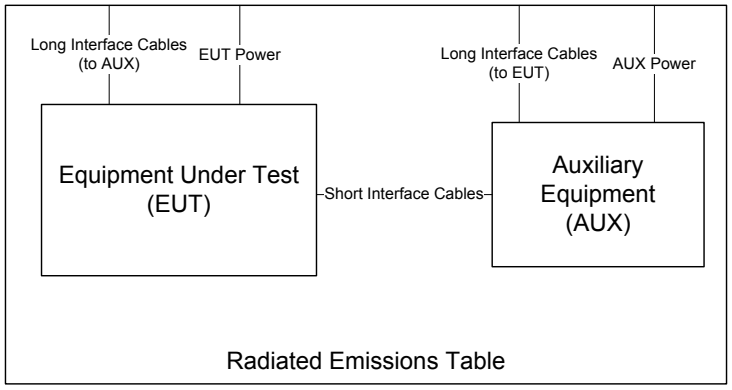


Figure 3: Radiated Emissions Diagram of the EUT.

If the EUT exhibits spurious emissions due to internal receiver circuitry, such emissions are measured with an appropriate carrier signal applied. For devices with intentional emissions below 30 MHz, a shielded loop antenna is used. It is placed at a 1 meter receive height. Emissions between 30 MHz and 1 GHz are measured using tuned dipoles and/or calibrated broadband antennas. For both horizontal and vertical polarizations, the test antenna is raised and lowered from 1 to 4 m in height until a maximum emission level is detected. The EUT is then rotated through 360^o in azimuth until the highest emission is detected. The test antenna is then raised and lowered one last time from 1 to 4 m and the worst case value is recorded. Emissions above 1 GHz are characterized using standard gain horn antennas or calibrated broadband ridge-horn antennas on our OATS with a 4×5 m rectangle of AN-79 and/or H-4 absorber placed over the ground screen covering the OATS ground screen. Care is taken to ensure that test receiver resolution and video bandwidths meet the regulatory requirements, and that the emission bandwidth of the EUT is not reduced. Photographs of the test setup employed are depicted in Figure 4.

Where regulations allow for direct measurement of field strength, power values (dBm) measured on the test receiver / analyzer are converted to dBμV/m at the regulatory distance, using

$$E_{dist} = 107 + P_R + K_A - K_G + K_E - C_F$$

where P_R is the power recorded on spectrum analyzer, in dBm, K_A is the test antenna factor in dB/m, K_G is the combined pre-amplifier gain and cable loss in dB, K_E is duty correction factor (when applicable) in dB, and C_F is a distance conversion (employed only if limits are specified at alternate distance) in dB. This field strength value is then compared with the regulatory limit. If effective isotropic radiated power (EIRP) is computed, it is computed as

$$EIRP(dBm) = E_{3m}(dB\mu V/m) - 95.2.$$

When presenting data at each frequency, the highest measured emission under all possible EUT orientations (3-axes) is reported.

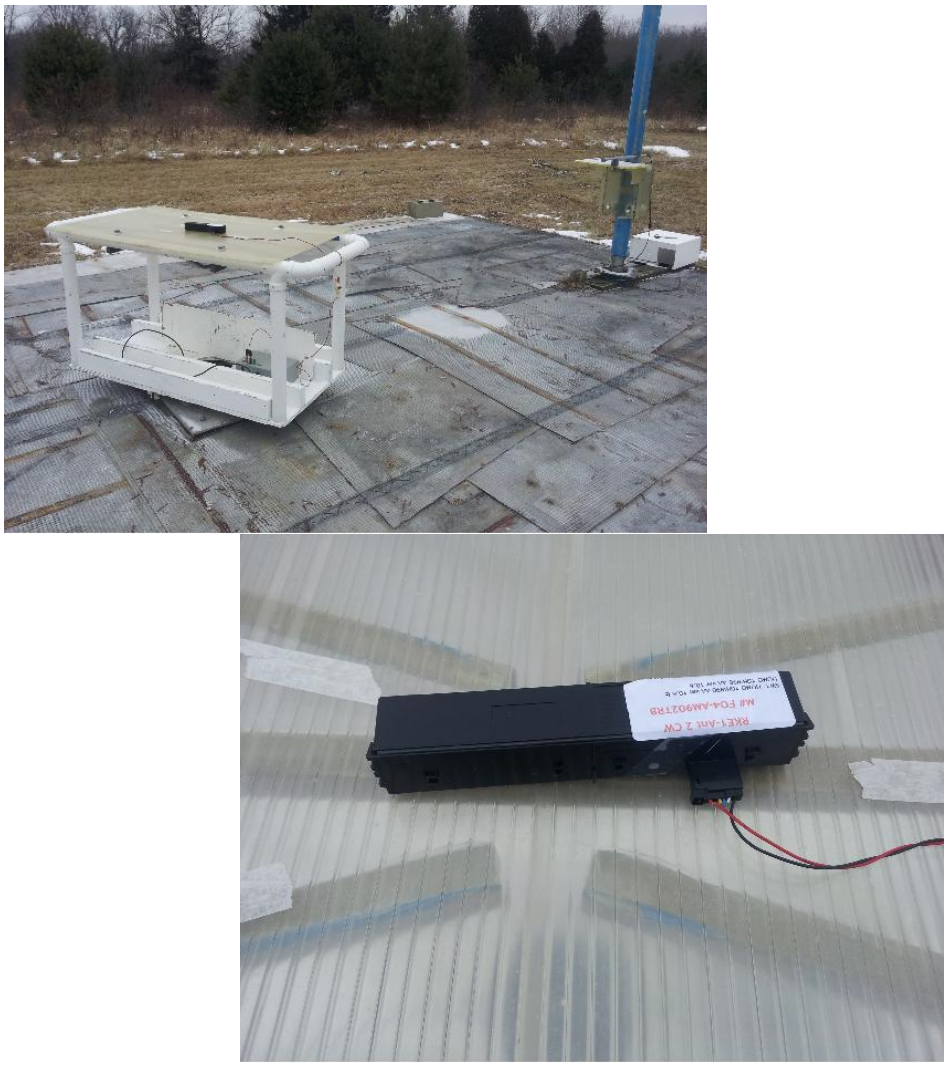


Figure 4: Radiated Emissions Test Setup Photograph(s).

3.1.2 Conducted Emissions Test Setup and Procedures

Vehicle Power Conducted Spurious The EUT is not subject to power line conducted emissions regulations as it is powered solely by the vehicle power system for use in said motor vehicle.

3.1.3 Power Supply Variation

Tests at extreme supply voltages are made if required by the the procedures specified in the test standard, and results of this testing are detailed in this report.

3.1.4 Thermal Variation

Tests at extreme temperatures are made if required by the procedures specified in the test standard, and results of this testing are detailed in this report. The provider has declared that the EUT is designed for operation over the temperature range -40^{o}C to $+85^{o}$C. Before any temperature measurements are made, the equipment is allowed to reach a thermal balance in the test chamber, temperature and humidity are recorded, and thermal balance is verified via a thermocouple–based probe.

3.2 Intentional Emissions

3.2.1 Fundamental Emission Pulsed Operation

Test Setup & Procedure The test equipment and facilities were setup in accordance with the standards and procedures listed in Section 1.1. Environmental conditions were set at the appropriate temperature and thermal balance was checked with a thermocouple based probe. Duty cycle is reported for all relevant modes of operation. The test equipment employed includes RSFSV30001, DIPEMC001.

Measurement Results The details and results of testing the EUT are summarized in Table 3. Plots showing the measurements made to obtain these values are provided in Figure 5.

Table 3: Fundamental Emission Pulsed Operation.

Detector	Span	IF Bandwidth	Video Bandwidth
Pk	0	1 MHz	3 MHz

Test Date:	20-Jan-16
Test Engineer:	Joseph Brunett
EUT:	Delphi RTM 902
EUT Mode:	Normal Modulated
Meas. Distance:	10 cm

FCC/IC

		Overall Transmission			Internal Frame Characteristics			Computed Duty Cycle	
#	EUT Test Mode*	Min. Repetition Rate (sec)	Max. No. of Frames	Total Transmission Length (sec)	Max. Frame Length (ms)	Min. Frame Period (ms)	Frame Encoding	(%)	(dB)
1	Normal Operating Subfigure (a)	Single Frame in response to automatic activation.	3	0.30	19.8	295.0	When automatically actuated by transmission from a paired remote start keyfob, the EUT transmits an OOK (AM) data frame. Each frame is 19 ms in duration, and the transmit frequency alternates between CH1 and CH2 over a set of 3 frames. Period from transmission on CH1 back to CH1 in case of repeated inquiry is 295ms. OOK encoding has a 50% duty cycle.	9.9	-20.0

Example Calculation: Worst Case OOK Duty (%) = (19.8 ms x 50% / 100 ms window) x 100 = 9.9 %

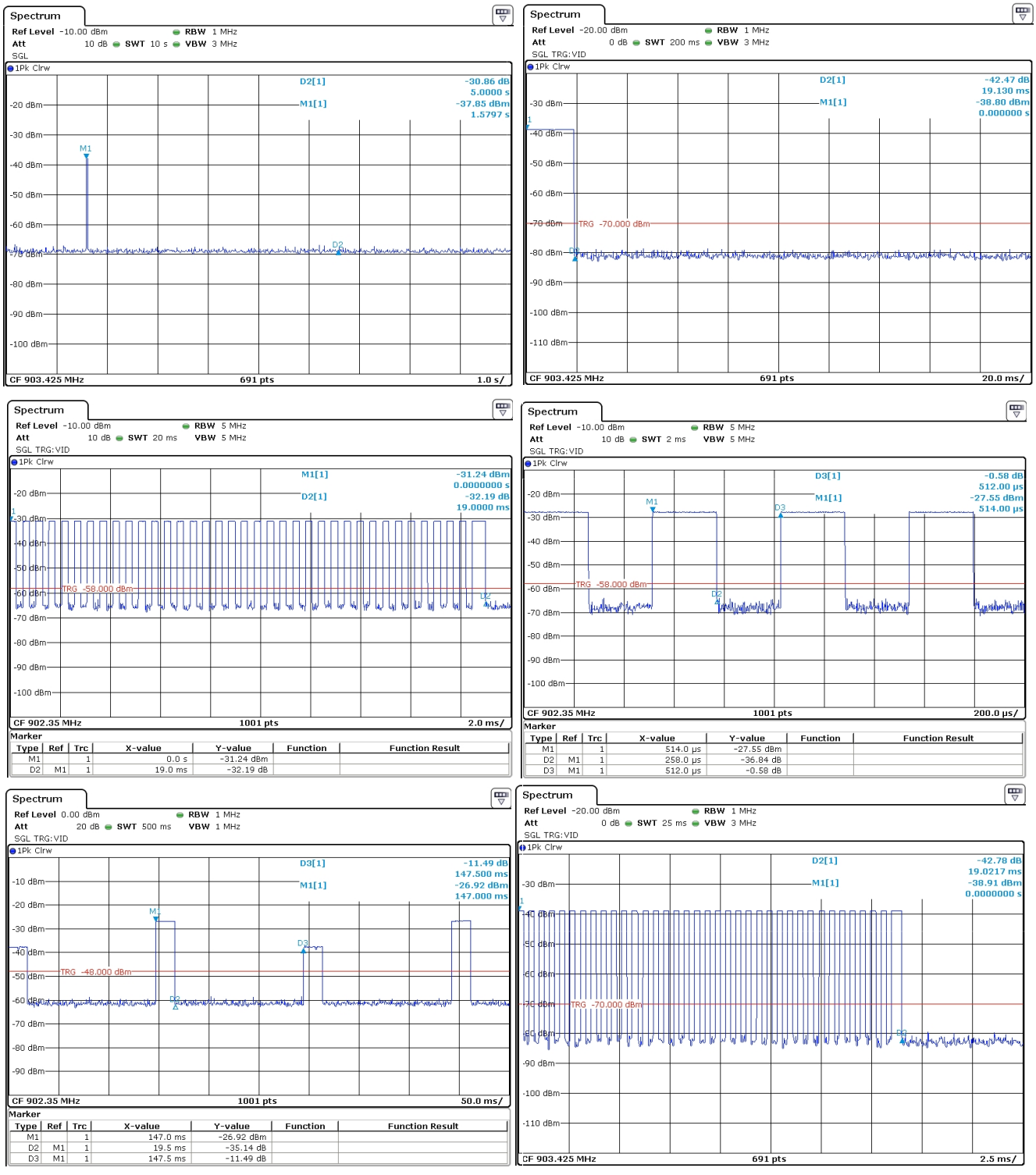


Figure 5: Fundamental Emission Pulsed Operation.

3.2.2 Fundamental Emission Bandwidth

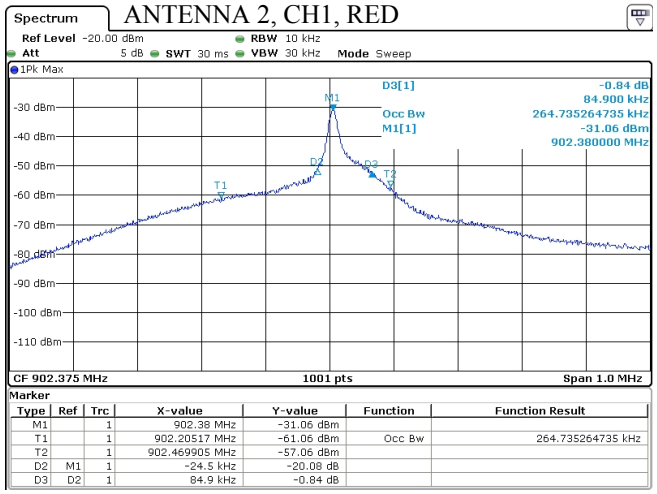
Test Setup & Procedure The test equipment and facilities were setup in accordance with the standards and procedures listed in Section 1.1. Environmental conditions were set at the appropriate temperature and thermal balance was checked with a thermocouple based probe. Emission bandwidth (EBW) of the EUT is measured with the device placed in the test mode(s) with the shortest available frame length and minimum frame spacing. The 20 dB EBW is measured as the max-held peak-detected signal when the IF bandwidth is greater than or equal to 1% of the receiver span. For complex modulations other than ASK and FSK, the 99% emission bandwidth per IC test procedures has a different result, and is also reported. The test equipment employed includes RSFSV30001, DIPEMC001.

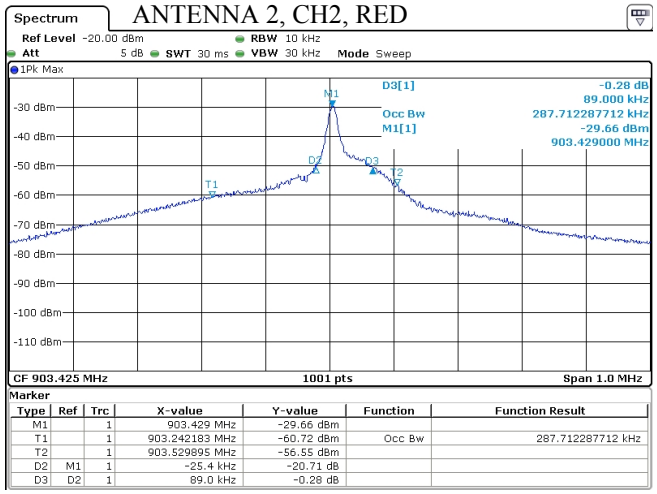
Measurement Results The details and results of testing the EUT are summarized in Table 4. Plots showing the measurements made to obtain these values are provided in Figure 6.

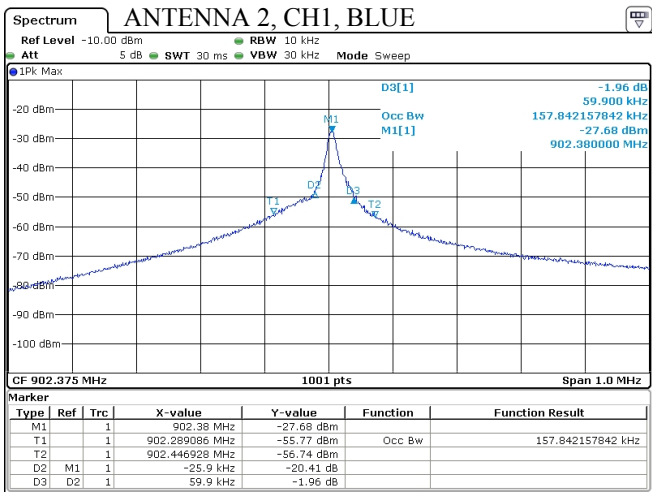
Table 4: Fundamental Emission Bandwidth.

Detector	IF Bandwidth	Video Bandwidth		
Pk	10 kHz	30 kHz		
			Test Date:	15-Jan-16
			Test Engineer:	Joseph Brunett
			EUT:	Delphi RTM 902
			EUT Mode:	Modulated
			Meas. Distance:	10 cm

							FCC/IC
#	Modulation	Center Frequency (MHz)	20 dB EBW (MHz)	EBW Limit (MHz)	99% EBW (MHz)		
1	OOK	902.375	0.085	2.256	0.265		
2	OOK	903.425	0.089	2.259	0.288		
3							
4							
5							







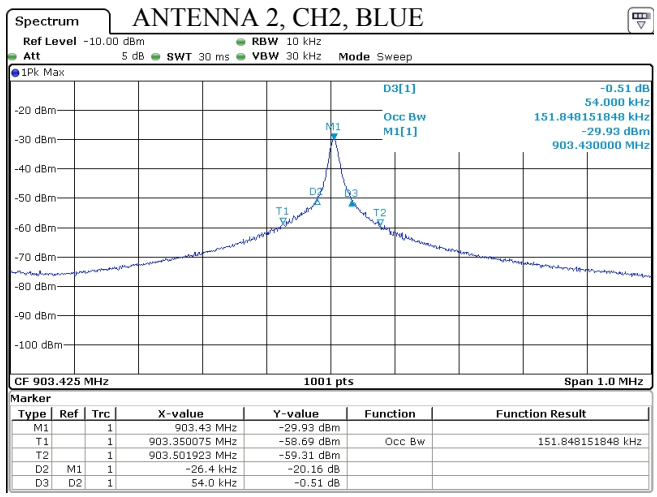
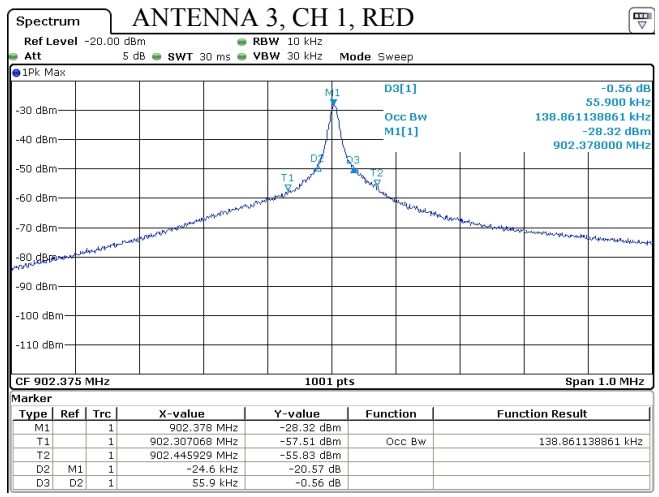
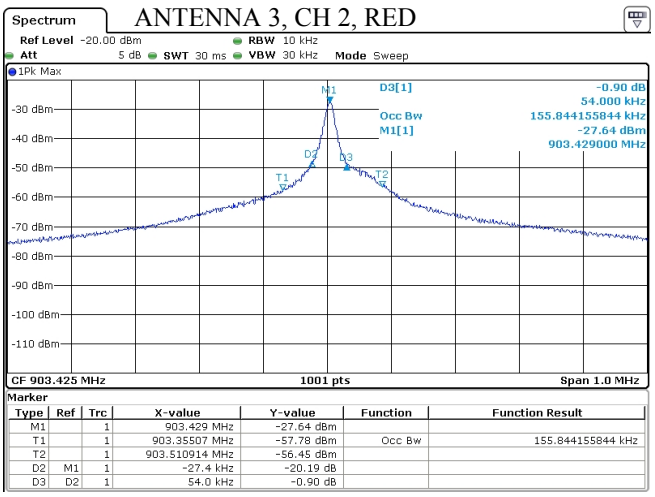
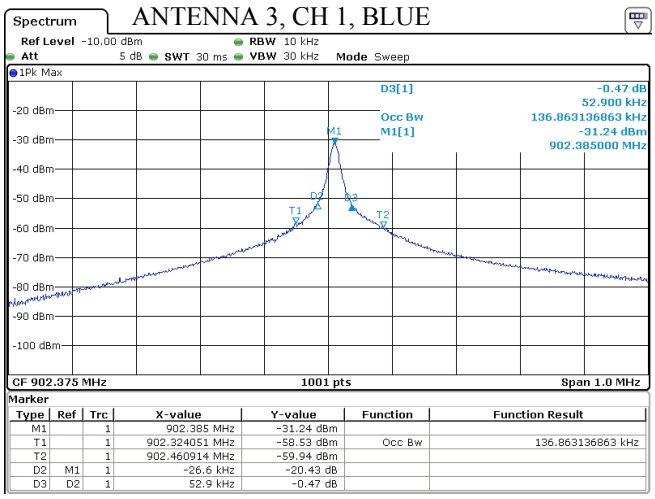


Figure 6(a): Fundamental Emission Bandwidth.







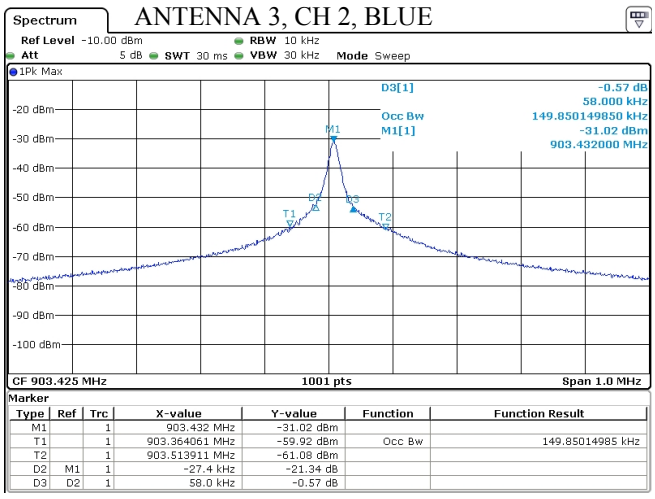


Figure 6(b): Fundamental Emission Bandwidth.

3.2.3 Fundamental Emission Field Strength

Test Setup & Procedure The test equipment and facilities were setup in accordance with the standards and procedures listed in Section 1.1. Environmental conditions were set at the appropriate temperature and thermal balance was checked with a thermocouple based probe. Fundamental emissions are measured at the regulatory distance on our OATS. The test equipment employed includes RSFSV30001, DIPEMC001.

Measurement Results The details and results of testing the EUT are summarized in Table 5.

Table 5: Fundamental Emission Field Strength.

Frequency Range	Det	IF Bandwidth	Video Bandwidth		
25 MHz ≤ f ≤ 1 000 MHz	Pk/QPk	120 kHz	300 kHz	**Test Date:**	20-Jan-16
f > 1 000 MHz	Pk	1 MHz	3MHz	**Test Engineer:**	Joseph Brunett
f > 1 000 MHz	Avg	1 MHz	10kHz	**EUT:**	Delphi RTM 902
				Meas. Distance:	3 meters

FUNDAMENTAL EMISSION – FCC / IC														
#	Mode	Ant. Pol	Freq. MHz	Ant. Used	Temp °C	Pr (Pk) dBm	Pr (Avg)* dBm	Ka dB/m	Kg dB	E3(Pk) dBµV/m	E3(Avg) dBµV/m	FCC/IC E3(Avg) Lim. dBµV/m	Pass By dB	Comments
1	**M# FO4-AM902TRB (RED)**													
2	CW	H	903.48	Dipole	3.0	-5.2	-25.2	28.3	29.2	101.0	81.0	81.9	0.9	ANT2, FLAT
3	CW	V	903.48	Dipole	3.0	-6.4	-26.4	28.3	29.2	99.8	79.8	81.9	2.1	ANT2, END
4	CW	H	902.38	Dipole	3.0	-4.6	-24.6	28.3	29.2	101.5	81.5	81.9	**0.4**	ANT2, FLAT
5	CW	V	902.38	Dipole	3.0	-6.4	-26.4	28.3	29.2	99.8	79.8	81.9	2.1	ANT2, END
6	CW	H	903.48	Dipole	3.0	-5.3	-25.3	28.3	29.2	100.9	80.9	81.9	1.0	ANT3, FLAT
7	CW	V	903.48	Dipole	3.0	-7.2	-27.2	28.3	29.2	99.0	79.0	81.9	2.9	ANT3, END
8	CW	H	902.38	Dipole	3.0	-5.3	-25.3	28.3	29.2	100.8	80.8	81.9	1.1	ANT3, FLAT
9	CW	V	902.38	Dipole	3.0	-6.7	-26.7	28.3	29.2	99.4	79.4	81.9	2.5	ANT3, END
10	**M# FO4-AM902TRB (BLUE)**													
11	CW	H	903.48	Dipole	3.0	-6.3	-26.3	28.3	29.2	99.9	79.9	81.9	2.0	ANT2, FLAT
12	CW	V	903.48	Dipole	3.0	-7.4	-27.4	28.3	29.2	98.8	78.8	81.9	3.1	ANT2, END
13	CW	H	902.38	Dipole	3.0	-5.4	-25.4	28.3	29.2	100.7	80.7	81.9	**1.2**	ANT2, FLAT
14	CW	V	902.38	Dipole	3.0	-6.9	-26.9	28.3	29.2	99.2	79.2	81.9	2.7	ANT2, END
15	CW	H	903.48	Dipole	3.0	-13.1	-33.1	28.3	29.2	93.1	73.1	81.9	8.8	ANT3, FLAT
16	CW	V	903.48	Dipole	3.0	-14.7	-34.7	28.3	29.2	91.5	71.5	81.9	10.4	ANT3, END
17	CW	H	902.38	Dipole	3.0	-13.7	-33.7	28.3	29.2	92.4	72.4	81.9	9.5	ANT3, FLAT
18	CW	V	902.38	Dipole	3.0	-15.1	-35.1	28.3	29.2	91.1	71.1	81.9	10.8	ANT3, END
19														

20		Ant.	Freq.	DC Supply		Pr (Pk)					
21	Mode	Pol	MHz	Voltage		dBm					
22	CW	H	902.38	8.0		-6.3					
23			902.38	12.8		-6.3					
24			902.38	18.0		-6.2					

*Avg data computed from Peak Measured Data and EUT Duty Cycle. EUT in CW mode.

** EUT in CW mode.

3.3 Unintentional Emissions

3.3.1 Transmit Chain Spurious Emissions

Test Setup & Procedure The test equipment and facilities were setup in accordance with the standards and procedures listed in Section 1.1. Environmental conditions were set at the appropriate temperature and thermal balance was checked with a thermocouple based probe. Spurious radiated emissions measurements are performed to 10 times the highest fundamental operating frequency. The test equipment employed includes RSFSV30001, DIPEMC001, UMHORN005.

Measurement Results The details and results of testing the EUT are summarized in Table 6.

Table 6(a): Transmit Chain Spurious Emissions.

Frequency Range	Det	IF Bandwidth	Video Bandwidth		
9 kHz ≤ f ≤ 150 kHz	Pk/QPk	200 Hz	300 Hz	**Test Date:**	20-Jan-16
150 kHz ≤ f ≤ 30 MHz	Pk/QPk	9 kHz	30 kHz	**Test Engineer:**	Joseph Brunett
25 MHz ≤ f ≤ 1 000 MHz	Pk/QPk	120 kHz	300 kHz	**EUT:**	Delphi RTM 902
f > 1 000 MHz	Pk/Avg	1 MHz	3MHz	**EUT Mode:**	CW
				Meas. Distance:	3 meters

TRANSMIT CHAIN SPURIOUS EMISSIONS TABLE – FCC/IC

	Frequency Band		Antenna	Ant.	Pr (Pk)	Pr (Avg)*	Ka	Kg	E-Field		E-Field Limit		Pass	Comments
	Start	Stop							Pk	Avg/QPk	Pk	Avg		
#	MHz	MHz	Qual. Number	Pol.	dBm	dBm	dB/m	dB	dBuV/m	dBuV/m	dBuV/m	dBuV/m	dB	
1	**RED, ANT 2, WORST CASE (Both Channels)**													
2	1804.8	1807.0	HRNQR316401	H/V	-91.6	-111.6	29.0	-0.2	44.6	24.6	74.0	54.0	29.4	max all, noise
3	2707.1	2710.4	HRNQR316401	H/V	-86.1	-106.1	34.7	-0.3	55.9	35.9	74.0	54.0	**18.1**	max all
4	3609.5	3613.9	HRNQR316401	H/V	-90.5	-110.5	35.3	-0.4	52.2	32.2	74.0	54.0	21.8	max all, noise
5	4511.9	4517.4	HRNQR316401	H/V	-89.6	-109.6	33.0	-0.5	50.9	30.9	74.0	54.0	23.1	max all, noise
6	5414.3	5420.9	HQR2TO18S01	H/V	-89.0	-109.0	33.5	-0.5	52.1	32.1	74.0	54.0	21.9	max all, noise
7	6316.6	6324.3	HQR2TO18S01	H/V	-88.3	-108.3	32.8	-0.6	52.1	32.1	74.0	54.0	21.9	max all, noise
8	7219.0	7227.8	HQR2TO18S01	H/V	-97.5	-117.5	33.3	-0.7	43.5	23.5	74.0	54.0	30.5	max all, noise
9	8121.4	8131.3	HQR2TO18S01	H/V	-98.2	-118.2	34.1	-0.8	43.6	23.6	74.0	54.0	30.4	max all, noise
10	9023.8	9034.8	HQR2TO18S01	H/V	-98.8	-118.8	34.7	-0.8	43.8	23.8	74.0	54.0	30.2	max all, noise
11														
12														
13	**BLUE, ANT 2, WORST CASE (Both Channels)**													
14	1804.8	1807.0	HRNQR316401	H/V	-93.6	-113.6	29.0	-0.2	42.6	22.6	74.0	54.0	31.4	max all, noise
15	2707.1	2710.4	HRNQR316401	H/V	-88.5	-108.5	34.7	-0.3	53.5	33.5	74.0	54.0	**20.5**	max all
16	3609.5	3613.9	HRNQR316401	H/V	-91.4	-111.4	35.3	-0.4	51.3	31.3	74.0	54.0	22.7	max all, noise
17	4511.9	4517.4	HRNQR316401	H/V	-91.3	-111.3	33.0	-0.5	49.2	29.2	74.0	54.0	24.8	max all, noise
18	5414.3	5420.9	HQR2TO18S01	H/V	-89.9	-109.9	33.5	-0.5	51.1	31.1	74.0	54.0	22.9	max all, noise
19	6316.6	6324.3	HQR2TO18S01	H/V	-87.5	-107.5	32.8	-0.6	52.9	32.9	74.0	54.0	21.1	max all, noise
20	7219.0	7227.8	HQR2TO18S01	H/V	-97.2	-117.2	33.3	-0.7	43.8	23.8	74.0	54.0	30.2	max all, noise
21	8121.4	8131.3	HQR2TO18S01	H/V	-99.4	-119.4	34.1	-0.8	42.4	22.4	74.0	54.0	31.6	max all, noise
22	9023.8	9034.8	HQR2TO18S01	H/V	-97.3	-117.3	34.8	-0.8	45.3	25.3	74.0	54.0	28.7	max all, noise
23														
24														
25														

*Avg data computed from Peak Measured Data and EUT Duty Cycle. EUT in CW mode.

Table 6(b): Transmit Chain Spurious Emissions.

Frequency Range	Det	IF Bandwidth	Video Bandwidth		
9 kHz ≤ f ≤ 150 kHz	Pk/QPk	200 Hz	300 Hz	**Test Date:**	20-Jan-16
150 kHz ≤ f ≤ 30 MHz	Pk/QPk	9 kHz	30 kHz	**Test Engineer:**	Joseph Brunett
25 MHz ≤ f ≤ 1 000 MHz	Pk/QPk	120 kHz	300 kHz	**EUT:**	Delphi RTM 902
f > 1 000 MHz	Pk/Avg	1 MHz	3MHz	**EUT Mode:**	CW
				Meas. Distance:	3 meters

TRANSMIT CHAIN SPURIOUS EMISSIONS TABLE – FCC/IC

	Frequency Band		Antenna	Ant.	Pr (Pk)	Pr (Avg)*	Ka	Kg	E-Field		E-Field Limit		Pass	Comments
	Start	Stop							Pk	Avg/QPk	Pk	Avg		
#	MHz	MHz	Qual. Number	Pol.	dBm	dBm	dB/m	dB	dBuV/m	dBuV/m	dBuV/m	dBuV/m	dB	
1	**RED, ANT 3, WORST CASE (Both Channels)**													
2	1804.8	1807.0	HRNQR316401	H/V	-93.5	-113.5	29.0	-0.2	42.7	22.7	74.0	54.0	31.3	max all, noise
3	2707.1	2710.4	HRNQR316401	H/V	-85.6	-105.6	34.7	-0.3	56.4	36.4	74.0	54.0	**17.6**	max all
4	3609.5	3613.9	HRNQR316401	H/V	-91.6	-111.6	35.3	-0.4	51.1	31.1	74.0	54.0	22.9	max all, noise
5	4511.9	4517.4	HRNQR316401	H/V	-90.7	-110.7	33.0	-0.5	49.8	29.8	74.0	54.0	24.2	max all, noise
6	5414.3	5420.9	HQR2TO18S01	H/V	-89.8	-109.8	33.5	-0.5	51.2	31.2	74.0	54.0	22.8	max all, noise
7	6316.6	6324.3	HQR2TO18S01	H/V	-88.2	-108.2	32.8	-0.6	52.2	32.2	74.0	54.0	21.8	max all, noise
8	7219.0	7227.8	HQR2TO18S01	H/V	-97.1	-117.1	33.3	-0.7	43.9	23.9	74.0	54.0	30.1	max all, noise
9	8121.4	8131.3	HQR2TO18S01	H/V	-98.2	-118.2	34.1	-0.8	43.6	23.6	74.0	54.0	30.4	max all, noise
10	9023.8	9034.8	HQR2TO18S01	H/V	-98.5	-118.5	34.7	-0.8	44.1	24.1	74.0	54.0	29.9	max all, noise
11														
12														
13	**BLUE, ANT 3, WORST CASE (Both Channels)**													
14	1804.8	1807.0	HRNQR316401	H/V	-93.9	-113.9	29.0	-0.2	42.3	22.3	74.0	54.0	31.7	max all, noise
15	2707.1	2710.4	HRNQR316401	H/V	-89.4	-109.4	34.7	-0.3	52.6	32.6	74.0	54.0	**21.4**	max all
16	3609.5	3613.9	HRNQR316401	H/V	-91.7	-111.7	35.3	-0.4	51.0	31.0	74.0	54.0	23.0	max all, noise
17	4511.9	4517.4	HRNQR316401	H/V	-91.0	-111.0	33.0	-0.5	49.5	29.5	74.0	54.0	24.5	max all, noise
18	5414.3	5420.9	HQR2TO18S01	H/V	-89.1	-109.1	33.5	-0.5	51.9	31.9	74.0	54.0	22.1	max all, noise
19	6316.6	6324.3	HQR2TO18S01	H/V	-86.3	-106.3	32.8	-0.6	54.1	34.1	74.0	54.0	19.9	max all, noise
20	7219.0	7227.8	HQR2TO18S01	H/V	-96.9	-116.9	33.3	-0.7	44.1	24.1	74.0	54.0	29.9	max all, noise
21	8121.4	8131.3	HQR2TO18S01	H/V	-99.9	-119.9	34.1	-0.8	41.9	21.9	74.0	54.0	32.1	max all, noise
22	9023.8	9034.8	HQR2TO18S01	H/V	-99.1	-119.1	34.8	-0.8	43.5	23.5	74.0	54.0	30.5	max all, noise
23														
24														
25														

*Avg data computed from Peak Measured Data and EUT Duty Cycle. EUT in CW mode.