



Test Report:

3W07020

Applicant:

DESA Specialty Products
2901 Industrial Drive
Bowling Green, KY
42102

**Equipment Under Test:
(EUT)**

Model 6016-TX Wireless Entry Transmitter

FCC ID:

In Accordance With:

FCC Part 15, Subpart C, 15.231

Tested By:

Nemko Canada Inc.
303 River Road, R.R. 5
Ottawa, Ontario K1V 1H2

Authorized By:

G. Westwell, Wireless Technologist

Date:

August 19, 2003

Total Number of Pages:

15

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EQUIPMENT: Model 6016-TX Wireless Entry Transmitter

Section 1. Summary of Test Results

General

All measurements are traceable to national standards.

These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with Part 15, Subpart C. All tests were conducted using measurement procedure ANSI C63.4-1992. Radiated emissions are made on an open area test site. A description of the test facility is on file with the FCC.

THIS TEST REPORT RELATES ONLY TO THE ITEM(S) TESTED.

THE FOLLOWING DEVIATIONS FROM, ADDITIONS TO, OR EXCLUSIONS FROM THE TEST SPECIFICATIONS HAVE BEEN MADE. NONE
See " Summary of Test Data".



TESTED BY: _____
Kevin Carr, EMC Specialist

DATE: August 19, 2003

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This report applies only to the items tested.

EQUIPMENT: Model 6016-TX Wireless Entry Transmitter

Summary Of Test Data

Name of Test	Para. Number	Results
Transmission Requirements	15.231(a)	Compiles
Radiated Emissions	15.231(b)	Compiles
Occupied Bandwidth	15.231(c)	Compiles
Frequency Tolerance	15.231(d)	N/A
Periodic Alternate Field Strength Requirements	15.231(e)	N/A
Powerline Conducted Emissions	15.207	N/A

Test Conditions:

Indoor Temperature: 22°C
 Humidity: 45%

Outdoor Temperature: 28°C
 Humidity: 67%

EQUIPMENT: Model 6016-TX Wireless Entry Transmitter

Section 2. Equipment Under Test

General Equipment Information

Manufacturer:	DESA Specialty Products
Model No.:	6016-Tx
Serial No.:	None
Date Received In Laboratory:	14 Aug. 2003
Frequency Range (<i>or fixed frequency</i>):	315 MHz, Fixed
Occupied Bandwidth (99% BW):	68kHz
Type of Modulation:	Pulse Carrier On Off
Emission Designator (TRC-43:)	68K0L1D

Section 3. Transmission Requirements

Para. No.: 15.231(a)

Test Performed By: Kevin Carr	Date of Test: 14 Aug.2003
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Minimum Standard: 15.231(a) Continuous transmissions such as voice, video or data transmissions are not permitted.

15.231(a)(1) A manually operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 seconds after being released.

15.231(a)(2) A transmitter activated automatically shall cease transmission within 5 seconds of activation.

15.231(a)(3) Periodic transmissions at regular pre-determined intervals are not permitted. However polling or supervisory transmissions to determine system integrity of transmitters used in security or safety applications are allowed if the periodic rate of transmission does not exceed one transmission of not more than one second duration per hour for each transmitter.

15.231(a)(4) Intentional radiators which are employed for radio control purposes during emergencies involving fire, security, and safety of life, when activated to signal an alarm, may operate during the pendency of the alarm.

Test Results: Complies

Test Data: Compliance was determined by verification of technical specifications and a functional test on the equipment.

EQUIPMENT: Model 6016-TX Wireless Entry Transmitter

Rationale for Compliance with Transmission Requirements

- 15.231(a)(1) :** The transmitter is deactivated immediately upon releasing the push button switch.
- 15.231(a)(2) :** No automatic activation.
- 15.231(a)(3) :** No periodic, polling, or supervision transmissions.
- 15.231(a)(4) :** NA

EQUIPMENT: Model 6016-TX Wireless Entry Transmitter

Section 4. Radiated Emissions

Para. No.: 15.231(b)

Test Performed By: Kevin Carr	Date of Test: 14 Aug 2003
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Minimum Standard:

Fundamental Frequency (MHz)	Field Strength of Fundamental ($\mu\text{V/m @ 3m}$)	Field Strength of Spurious Emissions ($\mu\text{V/m @ 3m}$)
40.66 - 40.70	2,250	225
70-130	1, 250	125
130-174	1,250 to 3,750*	125 to 375
174-260 (note 1)	3,750	375
260-470 (note 1)	3,750 to 12,500*	375 to 1,250
Above 470	12,500	1,250

Restricted Band Limits		
Frequency (MHz)	Field Strength ($\mu\text{V/m @ 3m}$)	Field Strength (dB $\mu\text{V/m @ 3m}$)
30 - 88	100	40.0
88 - 216	150	43.5
216 - 960	200	46.0
Above 960	500	54.0

Test Results: Complies.

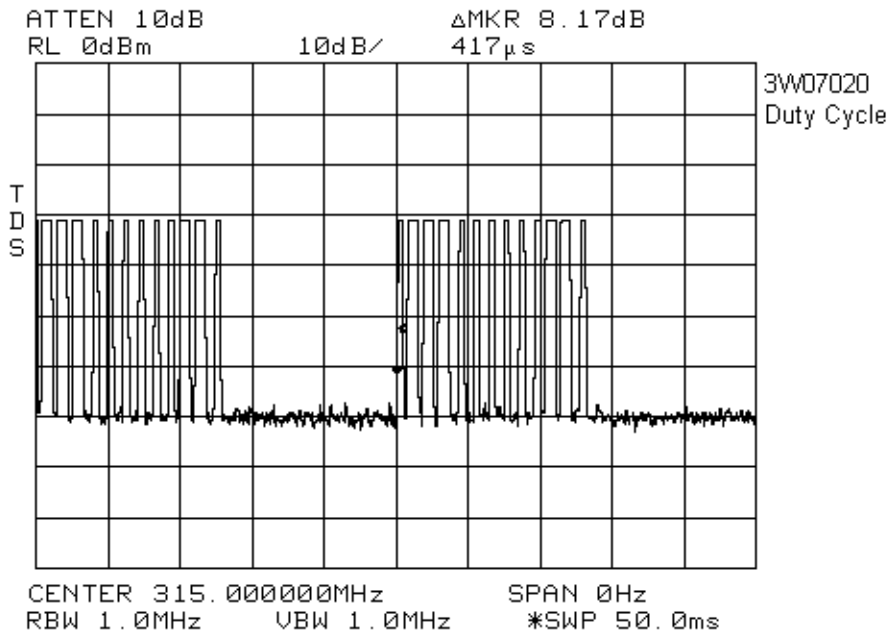
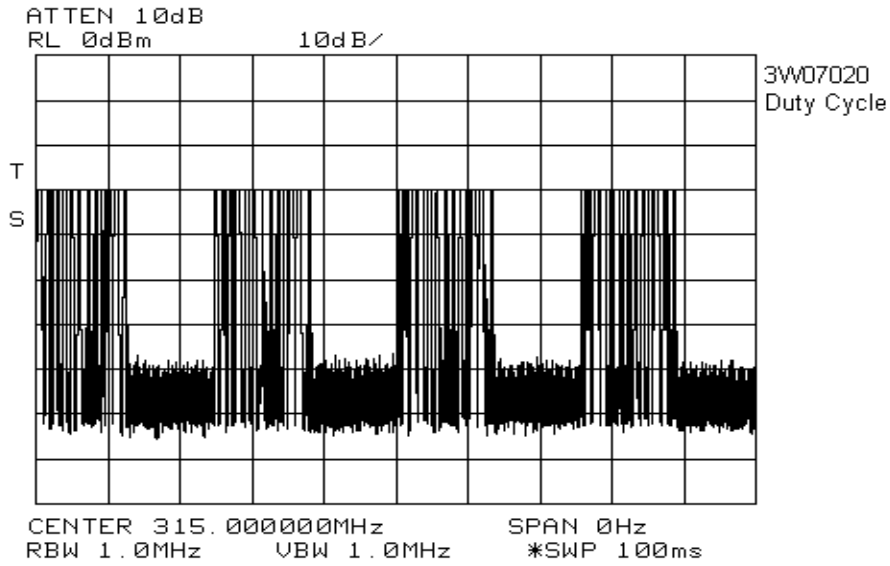
Test Data: As per attached tabulated data.

- All spurious and harmonic emissions were search to the 10th harmonic.
- The EUT was searched on 3 orthogonal axis for maximum emission detection.
- The EUT was powered with fresh 3Vdc cell.

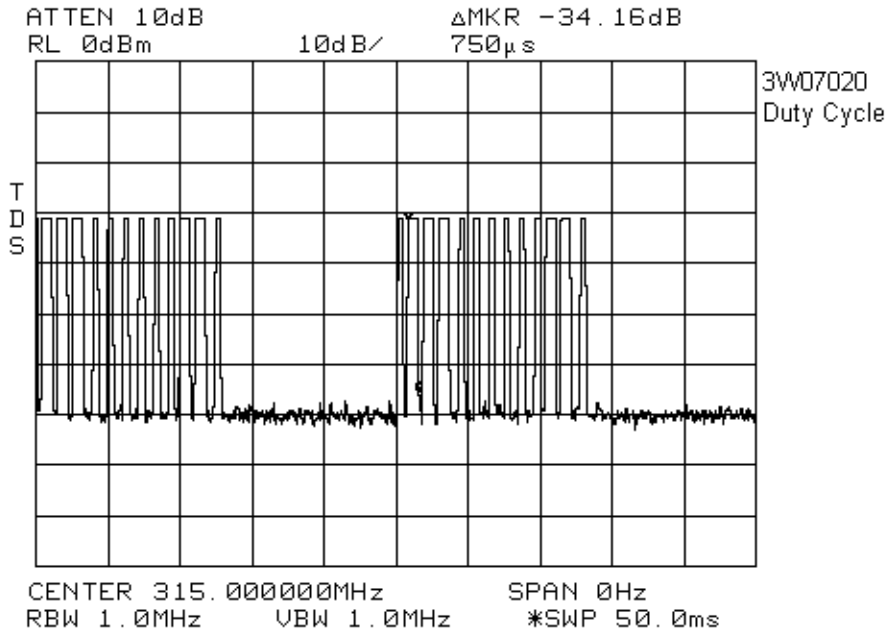
EQUIPMENT: Model 6016-TX Wireless Entry Transmitter

Standard:		FCC Part C					Date:		14-Aug-03		Tester:		Dome # 1	
Tower:		A Distance: 3 m					Location:		Ottawa		Kevin Carr			
Receiver:		8565E Comment:					Temp:		28		Humidity:		67	
Frequency (MHz)	Ant.	Pol.	RCVD Signal (dBuV)	Ant. Factor (dB)	Amp. Gain (dB)	Duty Cycle Corr.	Cable Loss (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Amp.		
1	315.0770	LP2	V	54.7	14.9	N/A	-11.0	2.3	60.9	75.6	14.7	Peak	None	
2	315.0730	LP2	H	56.7	15.6	N/A	-11.0	2.3	63.6	75.6	12.0	Peak	None	
3	635.1570	LP2	V	27.0	20.9	N/A	-11.0	3.2	40.1	55.6	15.5	Peak	None	
4	630.1500	LP2	H	23.2	21.3	N/A	-11.0	3.1	36.6	55.6	19.0	Peak	None	
5	945.2000	LP2	V	18.8	23.7	N/A	-11.0	4.0	35.5	55.6	20.1	Peak	None	
6	945.2000	LP2	H	20.9	24.6	N/A	-11.0	4.0	38.5	55.6	17.1	Peak	None	
7	1260.3000	Horn2	V	52.5	26.6	46.5	-11.0	3.2	24.7	54	29.3	Peak	1-2GHz	
8	1260.3000	Horn2	H	52.0	26.3	46.5	-11.0	3.2	23.9	54	30.1	Peak	1-2GHz	
9	1575.4000	Horn2	V	56.0	28.2	46.3	-11.0	3.4	30.3	54	23.7	Peak	1-2GHz	
10	1575.4000	Horn2	H	58.0	28.6	46.3	-11.0	3.4	32.7	54	21.3	Peak	1-2GHz	
11	1890.4000	Horn2	V	54.7	28.5	46.3	-11.0	4.0	29.8	55.6	25.8	Peak	1-2GHz	
12	1890.5000	Horn2	H	59.0	29.0	46.3	-11.0	4.0	34.6	55.6	21.0	Peak	1-2GHz	
13	2205.5000	Horn2	H	68.5	29.1	55.5	-11.0	4.4	35.4	54	18.6	Peak	2-4GHz	
14	2205.6000	Horn2	V	67.3	28.9	55.5	-11.0	4.4	34.0	54	20	Peak	2-4GHz	
15	2520.7000	Horn2	H	71.3	29.8	56.4	-11.0	6.1	39.8	55.6	15.8	Peak	2-4GHz	
16	2520.7000	Horn2	V	77.5	30.0	56.4	-11.0	6.1	46.2	55.6	9.4	Peak	2-4GHz	
17	2835.8000	Horn2	H	66.2	29.9	56.3	-11.0	5.8	34.7	54	19.3	Peak	2-4GHz	
18	2853.8000	Horn2	V	71.2	30.1	56.2	-11.0	5.9	40.0	54	14	Peak	2-4GHz	
19	3150.7000	Horn2	H	64.5	31.0	56.1	-11.0	6.9	35.2	55.6	20.4	Peak	2-4GHz	
20	3150.8000	Horn2	V	70.5	31.0	56.1	-11.0	6.9	41.2	55.6	14.4	Peak	2-4GHz	

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Duty Cycle Calculation:

$$20\text{Log}\{((8 \times 0.417) + (5 \times 0.75) \times 4) / 100\} = -11.0 \text{ dB}$$

EQUIPMENT: Model 6016-TX Wireless Entry Transmitter

Section 5. Occupied Bandwidth

Para. No.: 15.231(c)

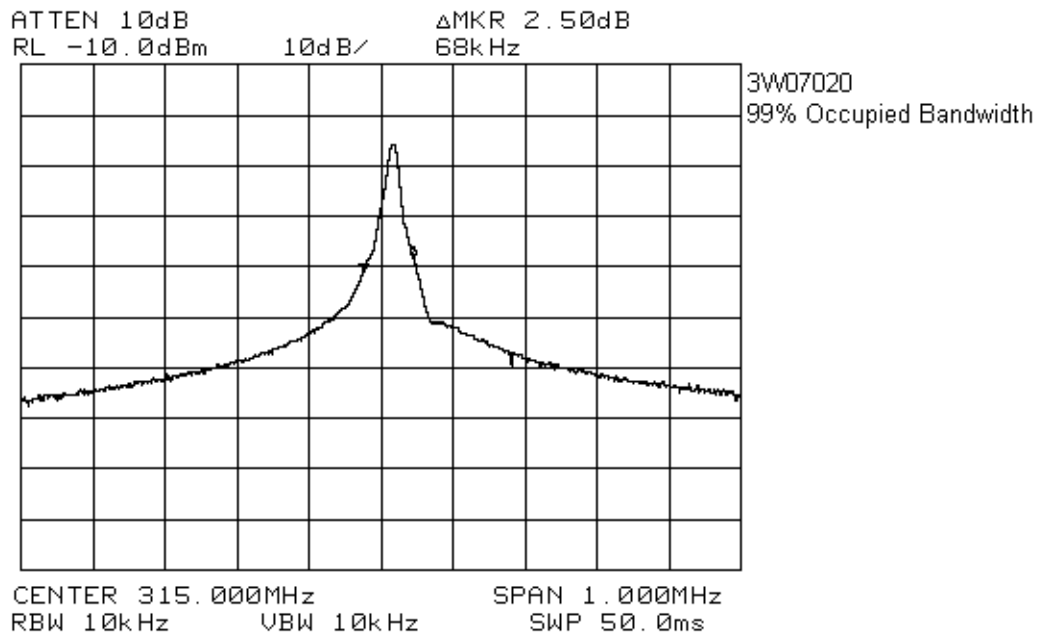
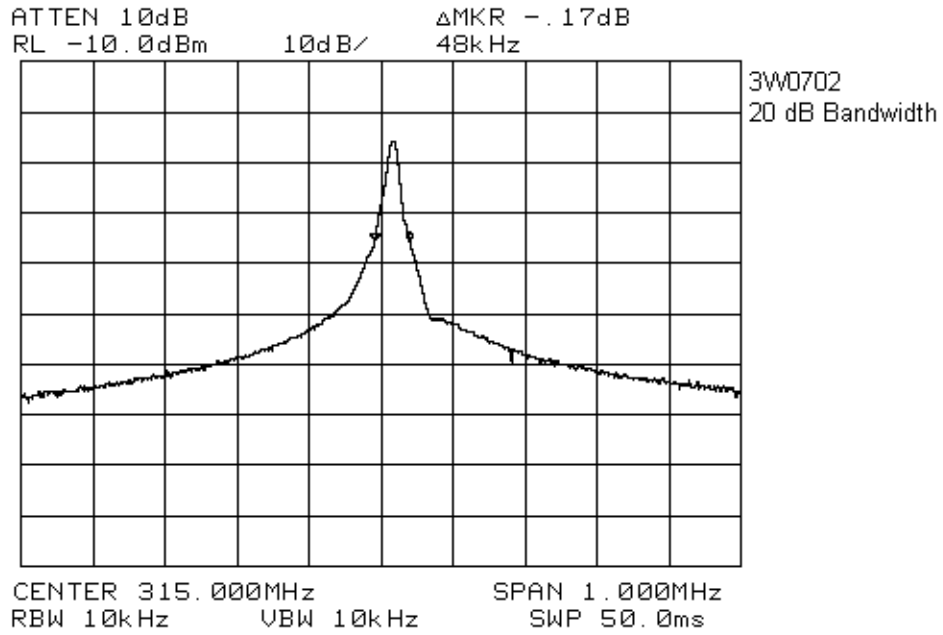
Test Performed By: Kevin Carr	Date of Test: 14 Aug. 2003
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Minimum Standard: 15.231(c) The bandwidth of the emission shall be no wider than 0.25% of the center frequency for devices operating above 70 MHz and below 900 MHz. For devices operating above 900 MHz, the emission shall be no wider than 0.5% of the center frequency. Bandwidth is determined at the points 20 dB down from the modulated carrier.

Test Results: Complies

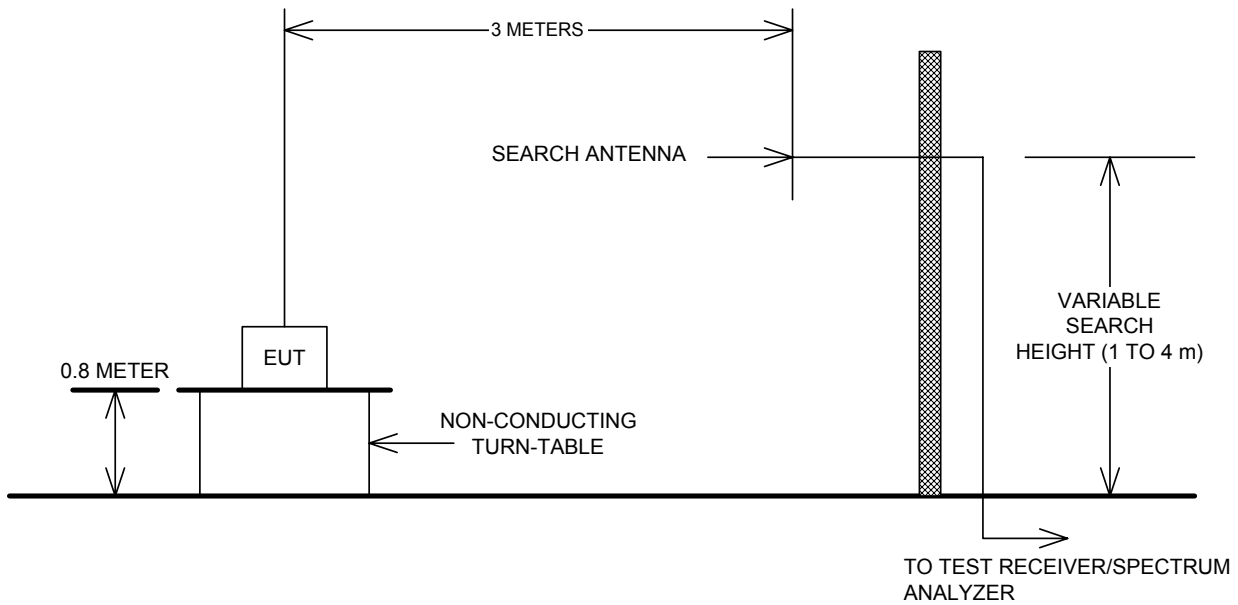
Test Data: See attached graph.

EQUIPMENT: Model 6016-TX Wireless Entry Transmitter



Section 7. Block Diagrams

Outdoor Test Site For Radiated Emissions



The spectrum was searched up to the 10th harmonic of the fundamental frequency of operation.

EQUIPMENT: Model 6016-TX Wireless Entry Transmitter

Section 8. Test Equipment List

Equipment List - Radiated Emissions

CAL Cycle	Equipment	Manufacturer	Model No.	Asset/Serial No.	Last Cal.	Next Cal.
1 Year	Spectrum Analyzer	Hewlett-Packard	8565E	FA000981	July. 03/03	July. 03/04
1 Year	Horn Antenna #2	EMCO	3115	FA000825	Dec. 09/02	Dec. 09/03
1 Year	Log Periodic Antenna #2	EMCO	3148	FA001355	May. 09/03	May. 09/04
1 Year	1.0 – 2.0 GHz Amplifier	JCA	12-400	FA001498	June. 18/03	June. 18/04
1 Year	2.0 – 4.0 GHz Amplifier	JCA	24-600	FA001496	June. 18/03	June. 18/04
Note: N/A = Not Applicable, NCR = No Cal Required, COU = CAL On Use, OUT = Out For CAL/Repair						