

THRU Lab & Engineering.

477-6, Hager-Ri, Yaju-Up, Yaju-Gun

Kyunggi-Do, 469-803, Korea

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THRU

Class permissive change

Test Report

Product Name: GMRS/FRS Combination

MODEL NO : GXT800

FCC ID : MMAGXT850

Applicant:

Midland Radio Corporation.
5900 Parretta Drive, Kansas City,
MO 64120

Date Receipt: 02/06/2007

Date Tested: 02/07/2007

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TABLE OF CONTENTS LIST

APPLICANT: Midland Radio Corporation.

FCC ID :MMAGXT850

TEST REPORT

PAGE 1..... GENERAL INFORMATION & TECHNICAL DESCRIPTION

PAGE 2..... TECHNICAL DEACRIPTION & RF POWER OUTPUT

PAGE 3..... UNWANTED RADIATION - GMRS

PAGE 4..... UNWANTED RADIATION - FRS

PAGE 5-6... LIST OF EMC TEST EQUIPMENT

EXHIBITS CONTAINING:

EXHIBIT 1.... FCC ID LABEL SAMPLES

EXHIBIT 2.... LABEL LOCATION

EXHIBIT 3.... EXTERNAL PHOTOGRAPHS

EXHIBIT 4.... INTERNAL PHOTOGRAPHS

EXHIBIT 5.... BLOCK DIAGRAM

EXHIBIT 6.... SCHMATICS

EXHIBIT 7.... USER'S MANUAL

EXHIBIT 8.... THEORY OF OPERATION

EXHIBIT 9.... ALIGNMENT PROCEDURE

EXHIBIT 10... PARTS LIST

EXHIBIT 11... TEST SET UP PHOTO

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GENERAL INFORMATION REQUIRED FOR CERTIFICATION

2.1033 (c) (1) (2) MidLand Radio Corporation. will manufacture

the FCCID: MMAGXT850 GMRS/FRS COMBINATION TRANSCEIVER
in quantity, for use under FCC RULES PART 95A&B.
MidLand Radio Corporation.
5900 Parretta Drive,
Kansas City, MO 64120

2.1033 (c) TECHNICAL DESCRIPTION

2.1033 (c) (3) Instruction book. A draft copy of the instruction
manual is included as EXHIBIT 7.

2.1033 (c) (4) Type of Emission : 10K9F3E
95.631

$B_n = 2M + 2DK$

$M = 3000$

$D = 2.25k$

$B_n = 2(3000) + 2(2450) = 10.9k$

GMRS Authorized Bandwidth : 20.0kHz

.1033 (c) (5) GMRS Frequency Range:
95.621

1. 462.5500	13. 462.7000
2. 462.5625	14. 462.7125
3. 462.5750	15. 462.7250
4. 462.5875	16. 467.5500
5. 462.6000	17. 467.5750
6. 462.6125	18. 467.6000
7. 462.6250	19. 467.6250
8. 462.6375	20. 467.6500
9. 462.6500	21. 467.6750
10. 462.6625	22. 467.7000
11. 462.6750	23. 467.7250
12. 462.6875	

FRS Authorized Bandwidth: 12.5kHz

2.1033(c)(5) FRS Frequency Range:
95.627

1. 462.5625	8. 467.5625
2. 462.5875	9. 467.5875
3. 462.6125	10. 467.6125
4. 462.6375	11. 467.6375
5. 462.6625	12. 467.6625
6. 462.6875	13. 467.6875
7. 462.7125	14. 467.7125 MHz

2.10311c)(6)(7)
2.1046(a)

RF power is measured by the substitution method as
outlined in TIA/EIA - 603. With a Rechargeable battery
voltage of 6 V, and the transmitter properly
adjusted the RF output measures:

power supply : Rechargeable Battery BATT-5R (6VDC) 1

GMRS (HIGH) - 1.6379 Watts

GMRS (LOW) - 0.2780 Watts

FRS - 0.2035 Watts

APPLICANT : Midland Radio Corporation.

FCC ID : MMAGXT850

Model Name : GXT800

REPORT : THRU-702003

Pages: 1 of 6

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2.1033(c)(6)(7) FRS Power Output shall not exceed 0.50 Watts effective

95.639 radiated power. There can be no provisions for

95.649 Increasing the power or varying the power.

2.1033(c)(8) DC Voltages and Current into Final Amplifier:
FINAL AMPLIFIER ONLY

FOR GMRS HIGH POWER SETTING INPUT POWER: (6V)(0.63A)=3.78 Watts

FOR GMRS LOW POWER SETTING INPUT POWER: (6V)(0.16A)=0.96 Watts

FOR FRS POWER SETTING INPUT POWER: (6V)(0.16A)=0.96 Watts

2.1033(c)(9) Tune-up procedure. The tune-up procedure is included as EXHIBIT # 9.

2.1033(c)(10) Complete Circuit Diagrams: The circuit diagram is included as EXHIBIT 6 of this report. The block diagrams are included as EXHIBIT 5 of this report.

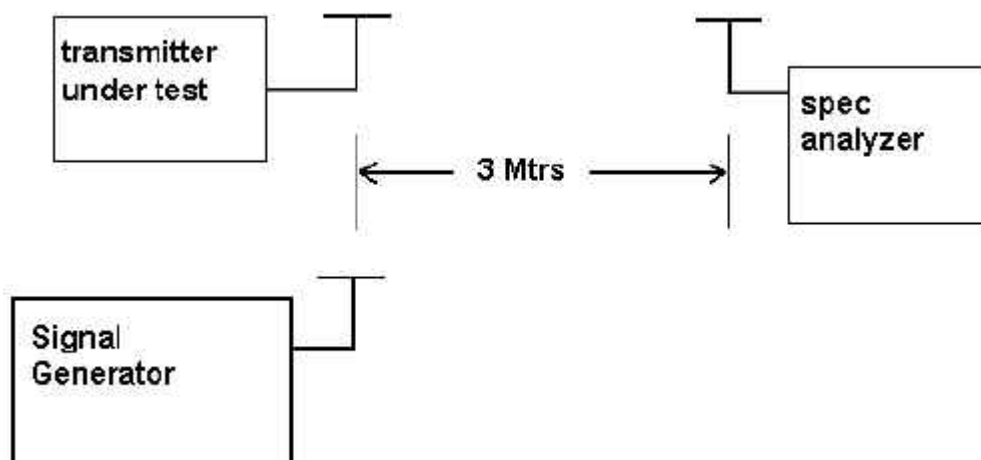
2.1033(c)(11) A photograph or a drawing of the equipment identification label is included as exhibit No. 1.

2.1033(c)(12) Photographs(8"x10") of the equipment of sufficient clarity to reveal equipment construction and layout, including meters, labels for controls, including any view under shields. See exhibits 3-4.

2.1033(c)(13) Digital modulation is not allowed.

2.1033(c)(14) The data required by 2.1046 through 2.1057 is submitted below.

2.1046(a) RF power output. The test procedure used was TIA/EIA-603.



APPLICANT : Midland Radio Corporation.

FCC ID : MMAGXT850

Model Name : GXT800

REPORT : THRU-702003

Pages: 2 of 6

THRU Lab & Engineering.

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2.1053
95.635 (b) (7)

UNWANTED RADIATION

The tabulated Data shows the results of the radiated Field strength emissions test. The spectrum was Scanned from 30 MHz to at least the 10th harmonic of The fundamental.

REQUIREMENTS: GMRS (HIGH): $43 + 10\log(1.6379) = 45.14\text{dB}$

(LOW) : $43 + 10\log(0.2780) = 37.44\text{dB}$

GMRS-High				GMRS-Low			
frequency	dBc	Margin	dBm	frequency	dBc	Margin	dBm
462.5500				462.5500			
925.1000	59.52	14.38	-27.38	925.1000	56.62	19.18	-32.18
1387.6500	65.43	20.29	-33.29	1387.6500	65.53	28.09	-41.09
1850.2000	63.77	18.63	-31.63	1850.2000	62.47	25.03	-38.03
2312.7500	67.35	22.21	-35.21	2312.7500	64.95	27.51	-40.51
2775.3000	69.59	24.45	-37.45	2775.3000	62.49	25.05	-38.05
3237.8500	64.87	19.73	-32.73	3237.8500	58.57	21.13	-34.13
3700.4000	59.63	14.49	-27.49	3700.4000	58.13	20.69	-33.69
4162.9500	68.73	23.59	-36.59	4162.9500	64.73	27.29	-40.29
4625.5000	68.33	23.19	-36.19	4625.5000	62.23	24.79	-37.79

METHOD OF MEASUREMENT : The tabulated data shows the results of the radiated field strength emissions test. The spectrum was scanned from 30 MHz to at least the tenth harmonic of the fundamental. This test was conducted per TIA/EIA STANDARD 603 using the substitution method. Measurements were made at the open field test site of ThruLab & ENGINEERING. located at 477-6, Hager-Ri, Yoju-Up, Yoju-Gun, Kyunggi-Do, 469-803, Korea

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FCC ID : MMAGXT850

Model Name : GXT800

REPORT : THRU-702003

Pages: 3 of 6

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2.1053

UNWANTED RADIATION:

95.635 (b) (7)

The tabulated Data shows the results of the radiated Field strength emissions test. The spectrum was Scanned from 30 MHz to at least the 10th harmonic of The fundamental.

REQUIREMENTS: FRS: $43 + 10\log(0.2035) = 36.09\text{dB}$

frequency	dBc	Margin	dBm
467.5625			
935.1250	55.57	19.48	-32.48
1402.6875	67.41	31.32	-44.32
1870.2500	61.55	25.46	-38.46
2337.8125	60.53	24.44	-37.44
2805.3750	64.18	28.09	-41.09
3272.9375	57.74	21.65	-34.65
3740.5000	59.71	23.62	-36.62
4208.0625	65.04	28.95	-41.95
4675.6250	61.08	25.00	-38.00

METHOD OF MEASUREMENT : The tabulated data shows the results of the radiated field strength emissions test. The spectrum was scanned from 30 MHz to at least the tenth harmonic of the fundamental. This test was conducted per TIA/EIA STANDARD 603 using the substitution method. Measurements were made at the open field test site of ThruLab & ENGINEERING. located at 477-6, Hager-Ri, Yoju-Up, Yoju-Gun, Kyunggi-Do, 469-803, Korea

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FCC ID : MMAGXT850

Model Name : GXT800

REPORT : THRU-702003

Pages: 4 of 6

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TEST Equipment List

No	Description	Manufacturer	Model No.	Serial No.	Due Cal.
1	Test Receiver	Rohde & Schwarz	ESVS10	830489/001	2007.04.23
2	Test Receiver	Rohde & Schwarz	ESHS 10	825832/014	2007.08.25
3	Test Receiver	Rohde & Schwarz	ESVS 10	826008/014	2006.05.24
4	Spectrum Analyzer	Hewlett Packard	8566B	2311A02394	2007.06.17
5	Spectrum Display	Hewlett Packard	85662A	2542A12429	2007.06.17
6	Quasi-peak Adapter	Hewlett Packard	85650A	2521A00887	2007.06.17
7	RF Preselector	Hewlett Packard	85685A	2648A00504	2007.06.17
8	Preamplifier	Hewlett Packard	8449B	3008A00375	2007.04.23
9	Preamplifier	Hewlett Packard	8447F	3113A05367	2007.05.09
10	Preamplifier	Hewlett Packard	8447F	2805A02570	2005.12.12
11	Preamplifier	A.H. Systems	PAM-0118	164	2007.04.01
12	Biconical Antenna	Eaton Corp.	94455-1	0977	2007.04.01
13	Biconical Antenna	EMCO	3104C	9111-2468	2006.06.07
14	Log Periodic Antenna	EMCO	3146	2051	2007.05.11
15	Log Periodic Antenna	EMCO	3146	8901-2320	2006.03.28
16	Horn Antenna	A.H. Systems	SAS-571	414	2007.03.17
17	Horn Antenna	A.H. Systems	SAS-571	781	2006.01.07
18	Loop Antenna	Rohde & Schwarz	HFH2-Z2.335.4711.52	826532/006	2009.01.31
19	Dipole Antenna	Rohde & Schwarz	VHAP	574	2007.12.12
20	Dipole Antenna	Rohde & Schwarz	VHAP	575	2007.12.12
21	Dipole Antenna	Rohde & Schwarz	UHAP	546	2007.12.12
22	Dipole Antenna	Rohde & Schwarz	UHAP	547	2007.12.12

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FCC ID : MMAGXT850

Model Name : GXT800

REPORT : THRU-702003

Pages: 5 of 6

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23	Signal Generator	Rohde & Schwarz	SMS	872165/100	2006.04.23
24	Signal Generator	Rohde & Schwarz	SMX	825459/030	2007.06.15
25	Spectrum Monitor	Rohde & Schwarz	EZM	862304/007	None
26	Panorama Monitor	Rohde & Schwarz	EPN	883707/207	None
27	Spectrum Analyzer	Advantest Corp.	R3261C	61720208	2007.06.05
28	Spectrum Analyzer	Hewlett Packard	8591A	3205A02641	2007.12.12
29	LISN	EMCO	3825/2	9111-1912	2007.12.12
30	LISN	Solar	8012-50-R-24	8379121	2007.04.25
31	LISN	Kyoritsu	KNW-242	8-923-2	2007.05.28
32	Plotter	Hewlett Packard	7475A	2210A02802	None
33	Modulation Analyzer	Hewlett Packard	8901B	3438A05094	2007.05.19
34	Waveform Generator	Hewlett Packard	33120A	US34001190	2007.05.23
35	Audio analyzer	Hewlett Packard	8903B	3011A12915	2007.05.23
36	Universal counter	Hewlett Packard	5343A	3020A02978	2007.05.23
37	Frequency Counter	Tektronic	CMC251	TW52489	2007.04.23
38	Temperature & Humidity Chamber	TABAI EZPEC CORP.	MC711P	112000492	2006.08.27
39	Antenna Mast	EMCO	1070-3	9109-1617	None
40	Turn Table	EMCO	1080-1,2	9203-1762	None
41	Positioning Controller	EMCO	1090	9111-1054	
42	Antenna Power Supply	Rohde & Schwarz	HZ-9	920127	None
43	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	881052	None
44	Coaxial Take-up Reel	EMCO	100817	9109-1684	None

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Pages: 6 of 6