

THRU Lab & Engineering.

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

Kyunggi-Do,469-803, Korea

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THRU

Test Report

Product Name: GMRS/FRS Combination

MODEL NO : GXT881

FCC ID : MMAGXT850

Applicant:

**Midland Radio Corporation.
5900 Parretta Drive,Kansas City,
MO64120**

Date Receipt:02/06/2007

Date Tested: 02/07/2007

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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, MO64120

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

Bn = 2M + 2DK

M = 3000

D = 2.25k

Bn = 2(3000) + 2(2450) = 10.9k

GMRS Authorized Bandwidth : 20.0kHz

2.1033 (c) (5) GMRS Frequency Range: 1. 462.5500 13. 462.7000
95.621 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: 1. 462.5625 8. 467.5625
95.627 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) RF power is measured by the substitution method as
2.1046(a) 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

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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.

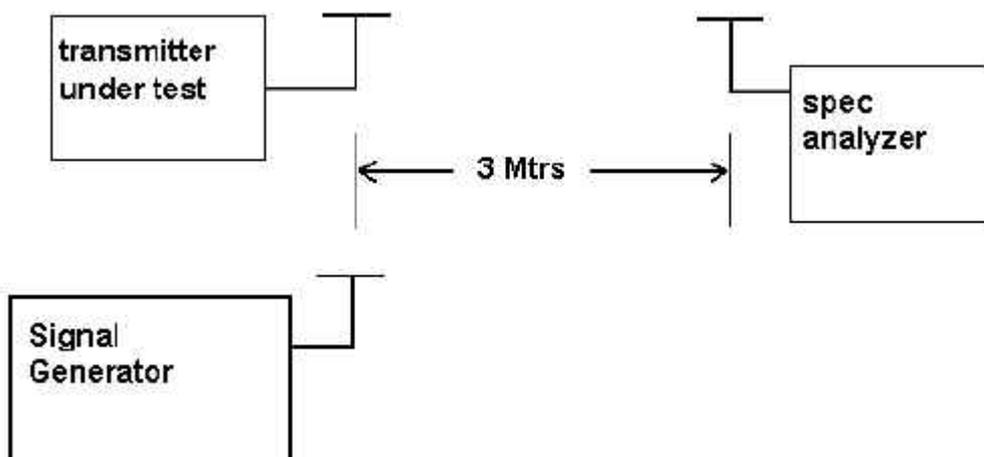
2.1033(c)(11) A photograph or a drawing of the equipment identification label is included as exhibit No. 1.

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.



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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	61.72	16.57	-29.58	925.1000	59.52	22.08	-35.08
1387.6500	66.93	21.79	-34.79	1387.6500	66.13	28.69	-41.69
1850.2000	63.57	18.43	-31.43	1850.2000	63.97	26.53	-39.53
2312.7500	65.55	20.41	-33.41	2312.7500	61.05	23.61	-36.61
2775.3000	65.19	20.05	-33.05	2775.3000	59.69	22.25	-35.25
3237.8500	64.97	19.83	-32.83	3237.8500	61.17	23.73	-36.73
3700.4000	63.03	17.89	-30.89	3700.4000	58.53	21.09	-34.09
4162.9500	69.23	24.09	-37.09	4162.9500	65.53	28.09	-41.09
4625.5000	67.73	22.58	-35.59	4625.5000	62.43	24.99	-37.99

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, Yaju-Up, Yaju-Gun, Kyunggi-Do,469-803, Korea

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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: FRS: $43 + 10\log(0.0.2035) = 36.09\text{dB}$

FRS			
frequency	dBc	Margin	dBm
467.5625	0	0	23.09
935.1250	59.67	23.58	-36.58
1402.6875	66.51	30.42	-43.42
1870.2500	62.45	26.36	-39.36
2337.8125	58.83	22.74	-35.74
2805.3750	54.58	18.49	-31.49
3272.9375	54.94	18.85	-31.85
3740.5000	60.31	24.22	-37.22
4208.0625	65.24	29.15	-42.15
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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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	Preamplifer	Hewlett Packard	8449B	3008A00375	2007.04.23
9	Preamplifer	Hewlett Packard	8447F	3113A05367	2007.05.09
10	Preamplifer	Hewlett Packard	8447F	2805A02570	2005.12.12
11	Preamplifer	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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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	Spctrum 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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