

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 : GXT700

FCC ID : MMAGXT750

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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GENERAL INFORMATION REQUIRED FOR CERTIFICATION

- 2.1033 (c) (1) (2) Midland Radio Corporation. will manufacture
the FCCID: MMAGXT750 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
 $B_n = 2M + 2DK$
 $M = 3000$
 $D = 2.25k$
 $B_n = 2(3000) + 2(2450) = 10.9k$
GMRS Authorized Bandwidth : 20.0kHz
- 2.1033 (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) 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) - 1.6369 Watts
GMRS (LOW) - 0.3837 Watts
FRS - 0.2447 Watts

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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: GMRS (HIGH): $43 + 10\log(1.6369) = 45.14\text{dB}$

(LOW) : $43 + 10\log(0.3837) = 38.84\text{dB}$

GMRS-High				GMRS-Low			
frequency	dBc	Margin	dBm	frequency	dBc	Margin	dBm
462.5500				462.5500			
925.1000	48.52	3.38	-16.38	925.1000	44.22	5.38	-18.38
1387.6500	67.13	21.99	-34.99	1387.6500	70.53	31.69	-44.69
1850.2000	68.47	23.33	-36.33	1850.2000	68.17	29.33	-42.33
2312.7500	67.55	22.41	-35.41	2312.7500	61.85	23.01	-36.01
2775.3000	65.49	20.35	-33.35	2775.3000	63.89	25.05	-38.05
3237.8500	63.67	18.53	-31.53	3237.8500	56.57	17.73	-30.73
3700.4000	68.33	23.19	-36.19	3700.4000	62.13	23.29	-36.29
4162.9500	68.73	23.59	-36.59	4162.9500	65.73	26.89	-39.89
4625.5000	70.03	24.89	-37.89	4625.5000	62.33	23.49	-36.49

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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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: $43 + 10\log(0.2447) = 36.89\text{dB}$

FRS			
frequency	dBc	Margin	dBm
467.5625			
935.1250	41.47	4.58	-17.58
1402.6875	66.01	29.12	-42.12
1870.2500	64.85	27.96	-40.96
2337.8125	60.33	23.44	-36.44
2805.3750	60.28	23.39	-36.39
3272.9375	53.54	16.65	-29.65
3740.5000	64.11	27.22	-40.22
4208.0625	64.84	27.95	-40.95
4675.6250	62.58	25.70	-38.70

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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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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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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