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APPLICANT: VICTORY CONCEPT IND. LTD.

FCC ID: OJ7904FRS0401

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GENERAL INFORMATION REQUIRED  
FOR TYPE ACCEPTANCE

2.1033(c)(1)(2) VICTORY CONCEPT IND. LTD. will manufacture the FCCID: OJ7904FRS0401 FAMILY RADIO SERVICES 4 CHANNEL TRANSCEIVER in quantity, for use under FCC RULES PART 95. The UUT is a PTT Radio with a maximum duty cycle of 50%.

VICTORY CONCEPT IND. LTD.  
RM. 1314-1315, KWONG SANG HONG CENTRE  
151-153 HOI BUN ROAD, KWUN TONG  
KOWLOON HONG KONG

2.1033 (c) TECHNICAL DESCRIPTION

2.1033(c)(3) Instruction book. A draft copy of the instruction manual is included as EXHIBIT 6A-6N.

2.1033(c) (4) Type of Emission: 10K6F3E  
95.631

Bn = 2M + 2DK  
M = 3000  
D = 2.0K  
Bn = 2(3.0)+2(2.3) = 10.6K

Authorized Bandwidth 12.5KHz

2.1033(c)(5) Frequency Range: 1. 467.5625  
95.627 2. 467.6125  
3. 467.6625  
4. 467.7125 MHz

2.1033(c)(6)(7) Power Output shall not exceed 0.500Watts effective  
95.639 radiated power. There can be no provisions for  
95.649 increasing the power or varing the power. The Maximum  
Output Power Rating: 400 milliWatts  
effective radiated power.

95.647 The antenna is an intergral part to the unit, it cannot  
be removed without rendering the unit inoperative. In  
order to remove the antenna the case must unscrewed,  
then the PCB assemblies must be removed then the  
antenna can be removed.

2.1033(c)(8) DC Voltages and Current into Final Amplifier:  
FINAL AMPLIFIER ONLY  
Vce = 6.0 Volts DC Ice = 0.144.  
Pin = .86 Watts

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2.1033(c)(9) Tune-up procedure. The tune-up procedure is included as EXHIBIT 8A-8B.

2.1033(c)(10) Complete Circuit Diagrams: The circuit diagram is included as EXHIBIT 6A-6B of this report. The block diagram is 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. 2.

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 EXHIBIT 3A-3D.

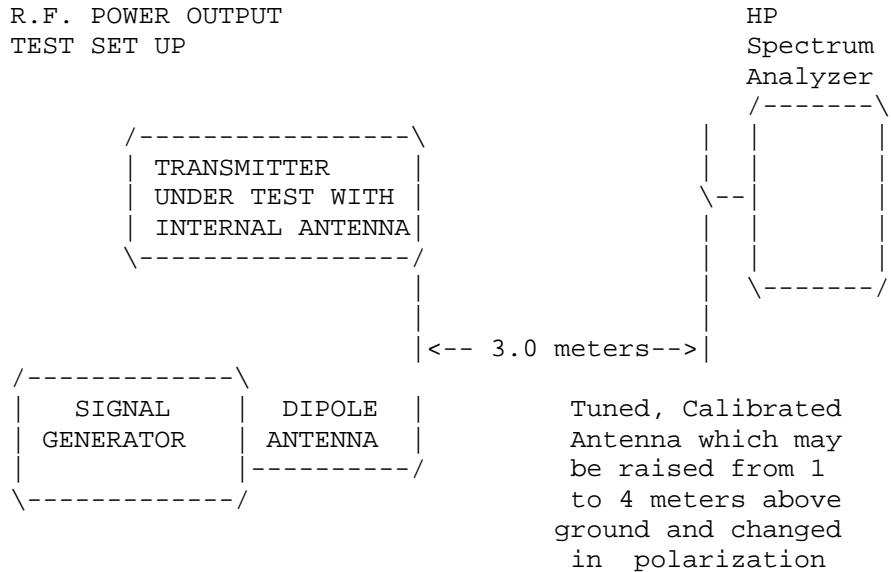
2.1033(c)(13) Digital modulation is not allowed.

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

2.1046(a) RF power output.

95.639 RF power is measured by measuring the radiated power at 3 meters and then replacing the transmitter with a signal generator to determine the effective radiated power. The ERP shall not exceed 0.500 Watts.

MEASURED POWER OUTPUT = 400 milliWatts ERP



Equipment placed 80cm above ground  
on a rotatable platform.

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2.1047(a)(b) Modulation characteristics:

AUDIO\_FREQUENCY\_RESPONSE

The audio frequency response was measured in accordance with TIA/EIA Specification 603. The audio frequency response curve is shown in exhibit 10. The audio signal was fed into a dummy microphone circuit and into the microphone connector. The input required to produce 30 percent modulation level was measured.

2.1047(b) Audio\_input\_versus\_modulation

The audio input level needed for a particular percentage of modulation was measured in accordance with TIA/EIA Specification 603. The audio input curves versus modulation are shown in exhibits 11A - 11C. Curves are provided for audio input frequencies of 300, 1000, and 3000 Hz.

95.637(b) Post Limiter Filter The filter must be between the modulation limiter and the modulated stage. At any frequency between 3 & 20KHz the filter must have an attenuation of  $60\log(f/3)$  greater than the attenuation at 1KHz. See the plot; exhibit 12.

2.989(c) EMISSION BANDWIDTH:

95.633(c)

Data in the plots shows that the sidebands from greater than 50% to 100% of the authorized bandwidth must be attenuated by at least 25dB and from 100 to 250% the sidebands must be attenuated by at least 35dB. Beyond 250% the sidebands must be attenuated by at least  $43+\log_{10}(TP)$ . The transmitter was modulated with 2500 Hz, adjusted for 50% modulation plus 16 dB. The spectrum analyzer was set with the unmodulated carrier at the top of the screen. The test procedure diagram follows. See the occupied bandwidth plots; exhibits 13A-13B.

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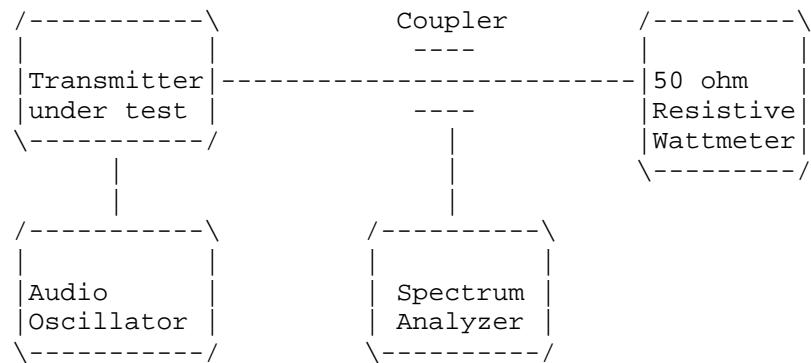
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Radiotelephone transmitter with modulation limiter.

Test procedure diagram

OCCUPIED BANDWIDTH MEASUREMENT



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2.1051 Not Applicable, no antenna terminal allowed.

2.1053  
95.635(b)(4) UNWANTED\_RADIATION:

REQUIREMENTS: Emissions must be attenuated by at least the following below the output of the transmitter.

$$43 + 10\log(\text{TP}) = 43 + 10\log(0.40) = 39.02 \text{ dB}$$

## TEST DATA:

Emission Frequency	Meter Reading	Ant. Polarity	Coax Loss	Correction Factor	Field Strength	Margin
MHz	dBuv		dB	dB	dBuv/m	dB
467.5	102.9	V	3.10	18.70	124.70	0.00
935.0	37.4	V	4.50	25.20	67.10	18.58
1402.5	31.2	V	3.70	26.49	61.39	24.29
1870.0	17.6	V	3.70	28.00	49.30	36.38
2337.5	5.5	V	3.70	29.25	34.75	50.93

MARGIN = (Field strength of Fund - 39.02dB) - FS OF EMISSION

METHOD OF MEASUREMENT: The procedure used was C63.4-1992 for intentional radiators. The spectrum was scanned from 30 to at least the tenth harmonic of the fundamental using a HP model 8566B spectrum analyzer, and an appropriate antenna - see test equipment list. Measurements were made at the open field test site of TIMCO ENGINEERING INC. located at 849 N.W. State Road 45, Newberry, FL 32669.

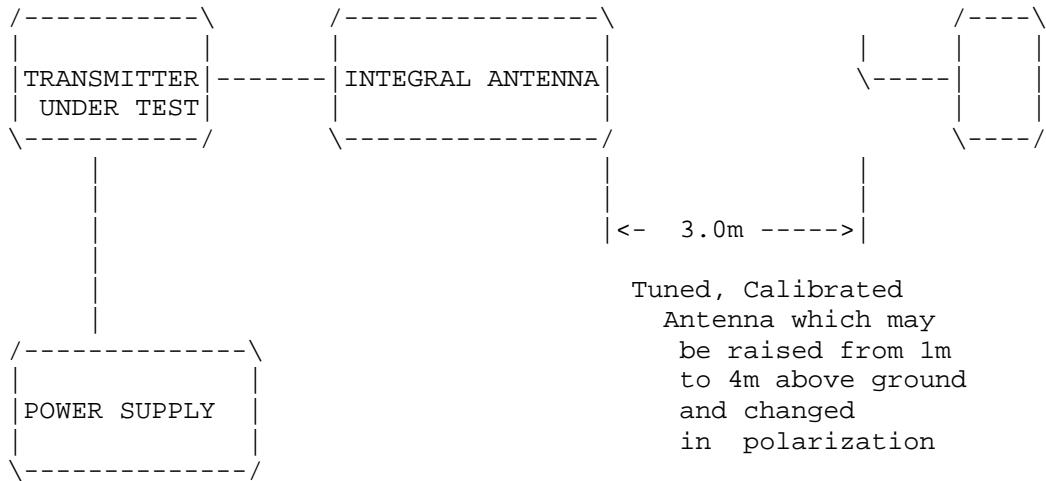
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2.1053  
95.635

UNWANTED\_RADIATION:

Method of Measuring Radiated Spurious Emissions

Hewlett Packard  
Spectrum  
Analyzer  
HP8566B



Equipment placed 80cm above ground on a rotatable platform.

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Temperature and voltage tests were performed to verify that the frequency remains within the 0.00025%, 2.5 ppm specification limit. The test was conducted as follows: The transmitter was placed in the temperature chamber at 25 degrees C and allowed to stabilize for one hour. The transmitter was keyed ON for one minute during which four frequency readings were recorded at 15 second intervals. The worse case number was taken for temperature plotting. The assigned channel frequency was considered to be the reference frequency. The temperature was then reduced to -30 degrees C after which the transmitter was again allowed to stabilize for one hour. The transmitter was keyed ON for one minute, and again frequency readings were noted at 15 second intervals. The worst case number was recorded for temperature plotting. This procedure was repeated in 10 degree increments up to + 50 degrees C.

Readings were also taken at plus and minus 15% of the battery voltage of 6 VDC.

#### MEASUREMENT DATA:

Assigned Frequency (Ref. Frequency): 467.562 500

TEMPERATURE_C	FREQUENCY_MHz	PPM
REFERENCE_____	467.562 500	0.00
-20_____	467.563 352	1.82
-10_____	467.562 870	0.79
0_____	467.563 323	1.76
+10_____	467.563 406	1.94
+20_____	467.563 026	1.13
+30_____	467.562 557	0.12
+40_____	467.562 090	-0.88
+50_____	467.561 950	-1.18
BATT. End-Point 5.1V/dc	467.562 799	0.64
BATT. End-Point 6.9V/dc	467.562 829	0.70

RESULTS OF MEASUREMENTS: The maximum frequency variation over the temperature range was -1.18 to +1.94 ppm. The maximum frequency variation with voltage was +0.70 ppm.

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TEST EQUIPMENT LIST

1.  Spectrum Analyzer: HP 8566B-Opt 462, S/N 3138A07786, w/  
preselector HP 85685A, S/N 3221A01400, Quasi-Peak Adapter  
HP 85650A, S/N 3303A01690 & Preamplifier HP 8449B-OPT H02,  
S/N 3008A00372 Cal. 1/19/01
2.  Biconnical Antenna: Eaton Model 94455-1, S/N 1057, Cal 3/15/00
3.  Biconnical Antenna: Electro-Metrics Model BIA-25, S/N 1171  
Cal. 3/16/01
4.  Log-Periodic Antenna: Electro-Metrics Model EM-6950, S/N 632  
Cal. 3/15/00
5.  Log-Periodic Antenna: Electro-Metrics Model LPA-30, S/N 409  
Cal. 3/15/00
6.  Double-Ridged Horn Antenna: Electro-Metrics Model RGA-180,  
1-18 GHz, S/N 2319
7.  18-26.3GHz Systron Donner Standard Gain Horn #DBE-520-20
8.  Horn 40-60GHz: ATM Part #19-443-6R
9.  Line Impedance Stabilization Network: Electro-Metrics Model  
ANS-25/2, S/N 2604 Cal. 2/9/00
10.  Temperature Chamber: Tenney Engineering Model TTRC, S/N 11717-7  
Cal. 1/21/01
11.  Frequency Counter: HP Model 5385A, S/N 3242A07460 Cal 11/20/00
12.  Peak Power Meter: HP Model 8900C, S/N 2131A00545, Cal. 1/26/01
13.  Open Area Test Site #1-3meters Cal. 12/22/99
14.  Signal Generator: HP 8640B, S/N 2308A21464 Cal. 11/21/00
15.  Signal Generator: HP 8614A, S/N 2015A07428
16.  Passive Loop Antenna: EMCO Model 6512, 9KHz to 30MHz, S/N  
9706-1211 Cal. 6/10/00
17.  Dipole Antenna Kit: Electro-Metrics Model TDA-30/1-4, S/N 153  
Cal. 11/24/00
18.  AC Voltmeter: HP Model 400FL, S/N 2213A14499 Cal. 2/1/01
19.  Digital Multimeter: Fluke Model 8012A, S/N 4810047 Cal 9/21/99
20.  Digital Multimeter: Fluke Model 77, S/N 43850817 Cal 11/16/00
21.  Oscilloscope: Tektronix Model 2230, S/N 300572 Cal 2/1/01

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