

ATTACHMENT K – OPERATIONAL DESCRIPTION

1. GENERAL

1.1 GENERAL

This equipment, FR1538-2ch is called 2 way portable handheld radios. The frequency range is 462~467MHz, UHF operating Channels for international 2 way portable radios.

1.2 CHARACTERISTIC

- a) All active device in this radio is composed of semiconductor and high density IC.
- b) To design this radio in compact and weight approximately 134g including battery.
- c) CPU of this equipment is HD404889 from HITACH.
- d) It's power can operate by use of alkaline 4 cell(1.5V AAA) battery

1.3 COMPOSITION

This radio is composed of following.

- a) Transmitter(W/Antenna)
- b) Belt clip

2. SPECIFICATION

2.1 GENERAL SPECIFICATIONS

- a) Frequency Range : 462.5625 ~ 467.7125 MHz
- b) Output Impedance : 50 Ω Unbalanced
- c) Modulation Type : 8KOF3E
- d) Communication Mode : Half duplex
- e) Channel Capacity : 14 channel
- f) Channel spacing : 12.5 KHz
- g) Power : 6.0V(alkaline)
- h) Battery Life : ALCA.1000mAh >30 hours (Tx5%, Rx5%, Stand-by 90%)
- i) Operating Temperature : -20°C ~ +60°C
- j) Dimension : 99(H)x 51.7(W)x 24.4(D)mm
- k) Weight : 134g(with Battery)

2.2 ELECTRICAL SPECIFICATION

a) TRANSMITTER

- 1) Output power : Max. 500 mW
- 2) Frequency Stability : ± 2.5 ppm(-20°C ~ +60°C)
- 3) Modulation Method : FM
- 4) Oscillation Method : PLL SYNTHESIZER
- 5) Max. Frequency Deviation : $< \pm 2.5$ KHz (with tone)
- 6) Cooling Method : air-cooling Method
- 7) Spurious Emission : < -60 dB
- 8) FM Hum/Noise : > -40 dB(1kHz 60% modulation)
- 9) Distortion : $< 5\%$ (1kHz 60% modulation)
- 10) Tx Audio Response : 6dB /OCT ± 3 dB PRE-EMPHASIS(300Hz ~ 2.5kHz)

b) RECEIVER

- 1) Receive Method : Double Super Heterodyne
- 2) Receive Sensitivity : < 0.28 uV(12dB SINAD) : > -118 dBm
- 3) Squelch Sensitivity : -120dBm ~ -130dBm(Audio On/Off Point)
- 4) Bandwidth : > 8 KHz(6dB ATT point)
- 5) Selectivity : < -60 dB(12.5kHz)
- 6) Local Frequency Stability : ± 2.5 ppm(-20°C ~ +60°C)
- 7) Spurious Response : > 45 dB
- 8) Audio output : 200mW(Internal 8 Ω load THD 10%) Ext 100mW
- 9) Distortion : $< 5\%$ (1kHz 60% Modulation)
- 10) RX Audio Response : -6dB/OCT +1/-10dB DE-EMPHASIS(300Hz ~ 2.5kHz)
- 11) S/N Ratio : < 40 dB(1kHz 60% modulation)

12) IF : 1'st IF = 21.7MHz

2'nd IF = 450kHz

13) Local Frequency : 1st Local Frequency = $f_c - 21.7\text{MHz}$

2nd Local Frequency = 21.25MHz