Operational description of PT-FM-007

This Unit is a Wide-Band-FM modulator, with four selectable output frequencies (88.3MHz, 88.5MHz, 88.7MHz, 88.9MHz) which is selected by four-position dip switch and install in car for listening the music (such as MP3) or others via car's radio.

Operating process:

1. Connect audio signal (may be com from MP3) to the audio input port of PT-FM-007.
2. Select the desired frequency channel via dip switch. Power on the PT-FM-007.
3. PT-FM-007 will radiate the RF signal (WFM modulated signal) to the air in selected frequency channel.
4. Tune the frequency of the car radio to the desired frequency. Car radio will receive the audio signal as the signal send to PT-FM-007 if car's radio select the same frequency channel.

Power Requirement:

This unit is operated with DC 3V (2AAA UM-4 size battery). This 3V voltage is step up to 5V DC for the operation of main IC chip (ROHM BH1417F).

Main Chip

1:. This unit uses a ROHM BH1417F(U2) with 7.6MHz crystal frequency simple configuration. The BH1417F is a FM stereo transmitter IC that transmits stereo composite signals and a FM transmitter for broadcasting a FM signal on the air. The FM output frequency is controlled by 4 digital control lines, pin 15,16,17,18. (In this case, Pin 15,16,17 is used.)

O/P Frequency	88.3MHz	88.5MHz	88.7MHz	88.9MHz
Pin 15	H	L	H	L
Pin 16	H	L	L	H
Pin 17	L	H	H	H
Pin 18	L	L	L	L

The FM output pin is pin 11. FM signal pass through a SAW Filter SF2 (GFWB3 SE) to reduce the harmonic noise, then a class A amplifier to drive a internal antenna which is printed on P.C.B.
The stereo modulator generates a composite signal which consists of the MAIN, SUB, and pilot signal from a internal 38KHz oscillator.
The FM transmitter radiates FM wave on the air by modulating the carrier signal with a composite signal. The transmission frequency is stable because it has a PLL system FM transmitter circuit. Frequency is set for North America.