



HT-RPT FM/AM Remote Control Repeater Module

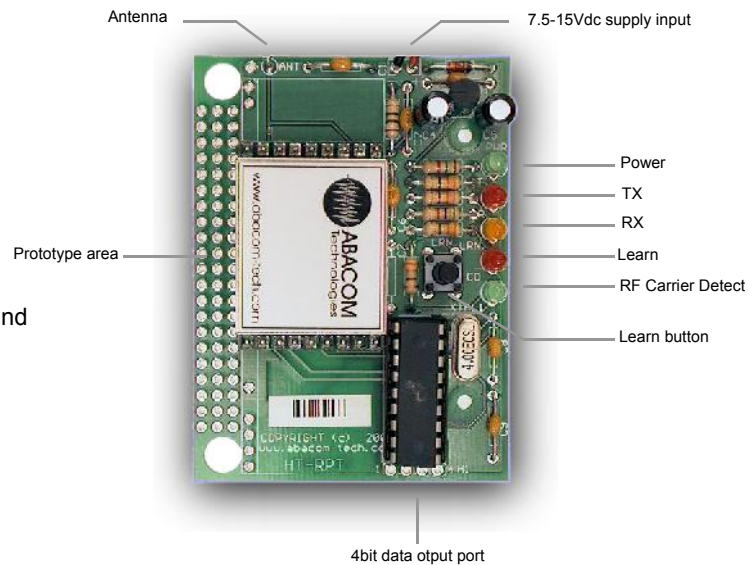
The HT-RPT RF remote control repeater is designed to extend the range of ABACOM Technologies RF remote control transmitters and receivers. Automatic address configuration is performed at the press of a button. The HT-RPT automatically learns the 8 bit address from the originating transmitter and retains the learned address in non volatile memory. Status LED's indicate the learn process, receive and transmit status, power supply and RF carrier presence. Four data bits of the 12 bit transmitted word (comprising of 8 address bits and 4 data/address bits) are latched on 4 external data lines, and may be used for user expansion.

A user prototyping area is available on the PCB to accommodate custom functions.

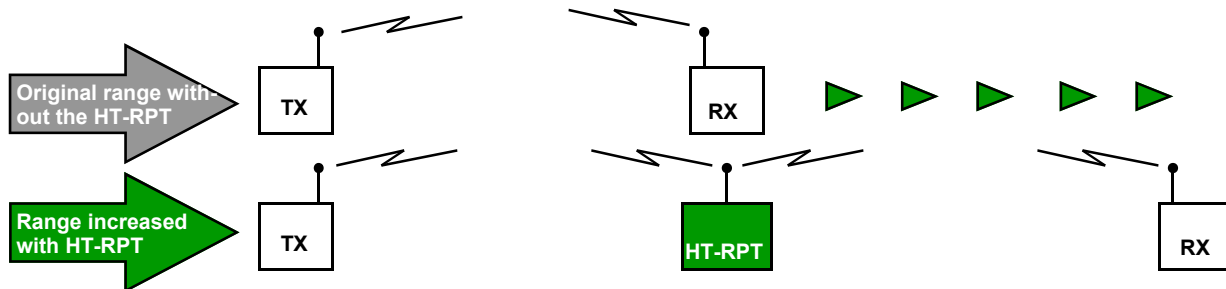
The HT-RPT is suitable for interfacing to third party RF remote controls that are designed around the Holtek HT12E data encoders and HT12D, HT12F data decoders and operating on the same frequency.

Features

- FM modulation
- 433.92MHz versions
- Automatic address learning
- Emulates the Holtek protocol
- 7.5-15Vdc supply range
- 30mA typical current draw
- LED status indicators
- 4bit Data output port
- Compatible with HT12E and HT12D and HT12F based RF remote controls
- Multiple repeaters may be used
- Small size: 2" x 2.7" x 0.5"
- Packaged version available



Before operation, the HT-RPT must learn the address of the remote control transmitter and receiver system. After power is applied, the learn button is pressed. With the learn button pressed the originating transmitter is keyed and the learn process takes place. The LEARN LED turns ON to indicate successful learning process and the HT-RPT remote control repeater is ready for normal operation.



HT-RPT Operation

When power is applied to the HT-RPT, the RX LED is ON. The RX LED indicates that the HT-RPT is in receive mode and is ready to receive data from the remote transmitter. The HT-RPT will only accept the data from the remote transmitter after it has been taken through the simple learning process as follows:

- Press and hold the LEARN button
- Key the transmitter; the LEARN LED begins to flash , indicating that the LEARN process is in operation. In a short time the LED will go OFF, indicating successful completion of the learn process
- Release the Learn button and the transmitter button
- The HT-RPT is now ready to operate

Once the remote control system address has been learned, the HT-RPT will be able to receive and forward the data from the originating transmitter. When the originating remote transmitter is keyed, the HT-RPT will receive and buffer the data sent by the transmitter. When the transmitter has stopped transmitting, the repeater will then retransmit the buffered data for the same duration as the original signal (up to a maximum of duration 5 seconds). If the originating remote control transmits continuously for a period longer than 5 seconds, this will cause a buffer overrun on the HT-RPT and the transmissions received by the HT-RPT after the 5 second period will be ignored.

When the HT-RPT is re-transmitting (forwarding), the RX LED goes OFF and the TX LED will be ON. When the re-transmission is complete, the TX LED goes OFF and the RX LED goes on again indicating that the repeater is ready to repeat the next transmission received.

The CD LED (RF carrier detection) operates on specific HT-RPT -FM models and serves to indicate the presence of the RF carrier signal of the remote transmitter. Depending on the model supplied, this function may not be present.

Positioning

First ensure that the system's final receiver is out of range of the transmitter. (which it probably will already be, otherwise there would be no need for the HT-RPT repeater!). This is important, otherwise the receiver will respond to the signal received from the transmitter, and then respond to the signal received from the HT-RPT repeater.

Locate the HT-RPT somewhere in between the originating transmitter and final receiver. For maximum range, the HT-RPT should be located at a point where beyond which it can no longer receive the transmitters signal. Similarly, the receiver would be located at the limit point beyond which it no longer receives the repeated signal. Open field range of up to 1000ft can be achieved.

Data Breakout Port

The HT-RPT has a data port which latches the four data bits of the most recent transmission. This data will remain the same for systems using single pushbutton transmitters, but will change depending on the button pressed on multi-button transmitters such as the 2, 3, 4 and 16 button remote transmitters.

The data port may be used for user expansion of the HT-RPT modules.

Packaged version:

The HT-RPT remote control extender is available mounted in an enclosure as pictured below. The unit may be powered via either a 9V battery or via an external 7.5-12VDC power supply connected to the socket provided on the rear panel. The switched DC socket accepts 2.1mm barrel type plugs with centre positive polarity and will disconnect the battery power when plugging in an external power supply.



The top cover is easily removed to perform the transmitter pairing (learning) function and to replace the battery.