

6160RF FUNCTIONAL DESCRIPTION

The 6150RF unit is a combination unit that contains all the functions of an alphanumeric keypad and a transceiver on one board. It incorporates the same functionality of a 6160 keypad; therefore it may be used on any Ademco control panel that supports this type of keypad. It supports wireless key transmitters in encrypted and non-encrypted modes. It also supports wireless keypads, such as 5827 and 5828V.

RF CIRCUIT DESCRIPTION

The 6160RF wireless keypad contains several functions, such as keypad, panel interface, and LCD display, please refer to the Block Diagram (EXHIBIT 2-2), and page 7 (RF CKT Page) of the Schematic (EXHIBIT 2-3). The RF section operates at 345 Mhz, and functions as follows:

The received RF signal enters the receiver through ANT1 & ANT2, of the switched diversity antenna system. The antennas are switched by SW2 under the control of the RF MICRO U16 , SAW FILTER FL3 improves the selectivity of the receiver, while LNA U74 improves the sensitivity. All other receive functions are handled by the SINGLE CHIP RECEIVER U19, including the phase locked L.O., who's FDE is Y3. The RX Data is fed directly into the RF MICRO for processing.

The transmitted RF signal is generated by a single phase locked chip U12 who's FDE is Y2. U12 is also amplitude modulated by the RF MICRO. CR19 etc., provides power level adjustment, and U13 acts as the PA. SW3 is the T/R SWITCH, sending the transmitted signal through FL3 for improved emissions, and then on to the diversity antenna system.

6160RF1 DUTY CYCLE CALCULATIONS

The 6160RF1 Keypad/Transceiver transmits TM2 messages only.

TM2 TRANSMISSION

Transmit data rate is 4.0 K-bit/sec. Each bit has a nominal duration of 250 usec.

The data output is Manchester phase-encoded, which has an inherent 50% duty cycle.

TM2 message consists of 120 bits, so message duration is 30.0 msec.

Each message is transmitted six times. Inter-message gap is 100msec (start to start)

Therefore:

Duty Cycle = $120 \text{ bits} \times 50\% \times 250 \text{ usec} / 100 \text{ msec} = 15\%$

6160RF1 TIMING DIAGRAM

