1.0   DESCRIPTION

The DXS-14 is a one channel keypad transceiver operating at a frequency of 433.92 MHz. The DXS-14 is intended for use in security applications for protection of homes and dwelling units.   The transmitter may be used with AlarmForce consoles. Each transmitter comes from the factory sequentially coded. Power is supplied by four 1.5 VDC AA batteries configured as two 3.0 Volt batteries in parallel. Battery life is estimated at a minimum of 3 years under typical conditions.

2.0   OPERATION

The DXS14 is typically activated by pressing a key on the 20 button keypad.   . A tamper switch is provided if the case top is removed.

XLP Microprocessor:

The XLP microprocessor (U1) controls all functions of the transceiver. The power supply is normially 3.0 VDC. As the batteries get weaker a SMPS U2 (Switch Mode Power Supply) is activated and will keep the system operating to a minimum of 1.8 VDC.

Piezo annunciator U3 is drivern by oscillator U4C & U4D. The piezo signals each keystroke and will provide an emergency signal if the keypad goes into an alarm condition.

RF Transceiver:

Silicon Systems microprocessor/synthesizer U1 (Si10001) receives and transmits at 433.92 MHz. It has a 30 MHz reference crystal Y1 that provides the clock for an internally programmed frequency synthesizer. This IC receives, transmits and decodes the FM modulated serial data stream.

Bi-directional RF switch U2 switches between transmit and receive functions for the antenna E_ANT2. In the transmit mode E_ANT2 output is filtered via lumped L/C networks LH, LO and LM. In receive mode, FL1 Is a bandpass filter that rejects spurious emissions outside of the 433.92 MHz receiver range.

The transmitter is supervised. It will send a status transmission about every 1.2 hours to show the current status of the battery and contact switches. Any automatic or manually activated transmission will reset the internal status timer and the transmitter will wait another 1.2 hours to send the next status transmission.

Due to battery limitations, the microprocessor IC has an internal clock that limits manually activated transmissions, even if the switch is held down, to no longer than 0.1 seconds. Only after the switch is released and then pressed again may another transmission cycle begin.

On a brief momentary pressing of the keypad or tamper contacts, the microprocessor will power up and complete RF data message. This transmission will take approximately 100 mSec. FCC Rules 15.231 (a)(1) allows no longer than 5 seconds upon the release of a manually activated transmitter push button. The receiver will wait for an acknowledgement of the transmissions, if none is received then the signal will be sent again. Up to a maximum of 5 times.

XLP Microprocessor (U1) contains a voltage comparator port that will sense a low battery if the battery is below 1.8 VDC.

XLP microprocessor (U1) contains a RTC (Real Time Clock) that runs on a low power 32.768 KHz crystal oscillator. This 32.768 KHz crystal is only used tio keep track of day and date. Data communications and keyboard functions are referenced to an external 30 MHz crystal.

3.0   SPECIFICATIONS

Product Identification:	DXS-14 keypad transmitter.
Encoding Format:	GFSK FM modulated code for AlarmForce. Gaussian Frequency Shift Keyed format.
Encoding Technique:	Each transmitter is programmed with the sequential serial transmitter ID number.
Number of Channels:	One
RF Carrier Frequency:	433.92 $\pm$44 KHz
Power Requirements:	3.0 VDC, 4 – 1.5 VDC AA batteries, 2 each in parallel.
Visual Indicator:	LED.
Operating Temperature:	0$°$ C to +70$°$ C. Tested –20$°$ C to 70$°$ C.
Current Consumption:	10 uA standby, 30 mA transmitting, 20 mA receiver on standby

All specifications are nominal unless specified.