Technical Description – 43-940

This model is a caller ID decoder unit with transmit capability. It receives standard Bellcore Type I caller ID data and transmit the same at carrier frequency of 418Mhz to any receiver (43-943) pinched within around 100ft.

The R14 and the VRD1 300V varistor form the protection circuit for the tip and ring.

The FSK data is decoded by IC1 EM78811 (Vig C23, C24, R18, R19). After interpreting the data, the CPU will send the data to the receiver via radio frequency (RF) means. The DATAOUT pin is normal high. When it turns to low, the 418 Mhz oscillator formed by X1, R1, Q1, R2, C1, C3, L1 will send out the carrier frequency.

C20, C21, D1-D4, R15, R17 forms the ring voltage detector.

X1 is a SAW (Surface Acoustic Wave) type resonator.

The IC3 stores the 16-bit security code for addressing the receiver(s).

Transmit pattern:
The bit rate is 1200 bits per second. The data byte is in one start bit, no parity bit, 8 data bit and one stop bit format, i.e. 10 bits time or 8.33ms per one data byte transmission.

The transmitter will sends out a preamble signal (50% duty cycle) for 400ms, for waking up the receiver(s) within coverage.

Then maximum 60 bytes (500ms) of data string will follow. Thus the total duration of the data packet is 0.9s.

For any byte transmission (10 bits, 8.33ms), the total number of zero equals the total number of ones, i.e. 5 ones and 5 zeros. This redundancy is for ensuring 50% duty cycle for any 8.33ms interval.

Thus for any 100ms interval, the effective duty cycle is also 50%.

The transmitter will not automatically send out periodic transmission within 30 seconds.

The transmitter will send periodic transmission every hour, which is to confirm receiver(s) coverage. No data transmission takes place in this type of transmission.