1 <u>RWT90V2</u> OPERATIONAL DESCRIPTION

The NOVA communication link is a one-way RF link, which consists of the receiver, a set of detectors with integrated transmitters and push-button transmitters.

The **<u>RWT90V2</u>** is a PIR detector which provides alarm and supervisory codes transmission to a base station by RF link at 318 MHz. The integral antenna is on the print of the module (patch antenna). The device is powered by a single internal 3 V lithium battery.

Modulation type is OOK (on/off keying). Bit rate is 666 bps (each bit is 1.5msec). The frame consists of 39 bits. Frame length is 58.5 msec. Bi-phase mark signaling is used.

The transmitters send events and status (every hour) messages only. In the rest of the time they are OFF (sleep or shutdown mode), in order to save battery life.

The receiver is always ON, waiting and listening for new messages. It works on power line and has backup batteries for power failure situation.

There are 2 kinds of messages: Learn (Write) mode and Normal mode. In Learn mode, the receiver "learns" about the transmitter, by getting the ID (or address code) and a set of bits, which specify the transmitter's functions. In Normal mode, the transmission consists of the transmitting transmitter ID code and a set of bits containing information about the transmitter status. Preamble & start bits are also sent with each transmission in both modes of operation.

RWT90V2 sends Learn mode messages only when pressing the tamper for 3 sec. In any event report they send 8 identical Normal mode frames separated by 140 msec intervals, in hourly status report – 4 the same frames.

2 NORMAL MODE MESSAGES

Normal Mode messages are sent every hour (indicating transmitter status) and whenever an event occurs. 8 identical frames are sent. Each transmission consists of 8 frames separated by intervals of 140 msec.

NAME	FIELD	DESCRIPTION	RANGE
Preamble	1-6	6 bits for synchronization	"000000"
Start	7	1 start bit	"1"
Address (ID)	8-31	24 address bits provide more than 16,000,000 possible different addresses. MSB bit first.	24 x "0" to 24 x "1"
Mode	32	1 bit for selecting Learn or Normal mode.	"0" for Normal mode
Status	33-39	field 33: alarm bit field 34: tamper bit field 35: low battery bit fields 36-39: not used	"1"=alarm,"0"=no alarm "1"=tamper,"0"=no tamper "1"=low bat,"0"=bat ok.

3 LEARN (WRITE) MODE MESSAGES

Learn Mode messages are sent when tamper is pressed for 3sec

NAME	FIELD	DESCRIPTION	RANGE
Preamble	1-6	6 bits for synchronization	"000000"
Start	7	1 start bit	"1"
Address (ID)	8-31	24 address bits provide more than 16,000,000 possible different addresses. MSB bit first.	24 x "0" to 24 x "1"
Mode	32	1 bit for selecting Learn or Normal mode.	"1" for Learn mode
Definition of transmitter functionality	33-39	field 33: restore bit field 34: not used	Only T30 and T71 send restore bit as "1".