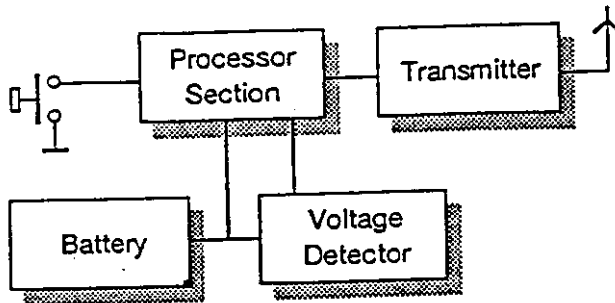


Exhibit C

U971 miniLARM Transmitter - Circuit Description

General



U971 is a wrist watch size alarm transmitter used together with the U981 miniLARM receiver or in a telePROTECT 900 radio alarm system. Alarms are initiated by a pushbutton that has a programmable double function. The type of alarm and pushbutton function are programmed in an internal EEPROM. The transmitter can be fitted to either a bracelet or necklace.

Alarm code is transmitted in the 425-475 MHz UHF range. The code format is fully compatible with the telePROTECT 900 alarm system.

Alarms are initiated by pressing the pushbutton. Different types of alarms can be transmitted depending on whether the button is pressed once or twice. The function of the alarm pushbutton is identical to U970/U970I.

*The unit consists of the following blocks:
(Refer to drawing 10566)*

Processor Section

IC01 is a mask programmed microprocessor with built-in EEPROM. It controls the transmitter and generates code according to parameters stored in the EEPROM. The 1,2288 MHz clock frequency is determined by crystal X02.

When pushbutton SW01 is pressed, transistor TR01 is switched on to apply battery voltage to the processor and reset the processor at the same time via R11 and C02. After reset, output G2 on pin 19 goes high and the supply to the processor is maintained after the pushbutton is released. The number of pushes is detected by input GO/INT on pin 17, via diode D01B.

The transmitter is keyed on by a high level on processor output G1, pin 18. Modulation to the transmitter is supplied from processor output G4, pin 1.

If voltage drops below 5,1 V during transmission, voltage detector IC03 pulls the processor input L7, pin 14 low.

During programming when the unit is placed in a programmer, G4, G5, and G6 (pins 1, 2, and 3 respectively) are connected to the programmer. The programmer also supplies power to the transmitter.

Transmitter Section

Transistors TR03 and TR04 supply power to the transmitter whenever it is keyed on by the processor.

The local oscillator is built up around TR05 and crystal X01, and frequency is adjusted by C10. Transmission frequency is 9 times local oscillator frequency. The bias voltage for the oscillator and modulator is supplied by voltage regulator IC02 to assure stable operation.

The LO signal is fed via C13 to the first tripler built up around TR06. The signal from the first tripler is fed via C22 to the second tripler built up around TR07. The output from the second tripler at tuned circuit L06/C28 is fed directly to the internal antenna.

Battery

Power is supplied by two CR1616 lithium cells. Nominal supply voltage is 6,0 V. The voltage detector is triggered when about 40% of battery capacity remains.

The unit is energized only when an alarm is transmitted. In normal mode battery capacity is 15 000 alarms. Capacity is 3000 alarms when the unit is used with the U981 miniLARM receiver in battery saving mode. This difference in capacity is due to the longer transmit time in battery saving mode. Self discharge of the lithium cells is not included in these estimates. Shelf life is at least five years.

*PC	PC-BOARD VERSION 40299 A						10347
C01	CAP.TANTAL CHIP	2U2	A	6V3	20	40508	
C02	CAP.CHIP X7R	10N	0805	25V	10	40442	
C03	CAP.CHIP NP0	68P	0805	25V	5%	40490	
C04	CAP.CHIP NP0	22P	0805	25V	5%	40484	
C05	CAP.CHIP X7R	4N7	0805	25V	10	40438	
C06	CAP.CHIP NP0	N22	0805	25V	5%	40496	
C07	CAP.CHIP NP0	N22	0805	25V	5%	40496	
C08	CAP.CHIP X7R	4N7	0805	25V	10	40438	
C09	CAP.CHIP NP0	27P	0805	25V	5%	40485	
C10	TRIMCAP.CHIP	40P	3*4.5MM			50027	
C11	CAP.CHIP NP0	33P	0805	25V	5%	40486	
C12	CAP.CHIP NP0	33P	0805	25V	5%	40486	
C13	CAP.CHIP X7R	4N7	0805	25V	10	40438	
C14	CAP.CHIP NP0	P68	0805	25V	P2	40467	
C15	CAP.CHIP NP0	N10	0805	25V	5%	40492	
C16	CAP.CHIP NP0	N10	0805	25V	5%	40492	
C17	CAP.CHIP NP0	5P6	0805	25V	P5	40478	
C18	TRIMCAP.CHIP	10P	3*4.5MM			50020	
C19	CAP.CHIP NP0	5P6	0805	25V	P5	40478	
C20	TRIMCAP.CHIP	10P	3*4.5MM			50020	
C21	CAP.CHIP NP0	P68	0805	25V	P2	40467	
C22	CAP.CHIP NP0	10P	0805	25V	5%	40480	
C23	CAP.CHIP NP0	P68	0805	25V	P2	40467	
C24	CAP.CHIP NP0	N10	0805	25V	5%	40492	
C25	CAP.CHIP NP0	N10	0805	25V	5%	40492	
C26	TRIMCAP.CHIP	6P	3*4.5MM			50021	
C27	CAP.CHIP NP0	P68	0805	25V	P2	40467	
C28	TRIMCAP.CHIP	6P	3*4.5MM			50021	
D01	DIODE	SOT143	BAS28	OR EQ V		70160	
D02	DIODE, TUNING	SOD323	BB535	OR EQ V		70214	
IC01	MICROPROCESSOR	'WMS'	CDPC8642			80488	
IC02	VOLTAGE REGULATOR	SOT89	7710YGA	OR EQ V		80489	
IC03	VOLTAGE DETECTOR	SOT89	7701YLA			80490	
L01	COIL CHIP	1U5H	SIMID 02		10	60151	
L02	COIL CHIP	1U5H	SIMID 02		10	60151	
L03	COIL CHIP	68NH	0805CS		10	60184	
L04	COIL CHIP	68NH	0805CS		10	60184	
L05	COIL CHIP	22NH	0805CS		20	60175	
L06	COIL CHIP	33NH	0805CS		20	60176	
P01	TRIMPOT.CHIP	22K	RH03A3A	OW1	25	30079	
R01	RESISTOR CHIP	18R	1206		5%	20610	
R02	RESISTOR CHIP	18R	1206		5%	20610	
R03	RESISTOR CHIP	18R	1206		5%	20610	
R04	RESISTOR CHIP	18R	1206		5%	20610	
R05	RESISTOR CHIP	22K	0805	OW1	5%	20418	
R06	RESISTOR CHIP	M22	0805	OW1	5%	20430	
R07	RESISTOR CHIP	22K	0805	OW1	5%	20418	
R08	RESISTOR CHIP	M22	0805	OW1	5%	20430	
R09	RESISTOR CHIP	M22	0805	OW1	5%	20430	
R10	RESISTOR CHIP	1M0	0805	OW1	1%	20447	
R11	RESISTOR CHIP	2K2	0805	OW1	5%	20442	
R12	RESISTOR CHIP	1K0	0805	OW1	5%	20402	
R13	RESISTOR CHIP	M22	0805	OW1	5%	20430	
R14	RESISTOR CHIP	M22	0805	OW1	5%	20430	
R15	RESISTOR CHIP	2M2	0805	OW1	5%	20442	
R16	RESISTOR CHIP	22K	0805	OW1	5%	20418	
R17	RESISTOR CHIP	2K7	0805	OW1	5%	20407	
R18	RESISTOR CHIP	1K0	0805	OW1	5%	20402	
R19	RESISTOR CHIP	K10	0805	OW1	5%	20390	

R20	RESISTOR CHIP	1K0	0805	0W1	5%	20402
R21	RESISTOR CHIP	2K7	0805	0W1	5%	20407
R22	RESISTOR CHIP	K10	0805	0W1	5%	20390
R23	RESISTOR CHIP	1K0	0805	0W1	5%	20402
R24	RESISTOR CHIP	K10	0805	0W1	5%	20390
R25	RESISTOR CHIP	15K	0805	0W1	5%	20416
R26	RESISTOR CHIP	2K7	0805	0W1	5%	20407
R27	RESISTOR CHIP	K56	0805	0W1	5%	20399
R28	RESISTOR CHIP	22K	0805	0W1	5%	20418
R29	RESISTOR CHIP	M22	0805	0W1	5%	20430
R30	RESISTOR CHIP	M22	0805	0W1	5%	20430
SW01	PUSH BUTTON SWITCH	SKHMPU0002				170279
TR01	TRANSISTOR PNP	SOT-23	2SB831BC	OR EQ V		70148
TR02	TRANSISTOR NPN	SOT-23	2SD1306	OR EQ V		70143
TR03	TRANSISTOR PNP	SOT-23	2SB831BC	OR EQ V		70148
TR04	TRANSISTOR NPN	SOT-23	2SD1306	OR EQ V		70143
TR05	TRANSISTOR CHIP		BFS20	OR EQ V		70154
TR06	TRANSISTOR	SOT23	BF775			70177
TR07	TRANSISTOR	SOT23	BF775			70177
X02	CRYSTAL	CX-1	1.2288			101392