TLR + FAMILY
User Guide

Contents

Alarm Receiver card TLR+

The twin line alarm receiver card TLR+ for PC and PC compatible computers is a MCDI product. It carries a five year limited warranty.

Installing TLR+ receiver in a PC

The TLR+ card is designed to fit a slot in an IBM PC or PC compatible computer type PC AT, 386, 486, and up. A standard chassis is compulsory for this product to fit.

Remove the top of the computer chassis, slide the card in the first free slot. Make sure that the metal holder at the end of the card is pointed toward the back of the chassis. The BUS connector should point toward the bottom of the chassis and be pushed firmly in the BUS. Use a screw to hold the back bracket firmly to the chassis of the computer.

Configuring TLR+ receiver

JP4
Reset
pins

Posts pwr, tx and rx
MRO1000 connection for R4-R6
Printer chaining on all models

S2 rotary switch
Used for selection of COM
Arrow points to selected COM
In this case COM3

3V lithium battery
Maintains configuration
and buffer. Replaceable

U30 Logic memory EPROM
When replacing, turn power off
Align notched side of EPROM
to arrow on PCB
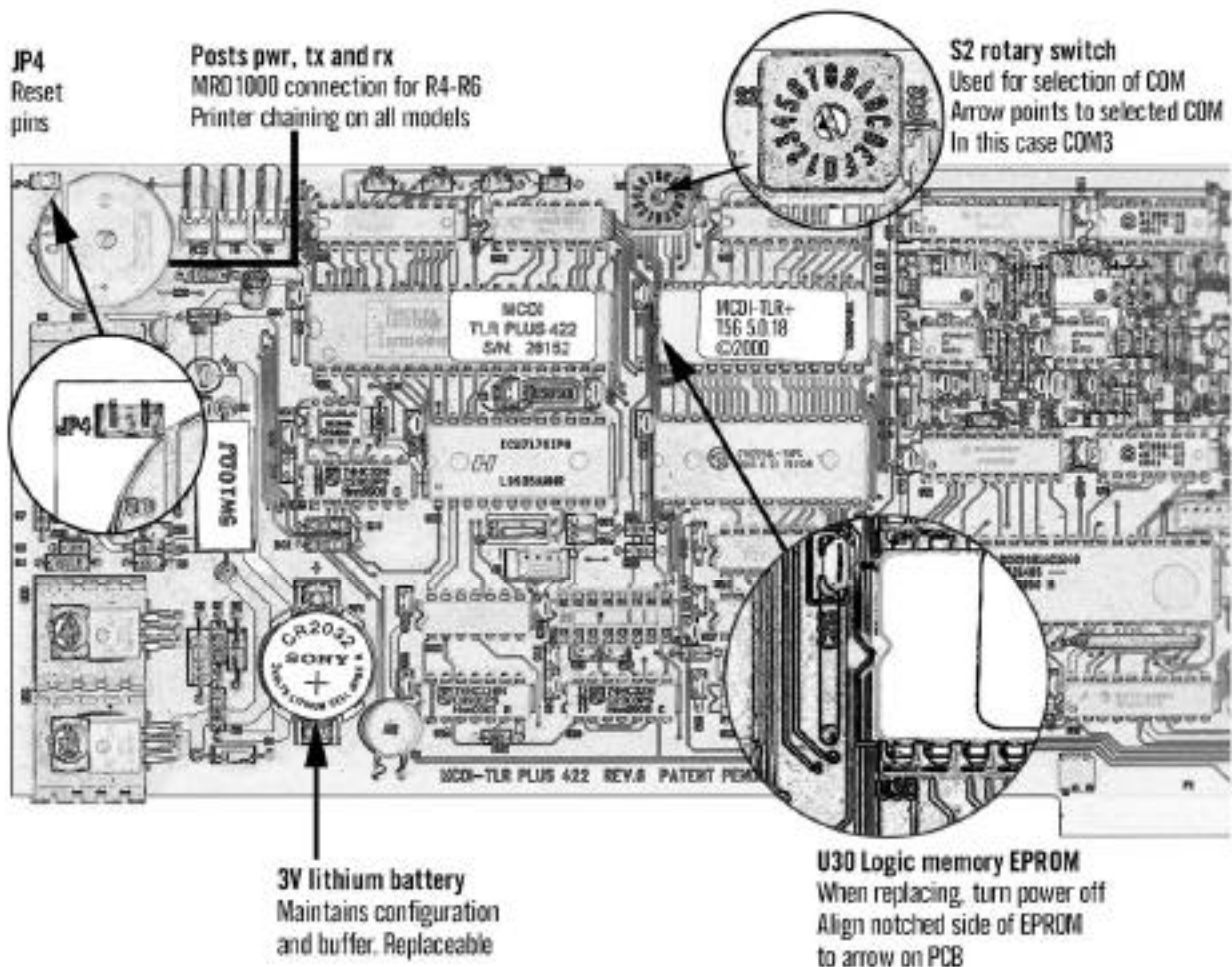
The default configuration of TLR+ receiver is address 3E8 corresponding to COM3 and IRQ 5. If other COM and IRQ are elected see **Setting up TLR+ receiver** for detailed instructions.

Make sure the COM port elected to operate TLR+ receiver is free of other devices.

To check for other devices on a COM port use the **debug** command as shown below or lookup the **Serial port** status at computer startup.

```
C:\>debug <enter>
-d40:0 <enter>
```

Installation guide for Alarm Receivers TLR+ and SA-TLR+

0040:0000	F8 03	F8 02	E8 03	E802	....
	(COM1)	(COM2)	(COM3)	(COM4)	
-q <enter>	to quit debug				

Example: If the -d40:0 table displays the following data:

0040:0000   F8   03   F8   02   00   00   00   00   ....

It means that 3E8 and 2E8 corresponding to ports COM3 and COM4 are available.

S2   Rotary switch to define the communication port address for the TLR+ receiver. Maximum of eight (8) receivers per PC. Sixteen (16) addresses may be selected. Addresses 1 to 4 are known as COM1 to COM4:

1 =	3F8	2 =	2F8	3 =	3E8(Default)	4 =	2E8
5 =	338	6 =	318	7 =	308	8 =	2A8
9 =	298	A =	288	B =	268	C =	258
D =	248	E =	238	F =	228	0 =	218

J6   Phone lines auxiliary pinout. Left to right L1 T-R, L2 T-R

JP1   Take-a-look video connector. When Video board is not present insert 2 vertical jumpers on leftmost pins and 2 horizontal connectors on rightmost pins.

J2   Telephone Line 1   J3   Telephone Line 2

JP3 on Rev 2. Tx, RX on Rev 4 and Rev 5
         Connectors for chaining more than one TLR card. This allows only one external printer to serve all receiver cards. When more than one receiver card is installed, use a jumper to link all receiver cards and connect the parallel printer cable to the last card. The last card is the rightmost card when looking inside the computer from the front. The last receiver card must be given the highest address within the group.

PWR on Rev 4   For MRD1000 power feed.   Unused on R5

JP4   Reset contact for the receiver. Two options are available.
         1.   Soft Reset: One short circuit resets the receiver to the user's configuration.
         2.   Cold Reset: Short JP4 once and wait for beep. During beep short once more.
              Cold Reset can also be software achieved by running INITPLUS setup program as shown in **Setting up TLR+ receiver**.

JP5   MRD1000 power feed on Rev 5   / JP6   Pins for External box SA-TLR+ connection.

BT1   On board CMOS micro battery to keep date, time and user's configuration.

Physical characteristics of TLR+

Size

         Receiver has all out dimensions, including bracket of 33.8x14.29 cm or 5 5/8x13.5 inches. A full size standard chassis is a prerequisite to install receiver.

Buffer memory

         Buffer holds up to 800 events in Native mode, 1000 in Ademco emulation Mode. Buffer is used when computer is absent.

         Card keeps printing during fail time if 6 volt external battery is connected and charged. When computer comes back on, buffer empties to the computer. If more than 800 events (1000 Ademco mode) are received in the buffer during fail time, card writes over the oldest event. Written records may be available on printer connected to parallel printer port.

Printer port

         Connector port for IBM compatible parallel printer type DB25. When more than one card is installed in the same computer, one printer can be used for all cards in the same computer, instead of one printer per receiver card..

Phone jack

         Single Phone connector type RJ11 on Rev 2. Connect four wires for two lines.
         Line 1   Green   Tip   Line 2   Yellow   Tip
                    Red   Ring   Black   Ring
         Double Phone connector type RJ11 on Rev 4 and Rev 5 . Connect Green and Red only on each connector

External battery connector

A six **(6) volt** battery connector is designed to feed receiver if computer fails. A 3 foot wire is supplied. Connect the red wire to the positive side and the black wire to the negative side of the battery.

During normal operation, card takes its power from computer and maintains battery charge. When computer fails, card takes its power from battery and keeps on receiving alarms.

Battery size (power) is dependent on the period it must maintain the receiver operating while PC is off. As a rule of the thumb, define the number of hours a fully charged battery must support the system and divide by two (2) to get the A-H.

Example: To support the receiver for 8 hours requires a 4 A-H rechargeable battery.
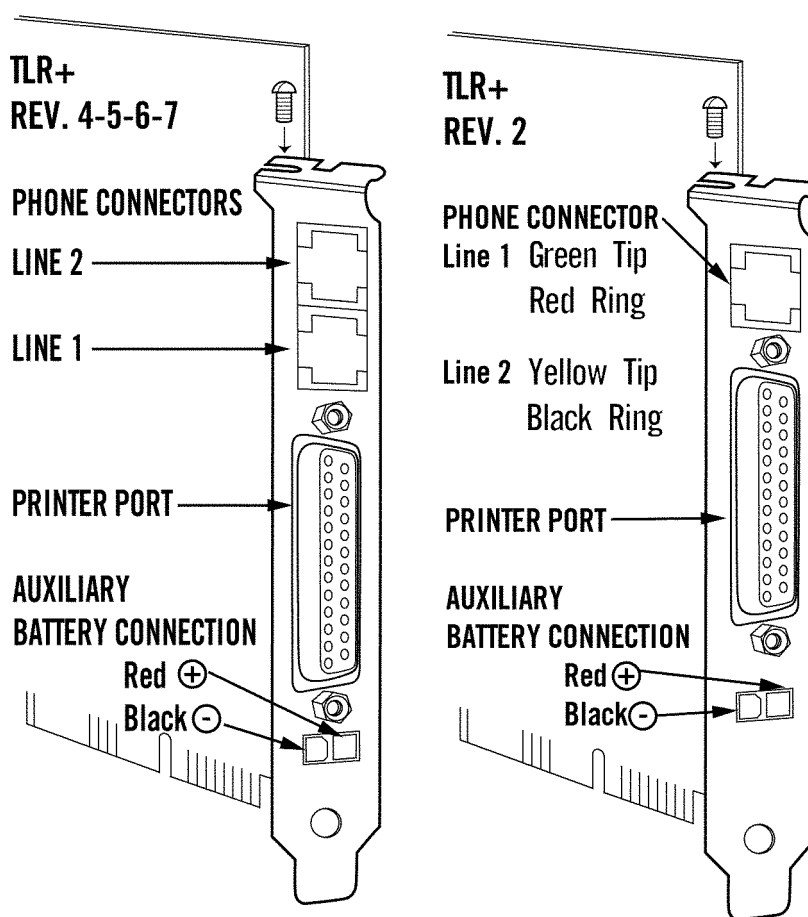
Battery type recommended: Rechargeable sealed lead-acid for constant voltage.

Buzzer Alert/Warning

On board buzzer is available for alert warning when Computer is absent.
Enable if setup parameter Check printer is set to Yes.
Is activated (start buzzing) by event to be printed on TLR+ printer port.
Stop buzzing by pressing twice (2) ON-LINE printer key. Refer to printer connected to TLR+ parallel printer port. Will resume buzzing if printer is left off-line.

TLR+
REV. 4-5-6-7

PHONE CONNECTORS

LINE 2

LINE 1

PRINTER PORT

AUXILIARY
BATTERY CONNECTION
Red ⊕
Black ⊖

TLR+
REV. 2

PHONE CONNECTOR
Line 1 Green Tip
Red Ring

Line 2 Yellow Tip
Black Ring

PRINTER PORT

AUXILIARY
BATTERY CONNECTION
Red ⊕
Black ⊖

CMOS Lithium battery

Receiver memory function support depends on CMOS battery. CMOS battery is located on receiver position BT1. Renata Model CR2430 or equivalent. Minimum life expectancy 7 years to 10 years.

Software tool COMIRQ

COMIRQ is a DOS software program shipped with all receivers. It is used to check signals sent to PC by TLR+. This tool is very useful to find free IRQ.

To check installation and find free IRQ, run COMIRQ followed by COM,IRQ parameters.

Example: COMIRQ 3,5   (Check if IRQ 5 is free for a TLR+ installed on COM3)

When COMIRQ is displayed, send a signal to a TLR+ where same setup parameters have been given .. Signal is displayed only if COM and IRQ are free. If no signal is displayed, change IRQ in COMIRQ and in TLR+ setup. Try again until signal is displayed indicating a free IRQ.

Press Space bar to display one signal a t a time. Press A to empty receiver buffer and enable ACK.

Alarm Receiver SA-TLR+

SA- TLR+ is a version of the TLR+ packaged for computer serial port connection.

Installing SA-TLR+ receiver

Power the SA-TLR+ from any 12 volt source. Connect SA-TLR+ to a computer serial port using the supplied cable.

It is recommended to connect a printer to the SA-TLR+ parallel port. This printer insures a full hard copy backup of all signals received by SA-TLR+

Configuring SA-TLR+ receiver

SA-TLR+ is configured using Setup software INTPLUS.

Physical characteristics of SA-TLR+

FRONT PANEL DESCRIPTION

POWER

Green LED
Lights when SA-TLR+ is on.

LINE 1 +2

Red LED
Lights when a transmission occurs
Blinks when signal is absent

COMPUTER

Yellow LED
Lights when a transmission occurs
Blinks when computer is absent

PRINTER

Yellow LED
Lights when printing occurs

PACKAGING

Size: 15" (L) x 5.5" (W) x 2"(H)
              38 cm (L) x 14 cm (W) x 5 cm (H)

Housing: Rugged aluminum chassis.
                Baked black enamel finish.

REAR PANEL DESCRIPTION

6-12V:

Power input 6 to 12 V DC 1 A

SERIAL (DB25 male connector)

Data transfer to computer in Surgard emulation
Serial port: 1200 Baud, 8 bit, 1 stop bit
Pin 2 = transmit   Pin 3= receive
Pin 7 = ground   Cable type=null modem

PRINTER (DB25 female connector)

Printer parallel port

REMOTE CONTROL CONNECTOR

- For optional Remote display and control unit.
- Displays incoming signals or controls .
- Configures and operates a TLR+ or a SA-TLR+.
- Power fed by TLR+ or SA-TLR+.
- External self contained unit or Mounted in PC's CD slot.

LINE 1, LINE 2

Incoming phone lines

Setting up SA-TLR+ / TLR+ Firmware -- Version 3.8.1+

Firmware version 3.8.1+ and setup program INITPLUS added features:

. New setup display allows easier selection of software interface emulation formats:
    Ademco 685 mode ─── Surgard mode ─── Native mode

. Receiver handshake heading pattern is now selectable

Before attempting to setup TLR+ with INITPLUS program, make sure firmware version 3.8.1+ is installed. Find Firmware level on Eprom U30 close to Rotary switch used to select COM port address.

Before installing TLR+ select COM port address using rotary switch. Next, install TLR+ in PC by pushing firmly so connector makes a good contact with motherboard.

Run INITPLUS setup program only with TLR+ receivers equipped with Firmware level 3.8.1+. Running INITPLUS with older firmware versions will not setup TLR+ properly.

Setup program **INITPLUS** (v1.4) displays selection pattern seen below:

Addresses	TLR+ PARAMETERS ─── MCDI INC. ─── +(514) 481-1067				
			Cold Reset: Ctl R		
03F8	Address	03F8			
02F8					
03E8	IRQ (3,4,5,9,10,11,12,15)	5		Wait After Off Hook	No
02E8	Receiver number	1		2 Rings(Not in use; set to 1 ring)	No
0338	Line 1 Number	1		Caller ID To PC	No
0318	Line 2 Number	2		Caller Id To Printer	No
0308	Heartbeat	No		Caller ID ALL	No
02A8	Sescoa SS instead of 4x2 SUM	No		Date / Time	Yes
0298	3x2 Instead 4x1	No		Send Year	No
0288	Clear Zero	No		ACK Delay	1
0268	Compress Extended	No		SA-TLR	No
0258	Listen-In (Empty or 1..F)			SurGard Mode	No
0248	Printer / Buzzer	No			
0238					
0228	Start handshake with	1	1=	1400hz / VFSK	
0218			2=	SIA / CFSK	
			3=	DUAL 1400hz / 2300hz	
			4=	2300hz	
			5=	Stratel	
			6	Telim	
			7=	Robofon	
<CR> Edit	**<ESC> Exit ─── <F1> Restore default ─── <F2> Read Config File**				

Setup program display description and commands

Address section

Address part of display shows address fields for all TLR+ receivers installed in PC.

Move cursor to desired TLR+ using UP/DN arrows.

Press <Enter> to move to Parameter section on right part of display.

Parameters displayed on the right are actual operating parameters.

Press F1 to restore Factory defined parameters. Press F2 to restore saved parameters.

Press <ESC> to Exit setup program INITPLUS.

Before accepting Exit command, INITPLUS request authorization to save new parameters.

When exiting from INITPLUS time on ALL TLR+ will be reset to PC time.

Parameter section to the right of Address section

TLR+ address selected when entering this section is shown in heading above columns of parameters.

Move cursor to desired parameter using UP/DN arrow. Key in each new parameter .

After all changes have been entered press <ESC> to go back to Address Section.

ONLY in Address Section can changes be saved and sent to receiver.

Parameter definition

Emulation mode easy setting information:

MCDI Mode	Default setting
Ademco 685 Mode	Default setting + Date / Time = NO
Surgard Mode	Surgard = YES

OPTIONS:

Address   Memory address for TLR+ port as configured by rotary switch S2

IRQ   3, 4, 5(default), 9, 10, 11, 12, 15   SA-TLR+ requires no IRQ setting.

Receiver   Number sent to computer and printer 0 to F (default = 1)

Line 1   Number sent to computer and printer 0 to F (default = 1)

Line 2   Number sent to computer and printer 0 to F (default = 2)

Heartbeat   Yes = enable   No = disable (default)

                 TLR+ sends Heartbeat signals to computer every 30 seconds only in Native mode and Surgard mode.

Sescoa SS   Yes = enable   No = disable (default)
                     Conflict with Pulse 4X2 Checksum format

3x2 Instead 4x1 Yes = enable   No = disable (default)
                     Conflict with 4X1 in Compressed Expanded
                     DO NOT select with Compressed Expanded = YES

Clear Zero   Yes = Zero removed in 3x1 and 4x1   No = zero present (default)

                 Tells TLR+ receiver <u>not to insert</u> a zero in front of the account number and in front of the alarm code, for incoming 3 x 1 and 4 x 1.

                 Example: 3 x 1   Extended compressed in 3 x 2 standard
                               123 4
                               444 5   After compression: 123 45

                 Example: 3 x 1   Standard 3 x 1
                               123 1

                 Example: 4 x 1   Standard 4 x 1
                               1234 1

                 Example: 3 x 1 and 4 x 1   <u>without</u> the CLEAR ZERO option:
                               0123 01 for 3 x 1
                               1234 01 for 4 x 1

Compressed/   Yes = Compressed extended 3x1 or 4x1   (No = default)
Extended

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Example:	3 x 1 123 4 444 5	Extended compressed in 4 x 2 standard After compression: 0123 45	

Example:	4 x 1 1234 5 5555 6	Extended compressed in 4 x 2 standard After compression: 1234 56	

Listen-In (3x1,4x2)
Empty or 1 .. F
Define code to trigger Listen-In mode in 3x1 or 4x2 formats

Printer/Buzzer
Yes = Check printer on TLR+ portNo= Do not check for printer (default)

By default TLR+ does not verify printer status on parallel port but sends data to be printed as if a printer was connected to this port.

(Yes) option tells the TLR+ receiver to verify and report on the status of the printer connected to the TLR+ parallel port. The status verification applies to the first card (lowest COM) in the computer if more than one card is installed. A connector is supplied to daisy chain multiple TLR+ cards in the same computer to send all output to one printer only.

When Check printer option is enabled (Yes) and the computer is absent, each event being sent to printer triggers a warning buzzer. This warning sound may be stopped by clicking twice the ON-LINE printer key. Buzzing resumes if printer is left Off-line.

Do not set the "Yes" parameter if no printer is installed. Multiple error messages could be generated by taking this action.

Wait after O/H
Delay to start Handshake after Off Hook. No = normal, Yes=5 seconds

2 Rings
Setting not in use. TLR+ set to 1 ring. Setting not Caller ID dependent

Caller ID PC
No = Do not send telephone ID data to PC
Yes = Send telephone ID data to PC

Caller ID PRN
No = Do not send telephone ID data to TLR+ printer
Yes = Send telephone ID data to TLR+ printer

Caller ID ALL
No = Do not send telephone ID data except when bad transmission occurs
Yes = Send telephone ID data to PC and TLR+ printer unless PRN and PC select otherwise

Date / Time
Yes = enable(Default)   No = disable

Send year
Yes = Date including the year   No = Date with no year (default)

Yes, tells TLR+ to add the Year in date format: HH:mm _ _ MM/DD[/YY] ...

No, by default, tells TLR+ to use date and time format: MM/DD.

SA-TLR+
Yes = enable (SA-TLR+)   No = disable (Default=TLR+)

Surgard Mode
Yes = enable   No = disable (Default)

ACK delay
Wait time in seconds for ACK reception before resend.   (Surgard/Native   mode only)

Start handshake with

1	1400hz / VFSK
2	SIA / CFSK
3	DUAL 1400hz / 2300hz
4	2300hz
5	STRATEL
6	TELIM
7	ROBOFON

Default sequence is as above. Option is to change first element with the one selected.
Extreme care must be exercised when changing Handshake sequence. It is a well known fact that many dialers do not respond well to all startup sequences.

Setting up TLR+ Firmware -- Before version 3.8.1

Native and Ademco 685 emulation modes

Run **INITLR** to access receiver parameters. The configuration of each TLR+ in the computer is displayed alternately. The setup application takes the time and date from the computer and enters it into the TLR+ each time it is executed. Information is held permanently by receiver until modified or until CMOS lithium battery is replaced.

TLR+ parameters   MCDI Inc.   (514) 481 1067

ADDRESS

XXX-	IRQ	:	5	Wait after O/H	:	No	2 Rings	:	No
	Receiver #	:	1	Line 1 #	:	1	Line 2 #	:	2
	Heartbeat	:	No	Extended	:	No	Ademco 685	:	Yes
	Caller ID PRN	:	No	Caller ID PC	:	no	Caller ID ALL	:	No
	Clear zero	:	No	Send year	:	No	Printer/Buzzer	:	No

<ESC> Exit   <CR> Next field   <PGDN>   Next TLR+   <PGUP> Previous TLR+

When exiting from INITLR time on ALL TLR+ will be reset to PC time.

SurGard emulation mode

Run **INIMLR** to access receiver parameters and transfer data to Automation software in SurGard MLR2 emulation mode. The configuration of each TLR+ in the computer is displayed alternately. The setup application takes the time and date from the computer and enters it into the TLR+ each time it is executed. Information is held permanently by receiver until modified or until CMOS lithium battery is replaced.

TLR+ parameters   MCDI Inc.   (514) 481 1067

ADDRESS

XXX -	IRQ	:	5	Wait after O/H	:	No	2 Rings	:	No
	Receiver #	:	1	Line 1 #	:	1	Line 2 #	:	2
	Heartbeat	:	No	Extended	:	No	Date / Time	:	Yes
	ACK delay sec.:		1	Caller ID PRN	:	No	Caller PC	:	No
	Clear zero	:	No	Send year	:	No	Printer/Buzzer	:	No

<ESC> Exit   <CR> Next field   <PGDN>   Next TLR+   <PGUP> Previous TLR+

To modify parameters press Enter. To move to another receiver in the same computer press <PGDN> or <PGUP>.

One computer can hold up to eight (8) receivers. Address is set by rotary switch S2.

When exiting from INIMLR time on ALL TLR+ will be reset to PC time.

OPTIONS:

Address	Display memory address of TLR+ port as configured by rotary switch S2	
IRQ	3, 4, 5(default), 9, 10, 11, 12, 15 For SA-TLR IRQ setting is not required.	
Wait after O/H	Delay to start Handshake after Off Hook. No = normal, Yes=5 seconds	
2 Rings	Answers after one ring by default (No) or 2 rings (Yes)	
Receiver	Number sent to computer and printer 0 to F (default = 1)	
Line 1	Number sent to computer and printer 0 to F (default = 1)	
Line 2	Number sent to computer and printer 0 to F (default = 2)	
Heartbeat	Yes = enable No = disable (default)	
	TLR+ sends Heartbeat signal to the computer every 30 second. Does not apply to Ademco 685 mode.	

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ACK delay	Wait time in seconds for ACK reception before resend. (Surgard mode only)

Extended   Yes = Compressed extended 3x1 or 4x1   (No = default)
              Sescoa Super Speed support in INIMLR mode only

Example:	3 x 1 123 4 444 5	Extended compressed in 4 x 2 standard After compression: 0123 45
Example:	4 x 1 1234 5 5555 6	Extended compressed in 4 x 2 standard After compression: 1234 56

Ademco 685   Yes = Ademco 685 protocol for computer   No = TLR+Native mode (default)

Caller ID PRN   No = Do not send telephone ID data to TLR+ printer
              Yes = Send telephone ID data to TLR+ printer

Caller ID PC   No = Do not send telephone ID data to PC
              Yes = Send telephone ID data to PC

Caller ID ALL   No = Do not send telephone ID data except when bad transmission occurs
              Yes = Send telephone ID data to PC and TLR+ printer unless PRN and PC select otherwise.

Clear Zero   Yes = Zero removed in 3x1 and 4x1   No = zero present (default)

Tells the TLR+ receiver not to insert a zero in front of the account number and in front of the alarm code, for incoming 3 x 1 and 4 x 1.

Example:	3 x 1 123 4 444 5	Extended compressed in 3 x 2 standard After compression: 123 45
Example:	3 x 1 123 1	Standard 3 x 1
Example:	4 x 1 1234 1	Standard 4 x 1
Example:	3 x 1 and 4 x 1 0123 01 for 3 x 1 1234 01 for 4 x 1	without the CLEAR ZERO option:

Send year   Yes = Date including the year   No = Date with no year (default)

Yes, tells TLR+ to add the Year in date format: HH:mm _ _ MM/DD[/YY] ...

No, by default, tells TLR+ to use date and time format: MM/DD.

Printer/Buzzer   Yes = Check printer on TLR+ port   No= Do not check for printer (default)

By default TLR+ does not verify printer status on parallel port but sends data to be printed as if a printer was connected to this port.

(Yes) option tells the TLR+ receiver to verify and report on the status of the printer connected to the TLR+ parallel port. The status verification applies to the first card (lowest COM) in the computer if more than one card is installed. A connector is supplied to daisy chain multiple TLR+ cards in the same computer to send all output to one printer only.

When Check printer option is enabled (Yes) and the computer is absent, each event being sent to printer triggers a warning buzzer. This warning sound may be stopped by clicking twice the ONLINE printer key. Buzzing resumes if printer is left Off-line.

Do not set the "Yes" parameter if no printer is installed. Multiple error messages could be generated by taking this action.

Transmission rate

1200 bps, no parity, 8 bits, I stop bit

Formats and characters transmitted

Receiving

Formats	MCDI	DTMF	FSK
	Acron	Ademco Contact ID	Ademco L/S Standard
	Ademco L/S expanded	Ademco Fast / High Speed	Ademco Express
	Ademco Old	DCI	FBI Super Fast
	Franklin Fast	Napco	Radionics Standard
	Radionics Expanded	Scantronic	Sescoa standard
	Sescoa SS	SIA I - II - ~III	Silent Knight Slow/Fast
	CFSK III	Varitech VFSK	Stratel
	SurGard	Robofon	Telim

Pulse	10,20,40 bps 3x1 - 4x1 - 4x2	Dual Round
	10,20,40 bps 4x2	Checksum
	10,20,40 bps 3x1 - 4x1 Extended	Dual Round
	Sescoa SS (set at setup) 4x2	Checksum
	Frequencies	1800 Hz / 1900 Hz
	Handshake and kissoff:	1400hz / 2300hz

DTMF   10 char/sec.

FSK   110 bauds or 300 bauds (SIA, CFSK, VFSK)   Bell 103

Listen-in, Two way voice

Listen-in function

Some alarm panels offer the option for the Central station operator to listen for sound in the premises where the alarm signal originates.

Alarm panels supporting "Listen-in" keep the telephone line open after having sent a signal, to allow sound monitoring. The telephone line will be closed by the Central station subject to operator action or receiver setup.

Listen-in criteria

Receiver TLR+ is triggered into "Listen-in" mode for incoming events according to panel setup for specific formats.

SIA (LFxxx) and Contact ID (E606)formats have specific codes for Listen-in. See Panel setup.

DTMF formats use the AEx signal where x can be 0 to F at the Installer's choice.

3x1 and 4x2 formats have no standard codes for Listen-in. TLR+ allows home selection of Listen-in codes at Setup time.

Receiver action upon reception of "Listen-in" trigger

Upon reception of event in the Listen-in category, TLR+ receiver maintains the telephone line open for a period of up to 180 seconds or less then 180 seconds upon reception of any telephone tone from the keypad.

Operator control for "Listen-in"

Operator must be warned by Monitoring software of account "listen-in" capability. Operator has a maximum of 180 seconds from time of alarm reception to telephone pickup. Failure to pickup telephone in this delays will cause line hang-up by TLR+ receiver.

Once the line is seized by Central station local telephone, the hang-up action of TLR+ will have no effect.

To close communication with alarm signal site in the first 180 seconds when TLR+ is in action, operator must press any key on the telephone keypad before hanging up. The TLR+ will hang up before 180 seconds only upon reception of a tone from telephone keypad.

To close communication with alarm signal site after 180 seconds of event reception, simply hang-up the telephone. This is because the TLR is not in function anymore, its delay having expired.

Transmission to computer and printer in TLR+ Native mode

Pulse, DTMF, FSK

FORMAT 3x1, 4x1

HH:mm_ _MM/DD[/YY] _ _ RL_CCCC_ØA<CR>	Default
HH:mm_ _MM/DD[/YY] _ _ RL_CCCC_A<CR>	Option 4x1 set by INITLR
HH:mm_ _MM/DD[/YY] _ _ RL_CCC_A<CR>	Option 3x1 set by INITLR
HH:mm_ _MM/DD[/YY] _ _ RL_ØCCC_AZ<CR>	Option 3x1 extended compressed 4x2

HH:mm_ _MM/DD[/YY] _ _ RL_CCCC_AZ<CR>   Option 4x1 extended compressed 4x2
                                                        Option zero removed 3x1,4x1, extended

FORMAT 4x2

   HH:mm_ _MM/DD[/YY] _ _RL_CCCC_AZ<CR>

FORMAT 4x3 (SESCOA SS)

   HH:mm_ _MM/DD[/YY] _ _RL_CCCC_AZZ[Z]<CR>

FORMAT 4x3 (SUR GARD)

   HH:mm_ _MM/DD[/YY] _ _RL_CCCC_AZZ<CR>

FORMAT ADEMCO HIGH SPEED

   HH:mm_ _MM/DD[/YY] _ _RL_CCCC_AAAA_AAAA_A<CR>

FORMAT ACRON

   HH:mm_ _MM/DD[/YY] _ _RL_CCCC_AAAAAAAA<CR>
   HH:mm_ _MM/DD[/YY] _ _RL_ _CCC_AAAAAAAA<CR>

FORMAT FBI SUPER FAST

   HH:mm_ _MM/DD[/YY] _ _RL_CCCC_EZZ<CR>

FORMAT CONTACT ID

   HH:mm_ _MM/DD[/YY] _ _RL_CCCC_18_TAAA_GG_ZZZ<CR>

FORMAT MODEM SIA

   HH:mm_ _MM/DD{YY}] _ _RL _ [#CCCCCC|EAAZZZ/AAZZZ/AAZZZ]<CR>   Native mode
   <LF>RL_ [#CCCCCC|EAAZZZ/AAZZZ/AAZZZ]<CR>   Ademco685 Emulation

FORMAT MODEM CFSK / VFSK   (same as 4x2)

   HH:mm_ _MM/DD{/YY} _ _ RL_CCCC_AZ<CR>

CALLER ID

   Phone signal added to event code. Examples

   HH:mm_ _MM/DD[/YY] _ _RL_CCCC_AZ{t...t}<CR>   Added to 4x2
   HH:mm_ _MM/DD[/YY] _ _RL_CCCC_18_TAAA_GG_ZZZ {t...t}<CR>   Added to Contact ID
   HH:mm_ _MM/DD{YY}] _ _RL _ [#CCCCCC|EAAZZZ/AAZZZ/AAZZZ]{t...t}<CR> Added to SIA

Heartbeat

   @<CR>   Signal sent to the computer every 30 seconds if option is enabled

Code definitions

HH	:	Hour	
:	:	Character ":"	
mm	:	Minute	
DD	:	Day	
_	:	1 space	
_ _	:	2 spaces	
MM	:	Month	
[YY]	:	Year [Present/Absent]	Receiver Option)
/	:	Character "/"	
R	:	Receiver number	(Receiver Option)
L	:	Line number	(Receiver Option)
C	:	Account number	
A	:	Event code or modifier	
E	:	Zone type	FBI super Fast
Z	:	Zone	
G	:	Group (Partition)	
T	:	Type(E or R)	(Contact ID)
Ø	:	Zero	

<CR>	:	EOS	(Carriage Return)
<ACK>	:	Data retransmits to computer every 2 second	until ACK is received by TLR+ (ACK=06H or $06).
@	:	Heartbeat signal	Receiver Option)
t...t	:	Telephone number from Caller ID	
[	:	Beginning data delimiter (SIA)	
]	:	Ending data delimiter (SIA)	
|	:	Field separator (SIA)	
#	:	Account ID block code (SIA)	
E	:	Function block code (SIA)	
/	:	Data code packet separator (SIA)	
<LF>	:	Line Feed	

TLR+ Error and Warning messages sent to Printer port and PC:

	HH:MM	MM/DD[YY]	RL	Account	XYY	
Printer message	Time	Date	Receiver	0000	01	Printer error
	Time	Date	Receiver	0000	02	Printer reset
Telephone line monitoring	Time	Date	Receiver	0000	03	Error Line 1
	Time	Date	Receiver	0000	04	Reset Line 1
Telephone line monitoring	Time	Date	Receiver	0000	05	Error Line2
	Time	Date	Receiver	0000	06	Reset Line2
External battery backup	Time	Date	Receiver	0000	07	Low external battery
	Time	Date	Receiver	0000	08	Normal external battery
CMOS RAM battery	Time	Date	Receiver	0000	09	Low CMOS battery
	Time	Date	Receiver	0000	0B	Normal CMOS battery
Transmission message	Time	Date	Receiver	0000	00	Bad transmission
	Time	Date	Receiver	[#0000|A BAD TRANSMISSION]Format SIA		
No Transmission	Time	Date	Receiver	0000	F1	No signal received Line 1
	Time	Date	Receiver	0000	F2	No signal received Line 2

Transmission to computer and printer in ADEMCO 685 / Surgard emulation mode

User Manual : for information on transmission See ADEMCO 685 standards
User Manual : for information on transmission See Surgard MRL2 documentation
    Surgard emulation applies to Dial up Alarm signals and Telephone ID

Messages from TLR+ to TLR+ printer port:

When computer ceases to answer   "Computer absent" is sent to TLR+ parallel port
When computer answers   "Computer restore" is sent to TLR+ parallel port

Data retransmit to another computer (Rack24,EXE)

Rack24 program

General

Software package to manage Rack system.   Application to turn a PC into a full multi line alarm receiver with retransmit capability.

Install

1. On PC hard disk, setup a RACK Directory.
2.   Copy RACK24.EXE application in RACK Directory
3.   Set each installed TLR+ address using Rotary swich. Address options are:

    Twelve (12) addresses may be selected. Addresses 1 to 4, known as COM1 to COM4, are Not Available.

1	=	N/A	2	=	N/A	3	=	N/A	4	=	N/A
5	=	338	6	=	318	7	=	308	8	=	2A8
9	=	298	A	=	288	B	=	268	C	=	258
D	=	248	E	=	238	F	=	228	0	=	218

4. Twelve (12) IRQs are available to TLR+.

    IRQs available: 1, 2, 3, 4, 5, 6, 7, 8, 9, 13, 14,16
    IRQs Not Available: 10, 11, 12, 15

Messages

Account # 0000 comes exclusively from RACK24

 Example: 010 0000 A201 Line #01 absent

1.   A2xx line absent   xx = line # 01 to 24
2.   R2xx line restore   xx = line # 01 to 24
3.   A01 Printer absent
4.   R01 Printer restore
5.   AFxx TLR+ absent xx = TLR+ # 01 to 12
6.   RExx TLR+ restore xx = TLR+ # 01 to 12
7.   T10 Communication fault between TLR+ and Rack24. Setup and /or Startup problem
8.   Buzzer sounds on computer connection fault
      Stop by pressing any key on keypad
      Enable buzzer at Setup by setting F1 to YES

    Note: To enable Reset button as Buzzer stopping key, connect Reset to Keylock button of keyboard

RACK display:

Rack24 Setup

RACK Display is always on the screen.

F1 = Setup Move Cursor using <Return>, <Up Arrow>, <Down Arrow> Exit using <ESC>
F2 = Date and Time

Serial = Port status ON LINE or ABSENT

Printer = Printer status ON LINE or ABSENT

Power AC or Battery

RACK offers Individual line numbering. RACK is addressable as two 8 line receiver blocks.

Line =   1 and 2 for COM5
           3 and 4 for COM6
           ETC.

```
LINE STATUS                                    RECEIVER STATUS
1  :         2  :         3  :         4  :     Serial  :
5  :         6  :         7  :         8  :     TCP/IP1 : N/A
9  :         10 :         11 :         12 :     TCP/IP2 : N/A
13 :         14 :         15 :         16 :     Printer :
17 :         18 :         19 :         20 :     Power   :
21 :         22 :         23 :         24 :

TRAFFIC
........
........
........
........

          [ <F1> Setup - <F2> Date and Time ]
```

END

Warranty

The Electronic products of MCDI Inc. are under a five year limited warranty. Material is repaired or exchanged, free of charge, when returned to MCDI service points, post paid. Abused or misused equipment is not covered by this warranty.   Power surge damages are not covered by warranty.

Legal compliance and Warning

United States   Regulation   FCC WarningUnited States   Regulation   FCC Warning

Radio/TV interference

This device is not equipped with dialing equipment.

Telephones equipped with electronic dialing keys generate and use radio frequency energy, and if not installed and used properly and in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception.

NOTE: This device has been tested and found to comply with Part 15 if the FCC rules. Operation is subject to the following two conditions:

1.   This device may not cause harmful interference and
2.   This device must accept any interference received, including interference that may cause undesirable operation.

If your device causes interference, one of the following measure may correct the problem:

.   Reorient or relocate the receiving TV or radio antenna, when this may be done safely.
.   To the extent possible, move the device and the radio or television farther away from each other, or connect the computer with the device and the radio or television to outlets on separate circuits.
.   Consult the dealer or an experienced radio/television technician for additional suggestions.

NOTE: FCC registration does not constitute an expressed or implied guarantee of performance.

Right of the Telephone Company

If this device causes harm to the telephone network, the telephone company may stop your service temporarily or ask you to remove your equipment until the problem is resolved. If possible, they will notify you in advance. If advance notice is not practical, you will be notified as soon as possible and be given the opportunity to correct the situation. You will also be informed of your right to file a complaint with the FCC.

Your telephone company may make changes in its facilities, equipment, operations or procedures that could affect the proper function of this device. If they do, you will be notified in advance to give you an opportunity to maintain uninterrupted telephone service.

Federal communication commission (FCC) Notice

FCC Registration Number: This device complies with Part 68, Rules and Regulations, of the FCC for direct connection to the Public Switched Telephone Network (the FCC registration number and REN number appear on a sticker). If requested, this information must be provided to the telephone company.

Your connection to the telephone line must comply with these FCC rules:

.   Use only an FCC standard RJ11W/RJ14W or RJ11C/RJ14C network interface jack and FCC compliant line cord and plug to connect to the telephone line. (To connect the device press the small plastic tab on the plug at the end of the telephone's line cord. Insert into a jack until it clicks. To disconnect, press the tab and pull out.)

.   If a network interface jack is not already installed in your location, you can order one from your telephone company. Order RJ11W/RJ14W for wall mounted telephones or RJ11C/RJ14C for desk/table use. In some states, customers are permitted to install their own jacks.

.   This device may not be connected to a party line or coin telephone line. Connection to Party Line Service is subject to state tariffs (contact the state public utility commission, public service commission or corporation commission for information).

.   It is no longer necessary to notify the telephone company of your device's Registration and REN number however, you must provide this information to the telephone company if they request it.

.   If trouble is experienced with this equipment, for repair or warranty information please contact:
Local dealer or
MCDI
86 Claude-Champagne Avenue., Montreal, QC, Canada   H2V 2X1
Telephone: +(514) 481-1067   Fax: +(514) 481-1487

.   If the equipment is causing harm to the telephone network, the telephone company may request that you disconnect it until the problem is resolved.
.   This device does not have any serviceable parts. Repair or exchange must be made by the manufacturer or its representatives.

Signaling method: This device does not dial out.

Ringer Equivalence Number: The FCC Registration label (on the device) includes a Ringer Equivalence Number (REN) which is used to determine the number of devices you may connect to your telephone line. A high total REN may prevent telephones from ringing in response to an incoming call and may make placing calls difficult. In most areas, a total REN of 5 should permit normal telephone operation. To determine the total REN allowed on your telephone line, consult your local telephone company.

Hearing aids This device does not convert the signal for human hearing.

Programming Emergency numbers: This device does not dial out.

Important safety instructions

When using the device, basic safety precautions should always be followed to reduce risk of fire, electrical shock and injury to persons including the following:

1.   Read and understand all instructions.
2.   Follow the warnings and instructions marked on the product.
3.   This device is installed in a computer. This work should be done by a qualified computer technician.
4.   Avoid using during electrical storm. There may be a remote risk of electrical shock from lightning.
5.   CAUTION: Do no use sharp instruments during installation procedure to eliminate the possibility of accidental damage to the device, the computer or the cord.
6.   Save these instructions.

Europe   EC Declaration of Conformity

We:

    MCDI Inc.
    86 Claude-Champagne Avenue
    Montreal, QC
    Canada H2V 2X1

Declare under our sole legal responsibility that the following products conform to the protection requirements of council directive 89/336/EEC on the approximation of the laws of member states relating to electromagnetic compatibility, as amended by directive 93/68/EEC:

<div align="center">MCDI-TLR+ alarm receiver</div>

The products to which this declaration relates are in conformity with the following relevant harmonised standards, the reference numbers of which have been published in the Official Journal of the European Communities:

    EN50082-1:1992 --- EN55022 CLASS A --- EN 60555 PARTS 2 & 3 ---EN41003:1993 --- BAPT Note 48 revision 5
    EN60950/IEC Ed 2 Amendment No1 1992, Amendment No2 1993, Amendment No3 1996

Signed this 7th day of January 1997

MCDI Inc.

Europe EN41003 Warning Application Note 48, Issue 5

1) The power required by the host and the total of all adapter cards installed within the host environment, together with any auxiliary apparatus, shall not exceed the power specification of the host apparatus.

The power requirements for the TLR+ receiver are:

From computer	12V	600 mA max.
From External Battery (standby)	6V	500 mA
Charging Voltage	6.7 Volts	500 mA (Current Limit)

2) It is essential that, when other option cards are introduced which use or generate a hazardous voltage, the minimum creepages and clearances specified in the table below are maintained. A hazardous voltage is one which exceeds 42.4V peak a.c. or 60V d.c. If you have any doubt, seek advice from a competent engineer before installing other adapters into the host equipment.

3) The equipment must be installed such that with the exception of the connections to the host, clearance and creepage distances shown in the table below are maintained between the card and any other assemblies which use or generate a voltage shown in the table below. The larger distance shown in brackets applies where the local environment within the host is subject to conductive pollution or dry non-

Installation guide for Alarm Receivers TLR+ and SA-TLR+

conductive pollution which could become conductive due to condensation. Failure to maintain these minimum distances would invalidate the approval.

4) The analogue telecommunications interface is intended to be connected to telecommunication network voltage (TNV) circuits which may carry dangerous voltages. The telephone cord(s) must be disconnected from the telecommunications system until the card has been installed within a host which provides the necessary protection of the operator. If it is subsequently desired to open the host equipment for any reason, the telephone cord(s) must be disconnected prior to effecting access to any internal parts which may carry telecommunication network voltages.

Table:

Clearance (mm) X	Creepage (mm) Y	Voltage Used or Generated by Host or Other Cards
2.0	2.4 (3.8)	Up To 50 Vrms or Vdc
2.6	3.0 (4.8)	Up To 125 Vrms or Vdc
4.0	5.0 (8.0)	Up To 250 Vrms or Vdc
4.0	6.4 (10.0)	Up To 300 Vrms or Vdc

For a host or other expansion card fitted in the host, using or generating voltages greater than 300V (rms or dc), advice from a competent telecommunication safety engineer must be obtained before installation or relevant equipment	Above 300 Vrms or Vdc

Host:
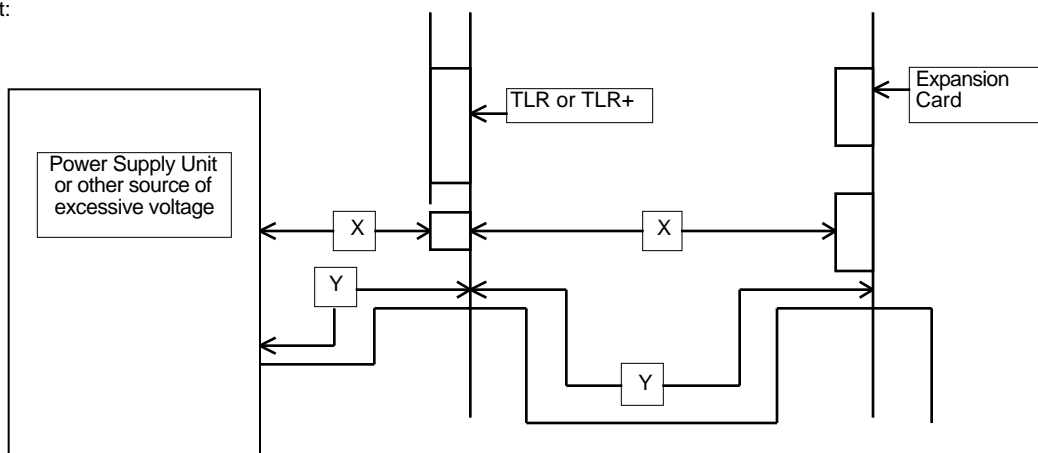
Technical data sheet for TLR+

Description

TLR+ is an enhanced performance version of the TLR, MCDI's popular PC-based twin-line alarm receiver card.

TLR+ uses a high-performance micro-controller and can be installed in any standard chassis IBM™ or compatible PC - AT, 386, 486 or Pentium™.   TLR+ can interface to two telephone lines, with no limit on the number of customers per line. It provides a DB25 parallel printer port.

With expanded memory, faster modem circuitry, improved PC bus interface and Caller ID option, TLR+ adds many new and attractive features to the basic Monitoring Station.

Option: Remote display / control unit. Packaged as stand alone device or fitted in PC's CD anchor slot.

Certification

FCC(USA), IC(Canada), CE-Security (Europe), CE-0560 Telecom (Europe), ICT D800-428K (Germany), IBPT TC970587 (Belgium) .

Specifications

Communications:

TLR+ provides an RJ11 type phone jack for connection to one or two telephone lines.

Type	:	Pulse, DTMF, FSK
Reception Speed	:	10, 20, 40 pps DR / CS
Handshake and Kissoff	:	1400Hz / 2300Hz/2225Hz
Pulse Frequency//Telim	:	1800Hz / 1900H//1100Hz

Reception Formats supported:

Acron	Radionics 6500
Ademco:	Radionics extended
- Slow/Fast;	Sescoa Slow, Super Fast
- Contact ID;	Sescoa Standard
- Extended;	SIA
- Express;	Contact ID
- High Speed	- compressed & converted
CFSK,BFSK VFSK	Silent Knight Slow
MCDI-Take-a-look	SurGard
FBI Super Fast	Napco Point ID
3x1	3x1 extended
4x1	3x1 extended compressed 4x2
4x1 extended	4x1 extended compressed 4x2
4x2	Zero removed 3x1, 4x1, extended.
Optex's Varitech	C&K: Bell 103A2 or CCIT on option
For Germany and Scandinavia, as Pulse replacement:	
Telim	Robofon

Printer Output:

°   Standard DB25 connector for Centronics Parallel Interface.

°   Card linking arrangement allows one printer to serve all TLR+ receivers in one PC.

Event Logging when PC is absent:

TLR+ can store up to 800 events (Native mode), 1000 events (Ademco 685 / Surgard mode).

Features

- Supports SIA, CFSK,BFSK, VFSK
- Caller Identification (Option)
- Internal buffer - 800 to1000 Events
- CMOS Lithium battery for non volatile memory
- Dead line detection
- Up to eight receivers per PC
- Supports software retransmit function
- Configureable address and IRQ
- Alert/Warning buzzer
- Supervision of back-up battery
- Selectable Monitoring software interfaces
- Listen-in, Two way voice
- Remote control and display (option)

Power Requirements:

From computer +12V Supply:	500 mA max.
From 6V Battery (standby):	500 mA

Port & IRQ:

Port address is configured by rotary switch and IRQ by setup program:

- COM 1 , 2, 3, or 4 and up to 16 addresses
- IRQ 3, 4, 5, 9,10,11, 12, 15.

Battery Back-up:

TLR+ provides charging and supervision circuitry for an external 6-Volt battery (not supplied).

Charging Voltage	6.7 volts
Charging Current Limit	500 mA

Station Requirements:

°   IBM™ or Compatible AT, 386, 486 or Pentium™ computer with Standard chassis, ISA bus, 640Kbytes RAM, unused COM port and DOS Version 3.1 or later

°   Printer with Centronics parallel interface and cable with DB25 connector.

Monitoring Software:

TLR+ interfaces with Monitoring software in Native mode, Ademco™ 685 emulation mode and SurGard™ MLR2 emulation mode.

Optional remote control MRD1000

- Displays incoming signals or controls on 2 lines by 20 characters.
- Configures and operates a TLR+ or a SA-TLR+.
- Alarm acknowledge key for easy operation.
- Power fed by TLR+ or SA-TLR+.
- External self contained unit or Mounted in PC's CD slot.