

MCDI

RACK16

INDUSTRIAL ALARM RECEIVER 2 TO 16 LINES



Installation Guide and user manual

RACK16 user guide

Technical data sheet

Description

RACK16 is a (19") rack mounted receiver with a 2 line basic configuration upgradable to 16 lines. Displays line status and incoming signals on integrated monitor.

Based on high-performance TLR+ receiver, RACK16 comes with 2 keyboard connectors, 2 serial ports, Ethernet port on option and parallel printer port.

RACK16 is Internet compatible and connects directly to LAN without in between PC. Monitoring Station sees RACK16 as a receiver, COM or LAN connected. RACK16 is the reliable and configurable alternative for the high volume year 2000 Central.

Line circuitry is certified: FCC(USA), IC(Canada), CE-Security(Europe), CE-Telecom (Europe), ICT (Germany), ICPT (Belgium)

Specifications

Communications

| | | |
|------------------------|---|-------------------------|
| Type | : | Pulse, DTMF, FSK |
| Reception Speed | : | 10, 20, 40 pps (dr/cs) |
| Handshake and Kiss-off | : | 1400Hz / 2300Hz//2225Hz |
| Pulse Frequency//Telim | : | 1800Hz / 1900Hz//1100Hz |

Reception Formats supported:

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

Power Requirements:

| | |
|----------------------------------|---------------------|
| Input voltage selectable: | 120V/240 V 50/60 Hz |
| From external 24V Battery input: | 5 A |
| Fully integrated UPS function | |

Event Logging:

Stores up to 20 000 events in a non volatile memory. Each TLR+ receiver board also has its own logging capacity of 800 to 1 000 events.

Printer Output:

Standard DB25 connector for Centronics Parallel Interface.

Addresses:

Individual line numbering. RACK16 is addressable as two 8 line receiver blocks.

Features

- FSK (SIA,CFSK,BFSK,VFSK) formats support.
- 20 000 events internal buffer.
- Up to eight twin line receiver cards per RACK16.
- Dead line detection.
- 2 External keyboard connectors.
- Lock and key for reset
- Built-in UPS and charger for external battery
- Alert/Warning buzzer and acknowledge button.
- Listen-in, Two way voice.
- Permanent receiver status self check.
- Readily exchangeable daughter board
- Built in watchdog.

Battery Back-up:

RACK16 provides charging and supervision circuitry for an external 24-Volt battery (not supplied).

| | |
|------------------------|--------|
| Charging Voltage | 27.6 v |
| Charging Current Limit | .6 a |

Size, weight and construction:

19" / 48 cm (W) x 20" / 51 cm(D) x 7" / 18 cm (H)
 Weight 17.2 k37.8 lb empty of receiver.
 Each added TLR+ receiver weight 0.31 kg/0.68 lb
 Rugged steel chassis, zinc plated and sturdy protective coating. Cooling fan at front panel with removable filter (in flow)

Monitoring Software:

RACK16 interfaces with Monitoring software in SurGard™ emulation mode. Compatible with most automation software on the market.

Configuration

- Intel Processor 40 Mhz w/watch dog.
- Disk on chip 2mb.
- Monitor 7" VGA 80X25.
- Floppy drive 3.5".
- ITC/IP.(Soon)
- Parallel port LPT1.
- Network access (Ethernet on option soon).

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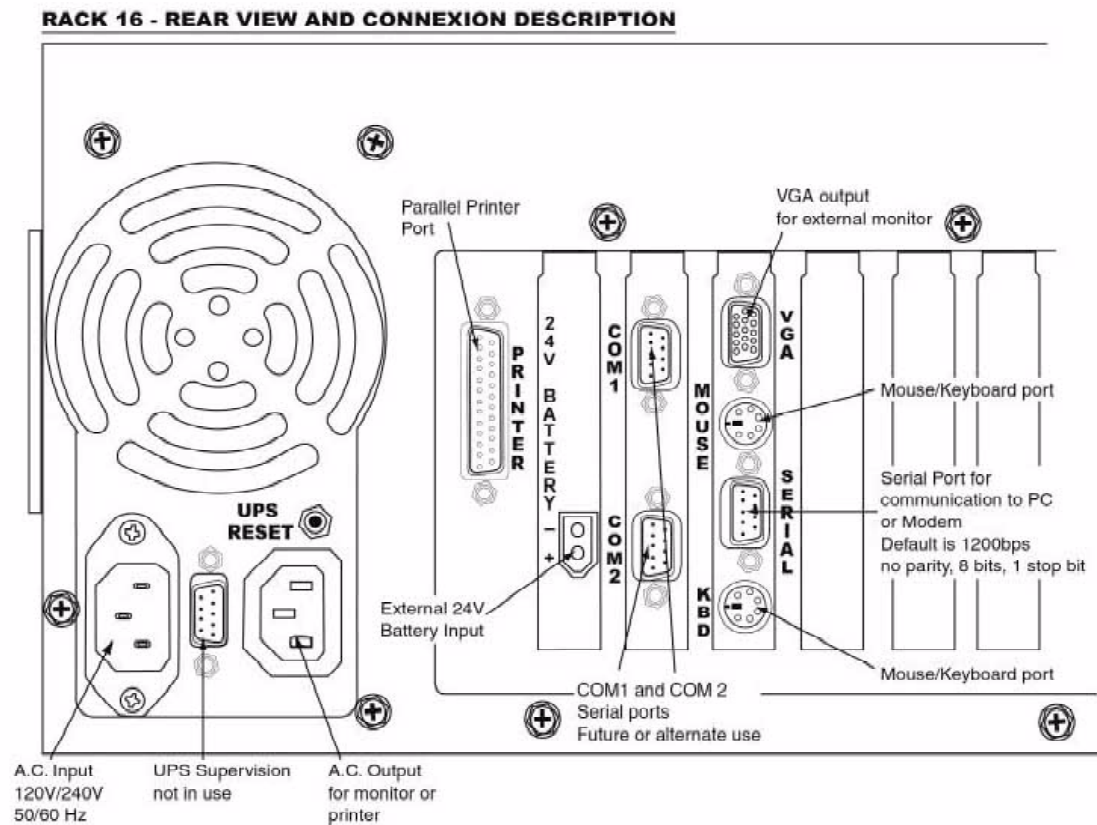
Rack16 Alarm receiver

Rack16 is a rack type PC computer equipped with industrial grade components and features to offer a dedicated alarm receiver. Capacity can reach 16 telephone lines by steps of 2 lines.

Firmware driving this powerful unit is the RACK24 software shipped with all MCDI receivers.

Rack16 comes loaded with TLR+ receiver cards as ordered. Firmware is permanently loaded in memory and unit and is ready to operate.

Installation of RACK16



1. Components

- Rack16 receiver
- Reset key
- Power cord (USA-Canada type)
- Battery cord
- PC DB9 to DB9: null modem cable
- TLR+ receiver boards (Quantity as ordered)

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- For full battery backup, using battery cable (supplied), connect a 24 V battery (not supplied)
ATTENTION: Battery must always be connected before AC to trigger UPS
- Plug Rack16 into AC outlet 120/240V 50/60 Hz
- Connect a standard PC keyboard (not supplied) to Keyboard connector

Maximum power drawn by fully loaded Rack16 is 5A.

Each TLR+ receiver uses 0.5A nominal.

Battery power of 120Ah should support fully loaded Rack16 for 24 hours.

- Connect telephone lines to RJ11 connectors. Telephone lines should be free of any other devices.
- Connect available printer to DB25 Centronics parallel connector identified PRINTER.
Printer and printer cable are not supplied.
- Connect Rack16 to PC Serial port using cable supplied. DB9 to DB9: null modem.
- Power up unit
- Reset

Resetting Rack16 is done by way of a key to be inserted into front plate lock.

Resetting Reboot Rack16 computer

Alarm buffer and settings are saved when resetting.

- Standard display

```

          RACK24 Release 3.0.A - Copyright (c) 1998,2000 - MCDI Inc.
*****
* LINE STATUS                               ** RECEIVER STATUS **
* 1 : ....      2 : ....      3 : ....      4 : ....      ** Serial : OnLine *
* 5 : ....      6 : ....      7 : ....      8 : ....      ** TCP/IP1 : 0.0.0.0 *
* 9 : ....     10 : ....     11 : ....     12 : ....     ** TCP/IP2 : 0.0.0.0 *
* 13 : ....     14 : ....     15 : ....     16 : ....     ** Printer : OnLine *
* 17 : ....     18 : ....     19 : ....     20 : ....     ** Power : AC *
* 21 : ....     22 : ....     23 : ....     24 : ....     ** 15:39   09/08/00 *
*****
* TRAFFIC
*
*
*
*
*
*
*
*
*
*
*
*
***** <F1> RACK-16 Setup - <F2> Line Cards Setup *****

```

- Configure receiver with keyboard using F1 and F2 functions

Installation of new receiver boards

- Physical limitations

RACK16 holds maximum of 8 TLR+ receiver boards for a total of 16 telephone lines

- Firmware limitations

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TLR+ receivers must be loaded with Firmware level T7-5.1.1 or higher.

2. Address setting

- TLR+ receiver boards may be inserted in any ISA slot available
- Physical position does not matter
- Set TLR+ S2 rotary switch to any position 5 and up
- Each TLR+ must have an address of its own
- It is easier to go sequentially 5,6,7 ...F
- Rebooting RACK sets up TLR+ receivers

F1 Rack16 configuration

```
***** RACK SETUP *****
*
*
*   AUTOMATION SOFTWARE           : No
*   BAUD RATE                     : 3      1200 Baud >-----> 0 = 9600
*   NETWORK DRIVE, EMPTY = NONE   :      1 = 4800
*   ACK DELAY FROM AUTO. SOFTWARE : 1      2 = 2400
*   HEARTBEAT                     : No     3 = 1200
*   HEARTBEAT DELAY               : 30    4 = 600
*   RECEIVER NUMBER LINES 1 TO 12 : 1
*   RECEIVER NUMBER LINES 13 TO 24: 1
*   SEND DATE AND TIME            : No
*   SEND DATE WITH YEAR          : No
*
*   RECEIVER DATE                 : 2000/08/09
*   RECEIVER TIME                 : 15:40
*
***** <ESC> Exit *****
```

AUTOMATION SOFTWARE : Yes/No

With monitoring software running on the Monitoring PC, turn option to YES. That way, if communication is broken between Rack16 and computer or the software is not running, etc., RACK24 will beep and display COMPUTER ABSENT message. Once the communication resumes, COMPUTER RESTORE message will be sent.

BAUD RATE : 3

Baud rate to Computer of 600, 1200, 2400, 4800 or 9600 may be selected. Default is 1200 bauds

NETWORK DRIVE (for future TCP/IP link)

Not used.

ACK DELAY FROM AUTOMATION SOFTWARE : 1

Wait time for ACK (from automation software) before resend

HEARTBEAT : No

Heartbeat signal sent every (see next option) second

HEARTBEAT DELAY : 30

Delay in second between each heartbeat signal.

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RECEIVER NUMBER Line 1 to 12 : 1

Rack16 emulated up to Two Surgard receivers.

Receiver cards 1 to 6 for lines 1 to 12 are given a number with this parameter.

A different number can be assigned to the first and second group of 12 lines. The same number can be used for both groups as well.

RECEIVER NUMBER Line 13 to 24 : 1

Receiver cards 7 to 12 for lines 13 to 24 are given a number with this parameter.

A different number can be assigned to the first and second group of 12 lines. The same number can be used for both groups as well.

SEND DATE AND TIME : No

SEND DATE WITH YEAR : No

Select if date, time and year should be sent.

RECEIVER DATE :

RECEIVER TIME :

Set Rack16 date and time. RACK16, holds date and time, not by the individual TLR+ receiver cards.

F2 Line cards configuration

```

*
*** LINE CARD *****
*
* 1 - 2 ** LINE CARD NUMBER : 1 - 2 *
* 3 4 ** *
* 5 6 ** Line 1 Number : 1 *
* 7 8 ** Line 2 number : 2 *
* 9 10 ** Sescoa SS Instead 4x2 sum : No *
* 11 12 ** 3x2 Instead 4x1 : No *
* 13 14 ** Compress Extended : No *
* 15 16 ** Wait after Off Hook : No *
* 17 18 ** Caller ID To PC : No *
* 19 20 ** Caller ID ALL : No *
* 21 22 ** Listen-in (Empty or) : 1 .. F *
* 23 24 ** *
*
* ** Start Handshake With : 1 1 = 1400 HZ / VFSK *
* ** 2 = SIA / CFSK *
* ** 3 = DUAL 1400HZ / 2300HZ *
* ** 4 = 2300HZ *
* ** 5 = STRATEL *
* ** 6 = TELIM *
* ** 7 = ROBOFON *
*
* ** *
*
*** <CR> Edit ***** <ESC> Exit *****

```

Similar to the INITPLUS window used to setup TLR+ receivers. Configure each TLR+ card included in Rack16. Select Line card to configure and press ENTER. Cursor will move to right side of display.

Setup display description and commands**Line card section**

Line card refers to TLR+ receivers installed in Rack16.

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

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

Parameters displayed on the right are actual operating parameters.

Press <ESC> to Exit

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

OPTIONS:

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)

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

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

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

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

Listen-In Empty or 1 .. F See detailed explanation of Listen-in at the end of this section
(3x1,4x2) Define code to trigger Listen-In mode in 3x1 or 4x2 formats

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

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

Start handshake with 1 1400hz / VFSK

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| | |
|---|----------------------|
| 2 | SIA / CFSK |
| 3 | DUAL 1400hz / 2300hz |
| 4 | 2300hz |
| 5 | STRATEL |
| 6 | TELM |
| 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.

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 than 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.

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RACK16 Error messages

| | |
|-----------|---|
| 0000 A01 | : Printer Error |
| 0000 R01 | : Printer Restored |
| 0000 Fxx | : Line Card xx (01..12) Absent |
| 0000 Exx | : Line Card xx (01..12) Restored |
| 0000 A15 | : AC Lost |
| 0000 R16 | : AC Restored |
| 0000 A03 | : 24 volt Battery Low |
| 0000 R04 | : 24 volt Battery restored |
| 0000 T10 | : Faulty Date Received On Line Card |
| 0000 A2xx | : Telephone Line Fault on Line xx (01..24) |
| 0000 R3xx | : Telephone Line Restored on Line xx (01..24) |

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 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.

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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.

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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 not 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:

MCDI-TLR+ alarm receiver

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.

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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-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 |
|---|-----------------------|

