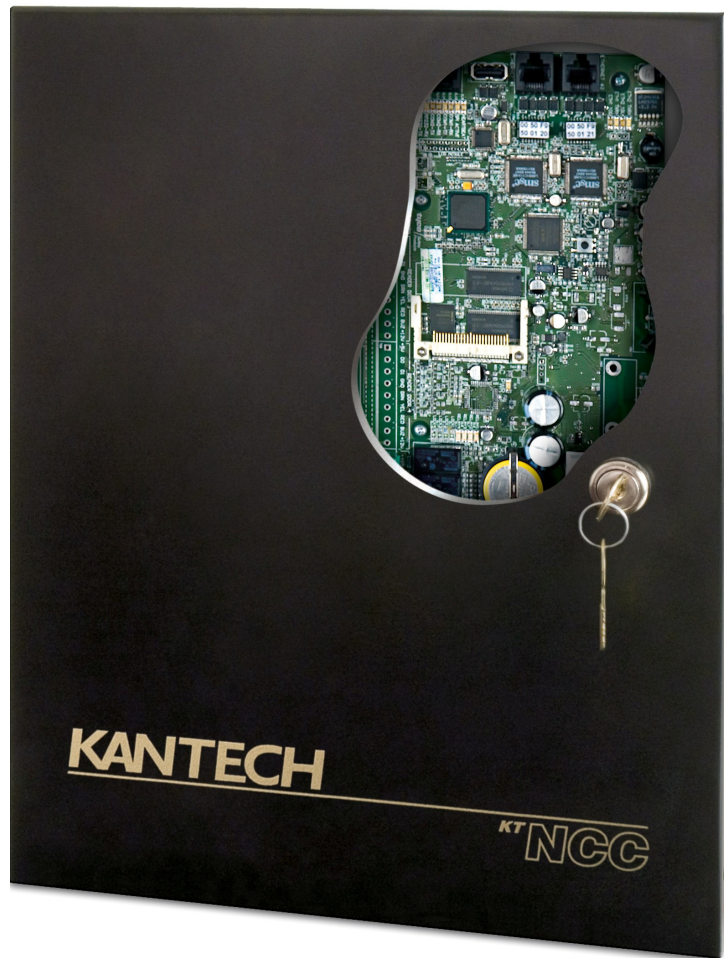


KT-NCC

Network Communications Controller Installation Guide



DN1611-1908

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Pre-Installation Information

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Safety Instructions

Important: NEVER INSTALL THE EQUIPMENT DURING A LIGHTNING STORM!

This equipment, KT-NCC NETWORK COMMUNICATIONS CONTROLLER Model KT-NCC-EU shall be used installed and used within an environment that provides the pollution degree max 2 and over voltages category II NON HAZARDOUS LOCATIONS, INDOOR only. The equipment is FIXED and PERMANENTLY CONNECTED and is designed to be installed by Service Persons only; [service person is defined as a person having the appropriate technical training and experience necessary to be aware of hazards to which that person may be exposed in performing a task and of measures to minimize the risks to that person or other persons.] The equipment is installed in a metallic cabinet that meets the applicable requirements for a FIRE ENCLOSURE.

1. The **connection to the mains supply** must be made as per the local authorities rules and regulations: In the UK as per BS6701. An appropriate disconnect device must be provided as part of the building installation. Where it is not possible to rely on the identification of the NEUTRAL in the AC MAINS SUPPLY, the disconnecting device must disconnect both poles simultaneously (LINE and NEUTRAL).
2. AVOID **setting up** the equipment near heaters, air conditioners, ventilators, and/or refrigerators; DO NOT select a place that exposes your KT-NCC to direct sunlight, excessive heat, moisture, vapors, chemicals or dust.
3. If **during the installation** a knockout on the cabinet is removed, it is the installer's responsibility to ensure that the same degree of protection for the cabinet is provided by the use of bushings, fittings, adequate sealant, etc.
4. The metallic **cabinet must be secured to the building structure before** operation. Use four (4) stainless steel tapping screws #8, 32 mm (1.25 in) to mount the cabinet.
5. Regarding the **power supply, it is permanently connected**, fail safe, with double or reinforced insulation between primary and secondary circuits. In EU countries it must meet the applicable requirements of the Low Voltage Directive and is protected as per the EN60950-1: 2001 Standard Requirements. In all other countries, it must be of an approved type acceptable to the local authorities.
6. The **ground connection** must be as shown within the included diagram, or equivalent.
7. **Internal wiring** must be routed in a manner that prevents:
 - Excessive strain on wire and on terminal connections;
 - Loosening of terminal; connections;
 - Damage of conductor insulation.
8. It is the end-user and/or installer's responsibility to ensure that the disposal of the used batteries is made according to the waste recovery and recycling regulations applicable to the intended market.
9. There are **no serviceable parts within the equipment**; For any issues regarding the equipment please contact your installer.
10. **DISCONNECT POWER BEFORE SERVICING.**

**Technical
Support**

For technical support, email access-support@jci.com during business hours, or go to:
http://www.kantech.com/Support/Contact_Technical_Support_Advanced.aspx
The following table lists the technical support phone numbers and opening hours.

Country/Region	Phone Numbers
North America Toll Free +888 222 1560 8:00 to 20:00 (GMT -05:00)	
US and Canada	Direct: +1 450 444 2030
Latin America 8:00 to 20:00 (GMT -03:00)	
Argentina, Buenos Aires	Direct: +5411 5199 3104
Brazil, Sao Paolo	Direct +5511 3181 7377
Chile, Santiago	Direct +56 2 3210 9662
Colombia, Bogota	Direct +57 1344 1422
Colombia, Cali	Direct +57 2891 2476
Colombia, Medellin	Direct +57 4204 0519
Costa Rica, National	Direct +506 4000 1655
Dominican Republic, Santo Domingo	Direct +1829 235 3047
El Salvador, San Salvador	Direct +503 2136 8703
Guatemala, Guatemala City	Direct +502 2268 1206
Mexico, Mexico City	Direct +5255 8526 1801
Panama, Panama City	Direct +507 836 6265
Peru, Lima	Direct +51 1642 9707
Venezuela, Caracas	Direct +58 212 720 2340
Asia Toll Free +800 CALL TYCO / +800 2255 8926 9:00 to 17:00 (GMT +08:00)	
Asia	Direct +8621 6023 0650
China	Direct +400 671 1528
India	Direct +1800 1082 008
Australia	Direct +02 9684 3980
EMEA Toll Free +800 CALL TYCO / +800 2255 8926 8:00 to 18:00 (GMT +01:00)	
EMEA	Direct +31 475 352 722
United Kingdom	Direct +44 330 777 1300
Israel	Direct +972 772 201 350
Spain	Direct +900 99 31 61
France	Direct +0800 90 79 72
Germany	Direct +0800 1806 757
Italy	Direct +3902 3051 0112

Country/Region	Phone Numbers
Bahrain	Direct +800 0 4127
Belgium	Direct +0800 76 452
Ireland	Direct +1800 94 35 70
Nordic countries	Direct +4544 94 90 01
Denmark	Direct +4544 94 90 01
Greece	Direct +00 800 3122 9453
Russia	Direct +8 10 800 2052 1031
Turkey	Direct +00 800 3192 3037
United Arab Emirates	Direct +800 0310 7123
South Africa	Direct +2721 100 3882

KT-NCC Compliance Specifications

KT-NCC FCC & IC Compliance

This device complies with Part 15 of 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 undesired operation. This class A digital apparatus meets all requirements of the Canadian Interference Causing Equipment Regulations. The KT-NCC is also compliant with EN55022: 1994, amendment 1:1995, Class A.

UL 294 Compliance Notice

- The KT-NCC is UL 294 listed with EntraPass, KT-300 Door Access Controllers, IoProx Proximity readers, and Trex request to exit devices.
- Each KT-NCC enclosure will be installed in a secured and protected location with tamper supervision
- Each KT-NCC will be powered by a class 2 transformer such as the TR1640P/UL.
- Each KT-NCC will be battery backed up with a KT-BATT-12, 12V/7Ah battery.
- Should additional sites or loops of KT-300 controllers be added, the installer must configure alarms to be acknowledged in the event of communication troubles or failures.
- Each KT-NCC will be equipped with an AC powered LED installed outside the KT-NCC and connected to an onboard relay, and visible at all time to monitor relay status, as per UL294.

UL 294 Performance Levels

Model	Destructive Attack	Line Security	Endurance	Standby Power
KT-NCC	Level I	Level II	Level IV	Level I*
KT-CAB3000LDR	Level I	N/A	N/A	N/A
KT-CAB4000LDR	Level I	N/A	N/A	N/A

*Standby Power Level IV when powered by KT-300 or KT-400

UL 1076 Compliance Notice

- The KT-NCC is UL 1076 Listed as a Commercial Proprietary Control Unit Accessory (Section 83.2), with EntraPass and Redundant Server, alarm system features, KT-300 Door Access Controllers, IoProx Proximity readers, and Trex request to exit devices – other sensor devices (temperature, water level, etc.) may be used as long as they are also UL 1076 Listed.
- The EntraPass and Redundant Server shall be running at all time, and manned 24 hours a day, 365 days a year – The EntraPass and Redundant Server will each have their own operator workstation.
- Data processing equipment and office appliance and business equipment used as central supervisory equipment station shall be Listed to Information Technology Equipment - UL 60950.
- Should the EntraPass and/or Redundant Server be replaced, a UL 60950 listed computer must be used.
- The following recommended system requirements apply to the EntraPass Server, Redundant Server, Video Vault, Card Gateway, SmartLink, and Workstation:

Operating Systems

- Windows Server 2008 Standard / Enterprise
- Windows 7 Pro / Enterprise / Ultimate. All in 32-bit and 64-bit versions.

Note: Ensure all operating system have their latest Services packs and updates installed.

- Dual Core processor
- 4GB RAM
- AGP or PCI Express 8X graphics card with 75 MB memory and DirectX 9.0 support
- 10/100 Base-T network adapter EntraPass

Actual requirements may vary based on your operating system and configuration.

UL 1076 Compliance Notice (cont'd)

- The Central Supervisory Equipment shall employ supply line transient protection complying with the Standard for Transient Voltage Surge Suppressors, UL 1449, with a maximum marked rating of 330 V.
- The Central Supervisory Equipment shall employ signal line Transient protection complying with the Standard for Protectors for Data Communications and Fire Alarm Circuits, UL 497B, with a maximum marked rating of 50 V.
- The Central Supervisory Equipment shall employ that communication circuits and network components connected to the telecommunications network shall be protected by secondary protectors for communication circuits. These protectors shall comply with the Standard for Secondary Protectors for Communications Circuits, UL 497A. These protectors shall be used only in the protected site of the telecommunications network.
- The Central Supervisory Equipment shall be installed in a temperature controlled environment. A temperature controlled environment is defined as one that can be maintained between 13° - 35°C (55° - 95°F) by HVAC system. Twenty-four hours on standby power shall be provided for the HVAC system. The standby power system for the HVAC system may be supplied by an engine driven generator alone. A standby battery is not required to be used.
- A marking to identify the application and signaling function of the product is located on the inside of the unit (inner door sticker).
- For certified commercial proprietary control unit accessory applications, the requirements of UL 1076, Commercial Proprietary Control Unit Accessory also apply.
- All alarms shall be reported and acknowledged in the following priority*:
 1. Fire alarm and industrial supervision where a risk of injury to persons, or damage or destruction of property may be involved
 2. Hold-up or panic alarm
 3. Burglar alarm
 4. Watchman tour (Guard tour)
 5. Fire-alarm supervision
 6. Burglar-alarm supervision
 7. Industrial supervision where a risk of injury to persons, or damage or destruction of property will not be involved
- * To set these priorities, please adjust the Event Parameters, found in EntraPass System.
- The following Kantech readers were validated by UL for the UL 1076 standard: P225W26, P225KPW26, P225XSF, P225KPXSF, P325W26, P325KPW26, P325XSF, P325KPXSF, and P600.
- For remote alarm monitoring, the Kantech part number KT-3LED-PLATE must be installed. Refer to the procedure **Install the KT-3LED-PLATE** on **Page 17** for details.

KT-NCC UL Compliance

In order to comply with UL listings, the following has to be met:

- Use of a UL listed 60950 computer
- Use of a UL recognized tamper switch on every housing cabinet for the KT-NCC
- Use only UL listed or recognized cables
- Use only UL listed or recognized adaptors
- Use only a UL listed transformer such as Kantech TR1640P/UL
- Use a Kantech KT-BATT-12, 12V/7Ah battery
- The KT-CAB3000LDR and KT-CAB4000LDR have been evaluated by UL as alternate enclosures

Note: The backup battery provides operation for up to 6 hours; This battery has only been tested for only 4 hours as per Section 33 of UL 294, fifth edition. A message will be sent to the monitoring station when the battery life has less than 4 hours remaining.

**CE & RCM
Compliance**

EN50133-1: Alarm systems - Access control systems for use in security applications: system requirements.

EN55022: Information technology equipment, radio disturbance characteristics.

EN60950: Information technology equipment, safety.

EN61000-6-1: Electromagnetic Compatibility (EMC) - Generic Standards - Immunity for residential, commercial and light-industrial environments.

EN61000-6-2: Electromagnetic Compatibility (EMC) - Generic Standards - Immunity for industrial environments.

Overview

Introduction

The KT-NCC Network Communications Controller, redefines the way you can manage access control for a widely-dispersed environment. In fact, all events from the controllers are stored in the KT-NCC for additional security, in case of communications failure between the controllers and the server. This innovative way of bringing the communication closer to the controller eliminates wiring costs, PC reliability issues, and cuts down the actual distance the information has to travel through the network, greatly reducing the bandwidth required. The KT-NCC can connect up to seven loops per gateway and features four relays that can activate in the event of communication loss, power failure, or upon activation of a tamper switch.

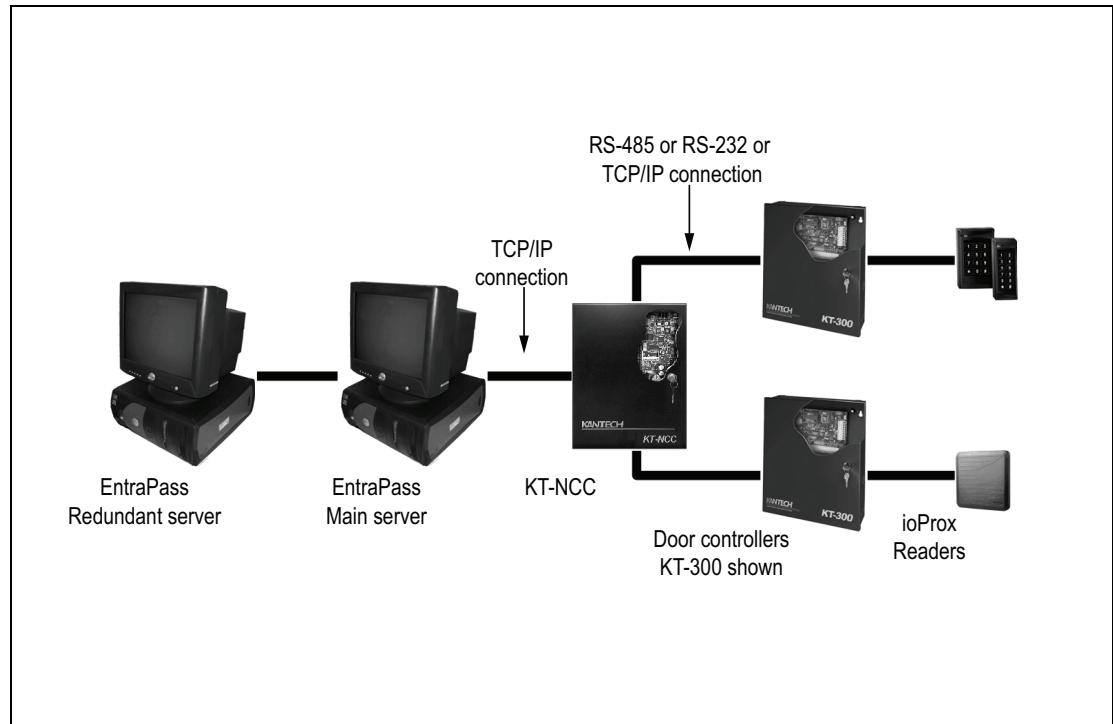


Figure 1: KT-NCC Configurations

Combining the powerful EntraPass Global Edition software to the KT-NCC also allows for a more effective way of utilizing global security features such as the anti-pass back, alarm systems, guard tours, dual custody, etc.

The KT-NCC's main task is to acquire information from all input channels and relay the results back to all output channels through the controller loops. The KT-NCC communicates with the server through an Ethernet 10/100 Base-T port and indicates its communication status through a heartbeat LED. The KT-NCC will report low battery and battery failure events, and can activate relays in instances of battery power loss or communication failure. For added security, the KT-NCC has an onboard rechargeable lithium-ion battery that ensures data retention for a minimum of 75 hours, to safeguard any loss of data due to a complete failure.

Environmental and Electrical Specifications

Table 1: Environmental and Electrical Specifications

Specification	Description
Operating Temperature	2°C to 49°C (35°F to 120°F)
Humidity Level	0 to 85% non-condensed, indoor use only
AC Power Input (UL/CSA)	120 VAC, 16.5 VAC, 40 VA class 2 transformer (Part #: for USA TR1640P/UL - Part # for Canada TR1640P/CSA)

Specification	Description
AC Power Input (CE)	240 VAC, 16.5 VAC, 40 VA (Part #: 17000044 included in the KT-NCC-EU cabinet kit for EMEA)
AC Power Rating	16.5 VAC, 40 VA, 2.42 A
Battery Back-Up	1 KT-BATT-12, 12V/7Ah battery supervised, provides a minimum of 4 hours of operation

**KT-NCC
Specifications**

Table 2: KT-NCC Specifications

Specification	Description
Cabinet Dimensions	375.9 mm (14.8 in) x 304.8 mm (12.0 in) x 125.7 mm (4.95 in)
Cabinet Weight (UL)	4.0 kg (8.8 lb)
Cabinet Weight (CE)	4.8 kg (10.6 lb)
KT-NCC Board dimension with heat sink	22.90 cm (9 in) x 13.98 cm (5 1/2 in) x 5.20 cm (2 1/16 in)
Communication Ports	RS-485 x 2, RS-232, Ethernet 10/100 base-T
Communication Speed	Up to 19,200 Baud for serial communication
Firmware Flash Memory	16 MB
SDRAM Memory	64 MB (Protected by a rechargeable Lithium-ion battery for a minimum of 75 hrs)
Auxiliary Power Output	12 VDC, 250 mA, resettable fuse protected
Relays	4 form "C" relays, 30 VDC/3 Amps

**KT-NCC
Characteristics
with EntraPass
Global Edition**

Table 3: KT-NCC Characteristics With EntraPass Global Edition

Specification	Description
Controllers per KT-NCC	128
Loops Per Gateway	7 loops (2 x RS-485, 1 x RS-232, 4 x IP)
Maximum Controllers per Loop	RS-485 (COM1) = 32 RS-485 (COM2) = 32 RS-232 = 32 IP#1 = 8 IP#2 = 8 IP#3 = 8 IP#4 = 8
Number of Cards	56,000
Readers/Keypads per Gateway	128 X 2 = 256
Door Lock Outputs per Gateway	128 X 2 = 256
Maximum Number of Floors	64 floors
Access Levels	250
Access Door Groups	100
Relay Groups	100
Controller Groups	100
Access Code Groups	100
Operating System	Windows CE embedded v 5.0

Ordering Information

Models Available

- **KT-NCC:** Cabinet with KT-NCC PCB for North America
- **KT-NCC-PCB:** KT-NCC PCB with parts
- **KT-NCC-CAB:** Cabinet only
- **KT-NCC-ACC:** miscellaneous parts for PCB
- **KT-NCC-PCB-ACC:** miscellaneous parts for PCB and cabinet
- **KT-NCC-EU:** Cabinet with KT-NCC PCB and transformer for Europe and Asia

Table 4: Bill of Material

Item Description	KT-NCC (Notes 1,2)	KT-NCC- PCB	KT-NCC- CAB (Note 1)	KT-NCC- ACC	KT-NCC- PCB-ACC (Note 2)	KT-NCC- EU (Notes 1,2)
KT-NCC PCB	1	1	-	-	-	1
Cabinet	1	-	1	-	-	1
VC-485 adapter cable	-	-	-	1	1	-
Ground wire (PCB to cabinet)	1	-	-	-	1	-
Ground wire (door to cabinet)	1	-	-	-	1	-
Green ground wire 18 AWG 20 cm (8 in.)	-	-	-	-	-	1
Tamper switch	1	-	-	-	-	1
Battery cable	1	-	-	-	1	1
KT-NCC-ACC	1	-	-	-	-	1
KT-NCC-PCB-ACC	-	1	-	-	-	-
Inner door sticker for North America, DN1642, see Figure 23: on Page 40	1	-	1	-	-	-
Inner door sticker for Europe and Asia, DN1720, see Figure 24: on Page 41	-	-	-	-	-	1
Installation Manual DN1611 - English	1	1	-	-	-	1
Installation Manual DN1645 - French	1	1	-	-	-	1
Transformer 240 VAC, 16 VAC, 40 VA	-	-	-	-	-	1
Fused terminal blocks	-	-	-	-	-	1
Fuse slow/blow 250 VAC, 315 mA	-	-	-	-	-	1

Note 1: The **KT-NCC**, **KT-NCC-CAB** and **KT-NCC-EU** models also include the CAM LOCK.

Note 2: The **KT-NCC**, **KT-NCC-PCB-ACC** and **KT-NCC-EU** models also include screws and locknuts.

Pre-Installation

Before installing the KT-NCC, confirm that all parts are in order, all necessary tools are available, and that the site is properly prepared.

If you are connecting your KT-NCC to the EntraPass Global Edition software, you must make sure that you are running version 3.17 or higher.

Equipment Checklist UL Only

Note: The equipment checklist is not required for the **KT-NCC-EU** since it is fully assembled by Kantech.

- KT-NCC-CAB: Cabinet with inner door sticker UL, DN1642,
- KT-NCC-PCB: KT-NCC-PCB with accessory kit KT-NCC-PCB-ACC and KT-NCC, *Installation Manual*, DN1611,
- KT-NCC-ACC: Accessory kit with VC-485 adapter cable,
- KT-TAMPER: Tamper Switch,
- An AC transformer 16.5 VAC, 40 VA, class 2 wire-in or plug-in transformer. The Kantech **TR1640P/UL** (in USA) or **TR1640P/CSA** (in Canada) is recommended.
- Kantech 3-LED plate part number **KT-3LED-PLATE** for remote alarm monitoring

Additional Parts

Along with these parts, the following items will be needed to correctly install the KT-NCC:

- One **KT-BATT-12**, 12V/7Ah battery,
- RJ-45 Network cable(s)

Tool Checklist

The following tools will be required to install the KT-NCC:

- Small screwdriver (included in the KT-NCC-ACC and KT-NCC-PCB-ACC kits)
- 0.65 cm (0.25 in) nut driver
- Wire strippers
- Small needlenose pliers

Reading Checklist

We strongly suggest that you keep the following documents close at hand:

- *EntraPass Global Edition Reference Manual*, DN1316
- *KT-NCC Quick Configuration Guide*, DN1656
- *How to Migrate from a Windows Global Gateway to KT-NCC Application Note*, DN1661
- *To Upgrade EntraPass Global Edition from Version 1 to Version 3 Application Note*, DN1541
- *Upgrading NCC8000 to NCC Windows Application Note*, DN1567
- *Setting Up EntraPass Mirror Database and Redundant Server Application Note*, DN1317
- *Lantronix UDS-10 Setup Instructions Application Note*, DN1506
- *Lantronix UDS1100 Setup Instructions Application Note*, DN1665

Site Checklist

Ensure the following:

- The mounting site is ready. The upper mounting screws should be 25.65 cm (9.9 in) center to center, the bottom mounting holes are 31.50 cm (12.40 in) below the upper mount holes.
- The site has been inspected and all wiring complies with UL or CE requirements and other codes as appropriate.
- All preliminary site work is completed and the site is clean and free of dust or other contaminants.

KT-NCC Installation

The KT-NCC installation process consists of installing your KT-NCC and then configure it in EntraPass Global Edition software.

To install the KT-NCC, first mount the cabinet, connect back-up power and grounding connections, then wire all relays and controller loops to the board.

Mounting the KT-NCC Enclosure

The KT-NCC cabinet does not require any additional enclosures.

- The cabinet must be mounted indoor in a secure, yet accessible, location that supports the environmental conditions listed in the environmental specifications on Table 1 on Page 9.
- Leave 23 cm (8 in) clearance space around the sides of the cabinet, and at least 33 cm (13 in) space in front of the cabinet.
- Avoid placing the cabinet near electrical or communication devices.
- Electrical metallic tubing (EMT) 1.9 cm (3/4 in) conduit knockouts are provided on all sides of the cabinet.
- Install the cabinet on the selected wall using four screws fed through the mounting holes. Refer to Figure 25: on Page 42 for details on the KT-NCC enclosure.
- **For KT-NCC UL Cabinet only** - In order for the KT-NCC to comply with UL294 section 32.1.5, the installation technician has the responsibility of installing an AC powered LED outside the KT-NCC cabinet and connect it to relay # 2 on the KT-NCC. The LED must be visible at all time.

Removing the Enclosure Door (Optional)

The enclosure door can be removed to facilitate access to the KT-NCC board and to ease installation. To remove the door:

1. **For KT-NCC UL Cabinet only** - Remove the ground wire from the screw on the door, see Figure 2: on Page 14 below.
2. Lift the door up until the hinges no longer touch the pins.

Note: **For KT-NCC UL Cabinet only** - When re-attaching the ground wire be sure to slide the metal loop at the end of the wire onto the screw, then add the nut on the screw to ensure that the ground wire stays in contact with the door.

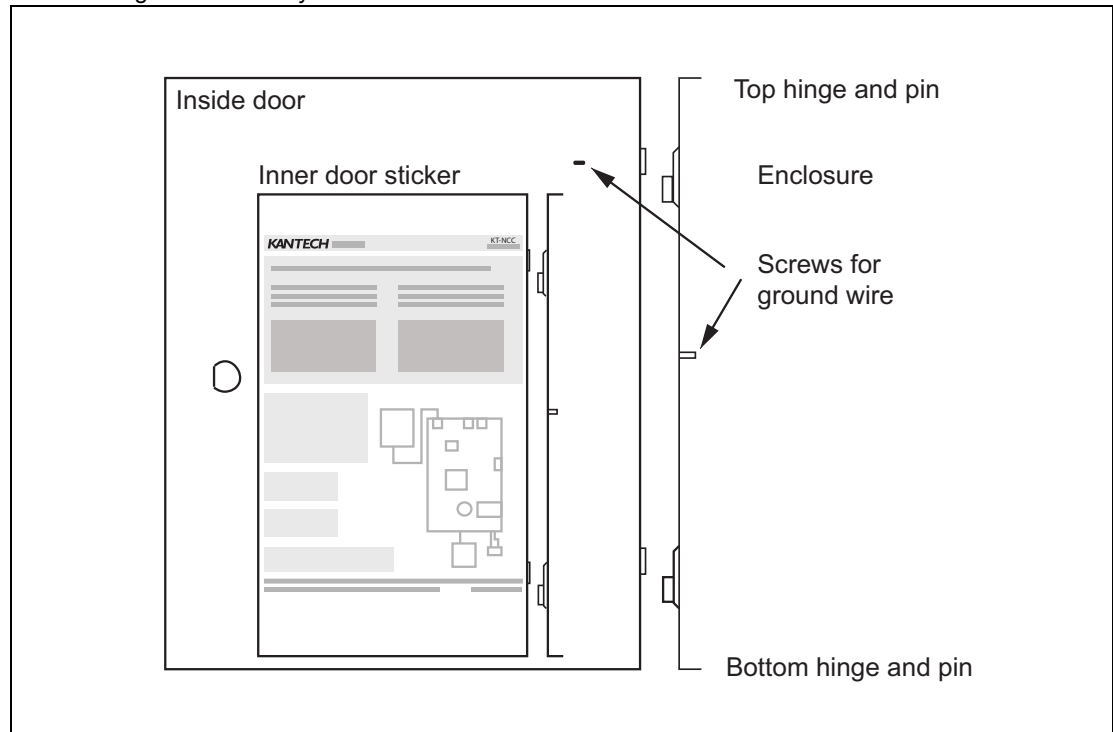


Figure 2: Enclosure Door and Hinges

Connecting the Earth Ground

Use a single conductor solid copper wire to ground the KT-NCC to a good earth ground as per the local electrical code. Refer to Figure 3: on Page 15 below.

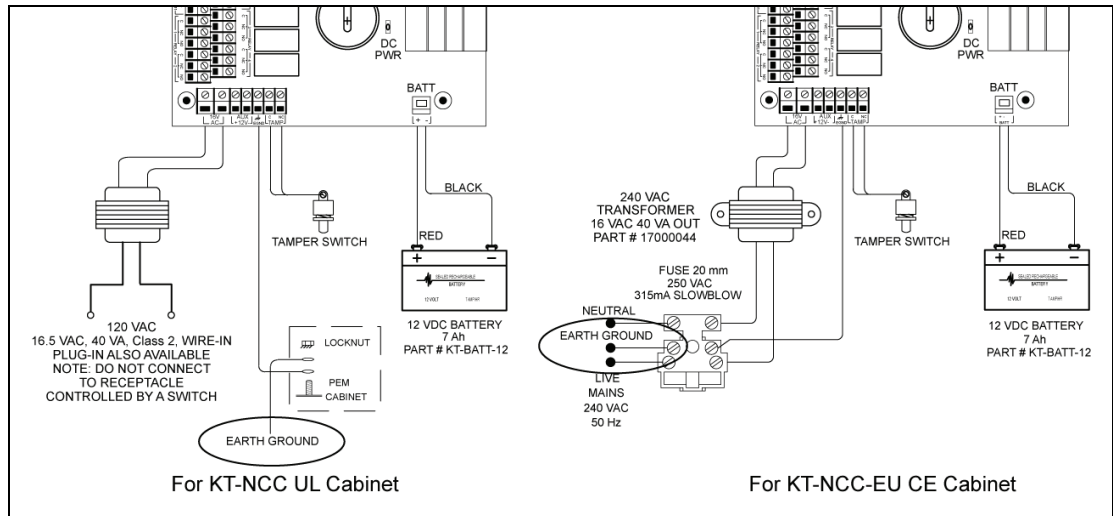


Figure 3: Tamper Switch and Earth Grounding

Connecting the KT-NCC to Controllers Loops

The KT-NCC can connect to two RS-485 expansion buses and through one RS-232 connection. The following figures demonstrate these connections. The maximum connection loop length with the appropriate cable is 1.2 kilometers (4,000 feet).

Note: Connecting several KT-NCC's at a single point is not acceptable nor are "Y" or "spider web networks".

Note: There is no end-of-line resistor to install on the RS-485 terminals on the **last** controller of a loop.

1. The two RS-485 terminals (labeled COM 1 and COM 2) can be found next to the relay terminals at the bottom of the left side of the KT-NCC board. Wire the loops according to Figure 4: on Page 15 below: The orange wire connects into the + terminal; the blue wire connects into the - terminal; and the white wire connects to the **AUX 12V-**.

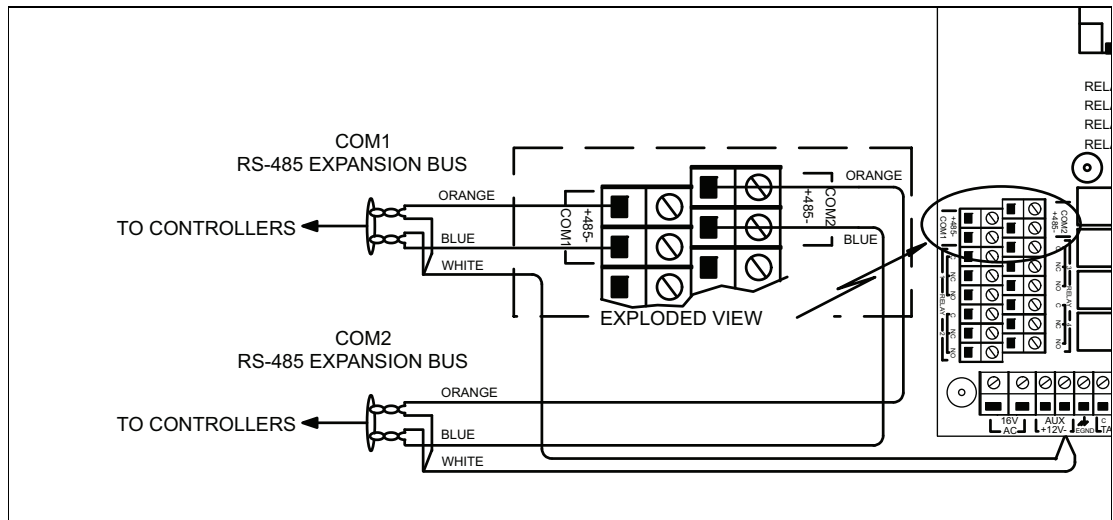
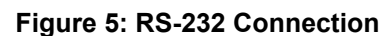


Figure 4: RS-485 Connection

2. The RS-232 connection is demonstrated in Figure 5: on Page 16. A straight flat cable connects from the RS-232 connector on the top of the KT-NCC board to a VC-485.

Connecting the Relays



For the KT-NCC UL Cabinet only - In order for the KT-NCC to comply with UL 294 section 32.1.5, the installation technician has the responsibility of installing an AC powered LED outside the KT-NCC cabinet and connect it to relay # 2 on the KT-NCC PCB. The LED must be visible at all time.



Connecting the Relays (cont'd)

Note: Relay #2 is located at the bottom left of the KT-NCC PCB.

For more information on configuring relays, please refer to the *EntraPass Global Edition Reference Manual*, DN1316.

Installing the KT-3LED-PLATE

For the arm/disarm operation, install the 3-LED plate (Kantech part number KT-3LED-PLATE) according to UL 1076 standards by following this procedure:

For the KT-400 Section:

1. Connect the LED black wire to GND AUX (which is associated with the green and red LEDs).
2. Connect the LED red wire to NO Relays (which is associated with the red LED).
3. Connect the LED red wire to NC Relays (which is associated with the green LED).
4. From AUX, use the 12-V cable and connect it to C Relays (which are associated with the red and green LEDs).

For the KT-300 Section:

1. Connect the LED black wire to GND AUX (which is associated with the red and green LEDs).
2. Connect the LED red wire to RL2 (which is associated with the red LED).
3. Connect the LED red wire to RL1 (which is associated with the green LED). To do this, you need to click the **Devices** tab and, from the menu **Relay**, select **Reverse** from the **General** tab.

Note: The green LED corresponds to **Ready to arm** or **Prevent arming**.

Note: When the red LED is ON, it corresponds to the **arm** function, and when the red LED is OFF, it corresponds to the **disarm** function. The system cannot be armed or disarmed when the **Ready to arm** green LED is OFF.

The electrical plate, with 22 AWG wires, made of stainless steel is considered as a standard.

Note: The 3-LED plate must be located near the reader(s) that is(are) designed to arm or disarm the alarm system. It must be within the secured side of the customer's premises.

EntraPass Configuration

1. From **Devices**, in the **Gateway** dialog box, select the **Onboard Relays** tab, and then select **Server Communication failed** from the **Onboard relay** drop-down menu. Click **Save**, then **Close**.
2. From **Definition**, in the **Alarm System** dialog box, select the **Input** tab, and assign the appropriate inputs in both the **Alarm level #1** and **Prevent arming** fields. To confirm, click **OK**, **Save** then **Close**.
3. From **Definition**, in the **Alarm System** dialog box, in the **Control relay** tab, in the **System status - relay**, choose the wanted replay to use in order to enable **Ready to Arm**. To confirm, click **OK**. **Close**.

Note: For additional software configuration, please refer to *EntraPass Global Edition Reference Manual*, DN1316.

Hardware Configuration:

- From the KT-NCC selected relays (C and NO) as defined previously in the EntraPass configuration, connect a 2-wire cable to the selected input door.
- For the KT-400, use C and Z inputs.
- For the KT-300, use C and the selected input.

Note: The polarity has no importance.

Installing Additional Sites

You can install four additional sites of eight controllers using a Lantronix LA-UDS1100 for each site, as shown in the figure below.

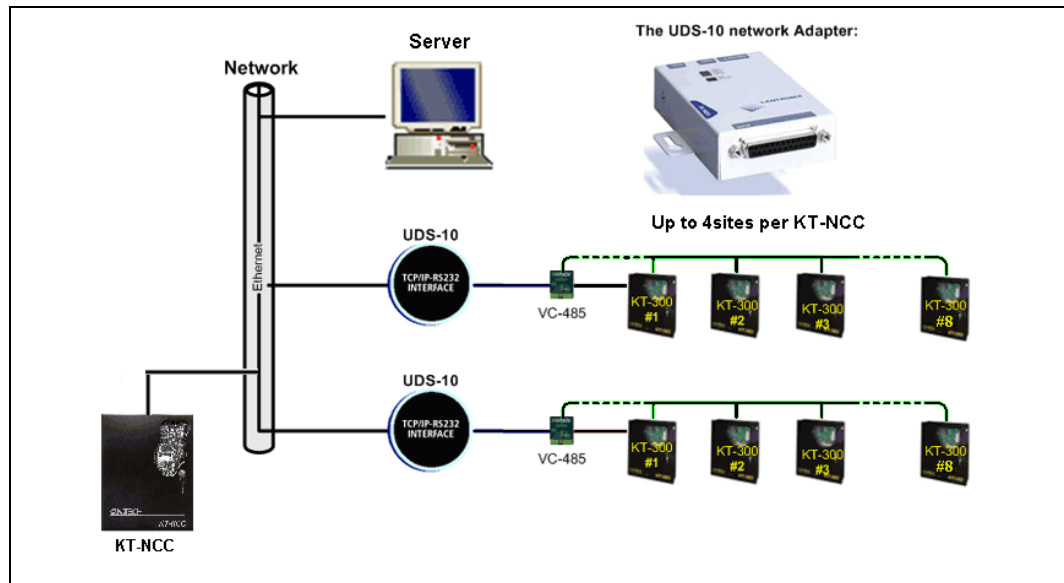


Figure 7: Additional Sites Installed with the Lantronix Network Adapter

Note: This type of installation has not been verified by UL.

Installing the 12V/7Ah battery

The cabinet is large enough to accommodate the battery backup supply and the necessary wiring connections for most applications. The battery sits in the enclosure as shown in Figure 25: on Page 42.

1. Place the KT-BATT-12, 12V/7Ah battery in the cabinet.
2. To connect the board to the battery, connect the battery to the RED and BLACK leads on the KT-NCC as illustrated in Figure 8: on Page 18 below.

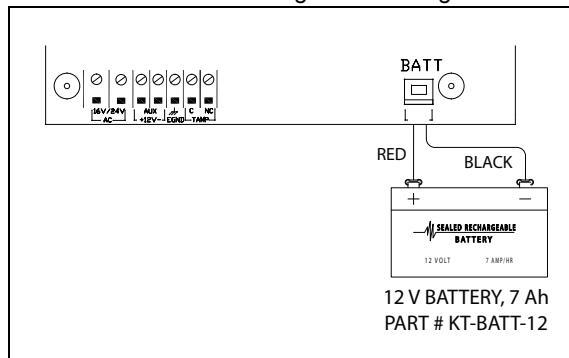


Figure 8: Connecting the Battery

Note: The backup battery will support normal operations for up to 4 hours if the AC supply is removed. An internal battery verification will cut the battery power if the battery voltage level falls below 9.5 volts.

Installing the AC Transformer

1. Install the 16.5 VAC, 40 VA, class 2 transformer. KT-NCC unit will not start on battery alone.

Note: That step doesn't apply to the **KT-NCC-EU** Cabinet.

2. Power up the KT-NCC.
3. Make sure the KT-NCC is in factory default before you start the configuration. Check the blue Heartbeat LED located next to the RS-232 connector to determine the status of communication and other vital parameters. (Refer to Table 7 on Page 43 for details on the heartbeat pulses.)
4. We suggest that you fill-out the detachable *KT-NCC Configuration Reference Sheet* (on the last page of this manual) with your configuration information and keep the information close at hands.

KT-NCC Configuration

Pre-Configuration

Before you register your KT-NCC to EntraPass Global Edition software and start configuring it, you must verify the following:

- Make sure that you are running version 3.17 or higher of EntraPass Global Edition software.
- Define what type of connection your network architecture requires: LAN or WAN, DHCP or Static IP address to the EntraPass server.
- Once you have defined the type of connection you will be using, the System Administrator has to provide you with the proper IP address information.
- We suggest that you fill-out the detachable *KT-NCC Configuration Reference Sheet* with your configuration information and keep the information close at hands. The sheet is located on the last page of this document.

Configuration Scenarios

Two types of network architectures exist: Local Area Network (LAN) and Wide Area Network (WAN). Each of these types of architecture has various possible configurations.

LAN enables users to communicate, exchange data and share resources in an internal network. A local network can be made up of a server and one or several KT-NCCs connected to the server through a hub or switch. Whatever the case, an IP address has to be assigned so that the KT-NCCs and the EntraPass server can communicate. When the EntraPass server is used, a static or DHCP address can be assigned to establish the communication. When the customer server is used, the DHCP server assigns a dynamic IP address.

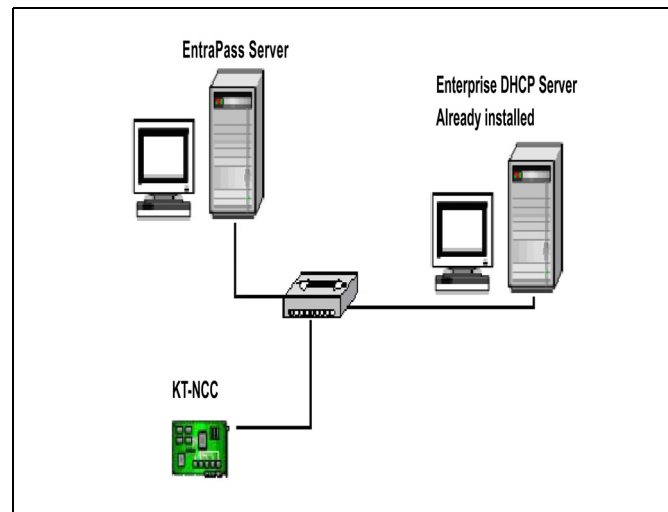
WAN is generally deployed on a long geographic distance and connects two or several local networks. The wide area network may use public networks to communicate and transmit data between the distant networks.

In a WAN architecture, IP addresses can be reserved or the server could be left to assign IP addresses automatically (DHCP).

Here is the definition of the different scenarios and the basic steps you will follow to configure your system.

DHCP with Customer Server IP Address (LAN)

You will use this type of configuration in an environment where the customer DHCP server will assign IP addresses automatically for communication with the KT-NCC.

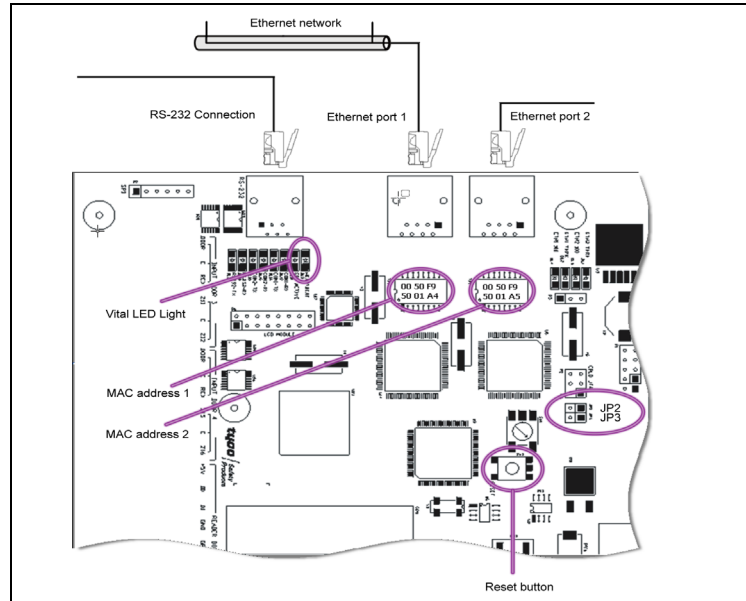


- Perform a hard reset (See instructions on page 23.)
- Connect your KT-NCC to the network (See instructions on page 24.)
- Register your KT-NCC to the EntraPass Global Edition network (See instructions on page 25.)
- Configure gateway parameters (See instructions on page 27.)

- e Check the connection status. (See instructions on page 37.)

Static IP address

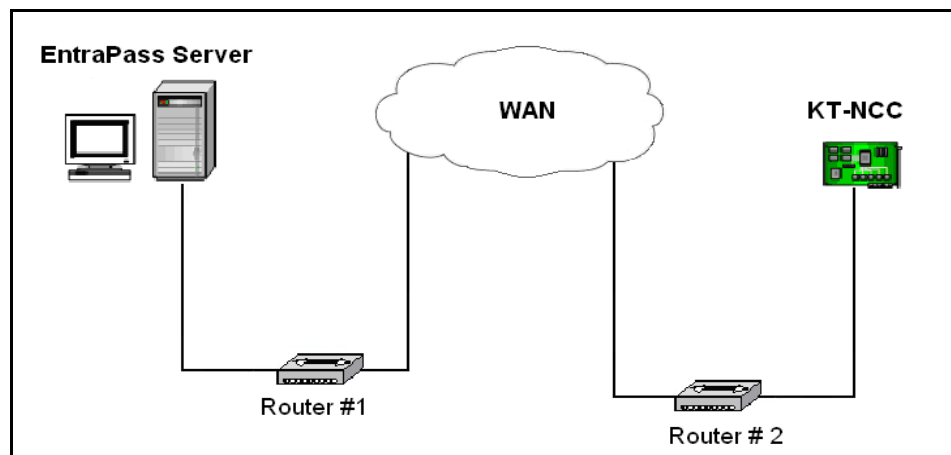
You will use this type of configuration in an environment where the Network Administrator will determine the IP addresses for communication between the EntraPass server and the KT-NCC(s). The IP address can be configured using the KT-NCC Web Configuration Page or the KT-Finder.



- a Perform a hard reset. (See instructions on page 23.)
- b Connect your KT-NCC to the network. (See instructions on page 24.)
- c Register your KT-NCC to the EntraPass Global Edition network (See instructions on page 25.)
- d Assign Static IP address using the KT-NCC Web Configuration Page or the KT-Finder, and configure gateway parameters (See instructions on page 29.)
- e Check the connection status. (See instructions on page 37.)

WAN Configuration

You will use this type of setup in an environment where remote sites are protected with routers and they communicate with each other through the Internet.



- a Initialize the KT-NCC in factory reset mode. (See instructions on page 23.)
- b Verify the port forwarding configuration with the Network Administrator.
- c Connect the KT-NCC to the network. (See instructions on page 24.)
- d Register the KT-NCC to the EntraPass Global Server (See instructions on page 25.)
- e Enter TCP/IP parameters in the EntraPass Global server and configure gateway parameters (See instructions on page 34).

WAN Configuration (cont'd)

f Check the connection status. (See instructions on page 37.)

Port forwarding

Before you start configuring the KT-NCC in a WAN environment, we suggest that you verify the port forwarding parameters with the System Administrator.

- Port forwarding configuration is only done on static IP or reserved DHCP addresses.
- Port forwarding is done to the same IP address. If you install more than one KT-NCC with a router, you should use different ports for every KT-NCC.

NT-NCC	Forward address	Port	Connection type	Protocol
Host router	Server IP address	18002	TFTP firmware update	UDP
	Server IP address	18701	Device communications	UDP
Host router for redundant server	Server IP address	18702	Device communications	UDP
Remote router	Device IP address	18703	Optional broadcast	UDP
	Device IP address	* 18710	Device communications	UDP
	Device IP Address	80	First configuration	TCP
* This is the default port and you can change it in the configuration.				

Communication Timing

A communication timing parameter can be configured for the KT-NCC in a WAN architecture. This parameter determines the communication frequency (latency period) between the EntraPass server and the KT-NCC. This parameter will be adjusted based on the complexity and size of the network. For example, when the network architecture is simple, a communication timing will be set to faster. On the other hand, when the network architecture is large and complex a slower communication timing will be more appropriate. It is important for the communication timing to be well configured in order to avoid communication breakdowns.

The following table contains the parameters that will be defined in EntraPass Global Edition Software.

Table 5: : KT-NCC Communication Timings

Parameter	Communication timing
Very fast	Latency period: max 300 ms
Fast	Latency period: max 800 ms
Average	Latency period: max 1500 ms
Slow	Latency period: max 2500 ms
Very slow	Latency period: max 4000 ms
Extremely slow	Latency period: max 6000 ms

Once again, we suggest that you consult the Network Administrator in order to measure the complexity of the network architecture where you will install the KT-NCC.

Resetting the KT-NCC

For maintenance purposes, the KT-NCC may need to be reset. Three types of resets can be performed on the system: Soft reset, hard reset and factory reset.

Please refer to Figure 22: on Page 39 to locate the different components of the KT-NCC board required to perform system resets.

Table 6: : KT-NCC Reset Types

Reset Type	Instructions
Soft Reset.	A soft reset will only re-initialize the status. 1. Press the Reset button.
Hard Reset	A hard reset will reset the KT-NCC to it's default values but will keep the IP address intact. 1. Use the needlenose pliers to remove jumper JP2. 2. Press the Reset button. 3. You must wait until the blue LED starts to flash again (approximately 15 seconds) before you put jumper JP2 back in place.
Factory Reset	We strongly suggest that you call Kantech Technical Support before performing a factory reset on your system. A factory reset will clear all KT-NCC configuration including the IP address. 1. Use the needlenose pliers to remove jumpers JP2 and JP3. 2. Press the Reset button. 3. Put jumpers JP2 and JP3 back in place.

Connecting the KT-NCC to the Network

The KT-NCC communicates with the EntraPass Server via a 10/100 Base-T Ethernet link.

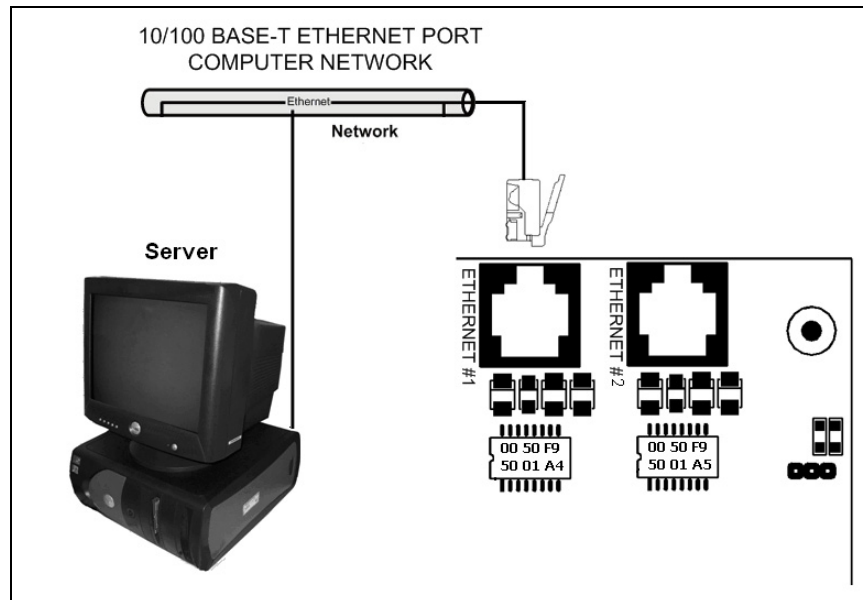


Figure 9: Ethernet Port #1 Connection to KT-NCC

1. Connect the cable from the KT-NCC to the network hosting the server application. Refer to Figure 9: on Page 24 above.
 - When connecting the KT-NCC to the network computer, connect the cable in the Ethernet #1 to the server.
 - When configuring the KT-NCC with the Web Configuration Page, you must use a crossover cable to connect the Ethernet #2 directly to the RJ-45 connector of the workstation.

Note 1: The KT-NCC Web Configuration Page is **only** accessible by the Ethernet #2 at IP address 192.168.0.2.

Note 2: The Ethernet #1 is accessible by the KT-Finder using Ethernet #1 MAC address (00-50-F9-xx-xx-xx).

Attention: If you are configuring your network to use a static IP address, **DO NOT** connect the network cable in the Ethernet Port #1 until indicated in the instructions further down.

Registering the KT-NCC with the EntraPass Global Server

Before you go any further, you must register your KT-NCC in the EntraPass Global Server.

1. Make sure that your EntraPass server application is running at all time.
2. Start the EntraPass Global Workstation application.
3. Under the **Options** tab, click **System Registration**.

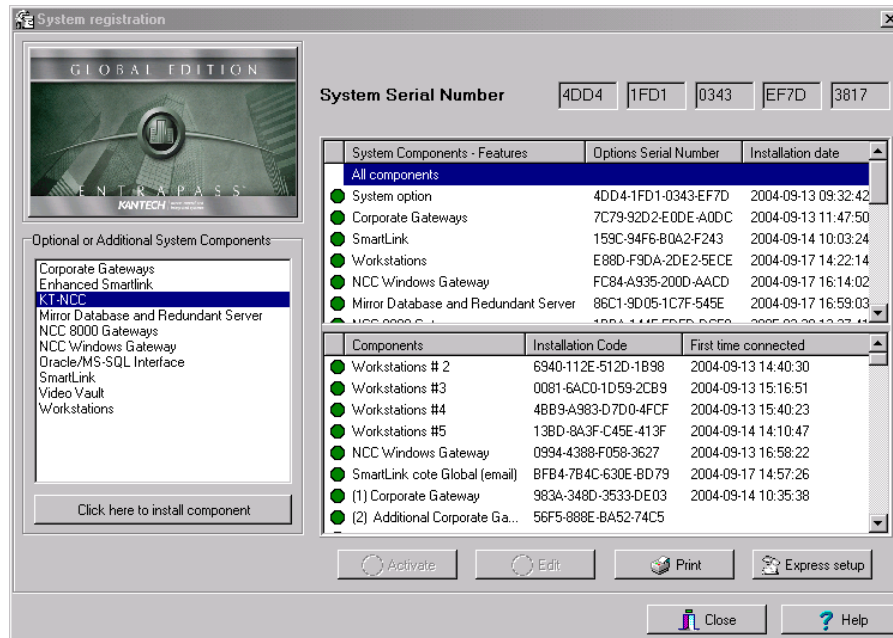


Figure 10: System Registration

4. In the **Optional and Additional System Components** area, select the **KT-NCC**.
5. Click on the button **Click here to install component**. The components list displays the new **KT-NCC**, still not activated, identified with the blue dot.
6. Select the **KT-NCC** component with the blue dot. The **Activate** button will become enabled. Click **Activate** to register the KT-NCC with the EntraPass Global server.
 - The blue dot next to the **KT-NCC** turns green.
 - The **Edit** button becomes enabled so that you can configure the security options.
7. Close the **System registration** window.

Note: At this stage, the system checks if the version numbers of the software and the KT-NCC are the same. If not, the system will automatically update the KT-NCC firmware. Three messages will appear on the EntraPass workstation list of messages to indicate that the update has been completed.

Registering the KT-NCC with the EntraPass Global Server (continued)

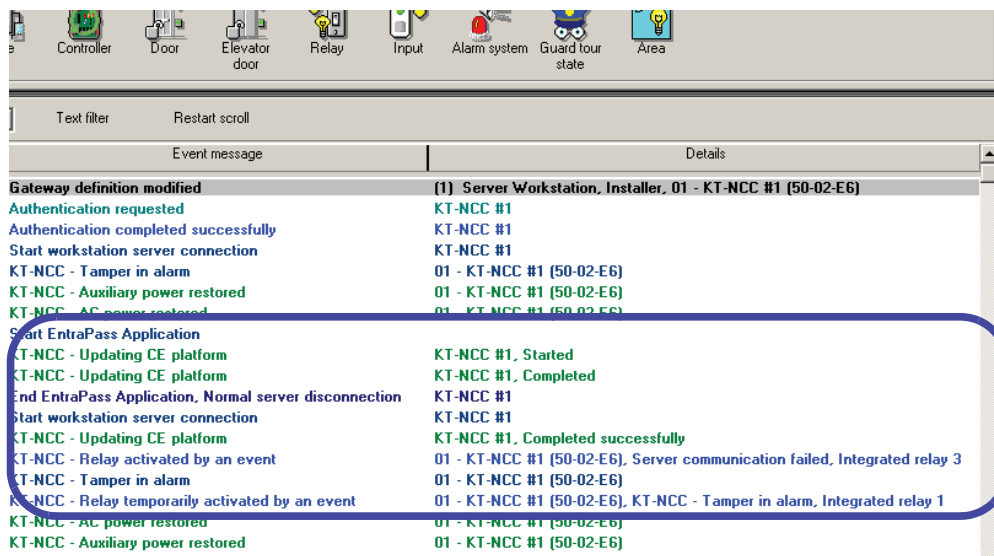


Figure 11: EntraPass Message List Desktop

The messages to lookout for are:

- KT-NCC Update of platform CE - KT-NCC, Started
- KT-NCC Update of platform CE - KT-NCC, Completed
- KT-NCC Update of platform CE - KT-NCC, Completed successfully.

Configuring DHCP with Customer Server IP Address

The customer DHCP server will assign IP addresses automatically for communication with the KT-NCC(s). We strongly suggest that you use a reserved IP address for the KT-NCC MAC address.

Configuring the Gateway

1. In the EntraPass Workstation main window, move to the **Devices** toolbar and click **Gateway** to open the corresponding dialog.

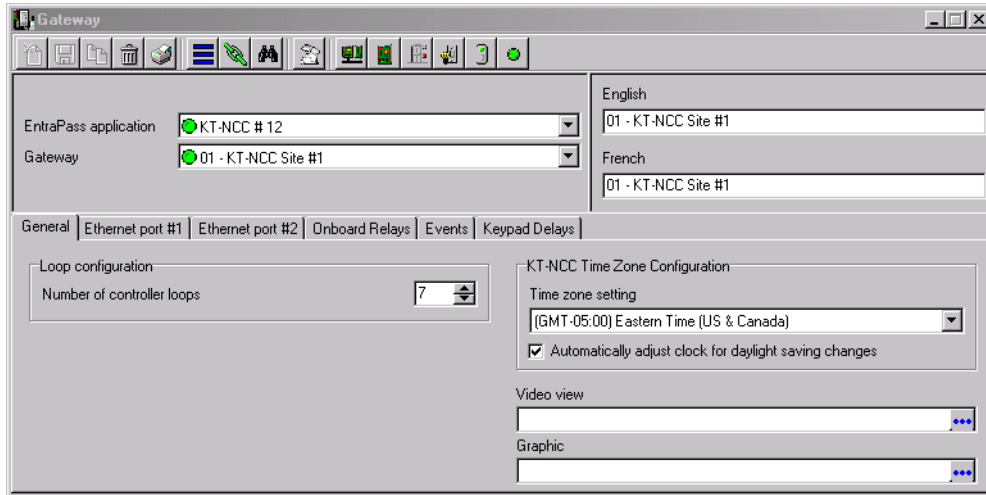


Figure 12: Gateway Dialog - General Tab

2. Click the down arrow next to the text box marked **Gateway** and scroll down the selection of gateways until you reach the KT-NCC gateway you have just saved. The KT-NCC gateway will appear along with a number on the right-hand side of the dialog.
 - You can rename the KT-NCC gateway in the **French** and **English** fields.
3. Click the **General** tab.
4. Select the **Number of controller loops** in the text box under **Loop Configuration**. The KT-NCC can physically support 7 controller loops.
5. In the **KT-NCC - Time Zone configuration** area, you must select the appropriate **Time zone setting**.

Note: It is advisable to check with the Network Administrator if the site where you are installing the KT-NCC is situated in an area where daylight saving time is in effect.

6. Check the box underneath it if you want the system to **Automatically adjust the clock for daylight saving changes**.
7. When applicable select the **Graphic** or **Video View** that pertains to the KT-NCC.
8. Move to the **Ethernet Port #1** tab.

Configuring DHCP with Customer Server IP Address (continued)

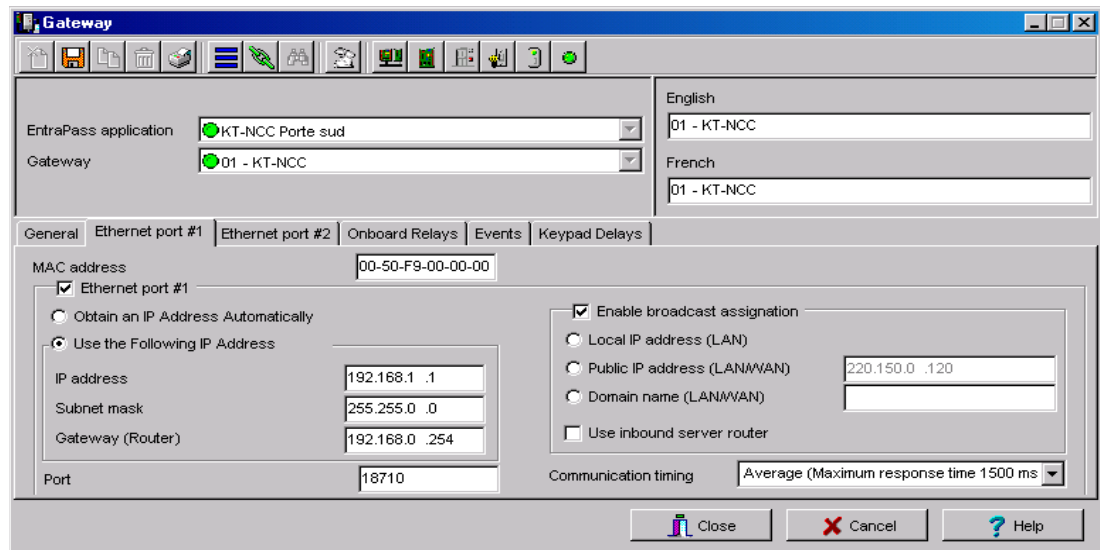


Figure 13: Gateway Window - Ethernet Port #1 Tab

9. Enter the KT-NCC **MAC address**. The first 6 numbers in the MAC address (00-50-F9) cannot be modified.

Note: The MAC address can be found on the KT-NCC PCB, underneath the Ethernet #1. It is a 12-digit hexadecimal code, with each two digits separated by a dash (00-50-F9-xx-xx-xx) Refer to Figure 22: on Page 39 to locate the MAC address on the KT-NCC board.

10. The **Online** option is checked by default.
 11. Select the **Obtain an IP address automatically** option.
 12. Port **18710** is automatically assigned to the KT-NCC by default. It is advisable not to modify it.
 13. By default, the **Enable broadcast assignment** box is checked. Leave it to default.
 14. Click the **Save** icon.
 15. To verify if the server is communicating with the KT-NCC, you can monitor the incoming messages in the Desktop Message list. (It may take a few minutes between saving the configuration to the first message broadcast to the server.) Or, you can check the connection status in the Connection List (See instructions on page 37).
 16. If you have more than one KT-NCC gateway, configure them all at this time.
-

Configuring with a Static IP Address

Communication between the EntraPass Global server and the KT-NCC(s) will be done through a static IP address. The network administrator must provide all the information in order to complete the configuration, see Configuration Information Sheet on page 44.

You can assign an IP address with 2 different tools: The Web Configuration Page and the KT-Finder.

Using the Web Configuration Page

Before you start: **NEVER** use the address 192.168.0.2 for the computer used to configure the KT-NCC. This IP address is assigned by default to Ethernet port #2 for the KT-NCC Web Configuration Page. The IP address of the computer must be within the same segment. For example, 192.168.0.x, where x can be any number between 3 and 255.

Important: Make sure that your **network cable** is **NOT** connected to the **Ethernet Port #1**

1. Connect the crossover cable to the Ethernet Port #2. Start the browser.

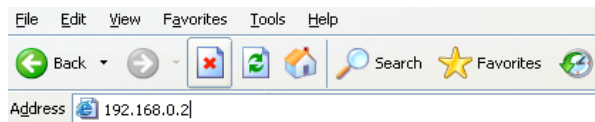


Figure 14: IP Address location

2. Enter the default IP Address of your KT-NCC in the **Address field**. (192.168.0.2), and press **Enter** on your keyboard. The KT-NCC Web Configuration Page will open.

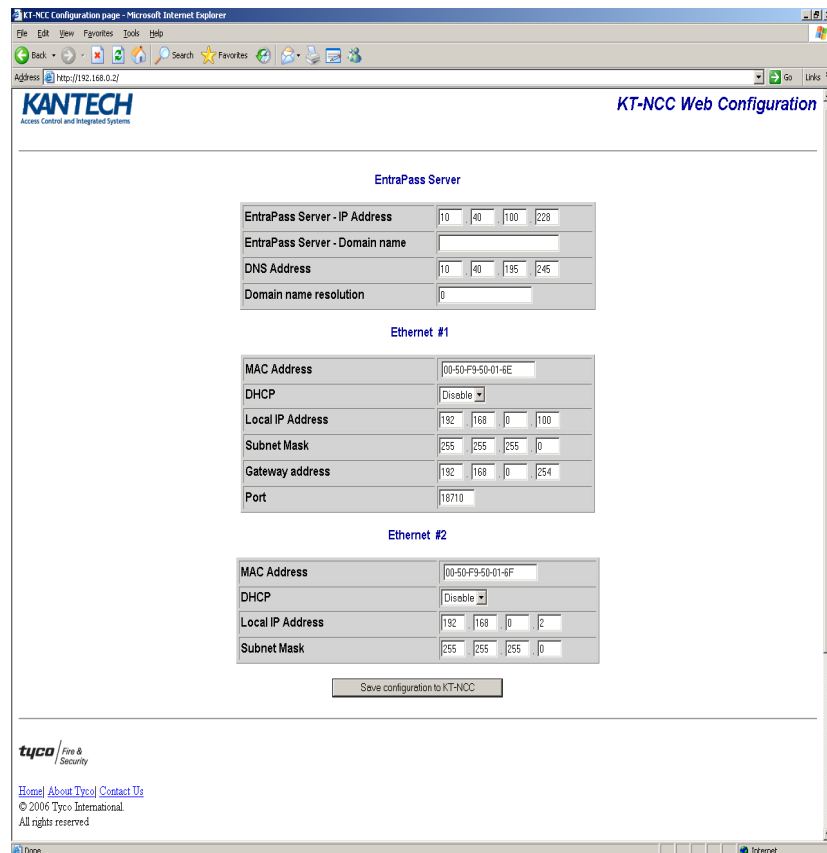


Figure 15: KT-NCC Web Configuration Page

3. In the **EntraPass Server** section, enter the **EntraPass Server IP Address**.

Configuring with a Static IP Address (continued)

4. In the **Ethernet #1** section:
 - The **MAC Address** of the KT-NCC is already configured. The MAC address is found on the top right of the KT-NCC circuit, under Ethernet Port #1, see Figure 22: on Page 39.
 - Ensure that the **DHCP** parameter is **Disabled**.
 - Enter the **IP address** of the KT-NCC that you received from the Network Administrator.
 - Enter the KT-NCC **Subnet Mask**.
 - The **Port** number is already configured. It is advisable to always use the default value **18710**.
5. The fields in the **Ethernet #2** section are already configured. You do not have to change these parameters.
6. Click **Save Configuration to KT-NCC**. A message showing that the configuration is saved and that the KT-NCC is reinitializing will appear on the screen.

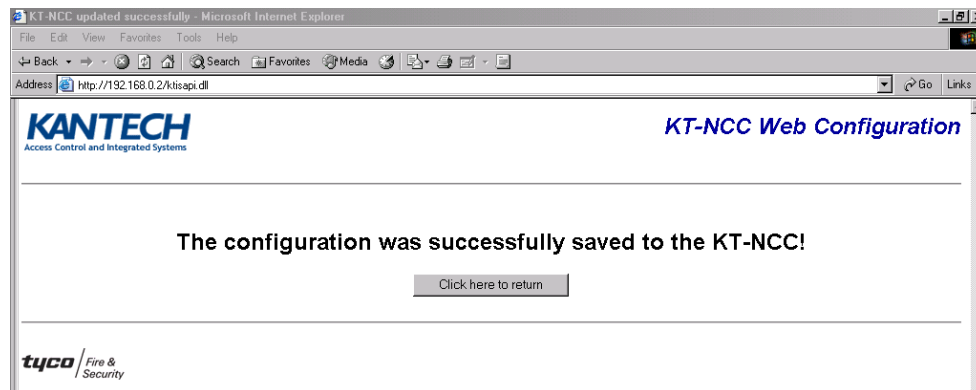


Figure 16: Save Web Configuration Page

7. Click on **Click here to return**. The screen will return to the KT-NCC Web Configuration tool main window. Meanwhile, the KT-NCC will reset.
 - The blue Heartbeat LED of the KT-NCC will blink quickly to signal that the KT-NCC is in reset mode.
 - The blue Heartbeat LED of the KT-NCC will remain lit for 15 seconds to signal that the KT-NCC is in startup mode.
 - The blue Heartbeat LED of the KT-NCC will blink 4 times to signal that the KT-NCC has reset but it is not yet registered on the EntraPass server. (Hard reset mode.)

Note: For details, refer to Heartbeat Blue LED Patterns on Table 7 on Page 43.

8. Close the KT-NCC Web Configuration window. Once the KT-NCC is registered on the server, you will no longer be able to access the Web Configuration Page.
9. Disconnect the cable of Ethernet port #2.
10. Connect the network cable on Ethernet port #1.
11. Register the KT-NCC in EntraPass Global Edition software (See instructions on page 25).

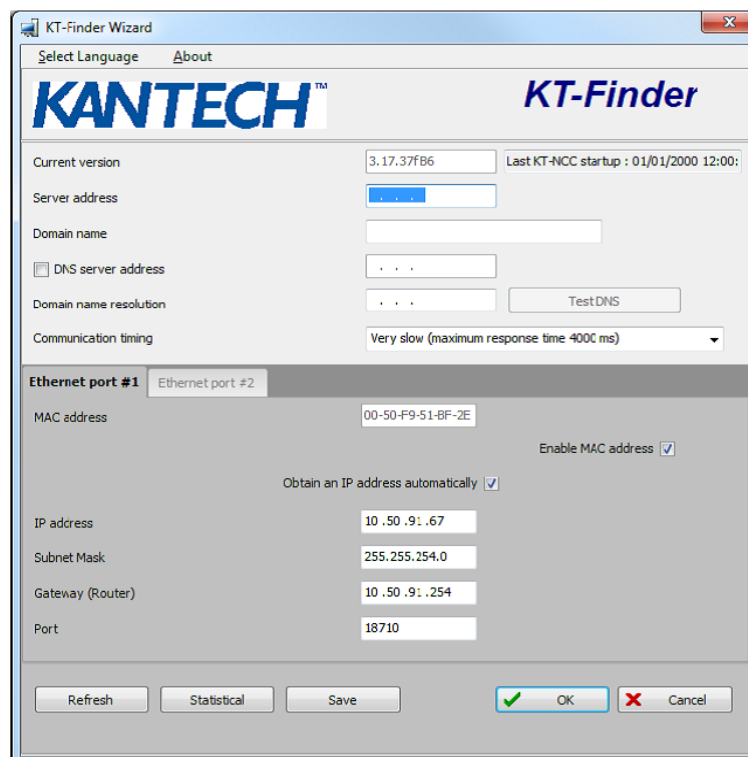
Using the KT-Finder

1. Connect the network cable to the Ethernet Port #1.
2. Select the **KT-NCC** from the devices list. Enter the MAC address of Ethernet Port #1 and click on **Connect**.

Configuring with a Static IP Address (continued)



3. Enter the information gathered in the Configuration Information Sheet.



4. Click on **OK**.

Configuring with a Static IP Address (continued)

Configuring the Gateway

1. In EntraPass Global Edition Workstation main window, move to the **Devices** toolbar and click **Gateway**.

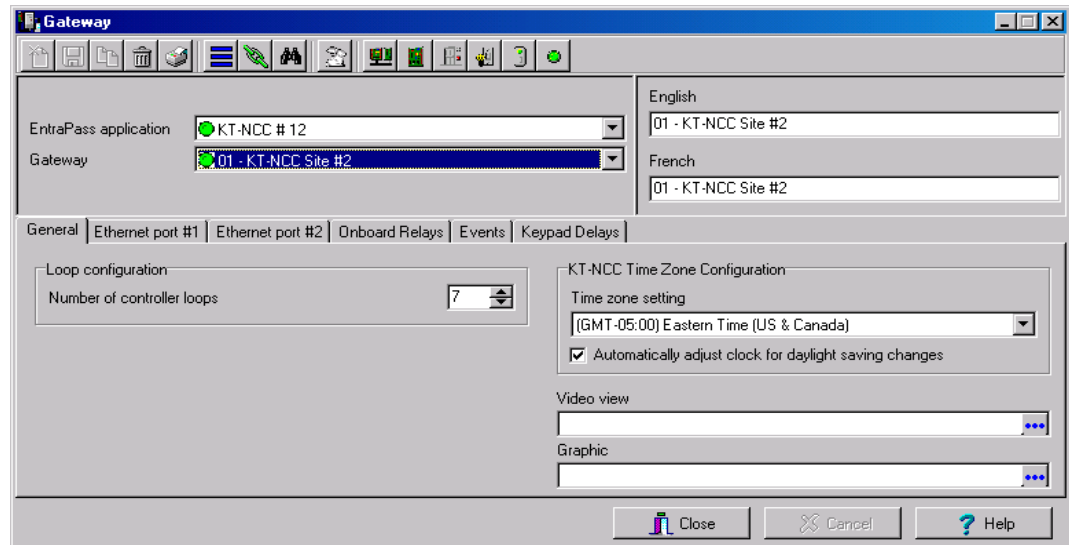


Figure 17: Gateway Dialog - General Tab

2. Click the down arrow next to the text box marked **Gateway** and scroll down the selection of gateways until you reach the KT-NCC gateway you have just saved. The KT-NCC gateway will appear along with a number on the right-hand side of the dialog.
 - You can rename the KT-NCC gateway in the **French** and **English** fields.
 3. Click the **General** tab.
 4. Select the **Number of controller loops** in the text box under **Loop Configuration**. The KT-NCC can physically support 7 controller loops.
 5. In the **KT-NCC - Time Zone configuration** area, you must select the appropriate **Time zone setting**.
- Note:** It is advisable to check with the Network Administrator if the site where you are installing the KT-NCC is situated in an area where daylight saving time is in effect.
6. Check the box underneath it if you want the system to **Automatically adjust the clock for daylight saving changes**.
 7. When applicable select the **Graphic** or **Video View** that pertains to the KT-NCC.
 8. Move to the **Ethernet Port #1** tab.

Configuring with a Static IP Address (continued)

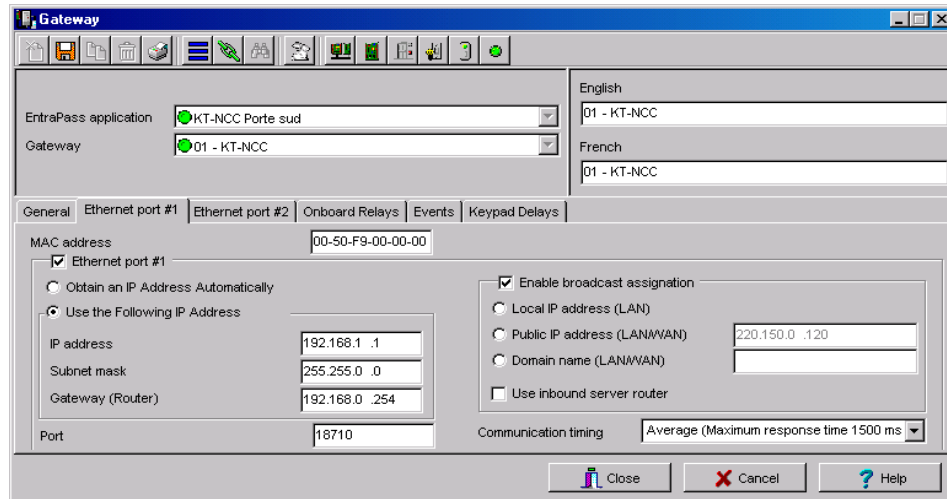


Figure 18: Gateway Window - Ethernet Port #1 Tab

9. Enter the KT-NCC **MAC address**. The first 6 numbers in the MAC address (00-50-F9) cannot be modified.

Note: The MAC address can be found on the KT-NCC PCB, underneath the Ethernet #1. It is a 12-digit hexadecimal code, with each two digits separated by a dash (00-50-F9-xx-xx-xx) Refer to Figure 22: on Page 39 to locate the MAC address on the KT-NCC board.

10. The **Online** option is checked by default.
11. Check the **Use the following IP Address** option.
 - Select the option **Use the Following IP Address**.
 - Enter the **IP address** of the KT-NCC.
 - Enter the **Subnet Mask** address.
 - When necessary, enter the **Gateway (Router)** that the Network Administrator provided you.
 - Port **18710** is automatically assigned by default. It is advisable not to modify it.
 - The option **Broadcast configuration** is selected by default. Leave this option as is.
12. Click the **Save** icon and close the Gateway dialog.
13. To verify if the server is communicating with the KT-NCC, you can monitor the incoming messages in the Desktop Message list. (It may take a few minutes between saving the configuration to the first message broadcast to the server.) Or, you can check the connection status in the Connection List (See instructions on page 37).
14. If you have more than one KT-NCC gateway, configure them all at this time.

Configuring in a WAN

In this type of architecture the EntraPass Server site is distant from the KT-NCC site module and the two communicate through the Internet.

After you have verified the port forwarding configuration with the Network Administration, connected the KT-NCC to the EntraPass network and registered the KT-NCC to EntraPass Global Edition Server, you will configure the server parameters.

Configuring Server Parameters

1. From the **Options** toolbar, click the **Server Parameters** tab.

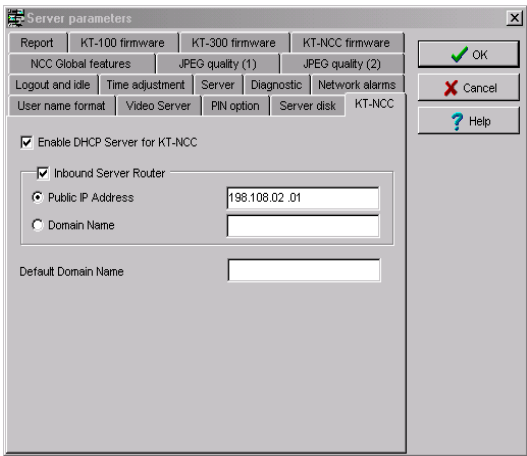


Figure 19: Server Parameters Dialog WAN

2. Select the **Gateway** tab, then **KT-NCC**.
3. The option **Inbound Server Router** should be already checked.
4. Enter the **Public IP Address** of inbound router or the **Domain Name**. This address is assigned by the public network provider to whom you are connected.
5. Click **OK** to save the configuration and close the dialog.

Configuring the Gateway

1. In EntraPass Global Edition Workstation main window, move to the **Devices** toolbar and click **Gateway**.

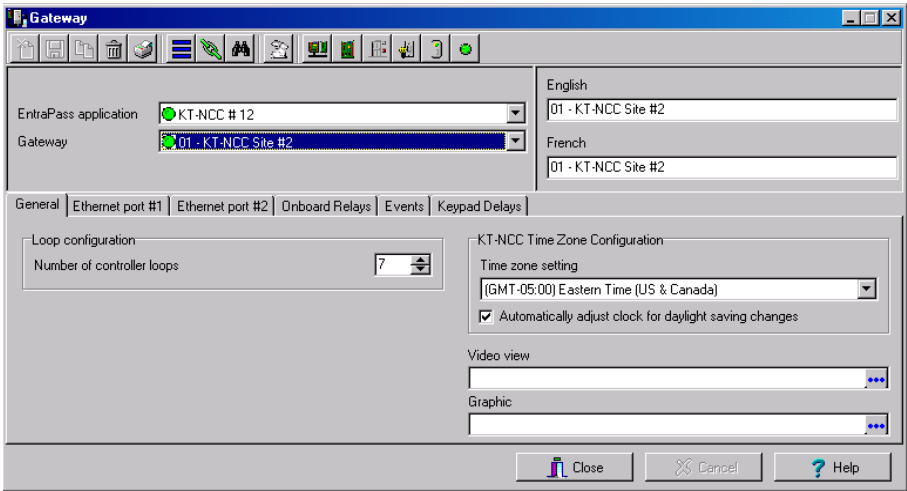


Figure 20: Gateway Dialog - General Tab

2. Click the down arrow next to the text box marked **Gateway** and scroll down the selection of gateways until you reach the KT-NCC gateway you have just saved. The KT-NCC gateway will appear along with a number on the right-hand side of the dialog.
 - You can rename the KT-NCC gateway in the **French** and **English** fields.

Configuring in a WAN (continued)

3. Click the **General** tab.
 4. Select the **Number of controller loops** in the text box under **Loop Configuration**. The KT-NCC can physically support 7 controller loops.
 5. In the **KT-NCC Time Zone configuration** area, you must select the appropriate **Time zone setting**.
- Note:** It is advisable to check with the Network Administrator if the site where you are installing the KT-NCC is situated in an area where daylight saving time is in effect.
6. Check the box underneath it if you want the system to **Automatically adjust the clock for daylight saving changes**.
 7. When applicable, select the **Graphic** or **Video View** that pertains to the KT-NCC.
 8. Move to the **Ethernet Port #1** tab.

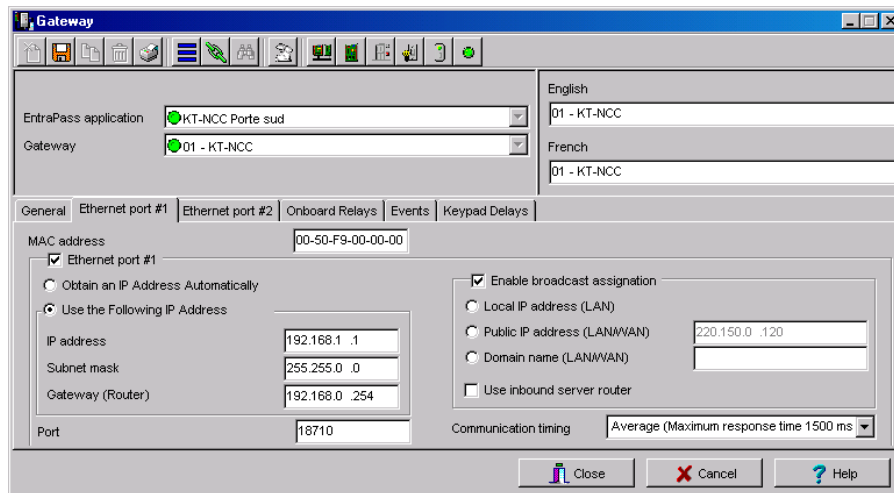


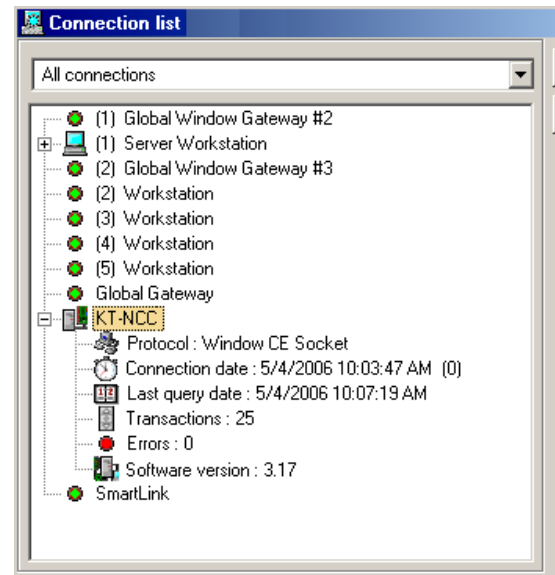
Figure 21: Gateway Window - Ethernet Port #1

9. Enter the KT-NCC **MAC address**.
 10. The **Online** option is checked by default.
 11. Select the **Obtain an IP Address Automatically** option.
 12. Port **18710** is automatically assigned to KT-NCC by default. It is advisable not to modify it. However, if you have to configure several KT-NCCs, ensure that every KT-NCC has a unique port number. This is necessary when forwarding ports to an IP address.
 13. The option **Broadcast configuration** is selected by default.
 14. Select the **Public IP address (LAN/WAN)** option and enter the IP address.
 15. Check the **Use inbound server router** option.
 16. Select the appropriate **Communication timing** (Consult Table 5 on Page 22).
 17. Click the save icon. Close the Gateway dialog.
 18. To verify if the server is communicating with the KT-NCC, you can monitor the incoming messages in the Desktop Message list. (It may take a few minutes between saving the configuration to the first message broadcast to the server.) Or, you can check the connection status in the Connection List (See instructions on page 37).
 19. If you have more than one KT-NCC gateway, configure them all at this time.
-

Connection Status

The EntraPass Global Edition server application gives you access to a Connection list where you can monitor the KT-NCC status at all time, but mostly right after you will have configured the gateway.

1. In the application **EntraPass Global Edition - Server**, click on the **Connection** toolbar, then **Connection list**.
2. Check the connection status of the KT-NCC that you just configured.



Upgrading Firmware

After installing a new version of EntraPass Global Edition software, and starting the application, the system will automatically verify that both software and hardware versions are similar. If this is not the case, the system will perform an update automatically. An event will be displayed in the Desktop Message list to indicate the progress of the upgrade.

Warning: Make sure that the AC power and the battery backup remain connected during the firmware upgrade and until EntraPass sends a message that the firmware has been successfully reloaded.

KT-NCC Maintenance Recommendations

Important: Only a technician should perform the following maintenance recommendations.

The KT-NCC includes a lithium-ion rechargeable battery, see KT-NCC Printed Circuit Board on page 39. This battery must be replaced by a **Technician ONLY** to avoid any risk of explosion. If the lithium-ion battery stops working, return the PCB to Kantech. Do not crush, puncture, open, disassemble or otherwise mechanically interfere with the battery. Do not try to recharge the battery. If you need to dispose of the PCB and/or the lithium-ion battery, wrap the KT-NCC in non-conductive tape. Check with your local authorities for battery disposal regulations.

Warning: Do not store the batteries in such a way that they come into contact with each other or with any piece of metal. Explosion or fire may occur. Should fire occur, use only dry chemical fire extinguishers. Do not use water to put out the fire. Do not heat the batteries. Do not dispose of the batteries or PCB in a fire. Do not disassemble the batteries. Do not apply pressure to or deform the batteries. Ensure that the above precautions are strictly observed by related departments, including, but not limited to, production, sales and outside contractors.

Regarding the recommended backup battery 12 VDC / 7 Ah: It is the technician's responsibility to assure that the disposal of used batteries is made according to the waste recovery and recycling regulations applicable to the intended market. Use the recommended battery type **ONLY**.

It is highly recommended to test the KT-NCC by performing the following tests:

1. Biannual test for battery:

Remove AC power from the KT-NCC and let it work on battery backup power for one hour. This test will ensure that in the event of a power failure, the battery will be able to support normal operations. This test should be performed twice a year. Once the test has been performed successfully, reconnect AC power to the KT-NCC.

2. Annual test for emergency lithium-ion battery:

Measure voltage of lithium-ion battery when power is totally removed from the KT-NCC (AC, DC and backup battery power). To ensure maximum operation and to prevent loss of the database, contact your distributor to return the KT-NCC for maintenance if the lithium-ion battery voltage measures below 2.5 VDC.

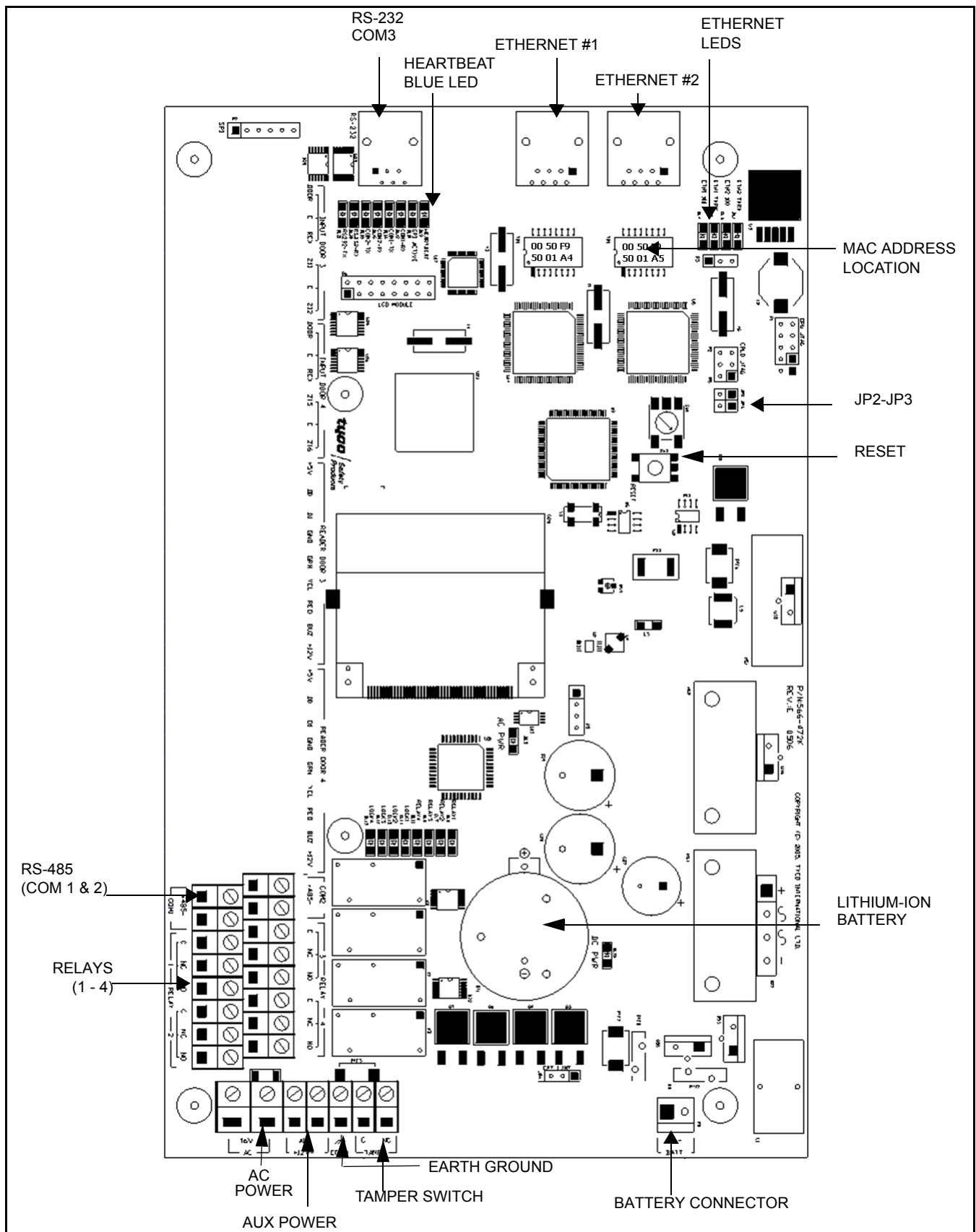


Figure 22: KT-NCC Printed Circuit Board

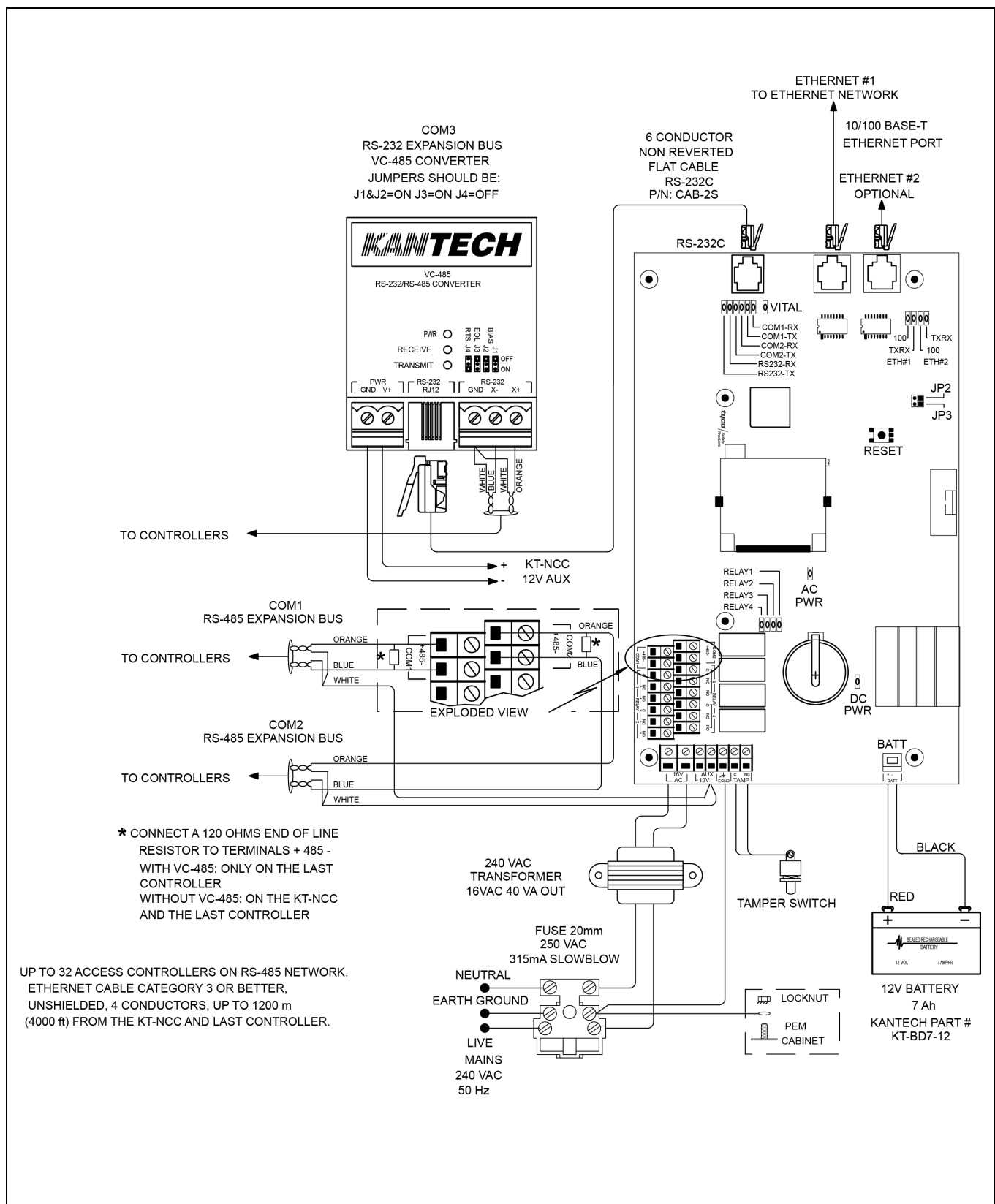


Figure 24: KT-NCC Wiring Diagram for Europe and Asia

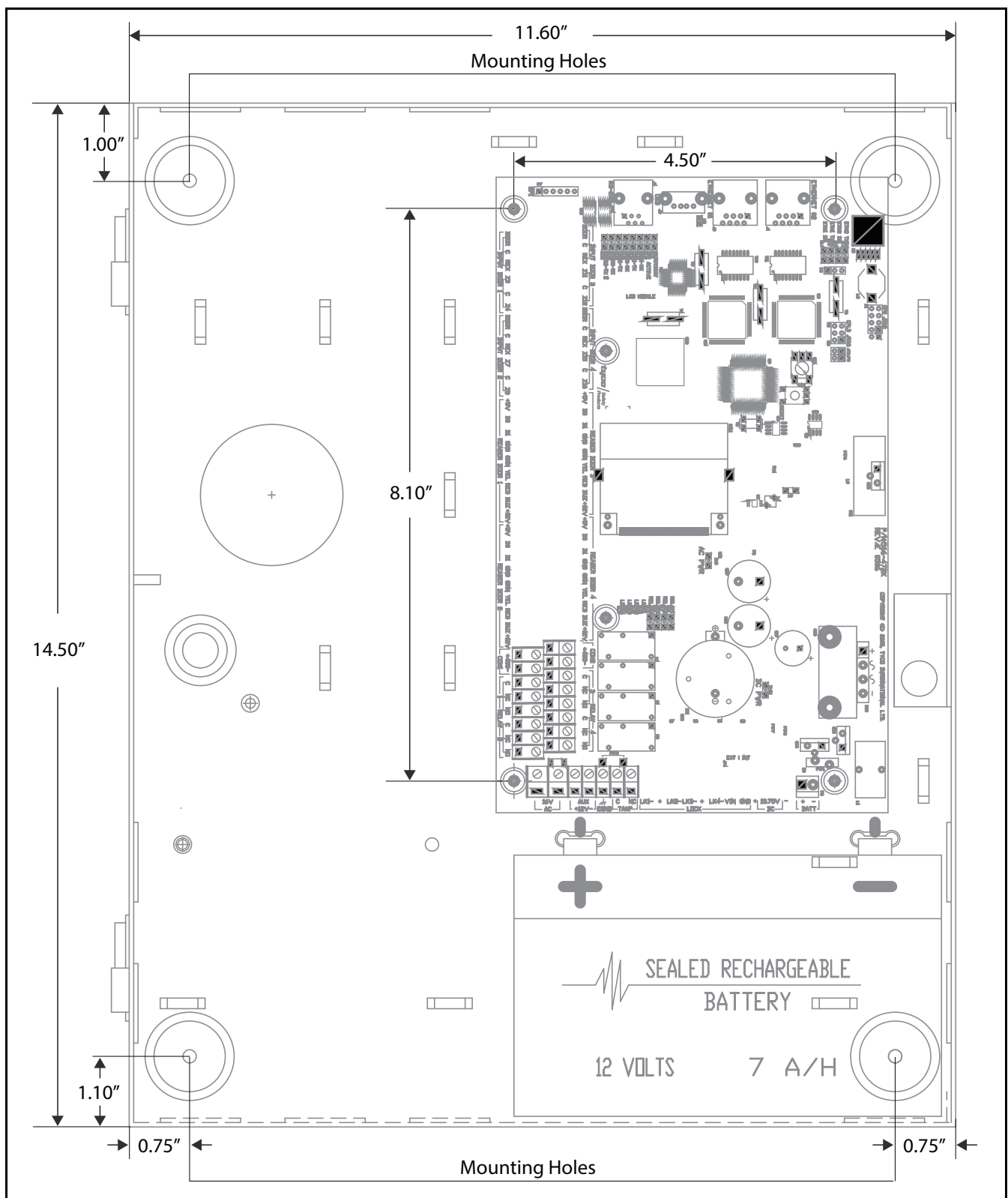
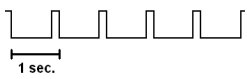
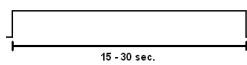
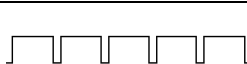


Figure 25: KT-NCC PCB Mounted in Cabinet with Battery

Table 7: Heartbeat Blue LED Patterns

Pulses	Description	Patterns
1 flash/sec	KT-NCC is communicating with the server.	
Fast flashes	KT-NCC is no longer communicating with the server.	
Steady on (15-30 sec)	KT-NCC is starting up.	
Quick flashes (May last from 15-30 sec)	Preparing to reboot. DO NOT POWER DOWN OR RESET DURING THIS PROCESS.	
Quick flashes (May last up to 90 sec.)	Firmware update. DO NOT POWER DOWN OR RESET DURING THIS PROCESS.	
1 long flash/sec	KT-NCC is in factory reset mode.	
4 flashes on per sec and 1 sec steady off	KT-NCC is in hard reset mode.	

KT-NCC Network Communications Controller

Configuration Information Sheet

Company Name: _____ Site Name: _____

KT-NCC Name: _____

Serial No.: _____

MAC Address #1: _____

IP Address #1: _____

IP Address is: ☐ Static ☐ DHCP

MAC Address #2: _____

IP Address #2: _____

IP Address is: ☐ Static ☐ DHCP (Reserved address recommended)

RS-485 Loop #1 Name: _____

RS-485 Loop #2 Name: _____

RS-232 Loop #3 Name: _____

IP Loop #4 Name: _____

IP Loop #5 Name: _____

IP Loop #6 Name: _____

IP Loop #7 Name: _____

Relay #1: _____

Relay #2: _____

Relay #3: _____

Relay #4: _____

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