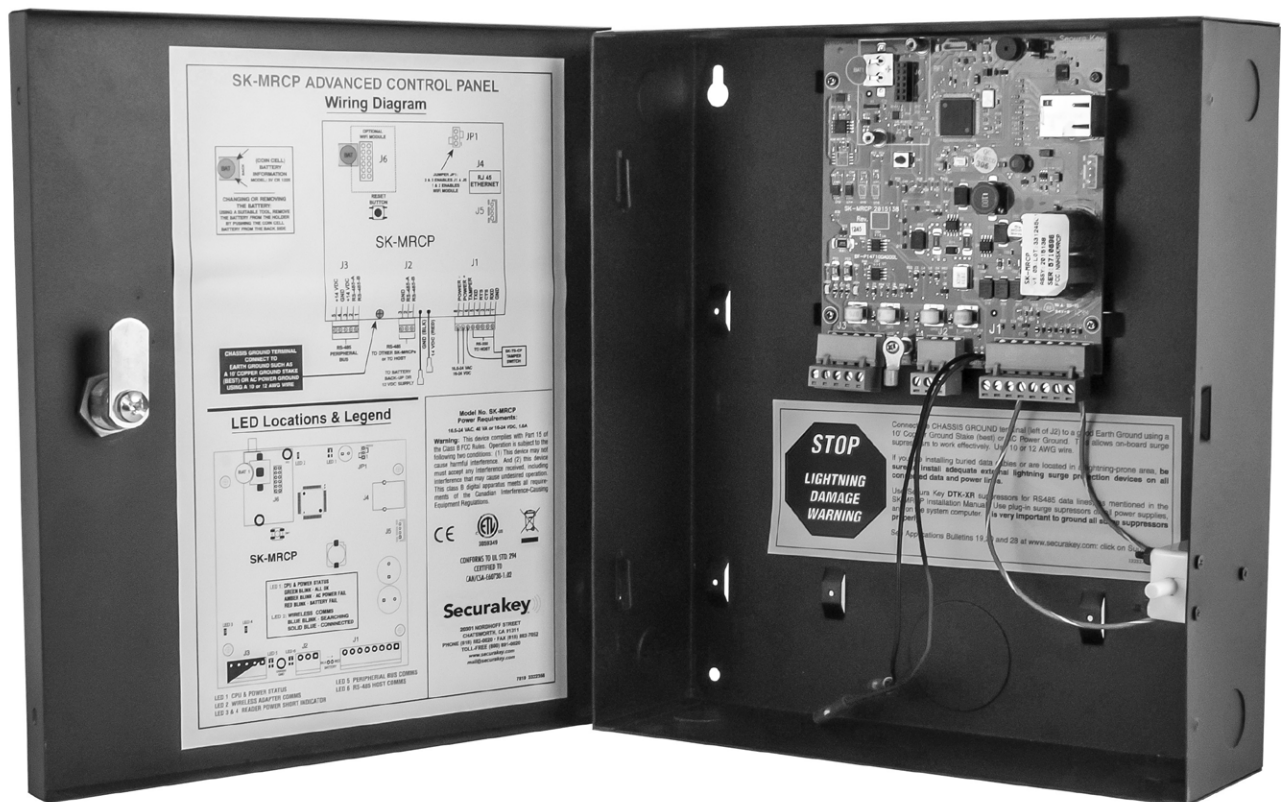


NOVA.16

SK-MRCP

Multi-Reader Control Panel



User/Installation Manual

NOVA.16 TABLE OF CONTENTS

- 1. INTRODUCTION 1**
 - Introduction to NOVA.16
 - Smart Readers
 - System Configurations.....2

- 2. INSTALLATION 3**
 - Typical Door Installation
 - Physical Installation:4
 - Wiring.....5
 - RS-232 Connections
 - RS-485 Connections.....6
 - Ethernet
 - RS-485 (Peripheral Bus).....7
 - Power and Batteries
 - Tamper Switch
 - Communications Jumper
 - LED Indicators8

- 3. READERS & CARDS 9**
 - Using NOVA.16 with Smart Readers
 - Programming the NOVA.16 with SK-NET™
 - Setting the Facility Code

- 4. FACTORY SETTINGS 10**

- APPENDIX A – Wiring and System ConfigurationsA-1**
- APPENDIX B – SK-NET™ Equipment Components and SpecificationsB-1**
- APPENDIX C – Connecting a Modem to NOVA.16 C-1**
- APPENDIX D – Connecting NOVA.16 to a Local Area Network D-1**
- APPENDIX E – NOVA.16 Troubleshooting Guide E-1**
- APPENDIX F – Preventing Lightning Damage F-1**
- APPENDIX G – USING OPEN COLLECTOR OUTPUTS G-1**

- 5. SPECIFICATIONS.....**

INTRODUCTION

The NOVA.16 (Model SK-MRCP-LE) is a highly sophisticated yet simple to use multi-reader access control panel, based on the powerful ARM Cortex M3, 32-bit RISC processor, providing a major technology upgrade to Secura Key's legacy SK-NET system.

The NOVA.16 connects to the host PC via the local area network using its built-in Ethernet connection, and it also connects to a high speed RS485 peripheral network consisting of up to 16 single-door Smart Readers. The NOVA.16 can also connect to the host PC via its RS-232 or RS-485 communications ports. The NOVA.16's 16-door capacity fully addresses the needs of the typical new access control system. Expansion is easy and inexpensive: Smart Readers can be added to a NOVA.16 to control additional doors and additional NOVA.16's can be added to the LAN, or NOVA.16s can be daisy chained together over an RS485 network.

NOVA.16 will control access for up to 65,535 individuals in 15 weekly time schedules (Time Zones) independently for each controlled door. Time Zones include a holiday schedule that is followed when one of the 32 user programmable holidays occur.

Up to 10,000 transactions are stored by the unit and may be downloaded to a PC, or serial printer.

Since the NOVA.16 has nonvolatile memory, reprogramming after a power loss is unnecessary.

USING NOVA.16 WITH SMART READERS

Smart Readers are available with Dual Technology Proximity (HID®/Secura Key), or in Contactless Smart Card (Secura Key e*Tag®) technologies in both mullion and switch plate sizes. Each unit includes all the inputs and outputs required to control and monitor a single door. By using RS485 communications, smart readers can be located as far as 4000 feet away from the NOVA.16. A single-door Wiegand Interface unit is also available, allowing any Wiegand-compatible reader or device to be connected to the Peripheral Network.

In outdoor locations which are prone to vandalism it is recommended to use the SK-SR1 SecuRelay which moves the lock control relay to a location away from the Smart Reader on the "secure side" of the door. This eliminates the threat of an intruder gaining entry by "hot wiring" the strike cable at the reader. Tampering with or even replacing the unit with another reader will not trick the SecuRelay™ into releasing the lock or gate.

The Smart Reader's Open Collector outputs are logic outputs that can be used to control other devices. By using a relay module, such as ELK-924 or Altronix RBSN or RBSNTTL, these outputs can switch larger loads. You can also use any 12VDC relay by connecting a diode across the input, see Appendix G.

Smart Reader Models offered include:

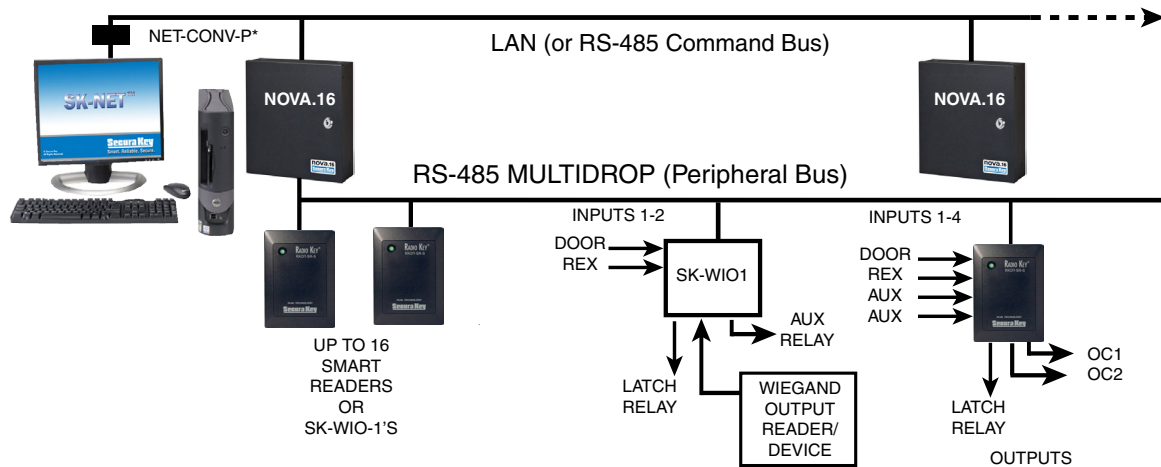
RKDT-SR-M	Dual Technology Proximity* (HID®/Secura Key), mullion housing
RKDT-SR-S	Dual Technology Proximity* (HID®/Secura Key), switchplate housing
	*Reads both Secura Key and most HID® proximity cards with non-proprietary pass-through formats, such as H10203 (26-bit) or HN10001 (Northern 34-bit).
ET8-SR-X-M	Contactless Smart Card Technology, mullion housing
ET8-SR-X-D-I	Contactless Smart Card Technology, Decora® housing, Ivory
ET8-SR-X-D-W	Contactless Smart Card Technology, Decora® housing, White
RK-XRM	Secura Key Proximity, mullion housing
RK-XRS	Secura Key Proximity, switchplate housing
SK-WIO-1	One-door Wiegand I/O Interface, fits 2S box behind reader

NOVA.16 SYSTEM CONFIGURATIONS

NOVA.16 allows many different options for system configuration (see Figure 1). Control panels can be connected to a Local or Wide Area Network, using the built-in Ethernet interface, allowing the PC to communicate with the control panels over the network. NOVA.16 panels at remote locations can be accessed over the Internet if they are assigned a fixed IP address.

The PC can be directly connected to one NOVA.16, using RS-232, RS-485, or a dial-up Modem, where that panel becomes a "gateway" panel, and then other NOVA.16's can be connected to the gateway panel via the RS-485 Command Bus. A remotely located NOVA.16 panel connected via the Internet can also become a gateway for its location, connecting to additional NOVA.16's via RS-485.

Each NOVA.16 has its own RS-485 Peripheral Bus which supports up to 16 Smart Readers or Single-Door Wiegand Interfaces (SK-WIO-1). Smart Readers can be daisy chained from the NOVA.16, or they can be paralleled in a Fan-out configuration. They can also be connected in a loop configuration, which provides reliability in case of the loss of an individual reader.



* USE NET-CONV-P ONLY IF RS-485 COMMAND BUS IS USED TO CONNECT PC TO NOVA.16'S.

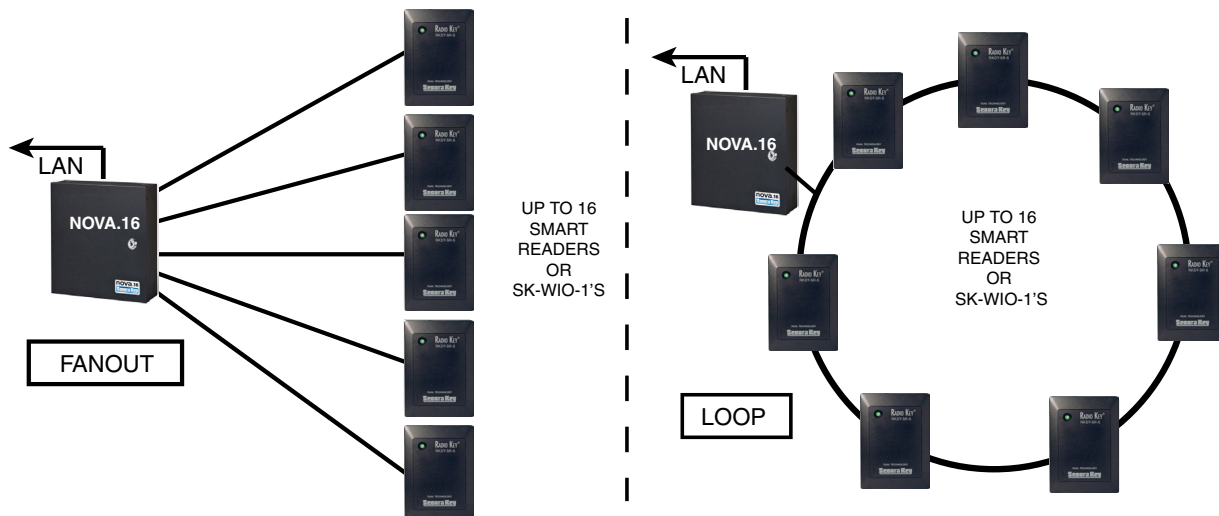


FIGURE 1 - VARIOUS SYSTEM CONFIGURATIONS

TYPICAL DOOR INSTALLATION

Smart Readers used with NOVA.16 provide all of the inputs and outputs required to monitor and control a single door or gate (see Figure 2). The readers only require data and power from the NOVA.16 panel. The REX switch, door monitor and strike, mag lock or gate operator connect directly to the Smart Reader, which has two additional inputs, and two open-collector outputs to activate relay modules.

TYPICAL DOOR INSTALLATION.

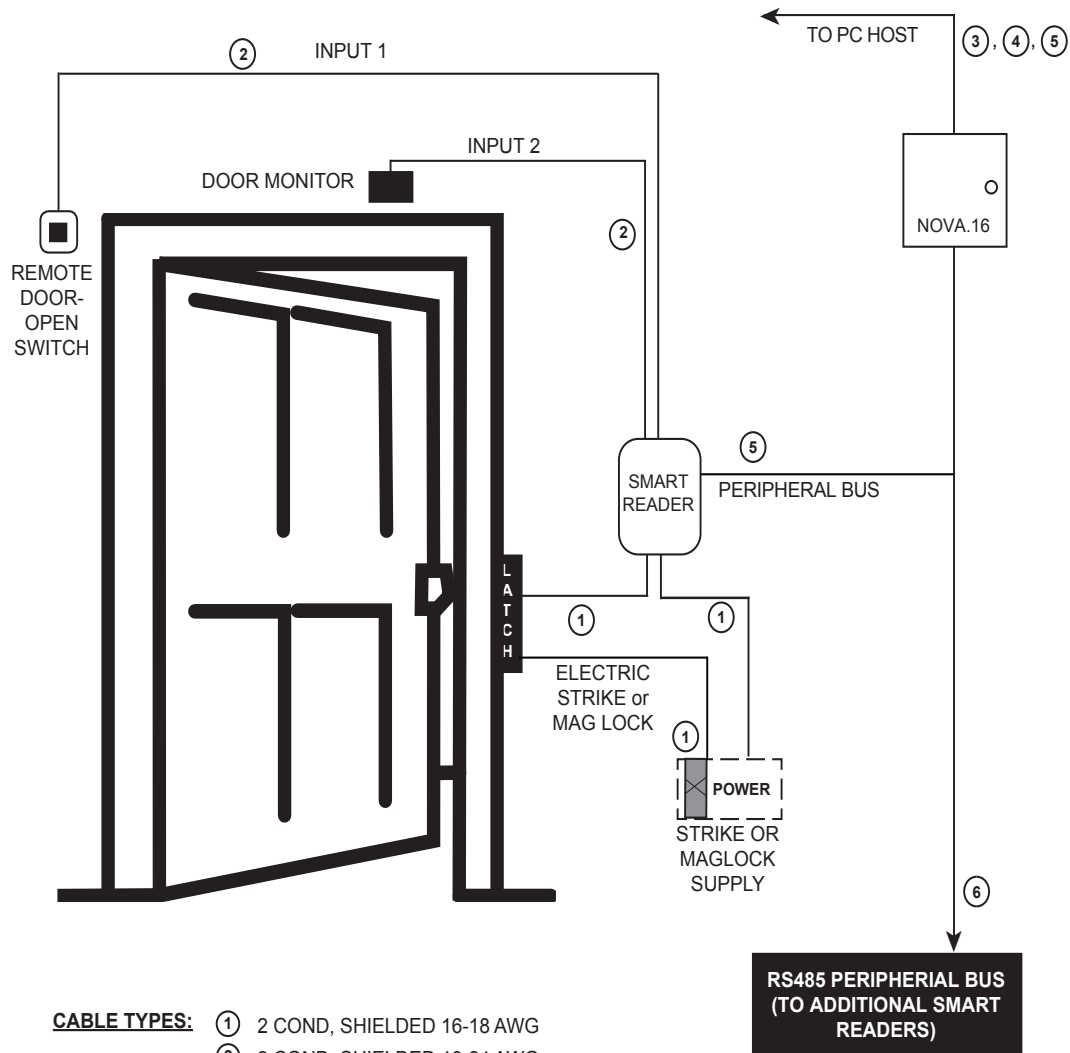


FIGURE 2

PANEL INSTALLATION

CAUTION SHOULD BE TAKEN NOT TO TOUCH CIRCUIT BOARD OR ELECTRONIC COMPONENTS PRIOR TO AND DURING INSTALLATION TO AVOID ELECTRO-STATIC DISCHARGE (ESD) DAMAGE.

INSTALLING THE NOVA.16

1. Select a location for the NOVA.16 unit that is secure and sheltered from weather and extreme humidity. Choose a location that has access to power and is within 4000 feet of the doors that are to be controlled.
2. Using the unit as a template, mark on the mounting surface the location of the four mounting holes.
3. Install appropriate mounting hardware (anchors, retainers, etc.) to the mounting surface if necessary.
4. Screw #6 or #8 mounting screws into the top 2 mounting holes of the mounting surface, leaving about 1/4" clearance.
5. Place panel top key-way mounting holes over installed mounting screws and slide panel down.
6. Tighten top mounting screws.
7. Install two bottom mounting screws (see figure 3).
8. Route cables into the enclosure through knockouts in sides or back of box, being careful not to nick or scrape insulation on any rough edges.

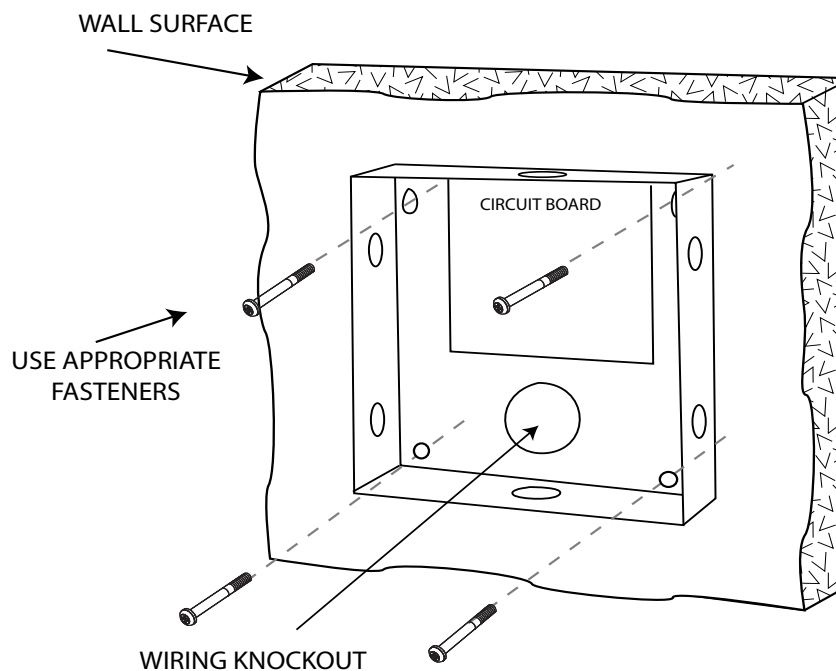


FIGURE 3

WIRING

For ease of installation and servicing, plug-in terminal blocks are provided.

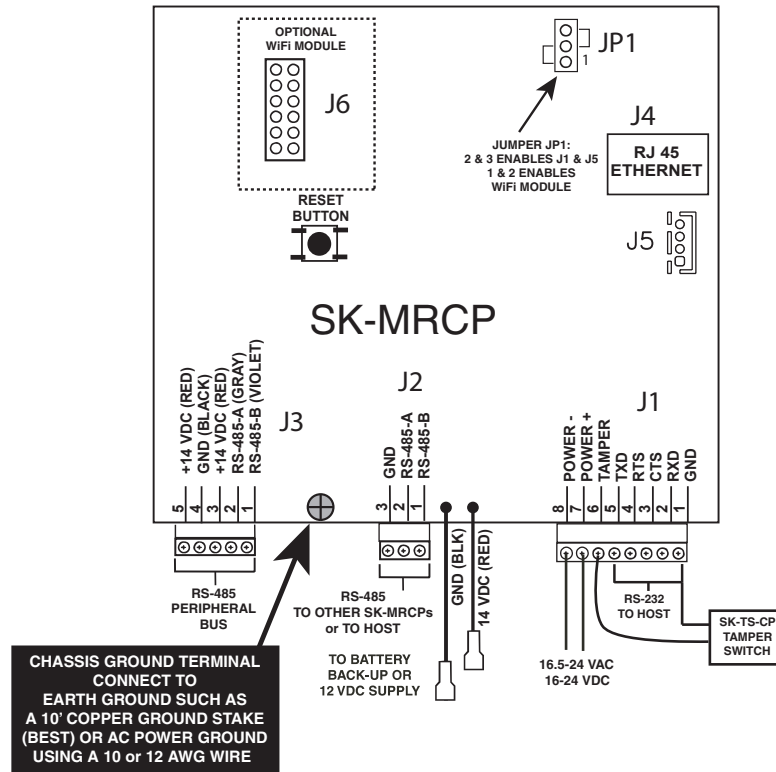


FIGURE 4

CONNECTIONS TO THE (HOST) PC RS-232

- You may connect RS-232 communications to the NOVA.16 either by using plug "J1", terminals 1-5, or by temporarily plugging the RS-232E cable into the J5 jack at the right hand side of the circuit board. (See Figure 4)
- RS-232 requires at least 5-conductor, non-twisted, shielded cable. SUGGESTED CABLE IS Belden 9535.
- RS-232 is used to connect the COM port of a PC to a single NOVA.16, (which can also be a gateway to a network of NOVA.16s connected via RS-485.
- COM ports are typically DB9 male or DB25 male jacks on the back of a personal computer.) Newer computers may not have COM ports, in which case, you must purchase a USB-to-Serial converter (SK-USB), which plugs into a USB port on your computer and provides a DB-9 connector, which can be connected to the NOVA.16 by using an SK-PLUG9 pigtail and extending the cable as required, using Belden 9535 or equivalent cable.
- When connecting a PC via RS-232 the distance from the panel to the computer should not exceed 100'. (For longer distances, see "RS-485" below.)
- A serial printer may also be connected to the RS-232 port of any NOVA.16. This will allow all system transactions to be printed as they occur. (A printer may be connected to one NOVA.16 even if a computer is connected to another NOVA.16 in the same network.) This function needs to be configured using SK-NET™ - see Appendix D.
- An external modem may also be connected to the RS-232 port of an NOVA.16 for dial-up applications using SK-NET-MLD software. We highly recommend that you use the Secura Key SK-MDM. The SK-MDM contains the configuration data, or "setup string" which allows this modem to be configured in the field without the use of a computer and without setting DIP switches. (See Appendix C for modem instructions.) Figure 5 shows the RS-232 pin connections for a PC, printer, or modem.

PIN NUMBER CONNECTIONS						
SK-ACP ADVANCED CONTROL PANEL		PC		PRINTER	MODEM	
SIGNAL DESCRIPTION	J1	DB-25S (FEMALE) PIN #	DB-9S (FEMALE) PIN #	DB-25P (MALE) PIN #	DB-25P (MALE) PIN #	DB-9P (MALE) PIN #
SIGNAL GROUND	1	1 & 7	5	1 & 7	7	5
RECEIVE DATA (RXD)	2	2	3	N/C	3	2
CLEAR TO SEND (CTS)	3	4	7	20	8	1
REQUEST TO SEND (RTS)			8	6 & 8	4	7
TRANSMIT DATA (TXD)	5	3	2	3	2	3

FIGURE 5

RS-485

- The RS-485 Command Bus (Connector J2) is used to link multiple NOVA.16 units into a network and it can also connect to the host PC. Where two or more NOVA.16s are linked, you must run cable between the “J2” plugs on each panel. Terminals 1 & 2 must be a twisted pair of wires.
- SUGGESTED CABLE is Belden 1585A (CAT-5e). Terminal 3 is a “signal ground” which should be connected to one conductor of another twisted pair. This must be an insulated conductor and it should NOT be connected to earth ground.
- Where the distance from the PC to the first connected NOVA.16 unit is greater than 100’, you may install an RS-232 to RS-485 converter (Secura Key p/n NET-CONV-P) to the COM port of the computer.
- If your PC does not have a COM port you will need to purchase a USB-to-serial converter (SK-USB), and then connect the RS-485 converter to the USB converter. From the converter you then run RS-485 cable and connect NOVA.16 units anywhere along the RS-485 bus.
- The total RS-485 cable distance, including the distance between all NOVA.16s, may be up to 4000’. Figure 6 shows how each NOVA.16 is connected to the RS-485 bus.

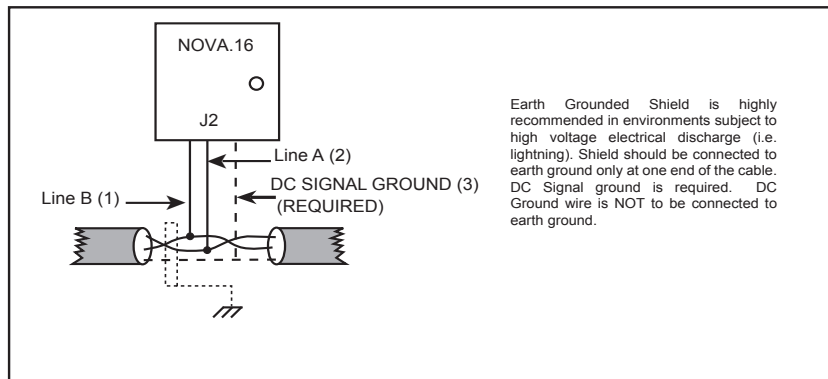


FIGURE 6

ETHERNET

- The RJ45 Ethernet connector (J4), located on the upper right-hand corner of the circuit board, is used to link individual NOVA.16 panels to a Local Area Network.
- You can use CAT 5e or CAT6 cable terminated with RJ45 jacks to connect each panel to a router, hub, or switch located up to 300 feet away.
- SK-NET-MLD software is required if more than one NOVA.16 is connected via Ethernet. See Appendix D for information on how to connect the NOVA.16 to a LAN.

RS-485 (PERIPHERAL BUS)

- The peripheral bus (J3) is used to link multiple Smart Readers into a network, communicating with the NOVA.16
 - Terminals 1 & 2 must be connected to a twisted pair of wires. Suggested cable is Belden 1585A (CAT 5e).
 - Terminals 3 and 5 provide 14 VDC reader power, and each is separately fused with a thermal resettable circuit breaker. Terminal 4 serves as reader power ground for both outputs. You can connect some readers to pins 3 & 4 and some to pins 4 & 5 to distribute the power across both outputs.
- While the total RS-485 data cable distance can extend to 4000 feet over twisted pair, 14VDC reader power cannot extend as far over 18/2 cable, due to voltage drop caused by wire resistance. Here are reader cable distances with various configurations:

Configuration	Reader Power Cable Distance
8 smart readers at end of cable	1000 ft
8 smart readers evenly distributed	2000 ft
5 readers at end of cable	2000 ft

If smart readers are located more than 2000 ft. from the panel, simply use local power at the door location to power the smart reader. Reader requires 12VDC, 200 mA minimum (we recommend RK-PS).

- You can also use "siamese cable" such as Coleman 97349-06-23, which consists of CAT5 plus 18/2 cable.
- When connecting Smart Readers to the peripheral bus, be careful to connect the RS-485B output, J3, Pin 1 to the VIOLET wire on each Smart Reader, and the RS-485A output, J3 Pin 2 to the GRAY wire on each reader. If the A and B wires are reversed, the Smart Readers will not communicate with the control panel. (Note that the RK-XRM Smart Reader uses different wire colors than other Smart Readers; it uses Orange for RS-485B and Orange/White for RS-485A.) SEE FIGURE 4.

POWER & BATTERIES

- The NOVA.16 unit must be connected to a source of low voltage power. To power the NOVA.16, you must use a power supply which is properly rated for the panel, plus any connected equipment:
- The panel and up to 12 Smart Readers can be powered by the SK-24VDC power supply or the SK-ACP-PS, which includes a 24VDC 1A supply and a 4AH backup battery. The panel and up to 16 Smart Readers can be powered by a 16.5VAC 40VA transformer (SK-XFRMR).
- Terminals 7 & 8 on plug "J1" must be connected to 16.5 to 24 volts, AC or DC.
- You may also connect the NOVA.16 to 12 VDC, but in this case you must connect your power supply to the red (+) and black (-) wire leads on the bottom center of the panel instead of the "J1" plug. If you use 12 VDC you cannot install a standby battery in the NOVA.16. When 16.5 – 24 volts is used to power the NOVA.16, you may connect the red and black wires to a 12 volt standby battery. Polarity (+/-) must be observed.
- The, 10" X 11" SK-MRCP-LE enclosure can accommodate batteries up to 4.0 Amp-hours.
- Do not energize the NOVA.16 until all other connections are made.**

CHASSIS GROUND

The NOVA.16 has a chassis ground terminal at the bottom of the PCBA just to the left of J2. This terminal must be connected to a good, reliable Earth ground, to enable the on-board gas tube surge suppressors to work effectively. If this is not done, damage to the controller may result. A crimp-type wire lug is supplied with the unit. Secure the lug to the terminal using the provided screw. Crimp the ground wire to 10AWG stranded, insulated wire, and connect the wire to the closest Earth ground available, such as a 10-ft buried copper grounding stake, Building Electrical Ground, or a steel cold water pipe, which must be contiguous, with no PVC or ABS sections.

TAMPER SWITCH

The NOVA.16 includes an enclosure Tamper Switch wired to J1, inputs 1 & 6, and it also has an onboard beeper, which can provide an audible warning if the NOVA.16 enclosure is opened. To stop the beeper from sounding during maintenance by authorized technicians, the tamper switch can be held down for about 20 seconds, and the beeping will stop (this will be reset again after the panel is closed.)

COMMUNICATIONS JUMPER

A jumper must be installed on pins 2 and 3 of Jumper connector JP1 to enable RS-232 communications at Jack J1 and J5. If the SK-WLSE-MOD Wireless network module is installed at J6, this jumper must be moved to pins 1 and 2 of JP1 to enable RS-232 communications with the wireless module.

CONNECTING NOVA.16 TO LEGACY SYSTEMS

NOVA.16 is compatible with existing SK-NET systems using SK-ACP 2-door control panels. THE software must be updated to SK-NET Version 5.1 or greater. It is also very important that if panels are daisy chained using RS-485, that the first panel connected to the PC (the Gateway Panel) must either be a newer SK-ACPE or a NOVA.16. This is because the older SK-ACP control panel will reject all the new message types used by NOVA.16. Other SK-ACPs which follow the Gateway panel do not have to be upgraded –they will pass the new messages through to the NOVA.16. This does not apply if all panels are connected directly to the LAN.

If the Gateway panel cannot be changed, the NOVA.16 can be directly connected to the Local Area Network (that is, do not connect it via RS-485).

LED INDICATORS

The NOVA.16 features 6 LED indicators, which will assist the installer when connecting, testing and troubleshooting power and communications wiring. These indicators and their functions are described in Figure 7.

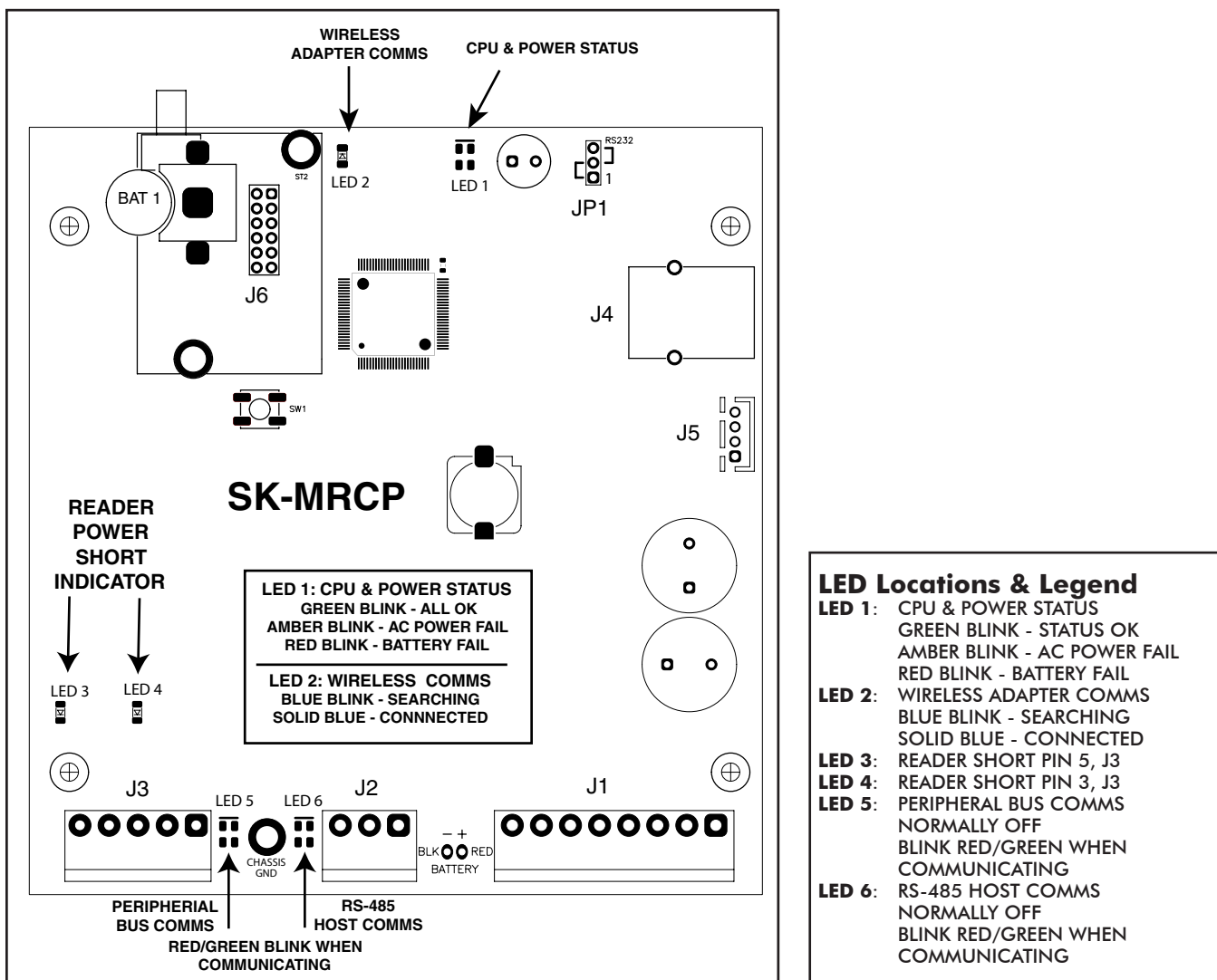


FIGURE 7

READERS AND CARDS

USING NOVA.16 WITH SECURA KEY READERS AND CARDS

- Secura Key Smart Readers read Secura Key cards only, except for the SK-RKDT readers, which read both Secura Key and most HID Proximity cards with non-proprietary pass-through formats, such as H10203 (26-bit) or HN10001 (Northern 34-bit).
- Secura Key cards have two encoded numbers: the ID Number which is different on each card, and the Facility Code (also called a system or site code) which is normally the same for all cards at a given site. When a card is read, the system first verifies the Facility Code, then it checks the ID Number against its internal "card list" to see if the card is void or valid. It also checks the card's Antipassback Status, Time Zone and Limited Use count.

USING NOVA.16 WITH NON-SECURA KEY CARDS AND READERS

NOVA.16 will accept data from any reader with an SIA Wiegand output when connected to an SK-WIO-1 Interface. When using non-Secura Key readers and devices, SIA 26-bit Wiegand format will present the least problems. Formats with ID fields longer than 16 bits will not work properly with the NOVA.16. Custom formats are setup using the SK-NET™ software (see the SK-NET software manual.) Contact Secura Key technical support with questions about custom format compatibility with NOVA.16.

ORDERING ADDITIONAL CARDS FOR YOUR SYSTEM

When ordering additional cards it is recommended that you place a factory order specifying the existing Facility Code and beginning with the ID Number which is one higher than the highest card already in use.

SETTING THE FACILITY (SYSTEM) CODE

IMPORTANT

NOTE: Before programming or using a new unit, the correct Facility Code must be set.

When power is first applied, or when the reset button is pushed (see Figure 3) the LED on each Smart Reader will flash red and green alternately. While the LED's are flashing, present an Access Card with the proper facility code to one of the readers and remove it (note LED turns solid green for about 1 second and the beeper beeps to indicate that the card has been read). The NOVA.16 will "remember" the facility code and retain it until reprogrammed. It is not necessary to present the access card to the second reader since it is automatically set for both passageways. After setting the facility code, wait for the LED to stop flashing before attempting to use the reader.

To change a facility code (or to set the facility code if the LED is not flashing red/green), momentarily depress the reset button. The LED indicator will flash red and green alternately. If the reset button is pushed, but no card is presented to the reader before the LED indicator times out, the facility code will be unchanged.

In some cases it may be necessary for the unit to recognize more than one facility code. Typical instances are when it is necessary to read cards that work in two independent locations that already have different facility codes or when two different reader technologies are used in the same system, each of which has a different facility code.

The NOVA.16 can be set to recognize up to sixteen different facility codes. To program multiple facility codes, follow the procedure above for programming a single facility code, but present a card with the second facility code (and additional facility codes if necessary) to the reader before the red/green LED indicator times out.

Note that it is not generally recommended to combine sets of cards with different facility codes, because the unit cannot distinguish between access cards having different facility codes and the same ID number. For example, if you have two sets of cards numbered 1-100, with facility codes 12345 and 23456, and you delete cards 1 - 10 from the reader's internal "card list," then cards 1 - 10 with either facility code will be denied entry at the reader.

PROGRAMMING THE NOVA.16 WITH SK-NET™

The NOVA.16 must be programmed with SK-NET™ software Version 5.1 or later. Please refer to the SK-NET™ manual for programming instructions. (The SK-NET™ manual is available at www.securakey.com)

FACTORY SETTINGS

When shipped from the factory, the NOVA.16 has the following settings:

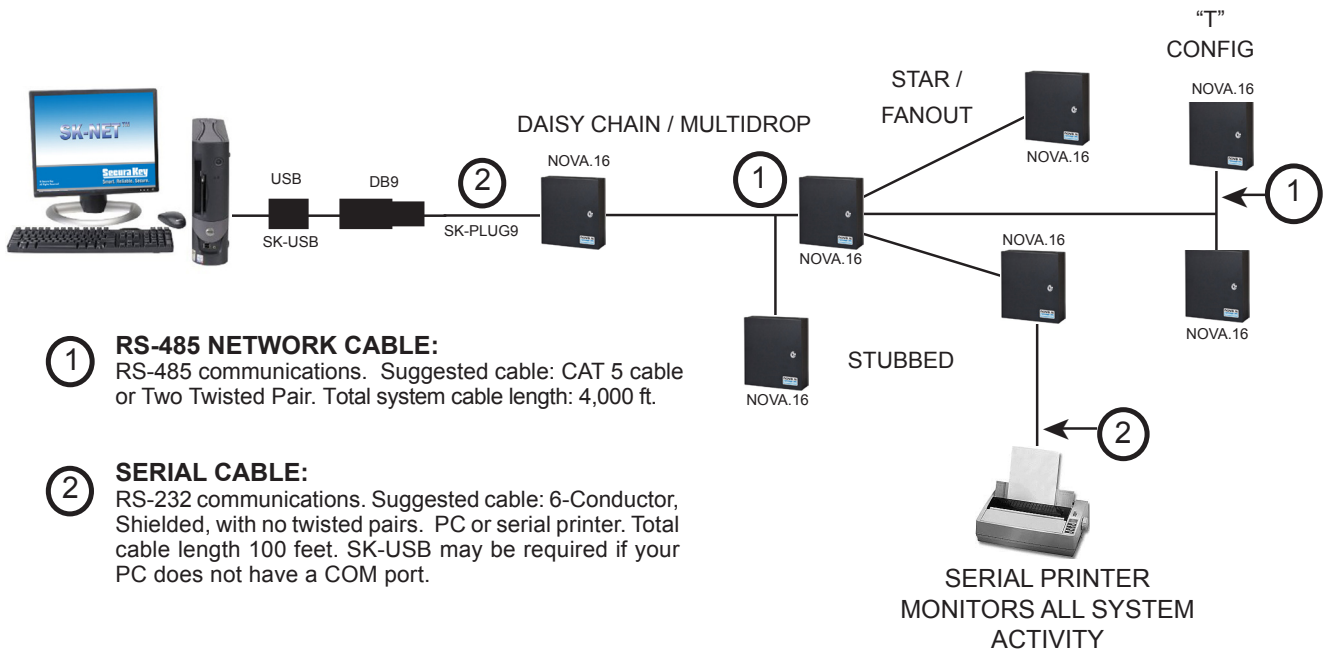
Facility Code	None*
All Cards	Time Zone 0 (void) No Limited Use Cards
Settings	Latch timer = 1 Second APB Timer = 0 Minutes (off) Baud Rate = 38,400* Reader ID = (none) Password = 12345* Date = Undetermined* Time = Undetermined*
Inputs	Input #1 - Door Monitor
Time Zones	APB = Timed Hard* Date Restrictions = None
	Cannot be changed {
	0 = Always Void
	1 = Always Valid (no restriction)
	2 = Mon - Fri, 8am - 5:30pm
	3 = Mon - Fri, 6am - 6pm
	4 = Sat & Sun, 24 hours
	5 = Sat & Sun, 6am - 6pm
	6 = Always Valid (Timed Antipassback)
	7 & Up = Mon-Sun, 6am - 6pm
Door Schedule	Off For All Time Segments
Holidays	None Set
Daylight Savings Correction	Automatic*
Anti-Passback Parameters	
Reader (In/Out)	None
Daily APB Forgive Hour	00

* Common to Panel, all other settings are per reader

APPENDIX A

WIRING AND SYSTEM CONFIGURATIONS

MULTI-PANEL SYSTEM USING SK-NET™ SOFTWARE- SINGLE LOCATION RS-232 CONNECTION

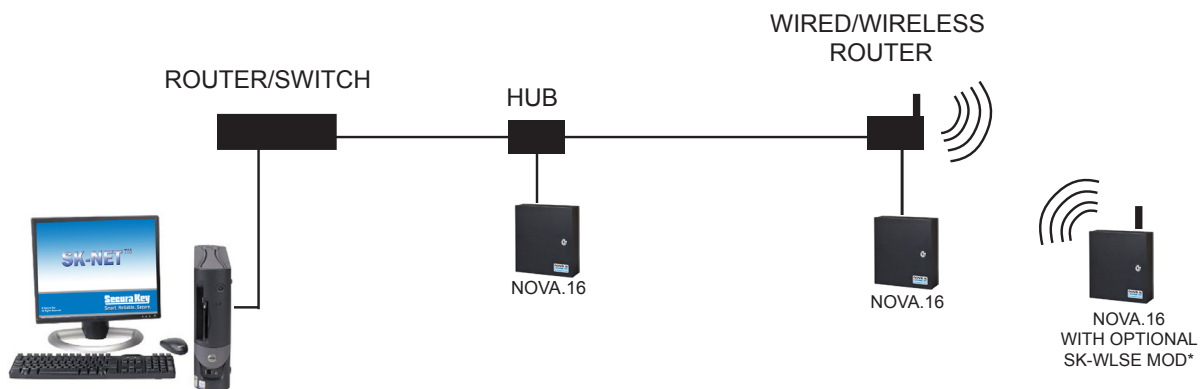


- ① **RS-485 NETWORK CABLE:**
RS-485 communications. Suggested cable: CAT 5 cable or Two Twisted Pair. Total system cable length: 4,000 ft.
- ② **SERIAL CABLE:**
RS-232 communications. Suggested cable: 6-Conductor, Shielded, with no twisted pairs. PC or serial printer. Total cable length 100 feet. SK-USB may be required if your PC does not have a COM port.

NOTE: Each SK-MRCP above can support 16 Smart readers.

Figure A-1

MULTI-PANEL SYSTEM USING SK-NET-MLD SOFTWARE WITH MULTIPLE LAN CONNECTIONS



- ③ **ETHERNET CABLE: (Required cables CAT 5e or CAT 6).**
Wired: max distance 300' (100m) between devices.
Wireless: Typically 100-200' (30-60m) depending on interference, building structure and metal objects.

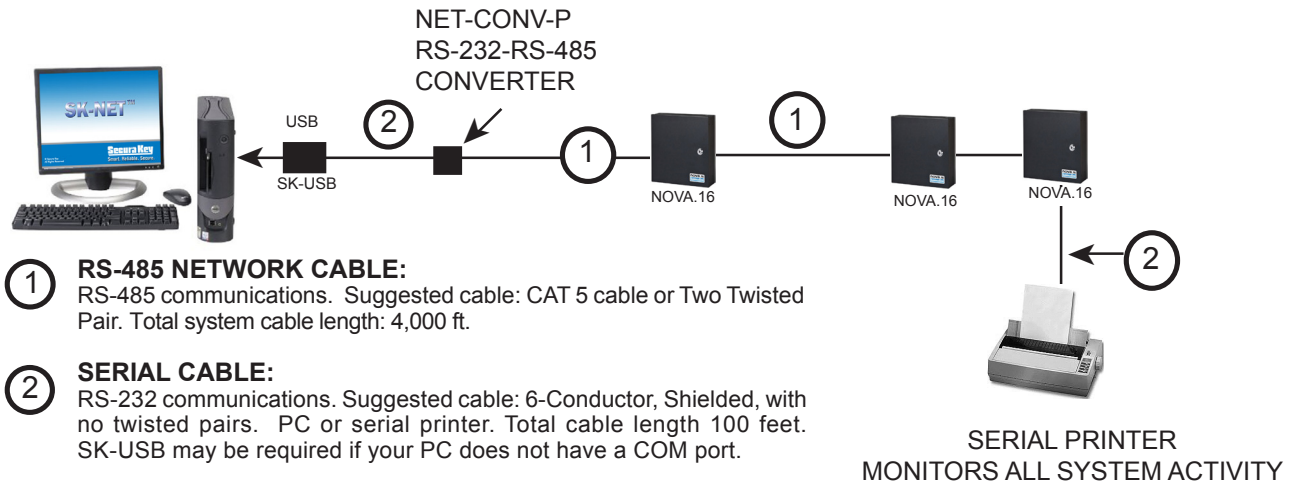
NOTE: Each SK-MRCP above can support 16 Smart Readers.

* Call Factory for availability.

Figure A-2

A-1

MULTI-PANEL SYSTEM USING SK-NET™ SOFTWARE- SINGLE LOCATION RS-485 with CONVERTER



Note: When using the RS-232 to RS-485 converter, you cannot use the stubbed, star fanout or “T” configuration. All network connections from SK-MRCP to the next SK-MRCP must be in parallel with each other. The J2 connector, Pins 1 and 2 must be a twisted pair. Pin 3 (Ground) uses a conductor from another pair, if you are using CAT 5 or CAT 6 cable .

Figure A-3

MULTI LOCATION SYSTEM WITH SK-NET-MLD SOFTWARE

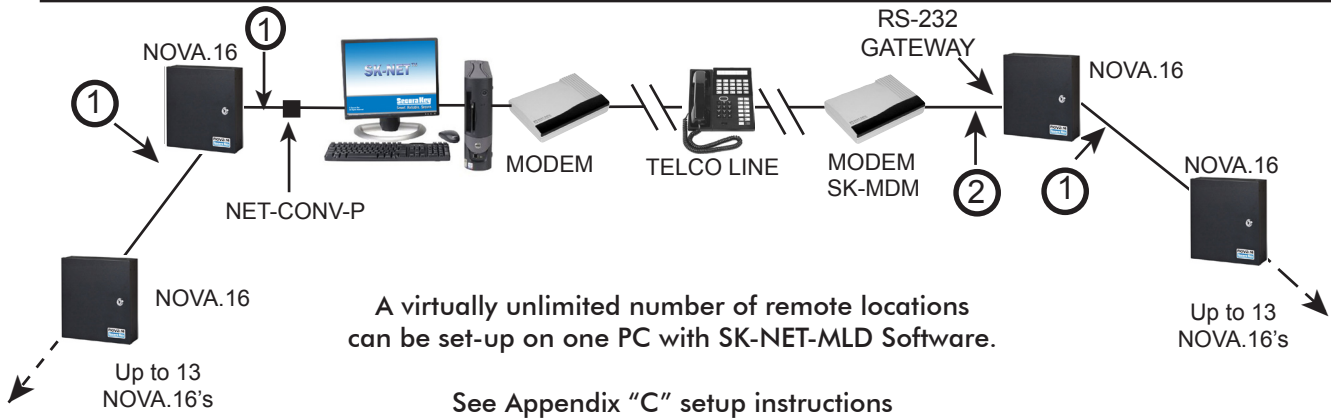
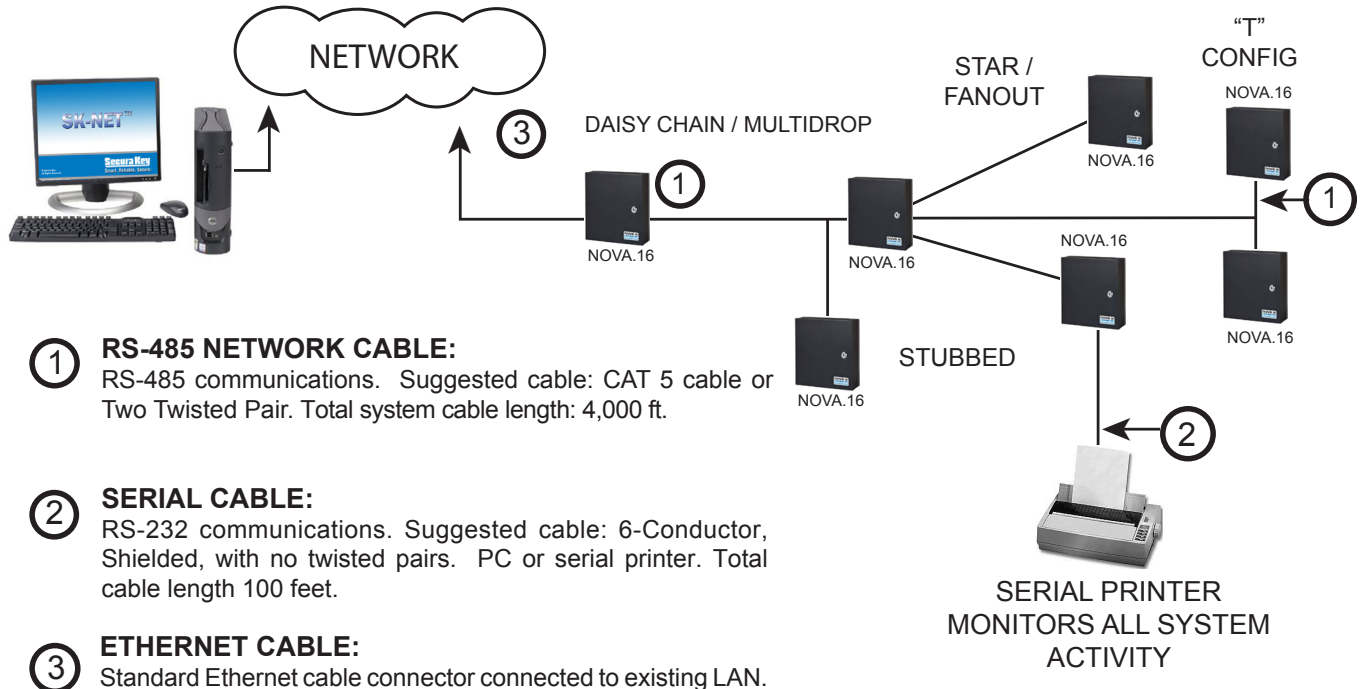


Figure A-4

MULTI-PANEL SYSTEM USING SK-NET™ SOFTWARE- SINGLE LOCATION WITH LAN CONNECTION

NOTE: SK-NET-MLD software must be used when connecting more than one SK-MRCP to the LAN. This can also be a remote location connected over a WAN, if a static IP address is used at each remote site.



NOTE: Each SK-MRCP above can support 16 smart readers.

Figure A-5

APPENDIX B

SK-NET™ EQUIPMENT & COMPONENTS**CONTROL PANEL:****SK-MRCP (NOVA.16):**

16 Door Access Control Unit with Ethernet connector

PROXIMITY READERS AND CARDS:**RKDT-SR-M or RKDT-SRS or RK-XRM**

Proximity Smart Readers (16 per SK-MRCP/single-door controller)

RKCM-02 Molded Proximity Cards

or RKKT-02 Key Tags

or RKCI-02 ISO Image-able cards

Specify Quantity**CONTACTLESS READERS AND CARDS:****ET8-SR-X-M, ET8-SR-X-D-W, or ET8-SR-X-D-I**

Contactless Smart Reader (16 per SK-MRCP/Single-door controller)

ETCI ISO Image-able Contactless Smart Cards

or ETST Key Tags

Specify Quantity**SOFTWARE:**

SK-NET™ — Basic Software Version 5.1 or higher

SK-NET™ -MLD — Multi-Location/Dial-Up Software

SK-NET™ -MLD — C/S 2, 5,10,15

Client/Server Software for Multiple Workstations

ACCESSORIES:**NET-CONV-P** — RS-232 to RS-485 Converter with Power Supply**RELAY BOARDS** — ELK-924 Sensitive Relay

Altronix RBSN or RBSNTTL Relay Modules

(Contact your distributor)

SK-SR1 — SecuRelay™ Intelligent Relay Module**RS-232E** — Serial Cable Assembly

For Bench Testing or field connection with a laptop

SK-24VDC— DC power supply, provides 1A@24VDC.**SK-MDM** — Modem - 56K Baud External Modem for dial-up connection to any SK-MRCP with MLD software**SK-ACP-PS** — 1A, 24VDC 4.0 AH supply and stand by battery for SK-MRCP. .**SK-BAT** — 4.0 AH standby battery for SK-MRCP.**SK-PLUG9** — Computer connector (DB9) with wire pigtail.**SK-USB** — Converts USB Port at PC to serial COM Port with DB9 connector**SK-WIO-1** — One-door Wiegand Reader Interface, Connects to RS-485 Peripheral Bus**SK-WLSE-MOD*** — Wireless LAN adapter, 802.11 b/g. Powered by SK-MRCP-LE. Connect at J6 and set jumpers.**SK-XFRMR** — 16.5VAC 40VA Transformer for SK-MRCP-LE.

* Contact Factory for Availability.

APPENDIX C

CONNECTING A MODEM TO NOVA.16

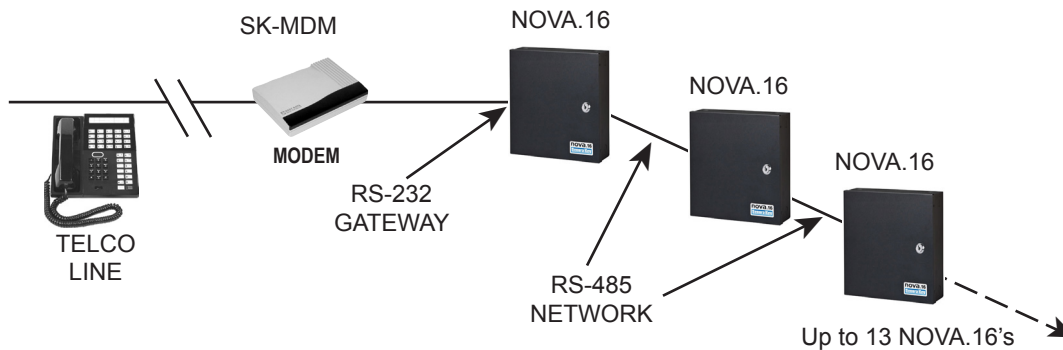
The SK-MDM (U.S. Robotics) has been preconfigured to work with Secura Key access control systems and SK-NET-MLD software. (NOTE: This modem requires SK-NET-MLD software. SK-NET-DM and the free download version of SK-NET™ do not support modem connections.)

1. Plug the telephone cable provided into the SK-MDM and into the jack for a dedicated phone line.
2. Plug the serial cable (provided) into the DB25 outlet on the SK-MDM.
3. Connect the serial cable wires to the J-1 connector on the NOVA.16.

PANEL	WIRE COLOR	DB 25
1	BLACK	7
2	WHITE	3
3	RED	8
4	GREEN	4
5	ORANGE	2

4. Connect the modem power supply to the SK-MDM and plug into a 110VAC wall outlet.
5. For added protection, the modem power lines, the phone line connection and the serial connection may be connected to suitable surge suppressors.
6. Establish connection from the computer to the access control system using SK-NET-MLD software. (Follow instructions in the SK-NET™ manual.)

REMOTE SITE MODEM CONFIGURATION WITH NOVA.16



Warranty: While Secura Key will be happy to help with modem-related problems, for best results contact a U.S. Robotics Service Center. To locate a convenient Service Center, go to www.usr.com. U.S. Robotics warrants this product for two years (detailed warranty is enclosed with the modem).

Figure C-1

APPENDIX D

CONNECTING AN NOVA.16 TO A LOCAL AREA NETWORK

The SK-MRCP-LE control panel features a built-in Ethernet connection. The panel may be connected directly to a hub, switch or router on your Local Area Network up to 300 feet away.

Alternately, you can use the SK-WLSE-MOD Wireless Network Module (which connects with an 802.11 wireless network.) This unit plugs into connector J6 on the NOVA.16, and it receives its power from the panel. You must move the 2-pin jumper at J1 to pins 1 and 2 before installing the module.

Refer to the Install/Setup documentation provided with the SK-WLSE-MOD for details on connections, IP addressing, setup and testing your network connection.

SK-NET-MLD is required for any system having more than one Ethernet connection. To configure your system using SK-NET-MLD software, see SK-NET™ Manual Section 2 for instructions.

NOTES:

- 1) Always close SK-NET™ before closing WINDOWS® to avoid LAN communications failures.
- 2) The manufacturer's instruction manual is included with the SK-WLSE-MOD. Keep this document for additional troubleshooting and setup information.

Configuring IP Addresses in the NOVA.16

Information you will need:

The NOVA.16 now has built-in Ethernet adapter which must be pre-configured with various IP addresses before connection to the LAN. Panels connected via RS232 or RS485 do not need to be configured with IP addresses.

Before starting the setup procedure, contact your IT Manager or Network System Administrator for the following required information:

- TCP/IP Address (one for each panel connected with TCP/IP)
- Subnet Mask
- Default Gateway
- DNS Server
- IP Port (Default = 10001, verify with IT Manager)

Each address will consist of four groups of 3-digit numbers separated by periods (e.g. 111.222.333.444) The Gateway Panel defaults to IP Port 10001. Verify this with the IT Manager. It can be changed if necessary.

IP Addresses can be configured in one of two ways: via Ethernet, or via the panel's, serial port. To configure the panel via Ethernet, refer to the SK-NET™ 5.1 Operating Manual, Appendix C Using SK-LAN Installer. To configure the panel via serial port using SK-NET Terminal or HyperTerm, refer to the following paragraphs.

Configuring the NOVA.16 Using The Serial Port

Hardware Connection

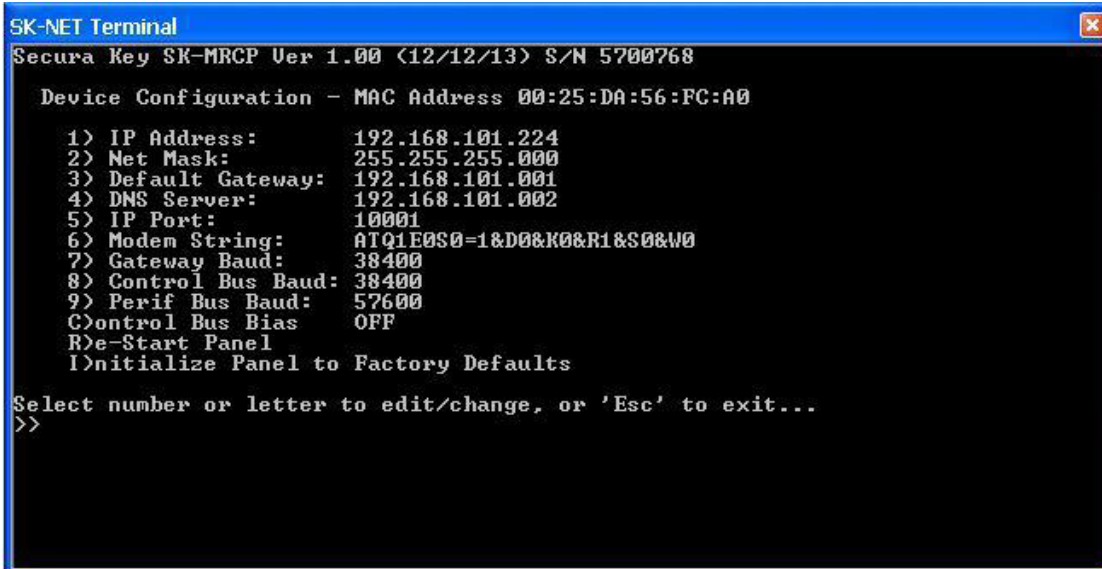
You must connect a Windows computer COM port to the J11 port on each NOVA.16, using the optional RS-232E cable (or to J7 using a wire pigtail, see Figure 3). If your computer does not have a serial COM port, purchase and install the SK-USB USB-to-Serial Converter on your computer, and connect the DB9M connector on the converter to the DB9F connector on the RS-232E cable.

Using SK-NET Terminal to configure your NOVA.16.

1. Connect your computer to the NOVA.16 being configured.
2. Start SK-NET™
3. Right click on the Connection 1
4. Select Properties
5. Select the Connection tab
6. Select Edit
7. Select Test. The NOVA.16 Log On Screen displays (Fig D-1)
8. Type in the Default Password 12345 and press Enter. The Device Configuration Screen (Fig D-2) will display: Ignore any IP addresses currently displayed – these are random values.
9. At the prompt, you will enter data for items 1, 2, 3, and 4:
10. Type 1, then type in the static IP address provided by the system administrator. Press Enter, then press Y to save changes.
11. Type 2, then type in the subnet mask provided by the system administrator. Press Enter, then press Y to save changes.
12. Type 3, then enter the default Gateway provided by the system administrator. Press Enter, then press Y to save changes.
13. Type 4, then enter the DNS server provided by the system administrator.
14. Press Enter, then press Y to save changes.
15. If Default IP Port 10001, needs to be changed, type 5, then enter the new IP Port number provided by the system administrator. If the IP Port does not need to be changed, skip to step 17.
16. Press Enter, then press Y to save changes.
17. Press ESC to exit, and the configuration is done. Your control panel is ready to connect to the LAN.
18. Enter the IP address settings for each NOVA.16 into the SK-NET™ Properties screen for each Ethernet-connected panel.



Figure D-1. NOVA.16 Log-on Screen



```
SK-NET Terminal
Secura Key SK-MRCP Ver 1.00 (12/12/13) S/N 5700768
Device Configuration - MAC Address 00:25:DA:56:FC:A0
1> IP Address:      192.168.101.224
2> Net Mask:       255.255.255.000
3> Default Gateway: 192.168.101.001
4> DNS Server:     192.168.101.002
5> IP Port:        10001
6> Modem String:   ATQ1E0S0=1&D0&K0&R1&S0&W0
7> Gateway Baud:   38400
8> Control Bus Baud: 38400
9> Perif Bus Baud: 57600
C>ontrol Bus Bias  OFF
R>e-start Panel
I>nitialize Panel to Factory Defaults
Select number or letter to edit/change, or 'Esc' to exit...
>>
```

Figure D-2. SK-NET™ Device Configuration Screen

Using HyperTerminal to configure NOVA.16

HyperTerminal is available free in Windows XP, but not in later Windows versions. Visit www.hilgreave.com to purchase HyperTerminal for use in Windows Vista, 7 or 8.

Follow this procedure to configure HyperTerminal for the NOVA.16 TCP/IP setup:

1. Connect your computer to the NOVA.16 being configured,
2. Click on the Windows XP Start Button
3. Select All Programs, then Select Accessories, Communications, then HyperTerminal
4. The **Location Information** Screen will display, but it is not necessary for this setup procedure: click Cancel, then Yes to Confirm Cancel, and OK.
5. The next screen is titled Connection Description. Enter a name and select any icon, then click OK.
6. The **Location Information** Screen will redisplay, but it is not necessary for this setup procedure: click Cancel, then Yes to Confirm Cancel, and OK.
7. The next screen titled **Connect To:** will have a parameter selection at the bottom titled "Connect Using:" Use the drop down box to select the COM port you are using to connect with NOVA.16. Click OK
8. The next screen which displays is **COM x Properties** which allows you to make Port Settings. Use the drop down boxes to select the following values: Bits per second = 38400, Data Bits = 8, Parity = None, Stop bits = 1, Flow Control = None, and then click OK
9. The HyperTerminal main screen will display with the password prompt

From this point, the configuration procedure is identical to the one used with SK-NET™ Terminal, described in the previous section.

Consult the HyperTerminal documentation for procedures used with the Windows 7, 8 and Vista versions of HyperTerminal.

Configuring the NOVA.16 for Serial Printer

A Serial Printer can be connected to any NOVA.16 in the system to monitor (print) all system transactions. The NOVA.16 must be configured for this function, using a terminal program, such as SK-NET Terminal or HyperTerminal.

To configure an NOVA.16 for the serial transaction printer function:

1. Follow Steps 1-7 in the previous section (using SK-NET Terminal) to display the NOVA.16 Login Screen (Figure D-1)
2. Press CTRL-P (Ctrl key plus P key simultaneously), release, and then quickly press C. (These commands are non-case sensitive.)

The NOVA.16 is now configured to send all system transactions to a serial printer connected at J7.

NOTE: To exit the printer mode, perform a "single-beep" Power Reset. (See Appendix E, Sec. 1.8.)

APPENDIX E

NOVA.16 TROUBLESHOOTING GUIDE

1.1 Cards do not work after creating a new Access Group

1. Did you drag-and-drop readers into the new Access Group?
 - a. From the Explorer screen, click on Connection Group.
 - b. Drag-and-drop the desired readers from each Connection Group into the new Access Group.
 - c. Click on the "+" sign next to the new Access Group to view the readers in the new group.
 - d. Perform a Card Send, as described below.
2. Did you send the cards to the Location?
 - a. Click on "Send Users Full".

1.2 New Transactions are not appearing in the Transaction Screen

1. Are transactions being filtered?
 - a. From the Transaction screen, click on the Filter icon.
 - b. Click on Defaults. Click OK.
2. Are you logged in to the Location?
 - a. From the Explorer screen, open each connection group's folder to display reader icon(s). Are there Green check marks by each reader icon?
 - b. If readers do not have Green check marks (or have red lines through them) try to Log-in. Is there a Red arrow next to the Location icon?
 - c. If there is a Red arrow, but readers are not logged in, click on the Log-In icon on the toolbar.
 - d. If there is not a Red arrow or a Green check mark, click on the location name, click on the Log-In icon on the toolbar.
3. Have you excluded any transactions?
 - a. Right click on Connection Group.
 - b. Click on the Transactions tab.
 - c. View Transaction Types. If there is a check mark in the box located next to a Transaction Type, it will not be sent to your Transaction database in SK-NET™.

1.3 "Invalid Facility Code" message when using newly-added cards

1. Do the new cards have a different Facility Code than the previous ones?
 - a. Go to one of the NOVA.16 panels. Take a sample card with each different facility code. Press the reset button.
 - b. Present a sample card with each Facility Code to one of the readers attached to the NOVA.16 while the LED is flashing Red and Green (within 10 seconds).
 - c. Repeat this process for each NOVA.16. You can also send Facility codes to all panels through SK-NET™, like this:
 - d. From the Explorer screen, right click on the name of the reader that has the new Facility Code.
 - e. Select Properties.
 - f. Click on the Service tab. You should see the quantity of Facility Codes active in that panel.
 - g. Under Facility Codes (Panel). Click Edit. Enter an unused facility code number (1-16). Enter the value, Click Add ++, then Close.
 - h. Click Close.
 - i. Click Send To All.
 - j. Click Close.
 - k. After all cards are working, right click on Connection Group.
 - l. Select Backup. Select Connection Group.

1.4 Reader does not read-LED is Flashing Red or Green

A slowly flashing Red LED indicates that the reader is in the Inactive mode. A slowly flashing Green LED indicates that the reader is in the Unlocked mode or a door schedule is active. These conditions exist when someone has activated a Door Control, from SK-NET,™ or when an input is shorted and programmed Remote Inactive. A flashing green LED also indicates the door has been unlocked by the Door Schedule. To check the door status:

1. From the Explorer screen, right-click on the name of the reader.
2. Select Properties.
3. Click on the Door Controls tab.
4. What is the Current Door State? This will help identify why the reader is in the Inactive or Unlocked mode.
5. Click on Normal if the reader shows Inactive Lock or Inactive Unlocked. This will change the Current Door State to Active Normal.
6. Unlock via Door Schedule indicates the door is unlocked by the schedule. To disable the schedule click on Edit, click in the Disabled box and Send.

1.5 Lost Communications between PC and Readers

1. Check Com Settings
 - a. From the Explorer screen, right click on the Connection Group.
 - b. Select Properties.
 - c. Click on the Connection Tab.
 - d. Run the Connection Wizard.
 - e. If the Wizard finds the connection, click OK and then Connect. If not, select your connection below.
 1. RS-232 direct connect, computer COM port to the SK-MRCP COM port. (See Section 1.6.)
 2. RS-232 to RS-485 converter, computer to converter to the SK-MRCP. (See Section 1.7.)
 3. TCP/IP connection via LAN, WAN. Contact the IT department.
 4. Modem connection, must have Local Connect unchecked and modem phone number provided. Try to re-power the modem and SK-MRCP.
2. Login Failure
 - a. In the Explorer screen, look for a red arrow next to the Location icon. This indicates you are connected to the Location.
 - b. Click on the "+" next to Connection Group. If the reader shows a green check mark, this indicates the reader is logged in. An icon with a red "X" indicates lost communications with that reader. If this occurs, perform a Power Reset. (See Section 1.8)

1.6 Using RS-232 Voltage Measurements to Check Communication Problems

If you cannot connect, it will be necessary to take voltage measurements to identify whether the problem is with the NOVA.16 or with the computer.

RS-232 Direct Connection

1. From the Explorer screen, right-click on the Connection Group.
2. Select Properties.
3. Click on the Connection tab.
4. Uncheck the box next to "Gateway (RS-232)"
5. Click on the Connect button.

The system will show connected, but will not login, but in the process it will open the computer COM port, making a voltage test possible.

1. Voltages: Measure voltages at the gateway panel connector J7, pins 1 to 5. Connect the ground lead to pin 1 (logic ground) for all measurements.

- a) Pin 2 (Receive Data, RXD). The voltage should read between -5 VDC to -12 VDC. This voltage comes from the PC. If the voltage is wrong or missing, disconnect the panel from the PC, and measure the voltages at the panel (should be 0.0 VDC) and at the PC (should be between -5 VDC to -12 VDC).
- b) Pin 3 (Clear to Send, CTS). The voltage should read +0 VDC. This voltage comes from the PC. If the voltage is wrong or missing, disconnect the panel from the PC, and measure the voltages at the panel (should be 0.0 VDC) and at the PC (should be between +5 VDC to +12 VDC).
- c) Pin 4 (Request to Send, RTS). The voltage should read between +5 VDC to +12 VDC. This voltage comes from the Panel. If the voltage is wrong or missing, disconnect the panel from the PC, and measure the voltages at the panel (should be +5 VDC) and at the PC (should be 0.0 VDC).
- d) Pin 5 (Transmit Data, TXD). The voltage should read between -5 VDC to -12 VDC. This voltage comes from the Panel. If the voltage is wrong or missing, disconnect the panel from the PC, and measure the voltages at the panel (should be -5 VDC) and at the PC (should be 0.0 VDC).

After testing voltages, return to the Location/Properties/Connection box and re-check the box next to "Gateway (RS-232)".

1.7 NET-CONV Converter Connection

If you cannot connect and you are connected using the NET-CONV converter, test voltages as follows:

1. Measure input voltage from the converter power supply. It should be between 9 VDC and 16 VDC.
2. Measure voltage between Ground (minus side of power supply) and TD (A). It should be 0.2 VDC.
3. Measure voltage between Ground (minus side of power supply) and TD (B). It should be between 2.5 VDC and 5 VDC.

If these voltages are incorrect, contact Secura Key Technical Support.

1.8 Power Reset

Occasionally it may become necessary to perform a power reset on a NOVA.16 panel (for example, after a power surge.) The NOVA.16 has a multi-level power reset procedure, with options depending on how long you hold down the reset button following restoration of power. The Unit will beep, indicating the level of reset which has occurred.

To perform a Power Reset:

1. Disconnect power from the reader or panel (including any backup battery)
2. Hold down the reset button.
3. While holding the reset button, restore power, and continue holding the button until the unit beeps and the desired reset level occurs:

One (1) beep will default the Baud rate to 38400 for the gateway (RS232), and (RS 485 communications), exit the printer mode, reset password to 12345, and resend the wireless settings if being used.

Two (2) beeps (3 seconds later) will change the node ID's. This procedure will reset the node address, requiring a recovery procedure in SK-NET™ (see below).

Three (3) beeps (15 seconds later) will perform a factory default for the panel.

Recovery Procedure:

To clone the readers:

1. From the Explorer screen, right click on the Connection Group.
2. Select New.
3. Select Readers.
4. Select Quick Find (with less than 20 readers), or Search (with more than 20 readers).
5. SK-NET™ will find the original reader(s) as new ones.
6. Click OK to bring them into the system. Do not log in at this time.

7. Look under The Connection Group and you will notice that you now have duplicate reader(s) names for a 2-beep reset or duplicate serial numbers for a 3-beep reset. The old one will still have the red X through the icon, and the new one will not.
8. Drag and drop the New reader(s) on to the old reader(s) with the same name or serial number. You will be asked to Replace the reader, click Yes. This will clone the original reader settings in to the New reader.
9. Right click on Connection Group and select Login. Now all the readers should have a green check next to each reader.

1.9 Replacing a NOVA.16

When replacing or adding an NOVA.16 to a system, it is recommended to perform a "2-beep" power reset for the new board (See Sec. 1.8).

NOTE: There are no changes required in SK-NET™ when replacing a card reader connected to the NOVA.16. While replacing the NOVA.16 it is recommended that you note the serial number of the board being replaced along with the new board being used for the replacement. This will simplify the following steps used in this procedure.

Note: DO NOT delete any readers from the Explorer screen!

After completing the replacement of the board you need to start SK-NET™, connect and login. Click on the + next to the Connection Group and you will notice a red X through the reader(s) icon(s) which have been replaced.

1. Left click on the Connection Group, now it will be highlighted.
2. Notice that on the right hand side of the Explorer screen all of the readers are listed along with the Node ID, Logged In, Serial Number, Version, and Type.
3. Right click on Connection Group.
4. Select New, Readers, Quick Find (for less than 20 readers) or Search (for more than 20 readers).
5. After SK-NET™ finds the new readers, click OK to add them to the system (note that under The Connection Group icon, the new readers found show the serial number as the name of the reader). Do not login.
6. Look at the serial number or name of the new reader(s) and drag and drop the new one over the old one with the red X through the icon.
7. When asked 'Do you wish to replace the reader?' Answer YES. SK-NET™ now will use the data files from the old reader and program them in to the new reader including sending cards.
8. Repeat steps 6 and 7 for all readers being replaced.
9. Test a card or two, the replacement is now complete.

APPENDIX F

PREVENTING LIGHTNING DAMAGE

SURGE PROTECTION FOR ACCESS CONTROL SYSTEMS

Access Control equipment is susceptible to damage from lightning, especially when installed outdoors. Voltage spikes which travel through buried data cables, telephone lines or AC power lines can damage Access Control equipment indoors, as well.

The SK-MRCP-LE is equipped with Gas Discharge Tube Surge Arrestors on the RS-485 communications lines (J2 and J3). For these devices to work properly, the NOVA.16 chassis ground (located on the circuit board, just to the left of J2) must be connected to a good Earth Ground.

While nothing can protect equipment from a direct lightning hit, surge protectors can help to minimize the damage caused by nearby lightning strikes. Surge protectors operate by connecting Transorbs or Varistors from data lines to ground. Surge protectors have no effect on normal circuit voltages, but can act quickly to divert large voltage spikes to ground and away from sensitive components.

Although Secura Key equipment includes on-board surge suppression, properly grounded off-board devices will provide the best protection.

WHERE TO INSTALL SURGE PROTECTION

- On the AC line voltage input to the PC. (A UPS with surge protection is recommended).
- On the AC line voltage input to any transformer or DC Power Supply connected to an NOVA.16 or Modem.
- On RS-485 data lines connecting an NOVA.16 to a PC, Printer or Modem, using a NET-CONV-P converter.
- On RS-232 data lines from NOVA.16s to PCs, Printers or Modems.
- On Telephone lines connected to Modems.
- On RS-485 Data lines connecting smart readers to the NOVA.16s.

PROTECT BOTH ENDS OF DATA LINES

Surge Protectors should be installed at both ends of all Data Lines.

WIRE DISTANCE FROM THE SURGE PROTECTOR

You must locate the protector at least three wire feet away from the device being protected. The additional wire resistance will dissipate the energy from leading edge of the spike. The wire can be coiled; a three-foot physical distance is not required.

GROUNDING THE SURGE PROTECTOR

Surge protectors must be connected to a verified good, nearby earth ground. This can be AC Power Ground, a 10' Copper Ground Stake, or Building Ground. Run 12 AWG or 14 AWG or heavier wire as short a distance as possible, and avoid any bends in the wire.

SELF-GROUNDING SURGE PROTECTORS

Do not use surge protectors unless they are equipped with a separate ground wire or ground screw. Self-grounding Surge Protectors use the connector shell or Pin 1 as a ground path; however, the shell and Pin 1 are not always grounded.

AC POWER SURGE PROTECTORS

AC Power Surge Protectors must be plugged into a properly grounded 3-wire socket. If a 3-wire socket is not available, have one installed by an electrician; do not use a 2-prong socket by cutting off the 3rd prong on the plug, or by using a 3/2 converter, or the surge protector will be rendered useless.

TERMINATING CABLE SHIELDS

Connect cable shields on data cables at one end only. You may terminate the cable shield to the same ground as the surge protector. Leave the cable shield unconnected at the opposite end.

SURGE PROTECTORS

There are many manufacturers of surge protectors. Some are designed to protect a single type of circuit such as high voltage AC, low voltage DC or telephone lines. Secura Key offers two multi-function surge suppressors that are well-suited to protecting access control equipment. The **DTK-XR** is a good choice for protecting an NOVA.16 panel from power, data and telephone line surges. If the smart readers connected to the NOVA.16 are located outdoors you may also wish to install **DTK-XR** protectors on each reader circuit. **Wiring instructions for this surge protector appears on the following pages.**

MORE INFORMATION

For more information on lightning, including additional lightning protection methods and a US lightning density map, see Secura Key Applications Bulletin #28 on our website. (www.securakey.com)

CONNECTING THE DTK-XR (DATA LINE PROTECTION)

The DTK-XR is a multi-line surge suppressor that can protect an NOVA.16 control panel, or other access control unit from damaging power surges.

Locate the DTK-XR at least three (3) wire-feet away from the unit to be protected.

Connect the green ground wire to a dependable earth ground, using a heavy gauge cable (12 or 14 AWG recommended). Keep the wire run to the grounding location as short as possible.

If you are using 24 volts to power the access control unit (recommended) connect the power supply to 24V IN and connect the access control unit to 24V OUT. If you are using 12 volts to power the access control unit, connect the power supply to 12V IN and connect the access control unit to 12V OUT.

If the access control unit is connected to other units via RS-485 you may connect the "A" and "B" lines of the RS-485 twisted pair to 6V IN and 6V OUT.

If you are using a dial-up modem, you may protect the modem by running the "Tip" (usually green) and "Ring" (usually red) phone lines to TELCO IN and connect the phone jack to TELCO OUT.

DTK-XR
DIAGRAM

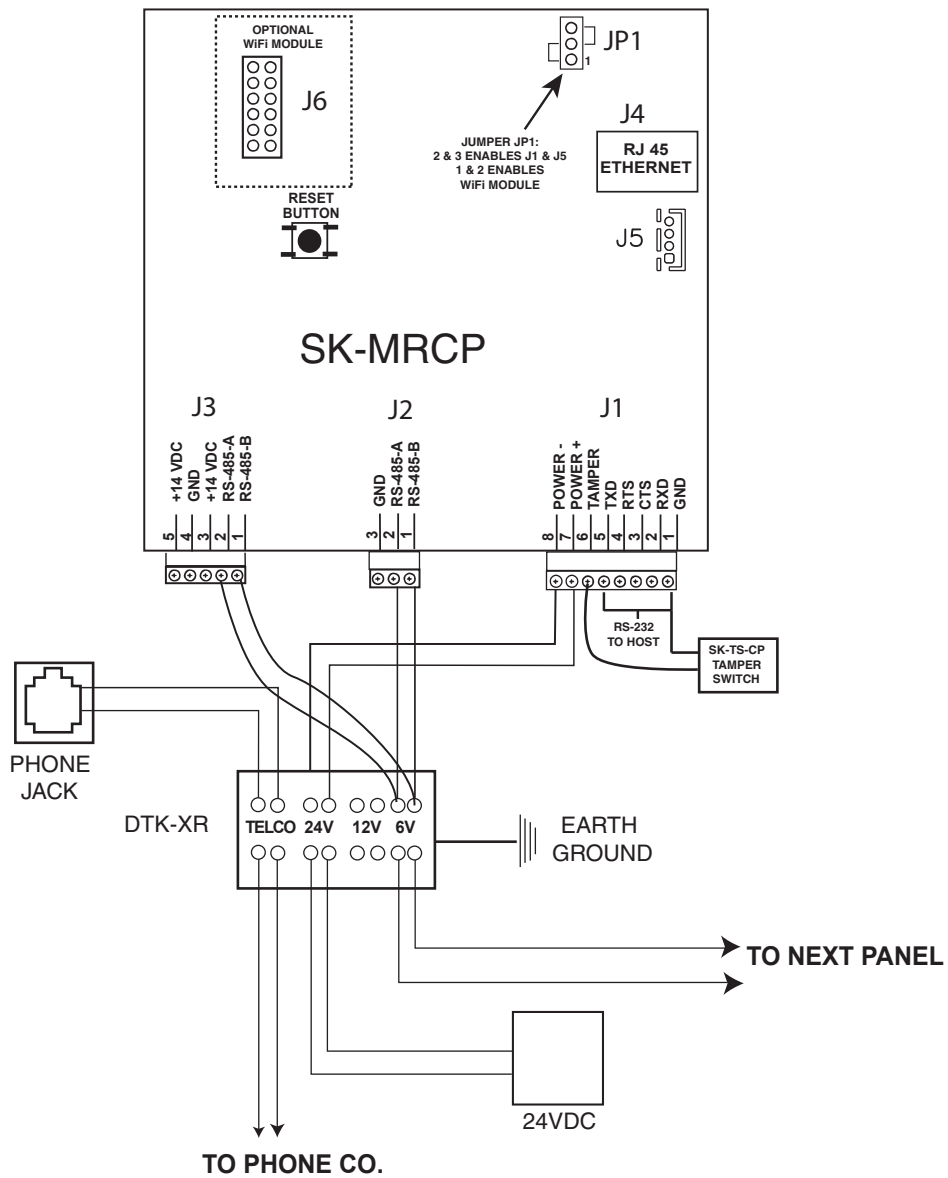


FIGURE F-1

APPENDIX G

USING OPEN COLLECTOR OUTPUTS

Open collector outputs are available on each Smart Reader used with the NOVA.16 system. They are only capable of switching very small loads, but they can be used to control a relay which is capable of switching larger loads.

While relay modules are available from your distributor, you can actually use any 12VDC relay such as the commonly available 10 Amp Omron G5LE-1 by connecting a diode across the inputs, as shown in the diagram below.

The Green wire from the Smart Reader is Open Collector #1 and the White wire is Open Collector #2. These outputs are independently controlled by the software, and you could connect one relay to each output as shown if needed.

If you are using a metal J-box, be sure to protect any relay connections from shorting by using electrical tape.

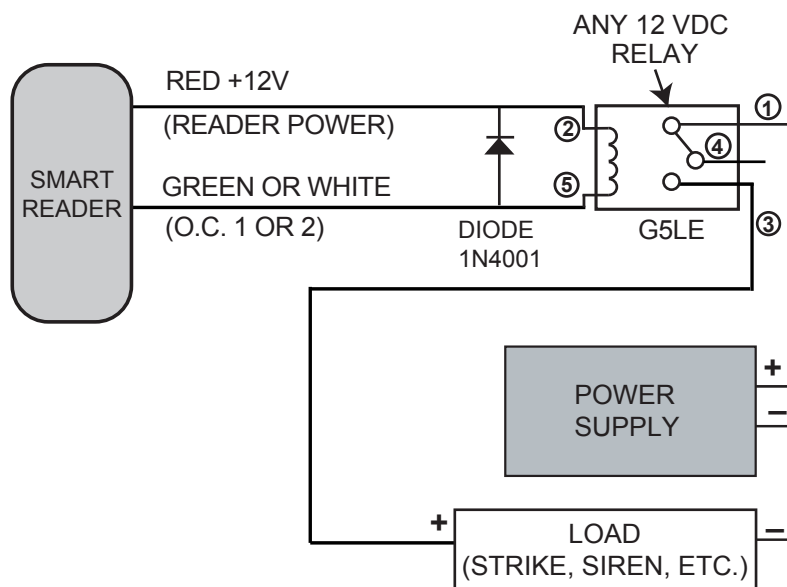


FIGURE G-1

SPECIFICATIONS

SK-MRCP-LE

PHYSICAL

Depth	3.0"	(7.62 cm)
Width	10.0"	(25.40 cm)
Height	11.0"	(27.94 cm)
Weight	68.8 oz.	(1.95 kg)
Housing Material is All Steel; Color is Black		

POWER REQUIREMENTS	16.5-24VAC, 40 VA or 16-30 VDC, 1.0A A 12 VDC Power Supply may be used if connected to Battery Back-Up Leads.
--------------------	--

BACK-UP BATTERY	12 V, 4 Ah (Optional, Sold Separately)
-----------------	--

SMART READERS	Connect up to 16 Smart Readers to J3, RS-485 Peripheral Bus. Also Connect Wiegand Output readers and devices to Peripheral Bus using SK-WIO-1 single-door Wiegand Interface modules.
---------------	--

SOFTWARE	SK-NET™ Software	Version 5.1 or greater
----------	------------------	------------------------

TAMPER INPUT	Requires SPST contact closure (switch included)	
--------------	---	--

COMMUNICATION	LAN: CAT 5e or 6, connect to on-board RJ45 Ethernet connector RS-485 Command Bus: Single twisted pair, shielded with ground up to 4000 feet RS-232: 5-wire shielded cable, up to 115K Baud, full duplex 8N1 up to 100 ft. Modem: Hayes compatible, 1.2 to 57.6 K baud Printer: Serial printer (or parallel printer with serial converter) Smart Readers: Use CAT5 for data and 18/2 for power. Or use Siamese cable with CAT5 AND 18/2 (COLEMAN cable 97395-06-23)	
---------------	--	--

ENVIRONMENT	Ambient Temperature	-40° F to 158° F (-40° C to 70° C)
	Humidity	0% to 95% relative humidity (non-condensing)

OPERATIONAL	Card Capacity	65,535 (Highest card number = 65,535)
	Time Zones	15 for card access, one door unlock (per reader); full week plus holiday in one-half hour segments; 32 programmable holidays; selectable automatic daylight saving time.
	Facility Code	Up to 16 different codes simultaneously (max. # of cards 65,535)
	Latch/Alarm Shunt Timer	Programmable from 1/4 to 30 seconds
	Antipassback	Real or Timed (1 to 30 minutes); hard or soft
	Limited Use Cards	65,535, programmable from 1-500 uses, days, weeks or number of days after first use.
	Transaction Storage	10,000 events
	Memory	Non-volatile (programming retained during power loss)

This product complies with UL 294 Standards, CE (European Standards), and with Part 15 of Class B FCC Rules.

WARRANTY

For warranty terms and conditions, please refer to the Secura Key Website (www.securakey.com) the current Secura Key price list, or contact the Factory.

WARNING:**INSTRUCTION TO THE USER**

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet of a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This equipment has been certified to comply with the limits for a class B computing device, pursuant to FCC Rules. In order to maintain compliance with FCC regulations, shielded cables must be used with this equipment. Operation with non-approved equipment or unshielded cables is likely to result in interference to radio and TV reception. The user is cautioned that changes and modifications made to the equipment without the approval of the manufacturer could void the user's authority to operate this equipment.

NOVA.16 (SK-MRCP)

User/Installation Manual
