NRL-101 Network Receiver Line Card

Description

The NRL-101 Interface Line Card provides data network Ethernet/Internet communication to the Sur-Gard MLR2-E Receiver. This capability allows the Sur-Gard MLR2-E to accept alarm and system reports over the network or the Internet from DMP Command Processor™ panel accounts equipped with a network device, such as an iCOM™ Internet Alarm Router.

The LEDs on the faceplate of the NRL-101 indicate system and Sur-Gard MLR2-E status, such as communication between the MLR2-E and the NRL-101, as well as network and MLR2-E trouble.

What's Included

The NRL-101 includes the following:

- NRL-101 Interface Line Card
- NRL-102 Backplane Interface Board
- Two spacers and 2 screws for mounting the NRL-102 Backplane Interface Board
- Four 4.5-inch telephone wires
- Model 330 Programming Cable

What Else is Needed

Additional equipment needed to install, program, and use the NRL-101:

- Sur-Gard MLR2-E Receiver (or Sur-Gard CPM2 Central Processing Module)
- Ethernet or full-time Internet connection
- DMP 32-character LCD keypad
- Sur-Gard MLRXE Expansion Card Cage (or available space in a card cage)
- Uninterrupted Power Supply (UPS) UL Listed for Fire Protective Signaling connected to the entire MLR2-E Receiver as a backup power source

NRL-101 LED Indicators and Buttons

Watchdog LED: Flashes to indicate the NRL-101 is present. When the Watchdog LED is off, the NRL-101 is not present.

Network Trouble LED: If the data network is in a trouble condition, the LED is on.

Message Error LED: If the Error LED is on, there has been an error with the packet of information (message). Press the MENU button to turn the LED off.

[MENU FUNCTION] Button: Press this button to access the line card menu.

Trouble LED: The LED is on to indicate either an Sur-Gard MLR2-E trouble, or the buffer is full.

[SELECT] Button: In normal mode, press this button to select the current item.

Tx (Transmit Data) **LED**: When the Sur-Gard CPM2 is transmitting to the NRL-101, this LED is on.

Figure 1: NRL-101 Faceplate with LED Indicators

Rx (Receive Data) **LED**: This LED is on when the Sur-Gard MLR2-E is receiving data from the NRL-101.

Tx**ACK** (Transmit Acknowledgment) **LED**: When the Sur-Gard CPM2 is transmitting an acknowledgment message to the NRL-101, this LED is on.

Note: The two buttons on the right-hand side of the faceplate are not used.
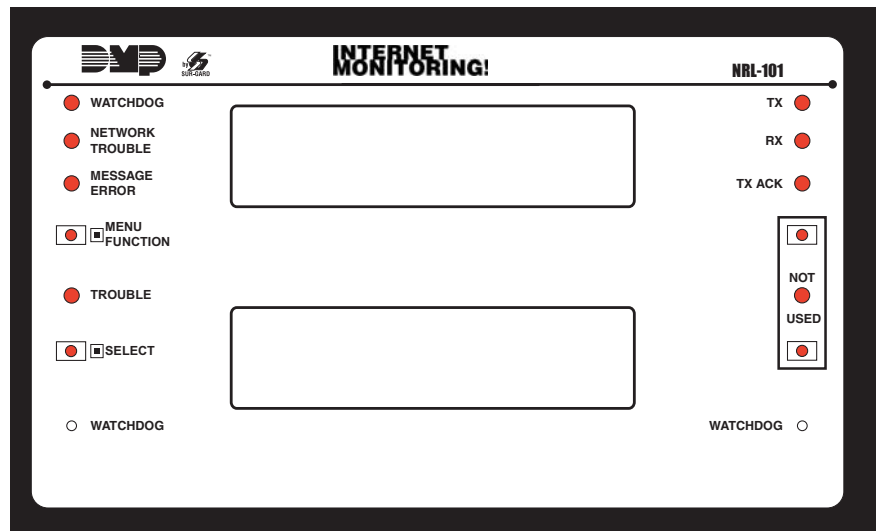The LED between those two buttons is also not used.

DMP
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Installing the NRL-101

After sliding the NRL-101 into an available space in the Sur-Gard MLR2-E Card Cage or an MLRXE Expansion Card Cage and securing the faceplate screws, mount the NRL-102 Backplane Interface Board on the backplane of the MLR2-E.

Insert the two supplied screws into the screw holes in the NRL-102 Backplane Interface Board shown in Figure 2. Place the two supplied plastic spacers on the screws. Mount the Backplane Interface to the backplane using the two holes for the DB-9 connector (P5) located just to the left of the Backplane Interface. Refer to Figure 3.

After securing the NRL-102 Backplane Interface to the backplane, connect the supplied 6-pin modular cables between the two sets of modular connectors on the backplane and the Backplane Interface. Connect **J1** on the interface to **P1** on the backplane, **J2** to **P2, J3** to **P3,** and finally **J4** to **P4**. After all four connections have been made and the programming has been completed, connect your network cable to **J6 NETWORK** on the Backplane Interface.
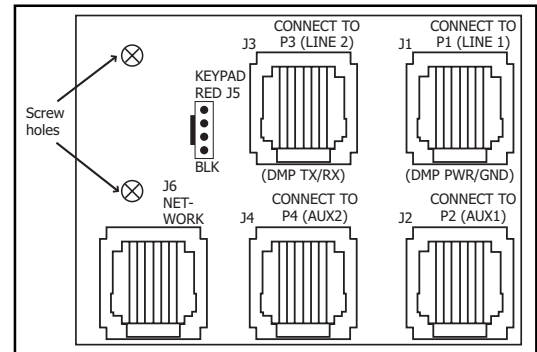

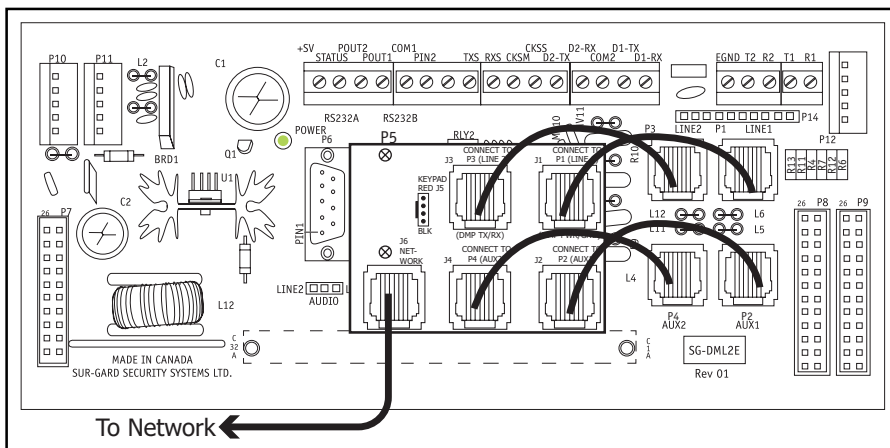**Figure 2: NRL-102 Backplane Interface Board**

Figure 3: NRL-102 Backplane Interface Board on the MLR2-E Backplane

Preparing to Program the NRL-101 for Network Operation with a DMP Keypad

To program the NRL-101 for network operation, use a supervised 32-character keypad set to address 1. These options are programmed in the Keypad Options menu. Set the CURRENT KEYPAD ADDRESS to **1** (one) and select **SUP** for the KEYPAD MODE. Refer to the keypad installation sheet for more information. After these two settings have been programmed, follow the steps below.

1. Connect a DMP 32-character LCD keypad to the **J5 KEYPAD** 4-pin connector on the NRL-102 Backplane Interface.
2. Pull out the NRL-101 from the Sur-Gard MLRXE Expansion Card Cage. This will remove power from the unit, allowing the NRL-101 to enter the programming mode.
3. Push the NRL-101 back into the card cage to reapply power to the unit.
4. The keypad should display **iCOM PROGRAMMER**. Press the COMMAND key to enter programming mode.

Note: While programming the NRL-101 with a keypad, you can advance to the next programming option by pressing the COMMAND key. To allow the entry of programming information, press a top row Select key. You can return to the previous programming option by pressing the Back Arrow key.

Note: *All IP addresses and port numbers need to be assigned by the network administrator. The network Administrator must fill in the information below.*

Local IP Address for the NRL-101: _____

Gateway IP Address: _____

Subnet Mask: _____

UDP Port: _____

Programming the NRL-101 for Network Operation

Note: All IP addresses and port numbers need to be assigned by the network administrator.

```
LOCAL IP ADDRESS
192.168.000.250
```

Local IP Address

Press the COMMAND key to display **IP ADDRESS**. Enter the IP address. Be sure to enter all 12 digits and leave out the periods. For example, IP address 192.168.000.250 is entered as 192168000250. The Local IP Address must be unique and cannot be duplicated on other NRL-101 Interface Line Cards. The default value is **192.168.000.250**.

```
GATEWAY ADDRESS
000.000.000.000
```

Gateway Address

Press the COMMAND key again to display **GATEWAY ADDRESS**. Enter the local gateway address. Be sure to enter all 12 digits and leave out the periods. For example, the gateway address 192.168.1.99 is entered as 192168001099.

```
SUBNET MASK
255.255.255.000
```

Subnet Mask

Press the COMMAND key to display **SUBNET MASK**. Enter the local subnet mask assigned to the NRL-101. Use the protocol described for entering the IP address. For example, if the subnet mask to be assigned is 255.255.255.0, enter the address as 255255255000. The default value is **255.255.255.000**.

```
RMT IP ADDRESS
000.000.000.000
```

Remote IP Address

Press the COMMAND key to display **RMT IP ADDRESS**. The Remote IP Address should remain 000.000.000.000. The NRL-101 does not transmit messages to a remote location; therefore, a Remote IP Address is not needed.

```
UDP PORT
2001
```

UDP Port

Press the COMMAND key to display **UDP PORT**. The default value is **2001**. If a different UDP Port number is needed, enter the new number.

```
TELNET PORT
9999
```

Telnet Port

Press the COMMAND key to display **TELNET PORT**. The default value is **9999**.

```
RS232 BAUD RATE
19200
```

RS232 Baud Rate

Press the COMMAND key to display **RS232 BAUD RATE**. The default is **19200**. The Baud Rate entered here must match the Baud Rate of the Sur-Gard MLR2-E, which is 19200. If you must change the baud rate, valid baud rates are 1200, 2400, 4800, 9600, and 19200.

```
PANEL MODE
YES          NO
```

Panel Mode Enabled

Press the COMMAND key to display **PANEL MODE**. The default setting is set to **NO**, which configures the NRL-101 for installation in the NRL-101. Do not change this setting.

```
CHECKIN / SUBST
YES          NO
```

Check-in / Substitution

Select **YES** to enable the NRL-101 to process check-in and substitution messages from the panels. By default, **YES** is selected. Leave **YES** selected. Selecting **NO** enables the NRL-101 to pass check-in and supervisory messages to another receiver. The Sur-Gard MLR2-E does not accept these messages.

Note: For UL listed signaling systems applications, the **Check-in / Substitution** must be set to **YES**.

```
SYS CHECK INTERVAL
1
```

System Check-in Interval

Enter the interval that the NRL-101 will send a System Check (S99) message to the Sur-Gard MLR2-E Receiver. The valid range is one message every minute to one message every 99 minutes (1 to 99 minutes). The default is **1** minute.

Note: For UL listed signaling systems applications, the **System Check-in Interval** must be set to **1** (one).

TIME CHANGE	
YES	NO

Time Change

Select **YES** to allow the NRL-101 to send time changes to the panels that are programmed to request a time change. Select **NO** disable the time update feature. The default is **YES**.

HOURS FROM GMT
6

Hours From GMT

When Time Change is **YES**, enter the number (0-23) that indicates the Greenwich Time zone (GMT) where the NRL-101 is located. The default is **6**. See table below for GMT values.

GMT	City
0	London, Monrovia, Lisbon, Dublin, Casablanca, Edinburgh
1	Cape Verde Island, Azores
2	Mid-Atlantic
3	Buenos Aires, Georgetown, Brasilia
4	Atlantic Time (Canada), Caracas, La Paz
5	Eastern Time (US, Canada), Bogota, Lima
6	Central Time (US, Canada), Mexico City, Saskatchewan
7	Mountain Time (US, Canada), Arizona
8	Pacific Time (US, Canada), Tijuana
9	Alaska
10	Hawaii
11	Midway Islands, Samoa
12	Fiji, Marshall Islands, Wellington, Auckland, Kwajalein
13	New Caledonia
14	Guam, Sydney
15	Tokyo, Seoul
16	Hong Kong, Singapore
17	Bangkok, Hanoi
18	Dhaka, Almaty
19	Islamabad, Karachi
20	Abu Dhabi, Kazan
21	Moscow, Baghdad
22	Eastern Europe
23	Rome, Paris, Berlin

PASSWORD ENABLED	
YES	NO

Password Enabled

Press the COMMAND key to display **PASSWORD ENABLED**. To require a password for NRL-101 programming, press the Select key under **YES**. To allow NRL-101 programming without a password, press the Select key under **NO**. The default setting is **YES**.

Note: For Fire Protective Signaling use, this option must be programmed **YES**.

STOP
PROGRAMMER

REMOVE
KEYPAD

Stop Routine

This option provides a way to exit programming mode if you are programming the NRL-101.

When **STOP PROGRAMMER** appears on the keypad, press any Select key to end programming. **REMOVE KEYPAD** then appears on the keypad display.

Completing the Installation

After you are finished programming the NRL-101, disconnect the keypad from the **J5 Keypad Connector** on the NRL-102 Backplane Interface. Connect the network cable to the **J6 Network Connector** on the Backplane Interface.

NRL-101 Configuration Options

Nine configuration options, which are listed below, apply to the NRL-101 Interface Line Card. The NRL-101 Configuration Options allow the NRL-101 to operate properly with the CPM2 and the MLR2-E Receiver. The Sur-Gard MLR2-E Installation Guide provides explanations of most of the Configuration Options for the NRL-101 Line Card.

By default, the NRL-101 options are configured so the NRL-101 will function properly. The default values shown in the Sur-Gard MLR2-E Installation Guide differ from those shown in this guide. When setting the NRL-101 Configuration Options, please refer to these default settings instead of those shown in the MLR2-E Installation Guide.

The NRL-101 Configuration Options are configured using the buttons and the LCD display on the CPM2 Central Processing Module or using Sur-Gard Console™ programming software. These options can be viewed through the NRL-101 using the DISPLAY OPTIONS menu. See **Display Options** in this guide.

Option	Name
01	Line Card Number: The default is **01.** (**Note:** If more than one line card is being used, you must change this number.)
02	Line Card Number Length: The default is **01.**
03	Internal Automation: The default is **00.**
0F	Mute Buzzer: The default is **00.**
1C	Busy Out: The default is **00.**
1F	Debug Output: The default is **00.**
73	Printer Select: The default is **00.**
74	Equivalent Line: The default is **00.**
75	Receiver Number: The default is **01.**

Programming the NRL-101 Display and Printer Options

The display and printer options are configured using the buttons on the faceplate of the NRL-101 and the top LCD display. Refer to the Sur-Gard MLR2-E Installation for more information. The following functions are available in the line card menu mode:

- Display Printer Alarm Buffer
- Display Options
- Display Program Version
- Adjust LCD Contrast
- Adjust Backlight

Use the MENU FUNCTION and SELECT buttons to program the NRL-101 Display and Printer Options. When the display shows ACK, press the MENU FUNCTION button.

NRL-101 Standby Mode

NRL-101-LINE #D
Unit in Standby

With the line card installed, apply power to the unit. "Contrast Loading" is displayed briefly on the top LCD.

The "Standby" message, shown to the left, is displayed in the top LCD display when the line card is operating normally. The bottom LCD display shows the most recent alarm message.

Line Card Menu Mode

PRINTER BUFFER
ACK:menu SEL:sel

When the NRL-101 is not on-line, the Menu Mode can be accessed. The message shown to the left indicates the NRL-101 is not on-line. Press the [MENU FUNCTION] button to display the first function menu.

Press the [MENU] button to scroll through the menu items. Press the [SELECT] button to select the function displayed on the LCD screen. When a function is selected, press [MENU] and [SELECT] together to exit from the Menu mode. The NRL-101 will automatically exit from the Menu mode if no keys are pressed for 30 seconds.

Printer Buffer

```
PRINTER BUFFER
ACK:menu SEL:sel
```

When the "Printer Buffer" menu option is displayed, press the [SELECT] button to display the most recent alarm message. Press the [SELECT] button to scroll backwards through alarm messages; press the [MENU] button to scroll forward through alarm messages.

```
3576-312
Alarm        001
```

Press the [MENU] button to display the alarm message shown to the left. "3576" is the Account Code. In this example, a 4/3 communication format is used. "3" indicates an alarm, while "12" is the zone number. "Alarm" indicates an alarm. "001" is the event's location in the event buffer. The event buffer can record up to 256 alarm messages. To print these messages, a print command can be sent from the Sur-Gard CPM2; refer to The Sur-Gard MLR2-E Installation Guide for information.

Display Options

```
DISPLAY OPTIONS
ACK:menu SEL:sel
```

```
Select Profile 0
Ack:up SEL:sel
```

Press the [SELECT] button when the "Display Options" menu is displayed to view and change the current Option Configuration. Use the MENU button to scroll through all 64 profiles (0-63). Profiles are configured using the utility software provided with the MLR2-E. Refer to the Sur-Gard MLR2-E Installation Guide for more information.

Press [MENU] and [SELECT] together to return to the Standby mode.

Display Program Version

```
PROGRAM VERSION
ACK:menu SEL:sel
```

When the "Program Version" is displayed, press the [SELECT] button to enter this menu.

```
SG-NRL-101 V1.00
Aug 29, 2002
```

After pressing the [SELECT] button, the software version number and the release date are displayed.

Press [MENU] and [SELECT] together to return to the Standby mode.

Adjust LCD Contrast

```
Adjust CONTRAST
ACK:menu SEL:sel
```

When "Adjust Contrast" is displayed, press the [SELECT] button to adjust the LCD screen's contrast.

```
Adjust CONTRAST
....
```

Press the [MENU] button to increase the contrast; press the [SELECT] button to reduce the contrast. The display will indicate the contrast level on the second line. Press [MENU] and [SELECT] together to return to the Standby mode.

Adjust Backlighting

```
ADJUST BACKLIGHT
ACK:up SEL:down
```

The [MENU] button is used to brighten the backlighting and the [SELECT] button is used to darken it.

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