



RCP-503

**Remote Control Panel
User Manual**

Supplement to the Integrity System User Manual

**Original Document
June 20, 2004**

Revision No. 1.01 6/21/04

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RCP-503

Express Remote Control Panel

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Installation Guide

Unpacking
Mounting the Control Panel
Mounting the Power Supplies
Compatibility
System Connections
Turn On

Unpacking

The shipping carton contains RCP-503 Control Panel, one PSU-303 Power Supply (standard), an Ethernet crossover cable for connecting directly to a system frame, a bag containing (4) rack mounting screws, the User Manual supplement, and optionally a second PSU-303 if ordered on the same purchase order. *A second power supply may be added at any time by ordering separately.*

Mounting the Control Panel

Attach the RCP-503 to an EIA 19" equipment rack using the four provided mounting screws or other similar hardware. Care should be taken not to over tighten the screws to prevent damage to the panel face.

Mounting the Power Supplies

A tray attached to the rear face of the RCP-503 Control Panel is provided to hold the PSU-303 power adapters, which should be attached using double stick tape or a hook-and-loop fastener to secure the supplies if this is a mobile application. Connect the first supply to the PWR A connector on the rear of the panel. If a redundant supply was purchased, connect it to the PWR B connector.

Compatibility

The Integrity product family from Fortel DTV has expanded over several years. Older hardware may not be compatible with the RCP-503. Some older hardware is eligible for a factory upgrade which would make it compatible. Consult the factory for details. Generally, cards installed in 4RU frames which are of software version **8.3.0** or higher are compatible with the RCP-503.

System Connections

One-to-One Setup: When one RCP-503 and one 4RU frame are to be used together as an isolated pair, you may use an Ethernet crossover cable to connect them, without the addition of an Ethernet switch. This is highly recommended during bench service or when pre-programming a larger networked system on the bench prior to deployment across a facility. Connect the Remote A RJ-45 connector on the RCP-503 to the Remote A RJ-45 connector on the frame using the crossover cable. If you prefer to pre-wire for expansion planned for the future, use the Network Setup method below.

Network Setup: When multiple frames and control panels are to be used together, an Ethernet switch is required and used with standard Ethernet patch cables. *When using a switch, the provided crossover cable should not be used.* Connect a port on the Ethernet switch to the Remote A RJ-45 port on each RCP-503 using an Ethernet patch cable. Connect a port on the Ethernet switch to the Remote A RJ-45 port on each FRM-304 frame using an Ethernet patch cable.

Turn On

When AC power is applied to the RCP-503 via a PSU-303 power adapter, the panel will initialize. During initialization, the panel executes a *discovery* process to determine the cards available for its control in your Integrity system frames. This process is complete when the Integrity logo appears on the display along with the *select any card* prompt. The panel will also illuminate all keycaps.

System Managers Guide

Control Layout and Purposes
Password Protected Functions
Setting Panel IP Address Assignment
Setting the Brightness of Displays
Checking the Panel Info
Assigning Frames and Cards to Groups
Assigning Express Key Macros
Labeling Keycaps

Control Layout and Purposes

Controls are grouped by function.

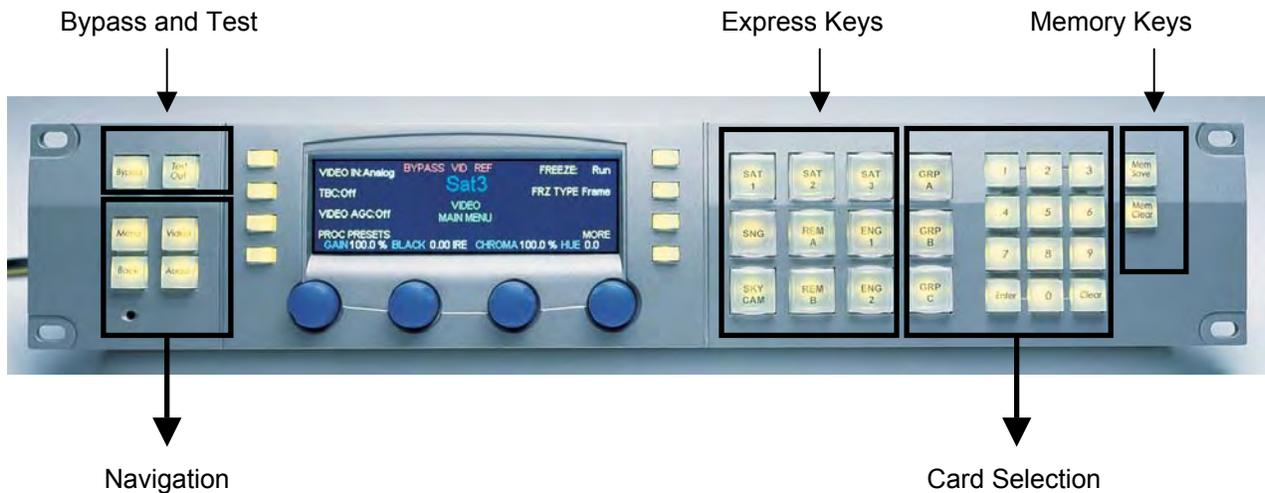


Figure A

Password Protected Functions

There are several functions that are used to configure the panel which are protected by a keypad code and not displayed in the on-screen menus without knowledge of the pass code. Some pass codes should be withheld from operators – they are for system configuration only!

Setting Panel IP Address Assignment

Each RCP-503 control panel ships with a default IP address of **192.168.0.150**. When installing multiple panels on the LAN, each panel must be configured during installation for a unique IP address assigned by your LAN manager. To view the current IP address, press [3][6][9][ENTER] using the numeric keypad. This is a read-only display. To change the IP address, press [7][7][0][ENTER]. Rotate the knob controls to change the IP address. Press the BACK key to exit. The panel will reinitialize following a change of IP address.

Setting the Brightness of Displays

The display backlight and the button illumination are adjustable during installation to compensate for the general lighting in the work area. Access these controls using the numeric keypad. Press [1][4][7][ENTER] to access the brightness controls.

Normal sets the standard intensity of the backlit keys.

Highlight sets the enhanced brightness associated with certain functions (i.e.: *Mem Save*).

Display sets the intensity of the display backlight.

Timeout sets an interval before the screensaver turns off the backlight. The default setting is 1.5 hours. Press any control after a timeout occurs and the display backlight will illuminate.

Checking the Panel Info

A panel information screen is provided to allow confirmation of the software version installed in the panel, the panel IP address, the panel MAC address and the list of installed Board Description Files. Press [3][6][9][ENTER] to display the panel info screen. Press the BACK key to exit.

Assigning Frames and Cards to Groups

Every Integrity card on the same LAN may be accessed by each RCP-503 control panel. By default, no keypad assignments have been made. The installer must set up these assignments once for each control panel.

The three large keys to the left of the number pad are Group Keys. Each Group Key should have a transparency legend created and installed under the keycap to represent a group name you wish to assign to a bank of cards. It is not necessary for all cards in one frame to be assigned to the same group. In fact, the system is designed to provide flexibility in assigning any card in any frame to any keypad assignment.

Access the configuration screen by pressing [4][0][4][ENTER].

The lower left corner of the display will show a scrollable list of cards recognized by the panel which it found on the LAN. It will display the information in white text, if the card is recognized, or gray text (dimmed) if the card is not currently accessible.

Each entry in the list will provide the following information about that card:

- Card Type
- Alias Name
- Frame Location
- Slot Location
- Current Group Assignment
- Current Keypad Assignment

Rotate the left knob to access a different card.

Rotate the right two knobs to change the group and keypad assignment for the card.

Press the BACK key to exit after programming a card or series of cards.

It is not necessary to configure every card before using the ones already configured.

Cards which have been given a keypad assignment are accessed by pressing the following keystroke sequence: [GROUP][NUMBER][NUMBER][ENTER] or [GROUP][NUMBER][ENTER]. The home screen of the selected card will then appear in the display window unless an invalid keystroke sequence was pressed.

Assigning Express Key Macros

Express keys are the nine large pushbuttons to the left of the three Group Keys. Each Express Key may be used to gain one-touch access to a card without using the number pad or group keys. The keycap for each Express Key may be removed and accepts a transparency legend so that the alias name for that card may appear on its keycap.

Program an Express Key by pressing the following sequence [MEM SAVE], [Any Express Key], [GROUP][NUMBER][NUMBER][ENTER]. When the Express Key is pressed, it will flash to indicate a programming sequence is in progress. When completed, the Express Key will return to normal brightness.

Cards which have been given an Express Key assignment are accessed by pressing the Express Key, or by pressing their Group/Number assignment. Assigning an Express Key is on a panel by panel basis. Installations which have multiple control panels may assign different cards to their Express Keys. This allows each operator panel to be configured for the nine cards they access most often at that work station.

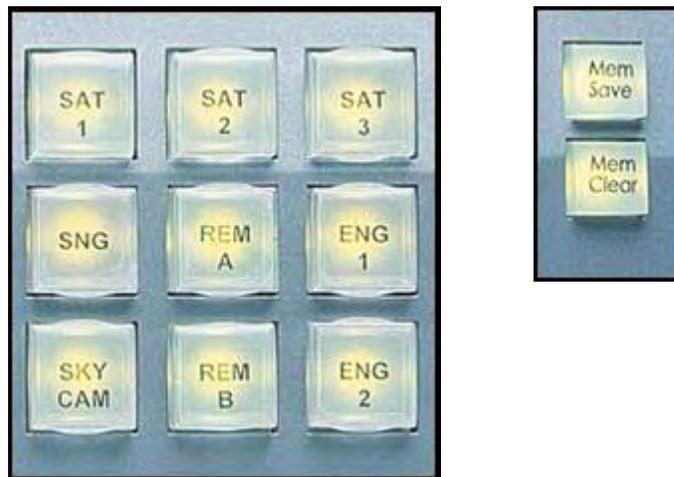


Figure B

Labeling Keycaps

Label the Group Keys or Express Keys by removing the transparent keycap. Grasp the keycap at the top and bottom and gently wiggle it until it pops off. Place a 0.6" x 0.6" square label under the keycap. The keycap orientation is important! Lens mounting ears are aligned to the top and bottom edges. Press the keycap onto the button face to replace.

Card Configuration

Setting Card Aliases

An alias name is a label you create for each card. This label appears in menus as a unique identifier for the operator. An alias may contain up to eight (8) characters from the following set: A-Z, a-z, 0-9, hyphen, or space. The alias is assigned directly to the card. Once created in the card, it appears on all control panels.

An alias may be simple, such as “Sat12” or “SAT-12”, consisting of the Group Name and the numeric code used to recall that card. An alias can also be more definitive, such as “TOWERCAM” or “LIVE EYE”. We recommend using such names for the nine Express Key selections, with a corresponding legend under the keycap.

The assigned alias will appear on each menu screen for that card in large, blue text. This ensures that the operator knows exactly which card he is controlling before making adjustments.

When audio and video cards are used together as one device, the same alias name may be assigned to both cards, but you must first create the label in each card in the pair.

Setting Card A/V Links

An A/V Link is used to create a relationship between a video card and audio card so that they can be treated as one virtual device on control panels. Once the links are created, the operator may use the VIDEO and AUDIO keys on the RCP-503 panel to shift between video functions and audio functions within the card pair.

In use, the operator will recall a video card using either the Group Key assignment or an Express Key. When the selected video card appears in the display, the operator may press the AUDIO key to shift to control of audio input levels, etc. Pressing VIDEO will return the operator to the home video screen of the A/V card pair. This provides a fast “toggle” between video gain controls and audio gain controls.

The A/V Links are created in the configuration menu for each card and are password protected under the configuration password [9][9][9][ENTER]. Navigate to the A/V Link soft key menu on the video card first and rotate the selector knob until its indicator is set to the card slot where the audio card is located. Press the BACK key to exit. Press the AUDIO key to jump to the home audio menu of the card and verify that you have linked to the correct card. Navigate to the Configure menu on the audio card using the soft keys. Enter the configuration password [9][9][9][ENTER]. Navigate to the A/V Link soft key menu on the audio card and rotate the selector knob until its indicator is set to the card slot where the video card is located. Press the BACK key to exit. Press the VIDEO key to jump to the home video menu on the card and verify that you have linked to the correct card.

Configuration Password

The configuration password is [9][9][9][ENTER] for all A/V cards. Operator access to the configuration screens should be at the discretion of the system manager. The configuration password allows changes to be made to system timing and other advanced functions which are usually adjusted only once during installation.

Operator Panel Functions

- Setting the Brightness of Displays
- Selecting a Card with the Keypad
- Selecting Video or Audio with Linked Cards
- Selecting a card with an Express Key Macro
- Programming an express key macro
- Bypass Key
- Test Out Key
- Menu Key
- Back Key
- Video Key
- Audio Key
- Soft Keys
- Soft Knobs
- Group Keys
- Numeric Pad
- Express Keys

Setting the Brightness of Displays

The display backlight and the button illumination are adjustable during installation to compensate for the general lighting in the work area. Access these controls using the numeric keypad. Press [1][4][7][ENTER] to access the brightness controls.

Normal sets the standard intensity of the backlit keys.

Highlight sets the enhanced brightness associated with certain functions (*Bypass*, and *Mem Save*).

Display sets the intensity of the display backlight.

Timeout sets an interval before the screensaver turns off the backlight. The default setting is 1.5 hours. Press any control after a timeout occurs and the display backlight will illuminate.

Selecting a Card with the Keypad

Select any Integrity A/V card on the LAN by pressing a Group Key followed by the one or two digit keystroke assignment for that device, then the ENTER key: [GROUP][NUMBER][NUMBER][ENTER]. The selected card will be recalled in the display. Verify that the correct card alias is shown in the center of the display in large blue text. The group assignment will appear just above it in small blue text.

Note: Creating Group assignments are a system manager function.

Selecting Video or Audio with Linked Cards

Once an A/V card has been selected using the keypad, the operator may shift between audio and video functions by pressing the VIDEO or AUDIO key. This allows the operator to rapidly adjust both audio and video levels using the four knobs by toggling between the VIDEO and AUDIO home screens.

Selecting a card with an Express Key Macro

Express Keys created during installation allow the operator to skip the keypad selection and go directly to any of nine pre-determined A/V card pairs directly with a single keystroke. Press the named Express Key and the selected card will be recalled in the display.

Bypass Key

The BYPASS key is a special function key used only with certain cards. These cards are equipped with a bypass relay which connects the analog input directly to the first analog video output on the card. It is used primarily in the setting up of microwave or satellite receive antennas as a means of viewing the unprocessed input's sync tip in order to jog the antenna to the optimal position where sync noise is at a minimum. Currently, this feature is on the FS-411A, FS-412A, FS-414A synchronizers.

When the BYPASS key is pressed and released, the bypass relay state toggles and if the output is bypassed, a red warning legend appears in the display along the top row. This warning is to remind the operator that the currently selected card is in BYPASS mode. Press the BYPASS key again and the relay state toggles back to normal, so that both analog outputs are processed through the synchronizer.

Test Out Key

The Test Out key is a special function key used only with certain cards. These cards include a reference quality test pattern generator. When TEST OUT is active, the last selected test pattern appears on all outputs. It is used primarily to provide a test signal downstream of the synchronizer to aid in setup of levels to their optimum value before an input signal is available, so that the operator can then use the video proc amp controls in the synchronizer to correct levels from the source once it is available and be assured that users downstream will see the same levels. When the test signal is active, proc amp controls are normalized.

When the TEST OUT key is pressed and released, the test signal appears on all outputs of that card. A red warning legend appears in the display along the top row to remind the operator that the currently selected card is in TEST mode.

Menu Key

The MENU key navigates to the home screen of the currently selected A/V card.

Back Key

The BACK key navigates to the previous screen from all soft key sub menus.

Video Key

The VIDEO key navigates to the video card home screen for the currently selected A/V card pair.

Audio Key

The AUDIO key navigates to the audio card home screen for the currently selected A/V card pair.

Soft Keys

Eight SOFT KEYS are used with the display to navigate to submenus or to change the state of certain card functions. Display legends which appear in yellow are soft key labels. Legends which appear in white declare the current state of that variable.

Soft Knobs

Four SOFT KNOBS are in an array across the bottom of the display. Soft knobs are used to change the value of a control variable across a range. Display legends which appear in light blue are soft knob labels. Legends which appear in white declare the current state of that variable.

Group Keys

The GROUP KEYS are the three large keys adjacent to the number pad. They are used together with the number pad to access individual cards, 0-99, in each of three banks which are assigned by the system manager. The group assignment of an A/V card can be verified once the card is accessed by observing the blue text label which appears above the alias name in the display.

Number Pad

The NUMBER PAD is used by operators along with a group key to select an A/V card for control. It is used by the system manager to access higher level function used in installation and in configuration of cards. It is also used to program the Express Keys.

Express Keys

The EXPRESS KEYS allow the operator to select any of nine predetermined A/V cards or card pairs directly. Express Keys are programmed by the system manager during installation.

Upgrading Software in Panels

Board Description Files **Displaying Installed Versions** **Installing Updates**

Board Description Files

BDF's (Board Description Files) are software files which are used by the RCP-503 panel to manage each type of hardware card it encounters. A BDF is installed once in each panel for all hardware cards of the same type and software edition. Over the life of the product, when cards with new features are added, it will be necessary to install a new BDF file to access the new or updated cards.

A Board Description File name is in the format of *boardtype_version*. I.e.: FS-412_8.2.3

Displaying Installed Versions

You may determine the current BDF files installed in your RCP-503 by viewing them in a scrollable list which is accessed through this keypad code [7][7][0][ENTER].

The display will present a scrollable list which includes all Board Description Files currently installed.

Installing Updates

Updates are provided as new BDF files and an installation utility as a set. These should first be loaded into your PC workstation. Connect your workstation to the LAN using an Ethernet patch cable or connect the RCP-503 directly to the PC using an Ethernet crossover cable. Use the Remote A connector (RJ-45) on the RCP-503 to perform the update. Install the software per the instructions provided with the update.

Troubleshooting Guide

Before Calling Tech Support
Finding Panel Version Info
Finding Card Version Info
FAQ
Calling Tech Support

Before Calling Tech Support

The Integrity system relies on interconnections between the frames and panels. There are several system tests which should be performed which may resolve a communications problem between panels and frames.

1. Verify that each panel and frame has been assigned a unique IP address.
2. Verify that every LAN switch is working properly.
3. Verify that LAN cables are connected properly.
4. Determine if any new hardware was added to the LAN just before the failure occurred.
5. Determine that all power supplies are still connected and working properly.

Finding Panel Version Info

The RCP-503 panel version info is accessed by entering [4][0][4] from the keypad.

Finding Card Version Info

The A/V Card version info is accessed through the configuration menu password on each card.

FAQ

1. *Is there any restriction on which IP address I choose?* There are two only restrictions on IP addresses: You may not use 0.0.0.0, which is reserved for factory use, you must also choose a unique IP address for every device on the network, whether a control panel, system frame, or third-party device.
2. *Why can't I change a MAC address?* The MAC address is a unique code assigned at the factory from a bank of codes licensed by Fortel DTV. This identifier is how one Fortel product recognizes others on the LAN.
3. *Why can't I use an Ethernet HUB, instead of a switch?* Control latency becomes a possibility, due to the difference in the way a hub and switch operate when there is simultaneous traffic on the LAN. For best performance, always use an Ethernet switch.
4. *Is there a limit to cable lengths and can I cascade multiple switches?* Hi-quality Ethernet cables should be limited to a maximum of 100 ft. lengths. You may cascade two switches in any one communications path, which means a maximum run length of 300 ft. using three, 100 ft. sections. We have not established a limit on the maximum number of ports on each switch.

Calling Tech Support

Technical support on the RCP-503 is available at Fortel DTV headquarters at +1-770-806-0234 ext. 111 during normal business hours.



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