



QUICK START

The CP66 provides the simplest setup for any digital Zone and Paging processor you'll ever encounter. Input, Zone, and DSP settings are right on the front panel and are easily set up in minutes. This operator's manual will have you fully configured for almost any scenario, without the need for a computer, complicated software, or a degree in rocket science.

(Note: If you have a PC you can take advantage of a few bonus features like Preset Saving and Custom Zone Naming, by using the included Rane CP66 Software. See the CP66 Software section).

Before you start, ensure that all amplifiers are powered off before connecting to or powering on the CP66.

HARDWARE CONNECTIONS

Program Inputs

Connect each Input's audio source to one of the RCA inputs for Program 1-4, or the balanced Euro inputs for Programs 5 & 6. If you have a high priority input, such as a jukebox or notification system, connect this to Program 6. It is a good idea to make a note of which input is connected to each Program for creating labels in the CP66 Software.

Page Inputs

If your system uses an analog Paging input, connect the microphone or line-level source to the balanced **PAGE 1 INPUT**. Select the appropriate switch setting for **LINE**, **MIC**, or **MIC +24V** with Phantom Power. Connect a push-to-talk switch, if available, to the **PAGE 1 EN** input. This switch is active low and will engage while the switch is closed and continue paging until released.

The DIP switch on the rear panel labeled **ZONE ASSIGN** selects which Zones are paged when **PAGE 1 ENGAGE** is active.

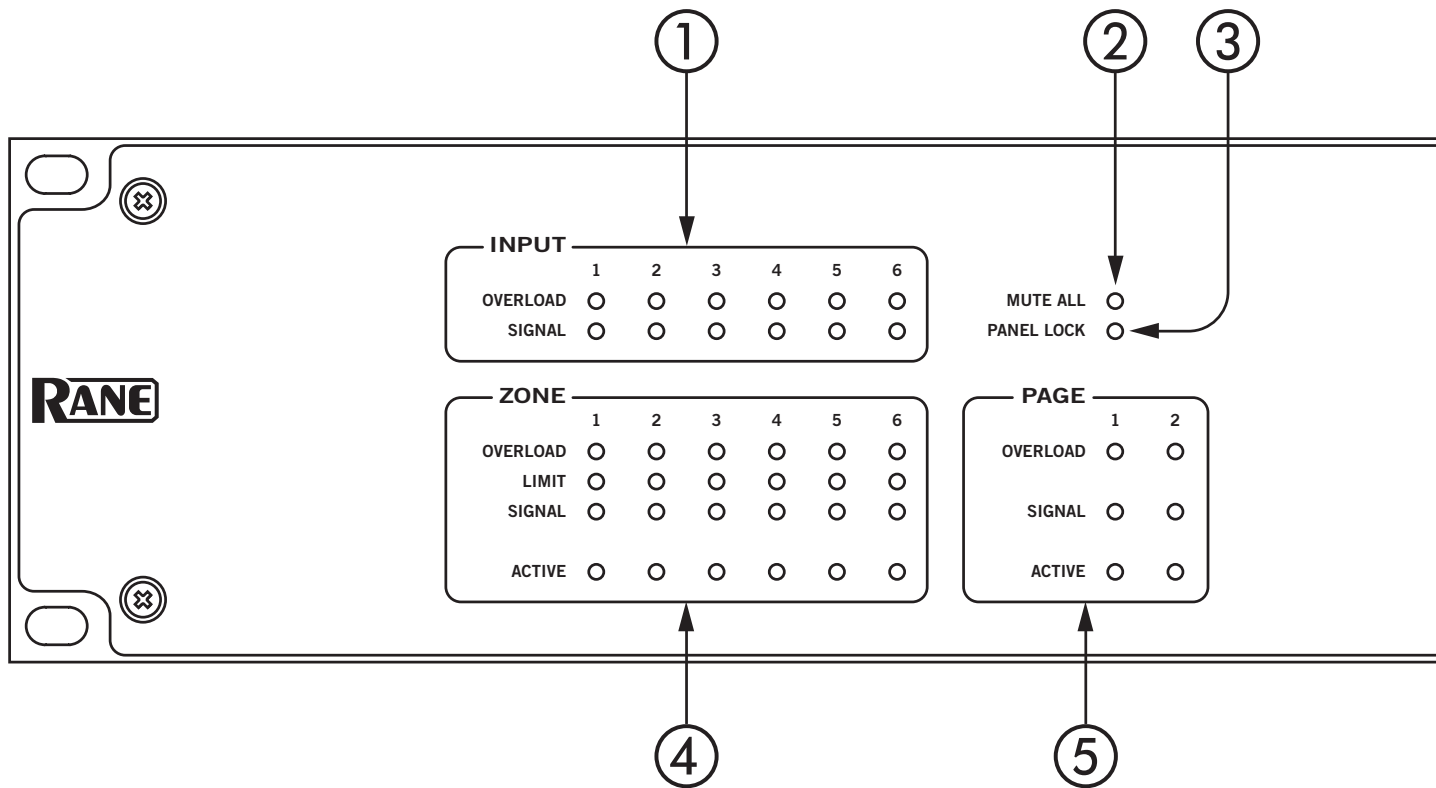
If your system uses the **PAGER2** paging station, simply plug the CAT 5 cable into the port marked **PAGER2**. All status indicators for **PAGER2** light green when powered. If one or more is not lit or is intermittent, check the cabling.

Zone Outputs

Each of the Six Zone Outputs drives a balanced Euro connector up to +20 dBu. Connect these to the amplifiers for each associated Zone. It is a good idea to note which Zone is which, for source selection and naming later.

Remotes and Linking

All Remote devices with the CP66 use regular CAT 5 cable and RJ-45 connectors at both ends. Refer to the descriptions on pages 5 and 8. If you are linking remotes, see **Zone and Remote Linking** on page 7.

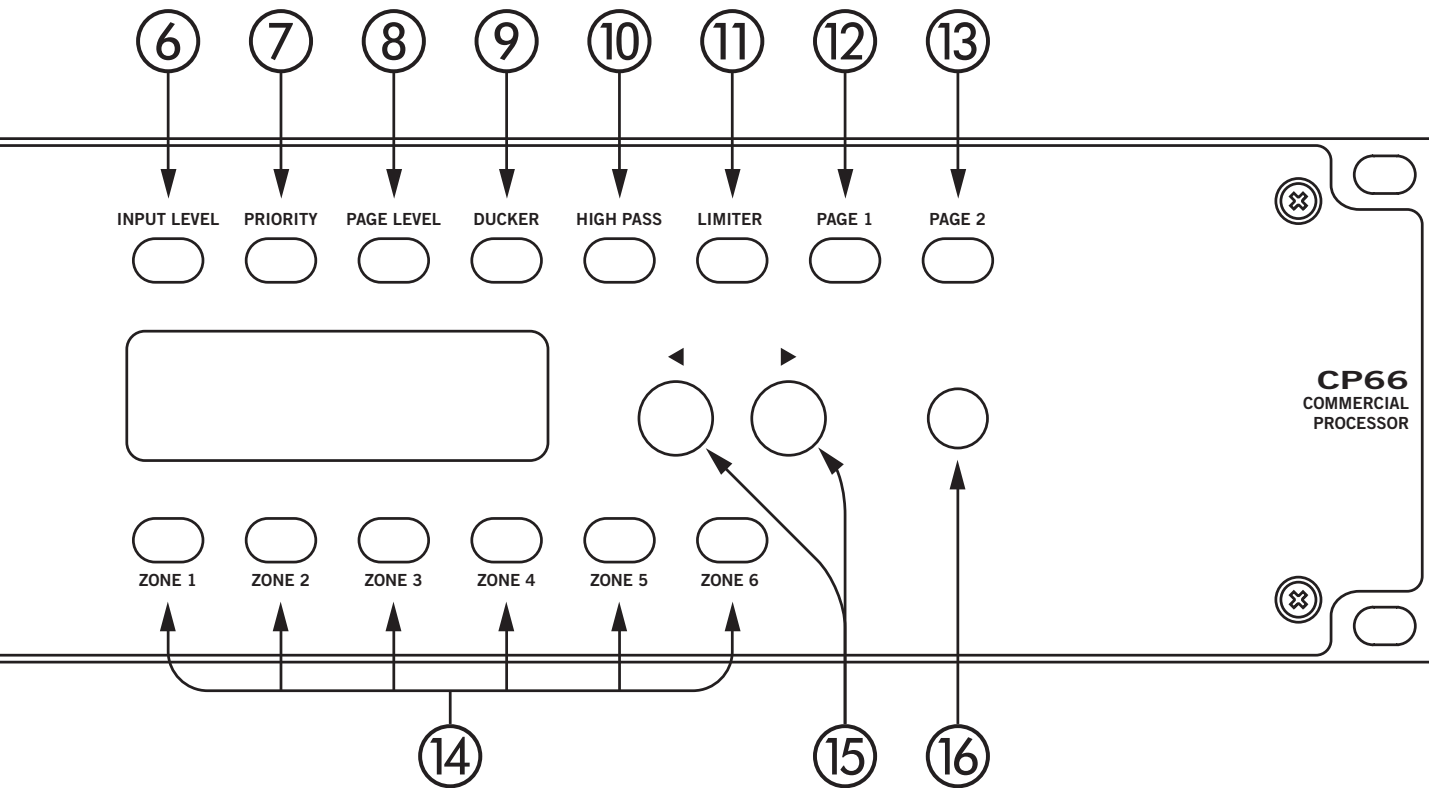


FRONT PANEL

- ① **SIGNAL** ● indicates the presence of an audio signal on this Input.
OVERLOAD ● indicates that the signal strength is too high for the Input.
- ② ● Indicates the **MUTE ALL** connection is engaged. See **Panel Lock** ⑩ in the **Rear Panel** section.
- ③ ● Indicates the **PANEL LOCK** is engaged in either mode. See **Panel Lock** ⑩ in the **Rear Panel** section.
- ④ **ZONE OVERLOAD** ● indicates that the signal strength exceeds the output limit for the Zone.
ZONE SIGNAL ● indicates that audio is present on the Zone.
ZONE LIMITER ● indicates that the Limiter is engaged (output level is at or above Limit Threshold) for the Zone.
ZONE ACTIVE ● indicates that a Page is active in the Zone.
- ⑤ **PAGE OVERLOAD** ● indicates that the signal strength exceeds the input limit for the Page. Turn down the Page Level for Page 1 (see **Rear Panel** ⑱) or turn on the Pad for Page 2 to decrease Input Level (see ⑬).
PAGE SIGNAL ● indicates that page audio is detected (not necessarily during an active Page).
PAGE ACTIVE ● indicates that Page is currently active.

Settings Panes

- ⑥ - ⑭ Each group of settings has a dedicated button to take you straight to the parameters you're interested in — no menus to dig through or weird hidden settings. To change a setting, use the ◀ left or right ▶ cursor arrows ⑮ to choose a parameter and turn the knob on the right ⑯ to increment or decrement its value.
- ⑥ Displays the settings pane for Program **INPUT LEVEL**.
- ⑦ Displays the settings pane for Program Input 6 **PRIORITY** Enable for each zone.
- ⑧ Displays the settings pane to set the **PAGE LEVEL** for each Zone.
- ⑨ Displays the settings pane to adjust the **DUCKER** Depth per Zone. During a Page, this is the amount that the background music volume is reduced by.
- ⑩ Displays the settings pane for the **HIGH PASS** Filter, typically used in constant-voltage (70V or 100V) systems.
- ⑪ Displays the Zone Output **LIMITER** Threshold for each Zone. This is the maximum level that the output level is allowed to reach before it is compressed by the Limiter in the DSP.



⑫ Displays the settings pane for **PAGE 1**:

Priority: When set to “1” while Page 2 is set to “2,” overrides the other page (if assigned to any of the same Zones). If set to “2” while Page 2 is set to “1,” Page 1 can still be overridden. If both Page priorities are set to the same value, the Pages are mixed.

EQ: 2-band tone controls, ± 6 dB for Low and High shelf.

Threshold Enable: Sets the analog Page 1 input to operate in either normal mode (“Off”) where triggered only by closure of the Page 1 Enable switch, or in threshold mode (“On”) where it is triggered by input detection.

Chime: If enabled, inserts a 2-second pre-announce tone before each page. This is required in some emergency and public address environments. Cannot be used while Threshold mode is enabled.

⑬ Displays the settings pane for **PAGE 2**:

Priority When set to “1” while Page 1 is set to “2,” overrides the other page (if assigned to any of the same Zones). If set to “2” while Page 1 is set to “1,” Page 2 can still be overridden. If both Page priorities are set to the same value, the Pages are mixed.

Phantom Power Enable: Turns on or off +24V phantom power.

Pad Enable: Turns on or off a hardware-level 13 dB pad (attenuator) in the PAGER2 itself. Use it to bring down a hot mic signal that is clipping.

Trim: DSP Level trim, used to adjust the relative level of the Page 2 input. Set to 0 dB, or adjust to match Page 1 level if both Page Inputs are used.

EQ: 2-band tone controls, ± 6 dB for Low and High shelf.

Chime: If enabled, inserts a 2-second tone before each Page. This is required in some emergency and public address environments.

⑭ Displays the settings pane for each of the six Zones:

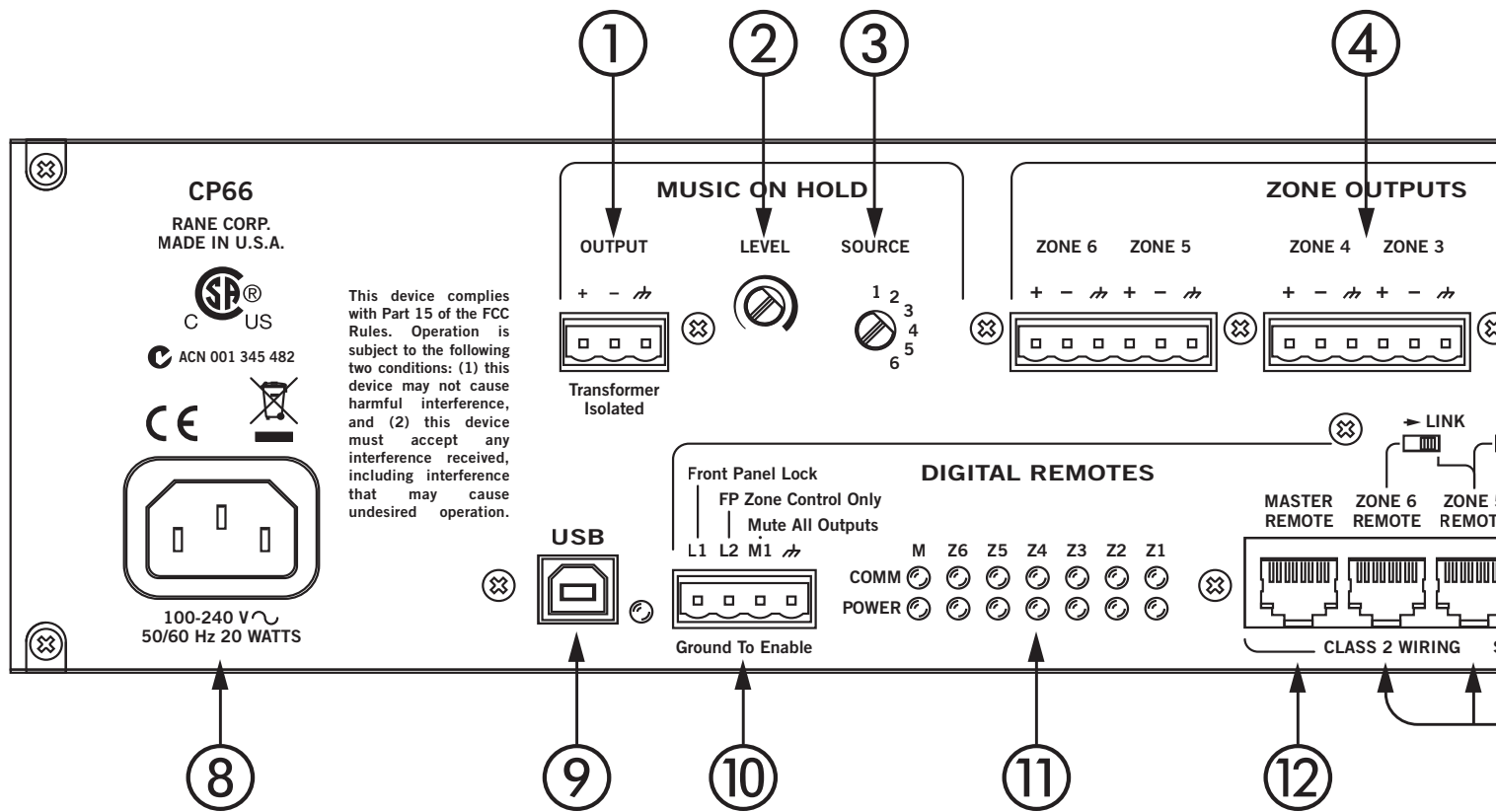
Source: The Program Input that is assigned to this Zone.

Level: The output level for the zone, relative to the max output level (+20 dBu) at 0 dB.

EQ: 3-band tone controls, ± 6 dB settings for each of Low, Mid, and High.

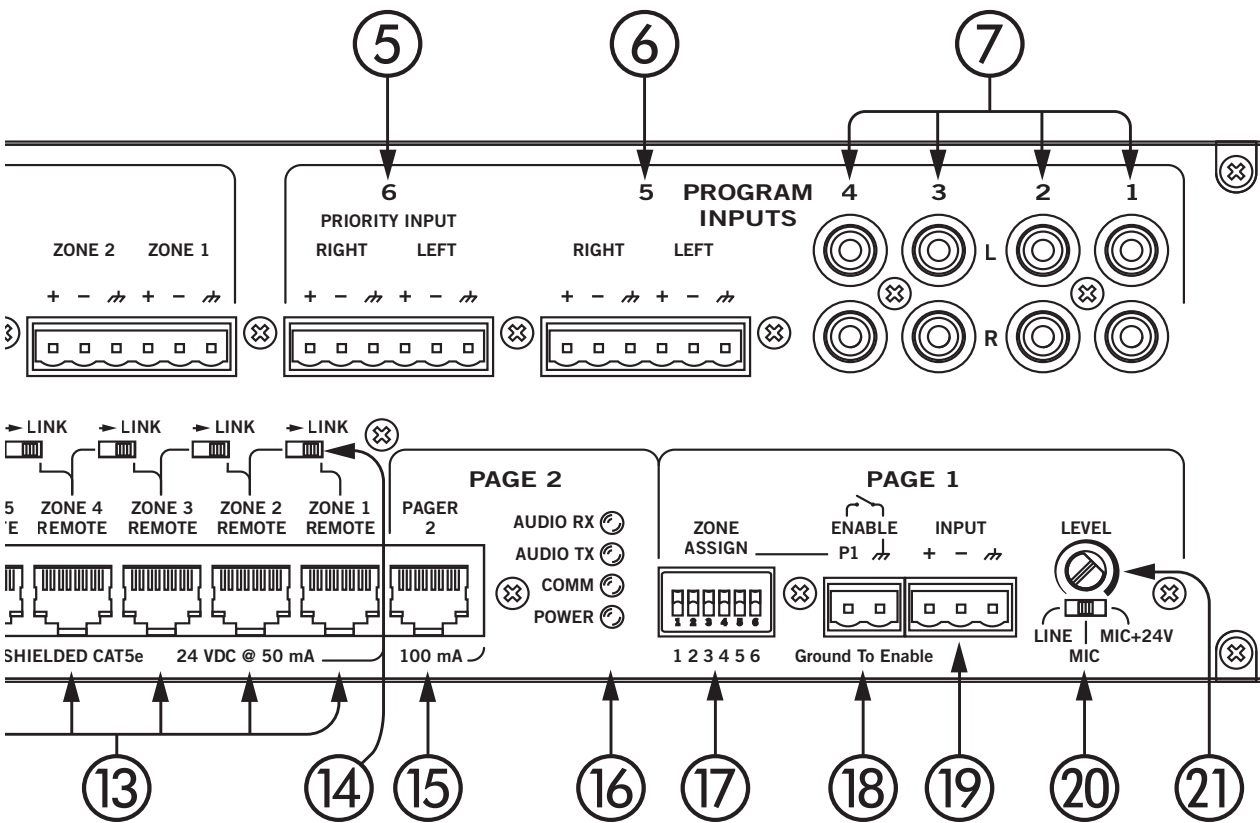
⑮ Cursor buttons: Press ◀ left or right ▶ cursor to select the value for editing with the data knob.

⑯ This knob is used to change the currently selected value. Turn clockwise to increase, counterclockwise to decrease.



REAR PANEL

- ① **MUSIC ON HOLD OUTPUT:** is balanced and transformer isolated, with a max output of +20 dBu. This can be connected directly to a telephone system. This works as an additional 7th zone without DSP, and mirrors one of the six Program Inputs.
- ② **MUSIC ON HOLD LEVEL:** sets the output level from Off to +20 dBu. Adjust using a screwdriver.
- ③ **MUSIC ON HOLD SOURCE:** selects which of the six Program Inputs is routed to the Music on Hold Output. Select using a screwdriver.
- ④ **ZONE OUTPUTS:** are balanced connections with a maximum output of +20 dBu.
- ⑤ **PROGRAM 6 PRIORITY INPUT:** is balanced and mono-summed, and can be optionally used as a Priority Input to override into enabled Zones (see Front Panel ⑦). This also behaves as a normal input, with a maximum level of +20 dBu.
- ⑥ **PROGRAM 5 INPUT:** is balanced mono-summed on a Euroblock with a max level of +20 dBu.
- ⑦ **PROGRAM 1-4 INPUTS:** are RCA unbalanced and mono-summed. The max level is 14.3 dBu (12 dBV).
- ⑧ **IEC Power:** connects to AC line voltage, 100-240V, 50-60 Hz.
- ⑨ **USB:** connects to a Windows® PC for software communication and firmware updates. See the **Rane CP66 Software** section on page 9.
- ⑩ **FRONT PANEL LOCK:**
 Connect **L1** to ground to lock out all front panel settings as view-only.
 Connect **L2** to ground to lock all front panel settings with the exception of Zone source selection and volume control.
 Connect **M1** to ground to mute all the Zone Outputs. For use with emergency systems.
- ⑪ **DIGITAL REMOTE Status Indicators:**
COMM LED indicates that a Digital Remote is connected and communicating successfully.
POWER LED indicates the CP66 power is functioning.



⑫ **MASTER REMOTE:** Connect a DR3 to this port to control all Zone Output Levels on one remote. Use a RJ-45 shielded CAT 5 cable up to 1000 feet (304 meters).

⑬ **REMOTE ZONE Ports 1 to 6:** Connect a DR1 to any of these ports to control the Zone Output Level for that Zone (as well as any linked Zones, see **Linking** on page 6). Connect a DR3 to control both Zone Output Level and Zone Source Selection. Use RJ-45 shielded CAT 5 cable up to 1000 feet (304 meters).

⑭ **REMOTE ZONE LINK switches:** Each switch links a pair of adjacent Zones as well as any Remotes connected to those Zones. These links may be cascaded to link more than two Zones together into a group. While linked, all Zones and Remotes in that group share the same values for Volume, Max, Min, and Input Source. The switch is engaged when in the “Right” position (toward the **LINK** label). See **Zone and Remote Linking** on page 7.

⑮ **PAGER2:** Connect a PAGER2 to this port for a full-featured digital paging station with selectable zones. Use a RJ-45 shielded CAT 5 cable up to 500 feet (152 meters). See the **PAGER2** section on page 8.

⑯ **PAGE 2 Status Indicators:** reveal the health of the CAT 5 connection between the CP66 and the PAGER2. If the twisted pair is functioning, the LED displays a solid green light.

- **AUDIO RX** – lights steadily if the CP66 receive pair is working properly.
- **AUDIO TX** – lights steadily if the CP66 transmit pair is working properly.
- **COMM** – lights steadily if the PAGER2 data communications pair is working properly.
- **POWER** – lights steadily if the CP66 is supplying adequate power to the PAGER2 port.

⑰ **PAGE 1 ZONE ASSIGN:** selects which Zones are paged into when Page 1 Enable ⑱ is engaged. A switch in the “up” position means that Zone is enabled.

⑱ **PAGE 1 ENABLE:** connects to a push-to-talk switch on the Page 1 Input microphone. Active when grounded.

⑲ **PAGE 1 INPUT:** is balanced line or mic level with selectable Phantom Power (⑳). Maximum input depends on the Page 1 Level (㉑), but supports a wide range of inputs.

⑳ **Page 1 Gain Selector:** choose depending on Input type – Line, Mic, or Mic with +24V Phantom Power.

㉑ **PAGE 1 LEVEL:** adjusts the gain of Page 1 Input ⑲.

SETUP PROCEDURE

Set the system in the following order to ensure an optimal setup for dynamic range and noise characteristics.

Note: To restore the unit to its factory settings, hold both the ◀ left and right ▶ cursor buttons while powering the unit.

- Connect the **ZONE OUTPUTS** to amplifiers.
 - Connect all **PROGRAM INPUTS**.
 - Connect the analog **PAGE 1 INPUT**.
 - Connect a **PAGER2** (if used) to the **PAGER2** port.
 - Connect all **DR1s** or **DR3s** (if used) to **REMOTE ZONE 1-6** ports.
 - Connect a **DR3 Master Remote** (if used) to the **MASTER REMOTE** port.
1. Connect the power cord and verify the CP66 powers on.
 2. With program sources active, adjust the output volume on each connected source until it is at the loudest possible without triggering the “Overload” indicator on the CP66 front panel. (For an MP3 player this will be full volume rock ‘n roll, for a TV it will be during commercials with the volume up). Make adjustments with the **INPUT LEVEL** (Front Panel ⑥).
 3. Set the **Zone Output Level** for Zone 1 (or the zone you are currently listening to) to minimum (Front Panel ⑭).
 4. Set the **Source** for this Zone to Program 1.
 5. Slowly turn up the **Zone Output Level** for this Zone until it is at a reasonable volume.
 6. Set the **Source** for this Zone to Program 2.
 7. Adjust the **Input Level** for Program 2 so it is as close as possible to Program 1. The goal is to have no change in volume when switching between different sources.
 8. Select each of the remaining sources individually and set their **Input Levels** to match all other **Input Levels** as closely as possible. If one isn’t loud enough to match, turn down the others accordingly.
 9. Now that your Inputs are leveled, set the **Zone Output Level** and **Zone EQ** settings for each of the six Zones. Set **Zone Output Level** as close to 0 dB as your amplifier allows.

10. Set the **Limiters Threshold** (Front Panel ⑩) for each Zone so it is just barely reducing the output level when at its maximum. Use the front panel Limit Threshold indicator (Front Panel ④) so you know where the threshold is. This ensures that the level in a Zone will never be louder than the maximum level you just set. If you want a particular Zone to have a lower maximum loudness, lower the **Limiters Threshold** accordingly. But overdoing – too much limiting – can overheat loudspeakers.

11. If you are using a Priority Input such as a jukebox, set the **Priority Enable** (Front Panel ⑦) value to “On” for each Zone where you would like the Program 6 Input to override when a signal is detected.

12. If you are connected to a system that uses constant-voltage (70V or 100V) overhead loudspeakers, set the **High Pass Filter Cutoff** (Front Panel ⑩) to minimize transformer saturation (typically 80 Hz). Otherwise leave this set to “Off” for full-range audio.

Page 1 Configuration

13. To use the analog **PAGE 1 INPUT**, connect the microphone to its green balanced Euroblock (Rear Panel ⑲).

14. Set the mode switch to **LINE**, **MIC**, or **MIC +24** Phantom Power depending on your input type (Rear Panel ⑳).

15. Connect the push-to-talk (PTT) switch of your microphone to the **PAGE 1 ENABLE** connector (Rear Panel ⑱). If you are using a telephone system or other type of Paging input without a PTT switch, leave the **PAGE 1 ENABLE** input disconnected, and set the **Page 1 Thresh** value to “On” (Front Panel ⑫). This threshold can be adjusted in the CP66 Software.

16. Using a screwdriver, adjust the **PAGE 1 LEVEL** while talking loudly into the microphone until it is close to, but not at, the maximum level by checking the Page 1 “Overload” indicator on the front panel.

17. Enable the desired Paging Zones by setting the **PAGE 1 ZONE ASSIGN** switch (Rear Panel ⑰). A switch in the “up” position means that Zone will be paged.

18. While paging, adjust the **Page Level** (Front Panel ⑧) for each Zone so it is at a comfortable level relative to the background music.

19. Set the **Page 1 EQ** if desired (Front Panel ⑫).

20. Set the **Ducker Depth** for each Zone to the amount you want the background music reduced by during a page. (The default is -12 dB).

Page 2 Configuration

21. If you are using the PAGER2 paging station, make sure it is connected properly and all four status indicators on the rear are lit green (Rear Panel ⑯).
22. Deselect all Zones on the PAGER2 by pressing its **ALL** button twice.
23. On the CP66, set the **Page 2 Trim** to 0 dB (Front Panel ⑬).
24. Set the **Page 2 Phantom Power** to “On” if your microphone requires it (most gooseneck mics require phantom power) (Front Panel ⑬).
25. While holding the Talk button on the PAGER2, talk loudly into the microphone and check that the overload indicator is not triggered (Front Panel ⑤).
26. If the Input is overloading, set the **Page 2 Pad** to “On” and check the indicator status again (Front Panel ⑬).
27. If both Page Inputs are used, adjust the **Page 2 Trim** so that the volume while paging is the same as Page 1 (Front Panel ⑬).
28. If both Page Inputs are used, set the **Page 1** and **Page 2 Priority** to the value for your desired behavior. A value of “1” is the higher priority, “2” is the lower priority. If one is set higher than the other, it cannot be interrupted. If both are of equal priority, either may page at any time and the pages will mix. This is great for practicing karaoke in the office before shipping the rack to the job site.
29. If the PAGER2 is the only Paging input (Page 1 not used), adjust the **Page Level** in each Zone so it is at a comfortable level relative to the background music (Front Panel ⑧).
30. If you have not already done so, set the **Ducker Depth** for each Zone to the amount you want the background music reduced by during a page. (the default is -12 dB) (Front Panel ⑨).

ZONE AND REMOTE LINKING

The linking system of the CP66 is intended to be a simple solution for a number of problems that can come up when trying to connect multiple rooms or remote controls together. Have a large room and want to put a volume control on two opposite walls? Just link the two Zones together (see Rear Panel ⑭) and plug a DR1 into each Zone port. Now any change on either remote adjusts the volume level for the entire room and updates both remotes simultaneously.

What if you have three separate rooms with different EQ requirements, such as Indoor and Outdoor dining areas, but want to control the source selection with a single DR3? Link Zones 1 & 2 together along with Zones 2 & 3, and all three Zones will track each other while maintaining separate EQ settings.

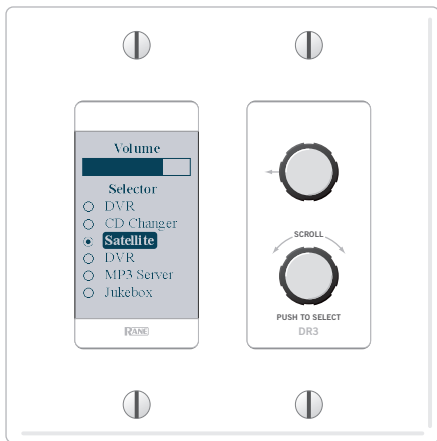
Each group of linked Zones has the same settings for Input Source and Output Level. By combining Zones together in this way, we avoid complicated setup configurations while providing many possibilities for traditional as well as non-traditional setups.

DIGITAL REMOTES



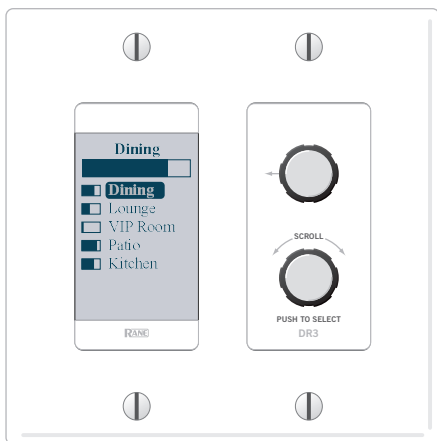
DR1 Volume Remotes

Digital remotes are a very powerful addition to any system. Install a DR1 into a party room or dining area up to 1,000 feet (304 meters) away from the CP66, and your customers can set their own volume level.



DR3 Remote for Selection and Volume

Install a DR3 into a multipurpose room and choose the music source for the room right at the remote itself (plug it into Remote Zone Port 1-6).



DR3 as a Master Remote

A DR3 Master Remote can be placed behind a bar or in the manager's office to allow quick and easy access to all volume controls for every Zone (plug it into the Master Remote Port).

You can name all of the Zones and Audio Sources with custom names using the Rane CP66 software and the name shows up right on the screen of the remote.

Digital remotes fit in a standard U.S. electrical box with a minimum depth of 2.25" (57 mm), and are available in Black, White, and Ivory colors. A single RJ-45 terminated CAT 5 cable provides both data and power connections to each remote.

PAGER2



PAGER2 Paging Station

The PAGER2 paging station is an advanced digital pager that allows the user to easily select any combination of Zones for paging right at the device itself. Indicators on the PAGER2 tell the user if the Zone is **READY** or **BUSY** (already being paged by a higher-priority Input) and when the **CHIME** has completed (if enabled).

Two group buttons are provided to give quick access to commonly-used zone combinations, for example "All Outdoor Zones" or "Dining Areas." To store a group, select your active Zones, hold the **GROUP 1** or **GROUP 2** button until the LED flashes, then release.

The Lexan overlay on the PAGER2 has slots on either side to allow insertion of printed labels, letting you set custom names for your Zones and Groups. To easily make labels with any printer, download the CP66 Labels PDF at rane.com/cp66.html.

A tool is included in the shipping box to remove the locking mechanism from the Neutrik jack so that the microphone may not be removed or stolen. The bottom panel of the PAGER2 can also be removed to allow the entire paging station to be securely fastened to a desk or table or held down via keyholes.

The PAGER2 uses a RJ-45 terminated CAT 5 connection for power, data, and audio over a single shielded CAT 5 cable up to 500 feet (152 meters). It accepts any standard microphone, and has built-in +24V phantom power as well as a selectable 13 dB pad for high-output microphones. The rear panel has indicators to troubleshoot any CAT 5 cable failure.

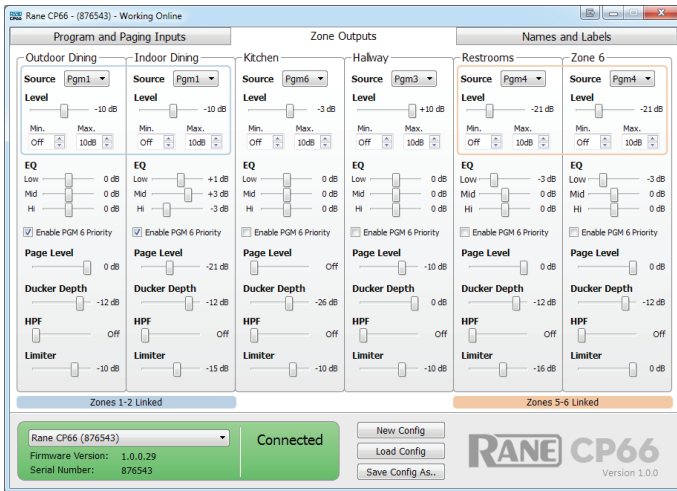
The sturdy steel chassis measures 4.5" w x 1.9" h x 6" d (15.3w x 4.6h x 11.3d) and weighs 20 ounces (567 grams).



RANE CP66 SOFTWARE

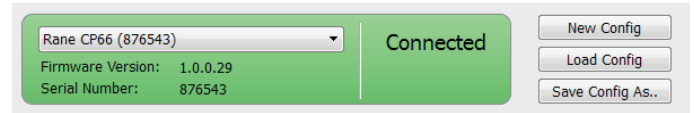
Note: As with many software products, new features may have been added since the initial release. Check rane.com/cp66.html to get the latest CP66 Software version. To install the software, run RaneCP66Installer.exe, available on our website or the CD that came with your unit, and follow the instructions. Rane CP66 Software is supported on Windows® XP, Vista, and 7, and requires a USB connection.

The Rane CP66 software allows you to view and configure all the same settings that are available on the front panel from a single interface, as well as a few additional features that are not otherwise accessible. This includes custom Input and Zone naming, setting of Max / Min Zone Levels, Page 1 Threshold adjustment, and Program 6 Priority Threshold / Hold Time settings.



You may set up a configuration in real-time when connected to a unit, as well as in Offline mode. In both instances your configuration can be saved to a file to be recalled and edited later, or loaded directly onto one or more units for a remote or batch installation.

USB Connection



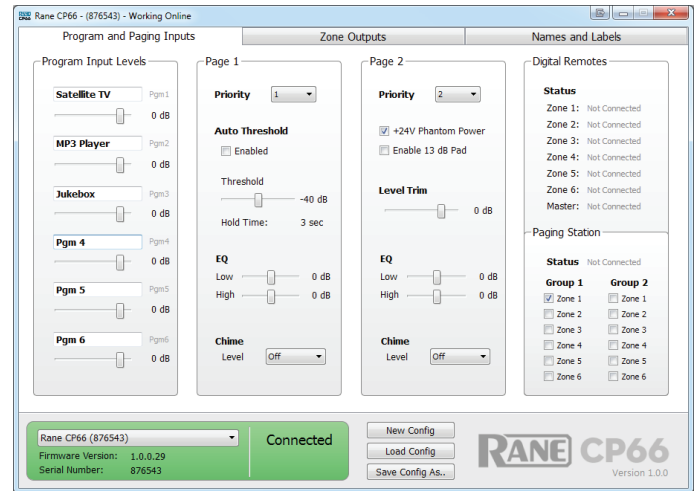
When the software detects a CP66 connected via USB to your computer, it will automatically establish a connection and show you the current configuration of the device. When connected to a live unit, the connection box turns green and displays the name and serial number of the device. Any changes you make to settings while connected are updated in real-time to the device itself. This means changes to the front panel display are updated in software automatically and vice versa; software changes to settings are immediately reflected on the front panel display.

If no unit is connected, the software is in "Offline" mode and the connection box remains white. While in Offline mode, use the software as a scratch pad to set up a configuration before loading it to the hardware. To work in Offline mode while a CP66 is plugged in, click the drop-down box that shows the current unit and select "Offline."

To save either an online or offline configuration to a file, press the "Save Config As.." button and choose the location and filename for your config file.

Loading a configuration by pressing the "Load Config" button in connected mode will load the settings from a saved file **immediately** to the connected unit. To modify a config file without updating a unit, switch to Offline mode and press the "Open Config" button.

Pressing the "New Config" button gives you the option to either restore your unit to factory settings or start a new configuration in Offline mode.



ADVANCED FEATURES

Zone and Input Naming

The Digital Remotes can display up to 15 characters and accept any standard ASCII characters for the Zone or Program Input names. In the “Names and Labels” tab, you can specify the individual Zone names or name linked groups of Zones. Remember, any changes made while connected to a live unit are reflected immediately on all remotes. Program names are set in the “Program and Paging Inputs” tab.

Max / Min Levels

Maximum and Minimum limits for Zone Output level are available only through the CP66 Software. This sets the true level when a Remote is turned all the way up or down, and is useful in many retail environments for setting a range for volume control. Digital remotes will always display their current level as a proportion of the maximum and minimum.



Page 1 Threshold

In threshold mode, where Page 1 is triggered not by a push-to-talk button but instead by detection of sound at the microphone itself, it may be necessary to adjust this threshold to match your environment. For example, in an area with some amount of background noise (like a restaurant) this threshold will be higher than when connected to a phone system that is only “on” when someone lifts a receiver.

This problem is especially apparent when amount of noise near the page mic changes throughout the day, making it nearly impossible to find a threshold value somewhere near the middle that always works. We recommend using a push-to-talk switch in environments where the background noise changes over time.

Program 6 Priority Threshold

In rare cases, it may be necessary to adjust the threshold and hold time for the Program 6 Priority or “Jukebox Input.” Older systems that take a long time to switch between CDs or records may require a longer hold time or a lower threshold value. To change these values, right click on the “Enable PGM 6 Priority” check box and select “Set PGM 6 Priority and Hold Time.” A dialog will appear that allows you to change these settings.

FIRMWARE UPDATES

If you have purchased new hardware, the software may indicate that the firmware inside the CP66 or one of its remotes is different than what is supported by the software. In this case, the connection box turns orange and a “FW Mismatch” warning is displayed on the screen. If you have access to the internet, first make sure you have the latest version of the CP66 software from rane.com/cp66.html. To update the device firmware so it matches the version contained in the software, connect the PAGER2 and any Digital Remotes and then press the “Update Firmware” button. This can take up to several minutes if multiple remotes are connected. Updating the firmware will **not** clear any of your settings.

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