RANE

TERMINAL 1010x

Quickstart Guide (English)

Introduction

The Terminal 1010x is an audio digital signal multi-processor designed to manage all sizes of audio installations, including retail stores, performance venues, hospitality and corporate facilities. The 1010x is easily programmable with Halogen software and an online wizard provides project templates for a plug and play performance. This 1 RU model provides native 10-in/10-out, 6 flexible RAD ports for remote audio expansion and wall-controls, an optional DANTE Card and is incredibly expandable. Integrate the 1010x for automation via the Universal Logic Ports and/or to a 3rd-Party Control Systems on the network. Rane Commercial products deliver high-quality sound, accurate audio processing with no latency and wide dynamic range. Take your Install to the next step and get the best DSP experience with the Terminal 1010x.

Advanced drag-and-drop open architecture with the following:

- 10 universal analog inputs (+20 dBU)
- 10 balanced analog outputs (+20 dBU)
- 2 Universal Logic Ports (Logic IN, Logic OUT and Ratiometric IN)
- 6 high-power RAD+ ports
- Expansion port
- Expansion slot for optional Dante card (32 x 32 with sample rate conversion to support up to 96K sampling rate Dante flows)
- Front panel color display for monitoring system status
- Uses Halogen graphical drag-and-drop software.
- Control remotely from a web browser on a computer, smartphone, or tablet.
- 50+ advanced processing block types with advanced linking, automatic and scheduled events and integration with 3rd-party control systems
- Optional Accessories: DANTE Card, DRZH, RAD16z, RAD26, DR6 and RPX7 pager remotes

Box Contents

Terminal 1010x

(5) 6-pin 3.8 mm Euroblock input (green, for audio inputs)

(5) 6-pin 3.8 mm Euroblock outputs (orange, for zone outputs)

(1) 6-pin 3.8 mm Euroblock input (black, for logic input)

Power Cable

Quickstart Guide

Safety & Warranty Manual

Important: Visit **ranecommercial.com** to download the full Halogen *User Guide*.

Support

For the latest information about this product (documentation, technical specifications, system requirements, compatibility information, etc.) and product registration, visit **ranecommerical.com**.

For additional product support, visit **ranecommercial.com/support**.

Setup

Terminal 1010x comes with a default configuration applied and ready to go. For more templates, visit the Halogen Wizard, download a configuration and apply it to the Terminal 1010x for plug-and-play performance. If you're a Rane Certified Designer or collaborate with a Rane Certified Company, please feel free to build your own design with Halogen software.

The default application in Terminal 1010x is: 4 stereo multi-source to 8 mono zones and 1 stereo zone with 2 dynamic microphones for master and local-announcement plus master web remote for source selection and level control.

To use or test the default configuration, connect all Euroblock connectors **with the Terminal 1010x turned off without the power cable**. Make sure all cables are properly screwed inside the Euroblock connectors and a power amplifier is placed in between the chain from the Terminal 1010x to the speakers.

Follow the specification below for setting up Terminal 1010x with the default configuration.

MUSIC INPUTS

Connect Inputs 1-8 to balanced line level (+20 dBU) stereo audio sources, as follows:

Input 1: Music Source A Left
Input 2: Music Source A Right
Input 3: Music Source B Left
Input 4: Music Source B Right
Input 5: Music Source C Left
Input 6: Music Source C Right
Input 7: Music Source D Left
Input 8: Music Source D Right

MICROPHONE INPUTS

Connect dynamic microphones to Inputs 9 and 10 for local and master announcements, respectively, as follows:

Input 9: Dynamic Microphone M1 for local announcement (overrides any other audio input on all mono zone outputs 1–8)

Input 10: Dynamic Microphone M2 for master announcement (overrides any other audio input—including the local announcement—on all outputs 1–10)

If you are using a microphone with an on/off switch, set the switch to **on** to begin the announcement. If your microphone does not have an on/off switch, the dedicated Halogen block called **Voice Detect** will detect when the microphone is in use and duck other audio input. After your message has finished, the audio input will smoothly fade back in over 3 seconds.

OUTPUTS

Connect Outputs 1–8 to mono zones, and Outputs 9–10 to a single stereo zone, as follows:

Output 1: Mono Zone 1	Output 6: Mono Zone 6
Output 2: Mono Zone 2	Output 7: Mono Zone 7
Output 3: Mono Zone 3	Output 8: Mono Zone 8
Output 4: Mono Zone 4	Output 9: Stereo Zone 9 Left
Output 5: Mono Zone 5	Output 10: Stereo Zone 9 Right

Connect the outputs to a power amplifier according to your needs, then connect the amplifier to speakers in each zone. Place the speakers connected to Outputs 9 and 10 in the same room as a stereo left/right pair for proper audio playback.

All outputs feature a -6 dBFS limiter to protect drivers and avoid saturation.

Once all connections have been made, test or use your system by connecting the power cable to power on Terminal 1010x.

CONNECT USING HALOGEN

Use the Halogen software to modify the default configuration or apply a template downloaded from the Halogen Wizard. Connect Terminal 1010x to a router or similar access point integrated with your LAN Network. You don't need a static IP; Halogen will find the Terminal 1010x unit using our proprietary RaneLink auto-discovery service.

WEB INTERFACE

You can use the web interface to control sources and levels remotely. Press the **Home** button on Terminal 1010x until the Wired Network Settings appear on the display, and then make note of the DHCP IP address (e.g., 10.10.10.182). Type this address into a web browser to load the web interface.

The earliest supported operating system is Windows 7 with SP1, 32-bit or 64-bit.

RESTORE PARAMETERS

If power to Terminal 1010x is lost at any time, the system will restore your previous adjustments including source selection and level control for all zones, ensuring that your system is always set as you intended.

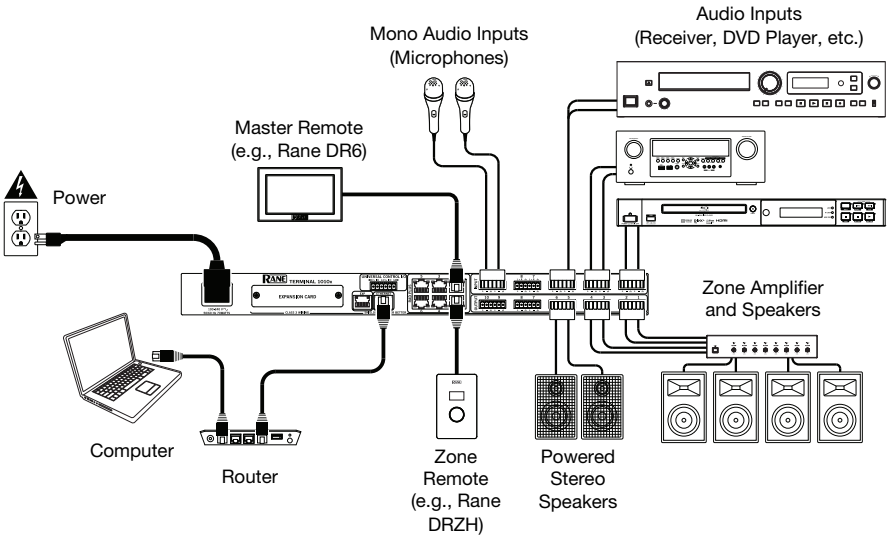
READY TO GO

Once you have checked your system and set all sources and levels, you can close the web interface and enjoy your system.

For more system applications and design templates, or to get your own custom configuration built, please visit **ranecommercial.com**.

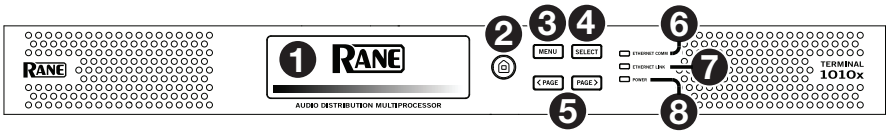
Connection Diagram

Items not listed under ***Introduction*** > ***Box Contents*** are sold separately.



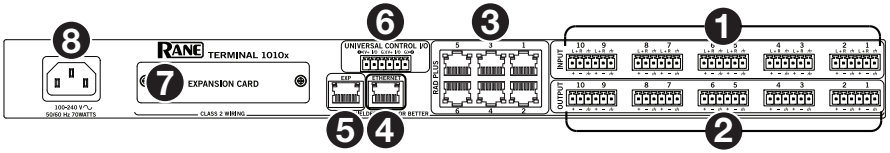
Features

Front Panel



1. **Display**: This display shows information about Terminal 1010x current status and options. See ***Operation*** > ***Display*** for more information.
2. **Home:** Press this button to enter the Home screen.
3. **Menu:** Press this button to enter the Menu screen, where you can select from the available pages.
4. **Select:** Press this button to select the highlighted page.
5. **Page Left/Right** (</>): Press these buttons to select the previous or next page (respectively) shown in the **display**.
6. **Ethernet Comm:** This LED will light to indicate Ethernet communication.
7. **Ethernet Link**: This light is on when the **Computer Ethernet port** on the rear panel is connected to a computer (powered on). You can then use the computer to load a properly designed system configuration using a **Windows PC** and **Halogen software** or control Terminal 1010x remotely using a web-based interface.
8. **Power**: This LED will be lit when Terminal 1010x is powered on.

Rear Panel



1. **Inputs** (10 Universal Analog): Connect balanced or unbalanced audio sources to these mono inputs. The inputs can function in 4 modes of operation: Condenser Mic with 48V phantom power, Dynamic Mic, Balanced +20 dBU Line, and Unbalanced Line+.

   Tip: **Unbalanced Line+** sums two unbalanced signals (such as left and right RCA lines) when one is connected to the positive (**+**) input and one is connected to the negative (**-**) input.

2. **Outputs:** (10 Balanced Line): Connect line-level devices to these balanced +20 dBU mono outputs with EMI filtering and transient on/off muting.

3. **Universal High-Power RAD Ports:** These 6 ports support any RAD or DR device (no power supply required). Each port provides up to 15 watts of peak power, and supports up to 2 audio in and 2 audio out channels plus control.

4. **Computer Ethernet Port** (Ethernet): Connect this port to a router or similar access point during setup. After Terminal 1010x is properly configured, you can connect a computer to another port on the same router or access point, allowing you to use a web browser to access an interface to control Terminal 1010x.

5. **Expansion Bus:** This port provides support for legacy expansion devices and future hardware releases.

6. **Universal Logic Ports** (Euroblock): Each of these 2 ports allow a system designer to read a contact closure, drive an indicator or relay, or read a potentiometer.

7. **Optional Card Slot:** Insert an optional DanteX card or other compatible expansion card into this slot.

8. **Power Input** (IEC): Use a standard IEC cable to connect this input to a power outlet.

Operation

Important: Visit **ranecommercial.com** to download the full Halogen *User Guide*.

Display

Home

To access the Home page, press the **Home** button at any time. The contents of the Home page will change depending on the current state of Terminal 1010x. Information that may be shown here includes booting status, fault status, network status, and more.

Menu

To access the menu, press the **Menu** button at any time.

To highlight the desired page, press the **Page Left** and **Page Right** buttons.

To enter the highlighted page, press the **Select** button.

The menu always contains the following pages:

- **Analog Input:** This page shows this selected **Input Mode** and current **Input Level** for all 10 Inputs.
- **Analog Output:** This page shows the **Output Level** and **Mute Status** for all 10 Outputs.
- **RAD:** This page shows the **Input Level**, **Output Level**, **Device Status**, and **Expected/ Unexpected Status**. If you are locating a device, the square for that device will blink.
- **EXP:** This page is divided into 32 regions, each representing 1 of 32 possible EXP positions in the chain. One of the following 4 status icons will appear in regions with connected devices in the configuration:
  - **Green:** This icon indicates the connection is good.
  - **Yellow:** This icon provides a warning for a missing connection.
  - **Yellow with Question Mark:** This icon provides a warning for an unexpected status.
  - **Red with Slash:** This icon indicates a problem, such as a wrong device connected.

  If you are locating a device, the icon will blink.

  Blank regions indicate an unused location that is not physically connected or in the configuration.

With an optional Dante Expansion Card installed, 4 additional pages will be shown in the menu: **1-16 TX**, **17-32 TX**, **1-16 RX**, and **17-32 RX**. These pages indicate if a channel is being routed and its level.

Controlling Terminal 1010x Remotely

You can use a web-based interface on your computer to control Terminal 1010x remotely.

To set up Terminal 1010x for use with its web interface:

1. Use standard Ethernet cables to connect Terminal 1010x's **Computer Ethernet port** to a DHCP (Dynamic Host Configuration Protocol)-enabled router or similar access point, and then connect your computer to another port on the same router or access point.
2. Once connected to a network, Terminal 1010x will automatically acquire a dynamic IP address that you can use. This may take a few seconds.
3. Press the **Home** button on Terminal 1010x until the **Wired Network Settings** appear on the **display**, and then make note of the **DHCP IP** address (e.g., **10.10.10.182**).

To open the Terminal 1010x web interface:

1. Open a web browser on your computer.
2. In the browser, enter the **DHCP IP** address shown in Terminal 1010x's **Wired Network Settings** (e.g., **http://10.10.10.182**) to load the web interface.
3. Press the **Login** button, and then enter the password for **Full** access mode. The default password is **admin**.

Troubleshooting

If you encounter a problem, try doing these things first:

- Make sure all cables and other connected devices are properly and securely connected.
- Make sure you are using Terminal 1010x as described in this user guide.
- Make sure your other devices or media are working properly.
- If you believe Terminal 1010x is not working properly, check the following table for your problem and solution.

Problem:	**Solution**:
Power does not turn on.	Make sure Terminal 1010x's **power input** is properly connected to a power outlet using the included power cable.
Terminal 1010x does not produce any sound, or the sound is distorted.	Make sure all cable and device connections are secure and correct. Make sure none of the cables are damaged. Make sure the settings on your Bluetooth device, loudspeaker, mixer, etc. are correct.
Ethernet Link LED indicators do not come on after plugging the HAL into a network switch or connecting it directly to a computer.	Make sure the Ethernet cable or crossover cable is not broken. Try using a different cable. Try plugging the cable into a different port on the network switch.
Terminal 1010x does not connect to the web browser.	Press the **Home** button on Terminal 1010x until the **Wired Network Settings** page appears on the display. Make note of the DHCP IP address. Type this address into your web browser to load the web interface.
After opening Halogen, Terminal 1010x does not appear in the **Connect To Device** window.	Make sure that you can connect to the Terminal 1010x web server through a browser. Make sure that the RaneLink II service is running. If not, restart it. Make sure to add the following to your firewall and virus protection exception lists: Halogen.exe, RaneLink.exe (port 4994), hal1.pcops.exe, and python.exe.

Appendix (English)

Technical Specifications

Analog I/O	**Type**	10 in x 10 out	
	ADC	High definition audio 24-bit, 48 kHz, DR 116 dB A-weighted	
	DAC	High definition audio 24-bit, 48 kHz, DR 116 dB A-weighted	
	Frequency Response	20 Hz – 20 kHz, ± 0.1 dB	
Inputs	**Connection**	(5) Euroblock connectors, 6 pins each, 3.81 mm pitch, green. Ships with strain relief plugs.	
Condenser Mic Mode	**Type**	Active balanced, microphone input mode with 48 V phantom power	
	Phantom Power	+ 48 V	
	Maximum Input	1 Vrms	
	Input Impedance	2.5 kΩ	Each leg
Dynamic Mic Mode	**Type**	Active balanced, microphone input mode without phantom power	
	Maximum Input	250 mVrms	
	Input Impedance	2.5 kΩ	Each leg
Line Mode	**Type**	Active balanced, line-level	
	Maximum Input	8 Vrms	
	Input Impedance	5 kΩ	Each leg
Line+ Mode	**Type**	Active, left [+] & right [–] signals summed to mono	
	Maximum Input	8 Vrms	
	Input Impedance	5 kΩ	Each leg
Outputs	**Connection**	(5) Euroblock connectors, 6 pins each, 3.81 mm pitch, orange. Ships with strain relief plugs.	
	Type	Active balanced, line output mode with active output transient muting	
	Maximum Output	8 Vrms	
	Impedance	300 Ω	Each leg
	Frequency Response	20 Hz – 20 kHz, ± 0.1 dB	
DSP	**Processing Power**	>10,000 MIPS	
	Word Length	32-/64-bit Floating Point	
	Delay Memory	Min. 160 sec total	
Computer Interface	**Type**	Ethernet 1000 base-T	Zeroconf service discovery protocol for easy setup
	Connection	RJ-45	Shielded Cat 5e cable or better
	Length	300 ft. / 100 m	Standard Ethernet cable length limit

RAD+ Ports	**Connection**	(6) RJ-45	Shielded Cat 5e cable or better
	Audio Channels	2 in, 2 out	Each port, control channel, 24-bit, 48 kHz
	Voltage	27 VDC	Each port
	Power	12 W (peak) / 6 W (average)	Each port
	Length	DR devices: 984 ft. / 300 m	RAD devices: 325 ft. / 100 m
Universal Logic I/O	**Connection**	(1) mini-Euroblock connector, 6 pins, 3.81 mm pitch, black	
Logic In	**Internal Pull-Up**	5 mA	Protected to +24 V, reverse-polarity-protected
	Vin High	> 2.2 V	Normal state
	Vin Low	< 1.0 V	
Logic Out	**Open Collector Output**	Source 5 mA, Sink 200 mA	Protected to +24 V, reverse-polarity-protected
	Vout High	> 2.2 V	
	Vout Low	< 0.2 V	
Ratiometric Input	**Input**	0–5 V	
	V+	40 mA	
	Resolution	8-bit at 2 kHz sample rate	
Expansion Port	**Types**	Rane Expansion Bus	Port supports legacy expansion devices and future hardware releases.
		Dante card (optional)	32 x 32 with sample-rate conversion, allowing 96 kHz sample rate Dante flows
	Connection	RJ-45	Shielded Cat 5e cable or better
	Maximum Length	300 ft. / 100 meters	
Power	**Connection**	IEC	
	Voltage	90–260 VAC, 50/60 Hz	
	Consumption	70 W	
	Output	28 V	

Unit	**Wiring**	Class 2	Rear-panel terminals
	Operating Temperature	32–104°F, 0–40°C	
	Fan	10 CFM, low noise (<20 dBa), long life (60k hours at 45°C)	
	Dimensions	18.98” x 8.38” x 1.74” 48.2 x 21.3 x 4.4 cm	Width x depth x height
	Weight	6.9 lbs., 3.14 kg	

Specifications are subject to change without notice.

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