Wavetec Pvt. Ltd.

Spectra Controller

Installation Guide Rev 1.0

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9/4/2020

Document History

Revision	Date	Comments	Prepared By
1.0	April 09, 2020	First Release	Haider Ali

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1. Introduction

This guide defines the installation procedure of Spectra Controller. Spectra controller is the main component in EQ system and can be used to drive displays which is described in this document.

The back side of the controller has all the ports and the front side has the company's logo that glow when unit is powered ON.

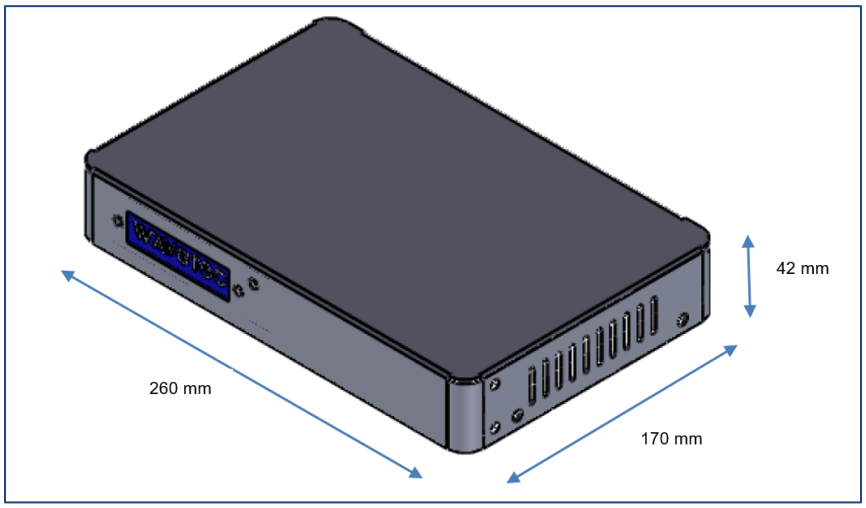
2. Items Included in Package

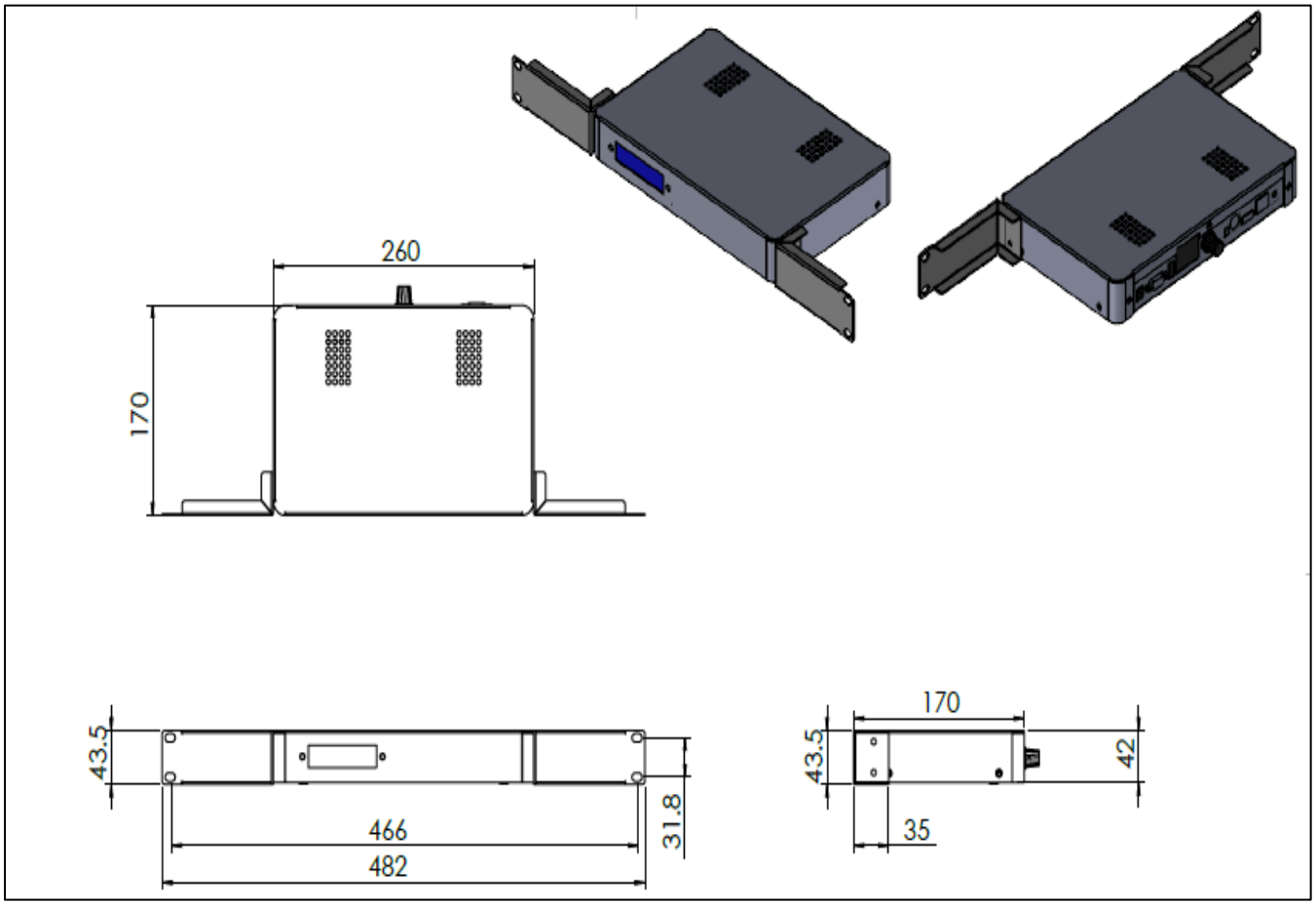
	Item	Specs	Quantity
1	Spectra Unit	Refer to Specs Sheet	1
2	Power Supply	Meanwell 12V/3.34A GST40A12-P1J	1
3	Power Cord	3-Pin British Plug / 3pin US / 2pin EU (as specified when ordering)	1
4	Rack Mount Brackets with screws		2

3. Dimensions and Mounting

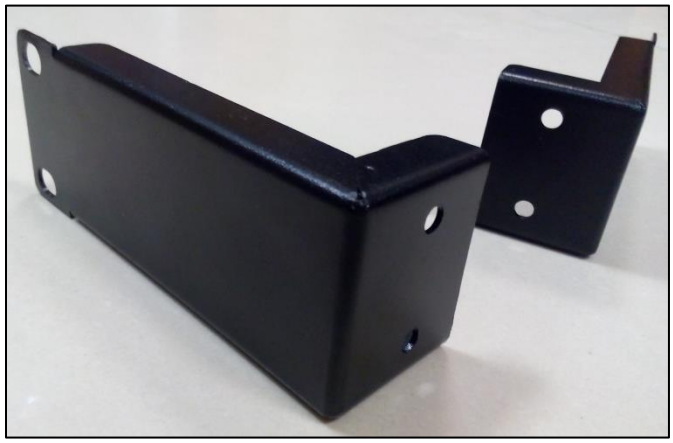
The Dimensions of the Spectra unit alone are 42 (H) x 260 (W) x 170 (D) mm

Dimensions are in mm





Rack Mount Brackets



These two brackets can be screwed on sides of spectra unit in order to mount it on rack.

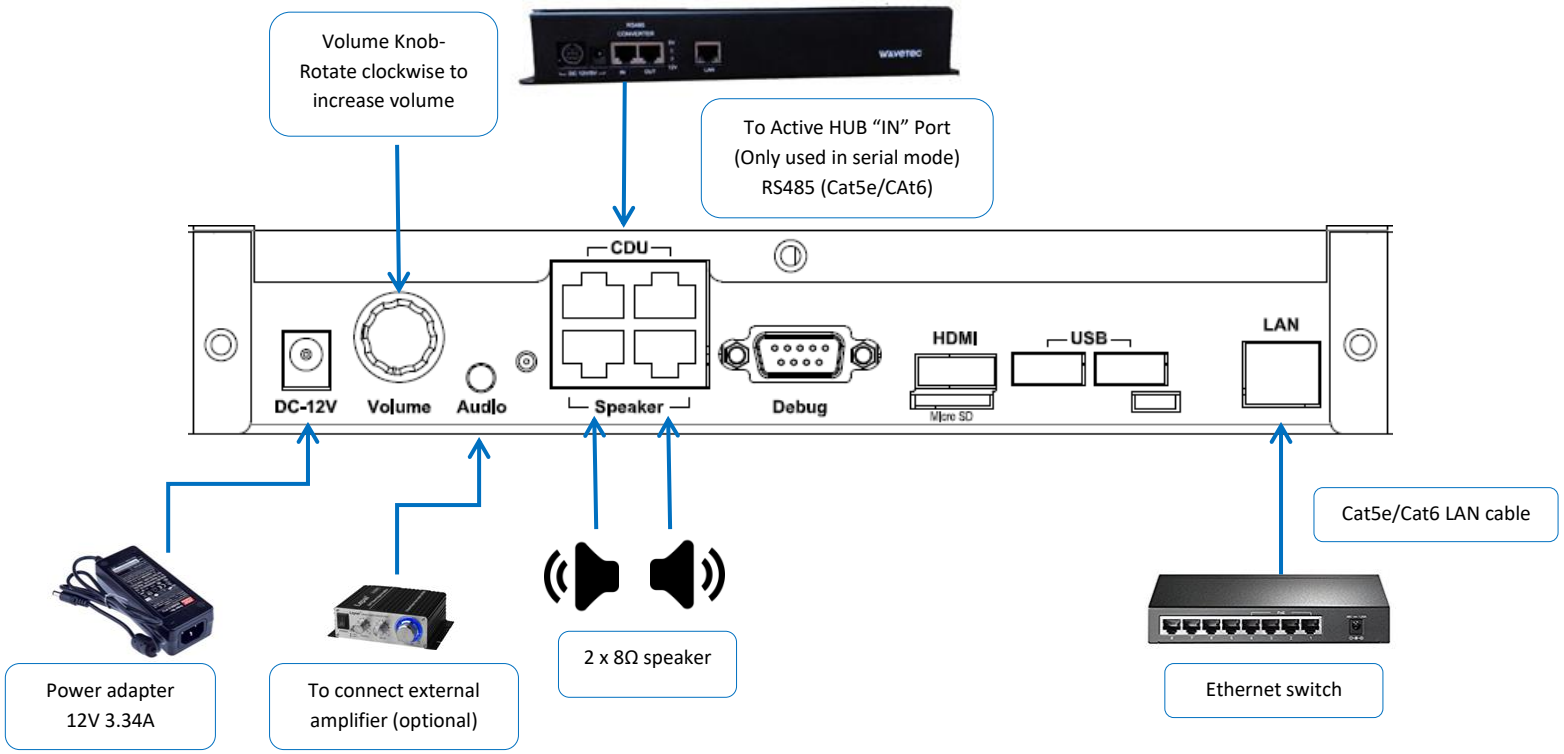
4. Picture of Spectra controller unit

4.1 Front View:

4.2 Back View:

5. Ports Description

Back panel of Spectra:



The controller provides following functionalities:

Power

- 2.5mm DC Jack to Power up the unit with Meanwell supply (12V, 3.34A) included in package.

CDU ports

- RJ45 Ports marked CDU can be used to drive Display devices over RS485 protocol (Active Hub will be needed).

Audio

- Two RJ45 ports for connecting **8 Ohm speakers**.
- **Volume Knob** for controlling volume level.

Debug port (DB-9 Connector)

- A standard FTDI cable (RS232 to USB) can be plugged into this port for debugging purpose.

USB port

- Two USB 2.0 ports can be used to connect peripherals like keyboard and mouse.
- One USB OTG port can be used for upgrade.

LAN port

- For providing internet or LAN connectivity to the unit.

LED indicators:

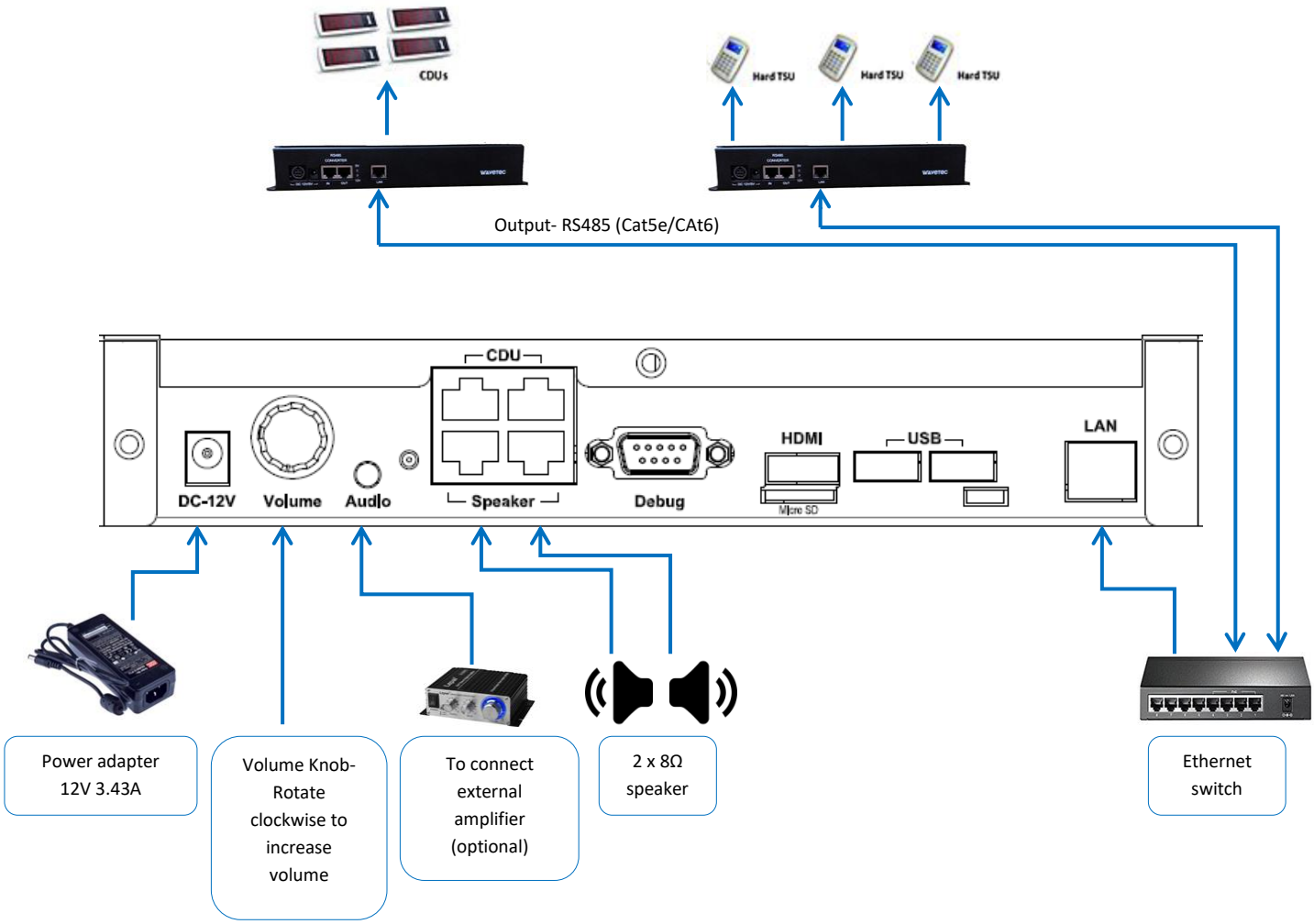
- Wavetec Logo with White Backlit LED that glows when unit is powered ON.

6. Setting up Spectra

6.1 Setting up Spectra in wired system

6.1.2 TCP/IP Mode (Recommended)

Wiring Diagram:



Description:

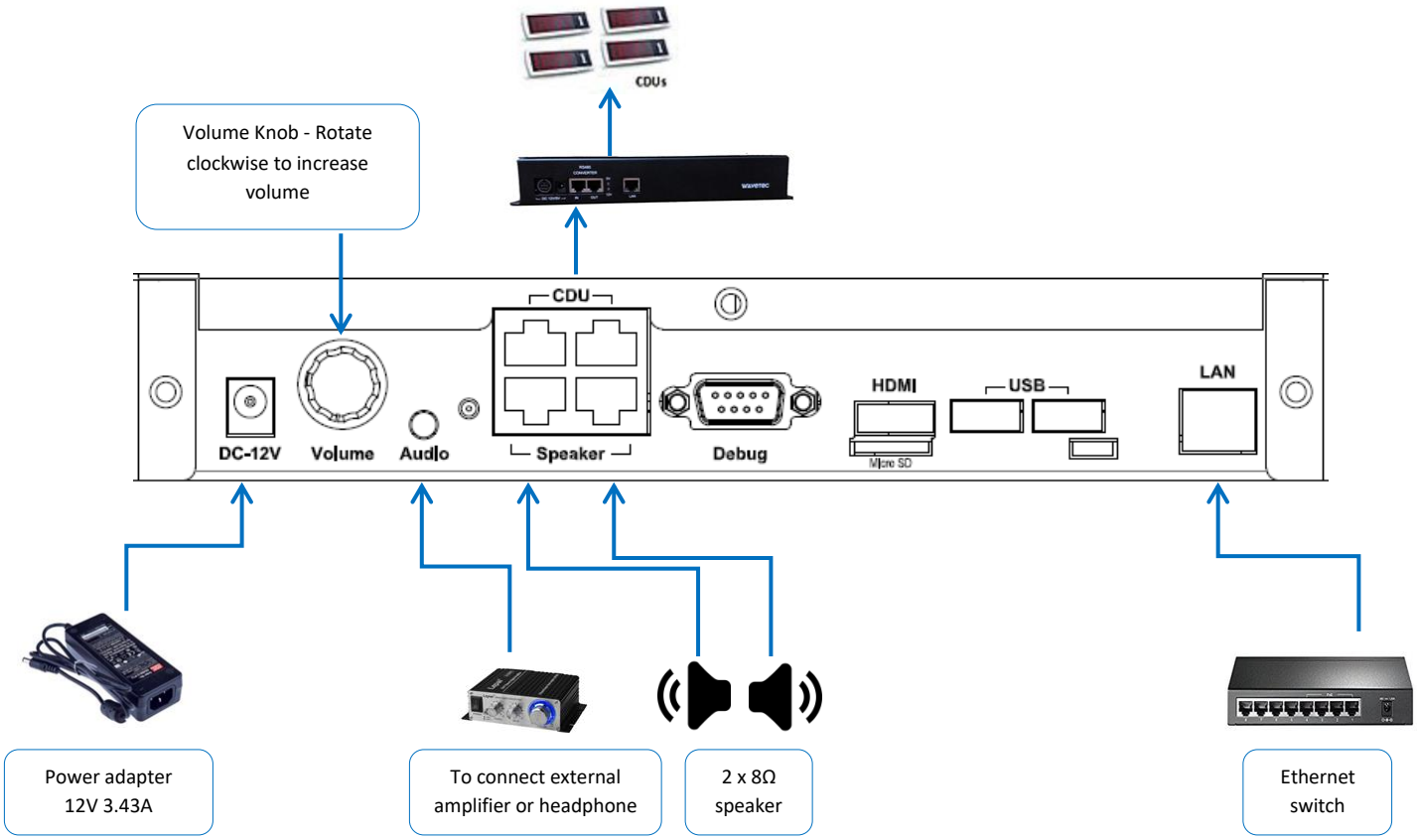
- Connect the Spectra controller as shown in wiring diagram above.
- When using TCP Active Hub, Spectra can be configured to transfer data for displays (CDUs, SDUs and PDUs) and HTSUs over TCP/IP connection to TCP Active Hub.
- TCP Active Hub must be connected to same local network as Spectra is connected to.
- It is recommended to use this mode if using TCP Active Hub (for setting up TCP Active Hub refer “TCP Active Hub installation guide”)

Note:

- It is recommended to use Cat5e or Cat6 LAN cable/Patch cord.
- When operating in TCP/IP mode we won’t be using CDU port.

6.1.3 Serial Mode (over RS485)

Wiring Diagram:



Description:

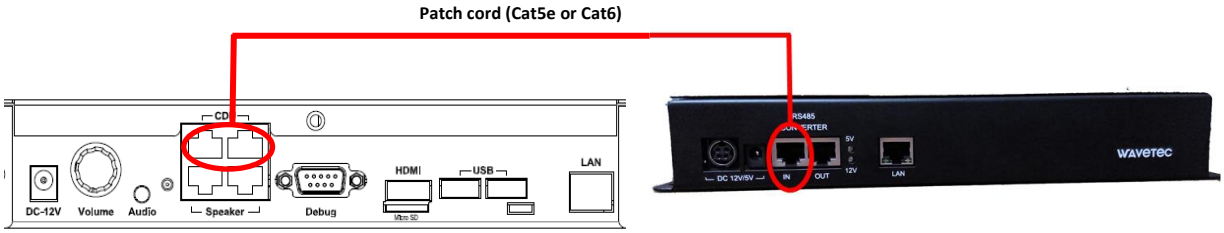
Connect the Spectra controller as shown in wiring diagram above.

1) Driving displays (CDUs, SDUs and PDUs):

- In order to drive displays connect one end of patch cord (Straight cable – RJ45 on both ends) to port marked **"CDU"** in Spectra and other end to Active Hub/TCP Active Hub port marked **"IN"**.

- All the End Devices (Displays) can be connected to any of the 16 output ports of Active Hub. Refer to Active Hub installation guide for further details, ensure that the DIP switch setting of the Active Hub is as per the document and that termination is disabled.

Refer below image for reference (TCP Active Hub):



Note:

- It is recommended to use Cat5e or Cat6 LAN cable/Patch cord
- Length of wire between Spectra controller "CDU" port and "IN" port of Active Hub can go up to 50m.

6.2 Providing LAN connectivity:

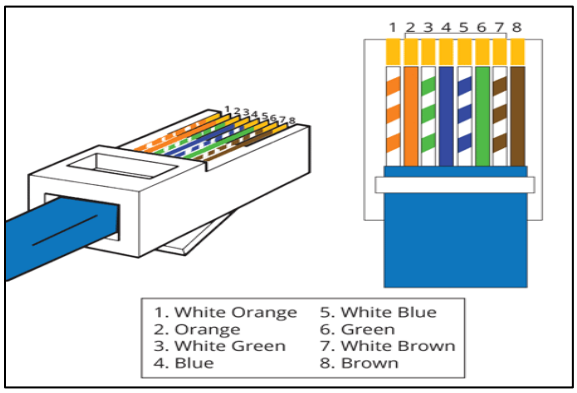
Connect a LAN cable/Patch cord from network switch to LAN port on Spectra controller in order to provide internet or LAN connectivity.

6.3 Connecting Speakers:

There are two RJ45 ports provided on Spectra unit marked "AUDIO" which can be used to drive two 4 ohm speakers.

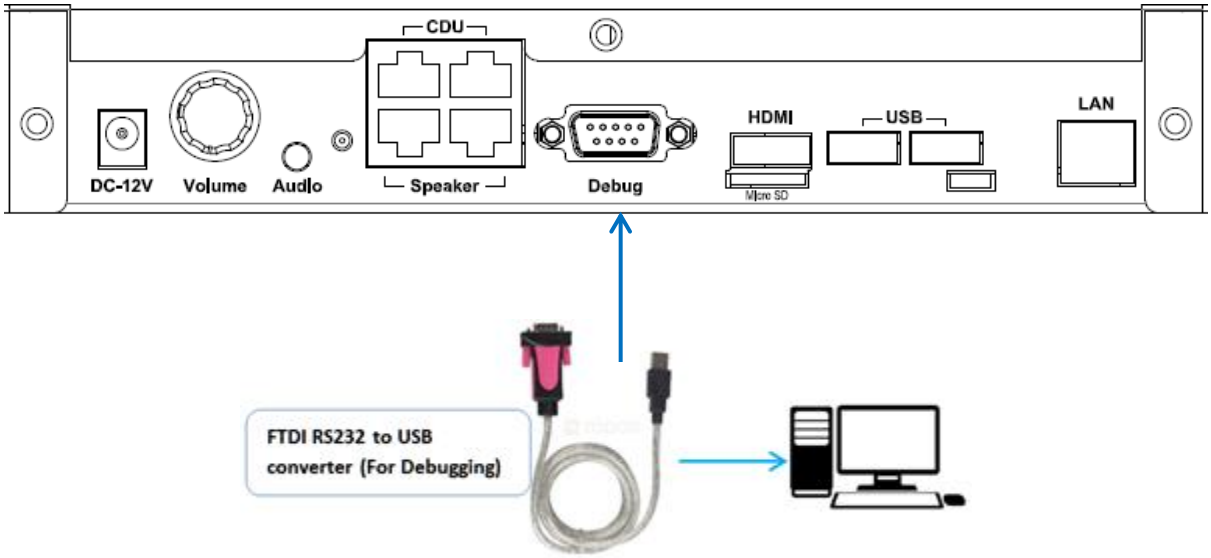
RJ45 cable connection for speaker (T-568B):

Use White Orange and Orange pair to connect speaker wires.

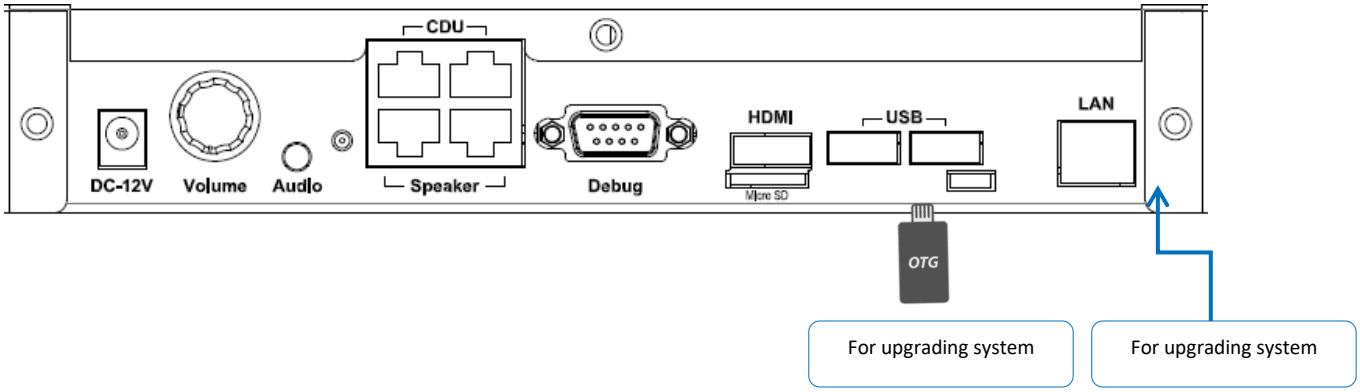


Volume knob is provided to change volume level, rotate it clockwise to increase volume.

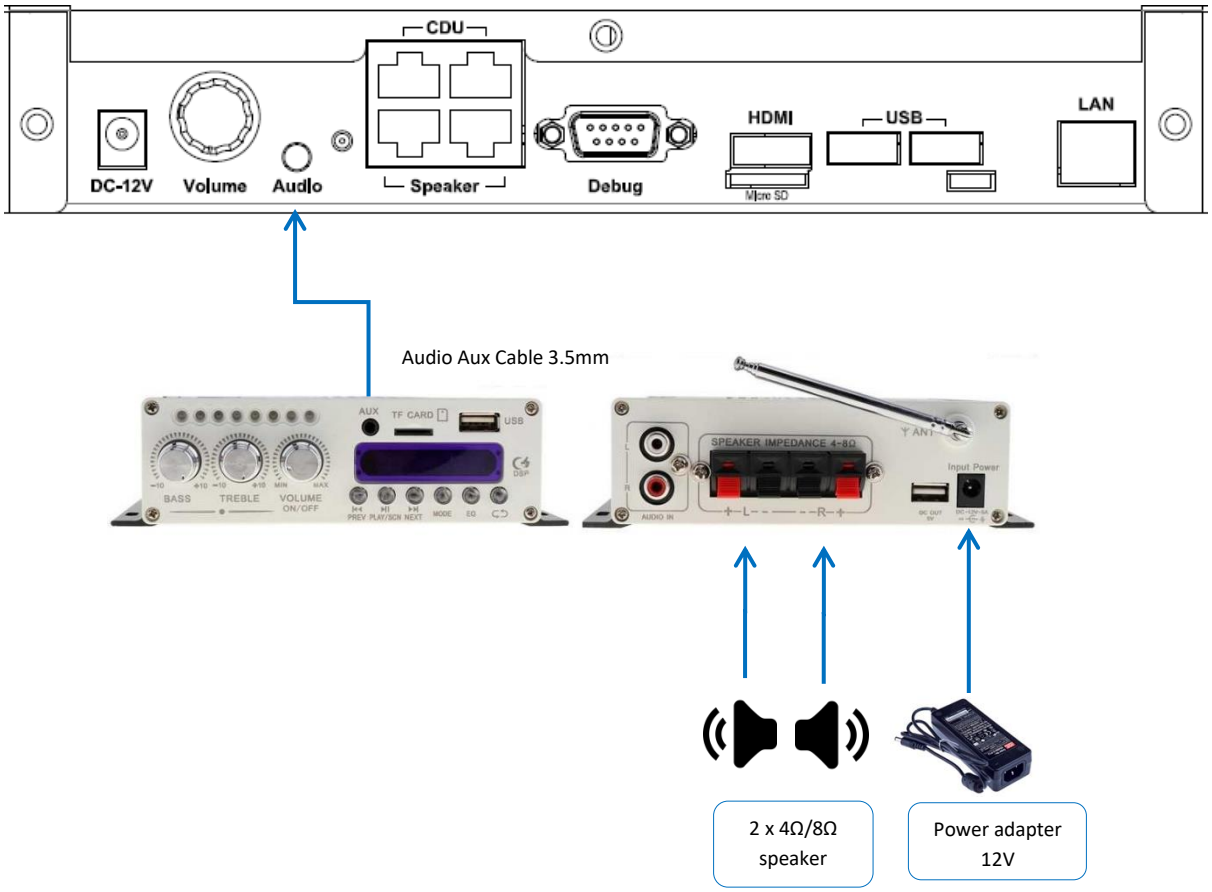
7. Debugging:



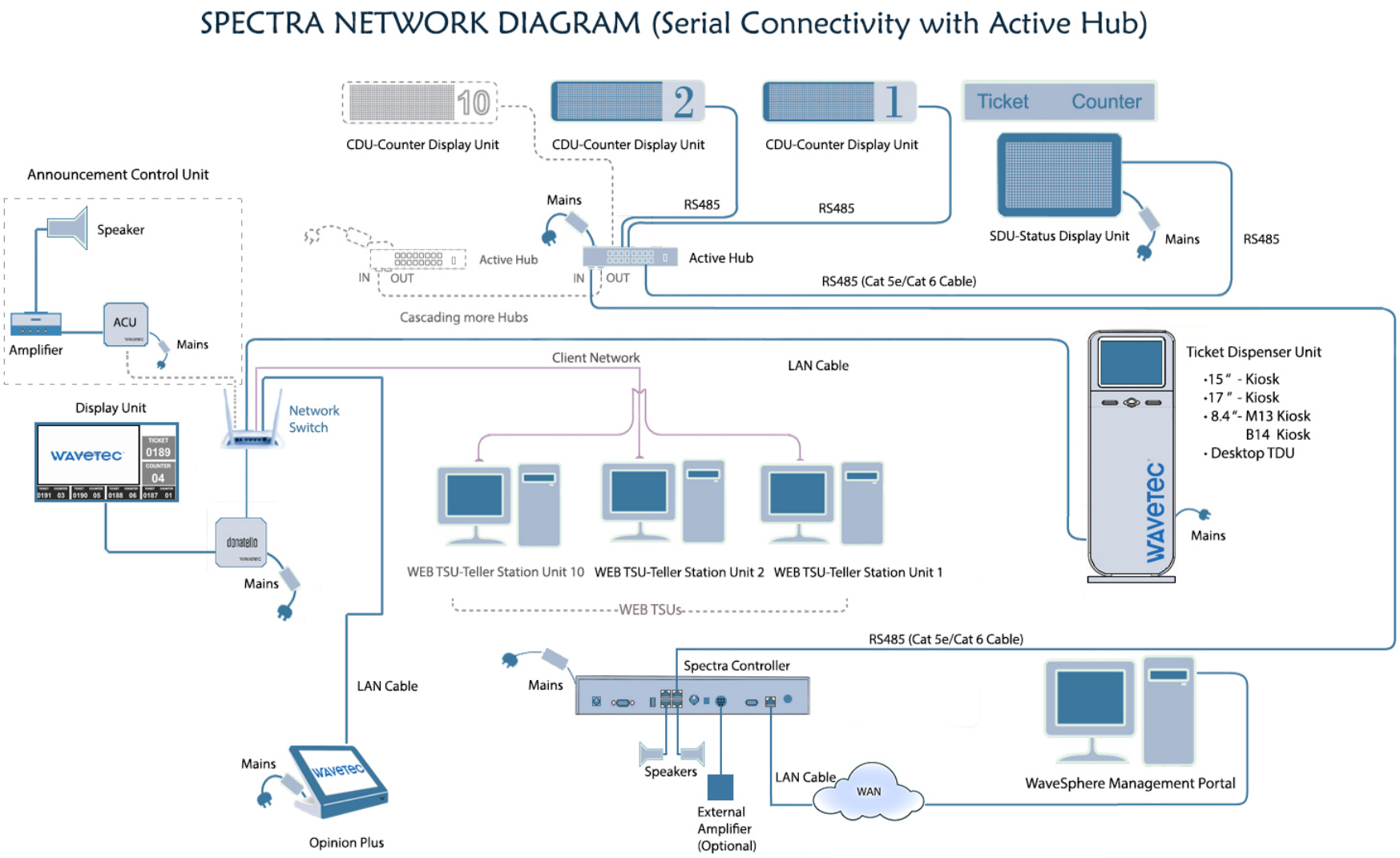
8. Upgrading Spectra / Updating Patch



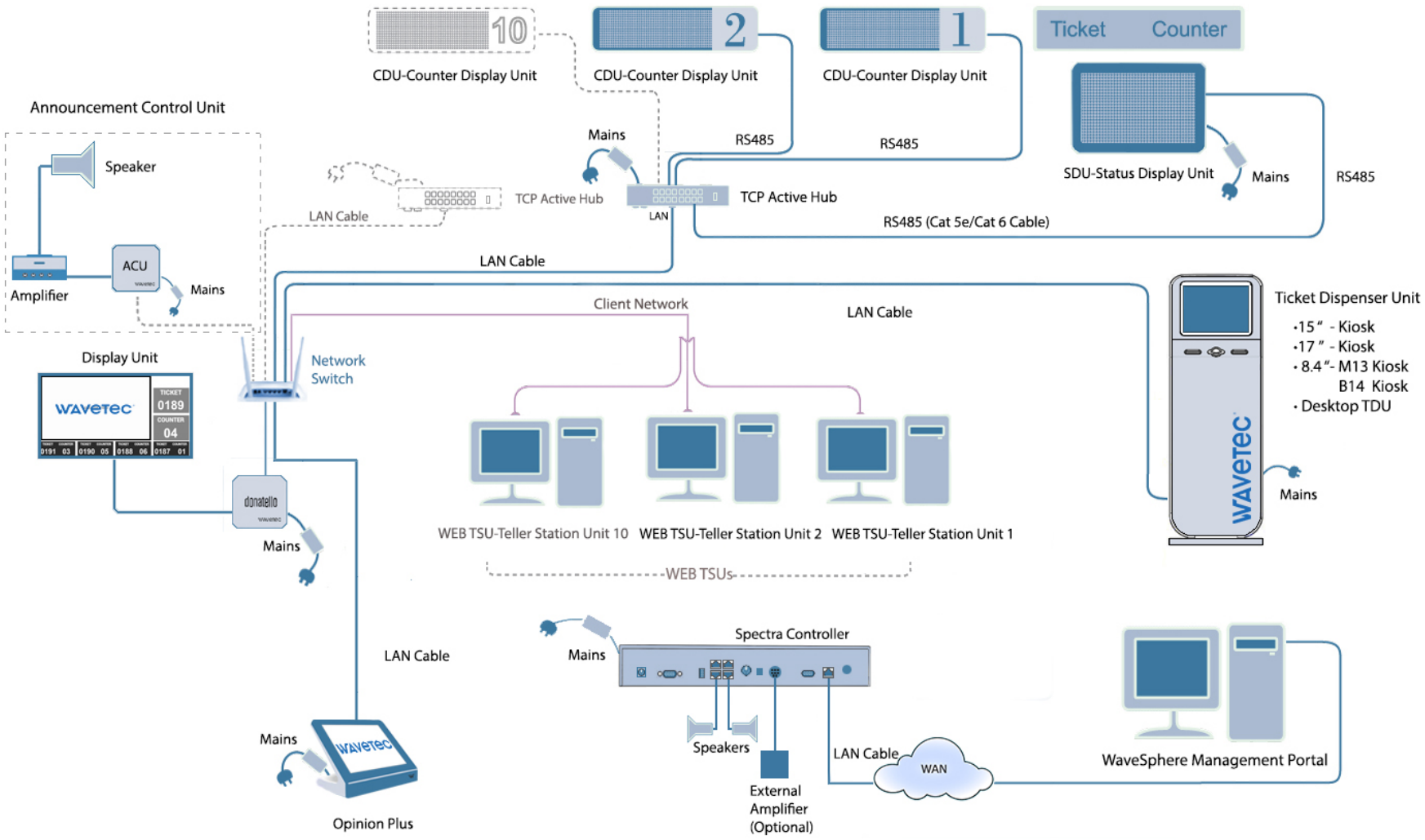
9. External Amplifier - Connections



10. Wiring Diagram with whole system



SPECTRA NETWORK DIAGRAM (Connection with TCP Active Hub)



This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC warning:

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: 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 on a circuit different from that to which the receiver is connected.

-Consult the dealer or an experienced radio/TV technician for help.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.