

# Spectra Controller

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Installation Guide Rev 1.0

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Prepared by

**WAVETEC**<sup>®</sup>

Product Code: 700-0000-0008-0A

[www.wavetec.com](http://www.wavetec.com)

## Revision Chart

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Version	Primary Author(s)	Description of Version	Date Completed
1.0	Haider	First Revision	October 23, 2017

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## 1.0 Introduction

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This guide explains the installation procedure of Spectra Controller. The back side of the controller has all the connecting ports and the front side has the company's logo which glows when unit is powered ON.

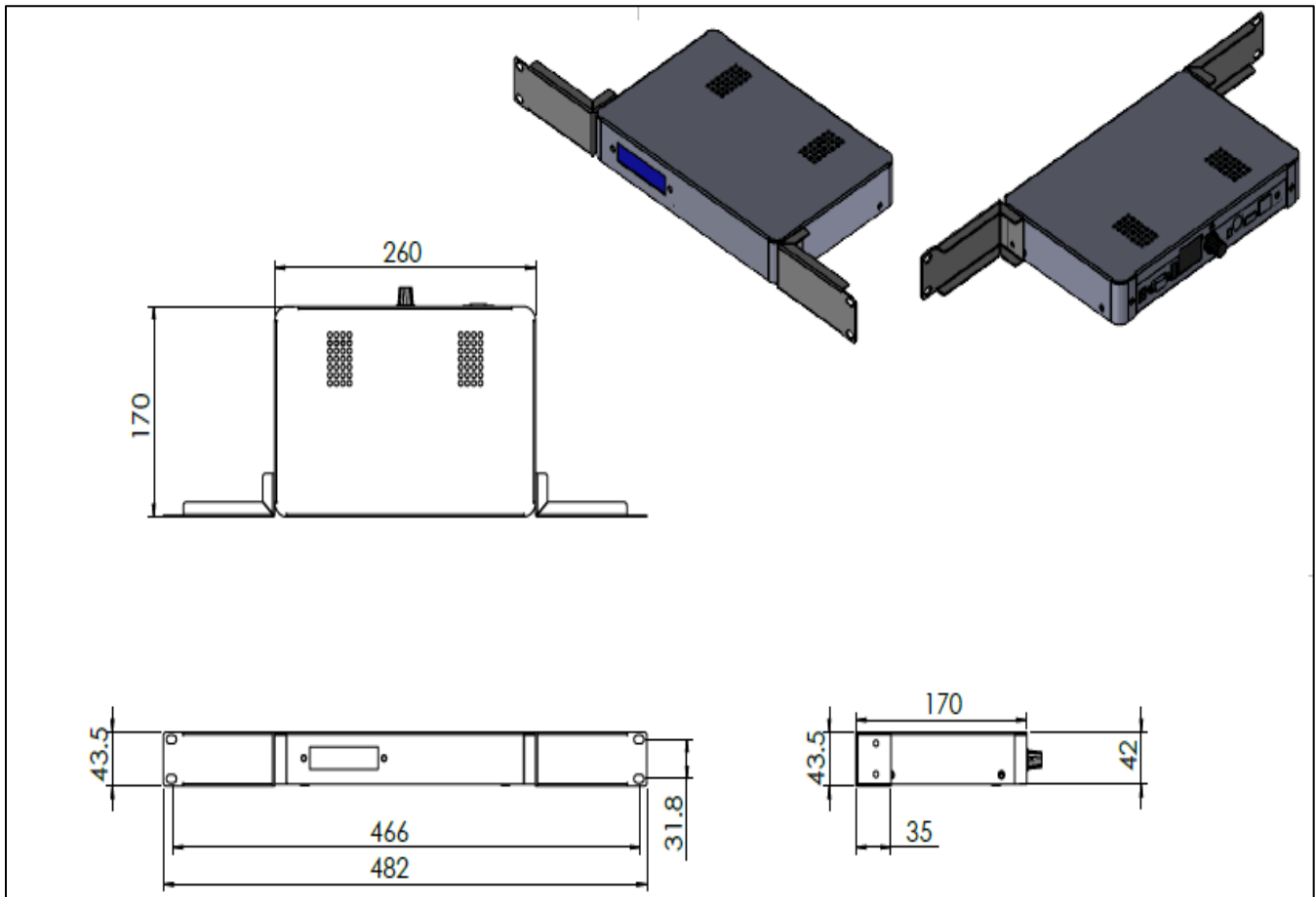
### 2.0 ITEMS INCLUDED IN PACKAGE:

	<b>Item</b>	<b>Specs</b>	<b>Quantity</b>
1	Spectra Unit	Refer to Spec sheet	1
2	Power Supply	Meanwell 12V/3.34A GS40A12-P1J	1
3	Power Cord	3-Pin British Plug / 3pin US / 2pin EU (as specified when ordering)	1
4	Rack Mount Brackets with screws	Mentioned below	2

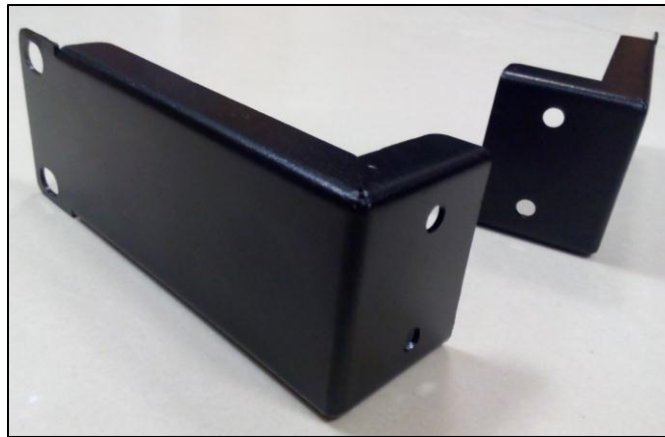
### 3.0 DIMENSIONS AND MOUNTING

The Dimensions of the Spectra unit without mounting brackets are **260x170x43.5** (LxWxH – in 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.

## 4.0 Picture of Spectra controller unit

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### 4.1 Front View:

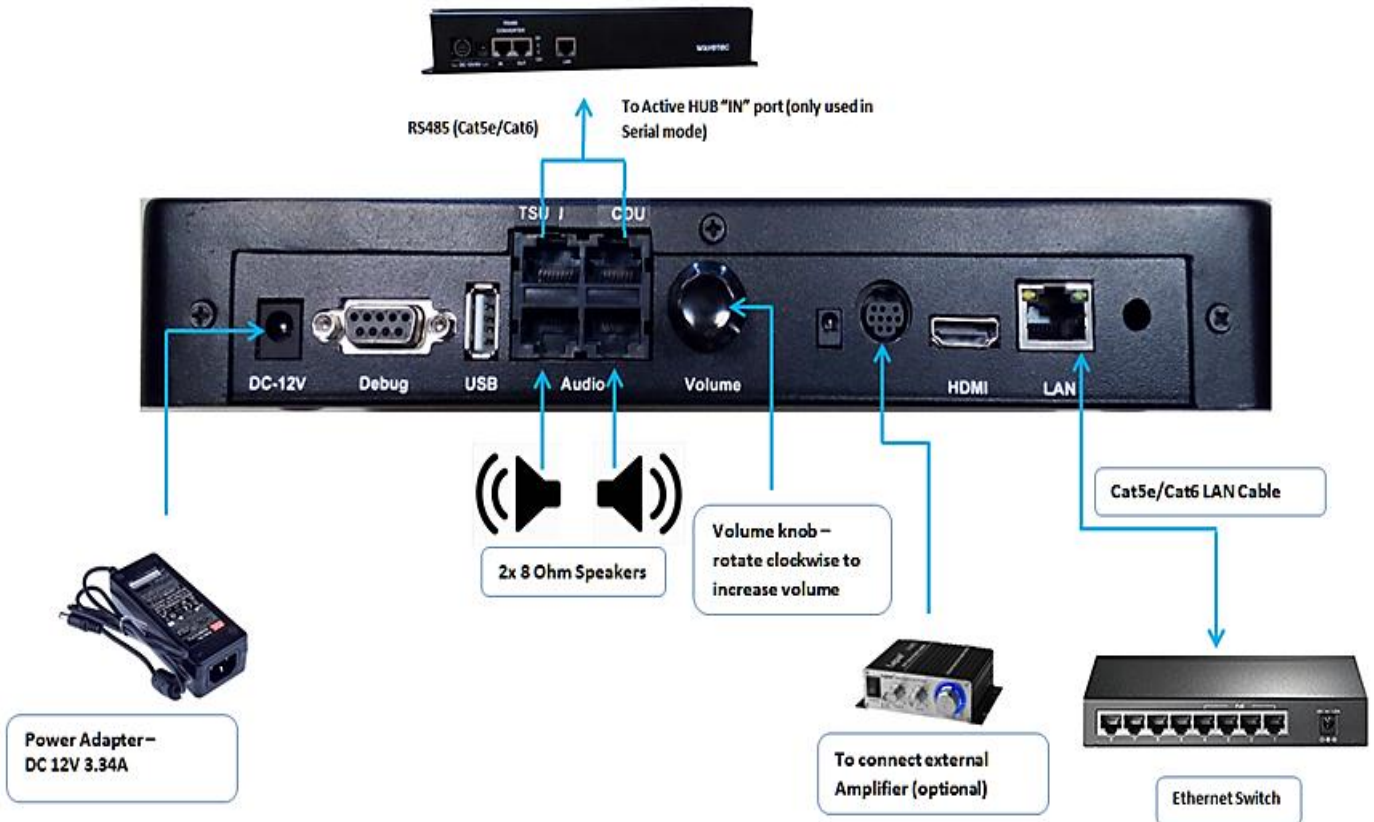


### 4.2 Back View:



## 5.0 Port Description

### Back panel of Spectra:





Details are as follows:

**Power**

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

**CDU/TSU ports**

- RJ45 Ports marked CDU and TSU can be used to drive Display devices and HTSU 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 purposes.

**USB port**

- One USB port can be used as required.

**LAN port**

- For providing internet or LAN connectivity to the unit.

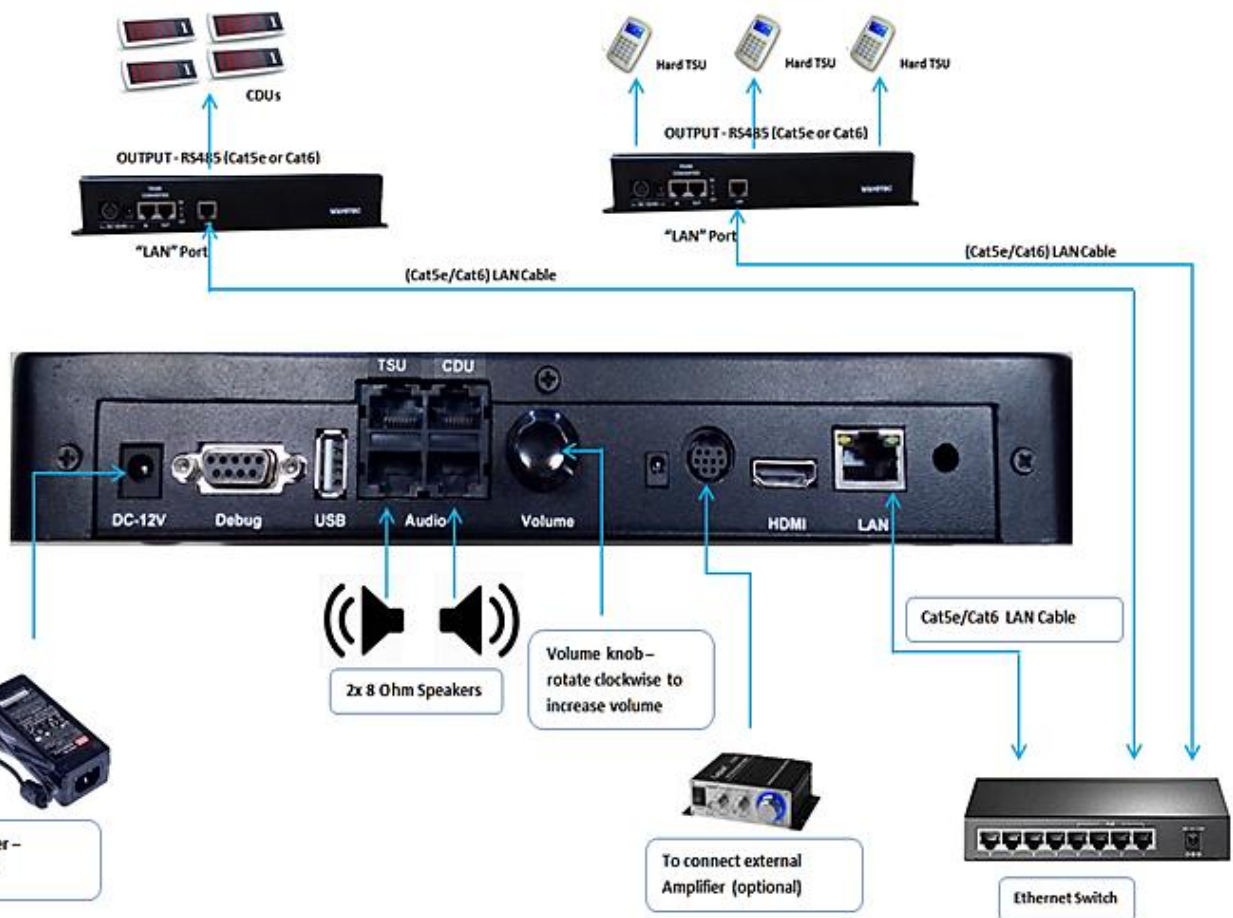
**LED indicators:**

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

## 6. 0 Setting up Spectra to drive Displays and TSUs

### 6.1 Setting up Spectra in wired system

#### 6.1.1 LAN MODE (RECOMMENDED FOR TCP ACTIVE HUB)



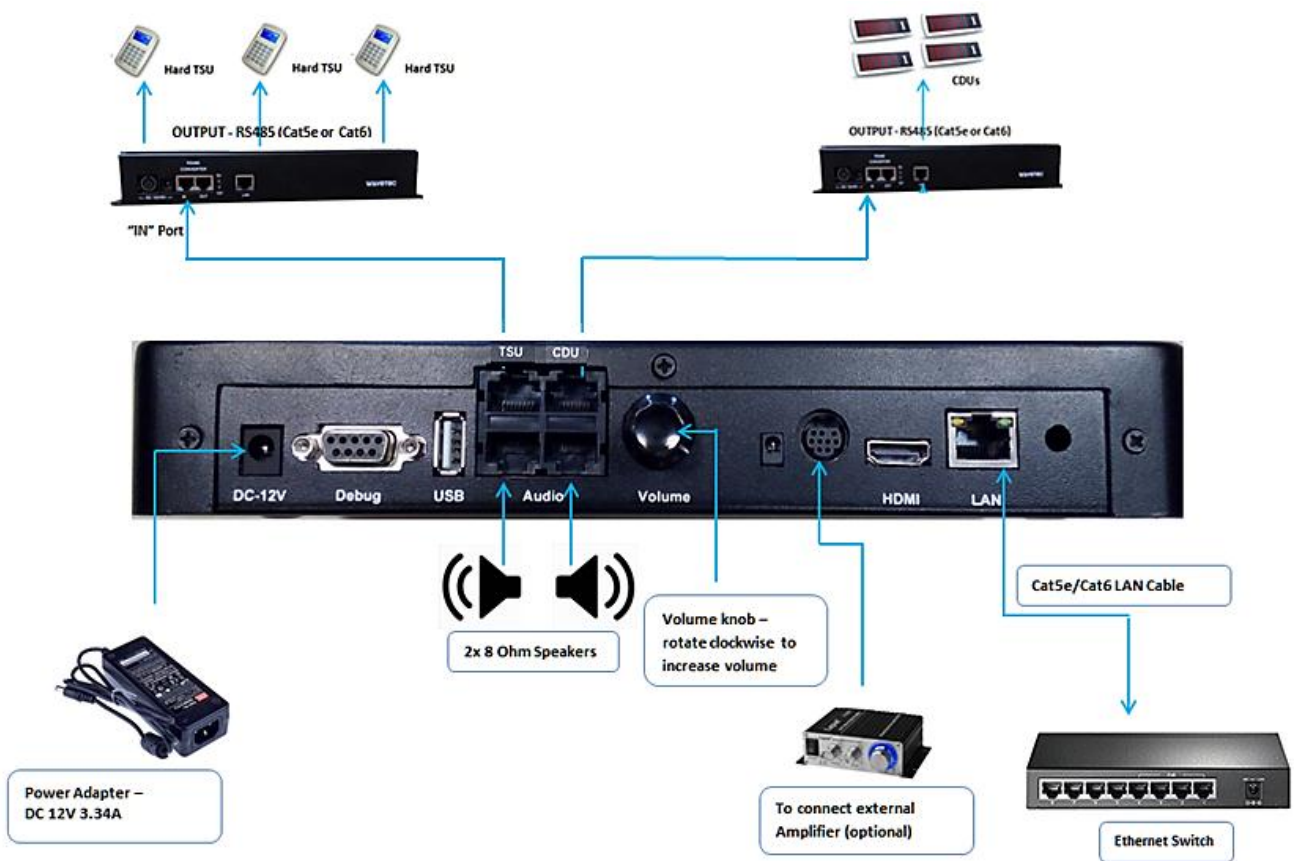
**Description:**

- 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 LAN 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 LAN mode CDU and TSU ports on Spectra will not be used.

### 6.1.2 SERIAL MODE (OVER RS485)



Serial Mode is to be used when connecting the system with the old Active Hub (old unit with Serial connection only). It can be used with TCP Active Hub as well (Serial + LAN connectivity), however with TCP Active Hub LAN mode is recommended.

**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 (RJ45 connector at 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 that document and that Termination is disabled

**2) Driving HTSUs**

- In order to drive HTSUs, connect one end of patch cord (RJ45 connector at both ends) to port marked “TSU” on Spectra and other end in Active Hub/TCP Active Hub port marked “IN”.
- All the HTSUs 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 that document to enable HTSU mode and that Termination is disabled

**Note:**

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

## 7.0 Providing LAN connectivity:

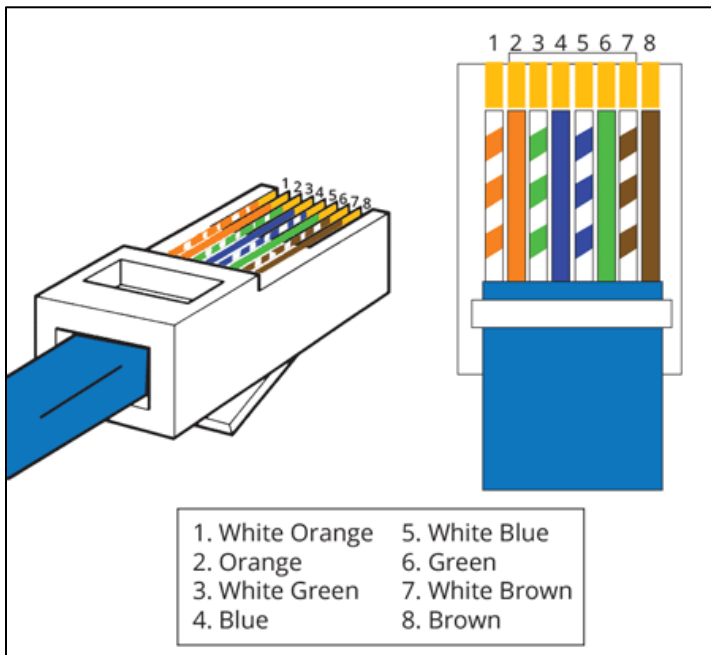
Connect a LAN cable/Patch cord from network switch to LAN port on Spectra controller in order to provide internet or LAN connectivity.

## 8.0 Connecting Speakers:

There are two RJ45 ports provided on Spectra unit marked “AUDIO”, which can be used to drive two 8 ohm speakers.

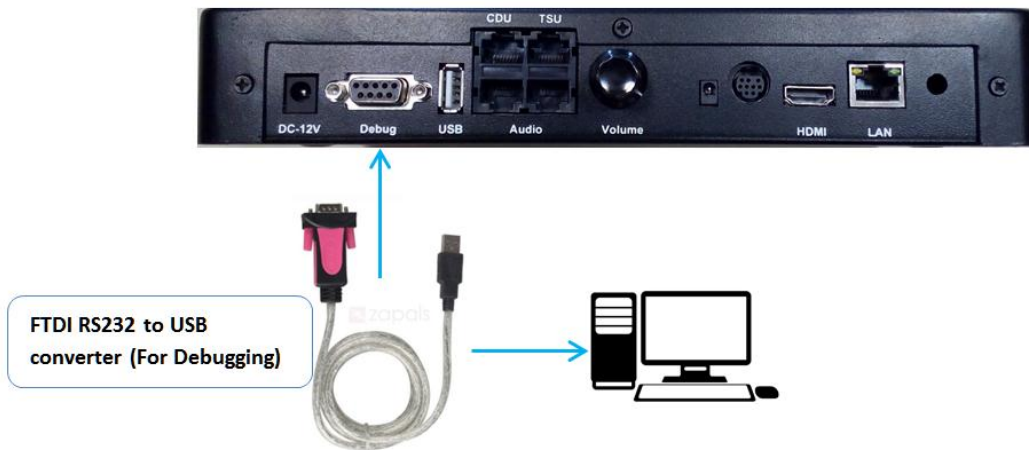
### RJ45 cable connection for speaker (T-568B):

Use White Orange and Orange pair to connect speaker wires.



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

### 9.0 DEBUGGING:



This cable will be used for troubleshooting purposes only.

### 10.0 UPGRADING SPECTRA



A basic version of EMportal (Web based management console) and WebTSU will already be installed in the spectra controller. User may need to upgrade the Spectra engine to the latest version. For upgrading the engine to the latest version, user first must change the IP setting via USB.

- Insert USB in the Spectra engine usb port.
- Take it off and connect it to a PC. A file named 'oldipsetting' would have been created.
- Edit this file and rename it to 'newipsetting' and configure the IP address as per to the branch setting.
  - oldipsetting > rename to newipsetting and edit the IP address.
  - Newipsetting > reboot the engine.
  
- After reboot, the engine will autodetect the IP configuration of the desired network from the 'newipsetting' file

For details on upgrading process refer to “**Spectra Engine Quick Installation Guide**”



## CONTACT US

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In case you may require further assistance regarding the **Spectra Controller**, please contact us at [support.int@wavetec.com](mailto:support.int@wavetec.com)

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**FCC Caution:**

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.

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.

The device has been evaluated to meet general RF exposure requirement. The device can be used in portable exposure condition without restriction.