



Engineered to perform | Toroldal Isolation & protect like no other | Power Transformers

AVR2 ELITE Series Owner's Manual





Torus Power toroidal isolation transformers dramatically improve the performance of all audio and video systems. Connect audio equipment to a Torus Power isolation transformer and it comes alive - with more dynamics, improved imaging, and cleaner, enhanced bass. Video is crisper, with darker blacks, and brighter colours. Torus Power toroidal isolation transformers are the consistent choice of knowledgeable audiophiles, home theatre enthusiasts, custom electronic system integrators and designers, whose discriminating tastes and technical requirements mandate the ultimate performance and protection levels achievable.

Power system design and custom integration using Torus is effortless, due to the wide range of models, power ratings, chassis types, mounting choices, and control options, which include a local web browser interface and remotely via the cloud-based **Torus Power Connect** service.

Virtually all power line noise artifacts are eliminated through the toroidal isolation transformer, using patented Narrow Bandwidth Technology. The toroidal isolation transformer provides high levels of instantaneous current, making sure even dynamic components (such as high power amplifiers) are never starved for power. It's like having a clean power source directly adjacent to the plugged-in components. Torus Power isolation transformers also protect connected equipment from potentially damaging AC power line events, including severe lightning strikes and brownouts, thereby increasing system reliability, and extending product life.

Precision engineered, with more than 30 years of experience, and an unparalleled reputation, Torus Power is manufactured under ISO9001: 2008 quality management system in Canada. Whether you are a music lover with a mid-level system, a dedicated audiophile, a home theatre enthusiast, a custom designer, installer or integrator specifying power systems for home, studio, stadium, or commercial applications, a Torus Power isolation transformer will provide the ultimate clean power source solution.

Cover page photos show the AVR2 ELITE 20 CB model.

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IMPORTANT SAFETY INSTRUCTIONS



CAUTION! To reduce the risk of electric shock and fire, do not remove the cover of this device. There are no user serviceable parts inside. Please refer all servicing to licensed service technicians.

CAUTION! The international symbol of a lightning bolt inside a triangle is intended to alert the user to uninsulated "dangerous voltage" within the device's enclosure. The international symbol of an exclamation point inside a triangle is intended to alert the user to the presence of important operating, maintenance and servicing information in the manual accompanying the device.

CAUTION! To prevent electrical shock, match wide blade of plug to wide slot, fully insert.

CAUTION! To reduce the risk of electrical shock, do not expose this equipment to rain or moisture.

- **1.** Read Instructions—All safety and operating instructions should be read before operating the device.
- **2.** Retain Instructions—The safety and operating instructions should be retained for future reference.
- **3.** Heed Warnings—All warnings on the device and in the operating instructions should be adhered to.
- 4. Follow Instructions—All operating and safety instructions should be followed.

5. Water & Moisture—The device should never be used in, on or near water for risk of fatal shock.

6. Ventilation—The device should always be located in such a way that it maintains proper ventilation. It should never be placed in a built-in installation or anywhere that may impede the flow of air through its ventilation slots.

7. Heat—Never locate the device near heat sources such as radiators, floor registers, stoves or other heat-generating devices.

8. Power Cord Protection—Power cables should be routed so they are not likely to be stepped on or crushed by items placed on them or against them. Special attention should be paid to areas where the plug enters a socket or fused strip and where the cord exits the device.

9. Periods Of Non-Use—The device should be unplugged when not being used for extended periods.

10. Dangerous Entry—Care should be taken that no foreign objects or liquids fall or are spilled inside the device.

11. Service—The device should always be serviced by licensed technicians. Only replacement parts specified by the manufacturer should be used. The use of unauthorized substitutions may result in fire, shock, or other hazards.

12. Damage Requiring Service—The device should be serviced by licensed technicians when:

- The plug or power supply cord has been damaged.
- Objects have fallen or liquid has spilled inside the device.
- The device has been exposed to moisture.
- The device does not appear to be operating properly or exhibits a marked change in performance.
- The device has been dropped or the enclosure becomes damaged.



13. Do not position the equipment so that it is difficult to operate the disconnecting device (power cord).

14. If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

15. The power switch should be in the "off" position when connecting or disconnecting equipment from a Torus Power unit.

16. CAUTION Some units can be very heavy, please use safe practices when lifting.



≥18 kg (39.7 lb)

≥32 kg (70.5 lb)

≥55 kg (121.2 lb)



Shipping Carton & Packing Material

Please keep the original shipping box and all packing material. This will ensure the unit is protected in future transport.

In the unlikely event you have a problem and must return it for service you must use the original packing material.

Ship the unit only in the original packing material, as the unit is not insurable by carriers otherwise.

Placement & Ventilation

Torus Power PIUs (Power Isolation Units) are extremely efficient yet very high power devices, and must be adequately cooled.

PIUs have ventilation slots on the base, side panels and on the cover. Maintain at least 1" distance from each of these surfaces to anything else. Should your installation conditions be confined, additional forced air-cooling may be necessary.

Do not install the unit directly above heat generating equipment. Maintain at least 6" behind the PIU for adequate wiring space.

Warranty

Torus Power Inc. products are warranted to be free from manufacturing defects as follows;

- Five years from the original date of sale for toroidal transformers
- Two years from the original date of sale for all other components

The product warranty includes parts, labour and return shipping to the customer. Shipping to Torus Power Inc. for warranty repair is the responsibility of the customer.

Warranty coverage is not transferrable and original proof of purchase is required for warranty claims. In the event of a warranty claim, Torus Power Inc. will remedy the issue by repair or replacement, as we deem necessary, to restore the product to full performance.

This warranty is considered void if the failure of the product or any component part is caused by damage or misuse. Failure to fully comply with Torus Power Inc. operating instructions voids the warranty.



Torus Power AVR ELITE SERIES Overview

Torus Power AVR ELITE models deliver clean AC power with noise attenuation from 2 KHz to beyond 1 MHz. They provide true isolation (using large toroidal transformers) along with low source impedance and high instantaneous current for today's most sophisticated and powerful audio amplifiers. The performance level is far beyond what any typical power conditioner using discrete filters can provide.

Torus Power AVR ELITE series products are full-feature state-of-the art power transformers and voltage stabilizers, with a built-in web browser interface for Local Area Network and Cloud based connectivity for monitoring and control of audio/video systems. It is not necessary to use either as the AVR ELITE provides all the standard features, performance, and benefits right out of the box.

The AVR ELITE series provides multiple outlet zones that can be separately turned on or off through the web browser or via user defined schedules. A key feature is the voltage stabilization that keeps an optimal output voltage range (North America models +/- 4V, Europe/Asia/Australia +/- 8V of nominal operating voltage) regardless of fluctuations in the line voltage. Voltage sags, brownouts, and surges can stress components and shorten equipment life with worst case catastrophic events destroying valuable equipment. In such real world conditions, the Torus Power AVR ELITE can protect your equipment and improve the quality of your audio and video experience.

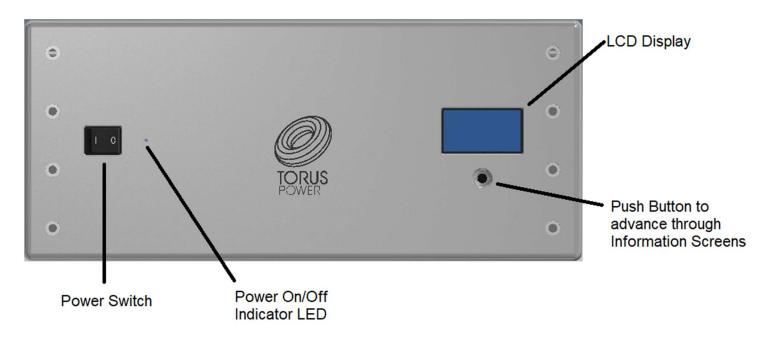
Series mode surge suppression is built into each AVR ELITE to provide protection against lightning strikes and other power disturbances, meeting IEEE endurance standards of 6000 volts, 3000 amps, with 1000 repeats.

Summary of AVR ELITE Series Features

- Toroidal isolation provides ultimate clean power performance
- Remote power management using Torus Power Connect cloud-based service
- Automatic voltage regulation with 4V increments maintains stable voltage output
- Series mode surge suppression protects against lighting, surges, spikes etc.
- Connect to local network using Web page browser
- Addressable outlet zones for control and monitoring
- Scheduling and sequencing of outlet zones
- Password control
- Email notification of fault conditions
- No programming or internet connection needed (required if using Torus Power Connect service)
- Powerful 32-bit processor
- Large graphical display of key power parameters
- Internal Flash Memory for 10,000 events to record data when cloud unavailable
- Internal high reliability power supply module
- Enhanced communication module including WiFi connectivity
- USB 2.0 port for 3rd party connectivity, LED lighting, and charging
- Optical isolation between high voltage and low voltage to increase safety and compliance to new standards



Front Panel Display

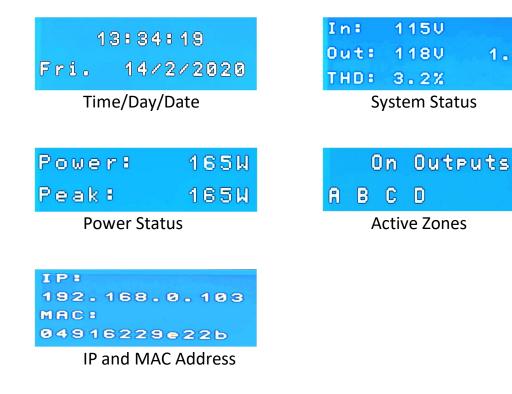


The front panel consists of a 4 line LCD display and a pushbutton switch. Each time you push the button the display will show a different feature of the AVR ELITE.

1.4A

R

When you first turn on the AVR ELITE the System Status will appear. Each time you push the button it will change from one information screen to another.





Voltage Fault Protection

If the AC voltage supplied to the AVR ELITE is too high or too low voltage (see reference chart at the end of this section) for 1 second or more, a voltage fault message is displayed and the back panel fault output is turned on. The unit automatically goes into shut down mode so the voltage to each power outlet on the back panel is automatically turned off even while the front panel power switch remains in the ON position.

The front panel display will alternate to show either of the following message pairs:

System OFF	In: Out:	138V ØV	0.0A			
HIGH AC VOLTAGE		0.0%	alan			
OR						
System OFF	In B	83V				
	Out:	ØV	0.0A			
LOW AC VOLTAGE	THD:	0.0%				

When the AC supply voltage has returned to a normal operating range for 1 minute consecutively the AVR ELITE will resume normal operation and the High or Low AC Voltage advisory message will no longer appear on the LCD display. The rear panel outlet zones will provide power again and be turned on in sequential order with the delay between zones as defined in System Setup.

Nominal Input	Output	Fully Regulated Output Range	Auto Shutdown Low Input Voltage	Auto Shutdown High Input Voltage	Output Range Before Auto Shutdown	Fully Regulated Input Range	Auto Turn On Low Input Value	Auto Turn On High Input Value
North Am	erican							
120	120	116-124	<85	>135	110-130	90-130	90	130
	+/- 4V							
240	120	116-124	<170	>270	110-130	180-260	180	260
	+/- 4V							
Internatio	pnal							
220	220	212-228	<150	>250	200-240	160-240	160	240
	+/- 8V							
230	230	222-238	<160	>260	210-250	170-250	170	250
	+/- 8V							
240	240	232-248	<170	>270	220-260	180-260	180	260
	+/- 8V							



Notes:

- 1. The AVR ELITE unit needs to be switched **ON at all times for series mode surge protection to be active**. If the AVR ELITE and connected components will not be used for an extended period of time, it is recommended to unplug the AVR ELITE unit from main power.
- 2. There is a 20-second delay built into the AVR ELITE system, to prevent nuisance switching. The AVR ELITE will take approximately 20-seconds to change relay taps to switch to the proper output voltage setting.
- 3. North American models (15A, 20A): Torus AVR ELITE will keep the output constant within the range of 120±4V, with an input voltage of 90V to 130V. Between 85V to 90V, and between 130V and 135V, the regulation will be reduced.
- North American BAL models: Torus AVR ELITE will keep the output constant within the range of 120±4V, with an input voltage of 180V to 260V. Between 170V to 180V, and between 260V and 270V, the regulation will be reduced.
- 5. International models: Torus AVR ELITE will keep the output constant within the range of 240±8V, with an input voltage of 180V to 260V. Between 170V to 180V, and between 260V and 270V, the regulation will be reduced.
- 6. The output current (Amps) displayed on the LCD is the RMS reading of the load. It does not indicate the peak current loads.
- 7. A drop in the input voltage is normal when increasing the load on the AVR ELITE. This is a result of the impedance of the power line, a function of the distance from the electrical panel and transformer regulation.



Component Connection Zones

Depending upon the power rating AVR ELITE units come in two configurations in terms of IP Addressable zones.

4 Zones + R: A, B, C, D and R

7 Zones + R: A, B, C, D, E, F, G and R

- Zones A to G can be individually controlled and programmed.
- Each zone can be scheduled to turn ON or OFF at any time or day of the week.
- Each zone can also be individually turned ON or OFF through the local web browser interface or Torus Power Connect account
- Zone R can be programmed as either a controlled outlet or an automatically rebooted Router outlet.



Rear Panel with 4 Zones + R

The Zones on the AVR ELITE switch on in sequence: Zone A first, Zone B second and so on. This will allow you to select the order in which your components are switched on. For example, components that should be switched on first (such as front end components) can be connected to Zone A and Zone B. Components to be switched on last (such as power amplifiers) can be connected to Zones C, D (or Zones E, F,G in higher capacity units). All outlet zones will be turned to the ON state when the AVR ELITE is turned ON. This also applies when outlet zone(s) were OFF prior to cycling its main power by turning it OFF and then ON again.

Routers should be connected to Zone R if the automatic reboot feature is to be utilized; if this feature is NOT to be used, Zone R can be used as an extra controllable outlet zone. Zone R switches on last. Since every outlet on the AVR ELITE is capable of providing full current with no restriction, connecting components for preferred sequencing will NOT compromise performance.



Rear Panel Connections



Ethernet

Allows access to the AVR ELITE and internal software via a local web browser interface (See AVR ELITE software section for more details) or Torus Power Connect service (see Torus Power Connect section).

USB 2.0 Port

For charging and external control (future)

12VDC Trigger On/Off

The AVR ELITE can be turned on and off by a 12 volt trigger input. Applying 12 volts turns ON the AVR ELITE and removing the 12 volts turns it OFF. Requires a 3.5 mm TS type male audio connector with tip wired as positive and sleeve wired as negative from controlling source.

12VDC Fault Output

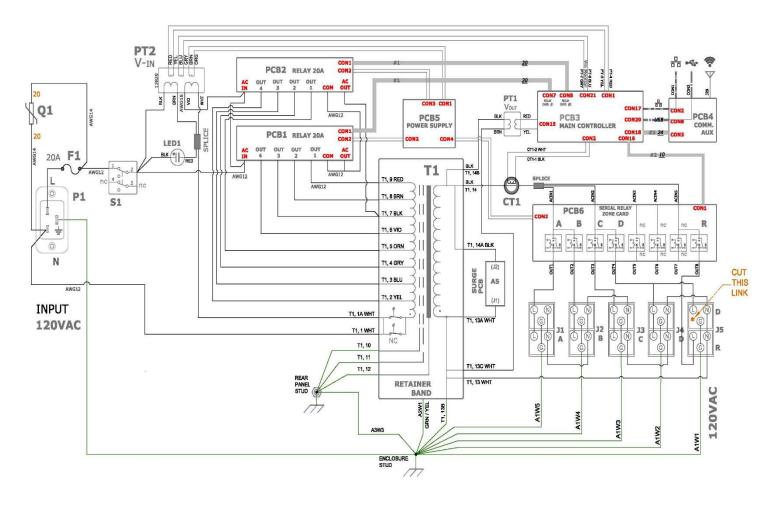
The AVR ELITE provides a 12 volt fault output through a jack on the back panel. The output goes to 12 volts when a relay or voltage fault is detected. The maximum current that can be drawn from this output is 75mA. Requires a 3.5 mm TS type male audio connector with tip wired as +ve and sleeve wired as -ve.

Antenna Ψ

Connect the provided antenna for WiFi functionality if using the Torus Power Connect service.

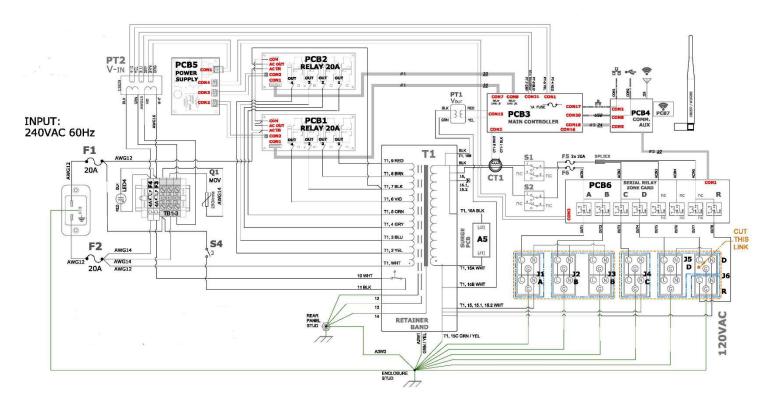


Circuit Schematics

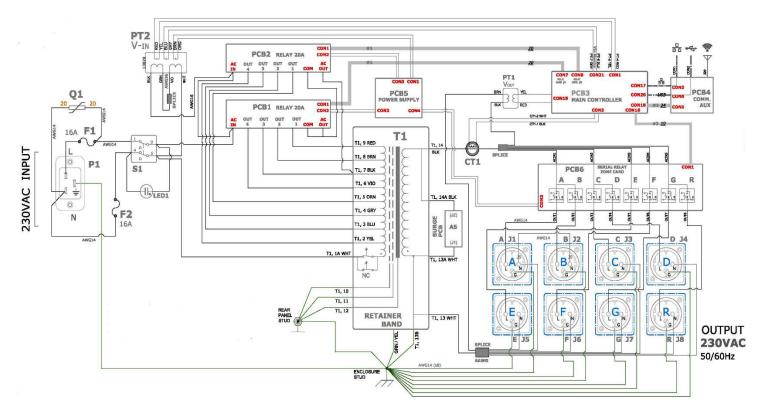


North American Model (AVR-2 ELITE 20)

North American Model (AVR-2 ELITE 40 BAL)



International Model (AVR-2 ELITE 16 CE)





AVR ELITE Embedded Software

The AVR ELITE local area network web browser interface is resident in the microprocessor on the internal control board. There are two methods to access the software.

1) Connect the AVR ELITE Ethernet port to a local network port and open a web browser on a PC that is connected to the same local network. Enter AVR (or the IP address displayed on the AVR ELITE's LCD display) into the browser window. Press ENTER and the software will open.

2) Use a three way DHCP Router. You then connect both PC and AVR ELITE to the same DHCP Router. Open a browser window from the PC. Type AVR, (or the IP address displayed on the LCD) into the browser window. Press ENTER and the software will open.

Connection	2 ×	
Connect to avr	R.C.	<u>Username and Password</u> The password is required to change the setup of the Torus unit.
10		Username: admin
The server avr a password.	Protected requires a username and	The username is factory set and cannot be changed.
	ver is requesting that your username and t in an insecure manner (basic authentication connection).	Password: avr
<u>U</u> ser name:	🖸 admin 🔹	This is the default password, and can be changed. You can change your password by selecting: Set Password
Password:	•••	
	Remember my password	Forget your password
	OK Cancel	The AVR ELITE can be restored to the factory default password avr by pressing and holding the button on the front panel for at least 10 seconds.



AVR ELITE Menu Selections

System Status Switch Main Switch Power Switch Power Switch Power System Setup Email Configuration Date and Time Schedule Management Change Password Torus Power Network Configuration Schedule Management Change Password More Network Configuration Software Version: 2.3 Feb 6 2015	System Status This screen indicates the overall status of the system, showing Voltage In, Voltage Out, Current Out, Power Consumption and Active Zones. It also reports if the system is functioning normally or whether there is a fault condition. (No password required to monitor status)
System Status Switch Main Switch Power Switch Power Switch Power System Setup Email Configuration Date and Time Schedule Management Change Password Torus Power Month Rome Network Configuration Schedule Management Change Password Month Month	Switch Main Power This screen allows ON/OFF control of the AVR ELITE unit. Press the SET button to implement your selection. As the output power from the Torus AVR ELITE unit is shut down, all the connected equipment is turned off. The AVR ELITE main power switch remains in the ON position, although there is no power to the load.

System Status Switch Main Switch Main Switch Main Switch Nower System Setup Enail Braing Change Password Torise Power Network Torise Power Network Torise Power Network Network <td< th=""><th>Zone Power Control The current ON/OFF state of each zone is indicated here. Each zone can be individually turned on or off. Use the 'ON' and 'OFF' buttons to change the zone state. Press 'SET' to save the new settings. Active zones are also shown in the front panel display.</th></td<>	Zone Power Control The current ON/OFF state of each zone is indicated here. Each zone can be individually turned on or off. Use the 'ON' and 'OFF' buttons to change the zone state. Press 'SET' to save the new settings. Active zones are also shown in the front panel display.
<image/> <image/>	Email Fault Alert Notification In the unlikely event your AVR ELITE experiences an issue the AVR ELITE will shut down and send an email notification, if this section is configured. After entering the configuration parameters use the 'Send Test Email' button to confirm your settings are correct.
System Status System Status Switch Main Switch Power System Status System Status Switch Power System Status System Status Date: 1/2//2020 mm/dd/yyyy Time: 1/2//2020 mm/dd/yyyy Time: 1/2//2020 mm/dd/yyyy Time: 1/2//2020 System Status Date: 1/2//2020 Date: 1/2//2020 Date: 1/2//2020 Date: 1/2//2020 System Status Date: 1/2//2020 System Status Date: 1/2//2020 System Status Date: System Status	Date and Time Setup When the AVR ELITE is connected to the Internet, the date, time and day will automatically be set. However, when the AVR ELITE has no access to the Internet the Date, Time and Day can be set manually which will allow the AVR ELITE to follow scheduled programming even if the Internet is later unavailable. If the Internet connection is restored the date, time and day will be automatically set. WARNING: If the unit is powered off/on when the Internet connection is lost the date, time and day is nulled. It can be manually re- entered here.



OPUS		Torus Power Web / C	System Setup
System Status Switch Main Power	System Setu This page allows the configu	p ration of the AVR's programmable paramete	 Delay Time Between Zones (Scheduler and Start UP): Select a delay interval time (1 to 999 seconds)
Switch Power Zones System Setup	th Power S Zone R/Router Check to Activate Auto Reboot and disable Zone R Scheduling.		for sequential Power ON and OFF between zones.
Email Configuration	Router Reset Delay Time:	15 (1 to 255 minutes) Select time interval between router resets. System will attempt 3 resets. 15 (1 to 999 seconds)	Schedule:
Date and Time Setup Schedule Management	Delay Time between zones (Scheduler and Start-Up): Schedule:	Select interval for sequencing and power up between zones.	By checking this button the output zones will follow the defined schedules for turning power on or off. (see Schedule Management)
Change Password Torus Power Home		Front Panel Display	
Network Configuration	Always ON: DIMMING Delay:	 Display is always On Display is dimmed after delay 	 Front Panel Display: There are 3 modes for the front panel display; Always ON (default setting)
	OFF Delay: Delay:	 Display is turned off after delay 120 (10 to 255 seconds) 	 Dim after delay time (10-255 seconds) expires
		Save Setup	Turn off after delay time (10-255 seconds) expires

Zone R/Router Reset:

User has the option to assign Zone R (individual zone located at rear panel) to act as an additional output zone or to be used for automatic router reboot.

Unchecked Zone R/Router Reset:

- Zone R will act like a regular zone, and can be programmed to switch ON/OFF individually like other zones. (see page 8, Zone Power Control)
- Zone R works with the Schedule Manager and can be programmed to turn ON/OFF at any time on any day of the week like other zones. (see page 10, Scheduling Management)
- Zone R operates with other zones during sequential start-up.

Checked Zone R/Router Reset:

- Zone R can only be used for router and/or modems.
- The Auto reboot feature initiates power cycling of the router or modem when internet connection is down. The system will reset Zone R up to three times with adjustable time intervals between each attempt.
- Zone R can no longer be individually turned OFF/ON through Zone Power Control.
- Zone R will disappear in the Zone Power Control section.
- Zone R can no longer be scheduled or sequenced to turn ON/OFF.

When you have made your selection, press **SAVE SETUP**.



O	Torus Power Web / Control	Schedule Management
TORUS	Totus Power web / Control	Scheduling features allow automatic control
System Status		(ON/OFF) of any outlet zone according to user-
Switch Main	Schedule Management Enter "Time" in 24 hour format. (e.g. 21:35 instead of 9:35PM.)	defined schedule.
Power	Schedule	
Switch Power Zones	Power Zones	Schedule parameters allow one week repeating
System Setup	Day Hour Min. A B C D R Monday: 0 0	schedule, with up to 6 events per day for each
Email Configuration	Monday: 0 0	controlled zone.
Date and Time	Monday: 0 0	Outlets can be sequenced during start up. Each
Setup	Monday: 0 0	zone can be operated by the schedule, or in
Schedule Management	Monday: 0 0	real-time via the web browser.
Change Password	Tuesday: 0 0 0 0 0	Schedule is followed even when Internet
Torus Power Home	Tuesday: 0 0	connection is lost, as long as system power is
Network	Tuesday: 0 0 0 0 0	maintained.
Configuration	Tuesday: 0 0	Check the box associated with each zone to
		have power enabled at its outlets at the
	Wednesday: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	specified time.
	Wednesday: 0 0	WARNING: Leaving a zone's box unchecked
	Wadaaadamoo	for a specific time will turn power off.
System Status Switch Main Ower Switch Power System Setup Email Configuration Date and Time Setup Schedule Management Change Password Torus Power Network Configuration	Action of the configuration of the board's network settings. Intervention of the cond's network settings. Intervention of the cond's network settings. Intervention of the cond below: Intervention of the board below: Intervention of thel	Network Configuration Each AVR ELITE unit has a unique MAC Address which is factory assigned. The IP address assigned to the AVR ELITE is dynamically assigned and is displayed on this screen as well as on the front panel LCD of the AVR ELITE. The AVR ELITE can be programmed through the web browser to automatically get an IP address from the network switch or router and this is the default setting and should work on most networks. Some networks require each PC or device to use a fixed IP address and the AVR ELITE also supports this option. The WiFi section is required when using the Torus Power Connect service. The WiFi password must be alphanumeric characters only.
System Status Switch Main Power Switch Power Cones System Setup Email Configuration Date and Time Sethefule Management Change Password Torus Power Torus Power Network Configuration	Change Password The refer Password: Save Password Save Password	Change Password If you wish to change the password, use this screen. In case you forget your password, the AVR ELITE can be restored to the factory default password by pressing and holding the button on the front panel for at least 10 seconds. The default password is avr .
1	Copyright © 2009 Plitron Inc.	



Electrical Specifications

Model Number	Input Voltage Nominal	Output Voltage Nominal	Input Fuses	Maximum Available Output Current	Number of IP Addressable Zones
AVR2 ELITE 20	120VAC, 60Hz (Operating Range 85V to 135V)	120VAC ± 4V	1 x 20A	20A	4 + R
AVR2 ELITE 40 BAL			2 x 20A	40A	4 + R
AVR2 ELITE 60 BAL	240VAC, 60Hz (Operating Range	120VAC ± 4V	2 x 30A	60A	7 + R
AVR2 ELITE 90 BAL	170V to 270V)		2 x 45A	90A	7 + R

Mechanical Specifications

Model Number	Input Connector (Rear Panel)	Output Connector (Rear Panel)	Line Cord	Size, mm (WxDxH) Size, inch (WxDxH)	Weight KG(lb)	Chassis Height
AVR2 ELITE 20	IEC 20A Inlet, NEMA C20	10 Medical Grade Outlets, 20A	N5/20, 12AWG- C19, 20A/125V	483x483x203 17x19x8	40.5(89)	4U (7.00")
AVR2 ELITE 40 BAL	IEC 20A Inlet, NEMA C20	12 Medical Grade Outlets, 20A	N5/20, 12AWG- C19, 20A/125V		63(139)	5U (8.75")
AVR2 ELITE 60 BAL	Hubbell Twist-lock 30A/250V NEMA L6-30P	18 Medical Grade Outlets, 20A	Twist-lock, 2.5M 10AWG, 30A	- 483x559x249 17x22x9.8	75(165)	
AVR2 ELITE 90 BAL	Hubbell Twist-lock 50A/250V 2P3W	24 Medical Grade Outlets, 20A	Twist-lock, 2.5M 6AWG, 50A	483x660x249 17x26x9.8	91(201)	



International Models

Electrical Specifications

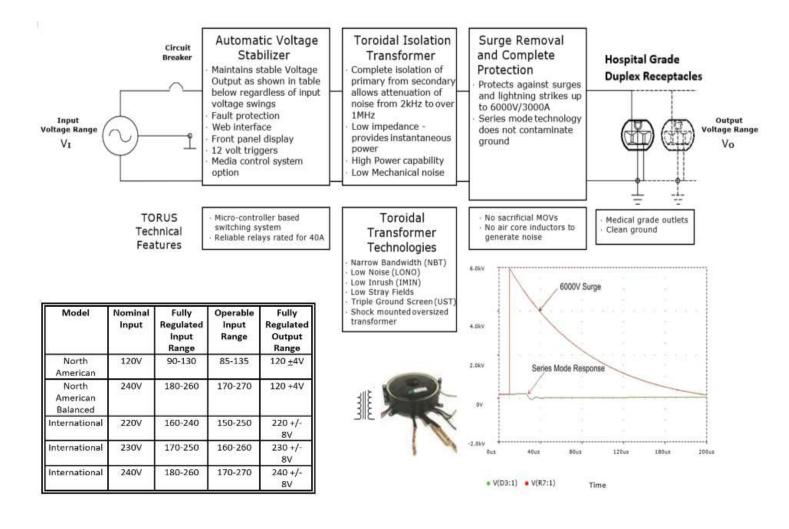
Model Number	Input Voltage Nominal	Output Voltage Nominal	Input Circuit Breaker (Fuses)	Maximum Available Output Current	Number of IP Addressable Zones
AVR2 ELITE 8 CE	240VAC, 50/60Hz		1 x 8A	8A	4 + R
AVR2 ELITE 16 CE	(Operating Range	220-240VAC ± 8V	1 x 16A	16A	7 + R
AVR2 ELITE 30 CE	170V to 270V)		2 x 30A (Fuses)	30A	7 + R
AVR2 ELITE 8 UK	240VAC, 50/60Hz (Operating Range 170V to 270V)		1 x 8A	8A	4 + R
AVR2 ELITE 16 UK		220-240VAC ± 8V	1 x 16A	16A	7 + R
AVR2 ELITE 30 UK			2 x 30A (Fuses)	30A	7 + R
AVR2 ELITE 8 AUS	240VAC, 50/60Hz	60Hz	1 x 8A	8A	4 + R
AVR2 ELITE 16 AUS	(Operating Range	220-240VAC ± 8V	1 x 16A	16A	7 + R
AVR2 ELITE 30 AUS	170V to 270V)		2 x 30A (Fuses)	30A	7 + R
AVR2 ELITE 8 515R	240VAC, 50/60Hz		1 x 8A (Fuse)	8A	4 + R
AVR2 ELITE 16 520R	(Operating Range	220-240VAC ± 8V	1 x 16A	16A	7 + R
AVR2 ELITE 30 520R	170V to 270V)		2 x 30A (Fuses)	30A	7 + R

Mechanical Specifications

Model Number	Input Connector (Rear Panel)	Output Connector (Rear Panel)	Line Cord	Size, mm (WxDxH) Size, inch (WxDxH)	Weight KG(lb)	Chassis Height
AVR2 ELITE 8 CE	IEC 15A Inlet, NEMA C14	16A/250V CE Socket (x6)	10A/250VAC, 2.5M Plug: CEE 7/7 Connector: IEC - C13	483x483x203 17x19x8	38.5(85)	4U (7.00")
AVR2 ELITE 16 CE	IEC 20A Inlet, NEMA C20	16A/250V CE Socket (x9)	16A/250VAC, 2.5M Plug: CEE 7/7 Connector: IEC - C19	483x559x249	56.5(125)	
AVR2 ELITE 30 CE	Hubbell Twist-lock 30A/250V NEMA L6-30P	16A/250V CE Socket (x9)	Twist-lock, 2.5M 10AWG, 30A	17x22x9.8	86(190)	5U (8.75")
AVR2 ELITE 8 UK	IEC 15A Inlet, NEMA C14	13A/250V UK Socket (x6)	10A/250VAC, 2.5M Plug: BS 1363 Connector: IEC - C13	483x483x203 17x19x8	38.5(85)	4U (7.00")
AVR2 ELITE 16 UK	IEC 20A Inlet, NEMA C20	13A/250V UK Socket (x8)	13A/250VAC, 2.5M Plug: BS 1363 Connector: IEC - C19	483x559x249	56.5(125)	
AVR2 ELITE 30 UK	Hubbell Twist-lock 30A/250V NEMA L6-30P	13A/250V UK Socket (x8)	Twist-lock, 2.5M 10AWG, 30A	17x22x9.8	86(190)	5U (8.75")



Model Number	Input Connector (Rear Panel)	Output Connector (Rear Panel)	Line Cord	Size, mm (WxDxH) Size, inch (WxDxH)	Weight KG(lb)	Chassis Height
AVR2 ELITE 8 AUS	IEC 15A Inlet, NEMA C14	10A/250V AUS Socket (x6)	10A/250VAC, 2.5M Plug: AS/NZS 3112:2000 Connector - IEC C13	483x483x203 17x19x8	38.5(85)	4U (7.00")
AVR2 ELITE 16 AUS	IEC 20A Inlet, NEMA C20	20A/250V AUS Socket (x8)	13A/250VAC, 2.5M Plug: BS 1363 Connector: IEC - C19	483x559x249	56.5(125)	
AVR2 ELITE 30 AUS	Hubbell Twist-lock 30A/250V NEMA L6-30P	20A/250V AUS Socket (x8)	Twist-lock, 2.5M 10AWG, 30A	17x22x9.8	86(190)	5U (8.75")
AVR2 ELITE 8 515R	IEC 20A Inlet, NEMA C20	10 Medical Grade Outlets, 15A	N5/20, 12AWG-C19, 2.5M	483x483x203 17x19x8	38.5(85)	4U (7.00")
AVR2 ELITE 16 520R	IEC 20A Inlet, NEMA C20	12 Medical Grade Outlets, 20A	N5/20, 12AWG-C19, 2.5M	49205500240	56.5(125)	
AVR2 ELITE 30 520R	Hubbell Twist-lock 30A/250V NEMA L6-30P	18 Medical Grade Outlets, 20A	Twist-lock, 2.5M 10AWG, 30A	483x559x249 17x22x9.8	86(190)	5U (8.75")



Factory Reset Procedure

- 1. Disconnect the Ethernet cable from the AVR.
- 2. Turn the power switch to the OFF position. The power light will go out.
- 3. Press and hold the little pushbutton switch below the front panel display on the AVR.
- 4. Continue to hold the pushbutton switch and turn the power switch to the ON position. Hold the pushbutton switch for approximately 30 seconds and then release the pushbutton switch.
- 5. Use the pushbutton as you would normally to scroll through the various screens until you get to the IP address screen and it should now show as 0.0.0.0.
- 6. Plug in the Ethernet cable. The IP address should change to a value appropriate for your new network setup as the unit's network configuration is now set to factory default as DHCP.
- 7. You can then use this new IP address to access the unit as you did previously if you wish to assign it a new static IP address.



Torus Power Connect



Torus Power Connect is a powerful cloud-based website developed by Torus Power for control, data logging and reporting. Torus Power Connect provides Users with a custom dashboard for control, status, setup, and configuration purposes.

A five-year subscription to the Torus Power Connect service is included with each new AVR Elite purchase.



User Registration

A User can register for the Torus Power Connect service directly or via their dealer/installer.

Direct Registration

This is done on the Torus Power Connect web site (<u>https://toruspowerconnect.com</u>). Click on *Register* and complete all fields on the Self Registration screen, perform the Anti-Spam Verification, and then click on *Register Account*.

A temporary password will be sent to the email address provided. The User must login to the Torus Power Connect web site (<u>https://toruspowerconnect.com</u>) within 30 days to set a new secure password and activate their Torus Power Connect account.

For any problems with this self registration please email (<u>tpc@toruspowerconnect.com</u>).

Dealer/Installer Registration

Your Torus Power dealer/installer will get the required details to proceed with the registration and activation of this service for your AVR Elite and provide your account login details.

Device Registration (applies to Self Registered Users only)

Each AVR-2 Elite to utilize the Torus Power Connect service by the dealer and/or user must be registered. There is a unique identifier called a MAC1 address for each AVR-2 Elite. The MAC1 address can be found on the model/serial number label of the unit. It can also be found by scrolling through the information shown on the front panel's LCD display by pressing the small button below the display when the unit is powered on. The MAC address consists of numbers (0 to 9) and letters (a to f) separated by colons (for example,

01:ab:23:cd:45:ef).

Login to Torus Power Connect and choose the *Device Info* option from the *User Menu* dropdown. Enter and confirm the MAC1 Address as well as a Location Description (up to 40 characters) for your unit and then click *Register Device*.

The AVR-2 ELITE connects to Torus Power Connect service via a WiFi network connection (2.4 GHz frequency band). This setup can be found on page 16 of this manual.

If you encounter any problems accessing your Torus Power Connect account or registering your AVR-2 ELITE, please email (<u>tpc@toruspowerconnect.com</u>).



User Menu

The Torus Power Connect User login defaults to the Live Data screen (see Present Live Data for details).

Click on *User Menu* to see a dropdown list of available options. Highlight and click to select the desired option (see below for details of each option)



Get information by hovering the mouse cursor over (computer or tablet) or clicking on (smart phone) this icon to open a popup window with information about the fields on that specific screen.

System Status

Click the *Show* text for a specific AVR Elite device to view its system status details. This will provide a snapshot of the values at the time of the request. Clicking the *Refresh* text bar will update the System Status details every 3 seconds for 1 minute.

)evice Statu	s
Location Description	n Torus Power Offices
Device ID	04916229e22b 🔻
MAC Address	04:91:62:29:e2:2b
System Power	ON
Model Type	North American 120
Status Syst	em is functioning normally
Device Last Time	1/28/2020 11:36:38 AM
Time Zone	-5 Hours, GMT
Refresh Mode	No updates
Re	fresh
Subscription End	8/7/2020

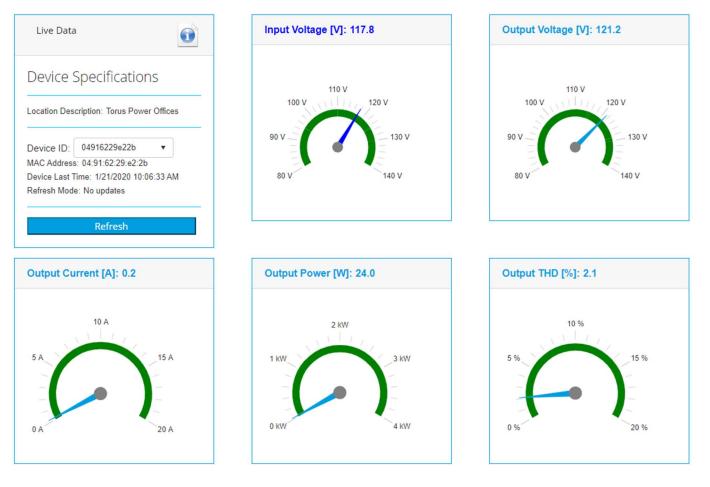
System Status	
Electrical Values	
Voltage In [V]	118.0
Voltage Out [V]	121.4
Current Out [A]	0.2
Power Out [W]	24.0
Output THD [%]	4.2
Tap Number	3

System Status	
Zone Values	
Zone A Subs	OFF
Zone B	OFF
Amps	
Zone C	OFF
Video hardware	
Zone D	OFF
Components	
Zone R	ON
Network Equipment	



Live Data

Click the *Present* text for a specific AVR Elite device to easily view its input voltage, output voltage, input current, output current, and output Total Harmonic Distortion values. Clicking the *Refresh* text bar will update the Live Data details every 3 seconds for 1 minute.





Power Control

Click the *Control* text for a specific AVR Elite device to manually control (ON/OFF) the unit's power state or the power state of each individual outlet zone. Click the *Refresh Reported Values* text to confirm the specific action was successful.

witch Ma		
ocation Description	Torus Po	wer Offices
Device ID	049162	29e22b •
MAC Address	04:91:62	:29:e2:2b
System	Reported	Desired
ower	ON	ON
Enable	Desired Se	ttings

Power Control				
ione Po	ower Contr	ol		
Zone	Reported	Desired		
A	OFF	OFF		
В	OFF	OFF		
C	OFF	OFF		
D	OFF	OFF		
R	ON ON			
Enable Desired Settings				
Ret	fresh Reported \	Values		

owei	Zone Description
Zone	Description
A	Subs
В	Amps
С	Video hardware
D	Components
R	Network Equipment



Historical Data

Click the *Retrieve* text for a specific AVR Elite device to get a listing of voltage, current, total harmonic distortion, and voltage regulation values based on the date and time period entered. The Requested Time entered is the time for the first data values and the Requested Interval is the time period duration to be provided. The data is listed chronologically in one minute intervals as the default sort order. The data can be sorted by the values in any of the columns by clicking on the specific column header (e.g. Output Voltage [V]). The first click on the specific column header will sort the values from highest to lowest. Clicking the same column header a second time will sort its data from lowest to highest.

Historical Data	
Device Infor	mation
Location Descripti	ion Torus Power Offices
Device ID	04916229e22b
MAC Address	04:91:62:29:e2:2b
Requested Date	28/01/2020
Requested Time	10:56 AM
Requested Interval	1 hour 🔻
Device Last Time Time Zone	1/28/2020 11:55:37 AM -5 Hours, GMT
G	et Data



1 2 3 4 5 6 7 8 9 10

Date/Time	Input Voltage [V]	Output Voltage [V]	Output Current [A]	Output Power [W]	Output THD [%]	Tap Number	Fault
12/27/2019 12:49:24 PM	121.2	119	0	0	3.3	2	0
12/27/2019 12:50:24 PM	121.3	119.1	0	0	3.4	2	0
12/27/2019 12:51:23 PM	121.3	119.1	0	0	2.7	2	0
12/27/2019 12:52:24 PM	119.5	117.4	0	0	2.8	2	0
12/27/2019 12:53:23 PM	120.8	118.7	0	0	3.2	2	0
12/27/2019 12:54:24 PM	120.8	118.6	0	0	2.9	2	0
12/27/2019 12:55:24 PM	120.8	118.7	0	0	4.1	2	0
12/27/2019 12:56:24 PM	119.1	116.9	0	0	4.2	2	0
12/27/2019 12:57:24 PM	120.8	118.7	0	0	3.4	2	0
12/27/2019 12:57:27 PM	120.8	118.6	0	0	4.6	2	0
12/27/2019 12:57:30 PM	120.8	118.6	0	0	4.6	2	0
12/27/2019 12:57:33 PM	120.7	118.5	0	0	4.6	2	0



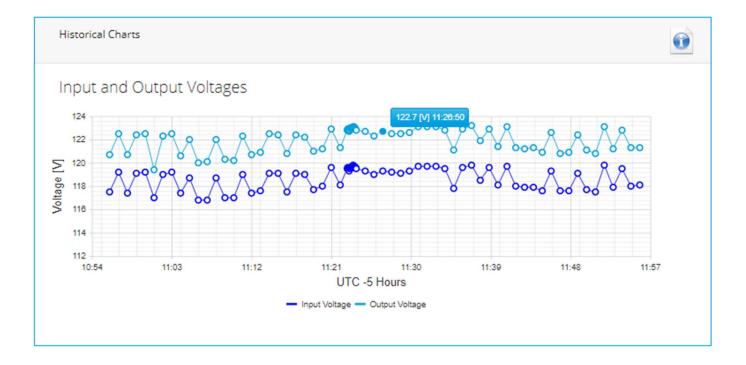
Historical Charts

Click the *Plot* text for a specific AVR Elite device to

Move the mouse cursor to one of the plot points to get the value and time for that data point.

Historical Charts				
Device Information				
Location Descript	ion Torus Power Offices			
Device ID	04916229e22b			
MAC Address	04:91:62:29:e2:2b			
Requested Date	21/01/2020			
Requested Time	10:56 AM			
Chart Interval	1 hour 🔻			
Chart Type	Voltages 🔻			
Device Last Time Time Zone	1/28/2020 12:03:38 PM -5 Hours, GMT			
G	et Chart			
Save	PDF chart			







System Setup

Click the *Setup* text for a specific AVR Elite device to view and edit operational setting of the device. Click the *Save Setup* text bar for changes to be saved on the AVR Elite.

- Zone R/Router Reset there is a single outlet on the back of the AVR Elite labelled as zone 'R'. When this box is checked the outlet should only be used to power a network router or switch. Power to this outlet will automatically cycle when the AVR Elite detects a loss of internet connectivity. When this box is checked Zone R state can no longer be controlled through Zone Control (it will not be shown as one of the zones) and it can not have a schedule assigned for automatic on/off control.
- Router Reset Delay Time enter the time (in minutes from 1 to 255) that Zone R outlet power should be cycled if the initial power cycle failed to restore internet connectivity. This power cycle will be attempted a maximum of three time. This setting requires the Zone R/Router Reset box to be checked.
- Delay Time between Zones enter the time (in seconds from 1 to 999) for delay between the sequential power up of zones when the AVR Elite unit is turned on or multiple zones are turned on at the same by a schedule.
- Front Panel Display choose between 3 modes;
 - \circ $\;$ Always ON when the AVR ELITE is powered on
 - Automatically DIM when the delay time expires (10-255 seconds)
 - Automatically turn OFF when the delay time expires (10-255 seconds)

For the automatic dim and off options the display will turn ON when the AVR ELITE is powered ON or the small pushbutton below the LCD display is pushed.

- Schedule when this box is checked the outlets for each zone can be controlled automatically by a schedule (see Manage Schedule).
- Device Time Zone enter the value relative to GMT for the location of the AVR Elite (e.g. enter -5 for Eastern Standard Time, -8 for Pacific Standard Time,)
- Device Time this displays the current local date and time at the AVR Elite.



System Setup
Device Settings
Location Description Torus Power Offices
Device ID 04916229e22b V MAC Address 04:91:62:29:e2:2b Zone R/Router Reset
Router Reset Delay Time 15
Delay Time between zones 15
Schedule 🔽
Device Time Zone -5
Device Time 3/24/2020 1:13:49 PM
Front Panel Display
Always ON O
DIMMING Delay
OFF Delay OFF Delay
Delay Time 120
Save Setup
Refresh Setup



Schedule

Click the *Manage* text for a specific AVR Elite device to define specific times of each day to automatically turn on and off power for each output zone individually. The Schedule box under Setup System must be checked for any defined schedule to apply.

To create a scheduled power on or off click the desired day, then type in the hour and minutes (24 hour format) or use the up/down arrows to scroll to the desired value. Check the box associated with each zone you wish to have power enabled at its outlets at that time.

WARNING: Leaving a zone's box unchecked for a specific time will turn power off for all the zone's outlets at that time.

Click the *Save Schedule on the Device* text bar when the required schedules have been entered.

Schedule M	anagement 👔
Device Sc	hedule
Location Description	Torus Power Offices
Device ID MAC Address	04916229e22b 04:91:62:29:e2:2b
System Power	ON
Device Time	1/28/2020 11:18:36 AM
Save Sch	edule on the Device
Read Sche	edule from the Device



lule Manag	gement						Û
ay Mo	nday	Tuesday	Wedne	esday	Thursday	Friday	Saturday
Minutes	Α	В	с	D	R		
00							
	ay Mo Minutes	ay Monday Minutes A 00 2	Minutes A B 00 ♥ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □	ay Monday Tuesday Wedne Minutes A B C 00	ay Monday Tuesday Wednesday Minutes A B C D 00 ✓ 00 ✓ 00 ✓ 00 00 00 00 00	ay Monday Tuesday Wednesday Thursday Minutes A B C D R 00 Image: Constraint of the state of the stat	ay Monday Tuesday Wednesday Thursday Friday Minutes A B C D R 00 Image: Contract of the state of the sta



Report

Click the *Send* text for a specific AVR Elite device to email system event details for the specified time period. It can be sent as a CSV format file or a fixed format pdf file. The CSV format file can be imported into a spreadsheet software program such as Microsoft Excel so it can be manipulated to filter/present the information in the desired format. The pdf format file has information presented in a fixed report format. The file is sent to the email address entered in the Dealer Information section.

Reports	O
Report Reco	orded Data
Location Description	Torus Power Offices
Device ID	04916229e22b 🔻
MAC Address Model Name	04:91:62:29:e2:2b North American 120
Start Date	29/12/2019
Finish Date	21/01/2020
Send Raw I	Data CSV Format
Send Power	Quality PDF Report



Device Info

Check an AVR Elite's Torus Power Connect subscription status by selecting its Device ID from the dropdown to view the subscription expiration date.

Register a new AVR ELITE to use the Torus Power Connect service. Enter and confirm its MAC address as well as a Location Description (up to 40 characters) for the unit and then click *Register Device*. The MAC address can be found on the unit's Model/Serial number label. It can also be found by scrolling through the information shown on the front panel's LCD display by pressing the small button below the display when the unit is powered on. The MAC address consists of numbers (0 to 9) and characters (a to f) separated by a colon (e.g. 01:ab:23:cd:45:ef).

Device Information	•	Devi	ice Information	
Device Status Location Description N/A Device ID MAC Address N/A	~	MAC MAC Conf Loca Desc	ription	
Subscription N/A End		Devie	ce ID N/A Register Device	



Personal Information

The Personal Information home screen shows the User's contact information submitted during the Torus Power Connect registration.

The User can use the *Change Password* text bar at any time to submit a new Torus Power Connect login password.

Unit 26	Personal Information View and edit your personal contact information for your registered Toru Power Connect account. Use the Change Password text bar at any time to submit a new login password. A User can only access their information and get control and status for the AV ELITE unit(s) assigned to them.
Unit 26	information for your registered Toru Power Connect account. Use the Change Password text bar a any time to submit a new login password. A User can only access their informa and get control and status for the AV
Unit 26	any time to submit a new login password. A User can only access their informa and get control and status for the AV
Unit 26	and get control and status for the AV
Unit 26	
Unit 26	

