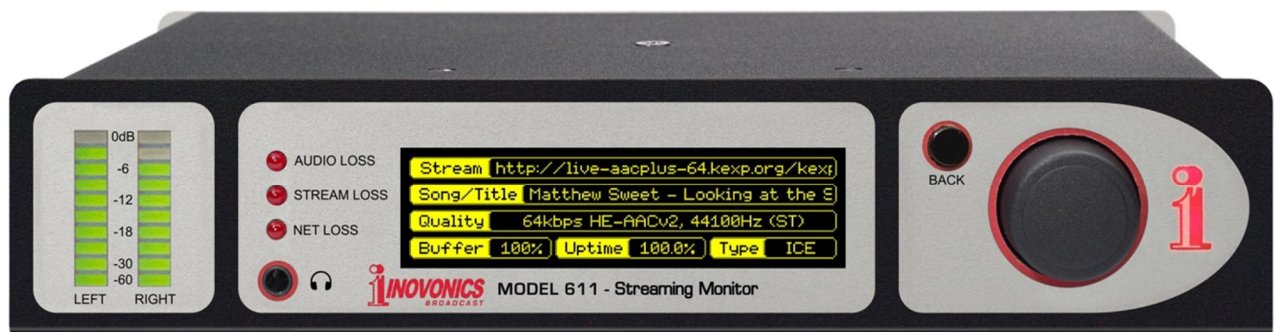


611

Streaming Monitor

Installation & User Guide



PRODUCT REGISTRATION RECORD

611 – Serial No. _____

Purchase Date _____

Warranty Registered via Web?

Reg. Date _____ By: _____

Installation & Operation User Guide

611

Streaming Monitor

May, 2023

Firmware Rev. 1.0.0.0 (Release)

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Section I

INTRODUCTION

611 PRODUCT DESCRIPTION

Introduction The 611 is Inovonics' second-generation Internet Streaming monitor, providing uninterrupted quality and performance monitoring of Internet audio streams. The 611 may be set up and operated with the front-panel jog wheel and OLED display, and a built-in, full-featured Webpage interface is accessible using any PC, tablet or smart phone with a browser.

Product Features

Leading features of the Inovonics 611 include:

- Supports HLS protocols (HTTP and HTTPS) to decode MP3, Ogg Vorbis, AAC and HE-AAC audio formats. Also features stream pinging and scalable multimode underrun protection.
- Displays all program info and stream metadata. 'Connection Tracker' shows IP addresses, response headers and playlist contents.
- On-site setup using the front-panel OLED screen and jog-wheel navigation, plus full Web browser access for remote setup, operation and audio monitoring. Complete read/write SNMP support.
- Self-logging alarms with tallies for Audio Loss, Stream Loss, Metadata Not Updated, Underrun, High Ping and Internet loss. Selective dispatch of email and SMS text-message alerts to station personnel.
- Adjustable analog L/R and AES3-digital program line outputs, plus a Web-streaming output for remote audio monitoring by any computer or mobile device with a Web browser.
- Accurate front-panel LED and Webpage interface audio level metering, plus a 24-hour graphic history of audio levels, buffer utilization and ping statistics.
- StreamRotation Mode allows automatic sequential monitoring of multiple preselected streams.
- Retains setup and quickly reconnects following network and power losses; failover mode can access secondary streams on loss of the primary.

611 TECHNICAL SPECIFICATIONS

Network Connection:

LAN (RJ-45) jack accepts universal TCP/IP connection to Local Area Network, and via router to the Internet. Supports HTTP and HTTPS connections.

Audio Formats Supported:

MP3 to 320kbps; Ogg Vorbis to 320kbps; AAC-LC to 320kbps; HE-AAC-v1 to 128 kbps; HE-AACv2 to 64kbps.

Stream Formats Supported:

Icecast/Shoutcast; HLS; Raw (MPEG-TS and fMP4).

Metadata Decoded and Displayed:

Stream Type; Stream Name; Stream Owner; Song/Title; Format; Container; URL; Connected URL; Buffer; Uptime; Codec; Bitrate; Sample Rate; Status.

Metering and History:

Webpage interface bargraph readout of Left, Right, L+R and L-R levels; up to 24-hour graphic rolling history of L/R audio levels, buffer utilization and pinging exceptions.

Program Audio Output(s):

Adjustable balanced analog Left/Right (XLR), 200-ohm source impedance; adjustable AES3 digital (XLR), 48kHz sampling rate.

HTTP/Icecast Listening Stream Output:

Web browser remote-listening stream employs HE-AACv2 encoding and accommodates up to 10 simultaneous listeners.

Headphone Jack:

Front-panel headphone jack (3.5mm TRS) with adjustable level.

Alarms:

Parameter-adjustable alarms for Audio Loss, Stream Loss, Metadata Not Updated, Underrun, High Ping and Internet Loss alarm functions.

GPO Alarm Tally Outputs:

Six individual open-collector NPN transistor outputs for alarm conditions. Outputs each sink 100mA, 40Vdc max., software-assignable for GPO terminal and polarity.

SNMP Compatibility:

Setup and operation read/write parameters under SNMP management; downloadable MIB file.

Power Requirement:

12VDC, 230mA (2.1mm x 5.5mm coaxial). A universal 'brick'-type switching power supply that accepts 100-240Vac, 50/60Hz mains is provided.

Mounting Options:

An optional rack adapter mounts one or two 611s in a standard 19-inch 1U rack space. A blanking panel and daisy-chain power pigtail are included.

Operating Environment:

32°F/0°C-122°F/50°C; 0%-95% non-condensing relative humidity; 10,000ft/3048m.

Size and Weight:

1.6"H x 8"W x 6"D; 5 lbs. shipping weight.

Conformances:

CE EN50081-1 / EN50082-1
93/68/EEC
RoHS 2002/95/EC

Rear Panel View



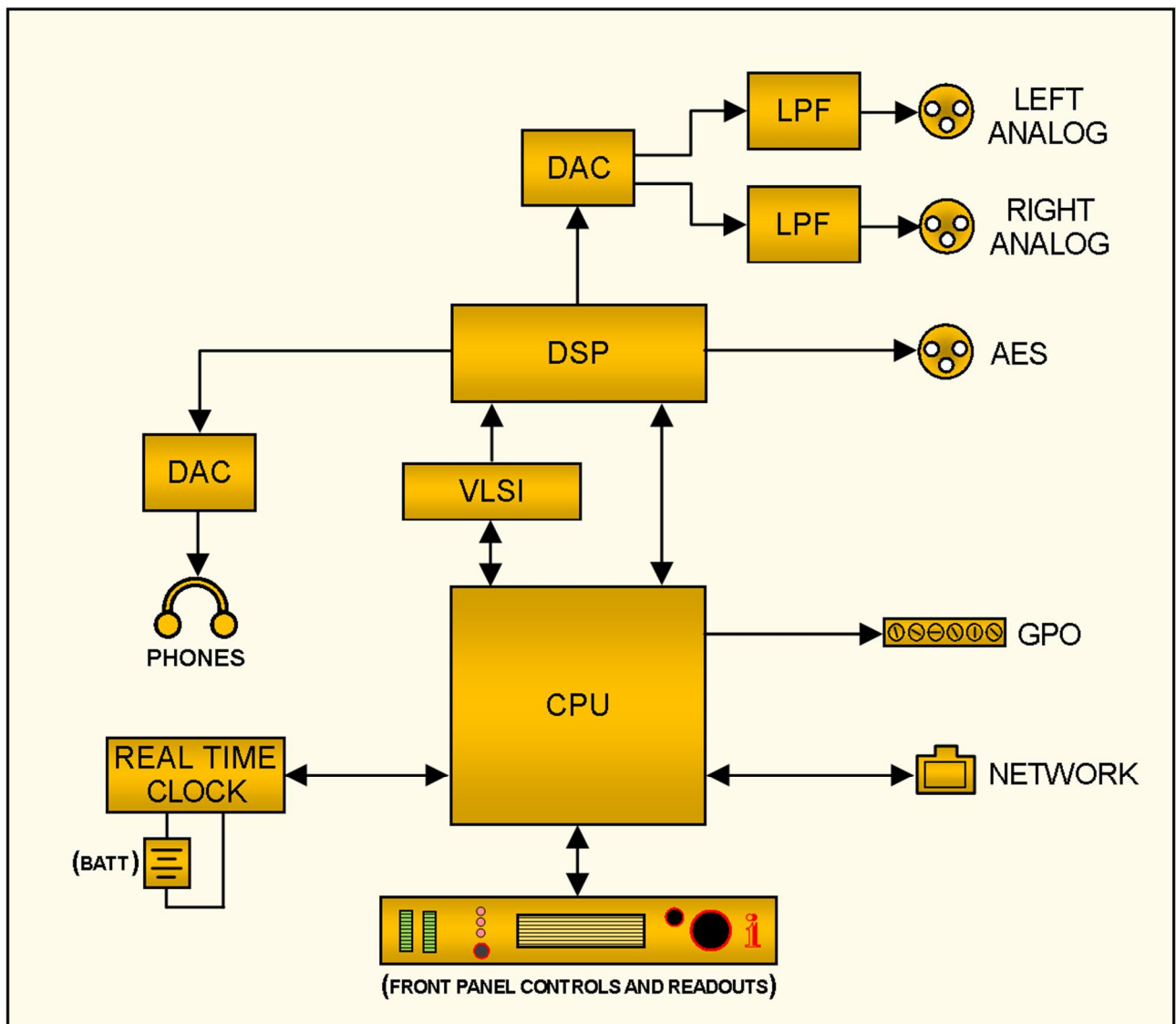
Under the Hood

The 611 Stream Monitor is very compact with a major utilization of surface-mount (SMD) technology. Some components are application-specific or factory-programmed, but all of them are impossibly tiny. This makes servicing the unit in the field a difficult proposition at best and fatally destructive in the worst case. Thus we have dispensed with schematic diagrams, servicing instructions and a listing of component parts.

Nevertheless, Inovonics' policy has always supported full disclosure. We feel that, unless we are doing something truly deceitful, there is no reason to hide information from the user. Upon request, we will be happy to provide additional documentation and divulge all but the deepest and darkest secrets concerning any Inovonics product.

Because it is so small and lightweight, returning the 611 Monitor for factory servicing is the option that we recommend. Inovonics has never depended on factory repair charges as a significant source of revenue, and we are confident that you will find our repair turnaround interval and rates equitable.

BLOCK DIAGRAM



Block Diagram of the Inovonics 611 Internet Radio Monitor

Section II

INSTALLATION

GENERAL

This section of the manual addresses the physical installation of the 611 at its operating location, or the ‘nuts and bolts’ of connecting the unit. This section also references manual pages where pertinent setup options and adjustments are discussed.

Unpacking and Inspection

As soon as the equipment is received, inspect carefully for any shipping damage. If damage is found or suspected, notify the carrier at once, and then contact Inovonics.

We recommend that you retain the original shipping carton and packing materials for possible return or transshipment. If returned for Warranty repair, shipping damage sustained as a result of careless return packing may invalidate the Warranty!

Warranty Registration

IT IS IMPORTANT to register the Warranty of your 611 Monitor. This assures coverage of the equipment under Warranty terms, provides a means of tracing lost or stolen gear, and adds the user to a database to receive specific service instructions or software/firmware updates when issued. Register online at:

www.inovonicsbroadcast.com/support/productRegistration

NOTE: Many users choose first to familiarize themselves with equipment on the bench or at their desk, in which case they may immediately turn to Section III that describes setup and use of the 611 monitor. When the time comes, do please refer back to this section to confirm proper physical installation and interconnection with other station equipment.

MOUNTING, POWER AND ENVIRONMENT

Mounting and Racking

The 611 Monitor is packaged in a compact, half-rack format. It may certainly sit on a desktop or atop an existing piece of rack-mounted equipment, as long as at least 1U of panel space is left open to access the unit’s front panel.

An optional rack-mount kit is available that can accommodate a single or a pair of Inovonics half-rack products. The kit comes with a blanking panel for unused space, and a ‘daisy-chain’ power cable so that two (or more) devices can share a single power supply.

Powering the 611	The 611 comes with a universal outboard 'brick' type switching power supply that accepts mains voltages between 100VAC and 240VAC. The actual power consumed is 230mA at 12 volts DC.
Radio Frequency Interference (RFI)	Although we have anticipated that the 611 will find a welcoming home in radio broadcast environments, please do practice reasonable care in locating the unit away from <i>abnormally</i> high RF fields.
Ground Loops	A mains frequency or RF ground loop could be formed between cable shield grounds and the AC power cord ground. If hum or other invasive noise is noted in the analog outputs, a 'ground-lifting' AC adapter may remedy the problem. Nevertheless, the chassis must somehow be returned to earth ground for safety. Rack-mounting the unit normally satisfies this requirement.

INPUTS, OUTPUTS AND PORTS

Analog Line Outputs	<p>The LEFT and RIGHT ANALOG OUTPUT on the rear panel are electronically-balanced and ground-referenced, but <i>not</i> transformer-isolated, with a resistive source impedance of 200 ohms. Output levels are expressed in dBu (unloaded) notation next to the adjusting sliders on front-panel or Webpage Setup menus.</p> <p>Analog levels may be set to any figure between -15dBu and +15dBu, corresponding to the digital-full-scale value of the incoming stream. The default setting is +4dBu.</p> <p>Although seldom seen in these enlightened times, a legacy 600-ohm-terminating load will drop the actual dBm level 2.5dB below the dBu figure shown beside the associated slider.</p> <p>An unbalanced output should be taken from the 'hot' or '+' side of any analog output and ground, leaving the 'return' or '-' side of the output floating. The unbalanced output level will be 6dB below the figure shown beside the slider.</p>
AES Digital Line Output	<p>The AES3 DIGITAL OUTPUT delivers balanced, transformer-coupled AES3 digital stereo program audio from a source impedance of 110 ohms. This is a 24-bit output at a 48kHz sample rate.</p> <p>The AES-digital output level may be varied between -30dBFS and 0dBFS, corresponding to 0dBFS of the incoming stream. The default setting is -10dBFS.</p>
GPOs	A removable, plug-in screw-terminal strip on the rear panel gives access to six GPO (general-purpose output) terminals. These are the alarm output 'tallies.' GPOs are NPN transistors that saturate to ground that can sink 100mA at up to 40Vdc. Alarm polarity (active ground or active open) is software-programmable. GPOs may be assigned to the various fault alarms as detailed on Page 29. A current-limited +5V source

and GND (ground) are included to facilitate interfacing with external 5V logic or optical couplers.

LAN Network Port The RJ45 LAN PORT connects the 611 to a Local Area Network (LAN), and onward to the Internet. Network setup is under the front-panel or Webpage interface Network menu, details are provided in the appropriate manual section. Networking enables full remote setup and operation, SNMP functionality, Web-browser stream-listening and dispatch of email or SMS (texting) alarm notifications.

Power I/O This parallel-connected pair of DC jacks allows the user to 'daisy-chain' two or more units to share a common mains power supply, thus cutting down on cord clutter. Do make sure that the total power consumption does not exceed the DC current rating noted on the power supply label.

Section III

PREPARING TO CONNECT

THE 611 FRONT PANEL

Front Panel vs. Webserver Interface Setup

All setup and operating adjustments of the 611 are under firmware control, there are no jumpers, switches or mechanical potentiometers. The unit may initially be set-up locally through the front-panel jog wheel and OLED display, or remotely using the built-in Webserver interface and any networked computer, tablet or mobile device with a Web browser.

OLED and Webserver interface menus follow one another in a reasonably faithful manner, although Webserver pages give far easier access to setup controls, as well as access that is not provided via the front panel. You will at least need to access the OLED display to find the unit's IP address, so some familiarity with the front panel is useful.

Powering-Up

'Boot' (startup) time of 611 is on the order of two seconds. When power is first applied, or following a power interruption, the unit is back in full operation in very short order. Setup and monitoring parameters in effect previous to a power glitch are reloaded immediately from nonvolatile memory.

The OLED Display

The front-panel display has an adjustable timeout feature with a factory default of 5 minutes. Should the readout suddenly go dark, you may safely push the jog wheel or BACK button once to wake the screen and reset the timer without risk of changing any settings. The 611 initially boots to the main home screen shown here, although in normal operation it will reboot to the last menu page in use.



Now Playing is highlighted in the illustration above. Turn the jog wheel to scroll through the other menu items, including additional entries off the bottom of the list.

Jog Wheel Navigation

Turning the jog wheel cycles among menu items. Once you reach an area of interest, push the wheel to open any sub-menus in that main menu category, and again to open deeper sub menu categories. The BACK button returns you to the previous screen, and ultimately to the home screen.

Once you reach a menu that permits a parameter change, turn the jog wheel to highlight (outline) the parameter, then push

the wheel. The outline will begin to blink, signaling that you may turn the wheel to change a value.

Here we've navigated to: `Setup / Audio Outputs` and entered that screen. We then highlighted `Analog Level` and reduced that level from the default `+4dBu` to `-6dBu`.



Once a change has been made, push the jog wheel again (or press `BACK`) to 'set' the new value. If you fail to do this, the 611 will do it for you after about 30 seconds.

There are some sub menus where one may even enter text, such as passwords, URL addresses, port numbers, IP setups, etc. This is a tedious process, however, and much better accomplished using the Webpage interface and a laptop or tablet. Exceptions are entries under the `Admin` screen for `Security` and `Display` features that pertain only to local, on-site operation.

The Admin Screen

The `Admin` menu hosts `Security` and `Display` settings; `About` shows the unit's current firmware version, its serial number, and how long the 611 has been running since it was last rebooted manually or power was last applied.

OLED Display Settings

`Brightness` controls the OLED intensity and `Timeout` sets the time that the display will remain on after you last access any menu screen. Toggling the `Dim on timeout` button will instead just reduce the timeout brightness to a low, but still visible level rather than turning the display off.

Headphone Volume

`Headphone Volume` is the last menu on the list and is used to set the listening level. This screen also pops-up automatically when headphones are plugged in. Use the `BACK` button to return to the previous menu screen.

BRINGING UP THE WEBPAGE SERVER

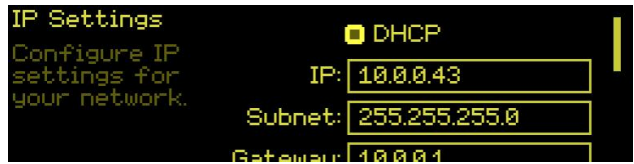
Network Considerations

To access 611 Webpages (Webserver interface), both the 611 and your computer must be on the same Local Area Network (LAN). As promised, the 611 can be accessed from a computer, tablet or mobile phone anywhere in the world, but your network must first be set up to make this possible. This remote access process is addressed in the Networking section later in the manual.

Finding the 611 IP Address

With both your computer and the 611 plugged into your LAN and turned on, navigate the OLED screen to `Setup / Network / IP Settings`.

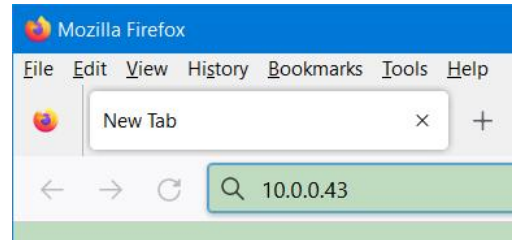
DHCP is the factory-default networking Mode. The IP: (address) of your 611 appears in the first box. DHCP should



work for you at least initially, but if and when your 611 needs a static IP address, you'll have to highlight and clear the DHCP box. This will unlock the other boxes for alternate data entry. As you then highlight each box, an on-screen keyboard pops up permitting you to overwrite the default entries. (Once connected, you may perform this operation more easily using Webpage entry, covered in the next section.)

Connecting

Bringing up 611 Webpages is as simple as entering the IP address of the 611 into your browser's address bar and clicking Enter.



Alternatively, a Windows computer is able to locate and connect to the 611 by using the unit's 'Hostname' followed by a forward slash in place of the IP address. The Hostname is shown on the 611 Network menu screen; the default Hostname: is MODEL611. So in this instance you would type MODEL611/ into your browser address bar. You may change this to a more convenient or personalized identification of the unit, as you may find convenient to differentiate between multiple units on the same LAN.



Connecting will bring up the Now Playing Webpage. Starting at this point in the manual, setup and operating discussions and instructions will utilize this Webpage interface utility, mainly because it's more convenient than the OLED menus to navigate and type into. Nevertheless, rest assured that much in the way of setup can be accomplished from the front panel as well.

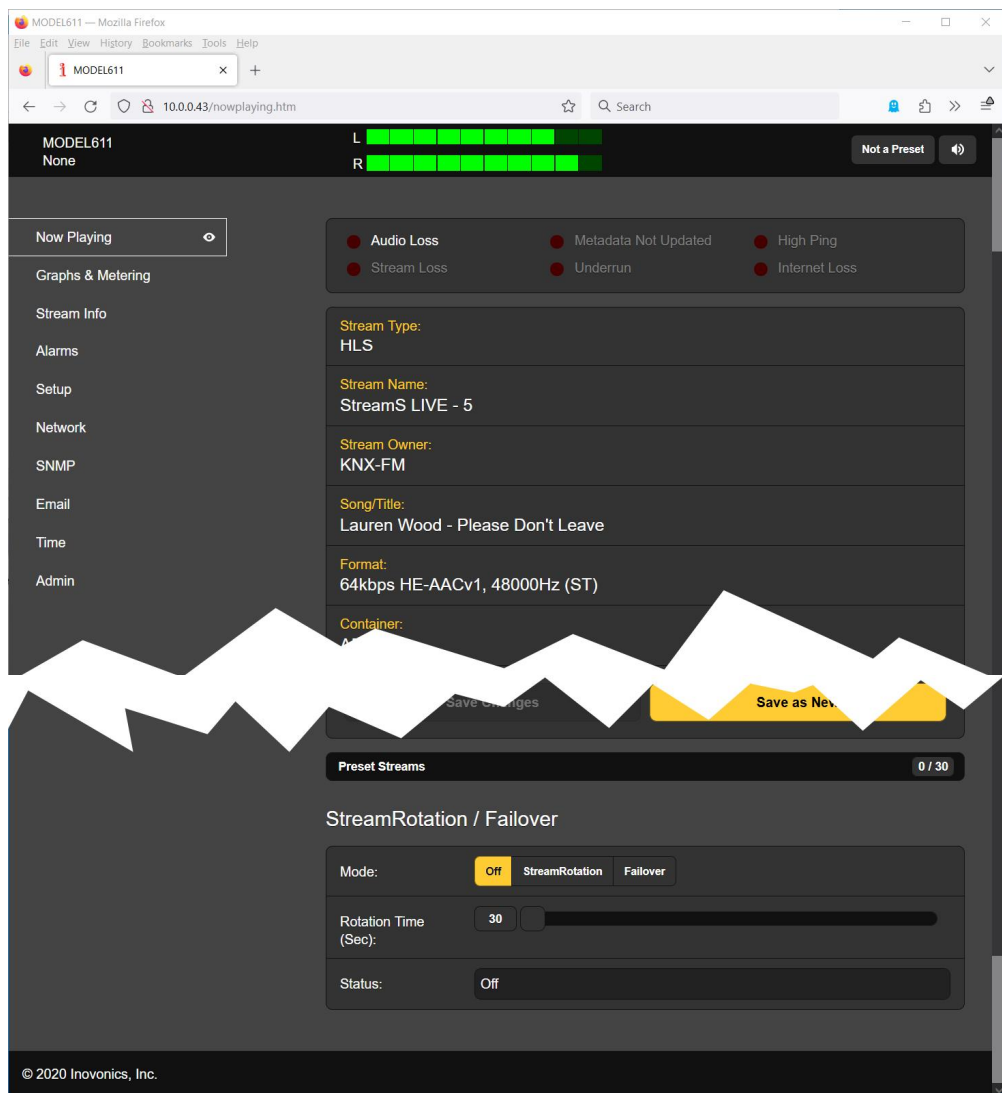
Section IV

USING THE WEBSERVER INTERFACE

Internal Webserver

The Inovonics 611 internal Webserver contains multiple interactive pages, or menus, for setup and operation of your unit. These pages provide ready and interactive access to all settings, readouts, graphics, audio monitoring and alarms.

Now Playing is the landing, 'home' Webpage, 'split' in this illustration to show the top and bottom of the page. Each Webpage will be detailed in turn in this section.



The Menu List

A list of all the Webpage menus can be found at the left edge of any page. Click on any menu heading to go immediately to that Webpage.

**Menu
Variances**

We have made every effort to coordinate the common elements between the Webpages and the front-panel OLED menus, but this is just not possible in all cases and you may have to hop around a bit to find corresponding features. For example, the Now Playing Webpage shows a wealth of interactive functions, whereas the Now Playing OLED menu is a display of only a few stream parameters. And although all six alarm conditions are available for setup and viewing on Webpage presentations, the 611 front has only three major loss-alarm LEDs, and instead flashes all active alarms in plain text on the OLED, even after that screen has timed-out.

We do apologize for ‘discrepancies beyond our control,’ but feel confident that your good common sense will guide you on your circuitous journey through the 611 learning maze.

**‘Responsive’
Webpages**

The ‘responsive’ 611 internal webserver provides an optimal viewing experience across a wide range of devices: desktop computers, tablets and mobile phones. Specific to the viewing device, the Webpage is cleverly and automatically reconfigured to give the best view as the image size varies.

THE WEBPAGE HEADER

Each of the 611 Webpages carries the header shown here:



Monitor ID

At the upper-left, the hostname of the 611 identifies the specific unit connected. As already mentioned, you may create your own unique hostname to differentiate between multiple units on the LAN.

**Assigned
Program Name**

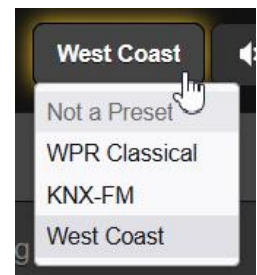
Once you connect to a stream and save it as a Preset, you may assign a name of your own to that stream. That name will appear just below the Monitor ID hostname.

**Audio Level
Display**

The front-panel LED level display is duplicated here, but turned on its side. This is a peak-responding indicator with a compressed dB level readout of the incoming stream from 0dBFS down to -60dBFS. Refer to the 611 front panel for meter scaling.

Stream Presets

To the right of the level display, a selection button lets you quickly change streams from among the presets that you have entered into memory. Once URLs are entered, clicking on the button will drop down the menu shown at the right. Clicking one of the presets will reconnect the 611 to that stream. Entering presets is explained shortly.



Remote Listening

Click the loudspeaker icon at the top-right of this or any other Webpage to listen to streaming audio through your Web browser. Up to 10 listeners can access this audio stream simultaneously.



Bear in mind that this audio stream from the 611 is being re-encoded by the 611 for Web-browser listening. What you hear using this utility will not be in exact sync with the hardwired audio outputs of the 611 or with the action of level meters and other visual displays.

Other Stream-Listening Options

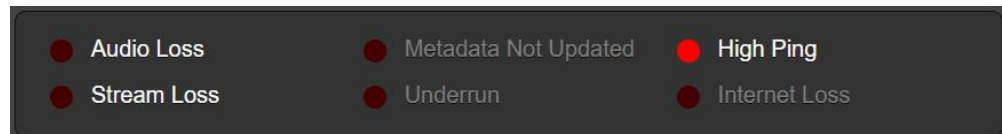
You may wish to allow personnel outside the engineering staff to listen to the 611 stream without granting them the ability to view 611 Webpages or change any settings. You will need to open a router port to use this IP-address method, but then one simply 'points' a computer browser or media player app at the URL of the 611's audio stream, adding /stream as shown circled in red here. Of course this isn't a terribly secure privilege as the slash may suggest alternative suffixes for evil hackers to access additional functionality.



NOW PLAYING

The Now Playing Webpage and a few others require you to scroll down to see everything, depending on the device you are using and its browser settings. Pages that require scrolling are broken down here by rational function divisions.

The Alarm Panel



This Now Playing alarm panel is a duplicate of the one on the Alarms Webpage. Setup of the alarms and alarm messaging is detailed in that discussion section.

Alarms that have been enabled by the user are noted in white text; grayed-out alarms are not enabled. Once an alarm triggers, based on level and/or timing or other settings, that alarm is indicated by the simulated red LED.

Reception Status-In-Brief

Stream Type: HLS
Stream Name: StreamS LIVE - 5
Stream Owner: KNX-FM
Song/Title: Chilliwack - I Believe
Format: 64kbps HE-AACv1, 48000Hz (ST)
Container: ADTS
URL: https://db2.indexcom.com/bucket/ram/00/05/05.m3u8
Connected URL: https://db2.indexcom.com/bucket/ram/00/05//64k/05-20230510T193407Z.aac
Buffer: 100%
Status: Connected

This second section of the Now Playing Webpage screen displays the bulk of the metadata that is either sent along with the audio stream, or that the 611 Monitor derives from stream parameters. Some of these parameters, along with others not in this grid, are displayed graphically with much greater detail and with selectable time scaling on the History Plots Webpage. Note that, depending on Stream Type:, a given stream may not display all categories described below.

Here's a brief rundown of what these categories refer to:

Stream Type: identifies the network streaming protocol of the incoming stream. HLS in the example stands for HTTP Live Streaming. Other streamers might use Icecast (or Shoutcast) -formatted MP3 streams.

Stream Name: is analogous to a radio station's "street name," an informal, easily-remembered nickname.

Stream Owner: a perhaps-more-formal identifier of the entity initiating the stream.

Song/Title: what's playing at the moment. May include artist, title, album, etc. or 'filler' text during speech.

Genre: further refinement of the streaming program material.

Format: additional details of the stream's encoding, including bitrate, codec and sample rate.

Container: the file format used in encoding.

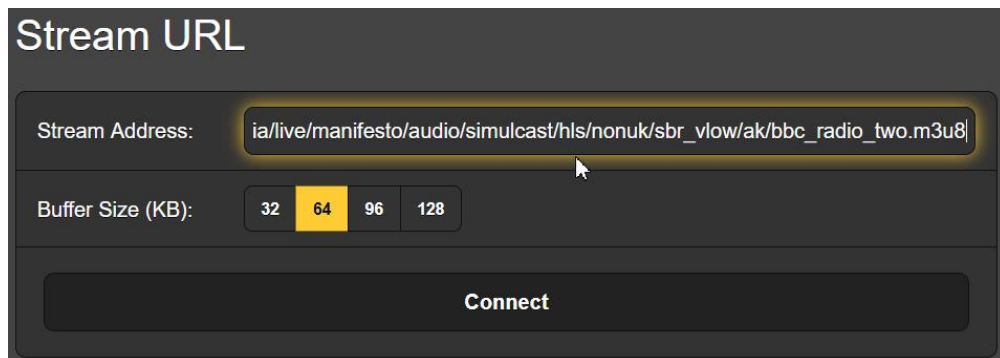
URL: the primary URL address of the stream, the one that the listener initially enters. In actuality this may be an alias for the incoming program, and simply contain a Master Playlist, or listing of alternate URLs that point the listener's hardware to the actual program source(s).

Connected URL: this is the 'real' URL of the program playing at the moment. The URL that the listener first enters may just be a playlist of program-source URL links that the 611 automatically switches to. Once that source has been played, the monitor then switches to the next source. With HLS streams, the 611 can re-read a Master Playlist and select a URL with a lower bitrate if the buffer tends toward an underrun.

Buffer: the 611 Monitor includes a programmable buffer to absorb dropouts and ensure seamless stream playout. Ideally the buffer remains at 100%, but may occasionally dip to a lower figure, indicating a poor connection or a network overload condition. Buffer storage is selectable, and the 611 also offers options to mediate buffer underrun, as discussed shortly.

Status: is simply an indication of whether the 611 is Connected to, or Disconnected from, the incoming stream.

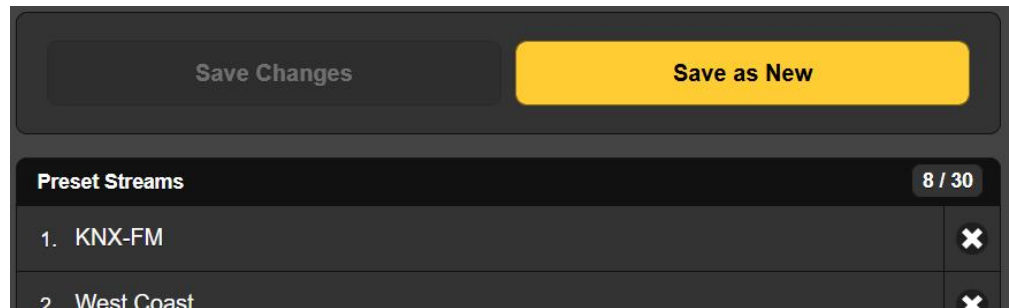
Selecting Streams and Saving Presets



This snapshot shows the Stream URL subsection of the Now Playing Webpage. What's discussed in connection with this image is also found on the [Stream Settings / Stream URL OLED menu](#).

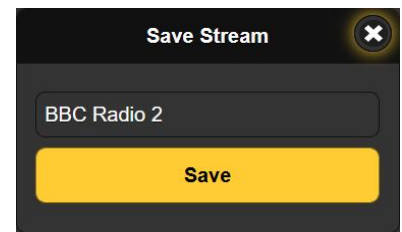
It's tedious to enter URLs from the front panel of the 611, and the Webpage interface offers a far easier method. You simply copy a URL from a Website, an email, or a spreadsheet or a scratchpad listing of saved URLs, and then highlight the existing Stream Address: and paste the new URL over it. Once the URL is entered, click Connect to access the stream.

Once connected, the stream may be saved in memory as a Preset Stream. Scroll down the Now Playing screen to reach this area:



Creating Stream Presets

The 611 offers thirty memory slots for station/stream presets. Once connected to a stream, simply scroll down and click Save as New. This will open the box shown here where you may enter your own text: a streamer's 'street name' or other identifier. Then click Save in that same box and your entry will be entered at the bottom of the Preset Streams list. Presets may be cleared from the list by clicking the X at the right of the listing.



But wait, that's not all!

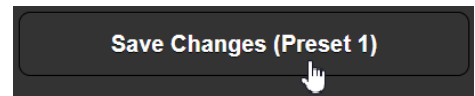
Options and Alarms

Stored Preset Streams entries also include various options and alarm setups *specific to that stream* when it was entered into memory. This is a leading feature of the 611 monitor, so please take time to understand it.

Important!



Setup options below the URL Tuner include Buffer Size (KB);, Underrun Options, (server) Pinger and Failover Triggers. These will each be detailed separately next, but keep in mind that if you make changes to *any* of these options, or to any alarm settings, the grayed-out Save Changes bar will immediately come alive, as shown here, prompting you to save those changes.



Alarm programming instructions begin on Page 26. Again, if you make changes to alarm settings or to the setup options selections detailed below, you *must* return to the Now Playing Webpage and click the Save Changes bar to permanently associate your option updates with that stream preset.

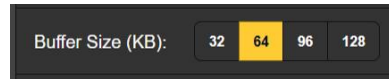
Stream Buffering

The incoming stream is initially buffered for a short period to absorb dropouts from a suboptimal network connection or condition; this ensures a solid, uninterrupted playout of the stream. You may select the buffer size for any given stream, and the setting will be saved when the stream is saved as a Preset Stream.

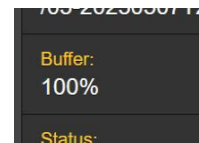
A buffer is said to 'underrun' if the output rate exceeds the input rate and it ultimately depletes to 0%. Under such a condition the audio program will become intermittent. Obviously an

infinite buffer would protect the program perfectly, but would take an eternity to develop an output stream.

64KB is the default buffer selection. 32KB buffering will allow the program to start quicker and have less latency, but at a greater risk of buffer underrun. 128KB would offer maximum underrun protection, but at the expense of greater latency.



The buffer in the 611 is meant to guard against occasional network 'hits' or hiccups, not for ongoing major data perturbations. For HLS streams, the 611 may automatically select a lower incoming bitrate to reduce underruns, but only if the streamer provides multiple streams at different rates. You can keep an eye on Buffer: (percentage), displayed just above the Stream URL block.



Underrun Options

Just below the Stream URL block you'll find utilities for buffer underrun mitigation. The first two options are individually specific to Icecast and HLS streaming. The function each offers is detailed below its Off On selector. The proper choice can be enabled to be called into play when needed.

The third option is unique. It functions with all streaming protocols and may even be used in conjunction with the first two. This option utilizes buffer storage to slow-down the outgoing data, giving the buffer a chance to catch-up. Only the tempo of the program slows, there is no audio pitch shift. This third option is effective only for occasional and relatively brief periods of underrun as the buffer has a maximum of 128KB storage.

Turn On Limit (%): is a set point in buffer storage, below which the output tempo will be slowed-down. Turn Off Limit (%): marks the set point that buffer storage must re-attain to restore the output to its normal output tempo. Slowdown (%): sets the output tempo reduction factor of the buffer.

The Pinger

The 611 is capable of 'pinging' the streaming server to test network conditions and to alert you to a data slowdown.

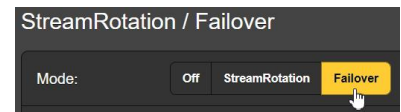
Click the down arrow at the right of the Mode: window and change from the default Disabled entry to either Original URL or Connected URL. This action enables the Pinger utility. Period (Sec): is the pinging interval, the time between pings.

Failover Triggers and Setup

The 611's failover utility switches from a compromised to a backup stream (if available), but only if this feature is set up properly and enabled.

Failover setup requires the primary stream to be at the number 1. spot in the Preset Streams listing. Backup stream(s) occupy lower list positions. If Failover On: Audio Loss is programmed, an audio loss alarm received for the stream playing will switch the 611 to the next stream on the list. Any or all triggers may be enabled, but the associated *alarm* for that fault mode must be set up and enabled on the Alarms Webpage. Remember too that each Preset Streams memory slot 'remembers' the failover trigger, and thus the alarm setup, for each stream separately.

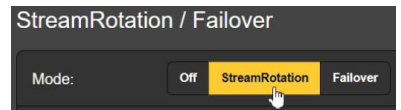
Once setup is completed, scroll down to the StreamRotation / Failover selection panel and enable the mode as shown here.



StreamRotation™

The 611 Monitor has primary service monitoring a streamer's own stream as a quality-verifying and listening tool, accessible locally or from any remote location. But the StreamRotation utility lends the added versatility of 'riding herd' over multiple streams, cycling through the Preset Streams list at a rate selected by the user. This way an IT consultant might keep an eye on several clients' streams and receive individual alarm messages for fault conditions.

Enable StreamRotation by selecting that mode as shown here. This will immediately inhibit changing any of the Stream URL settings and options, along with Alarm Webpage settings. You will have to set Mode: to Off before any grayed-out settings can again be accessed.



Finally, you must program the Rotation Time (Sec):, and this may take some forethought. For not only may it take a few seconds to acquire a new stream, but the 611 alarms have Time On (Sec): and Time Off (Sec): settings that will impact the Rotation Time (Sec): choice. See the Alarms discussion beginning on Page 26.

The Status: display gives a second-by-second countdown of rotation time, or it will indicate that the feature is Off.

Keep in mind that 611 audio outputs will reflect StreamRotation operation.

Alarm Display

In both the StreamRotation and Failover modes, the most recent alarms received are shown at the bottom of the Now Playing Webpage as illustrated at the top of the next page.

Do keep in mind that the Failover mode responds only to the Failover Triggers selections, not to alarms set on the Alarms Webpage.

Alarms		
1. KNX-FM		
Alarm	Time On	Time Off
Audio Loss		
Metadata Not Updated		
Underrun Detected		
2. West Coast		
Alarm	Time On	Time Off
Audio Loss	8:32:18 AM, 5/8/23	8:32:33 AM, 5/8/23
High Ping	8:32:17 AM, 5/8/23	8:32:24 AM, 5/8/23
3. ⇒ WGCS - Goshen College		
Alarm	Time On	Time Off
Audio Loss		
Metadata Not Updated		
4. BBC Radio 2		
Alarm	Time On	Time Off
Audio Loss	8:31:18 AM, 5/8/23	8:31:20 AM, 5/8/23
Metadata Not Updated	8:23:07 AM, 5/8/23	

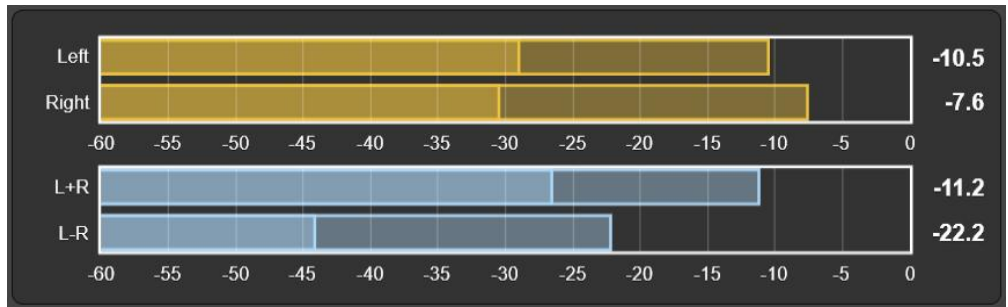
The stream currently playing is shown in yellow. Alarms set and armed for each stream in the Preset Streams list are shown in green. When an alarm is tripped, the **Time On** column indicates the current time and date, and when that alarm is subsequently cleared time and date are noted under **Time Off**. An alarm that is *not* cleared (an ongoing fault condition) will show up in red and will remain on the screen until that alarm does finally clear.

Multiple alarms for each stream are not sequentially accumulated in this presentation; the ones on display are just the most recent and will be overwritten by a subsequent alarm of the same type. However, the 611 maintains comprehensive Alarm Logs that may be viewed at the bottom of the Alarms Webpage. Alarm Logs remain until manually cleared.

GRAPHS AND METERING

Audio Levels The Graphs & Metering Webpage gives high-resolution, annotated measurements of stream audio levels: Left, Right and the L+R and L-R stereo sum and difference. Numerical readouts to the right of each bargraph reference 0dBFS (digital full-scale) of the incoming stream, although occasional program peaks can

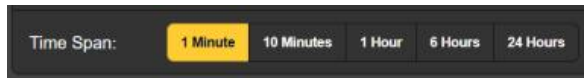
exceed this value, doubtless as a function of the Intersample Peak Clipping (0dBFS+) phenomenon.



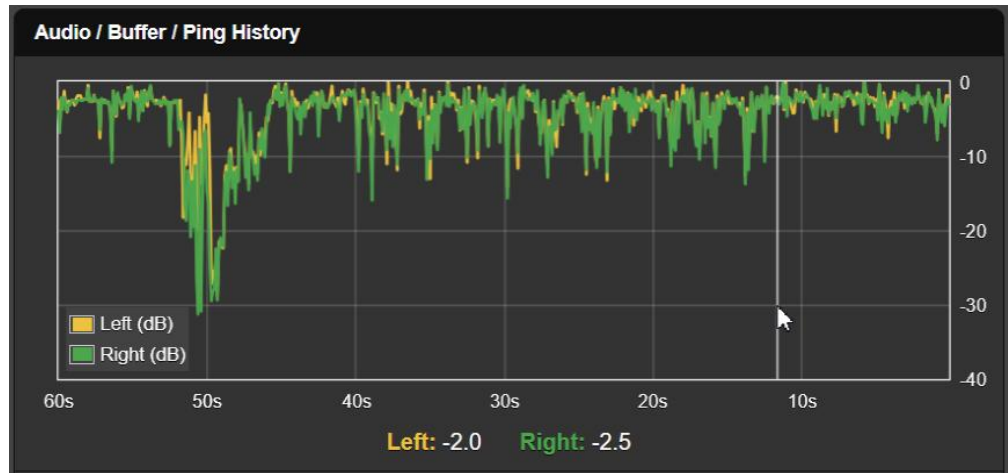
Meters have true-peak response to program peak content with fallback based on presentation of a meaningful visual analog of music and speech content. These meters should not be thought of as traditional “VU” meters, which have quasi-averaging response to program waveforms.

History Plot Screens

The 611 offers ‘rolling’ plots of audio levels, buffer utilization and ping timing. Plots are viewable over a specified time span, from the past minute to a full, 24-hour time study. Time Span: is selected with these buttons at the bottom of the screen.



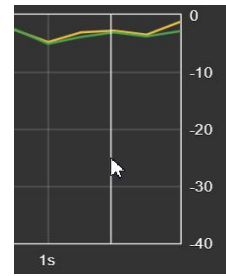
Audio Level History



This illustration is a display of audio levels over the past minute. Left and right channels are shown in contrasting colors. This is a music program with normal dynamics; note the segue between songs about 50 seconds back.

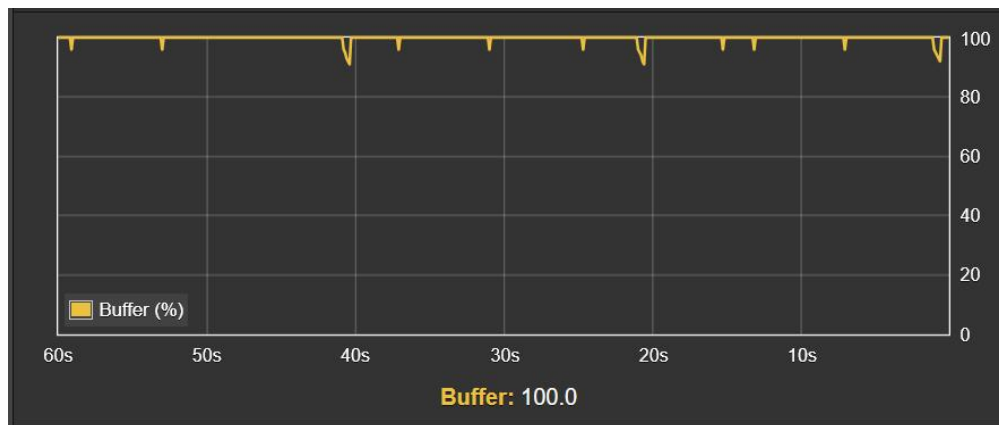
You may move your mouse pointer over the screen to bring up the white cursor line seen above. This gives you an accurate numerical readout of audio levels at that point in time, presented below the graph. The cursor is available on all history plot screens, and if not used the numerical values pertain to current, ‘right now’ time at the far right.

You may also zoom-in on the display by double-clicking your left mouse button, and then scroll through the magnified display by holding-down the button and dragging the cursor. In the example shown here we've zoomed-in on the display to enlarge the first one-second of audio levels. Close and re-open the Webpage to reset the magnification.



Buffer Utilization

With luck, this should be the least interesting of history plot screens. The buffer should ideally remain 100%-full most of the time, as suggested in the illustration below. The example shown utilized the default Buffer Size (KB): setting of 64KB.



Obviously, for this stream the minimum setting of 32KB would still have been more than adequate. But if a stream shows significant buffer deficit here, then a higher setting would better guard against an underrun.

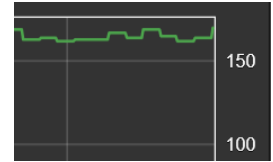
Ping Time



This is a time plot of ping-time response. In this illustration the Pinger (set-up on the Now Playing Webpage) was set to ping the server at one-second intervals. A longer interval setting would make only an inconsequential improvement in dataflow for the program, and would average the ping time over a longer period creating a display with less resolution.

The red area on the graph indicates a total dropout of the incoming stream. This was created artificially for this example by unplugging the network cable for a few seconds.

The vertical axis of this rolling plot is 'adaptive,' meaning that it will expand for consistently-longer ping times. For example, this different stream has an inordinately long ping time, on the order of 160ms or more.



STREAM INFO

Stream Basics

The upper portion of the Stream Info Webpage shows some of the more basic information about the currently-playing stream. These are statistics that may be found elsewhere on 611 Webpages, but are duplicated here for quick reference when picking through the wealth of data presented by the Connection Tracker below.

The Connection Tracker

The 611 Monitor includes a simplified Ethernet data packet viewer utility to display URL response headers and track the stream's URL request chain. It also shows the corresponding HTTP response and playlist data (for HLS streams), information useful in debugging.

The Connection Tracker screen is adaptive in size and complexity, based on the type of stream monitored. The screen for an Icecast stream will give a data display limited by the amount of background data carried by this format. An HLS stream, on the other hand, will expand the Webpage depth to disclose a veritable goldmine of info.

ALARMS

Alarm Status The 611 provides alarms for various stream fault conditions. Alarm Status ‘virtual LEDs’ top the Alarms Webpage; these are the same ones that also appear atop the Now Playing Webpage.

Set the Clock! Alarms are logged with time and duration stamps. Be sure to select the time zone and ensure that the 611 is sync’d with Internet time as instructed in the discussion for the Time Webpage.

Important!



As explained under the Now Playing Webpage discussion, alarms and some other options are saved along with the Stream Address: when the URL is saved as a Preset Stream. But, when casually stream-surfing, if you *manually* input a Stream URL and simply Save as New immediately, your stream will inherit and store the alarm and other settings that were in play for the *previous* stream that was playing. Be sure to select alarm and other options that pertain to the new stream selection, and *then* Save as New as a Preset Stream.

To associate any alarm setting *change* (update), you must again navigate to the Now Playing Webpage and Save Changes *while that stream is still playing*. Those alarm updates will then be saved in memory just for that stream. This Save Changes procedure must be completed immediately after programming or changing alarm settings, before the 611 is connected to any other stream.

Any of the alarms is also able to initiate email or SMS/text messages to selected personnel. All alarms are also logged for later analysis.

Alarms may be assigned to rear-panel GPO ‘tally’ outputs for interface with remote-control equipment or local alert devices. Alarm conditions must first be set-up as described in the remainder of this section. Following that you then can program email/SMS messaging and rear-panel GPO tallies following procedures described in the Setup and Email Webpage discussions, respectively.

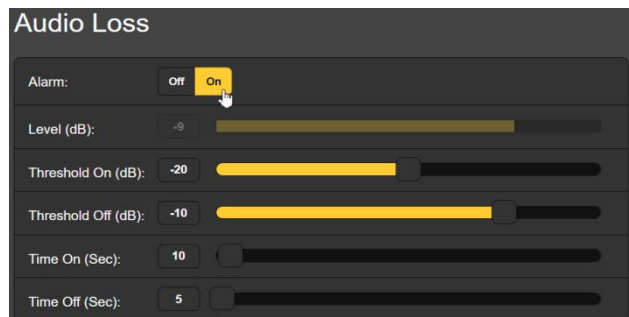
Programming Alarms

NOTE: Do please read the following discussions in their entirety. A setup explained for one alarm that is common (or quite similar) to the setup of others will not be explained in the same initial detail in successive setup discussions.

Audio Loss

Alarm: must of course be set On to arm this, or any other alarm, function. The grayed-out Level (dB): meter indicates the current program level for the stream now playing.

This alarm will moni-



tor for a low-level program audio condition. In our example, the Threshold On (dB): setting of -20 is what the program level has to fall to, *and remain below* -20 , for the Time On (Sec.): interval of 10 seconds before the alarm will trigger.

For the alarm to clear, Level (dB): must rise back up to the Threshold Off (dB): value of -10 , *and remain above* -10 for the Time Off (Sec): period of 5 seconds.

Your settings for this alarm will depend greatly on the type of program the stream delivers. A pop music stream could probably use the figures in the example, whereas a roundtable discussion may require lower level thresholds and longer on/off settings.

Stream Loss This alarm indicates loss of the program stream, not necessarily loss of the network connection. There is no level threshold setting as was the case with the Audio Loss alarm.

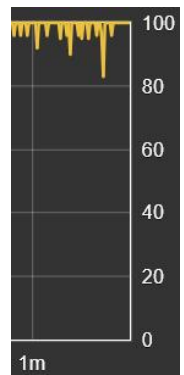
For the Stream Loss alarm to trigger, the stream must be down for the entire Time On (sec): setting. To clear the alarm, the stream must return for the entire Time Off (sec): interval you have chosen.

Metadata Alarm Metadata that accompanies a streaming channel generally keeps time with the audio content. For instance, a song title would want to correspond to the song playing. If an automated playout system feeds the channel, it's possible that the metadata could get 'stuck' and not send the new title when the song changes. The Metadata Not Updated alarm monitors the stream and triggers when the metadata shows no change for the period programmed into the Time On (Min): setting. The alarm will automatically clear when metadata finally changes.

The Time On (Min): (minutes!) setting for this alarm will depend very much on the program type. Song titles change predictably, but metadata accompanying a talk show might not change until the next host takes over, perhaps a couple of hours later.

Underruns On a quantitative basis, the 611 Monitor expresses buffer utilization in percent, 100% representing the desired condition of a full buffer. Network or server issues that slow down the incoming stream to a rate less than the output rate will ultimately deplete the buffer to 0%, which defines 'underrun.' Under this condition the audio decoder pauses. When the stream recovers the buffer will again begin to fill, and when it reaches 90% the decoder will resume playback.

The 611 Monitor tracks underruns, those instances when the buffer becomes totally depleted to 0%. The Underruns alarm may be programmed to trigger when a preset number of these Underruns Per Period: occur within a preset Period (Min): timeframe. Most streams should look like this example from the history plot on the Graphs & Metering page,

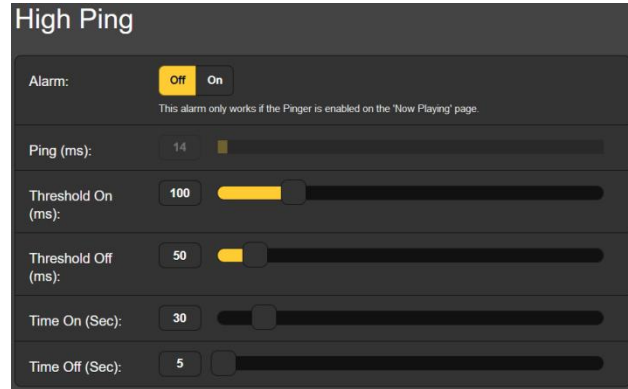


showing that buffer capacity rarely drops below 90%. Base your judgment on the buffer statistics for the particular stream of interest.

The High Ping Alarm

The 611 is able to ‘ping’ the connected server to monitor the overall network path send/receive interval. The High Ping alarm is similar to the Audio Loss alarm in that it has both magnitude threshold and timeframe settings.

The grayed-out Ping (ms): bar shows the current ping time to serve as a guide in setting-up the alarm. The Graphs & Metering Webpage displays a rolling history plot of ping time.



In the setup shown here, ping time must stretch to 100 milliseconds and remain at or above that value for 30 seconds or more to trigger an alarm. The alarm will clear when ping falls to, and remains below, 50 milliseconds for at least 5 seconds.

Internet Loss

Not to be confused with a Stream Loss condition, an Internet Loss alarm triggers when the 611 is not able to connect to one of several factory-programmed ubiquitous public Websites. Although disconnecting the LAN cable will precipitate an Internet Loss alarm (and others as well!), the 611 is actually looking beyond the router for a formal loss of internet connectivity. This alarm has the usual Time On (sec): and Time Off (sec): settings.

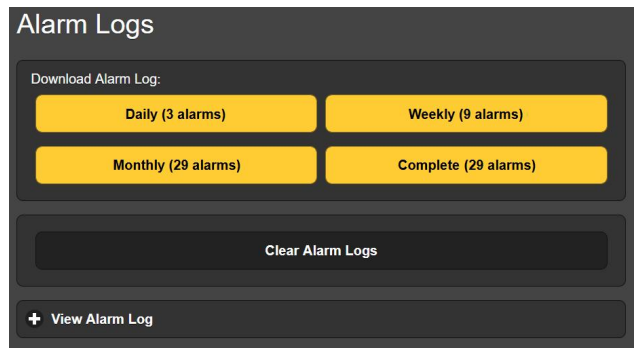
Alarm Logging

In addition to local and Webpage displays, tallies and SMS/email alerts for network- and stream-related faults, all alarms are logged and stored. The log holds data on the type of Alarm, which monitored Stream it pertains to (important when the StreamRotation feature is active), the Time and Date received plus the alarm Duration. The total number of alarms logged is given as well in the upper-right corner.

Click + View Alarm Log at the bottom of the page for a display of stored alarms in order of time and date. You may even filter the results by over-typing Filter alarms... with an appropriate search term.

Alarm	Stream	Time	Date	Duration
Metadata updated	- KNX-FM	09:17:00 PM	05/09/23	00:03:59
Metadata not updated	- KNX-FM	09:13:01 PM	05/09/23	
Audio back Level (dB): -3 ≥ -3 for 1s	- KNX-FM	09:12:12 PM	05/09/23	00:00:05
Audio loss Level (dB): -14 < -10 for 1s	- KNX-FM	09:12:07 PM	05/09/23	
Metadata updated	- KNX-FM	09:11:50 PM	05/09/23	00:01:01

You may also download the Alarm Logs for Daily, Weekly, Monthly or Complete (all saved alarms) time periods. The number of alarms received for these logging periods is given here as well. Downloads are saved to your computer as small .csv text files.



The Alarm Log will continue to accumulate entries indefinitely. Clear it completely at any time by clicking the Clear Alarm Logs bar. This will delete all entries. You'll be asked to confirm this action, at which point you might decide first to download the Complete log of all alarms to be on the safe side.

SETUP

Initial setup of the 611 Monitor generally requires user action by front-panel or Webpage selection of options or with data entries.

Audio Outputs

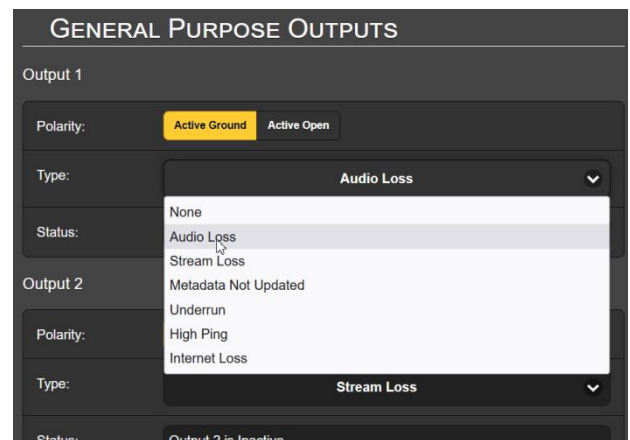
Analog left/right and AES-digital line outputs are independently programmed and adjusted for output levels, either from the front panel or using Webpage entries. Level adjustments are depicted both graphically and with numerical values, and may be set in 0.1dB steps. Webpage adjustment may be made by moving the level sliders or by overtyping the numerical dB value. Output characteristics are specified on Pages ## and ##.

GPO Setup (Alarm 'Tallies')

The rear-panel GPO terminals serve as 'tallies' for up to six of the 611's fault alarms.

The Type: of alarm has been factory-assigned, but the pull-down menu seen here allows you to reassign any of the possible alarms to any GPO terminal. Each output is numbered to match the legend above the rear panel terminal strip.

You are able to specify alarm tally Polarity:, whether you want an Active Ground (chassis ground) or Active Open (removal of ground) when the alarm is triggered.



The **Status:** line will show the output as **Inactive** until the alarm is triggered to **Active**.

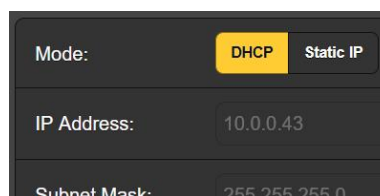
Alarm setup procedures begin on Page 26; see Page 29 for GPO tally output wiring information.

Network Front-panel **Network** setup is somewhat restricted and, in fact, discouraged in favor of Webpage setup of both simple and advanced network connecting and operating parameters. What you may nevertheless wish to do from the front panel will be divulged in the discussion under the next manual subhead.

Time Like networking, above, Front-panel **Time** setup is an easier proposition using the Webpages interface, which is detailed under the **TIME** subhead on Page 33.

NETWORK SETUP AND INTERNET ACCESS

IP Setup With **Mode:** set to **DHCP**, your router automatically assigns the 611 an **IP Address:** and will populate the next three fields, although they will be 'grayed-out' and you'll not be able to edit those data. If you reset **Mode:** to **Static IP**, then you must make the appropriate entries in all four fields and click the **Save** bar at the bottom.



The screenshot shows a network configuration interface with a dark background. At the top, there is a 'Mode:' label with two buttons: 'DHCP' (highlighted in yellow) and 'Static IP'. Below this, there are three input fields: 'IP Address:' with the value '10.0.0.43', and 'Subnet Mask:' with the value '255.255.255.0'. The fields are grayed out, indicating they are not editable in DHCP mode.

Assigning a Hostname You may change the default name **MODEL611** to something else, either to personalize the equipment name or to differentiate between two or more 611 monitors on the same network. Simply overtype the default **Hostname:** without using spaces. Be sure to click the **Save** bar once entries are finalized.

HTTP Port The default **HTTP Port:** 80 is common when accessing networked equipment like the 611 on a local network (LAN). You may change this to another port number as may be required under certain circumstances. Remember to **Save** your new setting.

MAC Address The **MAC Address:** (Media Access Code) for your particular 611 is factory-assigned and cannot be changed. You may wish to make note of your unit's **MAC Address:** to help identify it on your network.

Link Speed **Link Speed:** is an indication of connection status and the expected bitrate between your 611 and the local network (LAN).

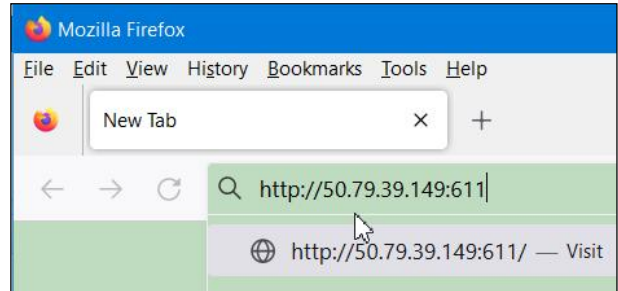
Addressing the 611 Making local (LAN) connection with the 611 was discussed on Pages 12 and 13.

Incoming Internet Access To access the 611 from the Internet, the unit must be assigned a static IP address. If your router makes DHCP assignments for other equipment on the network, simply assign a static IP that

is outside the router's DHCP range. This should be an easy matter with the aid of the router's Help utility.

You also need to open a specific port for the 611 on the network router. Within the router's Port Forwarding utility you will be able to enter your static IP address for the unit (Internal IP), followed by a colon and a port number. The port number may be any number in the router's range.

If your Internet Service Provider (ISP) assigns you a static IP address, then it is a simple matter to address the 611 from anywhere. Just type the IP address and port number into your browser as pictured here.



But if your ISP issues a *dynamic* IP, which is more often the case, this mandates 'Dynamic DNS' operation, which uses the services of an IP-forwarding provider. This is an operation you should entrust to your IT department. Further explanations and instructions are available from multiple Web resources.

SNMP OPERATION

Overview SNMP (Simple Network Management Protocol) allows other equipment on the same Local Area Network (LAN) to communicate directly with your 611, and for your unit to send alarms and supplementary information to other equipment on the network.

The 611 will interface directly with a network controller, technically known as the SNMP 'Manager.' The 611 has an embedded ASCII text file named Management Information Base, or MIB. In setting up for SNMP operation, the MIB file will have to be downloaded from your unit through the Webpage interface and uploaded to the SNMP Manager. This is detailed later-on.

Mode The SNMP submenu default Mode: setting is Disabled, which inhibits communication between the 611 and the SNMP Manager.

Changing Mode: to Read Only allows the 611 to be interrogated by the SNMP Manager so that programmed setup parameters, alarms, etc. can be integrated with other equipment on the network.

Setting the Mode: to Read & Write allows the SNMP Manager to send commands to your 611 Monitor for remote control of all functions.

Security SNMP 'Communities' serve as passwords for this function. In the Read Community: and Write Community: fields, overtype the

factory default public and private entries, entering text that is specific to the read/write strings on your SNMP Manager monitoring device. Do a Save after entering your text.

- Ports** The default SNMP Ports, SNMP Port: 161 and Trap Port: 162, are customary for a majority of SNMP operations. Overtyping these defaults to change them, followed by a Save.
- Trap Destinations** When the 611 *initiates* an alarm, rather than being *queried* or *polled* for one, the alarm is known as a ‘trap.’ Three local network IP addresses may be entered in the Trap Destination 1:, 2:, and 3: fields, each corresponding to other devices on the LAN that require alarm notifications. Overtyping the defaults with valid IP addresses of other equipment and Save.
- The MIB File** The MIB File is a small text file required by the SNMP Manager. Click: Download MIB to save this file using the usual Windows methods. The MIB file is in plain text with a .mib extension, and may be read with Windows Notepad.

NOTE: This is an abbreviated discussion of SNMP operation. SNMP is a complex utility, managed exclusively by whatever SNMP ‘Manager’ (monitoring equipment) is employed. Refer to all instructions supplied with, and for, the SNMP Manager hardware and/or software in setting-up the 611.

EMAIL

- Email and Text Notifications** NOTE: The time-stamp feature for email notifications and the Alarm Log depends on a network connection to sync with Internet time, along with setting the proper time zone and other options. This is detailed under the next subheading.

Connected to the Internet, the 611 can send email or SMS/text notifications of network conditions and other faults to one or more recipients. Which alarms go to what recipient is a separate setup routine.

- SMTP Setup** The 611 must first be properly programmed to send mail under SMTP Settings. You need to set up an actual email account, the elements of which are just like setting up any conventional email account. Information to be entered here depends on the provider you choose. When you apply for the account, much of this information will be assigned to you. Consult your IT professional for help setting up email accounts.

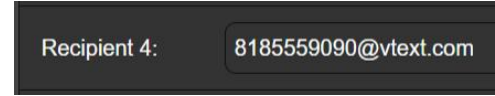
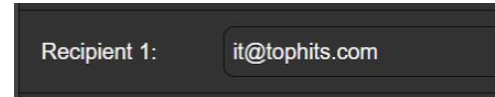
Under SMTP Server:, enter the provided outgoing mail server info (e.g.: smtp.gmail.com), the required Port: number and whether TLS: is On or Off.

From: is the ‘friendly’ name that identifies the 611 to the email or SMS/text recipient. You could just use 611Monitor or your informal “street name” stream identifier. User: is the full email address (username) of the email account you’re using for the 611, and the Password: you chose for this account.

**Recipients,
(Send To)**

Next enter up to ten email recipients, typing-in the full email address. After this you'll decide who gets what alert.

Email addresses typically take the form of the upper example here, in this case the IT pro for a music streaming service. If instead you wish to send a text message to a recipient's cell phone, the entry may look like the second image, where the alarm notifications are being directed to a Verizon subscriber's cellphone. Further information on these naming protocols is available on the Web, or you can check with the wireless carrier to confirm the proper addressing style for Internet texting delivery.

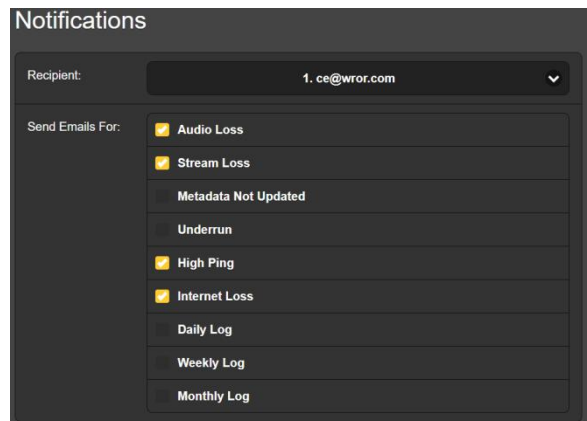


When all recipients have been entered, click **Save**. You may also click **Send Test Email**, which will message *all* recipients to confirm proper communications setup. The **Status:** field will show whether the test message has been properly formatted, dispatched and accepted by the email provider.

**Notifications,
(Send What)**

In the Notifications section you may assign any or all alarms to any email or text addresses Recipient:.

Referring to the example here, click the down arrow to select Recipient: 1. through 10. With a Recipient: selected, click the Send Emails For: boxes to choose which alarm condition(s) will be reported (and/or alarm logs dispatched) to that specific individual.



In this abbreviated example, the station's Chief Engineer will receive a text message on his phone for Audio Loss, Stream Loss, High Ping and Internet Loss alarms. The overworked fellow will have the Weekly Log downloaded to his phone as well.

When you've finished with this Recipient:, proceed to the next. No **Save** command is necessary in this operation.

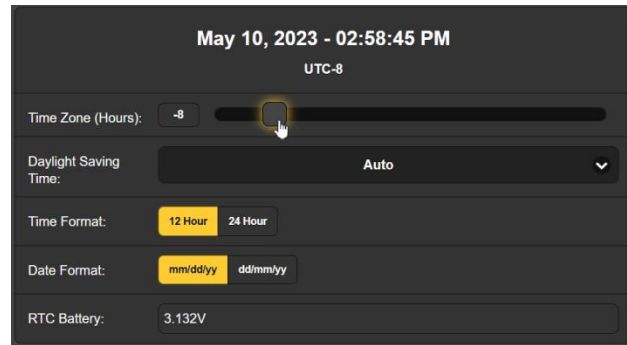
TIME SETUP

Time and DST

The internal Real Time Clock gets daily updates from Internet Time and has sufficient inherent precision to remain accurate within this schedule.

Grab and drag the Time Zone (Hours): slider for the proper offset from Universal Coordinated Time for your location.

In this example, UTC -8 represents West Coast US (Pacific) time. The time at the top of the page will update rapidly, so you can simply drag the slider until the time shown there agrees with your Rolex Cosmograph, or perhaps your even-more-accurate (crystal-controlled) Timex.



Daylight Saving Time: defaults to the Auto mode, though you may either opt for this convenience or click the down arrow to select On or Off for DST.

Presentation Formats

Time Format: can show either a 12 Hour or a 24 Hour clock, and the Date Format: can reflect either US or European conventions. The date is automatically set by the Internet Time Server.

RTC Battery

The Real Time Clock has a backup battery located on the back of the 611's front-panel circuit board. This is a 3V CR2032 flat 'coincell' battery with the + side facing out. Replace the battery when RTC Battery: drops below 2.000V.

Time Server

We have provided a reliable default time server to sync the 611, 1.inovonics.pool.ntp.org. If you prefer another, overtype the Server: entry with your alternate and click Save.

ADMINISTRATIVE MATTERS

Security and Passwords

Access to your 611 may be protected by multilevel passwords, which must then be entered before screens can be viewed or entries changed.

NOTE:

Once the 611 front panel OLED screen is unlocked, all passwords will appear in clear text on the Admin menu.

All passwords are hidden on the Admin Webpage when logged-in as a 'Read Only Web User'.

Under the Security heading of the Admin Webpage, type-in the Front Panel: password, which henceforth must be manually entered at the front-panel screen at the equipment site.

There are two Webserver-access passwords. Web Admin Password (Read/Write): is the Administrator password that allows full access to the 611. Web User Password (Read Only): will permit a lower-level user to view all data, but that user cannot make

changes to any settings. When passwords have been assigned, click **Save** to lock them into nonvolatile memory.

Once passwords have been entered and saved, the front-panel **Now Playing** screen will be the only one visible, all other Webpage screens will be locked out.

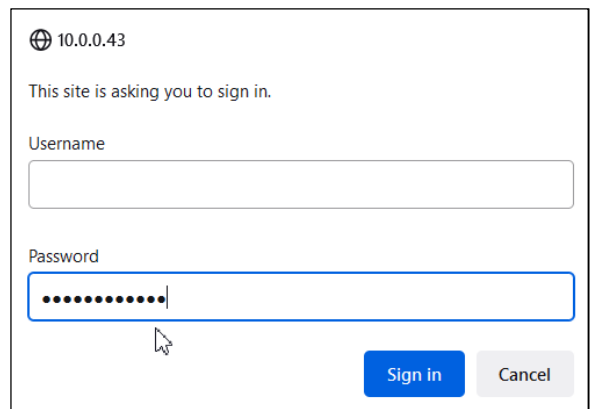
To delete or change a password, highlight and delete or overtype the existing password.

Signing In

With front-panel password protection in place at the installation site you must first press the **BACK** button. You'll then be prompted to enter the Front Panel Password using the jog wheel before any menu other than **Now Playing** can be accessed.

Passwords are case-sensitive. You'll find that the password-entry screen has sub-screens, one for lowercase, one for uppercase and one for numbers. Use the on-screen keyboard to spell-out the password, and then click **Save**. This will be necessary each time the unit times out to a dark or dim screen, so you may wish to reset the **Admin / Display / Timeout** interval to a higher number while you are working on the unit.

On any Web-connected device you will have to enter the appropriate **Admin** or **Web User** password. When this image appears on your screen, ignore **Username** and enter your password into the proper **Password** field, then click **Sign in**.



10.0.0.43
This site is asking you to sign in.
Username
Password
Sign in Cancel

Lost Password (Hard Reset)

NOTE: A 'hard reset' is required to bypass a local or a Webpage interface password. *This can only be done at the installation site!* A hard reset not only deletes the password, but will also return the 611 to all-factory-default settings. *All User settings will be lost!* This illustrates the importance of maintaining a current Hardware Profile, which is discussed shortly.

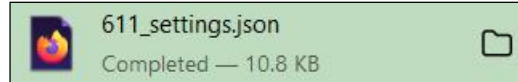
If the password is lost, the only way you can recover control of the 611 is at the equipment site following this procedure:

1. Unplug the power cable or disconnect the AC mains source.
2. Wait 10 seconds.
3. Hold down the **BACK** button and reapply power. You should see confirmation on the OLED that the 611 is rebooting with factory-default values.

The Hardware Profile

The entire 611 'setup' may be saved to your computer as a small text file. The Hardware Profile includes user settings, alarm notification preferences, SNMP options, passwords, etc., and is useful for restoring a previous setup or for cloning a second unit for backup service.

To save a profile to your computer, under Configuration click: Download Hardware Profile. With the Firefox browser used in this example, Windows 10 automatically saves the file to your Windows Downloads folder as a small file with a .json extension. From there you can move it to a location of your choice. Other browsers may ask you to specify a Save as: location. The file carries a default name of 611_settings.json.



To upload (restore) saved settings, first click Select Hardware Profile... under Configuration and navigate to where you have saved the profile. When prompted, Open the file. Then click Upload Hardware Profile. This will replace all setup parameters currently loaded and running in your 611 with the saved ones.

Reboot

Uploading a Hardware Profile *automatically* reboots the 611. There may be other circumstances under which you might want to reboot the unit manually. This can be done by clicking Reboot in the Configuration area.

A *manual* reboot does not change any settings or purge any data that would not be lost with a power cycle. The 611 will come back connected to the same stream and with all the same settings.

However, at any time you wish to 'clean house' and restore all settings and preferences to factory values, click: Load Factory Defaults. In this case you will lose your settings, except for IP settings (to maintain access to the unit), so first doing a Download Hardware Profile might be a smart move.

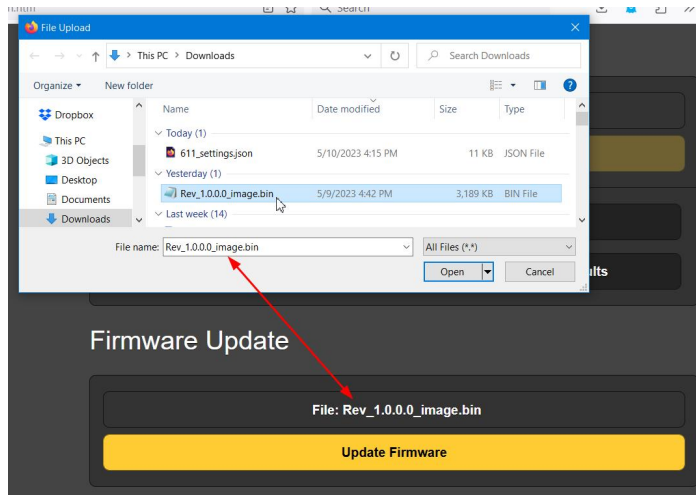
Updating Firmware

NOTE: Before attempting a firmware update, we do recommend first saving a fresh Hardware Profile, as a firmware update may affect user settings. If there is danger of compromising stored data, the firmware update will include notes to that effect.

611 firmware updates are issued as small .bin files that are downloaded from the Inovonics Website to your computer Desktop or into in a folder set aside for this purpose.

Updates including the Webpage interface pages and are easily uploaded to your 611. From the Firmware Update utility at the bottom of the Admin screen, click Select Firmware File... and

double-click the downloaded .bin file. This will transfer the file to the updater as shown in this screenshot:



With the name of the new .bin showing in File:, Click Update Firmware and follow prompts to complete the process. Updating takes a minute or so and will return you to the new Webpage interface pages once the operation is complete.

**611 Manual
'About' Info**

A PDF of the 611 manual has been included in the firmware.

The bottom of the Admin screen shows the Serial Number: of your 611, gives the current Firmware Rev: and displays the Up-time:, or how long your 611 has been running since the last manual or power-cycle reboot. You also may click Check for Updates to see if a new version of the firmware has been issued.

(This one of those “intentionally-left-blank” pages.)



INOVONICS WARRANTY

- I TERMS OF SALE:** Inovonics products are sold with an understanding of “full satisfaction”; that is, full credit or refund will be issued for products sold as new if returned to the point of purchase within 30 days following their receipt, provided that they are returned complete and in an “as received” condition.
- II CONDITIONS OF WARRANTY:** The following terms apply unless amended *in writing* by Inovonics, Inc.
- A. Register the Warranty online at www.inovonicsbroadcast.com within 10 days of delivery.
 - B. This Warranty applies only to products sold “as new.” It is extended only to the original end-user and may not be transferred or assigned without prior written approval by Inovonics.
 - C. This Warranty does not apply to damage caused by misuse, abuse, accident or neglect. This Warranty is voided by unauthorized attempts at repair or modification, or if the serial identification label has been removed or altered.
- III TERMS OF WARRANTY:** Inovonics, Inc. products are warranted to be free from defects in materials and workmanship.
- A. Any discrepancies noted within THREE YEARS of the date of delivery will be repaired free of charge, or will be replaced with a new or remanufactured product at Inovonics’ option.
 - B. Parts and labor for factory repair required after the three-year Warranty period will be billed at prevailing prices and rates.
- IV RETURNING GOODS FOR FACTORY REPAIR:**
- A. Equipment will not be accepted for Warranty or other repair without a Return Authorization (RA) number issued by Inovonics prior to its return. An RA number may be obtained by calling the factory. The number should be prominently marked on the outside of the shipping carton.
 - B. Equipment must be shipped prepaid to Inovonics. Shipping charges will be reimbursed for valid Warranty claims. Damage sustained as a result of improper packing for return to the factory is not covered under terms of the Warranty and may occasion additional charges.

