Omnia.9 Version 3.18.99 Software Update Notes

In addition to the update instructions below, please also see the changelog which lists all of the new features and fixes included in this release. The full User Manual is available online by clicking on the "Manual" link to the right of the Omnia.9 product page here: https://www.telosalliance.com/Omnia/Omnia9

If you have questions or find that you require assistance with this upgrade, you may call Customer Support at +1 216 622-0047 or email us at support@TelosAlliance.com. Please have the serial number of your unit available if you need to contact us. The serial number can be found on a small barcode sticker on the rear panel that looks like this: 0292xxyyyy.

IMPORTANT NOTES - PLEASE READ BEFORE UPDATING TO THIS VERSION:

In some cases, a full power cycle may be required following software installation in order to re-establish remote access. For this reason, updating software at the unit's location is recommended.

We have rewritten code for the entire streaming section and old streaming settings are not cross compatible to new. Upgrading to this version will result in losing all streaming encoder settings! Before you proceed, be sure to write down critical streaming settings such as server names, paths and IP addresses so you can re-configure your unit.

The MB Compressor threshold bug fixed. This section of the processing now behaves the way it was intended to -- please check and re-tune presets that use MB Comp. Note that most presets do not use MB Comp. MB Comp is different from MB AGC and MB LIM. MB Comp did not exist until beta v3.12.07 (Release version 3.15.36).

Errata / known Issues in this version:

- RDS UECP definitions are incomplete, may not properly parse all fields.
- If NTP is not properly set or present at startup, the system clock can drift by as much as several hours with each reset.
- Some systems may experience longer boot times after installing this version.

Software Update Procedure

Below is the step-by-step procedure for uploading the new firmware to your Omnia.9. Note that this will involve removing the unit from the air for quite some time, so be sure to have a backup processor ready or perform the update at a time when the station can be off air.

1. Download the update .pak file from the Telos Alliance website to a convenient location on your PC. The file can be found under the "Software" heading to the right of the Omnia.9 product page here: https://www.telosalliance.com/Omnia/Omnia9

- The file must be used as downloaded. Do not unpack/unzip it or use any other file decompression software on it.

2. You can update the Omnia.9 using the NfRemote software of via a USB flash drive plugged into the Omnia.9's rear panel USB port.

- If you'll be updating via USB, copy the update file to the root of the flash drive making sure there are no other older version update files present. Plug the USB drive into the Omnia.9 and navigate to System / System Configuration / Software Update and select "Update from USB". Follow the remaining instructions on the screen.
- If you'll be updating remotely via NfRemote, ensure that you have a solid network connection to the unit. Navigate to System / System Configuration / Software Update and select "Upload Software". Open the .pak file you downloaded above. Once fully uploaded, click on "Update to 3.19.x". (As previously stated, your system may require a reboot to re-establish network connections, understanding this risk, you may want to perform this update on site.)

3. After the Omnia.9 reboots, it's time to update the FPGA firmware. Navigate to System / System Configuration / Software Update. If there is any chance of a power outage (due to unreliable local power), this is the time to connect your Omnia.9 to a UPS before continuing . The FPGA update takes ten minutes, and MUST NOT BE INTERRUPTED! A power failure or reboot in the middle of an FPGA update is fatal and will require a trip to a Service Center to be repaired.

4. After you have ensured that the unit will not suffer a power outage, click on "Update FPGA to 0x90000018.

5. When the FPGA update is done, disconnect the power cables and then reconnect them.

6. Some units may need an Atmel update as well, depending on what software version they were running. If the "Update Atmel to 1.5" button is enabled (not grayed out) then you will want to do this as well, this also requires a hard power-off afterwards, separately from the FPGA update. It does not matter whether FPGA or Atmel is updated first. Risks here are similar to the FPGA, so take great care your unit is not rebooted during this update.

7. Hyperthreading is now recommended/required for certain configurations (2xHD and up).

- To enable hyperthreading, connect a USB keyboard to the rear panel USB port and repeatedly press F2 after power-on to enter the BIOS setup.

- Set "Intel Hyper-threading Technology" to Enabled. Press F10 and Y to save settings.

- Certain configurations in the Mk1 (original Omnia.9) (3xHD or 2xFM) will combine HD and Stream processing. Lowest studio output latency is achieved in Single FM, Single HD configuration. 2xHD is slightly higher, 3xHD or Dual FM studio latency is identical to 3.15.xx and older versions.

- Maximum number of encoders per stream:
  - 3xHD or 2xFM with hyperthreading: 6
  - 3xHD or 2xFM without hyperthreading: 4
  - Lighter configurations: 8

The Update procedure is now completed. You may now return the Omnia.9 to normal service.

The next section contains the changelog and manual addendum so be sure to read-on for information about the new features and bug fixes in this update.

Omnia.9 Change Log

(Applicable to Software v3.18.99, March 2018 – changes since previous release v3.15.36)

New clipper! FM and AM clippers by Hans van Zutphen, for even better audio quality and reduced latency!

Livewire+/AES67 Audio over IP support, ONLY when running on MkII hardware. Existing units (Mk I) can be upgraded.

Seamless preset switching.

ITU BS.412 MPX power limiter improved.

SNMP greatly extended, see MIB file for details.

µMPX MPX-over-IP support. (Licensable feature).

I/O back-end rewritten from scratch for reduced, constant latency. Studio latency now 6 milliseconds.

FM-AM-HD can now be crossfed, to facilitate using a single ratings encoder.

Brand New streaming engine with Shoutcast 2 and FLAC support, and built in server for direct connections.

Tilt correction algorithm improved for MPX Input, MPX Output (optional, with MPX PEQ enabled) and AM TX Output.

Preset descriptions added for all presets.

FM Phase Correction option added, corrects out of phase vocals and other out of phase sounds, reduces multipath and greatly reduces mono blending issues.

FM Mono Bass option added. This reduces multipath by mixing bass below a selectable frequency to mono.

Inputs and Outputs can now be labeled.

USB storage (file recorder) now accessible through FTP server.

FM Clipper meters added. (disabled by default)

RDS UECP UDP support.

RDS confidence decoder.

External RDS status: PS/RT/CT and signal quality displayed.

Internal RDS encoder now supports HTTP pull.

Double-clicking on a display window (when the adjustment page is already showing) will now make that display full-screen.

File Recorder / Client File Recorder:
MP3 support added (was previously FLAC only)
Can now split based on local time (quarter / half hour / hour) as opposed to just recording length.

MPX Output PEQ added, to compensate for transmitter deficiencies to maximize audio quality. Requires the use of an extremely accurate modulation monitor, and an oscilloscope.

Spectrum analyzer frequency graticule for MPX patch points now more detailed when zooming in.

Hardware version now displayed in system info.

Insert (ratings-encoder loop-through) improved - Lineup tone, Insert Return patch point and Return level LKFS readout added.

Ethernet settings updated, IPv6 disabled, prevents random link loss issues with the Intel 82579LM chip, all driver versions.

Internal Player now fades in/out main audio rather than cut.

Streaming engine now allows selecting the sample rate, for all except the lowest bit rates.

AM Stereo (C-QUAM) support.

AM Phase-independent Stereo to Mono downmix! No more loss of reverb on stereo material.

Studio path now has selectable sharp low and high pass filters, to better mimic AM on-air sound.

System Backup now contains human-readable HTML files.

NfRemote detects connection bandwidth much more accurately, allowing MPX streaming also on high latency links.

Full system logging, accessible through HTTP and through NfRemote: System Info - Download Logs.