MPX-2c/1c
Release Notes

Version 1.06.5

20.02.2026

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Version 1.06.5

20.02.2026

Version 1.06.5 includes a fix to the SNMP service that was updated in 1.06.4 but was missing support for some standard MIBs (uptime, etc.), unless you were using the devices MIBs OIDs for those.

Fixed Issues

- SNMP: support for some standard MIBs was missing from the updated SNMP service

Updated functionality

- Changes to the external clock are now tracked in the extended log, i.e. switching in between configured clock sources, fallback to internal clocks, etc.

Version 1.06.4

12./17.02.2026

Version 1.06.4 provides further bugfixes and improvements. It also fixes a potential crash for SNMP.

Fixed Issues

- Decoder: audio buffers for ES streams could potentially only use 25% of their assigned values after a reboot until any stream parameter was changed on the input source.
- SNMP: simultaneous trap generation and SNMP queries could crash the application. Measures have been applied to make this work, so there is no need to change any current intervals or deactivate traps, etc.

Updated functionality

- Updated SFN/SPN mechanism to be able to lock onto streams faster when starting up. This is an encoder side function, so encoders need to be running this version for the updated mechanism to work.
- Improved memory footprint for input and outputs streams, as in edge cases with a large number of streams the application could be terminated by the operating system and no crash report would be generated, as it technically was not a crash.

Update SNMP MIB

Due to an internal hiccup, the 1.06.4 bundle that was released on 12.02.2026 had an older MIB included (V1.44) then the current one (V1.45). As the application is identical, we opted to replace the bundle with updated MIB file inside. The updated MIB which is identical for both MPX-1c and MPX-2c can separately be downloaded via this link, if you already had updated in between 12.02. and 17.02.:

https://download.2wcom.com/products/MPX2c_AXPU/software/mpx2c_mib_1_45.zip

Version 1.06.3

22.12.2025

Version 1.06.3 provides further bugfixes and also addresses a small bug in the SNMP MIB, which has been updated to version 1.44 (downloadable from the web interface External API page, subtab SNMP).

Fixed Issues

- Decoder: further fixes for main and backup microMPX stream switching with SFN/SPN, where the decoder would sometimes stall with SFN status “No Timestamp”.
- Switch Criteria: silence detection (15kHz lowpass) would not work correctly with microMPX, keeping the decoder stuck on current main or backup. Please note that at this point in time, silence detection (15kHz lowpass) still won’t work with microMPX due to it not being decoded in the background due to licensing reasons, however if the stream is present, instead the MPX level is being used, so it will switch back and then notice afterwards if there is no audio present inside the decoded MPX.
- Switch Criteria: buffer level alarm would cannot work correctly with microMPX decoders, as only one instance can be active per decoder, hence buffer alarms for microMPX standby will now always claim to be ok, so this alarm can be used for PCM and microMPX parallel setups (i.e. PCM main, microMPX backup or vice versa).
- Crash on reboot: when restarting the device in V1.06.2 it was possible for the app to crash during powering everything down for a reboot. This led to a crash report generation after reboot or update to another version (that support crash report). In the latter case it made it look like the new version crashed on first start, while in fact it was the shutting down of the app prior to the update. You can safely ignore this crash and do not need to submit any reports when updating from 1.06.2.
- Live Listening: after factory reset, live listening ran at 192kHz until any parameter was changed.

Other Information

Unlike the other 2wcom products the MPX-1c and MPX-2c already had Live Listening in their default loadout, so no Santa present for them this year, sorry!

Version 1.06.2

07.11.2025

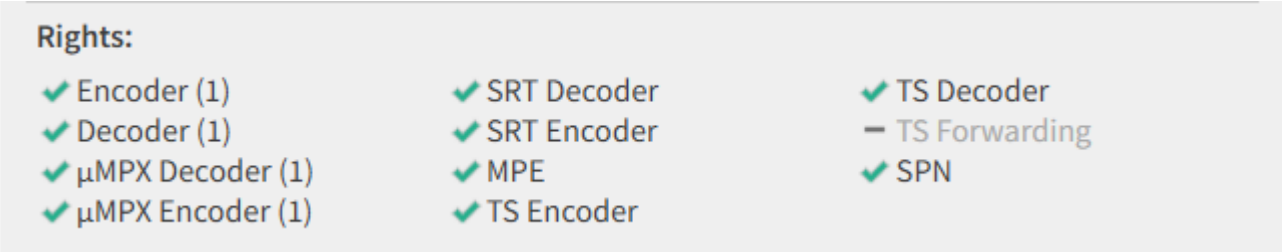
Version 1.06.2 provides a major bugfix for encoders stalling, as well as multiple main-/backup switching improvements. Due to the encoder stalling in versions 1.06 and 1.06.1, we have withdrawn those updates from the “Check for Updates” dialog.

Fixed Issues

- Encoder: fixed an issue that could cause the input to host data flow to stall and not recover, starving encoders and monitoring (stereo decoders) after longer run times. Multiple measures have been implemented to prevent future stalls, as well as resolve them automatically should they still happen in extreme load conditions.
- Main-/Backup Switching: fixed an issue that would stall the playout output chain when switching from a SFN/SPN main to a non SFN/SPN backup (no MPX signal on output, error counter increasing steadily)
- Main-/Backup Switching: fixed an issue where switching into a SFN/SPN Main or Backup, the decoder would only show “no timestamp”.
- microMPX: changes to microMPX input source parameters (microMPX buffer, decryption parameters) are now also applied when in Codec: Auto mode during operation, not just on device start once. Before changes were only applied while in Codec: microMPX mode. This also, in very rare cases, could lead to microMPX using the default setting of 1000ms for its buffer instead of the configured one.
- Buffer Alarm: buffer alarm were reporting a large negative number on device bootup.

Changed Functionality

The rights section on “System Settings -> Global” has been reworked to be easier to read. Green checkmarks display available options. Grey dashes display option that are not currently available in the device but can be acquired via sales.



Version 1.06.1 (withdrawn)

07.10.2025

Version 1.06.1 provides a bugfix for RTP statistics for microMPX streams.

Fixed Issues

- microMPX: fixed an issue that kept bitrate and packet rate at 0 for microMPX RTP streams. This was a visual issue only, introduced in the 1.06 release, streams were still being sent.

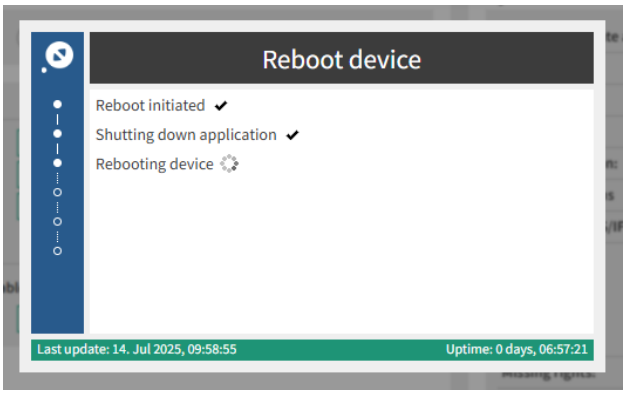
Version 1.06 (withdrawn)

26.09.2025

Version 1.06 provides provides further bugfixes, perfomance and stability improvements, as well as a rework of how external clocks are configured.

Improvements

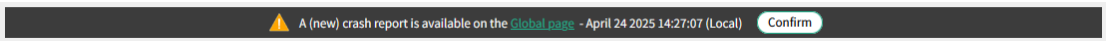
- Web: there on now a new dialog during updates and reboots that gives better information on where the process is currently



- MPE: MPE encapsulation now causes significantly less of a performance hit on encoders
- microMPX: made changes to the startup behaviour to help reduce start buffer offsets quicker
- Reporting: stream errors (in the audio block) should now give more precise error reporting in the log

New Functionality

- Added new crash report functionality
  In case the device does crash (performing an unintended reboot) it was until now very difficult to find the root cause for the crash/reboot. In such a case a crash report will now be generated which should be sent to us via the 2wcom Support Center. It will allow us to inspect the reason for the crash/reboot, enabling us to develop a fix for the crash.

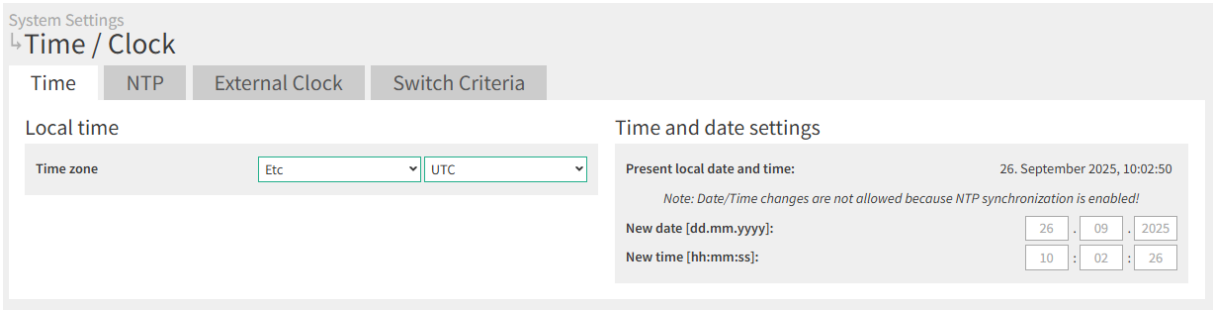


  The crash report can be downloaded via System Settings / Global:

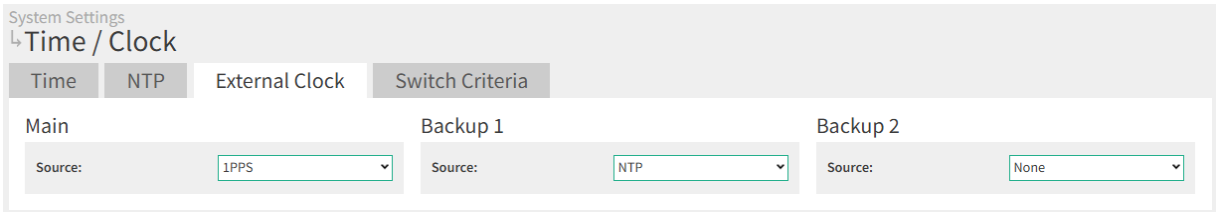
Changed Functionality

- We revised the way to configure everything related to time and clock handling including NTP and external clock.
  Before this revision several menu options were involved in the configuration. NTP configuration was done via “Network Settings / NTP”, time configuration (time zone) via “System Settings / Time”. Pretty much scattered all over the place.
  All these configuration options are now consolidated into a single place – the menu “System Settings /

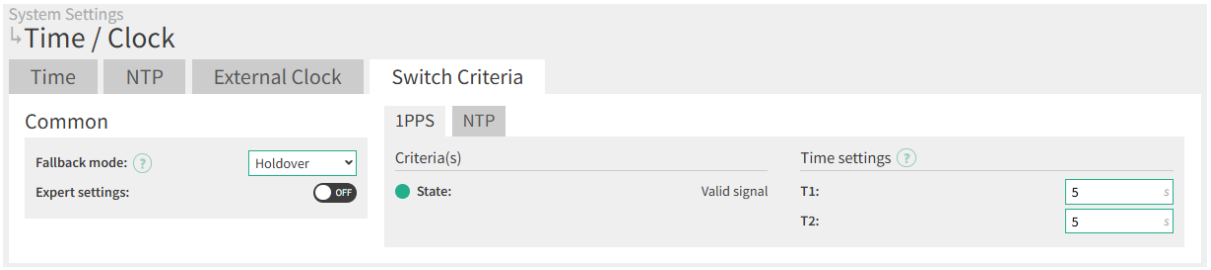
Time/Clock”:



You still have to configure via the “External Clock” tab (which corresponds to the former “System Settings / External Clock” menu), if and which external clock source (NTP, 1PPS) should be used for the MPX clock synchronization.



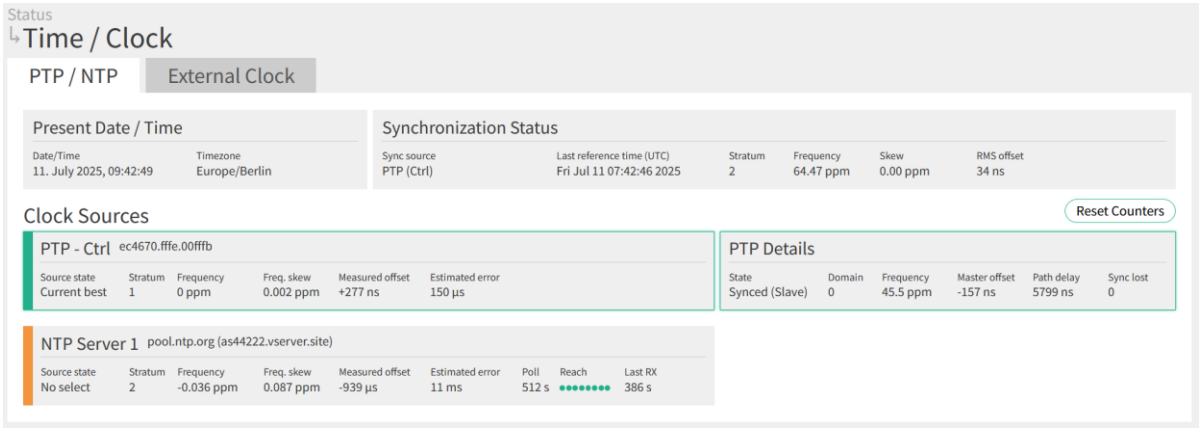
If a backup for the external clock is configured (e. g. NTP), the switch criteria are now configured via the “Switch Criteria” tab of the “Time / Clock” menu.



There’s also a new “Fallback mode” which allows you to control the behaviour if all configured external clock sources do fail. In “Holdover” mode (the new default) the device will keep the last external clock (no longer regulated) and will not switch to the internal clock, which would always result in a glitch.

- Together with the revision of the time and clock configuration we did also revise the available status information for time / NTP / external clock. Before the revision the NTP status could be found via the “Status / NTP” menu, whereas the external clock status could be found on the Overview page in a separate tab. PTP status information was only provided via this “External Clock” tab on the Overview page.
  The complete status information for all this is now also consolidated into a single place – the menu

“Status / Time/Clock”:



Fixed Issues

- microMPX: fixed an issue that could cause the decoder to (internally) no longer process packets after a stream loss or reconfiguration
- microMPX: fixed an issue that microMPX would not work with packet fragmentation (payload size set smaller than actual packet size)
- microMPX: fixed an issue where the microMPX internal sample rate converter was active by accident which led to less than optimal SFN accuracies
- SFN: fixed some issues when GPS was used as PPS source

Version 1.06-rc26

13.03.2025

Version 1.06-rc26 provides bugfixes and stability improvements.

Improvements

- Web: microMPX backups now have their own statistics (introduced in a pervious version, but missing from release notes)

Fixed Issues

- Stereo decoder: fixed an issue where is was always decoding using 0us deemphasis after a reboot until the user toggled it back and forth in between two settings
- MPE forwarding: fixed a memory leak that would eventually cause a reboot in fixed intervals (depending on amount of packets/forwards)
- microMPX buffer level: if the microMPX buffer level can be off target (+/-50ms) after a new stream starts or resumes, it now gets reset to the correct size. This is especially relevant in SFN and SPN use cases, as otherwise playout could shift into a neighbouring second
- NTP/SPN: addressed two issues, that could put the NTP clock controller, used for synchronous playout network (SPN), into a reset loop or get stuck on an offset.
- Fixed an incorrect clock setting for the hardware output SRC for decoder 1

Version 1.06-rc25

20.02.2025

Version 1.06-rc25 provides bugfixes and stability improvements.

Improvements

- Web: when reducing page width, the menu now is collapsed. You can still open and pin it to keep the old appearance and this setting is stored in your browser as a cookie
- Web: inputs that are available but not actively being used (i.e. backups) are now displayed with a half green/half grey status bar, instead of full green

Fixed Issues

- RTP: when using backups in standby mode, it was possible to corrupt encoder RTCP messages after a few switching cycles in between main and backup
- Ancillary Data: fixed a crash that could happen when using ancillary data with any codec
- AES Input: 176,4kHz AES input signals are now processed correctly and can be converted to 192 or 132kHz sampling rates
- SFN: 132kHz mode now correctly works with SFN again

Version 1.06-rc24

10.02.2025

Version 1.06-rc24 provides bugfixes and stability improvements.

Improvements

- NTP: added log messages when the device changes the current best NTP server
- NTP clock controller: current offset to clock is now visible at all times (External Clock tab on Overview page), when NTP is configured as an external clock.
- SFN/SPN: added last known accuracy value to error message when SFN/SPN hardware control resets
- NTP based SPN: improved NTP clock controller to not reset automatically in cases where this wasn't necessary

Fixed Issues

- Buffer Alarm: this alarm was not working when uMPX is being decoded. Note: for uMPX, the alarm looks at the uMPX decoder buffer, not the audio buffer, as is the case for all other codecs!
- RTP stream decoding: in cases where connections were lost often, the RTP decoder seized to pass on packets to the correct decoder, leading to a valid IP input statistic, but no decoded signal.
- uMPX Decoder: streams with very small data packets (less than 200bytes) were not forwarded to the decoder.
- SPN with NTP: NTP clock controller was able to drift off mark uncontrollably, resulting in massive offsets for those devices compared to decoders running normally. As a stop gap measure, the controller will now also auto reset in case the measured offset is >20ms. Typically, it should remain <2ms.

Known Issues / Recommendations

- PCM132kHz SFN/SPN: encoders will only provide correct timestamps after a reboot when all encoder outputs are deactivated and then reenabled.

Version 1.06-rc23

23.01.2025

Version 1.06-rc23 provides a major overhaul of how microMPX (uMPX) is being processed and played out. This will also address the long-standing issue with using very large uMPX FECs. Further refinement was made into the NTP based playout scheme to avoid unnecessary resets of the NTP based clock controller.

NOTE: due to the changes to the uMPX decoding process, some behaviour could change. Despite extended tests, there might be instances where these changes could cause issues in your setup, that we simply couldn't test or anticipate. If you encounter any issues you haven't experienced before, please open up a support ticket via the webpage: 2wcom Systems GmbH - Professional broadcast products

Improvements

- uMPX Decoder: refined error tracking and removed the dropout counter, as it wasn't giving any useful information and, in some cases, counted more than once for a single issue
- uMPX Decoder: revised how decoded MPX is read from and forwarded to the decoder hardware output(s)
- uMPX Decoder: added display for several RDS values like PI, PS, TA, etc. This is only available when using uMPX, not PCM!
- NTP based SPN: improved NTP clock controller to not reset automatically in cases where this wasn't necessary

Known Issues / Recommendations

- PCM132kHz SFN/SPN: encoders will only provide correct timestamps after a reboot when all encoder outputs are deactivated and then reenabled.

Version 1.06-rc17

05.12.2024

Version 1.06-rc17 provides major bug fixes for uMPX SFN mode, as well as some other improvements. With this version, we will also retract the former publically available 1.06-rc5 release, due to its uMPX SFN/SPN issues.

Improvements

- uMPX Decoder: if the decoder library generates a dropout message, these messages are now tracked and counted in the uMPX decoder status box on the web interface.

Fixed Issues

- SFN/SPN: fixed an issue where erroneous timepoints could get the output chain stuck
- SFN/SPN: fixed a bug, where uMPX decoders were slowly building up processing delays resulting in decoder reboots or unusable states
- uMPX Decoder: fixed a rare issue, where the decoder could lose packets despite them being received

Known Issues / Recommendations

- uMPX with large FECs: despite being marked as fixed earlier, this still remains an issue and is being addressed in a later update (again).
- MPX test generator cannot be used as a SFN source. The underlying problem is known and a fix will be provided in a later version.

Version 1.06-rc11 (withdrawn)

11.11.2024

Version 1.06-rc11 provides several bug fixes, improvements and adds some smaller features.

New Functionality

- History view: for certain error counters a clock symbol was added that on mouse over will display the 10 last occurrences from the event log, including timestamps.
- SCTE35: SCTE35 functionality was added to the TS multiplexer.
- SRC option for AES outputs: in some combinations, the AES output of the MPX-xc is not recognized by connected equipment due to the sampling rate slightly being adapted to keep buffers stable. For those scenarios, the output stream can be routed via a hardware SRC that uses a fixed clock on its output. Note: this adds a constant delay to the output stream, so for SFN/SPN all decoders needs to have this active, once a single decoder is using it!
- Added a silence detection alarm that evaluates the input after a 15kHz low pass filter, in order to be able to detect MPX signals that contain no audio.

Improvements

- Added a clear log button to the extended log
- Decoder Main/Backup Switching improved
- Improved playout behaviour for decoder
- More detailed log entries for audio (MPX) errors
- Consolidated TCP/IP page to only have one “Save” button

Fixed Issues

- SPN: long time until NTP sync is achieved and NTP mechanism resetting at times when the NTP servers are not ideal. This should work a lot better now.
- uMPX Decoder: ancillary data decoding occasionally dropped some bytes.
- Application crashing after uploading settings files with certain parameters.
- Second stream in dual streaming could report missing packets, despite them being received.

Known Issues / Recommendations

- uMPX with large FECs: despite being marked as fixed earlier, this still remains an issue and is being addressed in a later update (again).

Version 1.06-rc5 (withdrawn)

19.07.2024

Version 1.06-rc5 provides several bug fixes, especially for uMPX.

Fixed Issues

- Dual Streaming: UDP dual streaming for uMPX is possible once again
- uMPX Decoder (SFN/SPN): fixed a stuck issue/crash with uMPX running in SFN or SPN mode
- uMPX Decoder: fixed a crash that could occur when changing sources for a decoder with a present and active backup
- uMPX Decoder: increased internal buffer sizes to be able to handle large uMPX FEC bursts (tested 120/120)
- uMPX Decoder (SPN via Stereo Tool with NTP): fixed an issue that lead to accuracy not updating every 6h12m for a short duration, this however had no negative impact on general operation
- uMPX Encoder (SFN/SPN): fixed a crash when changing sources on an active encoder
- PCM Decoder (SFN/SPN): fixed filling silence in for portions where there is no data, instead of skipping over it, which lead to SFN/SPN accuracy jumping all over the place
- System Log: fixed system log page not showing up on the web interface

Known Issues / Recommendations

- PCM without external synchronization: decoder cannot estimate encoder speed when encoder is setup to maximum payload sizes smaller than required leading to fragmentation. Use Maximum if possible (default).
- Dual Streaming: if streams are time shifted, estimated time difference is calculated incorrectly when encoder is setup to maximum payload sizes smaller than required leading to fragmentation. Use Maximum if possible (default).

Version 1.06-rc2

04.07.2024

Version 1.06-rc2 contains some bug fixes for rc1.

Fixed Issues

- PES mode for uMPX: fixed several issues in certain configurations for both encoder and decoder side.
- Encoder profiles: fixes an issue where uMPX bitrate would always default to 320kbps when opening the dialog again.

Known Issues / Recommendations

- PCM without external synchronization: decoder cannot estimate encoder speed when encoder is setup to maximum payload sizes smaller than required leading to fragmentation. Use Maximum if possible (default).
- Dual Streaming: if streams are time shifted, estimated time difference is calculated incorrectly when encoder is setup to maximum payload sizes smaller than required leading to fragmentation. Use Maximum if possible (default).
- Dual Streaming: UDP dual streaming for native uMPX is unstable, leading to recurring codec buffer resets and uMPX buffer resets. Workaround: use a single stream only or (if possible) use RTP dual streaming in case the encoder is 2wcom.

Version 1.06-rc1

27.06.2024

Version 1.06-rc1 adds uMPX support for synchronous playout networking (SPN), where the encoder is Stereo Tool, as well as support transporting uMPX in a Transport Stream in PES mode, instead of having to rely on MPE. It also addresses an issue with the Stereo Decoders that could lose channel separation after dropouts, they will now automatically try to resynchronize.

New Functionality

- Can now use native Stereo Tool timing information to synchronize multiple decoders. For this the input protocol needs to be set to UDP to access SPN functionality for uMPX. Also requires Stereo Tool 10.31 beta 0008 or newer to use Stereo Tool with NTP only, instead of GPS.
- uMPX can now be embedded into MPEG Transport Streams using PES mode.

Fixed Issues

- Stereo Decoders: channel separation will now be correctly restored after dropouts, without needing to switch deemphasis around to reset the stereo decoder.

Known Issues / Recommendations

- PCM without external synchronization: decoder cannot estimate encoder speed when encoder is setup to maximum payload sizes smaller than required leading to fragmentation. Use Maximum if possible (default).
- Dual Streaming: if streams are time shifted, estimated time difference is calculated incorrectly when encoder is setup to maximum payload sizes smaller than required leading to fragmentation. Use Maximum if possible (default).

Version 1.05

13.06.2024

The full release version 1.05 adds NTP support for synchronous playout networking (SPN), decoding support for legacy FMC01 streams, REST API support, as well as the new extended log function. Further improvements were made to the global page and you can now get a visual spectral view of your MPX signal (MPX-2c devices only). TS Encoder and TS Decoder right were added to both devices, along with multiprotocol encapsulation (MPE) and MPE forwarding..

New Functionality

- Updated System Settings -> Global page: merged multiple upload boxes into a single instance. You can now also store settings files on your device's storage.
- Settings: settings can now be applied without having to reboot the device!
- Storage: storage can now also store settings files and firmware files, which can be activated on the Global page.
- Network: added a Tools tab to the TCP/IP page to allow pings and trace routes via devices ethernet ports.
- Transport Stream Codec + MPE (optional rights): you can now create and decode a MPEG transport stream, as well as embed IP data into it (MPE) and decode MPE IP data, as well as forward it.
- Alarms: the alarm page has been reworked to group existing and new alarms into category tabs for easier use.
- Spectrum: on MPX-2c devices you can now get a visual spectral representation of any input via FFT.
- uMPX encryption: you can now make secure your uMPX transmission with the inbuilt uMPX encryption scheme.

Fixed Issues

- Settings: fixed a crash when uploading older settings files with certain active settings.
- Main-/Backup-Switching: the overall reliability of main-/backup-switching has been improved, especially for uMPX.

Known Issues / Recommendations

- PCM without external synchronization: decoder cannot estimate encoder speed when encoder is setup to maximum payload sizes smaller than required leading to fragmentation. Use Maximum if possible (default).
- Dual Streaming: if streams are time shifted, estimated time difference is calculated incorrectly when encoder is setup to maximum payload sizes smaller than required leading to fragmentation. Use Maximum if possible (default).

Version 1.05-rc6

06.07.2023

Version 1.05 adds NTP support for synchronous playout networking (SPN), decoding support for legacy FMC01 streams, REST API support, as well as the new extended log function. It also addresses a critical bug when using SFN/SPN modes in conjunction with RIST, leading to decoders errors, even though all packets were able to be restored by RIST.

New Functionality

- SPN: improved NTP tracking algorithm to only rely on low skew values during initial tracking.
- Network setting: manual speed selection is now available for CTRL, DATA1 and DATA2.

Fixed Issues

- GPS (MPX2c only): fixed an issue with a wrong setting that would cause 1PPS to not be aligned to the correct time. The device will update the module after startup and future modules will already be delivered with this setting corrected.

Known Issues / Recommendations

- uMPX with SFN: for delays to be calculated correctly, the decoder needs to be set to uMPX instead of auto mode. This will be corrected in a future version.

Version 1.05-rc5

29.06.2023

Version 1.05 adds NTP support for synchronous playout networking (SPN), decoding support for legacy FMC01 streams, REST API support, as well as the new extended log function. It also addresses a critical bug when using SFN/SPN modes in conjunction with RIST, leading to decoders errors, even though all packets were able to be restored by RIST.

Fixed Issues

- uMPX: switching forth and back between main and backup (especially) in SFN mode would not correctly resume uMPX decoding operation. Please note: in order for main/backup switching to work correctly when using uMPX, the switch criteria “no decoder output” for that input needs to be deactivated, as uMPX will always generate a pilot, even if there is no more input data!

Known Issues / Recommendations

- uMPX with SFN: for delays to be calculated correctly, the decoder needs to be set to uMPX instead of auto mode. This will be corrected in a future version.

Version 1.05-rc4

13.06.2023

Version 1.05 adds NTP support for synchronous playout networking (SPN), decoding support for legacy FMC01 streams, REST API support, as well as the new extended log function. It also addresses a critical bug when using SFN/SPN modes in conjunction with RIST, leading to decoders errors, even though all packets were able to be restored by RIST.

New Functionality

- REST API: the MPX-1c/2c now supports REST API
- GPS module support: MPX-2c devices can now be delivered with internal GPS receivers that also provide 1PPS and 10MHz outputs. This option is available for new devices, however older devices can be retrofitted by 2wcom to be able to be upgraded with a GPS module.

Fixed Issues

- RIST: fixed an issue that was causing too many packets being requested and retransmitted when a packet did not arrive in time or at all.

Known Issues / Recommendations

- uMPX with SFN: for delays to be calculated correctly, the decoder needs to be set to uMPX instead of auto mode. This will be corrected in a future version.

Version 1.05-rc3

02.06.2023

Version 1.05 adds NTP support for synchronous playout networking (SPN), decoding support for legacy FMC01 streams, as well as the new extended log function. It also addresses a critical bug when using SFN/SPN modes in conjunction with RIST, leading to decoders errors, even though all packets were able to be restored by RIST.

Fixed Issues

- SFN/SPN: using the digital input on encoders could sometimes lead to timestamp jumps on decoders, breaking SFN/SPN every few hours for a couple of seconds.

Known Issues / Recommendations

- uMPX with SFN: for delays to be calculated correctly, the decoder needs to be set to uMPX instead of auto mode. This will be corrected in a future version.

Version 1.05-rc2

23.05.2023

Version 1.05 adds NTP support for synchronous playout networking (SPN), decoding support for legacy FMC01 streams, as well as the new extended log function. It also addresses a critical bug when using SFN/SPN modes in conjunction with RIST, leading to decoders errors, even though all packets were able to be restored by RIST.

New Functionality

- FMC01 decoder support: the device now is able to support FMC01 encoder streams (with and without SFN). For best results in SFN mode use 192kHz, as other sampling rates currently have degraded accuracy performance. This will be addressed in a future version.
- Extended log: this is a new tab on the log page that provides more in depth information than the regular log. The extended log is volatile, meaning that it clears on device restarts, but it can be saved to file. This log will track more events in future releases, so in this release it only covers some more basic things.

Fixed Issues

- SFN/SPN in conjunction with RIST: lost and re-requested packets were causing the decoder timestamps to lose synchronization, resulting in errors. This issue is caused by the encoder when resending the packets as it inserted incorrect timestamps, so to fix this issue, encoders need to be updated.
- Fixed an issue that prevented native uMPX UDP dual streaming from working. Now both streams are forwarded to the uMPX decoder and the decoder will now merge the streams internally to close gaps or failures in either stream.

Known Issues / Recommendations

- uMPX with SFN: for delays to be calculated correctly, the decoder needs to be set to uMPX instead of auto mode. This will be corrected in a future version.

Version 1.05-rc1

07.03.2023

Version 1.05 adds NTP support for synchronous playout networking (SPN) and addresses issues reported for the previous version(s).

New Functionality

- NTP can now be used to synchronize decoders over a network to create a synchronous playout network (SPN). A general recommendation guide for settings in SFN and SPN modes is in preparation and will be added to the manual/documents section soon.
- Unsynchronized PCM decoding tracks encoder speed way faster now, resulting in no or minimal buffer offset compared to previous versions.

Fixed Issues

- Fixed an issue that would prevent WAV files not with an uneven number of samples.
- Fixed an issue preventing device inputs to be used as backup sources for uMPX decoders.
- AES outputs could enter a continuous buffer underrun status, where every second sample would be replaced by a null sample leading to an aliased output signal.

Known Issues / Recommendations

- uMPX with SFN: for delays to be calculated correctly, the decoder needs to be set to uMPX instead of auto mode. This will be corrected in a future version.

Version 1.04

28.09.2022

Version 1.04 adds SFN support for uMPX, more uMPX instances per device, transport stream generation and decoding capabilities and addresses issues reported for the previous version.

New Functionality

- SFN is now working with uMPX as well. Since this is using the same system that is being used for PCM as well, uMPX with SFN is only possible in between 2wcom MPX-2c, MPX-1g and MPX-2ds devices. The MPX-1c does not support SFN at all.
- RIST encoder bandwidth limiter: to protect uplinks during wider connection problems to the decoder sites, a bandwidth limiting option can be activated that prevents the encoder from using more than that amount of bandwidth for resending packets. Before a flood of rerequests from decoders could possibly flood the uplinks bandwidth capabilities. Recommended values for PCM: 100ms, uMPX: 200ms (due to its jittery output, the decoder might otherwise ask for a resend of some packets).
- Source specific gain adjustments: have a backup that needs a different gain than your main? You can now add source specific gain adjustments that are added (or subtracted) from the regular output gain settings!
- New software right: TS Encoder. The device is now able to generate a MPEG-TS stream and output it via IP
- New software right: TS Decoder. The device is now able to receive and decode a MPEG-TS stream via IP
- New software right: MPE. The device is now able to embed IP streams into a TS using multi protocol encapsulation (MPE) in conjunction with TS Encoder right, or decoder MPE-IP streams from TS in conjunction with TS Decoder right.
- Updated software right: second uMPX encoder. MPX-2c can now run up to two uMPX encoders in parallel, but this is limited to uMPX version 4 streams.
- uMPX CPU load balancing: prevention measures have been added to avoid CPU bottlenecks on codecs by only allowing two instances (encoder or decoder or a mix of both) of uMPX to be able to operate in parallel when they are using version 4. Currently, two decoders can only be operated on MPX-2ds devices.

Fixed Issues

- Fixed an issue that would send a wrong number of IP packets per second in some 132kHz PCM modes.

Known Issues / Recommendations

- uMPX with SFN: for delays to be calculated correctly, the decoder needs to be set to uMPX instead of auto mode.
- PCM without SFN, µMPX decoders: after synchronization, audio buffer levels remain at the last value instead of slowly converging on the set buffer level. A fix has been postponed for now, as variations are usually within a 5ms tolerance.

Version 1.03

10.01.2022

Version 1.03 adds 132kHz sampling rate and ancillary data support for µMPX, as well as addresses bugs found in previous versions.

New Functionality

- Added 132kHz sampling rate, which is sufficient to transport regular MPX signals (M+S+RDS), while reducing required bandwidth by more than 30%.
- Enhanced frame size options for PCM. Users can now choose to change frame sizes of 1ms, 2ms or auto mode. Auto mode will calculate the best multiple of 1ms frame size based on regular MTU of 1500 bytes. This can lead to massive overhead reductions from ~27% to ~5% in the case of 132kHz@12bit. But even 192kHz@24bit can be reduced from 9% to 5%.
- µMPX now supports sending ancillary data. This will only work with 2wcom decoders and only in µMPX codec version 4.0.
- Added document download section (manual) to service section
- Updated firmware download section to also list additional downloadable content such as system controller and recovery image download/updates.

Fixed Issues

- Fixed an issue that could lead to distorted analog output signals after errors.
- Fixed a performance issue when using more than a few send delays and/or RIST FECs.
- Fixed a crash when disabling an active main when using “activate when needed” backups.

Known Issues / Recommendations

- 132kHz encoder with 13, 14 and 15bit sample width and 1ms frame sizes creates 1033 IP packets/second instead of 1000, which decoders have trouble recovering timing information in non SFN and SFN modes. There is a workaround for this: either use 12, 16, 20 or 24bit or change frame length to 2ms or auto mode.
- PCM without SFN, µMPX decoders: after synchronization, audio buffer levels remain at the last value instead of slowly converging on the set buffer level. A fix has been postponed for now, as variations are usually within a 5ms tolerance.
- MPX-2c: While possible, running µMPX on one codec and PCM on another, any changes made to the µMPX decoder due to encoder or decoder setting changes can also have a negative impact on the PCM codec (audio drops). It is recommended to only use µMPX alone without any other codecs, that is: ONE encoder OR ONE decoder at any time in one device, regardless of available channels.

Version 1.02

22.10.2021

Version 1.02 adds the ability to listen in to audio inputs on encoders, clipping functionality, as well as addresses many bugs found in version 1.01 or lower.

New Functionality

- Added audio inputs as sources for stereo decoder(s), enabling live listening for encoders without having to decode the encoded stream first. Also added symbols to inputs.
- Rearranged items in the decoder section of the overview page to better be able to track buffer levels.
- Added clipping function to inputs and outputs. NOTE: clipping will severely increase THD and should only be used by experienced users. Default threshold for clipping is maximum possible signal level, so it is disabled by default. Clipping should only ever be used as a safety net and is not to be confused with limiting!
- Signal generator stereo generation can now be turned off, to generate M band signals only.

Fixed Issues

- Removed many internal audio chain resets for µMPX, to prevent signal loss on output in bad reception cases, so at least the pilot tone will always be output.
- Fixed an issue that made using PCM in SFN mode impossible (introduced in V1.01).
- Fixed an issue that caused silence to be added to PCM outputs when using PCM without SFN.
- Fixed missing Decoder 2 SFN Accuracy Alarm (MPX-2c).

Known Issues / Recommendations

- PCM without SFN, µMPX decoders: after synchronization, audio buffer levels remain at the last value instead of slowly converging on the set buffer level. This will be addressed in V1.03.
- Using many encoder destinations in conjunction with dual streaming, FEC and send delays will cause huge CPU loads and create unstable encoder streams. It is recommended to only use dual streaming and/or µMPX FEC at the moment, when sending many unicast streams (point to multipoint).
- MPX-2c: While possible, running µMPX on one codec and PCM on another, any changes made to the µMPX decoder due to encoder or decoder setting changes can also have a negative impact on the PCM codec (audio drops). It is recommended to only use µMPX alone without any other codecs, that is: ONE encoder OR ONE decoder at any time in one device, regardless of available channels.

Version 1.01

12.07.2021

New Functionality

- Enabled backups for µMPX decoders. Due to the nature of the codec, switchovers in between main and backups will not be smooth. This can be reduced by reducing decoder buffer levels, as well as encoder keyframe intervals.
- Added live listening to the device. You can only listen to the output of a decoder. In order to listen to the input of an encoder, add that directly to the decoder as input.
- Added headphone support, as with live listening, currently only the decoders outputs can be listened to.
- Implemented a signal generator. Note: currently it will always stereo encode L and R, this will be optional in future releases.
- Added RIST (µMPX/PCM) and SRT (PCM only, µMPX not currently supported, use RIST instead). This is a software option, which needs to be enabled.

Fixed Issues

- Fixed stability issues with µMPX that could crash the application when reconfiguring the codec.
- Fixed audio buffer alarm not working in non SFN modes.

Known Issues / Recommendations

- Using many encoder destinations in conjunction with dual streaming, FEC and send delays will cause huge CPU loads and create unstable encoder streams. It is recommended to only use dual streaming and/or µMPX FEC at the moment, when sending many unicast streams (point to multipoint).
- MPX-2c: While possible, running µMPX on one codec and PCM on another, any changes made to the µMPX decoder due to encoder or decoder setting changes can also have a negative impact on the PCM codec (audio drops). It is recommended to only use µMPX alone without any other codecs, that is: ONE encoder OR ONE decoder at any time in one device, regardless of available channels.

Version 1.0-rc23

23.04.2021

New Functionality

- Increased total encoder destinations from 8 to 32.
- Updated µMPX library to version 4.
- Updated TCP/IP page in preparation for services per interface update.

Fixed Issues

- Fixed status indicators on the overview page that were showing no or wrong data.

Known Bugs

- Using many encoder destinations in conjunction with dual streaming, FEC and send delays will cause huge CPU loads and create unstable encoder streams. It is recommended to only use dual streaming and/or µMPX FEC at the moment, when sending many unicast streams (point to multipoint).
- While possible, running µMPX on one decoder and PCM on another, any resets made to the µMPX decoder due to encoder or decoder setting changes can also have a negative impact on the PCM decoder (audio drops). It is recommended to only use µMPX alone without any other codecs, that is ONE encoder OR ONE decoder at any time in one device, regardless of available channels.

Version 1.0-rc14

02.02.2021

New Functionality

- Added Linear PCM mode without external synchronization (1PPS).
- Added µMPX Codec configuration parameters for encoder and decoder.

Fixed Issues

- Crashes when changing µMPX configurations.
- Improved general PCM SFN stability.
- Fixed µMPX decoder not updating “no decoder output” switch criteria and showing as always red, even when running without issues.
- Fixed encoder evaluating XLR “no input data” when no XLR input is being used and showing as always red, even when running without issues.

Known Bugs

- When changing an active µMPX configuration in between encoders or decoders within one device, it is required to first turn off the µMPX encoder/decoder, save and only afterwards assign it again.