

# PRORXD 1RU / 2RU Professional Receiver Decoder

**Version 2.5.1**  
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**Domo Tactical Communications (DTC) Ltd**  
Fusion 2, 1100 Parkway,  
Solent Business Park, Whiteley,  
Hampshire, PO15 7AB, England

T: +44 (0)1489 566 750  
F: +44 (0)1489 880 538

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## Change History

Version	Main Changes from Previous Version	Released By
1.40	Initial release.	SV
1.41	Bug Fix – UDP Streaming port validation	SV
1.42	Bug Fix – 2U touchscreen buttons re-sizing	SV
2.0.0	MPEG-4 ASP Support + Improvements	SV
2.1.0	D298/D299 tuner card support + Fixes	SV
2.1.1	Bug fixes	SV
2.2.0	Improved demod and decoder performance + other enhancements and fixes.	SV
2.3.0	Low delay H.264 support + production support fix	SV
2.3.1	Kernel patch to cope with newer SD cards	SV
2.4.0	Dual Pedestal / Packet Diversity / Remux	SV
2.4.1	DDR calibration fix	SV
2.5.0	Video Preview on 2U touchscreen + bug fixes	SV
2.5.1	Linear Audio, Improved RTSP support + bug fixes	SV

## Introduction

This document describes to the reader the key features, improvements, known issues and bug fixes implemented in the software used to control some of the DTC Transmitter and Receiver products range.

The document will be up issued with every software release and as such gives a traceable history in a single document.

# Software Releases

## Version 1.40

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### File Names

- d330\_os\_v1.40.upg
- d330\_prorxd\_data\_v1.40.upg
- d330\_prorxd\_2u\_data\_v1.40.upg

### New features

- Production Release for PRORXD 1U and 2U products

### Enhancements

- None.

### Bug Fixes

- None.

### Known Issues

- End-to-end video delay not currently as low as 15ms.
- No MPEG-4 ASP support – due soon.
- [\[PRORX2-63\]](#) - UDP Streaming Port validation
- [\[PRORX2-64\]](#) - WUI Globals Tab settings apply bug

## Version 1.41

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### File Names

- d330\_os\_v1.41.upg
- d330\_prorxd\_data\_v1.41.upg
- d330\_prorxd\_2u\_data\_v1.41.upg

### New features

- Production Release for PRORXD 1U and 2U products

### Enhancements

- None.

### Bug Fixes

- [\[PRORX2-63\]](#) - UDP Streaming Port validation
- [\[PRORX2-64\]](#) - WUI Globals Tab settings apply bug

### Known Issues

- End-to-end video delay not currently as low as 15ms.
- No MPEG-4 ASP support – due soon.

## Version 1.42

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### File Names

- d330\_os\_v1.42.upg
- d330\_prorxd\_data\_v1.42.upg
- d330\_prorxd\_2u\_data\_v1.42.upg

### New features

- None.

### Enhancements

- None.

### Bug Fixes

- [\[PRORX2-65\]](#) - 2U touchscreen buttons enlarge on press.

### Known Issues

- End-to-end video delay not currently as low as 15ms.
- No MPEG-4 ASP support – due soon.

## Version 2.0.0

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### File Names

- d330\_os\_2.0.0.upg
- d330\_prorxd\_1u\_data\_2.0.0.upg
- d330\_prorxd\_2u\_data\_2.0.0.upg

### New features

- [PRORX2-39] - MPEG-4 ASP support. Now compatible with all Transmitters.
- [PRORX2-68] - Password Protect the browser interface. (Global Settings->Set Password button at the bottom).

### Enhancements

- MPEG Audio Layer 1 / 2 decode quality improvement
- Re-worked controls for the 1U front panel – Rotate control when navigating the menus is now more intuitive. The next item in a list is “rotate right”, previous is “rotate left”.
- OSD now within the “Title Safe” area for consumer monitors that overscan.
- When selecting preset Downconverter types the Manual LO now displays the LO frequency in use.
- IP decode more stable. Recommended configuration is to set the Genlock settings to “Internal” mode.
- If licensed for a single decoder the second output mirrors the first.

### Bug Fixes

- [PRORX2-59] [PRORX2-75] - Improved streaming bit-rates. For a single streamer output we can cover all DVB-T bit-rates. When using two streamers the unit should not be used to stream more than about 40Mbps i.e. two streams of DVB-T 8MHz 64QAM ½.
- [PRORX2-60] - When loading an invalid license file the WUI pop up window still shows a successful message.
- [PRORX2-66] - 2U touchscreen lock on processing message if you apply numerically equivalent frequency.
- [PRORX2-67] [PRORX2-76] - In 2x4 mode the LO frequencies are incorrectly assigned to channels
- [PRORX2-71] - KetTextBox in the WUI may not allow all the characters that are legal in the ADL spec
- [PRORX2-72] - Entering ADL key for the decoder 2 fails

- [\[PRORX2-73\]](#) - Video stutter when in Genlock and using ultra-low delay on TX.
- [\[PRORX2-74\]](#) - ProRxD 2U Front panel name editing issue.
- [\[PRORX2-77\]](#) - ProRxD RF Input Numbering inconsistency.
- [\[PRORX2-78\]](#) - Removing 2nd Decoder license doesn't stop H.264 / MPEG-2 decode on 2nd channel, just removes WUI controls.
- [\[PRORX2-79\]](#) - Licensing for 2-way is not limiting the reception to the first two inputs.
- [\[PRORX2-80\]](#) - Video delay up to 5 seconds.

#### Known Issues

- End-to-end video delay not currently as low as 15ms.
- [\[PRORX2-81\]](#) - Changing BNC output results in RTSP stream being cut off.

## Version 2.1.0

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### File Names

- d330\_os\_2.1.0.upg
- d330\_prorxd\_data\_2.1.0.upg

### New Features

- [PRORX2-82] - D298 / D299 support

### Enhancements

- Improved 4:2:0->4:2:2 chroma up-sampling filters
- Single Data upgrade file that supports both 1U and 2U variants

### Bug Fixes

- [PRORX2-83] - Spectrum inversion setting on the WUI doesn't change anything
- [PRORX2-84] - Narrowband Auto Bandwidth Detection does not work.
- [PRORX2-85] - Front panel IP Config change warning
- [PRORX2-86] - Cannot add Decimal place in IP config
- [PRORX2-90] - Slow response touch screen under higher bitrates
- [PRORX2-94] - RS232 command with leading zeros on integer values get interpreted as octal

## Version 2.1.1

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### File Names

- d330\_os\_2.1.1.upg
- d330\_prorxd\_data\_2.1.1.upg

### New Features

- None

### Enhancements

- None

### Bug Fixes

- [\[PRORX2-95\]](#) - Vertical tear on video in genlock mode. This would present as a vertical split down the screen and the video on the right hand side would have chroma artefacts that looked like bad de-interlacing. This only occurred in external genlock mode and was due to a counter reset issue.
- [\[PRORX2-101\]](#) - Sparkly video on Front Panel composite output. This cause video on the front panel connector to have random dots over the video and some syncing issues. Timing on an SDI link found to be variable across compilations and needed to allow more setup and rise time. Clocking structure improved and circuit locked down with more robust timing on the link.

## Version 2.2.0

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### File Names

- d330\_all\_2.2.0.upg (New single file upgrade – only applies if you have v2.2.0 or higher on the unit already)
- d330\_os\_2.2.0.upg (First part of two-part upgrade – applicable for units with software prior to 2.2.0 loaded)
- d330\_prorxd\_data\_2.2.0.upg (Second part of two-part upgrade – applicable for units with software prior to 2.2.0 loaded)

### New Features

- Single file upgrade support: From this version onwards upgrades can be done with a single file as listed above. If the version of software on the unit is 2.1.1 or older then the two-part upgrade needs to be used.
- Downconverter selection by part number added to 2U touchscreen.

### Enhancements

- Improved DVB-T performance in multipath environments with long echoes.
- Improved support for Vislink L1700 p50 and p60 video modes.
- When not decoding audio, signal level is returned to zero instead of a hold on the last sample value. Level bars on monitors, audio systems will return to zero.
- Improved audio support for BMS transmitters.
- When licensed for a single decoder the two video outputs are locked together to the same video, but genlock and OSD settings are independent for each output channel. Allows one SDI with OSD and one without with the same video on both.
- Rebranded Logo to reflect new company identity.
- SMPTE 352M Video Payload Identifiers added to SDI outputs in all video modes. P50 and P60 will now work into all monitors.
- Improved encryption interoperability with IMT and Janteq transmitters.
- Improved packet loss handling for web control.

### Bug Fixes

- If licensed for SD decoder only, the 2U touch panel disabled all the demod controls.
- In UMLV 2x4 mode the 2<sup>nd</sup> demod's controls on the WUI were disabled by mistake.

## Version 2.3.0

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### File Names

- d330\_all\_2.3.0.upg (New single file upgrade – only applies if you have v2.2.0 or higher on the unit already)
- d330\_os\_2.3.0.upg (First part of two-part upgrade – applicable for units with software prior to 2.2.0 loaded)
- d330\_prorxd\_data\_2.3.0.upg (Second part of two-part upgrade – applicable for units with software prior to 2.2.0 loaded)

### New Features

- Low delay H.264 support that matches the functionality of the ProRXB i.e. upto 1080p30/i60. This is enabled in the WUI on the Config tab under Decoder sections via the “Low delay” checkbox. In MPEG-2, MPEG-4 ASP this setting has no effect.

### Enhancements

- None.

### Bug Fixes

- New batches of processor were causing boot issues related to a component in the silicon. Workaround generated with equivalent functionality.

## Version 2.3.1

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### File Names

- d330\_all\_2.3.1.upg (New single file upgrade – only applies if you have v2.2.0 or higher on the unit already)
- d330\_os\_2.3.1.upg (First part of two-part upgrade – applicable for units with software prior to 2.2.0 loaded)
- d330\_prorxd\_data\_2.3.1.upg (Second part of two-part upgrade – applicable for units with software prior to 2.2.0 loaded)

### New Features

- None.

### Enhancements

- None.

### Bug Fixes

- More recent SD cards are slower to initialise after power up. Patched kernel to cope with this to ensure reliable initialisation of the SD cards.

## Version 2.4.0 – RECALLED – Use 2.4.1 instead

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### File Names

- d330\_all\_2.4.0.upg (Only for use if you are downgrading to this version from a later one. There is a problem in previous software versions where there was not enough memory allocated to store the entire file after new features had been added).
- d330\_os\_2.4.0.upg (First part of two-part upgrade – applicable for units with software prior to 2.4.0 loaded)
- d330\_prorxd\_data\_2.4.0.upg (Second part of two-part upgrade – applicable for units with software prior to 2.4.0 loaded)

### New Features

- **Dual Pedestal (4K) DVB-T support** - Used for doubling the bitrate of a regular DVB-T signal by using two adjacent channels to transmit the data, by splitting the stream between them. A single unit can operate in dual channel (2x2 / 2x4) mode to receive both channels and combine them on the same unit, or two units can be used in single channel mode (1x8 / 1x4) and utilise ASI to link the two together.
- **Packet Diversity** - Allows you to double the diversity of the system by linking a remote ProRXD in via ASI or IP and intelligently combining the streams together on a packet by packet basis to correct for errors.
- **Remux** - Multiple streams from RF, ASI and IP sources can be remultiplexed on the ProRXD to form a multi-program stream.
- Support for D331-OEM PCB product

### Enhancements

- Embedded audio available on auxiliary HD-SDI connections (OEM only)

### Bug Fixes

- 720p in 2/3 horizontal down-sampling mode was incorrectly displayed.
- Composite output displayed corrupt video when decoding 1080p50/59/60 video. Although the video cannot be downscaled to SD due to hardware constraints the output now goes to a static magenta colour when this happens to indicate this state.
- RS232 data packet loss when under high processor load. New implementation solves this.
- Incorrect reporting on IP input status has now been fixed.
- Demod status now reports the bitrate on the incoming RF channel to aid user awareness of the required bitrate to provision for streaming.

## Version 2.4.1

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### File Names

- d330\_all\_2.4.1.upg (Only use if already on 2.4.0 or later).
- d330\_os\_2.4.1.upg (First part of two-part upgrade – applicable for units with software prior to 2.4.0 loaded)
- d330\_prorxd\_data\_2.4.1.upg (Second part of two-part upgrade – applicable for units with software prior to 2.4.0 loaded)

### New Features

- None

### Enhancements

- None

### Bug Fixes

- DDR calibration fix. Some units when upgraded to 2.4.0 either would not complete their boot sequence or would have sparkles on the video outputs. This release fixes just this issue.

## Version 2.5.0

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### File Names

- d330\_all\_2.5.0.upg (Only use if already on 2.4.0 or later).
- d330\_os\_2.5.0.upg (First part of two-part upgrade – applicable for units with software prior to 2.4.0 loaded)
- d330\_prorxd\_data\_2.5.0.upg (Second part of two-part upgrade – applicable for units with software prior to 2.4.0 loaded)

### New Features

- **Video Preview on 2U**  
On the 2U touchscreen controller it is now possible to see a low frame rate preview of the decoded video from each of the on board decoders. Simply touch the SNR/Input level panel when on the status screen and it will toggle to a video display view. Touch it again and it will cycle to the 2<sup>nd</sup> decoder and then back to the SNR levels display.

### Enhancements

- In the unlikely event of a HTTP comms error on the network which the software on the ProRXD cannot recover from, the unit will reboot after 1 minute instead of locking up.

### Bug Fixes

- **[PRORX2-147]** Fix for genlock initialisation. Under certain circumstances the genlock would fail to initialise correctly depending on the order in which boot/connection of genlock reference and configuration occurred.
- **[PRORX2-153]** Video Decoder in H.264 standard mode would have a limited dynamic range, whereas an extended range of pixel values was expected. The clip range on the decoder has been adjusted and now outputs the extended range of values on the HD-SDI and HDMI ports.
- **[PRORX2-154]** SDI jitter when in Dual Pedestal mode. The combiner was not playing out the TS packets at an even rate and so when not in genlock mode the SDI had additional timing jitter that was not being smoothed out. The combiner has now been fixed and the jitter is now within acceptable limits set by the standards body.

## Version 2.5.1

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### File Names

- d330\_all\_2.5.1.upg (Only use if already on 2.4.0 or later).
- d330\_os\_2.5.1.upg (First part of two-part upgrade – applicable for units with software prior to 2.4.0 loaded)
- d330\_prorxd\_data\_2.5.1.upg (Second part of two-part upgrade – applicable for units with software prior to 2.4.0 loaded)

### New Features

- **[PRORX2-161] Linear Audio Support**  
ProRXD now supports Linear Audio for compatibility with AEON Transmitters. 48kHz 16bit 2 channel mode is supported. Allows for audio decoding to Analogue or AES/EBU Digital formats.
- **[PRORX2-156] RTSP Streaming of second video service from each received source**  
Allows support for receiving from two SOL8SDR each with two video services and being able to stream the elementary stream from both. URLs are video1\_2.sdp and video2\_2.sdp

### Enhancements

- None

### Bug Fixes

- **[PRORX2-156] RTSP elementary streaming not working into Milestone VMS**  
Re-worked streaming application code to fully support RTSP into VLC / DVP / Milestone.
- **[PRORX2-157] Assigning IP2 Stream to Decoder 2 selects IP1**  
Settings for IP input source options changed value by mistake and caused issues with MC3 compatibility.
- **[PRORX2-163] Genlock Issue**  
Genlock would lose position synchronisation with input and not recover with intermittent contact or shifts due to RF reference moving.