Summitwave TX

User Manual

Multi-Channel Auracast™ Transmitter



UM-TX-EN · Rev. A · 2026-10

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1 Overview

The TX takes audio from two analogue inputs or a Dante network and sends it as up to six simultaneous Auracast streams to compatible receivers. The three audio modes are described in *Select the audio mode*.

1.1 Safe operation

- Mount the TX securely and do not cover it.
- Use only undamaged network and audio cables.
- Operate the TX only at an ambient temperature between −10 °C and +40 °C.
- Immediately take the TX or cables out of service if they show visible damage, deformation or unusual heating.

1.2 Recommendations for operation

- Record the hostname, IP address, stream names and passwords.
- After every change, verify transmission with a compatible receiver: stream name, intelligibility, channel assignment and the entire intended coverage area.

Antennas on the front
The antennas are located on the front of the TX. Nothing may touch or cover this surface – otherwise the range drops sharply.

2 Technical data

The values correspond to datasheet DS-TX-EN, Rev. A (2026-07). Range and latency are typical values: they depend on the receiver, stream configuration, obstacles and RF environment. Always check reception on site.

BLE / AURACAST

Radio standard	Bluetooth LE Audio (Core 6.0)
Auracast mode	Broadcast transmitter · up to 6 simultaneous streams
Frequency range	2400–2482 MHz
Codec / sample rate / bit depth	LC3 · 16 / 24 / 48 kHz · 16 bit
Transmit power	max. +10 dBm
Encryption	AES-CCM · password per stream
Typical range	100 m
Typical end-to-end latency	40 ms

ANALOGUE AUDIO INPUTS

Inputs	2 × balanced XLR · line
Audio modes	2 × mono · mono sum · 1 × stereo (L/R)
Nominal line level	+4 dBu
SNR / THD+N	≥ 105 dB · ≤ 0.05% (line at 0 dBu)
Internal processing	48 kHz · 24 bit
Frequency response	20 Hz–20 kHz (±1 dB at 48 kHz)

DANTE / NETWORK AUDIO

Channels	6
Port speed	100 Mbit/s
Additional latency	≤ 4 ms

NETWORK / POWER

Ethernet port 1	LAN configuration and monitoring
Ethernet port 2	LAN configuration + Dante + PoE (IEEE 802.3af)
IP addressing	DHCP · static IP · link-local
Management	Password-protected web interface over HTTP/HTTPS
Power	PoE (IEEE 802.3af) or USB-C 5 V; USB-C can also provide backup power
Recommended power supply	USB-C 15 W (5 V / 3 A)
Power consumption	7 W max. · 3 W nominal

MECHANICAL / ENVIRONMENT

Dimensions / weight	134 × 134 × 50 mm (W × H × D) · 300 g
Enclosure / colour	PETG · white or black
Mounting	Wall / ceiling · 1/4″ female thread · mounting plate · cable ties
Operating temperature	−10 °C to +40 °C
Storage temperature	−40 °C to +70 °C
Compliance	CE (RED) · EN 62368-1 · EN 55032 · EN 55035 · RoHS · REACH · WEEE

3 Open the web interface

You configure the TX in a browser – a current version of Chrome, Firefox or Edge. The computer and the TX must be on the same network.

1. **Connect the network**
   Connect the **Config** port (port 1) or the **PoE + AoIP + Config** port (port 2) to the network. Dante and PoE require port 2.
2. **Connect the power**
   Power the TX through PoE (IEEE 802.3af) on port 2 or over USB-C with a power supply of at least 15 W (5 V / 3 A). If both are connected, the TX keeps running when one supply fails. Start-up takes about one minute; the green LED blinks twice as soon as the web interface can be reached.
3. **Open the device address**
   Enter the address from the label on the rear of the device in the browser, for example `swtx1xxx.local`.
4. **Confirm the certificate warning**
   Open “Advanced” in the browser warning and continue. The warning (`NET::ERR_CERT_AUTHORITY_INVALID`) appears until the CA certificate is installed – see *Install the CA certificate*.
5. **Sign in**
   Sign in. The default password in factory condition is `beacon`.

Change the default password
Change the default password under *System Configuration* straight after the first sign-in. Use a password of at least 6 characters that you do not use anywhere else.

3.1 Certificate error `NET::ERR_CERT_AUTHORITY_INVALID`

Chrome and Edge report “Your connection is not private” (`NET::ERR_CERT_AUTHORITY_INVALID`); Firefox reports `SEC_ERROR_UNKNOWN_ISSUER`. The cause: the TX certificate comes from the Summitwave CA, and your computer does not trust that CA yet.

The connection is still encrypted. The only thing left unverified is whether you are really connected to your TX.

For one-off access, “Advanced” is enough. If you configure the TX regularly, install the CA certificate once; the warning then no longer appears.

3.2 Install the CA certificate

Download the certificate: *summitwave-ca.crt*. The Summitwave CA issues the certificates of all Summitwave devices, so one installation covers every device.

PROPERTY	
Issuer	`CN = SummitWaveCA`
Valid until	24 June 2045

Chrome and Edge on Windows

Both browsers use the same Windows certificate store, so a single import applies to Chrome and Edge alike.

1. **Start the import wizard**
   Double-click the downloaded `summitwave-ca.crt` file and select “Install Certificate”.
2. **Select the store location**
   Select “Current User” and continue with “Next”.

3. **Choose the target store**
   Select “Place all certificates in the following store”, click “Browse” and select **Trusted Root Certification Authorities**.
4. **Complete the import**
   Click “Next” and “Finish”, then confirm the Windows security warning with “Yes”.
5. **Restart the browser**
   Close all Chrome or Edge windows and open the `.local` address again.

> **Other systems and browsers**
> On macOS, import the file into Keychain Access and set it to “Always Trust”. Firefox keeps its own certificate store on every platform: import the certificate under Settings → Privacy & Security → View Certificates → Authorities.

> **What the installation does**
> Your system then trusts the certificates of all Summitwave devices. Use the file from this page.

4 The interface at a glance

After sign-in, **Stream Status** opens. The sidebar leads to all five pages:

PAGE	
Stream Status	What is on air right now. Display only; nothing can be changed by accident.
Stream Configuration	Select the audio mode, set up streams, start and stop the transmission – see *Select the audio mode*.
QR Codes	QR codes for listeners to join, also as a printable PDF.
Network Configuration	IP addresses of both ports, CA certificate.
System Configuration	LED, temperatures, password, updates, restart.

4.1 Typical workflow

1. **Select the audio mode**
   Under **Stream Configuration**, select the source: Demo, Analog or Network - Dante.
2. **Set up the streams**
   Set the name, language and input for each stream; add a password if required.
3. **Start the transmission**
   Click **Start Auracast** (in Demo mode **Start Demo**). The blue LED on the TX lights up.
4. **Check the status**
   Under **Stream Status**, check that all radios are transmitting as planned.
5. **Invite listeners**
   Under **QR Codes**, show the codes or print them as a PDF and put them up.

5 Select the audio mode

Select the audio source under **Audio Mode**.

Demo

Testing

Ready-made demo content without an external source – lectures, music or a 1 kHz test tone – for function checks, coverage tests and demonstrations.

Analog

XLR line

Signals from the two balanced XLR inputs.

Network - Dante

Audio network

Up to six channels from a Dante network.

Before changing modes
Stop the transmission before changing the audio mode or the stream format (channel count, sample rate, stereo).

6 Demo mode

The TX sends demo content stored on the device; no audio source is needed.

6.1 Basic control

PARAMETER	
Audio Mode	Switches between Demo, Analog and Network - Dante.
Start Demo / Stop Demo	Starts or stops the test transmission.
Status indicator	Shows the mode and state: “Streaming” = transmitting, “Stopped” = stopped.
Audio level monitor	Shows the transmitted levels while the stream is running.

6.2 Stream configuration

Parameter	Description	Values
Demo Configuration	Ready-made demo; sets the number of streams, sample rate and content.	see the table below
Stream Password	Optional. With a password, only receivers that know it can listen; empty = public stream.	

Demo Configuration	Streams	Sample rate	Content
`4-channel multilingual lecture · high quality · 24 kHz` (default)	4, 2 per radio	24 kHz	Lecture in English, German, Spanish and Italian
`2-channel music · Jazz + Film Music · 48 kHz`	2, 1 per radio	48 kHz	Jazz and film music
`6-channel multilingual lecture · speech quality · 16 kHz`	6, 3 per radio	16 kHz	Lecture in German, English, French, Spanish, Italian and Polish
`4-channel music + speech · Jazz 48 kHz + 3 lectures 16 kHz`	4: 3 on Radio 1, 1 on Radio 2	16 kHz (Radio 1) · 48 kHz (Radio 2)	Lecture in English, German and Spanish, plus jazz
`1-channel test tone · 1 kHz · 48 kHz`	1	48 kHz	1 kHz test tone

6.3 Advanced transmission parameters

Parameter	Description	Values
Assistive listening	Marks the stream as assistive listening. Information for the receiver only; audio and transmission are unchanged.	
Immediate rendering	Tells the receiver to ignore the delay and play immediately, if it supports this.	

Delay (ms)	Playback delay at the receiver, for example to match the sound to video or the room PA.	`10–200 ms` in 5 ms steps, default `10 ms`
QoS	Currently fixed to `Fast` (2 retransmissions per packet); cannot be changed.	`Fast`
TX Power (R1/R2)	Transmit power of the respective radio module, at most +10 dBm. Lower power reduces the coverage area.	up to `+10 dBm`

7 Analog mode (XLR)

The TX sends the signals of the two XLR inputs **Analog 1** and **Analog 2** in one of three assignments:

Two independent signals

Mono

Analog 1 and Analog 2 are used as separate audio channels.

One summed mono signal

Mono sum

Analog 1 and Analog 2 are mixed into one mono signal.

One stereo signal

Stereo

Analog 1 carries the left channel and Analog 2 carries the right channel.

7.1 Control and audio levels

Parameter	Description	Values
Start Auracast / Stop Auracast	Starts or stops the transmission.	
Status indicator	Shows the mode and state: “Streaming” = transmitting, “Stopped” = stopped.	
Link audio channel gain	Links the gain controls: Analog 2 follows Analog 1.	
Analog 1 / Analog 2 Input Gain	Input gain of the respective input; can also be adjusted during transmission.	`−12 dB to +18 dB`, default `0 dB`
Audio level monitor	Shows the transmitted levels while the stream is running.	

7.2 Configure Radio 1

Radio 1 is the primary transmitter and is enabled by default.

Parameter	Description	Values
Stereo Mode	Sends Analog 1 (left) and Analog 2 (right) as one stereo stream. Radio 2 is then disabled, and Stream Quality offers only `High (48kHz)` and `Medium (24kHz)`.	
Stream Quality	Sample rate of the stream. Higher settings sound better and use more radio capacity.	`High (48kHz)` · `Medium (24kHz)` · `Fair (16kHz)`
Stream Password	Optional. With a password, only receivers that know it can listen; empty = public stream.	

7.3 Radio 1 transmission parameters

Parameter	Description	Values

Assistive listening (R1)	Marks the stream as assistive listening. Information for the receiver only; audio and transmission are unchanged.	
Immediate rendering (R1)	Tells the receiver to ignore the delay and play immediately, if it supports this.	
Delay (ms, R1)	Playback delay at the receiver, for example to match the sound to video or the room PA.	`10–200 ms` in 5 ms steps, default `10 ms`
QoS (R1)	Currently fixed to `Fast` (2 retransmissions per packet); cannot be changed.	`Fast`
TX Power (R1)	Transmit power of Radio 1, at most +10 dBm. Lower power reduces the coverage area.	up to `+10 dBm`

7.4 Metadata and signal source

The receiver displays this information; it helps listeners find the right stream.

Parameter	Description	Values
Channel Name	Name of the stream as it appears on the receiver.	
Language (ISO 639-3)	Language of the content as a three-letter code.	for example `deu` · `eng`
Program Info	Short description of the programme, for example “Lecture Hall 1”.	
Input Device	Input whose signal this stream sends.	`ch1` · `ch2` · `ch1+ch2 (Stereo)`

7.5 Configure Radio 2

Enable **Enable Radio 2** to send a second, independent stream in parallel, for example for another language. Radio 2 has the same settings as Radio 1. Radio 2 is not available in Stereo Mode.

8 Network Dante mode

The TX takes up to six channels from a Dante network and sends them as Auracast streams. **Stream Configuration** sets the number of streams per radio and the highest sample rate; **Stream Quality** can lower the sample rate further.

Stream Configuration	Streams per radio	Selectable Stream Quality
`1 x Mono (max. 48kHz)`	1	High · Medium · Fair
`2 x Mono (max. 24kHz)`	2	Medium · Fair
`3 x Mono (max. 16kHz)`	3	Fair
`1 x Stereo (max. 48kHz)`	1 stereo stream from two Dante channels (left/right)	High · Medium

Example: for a single stream at 16 kHz, select `1 x Mono (max. 48kHz)` and Stream Quality `Fair (16kHz)`.

8.1 Basic control

PARAMETER	
Audio Mode	Selects Network - Dante as the audio source.
Start Auracast / Stop Auracast	Starts or stops the transmission.
Status indicator	Shows the mode and state: “Streaming” = transmitting, “Stopped” = stopped.
Audio level monitor	Shows the transmitted levels while the stream is running.

8.2 Configure Radio 1

Parameter	Description	Values
Stream Configuration	Number of streams and highest sample rate for this radio (see the table above).	`1 x Mono (max. 48kHz)` · `2 x Mono (max. 24kHz)` · `3 x Mono (max. 16kHz)` · `1 x Stereo (max. 48kHz)`
Stream Quality	Sample rate of the streams, at most the value from Stream Configuration.	`High (48kHz)` · `Medium (24kHz)` · `Fair (16kHz)`

8.3 Advanced transmission parameters

Parameter	Description	Values
Assistive listening (R1)	Marks the stream as assistive listening. Information for the receiver only; audio and transmission are unchanged.	
Immediate rendering (R1)	Tells the receiver to ignore the delay and play immediately, if it supports this.	
Delay (ms, R1)	Playback delay at the receiver, for example to match the sound to video or the room PA.	`10–200 ms` in 5 ms steps, default `10 ms`
QoS (R1)	Currently fixed to `Fast` (2 retransmissions per packet); cannot be changed.	`Fast`
TX Power (R1)	Transmit power of Radio 1, at most +10 dBm. Lower power reduces the coverage area.	up to `+10 dBm`

8.4 Stream settings

Each stream of a radio has its own section – one to three, depending on Stream Configuration.

Parameter	Description	Values
Channel Name	Name of the stream as it appears on the receiver.	
Language (ISO 639-3)	Language of the content as a three-letter code.	for example `deu` · `eng`
Program Info	Short description of the programme, for example “Lecture Hall 1”.	
Stream Password	Optional. With a password, only receivers that know it can listen; empty = public stream.	
Input Device	Dante channel whose signal this stream sends; for stereo, one channel each for left and right. Each channel can be used only once per radio.	`dante_asrc_ch1` to `dante_asrc_ch6`

8.5 Radio 2

Enable **Enable Radio 2** to use a second radio with its own Stream Configuration, Stream Quality and transmission parameters.

9 Stream Status

This page shows what is on air and changes nothing. At the top it says whether both, one or none of the radios are transmitting. Below is one card per radio:

ITEM	
State	`Streaming` or `Not streaming`. A radio that is not transmitting shows only this line.
Audio mode	Active audio mode.
Audio source	Inputs in use.
Channels	Mono or stereo.
Streams	Number of streams · sample rate · QoS.
Broadcast names	Stream names as they appear on the receiver.

The page does not refresh by itself. Click **Refresh** to load the current state.

10 QR Codes

For every stream that is currently on air, this page shows a QR code. Listeners scan it with a smartphone or another Auracast assistant app and join the stream directly – without searching for it in a list. Stopped streams do not appear.

FUNCTION	
QR code per stream	Contains the stream name and the transmitter's identifiers according to the Bluetooth "Broadcast Audio URI" standard.
Download PDF handout	A4 sheet with all codes to put up, in the layout of the Auracast stickers.
Put the broadcast code in the QR codes	Only for password-protected streams. On (default): scanning is enough. Off: whoever scans has to enter the password.

A printed code stays valid after a restart as long as the stream name, password and broadcast identity stay the same.

Password in the QR code
If the password is in the QR code, anyone who photographs the code can listen within radio range – until you change the password. For confidential content, switch the option off and share the password only with the intended listeners.

11 Network Configuration

The page shows the hostname and, for each port, the interface, IP address and MAC address. The hostname gives the device address, for example `swtx1005` → `swtx1005.local`.

PARAMETER	
Port 1 (**Config**)	LAN configuration and monitoring; no PoE.
Port 2 (**PoE + AoIP + Config**)	LAN configuration and Dante; power through PoE (IEEE 802.3af).
Mode	Per port: `DHCP` obtains the IP configuration automatically, `Static IP` uses fixed values.
Static IP Address / Subnet Mask	Only with `Static IP`. Subnet mask as `255.255.255.0` or as prefix length `24`. **Apply** saves the values.
Download CA Certificate	Downloads the CA certificate. For installation, see *Install the CA certificate*. In managed networks, the IT department usually distributes the certificate.

12 System Configuration

PARAMETER	
LEDs on the device	Green: operation and signals, blue: transmitting. See *LED signals*.
Power LED	Keeps the green LED lit during operation (default: off).
Status LED	“Blue LED on while transmitting” switches the blue LED on or off (default: on).
System temperatures	Shows the current CPU and enclosure temperatures. **Refresh** updates the values.
Operating temperature	−10 °C to +40 °C ambient. The range −40 °C to +70 °C applies to storage only.
Change password	New web-interface password, at least 6 characters. You need the current password and the new password entered twice.
Software Version	Shows the installed version. **Check for updates** looks for updates online; the TX needs an internet connection for this.
Update now	Appears only when an update is available. Installs it; the interface restarts afterwards.
Reboot now	Restarts the TX. Transmission is interrupted during the restart (about one minute).
Broadcast identity	Identifiers by which receivers, hearing aids and QR codes recognise the transmitter.

Change the broadcast identity only deliberately
A changed identifier makes every stored source in hearing aids and assistant apps, and every printed QR code for this stream, invalid.

13 LED signals

The TX has a green and a blue LED.

LED	
Green lit steadily	The TX is switched on. Only when **Power LED** is switched on under *System Configuration* (default: off).
Green blinks twice	After start-up: the web interface can be reached.
Green off, lights up briefly after 1 s and 2 s	The reset button is being held. Releasing it cancels.
Green and blue blink rapidly three times	Reset confirmed. The TX deletes the password and stream settings and restarts.
Blue lit	Transmitting. Can be switched off with **Status LED** under *System Configuration*.

The start-up and reset signals also appear when the LEDs are switched off in System Configuration.

14 Reset to factory settings

The reset button resets the TX's password and stream settings – for example, if you have forgotten the web-interface password.

1. **Press and hold the reset button**

   With the TX running, press and hold the reset button on the back of the enclosure. The green LED goes off and lights up briefly after one and after two seconds.

2. **Release after three seconds**

   After three seconds, the green and the blue LED blink rapidly three times. This confirms the reset; you can release the button. The TX restarts. After about one minute the green LED blinks twice: the web interface can be reached again.

3. **Set a new password**

   Open the web interface as described in *Open the web interface*. It asks you to set a new password of at least 6 characters.

4. **Set up the streams again**

   Select the audio mode and set up the streams again.

If you release the button before the LEDs blink rapidly, nothing is reset.

Reset	Web-interface password. Audio mode and all stream settings of both radio modules: stream name, language, input, Stream Password and transmission parameters.
Kept	Network settings, broadcast identity, LED settings, Dante configuration and the installed software version.

:::tip[Keep using printed QR codes] The broadcast identity is kept. Give the streams the same Stream Name and Stream Password as before the reset, and stored sources in hearing aids and printed QR codes stay valid. :::

15 Troubleshooting

First check the power supply, network, source and transmission state.

Problem	Check	Next step
Web interface cannot be reached	Check the LAN connection, `.local` address, IP configuration and that both devices are on the same network.	Look up the TX's IP address in the DHCP server or router and open it directly.
Forgotten password	–	Reset the TX with the reset button, see *Reset to factory settings*.
No stream is visible	Check the transmission state, radio activation, stream name and transmit power.	Start Demo mode and test with a second receiver.
Stream has no audio	Check Audio Mode, Input Device, input gain and the Audio level monitor.	Test the source directly or verify Dante routing.
Audio is unstable	Check transmit power, distance, obstacles and local RF conditions.	Keep the antenna surface clear, move the TX closer to the listening area and carry out a coverage test.
No Dante signal	Check Dante routing and network status.	Restart the TX (System Configuration → **Reboot now**).

Support
Email: support@summitwave.eu · Phone: +43 670 6020 690

Have ready: device name, serial number, firmware version, audio mode, network configuration and a precise description of the problem.

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