



Astral Mini Plus User Guide

Digital Wireless Mini Body Pack Transmitter
with GainForward, SpectraBand, & NexLink

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Chapter 1: Introduction

The Astral Mini Plus miniature transmitter incorporates state-of-the-art features such as full remote control via NexLink, Standard, Long Range, and T&M modulation, GainForward Architecture, SpectraBand's 169 MHz – 1525 MHz tuning range, internal 32-bit float recording, and more. The Astral Mini Plus is fully compatible with the Astral ARX32, ARX16, ARX8, ARX2 and the A10-RX.

1.1 Key Features

- Waterproof / sweat proof, IP67 rated
- Battery duration 7.5+ hours
- Small size, rounded form factor for comfort
- Worldwide tuning range of 169 MHz – 1525 MHz
- Powering via 1x or 2x Lithium XL-B14500 rechargeable batteries
- Built-in battery charger via USB-C
- Sunlight-readable ePaper display maintains display even with no batteries
- NexLink – extremely long-range remote control of all settings
- Digital modulation delivers pristine audio quality with no companding
- Longest range, most robust RF operation in the industry
- Standard, Long Range, and T&M modulation modes
- GainForward Architecture – no transmitter gain control to worry about
- Full 10 Hz – 20 kHz audio bandwidth; ultra-wide 140 dB dynamic range
- Built-in 32-bit float, 48 kHz recording with 64 GB storage for over 80 hours of record time

- 2- and 3-wire lavalier mics supported
- Bluetooth for remote control from Astral Remote iOS/Android App
- Sleek, rotatable belt clip
- Internal timecode generator with super capacitor backup jammable via NexLink
- RFID tag to tap-to-pair functionality with a mobile device running the Astral Remote app

Terminology used throughout this guide: Astral Receiver refers to the Astral ARX32, Astral ARX16, and Astral ARX8 multichannel receivers.

1.2 SpectraBand

SpectraBand is a technology that enables the Astral Mini Plus to tune over a super wide range of 169-1525 MHz.

Tuning within this range varies by country. For instance:

In the USA, the available frequency ranges are:

- The VHF band (specific frequencies within the 169-216 MHz range)
- The entire UHF TV band (470-608 MHz)
- The 600 MHz guard band (614-616 MHz)
- The 600 MHz duplex gap (653-663 MHz)
- The 900 MHz ISM Band (902-928MHz)
- The 950 MHz STL Band (941.5-960 MHz)
- The 1.5 GHz AFTRCC band (1435-1525 MHz), with an appropriate license.

In the UK, the available frequency ranges are:

- The VHF band (specific frequencies within the 173-210 MHz range)

- The core UK UHF TV band (470-702 MHz)
- The 800 MHz duplex gap (823-832 MHz)
- The 800 MHz guard band (863-865 MHz)
- The DME bands (961-1015 MHz, 1045-1075 MHz, 1105-1154 MHz), with an appropriate license.
- The IMT band (1518-1525 MHz)

Please see <https://www.sounddevices.com/available-frequencies/> for further detailed information on which frequency ranges are available for each country and also [Frequency Authorization](#) for details on using restricted frequencies.

1.3 NexLink Remote Control

NexLink is a proprietary 2.4 GHz bidirectional wireless data link technology that allows multiple Astral transmitters to be controlled, monitored, and timecode synced from an Astral Receiver over long distances. NexLink is designed to offer robust and reliable control over distances far exceeding that of the wireless audio transmission, even in the presence of Wi-Fi, Bluetooth, and other 2.4 GHz interference. Astral Receivers can pair with up to 64 NexLinked transmitters at a time.

All Astral Mini Plus settings can be configured via NexLink.

1.4 GainForward

The Astral Mini Plus transmitter supports GainForward, a technology that eliminates the need to adjust audio gain at the wireless transmitter. Audio levels from the transmitter are controlled either directly at the mixer's trim control or at the wireless receiver. If the source is too soft or too loud, adjust the transmitter's audio level with a downstream mixer's digital trim gain control. There is absolutely no noise penalty when the audio path remains 100% digital (i.e., Astral transmitter -> Astral receiver, Astral receiver digital audio output -> mixer digital audio input). Read more about GainForward [here](#).

1.5 Waterproofing

The Mini Plus is designed to be fully waterproof and carries an IP67 rating. Waterproof ratings define both the depth and duration of water exposure a product can withstand. For example, a device designed to survive deep underwater submersion requires a very different construction than one intended only to resist rain or splashes.

The Mini Plus is engineered to the IP67 standard, meaning it can withstand immersion in up to 1 meter of water for up to 30 minutes. This rating is well suited to real-world production use, including operation on perspiring performers and in wet or challenging environments.

Please note the following regarding waterproof operation:

- The SSMA, 3-pin audio, and USB-C connectors are waterproof. The USB-C connector remains waterproof with or without the supplied rubber plug installed.
- Although these connectors are waterproof, their electrical contacts should be dried when possible—especially after exposure to saltwater—to help ensure maximum reliability and service life.
- We cannot guarantee the waterproof performance of any mating connectors or cables connected to the Mini Plus. If a fully waterproof connection is required, additional waterproofing measures may need to be applied to the mating connector.
- If additional waterproofing is applied, do not use standard RTV silicone, as it releases acetic acid during curing, which can corrode electrical contacts. Instead, use an electronics-grade RTV silicone designed for electronic assemblies.
- The battery compartment is fully waterproof only when the battery door is properly closed and latched. The triple-gasket sealing system protects the compartment from water ingress, but the Mini Plus is not waterproof with the battery door open.

1.6 Safety Information



Follow all safety and operating instructions in this guide.

RETAIN INSTRUCTIONS: These safety and operating instructions should be retained for future reference.

HEED WARNINGS: All warnings on the product and in the operating instructions should be adhered to.

FLAME SOURCE: The product should be situated away from any naked flames such as candles, open fires or gas, oil or wood burning heaters.

BATTERY WARNINGS: The product should be used only of the type described in these operating instructions or as marked on the product.

- Do not open, crush, modify, disassemble, heat above 140°F (60°C), or incinerate.
- Danger of explosion if battery incorrectly replaced. Replace only with same or equivalent type.
- Do not short circuit; may cause burns or catch fire.
- Do not subject to extremely low air pressure.
- Battery misuse may result in explosion and/or the leakage of flammable liquid or gas.
- Dispose of batteries properly. Check with local vendor for proper disposal of used battery packs.
- Do not immerse the battery in liquid such as water, beverages, or other fluids.
- Do not insert batteries with polarity reversed.
- Never put batteries in mouth. If swallowed, contact your physician or local poison control center.
- Keep away from small children.
- Pack the battery securely for transport.

ATTACHMENTS / ACCESSORIES: Only use attachments and /or accessories specified and approved by the manufacturer.

CLEANING: The product should only be cleaned with a soft dry cloth.

SERVICING: The user should not attempt to service the product beyond that described in the operating instructions. All other servicing should be referred to qualified service personnel.

Chapter 2: Interface Description

2.1 Front Panel



1: Antenna Connector

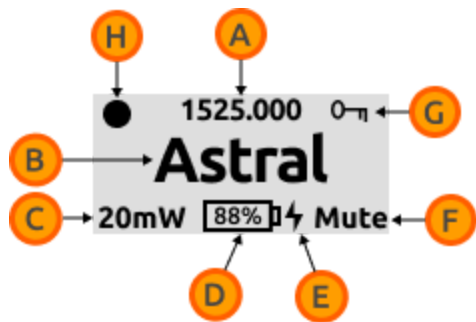
SSMA connector. Attach an antenna with the correct length for the frequency. Using the wrong length reduces RF range. See Antenna Guide for details.

2: Lavalier Microphone Input

3-pin LEMO connector for 2- or 3-pin lavalier microphones. Can power the transmitter on/off by connecting or disconnecting the mic.

3: ePaper Display (EPD) with Backlight

The 'always on' EPD displays name, frequency, power, mute, privacy, and record status. The information persists even when the transmitter is powered down. Screen background color and orientation can be configured via NexLink from Astral receivers or via the Astral Remote app.



A: Frequency / MHz (or Name if Display Name is set to 'Top'). Displays firmware # briefly on boot up and 'Rec Only' in Rec Only Mode.

B: Name (or Frequency if Display Name is set to 'Top')

C: RF Power / mW, 'RFOff' (RF set to off), or 'Off' (unit powered off)

D: Power status: Battery remaining (%) or 'USB' (if powered via USB and no batteries inserted)

E: Charging batteries via USB

F: Mute enabled

G: Privacy (encryption) enabled

H: Recording enabled

2.2 Top Panel



1: Lavalier Microphone Input

3-pin LEMO connector for 2- or 3-pin lavalier microphones. Can power the transmitter on/off by connecting or disconnecting the mic.

2: Antenna Connector

SSMA connector. Attach an antenna with the correct length for the frequency. Using the wrong length reduces RF range. See Antenna Guide for details.

3. Multifunction Power Button

Powers the Astral Mini Plus on or off and enters Bluetooth Pairing mode.

- Power On = Press and release button.
- Power Off = Press and hold button for 3 seconds until 'Off' is displayed.
- Pairing Mode = While Astral Mini Plus is off, press and hold button for 5 seconds. The Pairing LED on the bottom and top panel flashes blue rapidly while in Pairing mode.

It can also be user-programmed to toggle the following functions on/off:

- Mute
- Record

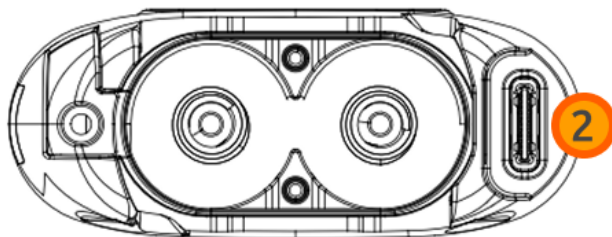
- Aux 1 Hold* or Latch
- Aux 2 Hold* or Latch
- Aux 3 Hold* or Latch
- Aux All Hold* or Latch
- Control
- RF
- PTT*

* The 3-second Power Off is disabled for asterisked functions; use the ARX receiver or Astral Remote to power off.

2.3 Bottom Panel



Battery compartment cover open



1: Battery Compartment

Twist battery compartment cover counter-clockwise to access the battery compartment. The compartment accepts 1 or 2 XL-B14500 lithium-ion rechargeable batteries.

Warning: Do not use other battery chemistries.

Note: If one battery is inserted the wrong way, the display shows 'Reversed Battery'

Refit the compartment cover by pushing it down and rotating clockwise.

2: USB-C Port

Multifunction USB-C port for:

- Powering Astral Mini Plus
- Charging internal XL-B14500 rechargeable batteries
- Transferring files to and from a computer

Remove the protective rubber bung to access the USB-C port.

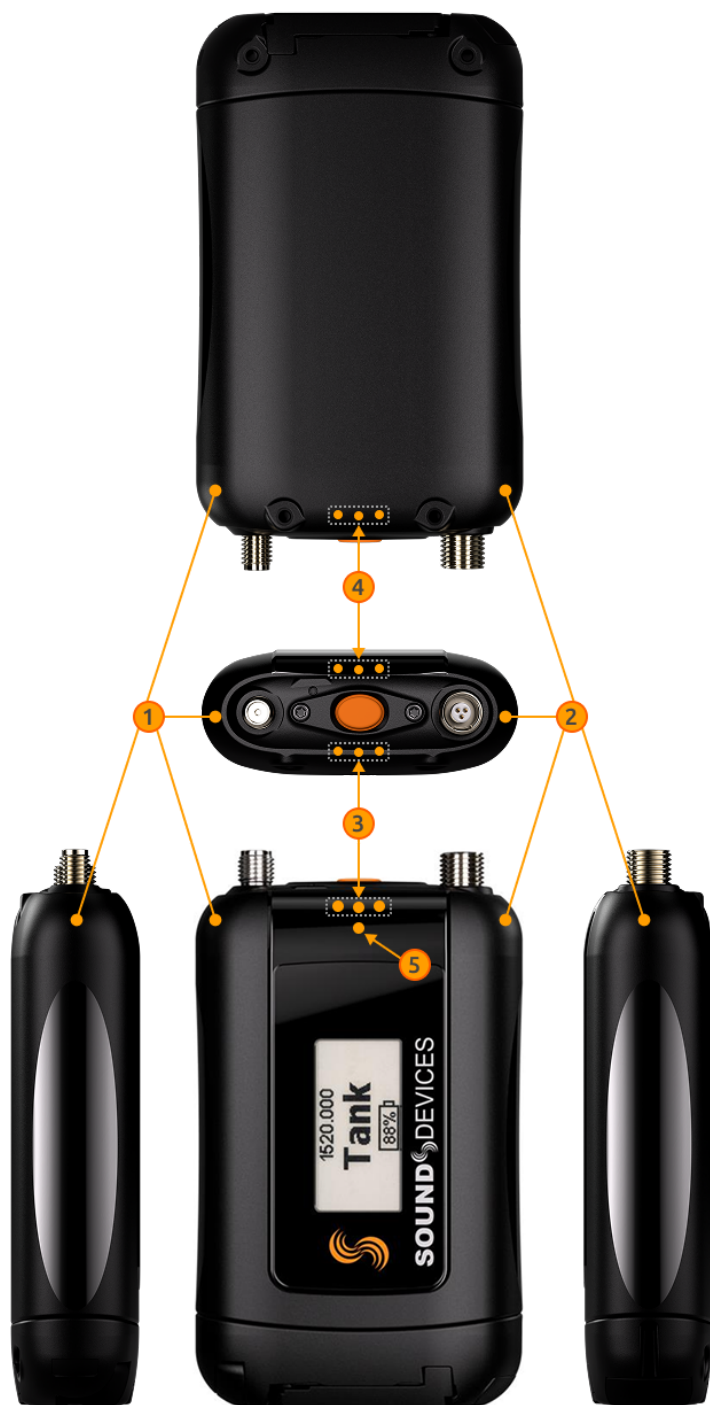
2.4 Back Panel



1: Belt Clip Mounting Points

Mounting points for securing the belt pack accessory. See [Fitting the Belt Clip Accessory](#).

2.5 LEDS



1: SSMA LED (Top Left), Power Status

Indicates power status.

- Solid Green = battery level good
- Solid Yellow = battery level moderate
- Solid Red = battery level low
- Flashing red = battery level critically low. RF and audio disabled.
- Flashing green = flashes green whilst holding the power button to power down. Hold the button until the flashing stops, then release to power down.
- Solid Blue = device is initializing after inserting batteries. Wait until initialization is complete before operating.
- Alternating red, green, blue = Being ID'd

2: LEMO LED (Top Right), Audio/Timecode Status

Indicates audio activity and timecode status.

- Green (variable intensity) = Audio activity from microphone LEMO input.
- Solid Blue = audio muted.
- Blinking Blue = Shows the internal timecode generator is synced; blinks on the 00 frame (only when the Mini Plus is Off).

3: Front LED Strip, 4: Rear LED Strip

- Flashing red = battery level critically low. RF and audio disabled.
- Alternating red, green, blue = Being ID'd
- Rotating red, green, blue = Updating firmware
- Button function color:

- Record On = Rotating red
- Mute On = Blue
- Aux On = Yellow
- RF Off = Purple
- PTT Off = Blue, PTT On = no color

5: Front Center LED

- Solid Orange = Charging
 - Solid Green = 100% charged
 - Solid Red = Recording (except when Button = Record; in this case Front, Rear LED strips rotate red)
 - Pulsing Blue = Timecode Jam in progress
 - Flashing Blue = Pairing
 - Alternating red, green, blue = Being ID'd
-

Chapter 3: Power

The Astral Mini Plus is powered from 1 or 2 XL-B14500 Lithium-ion rechargeable batteries or via USB-C.

To power the transmitter on, ensure charged batteries are inserted or a USB power source is connected to the USB-C port, then press the power button on the top panel.

To power the transmitter off, press and hold the power button for 3 seconds until 'Off' is shown in the display.

The Astral Mini Plus can also be powered on or off from an Astral receiver via NexLink or from the Astral Remote app.

3.1 Inserting XL-B14500 Batteries

- To access the battery compartment, rotate the bottom panel battery compartment cover counter-clockwise then lift off.
- Insert 1 or 2 XL-B14500 batteries into the compartment, negative terminal first.
- Refit the compartment cover by pushing it down and rotating clockwise.

Note: *The Astral Mini Plus resumes its prior power state upon battery insertion.*

3.2 Powering and Charging via USB-C

The USB-C port can be used to power the Astral Mini Plus and/or to charge inserted XL-B14500 batteries. USB-C is the priority power source whenever connected.

The front center LED glows solid orange while the battery is charging. The Charge LED turns solid green when charging is complete.

The Astral Mini Plus is fully operational when charging batteries from USB-C.

3.3 Auto-Power with Lemo Connection

When 'Auto power with Lemo connection' is enabled using Astral Remote or an Astral Receiver via NexLink, connecting a lav mic to the LEMO connector automatically turns on the transmitter. Disconnecting the LEMO automatically turns it off.

3.4 Estimated Battery Runtime

The Astral Mini Plus can operate for 7.5+ hours at 5 mW RF power. Conserve power by remotely powering the transmitter off via NexLink or Astral Remote app when not in use.

Battery runtimes for the Astral Mini Plus at various RF power levels:

RF Power	Runtime
Rec Only	15 hours
5mW	10 hours
5mW + Rec	9 hours
10mW	10 hours
10mW + Rec	8 hours
20mW	8 hours
20mW + Rec	7.5 hours

Chapter 4: Pairing

Pairing is required to control the Mini Plus remotely through NexLink from ARX8, ARX16, ARX32 receivers, or via Bluetooth (BLE) using the Astral Remote app. Once paired, the transmitter remains paired through power cycles and doesn't need re-pairing.

- **Pair to an ARX using a USB cable:** Connect the Mini Plus USB-C to the ARX USB. Pairing is successful when the transmitter appears in the ARX's TX List.

- **Pair to an ARX via BLE:** With the Mini Plus off, hold the top button for 5 seconds to enter pairing mode - the front center blue LED will flash. Then, tap search in the ARX TX List to pair with the transmitter.
 - **Pair to Astral Remote app via BLE:** With the Mini Plus off, hold its top button for 5 seconds to enter pairing mode - the front center blue LED will flash. From the Astral Remote Manage Devices View, tap the Mini Plus's 'Paired' checkbox to pair with the transmitter.
 - **Pair to Astral Remote app using tap-to-pair:** Hold the Mini Plus's front panel Sound Devices logo against the top of the mobile device that is running the Astral Remote app. Tap the mobile device's 'Open in Astral Remote' notification to complete pairing.
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Chapter 5: Connecting Lavalier Mics

Connect a 2- or 3-wire lavalier microphone to the Astral Mini Plus's 3-Pin LEMO connector. Secure the connection by screwing clockwise until the connector is firmly attached. The transmitter can be set to automatically power on/off when the lav is connected/disconnected.

Chapter 6: Identify (ID)

When the Astral Mini Plus receives an ID command from an Astral receiver or the Astral Remote app:

- LEDs flash red, green, and blue
- Unit vibrates

This helps to identify which Astral Mini Plus is which when many are being used.

Chapter 7: Tuning the Astral Mini

RF signals transmitted by the Astral Mini Plus transmitter are received by all Astral ARX Receivers and the Audio Ltd A10-RX. Set the same modulation and frequency on the transmitter and receiver - this is automatically taken care of when using NexLink between transmitter and receiver (except ARX2 and A10-RX which do not support NexLink). See the Astral ARX32, Astral ARX16, Astral ARX8, Astral ARX2 and A10-RX User Guides for more details.

Frequency

The Astral Mini Plus transmits on frequencies ranging from 169 MHz – 1525 MHz. The frequencies available are determined by geographic location and whether you have entered a unique license code issued by Sound Devices to unlock the use of restricted frequencies.

Because the Astral digital RF transmission is inherently immune to intermodulation, multiple Astral Digital Wireless transmitters can be used simultaneously on nearby adjacent frequencies without worry of intermodulation interference. Systems can be used together when separated by at least 400 kHz. When operating in the 902-928 MHz Band, it is recommended to separate channel frequencies by at least 1 MHz.

Set the Astral Mini Plus's transmit frequency via the Astral Remote App or Astral Receiver (except ARX2 and A10-RX) via NexLink.

Ensure an antenna with a length specific to the frequency in use is attached to the SSMA connector. Using the wrong length of antenna reduces RF range. See the [Antenna Guide](#) for more information.

Modulation

The Astral Mini Plus offers three types of modulation, Long Range, Standard, and T&M. Long Range modulation has better sensitivity resulting in more robust performance in challenging RF environments. Standard modulation has lower latency (2ms versus the 3.9ms of Long Range). T&M modulation has been specifically optimized for the flattest frequency and phase response possible for test and measurement applications. The Modulation setting must match between the Astral Mini Plus and Astral receivers for the transmitted signal to be received.

RF Power

RF power is the strength of the transmitting signal. The Astral Mini Plus offers the following RF power settings:

- 5 mW
- 10 mW
- 20 mW

Set the RF Power via the Astral Remote App or Astral Receiver.

Available RF Power settings are dependent on the Country of operation and local frequency restrictions. The Country must be set using Astral Remote and an Astral Receiver.

For most common wireless microphone applications, the 5 mW setting provides excellent range and best battery life. In situations where body absorption may be an issue or extended range is required, the 10 or 20 mW settings can be helpful.

Best practice: Use Long Range Modulation first before using higher RF power settings.

Chapter 8: Audio Levels - GainForward

The Astral Mini Plus transmitter supports GainForward, a technology that eliminates the need to adjust microphone preamplifier gain at the wireless transmitter. Audio levels from the transmitter are controlled either directly at the mixer's digital trim control or at the wireless receiver. If the source is too soft or too loud, adjust the transmitter's audio level with a downstream mixer's digital trim gain control. There is absolutely no noise penalty when the audio path remains 100% digital, i.e. Astral transmitter -> Astral receiver, Astral receiver digital audio output -> mixer digital audio input. Read more about GainForward [here](#).

Adjusting Astral Mini Plus Audio Levels

From the Astral ARX2 or A10-RX

From the Astral ARX2 or A10-RX home screen, press the channel's arrow button twice to enter the Input menu. From the Input menu, press the middle button to select a sub-menu to adjust gain, low cut, or limiter of the incoming transmitted signal. Gain is adjustable from 0 to 60 dB. High-Pass Filter can be set to Off, 40 Hz, 60 Hz, 80 Hz, 100 Hz, or 200 Hz. Limiter can be turned on or off. The information menu displays the status of the tuned Astral Mini Plus. See the Astral ARX2 or A10-RX User Guides for more details.

From the Astral ARX32, ARX16 or ARX8

See the Astral ARX32, Astral ARX16 and Astral ARX8 User Guides for details.

From the 8-Series with docked Astral ARX8 or ARX16

When an Astral ARX16 or ARX8 is docked to an 8-Series via the Quick Dock accessory, gain, high-pass filter, and limiter are controlled by the 8-Series. See the Mixer-Recorder User Guides for more information.

From the 8-Series with docked Astral ARX2

When an Astral ARX2 (or legacy A10-RX) is docked to an 8-Series (or legacy 688) via the SL-2 or SL-6 SuperSlot accessory, gain, low cut, and limiter are controlled by the 8-Series (or 688). See the Mixer-Recorder User Guides for more information.

Chapter 9: Recording WAV Files

The Astral Mini Plus records 32-bit float Broadcast WAV (under 4 GB) or RF64 WAV (over 4 GB) files at 48 kHz sampling rates to an internal SSD. 32-bit float files are recorded such that gain decisions can be made after recording. Because of the Astral Mini Plus's high dynamic range, audio levels are never too high or too low. [Learn more about 32-bit float.](#)

The Astral Mini Plus must be set to REC+RF or REC Only Mode.

Astral Mini Plus recording can be initiated from the:

- Astral Remote App
- Astral Receivers via NexLink

The file name format of recorded files is "transmitter name-YYMMDDHHMMSS.WAV".

For example, if the Astral Mini Plus name has been changed to "Barney" and a recording is created on July 10, 2021 at 09:30 (24 hour format), the resulting file is named Barney-210710093000.WAV. All files are recorded at the root of the internal SSD.

About recording formats:

- The Astral Mini Plus records 1-ch monophonic 32-Bit float / 48 kHz wav files.
- The internal storage is formatted as ExFAT which can record file sizes > 4 GB. Recordings that exceed 4 GB are automatically converted from standard broadcast wav to RF64 wav format.

Note: Recording is not permitted whilst connected via USB-C to a computer

Formatting

You can erase and format the internal 64GB storage by issuing a Format command from the Astral receivers or Astral Remote.

While formatting, you'll see 'Formatting' and a progress bar on the EPD. Once it's done, 'Format Success' will be displayed.

Chapter 10: Jamming Timecode

When in REC or REC+RF mode, the Astral Mini Plus can accept timecode via NexLink or an 8-Series mixer-recorder via USB-C from the 8-series USB-A port. The timecode frame rate is derived from the incoming TC. If timecode has not been jammed, the Astral Mini Plus starts rolling timecode from 00:00:00:00 when it is powered on.

Jammed timecode values are held for up to four hours after powering off, and up to one hour after the battery has been removed. This allows for time to swap batteries without having to re-jam timecode.

After a successful timecode jam via NexLink, the Audio/LTC LED flashes blue on the 00-frame crossing for 10 seconds. When the Astral Mini Plus is powered off, the Audio/LTC LED and the Charge & Timecode LED flash blue on the 00-frame crossing to indicate timecode is being held.

Chapter 11: File Transfer to a Computer

The Astral Mini Plus connects via USB-C to a computer as an exFAT-formatted mass storage device. Copy WAV files from the Astral Mini Plus to the computer. When file transfer is complete, eject the drive from the operating system and disconnect USB.

While connected to a computer RF transmission, audio, and recording are disabled.

Chapter 12: Updating Astral Mini Firmware

Register your Astral Mini Plus to stay informed of firmware updates. Register here:

<https://account.sounddevices.com/>

Firmware updates via USB-C to a computer or wirelessly from an Astral receiver (except ARX2)

Firmware version information is displayed briefly on the transmitter's screen during power up. It can also be found in the Astral Remote app and in the Astral receiver's TX List.

12.1 Update via USB-C

- Connect the Astral Mini Plus to a computer using a USB-C cable. See File Transfer to a Computer.
- Download the Astral Mini Plus firmware PRG file from:
<https://www.sounddevices.com/download/?prod=astral-mini-plus>
- Copy the PRG file to the root of the Astral Mini Plus volume.
- Eject, then disconnect the Astral Mini Plus USB-C cable from the computer.

At this point, the Astral Mini Plus's Strip LEDs rotate around the button in red, green, blue and the EPD shows 'Updating Firmware. Please wait ...'

Once the update is complete, the EPD shows 'Update successful. Rebooting ...' and the unit reboots.

The firmware update can take a few minutes to complete. Wait for the update to complete before using Astral Mini Plus.

When the firmware update completes, the Astral Mini Plus automatically deletes the PRG file from its internal storage.

11.2 Update wirelessly from an Astral Receiver

1. Download the Astral Mini Plus firmware PRG file [here](#).
2. Copy the PRG file to the root of a USB thumbdrive.
3. Insert the USB thumbdrive in the Astral receiver's USB-A port or USB-C port if an ARX32.
4. Install charged batteries in the transmitter and ensure the transmitter is paired to the Astral receiver and powered on.
5. Select Firmware Update in the Astral receiver's System menu to display a list of all paired transmitters
6. Select the transmitter to be updated from the list.
7. Tap the Start Update button in the Astral Receiver's OLED 4.
8. Select the Astral Mini Plus firmware update file from the drop-down list, then tap OK at the confirmation popup.
9. Ensure the transmitter is kept nearby the Astral receiver during the update.

"Receiving Update. Please wait ..." is displayed when the transmitter is wirelessly receiving the firmware update .PRG file.

Whilst firmware is being updated, "Updating firmware. Please wait ..." is displayed. All LEDs flash red, blue, and green too. The Astral receiver's OLED 3 displays 'Updating'. Once the update is completed, the Astral Mini Plus reboots.

Note: It can take a few minutes to send the file and another minute or so for the transmitter to update.

Chapter 13: Astral Remote App

Astral Remote is an application for Android/iOS mobile devices designed to pair with Astral transmitters (Astral HH, Astral TX, Astral Mini, Astral Mini Plus). All transmitter settings are conveniently controlled using Astral Remote.

Tap to Pair

The Astral Mini Plus transmitter has a built-in RFID tag for easy pairing with the Astral Remote app. Just briefly touch the transmitter's orange Sound Devices logo to your mobile device to start pairing. If pairing fails, try positioning the Sound Device's logo closer to the tag. Check your device manufacturer's info to find the exact tag location for proper alignment.

Before pairing, ensure the Astral Mini Plus has fully charged batteries. The app doesn't need to be open, and the transmitter doesn't need to be powered on for pairing to succeed.

Once paired, you can control the transmitter directly from the app.

Astral Remote User Guide

Please refer to the [Astral Remote User Guide](#) for complete operational details.



When connected via Bluetooth LE to the Astral Mini Plus, Astral Remote offers control and display of all Astral Mini Plus parameters, including:

- Power on and off the Astral Mini
- Monitor battery status
- Frequency, Modulation, and RF power setup
- Set Privacy Key
- Monitor audio signal presence
- Microphone mute

- Transport controls (Record, Stop)
- Timecode display
- Media formatting and monitoring of remaining space
- Astral Mini Plus settings (Mode, power options, and more)
- Group control of powering, recording, and more

Download and install the [Astral Remote app](#) from the Google Play Store or Apple App Store.

Astral Remote has the following minimum operating requirements: Android tablets and phones running Android 8+, or iPad and iOS devices running iOS 13+. The device must have Bluetooth and Location Services on in order to connect with an Astral Mini.

IMPORTANT: The mobile device's location is used to determine available frequencies, RF power levels, and TV channel mapping of the Astral Mini Plus. The Country setting is automatically set using the mobile device's Location Services.

The mobile device's system date and time are used in the metadata of recorded files.

Chapter 14: SD-Utility

Sound Devices SD-Utility is a companion application for MacOS and Windows that supports Sound Devices wireless products. This application can be used to process files recorded by Astral transmitters to be more suited to the given workflow. Astral transmitter 32-bit float, 48 kHz, monophonic WAV, 2ch polyphonic WAV, and RF64 WAV files can be imported, renamed, snipped by timecode values, converted to 24 bit, conformed to a CSV Sound Report, exported as monophonic or polyphonic WAV, and more.

Please refer to the [SD-Utility User Guide](#) for complete install and operational details.



Chapter 15: Accessories

The Astral Mini Plus includes the following accessories:

- SSMA Antenna set
 - 1 straight black 470-548 MHz
 - 1 straight black 548-638 MHz
 - 1 straight black 17" uncut
 - Antenna caps
- Astral Mini Plus Belt Clip
- Welcome magnet

Fitting the Belt Clip Accessory

The pre-assembled belt clip accessory includes mounting plate, wire clip, 4 screws with captive washers and T5 torx bit.



Use the included T5 Torx bit to hand tighten the belt clip mounting plate screws to the four points (1) shown above. **DO NOT USE A TORX DRIVER.**

The belt clip can be positioned at 0, 90, 180, or 270 degrees. To adjust, remove the wire clip by pushing 'A' toward the center and pulling 'B' outward. After releasing the right-side, remove the clip and reinsert it at the desired angle using the plate clip holes.

Chapter 16: Specifications

Specifications are subject to change without prior notice. For the latest information available on all Sound Devices products, visit our website: www.sounddevices.com.

Frequency Range

- 169 to 1525 MHz
- Transmitters are tunable in 25 kHz steps
- Available frequencies are dependent on region

RF Output Power

- Off, 5 mW, 10 mW, 20 mW, selectable

Modulation Mode

- Proprietary, 100% digital RF modulation
- Standard, Long Range or T&M, selectable

Latency - Lemo input to Receiver analog output

- Standard (2 ms)
- Long Range (3.9 ms)
- T&M (7 ms)

Antennas

- VHF, UHF RF: SSMA connector, removable
- 2.4 GHz built-in

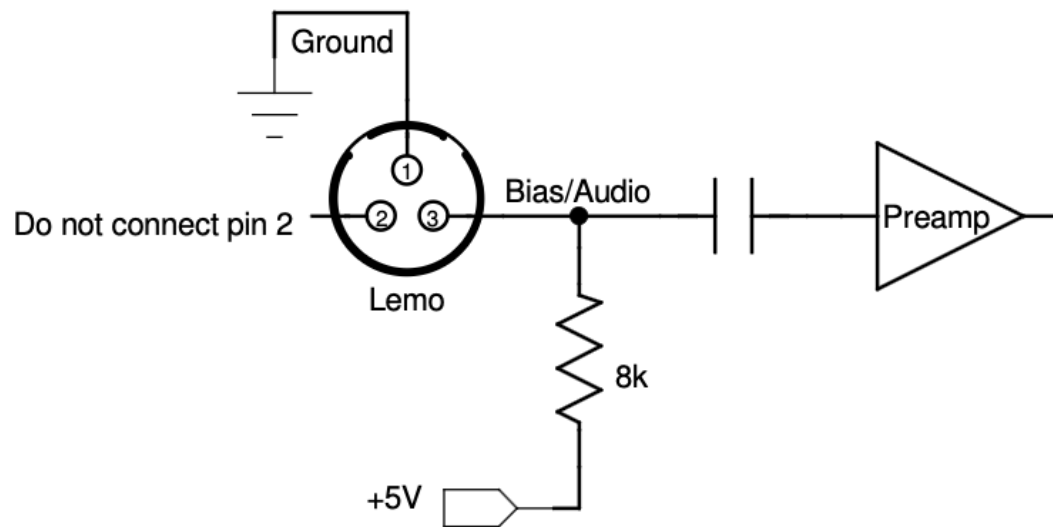
Audio Frequency Response

- 10 Hz - 20 kHz, +/- 1 dB re 1 kHz

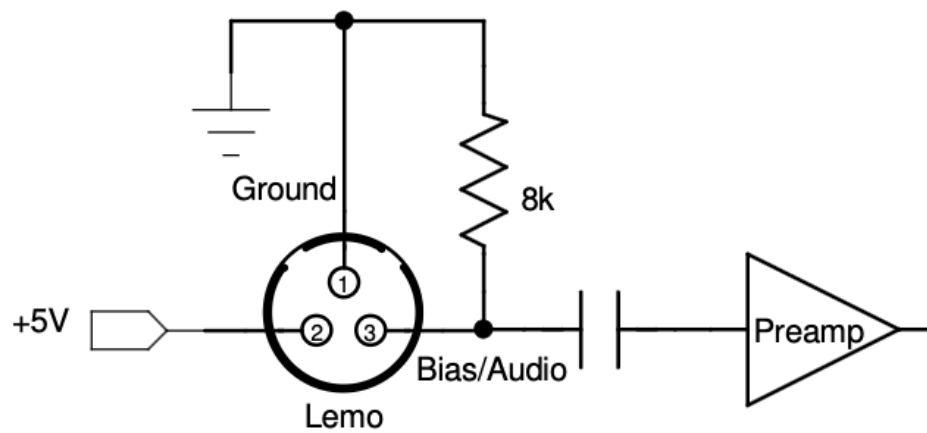
Audio Input Type

- 2-wire or 3-wire lavalier microphone via 3-pin LEMO

2-wire Lav



3-wire Lav



Bias Power

- 5 V

Input Impedance

- 8k ohm

Input Clipping Level

- +7 dBu

Dynamic range

- 140 dB (A-weighted)

Menu and Controls

- Power & Pair button on top panel
- Tap to pair with Astral Remote mobile device app

Remote Control

- Astral Remote Android, iOS, and iPad app via Bluetooth 5.2 LE
- Astral ARX32, ARX16 and Astral ARX8 via NexLink

Recording Media

- Internal 64 GB
- 10% over-provisioned for optimum performance

Recording File Format

- 32 Bit Float, 48 kHz, Monophonic
- Broadcast WAV (<4 GB), RF64 WAV (>4 GB)
- ExFAT internal drive format

Simultaneous Record and Transmit mode is not available on Astral Mini Plus units sold or operated in the United States of America.

Timecode

- Jam via NexLink
- Jam via USB-C from 8-series USB-A port

Timecode Clock

- 0.2 ppm accuracy

- Holds accurate clock for four hours while powered down with batteries inserted, holds for one hour without batteries via internal super-capacitor

Timecode Frame Rates

- 23.98, 24, 25, 29.97 DF, 29.97 ND, 30 DF, 30 ND

Frame rates are auto-detected from incoming source

USB-C

- Mass Storage (USB-C): USB 2.0 high speed for file transfer
- Powers Astral Mini Plus

Powering

- 1x or 2x XL-B14500 Li-ion rechargeable batteries
- Built-in charging using USB-C

Battery Runtime

- 7.5+ hours @ 5 mW
- Can be powered off remotely via NexLink or Astral Remote app to extend runtime.

Environmental

- Operating: -10° C to 38° C
- Storage: -40° C to 85° C
- Waterproof, sweatproof, IP67 rated
- 0 to 90% relative humidity (non-condensing)

Dimensions (H x W x D)

- 85.5 mm (3.37 in) x 50.80 mm (2.00 in) x 20.3 mm (0.8 in); with standard battery door

Weight

- 62 g (without batteries); 102 g (with batteries)
 - 2.2 oz (without batteries); 3.6 oz (with batteries)
-

Chapter 17: Frequency Authorization

The wireless system operator needs to be aware of local regulations and comply with all applicable laws regarding operation of wireless devices.

Frequency Authorizations allow the unlocking of restricted frequencies that require proof of a valid license before they can be used. Once a license has been granted, please contact Sound Devices (RF_Request@SoundDevices.com) to obtain the necessary authorization. An Authorization ID and License Code will be generated by Sound Devices based on the license provided. The Authorization ID or License Code can be entered into the Astral Remote App and then synchronized with an Astral ARX8, Astral ARX16, or Astral ARX32 receiver and its paired Astral transmitters.

An example of a frequency band requiring an unlock code in the United States is 1435-1525 MHz. Program Making and Special Events (PMSE) wireless operators typically call 1435-1525 MHz the "AFTRCC band". AFTRCC stands for Aerospace and Flight Test Band Coordinating Council. This organization coordinates several frequency bands for use by air and spacecraft in the United States. This includes 1435-1525 MHz.

Per the United States Federal Communications Commission (FCC) rules, wireless microphones are allowed as secondary users in the 1435-1525 MHz AFTRCC band. This is detailed in the FCC Part 74 rules:

<https://www.ecfr.gov/current/title-47/chapter-I/subchapter-C/part-74>

One section of the Part 74 rules that's of particular interest to operators seeking an AFTRCC band license is 74.803(d):

[https://www.ecfr.gov/current/title-47/chapter-I/subchapter-C/part-74#p-74.803\(d\)](https://www.ecfr.gov/current/title-47/chapter-I/subchapter-C/part-74#p-74.803(d)).

Generally speaking, a wireless operator needs to show they've used all other available spectrum before the AFTRCC will consider a license request in the 1435-1525 MHz range. If granted, the license is normally assigned for a specific location and a specific time range.

Sound Devices encourages all wireless operators to obtain a Part 74 license, and specifically to make sure applicable parts of the 600 MHz and 950 MHz range are included with their license application. This can help show an operator is aware of the available spectrum and is utilizing it responsibly.

More information on Part 74 licensing can be found here: <https://www.local695.com/fcc-licensing/>.

Chapter 18: Antenna Guide

The Astral Mini Plus ships with a set of three antennas (1 straight 470-548 MHz, 1 straight 548-638 MHz, 1 straight uncut, set of antenna caps).

Sound Devices offers additional pre-cut and uncut antennas as available options.

Attach antennas with a length specific to the frequency in use. Using the wrong length of antenna reduces RF range.

Cutting Antennas to Length

Uncut antennas need to be cut to the length specific to the frequency for intended use.

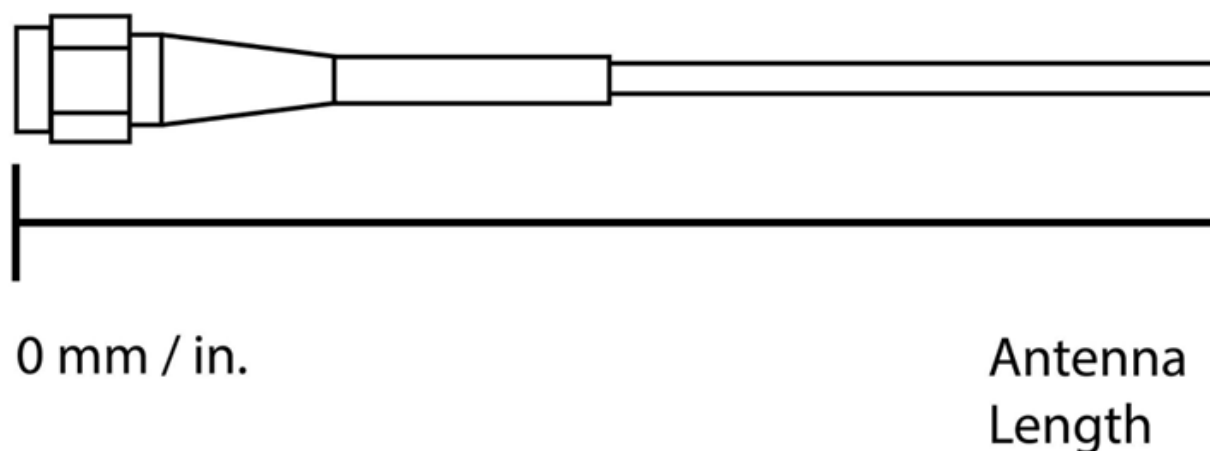
- Determine the frequency range intended for the uncut antenna using the Antenna Length chart.
- Measure the antenna for the cut point. Measurements should begin from the bottom of the SSMA connector.
- Using a pair of cutters, cut the quarter-wave antenna at the specified cut point.

- Position the antenna cap onto the cut-end of the antenna and push the cap firmly onto the antenna.

Tip: Use an Astral ARX receiver's built-in Antenna Length Tool to assist in cutting antennas to the correct length.

Antenna Length Chart

Frequency Range	Antenna Length in mm	Antenna Length in inches
169 - 216 MHz	388 mm	15.28"
470 - 548 MHz	140 mm	5.51"
548 - 663 MHz	120 mm	4.72"
638 - 738 MHz	104 mm	4.09"
738 - 865 MHz	89 mm	3.50"
902 - 1015 MHz	74 mm	2.92"
1045 - 1154 MHz	65 mm	2.55"
1240 - 1260 MHz	57 mm	2.24"
1350 - 1525 MHz	49 mm	1.93"



Chapter 19: Servicing

Do not attempt to service the Astral Mini Plus. Due to the IP67 waterproof rating, the case is factory-sealed and needs to have new gaskets installed if taken apart. The internal parts are microscopic and not user serviceable. Please [contact Sound Devices](#) for any service needs.

Chapter 20: Warranty

Sound Devices, LLC warrants the items listed above against defects in materials and workmanship for a period of ONE (1) year from date of original retail purchase. Users who register their product directly with Sound Devices Technical Support using the online form or by phone, will receive an additional ONE (1) year of warranty coverage, extending the complete warranty period to TWO (2) years from the date of original retail purchase. To extend the warranty coverage period, registration must be completed within the initial ONE (1) year warranty period. Products must be purchased through authorized Sound Devices resellers to qualify for Warranty coverage. Damage resulting from the opening of a Sound Devices product or attempted repairs by a non-authorized Sound Devices repair technician will void warranty coverage.

This is a non-transferable warranty that extends only to the original purchaser. Sound Devices, LLC will repair or replace the product at its discretion at no charge. Warranty claims due to severe service conditions will be addressed on an individual basis.

THE WARRANTY AND REMEDIES SET FORTH ABOVE ARE EXCLUSIVE. SOUND DEVICES, LLC DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. SOUND DEVICES, LLC IS NOT RESPONSIBLE FOR SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES ARISING FROM ANY BREACH OF WARRANTY OR UNDER ANY OTHER LEGAL THEORY. Because some jurisdictions do not permit the exclusion or limitations set forth above, they may not apply in all cases.

For all service, including warranty repair, please contact Sound Devices for an RMA (return merchandise authorization) before sending your unit in for repair. Product returned without an RMA number may experience delays in repair. When sending a unit for repair, please do not include accessories, including SSD drives, CF cards, batteries, power supplies, carry cases, cables, or adapters unless instructed by Sound Devices. Sound Devices repairs and replacements may be completed using refurbished, returned or used parts that have been factory certified as functionally equivalent to new parts.

Sound Devices, LLC

Services Repair RMA #XXXXXX

E7556 State Road 23 and 33

Reedsburg, WI 53959 USA

Telephone: +1-608-524-0625

Chapter 21: Patents

This product is covered under patent number 9,654,134 and other patents pending.

Chapter 22: Legal Notices

Product specifications and features are subject to change without prior notification. Read and fully understand this manual before operation.

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The “wave” logo is a registered trademark of Sound Devices, LLC. Windows is a registered trademark of Microsoft Corporation in the U.S. and other countries. Bluetooth LE is a registered trademark of Bluetooth SIG, Inc. Android is a registered trademark of Google. iPad, iPhone, and iOS are registered trademark of Apple Inc. All other trademarks herein are the property of their respective owners.

FCC Conformity



This device complies with part 74 and part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the manufacturer could void the user’s authority to operate the equipment.

Warning! Any modifications or changes made to this device, unless explicitly approved by Sound Devices may invalidate the authorization of this device. Operation of an unauthorized device is prohibited under Section 302 of the Communications act of 1934, as amended, and Subpart 1 of Part 2 of Chapter 47 of the Code of Federal Regulations.

FCC & ISED User Statement

This device complies with FCC and ISED RF exposure limits for general population / uncontrolled environments.

Cet appareil est conforme à la norme FCC et ISED les limites d'exposition pour la population générale / l'exposition incontrôlée

FCC Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help

Industry Canada Conformity

This device operates on a no-interference, no-protection basis. Should the user seek to obtain protection from other radio services operating in the same TV bands, a radio licence is required. For further details, consult Innovation, Science and Economic Development Canada's Client Procedures Circular CPC-2-1-28, Voluntary Licensing of Licence-Exempt Wireless Microphones in the TV Bands.

This radio transmitter 22225-9295W has been approved by Innovation, Science and Economic Development Canada to operate with the antenna types listed below, with the maximum permissible

gain indicated. Antenna types not included in this list that have a gain greater than the maximum gain indicated for any type listed are strictly prohibited for use with this device.

The transmitter is supplied with the above unique antenna types; to replace a lost, damaged or faulty antenna, please contact Sound Devices, LLC.

Part #	Manufacturer	Description	Maximum Gain	Impedance
11224	Sound Devices, LLC	Antenna straight 470-548 MHz (140 mm / 5.51 ")	+2.15 dBi	50 ohms
11225	Sound Devices, LLC	Antenna straight 548-638 MHz (120 mm / 4.72 ")	+2.15 dBi	50 ohms

This Device complies with Industry Canada License-exempt RSS standard(s). Operation is subject to the following two conditions:

- 1) this device may not cause interference, and
- 2) this device must accept any interference, including interference that may cause undesired operation of the device.

Conformité à Industrie Canada

Cet appareil opère selon un régime de non-brouillage et de non-protection. Si l'utilisateur veut obtenir une protection par rapport aux autres services radio opérant sur les mêmes bandes TV, une licence radio est requise. Pour plus de détails, veuillez consulter le circulaire de procédures client CPC-2-1-28 Délivrance de licences sur une base volontaire pour les microphones sans fils exempts de licence exploités dans les bandes de télévision, publié par Innovation, Sciences et Développement économique Canada.

Ce transmetteur radio 22225-9295W a été approuvé par Innovation, Sciences et Développement économique Canada pour opérer avec les types d'antennes listés ci-dessous, avec gain maximum permissible indiqué. Les types d'antennes non inclus dans cette liste et dont le gain excède le gain

maximum indiqué sur n'importe quel type listé ci-dessous sont strictement prohibés d'utilisation avec cet appareil.

Ce transmetteur est fourni avec les types d'antenne unique ci-dessus; pour remplacer une antenne perdue, endommagée ou défectueuse, veuillez contacter Sound Devices, LLC.

# Pièce	Manufacturier	Description	Gain Maximum	Impédance
11224	Sound Devices, LLC	Antenne droite 470-548 MHz (140 mm / 5.51 ")	+2.15 dBi	50 ohms
11225	Sound Devices, LLC	Antenne droite 548-638 MHz (120 mm / 4.72 ")	+2.15 dBi	50 ohms

Cet appareil est conforme aux normes CNR exemptes de licence d'Industrie Canada. Son fonctionnement est soumis aux deux conditions suivantes:

- 1) ce dispositif ne peut pas causer d'interférences, et
- 2) ce dispositif doit accepter toute interférence, y compris les interférences qui peuvent causer un mauvais fonctionnement de l'appareil.

Chapter 23: Declaration of Conformity



Manufacturer's Name: Sound Devices, LLC

Manufacturer's Address: E7556 State Road 23 and 33 Reedsburg, WI 53959 USA

We, Sound Devices LLC, declare under our sole responsibility that the product

Product Name: Astral Mini Plus

Model Number: 9295

Description: Digital Wireless Microphone Transmitter

is in conformity with the essential requirements of the following relevant Union harmonisation legislation:

Radio Equipment Directive (RED) 2014/53/EU

Low Voltage Directive 2014/35/EU

RoHS Directive 2011/65/EU

The following harmonized standards and/or normative documents were applied:

Health & Safety (Article 3.1(a) of RED) EN 62368-1:2014

EN 50566:2017

EMC (Article 3.1(b) of RED) EN 301-489-1 v2.2.3:2019

EN 301-489-9 v2.1.1:2019

EN 301-489-17 v3.2.4:2020

RF Spectrum (Article 3.2 of RED) EN 300 422-1 v2.1.2:2017

EN 300 328 v2.2.2:2019

EN 300 440 v2.1.1:2017

Signed for and on behalf of Sound Devices LLC:



July 20th, 2026

Date

Matt Anderson - Sound Devices, LLC President



Post Office Box 576

E7556 State Rd. 23 and 33

Reedsburg, Wisconsin 53959 USA

support@sounddevices.com

+1608.524.0625 main

800.505.0625 toll free (U.S. only)

www.sounddevices.com