



# AVRB7101A

## Wireless Audio USB Dongle

### User Guide

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#### General Description

Every consumer wants to be free from wires, but system designers could never find a low-cost, high-quality, easy-to-use wireless audio solution for speakers, microphones, headphones and headsets on the market.

Avnera's proprietary wireless system changes the game by taking a new approach to wireless audio. The wireless protocol was designed from the ground up and delivers uncompressed stereo audio over the air without interference problems.

Avnera's wireless USB dongle offers a low-touch, easy-to-integrate wireless audio solution and enable fast time to market by already solving the problem associated with FCC, antenna tuning and board optimization.

Avnera's AVRB7101A USB dongle provides breakthrough wireless audio functionality with point to point transport of uncompressed stereo PCM audio data from an AVRB7101A sender to an AVMD71x2 listener.

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#### Applications

- ✓ Wireless audio transmitter for wireless USB headsets and headphones
- ✓ Wireless audio distribution hub for surround speakers

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#### Features

- ✓ Uncompressed audio, point to point
- ✓ Forward audio path: stereo 91 dB SNR, 48 kHz sampling rate
- ✓ Reverse voice path: mono 64 dB SNR, 16 kHz sampling rate
- ✓ Support for 10m (typical) range
- ✓ Frequency range: 2.4 GHz ISM band, continuous dynamic frequency selection
- ✓ Forward error correction coding, error detection, and audio-specific error concealment
- ✓ Connector: USB connector
- ✓ One programmable button
- ✓ One programmable LED
- ✓ Auto-search/synch and dynamic channel selection
- ✓ Low, fixed latency suitable for video lip-synch
- ✓ Support for 16, 20, 24, and 32 bit PCM words at 16, 22.05, 24, 32, 44.1, 48, and 96 kHz
- ✓ General purpose over-the-air (OTA) serial interface:
  - ✓ 2 kbps, bi-directional, full duplex
  - ✓ Support for meta-data and remote control commands

**AVRB7101A Pin Information**

Pin Number	Pin Name	Type	Pin Description
1	VDC	Power	USB power connection (Vbus)
2	DM	Analog	USB D- connection
3	DP	Analog	USB D+ connection
4	GND	Ground	USB ground connection

**Absolute Maximum Ratings**

Absolute Maximum Ratings (AMR) are stress ratings only. AMR corresponds to the maximum value that can be applied without leading to instantaneous or very short-term unrecoverable hard failure (destructive breakdown). Stresses beyond those listed under AMR may cause permanent damage to the device.

Functional operation of the device at these or any other conditions beyond those indicated under "Recommended Operating Range" is not implied. Exposure to absolute-maximum-rated conditions for extended periods may adversely affect device reliability.

Device functional operating limits and guaranteed performance specifications are given under Electrical Characteristics at the test conditions specified.

CONDITION	MIN	MAX
USB VDC Supply Voltage Input	-0.3V	6.5V
Operating Temperature	-40°C	+85°C
Storage Temperature	-40°C	+100°C
Static Discharge Voltage – HBM *	1000V	

\*Terminology: HBM => ESD human body model

**Recommended Operating Range**

PARAMETER	MIN	TYP	MAX	UNIT
USB VDC Supply Voltage Input	4.5	5.0	5.5	V
Ambient Temperature (T <sub>A</sub> )	-20		70	°C

## FCC certification information

This product is certified under US FCC ID: V3CAVRB7101A

Avnera makes the following representations:

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

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

Per FCC regulation 47 CFR 15.21: Changes or modifications not expressly approved by Avnera, as the party responsible for compliance, can void the user's authority to operate the equipment using AVRB7101A dongles.

### NOTE:

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.

## Contact Information and Legal Disclaimer

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Avnera Corporation reserves the right to make changes without notice to the product to improve function, reliability, or performance.

Avnera Corporation does not assume any liability arising from the application or use of the products or circuits described herein.