



WaveBox Pi
1U RFSoc Enclosure



Transform Analog Signals to Network Packets

1U, up to 3 Cards, Front or Rear I/O

BittWare's WaveBox Pi chassis houses BittWare's RFSoc and FPGA cards to create appliances that transform analog signals into network packets. BittWare's RFX family of cards are specifically designed for the WaveBox family of enclosures. The WaveBox Pi is for standalone RFX cards that do not require a server motherboard. It offers three card slots, located on either the front or rear of the enclosure. BittWare also offers WaveBox cards with large FPGAs for customers whose processing needs overflow an RFSoc chip's FPGA potential.

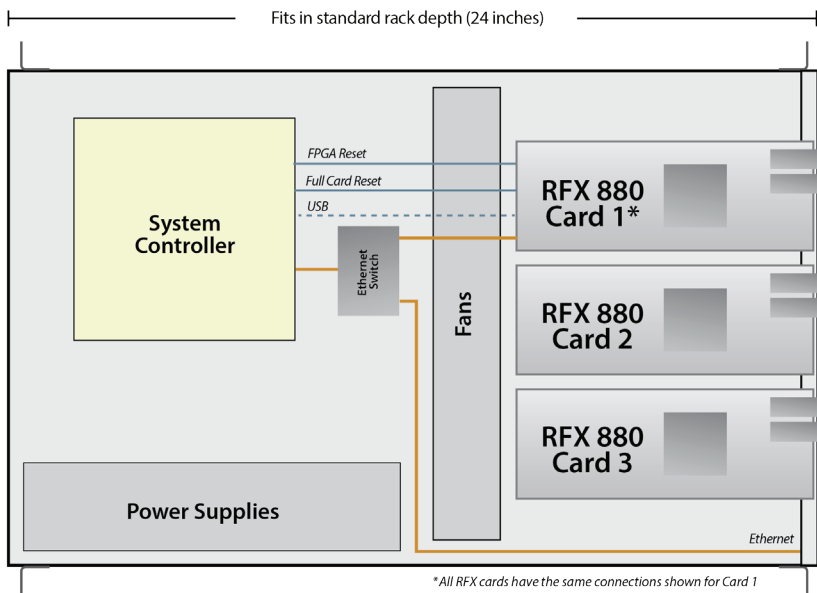


key features

Up to
6 QSFP-DDs
for 3x 400G

up to 12x 5 GSPS
14-bit ADCs
up to 12x 9.7 GSPS
14-bit DACs

1U
up to 3 FPGAs in a
standard-depth
1U server



chassis key specs

- 1U depth, 600mm
- Processor: Embedded ARM
- Card Access: 3x RJ45 ports (1 per card), system controller for reset
- Slots: 3x front or rear panel (initial configuration available with rear I/O only)
- Power: Dual C14 IEC power connectors

WaveBox Pi Chassis Top View - Rear I/O Configuration

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BittWare FPGA Cards

The WaveBox Pi is functionally similar to BittWare's TeraBox 140EB, but WaveBox was specifically designed to be less expensive and to fit into a common depth rack. The longer TeraBox offers 4 slots to the WaveBox's three slots. The TeraBox uses a PC motherboard as a chassis controller whereas the WaveBox uses an embedded ARM.

Cable Tray

BittWare RFSoc cards use tiny SSMC or SMPM coax connections for analog signals. For customers who prefer larger SMA connectors, the WaveBox has an optional cable tray that plugs onto the rear of the chassis to hold phase matched pigtailed.

System Controller

The WaveBox includes a chassis controller offering both a web interface and a front panel LCD with a button interface.

The controller provides network security, and it manages the RFX cards and the chassis. The controller is an ARM processor running Linux; customers can use the controller as-is or download the source code.

1U Enclosure

The WaveBox is a 1U enclosure that is exclusive to BittWare. The enclosure is assembled in the USA and has a three-year warranty.

Server Configuration

- **Cards Supported** -- RFSoc cards RFX 880, RFX-8440, as well as FPGA card XUP-VV8. Customers must order these cards specifically for the WaveBox Pi which lowers any mezzanine's height and adds a WaveBox mechanical card kit, sometimes called a sled. The enclosure power and cooling support a single XUP-VV8, along with two RFX cards, or three RFX cards without the XUP-VV8.
- **Mechanical** – 19 inch rack, 1U height, 600mm depth. With the optional SMA cable pigtailed, 793mm long. Note that 600mm fits into 24 inch and deeper racks.
- **Electrical** – Dual C14 IEC power connectors. Power cords not included.
- **Certifications Planned** -- UKCA and CE certified. RoHS. FCC Class A tested with three RFX-880 cards inside.
- **Environmental** -- Class 3.1 of ETSI EN 300 019-1-3 which requires operating between +5C to +40C most of the time.
- **Warranty** – 3 years



WaveBox Pi Rear View - Rear I/O Configuration

To learn more, visit www.BittWare.com

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