



## Artificial Intelligence Radio Transceiver (AIR-T) Embedded Series Product Family, AIR7310

*Broad RF application coverage,  
coupled with state-of-the-art  
computing and deep learning.*



### Product

Deepwave Digital's AI Radio Transceiver product line enables AI supercomputing at the edge in a compact and tightly integrated software-defined radio.

The AIR7310 integrates the NVIDIA Jetson Orin NX 16GB system-on-chip with the compute capability of the NVIDIA Ampere GPU architecture to enable the most recent deep learning methods, including generative AI at the edge.

### Use Cases

Provides ultra-low latency RF data intelligence at the edge to drive workflow automation and critical decision-making:

- Environmental and workplace safety
- Local network optimization
- Physical infrastructure monitoring
- Satellite communications

### Highlights

#### Purpose-Built

Integrated RF, AI, and edge computing platform built on patented, best-in-breed technologies that address RF and AI computing bottlenecks.

#### Practical and Flexible

Tuned for high-traffic RF spectrum covering high- and low-SNR signals while also supporting phase-coherent or independent channel operation.

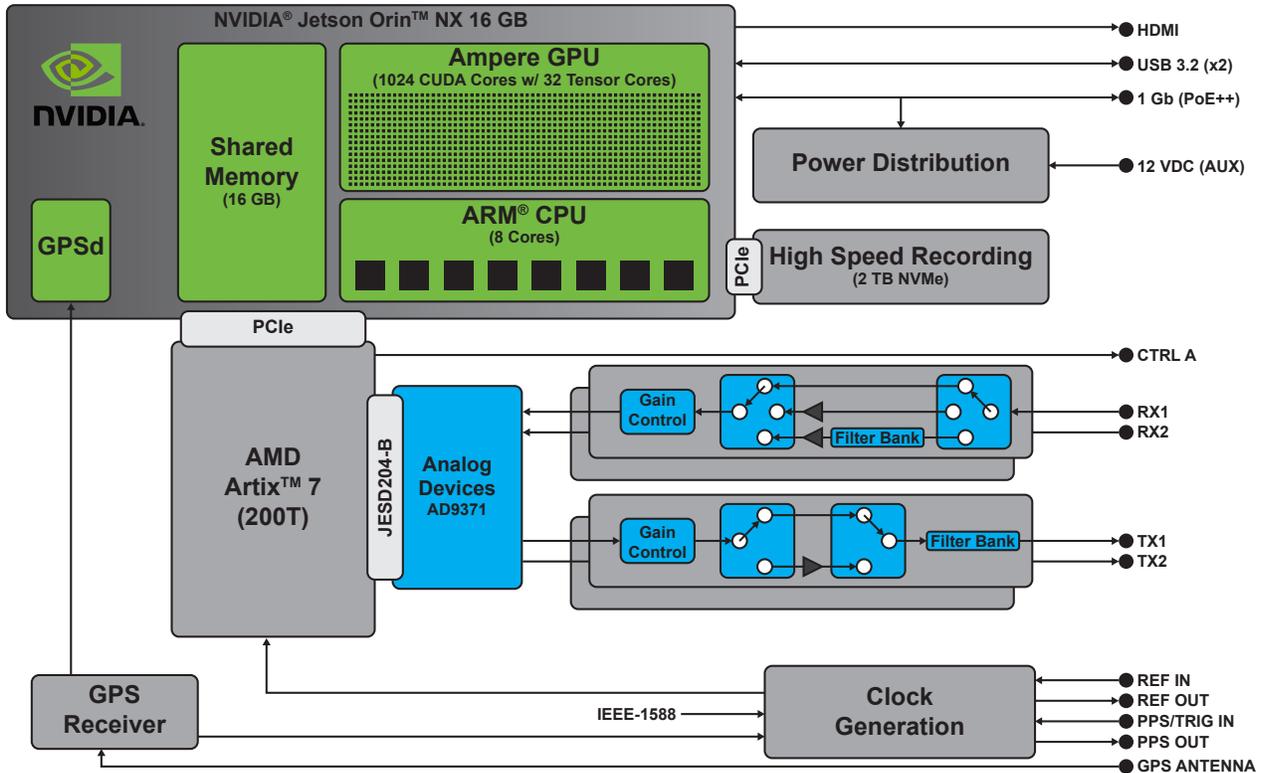
#### Simple Deployments

Small form factor, low-power, and modular unit that can be easily mounted to standard server racks (1U) or custom deployments. Just plug it in and go.

#### Developer Friendly

Platform enabled by flexible, open-source software for managing hardware, software deployments, and real-time AI model inference.





## Key Specifications

### General Purpose Processor

NVIDIA® Jetson Orin™ NX 16 GB

### Ampere GPU

1024 NVIDIA® CUDA® cores  
32 Tensor cores

### ARM® CPU

8-core Cortex® v8.2 64-bit

### Shared Memory

16 GB 128-bit LPDDR5 DRAM

### AMD® FPGA

Artix™ 7 FPGA - XC7A200T-2FFG1156C

### Networking

1 GbE RJ45 port  
Precision Timing Protocol (IEEE-1588)

### Data Storage

2TB NVMe storage (4 GB/s read/write)

### Digital Connectivity

Dual USB-A 3.2  
HDMI 2.1 (Micro HDMI connector)  
Control of external RF systems (GPIO)  
On board sensor reporting

### Power

PoE++ or 12 VDC (30 W Typ., 60 W Max)

### Mechanical

18.7 x 23.0 x 4.4 cm (7.3 x 9.1 x 1.7 in)  
1.51 kg (3.3 lbs)

### Environmental

Commercial Grade (0 - 50°C)  
Convection Cooled

### RF Specifications

Single transceiver daughtercard  
2x2 MIMO  
100 MHz IBW (125 MSPS)  
300 MHz to 6 GHz  
14 bit ADC / 16 bit DAC

### Transceiver Performance

+35 dB receiver gain  
3.0 dB receiver noise figure  
+20 dBm max transmit output power

### GNSS / GPS Performance

5 ns (1-sigma) to UTC

### Signal Connectivity

10 MHz reference input/output  
1PPS clock input/output  
Trigger input

