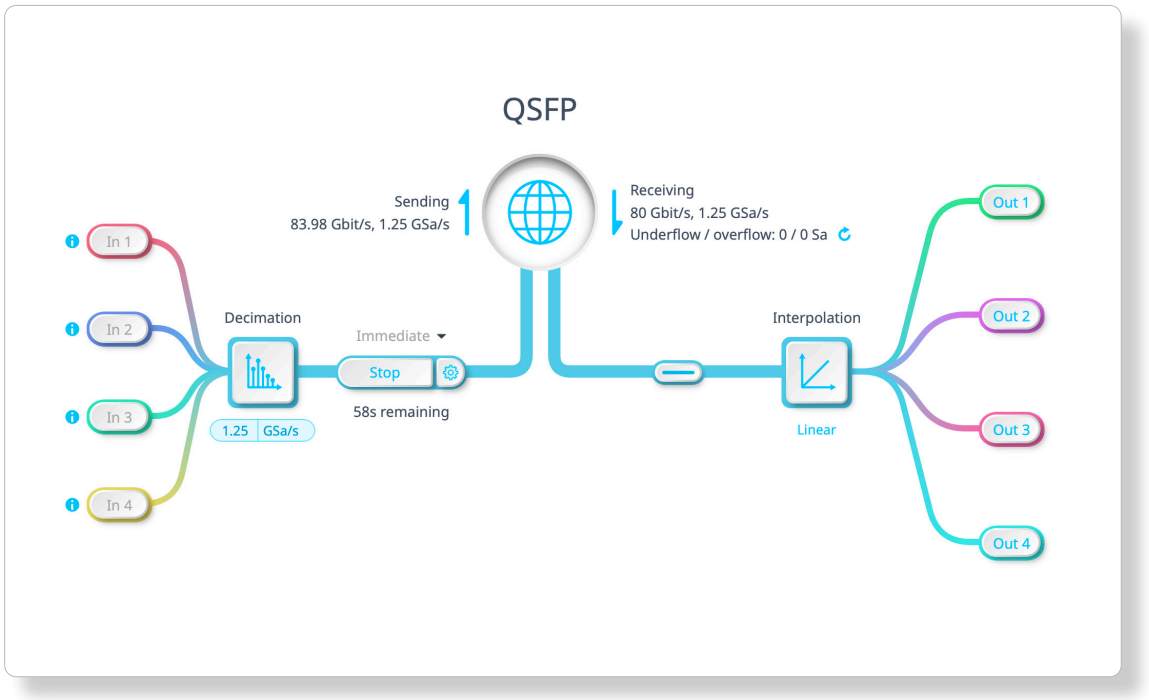
Moku:Delta Instrument Datasheet

Gigabit Streamer+

Moku Gigabit Streamer+ enables ultra-high-speed data transfer between a Moku:Delta and external systems. Its 100 Gbit/s QSFP interface provides four-channel streaming in stand-alone mode or dual-channel operation in Multi-Instrument Mode, delivering exceptional bandwidth with low-latency performance. Coupling together both transmit and receive modes, it enables real-time capture, waveform playback, sensor signal emulation, and demanding hardware-in-the-loop applications. Gigabit Streamer+ uses a DIFI-aligned VITA 49.2 packet structure with real-valued 16- or 32-bit samples, facilitating straightforward integration with existing processing pipelines.



Data Streaming Rate	Sampling Rate	Transmit MTU	Receive MTU	Transmit Sample Size	Receive Sample Size
Up to 80 Gbit/s	**Up to 5 GSa/s**	**Up to 1,500 bytes**	**Up to 1,500 bytes**	**16-bit or 32-bit**	**16-bit**

Features

- Dual- or quad-channel data streaming at an 80 Gbit/s data rate
- Maximized throughput efficiency with large sample payloads using MTU sizes up to 1,500 bytes.
- UDP over IPv4 for deterministic, low-latency transport in real-time applications.
- Robust receive path supporting MTUs up to 1500 bytes, with 16-bit data streams up to 5 GSa/s.
- Seamlessly integrates with other Moku instruments in Multi-Instrument Mode, enabling combined capture, generation, and processing in a single setup.

Specifications

- Compatible with QSFP28 DAC copper cables up to 100 Gbit/s
- DIFI-aligned VITA 49.2 packet format
- Data rate: 80 Gbit/s
- Protocol: UDP over IPv4

Transmit

- Sampling rate: up to 5 GSa/s
- Network MTU: 508 bytes, 576 bytes, 1,500 bytes
- Sample size: 16 bit or 32 bit

Receive

- Receiving rate: up to 5 GSa/s
- Accepted MTU: up to 1,500 bytes
- Sample size: 16 bit

Applications

- Sensor signal emulation
- High-speed data capture
- Wideband RF event recording
- Wideband RF playback
- Real-time waveform streaming
- On-demand direct injection of real-world events
- Distributed signal processing
- Closed-loop control systems
- Hardware-in-the-loop testing
- Remote waveform generation

Note: All Moku:Delta specifications are subject to change.