

## ADARQ IP Gateway

### Error Correction Video/Audio Streaming over the Internet

The ADARQ IP Gateway is a complete affordable solution for transporting video/audio stream to nearly any location via unconditioned IP networks including wireless networks and the Internet.

The ADARQ IP Gateway features some of the most powerful and advanced error correction capabilities found in any video over IP product.

ADARQ IP Gateway implements QVidium's patented ARQ error correction and clock synchronization for the more robust video transmission with the lowest delay.

ARQ (Automatic Retransmission Request) is a dynamically adjusting feedback error correction mechanism designed specifically to enable the highest quality video transport over wireless networks and the Internet. ARQ can provide nearly flawless reproduction of a video stream even through extremely lossy or congested networks.

In contrast with FEC, ARQ is a feedback mechanism that detects packet loss at the receiver (ADARQ-Rx) and requests the retransmission of only those lost packets from a transmitter (ADARQ-Tx). A user-configurable buffer at the receiver delays the video stream just long enough to allow the system to replace any missing packets and re-insert them in their proper order without disturbing play out of the video stream. Because ARQ senses actual packet loss, rather than attempt to predict packet loss, it can precisely and

completely restore all lost packets without disturbing timing of the video play out. In contrast to FEC, ARQ can successfully recover lost packets regardless of the magnitude or pattern of the packet losses, provided that the network connection has enough capacity to send both the original video stream and the replacement packets.

ARQ shares similarities with robust packet transport protocols, such as TCP/IP in that both use feedback to create robust network packet transport. However TCP/IP uses a sliding window that limits the number of packets that a source can have in transit and requires a positive acknowledgement for each window of packets. This limits TCP's throughput, especially over links with long latencies. Furthermore, under heavy loss conditions, TCP/IP scales back the data transmission rates and provides no concise deadlines or constraints on packet delivery times. For real-time video, this limits the usefulness of TCP/IP and makes it unacceptable for live, low-latency video transport.

In contrast with TCP/IP, ARQ is designed specifically for live, interactive, real-time video and audio signals to automatically recover nearly all lost packets with minimal latency and over nearly any link loss conditions. It adds a small configurable amount of delay to the network transport in exchange for significantly improving the robustness and reliability of video transport.



### Benefits and Features

- Enables high-quality video transport over any IP network, including wireless networks and the public Internet.  
ADARQ-Tx receives UDP or RTP IP video-audio stream with HD/SD H.264 or MPEG2; outputs IP streams with ARQ error correction.  
ADARQ-Rx receives IP stream with ARQ error correction; outputs UDP or RTP IP video-audio stream.
- Advanced error correction ARQ maintains video transport quality despite packet loss, reordering, and duplication.
- Advanced packet pacing & configurable jitter buffer eliminates and handles large packet bursts.
- Includes Web interface for complete system control, monitoring, and configuration.

### Specifications (ADARQ-Tx and ADARQ-Rx)

**Network Interface:**

- 1 IEEE 802.3 100/10 Base-TX Ethernet (RJ-45)

**IP Network Stream Conditioning & Error Correction (EC):**

- QVidium patented ARQ error correction
- QVidium packet pacing

**Network Protocols:**

- IP Encapsulation: RTP/UDP/IP and UDP/IP

**Configuration and Monitoring:**

- Web setup & monitoring interface over IP network

**Electrical:**

- DC Power Input: 12 VDC, 5 A, 60 Watts average
- Auto sensing AC power adapter included

**Mechanical:**

- Dimensions: 7.7"(W) x 8.75" (D) x 2.5" (H)
- Dimensions (mm): 195 (W) x 222 (D) x 64 (H)
- Unit Weight: 3.0 lbs (1.36 Kg)

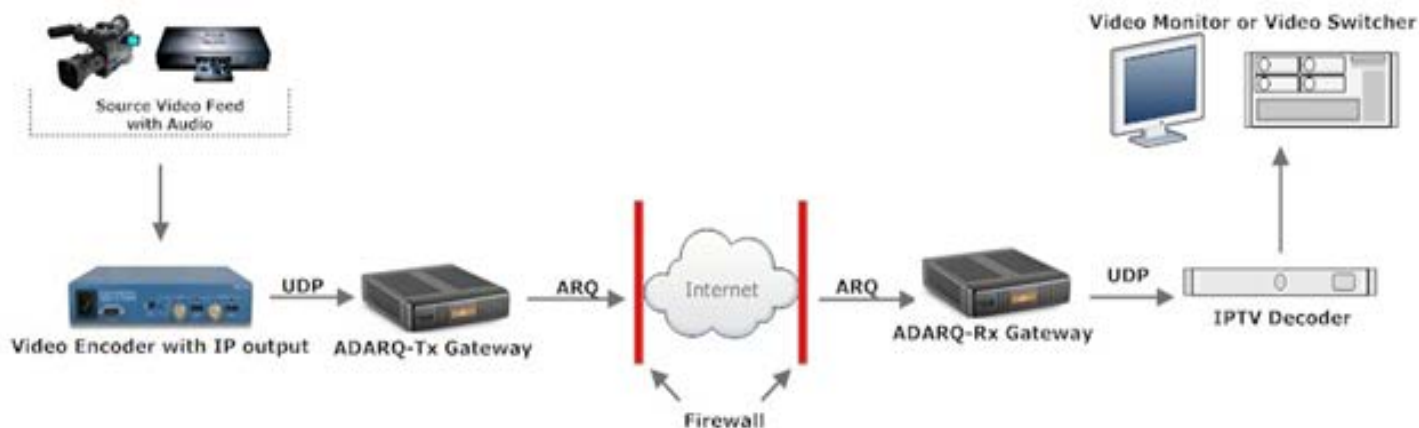
**Environmental:**

- Operating temperature: 0 to 50° C
- Operating humidity: 0 to 90% R.H., non-condensing
- Non-operating temperature: -20 to 70° C
- Non-operating humidity: 0 to 95% R.H., non-condensing

**Warranty:**

- Parts and labor: 1-year

### Application Example



**Ordering info:**

**ADARQ-Tx - IP transmitter with UDP or RTP IP input and ARQ IP output**

**ADARQ-Rx - IP receiver with ARQ IP input and UDP or RTP IP output**

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