



# Fusion Embedded™ RTP/RTCP

## Introducing Fusion Embedded RTP/RTCP with SRTP

RTP (Real-time Transport Protocol) facilitates real-time data transport over packet-oriented data networks such as the Internet. RTP was primarily developed for multi-participant multimedia conferences, but its use is not limited to these kinds of applications. In fact, it can be of value any time there is a need to transport real-time data over a packet network, particularly the Internet.

RTCP (Realtime Transport Control Protocol) is a companion protocol used for gathering statistics on the performance of the RTP connection. The statistics are used to dynamically adjust and optimize packet transmission for current network conditions.

Because Fusion Embedded RTP takes care of many of the networking aspects of RTP, developers are free to focus on the issues that are more important to the application—RTP payloads, encoding and decoding media streams, etc.

Fusion Embedded RTP provides full support for RTP and RTCP per RFC 1889/1890, including:

- Support for multiple concurrent RTP sessions and support for multicast, unicast, and multipoint unicast UDP sessions
- Support for multiple send and receive streams per session

- Jitter buffer with configurable depth
- Maintains data base of all session participants that includes RTCP information and statistics including jitter, delay, packet loss, and time stamps
- Calculates RTCP bandwidth based per RFC 1890
- API for configuring Source Description Items
- Synchronizing Source (SSRC) collision resolution and loop detection
- Asynchronous notification API for events that occur on send and receive streams
- API to add Contributing Sources (CSRCs) for mixers

Fusion Embedded RTP takes advantage of the Fusion Embedded networking stack's multi-point unicast UDP socket support to allow RTP packets to be sent to multiple unicast destinations with no additional copies of RTP payload data. It also integrates with Fusion Embedded SNTP for network timestamps and it can be used with an RTOS or in polled-mode.

RTP makes it possible to deliver via the Internet many real-time events, including:

- Up-to-the-minute stock quotes and other financial data
- News feeds
- Sporting events
- Video-conferences
- Internet radio
- Internet telephony
- U-mail
- Streaming media players & servers
- Conference bridge
- Residential gateways
- Set-top boxes





### Fusion Embedded RTP/RTCP Features

- Secure RTP (SRTP)
- Supports multiple concurrent RTP sessions
- Supports multicast, unicast, and multi-point unicast UDP sessions
- Supports multiple send and receive streams per session
- Provides jitter buffer with configurable depth
- Maintains session data base, including RTCP information and statistics including jitter, delay, packet loss, and timestamps
- Calculates RTCP bandwidth based per RFC 1890
- Includes API for configuring Source Description Items
- Provides Synchronizing Source Collision Resolution (SSRC) and loop detection
- Includes asynchronous notification API for events that occur on send and receive streams
- Includes API to add Contributing Sources (CSRCs) for mixers

### Fusion Embedded Products

Networking					Web		Security	Voice	File	Reference Designs
POP3	PPP	IPv6	SMTP	RTP	Browser	DOM	SSL/TLS	Algorithms	NOR	IP Media
SDP	PPPoE	IPv4	SNMP	RTCP	HTML UI	SAX	IPsec	Codecs	NAND	VoIP Phone
IGMP	NAT	FTP	DHCP	TFTP	HTTP	SOAP	IKE	Voice Engine	SD	Terminal Adapter
CIFS	SIP	RTSP	RIP	SNTP			SRTP		SDHC	VoIP Gateway
Telnet	STUN	DNS					SIPS		CIFS	