

# Merlin<sup>®</sup> PLUS

## AUDIO CODEC



# Merlin PLUS (TLR5200MP)

Rapidly expand your remote capability by using Merlin PLUS to create and manage up to 6 independent bidirectional mono connections with IP codecs or smartphones using Report-IT, and at the same time save money on codec hardware costs and reduce studio rack space requirements.

Merlin PLUS can also deliver high fidelity, bidirectional stereo IP audio and IFB communications from the studio to a remote codec.

## Flexible Applications

Merlin PLUS is the ideal 1RU codec for studio installations and offers a simple, compact and scalable solution for managing multiple simultaneous remotes. Use Merlin PLUS for:

- Bidirectional stereo or mono
- 3 Bidirectional mono connections
- Up to 6 simultaneous bidirectional mono remote connections.
- 1 or 2 stereo remote connections (bidirectional), each with separate IFB communication channels.
- Recallable codec configurations via 'programs'.

## Reliability and Connectivity

Merlin PLUS is specifically designed to deliver remote broadcast connections over the full suite of wired and wireless IP networks. The codec features dual Gigabit Ethernet ports, dual internal power supplies and IP network backup, as well as SmartStream PLUS redundant IP streaming to ensure you're always on the air.

## Fuse-IP and SmartStream PLUS

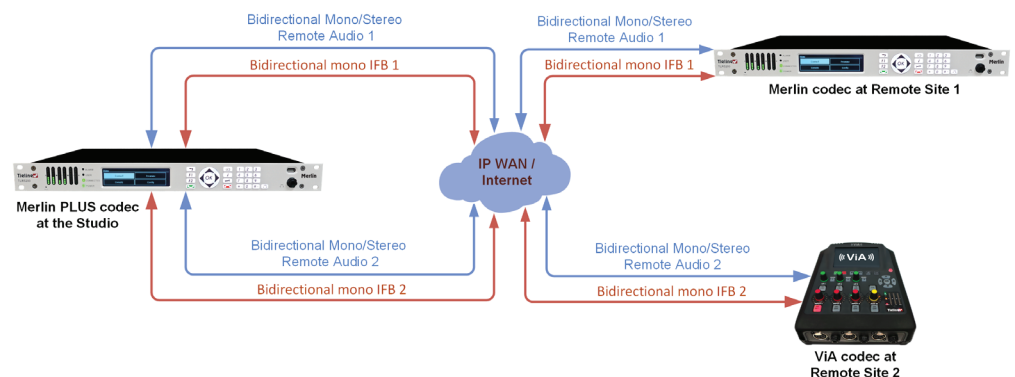
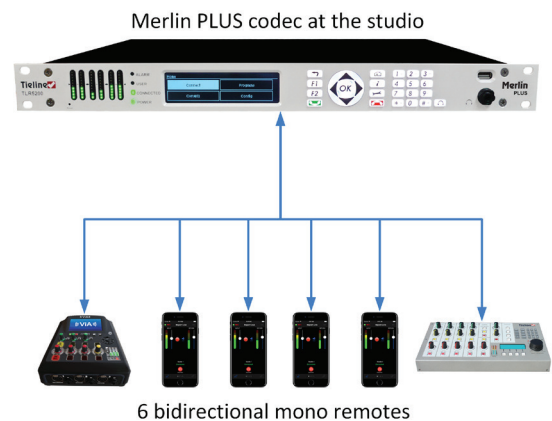
With Tieline's proprietary Fuse-IP data aggregation technology you can bond multiple IP interfaces you choose, including options like:

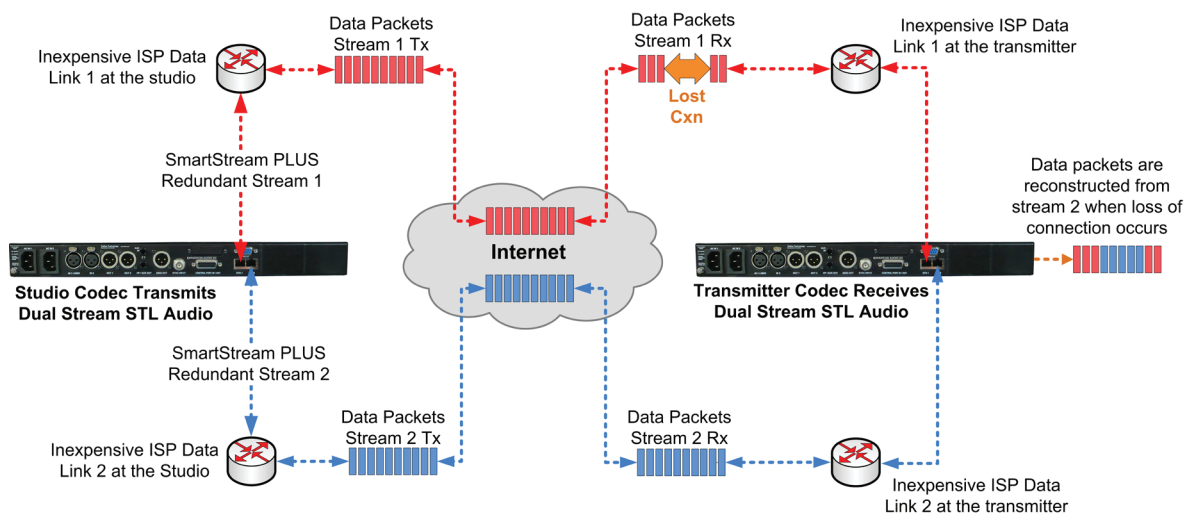
- USB Wi-Fi Modem and LAN port, or
- Dual Ethernet LAN Ports.

Imagine the peace of mind knowing you can bond 2 links from different Telcos and let Tieline's Fuse-IP technology automatically manage the data capability of each link!

Tieline's SmartStream PLUS dual redundant streaming software has set the benchmark for redundant IP streaming over the public internet. Tieline supports up to 3 redundant streams with each primary audio stream[2]. Some manufacturers charge thousands of dollars for IP management software like SmartStream PLUS as an optional extra, however Tieline believes high performance and rock-solid reliability is an essential part of each and every broadcast, so you get it for FREE!

With Tieline's SmartStream PLUS and Fuse-IP technologies, as well as automated jitter buffer management and error correction strategies, you can be assured of trouble-free motoring on the information superhighway!



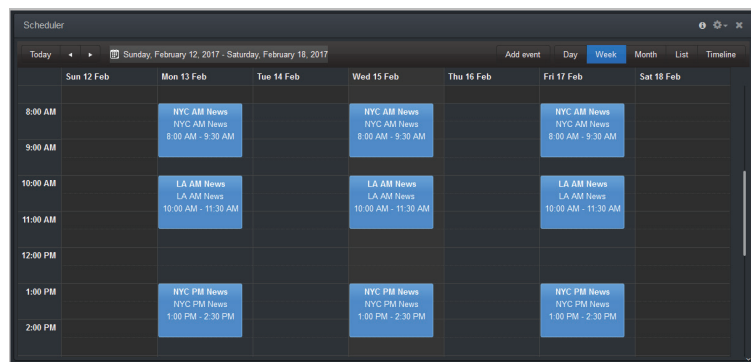


**SmartStream PLUS Redundant Streaming Reconstitutes Lost Packets from Stream 1 using Stream 2**

## Program Scheduler

The Program Scheduler is a powerful tool which automatically connects and disconnects scheduled programs using a simple calendar-based user interface.

- Drag and drop to add programs into the scheduler.
- Drag the top or bottom of a scheduled program to adjust the scheduled time.
- Customization of time-zones.
- Day, week, month, list and timeline views available.
- Enable and disable events in a snap.
- Automatically switch program types from dialing to answering.



**The Web-GUI Program Scheduler**

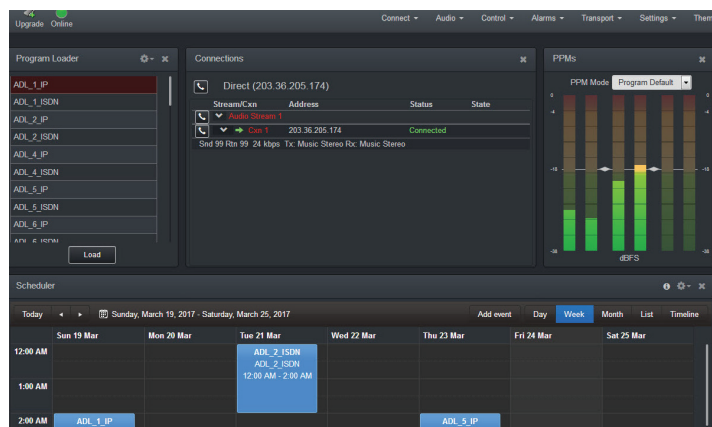
## Algorithms

The codec includes the low delay and cascade-resilient aptX® Enhanced algorithm, as well as other popular algorithms including the full AAC suite, variable bit-rate Opus, MPEG Layer II, MP3, Tieline Music and MusicPLUS, G.722 and G.711.

## Codec Management

Configure and control all your Tieline codecs from anywhere you can connect to the internet.

- HTML5 ToolBox Web-GUI: Fully configure all codec and connection settings.
- HTML5 ToolBox Quick Connect Web-GUI: Simplified GUI for less technical users. Load existing programs and simple point-to-point dialing.
- Use the Cloud Codec Controller to configure & manage your entire codec network remotely.
- The Tieline Traversal Server centralizes contact list management and provides self discovery of codecs within customized call groups.



**The Web-GUI**

## Input/Output Specifications

Analog Audio Inputs	2 x Female XLR line inputs
Analog Audio Outputs	2 x Male XLR
AES3 In	1 x female XLR (Channel 1 in; shared with Ch1 analog input)
AES3 Out	1 x male XLR
Aux Input	1 x 6.35mm (1/4") Mic/Line level Jack on rear panel
Headphones Out/Aux Out	1 x 6.35mm (1/4") Jack on rear panel and 1 x 6.35mm (1/4") Jack on the front panel
Female DB25	4 Channel audio expansion connector
Sync Input	BNC Wordclock input
Control Port In/Out	Four relay inputs and four opto-isolated outputs for machine control via a DB15 connector.
Audio Input Impedance	High Impedance > 5K ohm
Output Impedance	<50 ohm Balanced
Clipping Level	+22dBu (input and outputs)
A/D & D/A Converters	24 bit
Frequency Response	20Hz to 22kHz
Total Harmonic Distortion	<0.0035% at +16dBu or -89 dBu unweighted
Signal To Noise Ratio	>98.5dB at +22dBu, unweighted

## Sample Frequencies

IP Sample Frequencies	8kHz, 16kHz, 32kHz, 44.1kHz, 48kHz
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## Algorithms

IP	Tieline Music, Tieline MusicPLUS, Opus, G.711, G.722, MPEG Layer 2, MPEG Layer-3
IP (uncompressed)	LC-AAC, HE-AAC, HE-AACv.2, AAC-LD, AAC-ELD, 16/24 bit aptX® Enhanced algorithm Linear PCM16/24 bit 32kHz, 44.1kHz, 48kHz

## Data and Control Interfaces

Web Audio Monitoring	Selectable web audio monitoring of IP audio streams
USB	USB 2.0 Host port on the front panel (support for USB firmware upgrades & Wi-Fi USB Modems)
LAN	2 x 10/100/1000 RJ45 connectors
Serial	RS232 up to 115kbps with or without CTS/RTS flow control can be used as a proprietary data channel
Protocols	SIP (EBU N/ACIP 3326 & 3368 compliant), RTP, DHCP, SNMP, DNS, HTTP, IGMP, IPv4/IPv6, RTCP, STUN, SSL Security Certificate, I3P EBU3347 Compliant, FTP
ISDN	Optional via module slot

## Advanced Networking

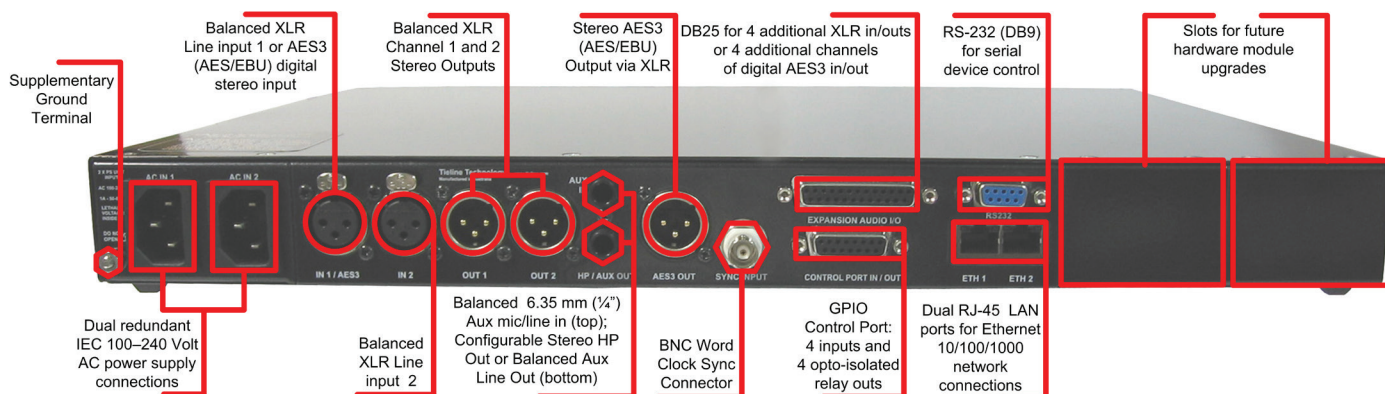
VLAN Tagging	IEEE 802.1Q, 802.1p
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## Front Panel Interfaces

Display	256 x 64 monochrome LCD
Keypad	21 button keypad
Navigation	5 button keypad

## General

PC Configuration	User-configurable settings via browser-based Toolbox Graphical User Interface
Multilingual	Multilingual menus and configuration software
Size	1U x 19" Rackmount
Dimensions	19" x 1.75" x 13.5" [482mm (W) x 44mm (H) x 343mm (D) including rear connectors]
Weight	6lb 7.7oz/2.94Kg
Power Consumption	Dual 100-240V IEC power inlets; 1A 50-60Hz
Operating Temperature	0°C to 45°C (32°F to 113°F)
Humidity Operating Range	20% ≤ RH ≤ 70% (0 to 35°C/32°F to 95°F), non-condensing.



Merlin PLUS rear panel

Extensive dealer network with global telephone support in 2 strategic locations around the world

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