

# Merlin

## AUDIO CODEC



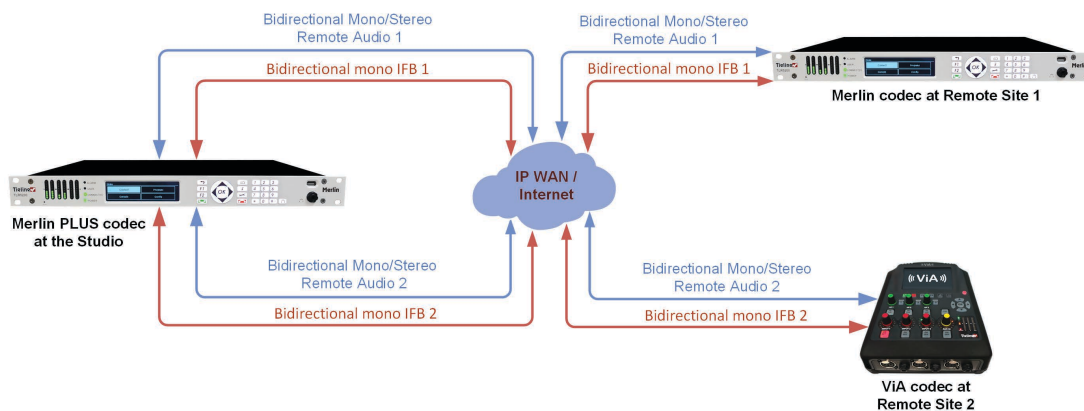
# Merlin (TLR5200M)

Use Merlin to deliver rock solid, high fidelity IP audio and IFB communications between the studio and a wide range of Tieline remote codecs or smartphones using Report-IT.

## Flexible Applications

The 1RU Merlin rack mount IP codec is ideal for studio and remote truck installations and can deliver:

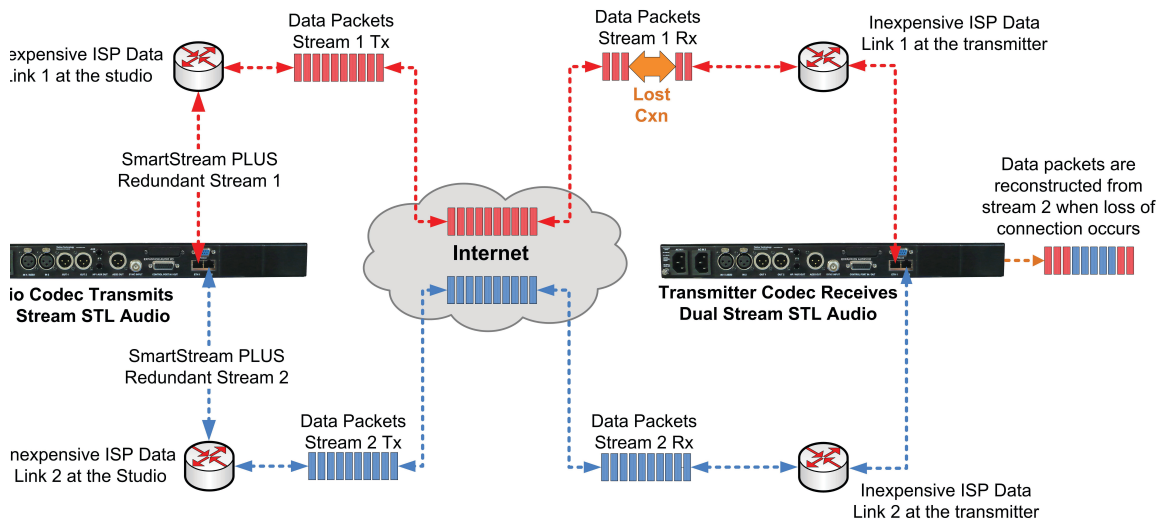
- Bidirectional stereo or mono
- Bidirectional stereo with a separate bidirectional IFB communication channel
- Two simultaneous mono connections with different Tieline IP codecs, or smartphones using Report-IT to save on hardware costs
- Recallable connection profiles via 'programs'



## 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.



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

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. 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!

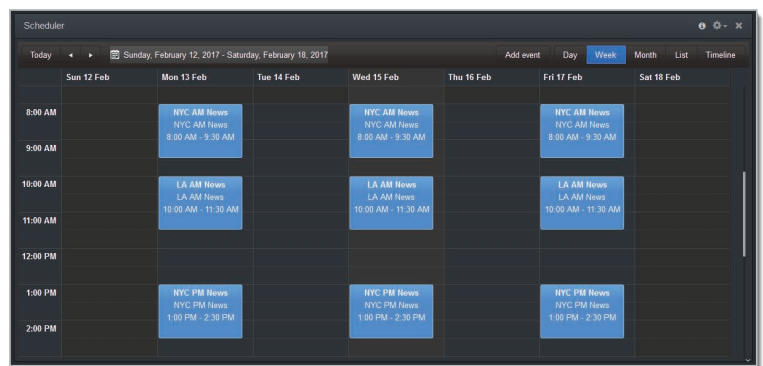


Nobody likes a traffic jam, least of all broadcasters dealing with IP packet congestion! With Tieline's SmartStream PLUS and Fuse-IP technologies, as well as automated jitter buffer management and error correction strategies, you can be assured of trouble-free motoring on the information superhighway!

## Program Scheduler

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

- 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

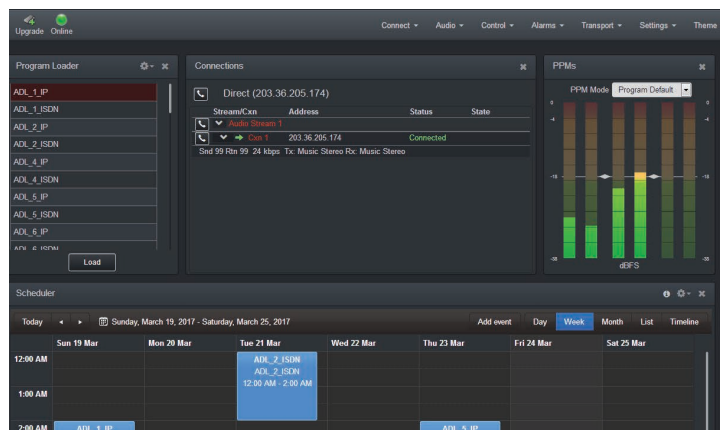
## Algorithms

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

Our ToolBox Web-browser Graphical User Interface (GUI) allows you to remotely configure and control all your Tieline codecs from anywhere you can connect to the internet. Two versions are available, including:

- 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.



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
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, AAC-ELDV2, 16/24 bit aptX® Enhanced algorithm Linear PCM16/24 bit 32kHz, 44.1kHz, 48kHz

## Data and Control Interfaces

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 compliant), RTP, DHCP, SNMP, DNS, HTTP, IGMP, IPv4/IPv6, RTCP
ISDN	I3P EBU3347 Compliant
POTS	Optional via module slot

## Advanced Networking

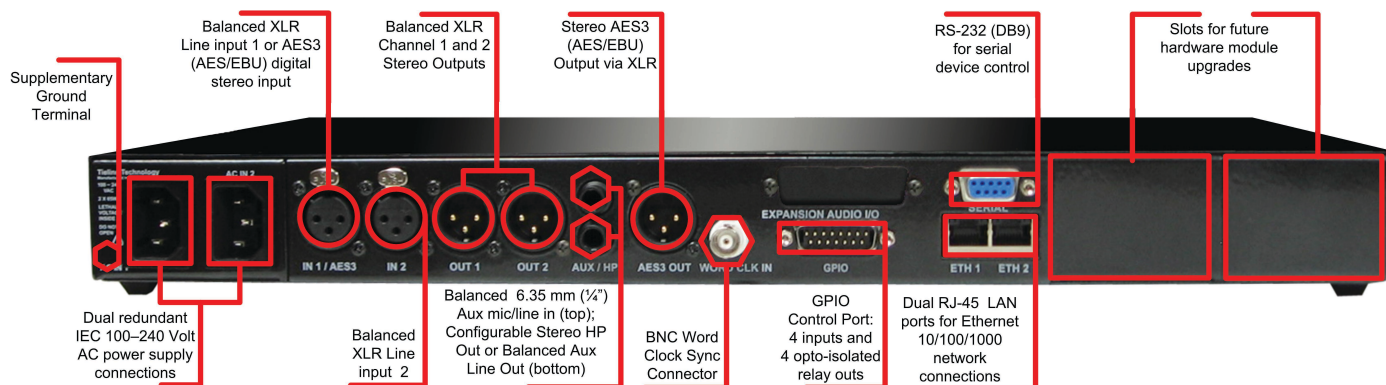
VLAN Tagging	IEEE 802.1Q, 802.1p
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## Front Panel Interfaces

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

## General

PC Configuration	User-configurable settings and matrix audio mixer** via browser-based Toolbox Graphical User Interface
Multilingual	Multilingual menus and configuration software
Remote Control	Compatible with Codec Management System software (optional purchase)
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 rear panel

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

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