Merlin PLUS

AUDIO CODEC

WHEATNET
W IP

POTS | ISDN | OPUS | SIP | IPv4 IPv6 | W IP | SMART STREAM PLUS

Tieline®
The Codec Company

www.tieline.com

Merlin PLUS (TLR5200MPW)

Rapidly expand your remote capability with the award winning Merlin PLUS with WheatNet-IP. Manage up to 6 bidirectional mono connections with IP codecs or smartphones using Report-IT, saving money on codec hardware costs and reducing studio rack space requirements.

The codec includes a WheatNet audio card which provides a WheatNet-IP LAN interface for connecting to the WheatNet-IP Environment.
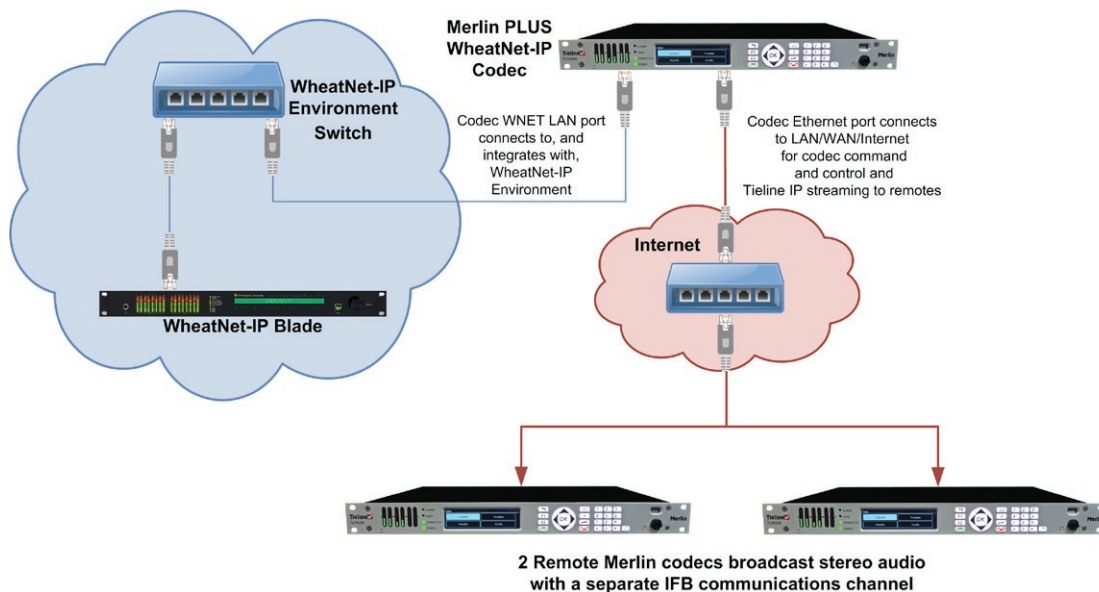
**Merlin PLUS and WheatNet-IP configuration**

Flexible Applications

Merlin PLUS with WheatNet-IP is a simple, compact and scalable solution delivering:

➤ Up to 6 simultaneous bidirectional mono remote connections, or

➤ 2 x Bidirectional mono or stereo remotes, each with a separate bidirectional IFB communications channel.

Connectivity & Compatibility

Merlin PLUS with WheatNet-IP delivers remote broadcast connections over the full suite of wired and wireless IP networks[1]. It 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.
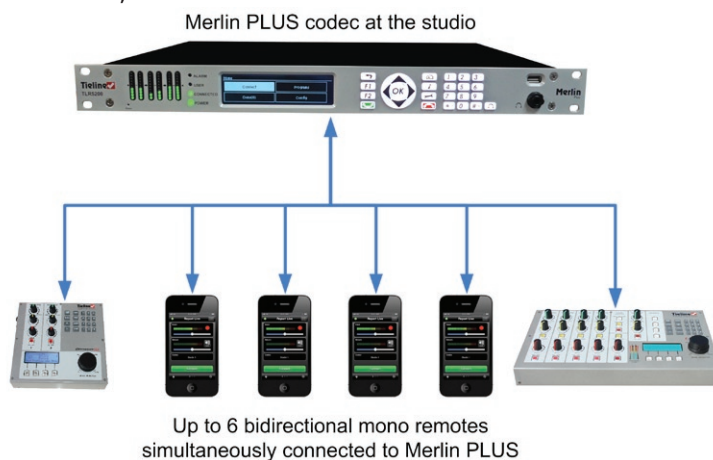
Merlin supports both IPv4 and IPv6 (Dual Stack)

Up to 6 bidirectional mono remotes simultaneously connected to Merlin PLUS

protocols, so broadcasters can be assured that they have made a smart investment for the future. You can also connect over IP with any SIP-enabled IP codec brand supporting the EBU N/ACIP tech 3326 standard. It is also compliant with I3P EBU3347 requirements for interoperability of AoIP production intercoms. Optional ISDN [3] and POTS [3] module cards allow you to interface with your existing infrastructure, as your network transitions to IP.

Rock Solid Audio over Low Cost IP Links

Tieline's SmartStream IP technology adapts effortlessly to variable IP network conditions to deliver seamless bidirectional audio over wireless connections, which can be susceptible to packet loss over time.

SmartStream PLUS revolutionises IP broadcasting by streaming simultaneous redundant data streams from both Ethernet ports to deliver seamless redundancy over inexpensive IP links. This maintains rock solid audio over unmanaged IP networks like the internet, allowing you to perform reliable high quality remotes at a fraction of the cost of synchronous leased lines.
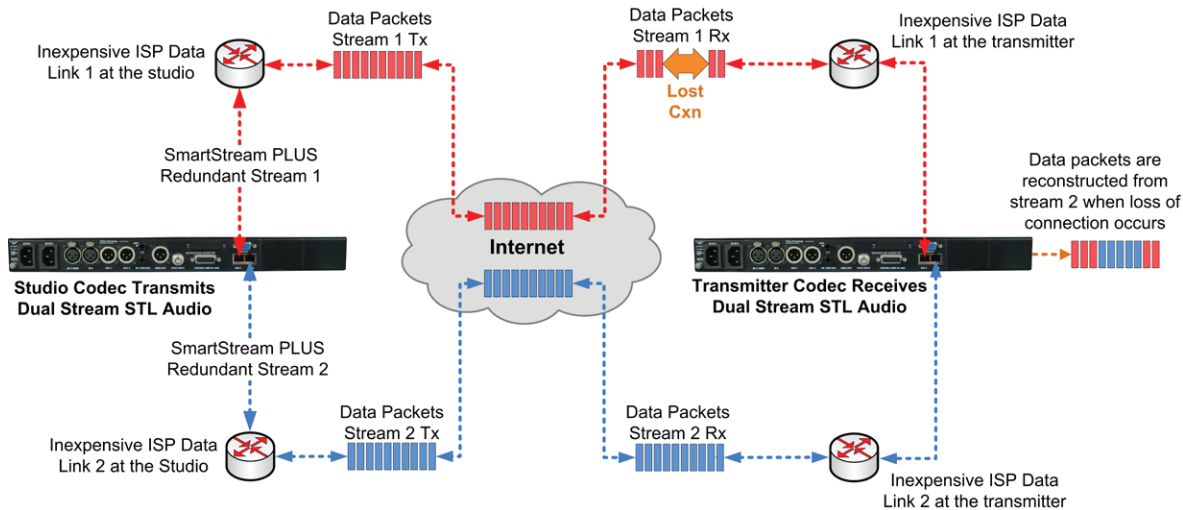
SmartStream PLUS Redundant Streaming Reconstitutes Lost Packets from Stream 1 using Stream 2

Some other manufacturers charge thousands for IP management software like SmartStream. Tieline believes high performance and rock-solid reliability is an essential part of each and every broadcast and delivers its renowned SmartStream and SmartStream PLUS software for free in Merlin PLUS with WheatNet-IP.

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. Asymmetric[2] encoding and decoding lets you send high quality audio in one direction and save on data by sending low bandwidth program on the return path.

Codec Management

Use Tieline's Toolbox web-browser Graphical User Interface to connect to your codec and configure individual codec settings over a LAN, WAN or the internet.

Routing of WheatNet-IP sources and destinations can be performed using Wheatstone's Navigator software.

Tieline's Codec Management System[3] allows you to use any computer to manage your entire network of IP codecs remotely.

[1]Requires 3rd Party Device [2]Future Release [3]Sold Separately

Input/Output Specifications

Analog Audio Inputs	2 x Female XLR line inputs
Analog Audio Outputs	2 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
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

Algorithms

IP	Tieline Music, Tieline MusicPLUS, Opus, G.711, G.722, MPEG Layer 2, MPEG Layer-3 LC-AAC, HE-AAC, HE-AACv.2, AAC-LD, AAC-ELD, AAC-ELDv2, 16/24 bit aptX® Enhanced algorithm
IP (uncompressed)	Linear PCM16/24 bit 32kHz, 44.1kHz, 48kHz

Data and Control Interfaces

USB	USB 2.0 Host port on the front panel
LAN	2 x 10/100/1000 RJ45 connectors
WheatNet-IP LAN	1 x 10/100 RJ45 connector to distribute WheatNet-IP audio
Serial	RS232 up to 115kbps with or without CTS/RTS flow control can be used as a proprietary data channel
Protocols	Tieline, SIP/SDP (EBU N/ACIP 3326 compliant), RTP, DHCP, SNMP, DNS, HTTP, IGMP, ICMP, VLAN, IPv4/IPv6, I3P EBU3347 Compliant
ISDN	Optional via module slot
POTS	Optional via module slot

Advanced Networking

VLAN Tagging	IEEE 802.1Q,802.1p

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 4.59oz/2.85Kg
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.

** Available in later releases
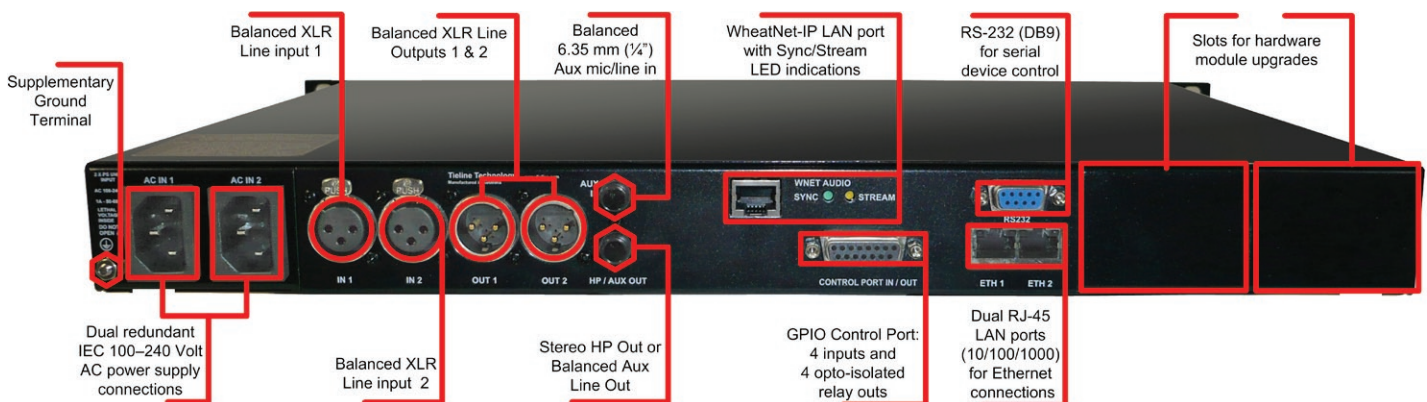
Merlin PLUS with WheatNet-IP rear panel

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

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