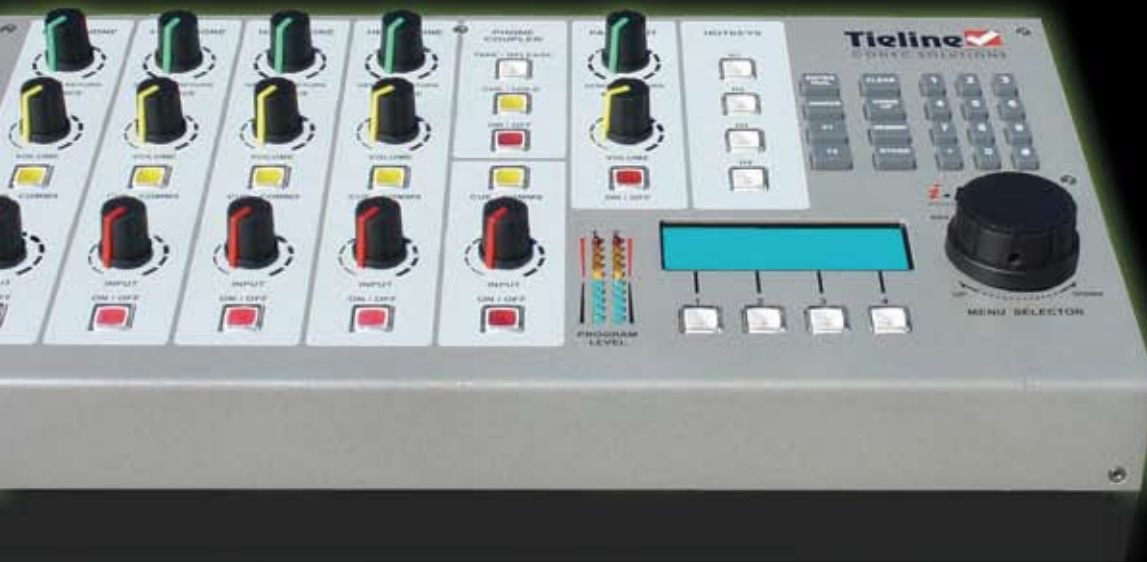


Codec
Commentary
Control
Communications

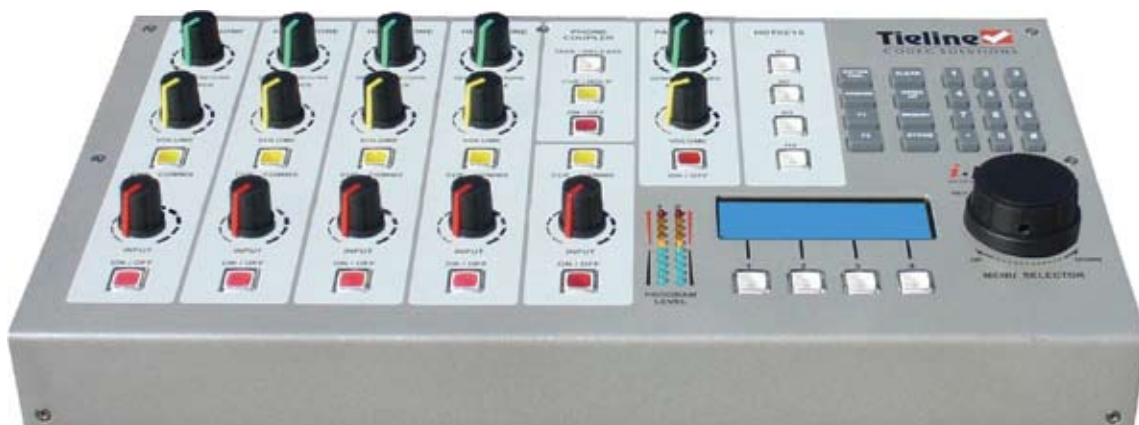
Wireless Ready

i-Mix G3



Features at a glance

- 6 network interfaces - Your choice of Wireless 3G (cellular broadband), GSM, Satellite and Wired IP, POTS, ISDN and X.21 modules. Buy only what you need.
- Built in QOS Performance Engine Technology with superior loss management over IP and 3G networks.
- A range of industry standard and specialized algorithm options including MPEG Layer II, G.711, G.722, Tieline Music and Tieline Voice. Superior Tieline Music and MusicPLUS algorithms deliver up to 20kHz stereo @ 96 kbps with 20ms encode delay.
- A configurable 16 x 8 Cross Point Digital Matrix Audio Router (DMR)
- Front panel configurable communications buttons for local and remote real-time communications.
- 7 input and 4 output digital mixing capability including 5 x mic/line, 1x auxiliary and an analog line input. An additional two codec decoders can also be used as inputs.
- A front panel operated analog telephone talkback interface for taking live callers in the field (or use as a live off-air comms channel)
- On-board relay and RS-232 control system for local and remote control of equipment at either end of the codec link plus control of your remote talent's audio input levels from the studio.
- LAN, USB master/slave and serial interfaces for connection to computers for remote control.



TLM600 i-Mix G3 7-input Commentary Mixer and Codec

Profile Flexibility

Mono/Stereo:

i-Mix G3 offers mono, two channel stereo and joint stereo options with 7kHz, 10kHz, 15kHz and 20kHz selections. Tieline's MusicPLUS algorithm also offers 20kHz stereo over a single 96 kbps IP link. You can also achieve up to 24 bit, 20kHz uncompressed low delay audio over IP.

Mono/IFB for Live Simultaneous Comms:

Tieline delivers a bi-directional mono channel for program plus a separate full bandwidth off-air communications channel. Use hotkeys for your choice of one-to-one or one-to-many communication off-air feeds without interrupting your programming. At the touch of a button on-air talent, producers, directors and engineers can bypass the program feed and split headphone feeds into comms and main program audio at either end of your codec link.

Dual Program-Two unique options:

a) Dual Mono: One audio source sent to two separate studios over any 2 networks simultaneously including Wireless 3G, POTS, ISDN, X.21, GSM or IP. or;

b) Two separate remote audio feeds to one studio codec over any two networks. Now two separate remotes only requires three codecs instead of four.

PA control

The i-Mix G3 features front panel operated and user-configurable PA outputs featuring digi-pot volume control and send/return mix control. You can send a mix of your local audio and the decoder return audio from the studio to speakers at the remote event. Use the Digital Matrix Router to configure which send and return inputs are sent to any of the PA outputs.

PC control

A PC software package which offers configuration, audio routing and control of your local and remote codecs is supplied free with every i-Mix G3. Simply connect your PC to the LAN, serial or USB ports on the rear of the codec. The remote codec can be controlled via the actual codec link or you can directly connect to the remote codec via the Internet to configure it. Tieline i-Mix G3 is backwards compatible with all original Tieline G1 codecs (excluding remote control) and can be combined with the Commander G3 field or studio codecs for a complete end-to-end broadcast solution.

Remote control

- Take control of your talent's audio input levels and remote control them from the studio over your broadcast link.
- Function Manager can be configured for one button control of most complex functions.
- Commander features serial, USB and LAN interfaces, two GPIO relay control inputs and two outputs (expandable to 8 using the optional Tieline CAN8+8 relay box).
- Front panel hotkeys can be programmed to trigger relay and routing state changes or external relay devices can be interfaced for local or remote control.
- RS232 or raw control data can be interfaced via the serial port and delivered to the other end of your codec link for external machine control.

7 in 4 out mixing capability

Tieline provides audio mixing capability featuring 5 mic line switchable inputs offering your choice of line level, unbalanced and low, medium and high mic gain settings plus two line level outputs, an additional auxiliary unbalanced input and output, telephone coupler in/out and codec in/outs. Using the optional matrix router, you can mix and route any input to any output of the remote or local codec.

Live callers

A telephone talkback system has been integrated including analog telephone coupler, front panel telephone control "cue" and "live to air buttons" to allow live callers to be managed in the field. Mix minus audio routing ensures caller audio is separated from the announcers audio feed and unique "Audio Ducking" software reduces the caller's audio by up to 30dB when they try to talk over the announcer. When you are not using the telephone talkback system you can use the telephone coupler as another analog telephone communications feed.



Thousands of Tielines used every day

Tieline's i-Mix G3 is the world's most advanced Radio and Television Codec, Commentary, Communications and Control interface featuring Audio over 3G cellular Broadband, IP, 802.11x, POTS, GSM, ISDN, and X.21 networks.

The new Tieline i-Mix G3 combines 6 essential live remote broadcast products into one 16"x9" box weighing just 4 pounds and replaces tens of thousands of dollars of equipment. It's like having a remote broadcast truck in a single box. The i-Mix G3 is a talk show, sports, music and live event dream machine. It was designed by live sports radio and television event broadcasting

specialists to integrate communications, control and programming functions while significantly reducing the setup time, personnel, wiring and signal distribution costs. Tieline's award winning multi-network codecs can be found in thousands of radio and television networks throughout the USA, Canada, South America, Europe, Africa, Asia, Middle East and Australia.

"We conduct numerous remotes and have had great success using Tieline codecs. They are versatile and perform very well."



*Clarke Dixon, Chief Engineer
Clear Channel, Tulsa*

"I came away so impressed with the Tieline that I'm convinced they will make a connection even over a barbed wire fence."



*George Bisso, Director
of Engineering Sandusky
Broadcasting, Seattle*

"The remote was a spectacular success in no small part thanks to the flawless sound which the Tieline G3 provided over the public Internet."



*Mike Rabey Chief
Engineer
Entercom Indianapolis*

"One of the things I like about the i-Mix is the intelligent gain control which allows the commentators to stop worrying about their levels and get on with having some fun."



*Russell Dower, President,
Wisdom
Sports Media*

Analog Audio Specifications

Audio Inputs	5 x Female XLR and 1 x RCA Aux
Audio Outputs	2 x Male XLR and 1 x RCA Aux
Headphones	4 x 6.5mm (1/4") Jacks
A/D & D/A Converters	24 bit sigma-delta
POTS Sample Frequencies	16kHz, 32kHz
ISDN Sample Frequencies	16kHz, 24kHz, 32kHz, 48kHz
X.21/V.35 Sample Frequencies	16kHz, 24kHz, 32kHz, 48kHz
GSM Sample Frequencies	16kHz, 32kHz
IP Sample Frequencies	16kHz, 32kHz
3G Sample Frequencies	16kHz, 32kHz
A/D & D/A Converters	24 bit Sigma-Delta
Audio Input Impedance	High Impedance > 5K ohm
Output Impedance	50 ohm Balanced
Clipping Level	+18dBu (inputs and outputs)
Frequency Response	20Hz - 15kHz over POTS/GSM. 20Hz - 20kHz over ISDN. 20Hz - 23kHz over IP
Total Harmonic Distortion	<0.01% at +4dBu
Signal To Noise Ratio	Typically 84dB at +4dBu

Compression Algorithms

POTS	Tieline Music, MusicPLUS, Voice G3 and Uncompressed audio
ISDN	G.711, G.722, MPEG Layer 2, MPEG, Tieline Music, Tieline Music Plus
GSM	Tieline Music and Tieline Voice G3
X.21	G.711, G.722, MPEG Layer 2, Tieline Music, Tieline Music Plus
IP	Tieline Music, Tieline Music Plus and Tieline Voice G3
3G	Tieline Music, Tieline Music Plus and Tieline Voice G3

Module Interfaces

3G	Global dedicated 3G module featuring GSM/UMTS/HSDPA wireless networks.
USB	USB master module accepts specific 3G cell phones to connect to wireless 3G IP
IP - (Software module)	TCP/UDP, SIP, over LAN, WAN, open internet, WiFi, WiMax
ISDN	Basic Rate S/T or U modules with up to 2 B channels supported per module with RJ45
POTS / PSTN / Analogue Telephone	Onboard POTS RJ11 connection or POTS Modem module with RJ11 connector
GSM	HSCSD 14,400 to 28,800bps and CSD 9600bps (requires SIM card)
X.21	DB15 male connector. Up to 384KBits/S Compressed, up to 2 Mb Uncompressed
Satellite	External BGAN or Inmarsat Satellite phone can be connected to the ISDN module or IP

Data and Control Interfaces

CAN	Differential CAN, 6 pin female DIN connector
USB - Slave	USB -1.1 slave
USB Master (optional)	USB 1.1 Master
LAN	10/100 base T RJ45 connector
Serial	RS232 up to 115kbps with or without CTS/RTS flow control Female DB9 Connector
RS232	Data interface port can be used as a proprietary data channel

Panel Controls

Keypad	20 Key
Display	4 x 20 line LCD
Level Indicators	2 x 10 level LED's with configurable source.
Channel On/Off	Volume controlled and matrix router configurable
Cue/intercom	Matrix router configurable
Headphone Monitoring	Volume controlled for each channel
Send Return Mix	Switch between audio send/return or a mix of both

GPIO Relay Controls

Inputs	2 x inputs: Contact Closure to ground with internal 5V feed at 5mA, 0.15" pitch male phoenix connectors. (12V power connector has two relay inputs for power sensing one independent and 1 duplicated with phoenix connector)
Outputs	2 x outputs: floating solid state switching 48V 100mA
Relay Expansion	Expandable to 8 in and 8 out using optional CAN8+8 product

General

Operating Temperature	5°C to 45°C (40°F to 115°F)
Power	12V DC, 1A (without plugin modules) 4 PIN XLR male connector
Dimensions	385 x 210 x 215mm or 3 x 15.2 x 8.5 inches
Weight	2kg or 4.4lbs

2 Year Warranty

Tieline offers a comprehensive 2 Year Warranty With offices in Indianapolis USA, Perth Australia and Switzerland plus distribution partners with full technical offices throughout Europe, UK, Asia, Canada, Middle East, South America, and South Africa, Tieline offers comprehensive round the clock technical support and warranty backup.

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