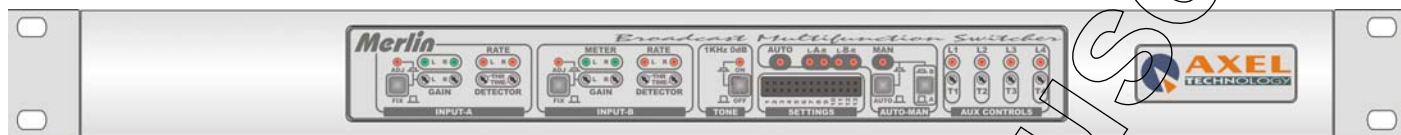




BROADCAST AUDIO CHANGEOVER

PRELIMINARY



- **Audio changeover 2 inputs /1 output**
- **Double Audio Detector fully user-settable**
- **Designed for transmitting sites**
- **Fully configurable for a range of applications**
- **Wide remote control capabilities**

- **Complete control of stereo audio, FM multiplex / Video composite source failures**
- **Hardware Bypass in case of AC Main failure**
- **Internal 1kHz / 0 dB oscillator**
- **Automatic / manual operation**

The Merlin is designed to provide sophisticated changeover of audio signals, such as stereo pairs and even FM multiplex and video composite signals. Incoming signals are constantly monitored and if a fault is detected on the signal applied to a set Input, it will switch to a stand-by source (such as a CD), in order to keep transmissions running.

Expressly designed for broadcast applications, Merlin features an hardware bypass (via relay) which connects the input 1 pair (and the Coaxial Input 1 as well) to the Output (both XLRs and Bnc) in case of AC power failure or whenever the unit is unintentionally turned off. This prevents the transmission chain from any audio interruption.

The Merlin fulfils the needs of every radio station for manual or automatic (emergency) switching between different audio sources. Multiple switching mode are provided (switch on stand-by input only when active, switch and stay on the second input, etc). Up to 7 internal relays can be associated to the audio switching for further alarm signalling, external signal routing, starting CD players etc.

The electronically balanced stereo inputs feature individual left / right gain controls with two bi-color LEDs enabling quick recognition of input status (no audio, audio ranging between - 6 and + 3 dBm or audio higher than + 3 dBm dB).

Using internal and front settings, the Merlin can be easily re-configured for a variety of applications, either in the radio or in the video field. The delay times before switching and before returning to the normal state (recovery) are easily set by trimmers and jumpers.

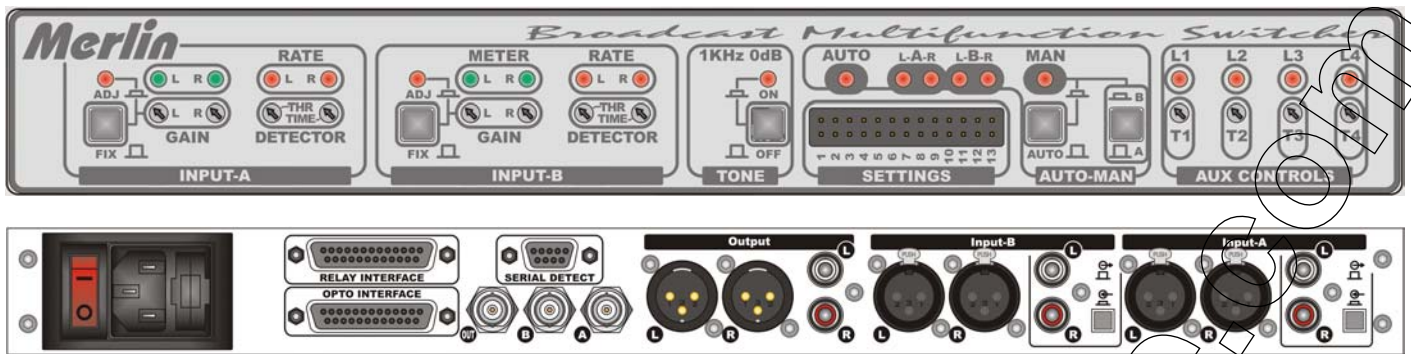
The Merlin is very easy to install and to operate. A '0 dB gain' mode can be selected for each output channel via front panel accessible slide switches. For fine calibration of the outputs, the source signal can be replaced by an internal 1kHz / 0 dB oscillator.

The Merlin features both XLR balanced and PinRca audio inputs for an easier connection to either professional or consumer equipment. Each pair of PinRca inputs can be also reverted to unbalanced 'foldback' outputs. The balanced XLR output stage incorporates high-current line drivers capable to always deliver optimal signals even down long cable runs and with low load impedance. Bnc, 75 Ohm terminated connectors are available for video and Mpx signals.

The rear panel includes a remote control / monitoring socket (optoinsulated) which may be used to connect external warning circuit. The contacts are open during normal operation and close during failure. These relays may be used to activate an external alarm in the event of a failure - even in case of missing power. An external control may be also applied to force the switching from remote.

The Merlin can be equipped with plug-in, optional modules which greatly improve its application fields: MPX decoder, Video monitor, Serial monitor and Crossfade module





HOW MERLIN WORKS

With four independent and permanent circuits, the Merlin constantly monitors both L & R channels on each input. By monitoring both the master and the stand-by input, the system reliability is increased.

If the Input 1 (both the channel or separately L and R channels) falls below the threshold (typically set to around -35dBu), the fail timer is started. Whether the fail time elapses without the signal recovering, then several actions can be taken (depending on the user settings):

- 1) simply switch from the one to the other input
- 2) switch on the stand-by input only whether a valid signal is present
- 3) switch and stay on the stand-by input even when the original circuit is restored in order to minimise switching

A full set of alarms (i.e. contact closing and relay switching) may also be triggered for external use.

Since silence is very much a part of normal audio, preset (typical) fail time is around 20 seconds. However time as long as a minute may be set. In order to ignore momentary levels above the threshold when re-connecting equipment the restore time for audio is generally set at around 10 seconds, but it may be also easily modified by the user.

MERLIN PLUG-IN OPTIONAL MODULES

MPX An MPX decoder is applied to the incoming MPX signals, resuming the Left and Right audio channels from the composite signal and routing them to the Input A for regular detection (see above). A pilot detector is also provided (which can be disabled), switching to the backup signal if pilot is lost.

SERIAL A decoder is provided which constantly monitors serial RS 232 connection activity and provides contact closures (f.i. a RESET command) in case of connection freezing lasting more than a pre-set time. A dedicated software application running on Windows platforms comes with the unit.

VCA It allows cross-fades between sources, with fully configurable rising / fading times and levels.

VIDEO A special stage watches after video sync switching to the backup signal if it is lost

RELAY Set of 5 internal relays

GENERAL FEATURES

Weight	~ 3.5 Kg
Dimensions	1 Rack Unit (484 x 351 x 44 mm)

AUDIO INPUTS (1 and 2)

Connector Type	XLR female el. bal.
Max Input Level	+ 20 dBu
Level adjust	+ / - 10 dB
Impedance	10 K Ω

'DRAW' OUTPUTS / UNBAL INPUTS

Connector Type	Pin-RCA
Level	The same as XLR inputs and output
Purpose	Unbal mirror of XLR inputs and output

AUDIO DETECTING STAGE

Threshold	Adjustable, - 20 dB ÷ - 60 dB
Detection delay	From a few seconds to a few minutes,

AC Main	110 / 220 VAC, 50 – 60 Hz
Consumption	10 VA

AUDIO OUTPUT

Connector Type	XLR male el. bal.
Max Output Level	+ 20 dBu
Output Levels	0, + 6 dBu (internal setting)
Impedance	100 Ω

PERFORMANCE

Linearity	\pm 0,1 dB 10 Hz ÷ 100 kHz
Noise	< - 90 dB (DIN Noise)
Crosstalk L to R	< - 80 dB @ 1 kHz

REMOTE CONTROL INTERFACE

Connector type	DB 25 p female
Devices	5 relays, 10 photocouplers

Specifications, pictures and graphic layout of this leaflet are furnished for informational use only and are subject to change at any time without notice.

Anzola Emilia • Via Caduti Di Sabbiano 6/F • 40011 • Bologna • Italy ☎ +39 051 736555 • Fax. +39 051 736170

e-mail: info@axeltechnology.com • web site: www.axeltechnology.com

