



# Radio All in One

- Audio Processing ◀
- RDS Encoding ◀
- Mobile Metering
- Monitoring ◀
- Test & Measurement



## Digiplexer 2/4

### OVERVIEW

The Digiplexer 2/4 is the first of a new generation of products which incorporate digital audio processors operating at 192 kHz/1.5MHz sampling rates, a stereo encoder plus additional innovative features such as an RDS encoder, embedded audio backup, I/O remote control and TCP/IP connectivity.

### FEATURES

- HQSound Audio Processor
- Audio Backup
- RDS Encoder
- Stereo Encoder
- I/O Remote control and Scripteasy V2 Software
- Compact flash memory
- Setup from front panel
- Digital audio Input/Output

### BENEFITS

- Achieve a clean and powerful sonic signature and FM signal
- Always stay on air with audio backup function
- Insert local audio drops automatically or on command
- Compact equipment, saving space at the transmitter site
- Draws less power
- Easy control of overall deviation
- Perfect synchronization of subcarriers
- Integrated user interface requires less training time and reduces errors
- All in one unit to reduce waste and power consumption



HQSound AUDIO PROCESSOR

AUDIO BACKUP

RDS ENCODER

STEREO ENCODER

I/O REMOTE CONTROL



DIGIPIEXER 2/4

### APPLICATIONS

- Radio stations or Network broadcasters can:
  - Create a clean and powerful sonic signature and FM signal.
  - Always stay on air with audio backup function.
  - Insert local audio drops automatically or on command.
- Car manufacturers and laboratories can validate performance of FM receivers (RDS data, FM sensitivity...).



Remote application - Status

# Digipl exer 2/4

## AUDIO PROCESSING

The Digipl exer 2/4 is the first HQSound audio processor with a sampling rate of up to 192kHz for the main process and 1.5 MHz for the final limiter. It can be used to process audio for FM and digital broadcasting such as HD/DAB and Internet streaming. Using the latest multi-band DSP technology, the Digipl exer 2/4 provides up to 2.8 gigaflops of processing power and less than 6ms delay. Three different processing versions are available with the Digipl exer 2/4 and these can be activated by installing a software upgrade key.

### HQSound 1 band version:

- 1 band version is ideal for those who want to use an external audio processor.
- With a powerful AGC and 1.5MHz Final Limiter, it is the ideal choice to finalize the audio with maximum fidelity.

### HQSound 2 band version:

- As a main audio processor for soft and medium formats (Classical, Voice, Jazz...)
- As a secondary processor to finalize the audio at each transmitter site (i.e. after pre-processing at the studio)

### HQSound 4 band version:

- As a main audio processor for all formats
- For radio station needing loudness: The sound that competes with the best processors on the market (Omnia6, Orban8500...)

	HQ-Sound* 1 band	HQ-Sound* 2 bands	HQ-Sound* 4 bands
Processing power		1.6 Giga Flops	2.8 Giga Flops
Sampling frequency for processing	192 kHz		
Sampling frequency for final clipper	1.5 MHz		
Predictive algorithms	X	X	X
Gated AGC	X	X	X
Parametric equalization	-	4 bands	
Tone FX (LF and HF enhancers)	-	X	X
Controlled Stereo enhancement	-	X	X
Revolutionary multi-band processing	-	2 bands	4 bands
Multi-band Limiter	-	2 bands	4 bands
Dual path for FM and digital applications	X	X	X
User and factory presets	X	X	X
Band upgrade capability	X	X	
Sound process delay	< 3ms	< 4ms	< 6ms

**\*Sound4 HQSound:** Our customers say this is the most incredible dynamic processing engine ever made...

Why does HQ Sound give such good results?

The results of our extensive tests prove that HQSound, the new algorithm engine specifically developed for our range of products, offers on average 20 times more power than those commonly used in competitors' products. So, with 4 bands and no other peripherals in front or behind it, HQSound can rival and even surpass processing chains made up of several processors in series.

### Automatic Gain Control

Using predictive techniques, the AGC is based on complex algorithms that correct large level variations without any pumping effect. It maintains a constant audio level on the air. The wideband approach keeps the balance between frequencies. Silence gating prevents unnecessary volume changes and improves processing quality.

### Tone FX

A 4-band parametric equalizer in both the 2 band and 4 band audio processors enables the creation of specific sonic signatures. For each band it allows the creation of specific sonic signatures thanks to its 4-band parametric equalizer. For each band it is possible to configure the frequency, the gain and the filter quality. This level of precision is extremely useful for bass enhancement. You can also increase high and low frequencies dynamically thanks to the Bass FX and Treble FX.

### Stereo FX

Enhance the stereo effect of your signal with perfect control. Stereo enhancement used to be a source of reception issues such as multi-path. The Digipl exer 2/4 includes a specific limiter to insure reception stability.

### Multi-band Processor

The Digipl exer 2/4 uses a unique algorithm that controls the gain for each band. You can easily control how the Digipl exer 2/4 will process your sound and each band can be separately gated. A 'fidelity' parameter enables you to control how close to the original sound you'd like to remain (Purist/Processed). The Digipl exer 2/4 also offers the Sound Impact System, a revolutionary algorithm that preserves dynamic and peak attack perception.

### Multi-band limiters

The Digipl exer 2/4 contains advanced multiband limiters. Its look ahead function guarantees perfect peak control without the drawbacks typically found in other limiters. A mix function enables control of the balance between the bands.

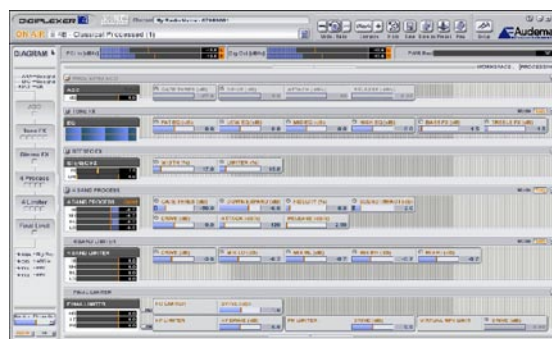
### Final limiters

Previously the best clippers on the market were running at a sampling rate of 768kHz. The Digipl exer 2/4 a revolutionary FM Limiter that samples at 1.5 MHz. This level of quality and control has never been reached before. You can precisely control high frequency energy with the HF limiter and an HD limiter can be used at the same time to process high quality digital radio (HD /DAB / DRM).

### Preset management

The Digipl exer 2/4 has many factory presets designed for every format. The unit keeps a complete preset history, so you will never lose an existing configuration. Presets can be password protected to ensure that your selected audio settings are only ever changed by those you can trust.

### User friendly and intuitive interface



PC based version of audio processing software

Audio configuration made easy:

- Instantly compares current settings with an existing preset.
- Keeps a record of all modifications thanks to the complete undo/redo function

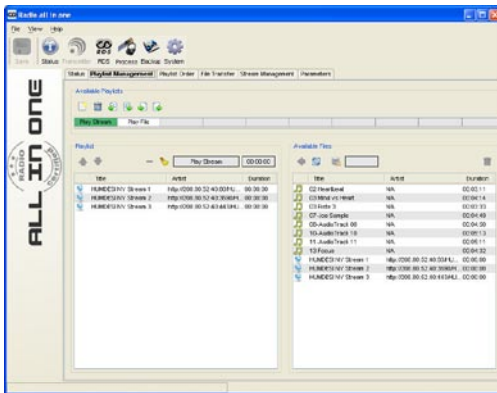
# Digiplexer 2/4

- Easy mode” for simplified audio configuration or “Full mode” for much greater depth
- Creates your own view by selecting the meters you want to see
- Each preset can be protected by password

## AUDIO BACKUP

The Digiplexer 2/4 includes an optional 80Gb hard drive for audio backup. This function provides additional security in case of loss of audio at the inputs. The audio backup is presented as an integrated 3rd audio input with the advantage of configurable crossfades during input auto-switches. An alarm can be automatically sent by the unit to inform the engineer of audio source failure. Audio files can be uploaded from your PC using the java interface or you can enter the IP port address of your SHOUTcast/ICEcast server so the IP MP3 stream input can serve as audio backup.

Using the java interface, upload audio files from your PC to be used for Audio Backup, or enter the IP port address of your SHOUTcast/ICEcast server so the IP MP3 stream input can serve as audio backup.

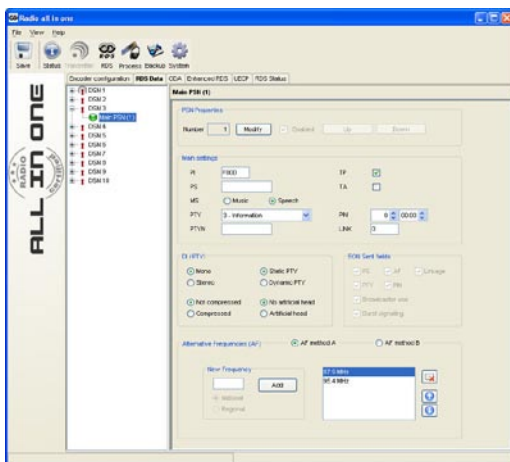


Playlist management

You can also use the hard drive to store audio files to be played at a specific time or triggered using the contact closures and Scripteasy software, for local content insertion.

2 versions: audio file stored on the hard disk or an advanced version which includes full management of up to 10 playlists

## RDS ENCODING



PSN configuration

The Digiplexer 2/4 includes a RDS encoder fully compliant with the RDS and RBDS standards as well as the UECP communication protocol. The built-in RDS encoder offers the same features as our high-end Audemat existing range including FMB10 (basic) and FMB80 (full) RDS encoder.

RDS parameters	Basic RDS	Full RDS
PI: Program Identification codes	X	X
PS: Program Service name (Scrolling PS)	X	X
TP - TA: Traffic Program and Traffic Announcement flags	X	X
MS: Music Speech flag	X	X
DI : Decoder Identification	X	X
PTY - PTYN : Program Type & Type Name	X	X
AF: Alternative Frequencies list	X	X
Method A (up to 25 Frequencies)	X	X
Method B	up to 25	up to 900
RT: Radio Text	X	X
Connection to automation software	X	X
IP connectivity	X	X
SLC, PIN, LINK, EON, TDC, TMC, ODA, EWS, Paging, IH		X
DSN / PSN	2 DSN / 1 PSN	10 DSN / 10 PSN
RT+: iTunes compatibles		X

## About RT+

RT+ enables broadcasters to interactively engage with their listeners and the audience to actively respond to the information displayed. Listeners with suitably equipped receivers can use the text display to initiate over 60 actions such as:

- connecting to a web address,
- calling a phone number
- voting by SMS
- and many more...

RT+ also delivers many substantial benefits for a station's communications strategy. With RT+, a radio receiver can gain access an Electronic Program Guide (EPG), dedicated news, and to the metadata content of a specific song. Providing user-selected relevant information direct to the listener opens up a world of possibilities for stations in terms of how they meet the information requirements of their listener base.



Going full circle: RT+ allows listeners to interact with the radio station and offers an opportunity to generate additional revenue

The Digiplexer 2/4 encoder also provides the ability to implement content tagging enabling users to download music and content heard on the radio.

## STEREO ENCODING

Using high speed DSPs, the Digiplexer 2/4 includes a highly over-sampled stereo encoder that offers amazing stereo performance and perfect synchronization. The MPX limiter enables control of the composite power conforming to ITU-R412.

- DSP technology and perfect synchronization of all subcarriers
  - Audio, Pilot and RDS signals are produced in the same unit
- Stereo Encoder is highly over-sampled for unparalleled stereo performance
- HQSound means higher audio quality for listeners:
  - 192 kHz sample rate for audio processing
  - 1.5 MHz sample rate for final limiters
  - Extend FM audio bandwidth to 17 kHz without affecting the 19 kHz or L-R signals

# Digipl exer 2/4

## I/O FACILITY MANAGEMENT



MasterView



Front Panel

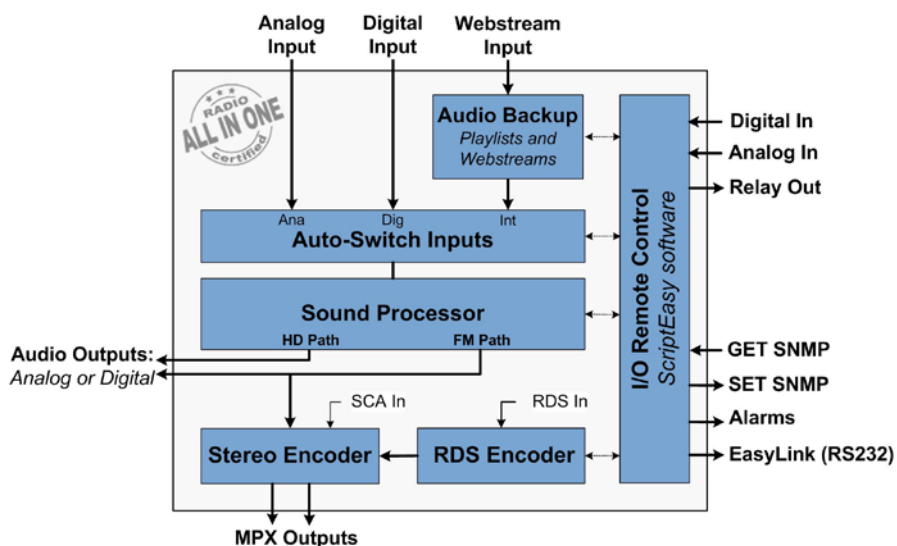


Rear Panel

The Audemat Digipl exer 2/4 has 2 slots that can be equipped with a status board (digital inputs) and a commands board (relay outputs).

As standard, it includes the ScriptEasy application which has the power to control and communicate with a large number of remote control units, while remaining accessible and easy to use. It could be used to control a satellite receiver, to trigger Traffic Announcements (RDS) or to control and play audio files stored on the local hard drive of the Digipl exer 2/4.

It also enables the SCRIPTEASY EasyLink option: a powerful new tool that makes it possible to link a Digipl exer 2/4 with external equipment using one of the available serial ports to enable complete remote access to the equipment via IP. It could be used to control an FM amplifier that is not IP ready. Custom views for remote monitoring and control can be created with the optional MasterView software.



**A SOUND4 powered product** Sound4 is a French company with more than 25 years of experience in processing of broadcast signals (FM - HD - DAB - DRM - WEB Radio - AM - TV). Audemat is the exclusive integrator for the Sound4 "stand alone" line. For more information, visit [www.sound4.biz](http://www.sound4.biz).

## ORDER INFORMATION

Standard versions	
TF00239-C0	Digipl exer 2/4 - 1 band version
TF00239	Digipl exer 2/4 - 2 bands version
TF00239-A0	Digipl exer 2/4 - 4 bands version
Software options	
CD00043	1 band to 2 band version software upgrade for Digipl exer 2/4
CD00027	2 band to 4 band version software upgrade for Digipl exer 2/4
CD00028	Full RDS for Digipl exer

CD00032	MasterView option
CD00044	Local/IP Audio Backup for Digipl exer 2/4
CD00029	Advanced Audio Backup option for Digipl exer & Next FM
CD00040-	Digipl exer 2/4 - 2 band versions software upgrade to version 2.6.1
CD00042	Digipl exer 2/4 - 4 band versions software upgrade to version 2.6.1
Hardware Options	
ST00651	Board for 16 status inputs (digital)
ST00342	Board for 8 commands outputs (relay)

Ref: Digipl exer 2/4 - Datasheet 01/2010  
Technical specifications are subject to change without prior notice



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