

FALCON FIVE TV

TV DIGITAL AUDIO PROCESSOR



5 BAND TV AUDIO PROCESSORS

- Digital TV audio processor 5 band
- Powerful AGC on the entire audio band
- Protection against audio overmodulation
- LOUDNESS Control: ITU-R BS1770 Compliant
- Analog, AES/EBU I/O
- Real Lip- Sync audio/video
- Flexible, dynamic and user friendly
- Remote control via Serial and Ethernet
- Best price / features

FALCON FIVE TV

Falcon Five TV is a 5 Band fully digital audio processor featuring the most up-to-date technologies.

Falcon Five TV shapes the TV's sound, exalting its charisma and appeal and providing distinctive colors to each single program always with the maximum control of modulation and assuring absolute peak control.

The core is a powerful DSP engine including 5 bands audio processor, stereo enhancer, super-bass enhancer, brilliance circuit.

With a precise AGC, Falcon Five TV maintains always the right level, avoiding over modulation and audio bouncing between different programs (ie movies, advertisement, live programs).

Dialog and musical background are preserved by any kind of audio "pumping effect".



FALCON *five* TV

LOUDNESS CONTROL - ITU COMPLIANCY:

Traditionally, it has been challenging to control the loudness between program segments, such as during commercial breaks and live programs.

Falcon Five TV avoids irritating loudness differences eliminating excessive sound energy as perceived by human ear, monitoring the output signal according to ITU-RBS1770* specifications.

* (Available only in the Elite version)

AUDIO VIDEO SYNC:

Falcon Five TV manages the audio/video sync fine tuning and guarantees perfect audio and video sync.

Fine adjustments on audio delay enable perfect audio video alignment.

REMOTE CONTROL SOFTWARE:

A powerful software comes free of charge, giving total control over all parameters (f.i.: input gain, pilot level, programming and advanced scheduling tools).



REMOTER

FAULT TOLLERANCE & BACKUP:

Falcon five TV features a hardware bypass, to continuously provide output signal even in case of fault.

In case of failure, **Falcon five TV** supports SNMP alerting for automation systems.

NETWORK MANAGEMENT:

Falcon Five TV perfectly fits all needs of any big network with structural architecture and involving many units spread out on the territory, providing the most advanced network management system. Control can be performed on each single unit or as well on multiple units (grouping).

The system easily allows to change, save, copy and retrieve settings on unlimited number of units at any time.

The built-in WEB SERVER allows to control all units remotely using Satellite connection or terrestrial back bone.

CONNECTION PORTS & PROTOCOLS:

I/O widest range: analogue L+R and digital AES/EBU are available on XLR with many sample-rate. Pre-emphasys 0/50/75 usec.

ANALOG AUDIO, AES/EBU CHANGEOVER:

Falcon five TV / five Elite TV manages:

- Audio Analogic Input L+R
- Audio Input Aes/Ebu
- Audio Analogic Output L+R
- Audio Output Aes/Ebu

FUTURE READY:

As the Axel Technology's R&D department continuously keeps up-to-date and improves the **Falcon Five TV**, the firmware can be easily updated to the latest release to implement future features.

FEATURES:

- 5 Digital Audio Processor
- Automatic changeover between Analog and AES/EBU on fault
- Hardware bypass both Analog and AES/EBU
- 4 GPI / 4 Relay interface.
- 3 serial connections
- Ethernet connection with SNMP protocol
- Pc control software
- Web server
- Headphones monitor output
- Double graphic display
- Pre emphasys 0, 50, 75 uS



WEB BROWSER

■ COMPARATIVE TABLE

| | Falcon fiveTV | Falcon fiveTV ₅ |
|------------------------------------|---------------|----------------------------|
| AUDIO ANALOG/DIGITAL INPUTS | | |
| • SENSITIVITY | ✓ | ✓ |
| • PHASE ROTATOR | ✓ | ✓ |
| • HI PASS FILTER | ✓ | ✓ |
| • INPUT MODE | ✓ | ✓ |
| • CHANGEOVER | ✓ | ✓ |
| AUDIO ANALOG OUTPUTS | | |
| • LEVEL ADJUST | ✓ | ✓ |
| • DEEMPHASIS FILTER | ✓ | ✓ |
| • GROUP DELAY ADJUST | ✓ | ✓ |
| • SOURCE SELECTOR | ✓ | ✓ |
| AUDIO DIGITAL OUTPUTS | | |
| • LEVEL ADJUST | ✓ | ✓ |
| • RATE 32 TO 96KHZ | ✓ | ✓ |
| • RATE INPUT SYNCH | ✓ | ✓ |
| • GROUP DELAY ADJUST | ✓ | ✓ |
| • DIGITAL OUTPUT RESOLUTION | ✓ | ✓ |
| • ITU-R BS 1770 | | ✓ |
| AUTOMATION | | |
| • PRESET SCHEDULING | | ✓ |
| AUDIO PREPROCESS | | |
| • AGC DRIVE | ✓ | ✓ |
| • AGC ATTACK | ✓ | ✓ |
| • AGC GATE THR | ✓ | ✓ |
| • EQUALIZER | ✓ | ✓ |
| • SPEECH DETECTOR | ✓ | ✓ |
| AUDIO PROCESSOR | | |
| • 5 BANDS DSP THRESHOLD | ✓ | ✓ |
| • LOOKAHEAD PROCESS | ✓ | ✓ |
| • BAND COUPLING | ✓ | ✓ |
| • DENSITY | ✓ | ✓ |
| • BRILLANCE | ✓ | ✓ |
| • SUPERBASS | ✓ | ✓ |

FALCON FIVE TV TECHNICAL SPECIFICATIONS

GENERAL

| | |
|--------------------------|--|
| Dimensions: | 1 rack unit, 352 x 483 x 44 mm (LxHxD) |
| AC Rate: | 230 Vac 50 Hz / 115 Vac 60 Hz +-10% |
| Type of power supply: | Transformer based |
| Processing architecture: | Fully digital. Based on DSP 24bit/100Mhz |
| Operating temp. range: | -5 to +50 °C |

AUDIO PROCESSOR

SYSTEM PERFORMANCE

| | |
|--------------------------|--|
| Frequency Response: | 30 Hz - 15 KHz (-0.1 dB) - Analog Processing Chain |
| Sample Rate: | Depending on processing being performed, from 47.5 to 760 KHz |
| Total System Distortion: | 0.008% - (0.005% at 1 KHz) |
| Output Noise: | The Falcon five TV/Five Tv Elite's noise floor, in bypass mode, is primarily governed by the dynamic range of CS8420 digital rate converter, which has a specified Dynamic Range of 126 dB |
| Stereo CrossTalk: | >-80 dB (from 30 Hz to 15 KHz) |

PROCESS ARCHITECTURE

| | |
|----------------------------|--|
| Min. Processing Delay: | as low as technically possible: max 4 msec for all processing curves |
| Number of Presets: | 10 Factory Presets + 10 User Presets |
| Preset Memory type: | Non volatile memory, factory presets protected against accidental deletion |
| Preset Import / Export: | import / export from and to a file, either in groups or individually |
| Wizard procedure controls: | Density, Compression, Equalization, Expansion |

5-BAND PROCESS

| | |
|----------------------------------|---|
| Falcon five TV Audio Preprocess: | Agc Drive, Agc Attack, Agc Gate Thr, Stereo Enhancer, Pre-Process Equalizer, Speech Detector |
| Falcon five TV Audio Process: | Band1, Band2, Band3, Band4, Band5 compressor, Process Mode, Band Coupling, Density, Brilliance, SuperBass |

SOUND ENHANCING

| | |
|------------------|------------------------------|
| Super Bass: | On/Off, Bass Type & Drive |
| Brilliance: | On/Off & Level |
| Speech Detector: | Automatic, 9 operating modes |

INPUT & OUTPUT

ANALOG INPUT MODULE

| | |
|-----------------------------|--|
| Connectors: | Two EMI-suppressed XLR female |
| Input impedance: | 600 / 10K / 50 K ohms electronically balanced, jumper selectable Depending on processing being performed, from 47.5 to 760 KHz |
| Input Configuration: | Stereo / Mono / L+R / Mono R / Mono L. Flat, 50 mcrosec or 75 microsec pre-emphasis sel. |
| Nominal Input Level (sens): | adjustable from -10.0 dBu to 12.0 dBu; +24 dBu max |
| Input Signal-to-Noise: | 108 dB (A weighted) |

DIGITAL AUDIO INPUT

| | |
|----------------------------------|---|
| Connector Type: | XLR female. XLR transformer balanced & floating. 110 Ohm impedance |
| Input Configuration: | Stereo / Mono L+R / Mono R / Mono L. Flat, 50 or 75 microsec pre-emphasis |
| Formats: | AES3/EBU |
| Input Rates: | 32/44.1/48/64/88.2/96 KHz with automatic selection and jitter correction, 16/20/24 bit res. |
| Nominal Level adj (sensitivity): | From 0.0 dBFs to -25 dBFs (0.1 dBu step) |
| Dynamic Range: | 125 dB (Typ), 122 dB (Min) |

INPUT CHANGEOVER

| | |
|---------------|--------------------------------------|
| Inputs: | Stereo analog audio, AES / EBU audio |
| Fail mode: | Lack of analog or AES/EBU audio |
| Fail Time: | From 1 to 120 seconds |
| Restore Time: | 1 sec to 250 sec (user settable) |

ANALOG AUDIO OUTPUT

| | |
|-------------------|---|
| Connectors: | Two, EMI-suppressed XLR-male. Balanced or unbalanced. 600 Ohm |
| Configuration: | Stereo. Flat or pre-emphasized (50 or 75 microsec). +-3 microsec pre-emphasis correction |
| Output Level: | (100% peak mod.): adj -6 dBu to + 20 dBu peak, into 600 Ohms load, 120% Peak Mod. allowed |
| Stereo CrossTalk: | >-70 dB, 20 Hz - 15 Hz |
| Signal-To-Noise: | >100 dB (A Weighted) - >97 dB (unweighted), 20 Hz - 15 Hz |
| Distortion: | 0.005% THD, 20 Hz - 15 Hz |
| Hardware bypass: | Internal relays connect to respective analog audio input in the event AC Power drops |

DIGITAL AUDIO OUTPUT

| | |
|--------------------------|--|
| Connector Type: | XLR male 110 Ohm impedance |
| Formats / Configuration: | AES3/EBU, flat or pre-emphasized (50 or 75 usec) |
| Sample Rates: | 32/44.1/48/64/88.2/96 KHz internal or synchr. to audio input. 16/20/24 bit |
| Output Level: | From 0.0 dBFs to -25.0 dBFs (0.1 dBFs Step) |
| Hardware bypass: | Internal relays connect to digital audio input in the event AC Power drops |

COMMUNICATION

I/O COMMUNICATION

| | |
|------------------------|---|
| Serial Ports: | 3 x RS232 optoinsulated or 2 x RS232 + 1 x RS485 (option). 2400 - 38400 Baud. Serial Port 1 & 2 support dial-up modem. |
| Ethernet: | 10/100 BaseT Ethernet on RJ45 connector |
| Supported Protocols: | SNMP, UECP, TCP/IP, NTP |
| Communication tools: | Web Server, dedicated Pc Control Software, textual Configuration Editor |
| Front panel displays : | Double Graphic display 160x32 |

GPI/O INTERFACE

| | |
|------------|--------------------------|
| Inputs: | 4, optocoupled, floating |
| Outputs: | 4 Relays |
| Connector: | 1 x SubD 25 pin female |

Pictures and technical specs in this leaflet are provided for information purpose only and are subject to change without further notification (Ver. 3.0)