

DIGIWAVE DSC-161i

Four Field Standards Converter, Time Base Corrector,
Frame Synchronizer, Noise Reducer and Transcoder

*Processing of SDI embedded, AES/EBU and analog audio
and of closed caption signal*



- TV Standards converter PAL, PAL N, PAL M, NTSC, NTSC 4.43 and SECAM (*).
- Enhanced 16 point interpolator, 4-field, 4-line aperture, with conversion aperture selection.
- Five-line high performance adaptive comb filter. Bandwidth 6 MHz.
- 12 bit A/D and D/A conversion and 10 bit processing.
- Digital adaptive noise reducer for luminance and chrominance, with frame recursive selectable filter.
- Composite video, Y/C (S-Video), genlock and SD-SDI with 4 channels embedded audio processing inputs and outputs (*).
- Synchronization and audio delay with automatic tracking plus variable manual delay. AES/EBU and analog inputs and outputs (*).
- Closed caption signal processing, with input decoder and output coder, with line selection.
- Complete controls menu, including horizontal and vertical enhancers.
- Selection of output signal in the event of input signal loss: last valid field, color bars, black, switch to alternative video input or to stored image.
- Audio and video test signal generator.
- Remote control and monitoring by Ethernet port, through web navigator, or by SNMP (*).

TECHNICAL SPECIFICATIONS

GENERAL

A/D Conversion	12 bit, 54 MHz (4x oversampling)
D/A Conversion	12 bit, 216 MHz (16x oversampling)
Processing	10 bit, 4:2:2
Analog Input TV Standard	PAL, PAL N, PAL M, NTSC M / J / 4.43, SECAM
Analog Output TV Standard	PAL, PAL N, PAL M, NTSC M / 4.43
Conversion	Bidirectional: 525/60 to 625/50; 625/50 to 525/60 selectable
Interpolation	16 point, 4-field, 4-line, with conversion aperture selection
Comb filter	Five-line adaptive, for PAL, PAL N, PAL M y NTSC M / J
Noise Reducer	Frame recursive adaptive for luminance and chrominance
Frame Synchronizer	Infinite window
Display	LCD, with backlight

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PERFORMANCE

Luminance bandwidth	6 MHz, composite video, comb filter
Differential gain	< 0.9 %
Differential phase	< 0.7 %
Signal to noise ratio	> 65 dB, weighted, ramp signal
Transient response	< 0.5 %, K 2T factor
Luma / chroma delay	< 10 ns
SC/H phase	0 ± 3°

CONTROLS AND ADJUSTMENTS

Direct Selection

Luma	- 6 to +3 dB
Black	± 100 mV
Chroma	± 6 dB
NTSC Hue (Tint)	± 30°
Non volatile memory	Store, Recall, Preset
Freeze	Interpolated frame freeze
By-Pass	Bypasses CVBS1 input with CVBS1 output

Menu Selection

Input selection	CVBS In1 - CVBS In2 - S-Video (Y/C) - SDI (1)
Analog input TV standard	Auto, PAL, PAL N, PAL M, NTSC M, NTSC 4.43, NTSC J, SECAM
Analog output TV standard	PAL, PAL N, PAL M, NTSC M, NTSC 4.43
Horizontal enhancer	± 4 dB
Vertical enhancer	0 dB to +5 dB
Noise reduction mode	Auto-low, Auto-medium, Auto-high, Manual, Off
Noise reduction, manual	0 to 12 dB
Genlock selection	Internal, External, Input
Genlock controls	Horizontal and vertical timing, SCH phase
Decoder controls	Luma AGC, Chroma AGC, Comb, Notch, Chroma delay, V-lock
Encoder controls	Pedestal NTSC, Chroma BW, H-Blank
Test signals	Color bars, Matrix, Ramp, Chroma noise, 5 steps, Multiburst, Composite, Off
No signal output	Autofreeze, Pass-through, Bars, Black, Autoswitch, Image
VBI blanking	Pass, Blank
Conversion aperture	Normal, Fast
Synchronizer mode	Frame, Line
Closed Caption, input	Auto, line 17 to 23
Closed Caption, output	Off, Auto, line 17 to 23
Remote control	Ethernet (ETH opt.), Off

INPUT AND OUTPUT FORMATS

CVBS In1 / In2 / Out1 / Out2	1 Vpp / 75 ohms, BNC
Y/C (S-Video)	1 Vpp Luma, 0.3 Vpp Chroma / 75 ohms, mini DIN
Genlock	1 Vpp / 75 ohms, loop-through BNC
SDI In / Out1 / Out2	270 Mb/s, SMPTE 259M, EBU Tech 3267, BNC (SDI opt.)
USB update port	Receptacle type B
Ethernet remote control	10/100 Mbit Ethernet, RJ-45 (ETH opt.)

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AUDIO PROCESSING (DAD option)

Analog audio

Resolution A/D and D/A	24 bit
S/THD+N	> 85 dB
Input and output level	+24 dBu max.
I/O controls stereo pair	Gain L, Gain R, Fixed delay, Tone level and frequency
Inputs / outputs	2 pairs, 24 kohm / 50 ohm, balanced, terminal block

AES/EBU Digital Audio

Inputs	2 inputs (AES3id), AES/EBU 32 - 96 kHz, BNC.
Outputs	2 outputs (AES3id), AES/EBU 48 kHz, BNC.

SDI embedded audio

Demultiplexer	2 pairs selection between 8 input pairs
Multiplexer	1 group selection between 4 output groups

General Controls and Selections

Source signal selection	Embedded audio, analog or AES/EBU input
Stereo mode, per pair	Mono sum, Stereo, Swap, Mono L, Mono R, Mute L / R
Master mute	Off, On, Auto no Video
Pair routing	Normal, Inverted, Pair 1, Pair 2
Audio follows video	On, Off. Non volatile selection memory

Audio delay

Delay	0 - 40 ms tracking delay; 1 - 990 ms manual offset
Delay mode	Auto track, Manual

PHYSICAL AND POWER

Power Supply	100 to 240V, 50/60 Hz, 30 W
Dimensions	1RU, rack mounting, 483 mm (W) x 44 mm (H) x 300 mm (D)
Cooling	Forced air
Weight	3.7 kg

VERSIONS

DSC-161i	Standards Converter, TBC, Frame Synchronizer, Noise Reducer and Transcoder
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OPTIONS

DAD	4 channels SDI embedded audio. Tracking audio delay. AES/EBU and analog inputs and outputs.
EAP	4 channels SDI embedded audio. Tracking audio delay.
ETH	Remote control by Ethernet port.
SDI	Serial digital SD-SDI input and output.

Specifications are subject to change without notice due to continuous product development and improvement.

(*) Secam only for input standard, manual selection. (1) See versions and options.

October 19, 2012

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