

SM03 NTSC / PAL Video Decoder and Enhancer



SM03 is an NTSC / PAL video decoder and enhancer designed to produce high quality video images from noisy, low contrast and/or out of specification sources.

It is ideal for applications in the:

- *Enhancement of noisy, low light images from security/CCTV/image-intensified cameras.*
- *Recovery of analogue tape and video disc video for de-archiving and transfer to modern media.*
 - *Contrast enhancement of high dynamic range video such as CCTV, pipeline inspection or endoscope images.*
- *Very low artefact decoding and noise reduction for MPEG encoding pre-processing (reduces compressed bandwidth requirement by up to 20% compared with conventional decoders).*
 - *Broadcast quality decoding of composite video images.*

The SM03 has applications in:

- *Security/CCTV camera installations.*
 - *Subsea/pipeline inspection.*
 - *Microscopy.*
 - *Remote video inspection.*
 - *Vehicle cameras.*
 - *Industrial imaging.*

The SM03 is affordable, compact and easy to operate.

SM03 Specification

Video Inputs:	NTSC-M/PAL standards. CVBS (BNC: ~1.0V into 75Ω). Y/C (4-pin mini-DIN: Y ~1.0V into 75Ω, C ~0.3V into 75Ω). 12 bit ADC, 54MHz sampling rate. 4dB overhead margin. Digital automatic gain control. Digital ACC (automatic colour gain).
Audio inputs:	Stereo audio (2 pole 3.5mm jack, 2.0V into 47kΩ). 48kHz sample rate.
Output:	525i/625i serial digital interface (SDI - SMPTE259M). (BNC: 800mV pk-pk).
Video Decoder:	Motion adaptive 3D comb filter (field/frame), 3-line comb filter, notch filter.
Noise Reduction:	5x5 adaptive median filter (Y channel only). Motion adaptive Y/C recursive filter.
Synchronisation:	Full frame synchroniser. Crystal based output sync pulse generator.
Chroma enhancement:	Adaptive chroma edge enhancement (edge sharpening).
Contrast enhancement:	Adaptive histogram equalization (Y channel only).
Character overlay:	Control/status video character overlay (60 x 32 character display).
Control:	Rotary encoder/button select with video character overlay. Auto/Manual mode. Median NR on/off. Recursive NR high, medium, low, off. Motion adaption on/off. Synchroniser H position, V position, Minimum delay mode. Histogram equalization on/off. Audio delay control. AGC/ACC on/off. Proc-amp control (brightness/contrast/saturation). Chroma Edge enhancement high/medium/low/off. Freeze video.
Latency:	<150us in synchroniser minimum delay mode.
Audio delay:	0-150ms. (Output audio is embedded into SMPTE-259M output).
Dimensions:	160mm x 78mm x 31mm.
Power supply:	5VDC (90V-260V AC-DC adaptor supplied).



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