

COLOSUS+ Standards Converter

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Colosus

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Colosus+ is a professional Standards Converter designed, developed and manufactured by Magna Scientific to satisfy the needs and requirements of a demanding market.

The interpolation is performed by bidimensional Finite Impulse Response (FIR) digital filters, implemented on the base of Digital Signal Processors (DSP) in order to obtain a virtually zero defect standard conversion.

Video processor is fully digital, increasing accuracy and reliability. The optional digital Adapting Comb Filter can be used to get optimal separation of Luminance and Chrominance components. Also optional, a programmable noise reducer helps to improve the quality of the input source.

The internal sync generator is highly stable and delivers ITU-R 624-3 (former CCIR) compliant signals. Through the Gen Lock input it can be synchronized to a reference generator signal.

Video source can be switched between 2 Inputs which may be configured as composite (CCVS) or Y/C. Switching, as also happens with the internal bar

and ramp generator, may be automatic or manual.

All functions can be remote controlled through **M-LINK** a Magna Scientific custom designed network.

Features:

- Bidirectional standards conversion among the following : PAL B, PAL N, PAL M, NTSC, NTSC 4.43.
- Time Base Correction of the input video.
- Interpolation through bidimensional FIR filters in Luminance and Chrominance channels.
- Programmable response at source signal loss: switch to auxiliary input, freeze, Bar or Ramp generation.
- High stability internal sync generator with accurate SC/H.
- Very low jitter wide range digital Gen-Lock.
- Digital Video Processor with wide range Hue, Set-Up, Chrominance and Luminance controls.
- Burst and Sync regeneration.
- Bar and Ramp generator.
- Two Composite Video or Y/C inputs which can be switched in the vertical interval.
- Two composite Video Outputs.

- One Y/C Output.
- Easy menu driven operation and programming with all user's options stored in non-volatile memory.
- Automatic power fail recovery.
- Remote control capability.

Optionals:

- 3-line Adaptive Digital Comb Filter, operates even with non SC/H stable sources.
- Programmable Digital Adaptive Noise Reduction subsystem.



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Technical Specifications:

OUTPUT		DIGITAL PROCESS	
<ul style="list-style-type: none"> • Main Video • Auxiliar Video • Input impedance • Sync threshold • Burst threshold 	<p>1, CCVS 1, Y/C 1, CCVS 75 Ω (internally terminated)</p> <p>150 mV 80 mV</p>	<p>ITU-R 601 FULLY COMPLIANT</p> <ul style="list-style-type: none"> • Sampling frequency: <ul style="list-style-type: none"> Luminance 13.5 MHz Chrominance 6.75 MHz • Luminance resolution 8 bit • Chrominance resolution 8 bit • Architecture 4 : 2 : 2 • Memory capacity 4 fields (1.6 MB) • Interpolation Process Bidimensional FIR filter 	
OUTPUT AND SYNC GENERATOR STAGES		CONTROL RANGE	
<p>ITU-R 624-3 FULLY COMPLIANT</p> <ul style="list-style-type: none"> • Video outputs <ul style="list-style-type: none"> 2, CCVS 1, Y/C • White Clipping Levels: <ul style="list-style-type: none"> PAL B and PAL N 700 mV PAL M and NTSC 714 mV • Sync Levels: <ul style="list-style-type: none"> PAL B and PAL N 300 mV PAL M and NTSC 286 mV • Sync Edges: <ul style="list-style-type: none"> PAL B and PAL N 200 nS PAL M and NTSC 250 nS • Subcarrier Frequency: <ul style="list-style-type: none"> PAL B 4.43361875 MHz PAL N 3.58205625 MHz PAL M 3.57561149 MHz NTSC 3.579545 MHz • SC/H 0 ± 5° • SC/H Sequence: <ul style="list-style-type: none"> PALB, N, M 8 fields NTSC 4 fields • Gen Lock Inputs 2, loop through • Horizontal phase range 20 μS • Horizontal phase steps 74 nS • Subcarrier phase range 360° • Subcarrier phase steps 1° 		<ul style="list-style-type: none"> • Luminance 0 a 200% • Chrominance 0 a 200% • Setup ± 200 mV • Hue (NTSC input) ± 40° 	
		PERFORMANCE	
		<ul style="list-style-type: none"> • Frequency response: <ul style="list-style-type: none"> CCVS 3.8 MHz CCVS (Comb filter) 5.5 MHz Y/C 5.5 MHz • Luma-Chroma delay ≤ 3 nS • Differential gain ≤ 2% • Differential phase ≤ 2° • S/N Ratio (weighted) ≥ 72 dB • S/N Ratio (unweighted) ≥ 60 dB • Noise Reducing up to 12 dB in 10 steps 	
		GENERAL	
		<ul style="list-style-type: none"> • Mains Power 80 to 240 V 47 to 440 Hz • Consumption ≤ 15 W • Enclosure 1 std. rack unit • Weight approx. 8 lbs. 	



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