

## Pulsar MKII™ (MN) – TV Modulator

### Description

The Pulsar MKII™ (MN) device is a TV modulator used to convert baseband audio and video signals into RF output signals ready to go into your cable network.

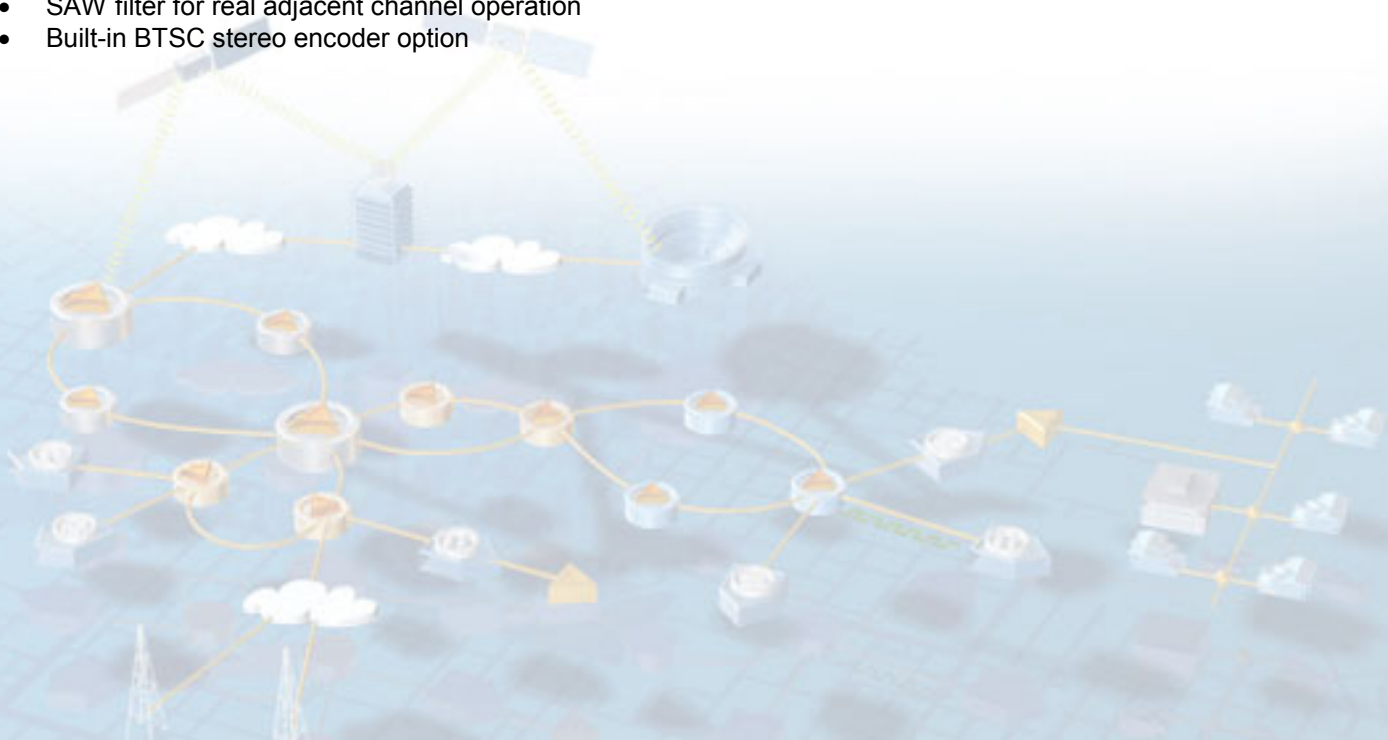
Thanks to built-in intelligence, all of its important parameters can be remotely controlled.

Typical applications are in those cable TV distribution systems where high reliability, low maintenance and excellent price/performance ratio are of the highest priority.



### Features

- Intelligent microprocessor controlled analog TV modulator
- State-of-the-art frequency output
- Fully agile converter 45 to 870 MHz
- Intelligent video AGC
- Full configuration and control via the ROSA™ Network Management System (NMS)
- Auto RF level alignment in combination with Scientific-Atlanta's LM 860™ network supervisor and ROSA NMS
- Monitoring of modulation depth, audio deviation and over-modulation
- Intelligent white clipper to prevent over-modulation
- Front panel LCD and buttons for user-friendly control
- A set of "plug 'n play" options transforms the Pulsar MKII TV Modulator to suit any possible application
- SAW filter for real adjacent channel operation
- Built-in BTSC stereo encoder option



# Pulsar MKII (MN) – TV Modulator



## Specifications

Interface Specifications	
Video inputs	
Connector	BNC, 75 $\Omega$
Level	1 Vpp ( $\pm 6$ dB)
Return loss	$\geq 30$ dB
Audio inputs	
Connector	Screw terminal on quick-disconnect-plug
Level	-10 to 10 dBm for 25 kHz deviation
Impedance	600 $\Omega$ / 10 $\Omega$
	Balanced or unbalanced
RF output	
Connector	BNC, 75 $\Omega$ (f-type optional)
Return loss (in channel)	$> 12$ dB
Frequency	50 to 870 MHz
Level	50 to 61 dBmV
RF test point	Output level -20 dB $\pm$ 0.5
Amplitude response	$< 0.5$ dB for fv -0.6 / fv +4.00 MHz $< -2$ dB for fv -0.75 / fv +5 MHz
Phase noise	$> 105$ dBc/Hz 20 kHz offset
Harmonics & spurious	$\geq 63$ dB
C/N	
5 MHz BW	$\geq 72$ dBc
5 MHz BW – 80 channels	$\geq 64$ dBc
S/V ratio	-15 dB nom, adjustable between -10 dB and -20 dB
RF mute isolation	$> 70$ dB
Composite IF loop	
Connector	F-type, 50 $\Omega$ (F-type optional)
Return loss	$\geq 18$ dB
Level	40 dBmV
Remote control	
Connector	9-pins Sub D
Interface type	RS-485

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## Specifications – continued

Typical Signal Specifications	
Audio	
Amplitude response	0.5 dB (between 30 Hz to 15 kHz)
Distortion at 50 kHz dev.	$\leq 0.5\%$
S/N at 50 kHz dev.	$\geq 65$ dB
Wideband mode	30 Hz – 100 kHz $\leq 1$ dB
Video	
DC restoration	Sync tip or backporch
Luminance bar amp.	$\leq \pm 1\%$
K2T	$\leq \pm 2\%$
Luminance non lin.	$\leq \pm 1\%$
Chrom. Lum. Delay	$\leq \pm 25$ ns
In band group delay tolerance	$\leq \pm 35$ ns
Chrom. Lum. Intermod.	$\leq \pm -1\%$
Differential gain	$\leq \pm 2\%$
Differential phase	$\leq \pm 1^\circ$
Video S/N	$\geq 70$ dB

Option Related Specifications	
Korean two carrier stereo	
Soundcarrier freq	41.25 and 41.0258 MHz
Amplitude response	0.5 dB (between 30 Hz to 15 kHz)
Distortion	$\leq 0.5\%$
S/N at 25 kHz	$\geq 55$ dB
Crosstalk at 1 kHz	$\geq -36$ dB (stereo)
	$\geq -65$ dB (dual sound)
BTSC stereo	
Amplitude response	$\pm 0.5$ dB (between 100 Hz to 14 kHz)
Distortion	$\leq 1\%$
S/N	$\geq 60$ dB
Separation (at 10% EIM)	$< 100$ Hz: $\geq 26$ dB
	100 Hz to 8 kHz: $\geq 30$ dB
	8 kHz to 14 kHz: $\geq 26$ dB
IF loops (vision before SAW and sound IF loop)	
Connector	F-type, 75 $\Omega$
Input & output levels	IFv : 46 dBmV
	IFs : 34 dBmV
Aux IF input	
Connector	F-type, 75 $\Omega$
Return loss	$\geq 18$ dB
Input level	30 to 45 dBmV (AGC)
Switching	Manual or automatic
Intercarrier input	
Connector	BNC, 75
Return loss	$\geq 20$ dB
Input level	37 to 50 dBmV (AGC)
Main scrambled, Aux unscrambled video input	
Coupling	
main	DC coupled
aux	AC coupled and clamped
DC input level range	
main	Backporch at $\pm 0.5$ V

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## Specifications – continued

Options	
Second A/V input with automatic fall-back capabilities	
Auxiliary composite IF input with AGC	
Korean two carrier stereo encoder	
4.5 MHz aural subcarrier input with AGC ( BTSC compatible)	
Sound and vision IF loops for scrambling interface	
Main scrambled, Aux unscrambled video input	
IF vision carrier reference input	
Separate sound and vision IF outputs for application in transmitters	
Phase-ock capability for HRC and IRC applications	
-48 V power supply	
IF vision carrier reference output	
Reference carrier output (10 MHz)	
4.5 MHz aural subcarrier output	

Environmental Specifications	
Operating temperature	+32°F to +113°F (0° to 45°C)
Storage temperature	-4°F to +158°F (-20° to 70°C)
Power supply (nominal)	115 V AC $\pm$ 10% 48 to 62 Hz
Power consumption (nominal)	Approx. 45 W

Mechanical Specifications	
Height	1 RU
Width	19 in. / 482 mm
Depth	18.5 in. / 470 mm
Weight	Approx. 12 lbs / 5.4 kg



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