

# Vestigial Side Band TV Modulators

## MCP411

REF. 3826

## MCP412

REF. 3829

## MCP421

REF. 3827

## MCP801

REF. 3849

## MCP811

REF. 3851

## MCP812

REF. 3848

- B/G, D/K, I, L TV Systems.
- Mono and A2 or Nicam Stereo/Dual Sounds.
- Maximum harmonic reduction and true VSB response.



### TV Modulators

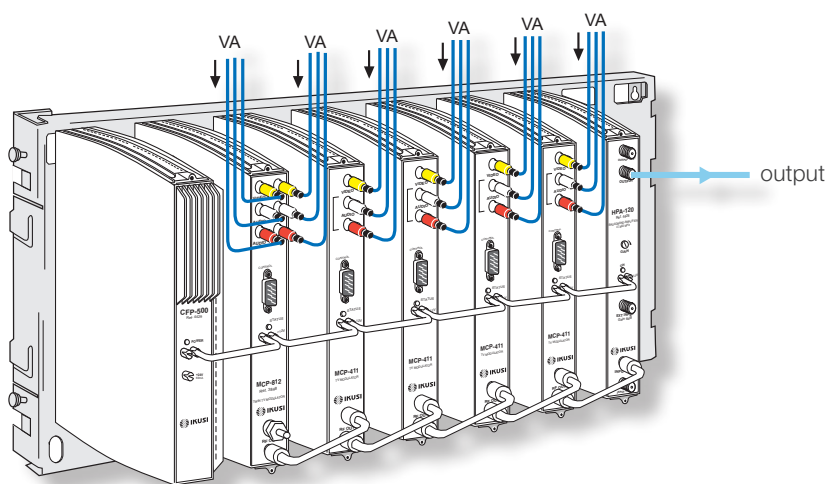
### Twin TV Modulators

		MCP-411	MCP-412	MCP-421	MCP-801	MCP-811	MCP-812
TV System		B/G		D/K/I/L	B/G/D/K/I/L		B/G
Audio System		Mono	A2	Mono	Mono		A2
Input		(1x) Video, (1x) Audio			(2x) Video, (2x) Audio		
Output channel selectable between		45 - 862			TV Bi-Channel each of the two channels is selectable between: 45 - 862 MHz		
Adjustable RF output level	dBμV	70 to 80			68 to 78		
Intercarrier frequency	Audio 1	5.5		6.5 (D,K,L), 6 (I)	5.5 (B,G), 6.5 (D,K,L), 6(I)		5.5
	Audio 2	-	5.742	-	-		5.742
V/A carrier level ratio	dB	12/16 (Mono; A2/Nicam:Audio1), 20 (A2:Audio2), 18 to 27 (Nicam:Audio2)			12/16		12/16 (Audio1), 20 (Audio2)
Video input level	Vpp				0.7 — 1.4		
Video input impedance	Ω				75		
Adjustable video modulation depth	%				80 to 90		
Audio input level	Vpp				0.5 — 4.0		
Audio input impedance	Ω				> 600		
Adjustable audio peak deviation	kHz				±40 to ±50 (except System L)		
Audio pre-emphasis	μs				50 (except System L)		
Weighted SNR	dB	> 60			> 59		
Group delay precorrection		Yes		-	No		Yes
Differential gain	%				< 3		
Differential phase	°	< 2			< 3		
K factor (2-T impulse)	%	< 2			< 3		< 2.5
Spurious in band	dBc	< 60		< 58	< 57		
Broadband noise (ΔB=5 MHz)	dBc	< 77			< 73		

	TV Modulators			Twin TV Modulators		
	MCP-411	MCP-412	MCP-421	MCP-801	MCP-811	MCP-812
Supply Voltage	Vdc			+12		
Consumption	mA	370	460	370	460	560
Operating temperature	°C			-10 — +55		
Output loop-through loss	0.7 (typ.), 1.2 (max)					
Video connector type	(1x) RCA female			(2x) RCA female		
Audio connector type	(2x) RCA female			(4x) RCA female		
RF connector type	(2x) F female					
DC connector type	banana socket					
Programming interface	RS-232/DB-9					
Dimensions	mm			230 x 195 x 32		

Each module is packed with:

- 1 F plug bridge, 64 mm length, for output coupling line.
  - 1 DC plug bridge, 53 mm length, for connection of +12 VDC voltage.
- (RCA plugs for video and audio input connections are not supplied)



- Example of «MCP» headend with 7 Modulators (the first at the left is twin type), 1 Amplifier and 1 Power Supply, all fixed on 1 baseplate.

## MCP MODULATORS

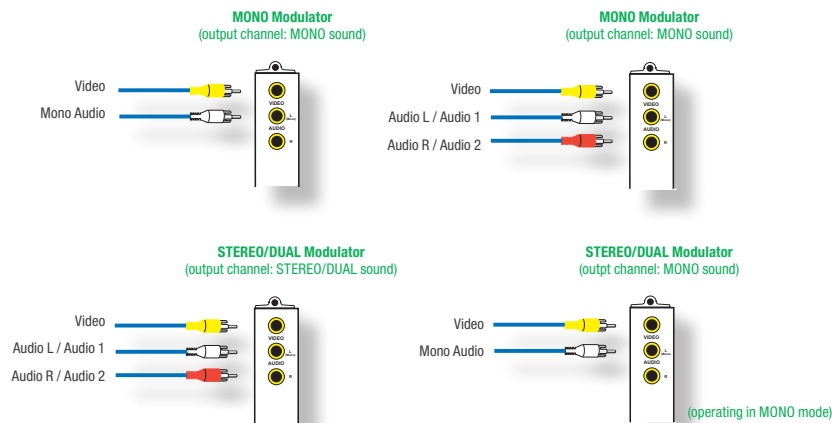
- Vestigial Side Band TV Modulators. Mono and A2 or Nicam Stereo/Dual Sounds. TV Systems: B/G, D/K, I, L.
- Range includes single (MCP-4xx) and twin (MCP-8xx) modulators. The twin ones integrate two modulators in one module.
- IF modulation and SAW filtering for maximum harmonic reduction and true VSB response. Adjacent channel operation.
- Frequency agility. Any selectable TV channel within the 45-862 MHz band. PLL frequency synthesized.
- Built-in test pattern generator.
- In twin modulators, the two generated TV channels are combined internally to make up one bi-channel output signal.
- An MCP headend includes:
  - Single MCP-4xx and/or twin MCP-8xx Modulators.
  - One HPA amplifier that amplifies the sum of the combined output TV channels.
  - One or more CFP Power Supplies.
  - One or more Rack-Frames or wall-fixing Base-Plates. The base-plates can be joined horizontally.
  - Usually, housing units for the base-plates.
  - For large headends, one or more AMX-400 combiners.

The MCP assembly provides a TV multichannel signal whose level is appropriate to feed the distribution network. An extension input at the HPA amplifier allows easy coupling of the wideband 47-862 MHz signal provided by an existing reception headend.

## AUDIO FUNCTIONALITY

The MCP modulators family includes models for mono and stereo/dual operations. The following pictures (\*) show the normal use — 1 audio source with "mono" models and 2 audio sources with "stereo/dual" models— as well as other possible uses: stereo sources with "mono" models (L and R signals are summed internally) and mono sources with "stereo/dual" models (the modulator is programmed for operating in mono mode).

NOTE: For simplicity, the pictures are referred to MCP-4xx models.



## SIMPLE CABLING OF MCP HEADENDS

Video and audio input ports of the modulators are disposed at the top of the front panel. The RF output is presented at the bottom on two directionally coupled F ports, so a channel coupling line may be formed along the MCP assembly by using the supplied plug bridges. The sum of the combined channels is connected to the drive amplifier — the HPA module or an external wideband amplifier—. For power connection, each module has two DC banana sockets to perform a +12 VDC cascade. Programming is carried out with the SPI-300 unit, which is connected to each module individually. The process involves the following selections and settings:

- Video Carrier Frequency
- TV System
- Video Modulation Depth
- Audio Modulation Deviation
- Carrier Level Ratio
- Audio Mode (mono-stereo-dual)
- RF Output Level
- Generation of Video Test Signal

NOTE: In twin modulators all selections and settings are made separately for each one of the two sections.