



MICM series of products are fixed-channel analog audio/video modulators available in the following models:

**MICM-45D:** Is available in NTSC channels 2-79 and 95-99 (54-550 MHz). This 5th generation of the MICM series, equipped with the [CALMTones](#) feature, utilizes an Audio AGC (Automatic Gain Control) solution that eliminates variations in loudness level that may be present among various program sources.

**MICM-45DS:** Is the same as MICM-45D but with stereo audio output.

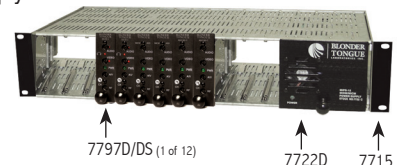
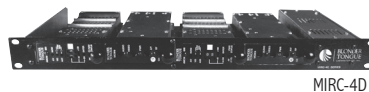


### FEATURES

- Prohibits commercials that accompany broadcast programs from:
  - (i) having modulation levels substantially higher than the broadcast program; and
  - (ii) having an average maximum loudness substantially higher than that of the broadcast program.
- Provides consistent audio level among all broadcast programs on different channels and among different programs within the same channel
- Compact design allows for deployment of 12 channels in 2RU
- Utilizes SAW filters for improved performance
- Die-cast chassis for RFI immunity
- Integrated Stereo encoder

### ORDERING INFORMATION

Model	Stock #	Description
MICM-45D	7797D <a href="#">CALMTones</a>	Fixed-channel Audio/Video Modulator, Audio AGC, +45 dBmV, 54-550 MHz
MICM-45DS	7797DS <a href="#">CALMTones</a>	Fixed-channel Audio/Video Modulator, Audio AGC, Stereo, +45 dBmV, 54-550 MHz
MIRC-12V	7715	Rack Chassis (holds up to 12 modulators)
MIPS-12D	7722D	100-240 VAC; 50/60 Hz power supply (one per chassis)
MIRC-4D	7711	Horizontal Rack Chassis equipped with Power Supply



# SPECIFICATIONS

## INPUT

<b>Video</b>	
<b>Connector:</b>	"F" Female
<b>Impedance:</b>	75 $\Omega$
<b>Return Loss:</b>	20 dB
<b>Input Level:</b>	1.0 volt Peak-to-Peak (87.5% depth of modulation)
<b>Frequency Response:</b>	1.0 dB Peak-to-Valley (fv to fv+4.2 MHz)
<b>Peak to Peak Video-to-RMS Hum Ratio:</b>	64 dB
<b>Signal-to-Noise Ratio:</b>	65 dB (Weighted; 4 MHz bandwidth)
<b>Differential Gain:</b>	2.0% (87.5% depth of modulation)
<b>Differential Phase:</b>	2.0 degree (87.5% depth of modulation)
<b>Chrominance/Luminance Delay:</b>	Per FCC Requirements
<b>Mono Audio (standard)</b>	
<b>Connector:</b>	RCA
<b>Input Impedance:</b>	Greater than 10 k $\Omega$ , unbalanced
<b>Input Level: (for 25 kHz deviation)</b>	0.5 to 4.0 volt peak-to-peak (constant AGC range)
<b>Frequency Range:</b>	50 Hz to 12 kHz
<b>Frequency Response:</b>	$\pm$ 0.5 dB
<b>Total Harmonic Distortion:</b>	1% @ 25 kHz deviation
<b>Signal-to-Noise Ratio:</b>	70 dB
<b>Stereo Audio (optional)</b>	
<b>Connector:</b>	RCA
<b>Input Impedance:</b>	Greater than 10 k $\Omega$ , unbalanced
<b>Input Sensitivity: (for 55 kHz peak deviation)</b>	0.5 to 4.0 volt peak-to-peak (AGC Range with pilot tone)
<b>Frequency Response:</b>	+/- 0.75 dB (50 Hz to 12 kHz)
<b>Separation:</b>	20 dB @ 50 Hz to 10 kHz

## OUTPUT

<b>Connector:</b>	"F" Female
<b>Impedance:</b>	75 $\Omega$
<b>Return Loss:</b>	15 dB
<b>Frequency Range:</b>	54 to 550 MHz (NTSC CATV Ch. 2 -79 and 95-99)
<b>Power Level:</b>	+45 dBmV
<b>Power Level Range:</b>	10 dB continuously adjustable
<b>Carrier-to-Noise: (In Channel)</b>	63 dB
<b>Broadband Noise:</b>	-90 dBc (@ +45 dBmV output level, 4 MHz band.)
<b>Spurious Outputs:</b>	-66 dBc
<b>Aural/Visual Carrier Ratio:</b>	-11 to -19 dB continuously adjustable
<b>4.5 MHz Aural Inter-carrier Freq. Tolerance:</b>	$\pm$ 250 Hz; 32 to 122 °F (0 to 50 °C)
<b>Visual Carrier Frequency Tolerance</b>	
<b>Standard Channels:</b>	$\pm$ 10 kHz; 32 to 122 °F (0 to 50 °C)
<b>FCC Aeronautical Channels:</b>	$\pm$ 5 kHz; 32 to 122 °F (0 to 50 °C)

## GENERAL

<b>Dimensions (W x D x H)</b>	
<b>MICM Modules:</b>	1.0 x 7.78 x 3.5 inches (25 x 198 x 89 mm)
<b>MIPS-12D Power Supply:</b>	4.2 x 7.5 x 3.5 inches (106 x 191 x 89 mm)
<b>MIRC-12V Chassis:</b>	19 x 12.0 x 5.25 inches (483 x 305 x 133 mm)
<b>MIRC-4D Chassis:</b>	19 x 9.0 x 1.75 inches (483 x 229 x 44 mm)
<b>Power</b>	
<b>MIPS-12CD Power Supply:</b>	100-240 VAC; 50/60 Hz
<b>MIRC-4D Power Supply:</b>	100-240 VAC; 50/60 Hz
<b>Power Dissipation:</b>	$\sim$ 3 W (per MICM Module)
<b>Weight</b>	
<b>MICM Module:</b>	0.65 lbs (0.3 kg)
<b>Fully Loaded Chassis:</b>	18.2 lbs (8.3 kg)
<b>Operating Temperature:</b>	32 to 122 °F (0 to 50 °C)
<b>Storage Temperature:</b>	-13 to 158 °F (-25 to 70 °C)
<b>Operating Humidity:</b>	0 to 95% RH @ 35 °C max, non-condensing
<b>Storage Humidity:</b>	0 to 95% RH @ 35 °C max, non-condensing

## ALARMS/MONITORING/CONTROL

<b>Front-Panel Indicators</b>	
<b>Power:</b>	Green LED
<b>Stereo:</b>	Red LED (when equipped)
<b>Front-Panel Control</b>	
<b>Output Level :</b>	Potentiometer
<b>Video Level:</b>	Potentiometer
<b>Audio Level:</b>	Potentiometer
<b>Aural Carrier Level:</b>	Potentiometer

## RELATED PRODUCTS

Model	Description
AM-60-860	Frequency-agile Audio/Video modulator, +60 dBmV, 54-860 MHz, 1RU
AMCM-860D	Frequency-agile Audio/Video modulator, +45 dBmV, 54-860 MHz, Twelve modulators in 2RU, CALMTones
ACM-806A	Frequency-agile Audio/Video modulator, +45 dBmV, 54-806 MHz, Twelve modulators in 2RU,