



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 CALMTones	Fixed-channel Audio/Video Modulator, Audio AGC, +45 dBmV, 54-550 MHz
MICM-45DS	7797DS CALMTones	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

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

OUTPUT

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

GENERAL

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

ALARMS/MONITORING/CONTROL

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