

# Audio/Video Modulator

## HE-12/HE-4 Series - MICM Series



### ○ Features & Benefits

- 5-860 MHz Channelized Audio/Video Modulator
- SAW Filtered to True Adjacent Channel Response
- Die-Cast Chassis Offers Superior Protection Against Ingress or Egress
- Front Panel Accessible Level Controls for Easy Set-Up and Adjustment
- Integrated Stereo Encoder Available

### ○ Specifications

The MICM-45 is a professional quality, channelized, heterodyne audio/video modulator which provides modulated RF carrier output on any single VHF channel, including: broadcast TV (2-13), CATV (14-135). It is ideal for placing audio and video onto any unused VHF channel. Any standard audio/video source can be used, such as satellite receivers, television cameras, video tape recorders, or television demodulators. The MICM-45 utilizes SAW filtering with FCC group delay pre-distortion to provide true vestigial sideband selectivity which makes it perfect for use in adjacent channel systems.

The MICM-45C takes baseband audio and video and modulates these signals onto the desired output channel. The MICM-45S takes baseband L/R audio and video and modulates these signals into the desired output channel. The heterodyne conversion process used in the unit employs a crystal referenced, PLL synthesized local oscillator. This guarantees rock solid, no-drift output for the life of the modulator. The MICM-45 meets FCC Docket 21006 aeronautical frequency offset requirements ( $\pm 5$  kHz video carrier accuracy). The modulator accepts standard polarity (sync negative) video in the range of 0.7 to 2.5 V p-p. It has field defeatable audio pre-emphasis to provide stereo compatibility with any external BTSC stereo generator providing a composite stereo baseband output.

The MICM-45S is a stereo A/V modulator providing a stereo audio and video modulated RF carrier on any single VHF channel. All other features and specifications are identical to the MICM-45C except as noted.

#### RF

- Frequency Range: 54-860 MHz (Broadcast 2-13, Cable 14-135)
- Output Level: +45 dBmV
- Output Level Range: 10 dB continuously adjustable
- Aural/Visual Carrier Ratio: -11 to -19 dB continuously adjustable
- Visual Carrier Frequency Tolerance:  $\pm 10$  kHz (standard channels)  $\pm 5$  kHz (aeronautical channels)
- Aural Carrier: 4.5 MHz above visual
- Frequency Setting:  $\pm 1.5$  kHz
- Spurious Outputs: -60 dBc, min
- C/N Ratio In Channel: 60 dB
- Broadband Noise: -90 dB
- Output Return Loss: 12 dB
- IF (Internal) Frequency: 45.750 MHz

#### Video

- Input Level: 1.0 V p-p for 87.5 % Modulation
- Frequency Response:  $f_v - 0.5$  MHz to  $f_v + 4.2$  MHz:  $\pm 1.0$  dB
- Video C/N: 60 dB (4 MHz BW)
- P-P Video to RMS Hum Ratio: 60 dB
- Differential Gain:  $\pm 4.0$  % @ 87.5% Modulation
- Differential Phase:  $\pm 2^\circ$  @ 87.5% Modulation
- Input Return Loss: 18 dB

#### Audio

- Input Level: 140 mV RMS for 25 kHz Peak Deviation
- Input Impedance: 10K  $\Omega$ , Unbalanced
- Frequency Range: 20 Hz to 20 kHz (MICM-45C)
- Frequency Response:  $\pm 1.0$  dB, (50 Hz to 12 kHz) Reference to Std. 75  $\mu$ s Pre-emphasis (MICM-45C)  $\pm 0.3$  dB (50 Hz to 50 kHz) (MICM-45S) in Stereo Configuration w/o pre-emphasis

- Total Harmonic Distortion (%): 1.0 at 25 kHz Deviation
- Stereo Separation (MICM-45S): 50 Hz - 100 Hz: 15 dB 100 Hz - 1 kHz: 25 dB 12 kHz: 18 dB
- Aural Intercarrier:  $\pm 5$  kHz ( $0^\circ$  to  $+50^\circ$  C), std.

#### General

- Power Requirements: External: 12 VDC @ 160 mA +5 VDC @ 130 mA (MICM-C) +5 VDC @ 180 mA (MICM-S)
- Temperature Range:  $0^\circ$  to  $+50^\circ$  C

#### Mechanical

- Dimensions (W x H x D): 1.20 x 3.5 x 7.50 in., 29 x 89 x 191 mm
- Weight: 0.65 lbs., 0.30 kg

#### Connectors/Impedance

- Audio Input: RCA Female (MICM-45C)
- L/R Audio Inputs: RCA Female
- Video Input: 75  $\Omega$  "F" Female
- RF Output: 75  $\Omega$  "F" Female

#### Controls

- Video Level: Control
- Audio Level: Control
- Aural Carrier Level: Control
- RF Output Level: Control

#### Indicators

- Power On: LED, Green
- Video Over Modulation: LED, Red (MICM-45S)
- Audio Over Modulation: LED, Red (MICM-45S)
- Stereo Indicator: LED, Red (MICM-45S)



Refer to product instruction manual for additional specification measurements and notes.

### ○ Ordering Information

Model	Stock No.	Description
MICM-45C	7797C 600	HE-12 & HE-4 Series Channelized Audio/Video Modulator, +45 dBmV, 54-600 MHz
MICM-45C	7797C 860	HE-12 & HE-4 Series Channelized Audio/Video Modulator +45 dBmV, 600-860 MHz
MICM-45S	7797S 600	HE-12 & HE-4 Series Channelized Stereo Audio/Video Modulator +45 dBmV, 54-600 MHz
MICM-45S	7797S 860	HE-12 & HE-4 Series Channelized Stereo Audio/Video Modulator +45 dBmV, 600-860 MHz