



## Addendum 651215100B to Instruction Manual 651204500E

### MICM-45 Modulators

#### MICM-45C, Stock No. 7797C, MICM-45S, Stock No. 7797S

The MICM-45 is a professional quality, channelized, heterodyne audio/video modulator. The unit provides audio and video modulated RF carrier output on any single VHF channel, including: broadcast TV (2 - 13), CATV (14-135). The MICM-45 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. This makes the MICM-45 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 MICM-45 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.

The MICM-45C 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 below.

#### Specifications MICM-45 (Typical)

##### 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, minimum

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 fv -0.5 MHz to fv +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, Reference to Std. (50 Hz to 12 kHz)

75  $\mu$ s Pre-emphasis (MICM-45C)

$\pm 3.0$  dB, Reference to Std. (50 Hz to 50 kHz) (MICM-45S)

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 (WxHxD): 1.20" x 3.5" x 7.50"

Weight: 0.65 lbs (0.30 kg)

##### Connectors/Impedance

Audio Input: RCA Phono, female (MICM-45C)

L/R Audio Inputs: RCA Phono, female

Video Input: 75 ohm "F" type, female

RF Output: 75 ohm "F" type, female

##### Controls

Video Level: Pot

Audio Level: Pot

Aural Carrier Level: Pot

RF Output Level: Pot

##### Indicators

Power ON: LED, green

Video Over Modulation: LED, red (MICM-45S)

Audio Over Modulation: LED, red (MICM-45S)

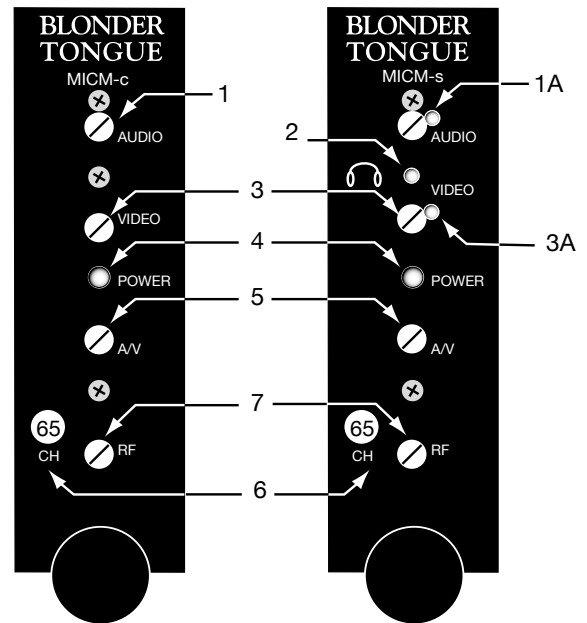
Stereo Indicator: LED, red (MICM-45S)

## Operating Controls and Indicators - MICM-45

### Front Panel

All operating controls are located on, or are accessible from the front panel.

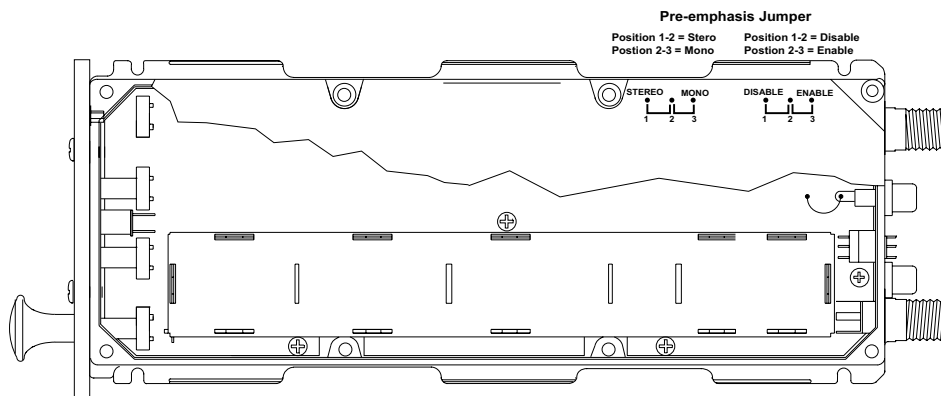
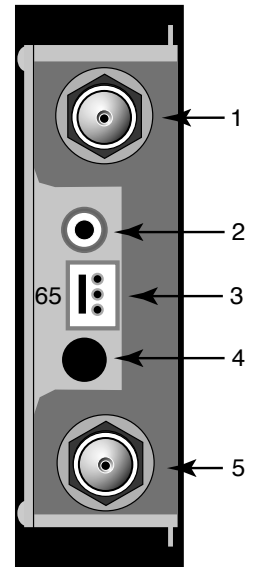
1. **Audio** - Adjusts the aural carrier modulation.  
1A. Audio - Aural carrier modulation control/overmodulation indicator.
2. **Stereo Indicator**
3. **Video** - Adjusts the modulation percentage.  
3A. Video - Modulation control/overmodulation indicator.
4. **Power** - The green LED indicates power is present and the fuse is good.
5. **A/V** - Controls the amplitude of aural RF carrier to change aural/visual ratio.
6. **Channel** - The modulator is factory aligned to the channel number indicated.
7. **RF** - The RF pot simultaneously adjusts the amplitude of aural and visual carriers to the final drive amplifier.



### Rear Panel

All the connectors on the Modulator are located on the rear panel.

1. **Video Input** - The modulator accepts standard negative sync video at a 0.7 to 2.5 Vp-p level.
2. **Audio Input** - The modulator accepts 140 mV RMS for 25 kHz peak deviation (MICM-C). Left audio input for MICM-S only.
3. **Power** - The polarized power connector accepts +12 Vdc +5 Vdc and ground.
4. **Right Audio Input** for MICM-S only. Connector not used in MICM-C (capped)
5. **RF Out** - The filtered RF signal is available for connection to a headend combiner.



**Internal Jumper Settings**

Unit comes factory set for audio pre-emphasis enabled.



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