

# MAVM Series

## Channelized Agile Audio/Video Modulator



MAVM-861

### ○ Features & Benefits

- EAS/ALT IF Ready Via Manual or Automatic Mode
- Front Panel Accessible Level Controls for Easy Set-Up and Adjustments
- Rack Mountable - 1 EIA (1.75") Rack Space
- Exceptional Broadband Noise Performance of -110 dBc
- -60 dBc Spurious Response for the Entire Level Range
- Works in Conjunction with High Performance Channelized Output Filter Modules (OFM)

The MAVM Series are professional quality, channelized agile, heterodyne audio/video modulators. They provide audio and video modulated RF output on any VHF, UHF, or CATV channel (7 to 860 MHz). SUB-BAND channels T7-T11 are available.

Any standard audio/video source can be used, such as satellite receivers, television cameras, video tape recorders, or television demodulators. These modulators feature a low cost, removable single channel output filter module to provide a channelized configuration. Customer requests for individual channels can be easily accomplished by combining the frequency agile mainframe with the desired removable output filter module. Modulators may be ordered as completed assemblies or as configurable modules.

The MAVM-861 is a single output modulator consisting of the MAVM-861-MF mainframe and a channelized OFM-40-860 output filter module. The MAVM-60-861 is a single output modulator consisting of the MAVM-861-MF mainframe and a channelized OFM-60-860 output filter module. The MAVM-863 is a triple output modulator consisting of a MAVM-863-FP faceplate to which are attached a MAVM-863-PS power supply and three MAVM-863-MB modulator bases. The MAVM-60-863 is a triple output modulator consisting of a MAVM-863-FP faceplate to which are attached a MAVM-863-PS power supply and three MAVM-863-MB modulator bases.

The MAVM Series takes baseband audio and video and modulates these signals onto the desired output channel (each modulator has separate audio and video inputs). The heterodyne conversion process used in the MAVM Series employs a crystal referenced, PLL synthesized local oscillator, with a 12.5 kHz tuning increment. This guarantees rock solid, no-drift output for the life of the modulator. A custom SAW filter is employed to provide true vestigial sideband selectivity with built-in FCC group delay pre-distortion. An external IF loop is standard which allows interfacing with video all-call and signal scrambling systems as well as the ability to lock to either baseband or a 4.5 MHz aural carrier. The MAVM Series meets FCC Docket 21006 aeronautical frequency offset requirements ( $\pm 5$  kHz video carrier accuracy) and accepts standard polarity (sync negative) video in the range of 0.7 to 2.8 V p-p. Field-defeatable audio pre-emphasis enables transmission of BTSC standard composite stereo signals.

### **Output Filter Modules (OFM)**

Output Filter Modules are factory tuned channelized units that are used with the CAM, CAP, MAVM & SAIP product lines. They are available with +40 dBmV or +60 dBmV output levels and can be order for any channel in the CATV (2-135), UHF (14-69) or Sub-Band (T7-T11) channel ranges.

*Available through*

**Multicom, Inc.**

1076 Florida Central Parkway, Longwood, FL 32750

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# MAVM Series

## Channelized Agile Audio/Video Modulator

### ○ Specifications

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#### RF

Frequency Range: 7-37 and 54-860 MHz  
Channels: SUB, CATV, VHF, UHF  
Output Level - Min  
7-37 MHz: +42/+60 dBmV  
54-648 MHz: +42/+60 dBmV  
648-860 MHz: +40/+58 dBmV  
Output Level Adjust: 15 dB  
Aural/Visual Carrier Ratio: -9 to -20 dB  
Visual Carrier Frequency Tolerance  
Standard Channels:  $\pm 5$  kHz  
FCC Aeronautical Channels:  $\pm 5$  kHz  
Aural Carrier Frequency  
Offset from Visual Carrier: 4.5 MHz  
Accuracy, Settable To (STD.):  $\pm 1.5$  kHz  
Channel Selectivity:  
Adjacent Aural and Below: -40 dB  
Adjacent Picture and Above: -40 dB  
Spurious Outputs OFM-40: -66 dBc  
Spurious Outputs OFM-60: -60 dBc  
C/N Ratio In Channel: 65 dB  
Broadband Noise (40/60): -95/-110 dBc  
Output Impedance: 75 ohm  
Output Return Loss: 15 dB

#### IF

Aural Frequency: 41.25 MHz  
Visual Frequency: 45.75 MHz  
Composite IF Loop Output  
Aural Carrier Level: +15 dBmV  
Visual Carrier Level: +30 dBmV  
Output/Input Impedance: 75 ohm  
Output Return Loss: 12 dB  
Input Return Loss: 10 dB

#### Video

Input Level: 1.0 V p-p  
Frequency Response  
fv-0.5 MHz to fv+4.2 MHz:  $\pm 1.0$  dB  
P-P Video to RMS Hum Ratio: 60 dB  
Video Signal-to-Noise Ratio, Weighted: 62 dB  
Differential Gain:  $\pm 2.0$  %  
Differential Phase:  $\pm 1.0$  °  
Over Modulation Indicator: 87.5,  $\pm 2.5$  %  
Input Impedance: 75 ohm  
Input Return Loss: 18 dB

#### Audio

Input Level: mV RMS  
Frequency Range: 20 Hz to 20 kHz  
Frequency Response:  $\pm 1.0$  dB  
Pre-Emphasis-Mono: 75  $\mu$ s  
Audio Signal-to-Noise: 60 dB  
Total Harmonic Distortion: 0.5 %  
Over Modulation Indicator: 25,  $\pm 2$  kHz  
Input Impedance: 10 k, unbalanced ohm

#### Sub-Carrier Audio

Frequency: 4.5 MHz  
Stability  
Standard:  $\pm 5$  kHz  
Aural Lock Option:  $\pm 500$  Hz

#### General

Power Requirements  
Voltage: 117,  $\pm 10\%$  VAC  
Frequency: 60 Hz  
Power  
MAVM-40-861: 6.5 W  
MAVM-60-861: 9.0 W  
MAVM-40-863: 16.5 W  
MAVM-60-863: 22.5 W  
Fuse: 1/8 or 1/4 A  
Temperature Range: 0 to +50 °C

#### Mechanical

Dimensions (WxHxD)  
MAVM-861: 19.0 x 1.75 x 5.5 in.  
(483 x 44 x 140) mm  
MAVM-863-3: 19.0 x 1.75 x 16.25 in.  
(483 x 44 x 413)  
Weight  
MAVM-861: 6.0 lbs. (2.73 kg)  
MAVM-863-3: 10.8 lbs. (4.91 kg)

#### Connectors (Rear Panel)

Video Input: "F" Type, Female  
Audio Input: RCA Phono, Female  
IF Output: "F" Type, Female  
IF Input: "F" Type, Female  
RF Output: "F" Type, Female

#### Controls (Front Panel)

Channel Selection: DIP Switches  
Video Level: Control  
Aural Carrier Level: Control  
Audio Level: Control  
RF Output Level: Control

#### Indicators (Front Panel)

Power ON: LED, Green  
Video Over Modulation: LED, Red  
Audio Over Modulation: LED, Red

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

**Ordering Information is located on the following page.**

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# MAVM Series

## Channelized Agile Audio/Video Modulator

### ○ Ordering Information

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| Model         | Stock No.  | Description  |
|---------------|------------|--|
| MAVM-60-861   | 7977A 300  | Channelized Agile Audio/Video Modulator +60 dBmV, 54-300 MHz                                     |
| MAVM-60-861   | 7977A 756  | Channelized Agile Audio/Video Modulator +60 dBmV, 300-756 MHz                                    |
| MAVM-60-861   | 7977A 860  | Channelized Agile Audio/Video Modulator +60 dBmV, 756-860 MHz                                    |
| MAVM-60-861   | S7977A 450 | Channelized Agile Audio/Video Modulator +60 dBmV, 7-450 MHz (SUB & VHF)                          |
| MAVM-60-861   | U7977A 758 | Channelized Agile Audio/Video Modulator +60 dBmV, 470-758 MHz (UHF)                              |
| MAVM-60-861   | U7977A 806 | Channelized Agile Audio/Video Modulator +60 dBmV, 758-806 MHz (UHF)                              |
| MAVM-60-863-1 | 7978A 300  | Channelized Agile Audio/Video Modulator +60 dBmV, 54-300 MHz                                     |
| MAVM-60-863-1 | 7978A 756  | Channelized Agile Audio/Video Modulator +60 dBmV, 300-756 MHz                                    |
| MAVM-60-863-1 | 7978A 860  | Channelized Agile Audio/Video Modulator +60 dBmV, 756-860 MHz                                    |
| MAVM-60-863-1 | S7978A 450 | Channelized Agile Audio/Video Modulator +60 dBmV, 7-450 MHz (SUB & VHF)                          |
| MAVM-60-863-1 | U7978A 806 | Channelized Agile Audio/Video Modulator +60 dBmV, 758-806 MHz (UHF)                              |
| MAVM-60-863-3 | 7979A 300  | Channelized Agile Audio/Video Modulator +60 dBmV, 54-300 MHz, Three Channel Modulator            |
| MAVM-60-863-3 | 7979A 756  | Channelized Agile Audio/Video Modulator +60 dBmV, 300-756 MHz, Three Channel Modulator           |
| MAVM-60-863-3 | 7979A 860  | Channelized Agile Audio/Video Modulator +60 dBmV, 756-860 MHz, Three Channel Modulator           |
| MAVM-60-863-3 | S7979A 450 | Channelized Agile Audio/Video Modulator +60 dBmV, 7-450 MHz (SUB & VHF), Three Channel Modulator |
| MAVM-60-863-3 | U7979A 758 | Channelized Agile Audio/Video Modulator +60 dBmV, 470-758 MHz (UHF), Three Channel Modulator     |
| MAVM-60-863-3 | U7979A 806 | Channelized Agile Audio/Video Modulator +60 dBmV, 758-806 MHz (UHF), Three Channel Modulator     |
| MAVM-861      | 7992A 400  | Channelized Agile Audio/Video Modulator +40 dBmV, 54-400 MHz                                     |
| MAVM-861      | 7992A 756  | Channelized Agile Audio/Video Modulator +40 dBmV, 400-756 MHz                                    |
| MAVM-861      | 7992A 860  | Channelized Agile Audio/Video Modulator +40 dBmV, 756-860 MHz                                    |
| MAVM-861      | S7992A 450 | Channelized Agile Audio/Video Modulator +40 dBmV, 7-450 MHz (SUB & VHF)                          |
| MAVM-861      | U7992A 758 | Channelized Agile Audio/Video Modulator +40 dBmV, 470-758 MHz (UHF)                              |
| MAVM-861      | U7992A 806 | Channelized Agile Audio/Video Modulator +40 dBmV, 758-806 MHz (UHF)                              |
| MAVM-861-MF   | 7982B      | Channelized Agile Audio/Video Modulator 54-860 MHz, Mainframe                                    |
| MAVM-863-1    | 7993A 300  | Channelized Agile Audio/Video Modulator +40 dBmV, 54-300 MHz                                     |
| MAVM-863-1    | 7993A 756  | Channelized Agile Audio/Video Modulator +40 dBmV, 300-756 MHz                                    |
| MAVM-863-1    | 7993A 860  | Channelized Agile Audio/Video Modulator +40 dBmV, 756-860 MHz                                    |
| MAVM-863-1    | S7993A 450 | Channelized Agile Audio/Video Modulator +40 dBmV, 7-450 MHz (SUB & VHF)                          |
| MAVM-863-1    | U7993A 758 | Channelized Agile Audio/Video Modulator +40 dBmV, 470-758 MHz (UHF)                              |
| MAVM-863-1    | U7993A 806 | Channelized Agile Audio/Video Modulator +40 dBmV, 758-806 MHz (UHF)                              |
| MAVM-863-3    | 7999A 300  | Channelized Agile Audio/Video Modulator +40 dBmV, 54-300 MHz, Three Channel Modulator            |
| MAVM-863-3    | 7999A 756  | Channelized Agile Audio/Video Modulator +40 dBmV, 300-756 MHz, Three Channel Modulator           |
| MAVM-863-3    | 7999A 860  | Channelized Agile Audio/Video Modulator +40 dBmV, 756-860 MHz, Three Channel Modulator           |
| MAVM-863-3    | S7999A 450 | Channelized Agile Audio/Video Modulator +40 dBmV, 7-450 MHz (SUB & VHF), Three Channel Modulator |
| MAVM-863-3    | U7999A 758 | Channelized Agile Audio/Video Modulator +40 dBmV, 470-758 MHz (UHF), Three Channel Modulator     |
| MAVM-863-3    | U7999A 806 | Channelized Agile Audio/Video Modulator +40 dBmV, 758-806 MHz (UHF), Three Channel Modulator     |
| MAVM-863-FP   | 7963A      | Channelized Agile Audio/Video Modulator 860 MHz, Front Panel                                     |
| MAVM-863-MB   | 7983A      | Channelized Agile Audio/Video Modulator, 860 MHz, Modulator Base                                 |
| MAVM-863-PS   | 7972A      | Channelized Agile Audio/Video Modulator, 860 MHz, Power Supply                                   |

### Output Filter Modules (OFM)

| Model      | Stock No.  | Description                                      |
|------------|------------|--|
| OFM-40-860 | U7984A 806 | Output Filter Module +40 dBmV, 758-806 MHz (UHF) |
| OFM-40-860 | U7984A 758 | Output Filter Module +40 dBmV, 470-758 MHz (UHF) |
| OFM-40-860 | S7984A 37  | Output Filter Module +40 dBmV, 7-37 MHz (SUB)    |
| OFM-40-860 | 7984A 860  | Output Filter Module +40 dBmV, 756-860 MHz       |
| OFM-40-860 | 7984A 300  | Output Filter Module +40 dBmV, 54-300 MHz        |
| OFM-40-860 | 7984A 756  | Output Filter Module +40 dBmV, 300-756 MHz       |
| OFM-60-860 | U7985A 758 | Output Filter Module +60 dBmV, 470-758 MHz (UHF) |
| OFM-60-860 | U7985A 806 | Output Filter Module +60 dBmV, 758-806 MHz (UHF) |
| OFM-60-860 | S7985A 37  | Output Filter Module +60 dBmV, 7-37 MHz (SUB)    |
| OFM-60-860 | 7985A 860  | Output Filter Module +60 dBmV, 756-860 MHz       |
| OFM-60-860 | 7985A 756  | Output Filter Module +60 dBmV, 300-756 MHz       |
| OFM-60-860 | 7985A 300  | Output Filter Module +60 dBmV, 54-300 MHz        |

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