

AM Series

Agile Audio/Video Modulators



○ Features & Benefits

- Supports All Broadcast and CATV Channels, Including All HRC and IRC Assignments
- EAS/ALT IF Ready Via Manual or Automatic Mode
- Superior Broadband Noise Performance (-76 dB)
- Fully Compatible With BTSC Encoded Stereo Audio
- All Level Controls are Conveniently Located on Front Panel For Easy Set Up and Adjustment
- Rack Mountable - 1 EIA (1.75") Rack Space
- UL Listed with Three Year Product Warranty

The AM-60-860 is a professional quality agile audio/video modulator. It is equipped with the Emergency Alert System (EAS) feature, which can also be used as an alternate IF input. The unit provides an audio and video modulated RF carrier on any channel from 54 to 860 MHz. Any standard audio/video source can be used, such as satellite receivers, television cameras, video tape recorders, or television demodulators.

Channel tuning is easily accomplished with the use of front panel push button switches. Frequency plans including CATV Standard EIA, IRC, HRC & Broadcast are available in the 54-860 MHz frequency range. All channel frequency information with appropriate FCC offsets is pre-programmed and tuned electronically via microprocessor.

The unit has a wide range of standard and optional features that make it ideal for advanced CATV systems. 4.5 MHz aural input, and 60 Ohm balanced audio have been incorporated as standard equipment on the AM-60-860. A stereo audio option, Option 05, allows the integration of a BTSC stereo encoder module. This optional stereo encoder converts stereo left and right audio into a composite BTSC stereo audio signal. The factory installed option provides 20 dB of stereo separation, less than 1.0% total harmonic distortion and 60 dB signal to noise ratio.

The AM-60-860 meets FCC Docket 21006 aeronautical frequency offset requirements (± 5 kHz video carrier accuracy). Outstanding in channel carrier to noise performance of 67 dB typical is achieved by the unit. A custom SAW IF filter is employed to provide true vestigial sideband selectivity with built-in FCC group delay equalization. A state of the art converter design with preprogrammed microprocessor controlled channel tuning @ 60 dBmV output ensures the Blonder Tongue AM-60-860 is the ideal agile modulator for any demanding CATV headend need.

○ Specifications

RF

Frequency Range: 54-860 MHz
 Channels: CATV, VHF, UHF (STD,HRC,IRC)
 FCC Offset (pre-programmed):
 0, +12.5, or 25 kHz
 Output Level - Min: +60 dBmV
 Output Level Adjust: 10 dB
 Aural/Visual Carrier Ratio: -15 ±5 dB
 Visual Carrier Frequency Tolerance
 Standard Channels: ±10 kHz
 FCC Aeronautical Channels: ±5 max kHz
 4.5 MHz Aural Inter Carrier Frequency: ±150Hz
 Channel Selectivity:
 Adjacent Aural and Below: -40 dB
 Adjacent Picture and Above: -50 dB
 Spurious Outputs: -60 dBc
 C/N Ratio In Channel: 67 dB
 Broadband Noise: -80 dBc
 Output Impedance: 75 Ohm
 Output Return Loss: 14 dB

IF

Aural Frequency Standard: 41.25 MHz
 Visual Frequency Standard: 45.75 MHz
 Composite IF Loop Output
 Aural Carrier Level: +20 dBmV
 Visual Carrier Level: +35 dBmV
 Output/Input Impedance: 75 Ohm
 Output Return Loss: 16 dB
 Input Return Loss: 20 dB
 EAS/ALT IF Input Level: 36 dBmV @ 45.75 MHz
 EAS/ALT IF Switch Isolation: >60 dB

Video

Input Level: 1.0 V p-p
 Frequency Response
 fv-0.5 MHz to fv+4.2 MHz: ±1.0 dB
 P-P Video to RMS Hum Ratio: 65 dB
 Video Signal-to-Noise Ratio, Weighted: 64 dB
 Differential Gain: 2.0 %
 Differential Phase: 1.0 °
 Over Modulation Indicator: 87.5, ±2.5 %
 Input Impedance: 75 Ohm
 Input Return Loss: 18 dB

Audio

Input Level: 140 mV RMS
 Ext. 4.5 MHz Input Level: +35 to +45 dBmV
 Frequency Range: 20 Hz to 20 kHz
 Frequency Response: ±1.0 dB
 Pre-Emphasis-Mono: 75 µs
 Audio Signal-to-Noise: 60 dB
 Total Harmonic Distortion: 0.6 %
 Over Modulation Indicator : 25, ±2 kHz
 Input Impedance: 600, balanced Ohm

General

Power Requirements
 Voltage: 117, ±10% VAC
 Frequency: 60 Hz
 Power: 25 W
 Fuse: 0.40 A
 Temperature Range: 0 to +50 °C

Mechanical

Dimensions (WxHxD):
 19.0 x 1.75 x 14.5 in
 483 x 44 x 368 mm
 Weight: 7 lbs. (3.18 kg)

Connectors (Rear Panel)

Video Input Standard: "F" type, female
 Option 02: BNC Video Input: BNC type, female
 Option 10: Composite A/V: "F" type, female
 Audio Input Standard 600 Ohm Audio Input:
 Barrier Strip
 Composite Video/Audio Input Option 10:
 Composite A/V: "F" type, female
 IF Output: "F" type, female
 IF Input: "F" type, female
 RF Output: "F" type, female
 EAS/ALT IF: "F" type, female

Controls (Front Panel)

Frequency Selection: Push-Button 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
 EAS/ALT IF: LED, green

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

○ Ordering Information

| Model | Stock No. | Description |
|-----------|-----------|---|
| AM-60-860 | 59415 | Agile Audio/Video Modulator +60 dBmV, 54-860 MHz with EAS Feature |

Options

| Model | Stock No. | Description |
|-----------|-----------|--|
| AM-OPT 02 | 5902 | AM Series Option: Video Input, BNC Connector |
| AM-OPT 04 | 5904 | AM Series Option: Sub-Band Output |
| AM-OPT 05 | 5905 | AM Series Option: Integrated BTSC Stereo Audio |
| AM-OPT 07 | 5907 | AM Series Option: Video AGC |
| AM-OPT 10 | 5910 | AM Series Option: Composite Video & 4.5 MHz Audio Input |
| AM-OPT 20 | 5920 | AM Series Option: Digital Control, Serial RS-232 |
| AM-OPT H | 5947 | AM Series Option: Option 2 & 9 Video Input BNC Connector & Balanced Audio, 600 Ohm |

(Not all options/combinations are available)

AM Series

Agile Audio/Video Modulators



○ Features & Benefits

- Supports All Broadcast and CATV Channels, Including All HRC and IRC Assignments
- EAS/ALT IF Ready Via Manual or Automatic Mode
- Superior Broadband Noise Performance (-76 dB)
- Fully Compatible With BTSC Encoded Stereo Audio
- Rack Mountable - 1 EIA (1.75") Rack Space
- UL Listed with Three Year Product Warranty

The AM Series are professional quality, agile audio/video modulators. They are equipped with the Emergency Alert System (EAS) feature, which can also be used as an alternate IF input. These units provide audio and video modulated RF carrier on any channel in 54 to 550/750 MHz frequency range. The AM Series is ideal placing audio and video onto any unused channel (broadcast CATV, including HRC and IRC assignments). Any standard audio/video source can be used, such as satellite receivers, television cameras, video tape recorders, or television demodulators.

Agile channel selection permits on-the-fly channel changes and reduces the need for large inventories of channelized products. Channel selection is accomplished with the use of simple to use front panel accessible dip switches.

These modulators have a wide range of standard and optional features that make them very suitable for advanced CATV systems. Four models are available with different output levels, frequency ranges and a variety of options.

All models feature rock solid, synthesized frequency control, with a tuning increment of 250 kHz. A custom SAW filter is employed to provide true vestigial sideband selectivity with built-in FCC group delay pre-distortion. These modulators have an external IF loop, which allows interfacing with video all-call and signal scrambling systems. The EAS Alternate IF feature allows the choice between manual and automatic selection of EAS/ALT IF input signal. This is done through a 3 position terminal strip on the rear of the unit.

The AM Series meets FCC Docket 21006 aeronautical frequency offset requirements (± 5 kHz video carrier accuracy). These modulators provide extremely clean output signals with distortion products (-60 dB or better). An exceptionally low broadband noise floor (-76 dBc or better) makes the AM Series ideal for large, multiple channel headends without the need for additional filtering.

AM Series

Agile Audio/Video Modulators

○ Specifications

RF

Frequency Range: 54-860 MHz
Channels: CATV, VHF, UHF (STD,HRC,IRC)
FCC Offset (Pre-programmed):
0, +12.5, or 25 kHz
Output Level - Min: +60 dBmV
Output Level Adjust: 10 dB
Aural/Visual Carrier Ratio: -15 ±5 dB
Visual Carrier Frequency Tolerance
Standard Channels: ±10 kHz
FCC Aeronautical Channels: ±5 max kHz
4.5 MHz Aural Inter
Carrier Frequency: ±150 Hz
Channel Selectivity:
Adjacent Aural and Below: -40 dB
Adjacent Picture and Above: -50 dB
Spurious Outputs: -60 dBc
C/N Ratio In Channel: 67 dB
Broadband Noise: -80 dBc
Output Impedance: 75 ohm
Output Return Loss: 14 dB

IF

Aural Frequency Standard: 41.25 MHz
Visual Frequency Standard: 45.75 MHz
Composite IF Loop Output Aural Carrier Level:
+20 dBmV
Visual Carrier Level: +35 dBmV
Output/Input Impedance: 75 ohm
Output Return Loss: 16 dB
Input Return Loss: 20 dB
EAS/ALT IF Input Level: 36 dBmV @ 45.75 MHz
EAS/ALT IF Switch Isolation: >60 dB

Video

Input Level: 1.0 V p-p
Frequency Response
fv-0.5 MHz to fv+4.2 MHz: ±1.0 dB
P-P Video to RMS Hum Ratio: 65 dB
Video Signal-to-Noise Ratio, Weighted: 64 dB
Differential Gain: 2.0 %
Differential Phase: 1.0 °
Over Modulation Indicator: 87.5, ±2.5 %
Input Impedance: 75 ohm
Input Return Loss: 18 dB

Audio

Input Level: 140 mV RMS
Ext. 4.5 MHz Input Level: +35 to +45 dBmV
Frequency Range: 20 Hz to 20 kHz
Frequency Response: ±1.0 dB
Pre-Emphasis-Mono: 75 µs
Audio Signal-to-Noise: 60 dB
Total Harmonic Distortion: 0.6 %
Over Modulation Indicator: 25, ±2 kHz
Input Impedance: 600, balanced ohm

General

Power Requirements
Voltage: 117, ±10% VAC
Frequency: 60 Hz
Power: 25 W
Fuse: 0.40 A
Temperature Range: 0 to +50 °C

Mechanical

Dimensions (WxHxD):
19.0 x 1.75 x 14.5 in
483 x 44 x 368 mm
Weight: 7 lbs. (3.18 kg)

Connectors (Rear Panel)

Video Input Standard: "F" Type, Female
Option 02: BNC Video Input: BNC Type, Female
Option 10: Composite A/V: "F" Type, Female
Audio Input Standard 600 Ω Audio Input:
Barrier Strip
Composite Video/Audio Input Option 10:
"F" Type, Female
Composite A/V: "F" Type, Female
IF Output: "F" Type, Female
IF Input: "F" Type, Female
RF Output: "F" Type, Female
EAS/ALT IF: "F" Type, Female

Controls (Front Panel)

Frequency Selection: Push-Button 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
EAS/ALT IF: LED, Green

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

○ Ordering Information

| Model | Stock No. | Description |
|------------|-----------|---|
| AM-40-550B | 59402 | Agile Audio/Video Modulator +40 dBmV, 54-550 MHz with EAS Feature |
| AM-40-750B | 59403 | Agile Audio/Video Modulator +40 dBmV, 54-750 MHz with EAS Feature |
| AM-60-550B | 59417 | Agile Audio/Video Modulator +60 dBmV, 54-550 MHz with EAS Feature |
| AM-60-750B | 59418 | Agile Audio/Video Modulator +60 dBmV, 54-750 MHz with EAS Feature |

Options

| Model | Stock No. | Description |
|-----------|-----------|--|
| AM-OPT 01 | 5901 | AM Series Option: 4.5 MHz Audio Input |
| AM-OPT 02 | 5902 | AM Series Option: Video Input, BNC Connector |
| AM-OPT 04 | 5904 | AM Series Option: Sub-Band Output |
| AM-OPT 05 | 5905 | AM Series Option: Integrated BTSC Stereo Audio |
| AM-OPT 07 | 5907 | AM Series Option: Video AGC |
| AM-OPT 09 | 5909 | AM Series Option: Balanced Audio Input, 600 Ohm, Stocking Option |
| AM-OPT 10 | 5910 | AM Series Option: Composite Video & 4.5 MHz Audio Input |
| AM-OPT 20 | 5920 | AM Series Option: Digital Control, Serial RS-232 |
| AM-OPT H | 5947 | AM Series Option: Option 2 & 9 Video Input BNC Connector & Balanced Audio, 600 Ohm |

(Not all options/combinations are available)

FAxM Series

Triple Channel Frequency Agile Audio/Video Modulators



○ Features & Benefits

- Rack Mountable - 1 EIA (1.75") Rack Space
- UL Listed with Three Year Product Warranty
- Supports All Broadcast and CATV Channels, Including HRC and IRC Assignments from 54 to 860 MHz
- Front Panel Accessible Level Controls for Easy Set-Up and Adjustments
- Fully Compatible With BTSC Encoded Stereo Audio

The FAxM Series is a professional quality, multiple channel agile audio/video modulator. This unit provides audio and video modulated RF carriers on any channel in the 54 to 860 MHz frequency range, using only one rack space. Any standard audio/video source can be used, such as satellite receivers, television cameras, video tape recorders, or television demodulators. Agile channel selection permits on-the-fly channel changes and reduces the need for large inventories of channelized products. Four modules are available with 2 basic distinctions. The FA3M-50-860, Stock No. 5961B, comes equipped with independent IF loops, which allows interfacing with video all-call and signal scrambling systems. IF loops are available in a triple channel configuration only. The FA1M; FA2M and FA3M, Stock No. 59711A, 59712A and 59713A respectively do not have IF loop capability.

○ Specifications

RF

Frequency Range: 54-806 MHz
Channels: CATV, VHF, UHF (STD,HRC,IRC)
FCC Offset (pre-programmed):
0, +12.5, or 25 kHz
Output Level - Combined Min: +50 dBmV
Output Level Adjust: 15 dB
Aural/Visual Carrier Ratio: -10 to -17 dB
Visual Carrier Frequency Tolerance
Standard Channels: ± 5 kHz
FCC Aeronautical Channels:
 ± 3 max kHz
4.5 MHz Aural Inter Carrier Frequency: ± 1 kHz
Channel Selectivity
Adjacent Aural and Below: -40 dB
Adjacent Picture and Above: -50 dB
Spurious Outputs: -60 dBc
C/N Ratio In Channel: 63 dB
Broadband Noise: -70 dBc
Output Impedance: 75 ohm
Output Return Loss: 12 dB

Video

Input Level: 1.0 V p-p
Frequency Response
fv-0.5 MHz to fv+4.2 MHz: ± 1.0 dB
P-P Video to RMS Hum Ratio: 65 dB
Video Signal-to-Noise Ratio,
NTC-7 Weighted: 62 dB
Differential Gain: 2.0 %
Differential Phase: 1.0 °
Over Modulation Indicator: 87.5, ± 2.5 %
Input Impedance: 75 ohm
Input Return Loss: 24 dB, min

Audio

Input Level: 140 mV RMS
Ext. 4.5 MHz Input Level: 40 \pm 1 dBmV
Frequency Range: 20 Hz to 20 kHz

Pre-Emphasis-Mono: 75 μ s
Frequency Response: ± 1.0 dB
IF Pre-Emphasis Defeated: +0.5 dB
Audio Signal-to-Noise: 58 dB
Total Harmonic Distortion: 0.6 %
Over Modulation Indicator : 25, ± 2 kHz
Input Impedance: Greater than 10 K Ω ,
Unbalanced

General

Power Requirements: 110 VAC to 260 VAC
Frequency: 47 to 63 Hz
Temperature Range: 0° to +50° C
AC Current: 0.32 Amp for 115 VAC
Output Voltage: +12 VDC, +5 VDC
Max Current Output/Voltage: 0.7 Amp

Mechanical

Dimensions (WxHxD): 19 x 1.75 x 14.25 in
Weight: 7 lbs (approx)

Connectors (Rear Panel)

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

Connectors (Front Panel)

Frequency Selection: Push-Button Switches
Video Level: Control
A/V Ratio: Control
Audio Level: Control
RF Output Level: Control
Channel Enter: Push-Button

Indicators (Front Panel)

Power ON/Status: 2 Color, LED, Red/Green
Video Over Modulation: LED, Red
Audio Over Modulation: LED, Red

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

○ Ordering Information

| Model | Stock No. | Description |
|----------------|-----------|--|
| FA3M-50-860-IF | 5961B | Frequency Agile Modulator, Triple Channel Unit Agile Output 54-860 MHz, With Independent IF Loops |
| FA3M-50-860 | 59713A | Frequency Agile Modulator, Triple Channel Unit Agile Output 54-860 MHz, STD CATV, HRC, IRC, +50 dBmV |
| FA2M-50-860 | 59712A | Frequency Agile Modulator, Double Channel Unit Agile Output 54-860 MHz, STD CATV, HRC, IRC, +50 dBmV |
| FA1M-50-860 | 59711A | Frequency Agile Modulator, Single Channel Unit Agile Output 54-860 MHz, STD CATV, HRC, IRC, +50 dBmV |
| AMCM-860H | 7766HA | Modular Agile Audio/Video Modulator (MIRC-4 Series) +45 dBmV, 54-860 MHz Agile |

HE Series

Modular Headend System - AMCM-860



The AMCM-860 is a professional quality agile audio/video modulator with an output frequency range of 54-860 MHz. It joins Blonder Tongue's family of modular headend components and works in conjunction with the MIRC-12V rack chassis and MIPS-12C power supply.

The unit provides a modulated aural & visual carrier on any channel in the 54 to 860 MHz range. Frequency plans including Standard CATV, IRC, HRC and Broadcast are accommodated via front panel selection. Channel tuning is easily accomplished with the use of front panel switches following the entry instructions. All channels with appropriate FCC offsets are pre-programmed and tuned electronically via microprocessor.

The unit accepts any standard audio/video source such as satellite receivers, television camera, video tape recorders or demodulators. The advanced design ensures access for all level and over-modulation controls via the front panel with LED indicators for each. Internal selectable jumper settings allow for compatibility of features such as defeatable audio pre-emphasis for BTSC compatibility.

Special features have been built into the unit firmware to ensure the best possible user experience. This includes the ability to alert an operator to any inadvertent or designed change to the unit switches by flashing a red error indicator. The indicator will continue to flash until the condition is corrected or the unit is reset.

○ Features & Benefits

- Meets FCC Docket 21006 Aeronautical Frequency Offset Requirements
- Fully Compatible With BTSC Encoded Stereo Audio
- Three Year Warranty
- Front Panel Accessible Level Controls for Easy Set-Up and Adjustments
- Die-Cast Chassis Offers Superior Protection Against Ingress or Egress
- Supports All Broadcast and CATV Channels, Including HRC and IRC Assignments from 54 to 860 MHz

○ Specifications

RF

Frequency Range: 54-860 MHz
Channels: CATV, VHF, UHF (STD,HRC,IRC)
FCC Offset (pre-programmed):
0, +12.5, or 25 kHz
Output Level - Min: +45 dBmV
Output Level Adjust: 15 dB
Aural/Visual Carrier Ratio: -10 to -17 dB
Visual Carrier Frequency Tolerance
Standard Channels: ± 5 kHz
FCC Aeronautical Channels: ± 3 max kHz
4.5 MHz Aural Inter Carrier Frequency: ± 1 Hz
Channel Selectivity:
Adjacent Aural and Below: -40 dB
Adjacent Picture and Above: -50 dB
Spurious Outputs: -60 dBc
C/N Ratio In Channel: 65 dB
Broadband Noise: -76 dBc
Output Impedance: 75 ohm
Output Return Loss: 12 dB

Video

Input Level: 1.0 V p-p
Frequency Response
fv-0.5 MHz to fv+4.2 MHz: ± 1.0 dB
P-P Video to RMS Hum Ratio: 65 dB
Video Signal-to-Noise Ratio,
NTC-7 Weighted: 62 dB
Differential Gain: 2.0 %
Differential Phase: 1.0 °
Over Modulation Indicator: 87.5, ± 2.5 %
Input Impedance: 75 ohm
Input Return Loss: 24 min, dB

Audio

Input Level: 140 mV RMS
Ext. 4.5 MHz Input Level: 40 ± 1 dBmV
Frequency Range: 20 Hz to 20 kHz

Pre-Emphasis-Mono: 75 μ s
Frequency Response: ± 1.0 dB
IF Pre-Emphases defeated: +0.5 dB
Audio Signal-to-Noise: 58 dB
Total Harmonic Distortion: 0.6 %
Over Modulation Indicator: 25, ± 2 kHz
Input Impedance: Greater than 10k Ω , unbalanced

General

Power Requirements
Voltage: +12, +5 VDC
Power: 5 W
Temperature Range: 0 to +50 °C
Current: 235, 375 mA

Mechanical

Dimensions (WxHxD):
1.15 x 3.5 x 7.5 in
29 x 89 x 101 mm
Weight: 0.8 lbs, .36 kg

Connectors (Rear Panel)

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

Controls (Front Panel)

Frequency Selection: Push-Button Switches
Video Level: Control
A/V Ratio: Control
Audio Level: Control
RF Output Level: Control
Channel Enter: Push Button

Indicators (Front Panel)

Power ON: 2 color LED, Red/Green
Video Over Modulation: LED, Red
Audio Over Modulation: LED, Red

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

○ Ordering Information

| Model | Stock No. | Description |
|-----------|-----------|--|
| AMCM-860 | 7766A | Modular Agile Audio/Video Modulator (HE 12 Series) +45 dBmV, 54-860 MHz Agile |
| AMCM-860H | 7766HA | Modular Agile Audio/Video Modulator (MIRC-4 Series) +45 dBmV, 54-860 MHz Agile |