

The R.L. Drake Video Modulator System is a professional quality modular headend system designed to optimize rack space. An assortment of up to (12) modular units, such as the fixed channel series of modulators, or agile modulators, or compatible audio/video products can be racked alongside a single power supply in the Drake 12 position rack mount. The RMM4 rack mount accepts up to (4) modular units.

The R.L. Drake VMM806AG Audio-Video Modulator is a high quality, vestigial sideband unit with synthesized visual and aural carriers. The frequency agile VMM806AG allows front panel pushwheel switch selection of standard CATV channels 2 through 125, or VHF/UHF TV channels 2 through 69. Aeronautical channels are offset positive with a tolerance of ± 5 kHz as required by FCC rules.

The heterodyne conversion system, in conjunction with the use of a SAW filter, ensures optimum vestigial selectivity for adjacent channel headends.

An optional FCC predistortion SAW response is also available for the VMM806AG.

The modulator is designed to accept any standard audio/video source such as NTSC video and audio baseband signals from a satellite receiver, TV camera, videotape recorder, TV demodulator, or similar signal source.

The modulator is designed to accept standard (negative sync) polarity video at 0.6 to 1.5 Vp-p level. All level controls are located on the front panel for ease of operation. Output level is +45 dBmV and is adjustable over a 15 dB range.

Field-defeatable audio pre-emphasis allows transmission of BTSC encoded baseband stereo audio signals using the Drake stereo encoder. The AUDIO INPUT can also accept a 4.5 MHz audio modulated carrier by changing internal jumpers.

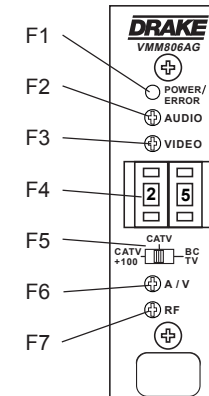


Figure 1

F1 - POWER/ERROR Indicator

Lights when the unit is connected to the required source of DC power via the rear panel DC INPUT connector. A flashing condition indicates an invalid channel setting or other conditions that would cause the unit to operate on an invalid channel. The RF output is switched off for flashing (ERROR) conditions.

F2 - AUDIO Level Control

The setting of this screwdriver adjustment determines the aural carrier deviation. Clockwise rotation increases the carrier deviation.

F3 - VIDEO Level Control

The setting of this screwdriver adjustment determines the video modulation level. Clockwise rotation increases the modulation depth.

F4 - Channel Number Switch

Sets the desired operating channel for standard CATV channels 02 through 125 or Broadcast TV channels 02 through 69. See also Item F5 which sets the type of channel (CATV or Broadcast TV) and sets the leading "1" for CATV channels 100 through 125.

F5 - Mode Switch

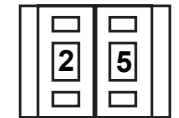
Sets the type of channel, CATV or Broadcast TV ("BC TV"). The first position of the switch ("100") sets a leading "1" for CATV channels 100 through 125. See also Item F4 for setting the channel number.

For example:
Setting for CATV channel "125"-



CATV +100 BC TV

For example:
Setting for CATV channel "25"-



CATV +100 BC TV

F6 - A/V Ratio Control

This screwdriver adjustment varies the level of the aural carrier over a range from 11 to 18 dB below the visual carrier. The aural carrier should be adjusted to approximately 15 dB below the visual carrier (normal operation). Clockwise rotation increases the aural carrier level.

F7 - RF Output Level

This screwdriver adjustment permits decreasing the RF output level a minimum of 15 dB as the control is rotated counterclockwise. Set the control for a +45 dBmV output level.

REAR PANEL CONNECTIONS / INTERNAL JUMPERS

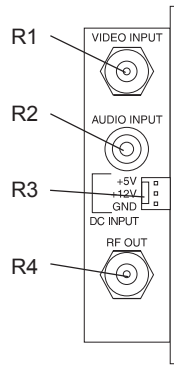


Figure 2

R1 - VIDEO INPUT Connector

This is the baseband video input to the IF circuits. This input accepts baseband input levels from 0.6 Vp-p to 1.5 Vp-p.

R2 - AUDIO INPUT Connector

This is an unbalanced audio input to the IF circuits. This "RCA" (phono) connector input accepts baseband audio from 100 mVrms to 3 Vrms levels.

NOTE: An internally selected test point jumper defeats the audio pre-emphasis for stereo capability. See the illustration on this page.

4.5 MHz Audio Input: This AUDIO INPUT can also accept a 4.5 MHz audio modulated carrier by reconfiguring two specified internal jumper settings. Required 4.5 MHz input level is +40 dBmV ± 2 dB. Some stereo generators or satellite receivers provide audio output in a 4.5 MHz audio modulated carrier format. See the illustration on this page.

R3 - DC INPUT Connector

This 3-pin connector (Male) accepts the appropriate mating DC power cable. Observe proper orientation and wiring.

R4 - RF OUTPUT Connector

This is the modulator output.

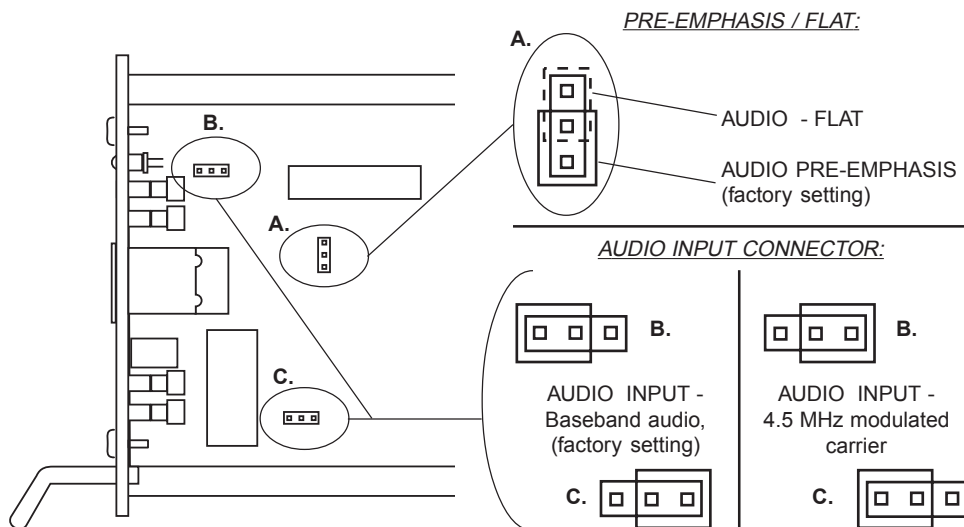


Figure 3

SPECIFICATIONS

RF

Frequency Range:	54 to 806 MHz; Standard CATV channels 2 to 125, Broadcast TV channels 2 to 69.
FCC Frequency Offsets:	Automatic (+12.5 kHz, +25 kHz, or none as required for each channel).
Output level:	+45 dBmV (minimum -15 dB adjustment range).
Output Impedance:	75 Ohms, 10 dB return loss.
A/V Ratio:	Audio carrier level, adjustable from -19 to -12 dB (± 2 dB) referenced to video carrier level.
Frequency Stability:	Within ± 5 kHz from 54 to 550 MHz including all aeronautical/ FCC offset channels. Within ± 7.5 kHz from 550 to 806 MHz.
Intercarrier Frequency:	4.5 MHz ± 50 Hz.
Spurious Outputs (5 MHz to 900 MHz):	-60 dBc typical, measured at -15 dB A/V ratio and with modulator output level of +45 dBmV.
In-channel C/N:	60 dB typical, 4 MHz bandwidth.
Broadband Noise:	-78 dBc typical, 4 MHz bandwidth @ +45 dBmV output.

VIDEO

Input Level for 87.5% Modulation:	0.6 Vp-p to 1.5 Vp-p. Manual gain adjust with front panel control.
Input Impedance:	75 Ohms, return loss of 20 dB minimum.
Frequency Response:	20 Hz to 4.2 MHz, ± 1 dB.
C/L Delay:	Within 50 nSec. of 0 nSec. (standard), or FCC predistortion, (option).
Differential Gain:	3% maximum (10 to 90% APL).
Differential Phase:	3 $^{\circ}$ maximum (10 to 90% APL).

AUDIO

Input Level for 25 kHz Peak Deviation:	125 mV rms to 3 V rms. Manual gain adjust with front panel control.
Input Impedance:	Greater than 10 K Ohms, unbalanced.
Pre-emphasis:	75 μ Sec., defeatable by internal jumper for BTSC baseband stereo compatibility.
Frequency Response:	40 Hz to 15 kHz, ± 2.0 dB referenced to 75 μ Sec. pre-emphasis curve. 40 Hz to 100 kHz, ± 0.5 dB if pre-emphasis is defeated.
S/N ratio:	55dB.
Total Harmonic Distortion:	1% maximum.

4.5MHz INPUT

(AUDIO INPUT Connector – selected by internal jumpers).	
Input Impedance:	75 Ohms.
Input Level:	+40 dBmV ± 2 dB for -15 dB A/V ratio.

GENERAL

DC Power Input:	+12 V $\pm 5\%$ at 160 mA typical, 180 mA maximum. +5 V $\pm 5\%$ at 330 mA typical, 380 mA maximum.
Operating Temperature:	0 $^{\circ}$ C to +50 $^{\circ}$ C ambient.
Size:	1" W x 3.5" H x 7.5" D. (2.5 cm) W x (8.9 cm) H x (19.1 cm) D.
Weight:	10.7 oz. (0.3 Kg).