

**THREE YEAR LIMITED WARRANTY**

R.L. DRAKE HOLDINGS LLC warrants to the original purchaser this product shall be free from defects in material or workmanship for three (3) years from the date of original purchase. During the warranty period R.L. DRAKE HOLDINGS LLC or an authorized Drake service facility will provide, free of charge, both parts and labor necessary to correct defects in material and workmanship. At its option, R.L. DRAKE HOLDINGS LLC may replace a defective unit.

To obtain such a warranty service, the original purchaser must:

1. Retain invoice or original proof of purchase to establish the start of the warranty period.
2. Notify R.L. DRAKE HOLDINGS LLC or the nearest authorized service facility, as soon as possible after discovery of a possible defect, of:
  - a) the model and serial number,
  - b) the identity of the seller and the approximate date of purchase; and
  - c) A detailed description of the problem, including details on the electrical connection to associated equipment and the list of such equipment.
3. Deliver the product to R.L. DRAKE HOLDINGS LLC or the nearest authorized service facility, or ship the same in its original container or equivalent, fully insured and shipping charges prepaid.

Correct maintenance, repair, and use are important to obtain proper performance from this product. Therefore carefully read the Instruction Manual. This warranty does not apply to any defect that R.L. DRAKE HOLDINGS LLC determines is due to:

1. Improper maintenance or repair, including the installation of parts or accessories that do not conform to the quality and specifications of the original parts.
2. Misuse, abuse, neglect or improper installation.
3. Accidental or intentional damage.

All implied warranties, if any, including warranties of merchantability and fitness for a particular purpose, terminate three (3) years from the date of the original purchase.

The foregoing constitutes R.L. DRAKE HOLDINGS LLC'S entire obligation with respect to this product, and the original purchaser shall have no other remedy and no claim for incidental or consequential damages, losses or expenses. Some states do not allow limitations on how long an implied warranty lasts or do not allow the exclusions or limitation of incidental or consequential damages, so the above limitation and exclusion may not apply to you.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state. This warranty shall be construed under the laws of Ohio.

**SPECIFICATIONS****RF**

Frequency Range:  
VMM600- 54-600 MHz.  
Factory set to one of the following channels:  
Cable Channels 2-86, 95-99  
VMM806- 600-806 MHz.  
Factory set to one of the following channels:  
Cable Channels 87-125  
Impedance: 75 Ohms  
Return Loss: 15 dB  
Power Level: +45 dBmV  
Power Level Range: 10 dB continuously adjustable  
Carrier-to-Noise: 63 dB  
Broadband Noise: -90 dBc  
Spurious Outputs: -66 dBc  
Aural/Visual Carrier Ratio: -11 to -19 dB  
4.5 MHz Aural Inter-carrier  
Freq. Tolerance:  $\pm 250$  Hz; 32 to 122 °F

**VIDEO**

Connector: "F" Female  
Impedance: 75 Ohms  
Return Loss: 20 dB  
Input Level: 1.0 volt Peak to Peak  
Frequency Response: 1.0 dB Peak to Valley  
Peak to Peak Video-to-RMS  
Hum Ratio: 64 dB  
Signal-to-Noise Ratio: 65 dB  
Differential Gain: 2.0%  
Differential Phase: 2.0 degree  
C/L Delay: Per FCC Requirements

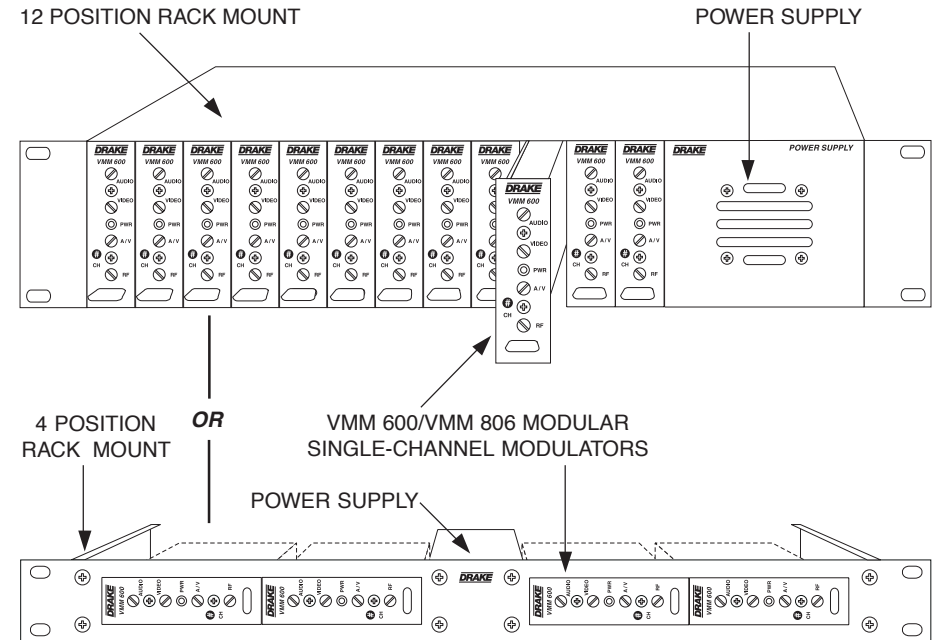
**AUDIO**

Connector: RCA  
Input Impedance: Greater than 10k Ohms, unbalanced  
Input Level: 0.5 to 4.0 volt peak-to-peak (constant AGC range)  
Frequency Range: 50 Hz to 12 kHz  
Frequency Response:  $\pm 0.5$  dB  
Total Harmonic Distortion: 1% @ 25 kHz deviation  
Signal-to-Noise Ratio: 70 dB

**GENERAL**

DC Power Input: +12 VDC @ 240 mA,  
+5 VDC @ 35 mA,  
Operating Temperature: 0°C to +50°C.  
Size: 1" W x 3.5" H x 7.78" D.  
Weight: 11 oz.

Specifications subject to change without notice or obligation.



The R.L. Drake VMM 600/VMM 806 Video Modulator System is a professional quality modular headend system designed to optimize rack space. Up to 12 VMM 600 and/or VMM 806 modulators can be racked alongside a single power supply in the Drake 12 position rack mount or up to 4 modulators can be racked in the 4 position rack mount. Either model is a high quality, fixed channel heterodyne audio/video modulator.

The VMM 600 provides a modulated visual and RF carrier output on any single channel 2-86, 95-99; Aeronautical channels are offset positive with a tolerance of  $\pm 5$  kHz as required by FCC rules.

The VMM 806 provides a modulated visual and RF carrier output on any single channel 87-125.

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

The modulators are 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 modulators have Audio AGC that eliminates variations in loudness level that may be present among various program sources.

The modulators accept standard (sync negative) polarity video at a 0.7 to 2.5 Vp-p level. All level controls are located on the front panel for ease of operation. Output level of +45 dBmV is typical and is adjustable from +30 to +45 dBmV.

Field-defeatable audio pre-emphasis enables passing of BTSC encoded standard baseband stereo audio signals.

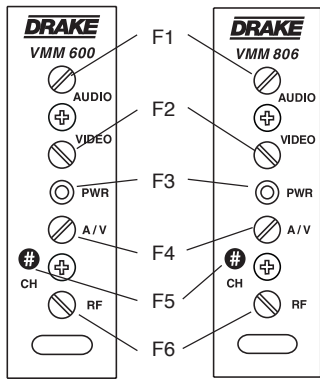


Figure 1

**F1 - AUDIO Level Control**

This screwdriver adjustment varies the peak aural carrier deviation. Clockwise rotation increases the carrier deviation.

**F2 - VIDEO Level Control**

This screwdriver adjustment varies the video modulation level. Clockwise rotation increases the modulation depth.

**F3 - POWER Indicator**

Lights when the unit is connected to the required source of DC power via the rear panel DC INPUT connector.

**F4 - A/V Ratio Control**

This screwdriver adjustment varies the level of the aural carrier over a range from 11 to 19 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 and thus decreases the A/V ratio.

**F5 - "CH#" (Channel)**

The modulator is factory aligned to the channel number indicated.

**F6 - RF Output Level**

This screwdriver adjustment varies the RF Output level from approximately 35-45 dBmV. The maximum output level is set with the adjustment fully clockwise.

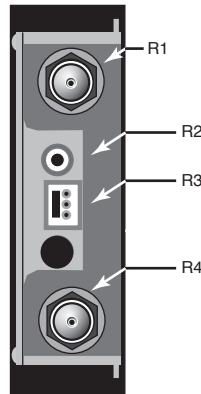


Figure 2

**R1 - VIDEO INPUT Connector**

This input accepts baseband input thru 4.2 MHz video at levels from 0.7 Vp-p to 1.5 Vp-p.

**R2 - AUDIO INPUT Connector**

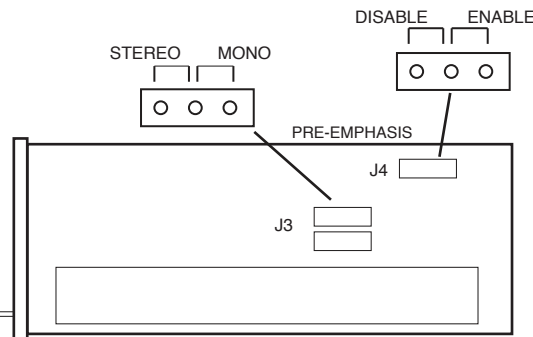
This "RCA" (phono) connector input accepts baseband audio at a nominal level of 0.5 VPP. NOTE: two internal jumpers can be configured to defeat the audio pre-emphasis or stereo capability. Top cover must be opened to access.

**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 RF output



Internal Jumper Settings

**CONNECTIONS AND CONTROLS**

All connections to and from each modulator are made through the rear panel. Figure 3 illustrates an installation with 12 modulator units combined through a passive signal combiner. Additional channels can be added by using additional VMM 600 or VMM 806 modulators and either multi-port combiners or combinations of two-port combiners.

**INSTALLATION NOTES**

Level adjustment provides optimum performance in multi-channel installations. The modulator outputs should be checked periodically with a spectrum analyzer to maintain a  $\pm 1$  dB variation of adjacent channel carriers.

Aural/Visual (A/V) ratios should be held to -15 dB or less. The output 'RF' and 'A/V (Ratio)' controls are used respectively to make these adjustments.

**RACK MOUNTING**

Adequate ventilation is very important in multi-channel installations. Units should be spaced apart by at least one panel height (1.75") wherever possible, and some air movement is advisable in enclosed rack cabinets.

Excessive heat will shorten component life and modulator performance will be degraded without proper cooling.

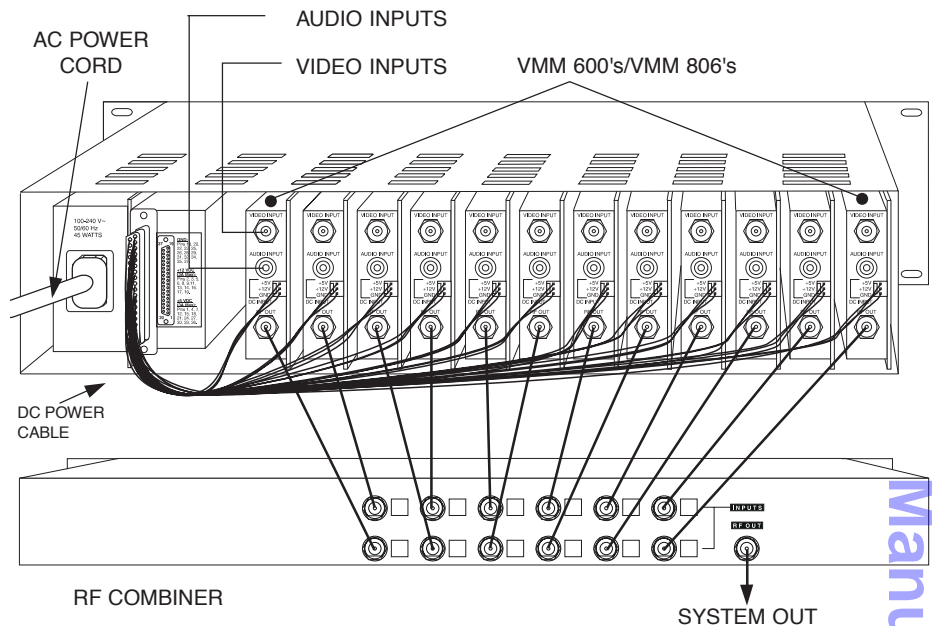


Figure 3



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