

The R.L. Drake VMD806AG Audio-Video Modulator is a high quality, vestigial sideband unit with synthesized visual and aural carriers. The frequency agile VMD806AG allows front panel pushwheel switch selection of standard CATV channels 2 through 125, CATV subband channels, T7 through T14, 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 VMD806AG.

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. Audio and video overmodulation indicators are provided. Output level is +45 dBmV and is adjustable over a 10 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.

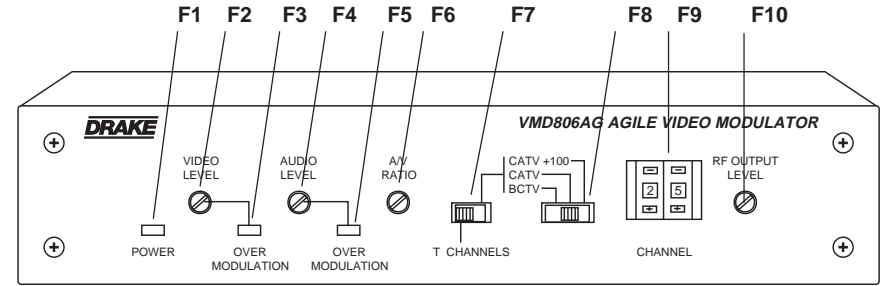


Figure 1

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 - VIDEO Level Control

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

F3 - Video OVER MODULATION LED

With a video input applied, adjust (F2) until this indicator just illuminates, then set just below this point.

F4 - AUDIO Level Control

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

F5 - Audio OVER MODULATION LED

With audio applied, adjust (F4) until this indicator just illuminates on peaks.

F6 - A/V RATIO Control

This screwdriver adjustment varies the level of the aural carrier over a range from 13 to 16 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 - T CHANNEL Switch

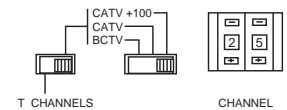
Set this switch to the "T" channel setting to enable "T" channel coverage. Use the Channel Number switch (F9) to select 7 - 14. For normal CATV or broadcast TV channels, this switch must be set to the right to enable selection by the mode switch (F8).

F8 - Mode Switch

Sets the type of channel, CATV or Broadcast TV ("BCTV"). This switch does not function if switch (F7) is in the "T" channel position. The last position of the switch ("+100") sets a leading "1" for CATV channels 100 through 125. See Item (F9) for setting the channel number.

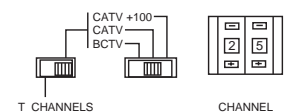
Example 1:

Setting for CATV channel "125"-



Example 2:

Setting for CATV channel "25"-



F9 - CHANNEL Number Switch

Sets the desired operating channel for standard CATV channels 02 through 125, "T" channels T7 through T14, or Broadcast TV channels 02 through 69. See Item (F8) which sets the type of channel (CATV or Broadcast TV) and sets the leading "1" for CATV channels 100 through 125.

F10 - 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 desired output level.



® is a registered trademark of the R.L. Drake Company

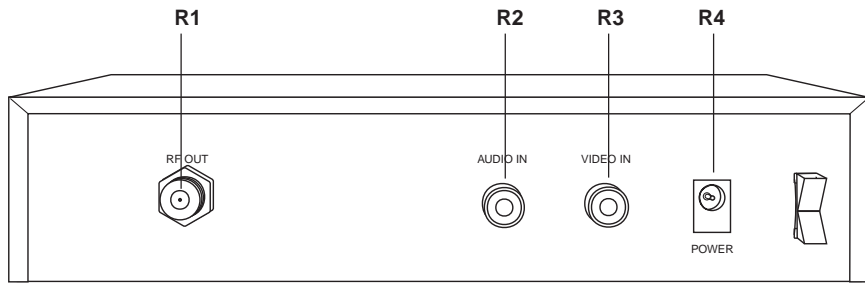


Figure 2

R1 - RF OUTPUT Connector

This is the modulator output.

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 jumper can defeat the audio pre-emphasis for use with a stereo encoder. See Diagrams 1 - 3.

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.

INSTALLATION NOTES

Level adjustment provides optimum performance in multichannel installations. The modulator outputs should be checked periodically with a spectrum analyzer or signal strength meter to maintain a ± 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.

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.

R3 - 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.

R4 - POWER / DC INPUT Connector

This connector accepts the appropriate mating DC power cable from the supplied AC adapter.

MOUNTING

Adequate ventilation is very important in multichannel installations. Units should be spaced apart by at least one panel height wherever possible, and some air movement is mandatory in enclosed rack cabinets. Excessive heat will shorten component life and modulator performance will be degraded without proper ventilation.

ACCESSING THE JUMPERS

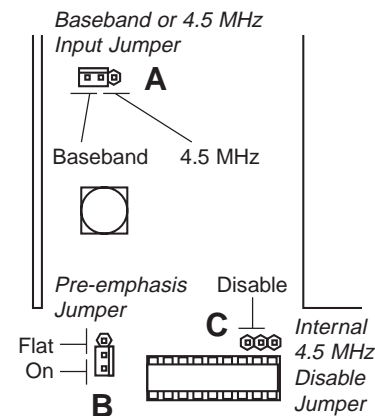
- First, **make certain the unit is disconnected from its power source.**
- Next, remove the four #4 screws from each side of the top cover. Save the screws for later reassembly.
- Carefully remove the top cover by lifting it upward from the chassis. The jumpers are now accessible for setting as desired.

JUMPER FUNCTIONS

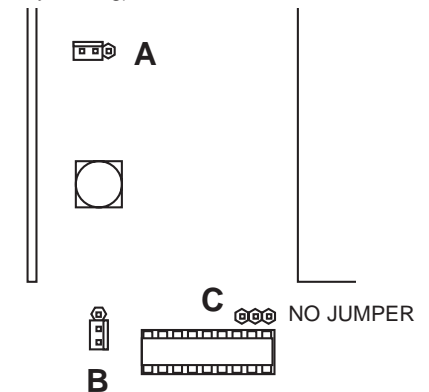
Refer to the INTERNAL JUMPER FUNCTIONS diagram for a brief explanation of the three jumpers used in the jumper settings.

Refer to the INTERNAL JUMPER SETTINGS Diagrams (1-3) for proper jumper placement of the desired mode.

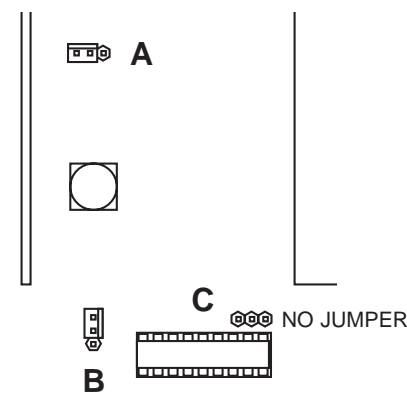
Note that jumper "B" can be used on jumper "C" to set the 4.5 MHz IN mode (see diagram 3).

INTERNAL JUMPER FUNCTIONS

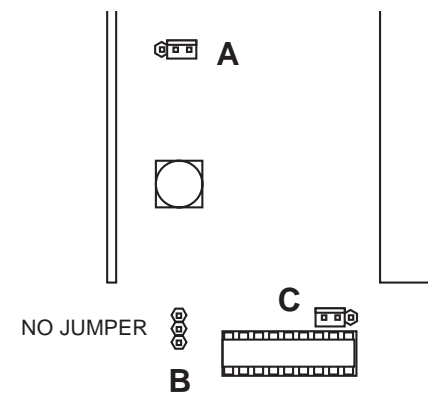
Front of Unit with Cover Removed

INTERNAL JUMPER SETTINGS**1) AUDIO IN, PRE-EMPHASIS ON (Factory Setting)**

Front of Unit with Cover Removed

2) AUDIO IN, PRE-EMPHASIS OFF

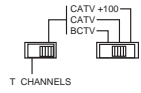
Front of Unit with Cover Removed

3) 4.5 MHz IN

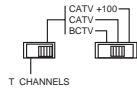
Front of Unit with Cover Removed

5 CATV CHANNEL OUTPUT FREQUENCIES

TABLE 1: CATV CHANNELS



Output Channel Switch Setting	Visual Carrier Frequency (MHz)	Frequency Offset (kHz)
02	55.25	NONE
03	61.25	NONE
04	67.25	NONE
05	77.25	NONE
06	83.25	NONE
07	175.25	NONE
08	181.25	NONE
09	187.25	NONE
10	193.25	NONE
11	199.25	NONE
12	205.25	NONE
13	211.25	NONE
14	121.25	±12.5
15	127.25	±12.5
16	133.25	±12.5
17	139.25	NONE
18	145.25	NONE
19	151.25	NONE
20	157.25	NONE
21	163.25	NONE
22	169.25	NONE
23	217.25	NONE
24	223.25	+12.5
25	229.25	+12.5
26	235.25	+12.5
27	241.25	+12.5
28	247.25	+12.5
29	253.25	+12.5
30	259.25	+12.5
31	265.25	+12.5
32	271.25	+12.5
33	277.25	+12.5
34	283.25	+12.5
35	289.25	+12.5
36	295.25	+12.5
37	301.25	+12.5
38	307.25	+12.5
39	313.25	+12.5
40	319.25	+12.5
41	325.25	+12.5
42	331.25	+25
43	337.25	+12.5
44	343.25	+12.5
45	349.25	+12.5
46	355.25	+12.5
47	361.25	+12.5
48	367.25	+12.5
49	373.25	+12.5
50	379.25	+12.5
51	385.25	+12.5
52	391.25	+12.5
53	397.25	+12.5
54	403.25	NONE
55	409.25	NONE
56	415.25	NONE
57	421.25	NONE
58	427.25	NONE
59	433.25	NONE
60	439.25	NONE
61	445.25	NONE
62	451.25	NONE
63	457.25	NONE
64	463.25	NONE
65	469.25	NONE
66	475.25	NONE
67	481.25	NONE
68	487.25	NONE
69	493.25	NONE



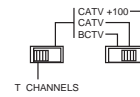
Output Channel Switch Setting	Visual Carrier Frequency (MHz)	Frequency Offset (kHz)
70	499.25	NONE
71	505.25	NONE
72	511.25	NONE
73	517.25	NONE
74	523.25	NONE
75	529.25	NONE
76	535.25	NONE
77	541.25	NONE
78	547.25	NONE
79	553.25	NONE
80	559.25	NONE
81	565.25	NONE
82	571.25	NONE
83	577.25	NONE
84	583.25	NONE
85	589.25	NONE
86	595.25	NONE
87	601.25	NONE
88	607.25	NONE
89	613.25	NONE
90	619.25	NONE
91	625.25	NONE
92	631.25	NONE
93	637.25	NONE
94	643.25	NONE
95	91.25	NONE
96	97.25	NONE
97	103.25	NONE
98	109.25	+25
99	115.25	+25

CATV +100

100	649.25	NONE
101	655.25	NONE
102	661.25	NONE
103	667.25	NONE
104	673.25	NONE
105	679.25	NONE
106	685.25	NONE
107	691.25	NONE
108	697.25	NONE
109	703.25	NONE
110	709.25	NONE
111	715.25	NONE
112	721.25	NONE
113	727.25	NONE
114	733.25	NONE
115	739.25	NONE
116	745.25	NONE
117	751.25	NONE
118	757.25	NONE
119	763.25	NONE
120	769.25	NONE
121	775.25	NONE
122	781.25	NONE
123	787.25	NONE
124	793.25	NONE
125	799.25	NONE

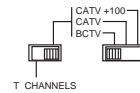
6 BROADCAST TV CHANNEL OUTPUT FREQUENCIES

TABLE 2: T CHANNELS



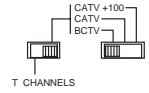
T CHANNELS	
Channel Number	Visual Carrier Frequency (MHz)
7	7.00
8	13.00
9	19.00
10	25.00
11	31.00
12	37.00
13	43.00
14	49.00

TABLE 3: BCTV CHANNELS



VHF BROADCAST CHANNELS	
Channel Number	Visual Carrier Frequency (MHz)
2	55.25
3	61.25
4	67.25
5	77.25
6	83.25
7	175.25
8	181.25
9	187.25
10	193.25
11	199.25
12	205.25
13	211.25

TABLE 3: BCTV CHANNELS, cont'd.



UHF BROADCAST CHANNELS	
Channel Number	Visual Carrier Frequency (MHz)
14	471.25
15	477.25
16	483.24
17	489.25
18	495.25
19	501.25
20	507.25
21	513.25
22	519.25
23	525.25
24	531.25
25	537.25
26	543.25
27	549.25
28	555.25
29	561.25
30	567.25
31	573.25
32	579.25
33	585.25
34	591.25
35	597.25
36	603.25
37	609.25
38	615.25
39	621.25
40	627.25
41	633.25
42	639.25
43	645.25
44	651.25
45	657.25
46	663.25
47	669.25
48	675.25
49	681.25
50	687.25
51	693.25
52	699.25
53	705.25
54	711.25
55	717.25
56	723.25
57	729.25
58	735.25
59	741.25
60	747.25
61	753.25
62	759.25
63	765.25
64	771.25
65	777.25
66	783.25
67	789.25
68	795.25
69	801.25