



OTFM-1000

FM MODULATOR

INSTRUCTION MANUAL

Phone: (209) 586-1022
(800) 545-1022
Fax: (209) 586-1026
E-Mail: salesupport@olsontech.com
www.olsontech.com

OTFM-1000

Frequency Agile Audio FM Modulator

The OTFM-1000 is designed for audio applications in the FM band from 88MHz to 108MHz. This design offers constant deviation regardless of frequency setting. With the change of one internal jumper pin, the unit becomes stereo compatible.

SPECIFICATIONS

Output Frequency Range.....	88MHz to 108MHz - Front panel DIP switch selectable in 0.1MHz increments.
Frequency Stability/Accuracy.....	± 5 KHz maximum from selected output carrier.
Output Power Level.....	+40dBmV minimum. Adjustable downward by 10dB minimum by front panel control.
Spurious Output.....	>60dB below output carrier level.
Deviation.....	150KHz - 75 μ pre-emphasis internal selectable.
Audio Input Level.....	0.5V p-p audio input for 150KHz deviation.
Audio Input Connector.....	Screw terminals
MPX Input Connector.....	Type F
RF Output Connector.....	Type F
Power Requirments.....	115 VAC @60Hz - 10 watts maximum.
Size.....	19" rack mount. 1.75" H x 8" D

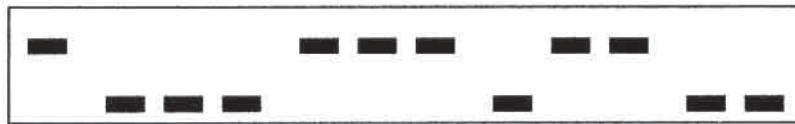
OTFM-1000 FM MODULATOR

- 1) The Olson Technology OTFM-1000 FM Modulator is designed for use in the DM spectrum of 88MHz to 108MHz. The unit is selectable in .1MHz increments across the complete spectrum and has constant deviation at any frequency in the spectrum.
- 2) **Output Frequency Select** - Remove the front panel cover plate to expose the DIP switches. Appendix A is a list of all DIP switch codes for output frequencies at odd intervals, ie: 88.1, 88.3, etc.

To select other frequencies at “even” intervals, utilize the chart to select the nearest “odd” frequency above the frequency desired. Placing the first DIP switch in the down position (left hand switch) will lower the frequency by .1MHz.

Example: 88.0MHz is desired frequency

- A) Select closest frequency above 88.0MHz from chart which is 88.1MHz.



- B) Move first switch to down position to subtract 0.1MHz and yield 88.0MHz.

- 3) **Modulation Adjust** - Connect the baseband audio signal to the audio input terminal on the rear panel. Adjust the “modulation adjust” control on the front panel until the overmod light just begins to blink on. Modulation should be set during periods of active audio (music, etc). Attempting to set the modulation during quiet periods can result in over-modulation.
- 4) The maximum output power level from the unit is +40dBmV (RF output adjust full CW). To reduce the level, turn the RF adjust pot CCW until desired level is obtained.
- 5) Balanced or unbalanced input is selected with internal jumper plug W1. Pre-emphasis in or out is selected with W2. Remove the top cover to gain access to W1 and W2. These are located in the left rear area of the main PCB.
 - A) This unit is shipped with W1 in the balanced position. The jumper plug is shorting two pins nearest the rear panel. To ground the left input terminal or the MPX input, move the jumper plug to short two pins on W1 nearest the front panel.
 - B) To defeat the pre-emphasis, remove the jumper plug on W2. Pre-emphasis is used for mono only and is defeated when MPX stereo is used.
- 6) “Audio In” and “MPX In” are terminated with 620 internally. For high impedance input, cut resistor from “Audio In” terminals inside.

APPENDIX A: OTFM-1000 OUTPUT CODES

0 = DOWN ONE = UP

FREQ.	DIP SWITCH			FREQ.	DIP SWITCH		
88.100	1000	1110	1100	96.100	1000	0011	1100
88.300	1100	1110	1100	96.300	1100	0011	1100
88.500	1010	1110	1100	96.500	1010	0011	1100
88.700	1110	1110	1100	96.700	1110	0011	1100
88.900	1001	1110	1100	96.900	1001	0011	1100
89.100	1101	1110	1100	97.100	1101	0011	1100
89.300	1011	1110	1100	97.300	1011	0011	1100
89.500	1111	1110	1100	97.500	1111	0011	1100
89.700	1000	0001	1100	97.700	1000	1011	1100
89.900	1100	0001	1100	97.900	1100	1011	1100
90.100	1010	0001	1100	98.100	1010	1011	1100
90.300	1110	0001	1100	98.300	1110	1011	1100
90.500	1001	0001	1100	98.500	1001	1011	1100
90.700	1101	0001	1100	98.700	1101	1011	1100
90.900	1011	0001	1100	98.900	1011	1011	1100
91.100	1111	0001	1100	99.100	1111	1011	1100
91.300	1000	1001	1100	99.300	1000	0111	1100
91.500	1100	1001	1100	99.500	1100	0111	1100
91.700	1010	1001	1100	99.700	1010	0111	1100
91.900	1110	1001	1100	99.900	1110	0111	1100
92.100	1001	1001	1100	100.100	1001	0111	1100
92.300	1101	1001	1100	100.300	1101	0111	1100
92.500	1011	1001	1100	100.500	1011	0111	1100
92.700	1111	1001	1100	100.700	1111	0111	1100
92.900	1000	0101	1100	100.900	1000	1111	1100
93.100	1100	0101	1100	101.100	1100	1111	1100
93.300	1010	0101	1100	101.300	1010	1111	1100
93.500	1110	0101	1100	101.500	1110	1111	1100
93.700	1001	0101	1100	101.700	1001	1111	1100
93.900	1101	0101	1100	101.900	1101	1111	1100
94.100	1011	0101	1100	102.100	1011	1111	1100
94.300	1111	0101	1100	102.300	1111	1111	1100
94.500	1000	1101	1100	102.500	1000	0000	0010
94.700	1100	1101	1100	102.700	1100	0000	0010
94.900	1010	1101	1100	102.900	1010	0000	0010
95.100	1110	1101	1100	103.100	1110	0000	0010
95.300	1001	1101	1100	103.300	1001	0000	0010
95.500	1101	1101	1100	103.500	1101	0000	0010
95.700	1011	1101	1100	103.700	1011	0000	0010
95.900	1111	1101	1100	103.900	1111	0000	0010

APPENDIX A (Continued)

<u>FREQ.</u>	<u>DIP SWITCH</u>		
104.100	1000	1000	0010
104.300	1100	1000	0010
104.500	1010	1000	0010
104.700	1110	1000	0010
104.900	1001	1000	0010
105.100	1101	1000	0010
105.300	1011	1000	0010
105.500	1111	1000	0010
105.700	1000	0100	0010
105.900	1100	0100	0010
106.100	1010	0100	0010
106.300	1110	0100	0010
106.500	1001	0100	0010
106.700	1101	0100	0010
106.900	1011	0100	0010
107.100	1111	0100	0010
107.300	1000	1100	0010
107.500	1100	1100	0010
107.700	1010	1100	0010
107.900	1110	1100	0010