



**LCM-500-550 B/G
TELEVISION MODULATOR**

INSTRUCTION MANUAL

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LCM-500-550 B/G
FREQUENCY AGILE - TELEVISION MODULATOR

1) INTRODUCTION

The Olson Technology LCM-500-550 B/G is a frequency agile television modulator. This unit will provide $>+55\text{dBmV}$ output on any channel from 48.250MHz to 543.250MHz. All channels are selectable by front panel DIP switches in 1MHz increments. Also provided with the LCM-500-550 B/G is a high level (+35dBmV) combined video/aural i.f. loop.

The LCM-500-550 B/G offers the unique Olson Technology feature of $>75\text{dB}$ out-of-band carrier to noise ratio. Also, this unit uses SAW filtering for adjacent channel operation, and it provides 60dB of spurious free dynamic range. These features allow virtually unlimited numbers of LCM-500-550 B/G's to be combined without the need for external bandpass filters.

The LCM-500-550 B/G has low power consumption (8 watts, 100-240 VAC @ 50/60Hz) for reliable long term operation.

2) CHANNEL SELECTION

Remove the small cover plate from the front panel to expose the channel select switches and the offset adjust control as shown in Figure #1. Note that the RF Level control is accessible through the level adjustment hole in the cover plate.

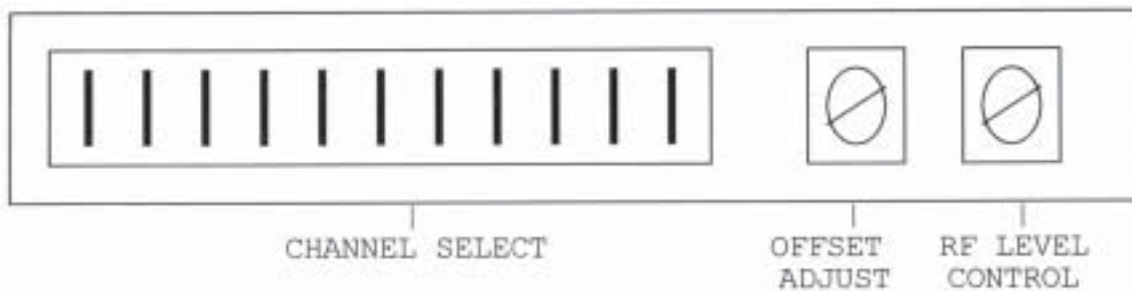


FIGURE 1 - CHANNEL SELECT/OFFSET ADJUST

Output frequency selection is made by properly setting the 12-position DIP switch to the corresponding code. Codes are shown in the rear of this manual. Set the DIP switches from left to right. For example, if 206.250MHz is desired, its corresponding channel code is:



3) OFFSET ADJUSTMENT

To adjust the frequency of a selected channel to provide an offset, remove the video input and connect a counter to the RF output of the LCM-500-550 B/G. Use the offset adjust control (marked OA) behind the cover plate to set the output frequency to the desired value.

4) VIDEO MODULATION ADJUSTMENT

- A) Connect a video source of approximately 1v p-p to the video input connector (75 ohms input Z) on the rear panel. The video should be of a reasonably bright scene (commercials are usually excellent).
- B) Rotate the video modulation control (MOD) slowly clockwise until the video overmodulation light (O/M) just turns on. The light may blink with differences in average picture level. CAUTION: If the modulation is set too high, compression or lack of contrast will occur during high intensity scenes.

5) AUDIO MODULATION ADJUSTMENT

- A) Connect an audio source of 500mv p-p (minimum) to the input connector (10K ohms input Z) on the rear panel.
- B) Rotate the audio modulation (MOD) control slowly clockwise until the audio overmodulation light (O/M) just begins to blink. CAUTION: Overmodulation can result in severe distortion in some TV sets. Set this control at peak program levels.

6) RF OUTPUT AND AURAL CARRIER LEVEL ADJUSTMENT

- A) Using a field strength meter or spectrum analyzer, set the video carrier to the desired level with the RF output “level” adjust pot (typically +40dBmV).
- B) Tune the field strength meter to the aural carrier, which is located 5.5MHz above the video carrier.
- C) Adjust the aural carrier level control (A/V) to the desired level, typically 15dB below the video carrier. CAUTION: Reducing the visual/aural carrier ratio to less than 15dB can result in high out-of-band spurious signals in adjacent channels.

7) MISCELLANEOUS

- A) The LCM-500-550 B/G is equipped with a 0.25A slo-blo fuse. For continued safety, and to maintain proper performance of the unit, please replace only with an equivalent fuse.
- B) When installing the LCM-500-550 B/G in an equipment rack, it is best to leave an empty rack space above and below the unit to allow for optimum air circulation.

LCM-500-550 B/G Channel Codes

48.250 0111 0001 0100	93.250 1101 1101 0100	138.250 0001 0111 0100	183.250 1010 1000 1100
49.250 1111 0001 0100	94.250 0011 1101 0100	139.250 1001 0111 0100	184.250 0110 1000 1100
50.250 0000 1001 0100	95.250 1011 1101 0100	140.250 0101 0111 0100	185.250 1110 1000 1100
51.250 1000 1001 0100	96.250 0111 1101 0100	141.250 1101 0111 0100	186.250 0001 1000 1100
52.250 0100 1001 0100	97.250 1111 1101 0100	142.250 0011 0111 0100	187.250 1001 1000 1100
53.250 1100 1001 0100	98.250 0000 0011 0100	143.250 1011 0111 0100	188.250 0101 1000 1100
54.250 0010 1001 0100	99.250 1000 0011 0100	144.250 0111 0111 0100	189.250 1101 1000 1100
55.250 1010 1001 0100	100.250 0100 0011 0100	145.250 1111 0111 0100	190.250 0011 1000 1100
56.250 0110 1001 0100	101.250 1100 0011 0100	146.250 0000 1111 0100	191.250 1011 1000 1100
57.250 1110 1001 0100	102.250 0010 0011 0100	147.250 1000 1111 0100	192.250 0111 1000 1100
58.250 0001 1001 0100	103.250 1010 0011 0100	148.250 0100 1111 0100	193.250 1111 1000 1100
59.250 1001 1001 0100	104.250 0110 0011 0100	149.250 1100 1111 0100	194.250 0000 0100 1100
60.250 0101 1001 0100	105.250 1110 0011 0100	150.250 0010 1111 0100	195.250 1000 0100 1100
61.250 1101 1001 0100	106.250 0001 0011 0100	151.250 1010 1111 0100	196.250 0100 0100 1100
62.250 0011 1001 0100	107.250 1001 0011 0100	152.250 0110 1111 0100	197.250 1100 0100 1100
63.250 1011 1001 0100	108.250 0101 0011 0100	153.250 1110 1111 0100	198.250 0010 0100 1100
64.250 0111 1001 0100	109.250 1101 0011 0100	154.250 0001 1111 0100	199.250 1010 0100 1100
65.250 1111 1001 0100	110.250 0011 0011 0100	155.250 1001 1111 0100	200.250 0110 0100 1100
66.250 0000 0101 0100	111.250 1011 0011 0100	156.250 0101 1111 0100	201.250 1110 0100 1100
67.250 1000 0101 0100	112.250 0111 0011 0100	157.250 1101 1111 0100	202.250 0001 0100 1100
68.250 0100 0101 0100	113.250 1111 0011 0100	158.250 0011 1111 0100	203.250 1001 0100 1100
69.250 1100 0101 0100	114.250 0000 1011 0100	159.250 1011 1111 0100	204.250 0101 0100 1100
70.250 0010 0101 0100	115.250 1000 1011 0100	160.250 0111 1111 0100	205.250 1101 0100 1100
71.250 1010 0101 0100	116.250 0100 1011 0100	161.250 1111 1111 0100	206.250 0011 0100 1100
72.250 0110 0101 0100	117.250 1100 1011 0100	162.250 0000 0000 1100	207.250 1011 0100 1100
73.250 1110 0101 0100	118.250 0010 1011 0100	163.250 1000 0000 1100	208.250 0111 0100 1100
74.250 0001 0101 0100	119.250 1010 1011 0100	164.250 0100 0000 1100	209.250 1111 0100 1100
75.250 1001 0101 0100	120.250 0110 1011 0100	165.250 1100 0000 1100	210.250 0000 1100 1100
76.250 0101 0101 0100	121.250 1110 1011 0100	166.250 0010 0000 1100	211.250 1000 1100 1100
77.250 1101 0101 0100	122.250 0001 1011 0100	167.250 1010 0000 1100	212.250 0100 1100 1100
78.250 0011 0101 0100	123.250 1001 1011 0100	168.250 0110 0000 1100	213.250 1100 1100 1100
79.250 1011 0101 0100	124.250 0101 1011 0100	169.250 1110 0000 1100	214.250 0010 1100 1100
80.250 0111 0101 0100	125.250 1101 1011 0100	170.250 0001 0000 1100	215.250 1010 1100 1100
81.250 1111 0101 0100	126.250 0011 1011 0100	171.250 1001 0000 1100	216.250 0110 1100 1100
82.250 0000 1101 0100	127.250 1011 1011 0100	172.250 0101 0000 1100	217.250 1110 1100 1100
83.250 1000 1101 0100	128.250 0111 1011 0100	173.250 1101 0000 1100	218.250 0001 1100 1100
84.250 0100 1101 0100	129.250 1111 1011 0100	174.250 0011 0000 1100	219.250 1001 1100 1100
85.250 1100 1101 0100	130.250 0000 0111 0100	175.250 1011 0000 1100	220.250 0101 1100 1100
86.250 0010 1101 0100	131.250 1000 0111 0100	176.250 0111 0000 1100	221.250 1101 1100 1100
87.250 1010 1101 0100	132.250 0100 0111 0100	177.250 1111 0000 1100	222.250 0011 1100 1100
88.250 0110 1101 0100	133.250 1100 0111 0100	178.250 0000 1000 1100	223.250 1011 1100 1100
89.250 1110 1101 0100	134.250 0010 0111 0100	179.250 1000 1000 1100	224.250 0111 1100 1100
90.250 0001 1101 0100	135.250 1010 0111 0100	180.250 0100 1000 1100	225.250 1111 1100 1100
91.250 1001 1101 0100	136.250 0110 0111 0100	181.250 1100 1000 1100	226.250 0000 0010 1100
92.250 0101 1101 0100	137.250 1110 0111 0100	182.250 0010 1000 1100	227.250 1000 0010 1100

**LCM-500-550 B/G Channel Codes
(continued)**

228.250 01000010 1100	273.250 1111 0110 1100	318.250 0011 1001 1100	363.250 1001 0011 1100
229.250 11000010 1100	274.250 0000 1110 1100	319.250 1011 1001 1100	364.250 0101 0011 1100
230.250 00100010 1100	275.250 1000 1110 1100	320.250 0111 1001 1100	365.250 1101 0011 1100
231.250 10100010 1100	276.250 0100 1110 1100	321.250 1111 1001 1100	366.250 0011 0011 1100
232.250 01100010 1100	277.250 1100 1110 1100	322.250 0000 0101 1100	367.250 1011 0011 1100
233.250 11100010 1100	278.250 0010 1110 1100	323.250 1000 0101 1100	368.250 0111 0011 1100
234.250 0001 0010 1100	279.250 1010 1110 1100	324.250 0100 0101 1100	369.250 1111 0011 1100
235.250 1001 0010 1100	280.250 0110 1110 1100	325.250 1100 0101 1100	370.250 0000 1011 1100
236.250 0101 0010 1100	281.250 1110 1110 1100	326.250 0010 0101 1100	371.250 1000 1011 1100
237.250 1101 0010 1100	282.250 0001 1110 1100	327.250 1010 0101 1100	372.250 0100 1011 1100
238.250 0011 0010 1100	283.250 1001 1110 1100	328.250 0110 0101 1100	373.250 1100 1011 1100
239.250 1011 0010 1100	284.250 0101 1110 1100	329.250 1110 0101 1100	374.250 0010 1011 1100
240.250 0111 0010 1100	285.250 1101 1110 1100	330.250 0001 0101 1100	375.250 1010 1011 1100
241.250 1111 0010 1100	286.250 0011 1110 1100	331.250 1001 0101 1100	376.250 0110 1011 1100
242.250 0000 1010 1100	287.250 1011 1110 1100	332.250 0101 0101 1100	377.250 1110 1011 1100
243.250 1000 1010 1100	288.250 0111 1110 1100	333.250 1101 0101 1100	378.250 0001 1011 1100
244.250 0100 1010 1100	289.250 1111 1110 1100	334.250 0011 0101 1100	379.250 1001 1011 1100
245.250 1100 1010 1100	290.250 0000 0001 1100	335.250 1011 0101 1100	380.250 0101 1011 1100
246.250 0010 1010 1100	291.250 1000 0001 1100	336.250 0111 0101 1100	381.250 1101 1011 1100
247.250 1010 1010 1100	292.250 0100 0001 1100	337.250 1111 0101 1100	382.250 0011 1011 1100
248.250 0110 1010 1100	293.250 1100 0001 1100	338.250 0000 1101 1100	383.250 1011 1011 1100
249.250 1110 1010 1100	294.250 0010 0001 1100	339.250 1000 1101 1100	384.250 0111 1011 1100
250.250 0001 1010 1100	295.250 1010 0001 1100	340.250 0100 1101 1100	385.250 1111 1011 1100
251.250 1001 1010 1100	296.250 0110 0001 1100	341.250 1100 1101 1100	386.250 0000 0111 1100
252.250 0101 1010 1100	297.250 1110 0001 1100	342.250 0010 1101 1100	387.250 1000 0111 1100
253.250 1101 1010 1100	298.250 0001 0001 1100	343.250 1010 1101 1100	388.250 0100 0111 1100
254.250 0011 1010 1100	299.250 1001 0001 1100	344.250 0110 1101 1100	389.250 1100 0111 1100
255.250 1011 1010 1100	300.250 0101 0001 1100	345.250 1110 1101 1100	390.250 0010 0111 1100
256.250 0111 1010 1100	301.250 1101 0001 1100	346.250 0001 1101 1100	391.250 1010 0111 1100
257.250 1111 1010 1100	302.250 0011 0001 1100	347.250 1001 1101 1100	392.250 0110 0111 1100
258.250 0000 0110 1100	303.250 1011 0001 1100	348.250 0101 1101 1100	393.250 1110 0111 1100
259.250 1000 0110 1100	304.250 0111 0001 1100	349.250 1101 1101 1100	394.250 0001 0111 1100
260.250 0100 0110 1100	305.250 1111 0001 1100	350.250 0011 1101 1100	395.250 1001 0111 1100
261.250 1100 0110 1100	306.250 0000 1001 1100	351.250 1011 1101 1100	396.250 0101 0111 1100
262.250 0010 0110 1100	307.250 1000 1001 1100	352.250 0111 1101 1100	397.250 1101 0111 1100
263.250 1010 0110 1100	308.250 0100 1001 1100	353.250 1111 1101 1100	398.250 0011 0111 1100
264.250 0110 0110 1100	309.250 1100 1001 1100	354.250 0000 0011 1100	399.250 1011 0111 1100
265.250 1110 0110 1100	310.250 0010 1001 1100	355.250 1000 0011 1100	400.250 0111 0111 1100
266.250 0001 0110 1100	311.250 1010 1001 1100	356.250 0100 0011 1100	401.250 1111 0111 1100
267.250 1001 0110 1100	312.250 0110 1001 1100	357.250 1100 0011 1100	402.250 0000 1111 1100
268.250 0101 0110 1100	313.250 1110 1001 1100	358.250 0010 0011 1100	403.250 1000 1111 1100
269.250 1101 0110 1100	314.250 0001 1001 1100	359.250 1010 0011 1100	404.250 0100 1111 1100
270.250 0011 0110 1100	315.250 1001 1001 1100	360.250 0110 0011 1100	405.250 1100 1111 1100
271.250 1011 0110 1100	316.250 0101 1001 1100	361.250 1110 0011 1100	406.250 0010 1111 1100
272.250 0111 0110 1100	317.250 1101 1001 1100	362.250 0001 0011 1100	407.250 1010 1111 1100

**LCM-500-550 B/G Channel Codes
(continued)**

408.250 0110 1111 1100	453.250 1100 0100 0010	498.250 0000 1010 0010	543.250 1011 1110 0010
409.250 1110 1111 1100	454.250 0010 0100 0010	499.250 1000 1010 0010	
410.250 0001 1111 1100	455.250 1010 0100 0010	500.250 0100 1010 0010	
411.250 1001 1111 1100	456.250 0110 0100 0010	501.250 1100 1010 0010	
412.250 0101 1111 1100	457.250 1110 0100 0010	502.250 0010 1010 0010	
413.250 1101 1111 1100	458.250 0001 0100 0010	503.250 1010 1010 0010	
414.250 0011 1111 1100	459.250 1001 0100 0010	504.250 0110 1010 0010	
415.250 1011 1111 1100	460.250 0101 0100 0010	505.250 1110 1010 0010	
416.250 0111 1111 1100	461.250 1101 0100 0010	506.250 0001 1010 0010	
417.250 1111 1111 1100	462.250 0011 0100 0010	507.250 1001 1010 0010	
418.250 0000 0000 0010	463.250 1011 0100 0010	508.250 0101 1010 0010	
419.250 1000 0000 0010	464.250 0111 0100 0010	509.250 1101 1010 0010	
420.250 0100 0000 0010	465.250 1111 0100 0010	510.250 0011 1010 0010	
421.250 1100 0000 0010	466.250 0000 1100 0010	511.250 1011 1010 0010	
422.250 0010 0000 0010	467.250 1000 1100 0010	512.250 0111 1010 0010	
423.250 1010 0000 0010	468.250 0100 1100 0010	513.250 1111 1010 0010	
424.250 0110 0000 0010	469.250 1100 1100 0010	514.250 0000 0110 0010	
425.250 1110 0000 0010	470.250 0010 1100 0010	515.250 1000 0110 0010	
426.250 0001 0000 0010	471.250 1010 1100 0010	516.250 0100 0110 0010	
427.250 1001 0000 0010	472.250 0110 1100 0010	517.250 1100 0110 0010	
428.250 0101 0000 0010	473.250 1110 1100 0010	518.250 0010 0110 0010	
429.250 1101 0000 0010	474.250 0001 1100 0010	519.250 1010 0110 0010	
430.250 0011 0000 0010	475.250 1001 1100 0010	520.250 0110 0110 0010	
431.250 1011 0000 0010	476.250 0101 1100 0010	521.250 1110 0110 0010	
432.250 0111 0000 0010	477.250 1101 1100 0010	522.250 0001 0110 0010	
433.250 1111 0000 0010	478.250 0011 1100 0010	523.250 1001 0110 0010	
434.250 0000 1000 0010	479.250 1011 1100 0010	524.250 0101 0110 0010	
435.250 1000 1000 0010	480.250 0111 1100 0010	525.250 1101 0110 0010	
436.250 0100 1000 0010	481.250 1111 1100 0010	526.250 0011 0110 0010	
437.250 1100 1000 0010	482.250 0000 0010 0010	527.250 1011 0110 0010	
438.250 0010 1000 0010	483.250 1000 0010 0010	528.250 0111 0110 0010	
439.250 1010 1000 0010	484.250 0100 0010 0010	529.250 1111 0110 0010	
440.250 0110 1000 0010	485.250 1100 0010 0010	530.250 0000 1110 0010	
441.250 1110 1000 0010	486.250 0010 0010 0010	531.250 1000 1110 0010	
442.250 0001 1000 0010	487.250 1010 0010 0010	532.250 0100 1110 0010	
443.250 1001 1000 0010	488.250 0110 0010 0010	533.250 1100 1110 0010	
444.250 0101 1000 0010	489.250 1110 0010 0010	534.250 0010 1110 0010	
445.250 1101 1000 0010	490.250 0001 0010 0010	535.250 1010 1110 0010	
446.250 0011 1000 0010	491.250 1001 0010 0010	536.250 0110 1110 0010	
447.250 1011 1000 0010	492.250 0101 0010 0010	537.250 1110 1110 0010	
448.250 0111 1000 0010	493.250 1101 0010 0010	538.250 0001 1110 0010	
449.250 1111 1000 0010	494.250 0011 0010 0010	539.250 1001 1110 0010	
450.250 0000 0100 0010	495.250 1011 0010 0010	540.250 0101 1110 0010	
451.250 1000 0100 0010	496.250 0111 0010 0010	541.250 1101 1110 0010	
452.250 0100 0100 0010	497.250 1111 0010 0010	542.250 0011 1110 0010	