Labgear MOD221 RF Modulator

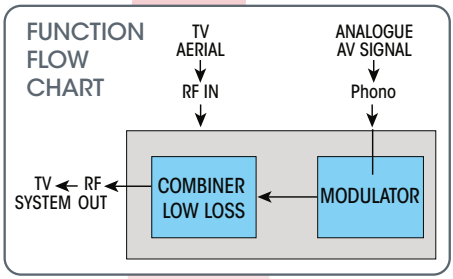
Introduction

Easy set-up analogue modulator pre-configured for UK TV integration. With clear LED channel display, auto recovery, PLL controlled frequency and adjustable RF, video and audio levels.

The MOD221 takes an additional audio/ audio video signal from a variety of analogue sources (e.g. DVD player, CCTV) and moves the signal to whatever TV channel you select to display it on. The modulator connects to the analogue source via the stereo audio and video phono connectors and to your TV via the standard RF aerial input, adding the additional signal and retaining the off-air channels from your existing RF feed (cable or aerial).

Main features

- Easy set-up - Pre-configured for UK TV integration
- Clear readout - 2 digit LED display shows selected channel number
- Highly adaptable - Can operate on cable TV networks
- Auto recovery - returns to selected channel after a power-cut
- PLL controlled frequency for rock-solid stability
- RF Output level adjustment - increase for longer cable runs
- Video and audio brightness and volume control
- Double side-band modulation for non-adjacent channels only



Signal sources

Any analogue AV signal source can be converted and distributed via the MOD221 including older CCTV equipment and other AV sources.

Compatible Displays

Please note you will need a TV with a built in analogue tuner to view the out put of the MOD221.

Safety

- Do not connect the device to the power if the power cord is damaged
- Do not connect the unit to the mains until all cables have been connected correctly
- Do not cover the ventilation slots, the recommended clearances and other precautions given in these instructions must be observed to prevent overheating. In addition, units should not be positioned where they are likely to become covered by curtains, fabric or insulating material. The unit should not be left resting on a carpet
- This appliance is not waterproof, it is intended for indoor use only and must not be positioned where they could be exposed to dripping or splashing water. Objects containing liquids should not be placed on or near the modulator.
- To prevent fire, make sure the unit and attached cabling is kept well away from heat sources
- If the unit has been stored in cold conditions allow it to warm to room temperature before connecting to the mains

NOTE: Multi dwelling systems must be earth bonded using a minimum 4mm² copper cable in accordance with the CAI Standard.

Making the connections

- Connect your source audio and video signals to the 3-inputs (2 audio and 1 video)
- Connect the RF OUT to your TV or your TV signal distribution system.
- If you are combining the new signal with off-air terrestrial signals connect your aerial to the ANT input
- Plug the Modulator into the power supply

Setting the TV Channel Number

- Before you start, if you are combining the modulated signal with off-air broadcasts check which channels are being used locally and try to add the new channel in a space with at least one empty channel on either side.
- In TV Mode the display will show the Channel number selected automatically. To change the output channel of your new modulated signal, press the UP or DOWN buttons until you reach the desired channel number.

Altering the Audio Subcarrier

- Using the MODE selection button select AV and the display will show the sub-carrier bandwidth (5.5 represents 5.5MHz). Use the UP or DOWN buttons to select the desired frequency.

Note: After 3 seconds the display will revert to show the Channel number.

Note: PAL-I (UK) uses 6.0MHz for audio, PAL-B/G uses 5.5MHz.

Setting a CATV Channel number

- Cable TV uses a different numbering convention so if you are combining this signal into a CATV network use the MODE selection button to select option 01.
- In CATV Mode the display will show the Channel Number. To change the output channel of your new modulated signal, press the UP or DOWN buttons until you reach the desired channel number.

Locking your selected settings

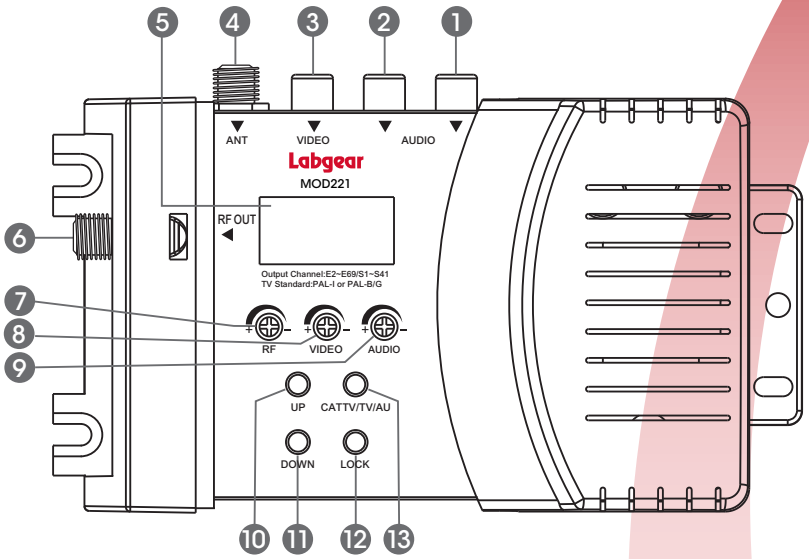
- Just press the LOCK button once and all other function buttons will be disabled (L displays for a few seconds to confirm). Pressing the Lock button again enables the function buttons and allows changes to be made.

Adjusting levels

- If required it is possible to adjust the input levels of the Audio or Video signal or the output level of the RF signal using the 3 adjusters under the display. Use a small slot screwdriver and take extreme care to avoid breaking these delicate components.

Labgear MOD221 Features

Features and Controls



1. Audio Input Right
2. Audio Input Left
3. Video Input
4. RF Input (Aerial)
5. LED Channel Display
6. RF Output
7. RF Output Level Adjustment
8. Video Brightness Adjustment
9. Audio Volume Adjustment
10. Channel Up
11. Channel Down
12. Channel Lock
13. Mode selection - (channel group/ audio subcarrier)

Technical Specifications	
Frequency Range	47-870MHz
Output Level	90dBµV
Input Level	0.8Vp-p for 80% ± 10% modulation
Input Level Addition	0.4Vp-p ~ 0.8Vp-p
S/N Ratio	55dB
A/V Ratio	-15 ± 2dB
Frequency Response	± 2.5dB (50Hz - 4.2 MHz)
Visual Carrier Freq. Accuracy	± 5KHz
Output Return Loss	14dB
Spurious Rejection	50dB
Audio Carrier Deviation	±50KHz
Audio Carrier Response	±2dB
Output Impedance	75Ω
AC Power Input	220-240V~50/60Hz
Maximum Power Consumption	2W

Labgear MOD221 - Modulator Channels

Modulator Channels Allocation Table

TV CHANNELS

TV Band	Channel No.	Displayed Number	Video carrier MHz	Audio carrier MHz
VHF I	E2	2.	48.25	53.75
	E3	3.	55.25	60.75
	E4	4.	62.25	67.75
VHF III	E5	5.	175.25	180.75
	E6	6.	182.25	187.75
	E7	7.	189.25	194.75
	E8	8.	196.25	201.75
	E9	9.	203.25	208.75
	E10	10.	210.25	215.75
	E11	11.	217.25	222.75
	E12	12.	224.25	229.75
UHF IV	E21	21.	471.25	476.75
	E22	22.	479.25	484.75
	E23	23.	487.25	492.75
	E24	24.	495.25	500.75
	E25	25.	503.25	508.75
	E26	26.	511.25	516.75
	E27	27.	519.25	524.75
	E28	28.	527.25	532.75
	E29	29.	535.25	540.75
	E30	30.	543.25	548.75
	E31	31.	551.25	556.75
	E32	32.	559.25	564.75
	E33	33.	567.25	572.75
	E34	34.	575.25	580.75
	E35	35.	583.25	588.75
	E36	36.	591.25	596.75
	E37	37.	599.25	604.75
UHF V	E38	38.	607.25	612.75
	E39	39.	615.25	620.75
	E40	40.	623.25	628.75
	E41	41.	631.25	636.75
	E42	42.	639.25	644.75
	E43	43.	647.25	652.75
	E44	44.	655.25	660.75
	E45	45.	663.25	668.75
	E46	46.	671.25	676.75
	E47	47.	679.25	684.75
	E48	48.	687.25	692.75
	E49	49.	695.25	700.75
	E50	50.	703.25	708.75
	E51	51.	711.25	716.75
	E52	52.	719.25	724.75
	E53	53.	727.25	732.75
	E54	54.	735.25	740.75
	E55	55.	743.25	748.75
	E56	56.	751.25	758.75
	E57	57.	759.25	764.75
	E58	58.	767.25	772.75
	E59	59.	775.25	780.75
	E60	60.	783.25	788.75
	E61	61.	791.25	796.75
	E62	62.	799.25	804.75
	E63	63.	807.25	812.75
	E64	64.	815.25	820.75
	E65	65.	823.25	828.75
	E66	66.	831.25	836.75
	E67	67.	839.25	844.75
	E68	68.	847.25	852.75
	E69	69.	855.25	860.75

CATV CHANNELS FULL CHANNELS

TV Band	Channel No.	Displayed Number	Video carrier MHz	Audio carrier MHz
VHF I	E2	2	48.25	53.75
	E3	3	55.25	60.75
	E4	4	62.25	67.75
	X	5	69.25	74.75
	Y	6	76.25	81.75
	Z	7	83.25	88.75
S I	S1	8	105.25	95.75
	S2	9	112.25	102.75
	S3	10	119.25	124.75
	S4	11	126.25	131.75
	S5	12	133.25	138.75
	S6	13	140.25	145.75
	S7	14	147.25	152.75
	S8	15	154.25	159.75
	S9	16	161.25	167.75
	S10	17	168.25	173.75
VHF III	E5	18	175.25	180.75
	E6	19	182.25	187.75
	E7	20	189.25	194.75
	E8	21	196.25	201.75
	E9	22	203.25	208.75
	E10	23	210.25	215.75
	E11	24	217.25	222.75
	E12	25	224.25	229.75
S 2	S11	26	231.25	236.75
	S12	27	238.25	243.75
	S13	28	245.25	250.75
	S14	29	252.25	257.75
	S15	30	259.25	264.75
	S16	31	266.25	271.75
	S17	32	273.25	278.75
	S18	33	280.25	287.75
	S19	34	287.25	292.75
	S20	35	294.25	299.75
S 3	S21	36	303.25	308.75
	S22	37	311.25	316.75
	S23	38	319.25	324.75
	S24	39	327.25	332.75
	S25	40	335.25	340.75
	S26	41	343.25	348.75
	S27	42	351.25	356.75
	S28	43	359.25	364.75
	S29	44	367.25	372.75
	S30	45	375.25	380.75
	S31	46	383.25	388.75
	S32	47	391.25	396.75
	S33	48	399.25	404.75
	S34	49	407.25	412.75
	S35	50	415.25	420.75
	S36	51	423.25	428.75
	S37	52	431.25	436.75
	S38	53	439.25	444.75
	S39	54	447.25	452.75
	S40	55	455.25	460.75
	S41	56	463.25	468.75
UHF IV	E21	57	471.25	476.75
	E22	58	479.25	484.75
	E23	59	487.25	492.75
	E24	60	495.25	500.75
	E25	61	503.25	508.75
	E26	62	511.25	516.75
	E27	63	519.25	524.75
	E28	64	527.25	532.75
	E29	65	535.25	540.75
	E30	66	543.25	548.75
	E31	67	551.25	556.75
	E32	68	559.25	564.75
	E33	69	567.25	572.75
	E34	70	575.25	580.75
	E35	71	583.25	588.75
	E36	72	591.25	596.75
	E37	73	599.25	604.75
UHF V	E38	74	607.25	612.75
	E39	75	615.25	620.75
	E40	76	623.25	628.75
	E41	77	631.25	636.75
	E42	78	639.25	644.75
	E43	79	647.25	652.75
	E44	80	655.25	660.75
	E45	81	663.25	668.75
	E46	82	671.25	676.75
	E47	83	679.25	684.75
	E48	84	687.25	692.75
	E49	85	695.25	700.75
	E50	86	703.25	708.75
	E51	87	711.25	716.75
	E52	88	719.25	724.75
	E53	89	727.25	732.75
	E54	90	735.25	740.75
	E55	91	743.25	748.75
	E56	92	751.25	758.75
	E57	93	759.25	764.75
	E58	94	767.25	772.75
	E59	95	775.25	780.75
	E60	96	783.25	788.75
	E61	97	791.25	796.75
	E62	98	799.25	804.75
	E63	99	807.25	812.75
	E64	00.	815.25	820.75
	E65	01.	823.25	828.75
	E66	02. ※	831.25	836.75
	E67	03.	839.25	844.75
	E68	04.	847.25	852.75
	E69	05.	855.25	860.75
		06.	863.25	868.75

※ Please Note: 02. represents E66 and is distinct from 2. which represents E2 in the TV Channels Allocation Table

Waste electrical and electronic products should not be disposed of with household waste. Please recycle where facilities exist. Check with your Local Authority for recycling advice.

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For further information or any queries please contact

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