

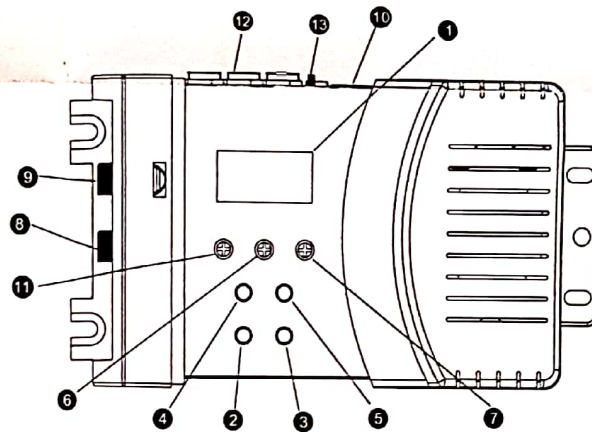
OPERATION MANUAL

▲ Features

1. MCU controlled PLL, high accuracy and stability of video carrier and audio subcarrier.
2. Audio subcarrier selectable: 5.5MHz、6.0MHz、6.5MHz.
3. With RF loop input and auto storage at power outage.
4. LED channel number display.
5. Double side band modulation for non-adjacent usage.
6. Output level adjustable.
7. Select the input of the AV signal or HDMI signal via the toggle switch

Function Diagram

- 1 - Channel Display
- 2 - Down
- 3 - Lock
- 4 - Up
- 5 - Mode selection (channel group/audio subcarrier)
- 6 - Video Level Adj. (Counter Clockwise to Bright)
- 7 - Audio Level Adj. (Counter Clockwise to Loud)
- 8 - RF Output
- 9 - RF Loop Input (eg. for ANT input)
- 10 - HDMI Input
- 11 - RF Level Addition.
- 12 - AV Input
- 13 - AV/HDMI Switch



▲ Specifications

※ RF

- Freq. range: VHF: CH2-CH4, S1-S10.
VHF III: CH5-CH12, S11-S41, UHF: CH21-CH69
- Output Level: 90dB μ VM in.
- A/V Ratio: -15 ± 2 dB
- Video Carrier Freq. Accuracy: ± 5 KHz
- Output Return loss: 14dB
- Spurious Rejection: 50dB
- Output Impedance: 75 Ω

※ INPUT

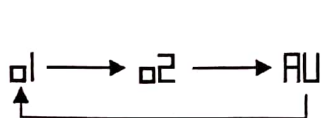
- Input Resolution: 640*480@60Hz 480i, 480p, 576i, 576p, 720p, 1080i, 1080p@50Hz/60Hz
- HDMI Version: HDMI 1.3
- HDCP Version: HDCP 1.3
- Input Level: 0.8Vp-p for 80% $\pm 10\%$ modulation
- Input Level Adj: 0.4Vp-p ~ 0.8Vp-p

※ GENERAL

- Input Voltage: 100-240V~50-60Hz
- Operation Temperature: -20°C to $+50^{\circ}\text{C}$

▲ Operation Instruction

1. Connect HDMI source to the input port of modulator, RF output to TV, then plug power cord.
2. The modulator is set in CATV channel mode when issued from factory, with the initial mode, click mode selection key continuously, the mode number display changes according to following sequence.



- 01 Indicates CATV channel setting mode.
- 02 Indicates TV channel setting mode.
- AU Indicates audio subcarrier setting mode.

Notice: Mode number just display temporarily while switching, normally the LED displays channel number.

3. Click mode selection key until display 02, means selecting TV channel setting mode. The LED will change to TV channel number display automatically, (eg. 2. represents TV channel 2). Then use Up/Down key to set the desired TV channel number.

- ④. Click mode selection key until display **FJ**, means selecting audio subcarrier frequency setting mode. The LED will change to subcarrier frequency display automatically (eg. 5.5 represents 5.5 MHz). Then use Up/ Down key to set the desired subcarrier frequency. Notice: LED will return to current channel number display automatically in about 3 seconds after stopping operation.
- ⑤. Click mode selection key until display **cl**, means selecting CATV channel setting mode. The LED will change to CATV channel number display automatically. (eg. 2 represents CATV channel 2). Then use Up /Down key to set the desired CATV channel number.
- ⑥. If want to lock current state, just click Lock key one time, click again will unlock it. Under locked condition, it will be no function to use other keys (except display L temporarily).
- ⑦. Adjust Video Adj variable to control video input level (video modulation index).
- ⑧. Adjust Audio Adj variable to control audio input level (audio subcarrier frequency deviation).
- ⑨. If the modulated input signal is the AV signal, please toggle the toggle switch to the AV interface; if you need to input the HDMI signal, dial the HDMI interface

▲ Modulator Channels Allocation Table

| CCIR TV CHANNELS | | | | | | | | | | | | | | | |
|------------------|-------------|------------------|-------------------|-------------------|---------|-------------|------------------|-------------------|-------------------|---------|-------------|------------------|-------------------|-------------------|--------|
| TV Band | Channel No. | Displayed Number | Video carrier MHz | Audio carrier MHz | TV Band | Channel No. | Displayed Number | Video carrier MHz | Audio carrier MHz | TV Band | Channel No. | Displayed Number | Video carrier MHz | Audio carrier MHz | |
| VHF I | E2 | 2. | 48.25 | 53.75 | UHF IV | E29 | 29. | 535.25 | 540.75 | UHF V | E49 | 49. | 695.25 | 700.75 | |
| | E3 | 3. | 55.25 | 60.75 | | E30 | 30. | 543.25 | 548.75 | | E50 | 50. | 703.25 | 708.75 | |
| | E4 | 4. | 62.25 | 67.75 | | E31 | 31. | 551.25 | 556.75 | | E51 | 51. | 711.25 | 716.75 | |
| VHF III | E5 | 5. | 175.25 | 180.75 | | E32 | 32. | 559.25 | 564.75 | | E52 | 52. | 719.25 | 724.75 | |
| | E6 | 6. | 182.25 | 187.75 | | E33 | 33. | 567.25 | 572.75 | | E53 | 53. | 727.25 | 732.75 | |
| | E7 | 7. | 189.25 | 194.75 | | E34 | 34. | 575.25 | 580.75 | | E54 | 54. | 735.25 | 740.75 | |
| | E8 | 8. | 196.25 | 201.75 | | E35 | 35. | 583.25 | 588.75 | | E55 | 55. | 743.25 | 748.75 | |
| | E9 | 9. | 203.25 | 208.75 | | E36 | 36. | 591.25 | 596.75 | | E56 | 56. | 751.25 | 756.75 | |
| | E10 | 10. | 210.25 | 215.75 | | E37 | 37. | 599.25 | 604.75 | | E57 | 57. | 759.25 | 764.75 | |
| UHF IV | E11 | 11. | 217.25 | 222.75 | | UHF V | E38 | 38. | 607.25 | | 612.75 | E58 | 58. | 767.25 | 772.75 |
| | E12 | 12. | 224.25 | 229.75 | | | E39 | 39. | 615.25 | | 620.75 | E59 | 59. | 775.25 | 780.75 |
| | E21 | 21. | 471.25 | 476.75 | | | E40 | 40. | 623.25 | | 628.75 | E60 | 60. | 783.25 | 788.75 |
| | E22 | 22. | 479.25 | 484.75 | E41 | | 41. | 631.25 | 636.75 | E61 | 61. | 791.25 | 796.75 | | |
| | E23 | 23. | 487.25 | 492.75 | E42 | | 42. | 639.25 | 644.75 | E62 | 62. | 799.25 | 804.75 | | |
| | E24 | 24. | 495.25 | 500.75 | E43 | | 43. | 647.25 | 652.75 | E63 | 63. | 807.25 | 812.75 | | |
| | E25 | 25. | 503.25 | 508.75 | E44 | | 44. | 655.25 | 660.75 | E64 | 64. | 815.25 | 820.75 | | |
| | E26 | 26. | 511.25 | 516.75 | E45 | | 45. | 663.25 | 668.75 | E65 | 65. | 823.25 | 828.75 | | |
| E27 | 27. | 519.25 | 524.75 | E46 | 46. | 671.25 | 676.75 | E66 | 66. | 831.25 | 836.75 | | | | |
| E28 | 28. | 527.25 | 532.75 | E47 | 47. | 679.25 | 684.75 | E67 | 67. | 839.25 | 844.75 | | | | |
| | | | | | E48 | 48. | 687.25 | 692.75 | E68 | 68. | 847.25 | 852.75 | | | |
| | | | | | | | | | E69 | 69. | 855.25 | 860.75 | | | |

| CCIR CATV CHANNELS(FULL CHANNELS) | | | | | | | | | | | | | | |
|-----------------------------------|-------------|------------------|-------------------|-------------------|---------|-------------|------------------|-------------------|-------------------|---------|-------------|------------------|-------------------|-------------------|
| TV Band | Channel No. | Displayed Number | Video carrier MHz | Audio carrier MHz | TV Band | Channel No. | Displayed Number | Video carrier MHz | Audio carrier MHz | TV Band | Channel No. | Displayed Number | Video carrier MHz | Audio carrier MHz |
| VHF I | E2 | 2 | 48.25 | 53.75 | S 3 | S27 | 42 | 351.25 | 356.75 | UHF V | E49 | 49 | 695.25 | 700.75 |
| | E3 | 3 | 55.25 | 60.75 | | S28 | 43 | 359.25 | 364.75 | | E50 | 50 | 703.25 | 708.75 |
| | E4 | 4 | 62.25 | 67.75 | | S29 | 44 | 367.25 | 372.75 | | E51 | 51 | 711.25 | 716.75 |
| X | X | 5 | 69.25 | 74.75 | | S30 | 45 | 375.25 | 380.75 | | E52 | 52 | 719.25 | 724.75 |
| | Y | 6 | 76.25 | 81.75 | | S31 | 46 | 383.25 | 388.75 | | E53 | 53 | 727.25 | 732.75 |
| | Z | 7 | 83.25 | 88.75 | | S32 | 47 | 391.25 | 396.75 | | E54 | 54 | 735.25 | 740.75 |
| S1 | S1 | 8 | 105.25 | 110.75 | | S33 | 48 | 399.25 | 404.75 | | E55 | 55 | 743.25 | 748.75 |
| | S2 | 9 | 112.25 | 117.75 | | S34 | 49 | 407.25 | 412.75 | | E56 | 56 | 751.25 | 756.75 |
| | S3 | 10 | 119.25 | 124.75 | | S35 | 50 | 415.25 | 420.75 | | E57 | 57 | 759.25 | 764.75 |
| | S4 | 11 | 126.25 | 131.75 | | S36 | 51 | 423.25 | 428.75 | | E58 | 58 | 767.25 | 772.75 |
| | S5 | 12 | 133.25 | 138.75 | | S37 | 52 | 431.25 | 436.75 | | E59 | 59 | 775.25 | 780.75 |
| | S6 | 13 | 140.25 | 145.75 | | S38 | 53 | 439.25 | 444.75 | | E60 | 60 | 783.25 | 788.75 |
| | S7 | 14 | 147.25 | 152.75 | S39 | 54 | 447.25 | 452.75 | E61 | 61 | 791.25 | 796.75 | | |
| | S8 | 15 | 154.25 | 159.75 | S40 | 55 | 455.25 | 460.75 | E62 | 62 | 799.25 | 804.75 | | |
| VHF III | S9 | 16 | 161.25 | 167.75 | S41 | 56 | 463.25 | 468.75 | E63 | 63 | 807.25 | 812.75 | | |
| | S10 | 17 | 168.25 | 173.75 | UHF IV | E21 | 57 | 471.25 | 476.75 | E64 | 64 | 815.25 | 820.75 | |
| | E5 | 18 | 175.25 | 180.75 | | E22 | 58 | 479.25 | 484.75 | E65 | 65 | 823.25 | 828.75 | |
| | E6 | 19 | 182.25 | 187.75 | | E23 | 59 | 487.25 | 492.75 | E66 | 66 | 831.25 | 836.75 | |
| | E7 | 20 | 189.25 | 194.75 | | E24 | 60 | 495.25 | 500.75 | E67 | 67 | 839.25 | 844.75 | |
| | E8 | 21 | 196.25 | 201.75 | | E25 | 61 | 503.25 | 508.75 | E68 | 68 | 847.25 | 852.75 | |
| | E9 | 22 | 203.25 | 208.75 | | E26 | 62 | 511.25 | 516.75 | E69 | 69 | 855.25 | 860.75 | |
| | E10 | 23 | 210.25 | 215.75 | | E27 | 63 | 519.25 | 524.75 | | 00. | 863.25 | 868.75 | |
| E11 | 24 | 217.25 | 222.75 | E28 | | 64 | 527.25 | 532.75 | | 01. | 871.25 | 876.75 | | |
| E12 | 25 | 224.25 | 229.75 | E29 | 65 | 535.25 | 540.75 | | 02. ※ | 879.25 | 884.75 | | | |
| S2 | S11 | 26 | 231.25 | 236.75 | E30 | 66 | 543.25 | 548.75 | | 03. | 887.25 | 892.75 | | |
| | S12 | 27 | 238.25 | 243.75 | E31 | 67 | 551.25 | 556.75 | | 04. | 895.25 | 900.75 | | |
| | S13 | 28 | 245.25 | 250.75 | E32 | 68 | 559.25 | 564.75 | | 05. | 903.25 | 908.75 | | |
| | S14 | 29 | 252.25 | 257.75 | E33 | 69 | 567.25 | 572.75 | | 06. | 911.25 | 916.75 | | |
| | S15 | 30 | 259.25 | 264.75 | E34 | 70 | 575.25 | 580.75 | | | | | | |
| | S16 | 31 | 266.25 | 271.75 | E35 | 71 | 583.25 | 588.75 | | | | | | |
| | S17 | 32 | 273.25 | 278.75 | E36 | 72 | 591.25 | 596.75 | | | | | | |
| | S18 | 33 | 280.25 | 285.75 | E37 | 73 | 599.25 | 604.75 | | | | | | |
| S3 | S19 | 34 | 287.25 | 292.75 | UHF V | E38 | 74 | 607.25 | 612.75 | | | | | |
| | S20 | 35 | 294.25 | 299.75 | | E39 | 75 | 615.25 | 620.75 | | | | | |
| | S21 | 36 | 301.25 | 306.75 | | E40 | 76 | 623.25 | 628.75 | | | | | |
| | S22 | 37 | 311.25 | 316.75 | | E41 | 77 | 631.25 | 636.75 | | | | | |
| | S23 | 38 | 319.25 | 324.75 | | E42 | 78 | 639.25 | 644.75 | | | | | |
| | S24 | 39 | 327.25 | 332.75 | | E43 | 79 | 647.25 | 652.75 | | | | | |
| | S25 | 40 | 335.25 | 340.75 | | E44 | 80 | 655.25 | 660.75 | | | | | |
| | S26 | 41 | 343.25 | 348.75 | | E45 | 81 | 663.25 | 668.75 | | | | | |
| | | | | E46 | 82 | 671.25 | 676.75 | | | | | | | |
| | | | | E47 | 83 | 679.25 | 684.75 | | | | | | | |
| | | | | E48 | 84 | 687.25 | 692.75 | | | | | | | |

※ Notice: 02 represents E66 is different from 2. represents E2 in TV Channels Allocation Table.