

TMM45-*

Modulator

Mini Modular Type

User's Manual

Safety Instructions & Precautions

- Do not operate the Unit in high-humidity areas, or expose it to water or moisture. No objects filled with liquid should be placed on the device.
- Disconnect the unit from the wall outlet prior to cleaning. Use a light, damp cloth (no solvents) to dust or clean the product.
- Do not block or cover slots and openings in the Unit. These are provided for ventilation and protection from overheating. Never place the Unit near or over a radiator or heat register. Do not place the Unit in an enclosure such as a cabinet without proper ventilation.
- We strongly recommend using the enclosed ground wire connecting to the ground cable of your house/building to avoid voltage spikes or ground fault.
- Never insert objects of any kind into the Unit through openings, as the objects may touch dangerous voltage points or short out parts. This also could cause fire or electrical shock.
- For using Mini Modular System's Products, space under and above Mini modular chassis is always necessary.
- There are no user serviceable parts in this device. Repairs should only be made by qualified and factory authorized service providers or by the factory itself. Failing to follow these guidelines may void the warranty and could cause unsafe conditions.

The lightning flash with arrow-head symbol within an equilateral triangle is intended to alert you to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electrical shock to persons.



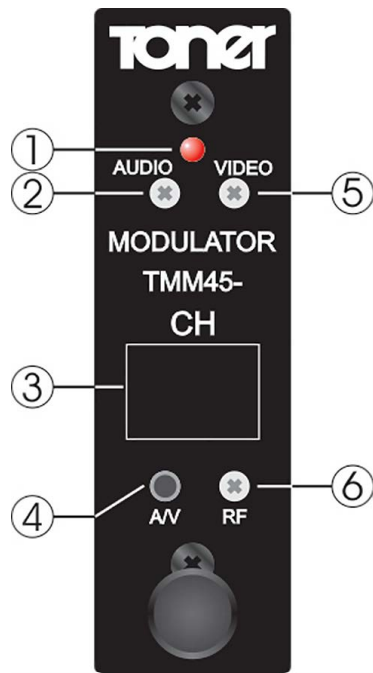
CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN



The exclamation point within an equilateral triangle is intended to alert you to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

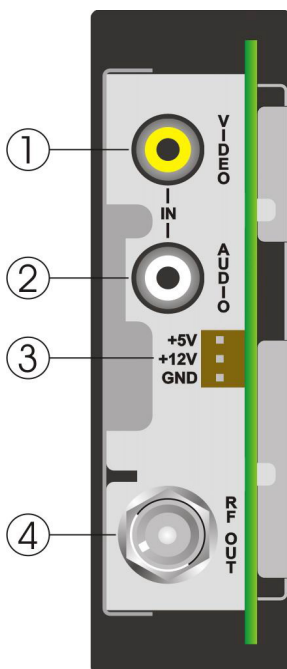
**TO REDUCE THE RISK OF ELECTRICAL SHOCK, DO NOT REMOVE COVER FROM THIS UNIT.
NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.**

I. INSTRUCTIONS



FRONT PANEL

1. POWER INDICATOR
2. AUDIO LEVEL ADJUSTMENT
3. CHANNEL NUMBER STICKER
4. A/V RATIO SELECTION
5. VIDEO LEVEL ADJUSTMENT
6. RF O/P LEVEL ADJUSTMENT



REAR PANEL

1. VIDEO IN
2. AUDIO IN
3. POWER INPUT
(5VDC/ 12VDC/GND)
4. RF OUT

Instructions

The TMM45-* is a SAW filtered analog NTSC modulator designed for use in TV signal distribution, the number after the model indicates the channel the modulator is set for (the number replaces the *).

Insert the TMM45 in an appropriate rack chassis such as TMMRC-12 or similar. When inserting the modulator, the card edges are designed to fit in the slide slots in the chassis. Once the modulator is installed, plug in the wiring harness to the mating plug in the rear of the modulator. NOTE the plug can only be inserted one way, do not force it and reversing the electrical connection will cause damage.

Once the modulator is installed, connect the audio and video cables to the corresponding RCA jacks on the rear of the unit. Then connect the RF output connector as needed to the system.

On the front of the TMM45-* you will find four (4) controls, these are audio adjustment, video adjustment, A/V ratio adjustment and RF output level adjustment. These controls use a small Phillips head screwdriver to adjust. CAUTION, do not turn the adjustment beyond their limits, this will damage them. When you feel resistance, stop turning.

NOTE it is recommended that any adjustment not be left at the end of its range of adjustment or beyond specification, always turn back about 1/8 the turn from the end of the adjustment range when making these settings.

II . SPECIFICATION

RF

Frequency Range	: 54 MHz (Ch.2) to 700 MHz (Ch. 110)
Output Level	: + 45 dBmV (minimum 15dB adjustment range)
Output Impedance	: 75 Ohms
A / V Ratio	: 15/20 dB selectable, +/- 2 dB
Frequency Stability	: \pm 5KHZ
Intercarrier Frequency	: 4.5MHz \pm 5KHZ
Spurious Outputs	: -60 dBc typical , measured at 15 dB A/V ratio and with Modulator output level of + 45 dBmV / + 60 dBmV
C/N	: 60 dB Typical

VIDEO

Input Level for 87.5% Modulation	: 1 Vp-p. Manual adjustment with front panel control
Input Impedance	: 75Ohms
Frequency Response	: \pm 1 dB (Within 5MHz)
S/N	: 60dB Typical

AUDIO

Input Level for 25 KHz Peak Deviation	: 140 mV rms. Manual adjustment with front panel control
Input Impedance	: Greater than 10 K Ohms , unbalanced
Pre emphasis	: NTSC 75 μ Sec
Frequency Response	: \pm 1 dB (40Hz to 15 KHz)

GENERAL

DC Power Input	: +12V \pm 5% at 230 mA typical + 5V \pm 5% at 350 mA typical
Operating Temperature	: 0°C to + 50°C
Size	: 1"W * 3.5"H * 7.5"D (2.5cm)W * (8.9cm)H * (19.1cm)D
Weight	: 0.3Kg