

5 SPECIFICATIONS

ALL MODELS

Power Output:	
MA-355B / MR-355C:	35 watts.
MA-605B:	60 watts.
MA-1005B:	100 watts.
Total Harmonic Distortion: (at rated output, 1,000 Hz)	Less than 0.5%.
Frequency Response:	80 Hz to 15,000 Hz, ± 2 dB.
Tone Controls:	
Bass:	+ 7/ - 12 dB at 100 Hz.
Treble:	+ 7/ - 12 dB at 10,000 Hz.
Signal-to-Noise Ratio:	
Mic:	Greater than 52 dB.
Aux 1 and 2:	Greater than 65 dB.
Paging:	Greater than 65 dB.
Power Amp In:	Greater than 90 dB.
Input Sensitivity/Impedance:	
Mic, Balanced:	0.3 mV/600 ohms.
Paging (transformer isolated, balanced):	-20 dBm [77.5 mV (adj.)/600 ohms.
Power Amp In, Unbalanced:	1 V/10 kohms.
Aux 1 and 2, Unbalanced:	100 mV/47 kohms.
Output Level/Impedance:	
Preamp Out, Unbalanced:	1V/1 kohms.
Tape Out, Unbalanced:	500 mV/5 kohms.
Speaker Outputs:	4, 8 and 16 ohms, 25 and 70.7 volts.
Tuner Output (MR-355C only, transformer isolated, balanced):	1 V (adj)/600 ohms.
Meter:	LED bar-graph.
Muting:	40 dB maximum attenuation.
Front Panel Controls:	
All Models:	Mic 1, Mic 2, Mic 3, Mic 4/Aux 1, Aux 2, Treble, Bass, Master, Power.
MR-355C Only:	Tuner Level, Up/Down Tuning, AM band select switch, FM band select switch, Mute, 8 station presets, memory, Tuner On/Off.
Rear Panel Controls:	
Mic 4/AUX 1:	Mic/AUX switch.
Muting:	Threshold level control and mute-defeat switch
	Paging: Level control.
Tuner Output:	Level control
Input Connectors:	
Mic:	3-pin female XLR connector.

Aux 1 and Aux 2:	Two RCA phono jacks labeled R and L.
Power Amp In:	1/4 inch phone jack.
Paging:	Screw terminal.
AM and FM Antenna (MR-355C only):	Screw terminals.
Output Connectors:	
Speakers:	Seven screw terminals on barrier strip (ground, common, 4, 8 and 16 ohms, 25 and 70.7 volts).
Tape Out:	Two RCA phono jacks labeled R and L.
Preamp Out:	1/4 inch phone jack.
Tuner Output (MA-355B only):	Screw terminal.
Unswitched AC Power:	Twin-blade with grounded ac outlet.
Enclosure:	Steel, painted black, white graphics, plastic trim.
Power Requirements:	
MA-355B:	108-132 V ac, 50/60 Hz.
MA-605B:	155 watts.
MA-1005B:	190 watts.
MR-355C:	370 watts.
	170 watts.
Fuse Requirements:	
MA-355B / MR-355C:	1.2 A and (2) 3.5 A, standard, 250 Vac.
MA-605B:	2 A and (2) 5 A, standard, 250 Vac.
MA-1005B:	3 A and (2) 7 A, standard, 250 V ac.
Dimensions:	
Height:	4.25 inches (10.8 cm).
Width:	16.5 inches (41.9 cm).
Depth:	12.5 inches (31.8 cm).
Weight:	
MA-355B:	16.0 lbs (7.3 kgs).
MR-355C:	17.5 lbs (7.9 kgs).
MA-605B:	22.5 lbs (10.2 kgs).
MA-1005B:	27.5 lbs (12.5 kgs).
Tuner Section: (MR-355C Only)	
Tuning Range,	
FM:	88 to 108 MHz.
AM:	525 to 1,620 kHz.
Antenna Input,	
FM:	300 ohms, balanced (included).
AM:	Low impedance, unbalanced.
Usable Sensitivity,	
FM:	8 μ V.
AM:	50 μ V.
Signal-to-Noise Ratio,	
FM:	60 dB.
AM:	45 dB.

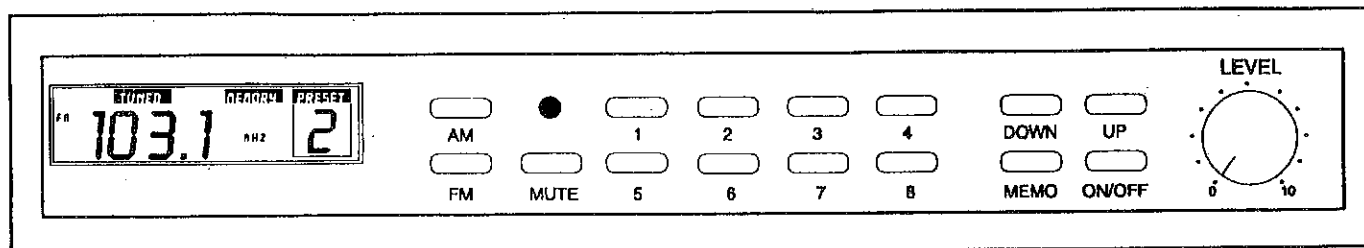


Figure 9: Tuner Section of MR-355C

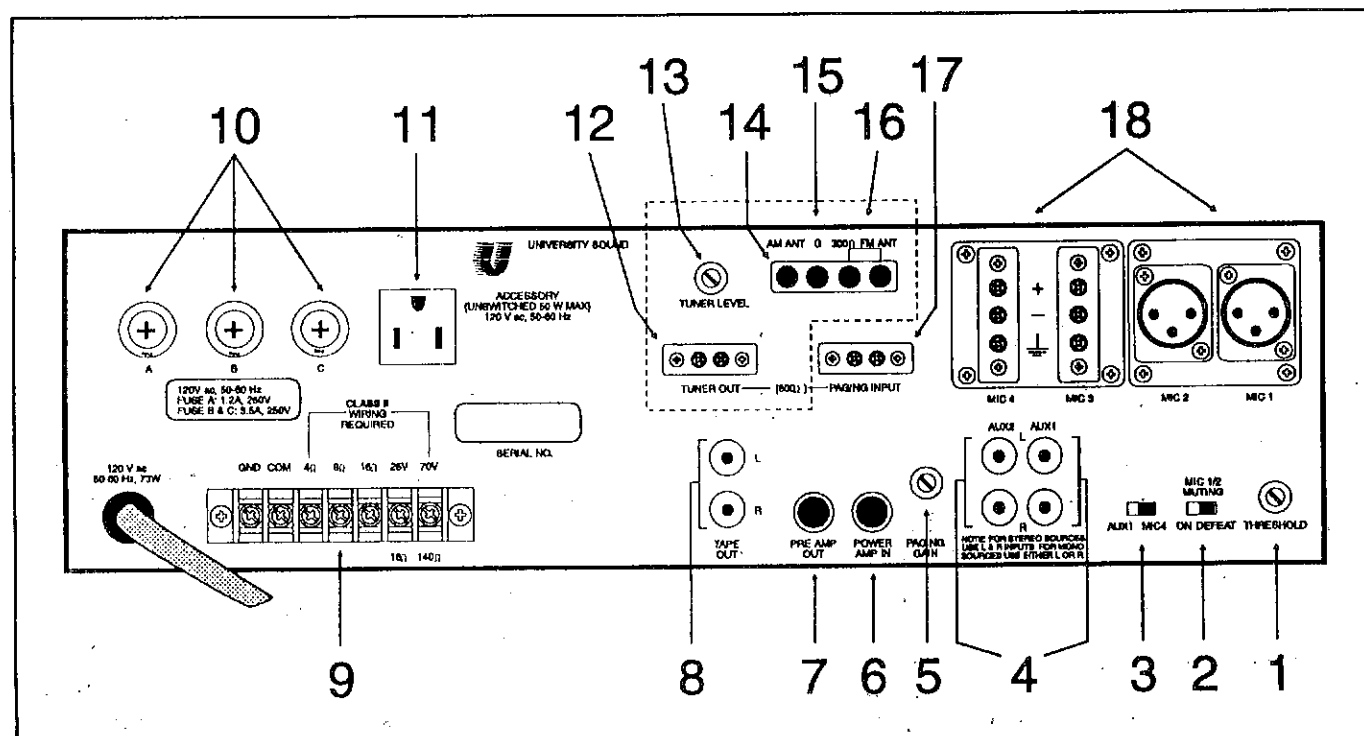


Figure 10: Back Panel Layout

Using the UP and DOWN buttons, stations can be selected either manually or by causing the tuner to automatically search "UP" or "DOWN" the band until a station is found. To manually select a station, press the UP or DOWN button momentarily. To automatically search for a station, press and hold either button. The buttons numbered from 1 to 8 select one of the 24 (8 AM and 16 FM) station presets. When one of these buttons is pressed momentarily, the tuner will jump to the station stored in that preset memory. To access FM presets 9 - 16, hold the desired button down until the preset changes. For example, if FM preset button #1 is held down, preset #9 is accessed. The AM presets and the FM presets use the same eight buttons; to access a preset on a different band, first press the AM or FM button to set the desired radio band. To store a station in a preset, use the MEMO button. First, set the tuner to the desired station and AM or FM band. Then press and release the MEMO button. The "MEMORY" box will light in the digital readout. While this box is lit, press the desired preset number button. If no preset is pushed within a certain amount of time, the MEMORY light will go out, preventing accidental erasure of a preset.

When the tuner is set to the FM band, the MUTE button toggles a circuit which narrows the sensitivity of the tuner circuit. This is useful when two stations are close enough on the FM band to cause the tuner to receive both stations simultaneously. When the MUTE circuit is active, the tuner can be fine-tuned so that only one station is received. An LED light directly above the MUTE button lights when the circuit is active.

4.2 Back Panel Controls and Connections (Refer to Figure 10)

1. **Threshold:** This control adjusts the threshold of the muting circuit for Microphone 1 and 2. This causes the muting circuit to operate only when there is an announcement, and not from background noise.
2. **Microphone 1 and 2 Muting:** This switch turns the automatic muting function on or off (defeat) for Microphone inputs 1 and 2. If the Mute switch is in the off position, Mics 1 and 2 do not affect the muting circuit.

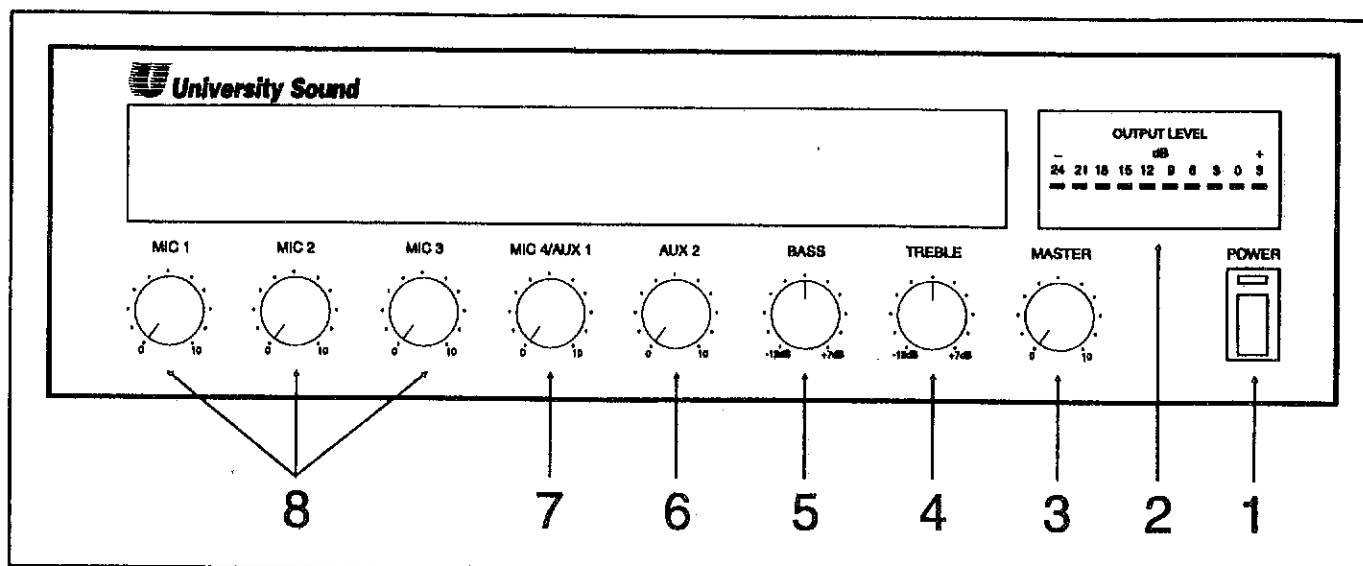


Figure 8: Front Panel Layout

amplifier's rated impedance and thus only reduces the power delivered at maximum amplifier level. However, avoid power totals greater than rated amplifier power, since the total load impedance drops below the rated load.

Preamp Out: The Preamp Out jack provides a line-level mix of the input signals, fed through a 1/4 inch phone plug wired with a single-conductor shielded cable. See Figure 5.

Use the signal at the Preamp Out jack to feed an external equalizer or signal processor whose output would connect to the Power Amp In jack.

The preamplifier output may also be used alone to drive an additional external power amplifier with its own set of speakers. When the Preamp Out jack is used, the mixed signal to the internal power amplifier is not interrupted, it continues to drive the internal power amplifier.

Tuner Output (MR-355C only): The AM/FM tuner signal may be connected to a paging or PBX system through this screw terminal located on the back panel. A signal from the tuner can provide music-on-hold for any device that interfaces to the telephone line. The level of the tuner output may be adjusted with the level control located on the back panel.

Tape Output: The Tape Out jacks provide a high-level mix of the input signals. The mix feeds to an external tape recorder through RCA phono plugs wired with single-conductor shielded cable.

The master volume control does not affect the level at the Tape Out jacks, which permits setting the tape recorder's input level independent of system volume. The tape output is buffered, so that an improper load will not affect system performance.

Block Diagram Label: Included with this manual is a Block Diagram Label which attaches to the unit's top cover for quick reference.

4 OPERATION

4.1 Front Panel Controls (Refer to Figure 8)

1. **Power Switch and Power Indicator:** This switch supplies power to the unit. The Power indicator lights when power is applied to the unit.
2. **Display:** This LED bar-graph indicates audio output level. **TO AVOID DISTORTION, DO NOT EXCEED "0 dB".**
3. **Master:** This control adjusts the level of the combined input signals to the power amplifier.
4. **Treble:** This control adjusts the high frequency response by providing up to 7 dB of boost or 12 dB of cut at 10 kHz.
5. **Bass:** This control adjusts the low frequency response by providing up to 7 dB of boost or 12 dB of cut at 100 Hz.
6. **Auxiliary:** This control adjusts the level of the Auxiliary input.
7. **Microphone 4/Auxiliary 1:** This control adjusts the level of the Microphone 4/Auxiliary 1 input.
8. **Microphone 1, 2 and 3:** These controls adjust the levels of the Microphone 1, 2 and 3 inputs.

4.1.1 MR-355C AM/FM Digital Tuner Operation (Refer to Figure 9)

The MR-355C has been equipped with a digital AM/FM tuner. In addition to digital readout, this tuner offers high sensitivity, FM muting and 24 (8 AM and 16 FM) station preset memories. To use the tuner, press the ON/OFF button (the tuner power may already be "on" when the unit is shipped to you) to power up the tuner. *The tuner's ON/OFF switch is independent of the main unit's POWER switch.*