MAX MMS-01S Multimedia Server

The MAX MMS-01S Multimedia Server (FIG. 1) keeps an ever expanding library of DVDs and CDs well organized, simple to access, and easy to use. The MMS-01S features a robust internal hard drive that allows you to efficiently manage up to 25 DVDs or 625 CDs (approximate values).

The MMS-01S accommodates single and multi-room video distribution, allowing the user to search and select chapters, titles and tracks. Video is stored in native DVD format to fully capture the quality of the original video. Music is stored in native audio CD format (although the MMS provides playback of MP3 files as well).

- The MMS-01S supports up to 25 MAX-AVM audio/video modules, via ethernet.
- The MMS-01S provides two audio output zones for digital and analog stereo output. Additionally, the USB port allows you to connect one MAX-AOM audio-only module (which distributes four zones) for a total of up to six audio zones.
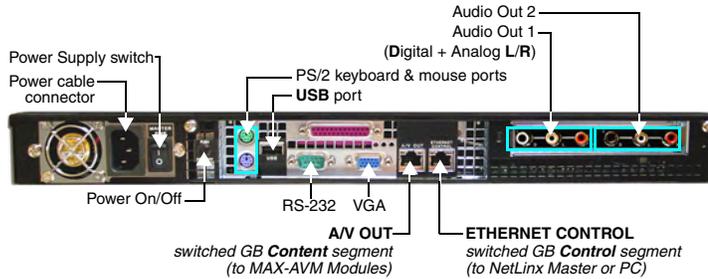

FIG. 1 MMS-01S MultiMedia Server (rear view)

Product Specifications

MMS-01S (FG 2178-10) Specifications	
Storage capacity:	• 250 gigabytes of storage space • 25 DVD (625 CD) capacity (approximate values) • Approximately 25 CDs can be stored in place of 1 DVD
Power:	110-240 VAC, 50/60Hz
AC Current Draw (AMP):	• 1.01A - Bootup/Power Cycle Peak • .95A - Normal Usage Peak
Front Panel Components: (remove Faceplate to access)	• 1 cold-swappable 250GB hard drive • Drive Status LEDs • DVD/CDRW drive • Ventilated front cover
Rear Panel Components:	• Power Cable connector: IEC connector for AC power cable (included) • Master Power Supply switch: Turns the power supply on/off • Power On/Off button: Turns the MMS on/off • PS/2 Keyboard and Mouse ports • USB port: Type A USB connector connects to one MAX-AOM module for additional audio distribution • RS-232 port: DB-9 serial port for external control • Parallel port: *not used* • VGA port: DB15HD port provides VGA output • ETHERNET CONTROL port: RJ-45 Gigabit Ethernet port provides 1000/100/10 Mb/s network connectivity between the MMS and the NetLinx Master or PC • A/V OUT port: RJ-45 Gigabit Ethernet port provides 1000/100/10 Mb/s network connectivity between the MMS and MAX-AVM module(s) for A/V distribution • Audio outputs: Two sets of three RCA jacks (D,L,R) provide digital (D) and analog stereo (L, R) output
Audio Output:	• 2 audio output channels, each with RCA SPDIF digital, analog stereo • Digital audio output: 6-channel Dolby Digital and DTS • Analog audio output: stereo • 24-bit D/A conversion, 128X over sampling • 48kHz sampling rate • Output level -10dBV nominal • Signal to Noise Ratio 110db A-weighted • Frequency Response: 20Hz to 20kHz • Dynamic Range: 110dB
Dimensions (HWD): (without rack ears)	• 1.75"" x 17.3" x 20" (4.45 cm x 43.94 cm x 50.80 cm) • 1 RU (mounts in a standard 19" equipment rack)
Weight:	26.40 lbs (11.97 kg)
Operating Environment:	• Operating Temperature: 10º to 35º C • Operating Relative Humidity: 20% to 80% (non-condensing) • Minimum Ventilation Clearance: 3" front and 3" rear • Operating acoustic noise: 62 dBA
Included Accessories:	• One 6' (1.83m) power cable • One DVD, one CD • Rack-mounting kit
Other AMX/MAX Products:	• MAX-AVM Audio-Video Module **(FG 2178-50)** • MAX-AOM Audio-Only (USB) Module **(FG 2178-55)** • MAX-AOM-EX Expansion Kit (**FG 2178-56**) • MAX-MDL200 Multi-Disc Loader **(FG 2179-01)** • MMS-HDD250G Replacement 250MB HDD **(FG 2178-250)**
Certification:	UL Listed E252362, FCC, CE

Initial Setup and Configuration

The following sections describe the basic process of setting up the MMS server and making the configurations required to get the server up and running with one or more MAX-AVM and/or MAX-AOM modules.

Follow the directions outlined below, and refer to FIG 1 for the location and orientation of the connectors mentioned in these steps.

Use the WinMAX software to add/remove content on the MMS server, and control playback. Additional documentation, including the *WinMAX Software Instruction Manual* and the *MAX by AMX Reference Guide* are available online at www.amx.com.

Note: *Static electricity can damage electronic circuitry. Before touching the MMS, discharge any accumulated static electricity from your body by touching a grounded metal object*.

Network Segment Layout for MMS Servers

It is required that the *control* segment of the network is kept separated from the (switched) *content delivery* segment, as indicated in FIG. 2.
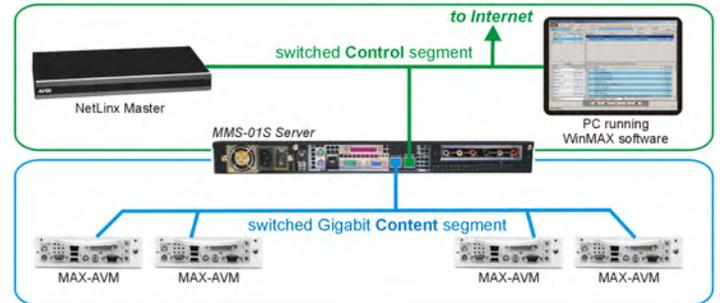

FIG. 2 Network Segment Layout

Step 1: Connect a Mouse, Keyboard and VGA Monitor

Connect a PS/2 mouse and keyboard, and a VGA monitor directly to the MMS server to access the on-board interface, called the **MAX Admin Menu** (FIG. 3)**.** You'll use the options in the Admin Menu to configure communication settings and add/remove MAX-AVM and MAX-AOM modules.

Note: *Alternatively, you can access the MAX Admin Menu via Telnet, using the Server Configuration feature in the WinMAX software. This requires that the MMS server is configured with an IP address and Subnet Mask settings which are appropriate for your network configuration. Refer to "Step 6: Install and Configure WinMAX Software" for details.*

Step 2: Connect the Power Cable and Apply Power

Note: *Consider using a UPS with the MMS server, modules and ethernet switch (if applicable).*

1. Connect the power supply, using the supplied power cord.
2. Flip the Master Power Supply switch to On.
3. Push the Power On/Off pushbutton to apply power.
4. Allow up to one minute for the MMS server to boot-up.

Shutting Down the MMS Server

Always shut down the MMS server is via the **Shutdown** command in the *MAX Admin Menu*. This allows the operating system to shut down completely before power is removed, and prevents the time-consuming reinitialization process that results from an improper shut down (and cannot be cancelled).

Step 3: Access the MAX Admin Menu

Once the boot-up process is complete, the MAX Admin Menu (FIG. 3) is displayed:
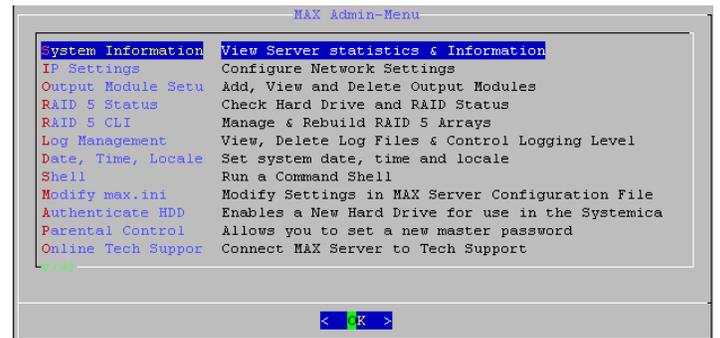
FIG. 3 MAX Admin Menu

Working With the MAX Admin Menu

- Use the arrow keys on the keyboard to highlight the desired option, and press Enter to make a selection. Do not use the arrow keys on your keyboard's numeric keypad.

- Beyond this menu, press the TAB button to navigate through the elements on the pages until an asterisk appears next to the desired selection.
- Press the spacebar to make a selection (press again to de-select).

Step 4: Add MAX-AVM & MAX-AOM Module(s)

Before you can use either the MAX-AVM or MAX-AOM modules, they must each first be added to the system, via the *Output Module Setup* options in the MAX Admin Menu. You should add the modules to the server before making any physical connections.

Adding MAX-AVM Audio/Video Modules

Complete these steps for each MAX-AVM module that you want to add to the MMS:

1. In the MAX Admin Menu, select **Output Module Setup > Add Output Module > AVM**.
2. In the *Enter Output Number* field, specify the output on the server that you want to assign to this AVM (range = 1 - 33). Each AVM module requires one output. Select OK to proceed.
   Note: The server will not allow you to assign a module to an output/zone that is already in use. Select Output Module Setup > View to review the current output/zone assignments.
3. In the *Enter Serial Number* field, enter the AVMs' *Setup Serial Number*. This number is printed on a decal located on the bottom of each AVM enclosure.
4. A message is displayed to notify you that the AVM module has been added to the system. Select OK to return to the Output Module Setup menu.
5. Select OK again to return to the main menu, then select **Restart MAX daemon**.

Adding a MAX-AOM Audio-Only Module

The 2 built-in audio outputs on the MMS-01S (see FIG. 1) utilize the internal **USB 1** port on the server. To add an external AOM module to the MMS-01S server, it is important to understand that:

- The two built-in audio outputs occupy audio outputs 1 and 2 on USB 1, leaving outputs 3 and 4 on USB port 1 open.
- The USB port on the rear panel of the server which is used to connect an additional external MAX-AOM module is **USB 2**.
- When you connect an external AOM module, the four audio outputs on that AOM will use ports **3** and **4** on **USB 1** (the ports that are unused by the two built-in audio outputs), and ports **1** and **2** on **USB 2** (as indicated below):

	MMS Output/Zone (1-33)	USB Port (1-2)	Audio Output (1-4)
built-in audio outputs on MMS	1	1	1
	2	1	2
external AOM	3	1	3
	4	1	4
	5	2	1
	6	2	2
MAX-AVM(s)	7...(to 33)	AVM 3...	

To add a MAX-AOM:

1. In the MAX Admin Menu, select **Output Module Setup > Add Output Module > AOM**.
2. In the *Enter Output Number* field, specify the first of up to 4 outputs on the server that you want to assign to the AOM (range = 1 - 33). Each AOM requires up to 4 server outputs to accommodate the 4 audio output/zones provided by each MAX-AOM. Since the MMS-01S supports one MAX-AOM, you'll assign up to 4 server outputs (one at a time). Select OK to proceed.
3. In the *Enter USB Port Number* field, enter the number of the USB port (1 or 2) on the MMS server that this MAX-AOM will be physically connected to. Select OK to proceed.
4. In the *Enter AOM Output Number* field, specify which audio output/zone on the MAX-AOM (1 - 4) you are adding to the specified server output. Select OK to proceed.
5. A message is displayed to notify you that the AOM module has been added to the system. Select OK to return to the Output Module Setup menu.
   Repeat steps 1 through 5 to assign each of the AOM's four audio output/zones to a USB port and output on the MMS server.
   Note: Always assign 4 consecutive server outputs to the MAX-AOM, even if you don't plan to use all of the AOM's outputs right away. Also, assign the 4 server outputs starting either with output #1 (if there are no MAX-AVMs on this server), or immediately after the last output assigned to an AVM. To avoid potential confusion later, do not mix AOM outputs and AVM outputs on the server.
6. Select **Restart MAX daemon**.

Step 5: Connect the Modules To the MMS Server

Once the MAX-AVM and MAX-AOM modules have been added to the server via the MAX Admin Menu, you can physically connect them to the MMS server.

Connecting MAX-AVM Modules

Note that multiple AVMs require a GB Ethernet switch (not included).

1. Connect the audio outputs, using either one of two options:
   a. Use the supplied mini-stereo to RCA adapter for analog audio output
   b. Use a coaxial cable for digital audio output
2. Use either a VGA or S-Video cable to connect the video output on the AVM to a display device.

3. Use ethernet cables to connect the ethernet port on the AVM to a GB ethernet switch (not included), and the GB ethernet switch to the A/V OUT connector on the MMS server.
4. Connect the included power supply.
5. Push the power button on the front panel of the AVM, and allow up to one minute for the module to boot up.
   *Power up the MMS **before** applying power to the AVM module(s).*

Connecting the MAX-AOM Module

Note: Do not use a USB hub with MMS servers or AOM modules.

1. Connect the MAX-AOM to an audio system (amplifier, switcher, etc.), using one of two options:
   a. Use RCA cables for analog stereo output (L and R)
   b. Use a coaxial cable for digital audio output (D)
2. Connect the included power supply to apply power to the AOM.
3. Use the supplied USB cable to connect the AOM module to a USB port on the MMS server.
   *Power up the AOM **before** connecting to the MMS server.*

Note: Refer to the MAX-AOM and MAX-AVM Installation Guides (available from www.amx.com) for detailed product information.

Step 6: Install and Configure WinMAX Software

Once the MAX-AVM and AOM modules have been added and connected to the MMS server, you can use the WinMAX software application to initiate and control playback of movies or music.

If its not already installed, load the WinMAX application on your PC. WinMAX can be downloaded from www.amx.com as a self-extracting executable.

If you intend to connect to the MMS via a LAN connection, verify that the PC is communicating properly with the network, and that the MMS server is powered and booted up.

Note: For WinMAX to be viewed properly, set your PCs resolution to **1024 x 768**.

1. Use an ethernet cable to connect the ETHERNET CONTROL port on the MMS server to the LAN that the PC running WinMAX is on.
2. Launch the WinMAX software on your PC and open the *System Information* tab, where you can specify the network address of the MMS server.
3. Change the *Server's IP Address or URL* field to match that of the MMS server you are connecting to. Click on the disk icon next to the text-entry field to save this configuration.
   If you are connecting to the MMS server via a direct connection with a PC (using a crossover ethernet cable), be sure that the IP Address of the Network card in your PC is in the same range as the server, but *not the same as* the server. For example a network card setting of 192.168.1.31 will work with an IP address of 192.168.1.30.
   *The default IP Address for all MAX servers is **192.168.1.30**.*
- The blank fields should fill in momentarily, indicating that the MMS has been recognized.

If You Don't Connect

- Check ethernet cables and verify that all connections are intact.
- If you are connecting to the server via a PC network, be sure that the *IP address* and *Subnet Mask* settings are appropriate for your network configuration. Consult your network administrator for help with this.

You can also use WinMAX to establish a Telnet connection with the MMS to access the MAX Admin Menu: in the WinMAX *System Information* tab, click on **Server Configuration**. You will be prompted for a *User Name* and *Password*. These are case sensitive, and by default:

- User Name = **root**
- Password = **mozart**

Note: If you have connected directly to the MMS (as described in Step 1), you will not be prompted for a User Name or Password.

Step 7: DVD and CD Playback

Once you have established communication with the MMS server via WinMAX, you can use WinMAX to initiate and control playback of movies or music.

Note that for DVDs, the region code of the DVD must match the region code setting on the MMS. By default, MMS servers are set to Region Code 1. Refer to the *DVD Region Code Settings* insert for details and instructions on changing the Region Code setting on MMS servers.

Playing a DVD

In WinMAX, open the *Movies* tab. Select the *Output Zone* that is associated with the AVM that you will use for display, then select a DVD title (MMS servers ship with one DVD loaded and ready for playback), and click the **Play** button.

Playing a CD

Open the *Music* tab. Select the *Output Zone* that is associated with the AOM that you will use for playback. Then, select a CD title (MMS servers ship with one CD loaded and ready for playback), and click the **Play** button.

Note: Use WinMAX to add/remove content (DVDs/CDs) on the MMS server. Refer to the WinMAX Instruction Manual for details.

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