



# MS616A Switch 16 Channel Audio Installation and Setup Guide



## Supported Models

This installation guide covers this Switch 16 Channel Audio model:

- Europe: EFMS616A/N1B
- UK: EFMS616A/T1B

## What's in the Box

The following items are included in your Escent Switch 16 Channel Audio

- Escent Matrix Switch 16 Channel Audio (MS616A)
- IEC power cord
- This manual

## Safety Instructions

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as when a power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

- ⚠ **WARNING!** Do not expose the apparatus to dripping or splashing. Do not place objects filled with liquids near the apparatus.
- ⚠ **AVERTISSEMENT!** N'exposez pas l'appareil à l'égoutture ou à l'éclaboussement. Ne placez pas les objets remplis de liquides près de l'appareil.
- ⚠ **WARNING!** Setzen Sie den Apparat nicht Bratenfett oder dem Spritzen aus. Setzen Sie nicht die Gegenstände, die mit Flüssigkeiten nahe dem Apparat gefüllt werden.
- ⚠ **WARNING!** To reduce the risk of fire or electrical shock, do not expose this apparatus to rain or moisture.
- ⚠ **AVERTISSEMENT!** Pour réduire le risque du feu ou de choc électrique, n'exposez pas cet appareil à la pluie ou à l'humidité.
- ⚠ **WARNUNG!** Um das Risiko des Feuers oder des elektrischen Schlages zu verringern, setzen Sie diesen Apparat nicht Regen oder Feuchtigkeit aus.
- ⚠ **WARNING!** Equipment must be connected to a Mains socket outlet with a protective earthing connection.
- ⚠ **AVERTISSEMENT!** L'équipement doit être relié à une sortie de douille de forces à un raccordement de mise à la terre protecteur.
- ⚠ **WARNUNG!** Ausrüstung muss an einen Hauptleitungseinführungsanschluß mit einem schützenden Erdunganschluß angeschlossen werden.

## Requirements and Specifications

Network Requirement: Ethernet or ZigBee 802.15.4 mesh network

## Technical Specifications

Table 1-1. MS616A Technical Specifications

Inputs	
# of Channels	16 L/R Stereo Pairs
Input Connectors	RCA Jacks
Input Impedance	10 kΩ typical
Nominal Input Level	-14 dBV
Maximum Input Level	+4 dBV
Outputs	
# of Channels	16 L/R Stereo Pairs
Output Connectors	RCA Jacks
Output Impedance	50 Ω typical
Nominal Output Level	-14 dBV
Maximum Output Level	+4 dBV
Zone (Output) Control:	
Available Gain	Mute (-75 dB) to -40 to +8 dB
Treble	-12 to +12 dB, 2 dB steps, High Shelving EQ
Bass	-12 to +12 dB, 2 dB steps, Low Shelving EQ
Balance	L / R
Input Power Requirement:	
Voltage	100-240V~
Frequency	50/60 Hz
Amps	0.12/0.06 Amps
Watts	14.4 Watts

## Additional Resources

The following resources are available:

- Your Escent-authorized reseller
- Escent Web Site: <http://www.escent.co.uk>

## Features and Benefits

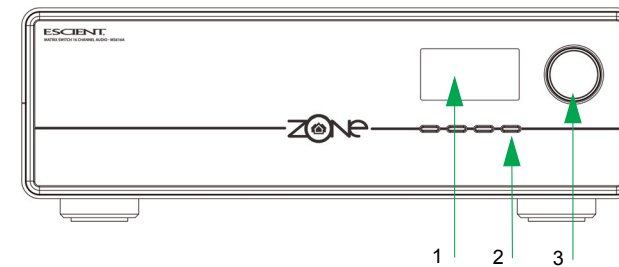
- Switches up to 16 input sources to up to 16 simultaneous output zones.
- Adjustable gain, treble, bass, and balance for each zone
- Audio sensing on inputs
- Device chassis is three standard rack units (RU) tall and rack mountable conforming to EIA 19" rack standards (13.3 cm x 44 cm x 35.6 cm)

- Communicates with control devices via Ethernet 10/100 port and ZigBee (a wireless standard for mesh-networking).

Backlighting feature turns on with any button push or Select Dial push and stays lit for a preset time (default is 30 seconds).

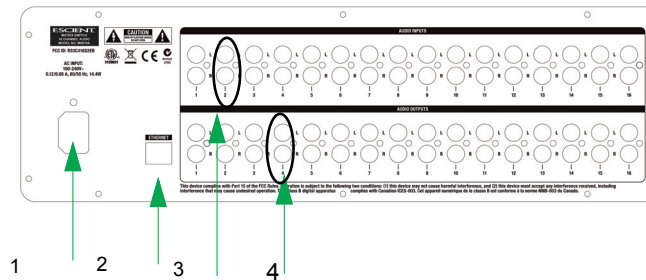
## About the Switch 16 Channel Audio

### Front View



1. **Front Display**—For displaying or setting audio switch settings and navigating system menus
2. **Buttons**—For choosing options or menus displayed in the front panel user interface
3. **Select Dial**—For scrolling through and selecting screen elements or options displayed in the LCD

### Back View



1. **Power Plug Port**—For standard IEC cord (included). Supports universal AC input (100-240 VAC 50/60 Hz).
2. **Ethernet**—RJ-45 for a 10/100 Mb Ethernet connection
3. **Audio In (Left-Right pairs) 1-16**—RCA jacks for stereo channel input for up to 16 stereo analog sources
4. **Audio Out (Left-Right pairs) 1-16**—RCA jacks for stereo channel line output for up to 16 amplifiers

## Source Inputs

Each of the 16 signal sensing analog audio inputs (the RCA style ports) is labeled 1-16 for each individual source.

## Audio Outputs

The system automatically creates generic source names displayed in the front of the device. To change these names, you must update your system using supported system designing software (such as Composer Pro on a PC). For more information, refer to the documentation that shipped with your Escent controller or contact your professional installer or reseller.

## Front Display

The best method of initially setting up system routing for the Switch 16 Channel Audio is using Composer Pro software on a PC (for trained installers only). You can also make adjustments from the front display.

The front display allows you to set or change audio source routing and change zone settings for volume, bass, treble, and mute. The display also shows the current source and zone activity.

## Set Up the Switch 16 Channel Audio

This device operates as part of the Escent home system, which requires physical and logical connections to function as designed.

Essential setup tasks include:

1. Connect Input and Output Devices
2. Connect Input and Output Devices

3. Connect to the Network and Power
4. Set Up Logical Connections
5. Static IP Modifications

This chapter describes, in general terms, how to set up physical connections required for the Switch 16 Channel Audio and all associated devices. Refer to any device-specific documentation for additional installation instructions.

To set up the logical connections required, refer to *Escent Composer Pro User Guide* software documentation.

## Connect Input and Output Devices

1. Connect audio source devices (such as CD changers or players, tuners, iPods, or tape players) you want included in the system to the audio in jacks.
2. Connect amplifiers or amplified speakers as needed to the audio out jacks.

## Connect to the Network and Power

1. If you are using an Ethernet connection for the Switch 16 Channel Audio, plug the data cable from the home network connection into the Switch 16 Channel Audio RJ-45 port (labeled Ethernet) and the network port in your wall or at the network hub or switch.
2. Connect the power cord provided to the back of the Switch 16 Channel Audio and to the power outlet. Once the power cord is connected, the Switch 16 Channel Audio should power up.

## Set Up Logical Connections

Physical and logical connections are required in order to control, navigate, and use the Switch 16 Channel Audio as designed.

Thus far you have set up the physical connections for the Escent Switch 16 Channel Audio. To complete the logical setup, trained installers must use a PC connected (and with Escent Composer software installed) to the home network. If you are a trained Escent installer, refer to the *Composer Help file*.

## Network Configuration

To set the network configuration:

1. At the In to Out Assignments screen, press the Network button.
2. On the Network Configuration screen, choose an Ethernet or ZigBee network by rotating and pressing the Select Dial.

**IMPORTANT!** When making logical connections in Composer, identify the device as the network type (Ethernet or Zigbee) that you choose on the device network configuration. To avoid unexpected behavior, do **not** identify the device as both network types.

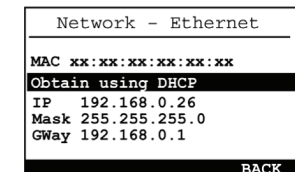
**IMPORTANT!** En établissant les rapports logiques dans le compositeur, identifiez le dispositif comme type de réseau (Ethernet ou Zigbee) ce vous choisissez sur la configuration réseau de dispositif. Pour éviter le comportement inattendu, n'identifiez pas le dispositif en tant que les deux types de réseau.

**WICHTIG!** Wenn Sie logische Beziehungen im Komponisten herstellen, identifizieren Sie die Vorrichtung als die Netzart (Ethernet oder Zigbee) diese Sie wählen auf der VorrichtungNetzwerk Konfiguration. Um unerwartetes Verhalten zu vermeiden, identifizieren Sie die Vorrichtung nicht als beide Netzarten.

3. If the switch is set to use a ZigBee network, the EUID, Gateway, and ZigBee channel number are displayed. This screen has two menu options:

- **Identify:** When identifying the switch in Composer, press this button.
  - **Back:** Returns to the Network Configuration screen.
4. If the switch is set to use an Ethernet network, the MAC address, method of obtaining a network IP address, the device's IP address, Subnet Mask, and Gateway are displayed.

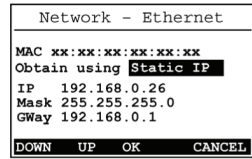
The Switch 16 Channel Audio, by default, uses DHCP to obtain a network IP address.



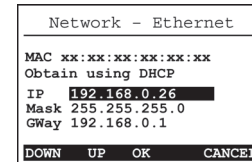
If the local area network does not support DHCP, you can configure the switch to use a Static IP address instead:



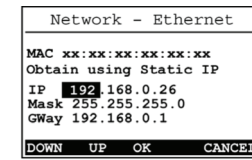
- Press the Select Dial to enter Edit mode.
- Press the Down or Up button (or rotate the Select Dial) to choose Static IP.



- Press OK (or press the Select Dial).
  - Press Save (or press the Select Dial).
- Edit the IP, Mask, and GWay fields for the Static IP network: Use the Select Dial to select a line, then press the dial.



Use the Select Dial to scroll the number up or down and edit as needed, then press the Select Dial to move to the next field within the number.



- When finished editing, press Save.

## Use Switch 16 Channel Audio

This chapter introduces the user interface available to Switch 16 Channel Audio users and common system tasks you can perform with the Switch 16 Channel Audio from the front display.

**NOTE:** Following initial setup, you may never need to manually change settings on the Switch 16 Channel Audio. This device is managed by the Escient system. The use of this chapter is completely optional.

This device assists in fulfilling a room-specific music request. To play music, use a system navigation device available to your current room to choose a specific music source or a device. That device may or may not need to make use of this switch.

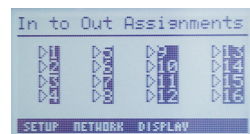
## View Output Assignments

Once you complete the physical and logical setup tasks, you can view or change setup configuration in the Switch 16 Channel Audio front display.

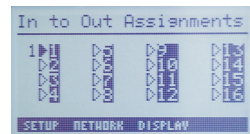
When you power up the Switch 16 Channel Audio, the following System Status screen appears momentarily.



The System Status screen is then replaced by the In to Out Assignments screen.



Once you make an assignment, the screen displays the assignment. For example, Output 1 is mapped to Input 1.

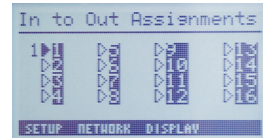


## Manage Outputs

### View Output Assignments

To view output assignments:

- Ensure your Switch 16 Channel Audio is powered up and that the In to Out Assignments screen displays in the front display.
- On the In to Out Assignments screen, view the current input-to-output assignments.



The screen consists of 16 output zones and any assigned input source. The shaded arrow indicates the Output currently selected.

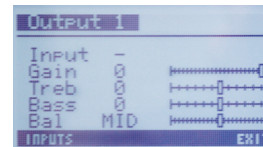
To explore these menu options, press the buttons on the front panel:

- Setup:** Displays an output-specific screen. The most recent screen accessed is displayed by default, but you can choose to view a different output's setting by changing the Output number.
- Network:** Displays the Network Configuration screen. From this screen, you can select Ethernet or Zigbee.
- Display:** Displays the Display Configuration Screen.

### Configure an Output

To change output source or settings:

- On the Output to Input screen, press the Setup button to view the output settings of the default output screen (which is the last output screen accessed).



- From the output screen, you can: (1) change to another output screen; (2) change the output settings on the screen; or (3) toggle to the Input Signal Sensing screen.
- If the output-specific screen you want to view did not display, use the Select Dial to highlight and select the output number and then change it.
  - (Optional) Change settings for the current output using the supported ranges:
    - Input:** Displays the number of the currently assigned input source and any label given to the input source. You can change this setting to any available input sources.
    - Gain:** Supported range: Mute and -44 to +4 dB (default: 0 dB)
    - Treble:** Supported range: -12 to +12 dB (default: 0 dB)
    - Bass:** Supported range: -12 to +12 dB (default: 0 dB)
    - Balance:** Supported range: -50 to +50dB (default: 0 dB)
  - To toggle to view input signal sensing information, press the Inputs button.
  - To exit the screen, press the Exit button.
  - Rotate the Select Dial to highlight a setting.
  - Press the Select Dial to enter edit mode.
  - Rotate the dial to change the setting; then press the dial to Save the new setting and exit edit mode or, to exit without saving, use the Cancel button.
  - Press the Inputs button to go to the Input Signal Sensing screen, or press the Exit button to return to the Output to Input screen.

### Check Signal Status

- From the Output to Input screen, press the Setup button, then press the Inputs button to access the Input Signal Sensing screen.



- On the Input Signal Sensing screen, a shaded circle appears by the device connection number of any input device with a signal present.

## View Network Settings

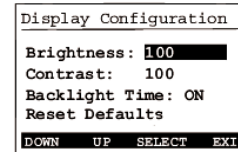
To view network settings:

- Press Network.
- From the Network Configuration screen, select Ethernet or Zigbee.
- To return to the Network Configuration screen, press Back.

## Set Front Display Preferences

To set your viewing preferences for the front display:

- On the Output to Input screen, press the Display button. The Display Configuration screen displays.

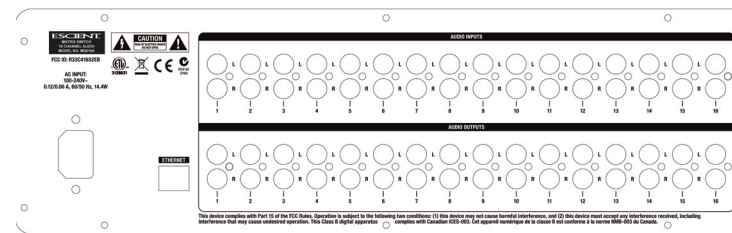


- Use the buttons and/or the Select Dial to choose a setting to change: Once you press the Select button (or press the dial), you enter Edit mode.
- In Edit mode, use the buttons or Select Dial to change the highlighted setting then press the OK button (or press the dial) to save the change and exit.

- Brightness:** Supported range: 0 to 100
- Contrast:** Supported range: 0 to 100
- Backlight Timeout:** Supported settings are:
  - OFF (always off)
  - 1 to 90 seconds (default is 30 seconds)
  - ON (always on)
- Reset Defaults:** Restores factory defaults.

## Regulatory Compliance

This product complies with standards established by the following regulatory bodies:



### North America

#### FCC

FCC ID: R33C416S2EB

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

**IMPORTANT!** Changes or modifications not expressly approved by Escient could void the user's authority to operate the equipment.

**IMPORTANT!** Les changements ou les modifications pas expressément approuvés par Escient ont pu vider l'autorité de l'utilisateur pour actionner l'équipement.

**WICHTIG!** Die Änderungen oder Änderungen nicht ausdrücklich genehmigt durch Escient konnten die Berechtigung des Benutzers aufheben, um die Ausrüstung zu betreiben.

#### Industry Canada

IC: R33C416S2EB

This Class B digital apparatus complies with Canada ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

### Edison Test Lab (ETL)

This product has been tested by ETL and has been found to be in compliance with:

- UL 60065: 2003: Seventh Edition, "Standard for Audio/Video and Musical Instrument Apparatus for Household, Commercial, and Similar General Use"
- CSA C22.2 No. 60065-03: Issued: 2003, First Edition, Revision: 2007 "Audio, Video and Similar Electronic Equipment"

### Europe

#### CE Declaration of Conformity

#### European Contact Information

DMI Europe  
5653 MA Eindhoven  
The Netherlands  
Phone: +312507889  
Fax: +312507840  
web: www.dm-i.eu  
email: info@dm-i.eu



#### United States Contact Information

Escient  
6640 Intech Blvd. Suite 250  
Indianapolis, IN 46278  
Phone: 317.616.6789  
Fax: 317.616.6790  
web: www.escient.co.uk  
email: info@dm-i.eu

Product: **Switch16 Channel Audio** (Model # MS616A)

The undersigned hereby declares, on behalf of Escient Corporation, that the above-referenced product, to which this declaration relates, is in conformity with the provisions of:

- Council Directive 89/336/EEC (May 3, 1989) on Electromagnetic Compatibility
- Council Directive 1999/5/EC (Mar 9, 1999) on Radio & Telecommunication Terminal Equipment (R&TTE)
- Council Directive 73/23/EEC (Feb. 19, 1973) on Low Voltage Equipment Safety
- Council Directive 93/68/EEC (Jul. 22, 1993) Amending Directives 89/336/EEC and 73/23/EEC

and has been tested to the requirements of, and shown to be in compliance with, the following requisite standards:

- EN 300-328 V1.7.1 (2006-10), Electromagnetic Compatibility and Radio Spectrum Matters (ERM); wide band transmission systems; data transmission equipment operating in the 2.4 GHz ISM band and using wide band modulation techniques.
- EN 55024:1998 incorporates: EN61000 (4-2, 4-3, 4-4, 4-5, 4-6, 4-8, 4-11 and A1 & A2)
- EN 61000-3-2:2005, Limits for harmonic current emissions
- EN 61000-3-3:2002, Limitation of voltage fluctuations and flicker in low voltage supply systems
- IEC 60065:2001+ and 1: 2005 "Standard for Audio/Video and Electronic Equipment"

### Australia/New Zealand

AS/NZS CISPR 22: 2006—Information Technology Equipment—Radio disturbance characteristics.

Dansk: Vigtigt! Lederen med grøn/gul isolation må kun tilsluttes en klemme mærket  eller .

Norsk: Apparatet må tilkoples jordnet stikkontakt.

Suomi: Laite on liitettävä suojamaadoituskoskettimilla varustettuun pistorasiaan.

Svensk: Apparaten skall anslutas till jordat uttag.

## Recycling



## Warranty

Limited 2-year Warranty. Refer to [www.escient.co.uk/warranty](http://www.escient.co.uk/warranty)

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Part Number: MS616A\_0409

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