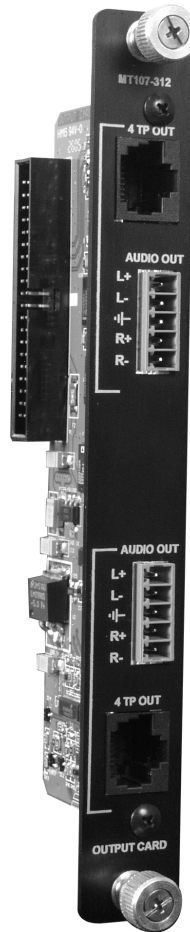


**Mult
Tasker™**



MANUAL PART NUMBER: 400-0415-001

MT107-312

**2 OUT, 4 TWISTED PAIR OUTPUT CARD
FOR MULTITASKER™
MATRIX SWITCHER
USER'S GUIDE**

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PRECAUTIONS / SAFETY WARNINGS 1

Please read this manual carefully before using your **MT107-312**. Keep this manual handy for future reference. These safety instructions are to ensure the long life of your **MT107-312** and to prevent fire and shock hazards. Please read them carefully and heed all warnings.

1.1 GENERAL

- Qualified ALTINEX service personnel or their authorized representatives must perform all service.

1.2 INSTALLATION

- To prevent fire or shock, do not expose this unit to rain or moisture. Do not place the **MT107-312** in direct sunlight, near heaters or heat-radiating appliances, or near any liquid. Exposure to direct sunlight, smoke, or steam can harm internal components.
- Handle the **MT107-312** carefully. Dropping or jarring can damage the card.
- Do not pull the cables that are attached to the **MT107-312**.
- Insert the card carefully into the slots of the MultiTasker™ without bending any edges.

1.3 CLEANING

- Clean only the connector area with a dry cloth. Never use strong detergents or solvents, such as alcohol or thinner. Do not use a wet cloth or water to clean the card. Do not clean or touch any component or PCB.

1.4 FCC / CE NOTICE

- 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 A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.
- Any changes or modifications to the unit not expressly approved by ALTINEX, Inc. could void the user's authority to operate the equipment.

ABOUT YOUR MT107-312 2

MT107-312 2 OUTPUTS, 4 TWISTED PAIR, SINGLE CHANNEL

The **MT107-312** is a 4 Twisted Pair Output expansion card for use with the MT107-104 64X64 Matrix Engine. The **MT107-312** is capable of receiving Altinex encoded Twisted Pair standard signals.

Each **MT107-312** connects to the output connector on the **MT107-104** Matrix Engine. Up to 8 **MT107-312** cards may be connected to the engine. Each card is connected to the engine via specially provided, high bandwidth video cables.

As part of the **MT107-104** Matrix Engine, the **MT107-312** has special built-in features. Signal detection circuitry allows the user to determine the presence of an output signal on any channel.

Output signals are driven by high speed, high bandwidth differential amplifiers.

TECHNICAL SPECIFICATIONS 3

FEATURES/DESCRIPTION	MT107-312
GENERAL	
Inputs	
Input from Engine	Internal Box Header (1)
Outputs	
Twisted Pair Connectors	RJ-45 Female (2)
Audio Connectors	5-Pin Terminal Block (2)
Compatibility	
Signal types	Altinex Twisted Pair Standard
Signal resolution	VGA through UXGA, C-Video, S-Video, Stereo Audio

Table 1. **MT107-312** General

MECHANICAL	MT107-312
Enclosure Slots Required	1 Slot per Card
Weight	0.4 lb (0.2 kg)
Connector Panel	Black Anodized
T° Operating	10°C-50°C
T° Maximum	75°C
Humidity	90% non-condensing
MTBF (calc.)	38,000 hrs

Table 2. **MT107-312** Mechanical

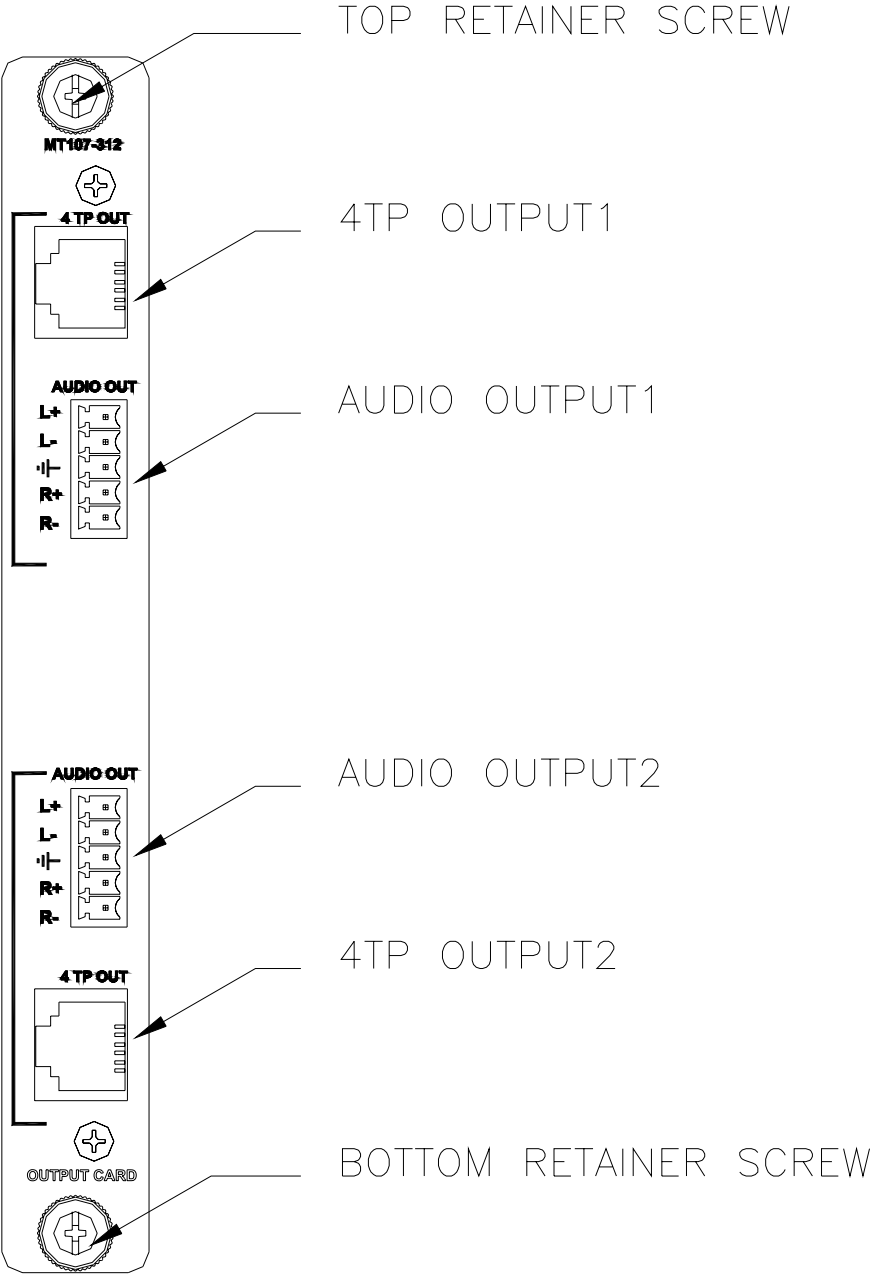
ELECTRICAL	MT107-312
Output	
Twisted Pair	Video/Sync/Audio Signals Altinex Standard
Analog Signal Level	1.5V p-p max.
Balanced Stereo Audio	0dB Gain
Input	
Bus input from Matrix Engine	0dB Gain
Bandwidth	
Video Bandwidth	300 MHz @ -3dB

Table 3. **MT107-312** Electrical

SPECIAL APPLICATION

DESCRIPTION OF PE1005

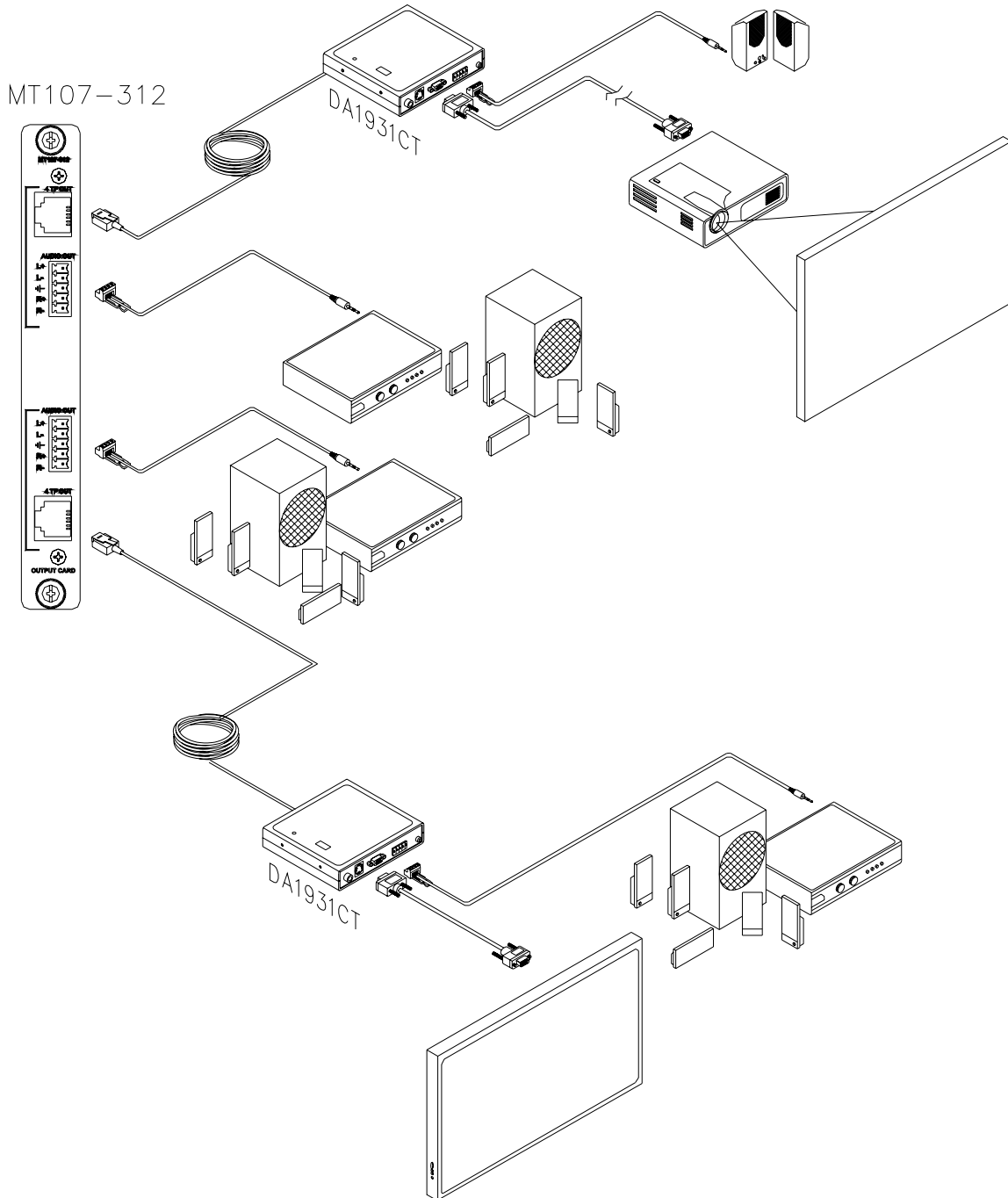
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APPLICATION DIAGRAMS

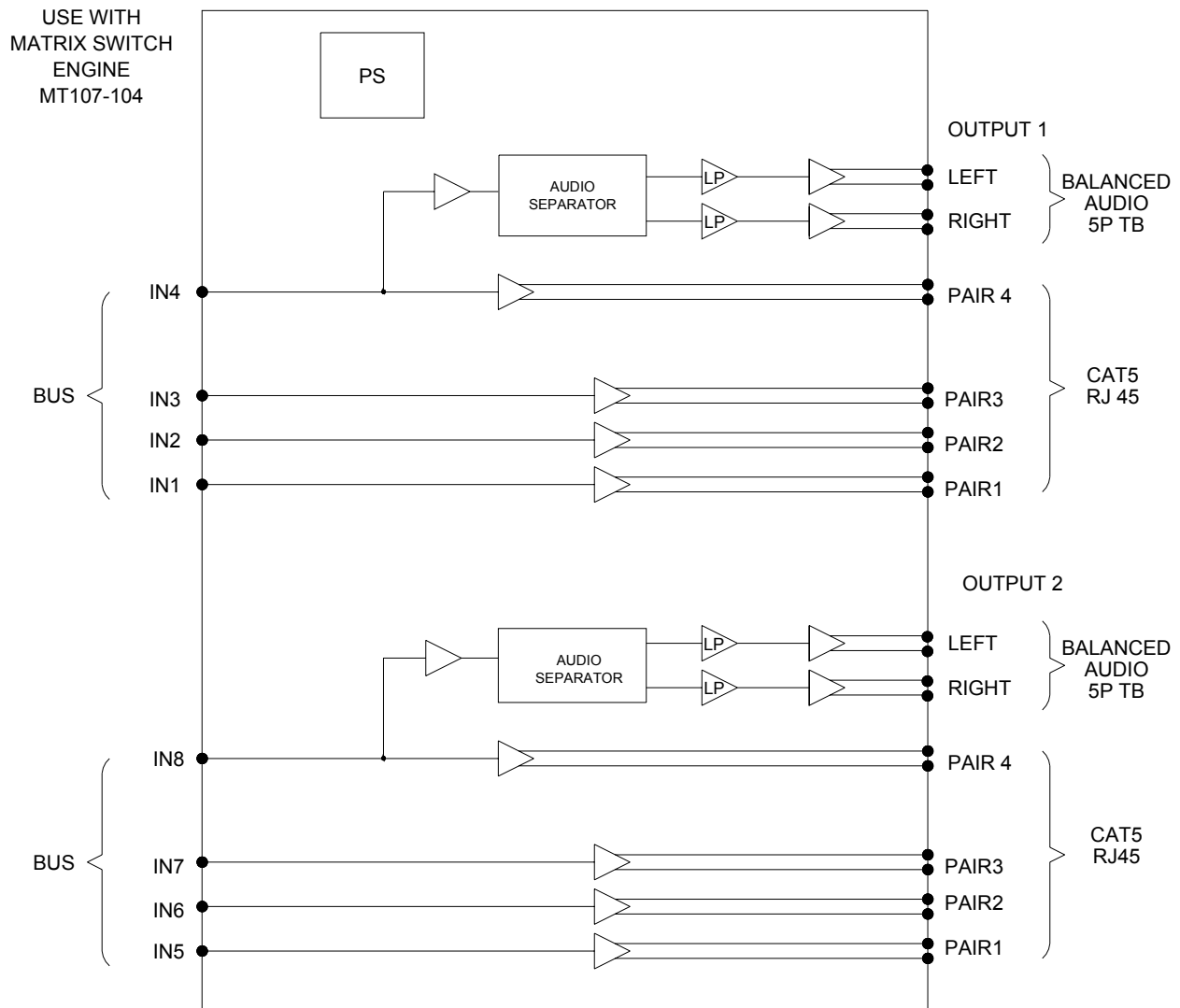
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DIAGRAM 1: TYPICAL SETUP



SPECIAL APPLICATION

DIAGRAM 2: INTERNAL VIEW



INSTALLING YOUR MT107-312 6

- Step 1.** Turn off power to the MultiTasker™ enclosure.
- Step 2.** Locate the **MT107-100** or **MT107-104** currently installed in the MultiTasker™. Ensure there are enough empty slots in the enclosure to allow the one or more **MT107-312s** to be installed.
- Step 3.** Route the ribbon cables through the notch in the add-on boards and connect to the **MT107** base engine assembly using the special high bandwidth cables provided with the Engine. Make sure that the cable connector is secured in the socket of the output connector card.
- Step 4.** Carefully, slide the **MT107-312** into a slot in the MultiTasker™ Enclosure.
- Step 5.** Secure each card by tightening the retainer screws at the top and bottom of each card.
- Step 6.** Connect each 4 TP OUT output on the **MT107-312** to the input of a twisted pair to VGA+ Audio receiver. The Altinex DA1931CT and MT103-123 receivers are good examples.
- Step 7.** Connect the audio output of the **MT107-312** to the input of an amplifier or other audio device.
- NOTE:** Audio terminal blocks on the **MT107-312** are output connectors. The audio output is the decoded audio signal transmitted on the 4 TP OUT output connector.
- Step 8.** Turn on power to the MultiTasker™ enclosure. The unit is ready for operation.

OPERATION 7

7.1 RS-232 CONTROL

The **MT107-312** has many remote control capabilities when used in a MultiTasker™ Enclosure with an MT107-104 Matrix Switcher. These capabilities are accessible through standard RS-232 communication. The actual controlling may be accomplished using a computer control system or any other device capable of sending RS-232 commands.

7.2 DESCRIPTION OF COMMANDS

Please, see the MT107-100 or MT107-104 User's Guide for a full listing of commands available for the **MT107-312** as part of a MultiTasker™ Matrix Switcher.

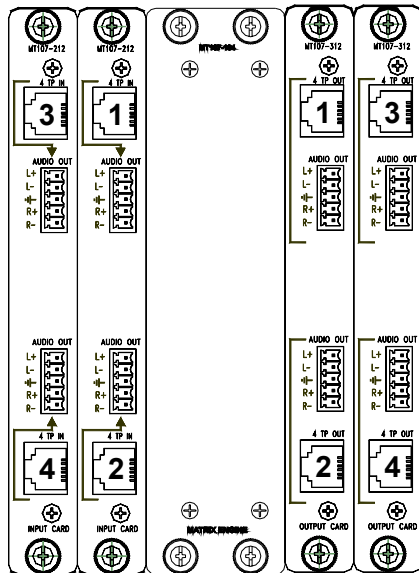
7.3 HANDLING MULTI-CHANNEL SIGNALS

The twisted pair inputs each use four twisted pairs for the combined audio and video signals. Therefore, four channels of the matrix engine must be used to switch the entire video + audio signal. This means all four input channels must be switched to their corresponding output channels.

Example:

There is an MT107-104 Matrix Switcher with two MT107-212s on the input side and two **MT107-312s** on the output side. The MT107-212s connect to the matrix engine's inputs 1-8 and 9-16, while the **MT107-312s** connect to the matrix engine's outputs 1-8 and 9-16. (See the following illustration.)

Matrix Engine



In order to switch input 1 to output 1, the matrix connections need to be as follows:

- In 1 to Out 1
- In 2 to Out 2
- In 3 to Out 3
- In 4 to Out 4

etc...

In order to switch input 1 to output 2, the matrix connections need to be as follows:

- In 1 to Out 5
- In 2 to Out 6
- In 3 to Out 7
- In 4 to Out 8

etc...

MATRIX DEFINITIONS

The matrix configuration may be changed to make it easier to control the signal switching. For example, the matrix can be defined as having a channel width of four, thereby controlling all four signal channels with one input and output definition. In order to set the matrix configuration, the following command and format must be used:

Command Format:

[MATj;mm;ww;xx;yy;kk;ll;CnUiS]

j = Matrix ID (j = # from 1 to 9)

The following properties MUST be entered in two (2) digit format.

mm = Inputs (2 digit # from 01-64)

zz = Outputs (2 digit # from 01-64)

xx = Input Offset (2 digit # from 00-99)

yy = Output Offset (2 digit # from 00-99)

kk = Channel Width (2 digit # from 01-32)

ll = Channel Spacing (2 digit # from 00-31)

Cn = Engine Card Slot Number

Ui = Unit ID (i = # from 0 to 9)

NOTE: See the MT107-104 User Guide for details.

Example:

Define the matrix as follows:

[MAT1;04;04;00;00;04;00;C8]

Now, in order to connect Input 1 to Output 2, the only command that needs to be sent is [I1O2C8]. This yields the following connections:

- Ch1 In1 Out 1 ON
 - Ch2 In1 Out 1 ON
 - Ch3 In1 Out 1 ON
 - Ch4 In1 Out 1 ON
 - Ch1 In1 Out 2 ON
 - Ch2 In1 Out 2 ON
 - Ch3 In1 Out 2 ON
 - Ch4 In1 Out 2 ON
- etc...

TROUBLESHOOTING GUIDE 8

We have carefully tested and have found no problems in the supplied **MT107-312**. However, we would like to offer suggestions for the following:

8.1 NO DISPLAY

Cause 1: The source has a problem.

Solution: Check the source and make sure that there is a signal present and all source connections are correct. If the source is working and there is still no display, see Cause 2.

Cause 2: The path has a problem.

Solution: Connect the transmitter directly to the receiver, bypassing the **MT107-312** and engine. If the image is good, see Cause 3.

Cause 3: The path is not selected.

Solution: Make sure the input to output path is correctly selected.

For example, Input 17 is connected to Output 1 in the matrix engine. Physically, the source signal is connected to Input 17 and the display cable is connected to Output 1. See RS-232 accessible commands in Section 7 of the **MT107-100** or **MT107-104's** User Guide for command details.

If no display is present, see Cause 4.

Cause 4: Cable connections are incorrect.

Solution: Make sure that cables are properly connected. Also, make sure that the continuity and wiring are good. If there is still no display present, see Cause 5.

Cause 5: The display has a problem.

Solution: Make sure the display has power and is turned ON. If there is still no display, please call Altinex at (714) 990-2300.

ALTINEX POLICY

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9.1 LIMITED WARRANTY/RETURN POLICY

Please also see the Altinex website at www.altinex.com for details the on warranty and return policies.

9.2 CONTACT INFORMATION

ALTINEX, Inc.

592 Apollo Street

Brea, CA 92821 USA

TEL: 714 990-2300

TOLL FREE: 1-800-ALTINEX

FAX: 714-990-3303

WEB: www.altinex.com

E-MAIL: solutions@altinex.com