INSTALLATION INSTRUCTIONS

MicroComm DXI

MAI-625 Master Audio Interface

1 Intent & Scope

This document describes the installation procedure for the MAI-625 Master Audio Interface.

2 Description

The MAI-625 Master Audio Interface is a Voice over Internet Protocol (VoIP) device for DXL intercom systems and is used to facilitate the integration of a variety of intercom master station components into a console or control panel.

The MAI-625 provides three separate RJ-25 connectors in support of an SMK-126/136 Panel Mount Handsfree Speaker/Microphone Kit, an HHK-136 Handset/Hookswitch Kit, and an HSK-136 Headset Kit. These kits provide handsfree audio, a privacy handset, or a headset interface, and can be installed in any combination desired. Please refer to their individual datasheets for further information.

The MAI-625 also includes a line-level input and output to facilitate making audio connections to an existing system. The line level output can also connect to an amplifier for driving external powered speakers. A status input, and a DPDT control relay are also available. These signals are provided on terminal blocks with the line-level output (also) brought out to a 3.5 mm stereo audio jack.

A combination of these audio devices can be used. If more than one audio/input device is connected to the MAI the hookswitch and headset switch will determine which speaker receives audio and which microphone is active. If the hookswitch is off hook the speaker audio is connected to the handset speaker and handset microphone audio is connected to the microphone audio lines. If the hookswitch is on hook the speaker audio is connected to either the headset or handsfree speaker depending on the state of the headset switch. If the headset switch is closed (corresponding to having a headset jack plugged in) the headset microphone is active and the speaker audio is connected to the headset. If the hookswitch is on hook and the headset switch is open then handsfree operation is possible. Figure 1 describes the operation of the hookswitch and headset switch.

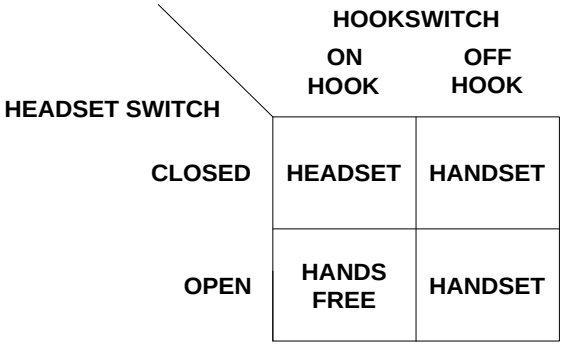

Figure 1. Operation of Hookswitch and Headset Switches

The MAI-625 has provisions for a line level output that can be used to drive speakers via an external amplifier. The following table summarizes the audio resource priorities

Priority	Device	Audio Resource
Highest	Handset	Input: Handset Microphone Output: Handset Speaker (Line Out disabled)
↓	Headset	Input: Headset Microphone Output: Headset Speaker (Line Out disabled)
	Line Out	Input: Handsfree Mic (Panel Mount Gooseneck or Flush Mic) Output: Line out & Panel Mount Mylar Speaker
Lowest	Handsfree	Input: Handsfree Mic (Panel Mount Gooseneck or Flush Mic) Output: Panel Mount Handsfree Speaker

Table 1: Audio Resource Priorities

Note when driving external speakers the panel mount handsfree speaker is not disabled when the line output is active.

The MAI-625 has provisions for several press-to-talk (PTT) inputs. The PTT switches can be used to control the audio direction of half duplex calls. The PTT inputs are available on the RJ-25 connectors

The MAI-625 can be software controlled so that the line level inputs and line level outputs can serve as a bridge between a DXL system and an existing audio system.

3 Wall Mounted MAI-425 Master Audio Interface

The MAI-625 can be either wall mounted using the 0.15″ diameter holes and #6 screws or mounted on a DIN rail using the 4 holes for mating to a DIN railclip. (A 209-188 Mounting Foot for mounting on DIN Rail Wago 210 Series)

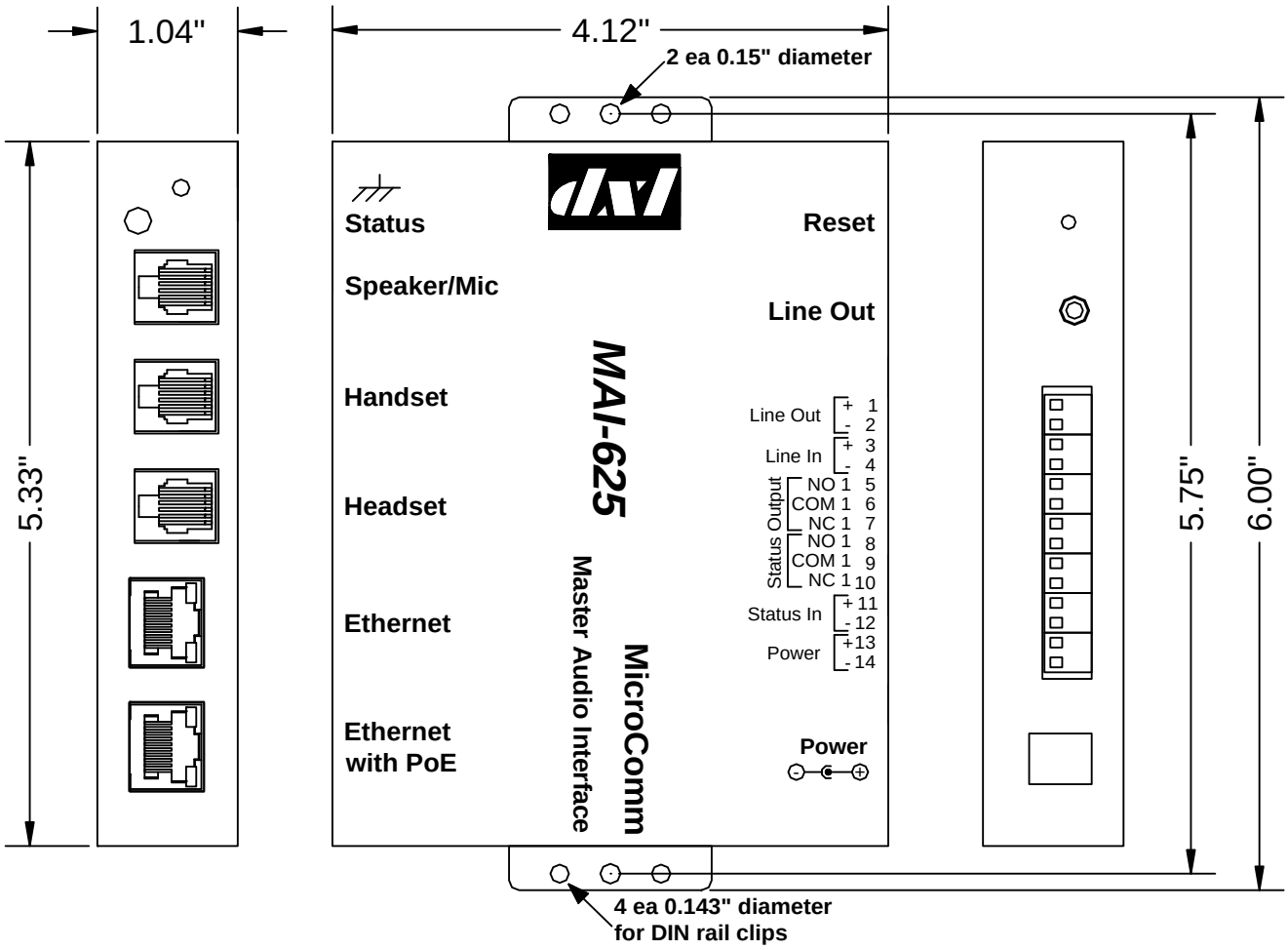

Figure 2. Mounting hole positions, for the MAI-425

4 Wiring Diagram for MAI-625

The following diagram shows the wiring required to connect up the Headset, Handset, and Handsfree Speaker/Microphone kits to an MAI-625.

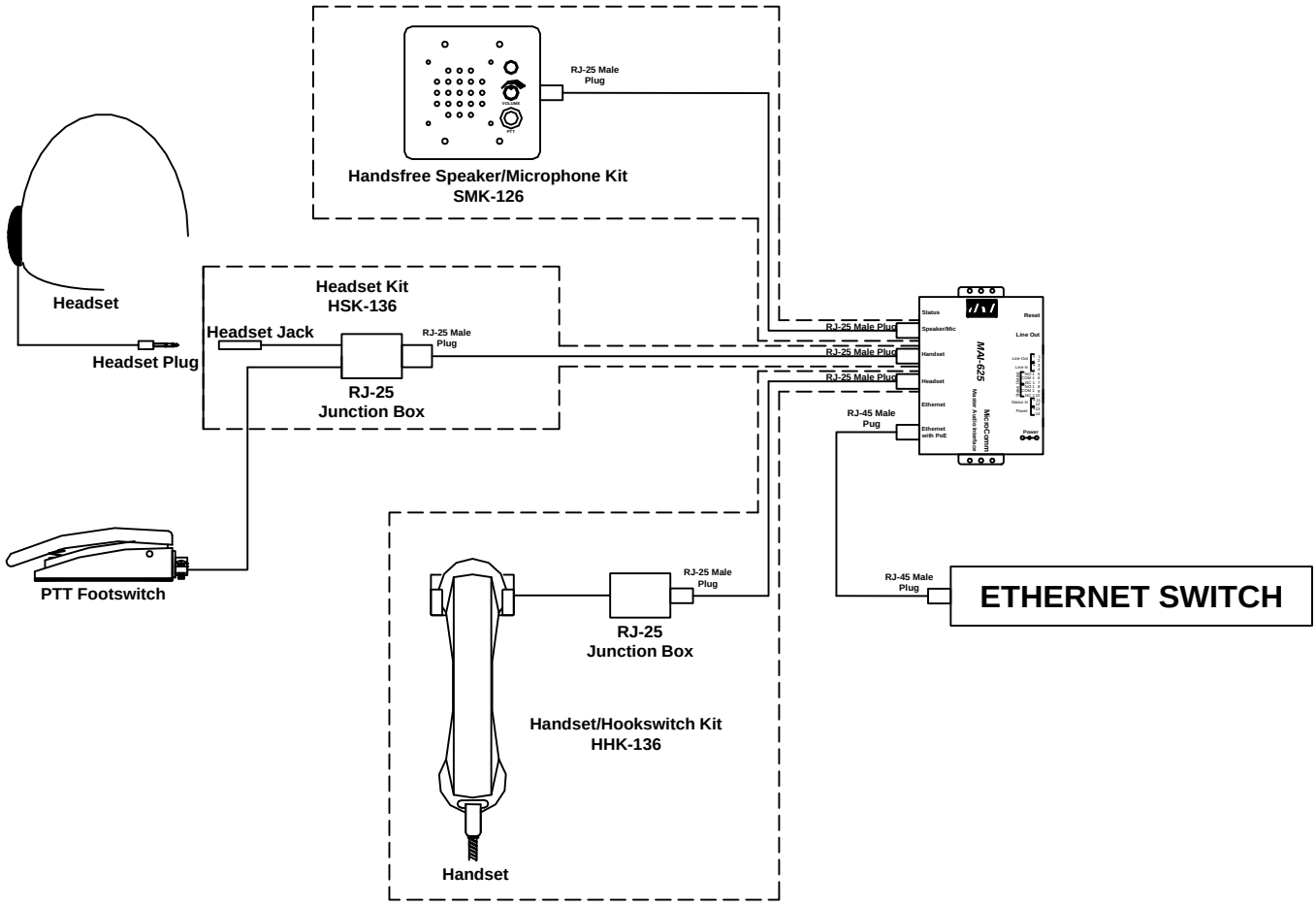

Figure 3. Wiring Diagram for MAI-625

5 Field Connection

5.1 Network Connections

Although the PSE (Power Source Equipment) must use the pin pairs assigned to an endspan or midspan (not both) the PD (Powered Device) must have the capability to accept power from either the endspan or midspan device. The Ethernet RJ-45 includes both the network and power connections.

RJ-45 Pin	Function
1	Tx+
2	Tx-
3	Rx+
4	48Vdc (SRC)
5	48Vdc (SRC)
6	Rx-
7	48Vdc (RETURN)
8	48Vdc (RETURN)

Table 2: RJ-45 Ethernet & PoE (Lower position)

The second RJ-45 includes only the network connections and is intended for the purpose of facilitating the connection of another device.

RJ-45 Pin	Function
1	Tx+
2	Tx-
3	Rx+
4	NC
5	NC
6	Rx-
7	NC
8	NC

Table 3: RJ-45 Ethernet (Upper Position)

5.2 Connections for SMK-126/136, HHK-136 and HSK-136 Kits

5.2.1 Handsfree Speaker/Microphone

The handsfree speaker and gooseneck (or flush mount) microphone with PTT connect via an RJ-25. The Speaker Microphone Kit (SMK-136) is available to facilitate the installation.

RJ-25 Pin	Function
1	Mic +
2	Push to Talk (PTT +)
3	Spk +
4	Spk -
5	Vol + (Potentiometer)
6	Mic -, PTT -, Vol -

Table 4: RJ-25 Handsfree Speaker/Microphone with PTT

5.2.2 Handset Hookswitch

The handset speaker and microphone with hookswitch and PTT connect via an RJ-25. The Handset Hookswitch Kit (HHK-136) is available to facilitate the installation.

RJ-25 Pin	Function
1	Mic +
2	Push to Talk (PTT +)
3	Spk +
4	Spk -
5	HKSW +
6	Mic -, PTT -, HKSW - , (Gnd)

Table 5: RJ-25 Handset with PTT

5.2.3 Headset

The headset speaker and microphone with PTT connect via an RJ-25. The Headset Kit is available to facilitate the installation.

RJ-25 Pin	Function
1	Mic +
2	Push to Talk (PTT +)
3	Spk +
4	Spk -
5	Not used
6	Mic -, (PTT -)

Table 6: RJ-25 Headset with PTT

5.3 Other Connections

5.3.1 Line Output

A right angle 3.5mm stereo jack connects the line out with the mono output connected to both the left and right speakers.

Jack	Function
Tip	Line Out +
Ring	Line Out +
Sleeve	Line Out -

Table 7: Line Output

5.3.2 Line Input/Output

The line input/output supports the potential audio bridging to an existing DXI system. The Line out is in parallel with the 3.5mm stereo jack described previously.

TB-04	Function
1	Line Out +
2	Line Out -
3	Line In +
4	Line In – (Gnd)

Table 8: Line Input/Output

5.3.3 Status Input

An unsupervised input is supported via a two pin terminal block. The status input is required for the audio bridging function.

TB-02	Function
1	Input +
2	Input – (Gnd)

Table 9: Status Input

5.3.4 Status Output

The DPDT relay outputs are as follows.

TB-06	Function
1	NO
2	COM1
3	NC
4	NO
5	COM2
6	NC

Table 10: Status Relay Contacts

5.3.5 Auxiliary Power

A right angle 2.1mm barrel jack configured as center-positive is available in place of PoE.

5.3.6 Status Indicator

A right angle green LED for general status indication.

5.3.7 Earth Ground

A #6 self-tapping hole is available for the purpose of earth grounding the enclosure.