PEIMUX3

Datasheet

PEI AT and Audio Multiplexer

Enables the use of up to 3 PEI accessories with a single TETRA MRT

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1. Order Information

FT no.	Description
460300	PEIMUX3 (incl. cable for 12VDC supply)
	Optional Connection Cables:
638900	Cable for Motorola MTM800FuG ET / MXM600 (MRTs with DSUB-9 / "COM" connector)
638905	Cable for Sepura SRG3900 / SCG2229
638931	Cable for Motorola MTM800FuG (Dash Version / MRTs without DSUB-9 / "COM" connector)

2. PEIMUX3

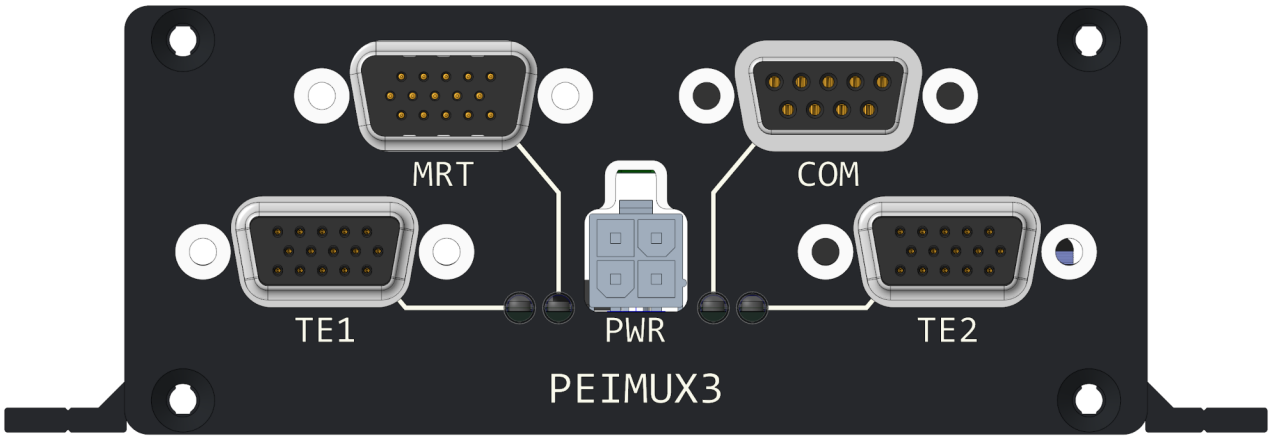
The PEIMUX3 is a third-generation PEI multiplexer. It has two full-featured ports for PEI participants (TE1 + TE2) as well as an additional dedicated data port (COM).

The full-featured PEI connectors are 15-pin D-Sub HD connectors and provide both audio and data connectivity. The sockets follow the same pin assignment as the INTER1 interface on Sepura radios, allowing compatible connection cables to be used. A standard PEI data application can be connected to the "COM" connector. A cable designed for the MTM800FuG ET can be used here.

RTS/CTS is not supported on the subscriber side. As a result, it can be necessary to disable the "Handshake" or "Flow Control" option on connected systems. The PEIMUX3 is factory-set to the de facto standard for TETRA radios, which is a data rate of 38,400 baud.

A power supply cable (+12 VDC) is included with the PEIMUX3. When connected to the Commander 6B, the radio can be turned on and off using the switches on the

cradles. The PEIMUX3 is active whenever power is supplied from the radio.



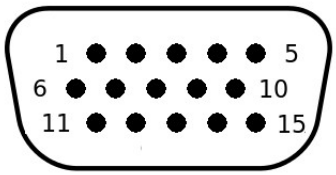
The 4 LEDs are each assigned to one of the 4 ports via visible lines. When the system starts up, the LEDs initially flash. They then remain red as long as there is no data connection on the respective port. An LED turns green as soon as data telegrams are detected in both directions.

If no telegrams are sent in either direction for more than 10 seconds, the LED turns red again. If the device is only receiving messages—for example, because the echo function is being used—without sending any messages itself, the LED will turn yellow. A yellow LED does not necessarily indicate a malfunction, especially if it occurs only intermittently.

3. Connector Pin Layout

Connector MRT

Connection the TETRA terminal (MRT)



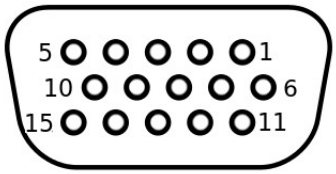
1	---
2	---
3	ON_SIG (output)
4	POWER (input, 12VDC)
5	AF_IN_A
6	AF_IN_B
7	AF_OUT_A
8	AF_OUT_B
9	---
10	RS232_RXD (input)
11	RS232_TXD (output)
12	RS232_RTS (output)
13	RS232_CTS (input)
14	---
15	GND

Remarks:

- The standard version of the PEIMUX3 does not start until power is supplied by the MRT.
- Connecting the power-on line (Pin 3 in this case) is not strictly necessary for the PEIMUX3 to function. However, the radio must then be turned on using a different method.

Connectors TE1 / TE2

Connection of full-fletched TETRA control accessories: Audio + PEI-AT data connection + powr supply (e.g. Commander 6B w/ cradle Digital)



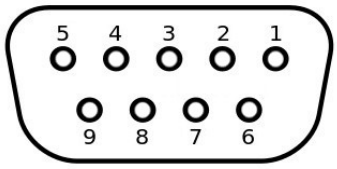
1	---
2	---
3	ON_SIG (input)
4	POWER (output, 12VDC)
5	AF_OUT
6	GND
7	AF_IN
8	GND
9	---
10	RS232_TXD (output)
11	RS232_RXD (input)
12	---
13	---
14	---
15	GND

Remarks:

- When connecting a Commander 6B via the digital interface, the switch on the interface can be used to turn the devices on and off.
- If a third-party device is to be powered via TE1 / TE2, Pin 5 and Pin 3 must be connected.
- The RTS/CTS pins are not connected on TE1 / TE2. As a result, it may be necessary to disable the "Handshake" or "Flow Control" option in connected applications. The PEIMUX3 is factory-set to the de facto standard data rate of 38,400 baud for TETRA radios.

Connector COM

Connection of additional PEI-AT participants (no audio connection)



1	---
2	TXD (output)
3	RXD (input)
4	---
5	GND
6	---
7	CTS (input)
8	RTS (output)
9	---

Remark:

- The PEIMUX3 is factory-set to the de facto standard data rate of 38,400 baud for TETRA radios.

Connector PWR

12VDC must be supplied to this connector in order to power control devices connected to the TE1/TE2 terminals and to utilize the power-on logic of our Commander 6B handsets.

1	GND_MAIN
2	ON_SIG (input)
3	+12VDC (input)
4	IN1 (input, not in use)

Remark:

- If a Motorola radio is connected via our connection cable 638900, you can use pin3, just like you would use the ignition sense / pin 25 at the Motorola MAC.

4. Technical Specifications

Dimensions (w/o flange)	108 x 108 x 45 mm (B x T x H)
Mass	ca. 350 g
Operating Voltage	+12VDC / -15% +20%
Power Consumption	< 100 mA for data-only operation (supply via MRT connection)
with control sets connected:	up to ca. 2A (add. supply via connector PWR)

5. Release Notes

31.03.2026 - first version