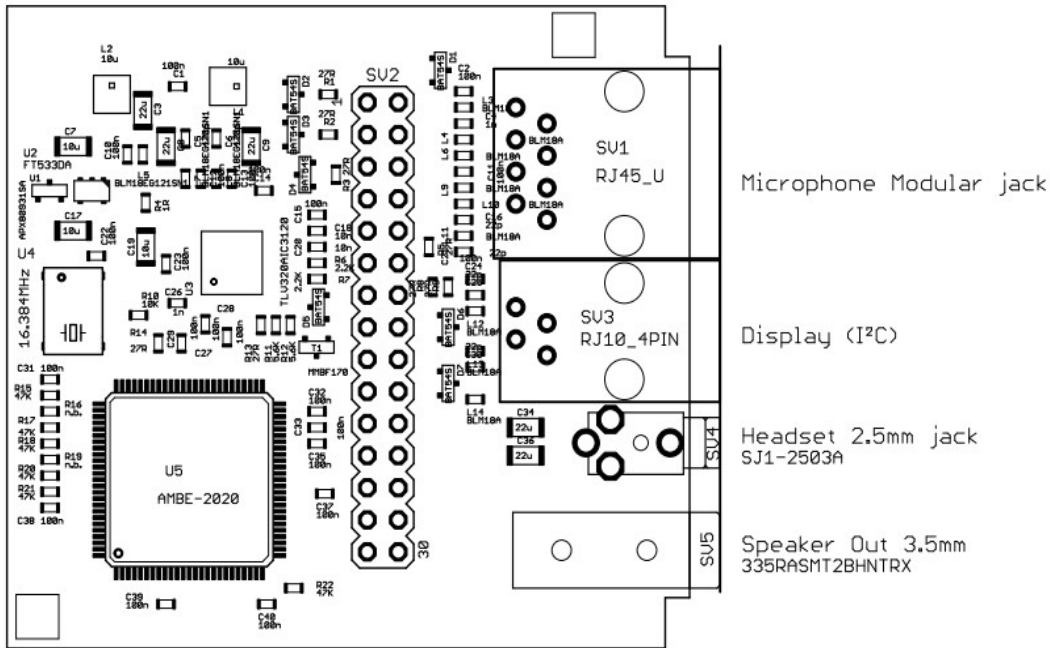


Quickstart / Installation Guide for AMBE-Addon Board (HW3.0a)

DV-RPTR AMBE-Addon



Installation

Ensure that both the power and USB connectors are disconnected from your DV-RPTR.

Make sure that you observe standard ESD handling procedures while you handle both the DV-RPTR and the AMBE Addon board.

Mount the AMBE-Addon on the top side of DV-RPTR the AMBE connectors will face the opposite direction to the DVR-RPTR connectors. (It will not seat 100% due to the height of electrolytic caps)

Ensure that all pins on the 30pin connector are correctly aligned and fit into the socket of the AMBE-Addon board, powering-up the DV-RPTR with incorrectly aligned pins can result in serious damage to both the DV-RPTR and the AMBE boards.

Speaker Output, Important notes

The external speaker is driven by a Class-D amplifier (part of the TLV320AIC3120) with a differential 5V PWM signal. The output is short-circuit proof, but none of the speaker signals can be connected to ground (not through the speaker coil either)!

A ground connected speaker will result in a destroyed TLV320AIC3120, based on this please ensure the 3.5mm connectors does not short to the metal case of the DV-RPTR.

Headset Operation

With the release of the next generation of firmware (V1.70) it will be possible to use a common mobile phone headset on the 2.5mm 3-pin connector. (PTT and the microphone share a common wire).

Operation with speaker and headset together will be possible, if both jacks are thin enough to be plugged in side by side.

Volume Adjustment

The V1.70 Firmware release will also support volume adjustment using the Up/Down keys on the mic.

The dial wheel (labeled SEL/DIAL) of the MH-59 microphone will also support volume adjustment.

DV-RPTR Firmware Update

Pressing the SCAN / FAST key of the microphone (if available) during power up will result in activation of the DV-RPTR bootloader making firmware updates much easier to do.

Connectors Pin Assignment

All 4 connectors from left to right (front view; AMBE-PCB is below the connectors).

Speaker Plug

3.5mm Stereo jack plug. Compatible with 3.5mm mono jacks

Pin	Signal
-----	--------

- | | |
|---|----------------------------------|
| 1 | speaker (+) |
| 2 | unassigned |
| 3 | speaker (-) / NOT GROUND! |

Numbering begins from the tip. Minimum impedance: 4 Ohm.

Headset Plug

2.5mm Stereo jack plug.

Pin	Signal
-----	--------

- | | |
|---|------------------------------------|
| 1 | microphone NF signal / PTT (input) |
| 2 | Earphone (output) |
| 3 | analog ground (common for both) |

Numbering begins from the tip. Minimum impedance of the earphone: 16 Ohm.

Display Connector (I²C Expansion Port)

Modular 4p4c connector (RJ10)

Pin	Signal
-----	--------

- | | |
|---|--|
| 1 | 5V power supply for additional hardware (max. 400mA) |
| 2 | I ² C SCL clock signal 5V TTL |
| 3 | I ² C SDA data signal 5V TTL |
| 4 | common ground (0V) |

Numbering is (left to right).

The frequency of I²C signals is 400kHz (50% pulse-pause duty-rate).

Microphone Connector

Modular 8p8c connector (RJ45)

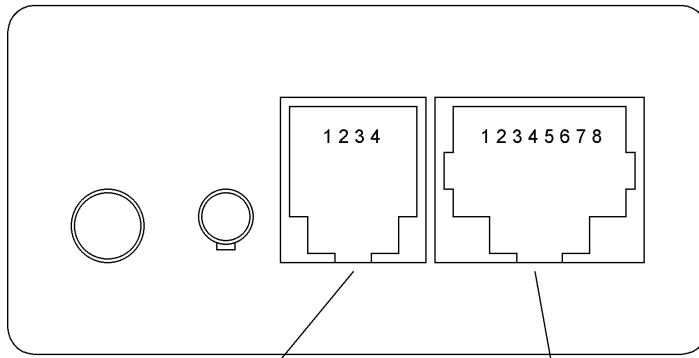
This connector is 1:1 compatible with the following Yaesu microphones MH-31A8, MH-59A8J

Pin	Signal
-----	--------

- | | |
|---|--|
| 1 | MIC_DN (active low down button), RxD (MH-59) |
| 2 | MIC_UP (active low up button), TxD (MH-59) |
| 3 | 5V power supply (max. 400mA) |
| 4 | microphone ground (analog GND) |
| 5 | microphone signal input |
| 6 | MIC_PTT (active low PTT button) |
| 7 | MIC_GND (common ground buttons, circuits) |
| 8 | MIC_SC (active low fast/scan button) |

Numbering is (left to right).

Modular Connectors Pin Assignment



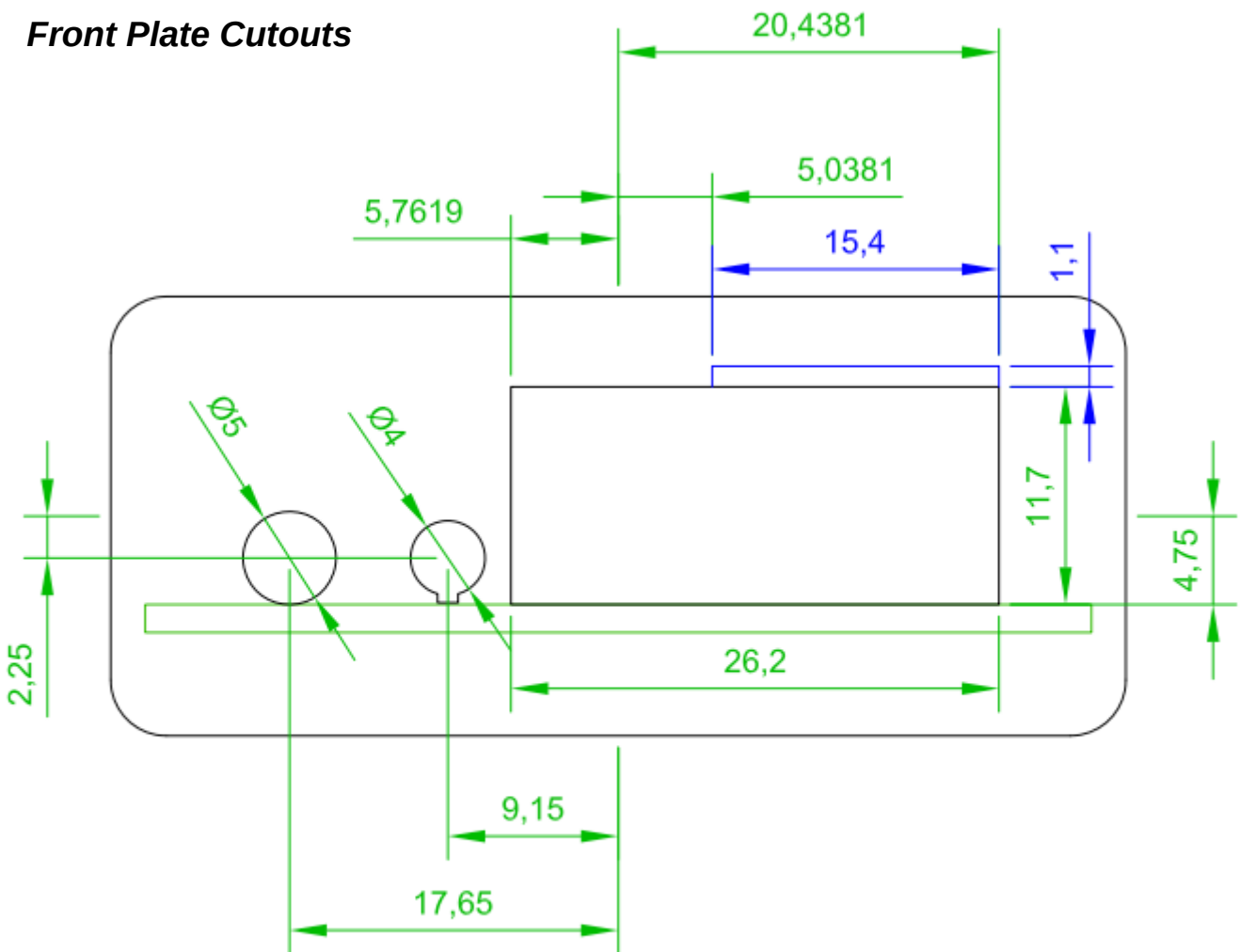
Display Connector

- 1: 5V power supply (max. 400mA)
- 2: I²C SCL clock signal TTL 5V
- 3: I²C SDA data signal TTL 5V
- 4: common GND (0V)

Microphone Connector

- 1: MIC_DN (active low down button), RxD (MH-59)
- 1: MIC_UP (active low up button), TxD (MH-59)
- 3: 5V power supply (max. 400mA)
- 4: microphone ground (analog GND)
- 5: microphone signal input
- 6: MIC_PTT (activ low PTT button)
- 7: common GND (buttons, microphone digital circuits)
- 8: MIC_SC (active low fast/scan button)

Front Plate Cutouts



all positions from center
all in [mm]

(blue) additional cutout for FCI modular jack (instead Assmann)