VE2DX

IAB1 ICOM IAB1 BREAKOUT BOX.

Mai 12th 2020

Version 1.1.0

Author: Richard G. Desaulniers Sr. VE2DX

VE2DX CT17B User manual Version 1.1.0

Date	Name	Comments	Revision
11 may 2020	VE2DX	Release first draft version	1.0.0
12 may 2020	VE2DX	Removed IAB-13 reference and corrected AIB errors.	1.1.0

Introduction:

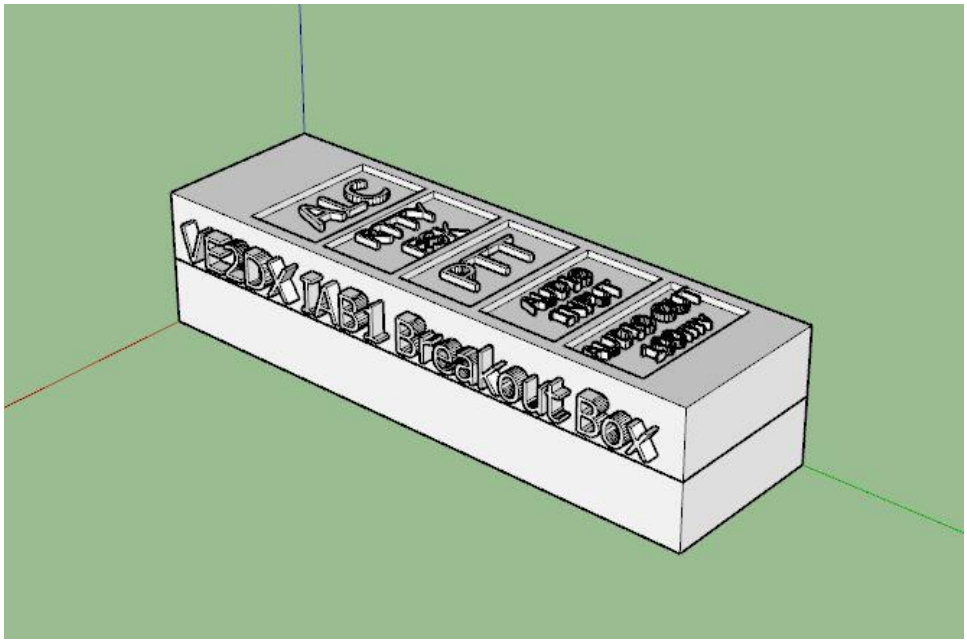
Hello and congratulation on your purchase of the **VE2DX ICOM IAB1 Breakout Box.** The **IAB1** is basically an ICOM ACC1 Conversion and distribution unit that lets you link together multiple ICOM radio to your accessories like Audio interfaces for computer.

Technical information:

The ICOM ACC1 connector is an 8 pin or 13 pin connectors on the back of most ICOM radios used to give access to ICOM accessories and external devices to needed signals like Audio Out (at fix levels of 100mv), audio in, PTT, ALC, RTTY FSK, Squelch, 13.8VDC, etc..

The ICOM design was with 8 or 13 pin DIN style connectors that are easily damaged and hard to work with. The IAB1 was designed for the 8 Pin DIN style connector to give easier access to the five most common signals on that connector, these are Audio Out, Audio In, PTT, ALC and RTTY FSK. If your ICOM radio uses a 13 Pin DIN Style connector look for the IAB2-13.

It is possible for a fee to request customization of the IAB1 to other signals available on the 8 pin ICOM ACC1 connector, see table 1 and 2 to view available signals.

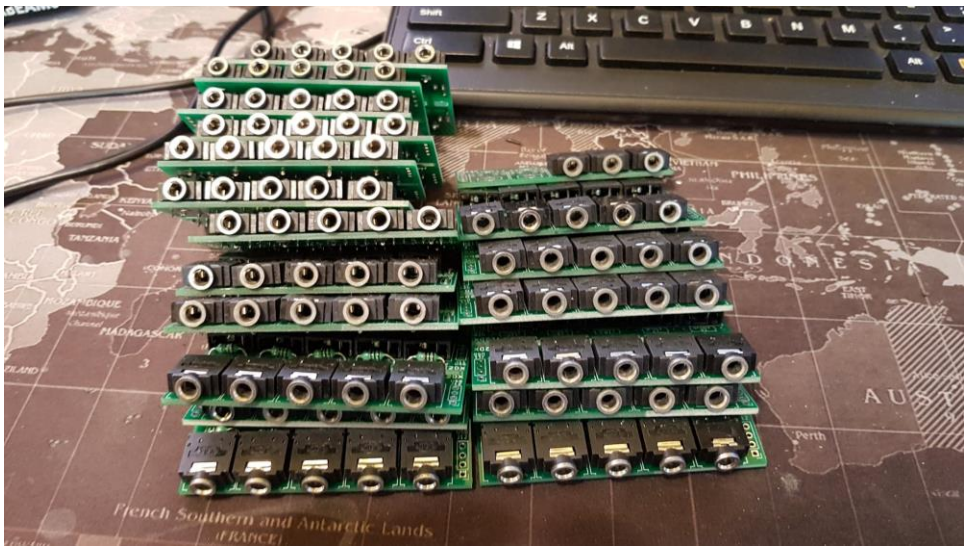


Description:

The IAB1 is made of 5 ports clearly identified on the top of the 3D printed enclosure.

- **3D SLA Printed enclosures**

One of the nice things about our design is the 3D SLA printed enclosures, this helped us turn around on the fly adjust our design like for special requested designs then the top identifications are adjusted to match the requested design, another change we made last minute was adding **magnets** to the back of the enclosure that will help the end user with the flexibility of attaching the **IAB1** on the radio itself.



Setting up the IAB1

! Warning !

Before plugin in ANY devices or IAB1, you MUST make certain that all equipment and power sources are turn OFF.

(Radios, Power supplies, accessories, PC, etc...)

1- Turn off all your radios, non-ICOM compatible devices and Power supply's.

2- Plug the 8 pin IAB1 cable in the back of the radio.

3- Making certain all devices and radios are turned off, plug you 1/8 audio style cables to your interface, making certain to clearly identify the IAB1 plug according to the enclosure case engraved identification.

Note: The IAB1 can support either 1/8 stereo or mono cables, the IAB1 design is such that the RING portion of the stereo cable is not in use. Check the manual and specifications of your other devices for proper cable selections.

Older style ACC connectors 8 pins ACC1 and 7 pins ACC2.

Note: The older ICOM radios like the 756 and 746 series and some newer ones like 7610 and 9700, use two 8 pin ACC connectors (ACC1 and ACC2) in the back of the radio, the ACC1 connector is the one used by the IAB1. ACC1 is easily identified since it has the center pin, ACC2 does not.

Newer style ACC/AUX connector 13 pins.

! Warning !

Do not try to FORCE an IAB1 DIN cable, this will damage the IAB1 and make it unusable.

That’s it! You're now ready to play!

- # Tips

1- Newer radios like the 7300, 7610 use the 13pin connector for ACC1/AUX1, these can be connected using an IAB2-13.

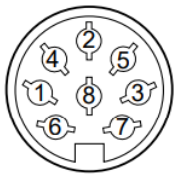
2- The IAB1 can also be adapted for a fee to the ACC2 connector if you want access to 8VDC band voltage for example.

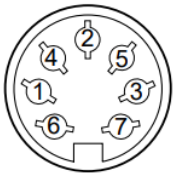
3- The PTT (SEND) pin is both an INPUT and an OUTPUT, the pin will go LOW if the radio is transmitting, and if the pin is connected to radio ground the radio will go into transmit (TX).

4- Your ICOM radio may need to be configured to make the ACC/AUX connectors work to your liking, please read your ICOM manual.

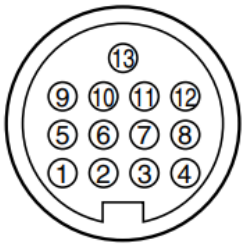
- Reference tables

■ Accessory connector information

ACC (1)	PIN No.	NAME	DESCRIPTION	SPECIFICATIONS
 Rear panel view	1	RTTY	Controls RTTY keying	"High" level : More than 2.4 V "Low" level : Less than 0.6 V Output current : Less than 2 mA
	2	GND	Connects to ground.	Connected in parallel with ACC(2) pin 2.
	3	SEND	Input/output pin. Goes to ground when transmitting. When grounded, transmits.	Ground level : –0.5 V to 0.8 V Output current : Less than 20 mA Input current (Tx) : Less than 200 mA Connected in parallel with ACC(2) pin 3.
	4	MOD	Modulator input. Connects to a modulator.	Input impedance : 10 kΩ Input level : Approx. 100 mV rms
	5	AF	AF detector output. Fixed, regardless of **[AF]** position in default settings. (see notes below)	Output impedance : 4.7 kΩ Output level : 100–300 mV rms
	6	SQLS	Squelch output. Goes to ground when squelch opens.	SQL open : Less than 0.3 V/5 mA SQL closed : More than 6.0 V/100 μA
	7	13.8 V	13.8 V output when power is ON.	Output current : Max. 1 A Connected in parallel with ACC(2) pin 7.
	8	ALC	ALC voltage input.	Control voltage : –4 V to 0 V Input impedance : More than 10 kΩ Connected in parallel with ACC(2) pin 5.

ACC (2)	PIN No.	NAME	DESCRIPTION	SPECIFICATIONS
 Rear panel view	1	8 V	Regulated 8 V output.	Output voltage : 8 V ±0.3 V Output current : Less than 10 mA
	2	GND	Same as ACC(1) pin 2.	
	3	SEND	Same as ACC(1) pin 3.	
	4	BAND	Band voltage output. (Varies with amateur band)	Output voltage : 0 to 8.0 V
	5	ALC	Same as ACC (1) pin 8.	
	6	TRV	Activates **[XVERT]** input/output when "HIGH" voltage is applied.	Input impedance : More than 10 kΩ Input voltage : 2 to 13.8 V
	7	13.8 V	Same as ACC(1) pin 7.	

• **ACC socket**

ACC	PIN No.	NAME	DESCRIPTION	SPECIFICATIONS
13-pin  Rear panel view ① brown ⑧ gray ② red ⑨ white ③ orange ⑩ black ④ yellow ⑪ pink ⑤ green ⑫ light blue ⑥ blue ⑦ purple ⑬ light green Color refers to the cable strands of the supplied cable.	1	8 V	Regulated 8 V output. (Used as the reference voltage for the band voltage.)	Output voltage: 8 V ±0.3 V Output current: Less than 10 mA
	2	GND	Connects to ground.	—
	3	SEND*1	Input/output pin. An external unit controls the transceiver. When this pin goes to ground, the transceiver transmits.	Input voltage (RX): 2.0 to 20.0 V Input voltage (TX): –0.5 to +0.8 V Current flow: Maximum 20 mA
			Input/output pin. The pin goes low when the transceiver transmits.	Output voltage (TX): Less than 0.1 V Current flow: Maximum 200 mA
	4	BDT	Not used.	—
	5	BAND	Band voltage output. (Varies with the selected amateur band)	Output voltage: 0 to 8.0 V
	6	ALC	ALC voltage input.	Input level: –4 to 0 V Input impedance: More than 3.3 kΩ
	7	NC	—	—
	8	13.8 V	13.8 V output when power is ON.	Output current: Maximum 1 A
	9	TKEY	Not used.	—
	10	FSKK	Controls RTTY keying.	High level: More than 2.4 V Low level: Less than 0.6 V Output current: Less than 2 mA
	11	MOD	Modulator input.	Input impedance: 10 kΩ Input level: 100 mV rms*3
	12	AF/IF (IF=12 kHz)*2	Fixed AF detector or receive IF (12 kHz) signal output.	Output impedance: 4.7 kΩ Output level: 100 ~ 300 mV rms*4
	13	SQL S	Squelch output. Grounded when the squelch opens.	SQL open: Less than 0.3 V/5 mA SQL closed: More than 6.0 V/100 µA

73 De Richard VE2DX 😋