

VE2DX

IMK2 manual

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Version 2.1.0

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Date	Name	Comments	Revision
11 Nov 2021	VE2DX	First draft version	1.0.0
17 Nov 2021	VE2DX	Pre release Draft	2.0.1
17 Nov 2021	VE2DX	Added Footswitch jacks modification	2.0.9
18 Nov 2021	VE2DX	Released for publication	2.1.0

Introduction:

Hello and congratulation on your purchase of the **VE2DX IMK2** 8 memories keypad for the ICOMs 7610, 7850, 7851 and 705

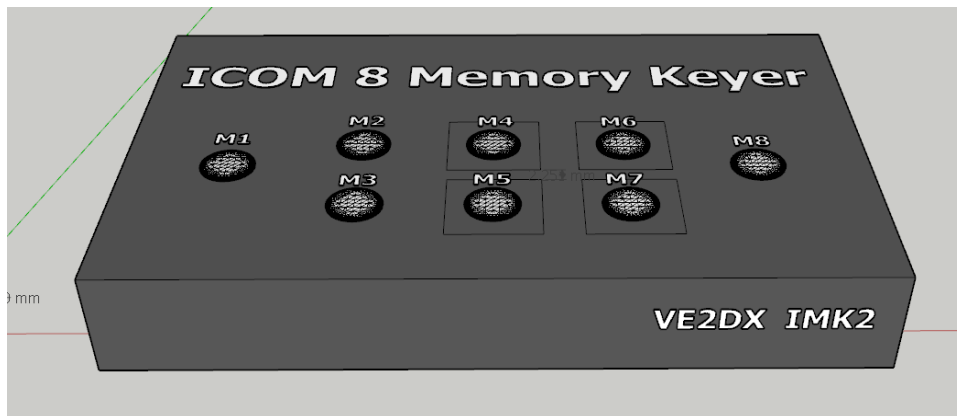
Technical information:

The VE2DX IMK2 is a simple external keypad made to plug into the rear External Keypad connector jack of the 7600, 7610, 7700, 7850 and 7851 or the KEYER connector jack of the 705.

Note: the radio must be properly configured to work with the external memory Keypad, please refer to your manual.

The IMK2 is made of 8 pushbuttons, M1 and M8 are offset from M2 to M7 to make them easier to locate during contesting. There are 3 X 3.5mm jacks in the back of the IMK2, the center one is used for connecting to the radio using a stereo 3.5mm male to male cable.

The two 3.5mm stereo jacks on each ends of the PCB are used to connect external footswitches to the IMK2, the left jack is made to control M1 and the right jack is made to control M8, these make it easier to control these two memory keys remotely during operations and free the operators hands.



Pre release sketch

Specifications:

- PCB size 3.5 x 2 inches.
- All inputs and grounds are fully RF filtered to limit RFI.
- 8 dual contact memory keys.
- M1 and M8 are placed for easy priority operations.
- 2 fully RF filtered to limit RFI External 3.5mm footswitch jacks to trigger M1 and M8.
- One fully RF filtered to limit RFI external 3.5mm jack to connect to 705, 7600, 7601, 7700, 7850 or 7851 EXTERNAL KEYPAD jack using 3.5mm male to male stereo cable.
- Fully Ground shielded PCB on both sides to limit RFI.
- 6 X large 12mm keycaps for M2 to M6 (10mm keycap on this picture).
- 2 Larger keycaps for M1 and M8 (10mm keycap on this picture).
- 5 holding stubs for very solid installation in the enclosure. (Enclosure not shown here)
- Custom design metal enclosure (coming soon)
- Available in kit form or assembled form with optional enclosure. (coming soon)
- The enclosure will be ergonomically designed to help operations. (coming soon)
- The enclosure will be laser engraved. (coming soon)

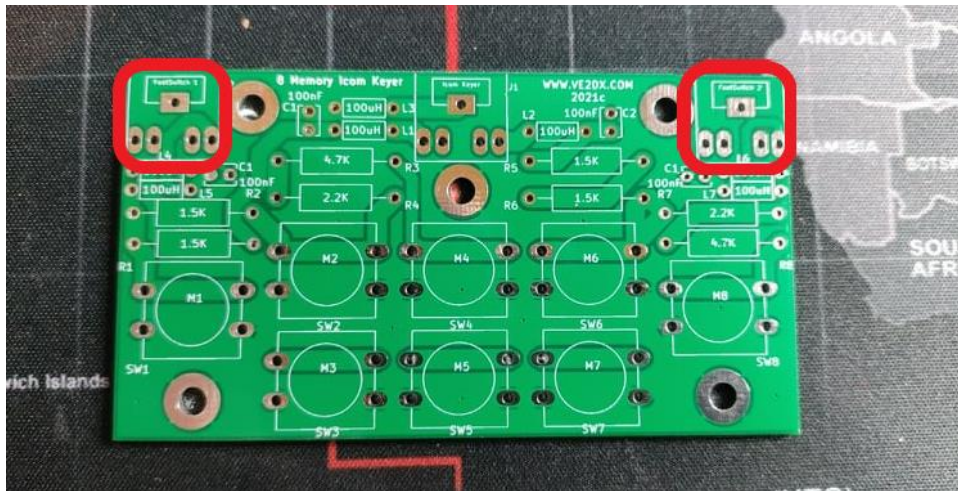
Important Note

Early PCB Version Modification

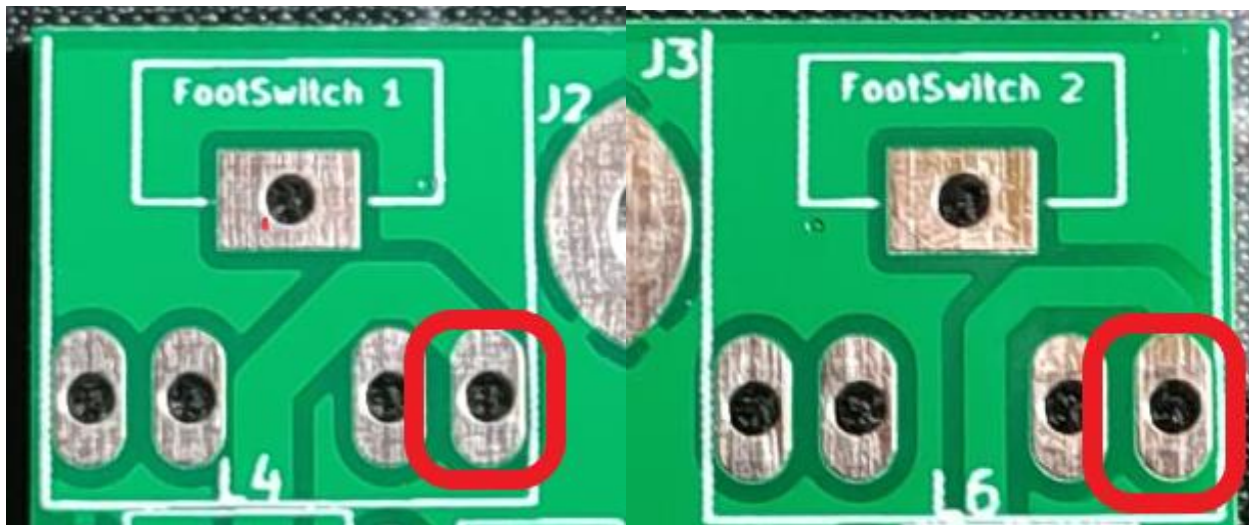
The first version of PCBs did have a small error on the two Footswict jacks where the Tip and Ring pins were reversed on the PCB, thus grounding the Tip portion of the PCB when a mono connector is plugged in and send in a permanent way the memory related to this jack (M1 or M8).

This is a simple fixe done before shipping on eassembled PCBs and done in the field for the kits.

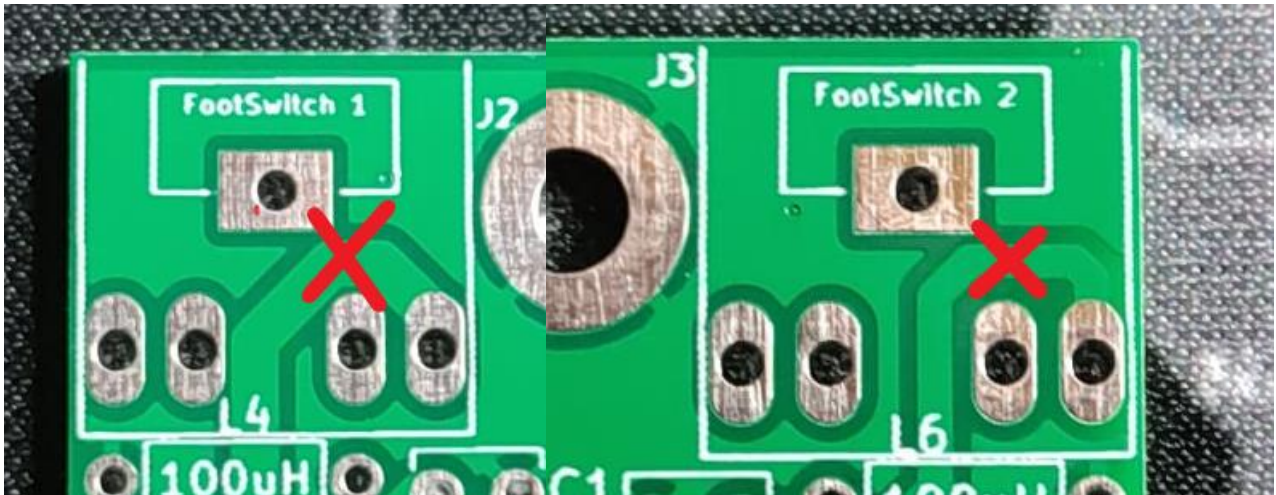
1- on the barebone PCB component side locate the J2 and J3 jacks



2- Locate the existing Ring connection on each connector



3- Cut the existing PCB using an exacto knife.



4- On the Soldering side add a short jumper as shown.



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Assembly:

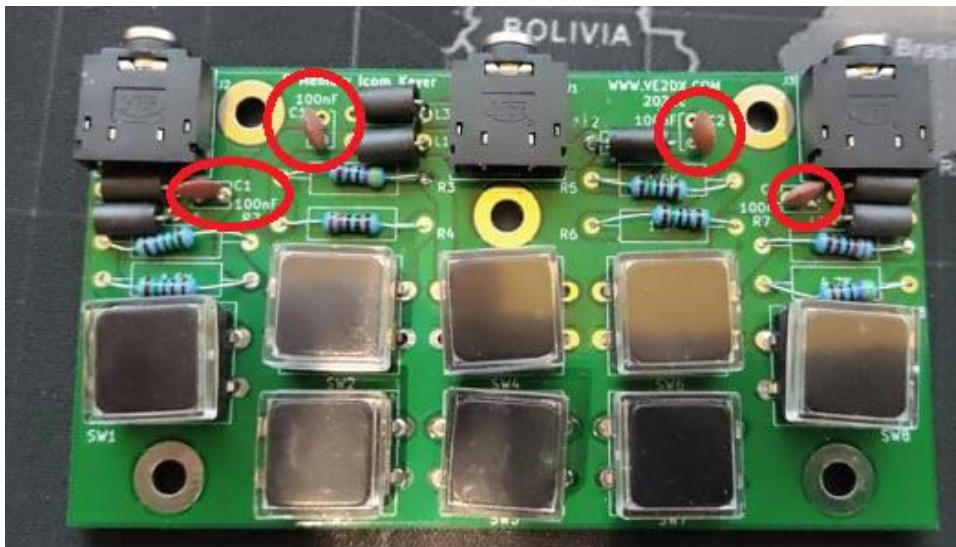
The IMK2 is fairly easy to assemble, simply follow the following steps.

1- Verify the content of the kit on a clear working area, there are some smaller parts we suggest using a plate of pan.

List

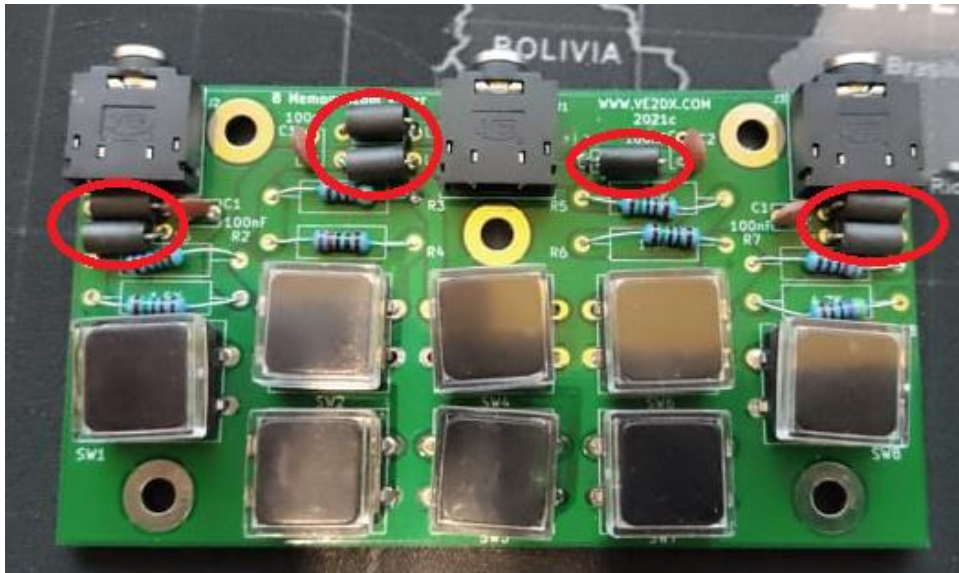
Item	Description	Quantity
1	100nf Capacitors	4
2	RF Ferrite Beeds	7
3	1.5k ohms Resistors	4
4	2.2 k ohms Resistors	2
5	4.7 k ohms Resistors	2
6	3.5mm jacks	3
7	12mm X 12mm Pushbutton switches	8
8	Black 10mm X 10mm keycaps	8
9	Red 10mm X 10mm keycaps	2
10	8 transparent Keycaps covers	8
11	PCB	1

2- Insert and solder the four capacitors in their position C1, C2, C3 and C4



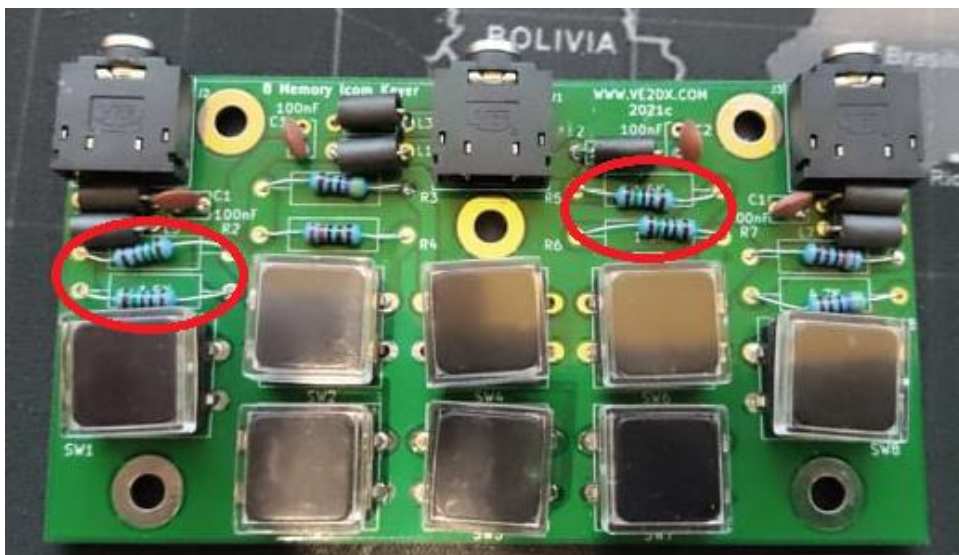
3- Cutoff any excess wires.

4- Insert and solder the seven Ferrite Beeds in their position from L1 to L7.



5- Cutoff any excess wires.

6- Insert and solder the four 1.5k ohm resistors in their position R1, R2, R5 and R6.



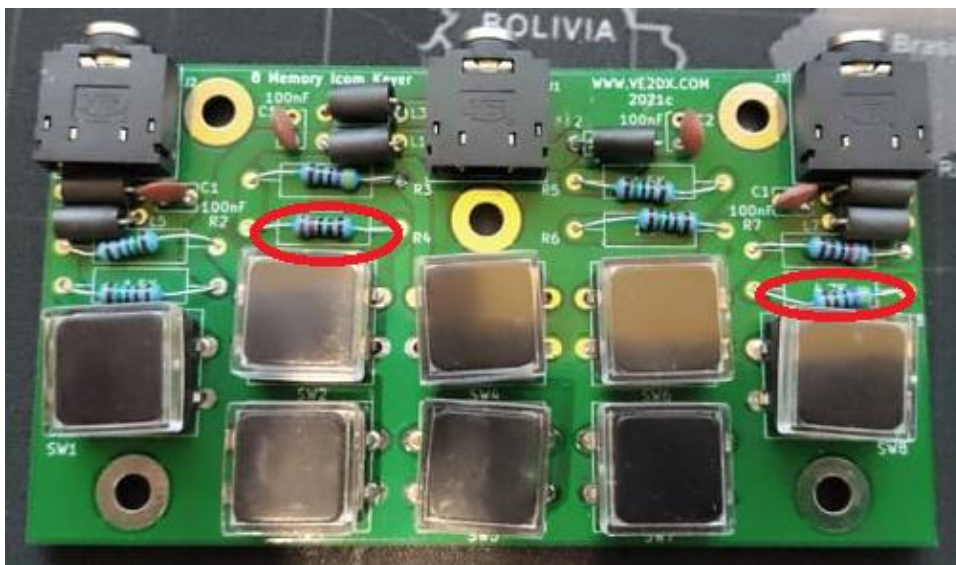
7- Cutoff any excess wires.

8- Insert and solder the four 2.2k ohm resistors in their position R3 and R7.



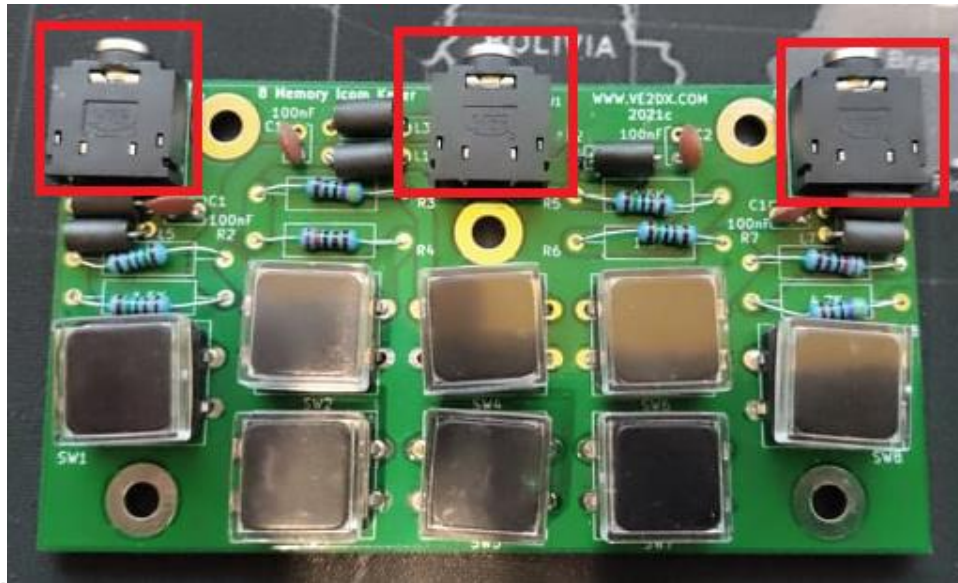
9- Cutoff any excess wires.

10- Insert and solder the four 4.7k ohm resistors in their position R4 and R8.

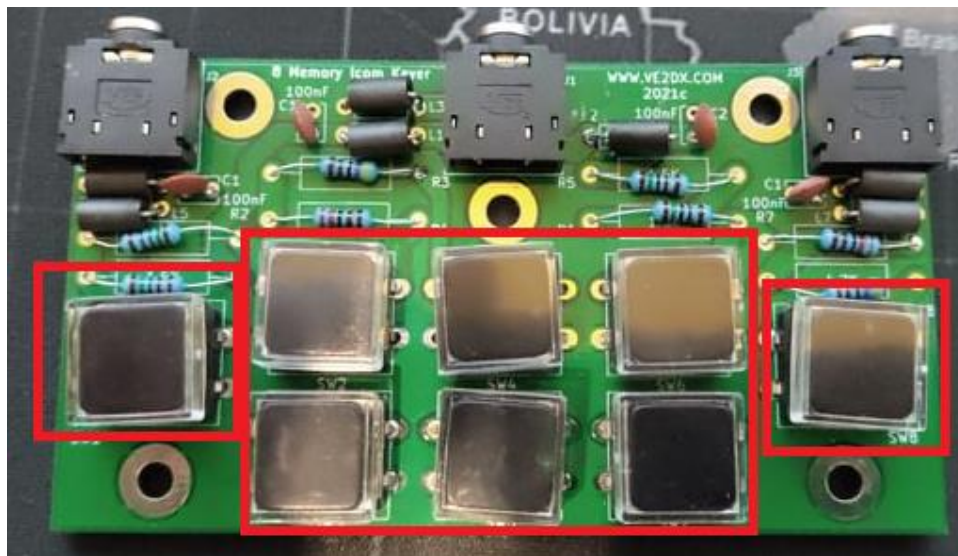


11- Cutoff any excess wires.

12- Insert and solder the 3 X 3.5mm jacks in their position J1 to J3



13- Insert and solder the 8 pushbutton switches in their position Sw1 to Sw8.



You are done!

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Setting up the IMK2 7610



Warning!

Before plugging in ANY devices, you MUST make certain that all equipment and power sources are turned OFF.

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

1- Turn off all your radios.

2- Plug the IMk2 in the back of the radio in the External Keypad Jack.

Note: You MUST use 3.5mm Male to Male STEREO jacks.

Rear Panel View



- A 13.8V DC Power Socket
- B Tuner Control Socket
- C CI-V Remote Control Jack
- D Ground Terminal
- E S-meter Output Jack
- F External Keypad Jack
- G Key Jack
- H Accessory Sockets
- I Antenna Connectors
- J 10 MHz Reference Frequency Input
- K Receive Antenna Connectors
- L Transverter Connector
- M LAN (Ethernet) Connector
- N External Display Connector
- O USB Connectors
- P ALC Input Jack
- Q External Speaker Jacks
- R SEND Control Jack

3- in your ICOM 7610 setup menu set the keyers for use with External Keypad to ON

MENU » **SET > Connectors > External Keypad**

VOICE _____ (Default: OFF)

Enables voice memory transmission using an external keypad.

KEYER _____ (Default: OFF)

Enables keyer memory transmission using an external keypad.

RTTY _____ (Default: OFF)

Enables RTTY memory transmission using an external keypad.

PSK _____ (Default: OFF)

Enables PSK memory transmission using an external keypad.



Do not try to FORCE the cable into the jacks this will damage the equipment.

That's it! You're now ready to play!

7850



Warning!

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

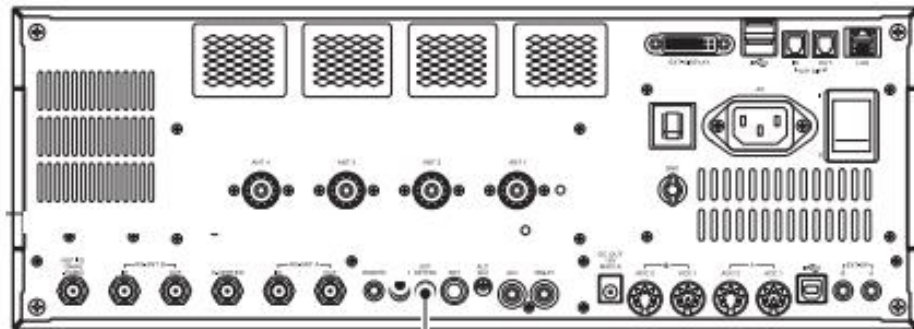
(Radios, Power supplies, accessories, PC, etc...)

1- Turn off all your radios.

2- Plug the IMk2 in the back of the radio in the External Keypad Jack.

Note: The MUST use 3.5mm Male to Male STEREO jacks.

◇ Rear panel (External keypad and meter)



External keypad

Connects to an external keypad for voice memory, memory keyer, PSK memory and RTTY memory content transmission.
(p. 20-4)

✓ For your information:

An external keypad can also be connected to the microphone connector on the front panel. See page 20-3 for details.

3- in your ICOM 7850 setup menu set the keys for use with External Keypad to ON

■ OTHERS SET(Continued)

SET [F-7] ▾ OTHERS [F-5]				
ITEMS	DESCRIPTIONS		RANGE OR VALUE	REF.
External Keypad (VOICE)	[EXT KEYPAD] (rear panel), or [MIC] (front panel)	Voice memory transmission setting for an external keypad .	OFF, ON	
External Keypad (KEYER)		Memory keyer transmission setting for an external keypad.		
External Keypad (RTTY)		RTTY memory transmission setting for an external keypad.		
External Keypad (PSK)		PSK memory transmission setting for an external keypad.		



Do not try to FORCE the cable into the jacks this will damage the equipment.

That's it! You're now ready to play!

7851

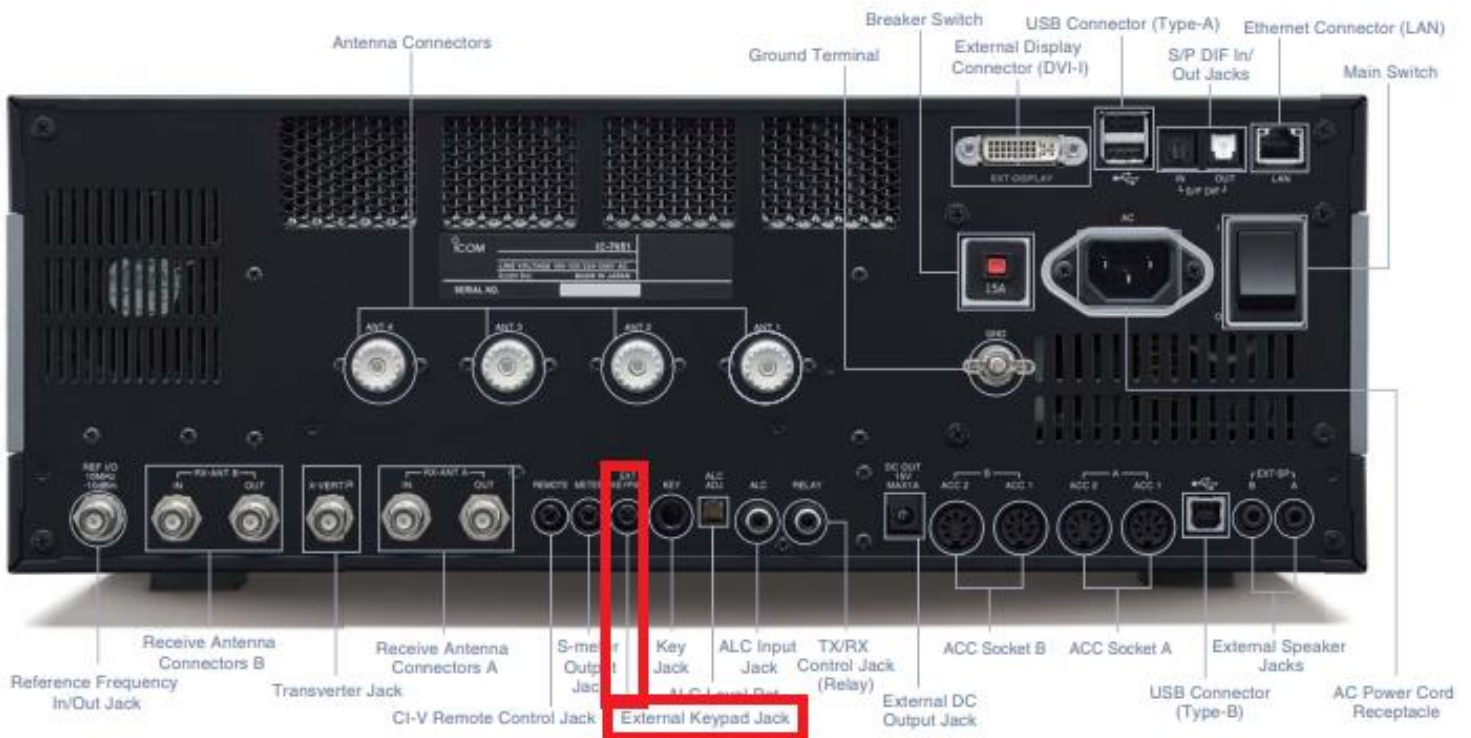


Before plugin in ANY devices, you MUST make certain that all equipment and power sources are turn OFF.

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

- 1- Turn off all your radios.
- 2- Plug the IMk2 in the back of the radio in the External Keypad Jack.

Note: The MUST use 3.5mm Male to Male STEREO jacks.



3- in your ICOM 7851 setup menu set the keys for use with External Keypad to ON

■ OTHERS SET(Continued)

SET [F-7] ▾ OTHERS [F-5]				
ITEMS	DESCRIPTIONS		RANGE OR VALUE	REF.
External Keypad (VOICE)	[EXT KEYPAD] (rear panel), or [MIC] (front panel)	Voice memory transmission setting for an external keypad .	OFF, ON	
External Keypad (KEYER)		Memory keyer transmission setting for an external keypad.		
External Keypad (RTTY)		RTTY memory transmission setting for an external keypad.		
External Keypad (PSK)		PSK memory transmission setting for an external keypad.		



Do not try to FORCE the cable into the jacks this will damage the equipment.

That's it! You're now ready to play!

705

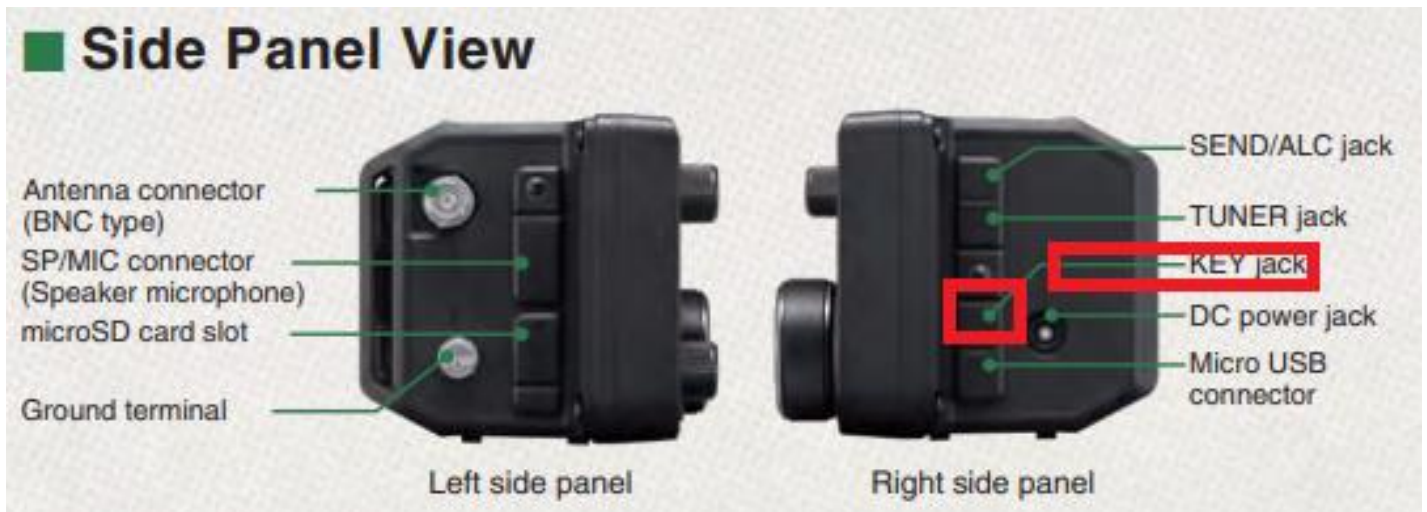


Before plugin in ANY devices, you **MUST** make certain that all equipment and power sources are turn **OFF**.

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

- 1- Turn off all your radios.
- 2- Plug the IMk2 in the right-hand side of the radio in the Key Jack.

Note: The **MUST** use 3.5mm Male to Male **STEREO** jacks.



3- in your ICOM 705 setup menu set the keyers for use with External Keypad to ON

[MENU] » **SET > Connectors > External Keypad**

VOICE	(Default: OFF)
KEYER	(Default: OFF)
RTTY	(Default: OFF)

Enables each memory (voice, keyer, RTTY) transmission using an external keypad.



Do not try to FORCE the cable into the jacks this will damage the equipment.

That's it! You're now ready to play!

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73 De Richard VE2DX 😊