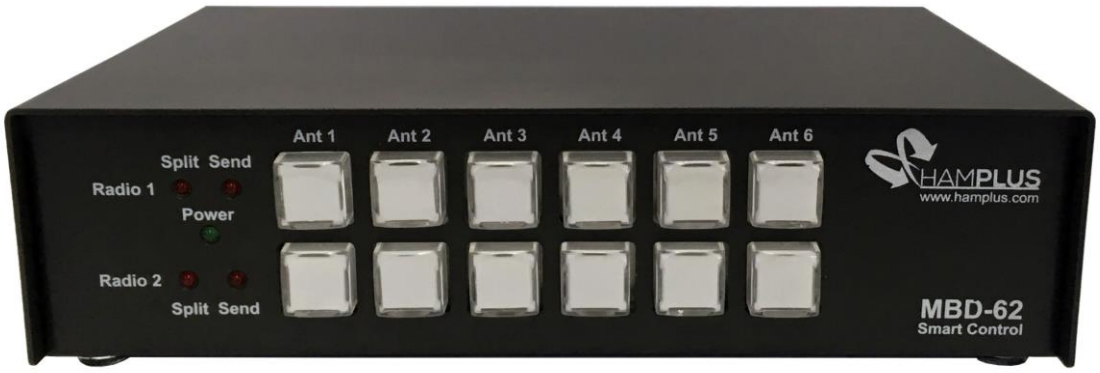
MBD-62 AUTOMATIC CONTROLLER

Instruction Manual



V. 1.2

HAMPLUS

http://www.hamplus.com

MBD-62
Instruction Manual

The **MBD-62** is an automatic controller for six-antenna two radios switch. It allows the simultaneous operation of the two radios in different antennas. It has been specially designed for use with the **AS-62** antenna switch. It also has two special outputs called Aux Out 1 and Aux Out 2, to automatically control external equipment such as Band Pass Filter. These outputs can also provide Frequency-Driven or Band-driven General Purpose Output (GPO) commands for a variety of uses, such as shortened antenna tuning box with high Q coils or to de-tuning antennas or any other use.
The antenna exchange can be manual through its Push Buttons, or automatic through the exchange of band on the radio connected to it.
In automatic antenna switching, the MBD-62 will always trigger the last antenna used in that band. Any of the six antennas can be selected for any selected band on the radio. Just as the same antenna can be chosen for all selected bands on the radio. The procedure for setting up the antenna for each band is very simple. You only have to put the radio in a band and then press on the MBD-62 the antenna Push Button that will be used in this band. Repeat this operation for each band and so all bands will have the antennas memorized.

Remote Operation

Another way to operate the MBD-62 is through remote control. For this, Hamplus offers the ROS-62, a software for PC. With an RS-232 port and a LAN port the MBD-62 can be connected to a local network or the Internet for remote operation.

Special Commands

1- Antenna Release

For radios connected with the appropriate control cable, the radio must only be switched off. For radios that do not have CAT, press Ant.1 Button and Ant.6 Button at the same time. Top Ant.1 Button for Radio 1 or Lower Ant.1 Button for Radio 2.

2- Antenna Split Mode

To activate Antenna Split Mode, put the radio on the transmit antenna, and then press the PTT. With the PTT pressed down, press the Push Button corresponding to the antenna that you want to receive for two seconds. Then release the PTT and watch the MBD-62 switch to the antenna you chose to receive. Each time you press the PTT, the MBD-62 will switch to the transmitting antenna. In Antenna Split Mode you can select any free antenna for reception.
To deactivate the Antenna Split Mode, press the transmit antenna Push Button or change the radio band.

3- Updating Firmware

a- **Step 1** Download the new Firmware version on the Hamplus site on a USB memory stick.

b- **Step 2** Insert the USB memory stick into the USB port on the MBD-62

c- **Step 3** Press and hold the Ant.4, Ant.5 and Ant.6 Buttons sequentially on the top line. All Buttons will light indicating the start of the update. Then release the Buttons. At the end of the update all Buttons will flash a few times. The blinking indicates that the update was successful.

4- Connecting the MBD-62 to your radio

a- **Step 1-** Use the appropriate cable to connect the MBD-62 to your radio.

b- **Step 2-** For radios that use the connection via CAT it is necessary to choose the **baud rate**. **The Baud Rate should be the same on Radio and MBD-62**.

Choosing MBD-62 Baud Rate

To help with the setup of the MBD-62 you should also use the **Quick Reference Map**

a- **Step 1** -Press the Ant.1 Button corresponding to the desired Radio for more than two seconds to enter the Setup mode. Top Ant.1 Button for Radio 1 or Lower Ant.1 Button for Radio 2.

b- **Step 2** -Press the upper Ant.1 Button to choose the Baud Rate for communication with the Radio or the upper Ant.3 Button to choose the Baud Rate of the RS-232 port

c- **Step 3** -Press one of the upper Button Ant.1 to Ant.5 to choose the desired speed, 9600, 19200, 38400, 57600 or 115200.At this time MBD-62 is already with the chosen Baud Rate.

d- **Step 4** -To save and exit Setup mode, press the lower Ant.6 Button that is flashing.

5- Communication with Icom, Yaesu, Kenwood, Elecraft K-3, Flex Radio via RS-232 and BCD

To use the MBD-62's automation functions, it must communicate with the radio. For ICOM brand radios, we use the CI-V protocol (MBD-62 CI-V port). With this protocol all the features described above will be able to work. For the equipment of the YAESU brand we use the band data information, which allows all configurations except the activation of the GPOs by frequency. For those of the brand Kenwood, Flex Radio and Elecraft K3 the protocol used is by the RS-232 communication port that allows use of all functions of the MBD-62.

Protocol and Baud rate

- Icom radios CI-V Baud rate from 9600 to 19200
- Yaesu radios Band Data BCD
- Kenwood, Elecraft, Flex radio, RS-232 Baud rate from 9600 to 115200

Elecraft K3 can use Band Data or RS-232 with Kenwood protocol

Frequency Band for communication via RS-232 and CI-V

Band 1 from 0 to 400KHz**, Band 2** from 400KHz to 540KHz, **Band 3** from 540KHz to 1.6 MHz**, Band** 4 from 1.6 MHz to 2.0 MHz, **Band 5** from 2.0 MHz to 4.0MHz, **Band 6** from 4.0 MHz to 5.4MHZ, **Band 7** from 5.4 MHz to 8.0 MHz, **Band 8** from 8.0 MHz to 11.0 MHz, **Band 9** from 11.0 MHz to 15.0 MHz, **Band 10** from 15.0 MHz to 20.0 MHz, **Band 11** from 20.0 MHz to 22.0 MHz, **Band 12** from 22.0 MHz to 25.0 MHz, **Band 13** from 25.0 MHz to 28.0 MHz, **Band 14**

from 28.0 MHz to 30.0 MHz, **Band 15** from 30.0 MHz to 60.0 MHz, **Band 16** from 60.0 MHz to 143.5 MHz, **Band 17** from 143.5 MHz to 144.4 MHz, **Band 18** from 144.4 MHz to 148.0 MHz, **Band 19** from 148.0 MHz to 225.0 MHz, **Band 20** from 225.0 MHz to 430.0 MHz, **Band** MHz, **Band 21** from 430.0 MHz to 450.0 MHz, **Band 22** Above 450 MHz

6- Antenna memory per band

The **MBD-62** has a memory for each of the eight antennas so that whenever an antenna is selected this memory registers the band selected by the Radio. With each band change in the radio the **MBD-62** will activate the last antenna that was used in that band.

Note: The setting mode is only possible when the Radio is properly connected to the **MBD-62.**

7- Selecting the function for AUX OUT 1 or 2

The MBD-62 has two outputs named **Aux Out 1** (DB-9M) and **Aux Out 2** (DB-9M) which correspond to the functions that will be performed by Radios 1 and 2 respectively. To choose the functions for Radio 1, enter the Setup mode by pressing the upper Ant.1 Button for a little more than 2 seconds or the lower Ant.1 Button for Radio 2 for a little more than 2 seconds.

There are five options for each Aux Out:

1- DX Engineering DXE-419 Band Pass Filter
2- Array Solutions AS-419 Band Pass Filter
3- Dunestar 600 Band Pass Filter
4- GPO per antenna
5- GPO on all six antennas

8- Choosing the Band Pass Filter

ATTENTION: Only connect the control cable between the Band Pass Filter and the Aux Out connector of the MBD-62 after completing the setup.

- To help with the setup of the MBD-62 you should also use the **Quick Reference Map**

- The Band Pass Filter setting is individual for each Radio. Therefore each Radio should receive the proper configuration of the Band Pass Filter that it will use.

1- **Step 1-** Press the Ant.1 Button for more than two seconds to enter Setup mode.
   Top Ant.1 Button for Radio 1 or Lower Ant.1 Button for Radio 2.
2- **Step 2-** Press the Ant.2 Button to enable the selection of one of the five available functions.
3- **Step 3**-The choice of Band Pass Filter;
   a- Press the Ant.1 Button to select DX Engineering DXE-419 Band Pass Filter
   b- Press the Ant.2 Button to select Array Solution AS-419 Band Pass Filter
   c- Press the Ant.3 Button to select Dunestar 600 Band Pass Filter
4- **Step 4**- To save and exit Setup mode, press the lower Ant.6 Button that is flashing.

These filters are connected to the MBD-62 with pin-to-pin cables. Other Band Pass Filter can be used but it is necessary to verify the correct connection of all the pins and if the drive is with + 12V or GND.

AS-419 is active high (+12V), DXE-419 is active low (GND) and Dunestar 600 is active high (+12V)

GPO commands

GPOs are typically used to tune shortened antennas with high Q coils and also to tune out TX/RX antennas that are influencing reception antennas.

To help with the setup of the MBD-62 you should also use the **Quick Reference Map**

- The configuration of the GPO by Antenna is made for the antenna in the Band chosen in the Radio. Therefore any of the two Radios that are in this Band and in this antenna will trigger the GPOs.

To choose GPO per Antenna (**G**eneral **P**urpose **O**utput associated with an antenna position)

1- **Step 1-** Press the Ant1 button for two seconds to enter Set Up mode
2- **Step 2-** Press the Ant 2 button to choose one of the five available functions in Aux Out.
3- **Step 3-** Press the Ant4 button to choose GPO by Ant, (GPO per antenna)
4- **Step 4-** Press the button (1 to 6) corresponding to the antenna you want to associate with the GPOs
5- **Step 5-** Press the Ant 1 button for **Active High** (+ 12v) or the Ant2 button for **Active Low** (GND)
6- **Step 6-** To mark the trigger points of the GPOs:
   a- **GPO per Band** -

   - Step 1 - Put the radio on a frequency in the band that you want to trigger the **GPO**. This is done, then press the **Ant.3** button for the always-on **GPO** in the entire selected band, or the **Ant.4** Button for **GPO** triggered on the entire Band selected but only when it is in reception.

   - Step 2 - Choose which GPO will be triggered. Buttons **Ant 1** through **Ant 6** correspond to **GPO1** through **GPO6**. The **GPO 7** is triggered by the lower **Ant.1** button (Button Ant.1 of radio 2). Press one of them to mark the **GPO**.

   -To **save and exit** Setup mode, press the blinking lower **Ant 6** button.

   b- **GPO by Frequency –**

   You can use as many **GPOs** you want within the same band or use some in one band and the rest in other bands.

   - Mark the first GPO. Set the radio to the frequency at which you want to trigger the first **GPO**. Press the **Ant1** button to mark the **GPO1**. This **GPO** will be triggered from the selected frequency to the end of the Band or until the next **GPO**, whichever comes first.

   - Mark the second GPO. On the radio dial increase the frequency to the next point at which you want to trigger the second **GPO**. Then press the **Ant.2** button to mark the GPO2 point.

   - To mark more GPOs. Repeat the previous procedure

   To **save and exit** Setup mode, press the lower button **Ant.6** that is blinking.

c- <u>GPO at the midpoint between two frequencies</u>.

GPO activation at the midpoint between two frequencies makes it easier to tune
the tuned box of shortened antennas using high Q coils. To mark the input frequency and the output frequency simply find the lowest SWR point for each
from them.

<u>-Mark the first GPO</u>. This **GPO** will be triggered at the midpoint between the two frequencies chosen.

<u>Step 1-</u> To mark the first GPO start at the beginning of the band and choose the frequency with the lowest SWR in the radio. Then press the **Ant1** button to mark the entry point for the **GPO1**. The **Ant1** button will blink.

<u>Step 2-</u> Increase the frequency on the radio dial until you find the next lowest SWR point. Press the **Ant.1** button again. Then the **Ant.1** button stops blinking, and this indicates that the **GPO1** is marked and will be triggered at the midpoint between the two frequencies.

<u>-To mark the second GPO in the same Band</u>. Keeping the radio still at the lowest SWR frequency press the **Ant.2** button to mark the **GPO2** entry point. The **Ant.2** button has started blinking. On the radio dial increase the frequency until you find the next lowest SWR point. Press the blinking **Ant.2** button again to mark the exit point of the **GPO2**. The **Ant.2** button stops blinking indicating that the **GPO2** is checked.

- **<u>To mark more GPOs</u>** Repeat the procedure used to mark the previous **GPO**.

-To **save and exit** Setup mode, press the blinking lower **Ant 6** button.

----------x----------

EXAMPLE:

Let's go to the procedure to set the Baud Rate on the MBD-62

First step:

To enter the config mode for Radio 1, **push the upper ANT 1 button until the lower ANT 6 button blinks** (2 to 4 sec).

To enter the config mode for Radio 2**, push the lower ANT 1 button until the lower ANT 6 button blinks** (2 to 4 sec).

Second step:

To set the Baud Rate to the Radio, push the upper ANT1 button.

Third step:

Now choose the Baud Rate

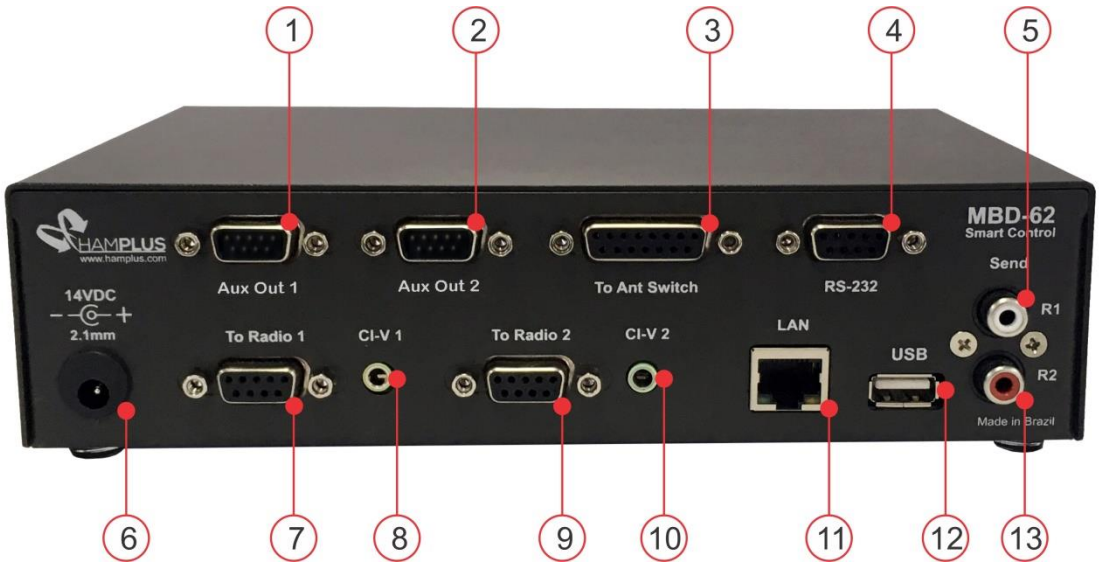
Upper Push Button ANT1 to 9600
Upper Push Button ANT2 to 19200
Upper Push Button ANT3 to 38400
Upper Push Button ANT4 to 57600
Upper Push Button ANT5 to 115200

Fourth step:

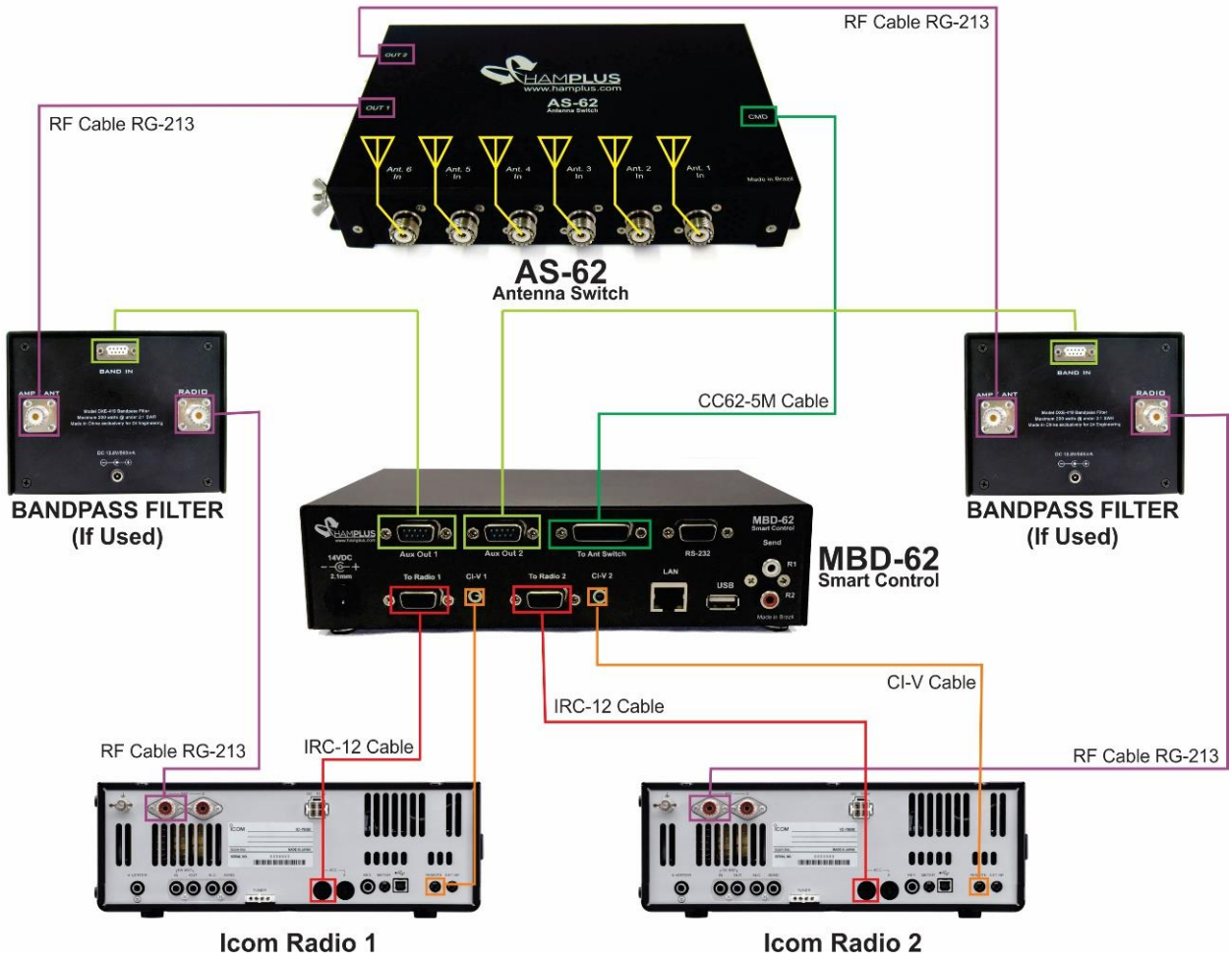
To save and exit config mode, push the lower ANT6 button that is still blinking.

After this procedure the MBD-62 will be with the chosen Baud Rate

It is important that the MBD-62 and the radio have the same Baud Rate.

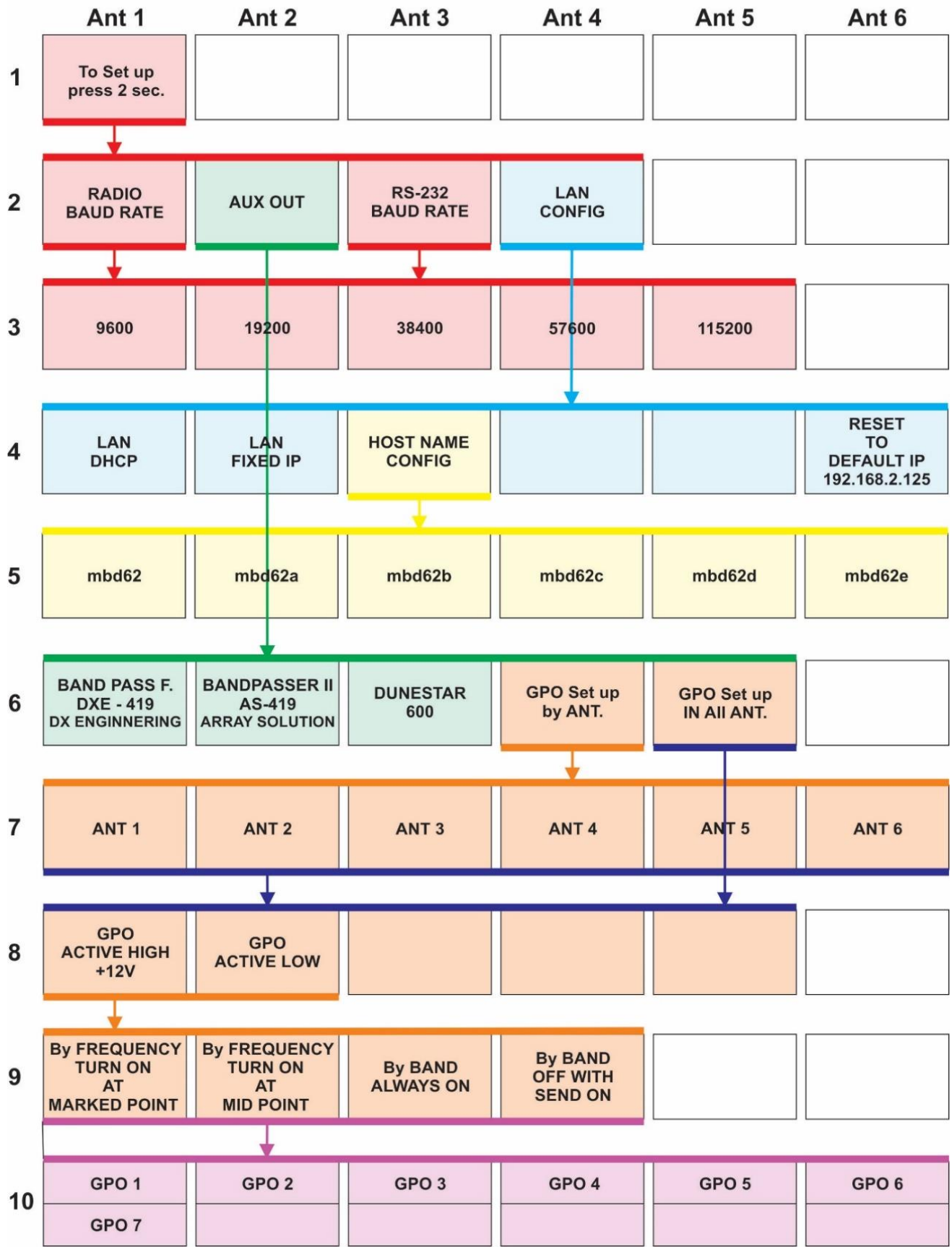


1-	**Aux Out 1**	DB-9M	Auxiliary Output of Radio 1
2-	**Aux Out 2**	DB-9M	Auxiliary Output of Radio 2
3-	**To Ant Switch**	DB-15F	Control output for Antenna Switch AS-62
4-	**RS-232**	DB-9F	Standard connection RS-232
5-	**Send Out R1**	RCA	Send Out connector for control of Linear Amp of Radio 1
6-	**14VDC**	External power input 14 VDC	
7-	**To Radio 1**	DB-9F	for connection to Radio 1
8-	**CI-V1**	P2	connector for CI-V of Radio Icom 1
9-	**To Radio 2**	DB-9F	for connection to Radio 2
10-	**CI-V2**	P2	connector for CI-V of Radio Icom 2
11-	**LAN**	RJ45	LAN for network connection
12-	**USB**	USB connector for Firmwere upgrade	
13-	**Send Out R2**	RCA	Send Out connector for control of Linear Amp of Radio 2

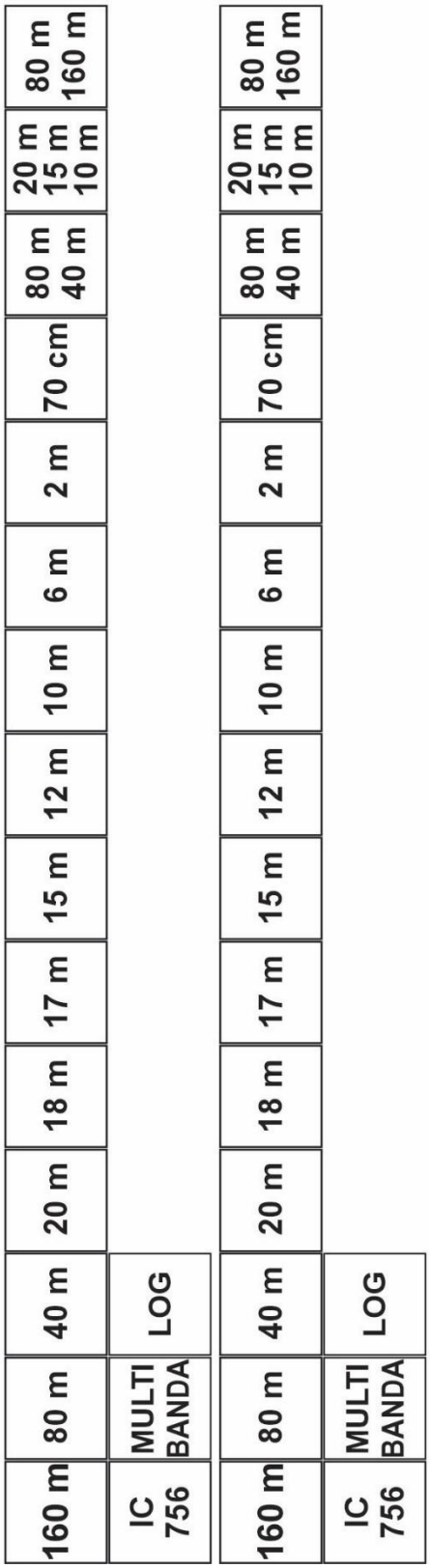

RF Cable RG-213
RF Cable RG-213
AS-62
Antenna Switch
BANDPASS FILTER
(If Used)
CC62-5M Cable
BANDPASS FILTER
(If Used)
MBD-62
Smart Control
CI-V Cable
IRC-12 Cable
RF Cable RG-213
IRC-12 Cable
RF Cable RG-213
Icom Radio 1
Icom Radio 2

MBD-62

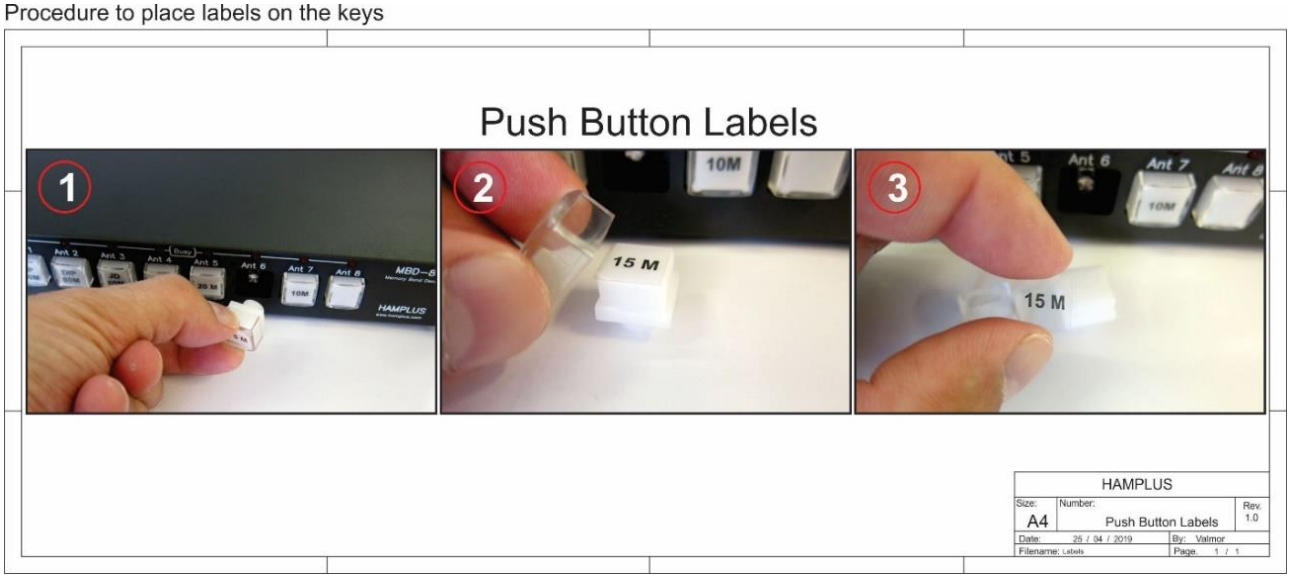
Quick Reference Map to Configure



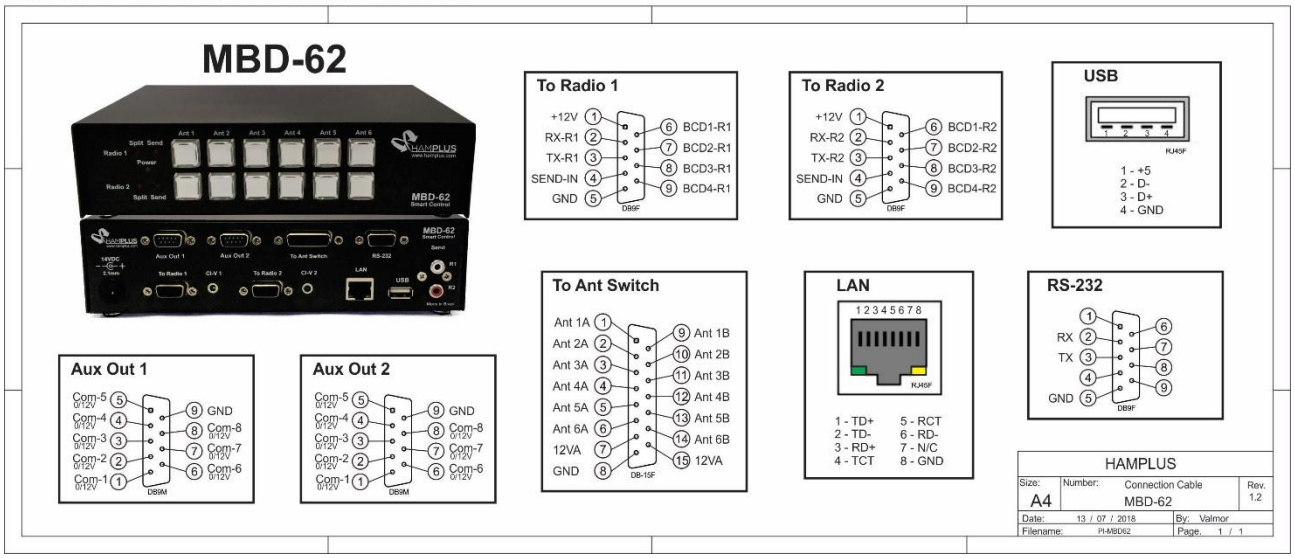
Labels - print on transparent paper with laser printer

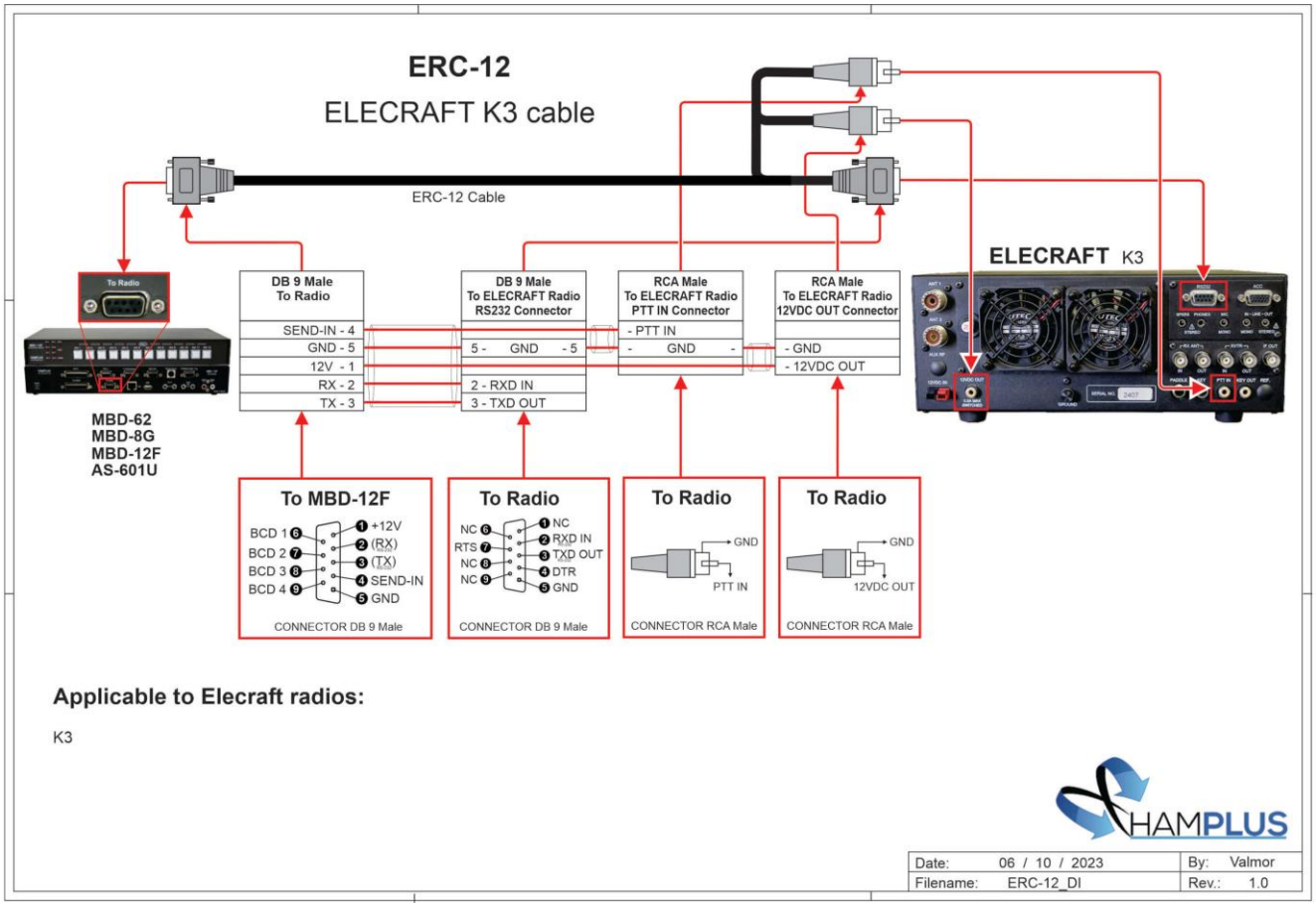


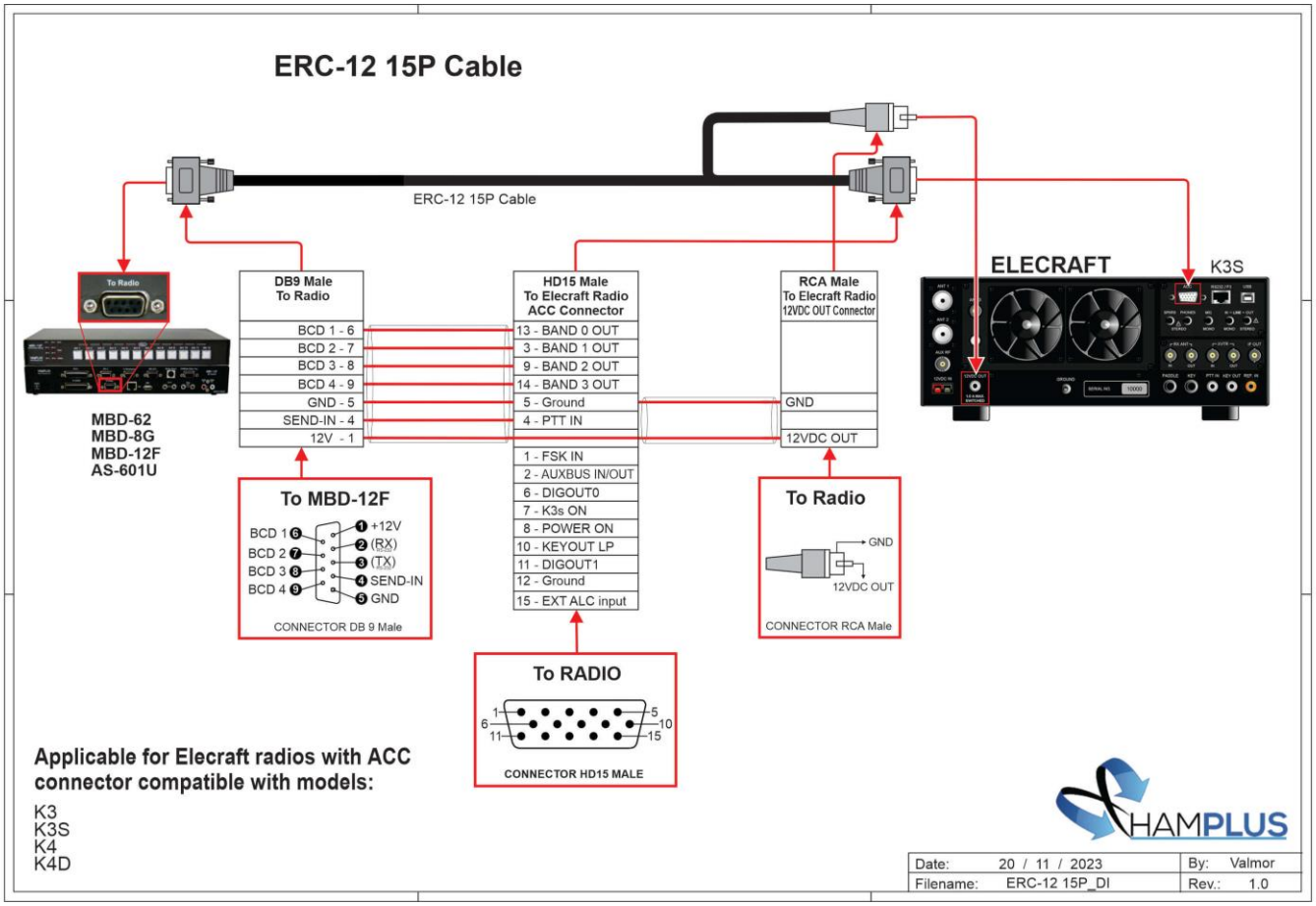
Procedure to place labels on the keys

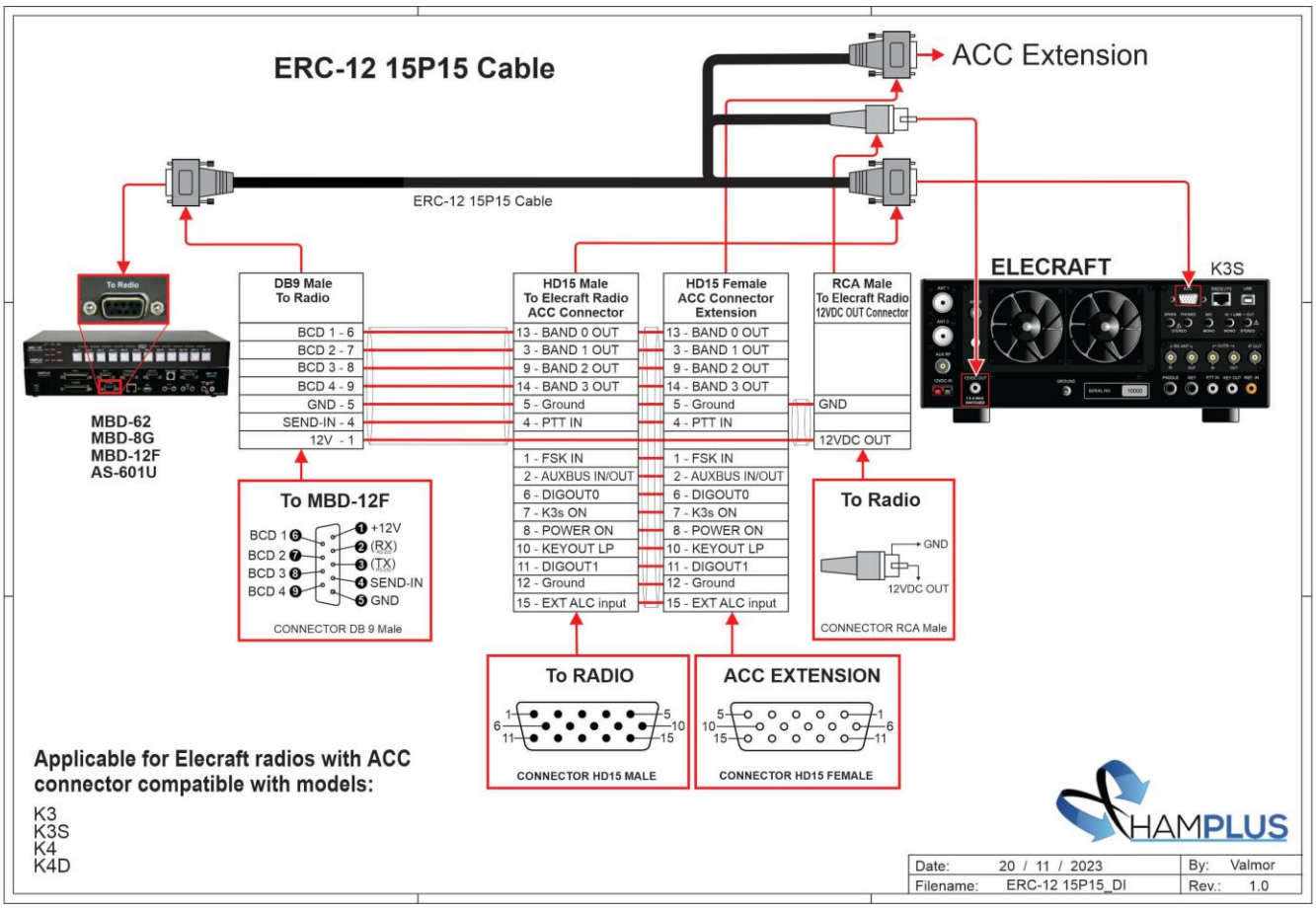


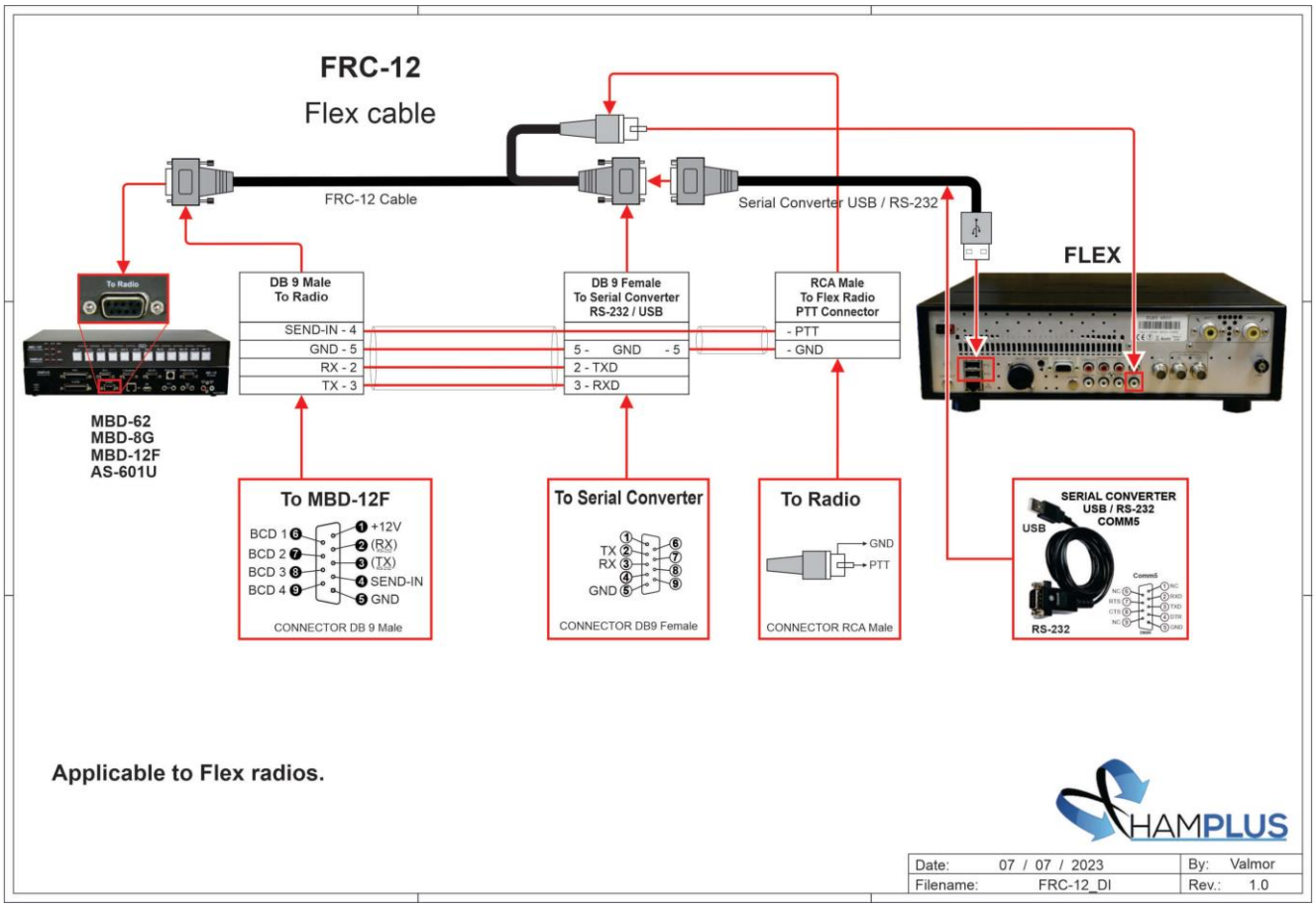
MBD-62 CONNECTOR PIN IDENTIFICATION

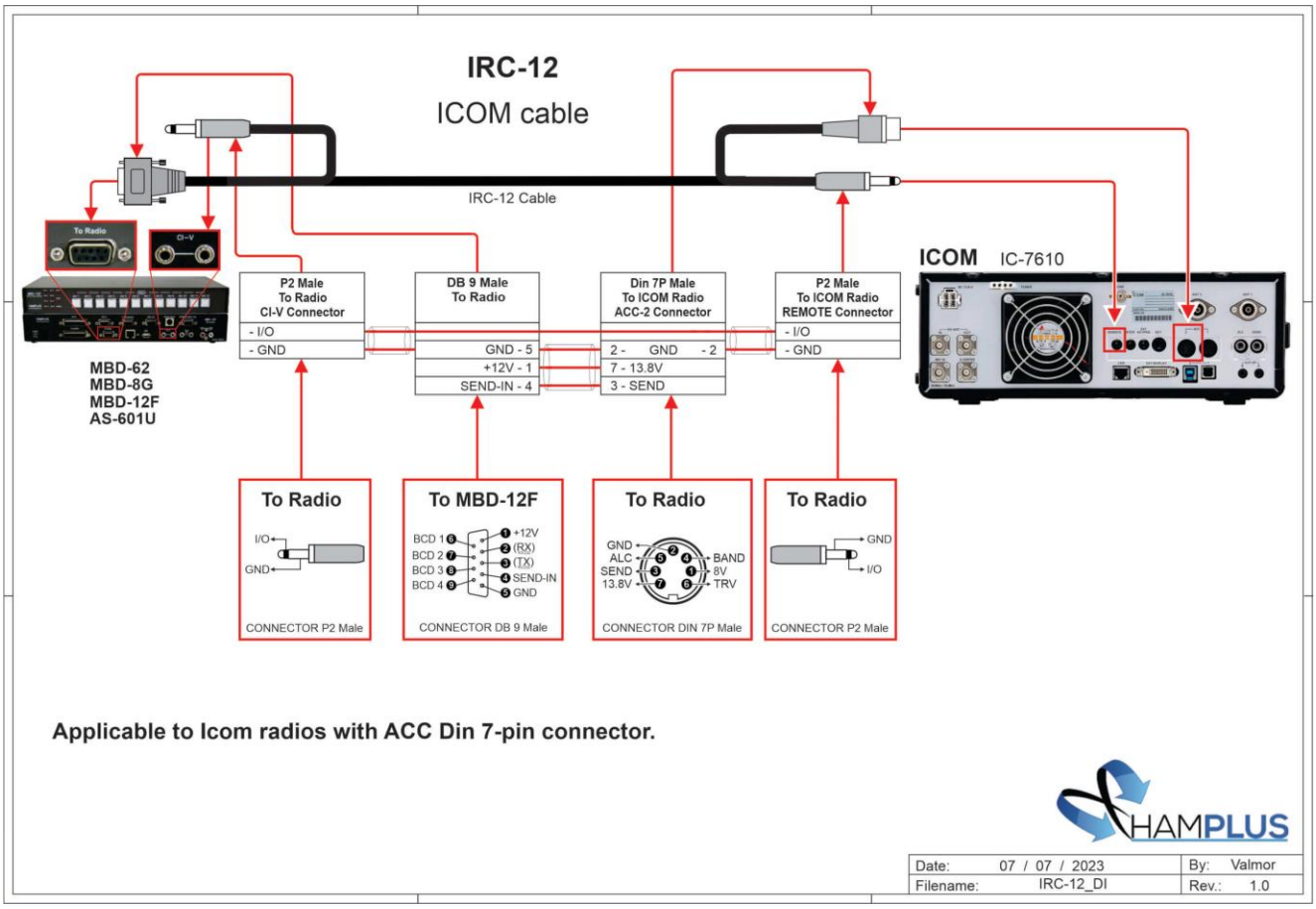


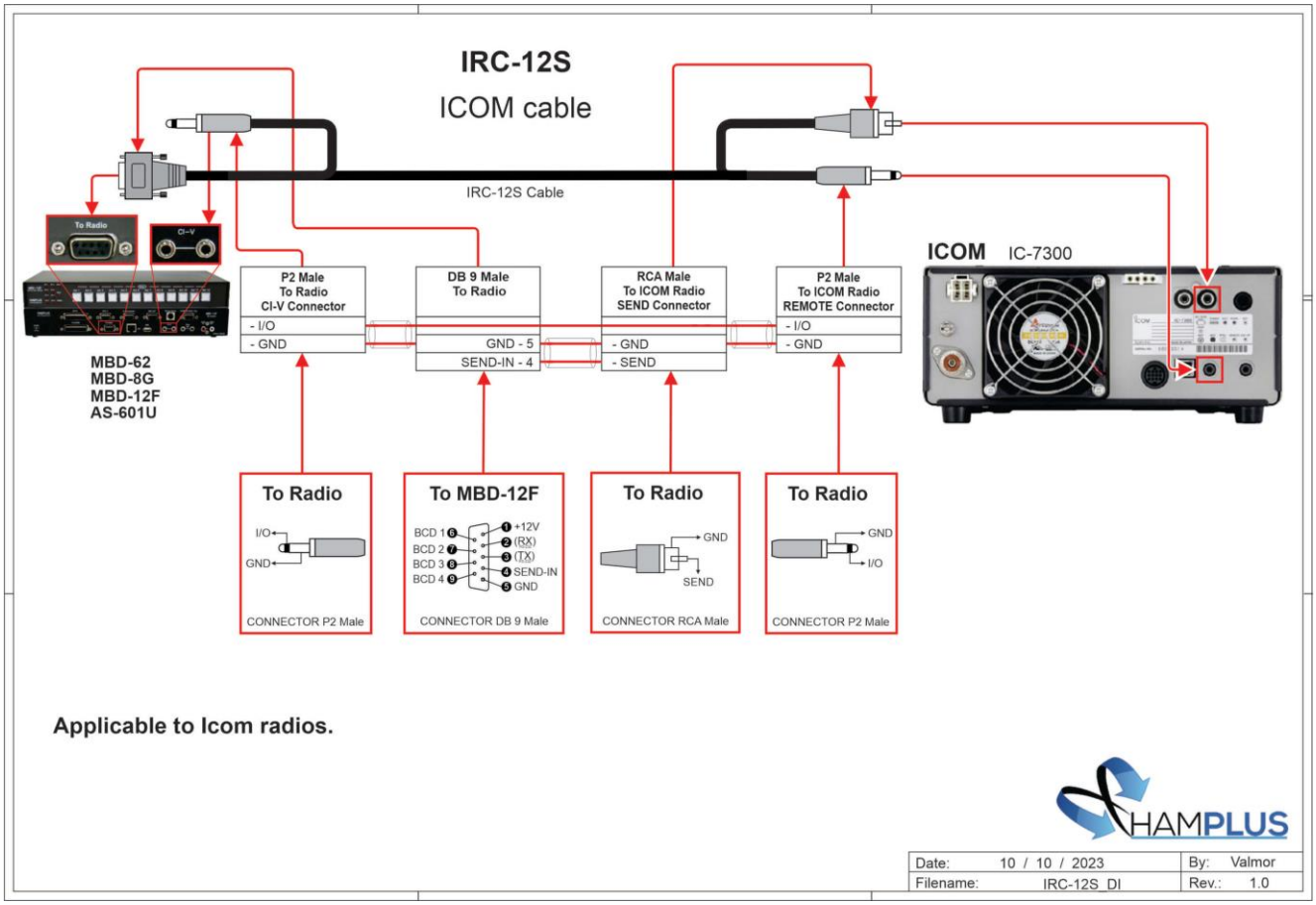

ERC-12
ELECRAFT K3 cable
ERC-12 Cable
ELECRAFT K3
To Radio
MBD-62
MBD-8G
MBD-12F
AS-601U
DB 9 Male
To Radio
SEND-IN - 4
GND - 5
12V - 1
RX - 2
TX - 3
DB 9 Male
To ELECRAFT Radio
RS232 Connector
5 - GND - 5
2 - RXD IN
3 - TXD OUT
RCA Male
To ELECRAFT Radio
PTT IN Connector
- PTT IN
- GND -
RCA Male
To ELECRAFT Radio
12VDC OUT Connector
- GND
- 12VDC OUT
To MBD-12F
BCD 1 6
BCD 2 7
BCD 3 8
BCD 4 9
1 +12V
2 (RX)
3 (TX)
4 SEND-IN
5 GND
CONNECTOR DB 9 Male
To Radio
NC 6
RTS 7
NC 8
NC 9
1 NC
2 RXD IN
3 TXD OUT
4 DTR
5 GND
CONNECTOR DB 9 Male
To Radio
GND
PTT IN
CONNECTOR RCA Male
To Radio
GND
12VDC OUT
CONNECTOR RCA Male
Applicable to Elecraft radios:
K3
HAMPLUS
Date: 06 / 10 / 2023
By: Valmor
Filename: ERC-12_DI
Rev.: 1.0

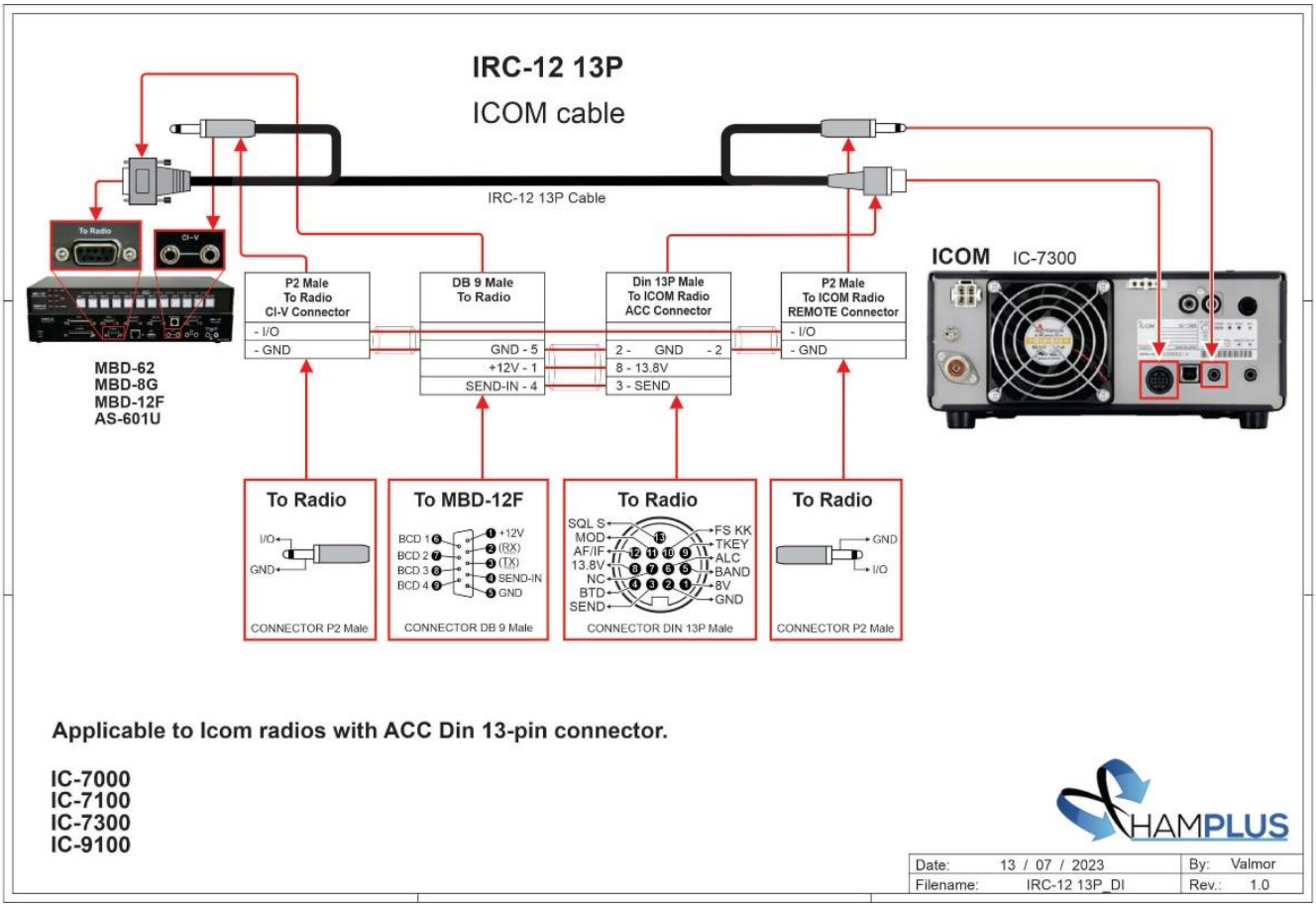

ERC-12 15P Cable
ERC-12 15P Cable
To Radio
MBD-62
MBD-8G
MBD-12F
AS-601U
DB9 Male
To Radio
BCD 1 - 6
BCD 2 - 7
BCD 3 - 8
BCD 4 - 9
GND - 5
SEND-IN - 4
12V - 1
HD15 Male
To Elecraft Radio
ACC Connector
13 - BAND 0 OUT
3 - BAND 1 OUT
9 - BAND 2 OUT
14 - BAND 3 OUT
5 - Ground
4 - PTT IN
1 - FSK IN
2 - AUXBUS IN/OUT
6 - DIGOUT0
7 - K3s ON
8 - POWER ON
10 - KEYOUT LP
11 - DIGOUT1
12 - Ground
15 - EXT ALC input
RCA Male
To Elecraft Radio
12VDC OUT Connector
GND
12VDC OUT
ELECRAFT
K3S
To MBD-12F
BCD 1
BCD 2
BCD 3
BCD 4
+12V
(RX)
(TX)
SEND-IN
GND
CONNECTOR DB 9 Male
To Radio
GND
12VDC OUT
CONNECTOR RCA Male
To RADIO
CONNECTOR HD15 MALE
Applicable for Elecraft radios with ACC connector compatible with models:
K3
K3S
K4
K4D
HAMPLUS
Date: 20 / 11 / 2023
By: Valmor
Filename: ERC-12 15P_DI
Rev.: 1.0

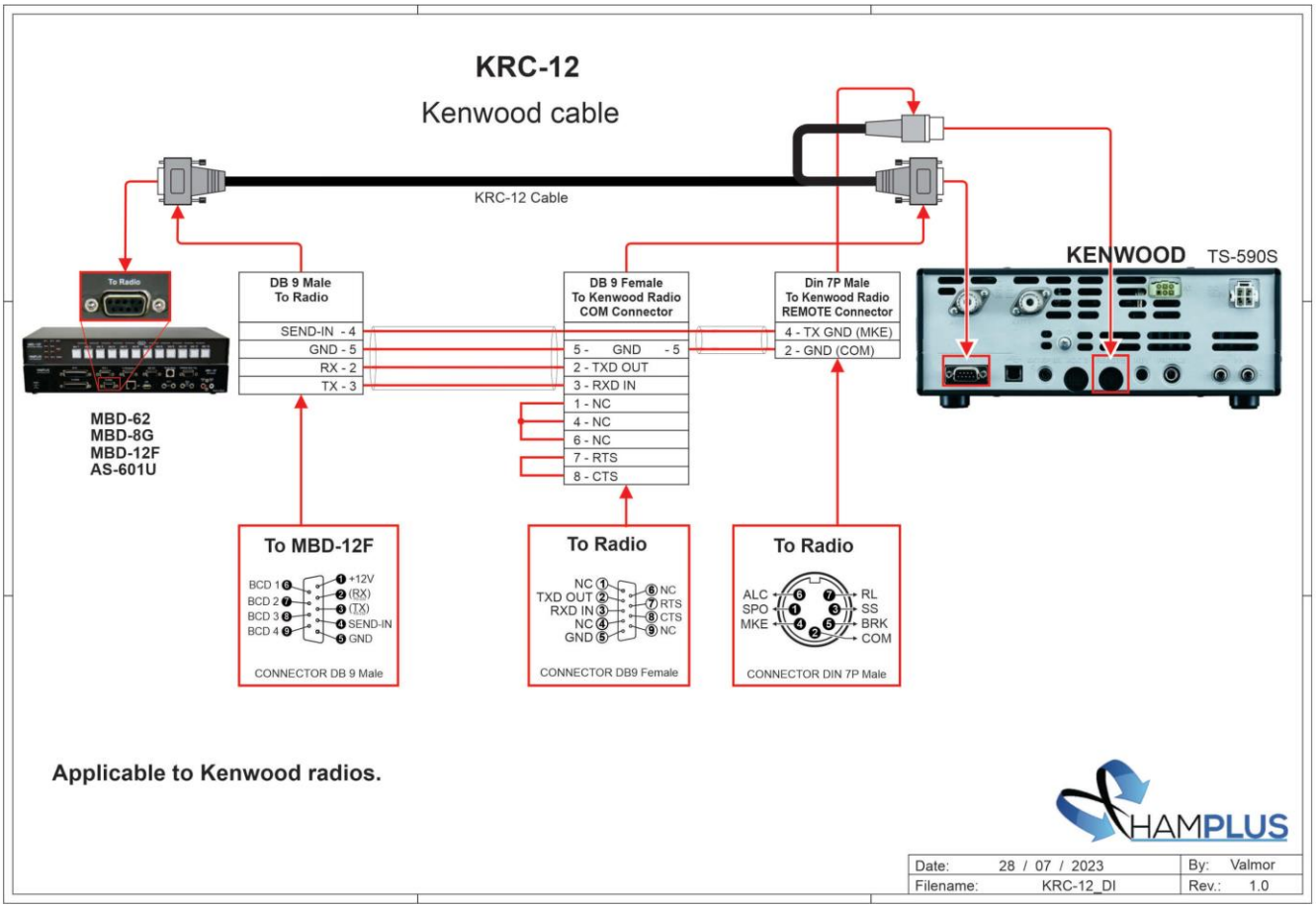

ERC-12 15P15 Cable
ACC Extension
ERC-12 15P15 Cable
ELECRAFT
K3S
To Radio
MBD-62
MBD-8G
MBD-12F
AS-601U
DB9 Male
To Radio
BCD 1 - 6
BCD 2 - 7
BCD 3 - 8
BCD 4 - 9
GND - 5
SEND-IN - 4
12V - 1
HD15 Male
To Elecraft Radio
ACC Connector
13 - BAND 0 OUT
3 - BAND 1 OUT
9 - BAND 2 OUT
14 - BAND 3 OUT
5 - Ground
4 - PTT IN
1 - FSK IN
2 - AUXBUS IN/OUT
6 - DIGOUT0
7 - K3s ON
8 - POWER ON
10 - KEYOUT LP
11 - DIGOUT1
12 - Ground
15 - EXT ALC input
HD15 Female
ACC Connector
Extension
13 - BAND 0 OUT
3 - BAND 1 OUT
9 - BAND 2 OUT
14 - BAND 3 OUT
5 - Ground
4 - PTT IN
1 - FSK IN
2 - AUXBUS IN/OUT
6 - DIGOUT0
7 - K3s ON
8 - POWER ON
10 - KEYOUT LP
11 - DIGOUT1
12 - Ground
15 - EXT ALC input
RCA Male
To Elecraft Radio
12VDC OUT Connector
GND
12VDC OUT
To MBD-12F
BCD 1
BCD 2
BCD 3
BCD 4
+12V
(RX)
(TX)
SEND-IN
GND
CONNECTOR DB 9 Male
To Radio
GND
12VDC OUT
CONNECTOR RCA Male
To RADIO
CONNECTOR HD15 MALE
ACC EXTENSION
CONNECTOR HD15 FEMALE
Applicable for Elecraft radios with ACC connector compatible with models:
K3
K3S
K4
K4D
HAMPLUS
Date: 20 / 11 / 2023
By: Valmor
Filename: ERC-12 15P15_DI
Rev.: 1.0

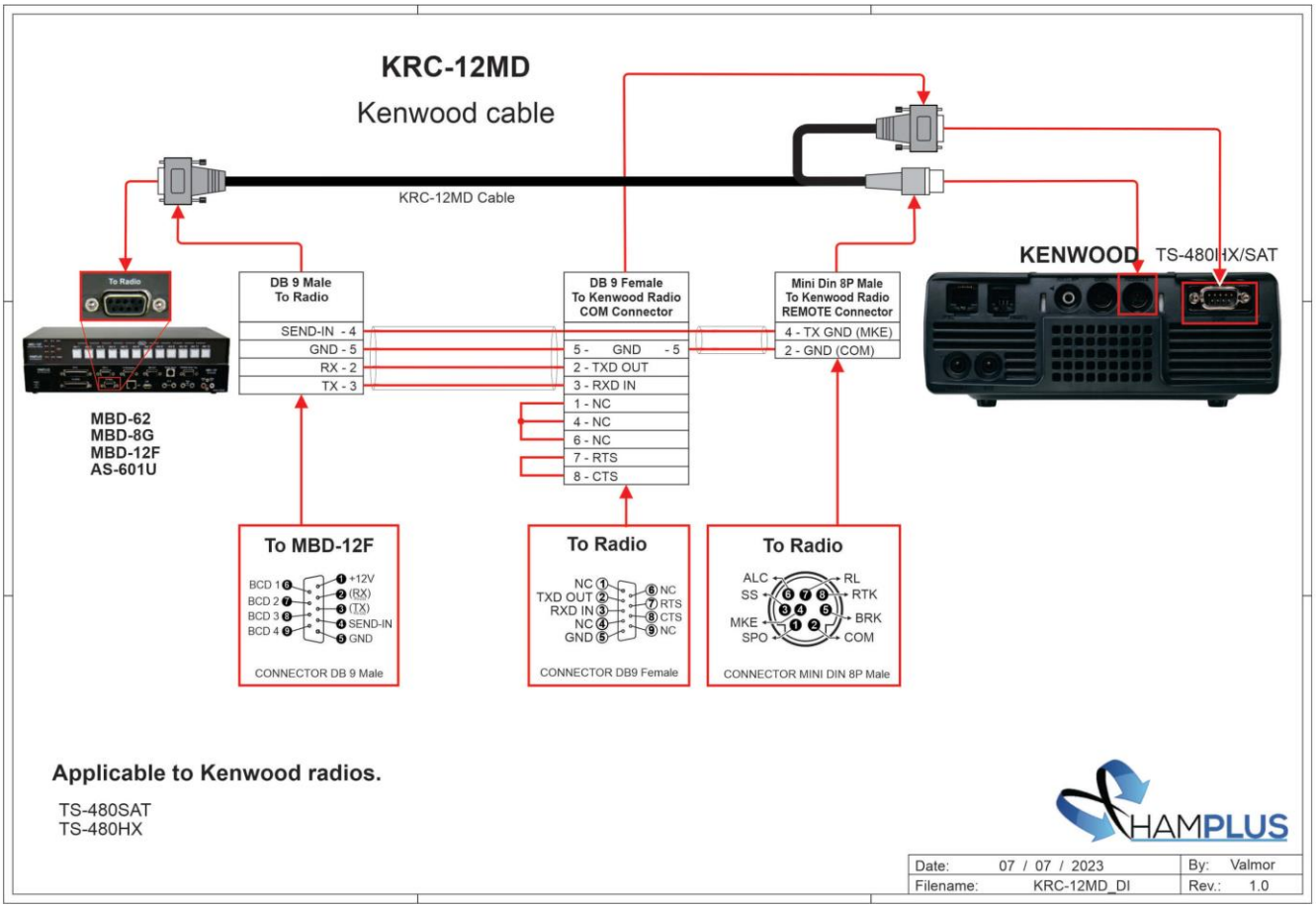

FRC-12
Flex cable
FRC-12 Cable
Serial Converter USB / RS-232
FLEX
To Radio
DB 9 Male
To Radio
SEND-IN - 4
GND - 5
RX - 2
TX - 3
DB 9 Female
To Serial Converter
RS-232 / USB
5 - GND - 5
2 - TXD
3 - RXD
RCA Male
To Flex Radio
PTT Connector
- PTT
- GND
MBD-62
MBD-8G
MBD-12F
AS-601U
To MBD-12F
BCD 1
BCD 2
BCD 3
BCD 4
+12V
(RX)
(TX)
SEND-IN
GND
CONNECTOR DB 9 Male
To Serial Converter
TX
RX
GND
CONNECTOR DB9 Female
To Radio
GND
PTT
CONNECTOR RCA Male
SERIAL CONVERTER
USB / RS-232
COMM5
USB
RS-232
Applicable to Flex radios.
HAMPLUS
Date: 07 / 07 / 2023
By: Valmor
Filename: FRC-12_DI
Rev.: 1.0

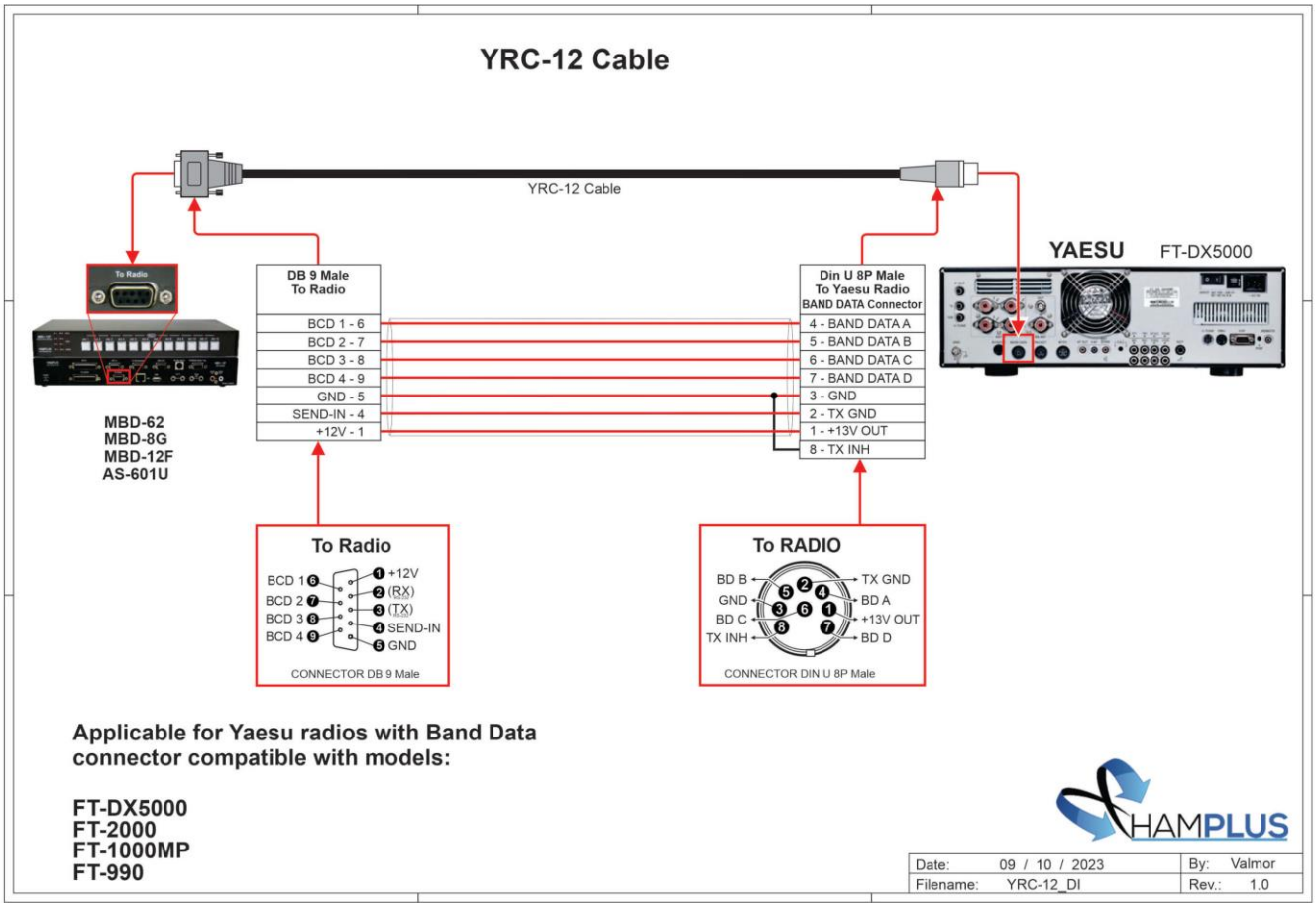

IRC-12
ICOM cable
IRC-12 Cable
To Radio
CI-V
MBD-62
MBD-8G
MBD-12F
AS-601U
P2 Male
To Radio
CI-V Connector
- I/O
- GND
DB 9 Male
To Radio
GND - 5
+12V - 1
SEND-IN - 4
Din 7P Male
To ICOM Radio
ACC-2 Connector
2 - GND - 2
7 - 13.8V
3 - SEND
P2 Male
To ICOM Radio
REMOTE Connector
- I/O
- GND
ICOM IC-7610
To Radio
I/O
GND
CONNECTOR P2 Male
To MBD-12F
BCD 1
BCD 2
BCD 3
BCD 4
+12V
(RX)
(TX)
SEND-IN
GND
CONNECTOR DB 9 Male
To Radio
GND
ALC
SEND
13.8V
BAND
8V
TRV
CONNECTOR DIN 7P Male
To Radio
GND
I/O
CONNECTOR P2 Male
Applicable to Icom radios with ACC Din 7-pin connector.
HAMPLUS
Date: 07 / 07 / 2023
By: Valmor
Filename: IRC-12_DI
Rev.: 1.0

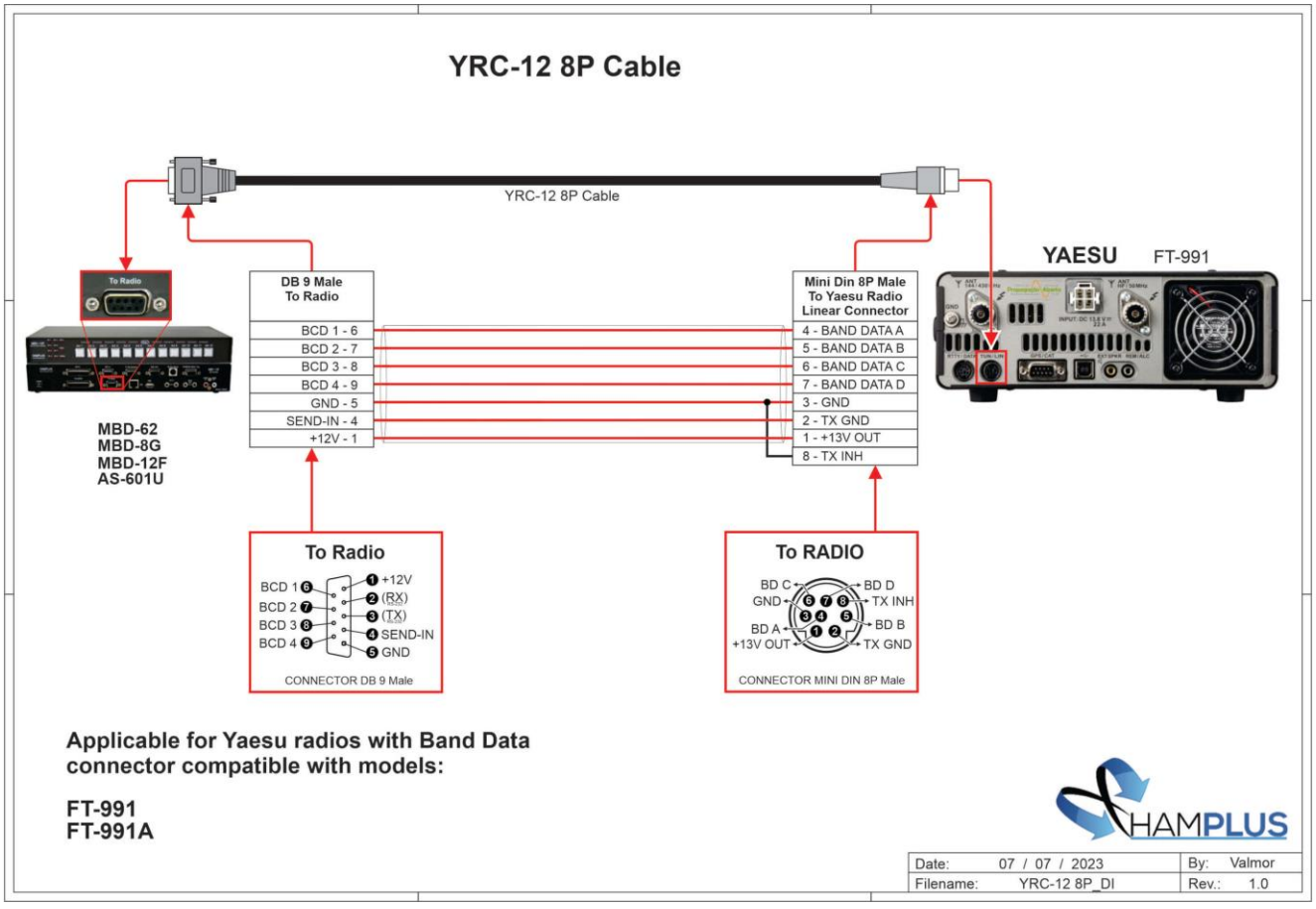

IRC-12S
ICOM cable
IRC-12S Cable
To Radio
CI-V
MBD-62
MBD-8G
MBD-12F
AS-601U
P2 Male
To Radio
CI-V Connector
- I/O
- GND
DB 9 Male
To Radio
GND - 5
SEND-IN - 4
RCA Male
To ICOM Radio
SEND Connector
- GND
- SEND
P2 Male
To ICOM Radio
REMOTE Connector
- I/O
- GND
ICOM IC-7300
To Radio
I/O
GND
CONNECTOR P2 Male
To MBD-12F
BCD 1
BCD 2
BCD 3
BCD 4
+12V
(RX)
(TX)
SEND-IN
GND
CONNECTOR DB 9 Male
To Radio
GND
SEND
CONNECTOR RCA Male
To Radio
GND
I/O
CONNECTOR P2 Male
Applicable to Icom radios.
HAMPLUS
Date: 10 / 10 / 2023
By: Valmor
Filename: IRC-12S_DI
Rev.: 1.0

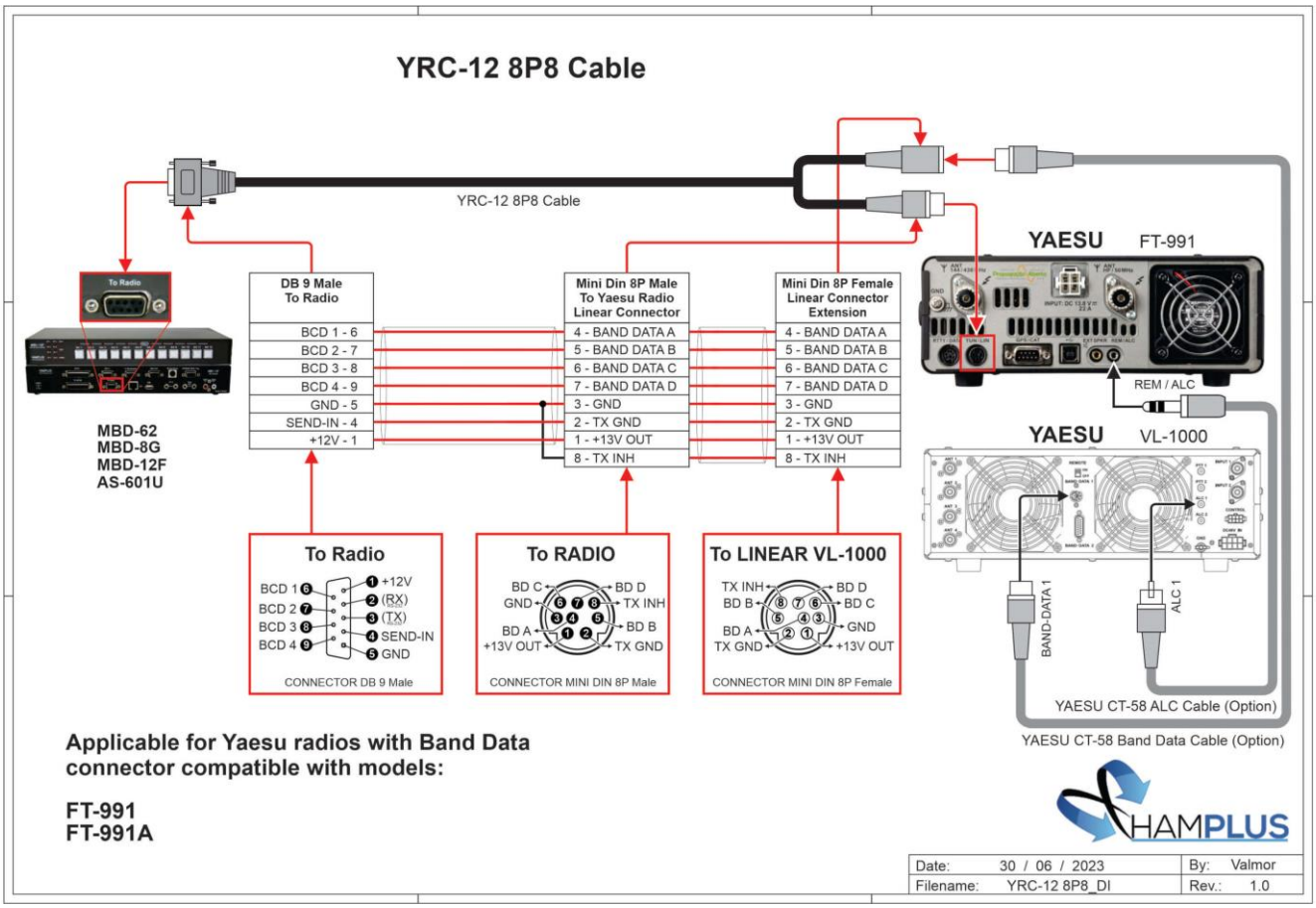

IRC-12 13P
ICOM cable
IRC-12 13P Cable
To Radio
CI-V
MBD-62
MBD-8G
MBD-12F
AS-601U
P2 Male
To Radio
CI-V Connector
- I/O
- GND
DB 9 Male
To Radio
GND - 5
+12V - 1
SEND-IN - 4
Din 13P Male
To ICOM Radio
ACC Connector
2 - GND - 2
8 - 13.8V
3 - SEND
P2 Male
To ICOM Radio
REMOTE Connector
- I/O
- GND
ICOM IC-7300
To Radio
I/O
GND
CONNECTOR P2 Male
To MBD-12F
BCD 1
BCD 2
BCD 3
BCD 4
+12V
(RX)
(TX)
SEND-IN
GND
CONNECTOR DB 9 Male
To Radio
SQL S
MOD
AF/IF
13.8V
NC
BTD
SEND
FS KK
TKEY
ALC
BAND
8V
GND
CONNECTOR DIN 13P Male
To Radio
GND
I/O
CONNECTOR P2 Male
Applicable to Icom radios with ACC Din 13-pin connector.
IC-7000
IC-7100
IC-7300
IC-9100
HAMPLUS
Date: 13 / 07 / 2023
By: Valmor
Filename: IRC-12 13P_DI
Rev.: 1.0

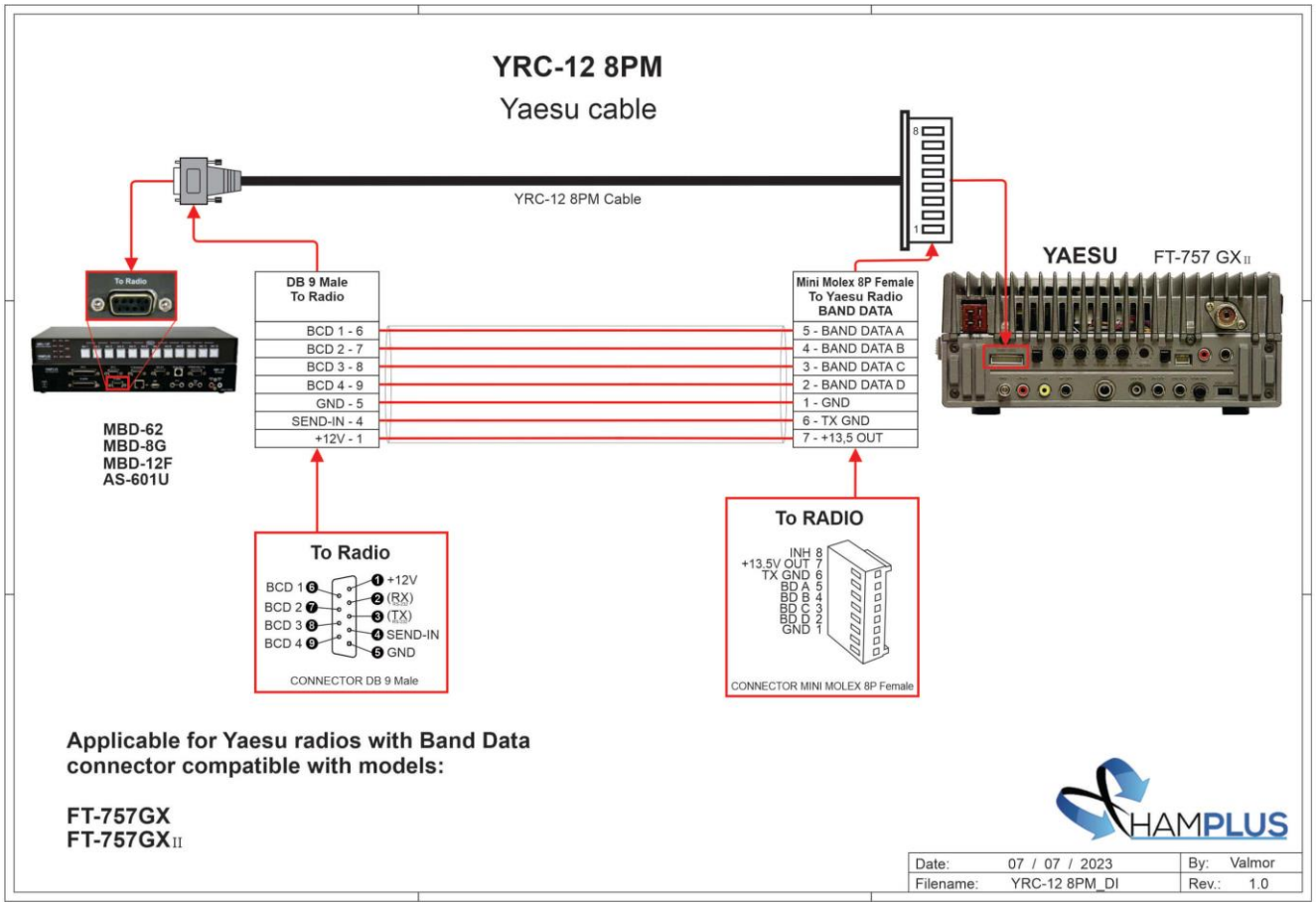

KRC-12
Kenwood cable
KRC-12 Cable
KENWOOD TS-590S
To Radio
MBD-62
MBD-8G
MBD-12F
AS-601U
DB 9 Male
To Radio
SEND-IN - 4
GND - 5
RX - 2
TX - 3
DB 9 Female
To Kenwood Radio
COM Connector
5 - GND - 5
2 - TXD OUT
3 - RXD IN
1 - NC
4 - NC
6 - NC
7 - RTS
8 - CTS
Din 7P Male
To Kenwood Radio
REMOTE Connector
4 - TX GND (MKE)
2 - GND (COM)
To MBD-12F
BCD 1
BCD 2
BCD 3
BCD 4
+12V
(RX)
(TX)
SEND-IN
GND
CONNECTOR DB 9 Male
To Radio
NC
TXD OUT
RXD IN
NC
GND
NC
RTS
CTS
NC
CONNECTOR DB9 Female
To Radio
ALC
SPO
MKE
RL
SS
BRK
COM
CONNECTOR DIN 7P Male
Applicable to Kenwood radios.
HAMPLUS
Date: 28 / 07 / 2023
By: Valmor
Filename: KRC-12_DI
Rev.: 1.0

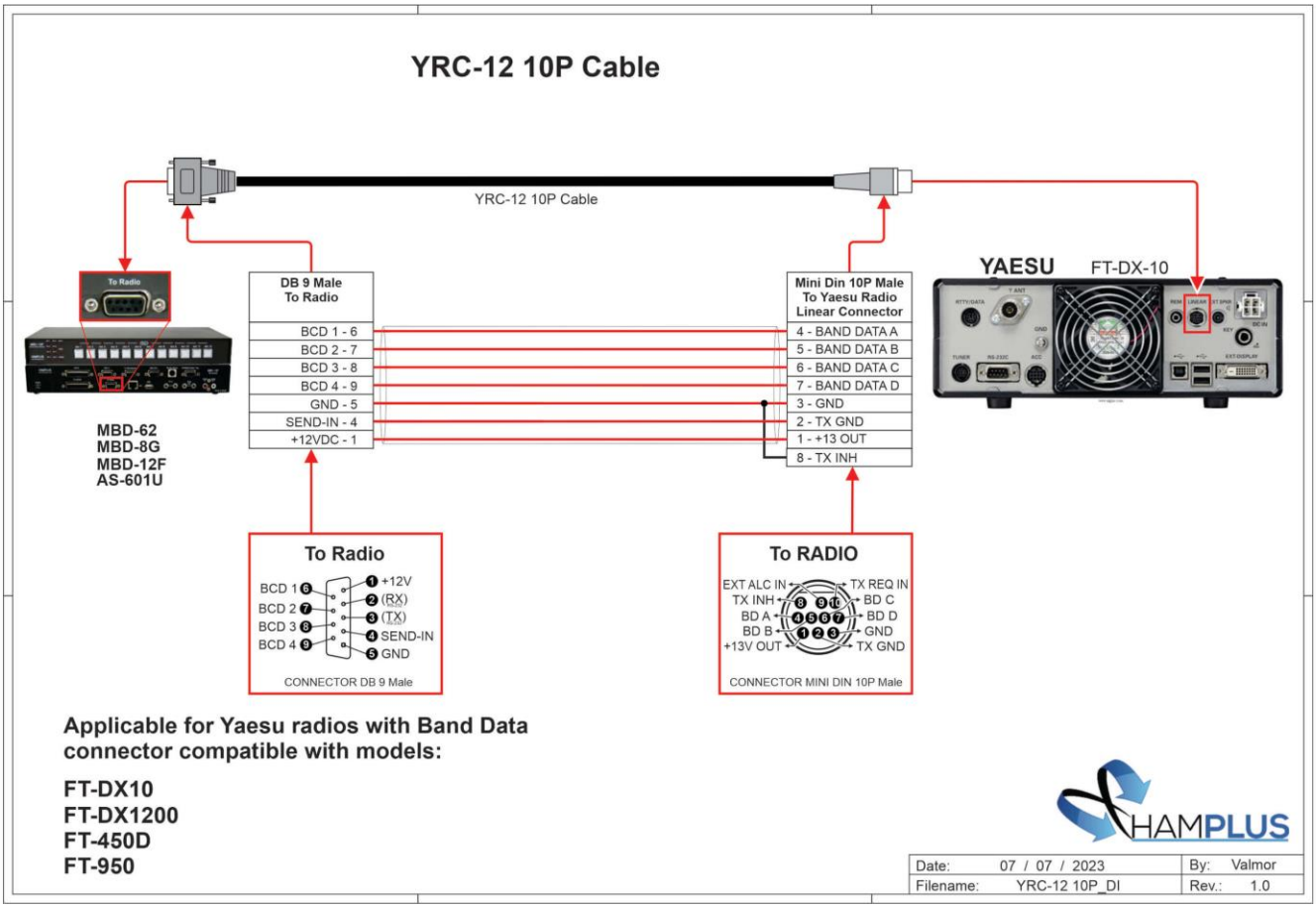

KRC-12MD
Kenwood cable
KRC-12MD Cable
KENWOOD TS-480HX/SAT
To Radio
DB 9 Male
To Radio
SEND-IN - 4
GND - 5
RX - 2
TX - 3
DB 9 Female
To Kenwood Radio
COM Connector
5 - GND - 5
2 - TXD OUT
3 - RXD IN
1 - NC
4 - NC
6 - NC
7 - RTS
8 - CTS
Mini Din 8P Male
To Kenwood Radio
REMOTE Connector
4 - TX GND (MKE)
2 - GND (COM)
MBD-62
MBD-8G
MBD-12F
AS-601U
To MBD-12F
BCD 1
BCD 2
BCD 3
BCD 4
+12V
(RX)
(TX)
SEND-IN
GND
CONNECTOR DB 9 Male
To Radio
NC
TXD OUT
RXD IN
NC
GND
NC
RTS
CTS
NC
CONNECTOR DB9 Female
To Radio
ALC
SS
MKE
SPO
RL
RTK
BRK
COM
CONNECTOR MINI DIN 8P Male
Applicable to Kenwood radios.
TS-480SAT
TS-480HX
HAMPLUS
Date: 07 / 07 / 2023
By: Valmor
Filename: KRC-12MD_DI
Rev.: 1.0

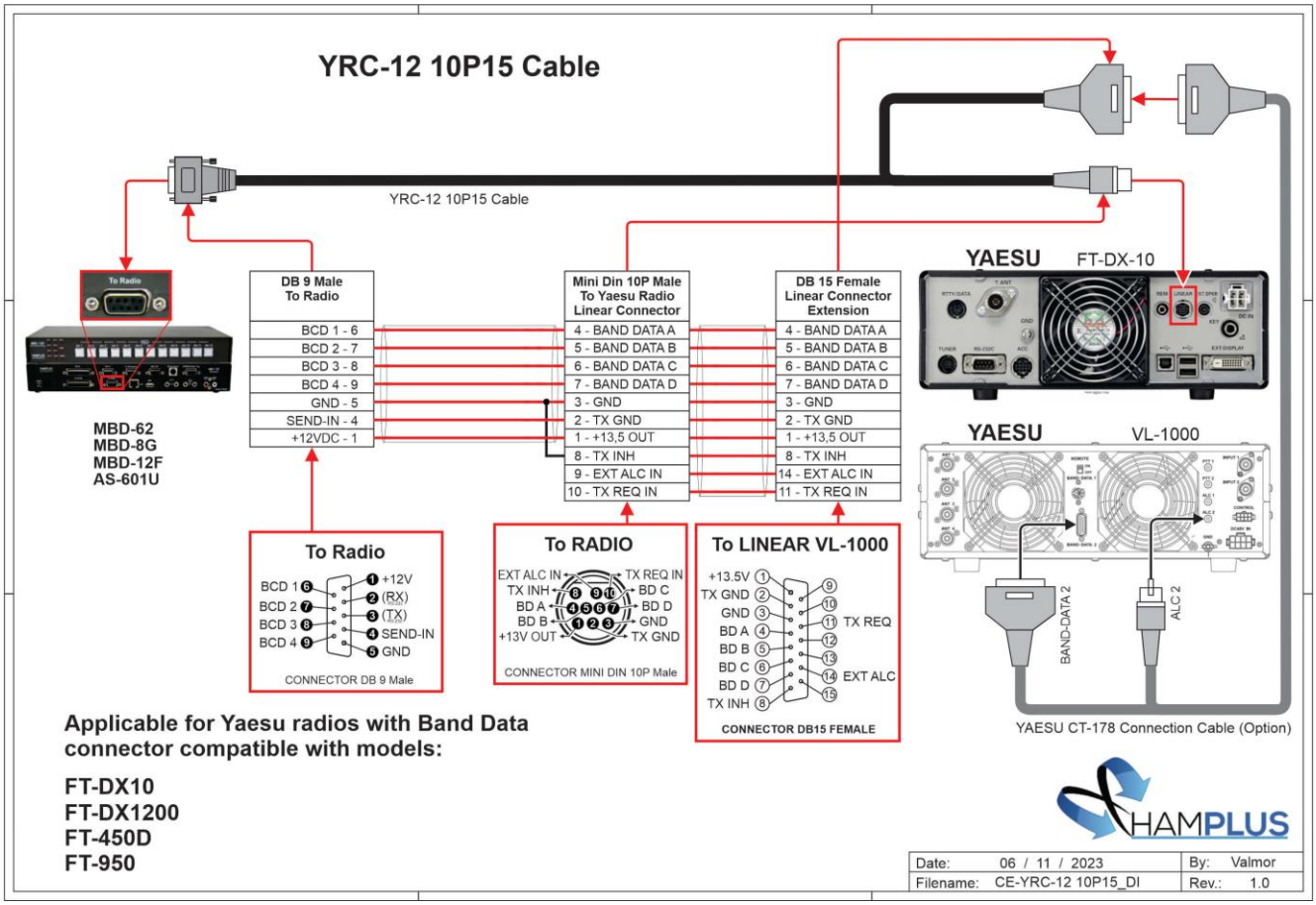

YRC-12 Cable
YRC-12 Cable
To Radio
MBD-62
MBD-8G
MBD-12F
AS-601U
DB 9 Male
To Radio
BCD 1 - 6
BCD 2 - 7
BCD 3 - 8
BCD 4 - 9
GND - 5
SEND-IN - 4
+12V - 1
Din U 8P Male
To Yaesu Radio
BAND DATA Connector
4 - BAND DATA A
5 - BAND DATA B
6 - BAND DATA C
7 - BAND DATA D
3 - GND
2 - TX GND
1 - +13V OUT
8 - TX INH
YAESU
FT-DX5000
To Radio
BCD 1
BCD 2
BCD 3
BCD 4
+12V
(RX)
(TX)
SEND-IN
GND
CONNECTOR DB 9 Male
To RADIO
BD B
GND
BD C
TX INH
TX GND
BD A
+13V OUT
BD D
CONNECTOR DIN U 8P Male
Applicable for Yaesu radios with Band Data connector compatible with models:
FT-DX5000
FT-2000
FT-1000MP
FT-990
HAMPLUS
Date: 09 / 10 / 2023
By: Valmor
Filename: YRC-12_DI
Rev.: 1.0

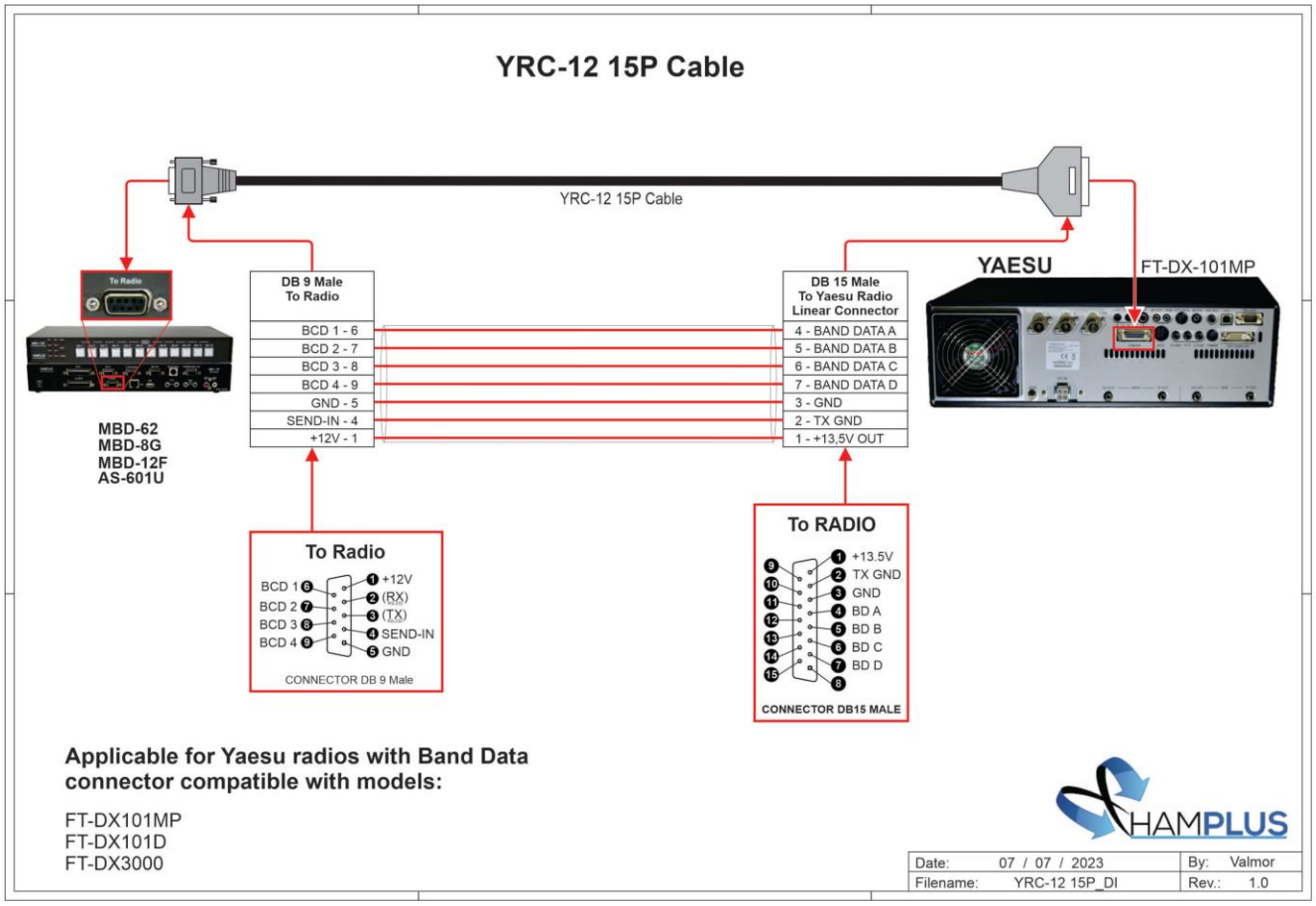

YRC-12 8P Cable
YRC-12 8P Cable
YAESU
FT-991
To Radio
DB 9 Male
To Radio
BCD 1 - 6
BCD 2 - 7
BCD 3 - 8
BCD 4 - 9
GND - 5
SEND-IN - 4
+12V - 1
Mini Din 8P Male
To Yaesu Radio
Linear Connector
4 - BAND DATA A
5 - BAND DATA B
6 - BAND DATA C
7 - BAND DATA D
3 - GND
2 - TX GND
1 - +13V OUT
8 - TX INH
MBD-62
MBD-8G
MBD-12F
AS-601U
To Radio
BCD 1
BCD 2
BCD 3
BCD 4
+12V
(RX)
(TX)
SEND-IN
GND
CONNECTOR DB 9 Male
To RADIO
BD C
GND
BD A
+13V OUT
BD D
TX INH
BD B
TX GND
CONNECTOR MINI DIN 8P Male
Applicable for Yaesu radios with Band Data
connector compatible with models:
FT-991
FT-991A
HAMPLUS
Date: 07 / 07 / 2023
By: Valmor
Filename: YRC-12 8P_DI
Rev.: 1.0

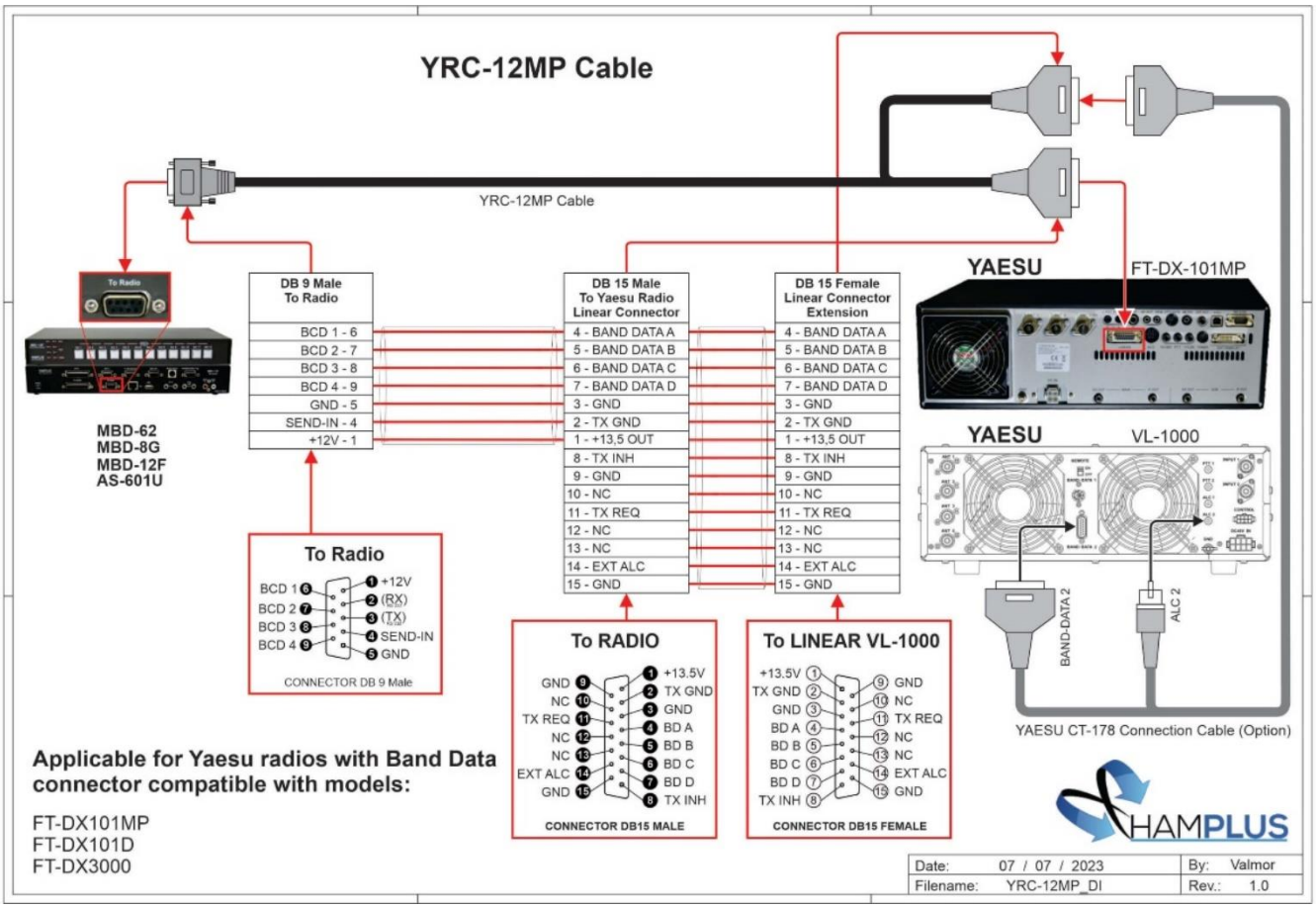

YRC-12 8P8 Cable
YRC-12 8P8 Cable
YAESU FT-991
REM / ALC
YAESU VL-1000
BAND-DATA 1
ALC 1
YAESU CT-58 ALC Cable (Option)
YAESU CT-58 Band Data Cable (Option)
MBD-62
MBD-8G
MBD-12F
AS-601U
DB 9 Male To Radio
BCD 1 - 6
BCD 2 - 7
BCD 3 - 8
BCD 4 - 9
GND - 5
SEND-IN - 4
+12V - 1
Mini Din 8P Male To Yaesu Radio Linear Connector
4 - BAND DATA A
5 - BAND DATA B
6 - BAND DATA C
7 - BAND DATA D
3 - GND
2 - TX GND
1 - +13V OUT
8 - TX INH
Mini Din 8P Female Linear Connector Extension
4 - BAND DATA A
5 - BAND DATA B
6 - BAND DATA C
7 - BAND DATA D
3 - GND
2 - TX GND
1 - +13V OUT
8 - TX INH
To Radio
BCD 1
BCD 2
BCD 3
BCD 4
+12V
(RX)
(TX)
SEND-IN
GND
CONNECTOR DB 9 Male
To RADIO
BD C
GND
BD A
+13V OUT
BD D
TX INH
BD B
TX GND
CONNECTOR MINI DIN 8P Male
To LINEAR VL-1000
TX INH
BD B
BD A
TX GND
BD D
BD C
GND
+13V OUT
CONNECTOR MINI DIN 8P Female
Applicable for Yaesu radios with Band Data connector compatible with models:
FT-991
FT-991A
HAMPLUS
Date: 30 / 06 / 2023
By: Valmor
Filename: YRC-12 8P8_DI
Rev.: 1.0


YRC-12 8PM
Yaesu cable
YRC-12 8PM Cable
8
1
YAESU
FT-757 GXII
To Radio
DB 9 Male
To Radio
BCD 1 - 6
BCD 2 - 7
BCD 3 - 8
BCD 4 - 9
GND - 5
SEND-IN - 4
+12V - 1
Mini Molex 8P Female
To Yaesu Radio
BAND DATA
5 - BAND DATA A
4 - BAND DATA B
3 - BAND DATA C
2 - BAND DATA D
1 - GND
6 - TX GND
7 - +13,5 OUT
MBD-62
MBD-8G
MBD-12F
AS-601U
To Radio
BCD 1 6
BCD 2 7
BCD 3 8
BCD 4 9
1 +12V
2 (RX)
3 (TX)
4 SEND-IN
5 GND
CONNECTOR DB 9 Male
To RADIO
INH 8
+13,5V OUT 7
TX GND 6
BD A 5
BD B 4
BD C 3
BD D 2
GND 1
CONNECTOR MINI MOLEX 8P Female
Applicable for Yaesu radios with Band Data
connector compatible with models:
FT-757GX
FT-757GXII
HAMPLUS
Date: 07 / 07 / 2023
By: Valmor
Filename: YRC-12 8PM_DI
Rev.: 1.0


YRC-12 10P Cable
YRC-12 10P Cable
To Radio
MBD-62
MBD-8G
MBD-12F
AS-601U
DB 9 Male
To Radio
BCD 1 - 6
BCD 2 - 7
BCD 3 - 8
BCD 4 - 9
GND - 5
SEND-IN - 4
+12VDC - 1
Mini Din 10P Male
To Yaesu Radio
Linear Connector
4 - BAND DATA A
5 - BAND DATA B
6 - BAND DATA C
7 - BAND DATA D
3 - GND
2 - TX GND
1 - +13 OUT
8 - TX INH
YAESU
FT-DX-10
To Radio
BCD 1
BCD 2
BCD 3
BCD 4
+12V
(RX)
(TX)
SEND-IN
GND
CONNECTOR DB 9 Male
To RADIO
EXT ALC IN
TX INH
BD A
BD B
+13V OUT
TX REQ IN
BD C
BD D
GND
TX GND
CONNECTOR MINI DIN 10P Male
Applicable for Yaesu radios with Band Data
connector compatible with models:
FT-DX10
FT-DX1200
FT-450D
FT-950
HAMPLUS
Date: 07 / 07 / 2023
By: Valmor
Filename: YRC-12 10P_DI
Rev.: 1.0


YRC-12 10P15 Cable
YRC-12 10P15 Cable
To Radio
MBD-62
MBD-8G
MBD-12F
AS-601U
DB 9 Male
To Radio
BCD 1 - 6
BCD 2 - 7
BCD 3 - 8
BCD 4 - 9
GND - 5
SEND-IN - 4
+12VDC - 1
Mini Din 10P Male
To Yaesu Radio
Linear Connector
4 - BAND DATA A
5 - BAND DATA B
6 - BAND DATA C
7 - BAND DATA D
3 - GND
2 - TX GND
1 - +13,5 OUT
8 - TX INH
9 - EXT ALC IN
10 - TX REQ IN
DB 15 Female
Linear Connector
Extension
4 - BAND DATA A
5 - BAND DATA B
6 - BAND DATA C
7 - BAND DATA D
3 - GND
2 - TX GND
1 - +13,5 OUT
8 - TX INH
14 - EXT ALC IN
11 - TX REQ IN
YAESU FT-DX-10
YAESU VL-1000
BAND-DATA 2
ALC 2
YAESU CT-178 Connection Cable (Option)
To Radio
BCD 1
BCD 2
BCD 3
BCD 4
+12V
(RX)
(TX)
SEND-IN
GND
CONNECTOR DB 9 Male
To RADIO
EXT ALC IN
TX INH
BD A
BD B
+13V OUT
TX REQ IN
BD C
BD D
GND
TX GND
CONNECTOR MINI DIN 10P Male
To LINEAR VL-1000
+13.5V
TX GND
GND
BD A
BD B
BD C
BD D
TX INH
TX REQ
EXT ALC
CONNECTOR DB15 FEMALE
Applicable for Yaesu radios with Band Data connector compatible with models:
FT-DX10
FT-DX1200
FT-450D
FT-950
HAMPLUS
Date: 06 / 11 / 2023
By: Valmor
Filename: CE-YRC-12 10P15_DI
Rev.: 1.0


YRC-12 15P Cable
YRC-12 15P Cable
To Radio
MBD-62
MBD-8G
MBD-12F
AS-601U
DB 9 Male
To Radio
BCD 1 - 6
BCD 2 - 7
BCD 3 - 8
BCD 4 - 9
GND - 5
SEND-IN - 4
+12V - 1
DB 15 Male
To Yaesu Radio
Linear Connector
4 - BAND DATA A
5 - BAND DATA B
6 - BAND DATA C
7 - BAND DATA D
3 - GND
2 - TX GND
1 - +13,5V OUT
YAESU
FT-DX-101MP
To Radio
BCD 1
BCD 2
BCD 3
BCD 4
+12V
(RX)
(TX)
SEND-IN
GND
CONNECTOR DB 9 Male
To RADIO
+13.5V
TX GND
GND
BD A
BD B
BD C
BD D
CONNECTOR DB15 MALE
Applicable for Yaesu radios with Band Data
connector compatible with models:
FT-DX101MP
FT-DX101D
FT-DX3000
HAMPLUS
Date: 07 / 07 / 2023
By: Valmor
Filename: YRC-12 15P_DI
Rev.: 1.0


YRC-12MP Cable
YRC-12MP Cable
To Radio
MBD-62
MBD-8G
MBD-12F
AS-601U
DB 9 Male
To Radio
BCD 1 - 6
BCD 2 - 7
BCD 3 - 8
BCD 4 - 9
GND - 5
SEND-IN - 4
+12V - 1
DB 15 Male
To Yaesu Radio
Linear Connector
4 - BAND DATA A
5 - BAND DATA B
6 - BAND DATA C
7 - BAND DATA D
3 - GND
2 - TX GND
1 - +13,5 OUT
8 - TX INH
9 - GND
10 - NC
11 - TX REQ
12 - NC
13 - NC
14 - EXT ALC
15 - GND
DB 15 Female
Linear Connector
Extension
4 - BAND DATA A
5 - BAND DATA B
6 - BAND DATA C
7 - BAND DATA D
3 - GND
2 - TX GND
1 - +13,5 OUT
8 - TX INH
9 - GND
10 - NC
11 - TX REQ
12 - NC
13 - NC
14 - EXT ALC
15 - GND
YAESU
FT-DX-101MP
YAESU
VL-1000
BAND-DATA 2
ALC 2
YAESU CT-178 Connection Cable (Option)
To Radio
BCD 1
BCD 2
BCD 3
BCD 4
+12V
(RX)
(TX)
SEND-IN
GND
CONNECTOR DB 9 Male
To RADIO
GND
NC
TX REQ
NC
NC
EXT ALC
GND
+13.5V
TX GND
GND
BD A
BD B
BD C
BD D
TX INH
CONNECTOR DB15 MALE
To LINEAR VL-1000
+13.5V
TX GND
GND
BD A
BD B
BD C
BD D
TX INH
GND
NC
TX REQ
NC
NC
EXT ALC
GND
CONNECTOR DB15 FEMALE
Applicable for Yaesu radios with Band Data connector compatible with models:
FT-DX101MP
FT-DX101D
FT-DX3000
HAMPLUS
Date: 07 / 07 / 2023
By: Valmor
Filename: YRC-12MP_DI
Rev.: 1.0

MBD-62

DECEMBER 18, 2023

HAMPLUS.COM
Rua Joe Collaço, 954 - Florianópolis - Brazil