User manual

DU 4000 AL

Automatic antenna tuner 4 kW 1,8-30 MHz
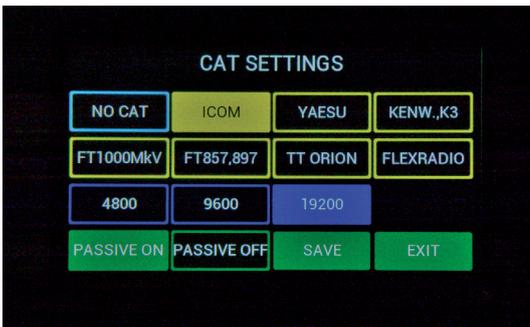
1. Select the radio make connected to the rzber – első sor- és típusát- második sor-

2. Select the communication speed on the touch screen – 4800 -9600-19200.

The selected speed must be the same as what is set on the radio.

To put this in the memory, press the SAVE button.

Use the EXIT button to leave this screen.

If a communication error occurs when multiple sets are connected, then one of them must be selected on the touch screen using the PASSIVE ON or PASSIVE OFF settings.

PASSIVE ON means that communication between the radio and the tuner only occurs in one direction.

PASSIVE OFF means that there is back and forth communication between the radio and the tuner.
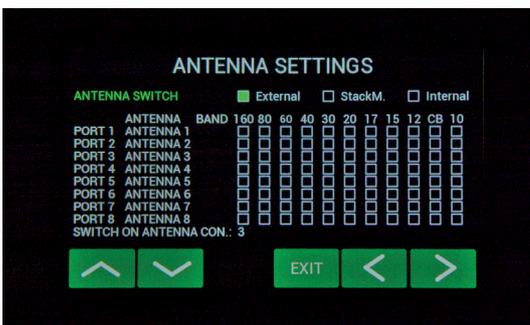
2. SETTINGS

It is possible to select the various functions using the up and down arrow buttons.

It is possible to enter the menu of the highlighted function by pressing the SET button.

After making the setting adjustments, it is possible to leave the screen by pressing the EXIT button.
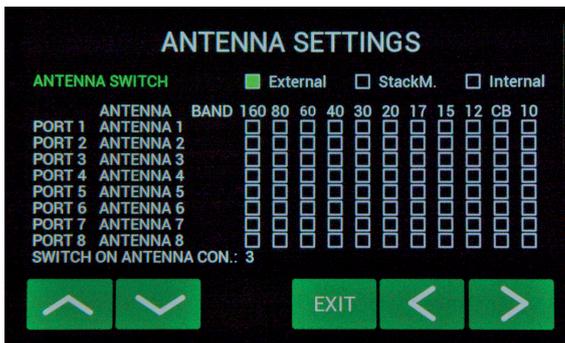
3. ANTENNA SETTINGS

The first setting possibility in the SETTINGS menu is the ANTENNA SETTINGS.

External: it is possible to operate the external antenna switch with this. Eight different antennas can be switched on with this.

It is possible to scroll between the ports (PORT 1, PORT2, PORT3…) with the up and down buttons. The writing of the active port turns green.
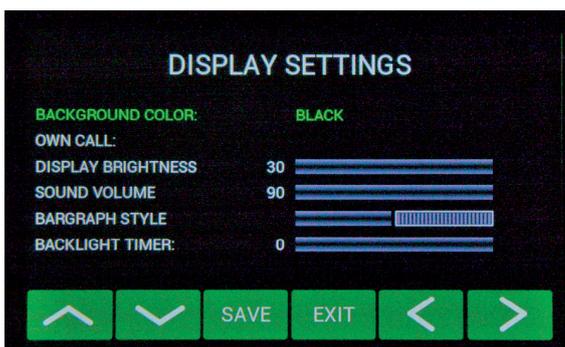
It is possible to select which frequency of antenna and which port is desired using the left and right arrows.

The settings must be put in the memory by pressing the SAVE button.

The first setting possibility in the SETTINGS menu is the ANTENNA SETTINGS.

When Internal is selected, the four-level internal antenna switch in the tuner is operational.

It is possible to scroll between the ports (PORT 1, PORT2, PORT3…) with the up and down buttons. The writing of the active port turns green.

The band (160, 80, 60,40…) can be selected with the left and right arrows. The box next to the selected value is highlighted in green.

The desired BAND can be turned off and on by using the SAVE button. When using a multi-band antenna on an input, the number of BANDs must be selected in accordance with how many bands the antenna has.

SWITCH ON ANTENNA CON (1...2...3...or 4) here we select which ANT output we want to use the (EXTERNAL,StackM or Internal)

It is possible to move between the functions using the up and down buttons. The writing of the selected function turns green.

It is possible to change the values of the selected setting using the right and left buttons.

The values set in this way can be put in the memory by pressing the SAVE button.

Leave the screen by pressing the EXIT button.
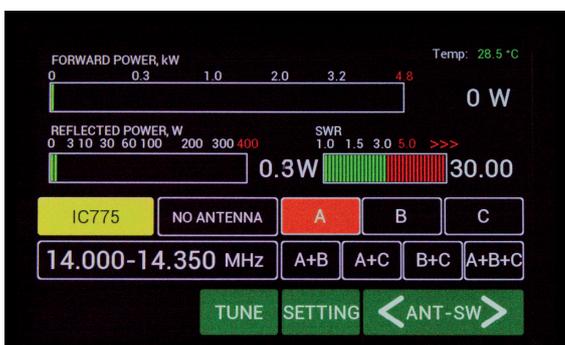
This is because which frequency is being used by the StackM controller has not been set on the ANTENNA SETTINGS menu.

If it is set properly, then the rectangle containing the letter A or B or C is highlighted in green.
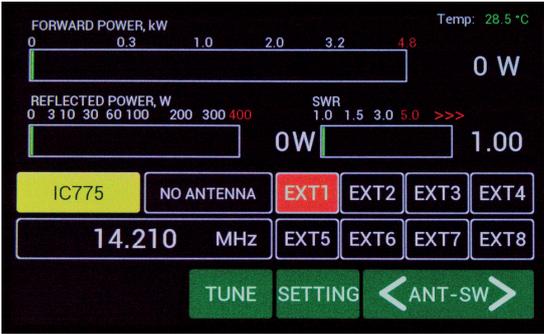
If we touch the 1U button, then it will switch to the UNTUNED mode.

It is possible to use the UNTUNED mode in the frequency segment where the SWR is good.

The HF signal bypasses the tuner in this mode.

There is no need to put this in memory after selecting the antenna switch.

It will always remember the most recent setting.

Do not press the TUNE button on the touch screen until the proper frequency segment has been set on the radio. The corresponding antenna must be selected on the touchscreen.

The tuner imports the frequency at the middle of the segment on the radio.

After setting these, it is possible to begin the tuning process by pressing the TUNE button.

After the tuning process has been completed, the ANTENNA rectangle will be highlighted in yellow.
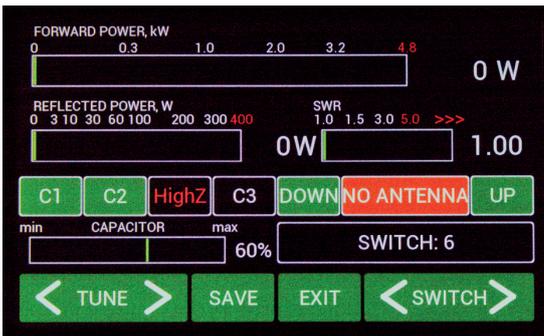
The tuning menu appers when the TUNE button is pressed.

C1: 220pF for "PI" tuning.

C2: +500 pF for "L" tuning

C3: +500 pF for "L" tuning. C3 only functions at 1.8 MHz.

HighZ is for setting impedance above 50 Ω, LOWZ for impedance below 50 Ω.

CAPACITOR: 0-500pF. It is possible to tune the variable capacitor by pressing the TUNE button with the left and right arrows.
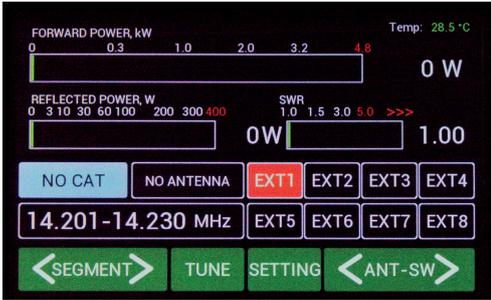
SWITCH: 1-11. The inductivity can be changed by pressing the SWITCH button with the left and right arrows.

After setting the minimum SWR value, the settings are put in the memory by pressing the SAVE button.

Leave the screen using the EXIT button.

WARNING! The input power necessary for the tuning procedure can be a maximum of 150 W.

This is because the proper BAND is not set for Port1.

10. TUNER DATA

Frequency: 1.8-30 MHz
RF input imdedance: 50Ω
Large 5" color touchscreen
The antenna impedance can be set to a minimum of 25Ω.
RF input power:

      SWR   1-3:1   4Kw
      SWR   1-2:1   3Kw

If it is possible to set the SWR higher than 3:1, then the power must be reduced to between 2 and 3 kW.
The necessary input power during the full tuning is 50-150W.
Retuning time when changing bands is 1s maximum 1.5, so during competitions and multiplications it is easy to use.
Full control and oversight can be done through LAN.
It works with all radios, LAN, RS232, CI-V and Flex radios.
A Windows application is necessary for control and configuration through the network.

5coll Color touch display   STBY/ ON-OFF function   Main power switch

1. Turning ON
    It must be pressed briefly STBY / ON
2. Turning OFF
    It must be pressed briefly the STBY/ON after need waiting the tuner save all data
3. FACTORY RESET
    If press the STBY/ON button for along time the tuner make FACTORY RESET

ANT CFG
PIN Out
1-8 +12V INT. PWR
6-8 GND INT. PWR
9-8 EXT. PWR

TCVR
DB9 serial port RS232 for KENWOOD, YAESU and ELECRAFT TCVRs. Correct baud rate and type is required for successful operation. If both CI-V and TCVR cables are connected then CI-V disables RS232. Otherwise selection of interface is done via TCVR type.

Stack Match

9 Outside ant switch
ANT & BPF SW DB-25 is used for switching external
Antenna Switch. Maximum switching of 30V / 0.5A is possible.

PC
DB -9 RS232 port is used for communication with your PC. Please use setting you would normally use if using direct TCVR – PC connection.

PIN OUT:
1. antenna port 1   8. antenna port 8
2. antenna port 2   9. antenna port 9
3. antenna port 3   10. antenna port 10
4. antenna port 4   11. COMMON port of ANT SW
5. antenna port 5   12. NC
6. antenna port 6   13. GND
7. antenna port 7

HF input

ANT input
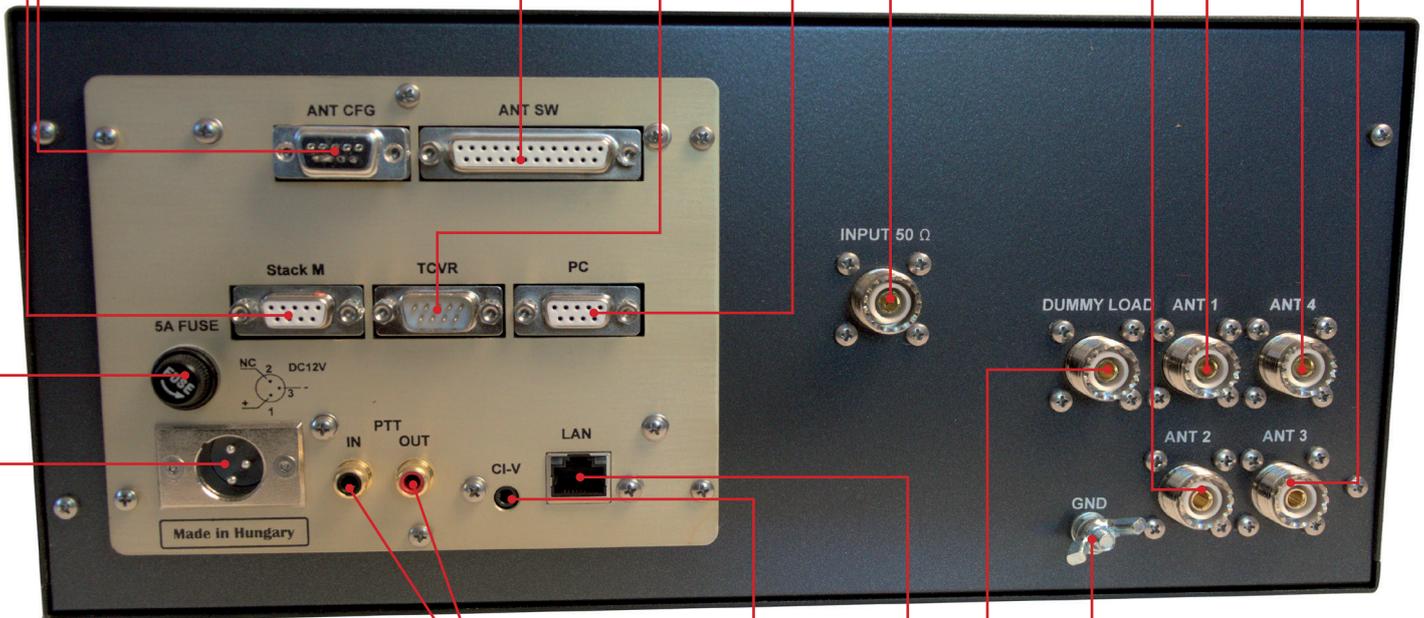
DC 12V 6,6A input

PTT IN-OUT
RCA Output signal PTT (maximum switching of 30V / 50mA)

GND

DUMMY LOAD

5A FUSE

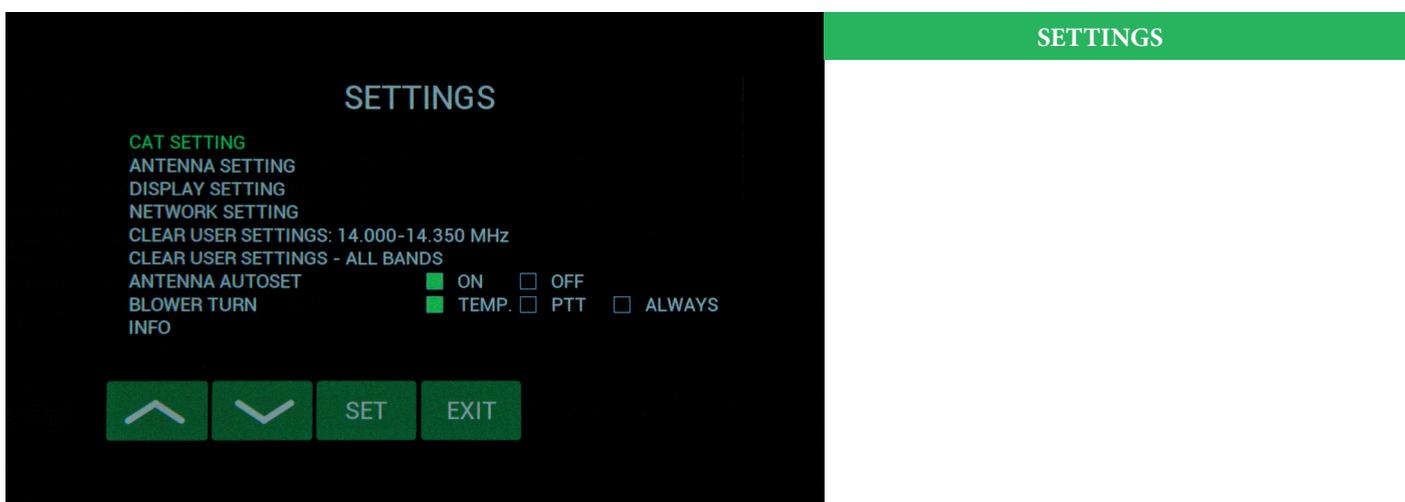**CI-V input for ICOM CAT communication**

LAN connection for network
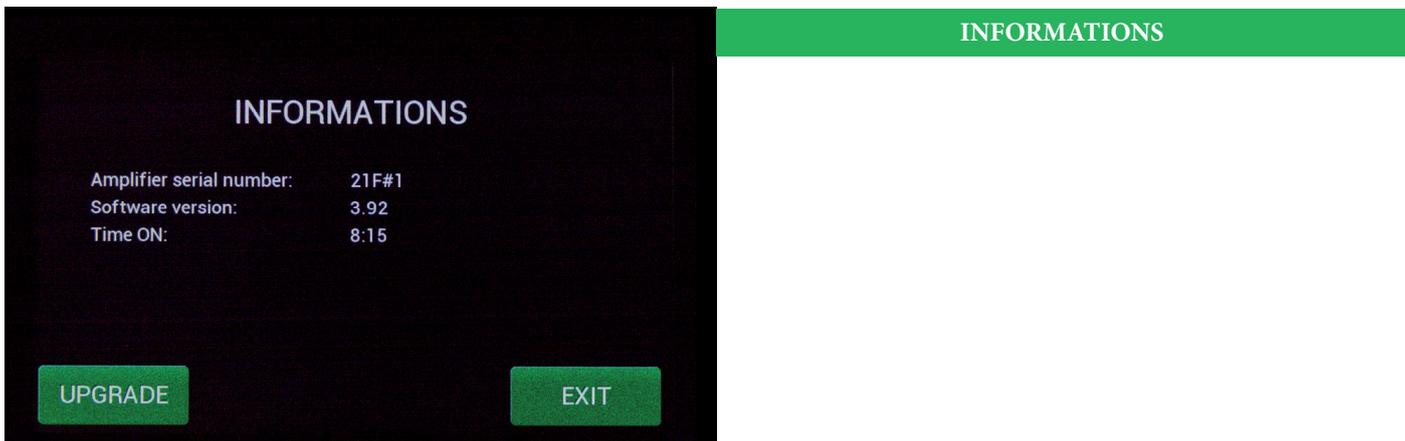
The current software version can be seen.
UPGRADE
Software upgrade function

CAT SETTING
It is possible here to adjust the CAT communication settings
ANTENNA SETTING
It is possible here to adjust the antenna name and port settings.
DISPLAY SETTING
It is possible here to adjust the display parameters and volume settings.
CLEAR USER SETTINGS 14.000MHz
This returns the settings for the selected segment back to factory settings.
CLEAR USER SETTINGS-ALL BANDS
This returns the settings for all bands (band segments) back to factory settings (50 ohm)
ANTENNA AUTOSET
ON   OFF
BLOWER TURN
The functions of the internal fan
TEMP: turns on when a temperature limit is exceeded.
PTT: the PTT controls the fan.
ALWAYS: the fan is always turned on.

It is possible to set the NETWORK parameters in this menu point.

IP ADDRESS: Here you must provide the IP address through which the tuner can be accessed using the network or remotely.
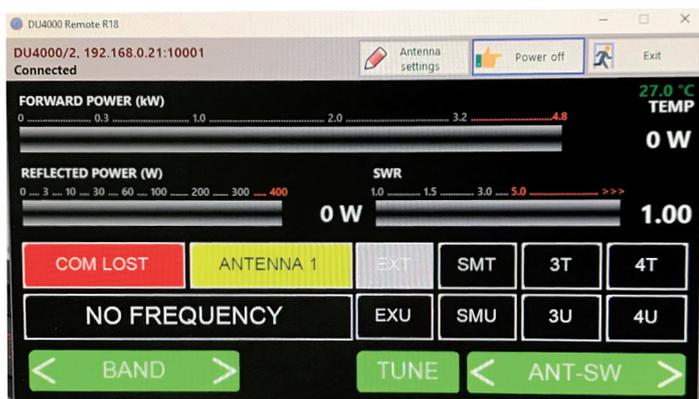
The values marked in red must be changed.

This IP address must be the same as the IP address in the remote control program.

IP SETTING THROUGH LAN:

ON – the Lantronix parameters can be set through the network as well.

OFF – the Lantronix parameters can only be set through the tuner menu.

The screen of the remote control program is the same as the screen of the tuner.

It is possible to turn off the tuner with the power off function.

It is possible to configure the antenna switches in the antenna settings menu.

The name of the tuner, its IP address number of ports, and whether there is a connectin to the tuner through the network.
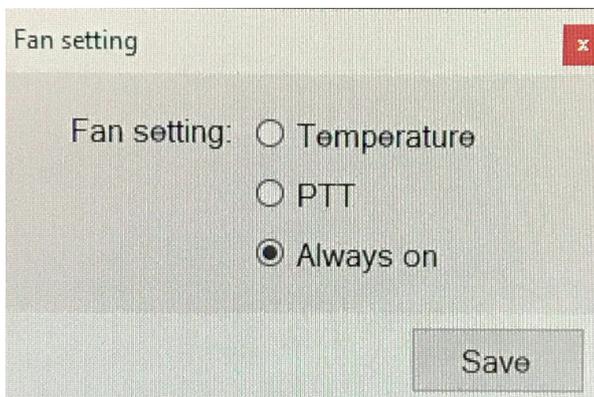
Guide the arrow with the mouse to the temperature display number and click on it there. When you do this, the fan setting window will appear.

The fan turns on due to temperature differences, the PTT turning on, or the fan is always on.

The selected function can be put in memor by pressing the SAVE button.

AC 2 - 230V/50Hz   AC 1 - 230V/50Hz   F1-T16A

F2-T16A

OUTPUT

⚠ High RF voltage ⚠

GND

TCVR   CI-V   LAN

PC   CONTROL

KEY IN   KEY OUT   ANT/BPF

INPUT

⚠ CAUTION
RISK OF ELECTRIC SHOCK
DISCONNECT SUPPLY CORD BEFORE OPENING
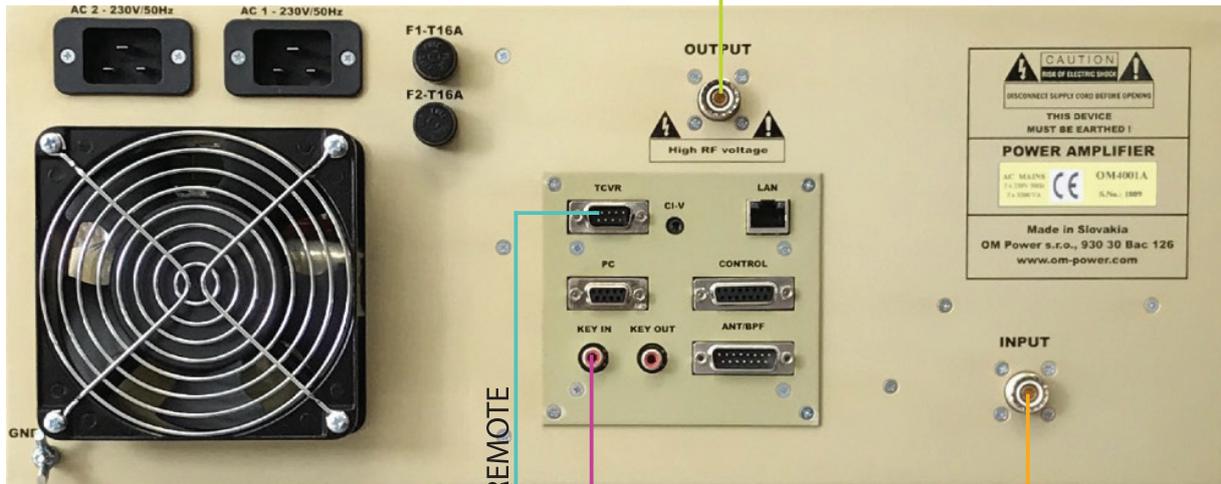THIS DEVICE
MUST BE EARTHED !

POWER AMPLIFIER

AC MAINS
2 x 230V 50Hz   CE   OM4001A
2 x 3500VA   S.No.: 1809

Made in Slovakia
OM Power s.r.o., 930 30 Bac 126
www.om-power.com

ANT CFG   ANT SW

Stack M   TCVR   PC

5A FUSE

FUSE   NC 2 DC12V
        3
        1

IN PTT OUT   CI-V   LAN

Made in Hungary

INPUT 50 Ω

DUMMY LOAD   ANT 1   ANT 4

ANT 2   ANT 3

GND

EXT DISPLAY   LAN

AC

15A

GND

ANT 4   ANT 3   ANT 2   ANT 1

REF I/O   RX ANT B   X-VERTER   RX ANT A   REMOTE METER KEYPAD   KEY   ALC   RELAY   DC OUT   ACC 2   ACC 3   ACC 1   EXT SP

REMOTE

9

Delta loop

GP

8x Switch

ANT CFG   ANT SW

INPUT 50 Ω

Stack M   TCVR   PC

DUMMY LOAD   ANT 1   ANT 4

5A FUSE

NC   2   DC12V

FUSE   1

                    ANT 2   ANT 3

        IN   PTT OUT

              CI-V   LAN

GND

Made in Hungary

Ant 1

Stack
M

Ant 2

Ant 3

ICOM - DU 4000 AL

PC

ANT CFG   ANT SW

Stack M   TCVR   PC

5A FUSE

FUSE   NC   2   DC12V
                 3
              1

IN   PTT   CI-V   LAN
      OUT

Made in Hungary

INPUT 50 Ω

DUMMY LOAD   ANT 1   ANT 4

ANT 2   ANT 3

GND

DC POWER

ANT 1

GND   PTT

CI-V

KENWOOD/YEASU - DU 4000 AL

ANT

REMOTE

CAT

PTT