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HF Linear Amplifier BURST-2000A



OPERATING MANUAL

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INTRODUCTION GENERAL

- The amplifier is very easy to control. With the on-screen menu, the settings can be made even a radio Ham beginner;
- There is the color TFT display with a diagonal of 4.3 inches (95 x 53 mm), and the resolution of 480 x 272 pixels and 24-bit color usage;
- There is a possibility of the remote control via Ethernet (option);
- The operator is able to track all main characteristics of the operating mode in the exact digital form;
- It can be fixed any failure statistics – the non-volatile memory stores the detailed information about all emergency Amplifier situations;
- The modern protection schemes ensure the integrity of the electrical circuits of the device;
- Lightweight and compact Amplifier dimensions with respect to its power;
- Suitable for use with any transceivers;
- Controlled by standard signals. Switching on the transmission mode (PTT) is carried out by applying zero. The rated input RF power - 15 W;
- The transceiver output is well matched with the broadband input. The SWR level is at 1.2:1 in the 1.8 - 54 MHz band range without any additional adjustments;
- The current automatic transceiver control system works via CAT Protocol (optional). The Amplifier monitors continuously the operating frequency and tunes after the band range change itself;
- Built-in frequency meter, band range decoder, and AUX connection, in case of non-use of CAT connection, will determine the frequency and allow the amplifier to correctly control the operating band range;
- FET transistors of the type BLF188 (MOSFET) are able to withstand high levels of mismatch at the output (high SWR level);
- Exceptional electromagnetic compatibility with different sensitivity units allows you to connect the Amplifier to almost any devices;
- High-quality protection against current surges and automatic reactive power compensation is achieved thanks to a high-quality switching power supply
- AC power voltage range (85-300 V).

1. GENERAL INFORMATION

1-1. Introduction and Description

This Chapter describes the installation, operation, and maintenance of the BURST 2000A Power Amplifier (PA).

BURST 2000A is a modern linear amplifier with the coverage all HF Amateur Radio bands from

1.8 Mhz to 54 Mhz. The current information about the operating mode is displayed on the multi- function color display with high resolution. BURST 2000A can be controlled either via the buttons on the front panel or remotely via Ethernet. BURST 2000A optimized for BURST AS05 antenna switch for 5 different antenna systems.

1-2. Assistance to the owner

If you need technical assistance, please contact the manufacturer. You can contact BURST AMPLIFIER producer via his e-mail r2dan@burst.su or via website: www.burst.su

1-3. Supplied equipment and options

The Buyer's specification of PA consists one box, including:

- BURST 2000A PA;
- Power cord;
- the Instruction Manual;
- Spare fuses: 16A / 250V -2pcs.
-

1-4. Characteristics

- All HF bands, including WARC bands and 6 m band
- Output power:
 - 1,8-30 MHz - 2200 W PEP (SSB and CW); 50-54 Mhz - 1100W
- Rated input power: 15W;
- 230 V AC mains voltage ;
- LCD display;
- Ethernet control
- Modern design;
- Intuitive menu;
- All kinds of protections:
 - SWR;
 - overload current protection;
 - overheat protection;
 - exceeding the input power;
 - band range switching error protection (LPF Error).
- Acceptable operating conditions:
 - Operating temperature range: -10°C (antifreeze) +40°C
 - Relative humidity up to 95% (at 35°C)
- Device dimensions (without protruding parts) - 352 x 395 x 153 mm.
- Weight - 17 kg.

1-5. Security concerns, clear definitions of NET power connections

The BURST 2000A linear amplifier is the device of Class I for protection against electric shock, i.e. the third power cord ground wire (colored yellow with two green strips) and ground pin on the PA rear panel, marked GND (Fig. 2-1), **must be connected to the house ground system for safety operation.**

This User Manual contains safety precautions, cautions and warnings that **MUST BE OBSERVED and COMPLIED** by the owner to ensure safety operations and maintenance of the BURST 2000A amplifier.

Precautionary measures

The notes described below refer to this manual:

The WARNING notes draw attention to the procedure that, if it is not correctly executed, may cause personal injury or fire hazard if electric shock or lightning strikes. Caution notes pay attention to a procedure that, if not performed correctly, may result in owner's equipment damage (not only in the BURST 2000A amplifier).

Notes NOTE pay attention to the procedure, which, if it is not performed correctly, can lead to inconveniences.

WARNING! HIGH VOLTAGE!

Both mains voltage and high RF voltage inside the BURST 2000A amplifier! For its safety, disconnect the mains plug from the mains and wait at least three minutes before removing the cover of the amplifier.

NEVER LET, ESPECIALLY CHILDREN to have something inserted in the body holes - this will cause an ELECTRIC SHOCK!

Never touch the antenna or antenna isolators during transfer or settings - this may cause ELECTRIC SHOCK!

Never expose the amplifier to rain, snow or any liquids'. Avoid excessive dusting of the amplifier and long-term exposure to direct sunlight.

Do not block the COOLING by closing the air ducts or air vents.

CAUTION

Do not repair or replace the hardware of your BURST 2000A amplifier. This can lead to health and life risks. Such repairs are not covered by the warranty.

The manufacturer is not responsible for any repairs performed by any specialists, uncertified by the PA producer.

PRECAUTION

To avoid damage (not covered by the producer's warranty!), please read INSTALLATION - section 2 of this instruction manual. If you have any doubts or questions regarding the installation, operation or safety of the BURST 2000A amplifier, please, consult the producer immediately as it was recommended above.

2. INSTALLATION

2-1. Unpacking and initial inspection

Unpack and carefully inspect the contents of the cardboard box for possible damage during transportation. Check the housing, the front panel, display, buttons, rear connectors, the main power switch and fuses.

2-2. Amplifier Location Selection and Cooling Conditions

You will need easy access to the rear panel of the Amplifier to connect the cables and to the buttons and the screen on the front panel as well.

BURST 2000A is equipped with water cooling. Place the amplifier so that there are no objects or other devices closer than 10 cm (4 in) from the rear panel of the amplifier.

PRECAUTION

Avoid any contacts with water, metal objects through the ventilation holes.

2-3. Amplifier Connections in the house.

CAUTION

The amplifier can create a significant load (more than 3 kW) on the local electrical network. From the beginning, verify the ability of your power net to work with such power consumption.

CAUTION

Never use the house gas pipes for grounding. This can cause an EXPLOSION!

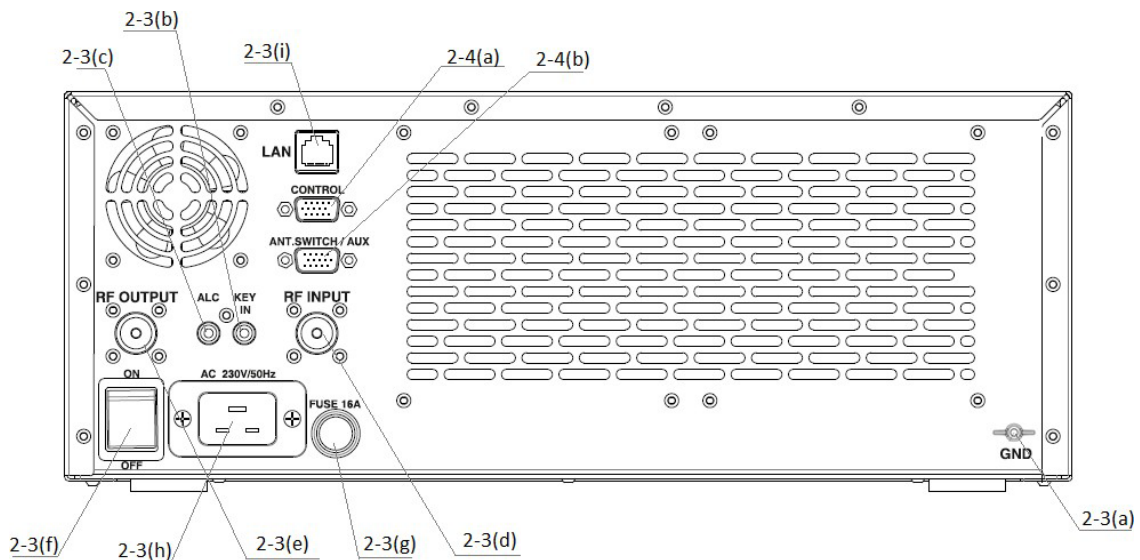
CAUTION

Do not use the local pipes for heating or water supply for grounding! You can create a dangerous tension on them. You can endanger not only yourself, but also other people in the house.

RECAUTION

Remember please, that the ground wire can withstand emergency currents of more than 20 A with a minimum voltage drop. Therefore, you may need to connect the ground with a thicker wire.

- a) GND Bolt – at the beginning, please, connect the ground pin of the amplifier (located on the rear panel and marked GND - Fig. 2-1) to the house grounding system.
- b) Socket “KEY-IN” input of the amplifier to control the reception / transmission from the transceiver.



- c) “ALC Connector” – please, connect this socket to the appropriate input of Your transceiver.
- d) “RF INPUT” - Connect the transceiver output (antenna socket) to the RF INPUT amplifier socket by the coaxial cable with PL-259 jack.

PRECAUTION

To avoid any damage, turn off the internal antenna tuner of your transceiver.

- e) “RF OUTPUT” – Please, connect RF OUTPUT plug on the back of the amplifier to the antenna or to the antenna switch by any suitable coaxial cable with the PL-259 jack.

PRECAUTION

If you are using an amplifier for the first time in your home, pay your attention to the marking of the coaxial cable from the output of your amplifier to the antenna. The cable must be capable of withstanding increased power, especially at 10m and 6m bands. This warning applies equally to the antenna switch, tuner and the entire antenna system.

We recommend you use RG213 type cable or better.

- f) Check the power switch position. It should be “OFF” for disconnection of the amplifier from your local power net.
- (g) Mains fuse.
- (h) power cord Socket.
- i) Ethernet (LAN) Connector for remote control of the amplifier via PC.
- ii)

2-4. Connections to External Devices (transceiver, computer, etc.)

a) “Control” connector used to connect and work with different transceivers models, as well as to update the software (see table 2-1).

Most modern transceivers can be connected via CAT or BAND DATA to BURST 2000A. This will allow the amplifier to monitor the transceiver frequency and automatically change the range and operating modes. The cable can be ordered in the kit additionally, supplied separately, or independently manufactured at home in accordance with table 2-1 and the transceiver manual.

Table 2-1 shows the signals and outputs of the “CONTROL” connector - the rear panel of the amplifier.

Table 2-1

Control interface	PIN NO.	PIN NAME	DESCRIPTION	SPECIFICATIONS
	Rear panel view	1	GND	Ground
2		Port 0	Bit 0	TTL input
3		Port 1	Bit 1	TTL input
4		Port 2	Bit 2	TTL input
5		Port 3	Bit 3	TTL input
6		RxD	Received Data	RS232 input
7		CTS	Clear to Send	RS232 input
8		RxD	Received Data	TTL input
9		CTS	Clear to Send	TTL input
10		KEY-IN	Tx Request	Less than +12V / 2mA
11		TxD	Transmitted Data	RS232 output
12		RTS	Request to Send	RS232 output
13		TxD	Transmitted Data	TTL output
14		RTS	Request to Send	TTL output
15		ALC	Automatic Level Control	0(-12)

b) Connector. “Ant Switch / AUX” is used to connect the Antenna Switch, as well as, to control the band range filters (LPF) of the amplifier directly.

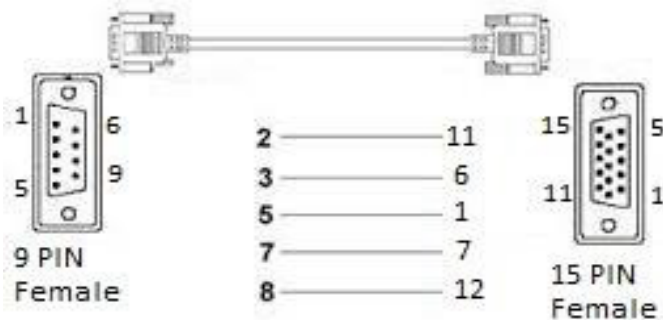
Ant.Switch/AUX interface	PIN NO.	PIN NAME

1	GND
2	3.5
3	7
4	10
5	14
9	18-21
10	25-28
13	50-54
14	PTT
15	24 V (no switchable)
6	12 V
7	Ant 2
8	Ant 4
11	Ant 1
12	Ant 3

Table of the amplifier connections to COM Port (RS232)

Control interface	PIN NO.	PIN NAME	COM Port	COM PIN NO.
Rear panel view	1	GND	GND	5
	11	TxD	RxD	2
	6	RxD	TxD	3

Cable diagram "Control (15 PIN) to COM Port (RS232)"



(This cable is used when updating the software or connecting some transceivers (e.g. KENWOOD) via a CAT interface)

ICOM transceivers connection table:

1) ICOM Band Data

Control interface	PIN NO.	PIN NAME	ICOM PIN NAME	ICOM DESCRIPTION
Rear panel view	1	GND	GND	Ground
	2	Port 0	BAND	Band voltage output(Varies with amateur band)
	3	Port 1	8V	Regulated 8V output
	10	KEY-IN	SEND	Input/output pin. Goes to ground when transmitting. When grounded, transmits.
	15	ALC	ALC	ALC voltage input

2) CI-V interface

Control interface	PIN NO.	PIN NAME	JACK 3.5 mm (2 pin)
Rear panel view	1	GND	GND (sleeve)
	2	Port 0	tip
	3	Port 1	tip

YAESU transceivers connection table

Control interface	PIN NO.	PIN NAME	YAESU PIN NAME	YAESU DESCRIPTION
Rear panel view	1	GND	GND	Ground
	2	Port 0	BAND A	BAND DATA A
	3	Port 1	BAND B	BAND DATA B
	4	Port 2	BAND C	BAND DATA C
	5	Port 3	BAND D	BAND DATA D
	10	KEY-IN	Tx GND	T/R Control of your linear amplifier
	15	ALC	ALC	Automatic Level Control

3. THE PRIMARY ACTIVATION AND OPERATION

PRECAUTION

Do not turn the amplifier on for at least two hours after unpacking and setting it to its final operating location. Please, pay your special attention whenever the amplifier is moved from a very cold place to a very warm place, because the water condensation may appear inside of the body, resulting in damage to the high voltage circuits of the amplifier. Under these conditions, do not turn on the amplifier for at least 4 hours.

After following all the instructions in section 2 "INSTALLATION", check whether the power switch on the rear panel is turned off. Then plug the amplifier into the local electrical outlet.

3-1. Power saving mode with low power consumption

Now you can turn on the power switch on the rear panel of PA. This only activates the low power standby mode of the amplifier power supply and the red LED on the ON/OFF button will light up while the main power supply is still off and the display is dark.

3-2. Front Panel - Control and Display indications

a) "ON/OFF" Button. When the power switch on the rear PA panel is in the position "ON", press to turn on the amplifier. When the amplifier is on, press to turn it off (standby).

b) LED indicator is above the ON/OFF button. When the red light is on and the screen is dark, the amplifier is in standby mode and can be turned on by pressing the ON/OFF button while the LED goes off.

This LED (b) flashes – it's an additional indication when one of the internal protection systems is activated.. Pressing the ON/OFF button will reset the protection.

c) There are six (6!) function buttons for manual (local) control of the amplifier. The function of each button is displayed above it. Depending on the menu displayed, the buttons may have different functions.

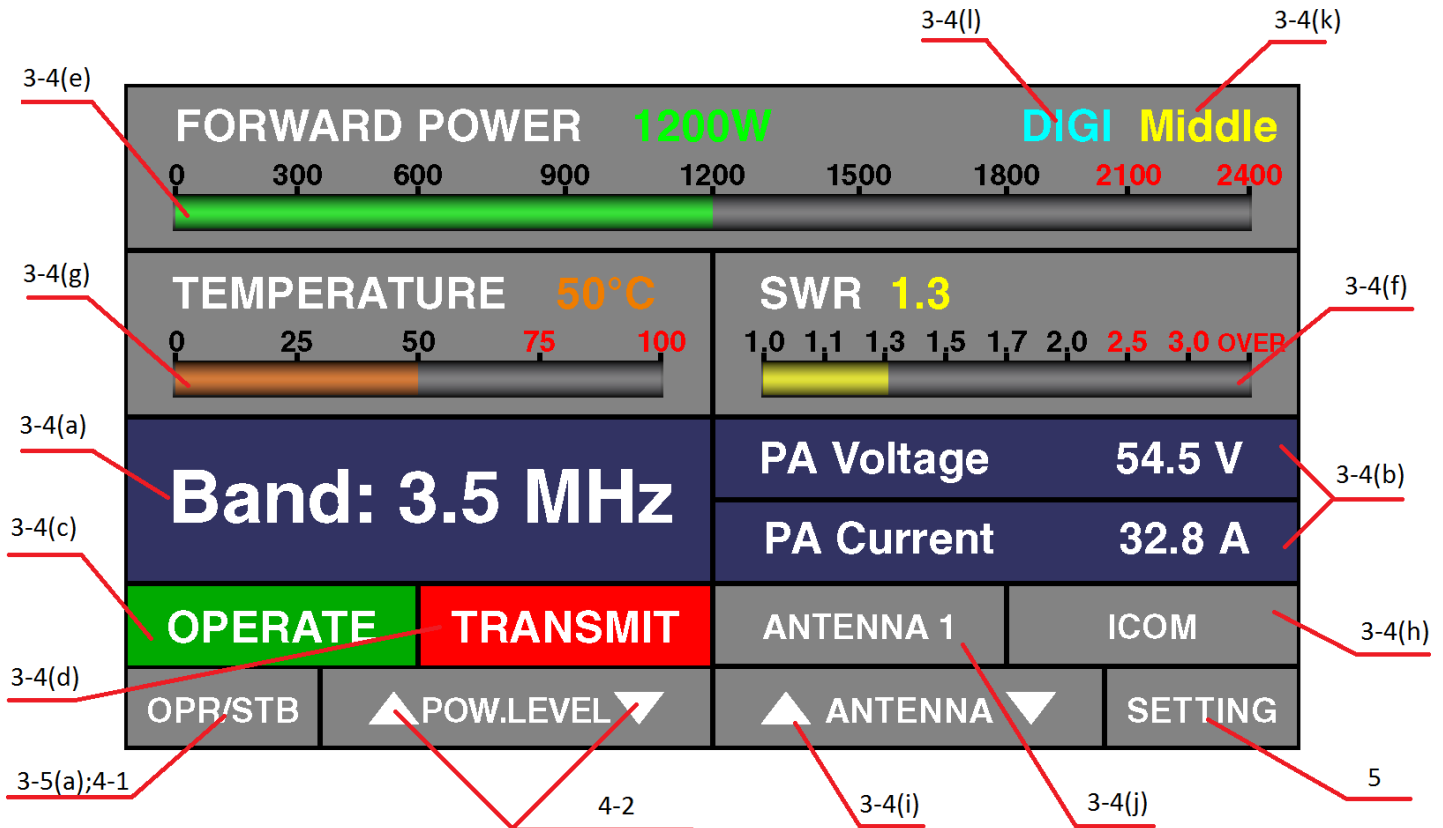
d) The color display shows you the full information about PA work conditions.



3-3. Primary Power "ON"

To start the amplifier, press the ON/OFF button on the front panel - after eight seconds (boot sequence), the display will show you the main screen - figure 3-2 , The amplifier can be started from the standby mode either by the ON/OFF button or by remote control.

3-4. Main Panel display



Picture 3-4

There are 10 information zones on the main display screen:

(a) Information area for the current range or frequency.

(b) Operating values.

The main operating parameters are displayed: voltage and current consumption of the output stage UM; input power; reflected wave power. These parameters are optionally selected in the main SCREEN submenu.

c) operating mode Indicator - OPERATE, STANDBY

d) RECEIVE/TRANSMIT indicator – displays the mode of operation of the amplifier. The white indicator RECEIVE, and TRANSMIT - red.

- e) Bargraph and digital value - displays the power input.
- f) Bargraph and digital value – displays the standing wave ratio.
- g) Bargraph and digital value – displays the temperature of the cooling PA system.
- (h) interface Information.
- (i) Antenna switch Control.
- j) the exact Number of the using Antenna is Displayed.
- k) Power output mode indication.
- l) Mode for working in digital modes.

3-5. First Test of Transmission Mode

To verify that you have installed the amplifier correctly, make a test transfer as described below. Perform these tests for each band and each antenna, and after installing a new or refurbished antenna, antenna switch, and jumper cables.

- a) Check the connection circuits of the transceiver, amplifier and antenna. For this test the amplifier must be in STANDBY or RECEIVE modes.

First of all, please, check that the signal reception level on the transceiver connected to this amplifier is normal. You should also check the SWR of the antenna system, set the transceiver to the nominal output power level for the amplifier (about 15W), make a test transmission in a constant carrier mode. Follow the indications on the display.

If you observe a significant degradation in reception or SWR value above the permissible value, at first check the coaxial connections to the amplifier, then the serviceability and the proper antenna selection.

NOTE!

If “Hi SWR” protection system is activated, at the beginning pay attention to the PA VOLTAGE settings. The limit of permissible SWR value depends on this setting, see section (7-1 (e)).

If PA is connected to the transceiver via the ALC line, in this case the amplifier will install a ban on the transmission mode of your transceiver.

If the signal reception is normal and SWR acceptable, put the transceiver functions as follows:

- select continuous carrier modulation type (CW, RTTY);
- set the minimum power on the transceiver;
- if the transceiver has a built-in antenna tuner, turn it off.

Now in the receive mode, select the frequency that is not busy at the moment, press the OPR/STBY button and press shortly the PTT or TX button, watching the output power and SWR readings. If any of the protections are not triggered, the desired range is set (in AUTO mode), increase the input power to the desired value (no more than 15W). If emergency protection appears on the screen, correct the cause based on this message. See section (4-3)

- PA CURRENT shall not exceed 65A
- PA VOLTAGE . Voltage PA could be regulated by “ VOLTAGE” in the range of 42v – 58v; but the nominal voltage is 54 V.
- SWR(VSWR). At the rated voltage should be lower than 2:1
- PA TEMPERATURE should not exceed 85°C;

- b) electromagnetic compatibility (EMC)

Having in mind that the amplifier power exceeds the power of the transceiver significantly, the following problems can occur:

the magnetic field can be induced on the microphone, the Telegraph key, on the computer, monitor, keyboard, computer mouse, etc.

It should be noted that the requirements for antenna systems, coaxial connections, and grounding are much higher.

All wires, connecting to the computer, power sources should be as short as possible. It is also recommended to use ferrite rings on these wires.

4. OPERATION

4-1. Changing RX / TX and Operate / Standby Modes

- a) In the STANDBY position as well as in the PA position “ OFF”, the amplifier operates in bypass mode. In this mode, the KEY-IN control input does not affect any operation modes. In AUTO mode bandpass filters (LPF) are not switched.
- b) In the mode OPERATE:
- when the KEY-IN (position of OPERATE / RECEIVE) is open, the transceiver receives signals from the antenna as in bypass mode;
 - when the KEY-IN body is closed (OPERATING / TRANSMIT mode), the RF signal is amplified and fed to the antenna via the RF OUTPUT connector.

IMPORTANT NOTE!

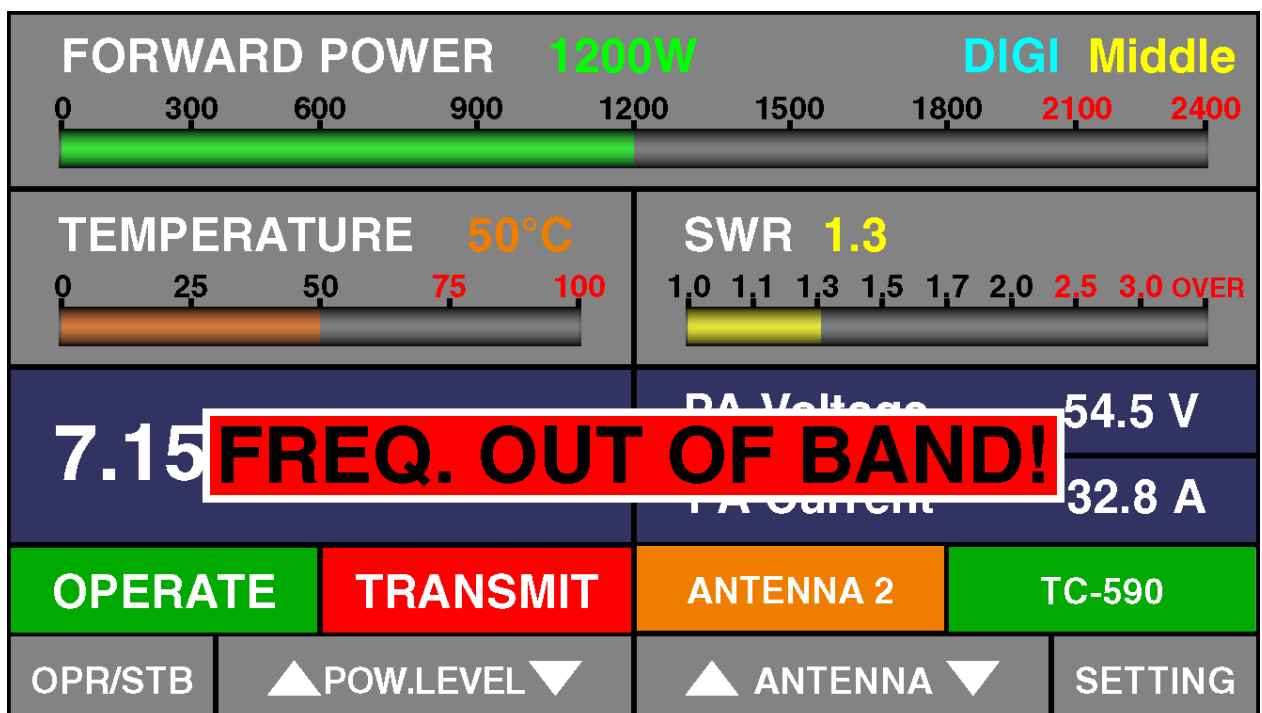
In AUTO mode, if there is no or an insufficient RF signal from the transceiver, the amplifier will not enter to OPERATE /TRANSMIT mode because in this case PA will not be able to determine the frequency and prevent accidental switching to the wrong range filter (LPF).

4-2. Bands Change, the Standard and Expanded Frequency Coverage

When PA is connected to the transceiver via CAT-interface, the amplifier displays the current frequency and switches the band ranges automatically. Without such CAT connection, the band ranges can be switched manually or automatically by the built-in frequency meter.

To change the bands range in AUTO mode automatically, please make a short pre-transmitting in CW or SSB mode (3ms is enough) before the main transmission.

In MANUAL mode the band ranges are changed manually by using the BAND buttons (up or down). If the transceiver frequency is outside the frequency range of the amplifier, the transmission request will be rejected and the following error message will be displayed:



4-3. Operating mode for digital modes (DIGI)

This mode is activated automatically after 7 seconds after detecting the constant carrier. In this case, the voltage for the final stage will have a value of 42 V, and

the current is also limited to 51 A. If the value of the current (PA Current) exceeds 51 A, the overcurrent protection "Over Current" will work.

If you are not using an ALC circuit, you must set the output power of the transceiver so that this value is not exceeded.

Also turns on (and off) by holding the OPR / STB button.

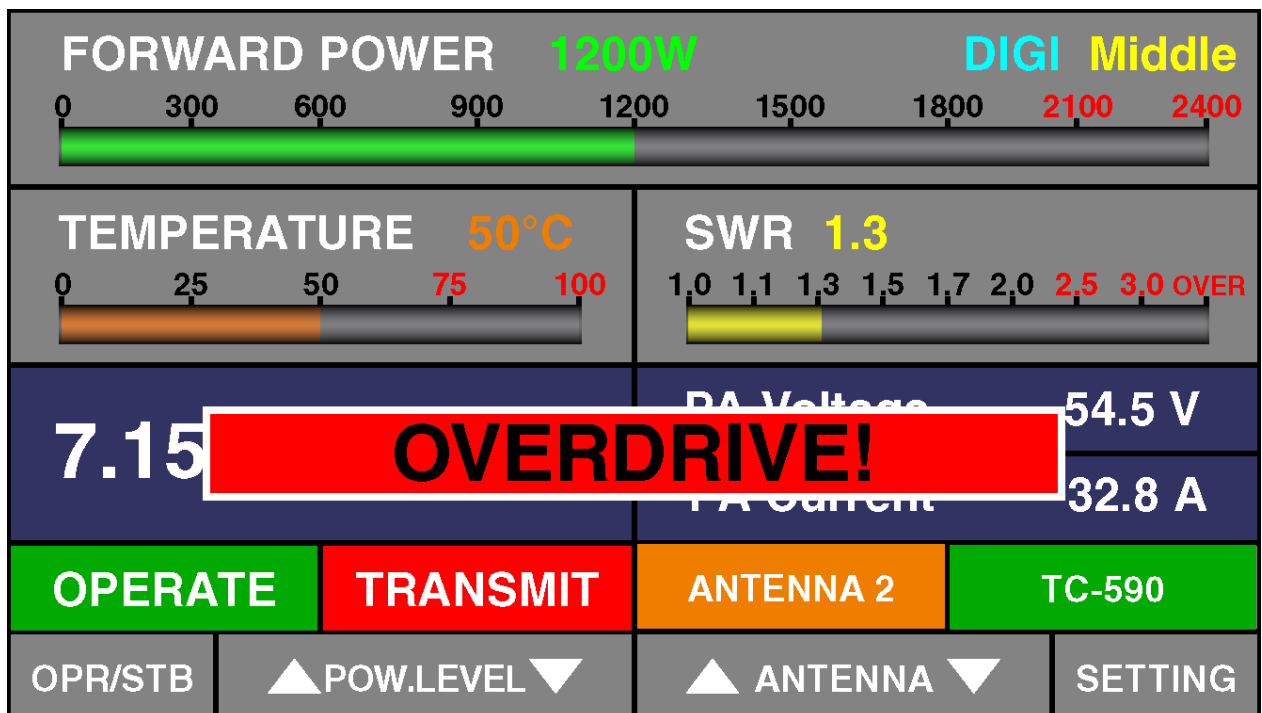
If the ALC system is configured correctly, then when operating in this mode, it is recommended to select the "Middle" output power mode.

4-4. Automatic protection system

The internal control unit of PA monitors most of the analog and logic signals of the amplifier in all modes: the receive / transmit control signal, the contact positions of the output relay and the switching time, the frequency and power of the transceiver (the input power of the amplifier), the current of the powerful transistors of the final stage, the radiator temperature, the temperature of the components of the main power supply, the output power, the value of the SWR and etc.

If the maximum value of the parameter is exceeded, one of the protection levels will be activated, as described in the paragraphs below. Each event is accompanied by a warning text on the screen (Fig. 4-1) and an additional indication in the form of a flashing LED on the ON/OFF button. It will also be a beep, if it is set to "USER PREFERENCES".

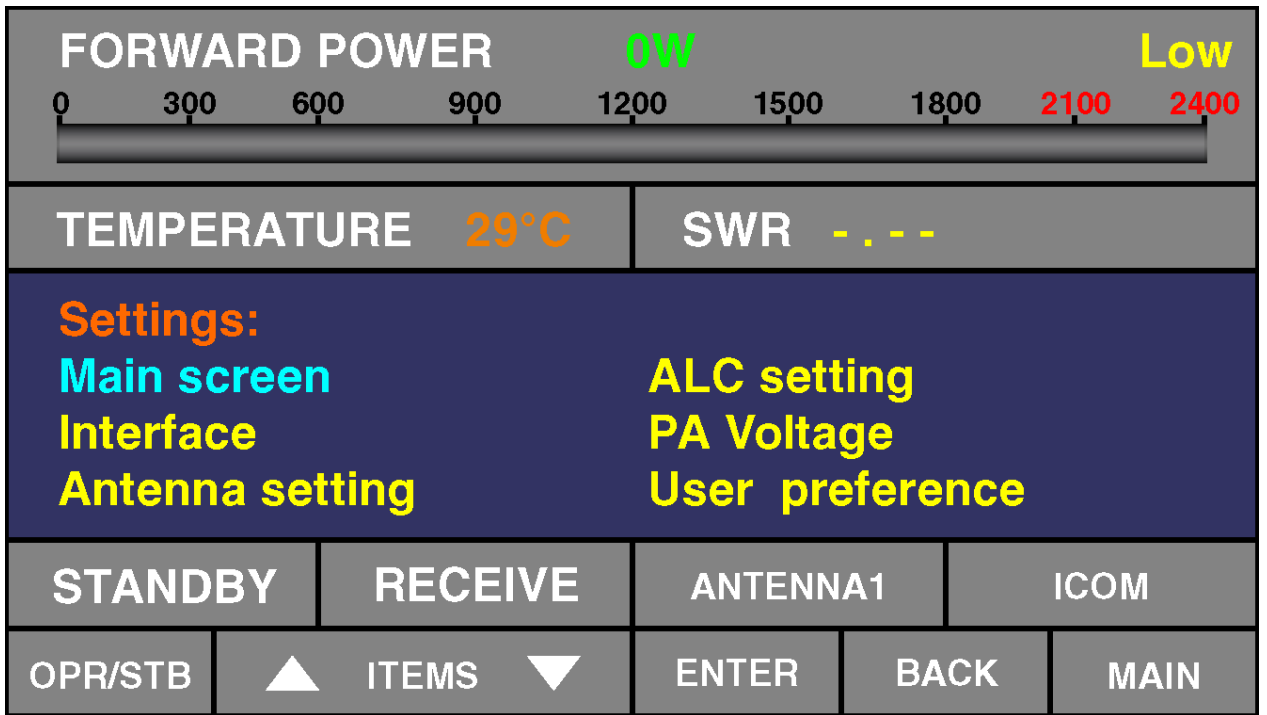
Figure 4-1 - Appearance of the emergency message



To reset the protection, press the ON/OFF button once. The amplifier will automatically enter "STANDBY" mode. Before continuing to the PA transmission, please remove the cause of activation of the protection control system in accordance with the screen message.

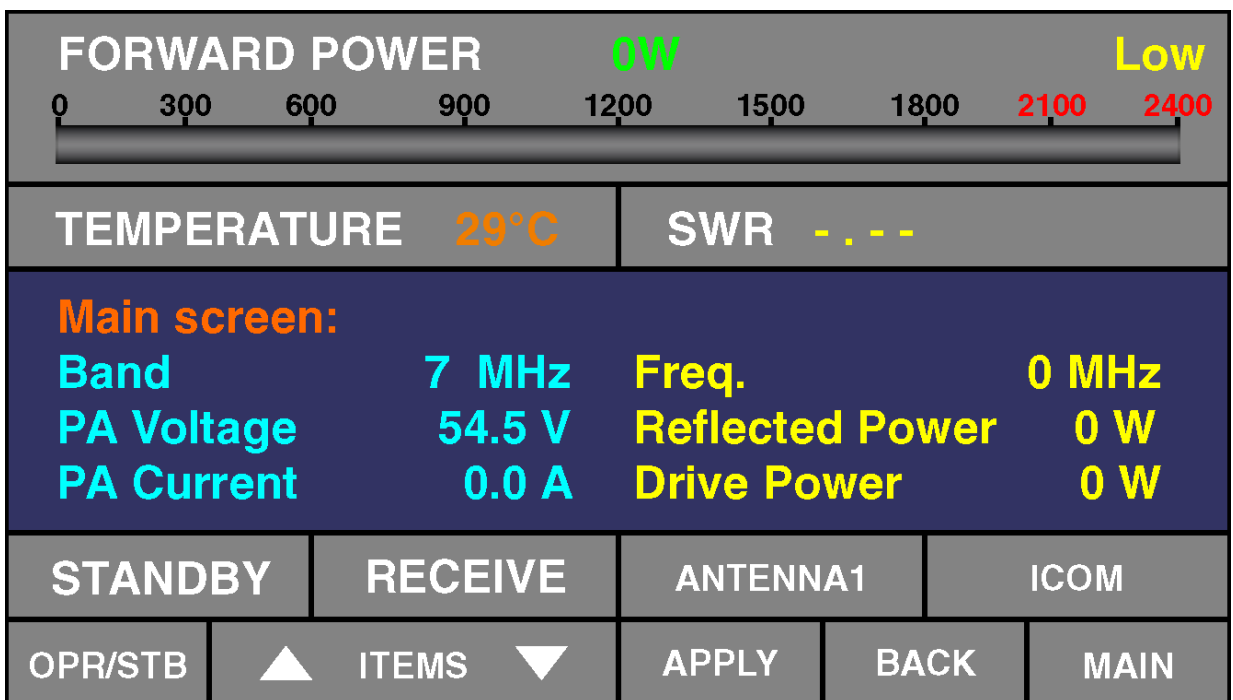
5. MENU - SETTINGS AND OPTIONS

By pressing the SETTINGS button (right) the user brings up the menu selection screen (Fig.5). Each menu can be selected with the ITEM (up and down) and SELECT buttons. The items in each menu are selected and controlled by the same six buttons as on the main screen. The selected values are displayed in blue. Inactive Windows remain dark until the corresponding functionality is added (please, see picture 5).

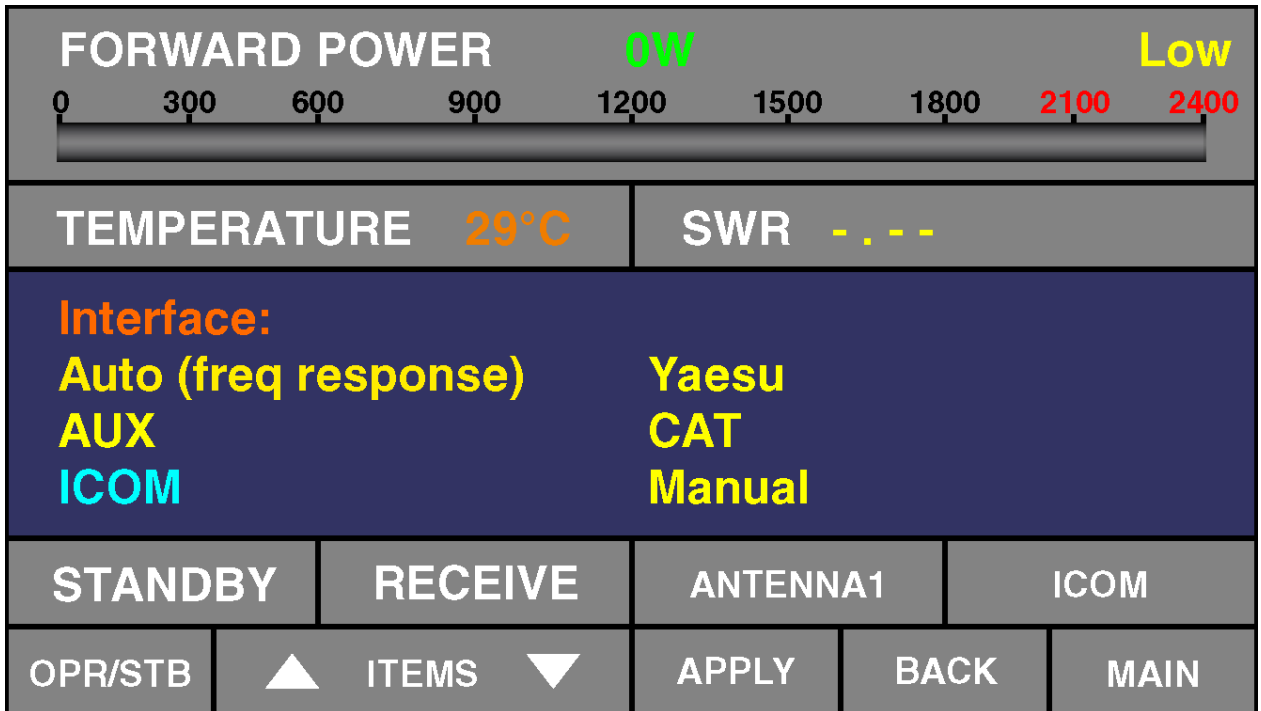


Picture 5 – Menu Choice

5-1. Menu "MAIN SCREEN" - Options on the main Page

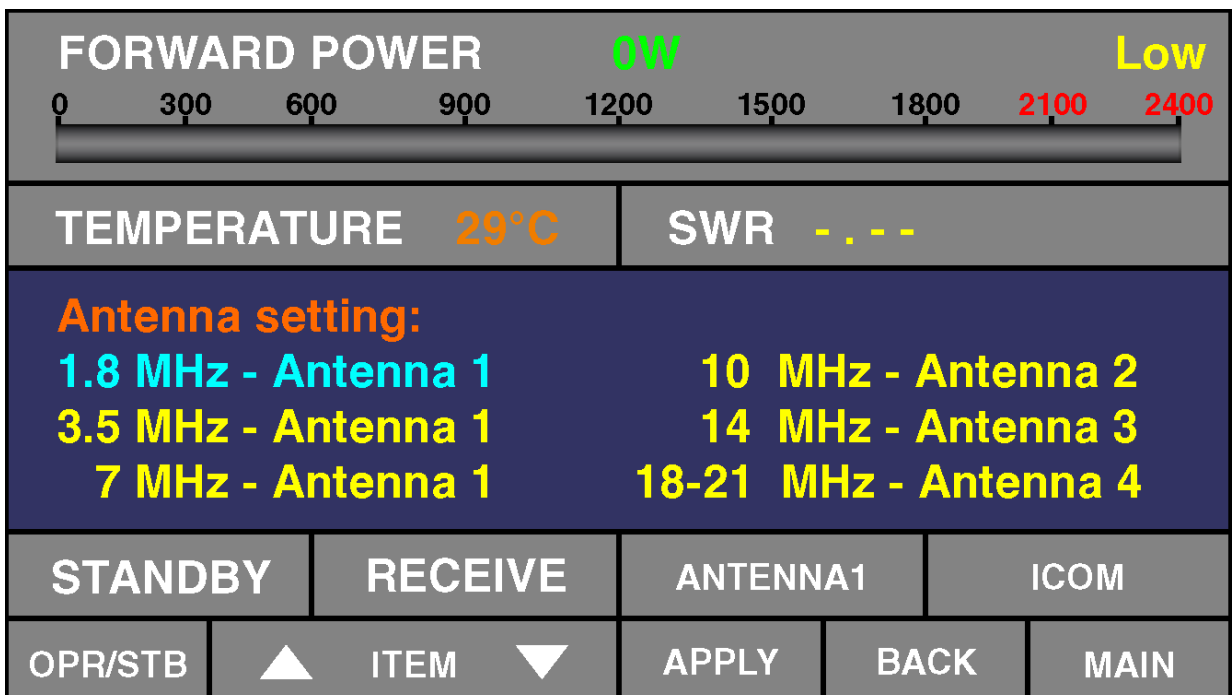


5-2. Menu "INTERFACE" – Interface selection to control the Amplifier work

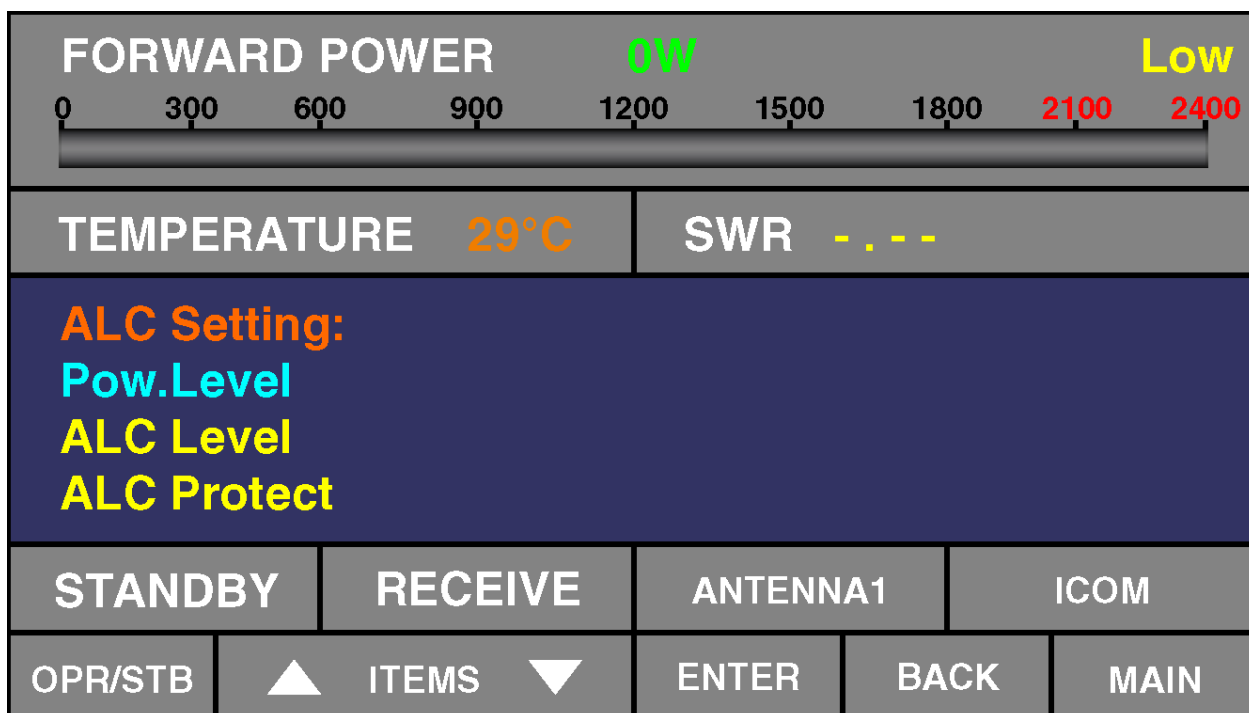


- 1) AUTO – range recognition by frequency;
- 2) AUX – direct control of bands filters (LPF);
- 3) ICOM band decoder for ICOM transceivers;
- 4) YAESU – BAND DATA for Yaesu transceivers;
- 5) CAT – connecting transceivers via CAT interface;
- 6) MANUAL – manual bands switching.

5-3. Menu "ANTENNA SETTINGS" – Antenna Switch Configuration



5-4. Menu "ALC SETTING" - ALC installation



- 1) POW. Level - enable ALC and set output power: ALC OFF; High; Middle; Low;
- 2) ALC Level - setting the reference negative voltage;
- 3) ALC Protect - on/off the locking voltage when the protection is triggered.

IMPORTANT NOTE!

When you set ALC OFF, the ALC system is disabled!

It is necessary to set the power of the transceiver 15 watts!

The ALC setting is to set the negative voltage for the nominal input power of 15-18W.

- 1) Connect the transceiver to PA via the ALC circuit.

Note: if there is no this connection in the interface cable!

- 2) Select the menu item ALC Level
- 3) Switch on the transceiver for transmission in the constant carrier mode Note: the power on the transceiver can be set, for example

100W. **IMPORTANT NOTE!**

The maximum allowed power for RF INPUT IS 100W.

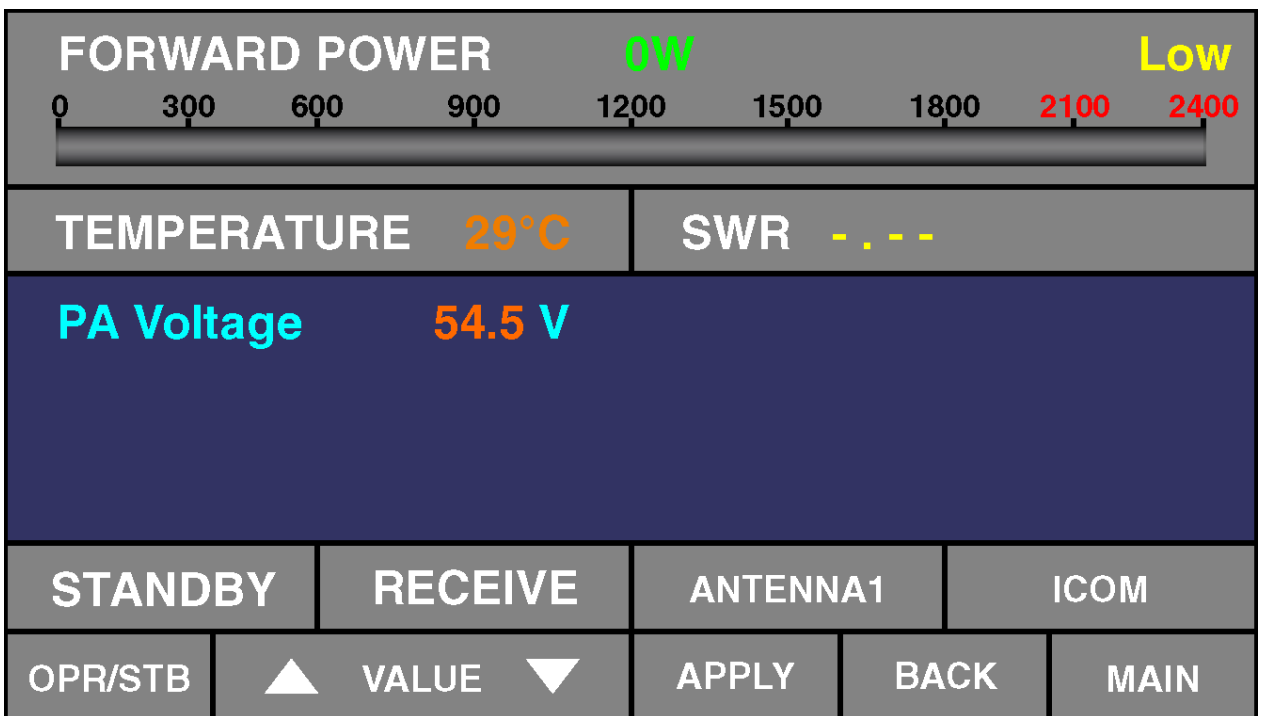
Set a negative voltage with the help of buttons ITEM , which will correspond to the rated input power 15-18 watts, guided by the readings on the display.

- 4) Click APPLY to save the settings.
- 5) If necessary, set the output power to High; Middle; Low.

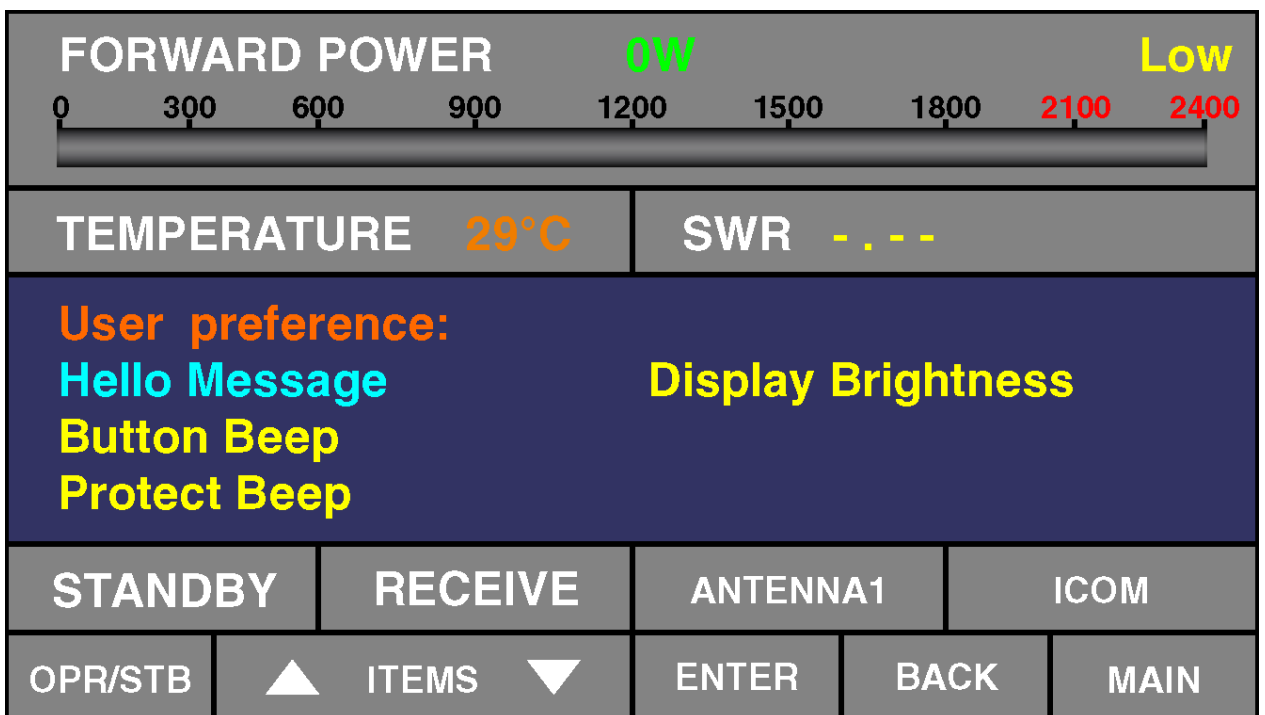
Note: when setting ALC OFF, ALC Level setting is not available.

5-5. Menu "PA Voltage"

Setting the voltage of the amplifier output stage (42V-58V). Please, pay yr attention to the fact, that this setting affects the maximum permissible SWR value of PA (see section 7-1), and the peak value of the maximum output power of your PA.

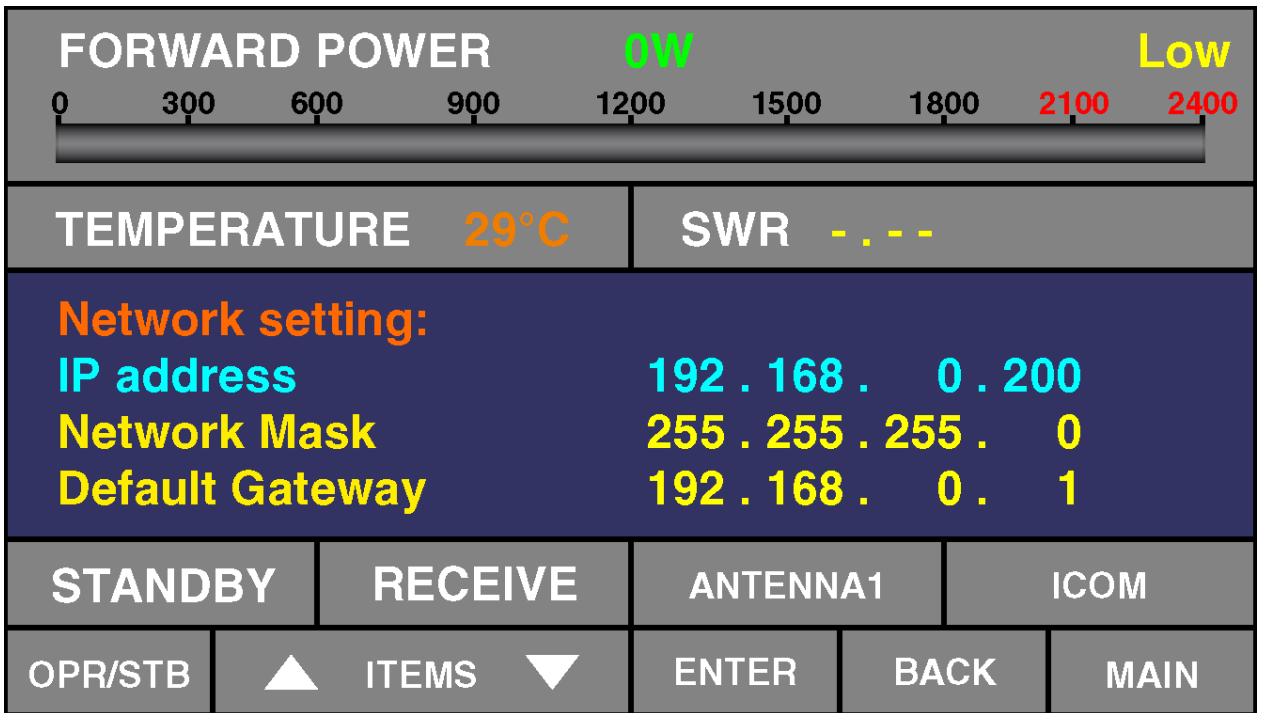


5-6. Menu "USER PREFERENCES"

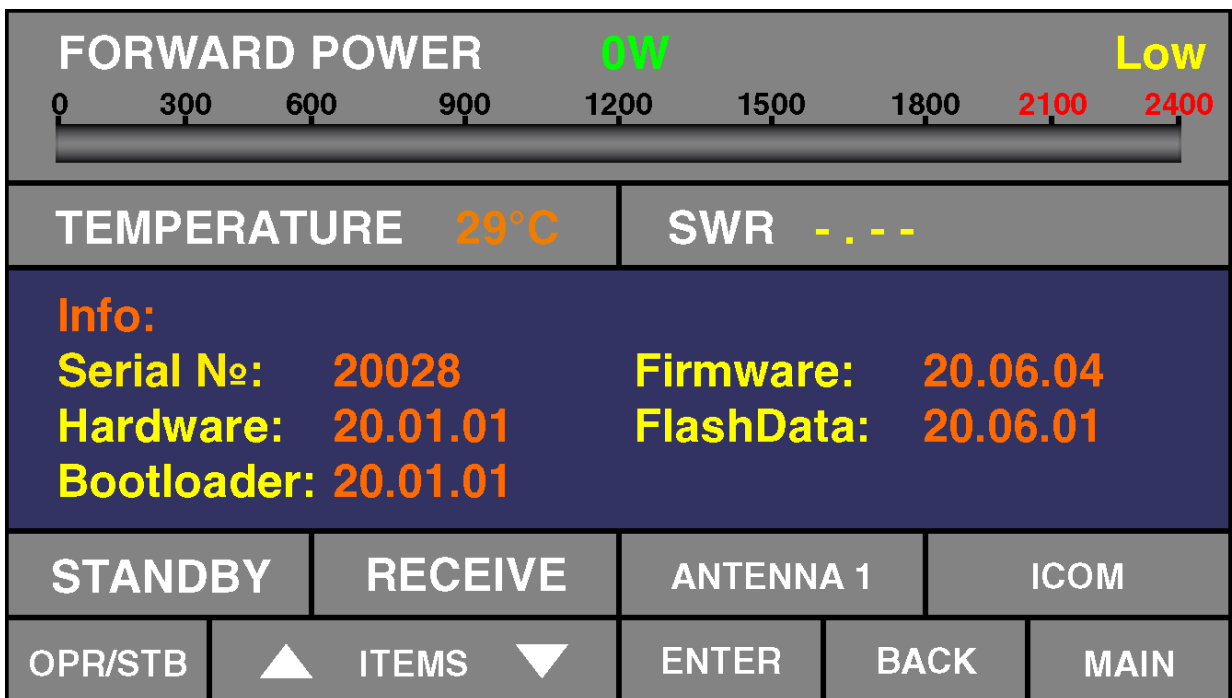


- 1) Setting the welcome message;
- 2) ON / OFF key press sounds.
- 3) Setting the display brightness;
- 4) On/Off sound of keystrokes and the internal protection system.

5-7. "Network Setting" Menu



5-8. "Info" Menu



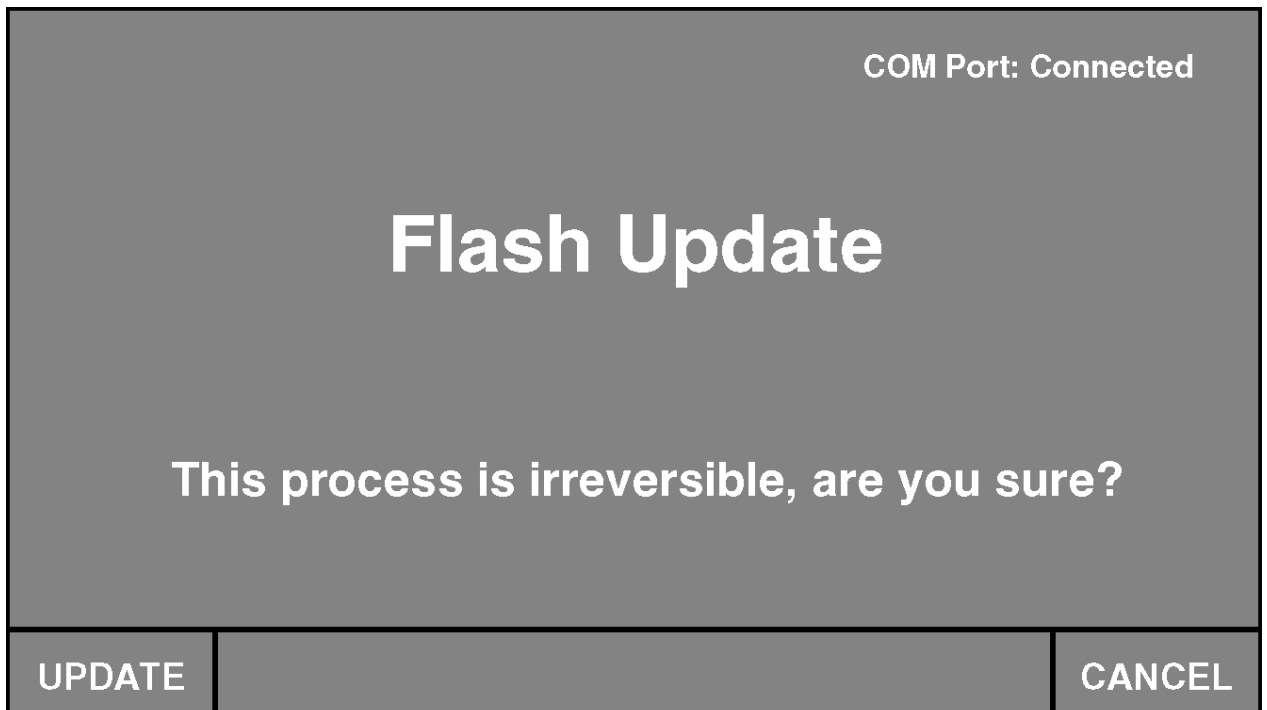
5-9. Software update.



The amplifier BURST 2000A provides 2 types of updates (download link,,): graphic/FLASH UPDATE(1) and software/FIRMWARE UPDATE(2), connect Your amplifier to PC via COM Port or USB/COM (you MUST SPECIFY 115200 bps IN the PORT SETTINGS)

- 1) *Graphic update.* To install the graphic update, turn off the amplifier completely, press the 3 and 5 buttons and turn on again (HARD POWER).

The following image appears on the display before you press the UPDATE button:

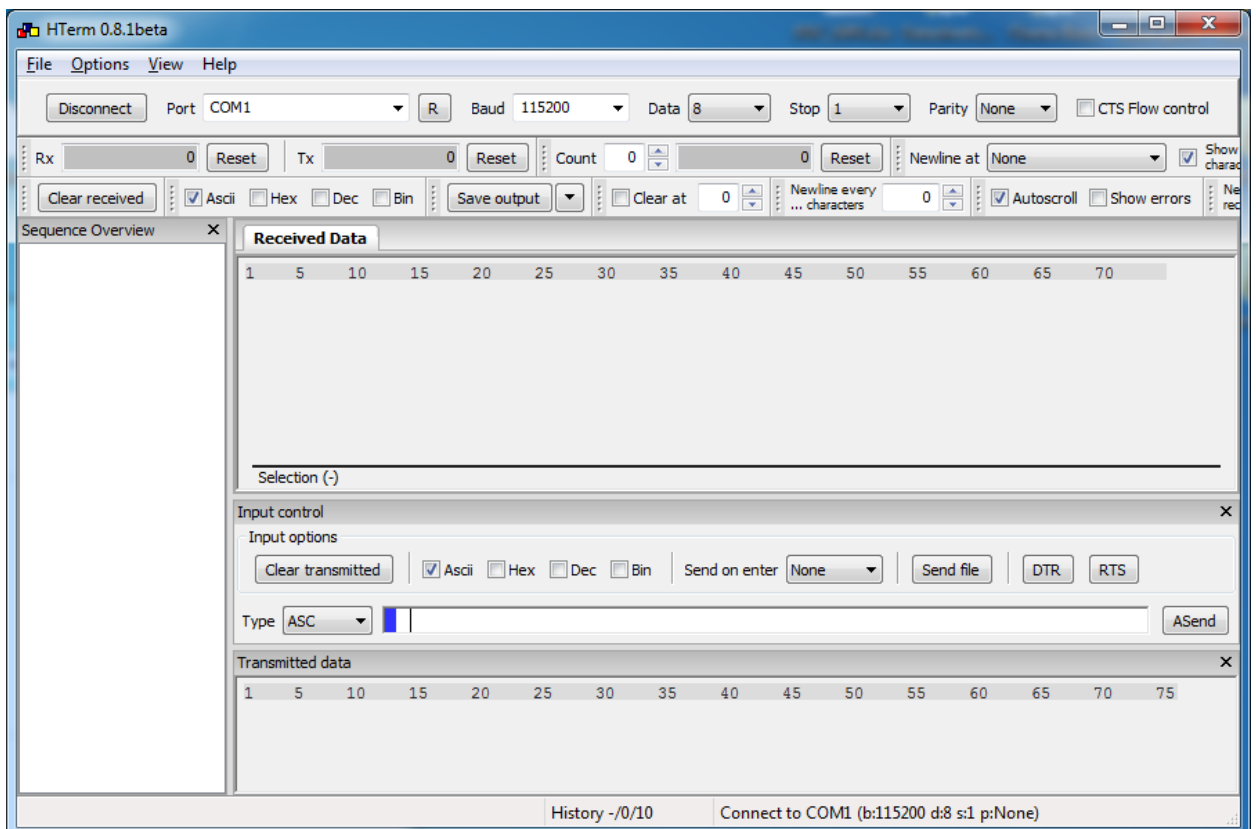


After you pressing "UPDATE", the following text will be seen:

Flash Update

Status: Waiting...

Run HTerm program on Your PC (you can download it here.....) and set the settings according to the image below (In the "Port" window, select Port number through which the PA is connected) and click "Connect".



Next, click "Send file" and select the update file (Flash Data.bin). In the new window, click "Start". The following image appears on PA display:

Flash Update

Status: Updating...

Wait for the update process to finish. A message appears on the display and informs you that the update is complete:

Flash Update

Status: Completed

2) Software upgrade. The software update/FIRMWARE UPDATE process is similar to the graphical update process except for some items:

1. To perform this update, hold down the 2 and 4 buttons and turn on the amplifier (HARD POWER).



2. The name of the update file (Firmware Data.bin).
In the case of substitution of the update files on the display of the amplifier, an error is displayed:.

**Firmware Update
Status: Failed!**

6. Remote control

Ethernet connection:

1) Connect the device with a standard Patch-Cord to the Ethernet network

2) Configure the Network Setting according to your local network

• NOTE!

The machine and the computer must be connected to the same subnet, for example: 192.168.0.200. To work from the WAN, you need to perform port forwarding (: 200)

3) Launch the BURST_LAN_CONTROL application on your computer, make the settings corresponding to the settings of the device, for example: 192.168.0.200. After pressing the "Connect" button, the device is completely controlled by this application (only the 2-3 (f) key remains active)

The image shows two screenshots of the BURST v.6.04 application interface. The top screenshot shows the device in a standby state with 0W forward power and 30°C temperature. The bottom screenshot shows the device in a transmit state with 32.8A PA current. A yellow banner at the bottom reads "REMOTE".

Parameter	Value
FORWARD POWER	0 W
TEMPERATURE	30°C
SWR	1.0
Band	7 MHz
PA Voltage	54.5 V
PA Current	0.0 A
Mode	STANDBY
Antenna	ANTENNA 1
ICOM	ICOM
IP Address	192.168.0.200
Device Info	BURST-2000A S/N: 20028 ONLINE
Control	DISCONNECT ON/OFF

R E M O T E

7. Maintenance

WARNING! HIGH VOLTAGE!

The local Network voltage and high RF voltage inside the BURST 2000A amplifier are deadly! For your safety, please, pull the power plug of the amplifier out of the wall outlet and **wait 3 minutes EACH TIME BEFORE STARTING the Amplifier SERVICING!**

7-1. Periodic Maintenance; General Check and Cleaning

Periodically (but at least once a year) check all connections, clean contact and tightness of all connectors, particularly coaxial. Check the integrity of the cables, particularly when they are lying on the floor. Pay special attention to the plug of the power cord and the socket - if in doubt, consult an electrician. Periodically check the VSWR antennas, it may change over time. Problems can occur more often in bad weather conditions - rain, snow, strong wind, etc.

7-2. Fuse Replacement

WARNING! HIGH VOLTAGE!

If you need to replace the main fuse, please, first of all, unplug the amplifier and wait at least 3 minutes!

The main fuse of the amplifier is located on the rear panel - Fig. 2-1.

Fuse size - 6x30 mm, designed for 250 V AC. Corresponds to the nominal value of 16 A.

PRECAUTION

Do not use a fuse with a different rating. If the fuse fails, replace it. If the replaced fuse fails immediately, it indicates a serious PA problems. Please contact the customer service shop.

8. SPECIFICATIONS

8-1. Main Parameters

- a) The working frequencies: 1.800-2.000 MHz
3.500 - 3.800 MHz
7.000 - 7.200 MHz
10.100 - 10.150 MHz
14.000 - 14.350 MHz
18.068 - 18.168 MHz
21.000 - 21.450 MHz
24.890 - 24.990 MHz
28.000 - 29.700 MHz
50,000 - 54,000 MHz
- b) Maximum out power - 2200 W +/- 0.5 dB, PEP or 1500 W, 50.000 - 54.000 MHz 1100 W.
- c) Inter modulation distortion (IMD): better than 31 dB below nominal PEP.

- d) Suppression of harmonic and parasitic oscillations: better than 40 dB.
- e) Input and output impedances:
 - nominal value 50 Ohms (UHF (SO239) connectors)
 - the nominal value of the SWR below 2:1 in the range of 1.8 - 54 MHz at a voltage of 45 - 55 V.
 - acceptable SWR value 3:1 at PA voltage 42 - 45 v.
 - SWR is below 1.3: 1 at the PA voltage 55 - v. 58;
- f) RF Gain: 21 dB +/- 1 dB
- g) Low voltage 85-175V AC reduces the output power.
- h) Network power consumption at the full PA output: 3000 VA or less with a power factor of 0.95 or higher;
- i) Low power consumption (standby): less than 1 VA;
- j) Climate working Conditions:
 - temperature range:- 10°C to + 40°C (14°F to 104°F);
 - relative humidity: up to 95% at 35°C (95°F);
- k) Dimensions (without protrusions): (G x W x H) 352 x 395 x 153 mm,
- l) Weight - 15 kg.

8-2. Functions Features

- a) Receive / Transmit Control system:
 - key-IN - RCA input. It is activated when the body is closed. This connection is duplicated on the CONTROL connector;
 - minimum delay time (TX DELAY) required to safely switch the amplifier to 10 MS transmission mode.
- b) The frequency Control via CAT interface. Automatic range switching (Auto mode) by RF signal.
- c) The Control of the range low-pass filters using connector "Ant.Switch/AUX";
- d) Remote control via Ethernet.
- e) control of the antenna switch via the connector "Ant Switch/AUX".
- f)

8-3 Storage

Normal conditions for storage:

- temperature range: - 40°C to +70°C.
- relative humidity: up to 75% at 35°C.

9. DENIAL OF RESPONSIBILITY

All specifications and descriptions of BURST 2000A are current at the time of writing. Since we are always striving to improve and update our products, BURST AMPLIFIER producer reserves all the rights to make changes and improvements at any time without any notifications or obligations to notify any person or organization of such revisions or changes made to improve the reliability, functionality, quality, design and / or performance BURST-2000A.