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## Annex 3 to Test Report # EMCC-170121A, 2017-09-06

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### DESCRIPTION OF EQUIPMENT UNDER TEST (EUT), PORTS

#### EQUIPMENT UNDER TEST:

Device:	1200S
Serial Number:	170102
Equipment Class:	Amplifier
Manufacturer:	Acom Ltd.
Address:	Bul. Nikola Mushanov 151 1330 Sofia Bulgaria
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<b>RELEVANT STANDARD(S):</b>	47 CFR §§ 97.307, 97.317
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The following pages are an excerpt from user's manual delivered by the customer:

## 2-3. Connecting the amplifier in the shack

### **WARNING**

Before you connect the amplifier to external grounding, you should advise with a licensed electrician and confirm such kind of connection is allowed by your national and local electrical code, safety rules, and regulations in force. Simultaneous connection to the earth grounding and protective earth may be inadmissible or may fall under special requirements in some countries!

### **WARNING**

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

### **WARNING**

Do not use the steam-heating or water-supply network pipes for grounding! You may expose to dangerous voltage not only yourself but also other people using the same installation.

### **CAUTION**

Bear in mind that the grounding installation may have to withstand emergency currents over 15A with minimal voltage drop on it. Therefore it may be necessary to improve its conductivity using heavier leads and lower-resistance grounding path. The grounding lead should be at least 4mm<sup>2</sup> (AWG 11 or SWG 13).

For details and recommendations on the grounding and RF counterpoise system concerning the electromagnetic compatibility see also S. 3-6(f).

- a) GND stud - First connect the grounding stud of the amplifier (located on the rear panel and marked GND – Fig. 2-1) to the grounding system of the shack.

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## b) KEY-IN jack - amplifier input for receive/transmit control from the transceiver.

The transceiver switches the amplifier from receive mode into transmit mode (RX/TX) by grounding of the KEY-IN input.

Run a shielded cable from the output of your transceiver, providing "ground on transmit", to the KEY-IN input on the amplifier rear panel (RCA PHONO jack – Fig. 2-1). Use a standard RCA PHONO plug for connection to the amplifier.

Transceiver manufacturers give different names to this output, for example: TX-GND, SEND, T/R LINE, RELAY, and others. At some transceivers "ground on transmit" output should be activated by a menu or via changing a switch on the rear panel or inside the transceiver. See instructions in your transceiver manual.

**NOTE**

Voltage on the KEY-IN jack does not exceed 12V and the current is below 6mA. See also S. 8-2(a).

**NOTE**

Your amplifier will not work if the KEY-IN input is not connected correctly. If you experience any difficulty consult your dealer.

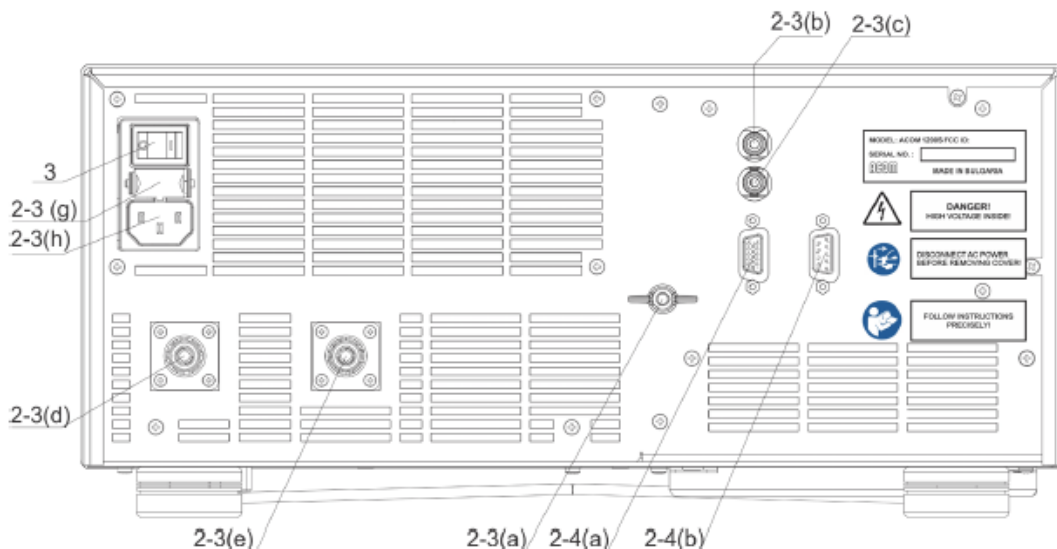


Fig. 2-1 Rear panel connections

## c) KEY-OUT jack - transmit-enabling control output from amplifier to the transceiver.

The KEY-OUT jack on the rear panel provides an extra control signal from the amplifier to the transceiver. This can be used for improving the receive/transmit (RX/TX) switching safety.

**CAUTION**

KEY-OUT is a low-powered open-collector output, make sure that the signal voltage coming from the respective transceiver connection does not exceed 50VDC (open circuit) and the closed-circuit current is below 20mA.

If your transceiver has a suitable input, that disables transmission unless grounded externally, we recommend this to be connected to the KEY-OUT jack of the amplifier. Use shielded cable terminated with a standard RCA PHONO plug.

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The transceivers manufacturers give different names to this input, for example: TX-INHIBIT, MUTE, LINEAR, and others. Check the manual of your transceiver. Approach your dealer for details. If your transceiver has no such input, do not worry – ACOM 1200S will operate normally with KEY-OUT unconnected.

- d) RF INPUT - Connect a coaxial cable with a PL-259 plug from the transceiver output (antenna jack) to the amplifier RF INPUT jack.

**CAUTION**

In order to avoid at damage, turn off your transceiver's internal antenna tuner.

- e) RF OUTPUT - Connect a suitable coaxial cable with a PL-259 plug from the RF OUTPUT on the rear amplifier panel to the antenna switch, tuner or antenna intended for the respective frequency band.

**CAUTION**

If you use an amplifier for the first time in your shack, pay serious attention to the size of coaxial cable from your amplifier output to the antenna. The cable must be capable of handling the increased power safely, particularly on the 10m and 6m bands. This warning applies equally to the antenna switch, tuner, and the whole antenna system, especially multi-band trap antennas.

We recommend using RG213 or better. Consult your local coax cable supplier.

- f) Preparation of the mains outlet for the amplifier, requirements for the installation and the mains voltage.

**CAUTION**

Before connecting your amplifier to the power grid, be sure that the outlet is correctly wired and is capable of providing the required current i.e. (up to 10A from 200/240VAC mains and up to 16A from 100/120VAC mains). Also make sure that the grounding lead is connected properly in the outlet, intended for the amplifier. If subsequently you connect the amplifier to a different outlet, check it as well.

It is preferable to use the mains outlet closest to the source. Make sure that the respective fuses and voltage, of your power mains match the ACOM 1200S amplifier's specifications (see S. 8-1(g)).

- g) Main fuses.

**CAUTION**

Make sure you check whether the main fuses installed in your amplifier correspond to your local mains nominal voltage and if necessary replace them as described in Section 7-2!

- h) Power cord socket. Due to different mains standards in different countries, the ACOM1200S is delivered without a power plug for the mains cable. Your dealer might be able to provide the correct Safety Class I plug. The ground lead of the power cable is colored yellow with two green stripes. If you have any doubts about the correct way to connect these wires, consult your dealer.

## 2-4. Installing options and connecting to external devices (transceiver, computer, etc.)

- a) CAT/AUX interface – used for connecting and operating with various transceiver models (see table 2-1 below and the respective menu in S. 5-3, table 5-1 and Fig. 5-3).

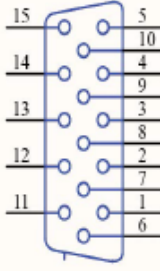
Most of the modern transceivers can be connected by CAT to the ACOM 1200S. This will allow the amplifier to track the transceiver frequency without any transmission and change the bands automatically when in Operate mode. The cable can be supplied optionally, ordered separately or home brewed according to table 2-1 and the transceiver's manual.

The CAT connection requires a cable made especially for the ACOM 1200S and your transceiver. Wiring diagrams of such cables can be found at [www.acom-bg.com](http://www.acom-bg.com).

Note that some of the connections - to the transceiver's BCD band data outputs and Band Voltage outputs do not provide an exact frequency data, but only band data. Those connections cannot be used when ACOM 1200S works together with ACOM 04AT because the tuner needs to know the exact frequency, not the band.

Table 2-1 shows the signals and the pin out of the CAT/AUX connector - rear panel of the amplifier.

Table 2-1

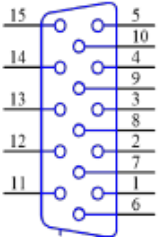
CAT/AUX interface	PIN NO.	PIN NAME	DESCRIPTION	SPECIFICATIONS
 <p>Rear panel view</p>	1	RxD	Received Data	TTL input
	2	RxD	Received Data	RS232 input
	3	TxD	Transmitted Data	RS232 output
	4	TxD	Transmitted Data	TTL output
	5	GND	Ground	0 Volt
	6	BAND voltage	Analogue input	0 to +8V
	7	Band data 0	Bit 0	TTL input
	8	Band data 1	Bit 1	TTL input
	9	Band data 2	Bit 2	TTL input
	10	Band data 3	Bit 3	TTL input
	11	ON RMT	Remote Pwr On	+4.5 to + 15V / 3mA max
	12	Debug mode	CPU only Pwr Input	+8 to + 15V / 0.4A
	13	KEY-IN	Tx Request	Less than +12V / 6mA
	14	KEY-OUT	Tx Ready	O.C. output, up to +50V / 20mA
	15	GND	Ground	0 Volt

- b) RS232 port. Table 2-2 shows signals and pinout of the RS232 port on the amplifier's rear panel.

This connector may remain unused until you decide to control the amplifier remotely.



Table 2-2

RS 232 interface	PIN NO.	PIN NAME	DESCRIPTION	SPECIFICATIONS
 Rear panel view	1	-	Not connected	-
	2	TxD	Transmitted Data	RS232 level output
	3	RxD	Received Data	RS232 level input
	4	-	Not connected	-
	5	GND	Ground	0 Volt
	6	DSR	Remote Power On	RS232 level input
	7	-	Not connected	-
	8	CTS	Remote Power On	RS232 level input
	9	-	Not connected	-