

ACOM



ACOM 2S1

Automatic XCVR Commutator

User's Manual

Installation, Operation
and Maintenance

OUTSTANDING HF POWER PRODUCTS

August 2024

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Title of Documentation ACOM 2S1 Automatic XCVR Commutator
User's Manual
Installation, Operation and Maintenance

Type of Documentation User's Manual

Purpose of Documentation This manual explains Installation, Operation and Maintenance of the ACOM 2S1 Automatic XCVR Commutator.

Record of Revisions	Description	Release Date	Notes
	ACOM 2S1 User's Manual	04.1999	First edition
	ACOM 2S1 User's Manual	22.06.2022	Second edition, R01
	ACOM 2S1 User's Manual	05.06.2024	Second edition, R02
	ACOM 2S1 User's Manual	12.08.2024	Second edition, R03

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Contents

ABOUT DOCUMENTATION	3
1. GENERAL INFORMATION	7
1.1. Introduction and Description	7
1.2. To the Reader of this Manual.....	8
1.3. Product Features	9
1.4. Product History and Documentation Validity	9
1.5. Additional Documentation	10
1.6. Equipment Supplied	10
1.7. Owner Assistance	11
1.8. Safety Considerations, Explicit Definitions.....	12
2. INSTALLATION.....	14
2.1. Unpacking and Initial Inspection	14
2.2. Commutator Location Selection.....	15
2.3. Connections.....	15
3. INITIAL CHECK AND OPERATION	20
4. MAINTENANCE	22
4.1. Periodic Maintenance	22
4.2. Cleaning.....	22
4.3. Schematic Diagram.....	22
4.4. Troubleshooting	25
5. SPECIFICATIONS.....	26
5.1. Parameters	26
5.2. Functions	26
5.3. Regulatory Requirements	27
5.4. Storage and Shipment.....	27
5.4.1. Storage Environment.....	27
5.4.2. Shipping Size and Weight	27
5.4.3. Transportation	27
5.4.4. Returning to the Service Provider	27
5.5. Information on Disposing and Recycling of Old Electrical and Electronic Equipment.....	29

NOTES 30

Figures

Figure 1-1 | Production Version Release Date 11.1999 10

Figure 1-2 | Production Version Release Date 04.2022 10

Figure 2-1 | 2S1 in original packaging 14

Figure 2-2 | Rear panel - Connections..... 15

Figure 2-3 | Example of control cables YAESU FT-990 and FT-1000MP transceivers 16

Figure 3-1 | Front panel - Indicators 20

Figure 4-1 | Schematic diagram, Part 1..... 23

Figure 4-2 | Schematic diagram, Part 2..... 24

Tables

Table 1-1 | Production versions history 9

Table 1-2 | Package contents 10

Table 2-1 | Control cable wiring for YAESU FT-990 and FT-1000MP transceivers..... 17

Table 2-2 | Signals and pin out of the CONTROL A/B connector 18

1. GENERAL INFORMATION

Congratulations on purchasing of our exclusive ACOM 2S1 Automatic XCVR commutator.

ACOM is pleased that you have chosen one of our products, and we will endeavor to provide you with the information and support you need to enjoy your purchase for many years.

We urge you to read all of the following materials before you embark on installing and using your new ACOM 2S1 Automatic XCVR commutator.

1.1. Introduction and Description

This manual explains:

- Installation,
- Operation and
- Maintenance

of the ACOM 2S1 Automatic XCVR commutator.

The ACOM 2S1 is a TX/RX commutator that allows two transceivers to use a common load. It guards each transceiver's input while the other transceiver transmits, prevents simultaneous transmission, and allows simultaneous reception.



ACOM 2S1 commutator is a universal device that can be integrated into any radio system. For example, ACOM 2S1 may be used to commutate an antenna only.

Its operation is fully automatic and the full break-in (QSK) mode is standard.

Historically, ACOM 2S1 was designed to complete the ACOM 2000A automatic HF linear amplifier, together with ACOM 2000S automatic antenna selector plus ACOM 2000SW remote antenna switch.



For details about ACOM 2000A, ACOM 2000S, and ACOM 2000SW, please, visit www.acom-bg.com.

1.2. To the Reader of this Manual

This document is written for the technically qualified users who will use the ACOM amplifier.

To ensure your safety in accordance with safety and security standards, read this manual carefully and follow the steps described in it.

Everyone who will use the amplifier must read this manual, and follow the instructions in it, and other accompanying ACOM documentation (see Section **1.5 Additional Documentation**), and consider also the appropriate safety precautions.

Informational notes

Observe the informational notes provided in this manual to ensure reliable and efficient operation of the amplifier. In this manual, you will find the following informational notes:



The information symbol highlights operating procedures or practices that may improve equipment reliability and/or personnel performance, or to emphasize a concept.



*The book symbol represents a **cross reference** to external documentation, e.g., other ACOM manual.*

Symbols and fonts used for marking text

In this manual the following symbols and fonts are used for marking text:

Format	Meaning
Orange bold text	Identifies all internal links in the document between Sections, Figures, Tables , etc. for your convenience.
BOLD TEXT IN CAPITAL LETTERS	Identifies the connectors, switches, and button names and labels.
TEXT IN CAPITAL LETTERS	Identifies the amplifier operating modes, menu names, messages, etc.

1.3. Product Features

- Easy to use**
 ACOM 2S1 commutator is a universal device that can be integrated into any radio system. For example, ACOM 2S1 may be used to commutate an antenna only.
 Historically, ACOM 2S1 was designed to complete the ACOM 2000A automatic HF linear amplifier, together with ACOM 2000S automatic antenna selector plus ACOM 2000SW remote antenna switch.
- Automatic operation**
 Operation is fully automatic and the full break-in (QSK) mode in CW is standard.
- Integrated power supply**
 There is no need of external power supply device. The ACOM 2S1 uses power supply directly from the transceiver (11-14 VDC / 30 mA power supply).

1.4. Product History and Documentation Validity

The ACOM 2S1 commutator serial production started in November 1999. The production has continued to these days without functional changes and with hardware improvements only.

This manual refers to the ACOM 2S1 Automatic XCVR Commutator and describes the operating possibilities of all commutators produced till the publishing date of this manual.

This manual is valid till a new manual is issued.

Production Version Release Date	Notes
11.1999	Basic design, metal outside box in RAL 8019 color;
04.2022	New metal outside box (in black color); No functional changes;

Table 1-1 | Production versions history



Figure 1-1 | Production Version Release Date 11.1999



Figure 1-2 | Production Version Release Date 04.2022

1.5. Additional Documentation

For further important information, please, refer to the following documentation:



- *ACOM 2S1 Brochure*

The documentation is available for download at www.acom-bg.com.

1.6. Equipment Supplied

The ACOM 2S1 automatic XCVR commutator is shipped as package, consisting of:

Nr.	PACKAGE CONTENTS	Pcs.
1	ACOM 2S1	1
2	Connector, MIC-type circular coupler, 4 pin, female	2

Table 1-2 | Package contents



The User's Manual is available as PDF-file only.
The latest version of the User's Manual is available at www.acom-bg.com.

1.7. Owner Assistance

If assistance is needed, you should contact your local dealer first. If necessary, your dealer will contact ACOM for additional guidance.

If you still have an issue you need to discuss with one of ACOM's specialists, the contact information is as follows:

ACOM Ltd.
Web-site: www.acom-bg.com -> **Support** page
E-mail: support@acom-bg.com
Bulgaria | Bozhurishte 2227
Sofia-Bozhurishte Industrial Park | 6 Valeri Petrov Str.
GPS coordinates: 42.748616° | 23.209801°



Including the ACOM equipment's model name, serial number, and a detailed problem description in your service assistance request is mandatory. Without this information, we cannot proceed with your request, or the proceeding will take longer.

1.8. Safety Considerations, Explicit Definitions

The ACOM 2S1 commutator is intended for indoor use only.

The ACOM 2S1 automatic XCVR commutator is designed to meet international safety standards and complies with the CE safety and electromagnetic compatibility requirements.

The ACOM 2S1 commutator is designed as low-power device that operates at normal room temperature and do not require a protective-earth connection. The device is powered from 12 VDC (fed from transceivers) and its consumption is below 30 mA.

This User's Manual contains information, warnings (signal words **Danger**, **Warning**, **Caution** and **Notice**) and instructions, related to hazards, that should be followed by the user in order to ensure safe operation and to keep the amplifier in a safe working condition at all times.



The safety instructions contained in this User's Manual feature specific signal words (**Danger**, **Warning**, **Caution** and **Notice**) and, where required, a safety alert symbol, in accordance with actual standards ISO 3864 or ANSI Z535.

The EXPLICIT DEFINITIONS described below apply to this User's Manual:

DANGER

*These notes call attention to a procedure or instructions which, if not correctly performed, **will result in serious personal injuries and even death.***

WARNING

*These notes call attention to a procedure or instructions which, if not correctly performed, **could result in serious personal injuries and even death.***

CAUTION

*These notes call attention to a procedure or instructions which, if not correctly performed, **could result in minor or moderate personal injuries.***

NOTICE

*These notes call attention to a procedure or instructions which, if not correctly performed, **could result in property damage or equipment damage not exclusively to the commutator but also to connected equipment.***

PRECAUTIONS:

DANGER

NEVER TOUCH AN ANTENNA or antenna insulators during transmission or tuning - this may result in an electric shock or burn. NEVER EXPOSE the commutator to rain, snow or any liquids.

WARNING

To avoid damage (not covered under warranty) read the Section **2 INSTALLATION** of this User's Manual carefully. Installation of the equipment must comply with local and national electrical codes.

If you have any doubts about the installation, operation or safety of the device, please, consult your dealer.

WARNING

Do not undertake on your own repairs or changes in hardware of the commutator in order not to endanger your or other's health and life and not to damage the commutator and the equipment connected with it, not covered by warranty. The manufacturer is not liable for another's actions and responsibility shall be assumed by the doer.

NOTICE

Some types of transceivers are not suitable to be directly used in the ACOM 2S1 XCVR commutator system. If your transceiver does not have TXINHIBIT input, it cannot be suited to the ACOM 2S1 XCVR commutator system (unless any modification is made inside the transceiver to get such TXINHIBIT input).

Check your transceiver's manual or consult your dealer.

2. INSTALLATION

2.1. Unpacking and Initial Inspection



Before you install your commutator, thoroughly read this manual. First, carefully inspect the cardboard carton and its contents for physical damage. ACOM ships commutator in protected container, but it cannot assure that mistreatment by shippers will not occur. If damage is evident, notify your dealer immediately. Delay may void the carrier's warranty.



Keep all packing materials for possible future equipment shipment (see Section [5.4.4 Returning to the Service Provider](#)).



Figure 2-1 | 2S1 in original packaging

2.2. Commutator Location Selection

Position the commutator near your transceivers or power amplifiers. You will need an easy access to the LED indicators on the front panel, as well as to the rear panel cabling.

2.3. Connections

Please, see [Figure 2-2 | Rear panel - Connections](#).

Connections to your stations must be accomplished in the order described below.



Figure 2-2 | Rear panel - Connections

a) INPUT A connector

Connect a coaxial cable with a PL-259 plug from commutator **INPUT A** connector to the antenna connector of transceiver A (see [Figure 2-2 | Rear panel - Connections](#), Pos. (a)).

b) INPUT B connector

Connect a coaxial cable with a PL-259 plug from commutator **INPUT B** connector to the antenna connector of transceiver B (see [Figure 2-2 | Rear panel - Connections](#), Pos. (b)).

c) OUTPUT connector

Connect a coaxial cable with a PL-259 plug from the commutator **OUTPUT** connector to the common load (amplifier's input, or antenna switch, or to the antenna directly, whichever is used). Please, see [Figure 2-2 | Rear panel - Connections](#), Pos. (c)).

d) **CONTROL A** and **CONTROL B** connectors

These connectors are for control cables to your transceivers A and B.



ACOM delivers cable connectors only for Control A and B connectors (see Section [1.6 Equipment Supplied](#)), not the entire cables.

- If you use YAESU FT-990 and/or FT-1000MP transceivers, please, follow instruction below.

NOTICE

You must prepare the necessary control cables or purchase them from your dealer.

The control cables must be suited for BAND DATA connectors of YAESU FT-990 and FT-1000MP transceivers.

Using an inappropriate cable may cause a serious damage to the ACOM 2S1 and your transceivers (not covered under warranty)!



Figure 2-3 | Example of control cables for YAESU FT-990 and FT-1000MP transceivers

NOTICE

Be extremely careful not to mix **A** and **B** control and RF cable pairs. Damage to the commutator and/or other equipment is possible, not covered by the warranty.

Connect both control cables (see [Figure 2-3 | Example of control cables YAESU FT-990 and FT-1000MP transceivers](#)) from commutator's **CONTROL A** and **CONTROL B** connectors (see [Figure 2-2 | Rear panel - Connections](#), Pos. (d)) to the respective transceiver's A and B control (Band Data) connectors.

ACOM 2S1 commutator Rear panel		Connecting cable					YAESU FT-990/FT-1000MP transceivers / Rear panel		
CONTROL A/B connectors							Band Data connector		
<p>MIC-type* connector, 4-pin, male (Rear panel front view)</p>	1 +(11-14) VDC	<p>MIC connector, 4-pin, female (Solder view)</p>	1	————	1	<p>Horseshoe DIN connector, 8-pin, male (Solder view)</p>	1 +13.8 V (OUT)	<p>Horseshoe DIN-type connector, 8-pin, female (Rear panel front view)</p>	
	2 TX GND		2	————	2		2 TX GND (OUT)		
	3 GND, Shield		3	————	3		3 GND		
	4 TXINHIBIT		4	————	8		4 Band A (OUT)		
	Housing		-	Not connected	4		5 Band B (OUT)		
			-	Not connected	5		6 Band C (OUT)		
			-	Not connected	6		7 Band D (OUT)		
			-	Not connected	7		8 LINEAR		
			Housing	Cable shield	Housing		Housing		Housing
	<p>Cable shield</p>								

Table 2-1 | Control cable wiring for YAESU FT-990 and FT-1000MP transceivers

NOTICE

* Designation MIC-type is used for a circle 4-pin connector type and does not mean a microphone!

Do not connect the control cable to the microphone input of your transceiver - this will damage the transceiver!

- If any of your transceivers is different (nor YAESU FT-990, nor FT-1000MP), please, follow instructions below.

NOTICE

You must prepare the necessary control cables or purchase them from your dealer.

Using an inappropriate cable may cause a serious damage to the ACOM 2S1 and your transceivers (not covered under warranty)!

Please, see [Table 2-2 | Signals and pin out of the CONTROL A/B connector](#) and your transceiver's manual to assemble the correct control cable.


CONTROL A/B connectors	Pin Nr.	Pin name	Description	Specification
 <p>MIC-type connector, 4-pin, male (Rear panel, front view)</p>	1	+13 VDC	Power supply	+(11-14) VDC
	2	TX GND	Ground on transmit	-
	3	GND, Shield	Ground	-
	4	TXINHIBIT	Disables transmission	-
	Housing	-	Cable shield	Ground

Table 2-2 | Signals and pin out of the CONTROL A/B connector

- 1) Connect commutator's connector **CONTROL**, Pin 1 (+13V) to any DC supply voltage in the range +(11-14) V available from the transceiver;
- 2) Connect commutator's connector **CONTROL**, Pin 2 (TX GND) to the transceiver's output providing "ground on transmit" (it's usually dedicated for external amplifier T/R control).



Prefer an electronic output to a relay contact.
 Transceiver producers give different names to this signal, for instance: TX-GND, SEND, T/R-LINE, etc. Some transceivers require that "ground on transmit" is implemented via a software command, or by changing the setting of a switch on the rear panel, or interior of the transceiver.
 Check your transceiver's manual or consult your dealer.

- 3) Connect commutator's connector **CONTROL**, Pin 3 (GND, Shield) to the common transceiver's ground;

NOTICE

The connection cable must be shielded.

- 4) Connect commutator's connector **CONTROL**, Pin 4 (TXINHIBIT) to a dedicated transceiver's input that disables transmission.



Transceiver producers give different names to this input and they are for instance TX-INHIBIT, MUTE, LINEAR, ATU, etc.

NOTICE

If your transceiver does not have TXINHIBIT input, it cannot be suited to the ACOM 2S1 XCVR commutator system (unless any modification is made inside the transceiver to get such TXINHIBIT input).

Check your transceiver's manual or consult your dealer.

After successfully assembling of necessary control cables, you can connect them from commutator's **CONTROL A** and **CONTROL B** connectors (see [Figure 2-2 | Rear panel - Connections](#), Pos. (d)) to the respective transceiver's A and B control (Band Data) connectors.

NOTICE

Be extremely careful not to mix **A** and **B** control and RF cable pairs. Damage to the commutator and/or other equipment is possible, not covered by the warranty.

e) KEY OUT and KEY IN connectors

Run a "daisy chain" wiring using Phono RCA connector terminated cables:

- From the commutator's **KEY OUT** connector (see [Figure 2-2 | Rear panel - Connections](#), Pos. (e)) to the amplifier KEY-IN connector;
- From the amplifier KEY-OUT connector to the antenna selector (e.g., ACOM 2000S) KEY-IN connector;
- From the antenna selector (e.g., ACOM 2000S) KEY-OUT connector to the **KEY IN** connector (see [Figure 2-2 | Rear panel - Connections](#), Pos. (e)) of the commutator.

If any of the units listed above (amplifier or antenna selector) is not present in the system, go to the next unit. If no external apparatus is used, merely place a bridge between **KEY OUT** and **KEY IN** connectors of the commutator.

3. INITIAL CHECK AND OPERATION

NOTICE

Do not try transmitting until all the system is properly connected to the ACOM 2S1 commutator according to Section [2.3 Connections](#).



Figure 3-1 | Front panel- Indicators

The operation of the commutator is fully automatic. But we recommend an initial check to be executed before using it for the first time.

For the initial check, please, follow the sequence below:

1) Transceivers Power On

After following all instructions in Section [2.3 Connections](#), you can turn ON both transceivers. This will apply DC voltage to the commutator. Powering sequence makes no difference. Both LED indicators **A** and **B** (see [Figure 3-1 | Front panel - Indicators](#)) on commutator's front panel must be OFF in RX mode. LED indicators **A** or **B** light only while the respective transceiver transmits: this indicates to the other transceiver's operator that he cannot transmit at the same time.

2) Transceivers band set

Set different bands on both transceivers. Switch the antenna selector ON and the amplifier OFF (if any). Set RF power controls of both transceivers to a possible minimum. Tune both transceivers to hear the typical band noise.

3) Test transmission

Try a short transmission from transceiver **A** - its LED must light during transmission. Hold transceiver **A** to transmit and try simultaneous transmission from transceiver **B**: it must be disabled and LED **B** must rest dark. The transceiver **B** must not be able to break transceiver **A** until you release **A**. When neither **A** nor **B** transmits both transceivers must normally receive.

NOTICE

LEDs **A** and **B** should never light simultaneously. Look for any connection error if you note such condition (see Section [2.3 Connections](#)).

4) Second test transmission

Try the same as described in Point 3 (above) but with **B** and **A** exchanged.

5) Repeat instructions in Points 3 and 4 (above) at a low (5-10 Watts) output level

Try QSK CW from both transceivers: a first pressed KEY must "reject" CW dots and dashes of the second one. The second transceiver must be automatically enabled when the first one returns to RX. Both transceivers must be able to receive in the pauses of transmission.

6) Breaking the **KEY IN / KEY OUT** "daisy chain" wiring

Breaking the **KEY IN / KEY OUT** "daisy chain" wiring at any point must disable transmission of both transceivers.

7) Breaking the **KEY IN / KEY OUT** "daisy chain" wiring

Restore all connections and turn ON the amplifier (if any). Try instructions in Point 5 again. The amplifier must follow the frequency last transmitted by either transceiver. Increase the output to its nominal level - no problems should be met.

4. MAINTENANCE

4.1. Periodic Maintenance

Periodically (but at least once per year) check all connections, contact cleanliness and the tightening of all connectors, in particular the coaxial ones.

Check the integrity of the cables, in particular when they are laid on the floor. Check also if the cables are secured well in the area where they come out of the connector body.

4.2. Cleaning

⚠ CAUTION

Do not use any solvents for cleaning. They may be dangerous to you and damage commutator surfaces, paint and plastic components.

Do not open the commutator. Cleaning of the commutator outer surfaces can be done with a piece of soft cotton cloth lightly moistened with clean water.

4.3. Schematic Diagram

Please, see [Figure 4-1 | Schematic diagram, Part 1](#) and [Figure 4-2 | Schematic diagram, Part 2](#).

Power supply is fed to the commutator from any transceiver via diodes D1 and D2. Both transceiver RF paths are controlled by the contacts of relays K1 and K2 (shown in RX position). When A transmits, INA is connected to the OUT via K2, while INB is grounded via K1. Relay's contacts are monitored through chokes RFC1...RFC4. Respective signals GA and GB are used by the logic to disable transmission while the opposite antenna input is not yet grounded. Two other signals PA and PB disable transmission if no RF input is connected to the output.

The transmission requests *TXA or *TXB are controlled via a trigger-logic composed by U3B, U3C, U4A, and U4B. It judges which request is earlier and disables the other until the first one finishes transmission. The opposite RF relay is switched over via U4 (A or B) in order to save its RX input. Simultaneously, the transmission request is passed to the KEY OUT through U3D, U2C, and the transistor Q1. At least one of PA or PB is wanted to be logical high by U3A, otherwise U2C would prevent KYE OUT going low.

The logical low KEY OUT signal must be returned to the KEY IN by the amplifier and/or antenna selector when they are ready to transmit. A direct jumper must be placed between KEY OUT and KEY IN if no external apparatus is used. After *KIN signal is tied low, a second trigger (composed by U1 and U2) is enabled. It is intended to check GA and GB signals, i.e., whether the opposite relay has already grounded the second transceiver's RX input. When grounded, the respective inhibit signal (INHA or INHB) is enabled and its LED lights. This returns a low INHIBIT confirmation signal to the transceiver that requested transmitting earlier. The other INHIBIT signal remains HIGH in order not to let simultaneous transmission.

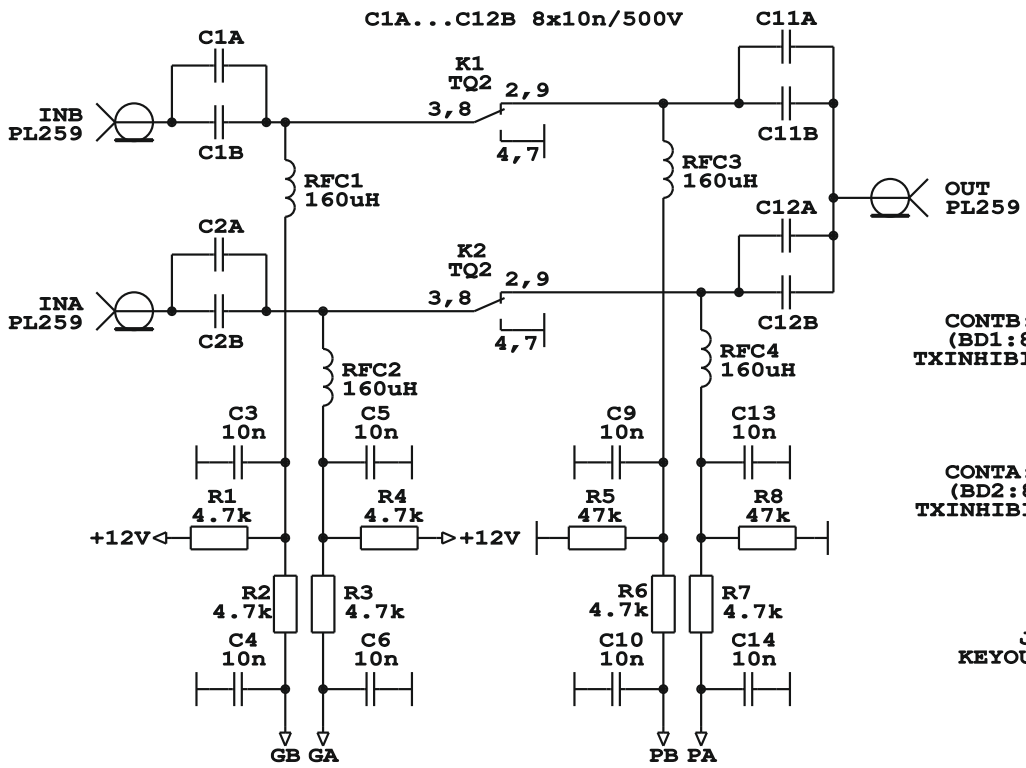
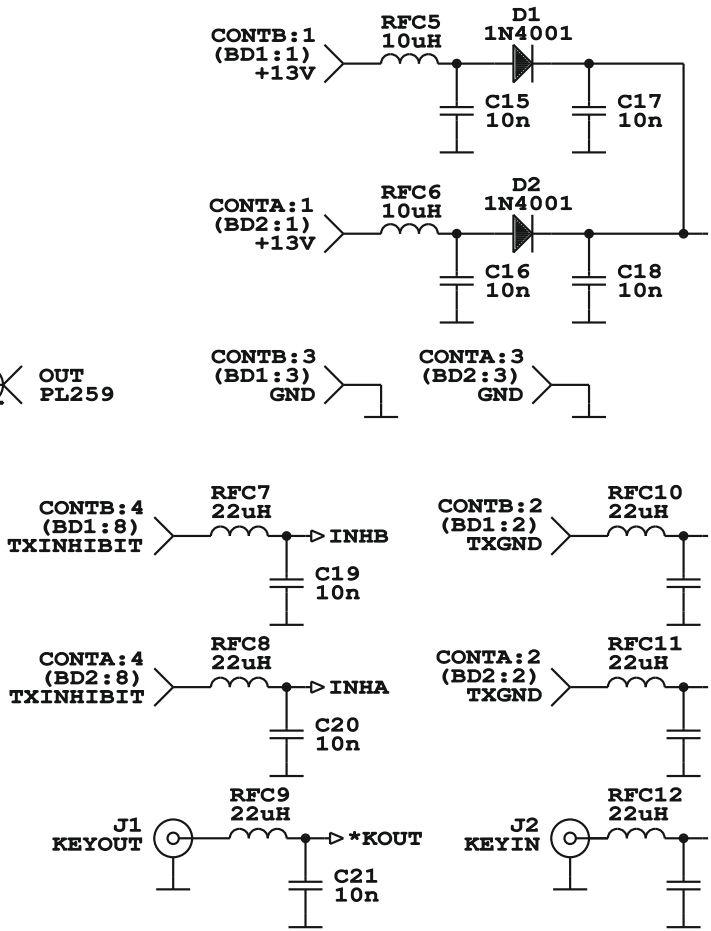


Figure 4-1 | Schematic diagram, Part 1

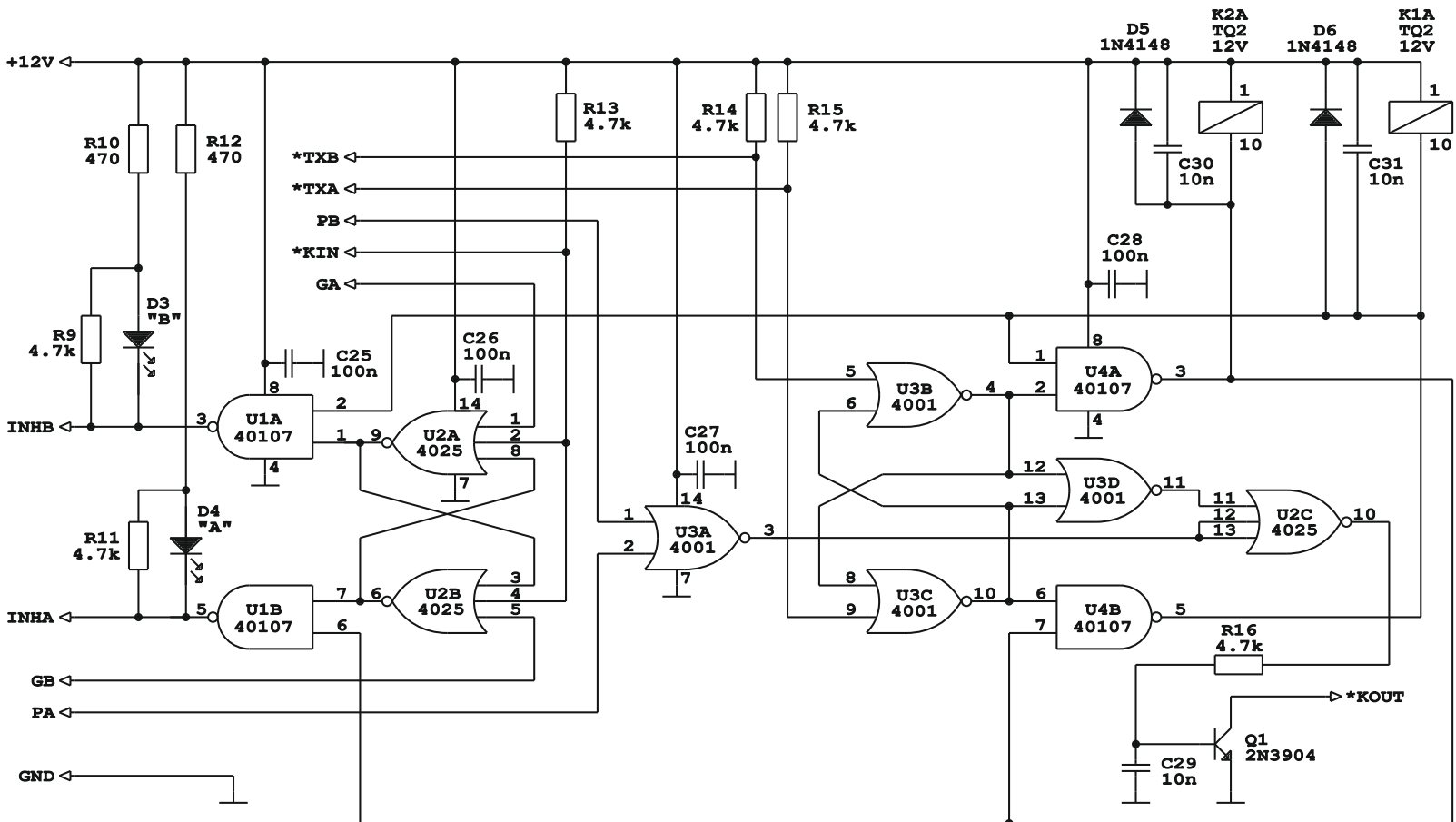


Figure 4-2 | Schematic diagram, Part 2

4.4. Troubleshooting

In case of trouble, please, inspect all cabling according to Section **2.3 Connections**.

Clean all connectors with alcohol as needed and check the cables for continuity or parasitic connections.

Make an initial operational check according to Section **3 INITIAL CHECK AND OPERATION**.



If the problem persists, you will need to contact your dealer (see Section **1.7 Owner Assistance**).

5. SPECIFICATIONS

5.1. Parameters

- a) Frequency Coverage
 - All amateur bands 1.8 - 54 MHz;
- b) Through-line Power
 - Up to 200 W PEP or continuous carrier;
- c) Input and Output Impedances
 - Nominal value: 50 Ohm unbalanced, UHF (SO-239) type connectors;
 - VSWR below 1.1:1 (1.8-54 MHz) and below 1.2:1 up to 80 MHz;
- d) Power Supply
 - 11-14 VDC;
 - Less than 30 mA consumption;
- e) Safety and Electromagnetic Compatibility
 - Complies with CE safety and electromagnetic compatibility requirements, as well as with the US Federal Communications Commission (FCC) regulations;
- f) Size & Weight (operating, excluding connected cables)
 - WxDxH: 110x42x67 mm, 0.25 kg (4.4x1.7x2.7 inches, 0.56 lbs.);
- g) Operating Environments
 - Temperature range: 0 to +50 degrees Celsius (32 °F to 122 °F);
 - Relative air humidity: up to 95% @ +35 degrees Celsius (95 °F);
 - Height: up to 3050 m (10000 ft) above sea level without output deterioration.

5.2. Functions

- a) T/R System: QSK mode capable;
- b) Protections:
 - One transceiver's input is grounded while the other transceiver transmits;
 - Simultaneous transmission is prevented;
 - T/R sequencing and RF relay contacts are continuously monitored.

5.3. Regulatory Requirements



CE mark (Conformité Européenne)

This symbol explains that "CE" marked ACOM product meets the essential requirements of the Radio Equipment Directive 2014/53/EU, and the restriction of the use of certain hazardous substances in electrical and electronic equipment Directive 2011/65/EU.

5.4. Storage and Shipment

5.4.1. Storage Environment

The commutator may be kept packed in a dry, ventilated and unheated location (with no chemically active substances such as acids or alkalis) within the following environment ranges:

- Temperature range: -40 to +70 degrees Celsius (-40 °F to 158 °F);
- Humidity: up to 75% @ +35 degrees Celsius (95 °F).

5.4.2. Shipping Size and Weight

- WxDxH: Approx. 200x150x70 mm, 0.5 kg (7.9x5.9x2.8 inches, 1.1 lbs.);



Please, contact ACOM (see Section [1.7 Owner Assistance](#)) for shipment details.

5.4.3. Transportation

All types of transportation may be used, including storage in an aircraft baggage compartment at up to 12000 meters (40000 ft) above sea level.

5.4.4. Returning to the Service Provider

This document section contains the general information on packing and shipping a commutator for diagnostics and repair.

NOTICE

Should it be necessary to ship the commutator, use the original packing as described below.

NOTICE

Before shipping the commutator, you should contact your local dealer first.

Your dealer can have a specific shipment requirement, e.g., a different shipping address. It is the sole customer's responsibility to ensure the commutator and all accessories are properly packaged to avoid any shipping damage.



If transporting for diagnostics and repair, you may not need to ship some cables or accessories. Please, consult with your dealer first.

Prepare the commutator for shipping as described below:

- Switch off your transceivers;
- Disconnect **KEY OUT** and **KEY IN** cables;
- Disconnect **CONTROL A** and **CONTROL B** cables;
- Disconnect **OUTPUT** cable;
- Disconnect **INPUT A** and **INPUT B** cables;
- Pack the commutator and **CONTROL A / CONTROL B** cables in its original cardboard carton (see Section **2.1 Unpacking and Initial Inspection**);
- Seal the commutator cardboard carton with self-adhesive tape;
- Now, the commutator is ready for shipment.



Basic shipping insurance is provided by the customer when sending in a commutator - you can verify the amount covered by the shipping company by looking on their website. If you are shipping the commutator, full/upgraded coverage is available as a suggested option.



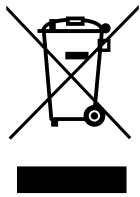
For alternative shipping instructions, please, contact your local dealer.

5.5. Information on Disposing and Recycling of Old Electrical and Electronic Equipment



The information in this section is applicable for countries that have adopted separate waste collection systems.

ACOM products cannot be disposed as household waste.



Waste electricals

This symbol (crossed-out wheeled bin) explains that you should not place the electrical item in the general waste.



Waste electricals

This symbol (three green arrows going in a triangle with electrical plug in the center) means that according to local laws and regulations this product should be sent for recycling.

Old electrical and electronic equipment and batteries should be recycled at a facility capable of handling these items and their waste byproducts.

Contact your local authority for details in locating a recycle facility nearest to you.

Proper recycling and waste disposal will help conserve resources whilst preventing detrimental effects on our health and the environment.

NOTES

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This manual is for electronic distribution mainly.
If you have it on paper and you no longer need it, please, recycle it!

The latest versions of our User's Manuals are available at
www.acom-bg.com

Dealer/Partner's address:

ACOM



📍 ACOM Ltd.

Bulgaria | Bozhurishte 2227
Sofia-Bozhurishte Industrial Park | 6 Valeri Petrov Str.
GPS coordinates: 42.748616° | 23.209801°

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