

USB

Pointer data from CAN-bus and PS/2 device port will be transferred to USB port if node number 0 is set and no PC is connected to PS/2 mouse port.

Keyboard data from CAN-bus and keyboard matrix will be transferred to USB port if node number 0 is set and no PC is connected to PS/2 keyboard port.

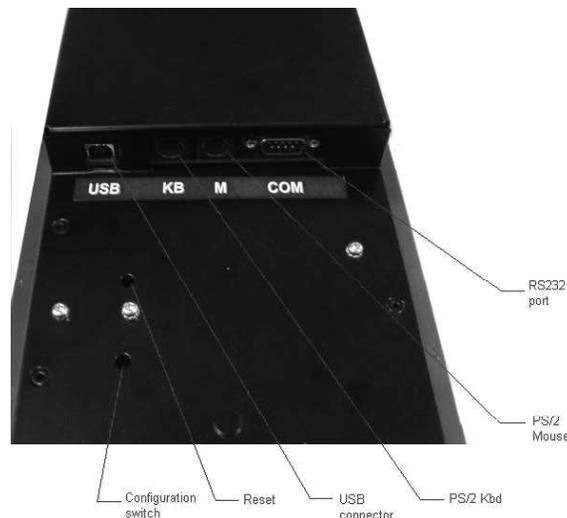


Fig. 3. ES6 keyboard. View of USB, PS/2 and RS232 connectors

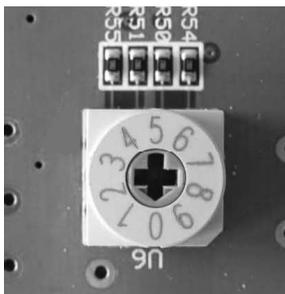


Fig. 4. ES6 keyboard. View of Configuration switch

Trackball Connections

The ES6 Trackball can be connected using the CAN Interface to a CAN master (the ES6 keyboard) or using the USB Interface to connect to a computer's USB Host.

Switch 4 on the DIP-Switch is used to set CAN (switch OFF) or USB (switch ON) interface active. Switch 1–3 set CAN node address (must be in range 1–7).

USB uses a USB-B contact to connect to the USB Host and CAN uses a 4-pin Phoenix contact for CAN-Bus IN (supplied 5 VDC) and a 3-pin Phoenix contact for CAN-Bus OUT.

It is possible to supply power by USB port even if CAN interface is selected.

Both ends of the CAN network must be terminated with 120 ohm resistor.

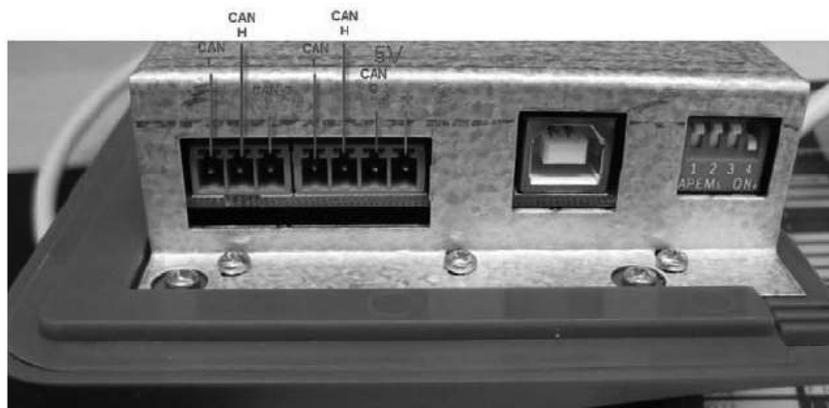


Fig. 5. ES6 Trackball. View of CAN, USB connectors and DIP-Switch

Radar Integrator Board RIB6

Specification of RIB6 is presented in **Chapter 3** of this document.

ATTENTION!

Check that technical characteristics of the connected equipment match characteristics of the RIB6 Input/Output signals specified in **Chapter 3**, section **Hardware Technical Specification**, paragraph **Radar Integrator Board (RIB6)**, item **Electrical Characteristics**.

Cables

Cables are run and installed in accordance with the cabling schedules.

RIB6 is connected with the Ethernet ports of RS6 Computer by means of a standard category 5 screened cables used in Ethernet 10/100/1000 Mbit networks. The cable contains 4 twisted pairs within the common screen and has RJ-45 connectors on both ends. Connection of cable cores with the connector contacts is identical on both sides.

External lines of Video and Trigger signals to the RIB6 are connected by means of coaxial cables with BNC connector plug.

External lines of Bearing, Heading, RS 422 Control signals to the RIB6 are connected by means of screw connectors. Any types of cables with a wire cross section of up to 1.5 mm² can be used. In case of considerable length of external cables, a screened cable is recommended.

Connections

For connection of RIB6 to some radar types see diagrams "Connection of RIB6 to Some Radar Types. Connection Diagrams" enclosed in **Annex G** of this document.

- 24 V nominal supply voltage: use connector X11 (pin 1 is minus, pin 2 is plus, see);
- Ethernet port 1:
 - Use connector X4 (IP: 10.8.1.209, Netmask: 255.255.255.0, Gateway: 10.8.1.240);
 - This port can be used after Linux has booted. It will send out video data and can receive a TCP connection on port 4172 (Max 1 connection globally for RIB6).

Transas ES6 Dedicated Keyboard with Trackball

General

- ES6 keyboard with Trackball (the ES6 in what follows) is a control unit inside the Transas systems;
- The ES6 consists of:
 - The PC compatible keyboard unit with two fields (QWERTY- and function-keys);
 - Separate trackball unit with trackball, two left buttons (one on each side of the Trackball), one right button and an optional scroll wheel.
- Dimensions remain unchanged (ES3 and ES4);
- Power supply 24VDC (-10/ +30% according to IEC 60945);
- Possibility to connect external KBD and pointing device via CAN-bus interface;
- Possibility to connect external pointing device via PS/2 interface;
- Possibility to connect to PC via USB interface by means of a built in USB hub;
- RS232 interface is compatible with ES3.

Keyboard Unit Overview

The keyboard unit is made up of basically four parts:

- Plastic front part with holes for keys, indicators and rotational controls e.g. Rain, Gain, Dimmer;
- Silicon rubber keypad with contact pads for the QWERTY-keys;
- Printed circuit board with LEDs for background light and indicators, tactile switches for function keys, rotary encoders, control electronics and connectors;
- Plastic back cover.

Keyboard QWERTY-Field

The keys are designed (looks and feel) and placed in a way to resemble a standard English-American laptop keyboard.

All keys are backlit with orange/yellow LEDs (Light Emitting Diodes). The keys are printed with a "hiding-effect", i.e. the key legends are normally invisible when not lit. The QWERTY-field is normally not lit, when a key is pressed the backlight is switched on and this first key press is not sent to the PC. When no key of the QWERTY-field is pressed for more than 30 seconds the backlight will be switched off.

Keyboard Function Field

All function keys have a tactile switch on the PCB to give a distinct “click” feeling.

The tracking keys are printed with a “hiding-effect”, i.e. the key legends are normally invisible when not lit. They are lit only when the tracking function is active.



Fig. 45. View of ES6 keyboard

Functional Keys

Table 14. ES6 Functional keys

N/N	ES6 key/control	Function	Comment
1	ECDIS	To turn on the ECDIS task	
2	RADAR	To turn on the RADAR task	
3	CONNING	To turn on the CONNING task	
4	AUX	Not used	
5	TX/STBY	Not used	
6	SHOW RADAR	To backlight the radar picture on the screen	<p>For ECDIS task as you press this button and keep it depressed:</p> <ul style="list-style-type: none"> To turn on the overlay; Transparency value – 0; Chart Base display. <p>For RADAR task as you press this button and keep it depressed:</p> <ul style="list-style-type: none"> Display of ARPA and AIS targets is turned off; Turns off CHARTS and MAPS. Display of chart information is switched to “Gray transparency” colour palette; Display of “Radar Rings” is turned off. <p>As the button is released, the system returns to the initial display mode</p>
7	SHOW CHART	To select chart information	<p>For ECDIS task as you press this button and keep it depressed:</p> <ul style="list-style-type: none"> Transparency value – 3; No targets are displayed; No tides or currents are displayed; No Add Info objects are displayed. <p>For RADAR task as you press this button and keep it depressed, contours of chart objects are backlit.</p> <p>As the button is released, the system returns to the initial display mode</p>

N/N	ES6 key/control	Function	Comment
8	ALL LAYERS	To turn on display of all the possible chart information layers	
9	OVERLAY	To turn on/off the Overlay mode	
10	DAY/NT	To switch successively colour palettes	<ul style="list-style-type: none"> • Daylight; • Twilight; • Dusk; • Night; • Dusk inverted; • Night inverted
11	AHEAD	To turn on the Navigation mode	<p>For RADAR task also:</p> <ul style="list-style-type: none"> • In Relative Motion: To switch to a new stabilisation course value; • In True Motion: To set the ship symbol to the initial state on the Plan Position Indicator
12	TGT	To turn on/off display of ARPA and AIS targets on NS screen	
13	MOB	To turn on the Man Overboard alarm mode	
14	EVENT	To make an instant position recording in the electronic log	
15	ST. DISP	To turn on presentation of the Primary Chart Information Set	
16	N/H/C UP	To switch successively to North UP/Heading UP/Course UP motion mode	<ul style="list-style-type: none"> • North Up; • Head Up; • Course Up
17	TM/RM	To switch between True Motion and Relative Motion modes	
18	EBL 1 2	To adjust the electronic bearing line value EBL1 and EBL2. A press on this switches the control between EBL1 and EBL2	<p>EBL1 is displayed in the form of a solid light blue coloured line originating from the centre of the own ship mark.</p> <p>EBL2 is displayed on the PPI as dashed light blue coloured line.</p> <p>By default, the direction of EBL is set at 0°</p>
19	EBL ON/OFF	To turn on/off EBL	
20	VRM 1 2	To adjust the variable range marker value VRM1 and VRM 2. A press on this switches the control between VRM1 и VRM2	<p>VRM1 is displayed in the form of a solid light blue coloured ring with centred on the own ship mark centre.</p> <p>VRM2 is displayed as dashed light blue coloured ring. By default, VRM1 radius is set to 0.25 mile</p>
21	VRM ON/OFF	To turn on/off VRM	
22	TRACK	To turn on the Track Control mode	
23	Qtrack	To turn on the mode for creating a temporary route (Quick Track)	
24	STOP	To turn off the Track Control mode	
25	ZOOM OUT	To reduce the chart display scale in the ECDIS task. To reduce the radar picture scale by one value with a single press in the RADAR task	
26	ZOOM IN	To increase the chart display scale in the ECDIS task. To increase the radar picture scale by one value with a single press in the RADAR task	

N/N	ES6 key/control	Function	Comment
27	ALARM	To display and acknowledge alarms	Each press on the button acknowledges successively active alarms in NS system. The indicator can assume the following values depending on the alarm status: <ul style="list-style-type: none"> • The button is highlighted in red, flashing red indicator – active unacknowledged alarm; • The button is highlighted in red – active acknowledged alarm; • The button is not highlighted in red – no active alarms
28	DIM	To control the keyboards's backlighting	The illumination intensity is controlled by using Dimmer
29	GAIN	To adjust the video signal gain level	
30	SEA	To adjust the sea clutter suppressions	
31	RAIN	To adjust the rain clutter suppressions	

Dimensions

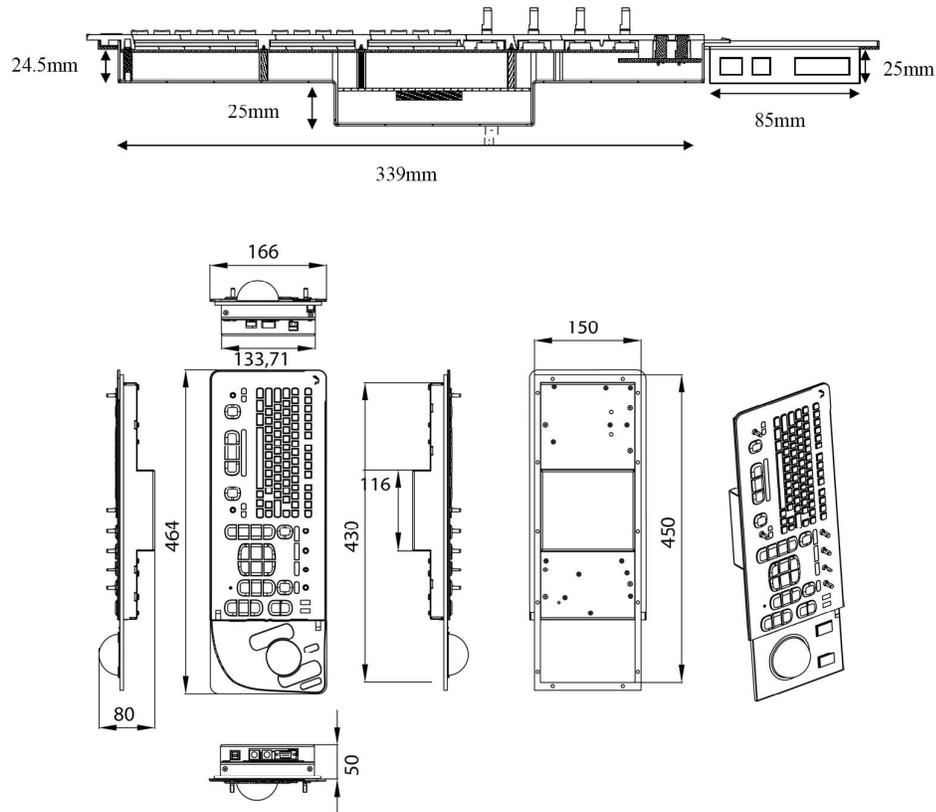


Fig. 46. Transas ES6 dedicated keyboard dimensional drawing