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TT1222 MPEG-2 SD 4:2:0 Professional Receiver

Software Version 6.1.1 (and later)

USER GUIDE

ERICSSON

EN/LZT 790 0002/1 R1A

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1 Introduction

1.1 Who Should Use this User Guide?

This User Guide is written for operators/users of the TT1222 MPEG-2 SD 4:2:0 Professional Receiver to assist in installation and operation. It is not intended to be a detailed source of information. This can be found in the *Reference Guide* companion document which is issued on CD.

Warning!

Do not remove the covers of this equipment. Hazardous voltages are present within this equipment and may be exposed if the covers are removed. Only Ericsson trained and approved service engineers are permitted to service this equipment.

Caution!

Unauthorized maintenance or the use of non-approved replacements may affect the equipment specification and invalidate any warranties.

1.2 What Equipment is Covered by this User Guide?

Ericsson is introducing an improved ordering system for its television products. New part numbers are being introduced to support this new system.
Table 1 shows the new part numbers used for ordering and supply of the product and its options.

Table 1   Equipment Model Descriptions

Model Number	TT1222	TT1222 with Russian Secam
Description	1U MPEG-2 SD 4:2:0 Professional Receiver. Common Interface CA unit with: 2 x Composite Video Outputs, 2 x Audio Outputs (D-types), RS-232 Data, RS-232 Remote Control, 5 x General Purpose Outputs (GPO), 1 x Alarm Relay and 1 x Ethernet Port	As described for TT1222 with addition of support for Russian SECAM Video Output.
Marketing Code	TT1222/CIBAS	TT1222/RSBAS
Price Object Number	FAZ 101 0128/1	FAZ 101 0128/2
Supply Object Number	KDU 137 661/1	KDU 137 661/2

1.3 Hardware Options

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See *Table 2* for a list of hardware options available with the Receiver. Detailed information is in the *Reference Guide*.

Table 2   Hardware Options

Marketing Code	Price Object Number	Supply Object Number	Description
TT1222/HWO/QPSK	FAZ 101 0128/8	ROA 128 3846	Single QPSK Input Card
TT1222/HWO/ASI/IN	FAZ 101 0128/9	ROA 128 3847	Single ASI Input Card
TT1222/HWO/ASI/OUT	FAZ 101 0128/10	ROA 128 3848	Single ASI Output Card
TT1222/HWO/ASI/SDI	FAZ 101 0128/11	ROA 128 3849	Dual ASI / SDI Output Card
TT1222/HWO/IP/OUT	FAZ 101 0128/12	ROA 128 3850	Dual IP Output Card

1.4 Software Options

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See *Table 3* for a list of software options available with the Receiver. Detailed information is in the *Reference Guide*.

Table 3   Software Options

Marketing Code	Price Object Number	Supply Object Number	Description
TT1222/SWO/AC3	FAZ 101 0128/5	FAT 102 0281	Dolby Digital decoding
TT1222/SWO/DIRV5	FAZ 101 0128/4	FAT 102 0280	Director by Ericsson

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2 Installing the Equipment

2.1 Introduction

For best performance and reliability follow the instructions for site requirements and installation in the *Reference Guide* and only use installation accessories recommended by the manufacturers.

2.2 Operating Voltage

2.2.1 AC Models

AC models are fitted with a wide-ranging power supply. It is suitable for supply voltages of 100-240 Vac -10% +6% at 50/60 Hz nominal.

Caution!

This product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply to your business, consult a qualified electrical engineer or your local power company.

Note: Refer to the *Reference Guide* for details of the color codes used on the mains leads.

See *Table 5* for fuse information and also the *Reference Guide* for a full power supply specification.

2.3 Power Cable and Earthing

Check that the power cable is suitable for the country in which the Receiver is to be used.
(Power Cable Information: H05VV-F, 0.75mm2, 3G or greater)

Warnings!

The Technical Earth is not a Protective earth for electric shock protection.

This unit must be correctly earthed through the molded plug supplied. If the local mains supply does not have an earth conductor do not connect the unit. Contact Customer Services for advice.

Before connecting the unit to the supply, check the supply requirements in *Annex B* of the *Reference Guide*.

2.4 Connecting Up the Basic Receiver

Always use the specified cables supplied for signal integrity and compliance with EMC requirements (see the *Reference Guide*).

The rear panel is directly related to the input and output options fitted. *Table 4* describes the types of connectors. *Figure 1* shows the typical rear panel components and connectors.
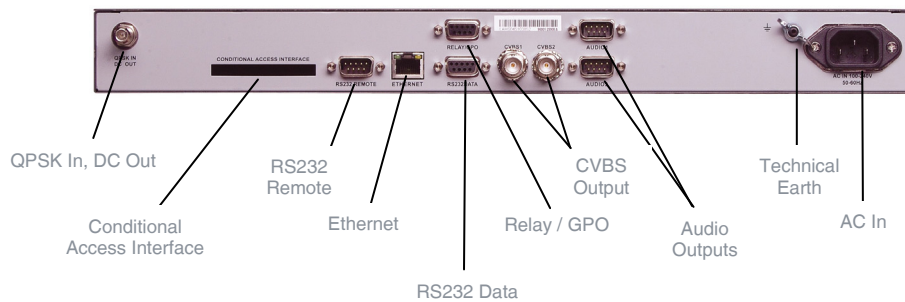

Figure 1   Typical Rear Panel Component Parts and Connectors (TT1222 with QPSK input option)

Table 4   Types of Connector

Type of Connector	Description
Inputs	
Technical Earth	Connect the Receiver's Technical earth to a suitable point.
RS232 Remote	A 9-way, D-type male connector provides a connection to a PC for remote control and software upload.
QPSK IN (Input Option)	An F-type female connector provides an L-band input.
ASI IN (Input Option)	A 75 Ω BNC connector provides an ASI input
Outputs	
CVBS	2 x 75 Ω BNC connectors provide a high quality analogue composite video output from the unit. **Note:** Russian SECAM output option uses the existing CVBS output connectors
ASI OUT (Output Option)	A 75 Ω BNC connector provides an ASI output
Dual ASI / SDI OUT (Output Option)	Two 75 Ω BNC connectors provide both ASI and SDI outputs.
Dual IP OUT (Output Option)	Two RJ-45, female connectors.
Audio 1 and 2	Two 9-way, D-type male connectors. Audio outputs 1 and 2 are analogue and digital (simultaneous).
Ethernet	A RJ-45, female connector.
RS232 Data	A 9-way, D-type female connector provides an RS-232 low-speed data output.
Conditional Access Interface	A single common interface slot, for insertion of the CA Module.
Relay/GPO	A 9-way, D-type female connector provides a relay and GPO interface which can be used to send signals to remote equipment. (1 x Alarm relay and 5 x GPO relays). The GPOs can be configured to trigger on particular events and the relay is triggered when any alarm occurs.

2.5 Connecting the Receiver to the Power Supply

Warnings!

Do not overload wall outlets and extension cords as this can result in a risk of fire or electric shock.

As no mains switch is fitted to this unit, ensure the local power supply is switched OFF before connecting the supply cord.

The Receiver is not fitted with an on/off switch. Ensure that the socket-outlet is installed near the equipment so that it is easily accessible. Failure to isolate the equipment properly may cause a safety hazard.

Connect the Receiver to the power supply as follows:

- Power Supply
  Ensure the power supply is isolated and switched off.

- Receiver
  Ensure the correct fuse type and rating has been fitted to both the equipment and the power cable.

- Supply Cord
  Connect the lead to the Receiver input connector and then to the power supply. Switch on the power supply.

Table 5   Fuse Type and Rating

Power Supply	Fuse Type and Rating
100-240 V AC –10% +6% at 50/60 Hz nominal	5 x 20 mm IEC/EN 60127-2 Sheet 2 Hollyand 5OF or Littelfuse 617 F3.15 A 250 V

Note: The Internal fuse is not user replaceable
Refer to the *Reference Guide* for all power supply, fuse, safety, EMC information and operating conditions.
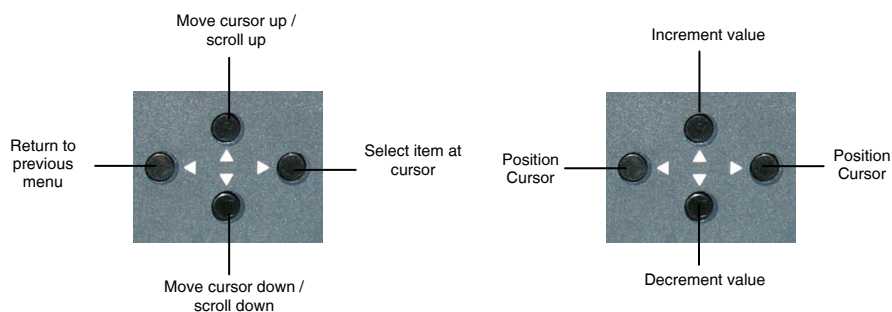
3   Operating the Equipment from the Front Panel

3.1   Introduction

The front panel display and keypad may be used to configure, control and monitor the unit when an external control system is not used.

3.2   Navigating the Menus

3.2.1   Navigation Using Arrow Keys

Navigating the Menus   Editing Values in a Menu

Figure 2   Navigation Using Arrow Keys

Note: The Arrow keys are referred to as **Left**, **Right**, **Up** and **Down**, indicating the direction of the arrows

3.2.2   Selecting a (Sub) Menu Item

3.2.2.1   Selecting the Menu Item

To select a menu item, navigate using the **Up** and **Down** arrow keys until the desired menu is displayed in front of the cursor. Press the **Right** arrow key to select / enter this menu item.

3.2.2.2   Leaving the Menu Item

To leave the current menu tree, press the **Left** arrow key.

3.2.3 Editing a Menu Value

3.2.3.1 Accessing the Edit Mode

To edit a menu item, first select the item using the **Right** arrow key. This takes you from the select mode to the edit mode.

3.2.3.2 Editing a Selectable Option

Once in edit mode, use the **Up** and **Down** arrow keys until the desired value is displayed. Exit and save the selection by pressing the **Right** arrow key. To exit without saving, press the **Left** arrow key.

3.2.3.3 Editing an Alphanumerical Value

When editing an alphanumerical value, the cursor starts flashing underneath the rightmost digit, once entering the edit mode. Use the **Up** and **Down** arrow keys to increase or decrease the value of this digit. Press the **Left** arrow key to select the next digit. The cursor moves to underneath the neighboring digit.

Again, use the **Up** and **Down** arrow keys to increase or decrease the value of this digit. Once satisfied with the result, move the cursor outside the selectable digits, by pressing the **Right** arrow key several times. Once the cursor moves outside the selectable area the arrow keys return to navigation mode and the new value is saved.

4 Typical Operation and Setting of Parameters

Refer to *Section 3.2* onwards on how to navigate the menus. To view the menu structure and for more detailed information regarding parameters not mentioned in this User Guide refer to the *Reference Guide*.

4.1 Setting up the QPSK Input Menu (if Option Card fitted)

The QPSK Input Menu contains all the items that need to be set to achieve a signal lock on an incoming QPSK Transport Stream.

Navigate to the **Input Menu** and select the following options:

- **LNB freq** - enter the desired LNB frequency in Gigahertz. This should be set to match the external LNB.

- **Sat freq** - edit the satellite channel frequency[1] in Gigahertz. This sets up the tuning frequency in the Receiver.

- **Sym rate** - enter the symbol rate. This sets up the incoming symbol rate of the demodulator.

- **Inner Code** - select the correct inner code. This sets up the Forward Error Correction (FEC) rate of the demodulator.

- **LNB volt** - select the correct LNB voltage output of the F-connector: Off, 13 V, 18 V.

- **LNB 22 kHz** – activate the LNB 22 kHz control signal to the LNB: On or Off.

- **Spec inv** – enable or disable the spectrum inversion on the incoming signal: On, Off or Auto.

4.2 Setting up the ASI Input Menu (If Option Card fitted)

No setup is required for the ASI input module.

4.3 Setting Up a TV Service

The **TV Service Menu** contains the Service list for the currently tuned Transport Stream. The list also contains a **ServiceID** item, which allows the user to select the Service, simply by typing in the correct Service ID. By selecting a Service in the Service list, the decoder will decode the selected Service.

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[1] The satellite frequency should be within the area of the LNB frequency (±950 to 2150 MHz). If the frequency is outside this range, replace the LNB with a higher or lower ranging unit.

Navigate to the **TV Service Menu**. Select the following options:

- **Service ID** - display or change the service ID for the decoded Service.

- **Service List -** press the Up and Down arrows until the selected Service is displayed. A small check mark is displayed in front of the Service, indicating that it is selected.

The **TV Service Menu** also allows the user to select which of the currently selected Service components are to be decoded. This is relevant for Services with multiple audio streams associated with the video.

- **Aud1 Lang** - enter the desired three-character ISO 639 language code to select the correct audio PID for the video Service. If the selected code is not present in the audio stream, the first audio stream in the PMT table will be decoded.

4.4　Setting Up Audio 2 Service

The **Audio2 Service Menu** contains the Service list for the currently tuned Transport Stream. The list also contains a **ServiceID** item, which allows the user to select the Service by typing in the correct Service ID. By selecting a Service in the Service list, the decoder will decode the selected Service on the corresponding audio output.

Navigate to the **Audio2 Service Menu**. Select the following options:

- **ServiceID -** display or change the service ID for the decoded Service.

- **Service List -** press the Up and Down arrows until the selected Service is displayed. A small check mark is displayed in front of the Service, indicating that it is selected.

The **Audio2 Service Menu** also allows the user to select which of the available audio components are to be decoded. This is relevant for services with multiple audio streams associated with the video.

- **Aud2 Lang -** enter the three-character ISO language code to select the correct audio PID for the selected audio Service.

4.5　Set the Default Output Options

The **Setup Menu** contains all the submenus and items, required to set the configuration and control the daily use of the unit.

Navigate to the **Video Setup Menu** under **Setup** and change the preferred video format to be used when the unit is not decoding video. [2]

Select the following options:

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[2] The Videoformat selection is not a format converter. The video format of the incoming MPEG stream overrides this setting.

- **Line Standard -** change the default line standard to be used when the unit is not decoding video: 525 or 625 selectable.

- **525 Video -** change the preferred 525 video format to be used when the unit is not decoding video: NTSC, PALM selectable.

- **625 Video -** change the preferred 625 video format to be used when the unit is not decoding video: PAL, PALCN, SECAM selectable.

5   Typical Configurations

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It may also be necessary to modify some of the other default settings to suit the particular installation, see the *Reference Guide* for details.

6 Equipment Packaging

6.1.1 Packaging Statement

The outer carton and any cardboard inserts are made from 82% recycled material and are fully recyclable.

The Stratocell ® or Ethafoam 220 ® polyethylene foam inserts can be easily recycled with other low density polyethylene (LDPE) materials

6.1.2 Packaging Markings

The symbols printed on the outer carton are described below:

Handle with care.

This way up.

Fragile.

Protect from moisture.

See Reference Guide for compliance with directives details.

See Reference Guide for compliance details.

Defines country of origin.

The packaging is reusable per GB 18455-2001.

This symbol guarantees that packaging with this symbol is recyclable and will be accepted by cardboard recyclers.

Recyclable per GB 18455-2001.

7 Materials Declarations

7.1 Overview

Ericsson products are designed and manufactured in keeping with good environmental practice. Our component and materials selection policy prohibits the use of a range of potentially hazardous materials. In addition, we comply with relevant environmental legislation.

7.2 For the European Union

For product sold into the EU after 1st July 2006, we comply with the EU RoHS Directive. We also comply with the WEEE Directive.

7.3 For China

For product sold into China after 1st March 2007, we comply with the "Administrative Measure on the Control of Pollution by Electronic Information Products". In the first stage of this legislation, content of six hazardous materials has to be declared together with a statement of the "Environmentally Friendly Use Period (EFUP)": the time the product can be used in normal service life without leaking the hazardous materials. Ericsson expects the normal use environment to be in an equipment room at controlled temperatures (around 22°C) with moderate humidity (around 60%) and clean air, near sea level, not subject to vibration or shock.

Where Ericsson product contains potentially hazardous materials, this is indicated on the product by the appropriate symbol containing the EFUP. For Ericsson products, the hazardous material content is limited to lead (Pb) in some solders. This is extremely stable in normal use and the EFUP is taken as 50 years, by comparison with the EFUP given for Digital Exchange/Switching Platform in equipment in Appendix A of "General Rule of Environment-Friendly Use Period of Electronic Information Products". This is indicated by the product marking:

It is assumed that while the product is in normal use, any batteries associated with real-time clocks or battery-backed RAM will be replaced at the regular intervals.

The EFUP relates only to the environmental impact of the product in normal use, it does not imply that the product will continue to be supported for 50 years.

8 Disposal of this Equipment

8.1 General

Dispose of this equipment safely at the end of its life. Local codes and/or environmental restrictions may affect its disposal. Regulations, policies and/or environmental restrictions differ throughout the world. Contact your local jurisdiction or local authority for specific advice on disposal.

8.2 For the European Union

"This product is subject to the EU Directive 2002/96/EC on Waste Electrical and Electronic Equipment (WEEE) and should not be disposed of as unsorted municipal waste."

9   Recycling

Ericsson SA TV Recycling has a process facility that enables customers to return Old and End-of-Life Products for recycling if it is required.

Ericsson provides assistance to customers and recyclers through our Ericsson and SATV Recycling eBusiness Portal.

This can be reached at: https://ebusiness.ericsson.net/.

Click on the Login Page then enter:

```
User id:  ETelevision
Password: Television
```

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