

4T2-Rack Platform Unit Manual

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1 First steps

1.1 Which products are covered by this manual?

This manual covers the 4T2-Rack platform units from 2014 models onward.

ABC takes great care that any new features added during the life-span of the equipments are backward-compatible.

Software manuals released after the shipment of the hardware usually refer to all released software versions.

Shall your hardware's application software be missing some of the features mentioned in the manuals, it is likely that there is a new and improved firmware-version available for download.

If you require any assistance to download, install, or with the configuration please contact your local support company, or Advanced Broadcast Components Ltd. representation in your region.

1.2 Available configurations

The 4T2-Rack platform units can be ordered in a variety of different configurations, each of which is tailored to specific measurement tasks. In general, all input interfaces of the ABC XTASI-line can be integrated into the system.

To date, there are the following modules available for integration into the 4T2-Rack:

- XTASI-ASI input modules
- XTASI-RF DVB-T/T2 input modules
- XTASI-S2 DVB-S/S2 input modules
- IP interfaces
- Integration of ASI/T2 and IF Sampler with expert software demodulation

Several configurations of modules are available, such as the combination of ASI, T2, and S2 in a single instrument.

Custom designs have been made available over time, to enable broadcasters to solve some unique requirements (examples listed only):

- DVB-S2 SourceScanner
- Quad high-speed ASI source

1.3 What is in the box?

- ABC 4T2-Rack Platform Unit in 19" , 1U frame
- Power cord, country variant to be specified on order
- This manual

If you are missing any of these items, please contact Advanced Broadcast Components Ltd.

Advanced Broadcast Components Ltd. recommends saving your box and its packing materials. Original packaging is preferred for shipment or relocation of your device. Substitute packaging may not provide adequate protection.

1.4 Environmental aspects

The device has been designed under aspects of environmental friendliness. The packaging has been optimised in terms of recycling possibilities, transport safety and weight savings. At end of life time the device may be completely recycled. Any recycling organisation may separate the material without taking into account special safety regulations.

1.5 Safety remarks

This manual addresses qualified personnel being familiar with the relevant safety standards in RF-measurement techniques. It is recommended to install and operate ABC Ltd. equipment by qualified personnel only.

Maintenance of ABC Ltd. equipment shall be performed by qualified ABC Ltd. personnel only.



Equipment shall be used only for the range of operations mentioned in this manual. Please adhere to all mentioned data. The product has been developed and manufactured according to all relevant safety standards. Observing the instructions for safety and operations mentioned in the manual using the transmitter monitor does not cause any hazardous situation for man or matters. Unqualified operations on hard- and software as well as neglecting the safety hints fixed to the device may lead to personal or material damage.



Additional or extensional devices to ABC Ltd. equipment may only be used if recommended by ABC Ltd.



Any other usage or operation from the one mentioned in the manuals will be treated as not agreed.



All relevant safety and accident prevention instructions have to be observed during commissioning, operation and maintenance.



All safety regulations and accident prevention instructions according to the specific operation scenario have to be observed. Opening of equipment voids the warranty.



Regular checks have to be done in order to verify that the power cable connected to the instrument is in good condition. In case of a power cable problem, the cable has to be removed from mains immediately and the defective cable has to be replaced.



Do not attempt to power the instrument from any receptacle other than a 2 pole 3-wire grounded receptacle.



Before setting into operation, check for conformity between the allowed voltage range and the mains provided by the local power supply.



Do not place the instrument close to liquids, don't allow liquids or any foreign objects to get inside.



Do not place the instrument in direct sunshine or close to strong heat-emitting sources.



Do not block air vents in the back, or on the front of the instrument.

2 Getting started

2.1 Product Overview

The ABC 4T2-Rack Platform Unit is the latest generation of Advanced Broadcast Components Ltd. System components for measurement and analysis. Systems are available in digital terrestrial, satellite, or IP input configurations.

2.2 Installation considerations

The ABC 4T2-Rack equipments are precision instruments.

Although great efforts have been made designing the machines to sustain many years of use, there are natural limits to durability.

It is therefore recommended to install the systems in a 19" rack. It should be assured that the rack is properly ventilated.

The 4T2-Rack uses internal fans to draw air from the front to the ventilation slots on the back of the instrument. Please make sure that the airflow to the vents is not restricted in any way.

It should also be avoided to expose the instrument to high temperatures, high humidity, or water in its liquid form.

2.3 Installation

Please make sure that the connections are performed using high quality cables and connectors. In many cases malfunction of equipment happens due to improper wiring of poor quality.

In order to receive transport stream data via IP, it is recommended to use a homogeneous Gbit ethernet environment. Lower bandwidth networks may result in dropped pictures, or instable behaviour of the streaming system.

The 4T2 Content Analyser logfile-display is a good source of information, as any packet inconsistencies are logged with their time of occurrence.

2.4 Start-up procedure

The 4T2-Rack Demodulator instrument runs under Microsoft Windows. On start-up, the application software programs are launched automatically.

All software modules are controlled by *initialisation files* and start in unattended mode by default.

2.5 Important operation remarks

All ABC Ltd. equipment is running under Microsoft Windows™ operating system.

Please take note of the following remarks to make sure that you always get the optimum measurement performance:



Running 3rd party applications while operating may have negative influence on the processing speed.



Make sure that the operating system configuration is not changed, updated or otherwise altered under any circumstances as this may influence the overall performance.



Installation of not approved third party hardware may damage the equipment and is not covered through the warranty.
We recommend to consult ABC, if in doubt of compatibilities of hardware.



Running the monitoring software under Windows presumes having administrator privileges (default shipping configuration).



Opening of the transmitter monitor voids the warranty.
There are no user serviceable parts inside.



The BIOS might be password protected (default pwd: dvbt).
It is not recommended for the user to change the BIOS settings.

3 4T2-Rack Platform Unit front features



Power Switch
Running Indicator

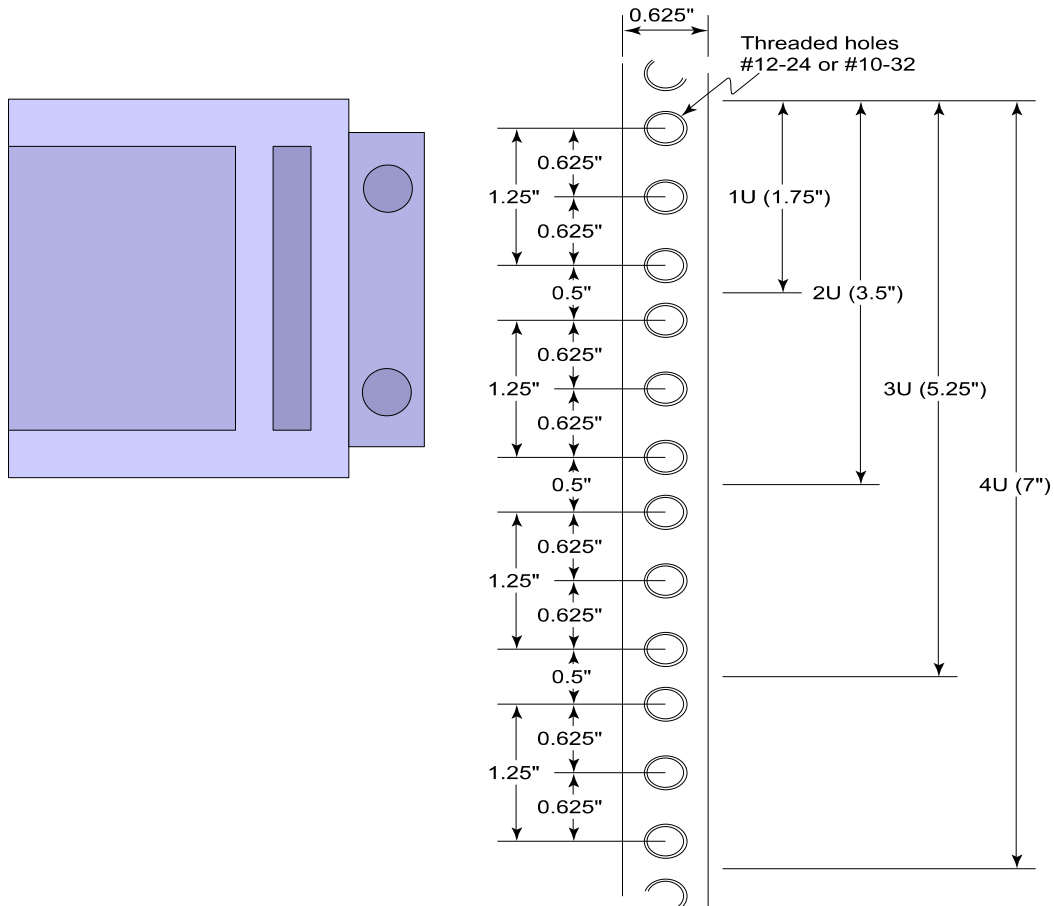
4 Rear connectors and features



mains	HID	Video		interface	audio	input(s)	
				ethernet	microphone		
				USB	speaker front	RF	ASI
mains	keyboard	HDMI	VGA	USB	speaker rear	(depending on application)	

5 Rack-Mounting and Spacing

The 4T2-Rack Platform Unit is designed to operate in standard 19" racks.



4T2-Rack PFU mounting holes

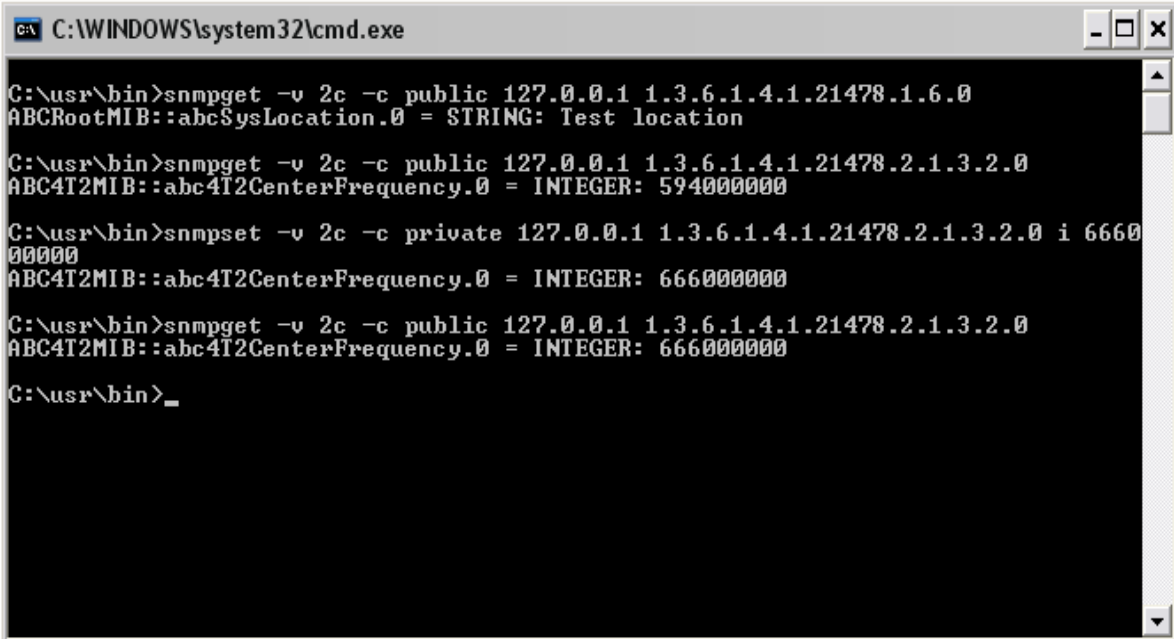
Standard 19" rack rail configuration

6 SNMP access

The 4T2-Rack implements an SNMP server based on the SNMP service (SNMP, simple network management protocol) that is part of the Windows installation (XP or later).

Any SNMP manager software can be used to access the 4T2-Rack SNMP server.

The screen-shot below shows examples of read and write access to the instrument through the cmd-line, using the open source software package net-snmp (documentation on NET-SNMP can be found under <http://www.net-snmp.org/>).



```

C:\WINDOWS\system32\cmd.exe
C:\usr\bin>snmpget -v 2c -c public 127.0.0.1 1.3.6.1.4.1.21478.1.6.0
ABCRootMIB::abcSysLocation.0 = STRING: Test location

C:\usr\bin>snmpget -v 2c -c public 127.0.0.1 1.3.6.1.4.1.21478.2.1.3.2.0
ABC4T2MIB::abc4T2CenterFrequency.0 = INTEGER: 594000000

C:\usr\bin>snmpset -v 2c -c private 127.0.0.1 1.3.6.1.4.1.21478.2.1.3.2.0 i 666000000
ABC4T2MIB::abc4T2CenterFrequency.0 = INTEGER: 666000000

C:\usr\bin>snmpget -v 2c -c public 127.0.0.1 1.3.6.1.4.1.21478.2.1.3.2.0
ABC4T2MIB::abc4T2CenterFrequency.0 = INTEGER: 666000000

C:\usr\bin>_

```

6.1 Read access examples

The first command queries the **abcSysLocation** entity containing the value of the “Site Info” field of the 4T2 RF-Analyser application software as a readable character string. It uses the net-snmp “snmpget” command.

SNMPGET-parameters to return **abcSysLocation** with NetSNMP:

-v 2c	use SNMP Version 2c
-c public	use “public” as a read-access community name
127.0.0.1	use 127.0.0.1 (localhost) as IP-Address of the 4T2-R
1.3.6.1.4.1.21478.1.6.0	abcSysLocation.0 entity

NetSNMP returns the type **STRING** with the value **Test location**.

The Advanced Broadcast Components Ltd. specific MIB (Management Information Base) files are located in the application\MIB\ subfolder.

The Advanced Broadcast Components Ltd. SNMP implementation follows the DVB standard. The reference document **ETSI TS.102.032** can be found at **www.dvb.org**.

The second command queries the **abc4T2CenterFrequency** entity containing the current receiver front-end frequency in Hz as an Integer value.
The usage of the parameters is similar to the first example.

SNMPGET-parameters to return **abc4T2CenterFrequency** with NetSNMP:

-v 2c	use SNMP Version 2c
-c public	use "public" as a read-access community name
127.0.0.1	use 127.0.0.1 (localhost) as IP-Address of the 4T2-Rack
1.3.6.1.4.1.21478.2.1.3.2.0	abcCenterFrequency.0 entity

NetSNMP returns the type **INTEGER** and the value **594000000**.

6.2 Write access examples

To change the receiver front-end frequency the command SNMPSET is used.

SNMPSET-parameters to change **abc4T2CenterFrequency** with NetSNMP:

-v 2c	use SNMP Version 2c
-c private	use "public" as a read-access community name
127.0.0.1	use 127.0.0.1 (localhost) as IP-Address of the 4T2-R
1.3.6.1.4.1.21478.2.1.3.2.0	abcCenterFrequency.0 entity
i	integer
666000000	666 MHz

NetSNMP returns the type **INTEGER** and the value **666000000**.

Since the link between the server and the 4T2-Rack application is asynchronous, it is highly recommended to re-read the written value using SNMPGET (like in example #2).

7 Technical specifications


Hardware installed	Parameter	
CPU	Multi-Core	
motherboard	Mini-itx	
RAM	DDR IV 2100	8 GB
Storage	SATA-III SSD	240 GB
Network	Ethernet (TCP/IP) 1 Gbit/s	
Operating System	Windows™ 10	64bit
Displays	HDMI, VGA	Multi monitor operation supported

Mechanical / Environmental		
Dimensions (w x d x h)	483mm (19in) x 250mm x 44 mm.	
Weight	4.5 kg	
Power Supply	47 ... 63 Hz; 90 ... 260 V; 400 W	
Operating Temperature	0 °C ... + 40 °C	
Storage Temperature	-20 °C ... + 60 °C	
Relative Humidity	5% .. 85% (non-condensing)	

Standards / Qualifications	
DVB compliance	EN 300 744, EN 302 304
Measurement Guidelines	TR 101 290
MPEG Compliance	ISO/IEC 13818-1; ITU-T H.222.0
EMC	DIN EN 55022: 2001-09
	DIN EN 55024: 2002-11
	DIN EN 55013: 2003-10
	DIN EN 61000-3-2: 2001-12
	EN 60950-1
Safety	EN 60 529; DIN VDE 470; IP20
Environmental Protection	EN 60 529; DIN VDE 470; IP20
Temperature Range	ETS 300 019-1-7 Class 7.1
Vibration	ETS 300 019-1-7 Class 7.1
Humidity	ETS 300 019-1-7 Class 7.1
Transportation	ETS 300 019-2-2 Class 2.3
Storage	ETS 300 019-1-1 Class 1.2

8 Miscellaneous

8.1 Declaration of conformity

	DECLARATION OF CONFORMITY according to EN 45014	
<p>Manufacturer : Advanced Broadcast Components Ltd. Wacholderstrasse 13, 23795 Bad Segeberg Germany</p> <p>We declare under our responsibility that the product:</p> <p>Product Name : 4T2-Rack Platform Unit Model Number : 20.100.000 Trademark : 4T2</p> <p>is in conformity with the essential requirements of the R&TTE Directive 1999/5/EC. The above mentioned product is in compliance with the following European standards:</p> <p>Electrical Safety EN 60950-1:2001</p> <p>EMC ETSI EN 55022:2001-09 ETSI EN 55024:2001-11 ETSI EN 55013:2003-10 (partly) ETSI EN 61000-3-2:2001-12</p> <p>Low Voltage Directive 73/23/EWG</p> <p>This declaration ist based on tests performed on 4T2 instruments by:</p> <p>Phönix Test-Lab, Königswinkel 10, 32825 Blomberg, Germany, Reg.No. DAT-P-105/00-00, NB-Nr.0700 Motorola EMV-Lab., TecCenter, 31162 Bad Salzdetfurth, Germany, Reg.No. TTI-P-D014/95-01</p> <p>Bad Segeberg, Germany, 01.06.2016</p> <p> Frank Wenzl Director</p>		

8.2 Maintenance and calibration

The 4T2-Rack Platform Unit has been designed as a robust test unit, which under any circumstances should not require special maintenance routines.

Depending on the actual configuration, installed receiver modules may however require specific calibration or service intervals to be met.

8.3 Dimensions and shipping information

	Packing Option	Status	Dimensions (h x w x d) [mm]	Weight [kg]
ABC 4T2-Rack PFU	carton box	standard	140 x 500 x 380	5.2

8.4 Application notes

A number of application notes are available from Advanced Broadcast Components Ltd. These documents give further insight into the theory of operation and special applications.

The most up-to-date source for application notes is the internet. Printed copies can be ordered directly from ABC Ltd.

8.5 Waiver

While the information contained in this document has been carefully compiled to the best of our present knowledge, it is not intended as representation or warranty of any kind on our part regarding the suitability of the products concerned for any particular use or purpose and neither shall any statement contained herein be construed as a recommendation to infringe any industrial property rights or as a license to use any such rights. The suitability of each product for any particular purpose must be checked beforehand with our specialists.

8.6 Document history

Date	Release	Status
01.11.14	1.0.0	Approved
01.04.15	1.0.1	Approved
20.08.16	1.0.2	Approved