

# RT|10 Top-up device

## DATASHEET

### NEXT GENERATION TOP-UP DEVICES (RT|10)

This new lightweight Top-up device RT|10 offers instant opportunity and convenience to top-up electronic travel cards. The RT|10 is a self-operated terminal, designed with its own processor, memory, interfaces and communication. The communication between the RT|10 and the Back office is provided by a configurable 4G router.

When a travel card needs to be topped up, passengers simply insert their travel card, selects the desired top-up action on the touch screen and performs the payment with the built in payment terminal.

The RT|10 has an implementation for the Dutch OV-chipkaart scheme currently supporting e-purse top-up, product sale, product-revocation, retrieving internet-based orders (NAL) and an information use case (showing card content like travel history and loaded products).

As the RT|10 is equipped with an advanced smartcard reader, other scheme implementations are possible.

**The RT|10 is based on the Scheidt & Bachmann standard OV|41 Validator.**

#### **Signalling**

3-coloured LED indicator (green, yellow, red). 4 additional LEDs for the processing of open payment transactions and an audible buzzer.

#### **Ergonomic user interface**

Includes a large scaled 5,7" touch display with durable LED backlight, anti-glare with extra wide viewing angle.

#### **Rugged housing**

Pry resistant, impact proof and flame retardant plastic housing. Front plate made of hardened glass.

#### **Mounting**

Easy mounting to vertical vehicle railings. Lockable mounting unit made of industrial aluminium.

#### **Optional printer**

Below the Payment terminal can be mounted in a separate housing. This printer can be used for receipt and barcode tickets



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## TECHNICAL SPECIFICATIONS

<b>OV 41</b>		<b>OV 41</b>	
<b>General</b>		<b>Computer</b>	
■ Height	295mm	■ <b>Temperature sensors</b>	Temperature sensor for system shutdown outside of specified temperature ranges
■ Width	155mm	■ <b>On-board clock</b>	Real-time clock, capacitor buffered
■ Depth	56mm	■ <b>Audio</b>	Audio on board
■ Display diagonal	5,7"	■ <b>Power supply</b>	Power supply via Power Switch Box or Power Box
■ Display Ratio	4:3	■ <b>Interfaces</b>	100 Mbit Ethernet interface
■ Display Resolution	640 x 480 (VGA)	<b>Valina Payment Terminal</b>	
■ Display Colors	262.144	<b>General</b>	
■ Display Backlight system	LED based	■ <b>Processor</b>	ARM Cortex A9 (600 MHz)
	lifetime 50.000 hours	■ <b>Operating system</b>	Android
■ Display Contrast ratio	200 typ.	■ <b>Memory</b>	1 GB RAM, 4 GB Flash
■ Display Brightness	350 cd / m <sup>2</sup>	■ <b>Display diagonal</b>	3.5"
■ Display Viewing angle	Readable minimum 45° in all directions	■ <b>Display Resolution</b>	320 x 480
■ Touchscreen	Capacitive	■ <b>Display Colors</b>	64K
<b>SmartCard Reader</b>		■ <b>Touchscreen</b>	Capacitive
■ eTicketing: Processing of Smart Cards according to ISO 14443 A or B	<ul style="list-style-type: none"> <li>● MIFARE Classic 1K/4K</li> <li>● MIFARE Plus 2K/4K S/X</li> <li>● MIFARE DESfire D40/EV1</li> <li>● MIFARE Ultralight C, EV1</li> <li>● Smart MX</li> <li>● Innovision jewel (UK – ITSO)</li> </ul>	<b>Security &amp; approvals</b>	
■ Processing of Smart Cards according to ISO 15693	Vicinity Cards	● PCI PTS 4.x (SRED and Open Protocols)	
■ Contactless NFC ISO 18092	NFC ISO 18092 passive initiator mode	● MasterCard TQM	
■ Possible implementation of specific operational schemes like:	<ul style="list-style-type: none"> <li>● VDV-KA (Germany)</li> <li>● ITSO (United Kingdom)</li> <li>● OV Chipkaart (Netherlands)</li> <li>● Calypso</li> <li>● Contactless credit cards</li> <li>● Customer specific layout</li> <li>● Scheidt &amp; Bachmann Mifare Smart Card Standard</li> </ul>	● VISA and MasterCard Level 2	
■ Compliance to EMV	<ul style="list-style-type: none"> <li>● EMV Level 1</li> <li>● EMV Level 2 for VISA, MasterCard, Amex</li> </ul>	● EMVCo Level 1 contact V4.3	
<b>Computer</b>		● EMVCo Contactless V2.5	
■ Processor	IMX6 ARM Cortex-A9 Trizeps VII CPU module industrial version with 800MHz	● Directives 1995/5/CE, 2004/108/CE	
■ RAM	1 GB RAM	● 2006/95/CE	
■ Memory	1 microSD card1 (System memory) up to 32GB	● Environmental directives Reach, RoHS 2, WEEE	
	Optional: 1 microSD card (backup data)	● FCC	
■ Operating system	Linux	● CE	
		<b>RUT950 Router</b>	
		■ <b>Mobile</b>	4G (LTE) – Cat 4 DL up to 150 Mbps, UL up to 50 Mbps; DC-HSPA+; UMTS; TD-SCDMA; EDGE; GPRS
		■ <b>CPU</b>	Atheros Wasp, MIPS 74Kc, 550 MHz
		■ <b>Memory</b>	16 MB Flash, 128 MB DDR2 RAM
		■ <b>Ethernet</b>	4 x 10/100 Ethernet ports: 1 x WAN (configurable as LAN), 3 x LAN ports
		■ <b>Connectors</b>	1 x 4 pin DC, 4 x Ethernet, 2 x Mobile SMA, 2 x WiFi RP-SMA
		■ <b>Operating system</b>	RutOS (OpenWrt based Linux OS)
		■ <b>SIM switch</b>	2 SIM cards, auto-switch cases: weak signal, data limit, SMS limit, roaming, no network, network denied, data connection fail

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