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VTR850-B On-board Unit

CEN/TC278 5.8 GHz DSRC multi-application OBU

Description

The VTR850-B is member of the VTR850 family of OBUs. The VTR850 family features a unique single-chip design, where analogue and digital circuitry are integrated into the same silicon chip.

The VTR850 family is the newest generation of Norbit ITS DSRC OBUs, featuring long lifetime, compact size and excellent performance at any speed. It is built on the experience Norbit ITS has gained designing and producing OBUs during the last decade. Millions of OBUs and DSRC Modules designed by Norbit ITS are in use on the world market.

Antenna and microwave circuitry contains patented technology, allowing high performance even under demanding conditions.

The integrated high speed microprocessor allows the VTR850 to handle any practical number of applications with minimum transaction time for DSRC transactions.

Fast DES and 3DES in hardware ensures the VTR850 supports all relevant security operations such as Access Credentials and Authentication at full speed.

Storage of personalization data and security keys is done in protected memory.

The integrated buzzer can be activated from the roadside during a DSRC transaction. Buzzer tones can be customized to suite various needs.

The VTR850-B is mounted on the windscreen by a windscreen bracket.

Features

- Small size and weight
- Long lifetime
- Field-proven performance and reliability
- Windscreen bracket allows easy removing and reattaching of OBU
- Secure storage of data
- Compliant with all relevant DSRC standards
- Supports up to 8 simultaneous applications / elements
- Supports a range of EFC applications such as EN15509, PISTA, CARDME, A1, AutoPASS, AS4962-A/B, OGS
- Supports AVI and customer specific application types and variants
- Large and flexible storage area for personalization data and security keys
- Custom colours available on casing
- Can be equipped with customer specified pad print or label on either side
- Can optionally detect removal of OBU from bracket
- VTR850-R model with reclosable fastener mounting is also available

VTR850

VTR850-B technical features

Physical

Size	69 x 46 x 22 mm (bracket builds additional 2.5 mm)
Weight	43 g

Electrical

Frequency	5.8 GHz
Conversion gain	> +7 dBi
Sensitivity	< - 43 dBm
Battery	+ 3.6V Lithium thionyl chloride

Environmental

Operating temperature	-25 °C - +85 °C
Storage temperature	-40 °C - +90 °C
Protection	IP40 (EN 60529)
Climate	IEC 60721-3-5, Class 5K2
Vibration/shock	IEC 60721-3-5, Class 5M3
Biological	IEC 60721-3-5, Class 5B1
Chemical	IEC 60721-3-5, Class 5C1
Fluids	IEC 60721-3-5, Class 5F1

Drop

1000 mm on each face

Lifetime

Battery	Typically > 7 years under normal use
Transaction capacity	ISO 14815 Class A2
MTBF	200.000 hours

Colour

Standard colour	RAL 7035

Other colours on request, including different colours on front and back sides.

Marking

Serial number/PAN	Printed in text and bar code (default CODE 128)
	Customer defined numbering is available

The VTR850 can optionally be marked with pad-print or label on front and/or back side.

DSRC Communication

Physical layer	EN 12253
Data link layer	EN 12795
Application layer	EN 12834
EFC application profile	EN/ISO 14906
DSRC Profile	EN 13372 (Profile 0/1, Set L1-B)
Interoperability	GSS 3.2, EN 15509

DSRC compliance verification

Data link layer	ETSI TS 102486-1
Application layer	ETSI TS 102 486-2
EN 14906 compliance	ISO/TS 14907
EN 15509 compliance	EN 15876

Conformance

R&TTE	Ref. 99/5/EC
ERM	ETSI EN 300 674-2-2
EMC	Ref. 2004/108/EC
	ETSI EN 301 489
LVD	EN 60950
RoHS	Ref. 2011/65/EU
WEEE	Ref. 2012/19/EU

Accessories

Standard:
- Mounting bracket

Optional:
- Wet wipe
- Mounting instructions according to customer requirements
- ESD shielded return envelope for returning old OBU

Extra accessories may be ordered

Packaging

- Individually packet in ESD shielded envelopes, or in trays stacked in boxes

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