# Technical Description

## Moby STG D

# Specification

## MOBY STG D v1.0

scemtec

Transponder Technology GmbH

| project name | | version | |
|---|---|---|---|
| **MOBY STG D** | | **1.0** | |
| build date | author | last change | author |
| **07.12.06** | **B. Bröhl** | **12.01.07** | **Burkhard Bröhl** |
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| project manager | development manager | Managing director scemtec | customer |
| <project manager> | Jürgen Kalbitzer | Rudolf Schmitz | <customer> |

**Important notice:**

**As with all electronic systems, the electronic circuitry on its own is not approved for safety-critical applications.**
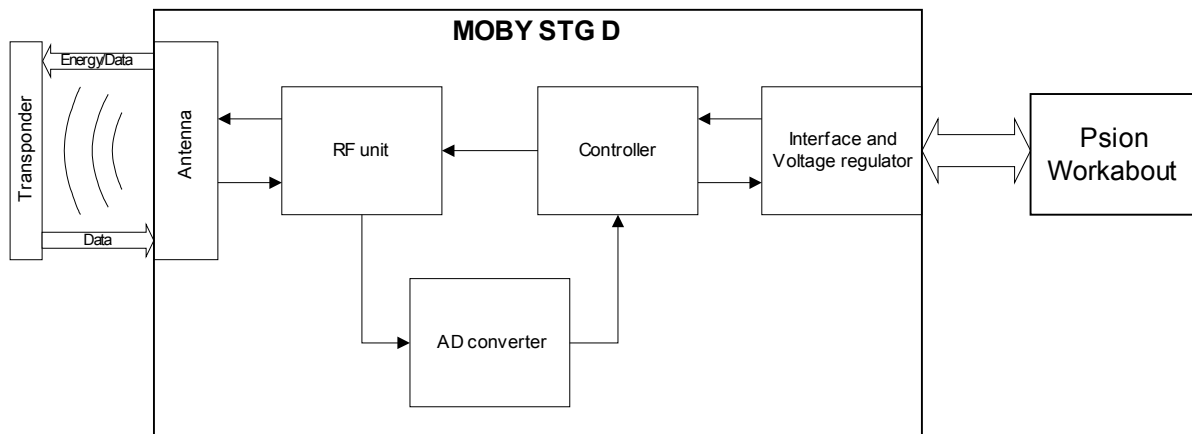
# Contents

# 1   General

The Psion Plug-On Moby STG  D device is a RFID transponder reader module for the Psion Workabout. It is capable to read and write several types of 13.56 Mhz Transponders contactless.

The reader module can be connected on the top of the Psion workabout hand-held device. Power supply and communication is realized via the serial TTL interface of the Psion.

# 2 Hardware

The hardware of the module can be divided into 5 units:

- Interface
- Controller
- Rf unit
- AD-converter
- Antenna



## 2.1 Interface and Voltage regualtor

The interface to the host system (Psion Workabout) is realised by TTL connection via a SUB D connector and includes as well the power supply. The voltage provided by the psion is regulated down to the voltage level needed by the Controller.

Pin Configuration:

| | |
|---|---|
| +5 V | pin 4 |
| RXD input | pin 3 |
| TXD output | pin 2 |
| GND | pin 5, 9 |

## 2.2   Controller

The controller unit consists Gigital signal processor (DSP) with external Flash memory, RAM and EEPROM. The DSP is able to handle the communication with the Psion Workabout and the transponder. The transponder data can be converted and the Rf field can be switched on and off.

## 2.3   Rf unit

The RF unit consists of the driver for the antenna and the demodulation unit for the received data.
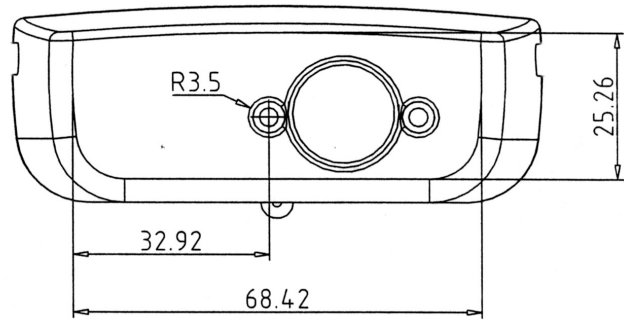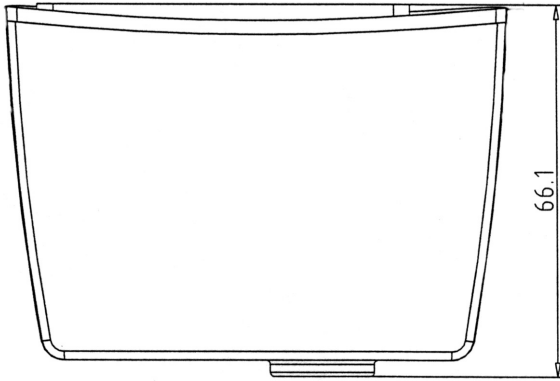
## 2.4   AD converter

The AD converter converts the demodualted data from the RF unit to a digital data stream, which can be processed by the DSP.

## 2.5   Antenna

The system has an integrated PCB antenna mounted in front of the modul.

# 3   Mechanical dimensions

# 4 Electrical data

| | |
|---|---|
| Power supply | 5V DC +5%, -2,5% (standard voltage supply on PSION interface) |
| Current consumption | < 200 mA |
| Transmit frequency | 13,56 MHz |
| Antenna | Mounted inside (front reading/writing direction) |
| Supported transponders | ISO 15693 compliant Tags, Philips I-CODE |
| Interface | serial, asynchronous, 9600 – 115200 Baud (default 9600), TTL |

# 5   Related Documents

STX/ETX Protocol description

# 6 Document History

| Version | Date | Changed by | Description |
|---------|------|------------|-------------|
| 1.0 | 21.12.06 | B.Bröhl | – First officialversion |
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