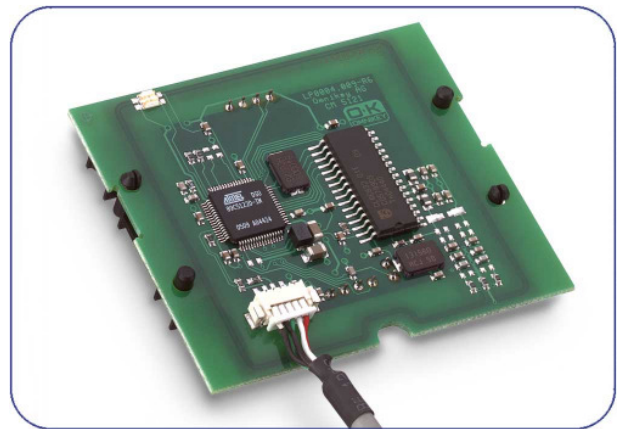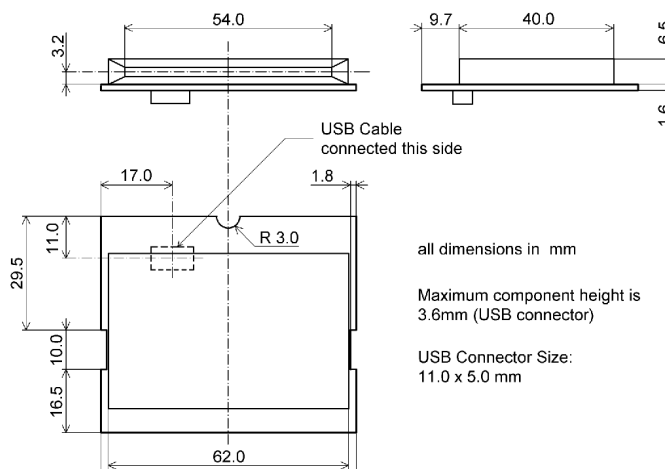# CardMan® 5121 Reader Board

USB connected 13.56 MHz RFID Smart Card Reader PCB

OMNIKEY, one of the world´s leading manufacturers of innovative smart card readers, has developed a modern and state-of-the-art dual interface smart card reader. The CardMan® 5121 Reader Board combines the advantages of contactless and contact smart card technology in a single USB device as built-in device for OEMs.

USB Cable connected this side

all dimensions in mm

Maximum component height is 3.6mm (USB connector)

USB Connector Size: 11.0 x 5.0 mm

OMNIKEY´s CardMan® 5121 Reader Board

The CardMan® 5121 Reader Board is a dual interface PC-linked reader that reads/writes to both a 13.56 MHz contactless smart card and virtually any contact smart card. The dual interface feature economically supports end-user environments where both contactless and contact smart card technology may be in use. With this product we support contactless smartcards with up to 424kbps.

Advantages of an OEM Dual Interface Reader

The ready-to use desktop device CardMan® 5121 is fully certified so that certification of your devices with the built-in OMNIKEY reader is no problem.
It can be used and tested as is following the well-known high quality standards of our housed readers.

Supported Applications

The CardMan® 5121 Reader Board shares the same driver platform with the CardMan® 5121 desktop device and is therefore usable in any application based on the supported operating systems.

Contactless Smart Cards Supported

The CardMan® 5121 Reader Board is based on a 13.56 MHz contactless smart card interface that is compliant with ISO specifications 14443 A and B and 15693. The reader works with a variety of 13.56 MHz contactless smart cards including, but not limited to:
- Philips: MIFARE®,DESFire®,MIFARE ProX®, SMART MX, and i.code
- HID: *iCLASS*®
- Texas Instruments: TagIT®
- ST Micro: x-ident, SR 176, SR 1X 4K
- Infineon: My-d (in secure mode UID only)
- Atmel: AT088RF020
- KSW MicroTech: KSW TempSens

If you are using a 13.56 MHz contactless smart card for other applications, use the same card for OEM devices and applications today!

Consistent with OMNIKEY's tradition of offering robust, technically superior firmware and driver support, the CardMan® 5121 Reader Board guarantees the highest level of interoperability available on the market. By sharing the same state-of-the-art technology features of the CardMan® 3121, OMNIKEY's contact smart card reader with USB interface, compliance with major standards such as ISO 7816, PC/SC, Microsoft WHQL, and EMV 2000 Level 1 specifications is guaranteed.

All certifications mentioned below are for the CardMan® 5121 where the Reader Board is built in.

CardMan® 5121 Reader Board

Host Interface	
USB 2.0 CCID[1] (also supports USB 1.1)	√
Transmission speed	12 Mbps
Power supply	Bus powered

Contact Smart Card Interface	
Compliant with ISO 7816 and EMV[2] 2000	√
Supports T=0, T=1	√
Supports 2-wire: SLE 4432/42 (S=10), 3-wire: SLE 4418/28 (S=9), SLE 4404	√
Supports I²C	√
Card Size	ID-1 (full size)
High-performance smart card interface (up to 420 Kbps when supported by card)	√
Smart card clock frequency up to 8 MHz	√
Supports 5V, 3V, and 1.8V smart cards ISO 7816 Type A, B and C	√
Supplies 60 mA current to power the smart card	√
Smart card movement detection with auto power-off	√
Automatic detection of smart card type	√
Short circuit and thermal protection	√
8 pin handling (C4/C8 supported)	√

Contactless (RFID) Smart Card Interface	
ISO 14443 A (424 Kbps transmission rate depending on card)	√
ISO 14443 B (424 Kbps transmission rate depending on card)	√
ISO 15693 (26 Kbps transmission rate depending on card)	√

Other Features	
LED status indicator	√

Compliance/Certification	
Microsoft® WHQL[3] certified	√
EMV[2] 2000 Level 1 certified	√
ISO 7816	√
HBCI[4]	√
USB 1.1 and 2.0	√
CCID (contact interface only)	√

API	
PC/SC driver	√
CT-API (on top of PC/SC, for contact interface)	√
OCF (on top of (PC/SC, for contact interface)	√
Synchronous API (on top of (PC/SC, for contact less interface)	√

PC/SC Driver Support	
Windows® 98/ME	√
Windows® 2000/XP	√
Windows® 2003 Server	√
Windows® XP 64bit (AMD64, EM64T, IA64)	√
Linux®	√

Hardware Specifications	
Dimensions (LxBxH)	66 x 55 x 11mm 2.6" x 2.16" x 0.43"
Weight with cable	75 gr/ 2.64 ounces
Operating temperature	0-55°C/ 32-131°F
Operating humidity	10-90% rH
Connector cable	180cm/ 70.9"
Durability	100,000 Insertions
Meantime between failure (MTBF)	500,000 Hours

Safety and Environmental Standards	
CE	√
FCC	√
UL	√

RoHS COMPLIANT 2002/95/EC

1= Chip Card Interface Device 2= Europay® MasterCard® Visa® 3= Windows® Hardware Quality Lab 4= Homebanking Computer Interface