Desktop KeyReader Plus

Operating Manual	Page 1 of 12	Author: Marcel Mörchen
Desktop KeyReader Plus	Document Version 1.0	
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DesktopKeyReaderPlus_EN.docx		

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1. Introduction

Desktop KeyReader Plus is a stationary device for reading out the vehicle data stored in the vehicle key. Once successfully read, the data is transmitted to a USB-connected PC. From there, the data is transmitted to a target system (KAI server).

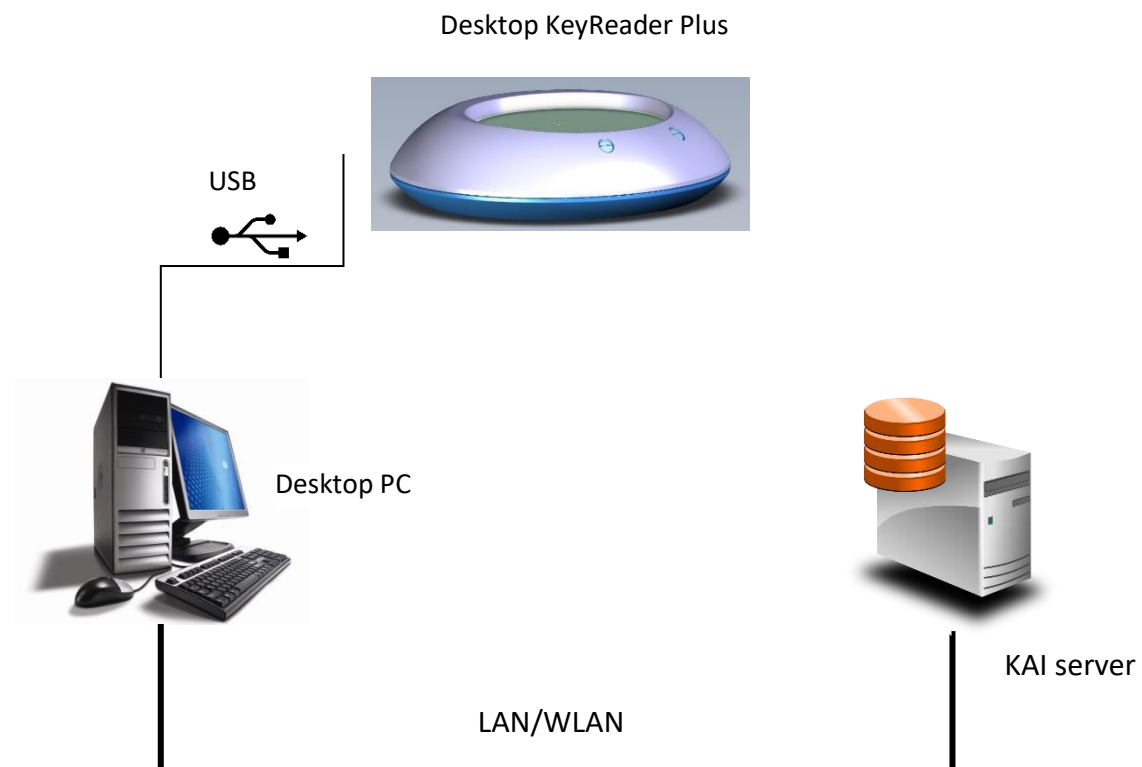The USB connection also ensures the power supply.

Desktop KeyReader Plus

USB

Desktop PC

KAI server

LAN/WLAN

Figure 1: Typical system configuration

1.1. Setup

To run and configure Desktop KeyReader Plus on a PC, first install and launch the ITOOLS-USBTrayApp software. This tool communicates with Desktop KeyReader Plus, receives read-out key data, and sends configuration commands, e.g. to adjust the volume.

This communication begins as soon as Desktop KeyReader Plus is connected.

1.2. Display and Control Elements

Desktop KeyReader Plus features a white LED (status LED) on the front left and a multicolor LED (key LED) on the front right.

The status LED indicates the current operating status:

- Off (not connected)
- Connected, but no communication established
- Connected and communication established with ITOOLS-USBTrayApp (normal mode)
- Connected and communication established with ITOOLS-USBTrayApp (VIN mode)

The key LED indicates a key's recognition and upload status. It also indicates the upgrade status when the device is undergoing an upgrade.

A detailed description is provided in Section 3

2. Mechanical Design

Figure 2: Top view

1) USB cable with type A plug connector
2) Round vehicle key tray
3) Status LED indicating operating mode(s)
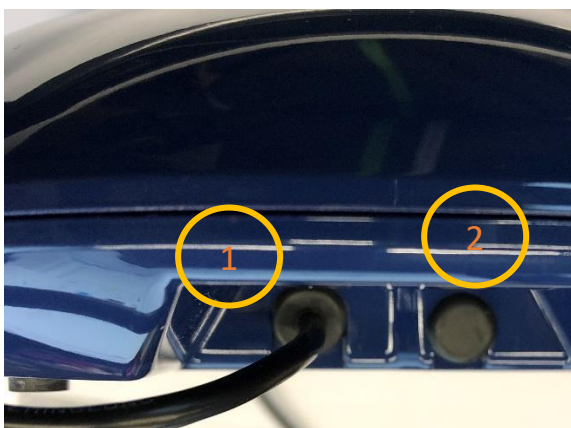4) Key LED indicating recognition/upload status or device upgrade status

Figure 3: Rear view

1) Grommet for USB cable
2) Rubber plug

3. Status LED Overview

Status LED (left LED):

Off	Solid white	Fast blinking white	Slow blinking white
No USB connection to PC. USB cable is not plugged in.	USB connection is OK. Communication with ITOOLS-USBTrayApp established successfully.	USB connection is OK. Communication with ITOOLS-USBTrayApp could not be established.	USB connection is OK. VIN mode is active.

Key LED (right LED):

Off	Slow blinking green	Solid green	Rapid blinking yellow
No key detected.	Key data uploading.	Key data successfully uploaded.	Device is in upgrade mode. Device is receiving new firmware.

4. Configuring Desktop KeyReader Plus

The ITOOLS-USBTrayApp software includes all drivers and configuration settings.

Please follow the instructions in the ITOOLS-USBTrayApp manual.

ITOOLS-USBTrayApp is a BMW application built for the BMW ISPI Next environment.
The software distribution, registration and documentation are in compliance with established ISPI Next standards.

5. Operating Desktop KeyReader Plus

5.1. Reading the Vehicle Key

When the status LED is on, you are free to place a key on the Desktop KeyReader Plus tray. The entire key must fit within the tray and must be positioned flat. The direction the key is pointing is irrelevant (see images below).

Do not move the key while it is being read.

Since Desktop KeyReader Plus is constantly scanning for different key types, it may take a while for the reading process to start. A confirmation signal sounds once a key is recognized.

A brief acoustic signal indicates the beginning of the reading process, and the key LED starts flashing green. Avoid moving the key during the reading process. When the key data has been uploaded, a

second confirmation signal sounds, and the LED light glows solid green for four seconds. (The upload time depends on the key and the amount of data stored, and may vary by several seconds).

Due to the large number of supported key types, it is difficult to recommend a single, universal procedure. As such, the scenarios illustrated are intended merely as a general guideline.

Data is transmitted exclusively via USB.

Other devices running on the same frequencies (125 kHz/13.56 MHz) may interfere with the upload quality. Please ensure that no other devices with the same frequency as Desktop KeyReader Plus are in the vicinity during operation. Please note that this applies in particular to other Desktop KeyReader Plus devices.

We recommend placing devices at least one meter apart.

Monitors, laptop chargers and printers can also cause interference that can affect Desktop KeyReader Plus's reading performance.

5.2.   Vehicle Key Data

Once Desktop KeyReader Plus issues the second confirmation (second beep and/or green LED), the vehicle key data is sent to the connected PC and stored by the ITOOLS-USBTrayApp in the folder specified.

For more information, please consult the ITOOLS-USBTrayApp manual.

6. Troubleshooting

- Desktop KeyReader Plus fails to read the key data even though the left LED indicates that the device is ready.

    Please check that
    - the USB port being used supplies a minimum of 500mAh (USB 2.0 standard)
    - the USB cable is not plugged in to a passive USB hub
    - the USB cable has not been extended using another cable.

7. Regulatory Notes

Desktop KeyReader Plus complies with the approval regulations of the following countries:

Desktop KeyReader Plus **KR0304**

Frequencies: 125kHz (Out: max. 2W) / 13,56MHz (Out: 1W)
Input: 5V DC / max. 500mA

P/N: 8131_5A27C04 $C \in FC$

Manufacturer:
TeraTron GmbH
Martin - Siebert - Str. 5
51647 Gummersbach
Germany

FCC ID: QLXKR0304
ISED ID: 4430A
HVIN: KR0304
IC: 4430A-KR0304

S/N: 123456

(((CCXXxxYYyyyZzW

CNC ID: XX-XXXX

Radiofrequency radiation exposure Information:
This equipment complies with FCC and IC radiation exposure limits set forth for an uncontrolled environment.
This equipment should be installed and operated with minimum distance of 20 cm between the radiator and your body.
This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Cet équipement est conforme aux limites d'exposition aux rayonnements IC établies pour un Environnement non contrôlé.
Cet équipement doit être installé et utilisé avec un minimum de 20 cm de distance entre la source de rayonnement et votre corps.
Ce transmetteur ne doit pas être place au même endroit ou utilise simultanément avec un autre transmetteur ou antenne.

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:
(1) This device may not cause interference.
(2) This device must accept any interference, including interference that may cause undesired operation of the device.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :
1) L'appareil ne doit pas produire de brouillage;
2) L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

USA:
Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules.
These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.
If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

不得擅自更改发射频率、加大发射功率（包括额外加装射频功率放大器），不得擅自外接天线或改用其它发射天线使用时不得对各种合法的无线电通信业务产生有害干扰；一旦发现有干扰现象时，应立即停止使用，并采取措施消除干扰后方可继续使用使用微功率无线电设备，必须忍受各种无线电业务的干扰或工业、科学及医疗应用设备的辐射干扰不得在飞机和机场附近使用。

取得審驗證明之低功率射頻器材，非經核准，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。低功率射頻器材之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。前述合法通信，指依電信管理法規定作業之無線電通信。低功率射頻器材須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。

Hereby, TeraTron GmbH declares that the radio equipment type Desktop KeyReader Plus (KR0304) is in compliance with Directive2014/53/EU.

CE

**Declaration of Conformity
DoC**

TeraTron

According to the Radio Equipment Directive 2014/53/EU (RED)

Company:	TeraTron GmbH
	Martin-Siebert-Straße 5
	D-51647 Gummersbach
	GERMANY
Product:	Desktop KeyReader Plus
Model Number:	KR0304
Intended purpose:	Vehicle Key ID Reader
Intended emission:	125 kHz, 13,56 MHz
Tested standards:	ETSI EN 300 330: V2.1.1 (2017-02)
	ETSI EN 301 489-1: V2.2.3 (2019-11)
	ETSI EN 301 489-3: V2.1.1 (2019-03)
	EN 62368- 1:2014/AC:2015/A11:2017
	EN 62479:2010

Gummersbach, March 11th, 2021

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