TR33CUT018

NFC Contactless Card Reader/Writer

(PR533 NFC Reader/Writer for Toppan Forms)

User Manual

Version: 1.0

TOPPAN FORMS

Toppan Forms Co. Ltd

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1 About this Document

1.1 Purpose and Contents

This document describes the setup and use of TR33CUT018 NFC Reader/Writer Module.

It includes the pcba information (TR33MUT014 pcba) on board layout, the antenna size and the interface to the host.

2 TR33CUT018 NFC Reader/Writer module description

The interface with the host controller is USB 2.0 full speed using USB cable.

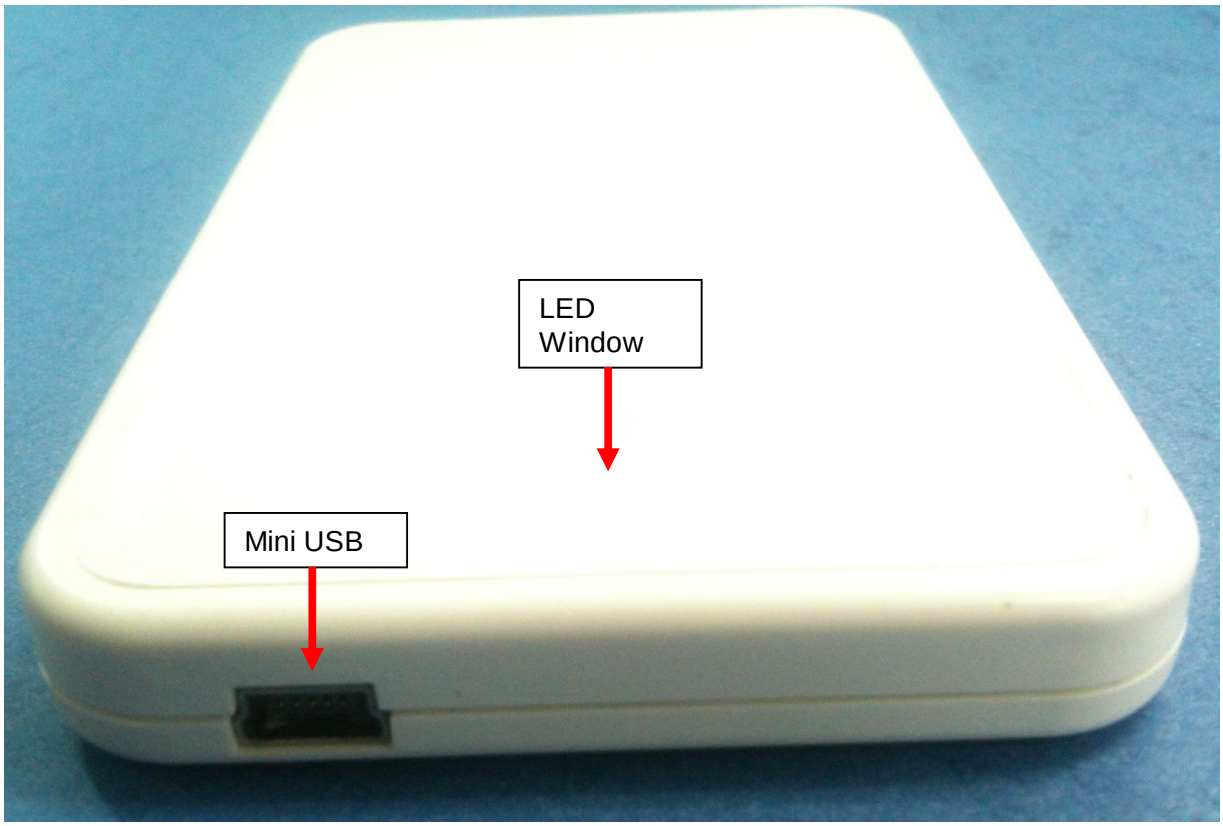


Fig 1. TR33CUT018 NFC Reader/Writer

2.1 Description

On the product, 2 parts are easily visible from external

- Mini USB connector
- LED window for indicating status

2.2 How to use this product

This product has to be connected through USB interface to a PC with CCID driver embedded. This driver is available in most of the OS. The product should be recognized and installed automatically as soon as it is plugged.

STYL's Toolkit application software will be provided for read/write application..

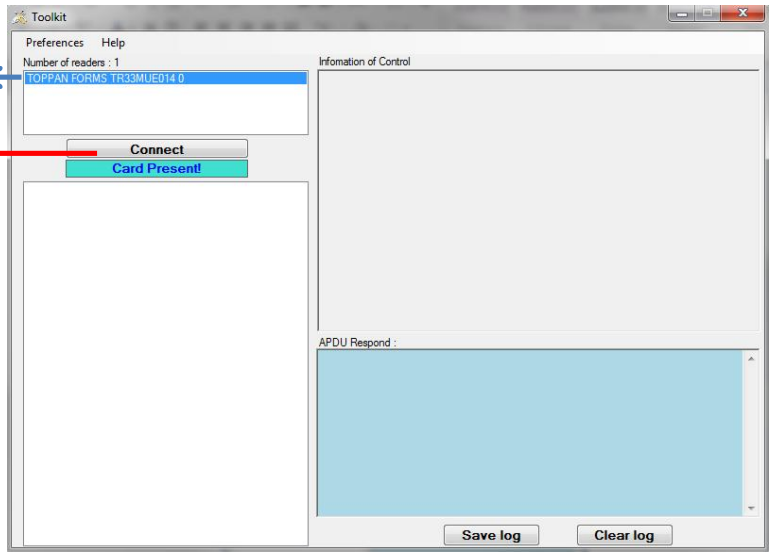
For read/write application tests, below are application example using STYL's Toolkit software.

STYL's Toolkit application software used for communication test

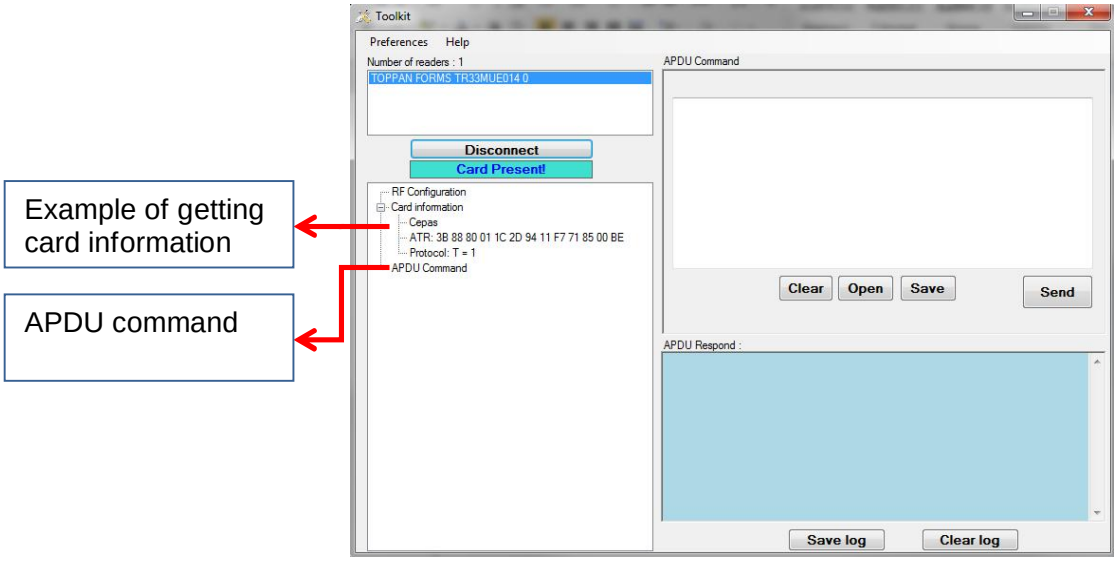
Case of smart card presented and detected in polling

PR533 reader detected

When Contactless card is present and detected, "Connect" tab is highlighted.



Case of connecting to card to read card information



3 Application testing using APDU command

By default upon power-up, the product is in ATD state. This mode is used to activate a card or check its presence automatically.

In application tests whereby manual control is needed, for example switching the RF field off or modulation control is required; it is possible to control using the APDU command.

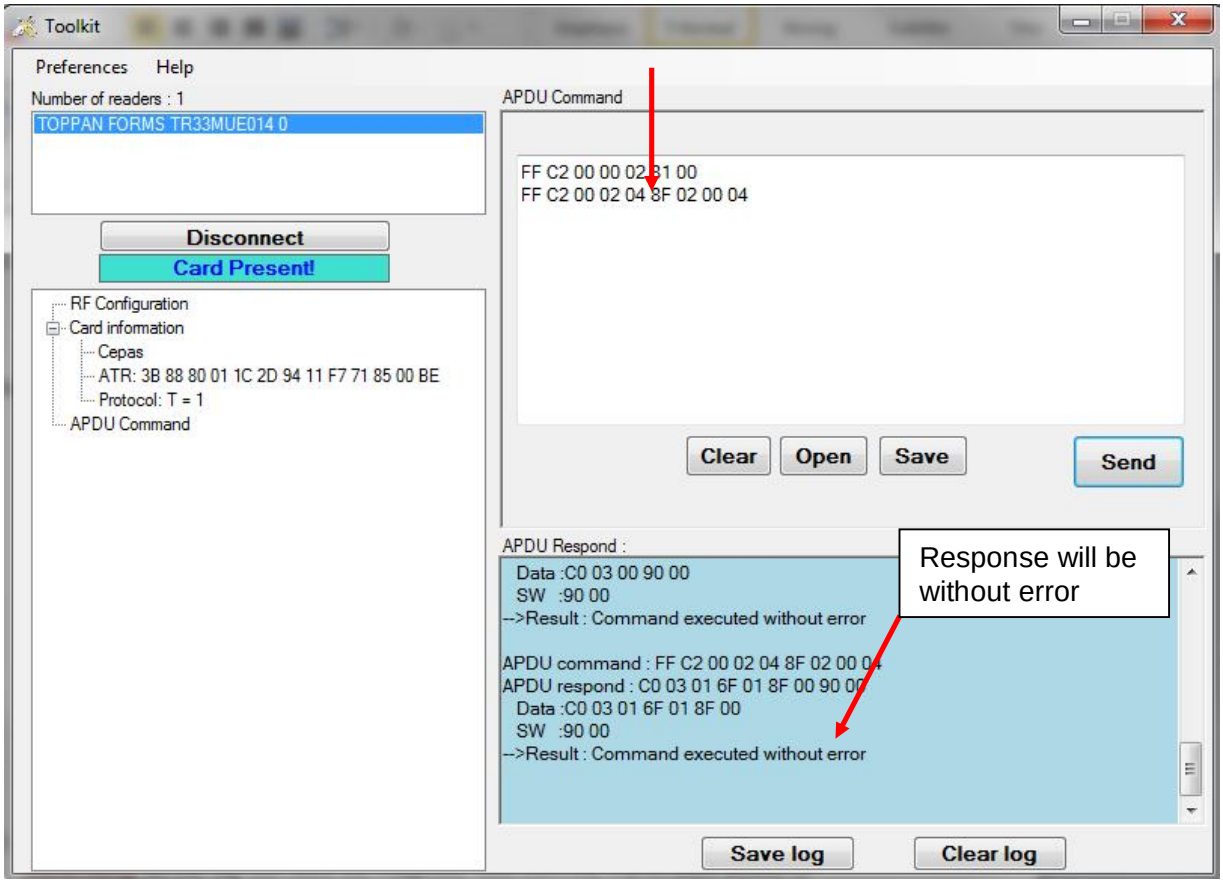
The list of APDUs are available from NXP'S PR533 User Manual (page41).

Please follow the following steps to do get to the APDU command window:

a) Place a card on the reader.

b) Select "Connect", then place the following set parameter command on the APDU command window, press "SEND". Response will be without error

APDU command window



The following are some APDU commands that are need for testing in EMC.

3.1 RF ON mode with no modulation

- Start a transparent session

  ⇨ `FF C2 00 00 02 81 00`

- Turn on the RF field

  ⇨ `FF C2 00 02 04 8F 02 00 04`

This is basically to set the set to manual mode and turn on the RF carier only(no modulation) manually.

To set back to ATD mode, send the APDU command below:

FF E1 04 01 01 01

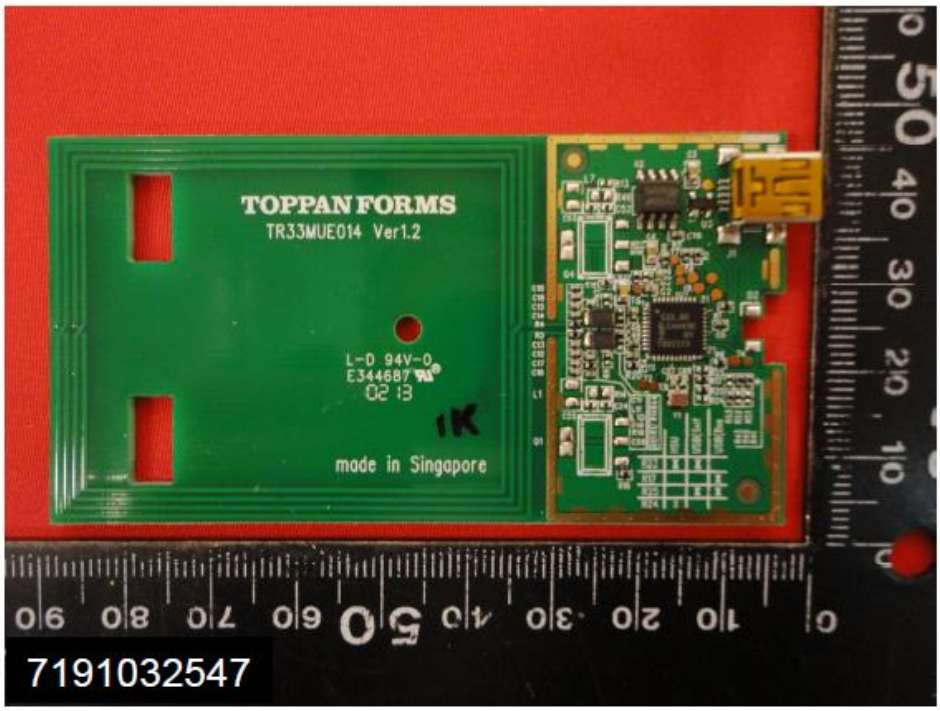
3.2 RF field OFF

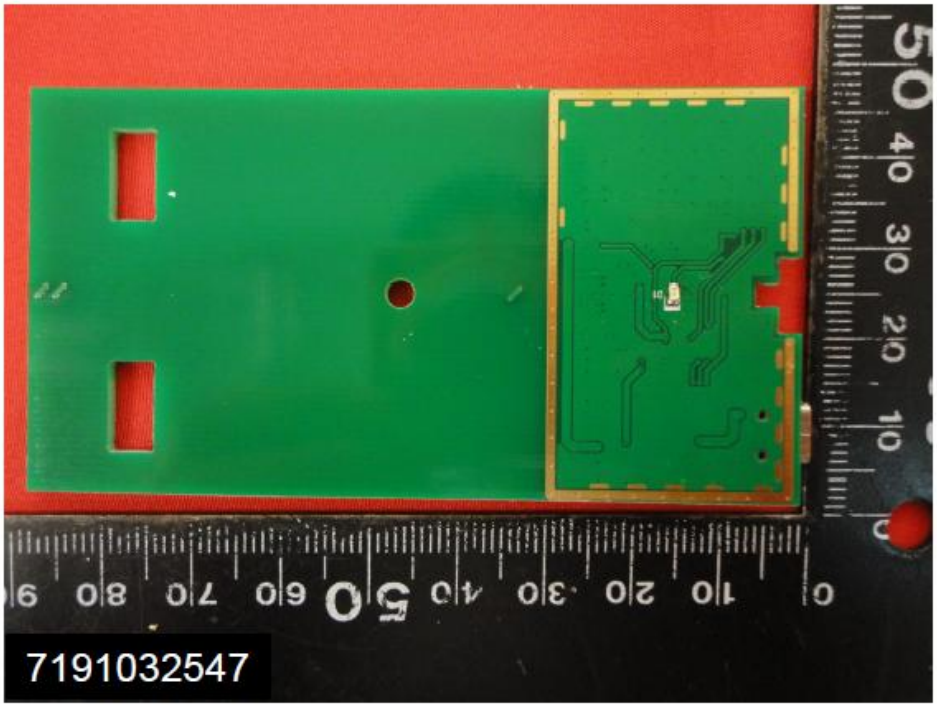
The APDU command to do this:

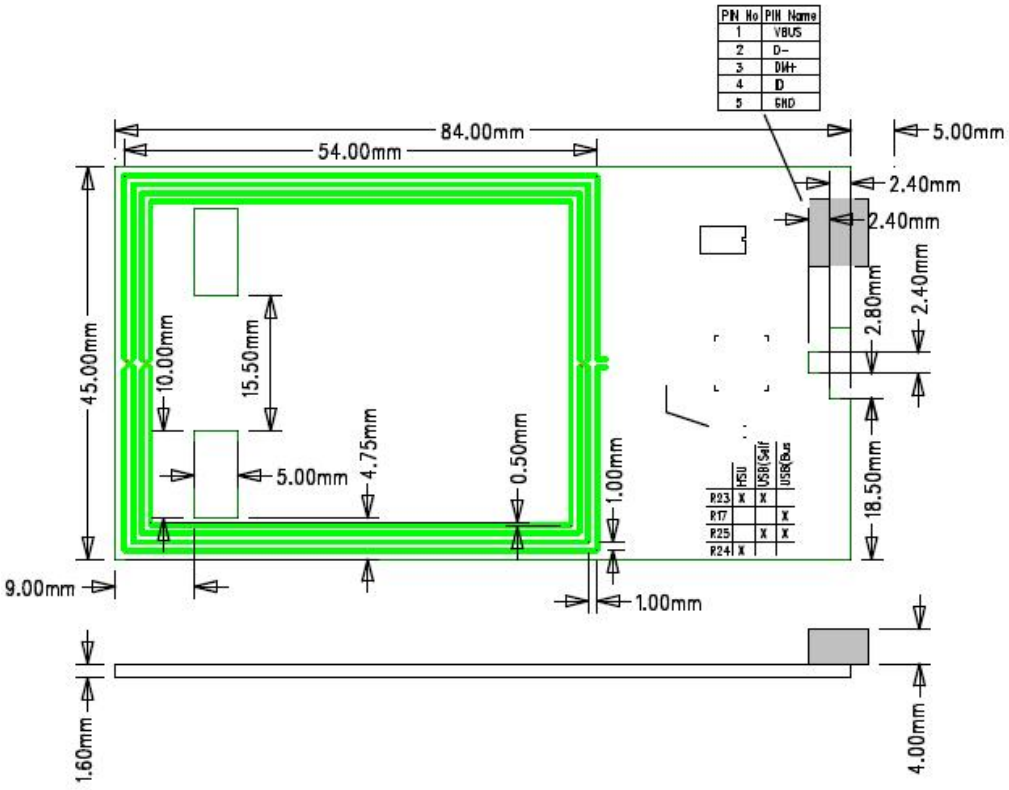
FF E1 04 01 01 00

4 PCBA TR33MUT014 PCB and Antenna Dimension overview

The pcba used in TR33CUT018 product is TR33MUE014 Ver 1.2 as shown below.







TR33MUE014 Ver 1.2 PCBA and Antenna dimension

5 Regulatory information

Regulatory Information

Federal Communication Commission Notice
FCC Identifier: ORK-TR33CUT018

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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.

Caution: Any changes or modifications not expressly approved by the party responsible for compliance to this equipment would void the user's authority to operate this device.

Note :
1. This module is intended for end device installation. The installer is still responsible for the FCC compliance requirement of the end product, which integrates this module. The host end product must also pass the FCC Part 15 unintentional emission testing requirement and be properly authorized per FCC Part 15. The host end product must include a user manual that clearly defines operating requirements and conditions that must be observed to ensure compliance with current FCC RF exposure guidelines.
2. The built-in antenna is integrated to the module and no other antenna should be used.
3. This module must not be co-located or jointly operated with any other antenna or transmitter within host.
4. A label should be attached to the host end product in a visible area with the following statement: "Contains Transmitter Module FCC ID: ORK-TR33MUE013" or "Contains FCC ID: ORK-TR33MUE013".

EC R&TTE directive:

We, hereby declare that the above named module is in conformity to all the essential requirements of Directive 1999/5/EC. The Conformity Assessment procedure referred to Article 10 and detailed in Annex [III] or [IV] of Directive 1999/5/EC has been followed with involvement of the following notified body:

TIMCO ENGINEERING, INC., P.O BOX 370, NEW BERRY, FLORIDA 32669.
Identification mark: 1177 (Notified Body number)

CE 1177

The technical documentation relevant to the above equipment is held at:
• Toppan Forms Co. Ltd, 1-7-3 Higashi Shimbashi, Minato-Ku, Tokyo 105-8311, Japan