



Advanced Card Systems Ltd.
Card & Reader Technologies

ACM1252U-Z2

Small NFC Reader Module



Technical Specifications V1.05

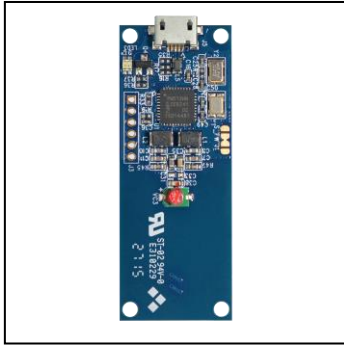


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1.0. Introduction



The ACM1252U-Z2 is an NFC reader module developed based on the 13.56 MHz contactless technology. This NFC Reader Module supports all three NFC modes namely card reader/writer, card emulation, and peer-to-peer communication.

The ACM1252U-Z2 supports ISO 14443 Type A and B cards, MIFARE®, FeliCa, and ISO 18092-compliant NFC tags. It also supports other NFC devices with an access speed of up to 424 Kbps and proximity operating distance of up to 30 mm (depending on tag type used).

It is PC/SC-compliant for interoperability across different applications and platforms and provides high-speed communication ability for contactless cards and NFC tags/devices. Post-deployment firmware upgrade is also supported, eliminating the need for additional hardware modification.



2.0. Features

- USB Full Speed Interface
- CCID-compliant
- Smart Card Reader:
 - Contactless Interface:
 - Read/Write speed of up to 424 Kbps
 - Built-in antenna for contactless tag access, with card reading distance of up to 30 mm (depending on tag type)
 - Supports ISO 14443 Part 4 Type A and B cards, MIFARE Classic®, FeliCa, and all four types of NFC (ISO/IEC 18092 tags)
 - Built-in anti-collision feature (only one tag is accessed at any time)
 - NFC Support:
 - Card Reader/Writer mode
 - Peer-to-Peer mode
 - Card Emulation mode
- Built-in Peripheral:
 - User-controllable bi-color LED
- Application Programming Interface:
 - Supports PC/SC
 - Supports CT-API (through wrapper on top of PC/SC)
- USB Firmware Upgradability
- Supports Android™ 3.1 and later¹
- Compliant with the following standards:
 - ISO 14443
 - ISO 18092
 - PC/SC
 - CCID
 - CE
 - FCC
 - RoHS 2
 - REACH
 - Microsoft® WHQL

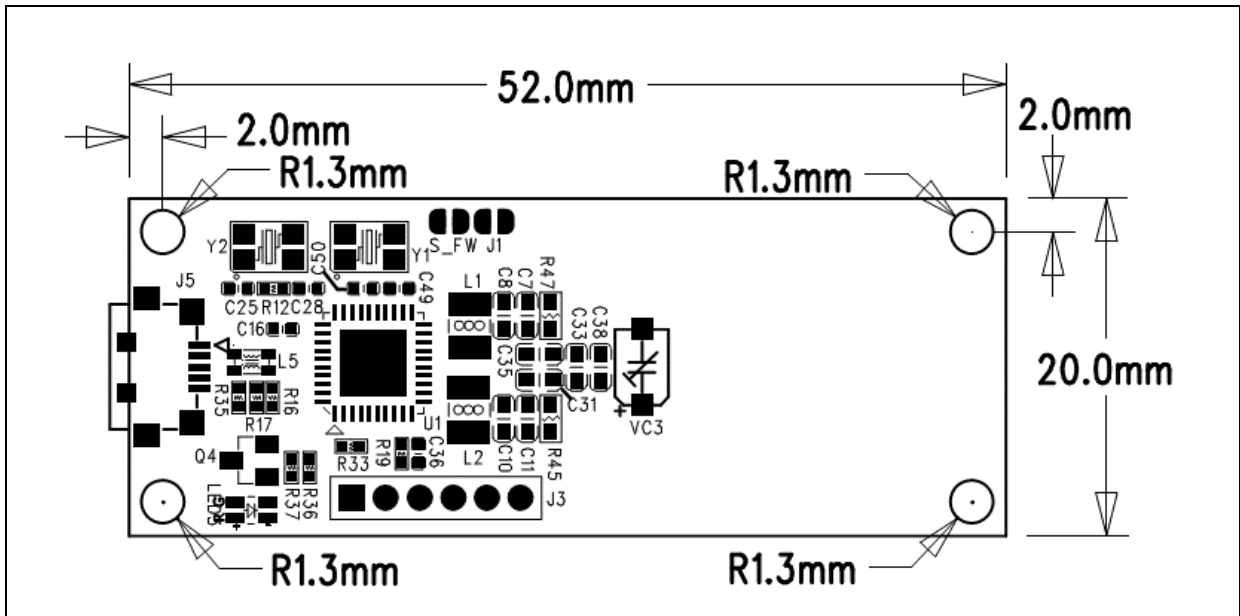
¹ Uses an ACS-defined Android Library



3.0. Typical Applications

- e-Government
- e-Banking and e-Payment
- e-Healthcare
- Transportation
- Network Security
- Access Control
- Loyalty Program

4.0. Technical Specifications



Physical Characteristics

Dimensions 52.0 mm (L) × 20.0 mm (W) × 6.0 mm (H)
Weight 3.65 g (29.05 g with cable ± 5 g tolerance)

USB Host Interface

Protocol USB CCID
Connector Type Micro USB
Power Source From USB port
Speed USB Full Speed (12 Mbps)
Supply Voltage 5 V
Supply Current Max. 200 mA
Cable Length 1.0 m, Detachable (Optional)

Contactless Smart Card Interface

Standard ISO/IEC 18092 NFC, ISO 14443 Type A & B, MIFARE®, FeliCa
Protocol ISO 14443 T=CL for ISO14443-4 compliant cards
..... T=CL Emulation for MIFARE Classic, ISO 18092, FeliCa and NFC tags
Operating Frequency 13.56 MHz
Operating Distance Up to 30 mm (depending on card type)
Smart Card Read/Write Speed 106 Kbps, 212 Kbps, 424 Kbps
Antenna Size 20 mm × 22 mm

Built-in Peripheral

LED 1 bi-color: Red and Green

Other Feature

Firmware Upgrade Supported

Application Programming Interface

PC-linked Mode PC/SC

Operating Conditions

Temperature 0 °C – 60 °C
Humidity Max. 90% (non-condensing)
MTBF 500,000 hrs

Certifications/Compliance

ISO 14443, ISO 18092, USB Full Speed, PC/SC, CCID, CE, FCC, RoHS 2, REACH, Microsoft® WHQL



Device Driver Operating System Support

Windows® XP, Windows Vista®, Windows® 7, Windows® 8, Windows® 8.1, Windows® 10
Windows® Server 2003, Windows® Server 2008, Windows® Server 2008 R2, Windows® Server 2012,
Windows® Server 2012 R2, Windows® Server 2016
Linux®, Mac OS®, Solaris, Android™ 3.1 and later



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