* Smart Card Reader:
  + Supports ISO 7816 Class A, B, and C (5 V, 3 V, 1.8 V) cards
  + Supports CAC
  + Supports SIPRNET Card [Mil Card interface]
  + Supports microprocessor cards with T=0 or T=1 protocol
  + Supports memory cards
  + Supports PPS (Protocol and Parameters Selection)
  + Features Short-Circuit Protection
  + Contact Interface

ISO/IEC 7816-1 Identification cards – Integrated circuit(s) cards with contacts – Part 1: Physical characteristics

ISO/IEC 7816-2 Information technology – Identification cards – Integrated circuit(s) cards with contacts – Part 2: Dimensions and location of contacts

ISO/IEC 7816-3 Information technology – Identification Cards – Integrated circuit(s) cards with contacts – Part 3: Electronic signals and transmission protocols 2 Normative References EMV 4.1 Book 3 Application Specification Page 6 May 2004

ISO/IEC 7816-4 Information technology - Identification cards – Integrated circuit(s) cards with contacts – Part 4: Interindustry commands for interchange

ISO/IEC 7816-5 Identification cards – Integrated circuit(s) cards with contacts – Part 5: Numbering system and registration procedure for application identifiers

ISO/IEC 7816-6 Identification cards – Integrated circuit(s) cards with contacts – Part 6: Interindustry data elements

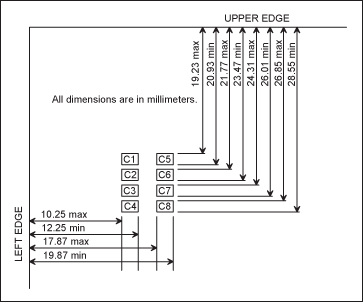
**Detailed Application Note EE**

<https://www.maximintegrated.com/en/design/technical-documents/app-notes/4/4029.html#:~:text=They%20are%20referred%20to%20as,is%20a%20block%2Dbased%20format>.

There are eight possible contact locations defined by ISO 7816. Of these eight locations, five are presently used in EMV applications. While contact C6 is defined as VPP by ISO 7816, this programming voltage is not used on current cards, according to the EMV specification. Contacts C4 and C8 are not used, and need not be physically present. A more detailed discussion of the individual contacts specified in the EMV specifications follows.

**Table 1. Smart Card Contacts**

| Contact Name | Contact Function |
| --- | --- |
| C1 | Supply voltage to card (VCC) |
| C2 | Reset (RST) |
| C3 | Clock (CLK) |
| C4 | Provided on the DS8007; not used in EMV |
| C5 | Ground (GND) |
| C6 | VPP; not used in EMV |
| C7 | Input/output (I/O) |
| C8 | Provided on the DS007; not used in EMV |



**JPN -Lists of Standard IC card Reader**

<https://www.jpn.gov.my/my/mykad/info-alat-pembaca-mykad>

**Malaysia MyCard Application Developer**

<http://mykadpro.onlineapp.com.my/api.mykadsdk.aspx>

**IC Card Reader Supplier and SDK provider**

From legacy JPN website <https://www.ftsafe.com/About>

Digi is using <http://www.acs.com.hk/en/>

Lists of Card Manufacturers, Readers, and Solutions

Manufacturers

ACS[Selected]

BasicCard

Certgate

Dot Origin

Elatec

Feitian[Selected]

Gemini 2000

G & D [Comprehensive solutions-oldest company]

HID [Seen in Zebra and ex-Motorola Enterprise product]

Identiv[Selected]

Key-ID

Omnikey

Read-a-Card

Sony

STid

Thales Gemalto[Selected]

Versasec

**Selection Trade-off IC Card Reader**

| Type | Advantage | Disadvantage |
| --- | --- | --- |
| Mobile IC card Reader Dongle | Cheap reader | Mechanical Reliability 10k cycle.  Android based devices will have dependency stability issues using Native Code. |
| Mobile IC card Reader Cable | Cheap reader  Mechanical reliability is better | Android based devices will have dependency stability issues using Native Code. |
| Mobile IC card Reader Cable wireless | Cheap reader  Mechanical reliability is better | Android based devices will have dependency stability issues using Native Code.  Cashier forgot to charge IC card reader |
| Single Device | Reliable | Expensive[Need to check price] |