

Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



## Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China

## Board Configurations

In the SC PICtail Daughter Board, only one jumper location is available. This jumper is useful only when the SC PICtail Daughter Board is used along with the Explorer 16 Board.

Jumper	Position	Function
JP1	Pin (SRC1-CLK)	Clock to the Smart card/SIM card is fed from RD1
	Pin (SRC2-CLK)	Clock to the Smart card/SIM card is fed from RB15

## Firmware

The latest Smart card software library, CCID demo, Smart card communication demo, Help files and Getting Started document are released as part of the "Microchip Applications Libraries" which can be downloaded from <http://www.microchip.com/mal>.

## References

- ISO 7816-3 specifications available by license
- [www.microchip.com](http://www.microchip.com)

### Americas

Atlanta - 678-957-9614  
Boston - 774-760-0087  
Chicago - 630-285-0071  
Cleveland - 216-447-0464  
Dallas - 972-818-7423  
Detroit - 248-538-2250  
Noblesville - 317-773-8323  
Los Angeles - 949-462-9523  
Phoenix - 480-792-7200  
Santa Clara - 408-961-6444  
Toronto - 905-673-0699

### Europe

Austria - Weis - 43-7242-2244-39  
Denmark - Copenhagen - 45-4450-2828  
France - Paris - 33-1-69-53-63-20  
Germany - Munich - 49-89-627-144-0  
Italy - Milan - 39-0331-742611  
Netherlands - Drunen - 31-416-690399  
Spain - Madrid - 34-91-708-08-90  
UK - Wokingham - 44-118-921-5869

### Asia/Pacific

Australia - Sydney - 61-2-9868-6733  
China - Beijing - 86-10-8528-2100  
China - Chengdu - 86-28-8665-5511  
China - Chongqing - 86-23-8980-9588  
China - Hong Kong SAR - 852-2401-1200  
China - Nanjing - 86-25-8473-2460  
China - Qingdao - 86-532-8502-7355  
China - Shanghai - 86-21-5407-5533  
China - Shenyang - 86-24-2334-2829  
China - Shenzhen - 86-755-8203-2660  
China - Wuhan - 86-27-5980-5300  
China - Xiamen - 86-592-2388138  
China - Xian - 86-29-8833-7252  
China - Zhuhai - 86-756-3210040  
India - Bangalore - 91-80-3090-4444  
India - New Delhi - 91-11-4160-8631  
India - Pune - 91-20-2566-1512  
Japan - Yokohama - 81-45-471-6166  
Korea - Daegu - 82-53-744-4301  
Korea - Seoul - 82-2-554-7200  
Malaysia - Kuala Lumpur - 60-3-6201-9857  
Malaysia - Penang - 60-4-227-8870  
Philippines - Manila - 63-2-634-9065  
Singapore - 65-6334-8870  
Taiwan - Hsin Chu - 886-3-6578-300  
Taiwan - Kaohsiung - 886-7-213-7830  
Taiwan - Taipei - 886-2-2500-6610  
Thailand - Bangkok - 66-2-694-1351

02/18/11



Microchip Technology Inc. • 2355 West Chandler Blvd. • Chandler, AZ 85224-6199

[www.microchip.com](http://www.microchip.com)

The Microchip name and logo, the Microchip logo, and MPLAB are registered trademarks of Microchip Technology Incorporated in the U.S.A. and other countries. All other trademarks mentioned herein are property of their respective companies.

© 2011, Microchip Technology Incorporated, Printed in the U.S.A. All Rights Reserved. 03/11

DS51958A

## Smart Card/SIM Card (SC) PICtail™ Daughter Board

The SC PICtail™ Daughter Board is an expansion board used for evaluating, reading and writing data on Smart cards and SIM cards.

## Features

- Supports a wide range of Smart cards and SIM cards
- Operates on a wide range of voltages from 3.3V-5.0V DC
- Includes PICtail Daughter Board and PICtail Plus Board connection interfaces
- Compatible with boards like Explorer 16 Development Board and PICDEM™ FS USB Demo Board

## Getting Started

To get started, a compatible PICDEM™ demonstration board is required. In general, a board is compatible if it has a PICtail Daughter Board interface expansion port or a PICtail Plus Board interface expansion port. When connecting the SC PICtail Daughter Board to a board with the PICtail Plus connector, like the Explorer 16 Development Board, the connector should be inserted in the first slot of the demonstration board (aligned with Pin #1) to communicate using the UART1 module.

## Signal Interface

Each of the Smart card signals have an outbound pin on the SC PICtail Daughter Board to check the signal status during the application development life cycle. Apart from this, if the user wants to connect the Smart card signals to different port pins of the microcontroller, then the signal wires can be directly connected from the microcontroller to the appropriate outbound pins on the SC PICtail Daughter Board.

TABLE 1:

Signals	I/O	Explorer 16 Board (J5 Port Connector)	Pin (PICtail™ Plus)	Description
SMART_VCC	O	RB9 (Pin 44)	RB0,RC0 (Pin 27, Pin 20)	Power supply to the Smart card/SIM card
SMART_RST	O	RE8 (Pin 18)	RB4,RC1 (Pin 19, Pin 22)	Reset signal to the Smart card/SIM card
SMART_CLK	O	RB15,RD1 (Pin 84, Pin 94)	RB2,RC2 (Pin 23, Pin 24)	Clock input to the Smart card/SIM card
SMART_CARD_DET	I	RB0 (Pin 11)	RB3 (Pin 21)	Smart card insertion detect signal
SIM_CARD_DET	I	RB1 (Pin 12)	RB1(Pin 25)	SIM card insertion detect signal
SMART_I/O	I/O	UART1_RX,UART1_TX (Pin 2, Pin 4)	RC6,RC7 (Pin 9, Pin 11)	Serial input and output data line (half-duplex)

## Other Information

The SC PICtail Daughter Board consists of two slots; one to insert the Smart card and the other to insert the SIM card. The SIM card and Smart card slots are connected in pin-to-pin parallel format. Therefore, for proper communication between the interfacing device and the card, either the Smart card or the SIM card has to be inserted in the SC PICtail board but not both.

**Note:** The board interfacing the SC PICtail Daughter Board should be able to provide the sufficient current and voltages as per the electrical specifications of the Smart card chip inserted in the slot. Therefore, the microcontroller interfacing the SC PICtail Daughter Board has to be chosen depending upon the specific application and the operating voltage requirement of the Smart card. If the microcontroller cannot support sufficient current and voltage required for the Smart card, then an external hardware circuitry has to be used to provide the current and voltage.

