

dsPIC33FJ128GP804 and PIC24HJ128GP504 PIM Information Sheet for Graphics Applications

The dsPIC33FJ128GP804 and PIC24HJ128GP504 Graphics Plug-In-Modules (PIMs) demonstrate the capabilities of the dsPIC33FJ128GP804 Digital Signal Controller (DSC) and the PIC24HJ128GP504 Microcontroller (MCU) using the Explorer 16 Development Board and the PICtail™ Plus Daughter Boards for graphics.

These PIMs support the Microchip Graphics Library with the following PICtail™ Plus boards:

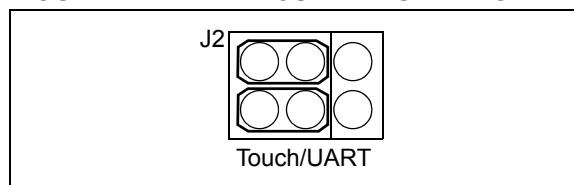
- Graphics LCD Controller PICtail™ Plus SSD1926 Board
- Graphics PICtail™ Plus Daughter Board

In addition, these PIMs also extend parallel port support to the LCD display on the Explorer 16 Development Board.

The pin schematics for the graphics PIMs are different from that of the dsPIC33FJ128GP804 and PIC24HJ128GP504 general purpose PIMs. These graphics PIMs do not support other PICtail™ Plus Daughter Boards such as the Audio PICtail™ Plus Daughter Board and the Thermal/Linear Intelligent Sensor PICtail™ Plus Daughter Board. For additional compatibility details refer the schematics of the respective PICtail™ Plus Daughter Boards.

For a typical application using the TFT with a touch screen, connect pin 2 and pin 3 on jumper J2 to use the touch screen signals for touch sense, as shown in Figure 1.

FIGURE 1: TFT JUMPER SETTING



To use the UART channel to download the image files from PC, connect pin 1 and pin 3 on jumper J2, as shown in Figure 2.

FIGURE 2: UART JUMPER SETTING

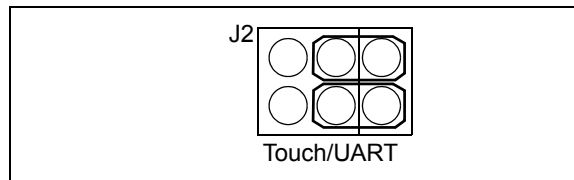


Table 1 provides the mapping of the 44 pins on the device to the 100-pin socket. The schematics for the 100-pin header and 44-pin device are provided in Figure 3 and Figure 4.

dsPIC33FJ128GP804 and PIC24HJ128GP504

TABLE 1: 44-PIN TO 100-PIN PINOUT

Device Pin #	dsPIC33FJ128GP804 and PIC24HJ128GP504	PIM Pin #	Functional Description
1	SDA1/RP9/CN21/PMD3/RB9	99	PMPD3
2	RP22/CN18/PMA1/RC6	43	ALH
3	RP23/CN17/PMA0/RC7	44	ALL
4	RP24/CN20/PMA5/RC8	96	YU
5	RP25/CN19/PMA6/RC9	97	XL
6	Vss	15	Vss
7	VCAP/VDDCORE	85	VDDCORE
8	PGED2/RP10/CN16/PMD2/RB10	98	PMPD2
9	PGEC2/RP11/CN15/PMD1/RB11	94	PMPD1
10	AN12/RP12/CN14/PMD0/RB12	93	PMPD0
11	AN11/RP13/CN13/PMRD/RB13	82	PMPRD
12	TMS/PMA10/RA10	8	POWER
13	TCK/PMA7/RA7	77	WAIT
14	AN10/DAC1LP/RTCC/RP14/CN12/PMWR/RB14	81	PMPWR
15	AN9/DAC1LN/RP15/CN11/RB15	70	CS
16	AVss	36	AVss
17	AVDD	30	AVDD
18	MCLR	13	MCLR
19	AN0/VREF+/CN2/RA0	79	EEPROM CS
20	AN1/VREF-/CN3/RA1	7	RS
21	PGED1/AN2/C2IN-/RP0/CN4/RB0	27	PGD
22	PGEC1/AN3/C2IN+/RP1/CN5/RB1	26	PGC

Device Pin #	dsPIC33FJ128GP804 and PIC24HJ128GP504	PIM Pin #	Functional Description
23	AN4/C1IN-/RP2/CN6/RB2	34/39 ⁽¹⁾	YD/UART_RX ⁽¹⁾
24	AN5/C1IN+/RP3/CN7/RB3	35/50 ⁽¹⁾	XR/UART_TX ⁽¹⁾
25	AN6/DAC1RM/RP16/CN8/RC0	12	EEPROM SDO
26	AN7/DAC1LM/RP17/CN9/RC1	11	EEPROM SDI
27	AN8/CVREF/RP18/PMA2/CN10/RC2	10	EEPROM SCK
28	VDD	62	VDD
29	Vss	65	Vss
30	OSC1/CLKI/CN30/RA2	63	OSCI
31	OSC2/CLKO/CN29/RA3	64	OSCO
32	TDO/PMA8/RA8	76	FLASH CS1
33	SOSCI/RP4/CN1/RB4	72	BUZZER
34	SOSCO/T1CK/CN0/RA4	6	RST
35	TDI/PMA9/RA9	71	FLASH CS2
36	RP19/CN28/PMBE/RC3	78	BE
37	RP20/CN25/PMA5/RC4	95	A16
38	RP21/CN26/PMA3/RC5	1	A17
39	Vss	31	Vss
40	VDD	2	VDD
41	PGED3/ASDA1/RP5/CN27/PMD7/RB5	5	PMPD7
42	PGEC3/ASCL1/RP6/CN24/PMD6/RB6	4	PMPD6
43	INT0/RP7/CN23/PMD5/RB7	3	PMPD5
44	SCL1/RP8/CN22/PMD4/RB8	100	PMPD4

Note 1: The pin function is based on the J2 jumper setting (see Figure 1 and Figure 2).

FIGURE 3: 100-PIN HEADER SCHEMATIC

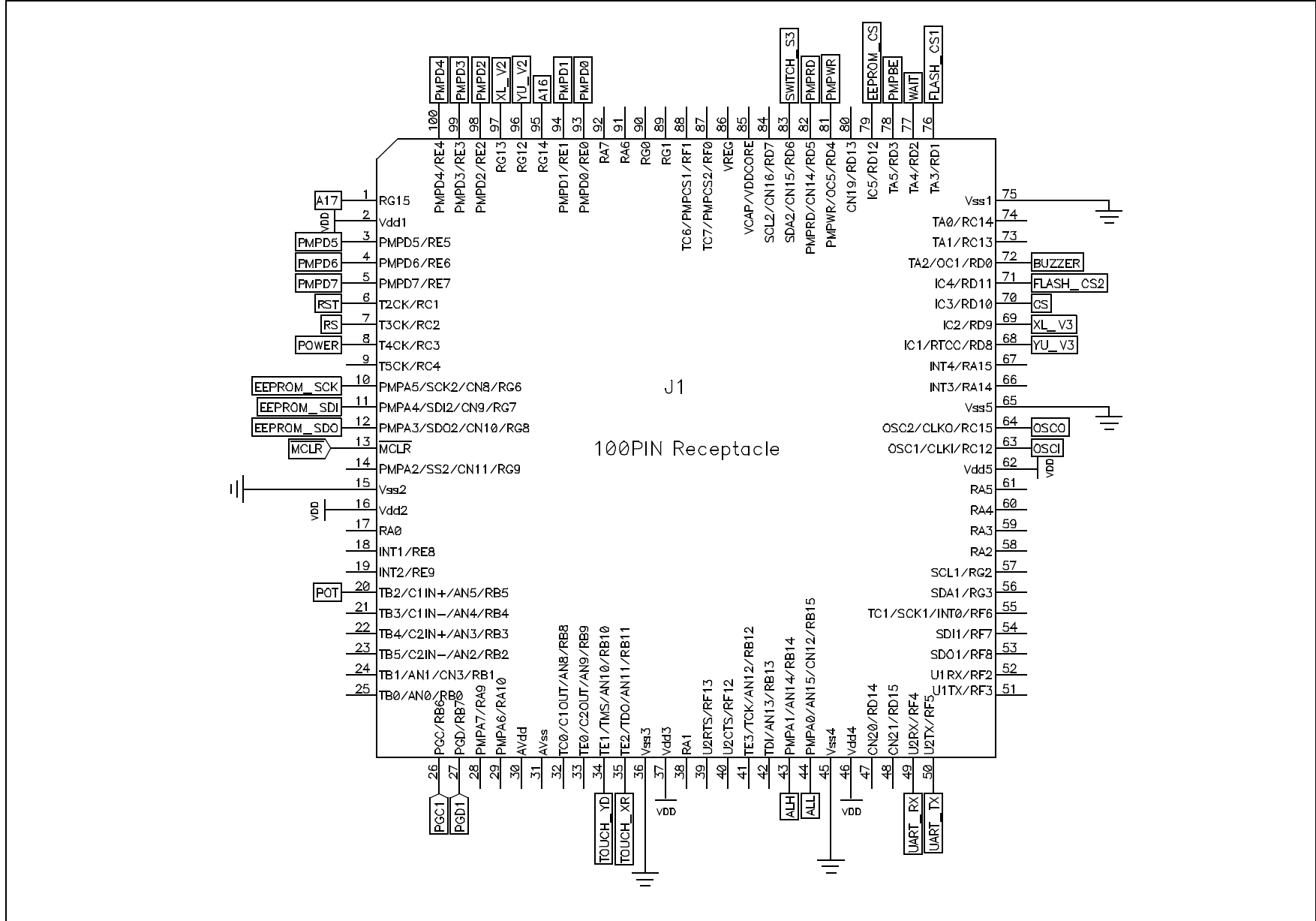
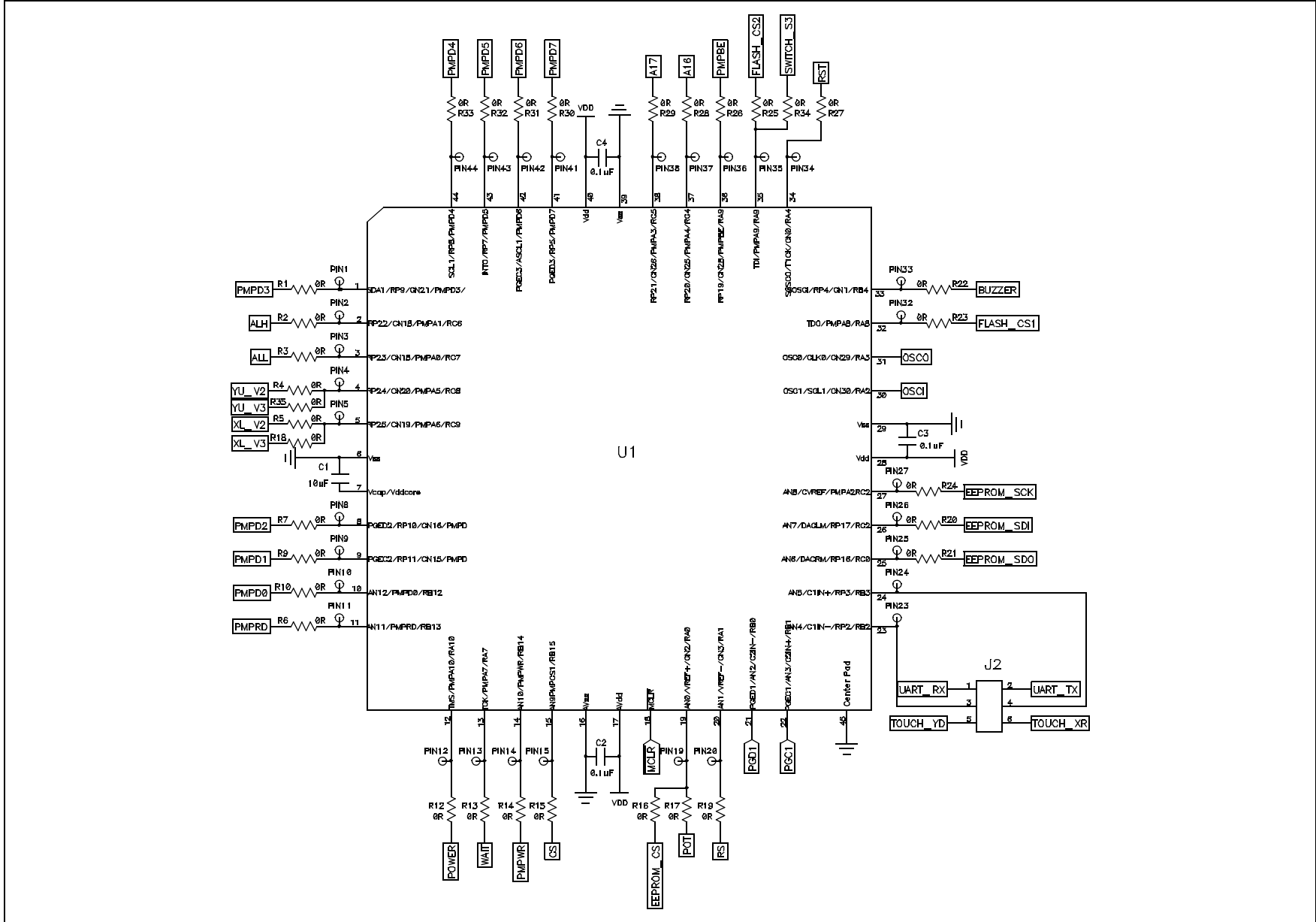


FIGURE 4: 44-PIN DEVICE SCHEMATIC



Note the following details of the code protection feature on Microchip devices:

- Microchip products meet the specification contained in their particular Microchip Data Sheet.
- Microchip believes that its family of products is one of the most secure families of its kind on the market today, when used in the intended manner and under normal conditions.
- There are dishonest and possibly illegal methods used to breach the code protection feature. All of these methods, to our knowledge, require using the Microchip products in a manner outside the operating specifications contained in Microchip's Data Sheets. Most likely, the person doing so is engaged in theft of intellectual property.
- Microchip is willing to work with the customer who is concerned about the integrity of their code.
- Neither Microchip nor any other semiconductor manufacturer can guarantee the security of their code. Code protection does not mean that we are guaranteeing the product as “unbreakable.”

Code protection is constantly evolving. We at Microchip are committed to continuously improving the code protection features of our products. Attempts to break Microchip's code protection feature may be a violation of the Digital Millennium Copyright Act. If such acts allow unauthorized access to your software or other copyrighted work, you may have a right to sue for relief under that Act.

Information contained in this publication regarding device applications and the like is provided only for your convenience and may be superseded by updates. It is your responsibility to ensure that your application meets with your specifications. MICROCHIP MAKES NO REPRESENTATIONS OR WARRANTIES OF ANY KIND WHETHER EXPRESS OR IMPLIED, WRITTEN OR ORAL, STATUTORY OR OTHERWISE, RELATED TO THE INFORMATION, INCLUDING BUT NOT LIMITED TO ITS CONDITION, QUALITY, PERFORMANCE, MERCHANTABILITY OR FITNESS FOR PURPOSE. Microchip disclaims all liability arising from this information and its use. Use of Microchip devices in life support and/or safety applications is entirely at the buyer's risk, and the buyer agrees to defend, indemnify and hold harmless Microchip from any and all damages, claims, suits, or expenses resulting from such use. No licenses are conveyed, implicitly or otherwise, under any Microchip intellectual property rights.

Trademarks

The Microchip name and logo, the Microchip logo, dsPIC, KEELOQ, KEELOQ logo, MPLAB, PIC, PICmicro, PICSTART, rPIC and UNI/O are registered trademarks of Microchip Technology Incorporated in the U.S.A. and other countries.


FilterLab, Hampshire, HI-TECH C, Linear Active Thermistor, MXDEV, MXLAB, SEEVAL and The Embedded Control Solutions Company are registered trademarks of Microchip Technology Incorporated in the U.S.A.

Analog-for-the-Digital Age, Application Maestro, CodeGuard, dsPICDEM, dsPICDEM.net, dsPICworks, dsSPEAK, ECAN, ECONOMONITOR, FanSense, HI-TIDE, In-Circuit Serial Programming, ICSP, Mindi, MiWi, MPASM, MPLAB Certified logo, MPLIB, MPLINK, mTouch, Octopus, Omniscient Code Generation, PICC, PICC-18, PICDEM, PICDEM.net, PICkit, PICtail, PIC³² logo, REAL ICE, rLAB, Select Mode, Total Endurance, TSHARC, UniWinDriver, WiperLock and ZENA are trademarks of Microchip Technology Incorporated in the U.S.A. and other countries.

SQTP is a service mark of Microchip Technology Incorporated in the U.S.A.

All other trademarks mentioned herein are property of their respective companies.

© 2009, Microchip Technology Incorporated, Printed in the U.S.A., All Rights Reserved.

 Printed on recycled paper.

**QUALITY MANAGEMENT SYSTEM
CERTIFIED BY DNV
== ISO/TS 16949:2002 ==**

Microchip received ISO/TS-16949:2002 certification for its worldwide headquarters, design and wafer fabrication facilities in Chandler and Tempe, Arizona; Gresham, Oregon and design centers in California and India. The Company's quality system processes and procedures are for its PIC® MCUs and dsPIC® DSCs, KEELOQ® code hopping devices, Serial EEPROMs, microperipherals, nonvolatile memory and analog products. In addition, Microchip's quality system for the design and manufacture of development systems is ISO 9001:2000 certified.



Worldwide Sales and Service

AMERICAS

Corporate Office
2355 West Chandler Blvd.
Chandler, AZ 85224-6199
Tel: 480-792-7200
Fax: 480-792-7277
Technical Support:
<http://support.microchip.com>
Web Address:
www.microchip.com

Atlanta
Duluth, GA
Tel: 678-957-9614
Fax: 678-957-1455

Boston
Westborough, MA
Tel: 774-760-0087
Fax: 774-760-0088

Chicago
Itasca, IL
Tel: 630-285-0071
Fax: 630-285-0075

Cleveland
Independence, OH
Tel: 216-447-0464
Fax: 216-447-0643

Dallas
Addison, TX
Tel: 972-818-7423
Fax: 972-818-2924

Detroit
Farmington Hills, MI
Tel: 248-538-2250
Fax: 248-538-2260

Kokomo
Kokomo, IN
Tel: 765-864-8360
Fax: 765-864-8387

Los Angeles
Mission Viejo, CA
Tel: 949-462-9523
Fax: 949-462-9608

Santa Clara
Santa Clara, CA
Tel: 408-961-6444
Fax: 408-961-6445

Toronto
Mississauga, Ontario,
Canada
Tel: 905-673-0699
Fax: 905-673-6509

ASIA/PACIFIC

Asia Pacific Office
Suites 3707-14, 37th Floor
Tower 6, The Gateway
Harbour City, Kowloon
Hong Kong
Tel: 852-2401-1200
Fax: 852-2401-3431

Australia - Sydney
Tel: 61-2-9868-6733
Fax: 61-2-9868-6755

China - Beijing
Tel: 86-10-8528-2100
Fax: 86-10-8528-2104

China - Chengdu
Tel: 86-28-8665-5511
Fax: 86-28-8665-7889

China - Hong Kong SAR
Tel: 852-2401-1200
Fax: 852-2401-3431

China - Nanjing
Tel: 86-25-8473-2460
Fax: 86-25-8473-2470

China - Qingdao
Tel: 86-532-8502-7355
Fax: 86-532-8502-7205

China - Shanghai
Tel: 86-21-5407-5533
Fax: 86-21-5407-5066

China - Shenyang
Tel: 86-24-2334-2829
Fax: 86-24-2334-2393

China - Shenzhen
Tel: 86-755-8203-2660
Fax: 86-755-8203-1760

China - Wuhan
Tel: 86-27-5980-5300
Fax: 86-27-5980-5118

China - Xiamen
Tel: 86-592-2388138
Fax: 86-592-2388130

China - Xian
Tel: 86-29-8833-7252
Fax: 86-29-8833-7256

China - Zhuhai
Tel: 86-756-3210040
Fax: 86-756-3210049

ASIA/PACIFIC

India - Bangalore
Tel: 91-80-3090-4444
Fax: 91-80-3090-4080

India - New Delhi
Tel: 91-11-4160-8631
Fax: 91-11-4160-8632

India - Pune
Tel: 91-20-2566-1512
Fax: 91-20-2566-1513

Japan - Yokohama
Tel: 81-45-471- 6166
Fax: 81-45-471-6122

Korea - Daegu
Tel: 82-53-744-4301
Fax: 82-53-744-4302

Korea - Seoul
Tel: 82-2-554-7200
Fax: 82-2-558-5932 or
82-2-558-5934

Malaysia - Kuala Lumpur
Tel: 60-3-6201-9857
Fax: 60-3-6201-9859

Malaysia - Penang
Tel: 60-4-227-8870
Fax: 60-4-227-4068

Philippines - Manila
Tel: 63-2-634-9065
Fax: 63-2-634-9069

Singapore
Tel: 65-6334-8870
Fax: 65-6334-8850

Taiwan - Hsin Chu
Tel: 886-3-6578-300
Fax: 886-3-6578-370

Taiwan - Kaohsiung
Tel: 886-7-536-4818
Fax: 886-7-536-4803

Taiwan - Taipei
Tel: 886-2-2500-6610
Fax: 886-2-2508-0102

Thailand - Bangkok
Tel: 66-2-694-1351
Fax: 66-2-694-1350

EUROPE

Austria - Wels
Tel: 43-7242-2244-39
Fax: 43-7242-2244-393

Denmark - Copenhagen
Tel: 45-4450-2828
Fax: 45-4485-2829

France - Paris
Tel: 33-1-69-53-63-20
Fax: 33-1-69-30-90-79

Germany - Munich
Tel: 49-89-627-144-0
Fax: 49-89-627-144-44

Italy - Milan
Tel: 39-0331-742611
Fax: 39-0331-466781

Netherlands - Drunen
Tel: 31-416-690399
Fax: 31-416-690340

Spain - Madrid
Tel: 34-91-708-08-90
Fax: 34-91-708-08-91

UK - Wokingham
Tel: 44-118-921-5869
Fax: 44-118-921-5820

03/26/09