



Product Change Notification / SYST-22BBGV912

Date:

30-Jan-2024

Product Category:

General Purpose Fpgas

PCN Type:

Document Change

Notification Subject:

PolarFire® FPGA Production Devices Errata

Affected CPNs:

[SYST-22BBGV912_Affected_CPN_01302024.pdf](#)

[SYST-22BBGV912_Affected_CPN_01302024.csv](#)

Notification Text:

SYST-22BBGV912

Microchip has released a new Document for the PolarFire® FPGA Production Devices Errata of devices. If you are using one of these devices please read the document located at [PolarFire® FPGA Production Devices Errata](#).

Notification Status: Final

Description of Change:

Defeatured PCIe SECEDED reporting. More information about this is available in the change impact analysis document.

Added references to MPF050T in Errata Summary and Supported Transceiver Protocols.

Updated to Microchip template.

Updated document number from ER0218 to DS80001111.

Impacts to Data Sheet: None

Change Implementation Status: Complete

Date Document Changes Effective: 30 Jan 2024

NOTE: Please be advised that this is a change to the document only the product has not been changed.

Markings to Distinguish Revised from Unrevised Devices: N/A

Attachments:

[PolarFire® FPGA Production Devices Errata](#)

Please contact your local [Microchip sales office](#) with questions or concerns regarding this notification.

Terms and Conditions:

If you wish to receive Microchip PCNs via email please register for our PCN email service at our [PCN home page](#) select register then fill in the required fields. You will find instructions about registering for Microchips PCN email service in the [PCN FAQ](#) section.

If you wish to change your PCN profile, including opt out, please go to the [PCN home page](#) select login and sign into your myMicrochip account. Select a profile option from the left navigation bar and make the applicable selections.

Affected Catalog Part Numbers (CPN)

MPF300T-FCG1152E
MPF300T-FCG1152I
MPF300TL-FCG1152E
MPF300TL-FCG1152I
MPF300TLS-FCG1152I
MPF300TS-1FCG1152I
MPF300TS-FCG1152I
MPF300T-1FCG1152IX45
MPF300T-FCG1152ES0311
MPF300T-FCG1152ES0324
MPF300T-1FCSG536E
MPF300T-1FCSG536I
MPF300T-FCSG536E
MPF300T-FCSG536I
MPF300TL-FCSG536E
MPF300TL-FCSG536I
MPF300TLS-FCSG536I
MPF300TS-1FCSG536I
MPF300TS-FCSG536I
MPF500TS-FC784M
MPF500TS-FC784MX512
MPF500TS-FC1152MX167
MPF500TS-FC1152M
MPF500TS-FC1152MX3
MPF500T-1FCG784E
MPF500T-1FCG784I
MPF500T-FCG784E
MPF500T-FCG784I
MPF500TL-FCG784E
MPF500TL-FCG784I
MPF500TLS-FCG784I
MPF500TS-1FCG784I
MPF500TS-FCG784I
MPF500T-1FCG1152E
MPF500T-1FCG1152I
MPF500T-FCG1152E
MPF500T-FCG1152I
MPF500TL-FCG1152E
MPF500TL-FCG1152I
MPF500TLS-FCG1152I
MPF500TS-1FCG1152I
MPF500TS-FCG1152I
MPF500T-1FCG1152IX533
MPF100T-1FCVG484T2
MPF100T-FCVG484T2
MPF100T-1FCSG325T2

MPF100T-FCSG325T2
MPF100T-1FCG484T2
MPF100T-FCG484T2
MPF100T-1FCG484E
MPF100T-1FCG484I
MPF100T-FCG484E
MPF100T-FCG484I
MPF100TL-FCG484E
MPF100TL-FCG484I
MPF100TLS-FCG484I
MPF100TS-1FCG484I
MPF100TS-FCG484I
MPF100T-1FCVG484E
MPF100T-1FCVG484I
MPF100T-FCVG484E
MPF100T-FCVG484I
MPF100TL-FCVG484E
MPF100TL-FCVG484I
MPF100TLS-FCVG484I
MPF100TS-1FCVG484I
MPF100TS-FCVG484I
MPF100T-1FCSG325E
MPF100T-1FCSG325I
MPF100T-FCSG325EX560
MPF100T-FCSG325E
MPF100T-FCSG325I
MPF100T-1FCSG325EX561
MPF100TL-FCSG325E
MPF100TL-FCSG325I
MPF100TLS-FCSG325I
MPF100TS-1FCSG325I
MPF100TS-FCSG325I
MPF100TL-FCSG325EQ347
MPF200T-1FCVG484T2
MPF200T-FCVG484T2
MPF200T-1FCSG325T2
MPF200T-FCSG325T2
MPF200T-1FCSG536T2
MPF200T-FCSG536T2
MPF200T-1FCG484T2
MPF200T-FCG484T2
MPF200TS-FCS325M
MPF200T-1FCG484E
MPF200T-1FCG484I
MPF200T-FCG484E
MPF200T-FCG484I
MPF200TL-FCG484E
MPF200TL-FCG484I
MPF200TLS-FCG484I

MPF200TS-1FCG484I
MPF200TS-FCG484I
MPF200T-FCG484EZ330
MPF200T-FCG484ES0304
MPF200T-FCG484ES0305
MPF200T-FCG484ES0306
MPF200T-1FCVG484E
MPF200T-1FCVG484I
MPF200T-FCVG484E
MPF200T-FCVG484I
MPF200TL-FCVG484E
MPF200TL-FCVG484I
MPF200TLS-FCVG484I
MPF200TS-1FCVG484I
MPF200TS-FCVG484I
MPF200T-1FCVG484ES0302
MPF200T-FCVG484ES0307
MPF200T-FCVG484ES0308
MPF200T-FCVG484ES0309
MPF200T-FCVG484ES0010
MPF200T-FCVG484ES0314
MPF200T-FCVG484IS0315
MPF200T-FCVG484IS0316
MPF200T-FCVG484ES0319
MPF200T-FCVG484ES0318
MPF200T-FCVG484ES0320
MPF200T-FCVG484IS0321
MPF200T-FCVG484ES0327
MPF200T-FCVG484ES0328
MPF200T-FCVG484ES0329
MPF200T-FCVG484ES0330
MPF200T-1FCG784E
MPF200T-1FCG784I
MPF200T-FCG784E
MPF200T-FCG784I
MPF200TL-FCG784E
MPF200TL-FCG784I
MPF200TLS-FCG784I
MPF200TS-1FCG784I
MPF200TS-FCG784I
MPF200T-FCG784EH701
MPF200T-FCG784ES0301
MPF200T-FCG784IS0303
MPF200T-FCG784ES0039
MPF200T-FCG784ES0312
MPF200T-FCG784IS0313
MPF200T-FCG784IS0325
MPF200T-FCG784IS0326
MPF200T-FCG784IS0332

MPF200T-FCG784IS0333
MPF200T-1FCSG325E
MPF200T-1FCSG325I
MPF200T-FCSG325E
MPF200T-FCSG325I
MPF200TL-FCSG325E
MPF200TL-FCSG325I
MPF200TLS-FCSG325I
MPF200TS-1FCSG325I
MPF200TS-FCSG325I
MPF200T-1FCSG536E
MPF200T-1FCSG536I
MPF200T-FCSG536E
MPF200T-FCSG536I
MPF200TL-FCSG536E
MPF200TL-FCSG536I
MPF200TLS-FCSG536I
MPF200TS-1FCSG536IQ302
MPF200TS-1FCSG536I
MPF200TS-FCSG536I
MPF300T-1FCVG484T2
MPF300T-FCVG484T2
MPF300T-1FCSG536T2
MPF300T-FCSG536T2
MPF300TS-FC484M
MPF300T-FCG484X547
MPF300TS-FCV484M
MPF300TS-FC784M
MPF300TS-FCS536M
MPF300T-1FCG484E
MPF300T-1FCG484I
MPF300T-FCG484EX52
MPF300T-FCG484E
MPF300T-FCG484I
MPF300TL-FCG484E
MPF300TL-FCG484I
MPF300TLS-FCG484I
MPF300TS-1FCG484I
MPF300TS-FCG484I
MPF300T-1FCG484IX548
MPF300T-1FCG484IS0322
MPF300T-1FCVG484E
MPF300T-1FCVG484I
MPF300T-FCVG484E
MPF300T-FCVG484I
MPF300TL-FCVG484E
MPF300TL-FCVG484I
MPF300TLS-FCVG484I
MPF300TS-1FCVG484I

MPF300TS-FCVG484I
MPF300T-FCVG484EX548
MPF300T-FCVG484ES0331
MPF300T-1FCG784E
MPF300T-1FCG784I
MPF300T-FCG784E
MPF300T-FCG784I
MPF300TL-FCG784E
MPF300TL-FCG784I
MPF300TLS-FCG784I
MPF300TS-1FCG784I
MPF300TS-FCG784I
MPF300T-FCG784ES0317
MPF300T-FCG784ES0323
MPF300T-1FCG784NE
MPF300T-1FCG784NI
MPF300T-FCG784NE
MPF300T-FCG784NI
MPF300TS-1FCG784NI
MPF300TS-FCG784NI
MPF300T-1FCG1152EX3
MPF300T-1FCG1152E
MPF300T-1FCG1152I

Introduction

The PolarFire® MPF100T, MPF200T, MPF300T, and MPF500T production FPGA devices are subject to the limitations described in this document. This document describes updates about known issues, available limitations, and workarounds. It provides a snapshot of the current validation status for feature sets. The document highlights dependencies that may exist between silicon device revisions and specific support by Libero® SoC software versions. Contact [Microchip Technical Support](#) for more information.

Table 1. Device Revisions

Device	Package	Revisions
MPF100T, TL, TS, TLS	FCG484, FCG484, and FCSG325	0, 1
MPF200T, TL, TS, TLS	FCG784, FCG484, FCG484, FCSG536, and FCSG325	0, 1
MPF300T, TL, TS, TLS	FCG1152, FCG784, FCG484, FCG484, and FCSG536	0, 1
MPF500T, TL, TS, TLS	FCG1152 and FCG784	0, 1

Note: See [CN19014](#) for details on revision 1 devices.

Table 2. Device Options

Device	Extended Commercial 0 °C–100 °C	Industrial –40 °C–100 °C	STD	–1	Transceivers T	Lower Static Power L	Data Security S
MPF100T, MPF200T, MPF300T, MPF500T	Yes	Yes	Yes	Yes	Yes	—	—
MPF100TL, MPF200TL, MPF300TL, MPF500TL	Yes	Yes	Yes	—	Yes	Yes	—
MPF100TS, MPF200TS, MPF300TS, MPF500TS	—	Yes	Yes	Yes	Yes	—	Yes
MPF100TLS, MPF200TLS, MPF300TLS, MPF500TLS	—	Yes	Yes	—	Yes	Yes	Yes

For specifications, see [PolarFire FPGA Datasheet](#).

Table of Contents

Introduction..... 1

1. Errata Descriptions and Workaround..... 3

2. Supported Transceiver Protocol Status for Production Devices.....4

3. Revision History..... 5

Microchip Information..... 6

 The Microchip Website..... 6

 Product Change Notification Service..... 6

 Customer Support..... 6

 Microchip Devices Code Protection Feature..... 6

 Legal Notice..... 6

 Trademarks..... 7

 Quality Management System..... 8

 Worldwide Sales and Service..... 9

1. Errata Descriptions and Workaround

The following sections describe device errata and workarounds wherever applicable. This document is intended to describe variations or deviations from information in the [PolarFire FPGA Datasheet](#) or any PolarFire user or demo guide.

The following table lists the specific device erratas and the affected PolarFire production devices.

Table 1-1. Summary of PolarFire FPGA Errata

Description	MPF050T, TL, TS, TLS	MPF100T, TL, TS, TLS	MPF200T, TL, TS, TLS	MPF300T, TL, TS, TLS	MPF500T, TL, TS, TLS
MPF300T-ES bitstream compatibility	N/A	N/A	N/A	*	N/A
System controller suspend mode interaction with JTAG	*	*	*	*	*
PCIe SECDED ECC reporting counters and interrupts	*	*	*	*	*

* indicates that the errata exists for that particular device. Details are discussed in the following sections.

For feature clarifications about supported transceiver protocols, see section [Supported Transceiver Protocol Status for Production Devices](#).

Bitstream Compatibility

MPF300T-ES bitstreams cannot be used to program pre-production (PP) or production MPF300T devices.

System Controller Suspend Mode Interaction with JTAG

If system controller suspend mode is enabled, device initialization may be interrupted after exiting JTAG programming. As workaround, reset the device after JTAG programming.

PCIe[®] SECDED Reporting Defeatured

When ECC is enabled (default) within the PCIe hard IP block, the single error correction and double error detection error reporting counters and interrupt registers show erroneous values. The following features of the PCIe SECDED are being defeatured:

- Single error correction reporting features
- Double error detection feature

More information about this is available in the [change impact analysis document](#).

2. Supported Transceiver Protocol Status for Production Devices

Transceiver protocol capabilities are validated and tested for robustness as per the specifications listed in the [PolarFire FPGA Datasheet](#) and [UG0677: PolarFire FPGA Transceiver User Guide](#).

The following table summarizes transceiver protocols and validation status for production devices.

Table 2-1. Supported Transceiver Protocols

Transceiver Protocol by Device	MPF050T/MPF100T/ MPF200T/MPF300T/ MPF500T Status	Details
SGMII/1000BASE-X	Complete	Transceiver: 1.25 Gbps with CoreTSE IP core. TxPLL SyncE validation is in-progress. Contact factory.
CPRI	Complete	Support for CPRI data rates 1–7 and 7A, 8, 9.
10GBASE-R	Complete	Transceiver: 10.3125 Gbps with Core10GMAC IP core. TxPLL SyncE is supported. IEEE® 1588 time stamping is not supported.
10GBASE-KR	Complete	Contact Microchip for complete solution.
Interlaken	Complete	—
JESD204B	Complete	Up to 12.5G with CoreJESD20BTX/RX IP core.
PCIE Endpoint Gen1/Gen2	Complete	—
PCIE Rootport Gen1/Gen2	Complete	—
LiteFast	Complete	Up to 12.7 Gbps (8b10b only).
XAUI	Complete	—
RXAUI	Complete	—
HiGig/HiGig+	Complete	—
Display Port	Complete	Per VESA DisplayPort Standard 1.2a.
SRIO	Complete	—
PMA only	Complete	—
SATA	Complete	Contact factory.
Fiber channel	Complete	Tested for electrical compliance.
SDI	Complete	HD-SDI (1.485 Gbps) and 3G-SDI (2.970 Gbps) are supported. SD-SDI (270 Mbps) are supported. 6G-SDI and 12G-SDI are supported.
OTN	Complete	Tested for electrical compliance.
QSGMII	Complete	—
USXGMII	Complete	—
CoaXPress	Complete	Tested with external PHY.
SLVS-EC	Complete	—
Half-duplex (independent Rx/Tx)	Complete	—

3. Revision History

The revision history describes the changes that were implemented in the document. The changes are listed by revision, starting with the most current publication.

Revision	Date	Description
A	01/2024	• Defeatured PCIe SECEDED reporting. More information about this is available in the change impact analysis document. • Added references to MPF050T in Errata Summary and Supported Transceiver Protocols. • Updated to Microchip template. • Updated document number from ER0218 to DS80001111.
6.0	05/2021	• Updated details for SGMII/1000BASE-X row in Table 4 Supported Transceiver Protocols.
5.0	12/2020	• Removed information for "Dynamic Training of HSIO/GPIO IOD Interfaces" and "Temperature-Voltage Sensor (TVS) Temperature Flags Values". • Updated status for SDI, SLVS-EC, and Half-duplex (independent Rx/Tx) to "Complete". • "SD-SDI (270 Mbps)" and "6G-SDI and 12G-SDI" are supported. • Deleted "Enhanced Receiver Management (ERM) is not supported".
4.0	12/2019	• Removed MIPI D-PHY support information. For MIPI D-PHY support information, see the PolarFire Datasheet Revision 1.7. • Added Temperature-Voltage Sensor (TVS) information (per CN19030). • Added system control suspend mode interaction with JTAG.
3.0	09/2019	• Removed memory interface limitation from errata for production silicon using Libero SoC version 12.0 or later software. • Removed IOCDR limitations from errata for production silicon using Libero SoC version 12.1 or later software. • Removed RxPLL behavior and DFE calibration limitations from errata for production silicon using Libero SoC version 12.1 or later software using PF_XCVR_ERM core. • Removed errata on the IBIS-AMI DFE support. The released IBIS-AMI models offer full feature support.
2.0	11/2018	• MPF100T device offerings were added.
1.0	11/2018	• It was the first publication of this document including the MPF200T and MPF300T device offerings.

Microchip Information

The Microchip Website

Microchip provides online support via our website at www.microchip.com/. This website is used to make files and information easily available to customers. Some of the content available includes:

- **Product Support** – Data sheets and errata, application notes and sample programs, design resources, user's guides and hardware support documents, latest software releases and archived software
- **General Technical Support** – Frequently Asked Questions (FAQs), technical support requests, online discussion groups, Microchip design partner program member listing
- **Business of Microchip** – Product selector and ordering guides, latest Microchip press releases, listing of seminars and events, listings of Microchip sales offices, distributors and factory representatives

Product Change Notification Service

Microchip's product change notification service helps keep customers current on Microchip products. Subscribers will receive email notification whenever there are changes, updates, revisions or errata related to a specified product family or development tool of interest.

To register, go to www.microchip.com/pcn and follow the registration instructions.

Customer Support

Users of Microchip products can receive assistance through several channels:

- Distributor or Representative
- Local Sales Office
- Embedded Solutions Engineer (ESE)
- Technical Support

Customers should contact their distributor, representative or ESE for support. Local sales offices are also available to help customers. A listing of sales offices and locations is included in this document.

Technical support is available through the website at: www.microchip.com/support

Microchip Devices Code Protection Feature

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

- Microchip products meet the specifications contained in their particular Microchip Data Sheet.
- Microchip believes that its family of products is secure when used in the intended manner, within operating specifications, and under normal conditions.
- Microchip values and aggressively protects its intellectual property rights. Attempts to breach the code protection features of Microchip product is strictly prohibited and may violate the Digital Millennium Copyright Act.
- Neither Microchip nor any other semiconductor manufacturer can guarantee the security of its code. Code protection does not mean that we are guaranteeing the product is "unbreakable". Code protection is constantly evolving. Microchip is committed to continuously improving the code protection features of our products.

Legal Notice

This publication and the information herein may be used only with Microchip products, including to design, test, and integrate Microchip products with your application. Use of this information in any other manner violates these terms. Information regarding device applications 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. Contact your local Microchip sales office for additional support or, obtain additional support at www.microchip.com/en-us/support/design-help/client-support-services.

THIS INFORMATION IS PROVIDED BY MICROCHIP "AS IS". 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 ANY IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY, AND FITNESS FOR A PARTICULAR PURPOSE, OR WARRANTIES RELATED TO ITS CONDITION, QUALITY, OR PERFORMANCE.

IN NO EVENT WILL MICROCHIP BE LIABLE FOR ANY INDIRECT, SPECIAL, PUNITIVE, INCIDENTAL, OR CONSEQUENTIAL LOSS, DAMAGE, COST, OR EXPENSE OF ANY KIND WHATSOEVER RELATED TO THE INFORMATION OR ITS USE, HOWEVER CAUSED, EVEN IF MICROCHIP HAS BEEN ADVISED OF THE POSSIBILITY OR THE DAMAGES ARE FORESEEABLE. TO THE FULLEST EXTENT ALLOWED BY LAW, MICROCHIP'S TOTAL LIABILITY ON ALL CLAIMS IN ANY WAY RELATED TO THE INFORMATION OR ITS USE WILL NOT EXCEED THE AMOUNT OF FEES, IF ANY, THAT YOU HAVE PAID DIRECTLY TO MICROCHIP FOR THE INFORMATION.

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 unless otherwise stated.

Trademarks

The Microchip name and logo, the Microchip logo, Adaptec, AVR, AVR logo, AVR Freaks, BesTime, BitCloud, CryptoMemory, CryptoRF, dsPIC, flexPWR, HELDO, IGLOO, JukeBlox, KeeLoq, Kleer, LANCheck, LinkMD, maXStylus, maXTouch, MediaLB, megaAVR, Microsemi, Microsemi logo, MOST, MOST logo, MPLAB, OptoLyzer, PIC, picoPower, PICSTART, PIC32 logo, PolarFire, Prochip Designer, QTouch, SAM-BA, SenGenuity, SpyNIC, SST, SST Logo, SuperFlash, Symmetricom, SyncServer, Tachyon, TimeSource, tinyAVR, UNI/O, Vectron, and XMEGA are registered trademarks of Microchip Technology Incorporated in the U.S.A. and other countries.

AgileSwitch, ClockWorks, The Embedded Control Solutions Company, EtherSynch, Flashtec, Hyper Speed Control, HyperLight Load, Libero, motorBench, mTouch, Powermite 3, Precision Edge, ProASIC, ProASIC Plus, ProASIC Plus logo, Quiet-Wire, SmartFusion, SyncWorld, TimeCesium, TimeHub, TimePictra, TimeProvider, and ZL are registered trademarks of Microchip Technology Incorporated in the U.S.A.

Adjacent Key Suppression, AKS, Analog-for-the-Digital Age, Any Capacitor, AnyIn, AnyOut, Augmented Switching, BlueSky, BodyCom, Clockstudio, CodeGuard, CryptoAuthentication, CryptoAutomotive, CryptoCompanion, CryptoController, dsPICDEM, dsPICDEM.net, Dynamic Average Matching, DAM, ECAN, Espresso T1S, EtherGREEN, EyeOpen, GridTime, IdealBridge, IGaT, In-Circuit Serial Programming, ICSP, INICnet, Intelligent Paralleling, IntelliMOS, Inter-Chip Connectivity, JitterBlocker, Knob-on-Display, MarginLink, maxCrypto, maxView, memBrain, Mindi, MiWi, MPASM, MPF, MPLAB Certified logo, MPLIB, MPLINK, mSiC, MultiTRAK, NetDetach, Omniscient Code Generation, PICDEM, PICDEM.net, PICKit, PICtail, Power MOS IV, Power MOS 7, PowerSmart, PureSilicon, QMatrix, REAL ICE, Ripple Blocker, RTAX, RTG4, SAM-ICE, Serial Quad I/O, simpleMAP, SimpliPHY, SmartBuffer, SmartHLS, SMART-I.S., storClad, SQL, SuperSwitcher, SuperSwitcher II, Switchtec, SynchroPHY, Total Endurance, Trusted Time, TSHARC, Turing, USBCheck, VariSense, VectorBlox, VeriPHY, ViewSpan, WiperLock, XpressConnect, 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.

The Adaptec logo, Frequency on Demand, Silicon Storage Technology, and Symmcom are registered trademarks of Microchip Technology Inc. in other countries.

GestIC is a registered trademark of Microchip Technology Germany II GmbH & Co. KG, a subsidiary of Microchip Technology Inc., in other countries.

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

© 2024, Microchip Technology Incorporated and its subsidiaries. All Rights Reserved.

ISBN: 978-1-6683-3270-2

Quality Management System

For information regarding Microchip's Quality Management Systems, please visit www.microchip.com/quality.

Worldwide Sales and Service

AMERICAS	ASIA/PACIFIC	ASIA/PACIFIC	EUROPE
Corporate Office 2355 West Chandler Blvd. Chandler, AZ 85224-6199 Tel: 480-792-7200 Fax: 480-792-7277 Technical Support: www.microchip.com/support Web Address: www.microchip.com	Australia - Sydney Tel: 61-2-9868-6733 China - Beijing Tel: 86-10-8569-7000 China - Chengdu Tel: 86-28-8665-5511 China - Chongqing Tel: 86-23-8980-9588 China - Dongguan Tel: 86-769-8702-9880 China - Guangzhou Tel: 86-20-8755-8029 China - Hangzhou Tel: 86-571-8792-8115 China - Hong Kong SAR Tel: 852-2943-5100 China - Nanjing Tel: 86-25-8473-2460 China - Qingdao Tel: 86-532-8502-7355 China - Shanghai Tel: 86-21-3326-8000 China - Shenyang Tel: 86-24-2334-2829 China - Shenzhen Tel: 86-755-8864-2200 China - Suzhou Tel: 86-186-6233-1526 China - Wuhan Tel: 86-27-5980-5300 China - Xian Tel: 86-29-8833-7252 China - Xiamen Tel: 86-592-2388138 China - Zhuhai Tel: 86-756-3210040	India - Bangalore Tel: 91-80-3090-4444 India - New Delhi Tel: 91-11-4160-8631 India - Pune Tel: 91-20-4121-0141 Japan - Osaka Tel: 81-6-6152-7160 Japan - Tokyo Tel: 81-3-6880-3770 Korea - Daegu Tel: 82-53-744-4301 Korea - Seoul Tel: 82-2-554-7200 Malaysia - Kuala Lumpur Tel: 60-3-7651-7906 Malaysia - Penang Tel: 60-4-227-8870 Philippines - Manila Tel: 63-2-634-9065 Singapore Tel: 65-6334-8870 Taiwan - Hsin Chu Tel: 886-3-577-8366 Taiwan - Kaohsiung Tel: 886-7-213-7830 Taiwan - Taipei Tel: 886-2-2508-8600 Thailand - Bangkok Tel: 66-2-694-1351 Vietnam - Ho Chi Minh Tel: 84-28-5448-2100	Austria - Wels Tel: 43-7242-2244-39 Fax: 43-7242-2244-393 Denmark - Copenhagen Tel: 45-4485-5910 Fax: 45-4485-2829 Finland - Espoo Tel: 358-9-4520-820 France - Paris Tel: 33-1-69-53-63-20 Fax: 33-1-69-30-90-79 Germany - Garching Tel: 49-8931-9700 Germany - Haan Tel: 49-2129-3766400 Germany - Heilbronn Tel: 49-7131-72400 Germany - Karlsruhe Tel: 49-721-625370 Germany - Munich Tel: 49-89-627-144-0 Fax: 49-89-627-144-44 Germany - Rosenheim Tel: 49-8031-354-560 Israel - Ra'anana Tel: 972-9-744-7705 Italy - Milan Tel: 39-0331-742611 Fax: 39-0331-466781 Italy - Padova Tel: 39-049-7625286 Netherlands - Drunen Tel: 31-416-690399 Fax: 31-416-690340 Norway - Trondheim Tel: 47-72884388 Poland - Warsaw Tel: 48-22-3325737 Romania - Bucharest Tel: 40-21-407-87-50 Spain - Madrid Tel: 34-91-708-08-90 Fax: 34-91-708-08-91 Sweden - Gothenberg Tel: 46-31-704-60-40 Sweden - Stockholm Tel: 46-8-5090-4654 UK - Wokingham Tel: 44-118-921-5800 Fax: 44-118-921-5820