JUMP*tec*® Ethernet Remote Target Setup

Technical Manual

Rev. 1.0

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User Information

In this document **JUMP*tec*Ò** Industrielle Computertechnik AG will also be referred to by the short form " **JUMP*tec*Ò** ".

The information in this document has been carefully checked and is believed to be accurate and reliable. However, no responsibility is assumed for inaccuracies. Furthermore, **JUMP*tec*Ò** reserves the right to make changes to any portion of this manual to improve reliability, function or design. **JUMP*tec*Ò** does not assume any liability for any product or circuit described herein.

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General

For the circuits, descriptions and tables indicated no responsibility is assumed as far as patents or other rights of third parties are concerned.
The information in the Technical Descriptions describes the type of the boards and shall not be considered as assured characteristics.

Warranty

Each board is tested carefully and thoroughly before being shipped. If, however, problems should occur during the operation, please check your user specific settings of all boards included in your system. This is often the source of the fault. If a board is defective, it can be sent to your supplier for repair. Please take care of the following steps:

1. The board returned should have the factory default settings since a test is only possible with these settings.

2. In order to repair your board as fast as possible we require some additional information from you. Please fill out the attached Repair Form and include it with the defective board.

3. If possible the board will be upgraded to the latest version without additional cost.

4. Upon receipt of the board please be aware that your user specific settings were changed during the test.

Within the warranty period the repair is free of charge as long as the warranty conditions are observed. Because of the high test expenditure you will be charged with the test cost if no fault is found. Repair after the warranty period will be charged.

This **JUMP*tec*Ò** product is warranted against defects in material and workmanship for the warranty period from the date of shipment. During the warranty period **JUMP*tec*Ò** will at its option either repair or replace defective products.

For warranty service or repair the product must be returned to a service facility designated by **JUMP*tec*Ò**.

The foregoing warranty shall not apply to defects resulting from improper or inadequate maintenance or handling by buyer, unauthorized modification or misuse, operation outside of the product´s environmental specifications or improper installation or maintenance.

JUMP*tec*Ò will not be responsible for any defects or damages to other products not supplied by **JUMP*tec*Ò** that are caused by a faulty **JUMP*tec*Ò** product.

Introduction

The **JUMP*tec*Ò** Ethernet Remote Target Setup (JERTS) is a visual tool takes the contents of a directory on a development workstation, creates a bootable FAT file system from those files, and then downloads this disk image thru Ethernet directly onto the **JUMP*tec*Ò** board's flash, chipDISK, or hard disk. Long file names are supported.

This tool is ideal for use with Windows NT Embedded where the finished operating system will be placed in a directory named C:\EmbeddedOS on the development PC and needs to be transferred to the target system. JERTS accomplishes the task at the touch of a button and then automatically reboots the target to launch the new copy of the OS.

JERTS can also be used to create a bootable Windows CE, Windows 9x, Windows NT/2000, MS-DOS, DR-DOS, VxWorks disk on JUMPtec boards.

JERTS requires Windows 9x/NT/2000 on the development workstation.

What's new

This is the initial release.

Requirements

To run the **JUMP*tec*ȯ** Ethernet Remote Target Setup must have any of these operation systems on your development workstation:

- Windows NT 4.0
- Windows 2000
- Windows 95
- Windows 98

The target system can be any **JUMP*tec*ȯ** boards with a floppy disk drive, and a flash, chipDISK, or hard disk with a minimum size of 2.5 MByte. One of the following Ethernet controllers must be on board or added externally:

- Crystal 8900
- Intel 82559(ER)
- Davicom 9102
- AMD PCNET Fast III
- NE2000 (ISA only)

JUMP*tec*ȯ does not provide any support or guarantee that JERTS works with 3rd party add-on cards even if the above controller chips are used.

These operating systems can be set up on the target:

- Windows CE
- Windows 95
- Windows 98
- Windows NT
- Windows NT Embedded
- MS-DOS 6.22
- DR-DOS 7.03
- VxWorks

The maximum disk size that JERTS can handle is only restricted by hardware. The maximum size of the first partition however is limited to 2 GB. JERTS always operates on the first partition of the first fixed disk. Other partitions on that drive and their entries in the partition table remain intact. The minimum partition size is 2.5 MB.

JERTS creates a bootable FAT16 file system. To make the Ethernet transfer as fast as possible only actually used sectors are transferred to the target.

The boot files for the selected OS must be present in the download directory. So for MS-DOS IO.SYS and MSDOS.SYS, and COMMAND.COM would be required.

Installation

To install the **JUMP*tec*Ò** Ethernet Remote Target Setup you must perform the following steps manually:

Copy all files contained in the JERTS subdirectory on the JERTS disk to any location on your development machine's hard disk.

JERTS.EXE The file system build and download tool
JW2NSET.EXE Tool to remotely set up a permanent IP address in the target
JERTS.DOC This documentation.

Preparation

In order for the transfer to work you must assign a fixed IP address and mask that is compatible with your networking environment. Ask your network administrator if in doubt.

There are two ways to set the IP address of the target:

- Edit the file JERTSIP.CFG on the target boot disk.
- Use a serial connection and JW2NSET.EXE to store the addresses in each target's EEPROM.

The EEPROM IP address takes precedence over the one on the JERTS target boot disk's configuration file.

Disk based target IP configuration

Modify the JERTSIP.CFG on the JERTS boot disk. The defaults are:

```
my_ip=89.0.0.222
netmask=255.255.255.0
```

EEPROM based target IP configuration

This method is available on many but not all **JUMP*tec*Ò** boards.

- Connect any of the target's COM ports with a free COM port on your development workstation with a serial null modem cable.
- Run the JERTS.EXE program on the development workstation.
- Select the COM port you have used on your development workstation.
- Select any baud rate.
- Enter the same IP address and mask for the target system.
- Press the Apply button.
- Boot the target with the supplied JERTS floppy disk.
- The connection should be established before the target boots the OS if any.

The IP address and mask will remain in the target until changed again.

Using JERTS

- Make sure that the target disk or the target EEPROM contains a valid IP address and mask.
- The target's hard disk should be partitioned but need not be formatted. All **JUMP*tec*Ò** chipDISKs are partitioned. JERTS can also partition the disk for you but the exact disk dimensions must be known and specified in an INI file. (see Advanced Configuration).
- Boot the target with the supplied JERTS floppy disk.
- After a short period the target should display a screen like this:

```
JERTS Target Program Version 1.0
(C) 2000 JUMPtec AG & 2net, Ltd.
Using IP address 89.0.0.222 mask 255.255.255.0
Ready to proceed with a JERTS download.
```

- Run the JERTS.EXE program on the development workstation.
- Enter the same IP address as displayed by the target system.
- Select the target's operating system or <not bootable> to create just a data disk.
- Choose the directory on your development that contains the files to be transferred to the target's disk. For Windows NT Embedded this directory is called C:\EmbeddedOS.
- Press the Apply button and the download will start.
- In the meantime remove the boot disk from your target's floppy drive.
- After the transfer the target will automatically reboot and run the transferred OS.

Make sure that the files in the download directory are not modified, held open, or deleted by other applications while the download is taking place.

Advanced Configuration

By default JERTS requires that the targets fixed disk is already partitioned. In some cases, such as using third party fixed disks in a production line, it is preferably to skip this step and have JERTS create the partition. To do this you need to specify the hard disk geometry manually.

Create a JERTS.INI file and place it in the same directory as JERTS.EXE. Here are the default values as applicable for a 16 MB chipDISK:

```
[Options]
CreateRoot=1
C=489
H=2
S=32
LBA=0
```

Setting CreateRoot to 1 allows JERTS to create the partition table. (Otherwise an error message is displayed if the target's disk is not partitioned.

C, H, and S specify the disk's number of logical cylinder, heads and sectors. Hint: Use the BIOS setup screen to find out the values. The C value should be one less than the displayed dimensions to follow FDISK standards.

With disks larger than 512 MB LBA must be set to the actual number of sectors on the disk.

Possible Causes for JERTS Failures

- The IP address and mask set in the target and JERTS do not match.
- The target does not have a fixed disk.
- The target's disk is not partitioned.
- The partition is smaller than 2.5 MB.
- The partition is larger than 2 GB.
- The selected files on the development workstation exceed the partition size.
- The some files in the download directory are opened by other applications.
- The some files in the download directory were modified while the download is took place.
- The selected OS does not match the boot files located in the download directory.

Document Revision History

Filename	Date	Edited by	Revision	Alteration to preceding revision
JERTS.DOC	2000.08.30	DP	1.0	Initial version
JERTS.DOC	2000.08.31	DP	1.0	Added more network adaptors

