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This is an addendum to the manual V-E6..-C990 Revision 2 A.
It describes all known problems and discrepancies of the
product EUROCOM-6 Revision 7.F or later.

EUROCOM-6 recognized bugs:

1. VME Interface Chip (VIC)

Several VIC-068 bugs exist with 'F5'/'F8'/'F9' Masks. The
Mask / Rev. No. can be checked by reading ICR5: $FEC0.1077,
which in this case reads $F5, $F8 or $F9. These limit the
functionality in only a few cases:

Users using ELTEC software like OS-9, UNIX etc. should not care
for the following error list. This software uses a work-around
for the listed problems.

For those who want to program their own drivers, please refer to
the following bug list:

a) Read / Write - Posting Problems:

   'F5' only:

   If a write is posted to an address that results in a BERR*,
   that BERR* is echoed on the local bus as a LBERR*. So take
   care when using master write-posting.

   If slave write-posting is enabled slave write block transfer
   and slave RMC cycles may not work (i.e. may corrupt the local
   RAM). So take care when enabling slave write-posting.

   The RMC AS stretching function does not work when master
   write-posting is enabled.

   'F5', 'F8' and 'F9':

   When the VIC has master write-post information stored, slave
   RMC cycles do not work correctly. So do not enable master
   write-posting when the EUROCOM-6 can be slave to a RMC cycle.

b) Problems with Block Transfer:

   'F5', 'F8' and 'F9':
   If the VIC is programmed to transfer exactly 256 bytes
   starting at a 256 byte boundary the VIC will set the boundary
   crossing flags in the DMA status register ($B3).

   If an interrupt acknowledge occurs between a BLT initiation
   cycle and the first transfer, the BLT will malfunction.

   Work-around: Disable all interrupts during BLT.

   Various VIC bugs:

'F5', 'F8' and 'F9':

If the VIC is system controller, it does not drive SYSCLOCK during RESET.

'F5' only:

When the VIC performs a VME interrupt acknowledge cycle it asserts LWORD on the VMEbus. This is not a serious problem because most interrupters (including the VIC) ignore the LWORD signal.

2. Warning

The address lines A0 and A1 connected to the second CIO (external parallel port) are reversed. This will never be changed in the future and is compatible to earlier versions of the EUROCOM-6.

3. Miscellaneous Problems

When writing the local RAM with master block transfer read or slave block transfer write the external cache on the 50 MHz board is not updated. When the CPU reads these locations it reads the old (wrong) data.

Work-around:
Invalidate the external cache by setting PA4 (/ENCACH) of the system CIO to "1" and then to "0" before reading such data (see chapter 13.0 "Status Register and Bits").

4. Battery Life of MK48Txx SRAM/RTC

The MK48Txx devices offer a battery life time of 3.7 years when power is off and the oscillator of the RTC is running. To extend battery life (more than 10 years with ambient temerature below 70 degrees C) the oscillator is stopped before the boards leave ELTEC. To restart the clock the user must execute the OS-9 setime utility or some equivalent program.

If the board should be stored for a longer time it is recommended to stop the clock to preserve battery capacity. This is done by writing $80 to the seconds register at $FEC0.37F9.

Alternatively a Dallas DS1642 device can be used which offers a guaranteed battery life time of 10 years at 25 degrees C even if the oscillator is running. Battery life time of this device can also be considerably extended by stopping the oscillator.

Corrections to the EUROCOM-6 Hardware Manual Revision 2 A:

Contrary to section 8.2.5 "VME Block Transfer Option" D16 BLT is also possible with the 'F8' AND 'F9' VIC. This requires the BLT target address to be in VME standard access range. Alternatively the DSCTRL0 pin of the system CIO can be programmed to "1" (see chapter 13.0 of the EUROCOM-6 Manual).

There are two restrictions:

1. Byte count must be even.

2. Byte count must be dividable by two times the burst length
   without rest (i.e. there are no bursts shorter than burst
   length).

Otherwise an additional cycle at the end of the BLT will occur.

D16 slave BLT is possible without restrictions.

Page 20:

The following two paragraphs on page 20,
chapter 3.0 "Installation" are incorrect:

Main processors.....
               .....hardware on the board.
Another way ....
               .....parameters of the hardware.

Correction:

Main processors can download programs into the local quad- ported RAM and start them by writing the start address of the program to base address + $11C and trigger an NMI by writing to base address + $7C. This procedure does not change the existing initialization parameters of the hardware.

Special Notes on Monitor EPROM (68Kbug) Rev. 4.4:

1. Changing the EPROM

If you've got an older version of the monitor EPROM on your EUROCOM-6 and want to replace it by the new one (4.4 or later), please notice the following:

- jumper J 1701 (autoboot disable) must be set for
  re-configuration.
- re-configure the monitor using the "co" command.
- write the new configuration values to NVRAM using the
  "we" command
- now feel free to remove the autoboot jumper J 1701.

If you simply exchange the EPROMS and omit the re- configuration, you may have problems in booting from harddisk/floppy, i.e. bootstrap terminates with "Kernel has bad module header" message.

2. Network Bootstrapping

As a new feature, this version supports the RARP protocol when booting OS-9 from a network server. If the server supports RARP too, you may set your own Internet address to "0" when asked in the configuration menu.

You will find further detail about TFTP bootstrapping and ARP and

RARP protocols in your OS9TCP manual (Eltec's Internet Support Package).

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3. New NVRAM Parameters

a) Board SCSI_Id

Normally, the SCSI_Id of the EUROCOM-6 is "7" and must not be changed under normal circumstances. Nevertheless, for use with special configurations the SCSI_Id of the board may be changed by modifying the respective location of the NVRAM:

```
>>>>> re               (command: copy NVRAM to working memory)
>>>>> m 95c         (command: memory modify at location 0x95c)
>>>>> 0000095C 07 ?04       (this will set the SCSI_Id to "4")
>>>>> 0000095D xx ?.                  (dot: leave "m" command)
>>>>> we                         (command: copy back to NVRAM)
```

b) Retry count for Network Bootstrapping

If the TFTP-bootstrapper fails by any reason, it will automatically retry as many times as defined by the TFTPboot's retry count. This retry count is set to 5 by default and may be changed by modifying the respective location of the NVRAM:

```
>>>>> re               (command: copy NVRAM to working memory)
>>>>> m 95d         (command: memory modify at location 0x95d)
>>>>> 0000095D 05 ?ff   (this will set the retry count to 255)
>>>>> 0000095E xx ?.                  (dot: leave "m" command)
>>>>> we                         (command: copy back to NVRAM)
```

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