



# RN0081

## Release note

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### Linux support package (LSP) v3.2.3 for SPEAr eMPU family

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#### Introduction

This document provides a summary for the contents of a specific Linux support package (LSP) software version for the SPEAr embedded eMPU family.

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# 1 Release information

**Table 1. Release information**

|                           |                                           |
|---------------------------|-------------------------------------------|
| LSP version               | 3.2.3                                     |
| Delivery date             | February 21, 2012                         |
| Status                    | Validated                                 |
| Reference U-Boot          | v2010.03                                  |
| Reference Linux kernel    | 2.6.37                                    |
| Reference GCC             | 4.6.2 20110813                            |
| Reference Binutils        | 2.20.51.20100809                          |
| Reference GDB debugger    | 6.8. 59                                   |
| Reference GLIBC libraries | 2.10                                      |
| X-Loader repository       | G://git.stlinux.com/spear/xloader.git     |
| U-Boot repository         | git://git.stlinux.com/spear/u-boot.git    |
| Linux repository          | git://git.stlinux.com/spear/linux-2.6.git |
| Git tag                   | lsp-3.2.3                                 |
| PC OS supported           | Fedora 9                                  |

## 2 Target platforms

The following table reports the hardware platforms and the relevant configurations supported by this LSP version. Each target may consist of one or more physical boards (kit).

Y: supported      N: not supported      -: not applicable

**Table 2. Target platforms**

| Target                               | Boards                                                       | Supported | Configuration                                     |
|--------------------------------------|--------------------------------------------------------------|-----------|---------------------------------------------------|
| SPEAr300                             | EVALSPEAR300                                                 | Y         | CPUs @ 333 MHz<br>Bus @ 166 MHz<br>DDR3 @ 333 MHz |
| SPEAr310                             | EVALSPEAR310                                                 | Y         | CPUs @ 333 MHz<br>Bus @ 166 MHz<br>DDR3 @ 333 MHz |
| SPEAR320S-PLC                        | EVALSP320SCPU standalone<br>or with EVALSP320SPLC appl.board | Y         | CPUs @ 333 MHz<br>Bus @ 166 MHz<br>DDR3 @ 333 MHz |
| SPEAR320S-HMI                        | EVALSP320SCPU +<br>EVALSP320SHMI prototype board             | Y         | CPUs @ 333 MHz<br>Bus @ 166 MHz<br>DDR3 @ 333 MHz |
| SPEAr600                             | EVALSPEAR600                                                 | Y         | CPUs @ 333 MHz<br>Bus @ 166 MHz<br>DDR3 @ 333 MHz |
| SPEAr1310-A with<br>common expansion | EVALSP1300CPU R3 +<br>EVALSP1310EXP                          | Y         | CPUs @ 500 MHz<br>Bus @ 166 MHz<br>DDR3 @ 533 MHz |
| SPEAr1340                            | EVALSP1340CPU R1/R2.x                                        | Y         | CPUs @ 600 MHz<br>Bus @ 166 MHz<br>DDR3 @ 533 MHz |

### 3 Features

The following table reports the features supported by this LSP version that have a general scope, not related to specific hardware IPs or external peripherals.

**Table 3. Features supported in LSP 3.2.3**

| Category component | Description                                                             | Targets                | Remarks                                                                                                           |
|--------------------|-------------------------------------------------------------------------|------------------------|-------------------------------------------------------------------------------------------------------------------|
| Multiprocessing    | Symmetric multiprocessing (SMP) in Linux kernel for dual core platforms | SPEAr1310-A, SPEAr1340 | NA                                                                                                                |
| Power Management   | CPU Frequency                                                           | All                    |                                                                                                                   |
|                    | Standby                                                                 | All                    | For Spear3xx/Spear6xx this is with echo mem > /sys/power/state. For others it is echo standby > /sys/power/state. |
|                    | Suspend to RAM                                                          | SPEAr1310-A, Spear1340 | NA                                                                                                                |
|                    | Hibernation                                                             | SPEAr1310-A, Spear1340 | Hibernation is now validated                                                                                      |
| Sound              | Support of ALSA framework                                               | SPEAr1310-A, SPEAr1340 | NA                                                                                                                |
| Video              | V4L2 framework                                                          | SPEAr1340              | NA                                                                                                                |
| Camera             | V4L2 framework                                                          | SPEAr1340              | NA                                                                                                                |
| Flashing Tool      | USB based Flashing tool                                                 | All                    | NA                                                                                                                |

#### 3.1 Linux device drivers for SOC IPs

The following table reports the device drivers supported by this LSP version for functionality provided through software concerned with internal hardware IPs.

Y: supported      N: not supported      -: not applicable

**Table 4. Linux device drivers for SOC IPs**

| Hardware component | Description   | SPEAr 300 | SPEAr 310 | SPEAr 320S | SPEAr 600 | SPEAr 1310-A test chip | SPEAr 1340 | Remarks                                      |
|--------------------|---------------|-----------|-----------|------------|-----------|------------------------|------------|----------------------------------------------|
| ADC                | A/D converter | Y         | Y         | Y          | Y         | Y                      | Y          |                                              |
| CAN                | CAN ports     | -         | -         | Y          | -         | Y                      | -          | Supported with prototype EVALSP320SHMI board |

Table 4. Linux device drivers for SOC IPs (continued)

| Hardware component     | Description                 | SPEAr 300 | SPEAr 310 | SPEAr 320S | SPEAr 600 | SPEAr 1310-A test chip | SPEAr 1340 | Remarks                                      |
|------------------------|-----------------------------|-----------|-----------|------------|-----------|------------------------|------------|----------------------------------------------|
| CLCD                   | CLCD controller             | Y         | -         | Y          | Y         | N                      | Y          | Supported with prototype EVALSP320SHMI board |
| CEC                    | CEC controller              | -         | -         | -          | -         | -                      | Y          | Tested in loopback only                      |
| Camera                 | Camera controller           | -         | -         | -          | -         | -                      | Y          | Tested with only one sensor                  |
| DMAC                   | DMA controller              | Y         | Y         | Y          | Y         | Y                      | Y          |                                              |
| EMI Flash memory PNOR  | EMI controller              | -         | Y         | Y          | -         | -                      | -          | PNOR is attached on EMI interface            |
| Ethernet (MAC)         | LAN                         | Y         | Y         | Y          | Y         | Y                      | Y          |                                              |
| Ethernet SMI           | LAN                         | -         | Y         | N          | -         | -                      | -          |                                              |
| E1/TDM/HDLC/RS 485     | HDLC controller             | -         | Y         | -          | -         | Y                      | -          |                                              |
| Flash memory NAND      | FSMC controller             | Y         | Y         | Y          | Y         | Y                      | Y          |                                              |
| Flash memory SNOR      | SMI controller              | Y         | Y         | Y          | Y         | Y                      | Y          |                                              |
| GPIO / XGPIO           | Standard and extended GPIOs | Y         | Y         | Y          | Y         | Y                      | Y          |                                              |
| GPT                    | General purpose timers      | Y         | Y         | Y          | Y         | Y                      | Y          |                                              |
| GPU (MALI 200)         | 2D/3D graphics              | -         | -         | -          | -         | -                      | Y          |                                              |
| Hardware video decoder |                             | -         | -         | -          | -         | -                      | Y          |                                              |
| I2C                    | I2C controller              | Y         | Y         | Y          | Y         | Y                      | Y          | Slave mode not supported                     |
| I2S                    | I2S controller for audio    | N         | -         | -          | -         | -                      | Y          | Tested with STA529 codec                     |
| JPEG                   | JPEG codec                  | Y         | Y         | Y          | Y         | Y                      | -          |                                              |
| Keypad                 | Keypad controller           | Y         | -         | -          | -         | N                      | N          |                                              |
| MCIF (SD/MMC)          | Memory card I/F             | Y         | -         | Y          | N         | Y                      | Y          |                                              |

Table 4. Linux device drivers for SOC IPs (continued)

| Hardware component        | Description                         | SPEAr 300 | SPEAr 310 | SPEAr 320S | SPEAr 600 | SPEAr 1310-A test chip | SPEAr 1340 | Remarks                   |
|---------------------------|-------------------------------------|-----------|-----------|------------|-----------|------------------------|------------|---------------------------|
| PCIe                      | PCIe controller                     | -         | -         | -          | -         | Y                      | Y          | Slave mode not supported  |
| PWM                       | PWM controller                      | -         | -         | Y          | -         | -                      | Y          | Not validated             |
| RTC                       | Realtime clock                      | Y         | Y         | Y          | Y         | Y                      | Y          |                           |
| SATA                      | SATA controller                     | -         | -         | -          | -         | -                      | Y          |                           |
| Security Coprocessor (C3) | Crypto accelerator                  | Y         | Y         | Y          | -         | N                      | Y          |                           |
| SPP                       | Legacy parallel port                | -         | -         | Y          | -         | -                      | -          | Not validated             |
| SSP                       | SPI port                            | Y         | Y         | Y          | Y         | Y                      | Y          | Slave mode not supported  |
| SPDIF Out                 | SPDIF playback controller for audio | -         | -         | -          | -         | -                      | Y          | Tested with HDMI tx on TV |
| SPDIF In                  | SPDIF recorder for audio            | -         | -         | -          | -         | -                      | Y          | Tested with loopback      |
| Temperature sensor        |                                     | -         | -         | -          | -         | Y                      | Y          |                           |
| Touchscreen               |                                     | Y         | -         | -          | Y         | N                      | Y          |                           |
| UART                      | Asynchronous serial port            | Y         | Y         | Y          | Y         | Y                      | Y          |                           |
| USB DEVICE                | USB device controller               | Y         | Y         | Y          | Y         | Y                      | -          |                           |
| USB HOST                  | USB host controller                 | Y         | Y         | Y          | Y         | Y                      | Y          |                           |
| USB OTG                   | USB OTG controller                  | -         | -         | -          | -         | -                      | Y          |                           |
| WATCHDOG                  | Watchdog timer                      | Y         | Y         | Y          | Y         | Y                      | Y          |                           |
| Video In                  | Video In controller                 | -         | -         | -          | -         | -                      | N          |                           |



## 3.2 Linux device drivers for external peripherals

**Table 5. Linux device drivers for external peripherals**

| Hardware component | Description           | SPEAr 300 | SPEAr 310 | SPEAr 320S | SPEAr 600 | SPEAr 1310-A test chip | SPEAr 1340 | Remarks                                                 |
|--------------------|-----------------------|-----------|-----------|------------|-----------|------------------------|------------|---------------------------------------------------------|
| Accelerometer      | Motion sensor         | -         | -         | -          | -         | -                      | Y          |                                                         |
| Gyroscope          | Gyroscope controllers | -         | -         | -          | -         | -                      | Y          |                                                         |
| HDMI TX            | HDMI TX controller    | -         | -         | -          | -         | -                      | Y          | Tested with HDMI Tx on TV through HDMI plug outside LSP |
| Magnetometer       | Motion sensor         | -         | -         | -          | -         | -                      | Y          |                                                         |

## 4 Summary of main changes

This LSP version includes the following main changes:

- SOC/board support added/removed
  - New SPEAr320S product added (in SPEAr320 backward compatibility mode). Support added for HMI board v3.0 and PLC board.
  - Support for SPEAr1300 and SPEAr900 test chips now dropped.
- XLoader
  - Added support of SPEAr320S
  - Change in SPEAr13xx leveling algorithm
  - Changed SPEAr3xx port priority
  - Changed DDR pad registration configuration
  - Changed MPMC configuration for DUAL DDR for SPEAr3xx
- U-Boot
  - Added support of SPEAr320S
  - Added support to list devices in IMLS in NAND
  - Updated Flash probing method
- Linux
  - Special customized bootargs panel is replaced by generic standard argument video to set CLCD resolution during boot. Refer to *linux-2.6/Documentation/kernel-parameters.txt* for further details.
  - CLCD can now be programmed to any valid resolution supported by CLCD controller. It looks for the mode from the platform first, then from generic modedb present in drivers/video/modedb.c.
  - On boot and thereafter on hotplug events, HDMI reads display EDID and sets CLCD resolution accordingly. For example, CLCD on boot chooses platform supplied mode and displays logo, but when HDMI is connected it overrides with its own best supported resolution. This may disturb the logo if 1080p is not passed from platform or from video bootargs.
  - SPDIF-IN is part of the release which is tested against SPDIF-OUT loopback
  - Magnetometer and accelerometer support added
  - I2S, SPDIF-OUT and SPDIF-IN support power management and hibernation callbacks
  - Mute control added to SPDIF and ADC gain to I2S record feature
  - Video-in support. This is tested with loopback board with CLCD output looped back to video in IP.
  - Camera supports 2 Mega pixel resolution, suspend/resume and crop implementations
  - Wake up sources extended to RTC, GPIO, ethernet and OTG USB device (earlier it was only GPIO) on SPEAr1340
  - Hibernation can be performed on MMC also now. Requires enabling MMC\_UNSAFE\_RESUME through menuconfig.

- Added support for MALI GPU and video decoder. These features, if needed, must be explicitly enabled using the Linux *menuconfig* tool before rebuilding the kernel source tree.
- I2C bus recovery hook added in SPEAr1340
- Most of the drivers now support hibernation

Note: 1 For detailed changes, use following Git commands

*git diff lsp-3.2.3..lsp-3.2.2: reports differences in each file with respect to earlier release*

*git log lsp-3.2.3: log message for lsp-3.2.3 up to now*

2 Major board related changes

*For power management following changes should be done*

- EVALSP1300CPU (board rev. 2 and 3), EVALSP1340CPU (board Rev.1) DDR specific changes (control of reset and clock signal through GPIO) for wake up from lower power state to normal power state

*Major EVALSP1340CPU (board rev.2.1) changes with respect to rev.1*

- PCI: Instead of PCI, SATA is supported by default. Board changes required to enable PCI.

*One camera sensor mounted over board*

*VGA on board support*

*Power management specific changes incorporated on board*

## 5 Bugs closed in LSP 3.2.3

Table 6. Bugs closed in LSP 3.2.3

| Category / Component | Summary                                                                               | Description                                                                                                                                                                                                                                               | Severity | Relevant targets       | Workaround                            | ID     |
|----------------------|---------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------------------------|---------------------------------------|--------|
| Camera               | For some IOCTLs, invalid options also return success                                  | If invalid buf_type field is set in struct v4l2_cropcap for ioctl VIDIOC_CROPCAP, ioctl returns success. instead of -1. Similarly Video_G_CROP does not return EINVAL in case of unsupported bug types Video_G_CROP, it returns success even if it fails. | Minor    | Spear1340              | Issue in case of erroneous input      | 150432 |
| Camera               | IOCTL ENUM_FMT gives wrong format                                                     | IOCTL ENUM_FMT gives wrong format for index=4. Empty string is returned by driver.                                                                                                                                                                        | Normal   | Spear1340              |                                       | 150722 |
| Camera               | Power Management (suspend, standby, hibernation) not supported                        | Camera does not support any of lower power state                                                                                                                                                                                                          | Plus     | SPEAR1340              |                                       | 156041 |
| Ethernet             | On MTU 9000: Cannot take TCP Rx performance. UDP Rx performance is zero.              |                                                                                                                                                                                                                                                           | Plus     | SPEAR1310, SPEAR1310-A | NA                                    | 142796 |
| Ethernet             | Ethernet not stable while moving to low power state                                   | Ethernet link goes down when putting system in low power state and then waking it up                                                                                                                                                                      | Normal   | SPEAR1340              |                                       | 150075 |
| Gyroscope            | Driver does not provide any provision to select different power modes from user space | Gyroscope supports multiple power modes to put IP in lower modes but there is no method to modify it from user space.                                                                                                                                     | Minor    | SPEAR1340              |                                       | 120329 |
| HDMI                 | Audio does not work when resolution is different from default resolution of TV.       | Selecting resolution other than default resolution of TV (selecting default panel) displays image on TV but no audio is heard.                                                                                                                            | Minor    | SPEAR1340              | Setting proper resolution solves this | 149748 |
| HDMI                 | Random flickering on TV connected on HDMI                                             | TV screen flickers randomly if a media is played using mplayer. Frequency programmed for CLCD needs to be tuned further.                                                                                                                                  | Normal   | SPEAR1340              |                                       | 150231 |

Table 6. Bugs closed in LSP 3.2.3 (continued)

| Category / Component | Summary                                                                                                                         | Description                                                                                                                                                  | Severity | Relevant targets                          | Workaround                                                                    | ID             |
|----------------------|---------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-------------------------------------------|-------------------------------------------------------------------------------|----------------|
| I2C                  | VS6725 camera sensor register access fails when I2C.0 controller is used in FAST mode                                           |                                                                                                                                                              | Normal   | SPEAR1340                                 | Changing speed to standard works                                              | 149546         |
| I2s                  | No audio in left speaker if pb=hdmi_tx is set in boot arguments                                                                 |                                                                                                                                                              | Normal   | SPEAR1340                                 | Wrong configuration of HDMI. HDMI default audio SPDIF works fine in this case | 149944         |
| NAND                 | Mounting of JFFS2 file system fails                                                                                             | Following errors are thrown<br>jffs2_scan_eraseblock(): Magic bitmask 0x1985 not found at 0x00000024: 0x2524 id Empty flash at 0x0001bffc ends at 0x0001c000 | Minor    | SPEAR300, SPEAR310, SPEAR600, SPEAR1310-A | Error messages are thrown but file system works properly                      | 110833         |
| NAND                 | NAND present in EVALSP1340CPU R2.x board does not work properly. Driver has to handle larger size NAND properly.                | Read and write to NAND fails with EVALSP1340CPU R2.x board                                                                                                   | Plus     | SPEAR1340                                 |                                                                               | 152441, 152444 |
| OTG                  | Moving to lower power state fails if OTG is enabled                                                                             | OTG is not enabled in default image. Enabling OTG and then putting system in lower power state fails.                                                        | Plus     | Spear1340                                 |                                                                               | 150483         |
| PCIE                 | System does not resume from suspend to RAM through GPIO wake if PCIE card is plugged (tested with PCIE to SATA and PCIE to USB) |                                                                                                                                                              | Plus     | Spear1340                                 |                                                                               | 151777         |
| PCIE                 | MSI interrupts not working                                                                                                      |                                                                                                                                                              | Medium   | SPEAR1310-A<br>SPEAR1340                  |                                                                               | 112969         |

Table 6. Bugs closed in LSP 3.2.3 (continued)

| Category / Component      | Summary                                                          | Description                                                                                                                                                                                                                                   | Severity | Relevant targets                          | Workaround                                                | ID     |
|---------------------------|------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-------------------------------------------|-----------------------------------------------------------|--------|
| PCIE                      | LSPCI command reported wrong device name                         | LS PCIe command reports pci device name as unknown device.                                                                                                                                                                                    | Minor    | SPEAR1340, SPEAr1310-A                    | Device works even if it's not recognized.                 | 113040 |
| Power Management: Standby | Board does not wake after standby on lower frequency range.      | On stressing system with periodic governor, changes in parallel with standby resume. Sometimes the system does not wake when CPU is at lower frequency.                                                                                       | Minor    | SPEAR1340                                 | NA                                                        | 150184 |
| Power Management: Standby | USB wake up fails                                                |                                                                                                                                                                                                                                               | Plus     | SPEAR300, SPEAr310<br>SPEAR320S, SPEAr600 | Other wake up source like Ethernet, GPIO, RTC can be used | 150443 |
| Power Management: Standby | On stress system standby resume sometimes crashes or gives error | Kernel crashes or gives error messages on stressing system. Test comprised of parallel, very long tests on multiple IP's, and continuous change in CPU frequency through scripts and continuous wake up and standby of system through scripts | Minor    | SPEAR1340, SPEAr1310-A                    | Fails on high stress but individual tests pass            | 150466 |

Table 6. Bugs closed in LSP 3.2.3 (continued)

| Category / Component                                     | Summary                                                                                                                    | Description                                                                                                                                                                                                                         | Severity | Relevant targets           | Workaround                                                                                                                                                                                                  | ID     |
|----------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| Power Management: Suspend to RAM                         | Sometimes kernel crashes on wake up from suspend to RAM through GPIO                                                       |                                                                                                                                                                                                                                     | Plus     | SPEAr 1310-A               | Open issue with Linux kernel. On wake up from power state new MMC node is created and ongoing transfer fails. For such cases, kernel has special boot time config parameter marked CONFIG_MMC_UNSAFE_RESUME | 151716 |
| Power Management: Hibernation                            | I2S fails to resume from hibernation                                                                                       | If audio was played on I2S before putting system into hibernation, audio does not play itself after wake up. Linux kernel reports error underrun (at least 6031.581 ms)                                                             | Normal   | SPEAr 1340                 | Music can be replayed                                                                                                                                                                                       | 151717 |
| Power Management: Hibernation / suspend to RAM / Standby | Resume from any power save state fails if transfer was ongoing on SATA hard disk from NFS before going to power save state | If a data transfer was ongoing from NFS to SATA hard disk, wake up Linux kernel crashes. Transfer between two memory locations of SATA hard disk is not an issue.                                                                   | Plus     | SPEAr 1340<br>SPEAr 1310-A |                                                                                                                                                                                                             | 150634 |
| SPDIF                                                    | Control interface not supported                                                                                            | SPDIF should export control interface, used for control volume, mute and so on                                                                                                                                                      | Plus     | SPEAr 1340                 | Affects mute from software                                                                                                                                                                                  | 149876 |
| SPDIF                                                    | Audio not working after wake up from power save modes                                                                      | If system is put in power save mode while audio was playing then audio does not resume after wake up. Following errors are thrown<br>soc-audio: resume work item may be lost aplay: pcm_write:1528: write error: Input/output error | Plus     | SPEAr 1340                 | Replay audio after resume                                                                                                                                                                                   | 149995 |

Table 6. Bugs closed in LSP 3.2.3 (continued)

| Category / Component | Summary                                  | Description                                                                        | Severity | Relevant targets                                      | Workaround                                      | ID            |
|----------------------|------------------------------------------|------------------------------------------------------------------------------------|----------|-------------------------------------------------------|-------------------------------------------------|---------------|
| USB Device           |                                          | Loopback tests fail if the configuration is switched to loopback from source sink. | Minor    | SPEAr300, SPEAr310, SPEAr320S, SPEAr600, SPEAr1310-A, | Device with single configuration works properly | 73995         |
| UBOOT                | MACB interface support is not available. | SMII support is missing at U-Boot                                                  | Minor    | SPEAr320S, SPEAr310                                   | Other interfaces are available                  | 124322, 97176 |



## 6 Known issues

The following table reports known issues related to this LSP version.

**Table 7. List of known issues**

| Category / Component | Summary                                     | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Severity | Relevant targets | Workaround | ID     |
|----------------------|---------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------------------|------------|--------|
| Accelerometer        | Input device events are not being generated | <p>Accelerometer and Magnetometer data can be read properly through device attributes.</p> <p>But if we read the data from an input framework based-application, events are not getting generated.</p> <p>Observations:</p> <ul style="list-style-type: none"> <li>– Magnetometer: events are generated once and data is received once for (x,y,z) axis</li> <li>– Accelerometer: No events are generated and so data is not read</li> <li>– Gyroscope: Same application is working fine to read gyroscope data</li> </ul> | Normal   | SP1340           |            | 158086 |
| ADC                  | Continuous mode not working                 | <p>While reading ADC channel with continuous mode following error occurs:</p> <p>Error in reading return value: -1 Errno set to 11 (EAGAIN)</p>                                                                                                                                                                                                                                                                                                                                                                            | Plus     | SPEAR300         |            | 7819   |

Table 7. List of known issues (continued)

| Category / Component | Summary                                                      | Description                                                                                                                                                                                                                                                                                                                                                 | Severity | Relevant targets | Workaround | ID     |
|----------------------|--------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------------------|------------|--------|
| Camera               | When iomethod is selected, user pointer green line displays. | When iomethod is used, user pointer captures from the camera the green line that is seen at the start of every frame. One extra frame is also captured for this iomethod. When using mmap method, the exact number of frames is captured, with no green line. Both methods are verified using mplayer to display captured data.                             | Normal   | SPEAR1340        |            | 156391 |
|                      | Only one pixel format is supported. Others are not working   | When the camera application is used to capture data for different pixel formats (such as V4L2_PIX_FMT_YUYV V4L2_PIX_FMT_RGB565 V4L2_PIX_FMT_RGB24 V4L2_PIX_FMT_UYVY), when the same captured data is played after the capture, with respective captured format, the display is not good. Using mplayer captured data, display is only good for yuy2 format. | Plus     | SPEAR1340        |            | 156496 |
|                      | Add interlaced frame support for CAMIF                       | This is related to supporting interlaced fields in CAMIF. Presently CAMIF support only progressive mode in CAMIF.                                                                                                                                                                                                                                           | Normal   | SPEAR1340        |            | 156723 |

Table 7. List of known issues (continued)

| Category / Component | Summary                                                                                 | Description                                                                                                                                                                                                                                                                                                                                                                                                                               | Severity | Relevant targets       | Workaround                                       | ID     |
|----------------------|-----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------------------------|--------------------------------------------------|--------|
| CAN                  | Issue in multiple frame transmission                                                    | <ul style="list-style-type: none"> <li>During transmit, program only two CAN objects for Tx. Program 3rd CAN object on receiving TX_OK of 1st Tx CAN object.</li> <li>Due to a hardware bug in the SPEAr1310-A CAN receive logic, two Rx objects need to be programmed for the same IDENTIFIER to receive a single Rx frame. That is, if CAN frame needs to be received with ID 0, two Rx objects must be programmed for ID 0.</li> </ul> | Plus     | SPEAr1310-A, SPEAr320S | Driver includes workaround, which fails randomly | 81064  |
|                      | S320S_CPU: CAN skb buffer full issue                                                    | While testing CAN for multiple frame transmission at 5 KBPS, sometimes the skb buffer is full and the particular frame transmission gets delayed. This is observed when multiple frame transmission is done in multiple loops.                                                                                                                                                                                                            | Normal   | SPEAr 320S             |                                                  | 155976 |
|                      | S1310-A: CAN - support for CAN not added                                                | No CAN support for S1310-A platform on LSP-3.2.3. During kernel bootup it displays missing platform data, probe failed                                                                                                                                                                                                                                                                                                                    | Normal   | SPEAr 1310-A           |                                                  | 158702 |
| CEC                  | CEC not able to communicate with external device                                        | CEC unable to communicate with external devices. Only tested in loop-back case.                                                                                                                                                                                                                                                                                                                                                           | Plus     | SPEAr 1340             |                                                  | 159097 |
| Ethernet             | NFS server goes down when stressing NFS@10 full [mailto:NFS@10full] or 10 half on SMII2 | TCP-Tx performance is low at 10 full/half for SMII-2 which is probably causing NFS to go down while running tests on SMII2.                                                                                                                                                                                                                                                                                                               | Minor    | SPEAr 310              |                                                  | 90395  |
| Ethernet             | FTP not working on SMII1,2,3,4 for 10/half, 10/full [SPEAr310]                          | FTP operation fail for configuration 10/full, 10/half on all SMII interface of EVALSPEAR310 board. Only ping command works.                                                                                                                                                                                                                                                                                                               | Minor    | SPEAr 310              |                                                  | 00942  |

Table 7. List of known issues (continued)

| Category / Component | Summary                                          | Description                                                                                                                                                                                                                                                                                                                                              | Severity | Relevant targets                     | Workaround | ID     |
|----------------------|--------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|--------------------------------------|------------|--------|
| Ethernet             | Configuring unused SMII results in junk messages | Configuring the SMII0 which is not connected via ethernet cable results in junk messages. Configuration is done using the ethtool. See the log below:<br># ./ethtool.dat -s eth0 autoneg off duplex full speed 100 #<br>./ethtool.dat eth0<br># # # Trying 100/HALF Trying 10/FULL Trying 10/HALF Trying 10/HALF                                         | Minor    | SPEAr 310                            |            | 02208  |
| Ethernet             | Multicast support not available in MII           | Multicast working for SMII driver but not working for MII (synopsys) driver if allmulti not set using ifconfig. Does not work in MII as hash table support for multicast is not available in MII driver.                                                                                                                                                 | Normal   | SPEAr 300, SPEAr 600                 |            | 96710  |
| Ethernet             | Ethernet performance for 1000/full is very low   | We get much less performance on 1000/full configuration using netperf. Performance results are given below:<br>– For Spear1310-A, Spear1340 TCP Tx Perf TCP RX perf 1000/FULL 200.71 Mbps 345.65 Mbps<br>– UDP Tx Perf UDP Rx perf 1000/full 301.04 Mbps 799.64 Mbps<br>– For Spear600: TCP-Tx - 72.47 TCP-Rx - 57.17<br>– UDP-Tx - 211.42 UDP-Rx - 3.53 | Plus     | SPEAr1340<br>SPEAr1310-A<br>SPEAr600 |            | 102682 |

Table 7. List of known issues (continued)

| Category / Component | Summary                                           | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Severity | Relevant targets                                                  | Workaround                | ID     |
|----------------------|---------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-------------------------------------------------------------------|---------------------------|--------|
| Ethernet             | TX performance test for MTU 9000 results in error | <p>Ping fails at 9000 MTU from SoC to PC. However we can ping from PC to SoC. This is true at all speeds (1000/100/10).</p> <p>At 1000-F unable to take TCP-Tx performance (hangs and need to press control c). At speeds below 1000 we can take TCP Tx/Rx performances. (ping will still fail)</p> <p>UDP-Rx performance for all speed/duplex settings in zero.</p> <p>Listing out performance at 9000 MTU to make things clearer. Tx Rx 1000-F TCP ^C 650.21</p> <p>UDP 775.44 0 100-F</p> <p>TCP 99.13 99.10</p> <p>UDP 100.13 0 100-H</p> <p>TCP 91.36 96.58</p> <p>UDP 100.12 0 10-F</p> <p>TCP 9.86 9.9</p> <p>UDP 10.71 0 10-H</p> <p>TCP 9.58 9.46</p> <p>UDP 10.71 0</p> | Normal   | SPEAR 1310-A                                                      | Supported only up to 8192 | 111097 |
| Ethernet             | Unable to set the MTU size if interface is up.    | <p>Steps followed are: ifconfig eth0 mtu 1000</p> <ul style="list-style-type: none"> <li>Result: eth0: must be stopped to change its MTU</li> </ul> <p>SIOCSIFMTU: Device or resource busy</p> <ul style="list-style-type: none"> <li>Expected result:</li> </ul> <ol style="list-style-type: none"> <li>Type ifconfig</li> <li>MTU field should be set to 1000. It is taking only 1500.</li> </ol>                                                                                                                                                                                                                                                                               | Normal   | SPEAR300, SPEAR310, SPEAR320S<br>SPEAR600, SPEAR1310-A, SPEAR1340 |                           | 115905 |

Table 7. List of known issues (continued)

| Category / Component | Summary                            | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Severity | Relevant targets | Workaround | ID     |
|----------------------|------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------------------|------------|--------|
| Ethernet             | NFS going up and down under stress | <p>NFS is going up and down while running stress. Following tests were executed concurrently</p> <p>1) Two instances of memtester (64 MB each) executing 100 loops</p> <p>2) Infinite DMA memory to memory copy on all 16 channels. Data compared with that copied</p> <p>3) One instance of netperf/netserv with netserver running on EVALSP1300CPU R3 and netperf on Linux machine</p> <p>4) Two instances of netperf/netserv executing on EVALSP1300CPU R3 in loopback mode</p> <p>5) Continuous display on CLCD with pattern continuously changing</p> <p>6) Continuous copy of large file from ethernet to USB pen drive attached on one of USB host ports (alternate copy in both directions)</p> <p>7) Continuous copy of large file from ethernet to USB pen drive attached on PCI to USB host converter on one of PCI host port (alternate copy in both directions)</p> | Plus     | SPEAr 1310-A     |            | 123761 |

Table 7. List of known issues (continued)

| Category / Component | Summary                                                               | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Severity | Relevant targets        | Workaround                               | ID     |
|----------------------|-----------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-------------------------|------------------------------------------|--------|
| Ethernet             | SPEAr1310-A ethernet linkup fails for autoneg off on host side        | <ul style="list-style-type: none"> <li>– Ethernet link up fails if host side autoneg is set to off.</li> <li>– If board boots with autoneg on, on host side, then autoneg is set to on, ethernet links down again.</li> <li>– With autoneg on at host side, no such issue is found. Setting autoneg off on host side (before or after booting the board) leads to ethernet link down. This is true for EVALSP1300CPU R3 + EVALSP1310EXP and EVALSP1340CPU R1/R2.x.</li> </ul> | Normal   | SPEAr1340, SPEAr1310-A  |                                          | 150232 |
| Ethernet             | Random failures of NFS at multiple boot                               | Ethernet sometimes fails at multiple reboots                                                                                                                                                                                                                                                                                                                                                                                                                                  | Minor    | SPEAr 1340              | NA                                       | 152249 |
| Ethernet             | SMII interfaces not working                                           | <ul style="list-style-type: none"> <li>– S310. Only 2 SMII out of four work (SMII2 &amp; SMII3 on some boards, SMII1 and SMII2 on others) but SMII4 is not working. Seems to be hardware issue as link LED is not glowing.</li> <li>– S1310-A. 2 SMII and 1 RMII interface. Only SMII interfaces are working. RMII does not work on any board</li> </ul>                                                                                                                      | Normal   | SPEAr 310, SPEAr 1310-A |                                          | 146315 |
| Ethernet             | Ethernet link down on setting link parameter on EVALSP1340CPU R1/R2.x | Setting any of the Ethernet link parameters (speed, duplex, autoneg) causes the link down                                                                                                                                                                                                                                                                                                                                                                                     | Normal   | SPEAr 1340              | Can only be reproduced with specific PCs | 148936 |
| Ethernet             | S320S: performance issue and MTU size issue                           | <p>Following issues on performance on eth2 of S320S.</p> <ul style="list-style-type: none"> <li>– Performance taken only at 100-F &amp; 100-H</li> <li>– Cannot change the MTU sizes.</li> <li>– TCP performance at Tx with 100-F/H is too low at about 10.84</li> </ul>                                                                                                                                                                                                      | Normal   | SPEAr 320S              |                                          | 154305 |

Table 7. List of known issues (continued)

| Category / Component | Summary                                                                          | Description                                                                                                                                                                                                                                                                    | Severity | Relevant targets         | Workaround                                                 | ID     |
|----------------------|----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|--------------------------|------------------------------------------------------------|--------|
| E1                   | Not working                                                                      |                                                                                                                                                                                                                                                                                | Plus     | SPEAr 1310-A             | NA                                                         | 119237 |
| FSMC                 | S1310-A: PNOR not detected                                                       | PNOR not detected on 1310-A. On flashing the U-Boot built for PNOR and connecting the EVALSP1310EXP (on which PNOR chip is present) dmesg shows: <code>physmap platform flash device: 04000000 at 7c000000 physmap-flash physmap-flash: map_probe failed</code>                | Normal   | SPEAr 1310-A             |                                                            | 158778 |
| HDMI                 | With some resolutions set on CLCD, no image is displayed on TV connected to HDMI | Observed with resolution of 480 X 272                                                                                                                                                                                                                                          | Normal   | SPEAr 1340               | Setting proper resolution solves this                      | 149878 |
| HDMI                 | HDMI TX - Interrupts not always received                                         | Sometimes interrupts are not received from HDMI device. This results in no display on HDMI device.                                                                                                                                                                             | Plus     | SPEAr 1340               |                                                            | 149881 |
| I2C                  | I2C designware timeout error                                                     | I2C timeout occurs with some I2C devices like gyroscope. This can occur with other devices too. This error continues in Linux boot log if board is rebooted again.                                                                                                             | Plus     | SPEAr 1310-A, SPEAr 1340 | NA                                                         | 130517 |
| I2C                  | Input event handler messages in kernel bootlog                                   | Following messages from input event handler are noticed for all the input devices (camera, gyroscope, accelerometer, magnetometer, sta529...) available on EVALSP1340CPU R1/R2.x.<br>For magnetometer: <code>evbug.c:Connected device:input5 (magnetometer at unknown).</code> | Normal   | SPEAr 1340               |                                                            | 158078 |
| I2S                  | With aplay command ALSA -l lists capture devices too                             | Aplay -l should list only playback devices. Current implementation lists capture devices too in aplay -l.                                                                                                                                                                      | Normal   | SPEAr 1340               | This affects the listing only. Functionality not effected. | 149669 |



Table 7. List of known issues (continued)

| Category / Component | Summary                                                                                          | Description                                                                                                                                                                                | Severity | Relevant targets                         | Workaround | ID     |
|----------------------|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------------------------------------------|------------|--------|
| I2S                  | Humming noise is heard at high volume                                                            | Noise is heard in audio at high volume                                                                                                                                                     | Normal   | SPEAR1340                                |            | 149947 |
| JPEG                 | JPEGCORE not able to encode the YUV data of JPEG image with varied luminance & chrominance value | Not able to encode YUV data for JPEG images that have varied luminance & chrominance part. Test the same using the diagnostic first. If the behavior is the same, log the bug to Synopsys. | Normal   | SPEAR300, SPEAR310, SPEAR320S, SPEAR600  |            | 92722  |
| LCD                  | Enable DMA only when required                                                                    | DMA is enabled even if there is no request for display from CLCD controller. Current implementation does a memset 0 in such cases. This affects bandwidth and power consumption of system. | Normal   | SPEAR300, SPEAR320S, SPEAR600, SPEAR1340 |            | 114451 |

Table 7. List of known issues (continued)

| Category / Component | Summary                                                           | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Severity | Relevant targets | Workaround | ID     |
|----------------------|-------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------------------|------------|--------|
| OTG                  | Board hangs when connected as device (observed on fedora machine) | <p>On connecting OTG cable B-type to SoC (making it a device) and A-type to Linux PC (making it the host) when board boots up, it hangs giving the following error: USB RESET I2C /dev entries driver Linux video capture interface: v2.00 camera 3-0: Probing 3-0 spear_camif spear_camif.3: SPEAr Camera driver attached to camera 0 vs6725 0-0010: vs6725 Device-ID=0x02::0xd5, Firmware-Ver=0x01 Patch-Ver=0x00 USB RESET zero gadget: high speed config #3: source/sink req 80.06 protocol STALL; err -22</p> <p>Following parameters were enabled from menuconfig<br/>           Synopsys DWC OTG Controller<br/>           DWC Mode Selection (DWC OTG Mode) DWC<br/>           DMA/SlaveMode Selection (DWC DMA Mode)<br/>           DWC Little Endian Register<br/>           DWC FIFO Little Endian<br/>           USB Gadget Support --&gt;;<br/>           USB Peripheral Controller (Synopsys designware OTG Device Controller)</p> | Plus     | SPEAr 1340       |            | 157742 |
| OTG                  | USB OTG: Kernel crashes when OTG type-A connector detached        | Connect Type-A plug on SoC. On detaching this plug the kernel crashes. No device is connected on Type-B plug.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Plus     | SPEAr 1340       |            | 157811 |

Table 7. List of known issues (continued)

| Category / Component | Summary                                                                       | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Severity | Relevant targets | Workaround                           | ID     |
|----------------------|-------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------------------|--------------------------------------|--------|
| OTG                  | USB OTG: Pen drive is not detected when Type-A connector is inserted after B. | <p>Connect B-type end of OTG cable to pen drive (device). Power up board. Connect A-type to SoC (Soc is now host). Pen drive is not detected.</p> <p>When A-type is connected:<br/>           Last login: Thu Jan 1 00:00:20 +0000 1970 on /dev/console. No mail.<br/> <a href="mailto:root@192.168.1.10">root@192.168.1.10</a><br/>           TargetMode="External"&gt;root@192.168.1.10&lt;/a&gt;:~#<br/>           port_otg_wqfunc Init:<br/>           Port Power?<br/>           op_state=a_host Init:<br/>           Power Port (1) OTG<br/>           Interrupt: Debounce Done<br/>           If pen drive is removed and inserted again, it is detected.</p> | Normal   | SPEAr 1340       | Reconnect pen drive and it will work | 157824 |
| OTG                  | USB OTG: USB hub not working over OTG port                                    | <p>Connect Type-A plug to SoC. Connect Type-B plug to a USB hub.</p> <p>Once hub is connected it powers up. If a pen drive is connected, an over-current change message and hub powers off.</p> <p>Remove the Type-A end and reconnect it for OTG to be redetected.</p>                                                                                                                                                                                                                                                                                                                                                                                              | Normal   |                  |                                      | 157843 |
| OTG                  | Some pen drives do not work under stress                                      | Large data copy on Kingston fails (400 MB transfer fails)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Minor    | SPEAr 1340       |                                      | 146543 |
| Others               | Linux kernel compilation displays warning messages                            | Compiling Linux-2.6 kernel displays many warning messages. Although most warnings are related to unused variables, they were not displayed in previous LSP releases.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Plus     | All              |                                      | 157369 |

Table 7. List of known issues (continued)

| Category / Component             | Summary                                                 | Description                                                                                                                                                                                                                                                  | Severity | Relevant targets           | Workaround                                                                                                                                                                                            | ID     |
|----------------------------------|---------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| PCIE                             | PCIE to SATA card (sil24) does not work                 | If PCIE to SATA card (sil24) is connected, Linux kernel crashes                                                                                                                                                                                              | Minor    | SPEAr 1340                 | This does not work with CPU frequency of 600 MHz. Lower CPU frequency is fine. Card works properly if some delay is inserted in sil24 driver after sil24 controller init. Sent issue to driver owner. | 151578 |
| PCIE                             | NFS not coming UP from PCle Ethernet card               | Bootting from PCie causes Ethernet crash message                                                                                                                                                                                                             | Plus     | SPEAr 1310-A               |                                                                                                                                                                                                       | 110231 |
| Power Management: Hibernation    | Error message of CPU stall on hibernation               | On putting system into hibernation following error messages are obtained:<br>INFO: rcu_sched_state detected stall on CPU0 (t=6000 jiffies)                                                                                                                   | Normal   | SPEAr 1340<br>SPEAr 1310-A | Error message displays but system goes into hibernation and wakes properly                                                                                                                            | 150564 |
| Power Management: Suspend to RAM | Random errors from SMI if system is suspended to RAM    | Error from SMI controller if system is suspended to RAM and then woken up in loop along with heavy access of NOR connected on SMI controller.                                                                                                                | Minor    | SPEAr 1340<br>SPEAr 1310   | This random bug does not occur always                                                                                                                                                                 | 150671 |
| PWM                              | PWM period cannot be configured for more than 2 seconds | Standard PWM header file [include/linux/pwm.h] takes duty and period as integer, and can support up to 4 sec. Our PWM can be configured for 12 sec using the variable (period, duty) for U64. PWM configuration is in nanoseconds, so 12 sec is 12000000000. | Normal   | SPEAr 320S                 |                                                                                                                                                                                                       | 81163  |

Table 7. List of known issues (continued)

| Category / Component | Summary                                                                                           | Description                                                                                                                                                                                                | Severity | Relevant targets                            | Workaround                                                                                                                    | ID     |
|----------------------|---------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|---------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|--------|
| SD/MMC               | Few kernel standard test fail                                                                     | Few standard MMC tests fail (test 15 and test 17), though normal file operations and iozone tests pass. Both the tests correspond to error cases.                                                          | Minor    | SPEAR300, SPEAr320S, SPEAr1310-A, SPEAr1340 | Normal functionality is not affected                                                                                          | 103988 |
| SPDIF/I2S            | aplay -L listing not correct                                                                      | Current listing shows only card information. No information about play back device i2s and SPDIF.                                                                                                          | Plus     | SPEAR 1340                                  | ALSA library should have proper name of device in configuration files. This is not present but does not affect functionality. | 149665 |
| SPDIF                | SPDIF: IN: SPDIF does not exit on record even after duration of OFF (sampling frequency is 8000). | SPDIF does not exit on record even after duration of OFF. With Creative Sound Blast, record file size does not increase.                                                                                   | Normal   | SPEAR 1340                                  |                                                                                                                               | 157368 |
| SPDIF                | SPDIF: IN: Record failing from Creative device                                                    | Recording on SPDIF does not work with external device (Creative USB sound blaster). Verified that this sound blaster is giving proper output by playing it on AV receiver. SPDIF OUT plays on AV receiver. | Plus     | SPEAR 1340                                  |                                                                                                                               | 157838 |
| SPDIF                | SPDIF: OUT: First few words are missing                                                           | When SPDIF mono standard OS files are played (Rear_Left.wav or Front_Left.wav), the first word Front is not heard properly. This always happens when audio is played.                                      | Plus     | SPEAR 1340                                  |                                                                                                                               | 157839 |
| SSP                  | Unable to mount file system on memory                                                             | System is tested with SPI memory attached to board. This memory exports mtd block. Trying to mount any file system fails.                                                                                  | Normal   | SPEAR 600                                   | Other SPI memory read-writes work                                                                                             | 141767 |

Table 7. List of known issues (continued)

| Category / Component | Summary                                                      | Description                                                                                                                                                                                                                                               | Severity | Relevant targets                 | Workaround                                       | ID     |
|----------------------|--------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------------------------------|--------------------------------------------------|--------|
| UART                 | RAS UART fails with large data transfers                     | RAS UART: Fail in DMA mode when transfer is in multiples of 200 bytes                                                                                                                                                                                     | Minor    | SPEAr320S                        |                                                  | 145738 |
| UART                 | UART data transfer missing data above 115200                 | System is tested with either external loopback, or data using two ports of same or different UART. UART comparison fails at speeds above 115200.                                                                                                          | Minor    | SPEAr320S                        | Flow control should be used in case of data loss | 78347  |
| UART                 | UART1 does not work on SPEAr1310-A                           | No data transfer on UART1                                                                                                                                                                                                                                 | Plus     | SPEAr1310-A<br>SPEAr320S         |                                                  | 158628 |
| USB host             | EVALSP320SHMI: udev exception                                | If USB is connected on the board when it is booted, following exception occurs: udevadm settle - timeout of 3 seconds reached, the event queue contains: /sys/devices/platform/spear-ohci.0/usb2/2-1/2-1:1.0/host0/target0:0:0/0:0:0/block/sda/sda1 (670) | Normal   | SPEAr320S                        |                                                  | 156266 |
| USB host             | S300/320S: USB speed issue at different ports on 3xx devices | Inserting pen drive on S300/320S boards, on minicom provides following speeds for both USB ports:<br>Upper port: Full speed Lower port: High speed. Both ports should be enumerated as high speed.                                                        | Plus     | SPEAr300, SPEAr310,<br>SPEAr320S |                                                  | 157631 |

Table 7. List of known issues (continued)

| Category / Component | Summary                                                                           | Description                                                                                                                                                                                                                                                                                              | Severity | Relevant targets                                                | Workaround                                      | ID     |
|----------------------|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-----------------------------------------------------------------|-------------------------------------------------|--------|
| USB host             | USB pen drive reset between data transfer                                         | Large file copy between a USB pen drive and another device (USB host, PCIE/USB convertor, NFS) sometimes causes a reset of pen drive. Sometimes USB pen drive is also marked as read only.                                                                                                               | Plus     | SPEAr300, SPEAr310, SPEAr320S, SPEAr600, SPEAr1310-A, SPEAr1340 |                                                 | 96569  |
| USB utils            | Flashing utility on SPEAr 1340 NAND                                               | Flasher does not detect the NAND device on SPEAr1340                                                                                                                                                                                                                                                     | Plus     | SPEAr 1340                                                      |                                                 | 158076 |
| USB utils            | Flashing utility with USB hub between PC and EVALSP1340CPU R1/R2.x                | When Flashing the EVALSP1340CPU R1/R2.x with USB hub as the interface, the Flasher displays error message: Firmware couldnot be uploaded. Restart the board and try again.                                                                                                                               | Normal   | SPEAr 1340                                                      |                                                 | 157943 |
| USB device           | Loopback tests fail if the configuration is switched to loopback from source sink | SPEAr board is powered up with USB device in bulk loopback and source sink configuration (default configuration) and connected to Linux PC. Configure device in loopback and perform tests. Then switch configuration to source sink and run tests. Then switch to loopback configuration and run tests. | Normal   | SPEAr300, SPEAr310, SPEAr320, SPEAr600, SPEAr1310-A, SPEAr1400  | Device with single configuration works properly | 73955  |

Table 7. List of known issues (continued)

| Category / Component | Summary                                                                                                   | Description                                                                                                                                                                      | Severity | Relevant targets                                                   | Workaround | ID     |
|----------------------|-----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|--------------------------------------------------------------------|------------|--------|
| USB device           | testUSB tests failing randomly with USB device on SPEAr1310 (also getting bad OUT byte prints on console) | Multiple loops of various test cases of test USB application via a shell script randomly fail in either test 3 or test 1 (with the error message "Broken Pipe", error number 32) | Normal   | SPEAr600, SPEAr300, SPEAr310<br>SPEAr320, SPEAr1310-A, SPEAr1340   |            | 111758 |
| U-Boot               | <i>USB start</i> fails after a <i>USB stop</i> in U-Boot                                                  |                                                                                                                                                                                  | Minor    | SPEAr300, SPEAr310, SPEAr320S, SPEAr600,<br>SPEAr1310-A, SPEAr1340 |            | 114777 |



Table 7. List of known issues (continued)

| Category / Component | Summary                                                                    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Severity | Relevant targets                                                | Workaround | ID    |
|----------------------|----------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-----------------------------------------------------------------|------------|-------|
| U-Boot               | Need to copy kernel from PNOR to DDR before booting kernel                 | On PNOR, XIP does not work in cases where PNOR is not 32 bit. In such cases kernel should be copied to DDR. The bug is that you need to issue byte access instructions for 8 bit NOR, half word for 16 bit and word for 32 bit NOR because EMI does not break word access into half word access for 16 bit NORs. Therefore trying to access 16 bit NOR through word instructions results in ABORT. For "bootm" there is no control on access width because it is XIP. | Normal   | SPEAr310                                                        |            | 79217 |
| U-Boot               | Serial NOR Flash and parallel NOR Flash can not be accessed simultaneously | Not able to use the serial and parallel NOR Flash from u-boot. This is also the root cause for USB utility not supporting the parallel NOR Flashing.                                                                                                                                                                                                                                                                                                                  | Plus     | SPEAr310                                                        |            | 82695 |
| U-Boot               | Copy from RAM to unaligned Flash addresses does not work                   | Copy from RAM to unaligned addresses does not work but at aligned addresses OK.                                                                                                                                                                                                                                                                                                                                                                                       | Minor    | SPEAr300, SPEAr310, SPEAr320S, SPEAr600, SPEAr1310-A, SPEAr1340 |            | 82797 |

Table 7. List of known issues (continued)

| Category / Component | Summary                                        | Description                                                                             | Severity | Relevant targets                                                | Workaround                                                                                                                                                                   | ID     |
|----------------------|------------------------------------------------|-----------------------------------------------------------------------------------------|----------|-----------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| U-Boot               | imls does not show if rootfs is present on NOR | Running imls command on u-boot prompt provides no information about rootfs              | Normal   | SPEAR300, SPEAR310, SPEAR320S, SPEAR600, SPEAR1310-A, SPEAR1340 |                                                                                                                                                                              | 141247 |
| U-Boot               | USB boot does not work with certain pen drives | USB pen drives not working for USB boot are Kingston DT101 G2 (8GiB) Moserbear          | Normal   | SPEAR1340                                                       |                                                                                                                                                                              | 139385 |
| U-Boot               | Random copy to Flash failures                  | Sometimes copying to Flash gives error copy to Flash...<br>flash.c[221] FIXME:<br>rc=-5 | Plus     | SPEAR300, SPEAR310, SPEAR320S, SPEAR600, SPEAR1310-A, SPEAR1340 | Error flags of SMI controller are not cleared before new transfers, which results in failure even of new transfers. Bug kept open for possible other causes of this failure. | 146182 |

Table 7. List of known issues (continued)

| Category / Component | Summary                                              | Description                                                                                                                                                                                                                                                                                                                   | Severity | Relevant targets | Workaround | ID     |
|----------------------|------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------------------|------------|--------|
| Video In             | Frame loss for increase in number of frames captured | Frames are lost when number of frames captured from the VideoIn is increased.<br><i>Loss Scenario:</i> Resolution = 640*480 Number of frames to be captured = 2000 bpp = 32 Image size received = 2147483647 bytes. Image size should be = 2457600000<br>Number of frames lost increases if number frames captured increases. | Normal   | SPEAr 1340       |            | 154097 |
| Video In             | ENUMINPUT ioctl returns two inputs                   | ENUM INPUT ioctl returns two inputs on enumeration:<br>– index=0, type=2, name= 1st Input,std=31, status=0<br>– index=1, type=2, name= 2nd Input,std=31, status=0<br>v4l2 documentation says that Video inputs and outputs are physical connectors of a device and for VIP. We have only one connector.                       | Normal   | SPEAr 1340       |            | 155324 |
| XLoader              | XLoader Bootargs and U-Boot default bootargs         | XLoader bootargs and U-Boot default bootargs pick file system from wrong mtdblock. Mtdblock for NOR or NAND is shifted due to new mtd block created because of SPI memory.<br>– Either fix sequence of mtdblock same as in earlier release or<br>– Change bootargs in XLoader and U-Boot                                      | Plus     | SPEAr 1340       |            | 140826 |

## 7 Limitations

The following table reports known limitations related to this LSP version. Note that some limitations reported at software level can actually be caused by hardware constraints.

**Table 8. List of known limitations**

| Category / component                              | Summary                                                                                                 | Severity | Targets     |
|---------------------------------------------------|---------------------------------------------------------------------------------------------------------|----------|-------------|
| ADC                                               | DMA mode of ADC is not working due to hardware limitation                                               | Plus     | SPEAr300    |
| SD/MMC                                            | Many SD/MMC cards do not work due to timing issues on EVALSPEAR300 board                                | Plus     | SPEAr300    |
| Ethernet (SMII) 1 and 4                           | Not able to test due to board issue                                                                     | Minor    | SPEAr310    |
| Ethernet (SMII)                                   | SMII1 and SMII3 not working due to board issue                                                          |          | SPEAr1310-A |
| RS485                                             | Due to board issue, RS485-2 is not working                                                              |          | SPEAr310    |
| RTC                                               | RTC does not increment time under battery only condition                                                | Plus     | SPEAr1340   |
| Power management:<br>RTC wake (in suspend to RAM) | Due to hardware issue, wake up from RTC is not working                                                  | Plus     | SPEAr1310-A |
| Power management:<br>GPIO                         | GPIO does not work after suspend to RAM, due to hardware issue. This affects IPs using GPIO such as SPI | Plus     | SPEAr1310-A |

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## 9 Revision history

**Table 9. Document revision history**

| Date        | Revision | Changes                                                                                                                                                                                          |
|-------------|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 02-Apr-2012 | 1        | Initial release.                                                                                                                                                                                 |
| 04-May-2012 | 2        | Modified <a href="#">Table 2: Target platforms</a> .<br>Modified last bullet in <a href="#">Chapter 4</a> , page 10.<br>Modified <a href="#">Table 4</a> and header in <a href="#">Table 5</a> . |

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