User's Manual

RENESAS

CONFIDENTIAL

Ethernet AVB Software Start-Up Guide

User's Manual: Software

R-Car H3/M3/M3N/E3/D3 Series

Renesas Electronics
www.renesas.com

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How to Use This Manual

- **[Readers]**
  This manual is intended for engineers who develop products which use the R-Car H3/M3/M3N/E3 processor.

- **[Purpose]**
  This manual is intended to give users an understanding of the functions of the R-Car H3/M3/M3N/E3 processor device driver and to serve as a reference for developing hardware and software for systems that use this driver.

- **[How to Read This Manual]**
  It is assumed that the readers of this manual have general knowledge in the fields of electrical
  — engineering, logic circuits, microcontrollers, and Linux.
  → Read this manual in the order of the CONTENTS.
  — To understand the functions of a multimedia processor for R-Car H3/M3/M3N/E3
  → See the R-Car H3/M3/M3N/E3 User's Manual.
  — To know the electrical specifications of the multimedia processor for R-Car H3/M3/M3N/E3
  → See the R-Car H3/M3/M3N/E3 Data Sheet.

- **[Conventions]**
  The following symbols are used in this manual.
  Data significance: Higher digits on the left and lower digits on the right
  Note: Footnote for item marked with Note in the text
  Caution: Information requiring particular attention
  Remark: Supplementary information
  Numeric representation: Binary ... 0b××××, or ××××B
  Decimal ... ××××
  Hexadecimal ... 0x×××× or ××××H
  Data type: Double word ... 64 bits
  Word … 32 bits
  Half word ... 16 bits
  Byte ... 8 bits

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1. Overview

1.1 Overview

This document explains Ethernet AVB Software, applications and installation for the R-Car H3/M3/M3N/E3/D3 System Evaluation Board which R-Car H3/M3/M3N/E3/D3 Yocto recipe is installed. Please read this document before using this Ethernet AVB Software.
Please contact Renesas Electronics person who provided this Ethernet AVB Software to you in case of questions. Please use always latest version about U-Boot, MMP and Linux Kernel.

1.2 Composition of this Ethernet AVB Software

The following shows the composition of this Ethernet AVB Software.

- Documents
- AVB Streaming driver
- AVB Media Streaming Engine
- AVB Media Clock Recovery Handler
- Application
- Renesas Yocto Recipe (include in meta-renesas)

1.3 Hardware environment

The following table lists the hardware needed to use this module.

Table 1.1 Hardware environment (R-Car H3/M3/M3N/E3/D3)

Name	Manufacture
R-Car H3-SiP System Evaluation Board Salvator-X	Renesas Electronics
R-Car M3-SiP System Evaluation Board Salvator-X	Renesas Electronics
R-Car H3-SiP/M3-SiP/M3N-SiP System Evaluation Board Salvator-XS	Renesas Electronics
R-Car E3 System Evaluation Board Ebisu-4D	Renesas Electronics
R-CarD3 System Evaluation Board Draak	Renesas Electronics
MOTU AVB Switch	MOTU
Summit X430/X440	Extreme Networks
Linux Host PC	-
Windows Host PC	-
Ethernet cable	-
USB cable (type A to micro B)	-

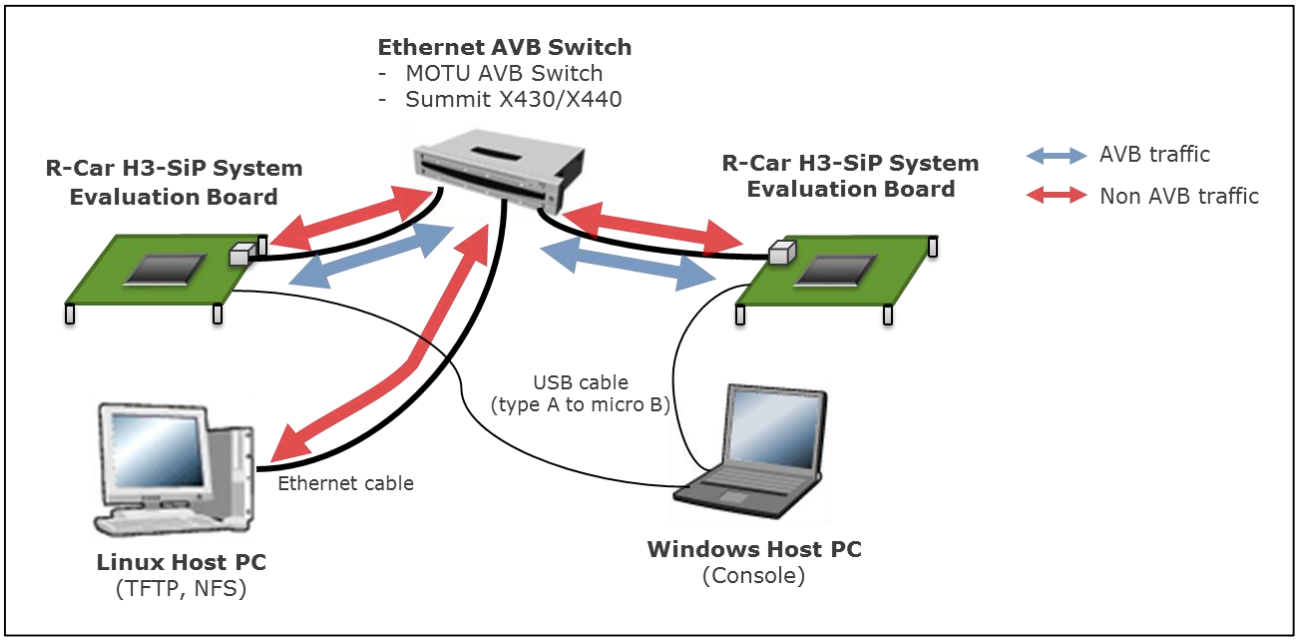

Figure 1.1 Recommended Environment

Note) In the case of Figure 1.1, AVB and Non AVB traffic are in the same network. If you want to separate each traffic, please refer to the Chapter 6.1.

Note) When using MOTU AVB Switch, we recommend updating to the latest version of FW. Please refer to the web site (http://motu.com/avb) about the firmware updating.
When using MOTU AVB switch, should be enable SRP and gPTP protocols. Because MOTU AVB Switch discard

the AVTP streaming traffic if not using these protocols.
Also notice the role of each port. For details, see Chapter 6.2.

Note) When using Summit X430/X440, we recommend updating to the latest version of FW. Please refer to the web site (https://gtacknowledge.extremenetworks.com/articles/How_To/How-to-Obtain-and-Upgrade-EXOS) about the firmware updating.
Also the switch needs several setting. For details, see Chapter 6.3.

1.4 Reference

Table 1.2 Reference

document name	version
Linux Interface Specification Yocto recipe Start-Up Guide User's Manual: Software	Rev 5.9.0
Ethernet AVB Software Simple Application Application Note	Rev.2.30
Ethernet AVB Software Launcher Application Application Note	Rev.2.30
Ethernet AVB Software Media Streaming Engine User's Manual: Software	Rev.2.30
Linux Interface Specification U-Boot User's Manual: Software	Rev.2.55

2. Environmental requirement

2.1 Software relationship

Figure 2.1 shows the software relationship of this Ethernet AVB Software and others.

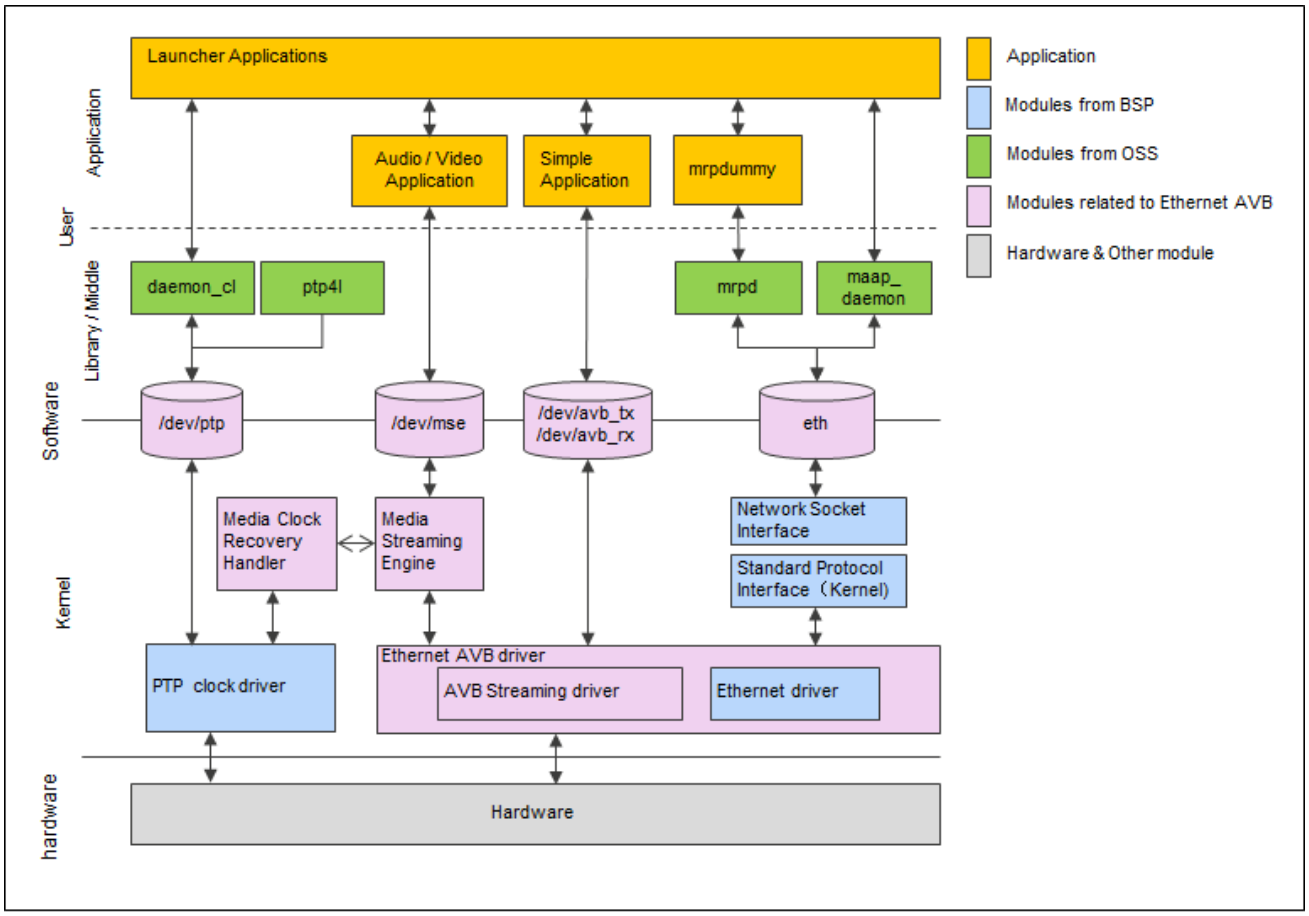

Figure 2.1 Software relationship

2.2 Build process

Figure 2.2 shows the build flow from setup to execution of application. Please perform the setup of Linux BSP and MMP with reference to "Linux Interface Specification Yocto recipe Start-Up Guide". This document treats a region which is covered by a dot-line. To setup Ethernet AVB, please change build procedure to the R-Car H3/M3/M3N/E3/D3 Yocto environment.

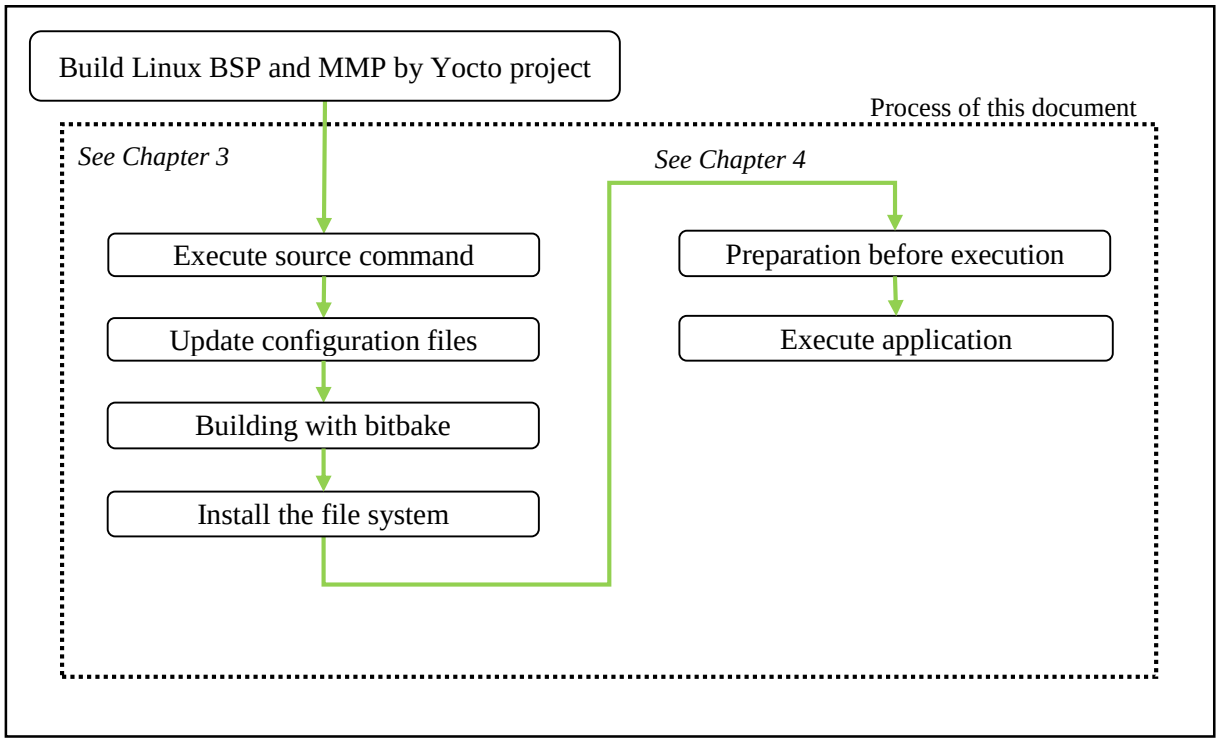

Figure 2.2 Build process

3. Build the kernel and rootfs

Step 1 Execute source command

Please execute source command with oe-init-build-env for setting environment.

```
# cd $WORK
# source poky/oe-init-build-env
```

Step 2 Enable "avb" distro feature in configuration file

Modify local configuration ($WORK/build/conf/local.conf) like a following.

```
...
# AVB Software Package for Linux
DISTRO_FEATURES_append = " avb"
... .
```

Step 3 Building with bitbake

Please build as follows. The root file system images and kernel image are created in $WORK/build/tmp/deploy/images/<supported board name>/ directory.

```
# cd $WORK/build
# bitbake core-image-weston
```

Step 4 Install the file system

Please extract file system on your Root file system.

```
# tar xf $WORK/build/tmp/deploy/images/<supported board name>/core-image-weston-<supported board name>.tar.bz2 -C /export/rfs/
```

4. Demo Applications

This software includes some application software. The list of application and the outline of the function are shown Table 4.1. For details, please refer to the application note. Please see Table 1.2.

Table 4.1 List of demo applications

NO.	Application	Name	Outline
1	simple	simple_talker	Ethernet frames are created from the file specified by user. And transmits Ethernet frames by Ethernet AVB driver.
2	simple	simple_listener	Receives Ethernet frames. And payload data are save at the file.
3	launcher	avblauncher	Provides functions to work together the application for protocol processing and streaming processing.
4	mrpdummy	mrpdummy	Application for bandwidth reservation.

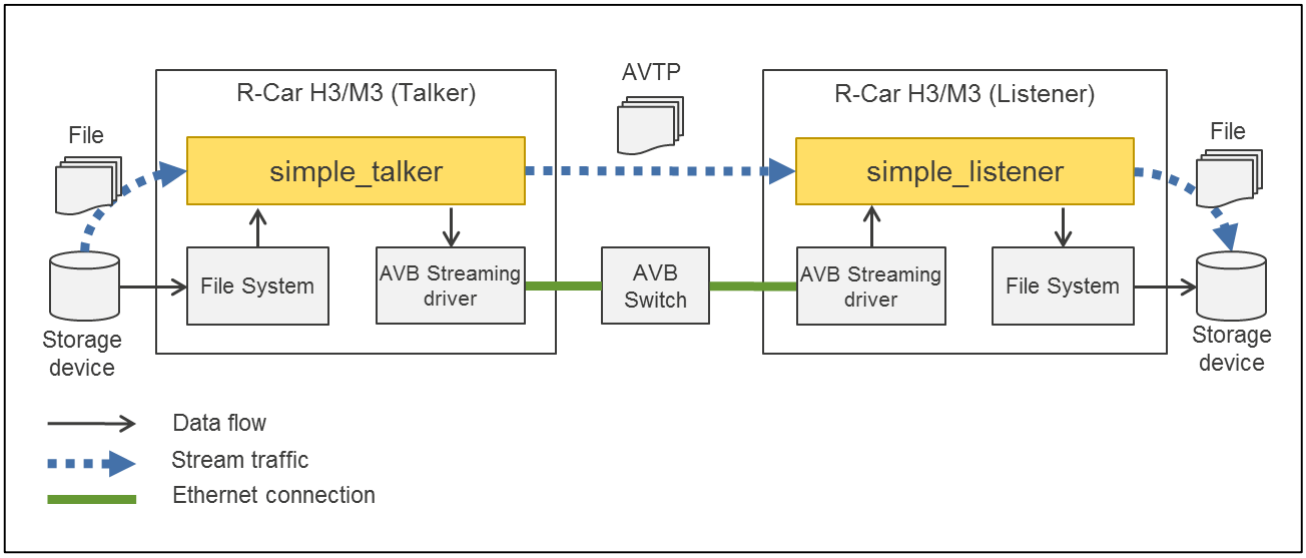

Figure 4.1 Simple application schematic diagram

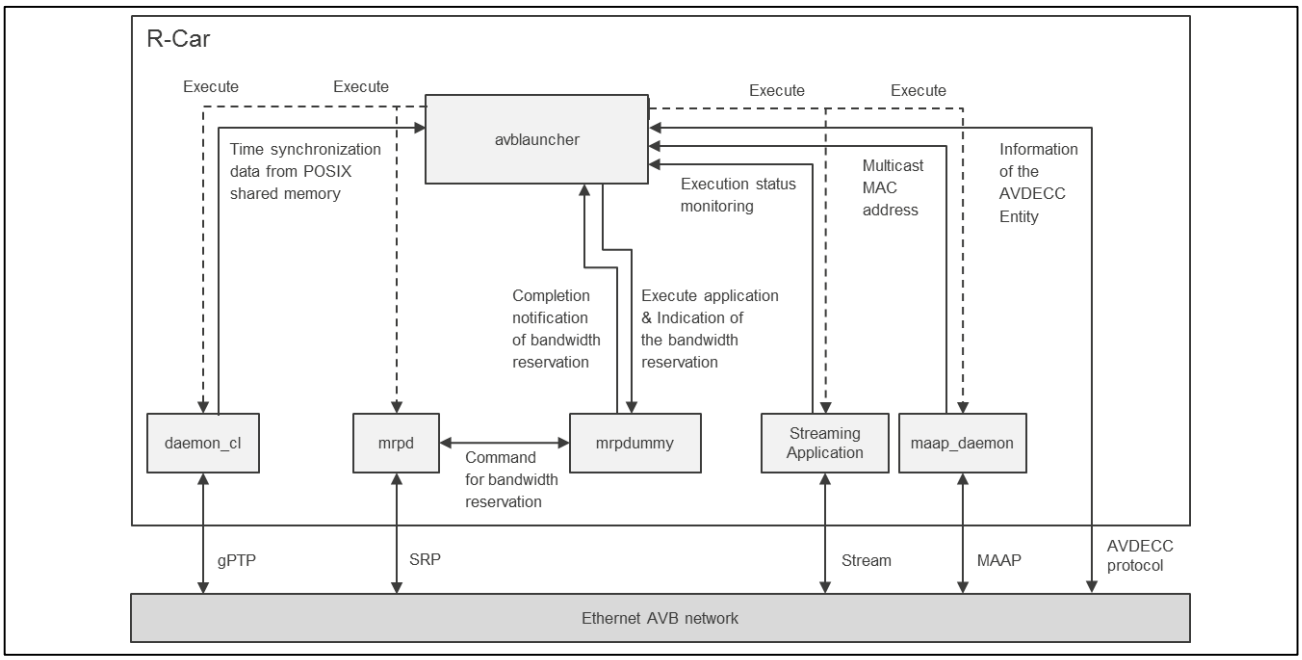

Figure 4.2 Launcher application schematic diagram

4.1 Preparation before execution

Step 1 Prepare U-Boot environment variables

Please start U-Boot by board reset, please set environment variables as follows.

```
=> setenv ethaddr XX:XX:XX:XX:XX:XX
=> setenv ipaddr 192.168.0.20
=> setenv serverip 192.168.0.1
=> setenv bootcmd 'tftp 48080000 Image; tftp 48000000 Image-r8a7795-salvator-x.dtb; booti 48080000 - 48000000'
```

Note) All devices in local area network should be configured that it has a completely different MAC address.
Note) About dtb file in bootcmd is an example for R-Car H3 Ver.2.0. That is should be configured for your device and board.

Step 2 change the bootargs by U-Boot

To change bootargs which passed to the kernel in boot sequence, please modify it as follows.

```
=> setenv bootargs 'consoleblank=0 ip=${ipaddr}:${serverip}::::eth0 root=/dev/nfs rw nfsroot=/export/rfs'
```

Step 3 Start Linux

Please execute the following commands manually, without reset.

```
=> run bootcmd
```

4.2 How to execute the application

This chapter shows an example about how to perform application. Please connect target board, Windows Host PC with terminal software for console. Then please confirm normal starting of U-Boot and Linux.
After booting, please run as these.

4.2.1 How to execute Simple application with Launcher application

Launcher application (avblauncher) provides functions to work together the application for protocol processing and streaming processing. In this chapter, introduce an example. For more information, please refer to application note of Launcher application.

Step 1 Load AVB kernel modules

```
# modprobe -a ravb-streaming
```

Step 2 Edit the Configuration file (For Listener)
Please change StreamID according to your environment.
Edit /etc/avblauncher/simple_listener.ini

```
; Stream ID for Listener (xx:xx:xx:xx:xx:xx:xx:xx)
STREAM_ID = 76:90:50:00:00:00:00:01
            Hardware address of the Talker
                              Unique ID of the stream
```

Step 3 Execute the application

Step 3.1 Execute application (For Listener)

```
# avblauncher -g /etc/daemon_cl/gptp_cfg.ini -a -m -i eth0 /etc/avblauncher/simple_listener.ini
```

Step 3.2 Execute application (For Talker)

```
# avblauncher -g /etc/daemon_cl/gptp_cfg.ini -a -m -i eth0 /etc/avblauncher/simple_talker.ini
```

4.2.2 How to send PCM audio data using MSE with Launcher application

This chapter described how to transport the Wave PCM file via the Ethernet AVB network.
For more information, please refer to user's manual of Media Streaming Engine.
In this chapter, it shows the case of the AAF_PCM format. If you want to use the IEC61883-6 format, please replace the INI file ("/etc/avblauncher/mse_iec61883_6_listener.ini" and "/etc/avblauncher/mse_iec61883_6_talker.ini").

Step 1 Load AVB kernel modules

```
# modprobe -a ravb-streaming mch_core mse_core mse_adapter_eavb mse_adapter_alsa mse_adapter_v4l2
mse_adapter_mch
```

Step 2 Edit the Configuration file (For Listener)
Please change StreamID according to your environment.
Edit /etc/avblauncher/mse_aaf_pcm_listener.ini

```
; Stream ID for Listener (xx:xx:xx:xx:xx:xx:xx:xx)
STREAM_ID = 76:90:50:00:00:00:00:01
```

Hardware address of the Talker (76:90:50:00:00:00) — Unique ID of the stream (00:01)

Step 3 Execute the application

Step 3.1 Execute application (For Listener)

```
# amixer sset 'DVC Out' 1%
# avblauncher -g /etc/daemon_cl/gptp_cfg.ini -a -m -i eth0 /etc/avblauncher/mse_aaf_pcm_listener.ini
```

Step 3.2 Execute application (For Talker)

```
# avblauncher -g /etc/daemon_cl/gptp_cfg.ini -a -m -i eth0 /etc/avblauncher/mse_aaf_pcm_talker.ini
```

4.2.3 How to send H.264 video data using MSE with Launcher application

This chapter described how to transport the H.264 video data via the Ethernet AVB network.
For more information, please refer to user's manual of Media Streaming Engine.
If you want to use the format of the CVF H.264 Draft13, please replace the INI file ("/etc/avblauncher/mse_cvf_h264_d13_listener.ini" and "/etc/avblauncher/mse_cvf_h264_d13_talker.ini").

Step 1 Load MMP kernel modules

```
# modprobe -a mmngr mmngrbuf vspm vspm_if vsp2 uvcs_drv
```

Step 2 Load AVB kernel modules

```
# modprobe -a ravb-streaming mch_core mse_core mse_adapter_eavb mse_adapter_alsa mse_adapter_v4l2
mse_adapter_mch
```

Step 3 Edit the Configuration file (For Listener)
Please change StreamID according to your environment.
Edit /etc/avblauncher/mse_cvf_h264_listener.ini

```
; Stream ID for Listener (xx:xx:xx:xx:xx:xx:xx:xx)
STREAM_ID = 76:90:50:00:00:00:00:01
```

Hardware address of the Talker

Unique ID of the stream

Step 4 Execute the application

Step 4.1 Execute application (For Listener)

```
# avblauncher -g /etc/daemon_cl/gptp_cfg.ini -a -m -i eth0 /etc/avblauncher/mse_cvf_h264_listener.ini
```

Step 4.2 Execute application (For Talker)

```
# avblauncher -g /etc/daemon_cl/gptp_cfg.ini -a -m -i eth0 /etc/avblauncher/mse_cvf_h264_talker.ini
```

4.2.4 How to send MJPEG data using MSE with Launcher application

This chapter described how to transport the MJPEG data via the Ethernet AVB network.
For more information, please refer to user's manual of Media Streaming Engine.

Step 1 Load MMP kernel modules

```
# modprobe -a mmngr mmngrbuf vspm vspm_if vsp2 uvcs_drv
```

Step 2 Load AVB kernel modules

```
# modprobe -a ravb-streaming mch_core mse_core mse_adapter_eavb mse_adapter_alsa mse_adapter_v4l2
mse_adapter_mch
```

Step 3 Edit the Configuration file (For Listener)
Please change StreamID according to your environment.
Edit /etc/avblauncher/mse_cvf_mjpeg_listener.ini

```
; Stream ID for Listener (xx:xx:xx:xx:xx:xx:xx:xx)
STREAM_ID = 76:90:50:00:00:00:00:01
```

Hardware address of the Talker

Unique ID of the stream

Step 4 Execute the application

Step 4.1 Execute application (For Listener)

```
# avblauncher -g /etc/daemon_cl/gptp_cfg.ini -a -m -i eth0 /etc/avblauncher/mse_cvf_mjpeg_listener.ini
```

Step 4.2 Execute application (For Talker)

```
# avblauncher -g /etc/daemon_cl/gptp_cfg.ini -a -m -i eth0 /etc/avblauncher/mse_cvf_mjpeg_talker.ini
```

4.2.5 How to send MPEG2TS data using MSE with Launcher application

This chapter described how to transport the MPEG2TS data via the Ethernet AVB network.
For more information, please refer to user's manual of Media Streaming Engine.

Step 1 Prepare MPEG2TS data (For Talker)
The example script assumes that there was the MPEG2TS file contains H.264 video and AAC-LC Audio. Therefore if using the example script without customize, It is necessary to prepare the MPEG2TS file in advance. Media Streaming Engine and Launcher Application has no limitation depends on some specific codec.

Step 2 Load MMP kernel modules

```
# modprobe -a mmngr mmngrbuf vspm vspm_if vsp2 uvcs_drv
```

Step 3 Load AVB kernel modules

```
# modprobe -a ravb-streaming mch_core mse_core mse_adapter_eavb mse_adapter_alsa mse_adapter_v4l2
mse_adapter_mch
```

Step 4 Edit the Configuration file (For Listener)
Please change StreamID according to your environment.
Edit /etc/avblauncher/mse_iec61883_4_listener.ini

```
; Stream ID for Listener (xx:xx:xx:xx:xx:xx:xx:xx)
STREAM_ID = 76:90:50:00:00:00:00:01
            |_____Hardware address of the Talker_____| |__Unique ID of the stream__|
```

Step 5 Execute the application

Step 5.1 Execute application (For Listener)

```
# amixer sset 'DVC Out' 1%
# avblauncher -g /etc/daemon_cl/gptp_cfg.ini -a -m -i eth0 /etc/avblauncher/mse_iec61883_4_listener.ini
```

Step 5.2 Execute application (For Talker)

```
# avblauncher -g /etc/daemon_cl/gptp_cfg.ini -a -m -i eth0 /etc/avblauncher/mse_iec61883_4_talker.ini
```

5. Notice

Nothing.

6. Appendix

6.1 How to start Linux using a USB Ethernet adapter

Step 1 Change the U-Boot configuration and rebuild

Please refer to "Chapter 1.5 Notice" in "Linux Interface Specification U-Boot User's Manual: Software". And please rebuild the U-Boot and update U-Boot on the target board.

Step 2 Enable the USB Ethernet Kernel configuration and rebuild the Kernel

Step 2.1 Enable the USB Ethernet.

Please enable CONFIG_USB_USBNET[=y] in Kernel configuration and enable all Kernel configuration affected by the CONFIG_USB_USBNET[=y]. Please change the Kernel configuration by the following way.
Edit $WORK/meta-renesas/meta-rcar-gen3/recipes-kernel/linux/linux-renesas/defconfig

```
# CONFIG_USB_LAN78XX is not set
  CONFIG_USB_USBNET=y
  CONFIG_USB_NET_AX8817X=m
```

change to y

Step 2.2 Enable the USB Ethernet adapter driver.

Please enable the kernel configuration of the driver that corresponds to your USB Ethernet adapter.
Edit $WORK/meta-renesas/meta-rcar-gen3/recipes-kernel/linux/linux-renesas/defconfig.

The following description is an example.

```
# CONFIG_USB_LAN78XX is not set
  CONFIG_USB_USBNET=y
  CONFIG_USB_NET_AX8817X=y
```

change to y

Step 2.3 Rebuild the Kernel.

```
# bitbake -c cleansstate linux-renesas
# bitbake linux-renesas
```

Step 3 Prepare U-Boot environment variables

Please start U-Boot by board reset, please set environment variables as follows.

```
=> usb start
=> setenv ethact asx0
=> setenv ethaddr XX:XX:XX:XX:XX:XX
=> setenv ipaddr 192.168.0.20
=> setenv serverip 192.168.0.1
=> setenv bootcmd 'tftp 48080000 Image; tftp 48000000 Image-r8a7795-salvator-x.dtb; booti 48080000 - 48000000'
```

Note) All devices in local area network should be configured that it has a completely different MAC address.
Note) About dtb file in bootcmd is an example for R-Car H3 Ver.2.0. That is should be configured for your device and board.

Step 4 change the bootargs by U-Boot

To change bootargs which passed to the kernel in boot sequence, please modify it as follows.

```
=> setenv bootargs 'consoleblank=0 ip=${ipaddr}:${serverip}::::eth1 root=/dev/nfs rw nfsroot=/export/rfs'
```

Step 5 Start Linux

Please execute the following commands manually, without reset.

```
=> run bootcmd
```

Step 6 Enable "eth0" device.

Please execute the following commands manually, and enable "eth0" device.

```
# ifconfig eth0 up
```

6.2 Recommended connection with MOTU AVB Switch

MOTU AVB Switch has 6 ports, the ETHERNET port cannot using AVB. It recommend the connection as shown in Figure 6.1.

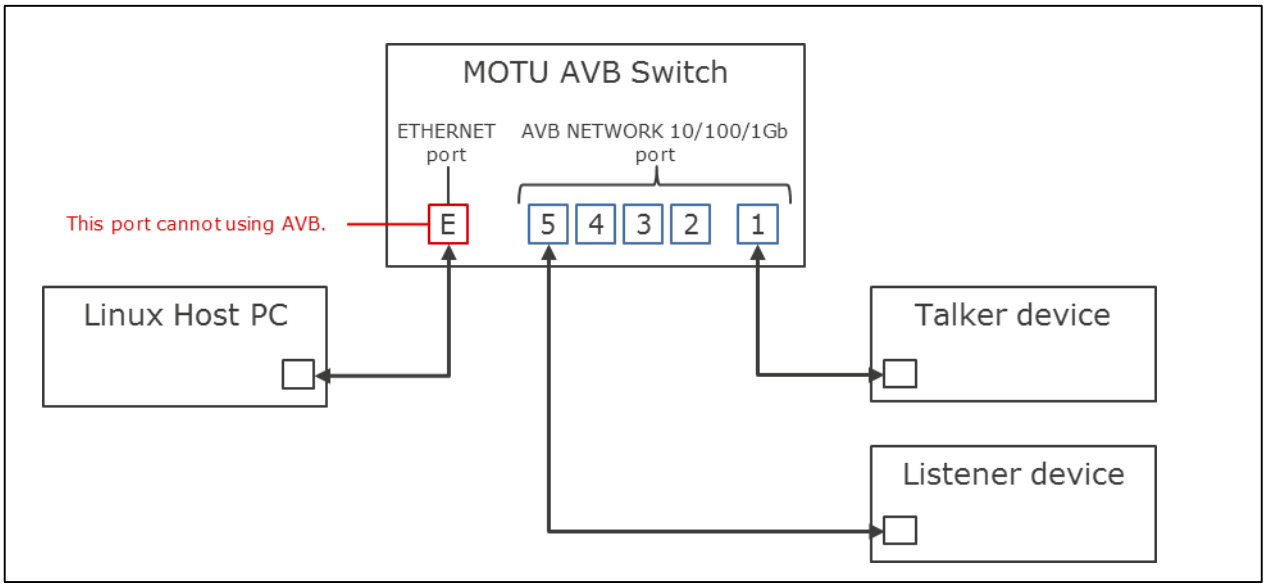

Figure 6.1 Recommended connection with MOTU AVB Switch

6.3 About the setup of Summit X430/X440

This chapter describes a setup in the case of using Summit X430/X440 of Extreme Networks. Please connect with the serial port of PC and execute the following command from a serial console.

Step 1 Enable AVB

```
# enable avb
```

Step 2 Enable gPTP

```
# enable network-clock gptp ports all
```

Step 3 Enable MSRP

If using the Static SRP mode, skip this step.

```
# enable msrp ports all
```

Step 4 Setting VLAN Tag 2

```
# create vlan avb_vlan tag 2
# configure "avb_vlan" add ports all tagged
```

Step 5 Enable RSTP

```
# configure stpd s0 mode dot1w
# enable stpd s0
```

Step 6 Disable Pause-Frame

```
# disable flow-control tx-pause ports all
# disable flow-control rx-pause ports all
```

REVISION HISTORY	Ethernet AVB Start-Up Guide User's Manual: Software

Rev.	Date	Description	
		Page	Summary
0.10	Oct. 26, 2015	-	First edition issued
0.11	Dec. 18, 2015	-	Update version to v2.1.0
0.12	Mar. 11, 2016	1	1.2 Composition of this Ethernet AVB Software - Update based yocto recipe package version to v2.7.0
		6	3. Build the kernel and rootfs - Remove step of the meta-openemebbeded recipe clone.
		6	3. Build the kernel and rootfs step 1 - Update Ethernet AVB software version to v2.2.0
		6	3. Build the kernel and rootfs step 3 - Remove highlight line of the meta-openembedded recipe.
		9	4.1 Preparation before execution Step 2 - Remove "console" setting in bootargs.
		12	6.1 How to start Linux using a USB Ethernet adapter Step 4 - Remove "console" setting in bootargs
0.20	Apr. 22, 2016	1	1.2 Composition of this Ethernet AVB Software - Update based yocto recipe package version to v2.8.0
		2-3	1.4 Reference - Update reference document version
		6	3. Build the kernel and rootfs step 4 - Remove edit configuration file, this version is install to all packages.
		9	4.2.1 Setup before execution the application Step 1 - Add loading AVB Streaming driver module. - Remove describe to avbtool.conf.
0.30	May. 20, 2016	1	1.1 Overview - Add M3 support
		1	1.2 Composition of this Ethernet AVB Software - Change describe to Github URLs of each component.
		2	1.3 Hardware environment - Add M3 support in Table 1.1
		3	1.4 Reference - Update the version of related document in Table 1.2
		4	2.1 Software relationship - Remove of Figure 2.2 Directory of Ethernet AVB Software
		5	2.2 Build process - Add M3 support - Remove "Extract this software" in Figure 2.2 Build process

		6	3. Build the kernel and rootfs - Remove "Step 1 Extract files" - In Step 2, Description update to enable avb distro features in Yocto local configuration file
0.40	Aug. 24, 2016	1	1.2 Composition of this Ethernet AVB Software - Add AVB Media Clock Recovery Handler - Remove the URL information of github
		3	1.4 Reference - Update reference document version - Add application note of Launcher Application - Add user's manual of Media Streaming Engine
		4	2.1 Software relationship - Update Figure2.1
		7,9-12	4. Demo Applications - Add a description related to the Launcher Application - Add the operation verification method of MSE
		14	6.1 How to start Linux using a USB Ethernet adapter - Update the "step 2" to the latest procedure
0.50	Jan. 13, 2017	3	1.4 Reference - Update reference document version
		4	2.1 Software relation ship - Update Figure 2.1
		7	4. Demo Applications - Update Figure 4.2
		8	4.1 Preparation before execution - In Step 1, Reneame "Image-r8a7795-salvator-x.dtb" to "Image-r8a7795-es1-salvator-x.dtb".
		10	4.2.2 How to send PCM audio data using MSE with Launcher application - In Step 3.1, Add "amixer sset 'DVC Out'1%"
		12	4.2.4 How to send MJPEG data using MSE with Launcher application - In Step 3, Rename "mymovie.mjpg" to "movie.mjpeg"
		13	4.2.5 How to send MPEG2TS data using MSE with Launcher application - Add description related MPEG2TS usecase.
		15-16	6.1 How to start Linux using a USB Ethernet adapter - In Step 3, Reneame "Image-r8a7795-salvator-x.dtb" to "Image-r8a7795-es1-salvator-x.dtb".
0.60	Mar. 15, 2017	3	1.4 Reference - Update reference document version
		12	4.2.4 How to send MJPEG data using MSE with Launcher application - In Step 3, Fixes copy and paste problem of example of the command related gst-launch-1.0.
1.00	Jul. 12, 2017	3	1.4 Reference - Update reference document version
		8	4.1 Preparation before execution - In Step 1, Reneame "Image-r8a7795-es1-salvator-x.dtb" to "Image-r8a7795-salvator-x.dtb".
		15-16	6.1 How to start Linux using a USB Ethernet adapter - In Step 3, Reneame "Image-r8a7795-es1-salvator-x.dtb" to "Image-r8a7795-salvator-x.dtb".

1.10	Nov. 14, 2017	All	Add R-Car M3N support.
		2	1.3 Hardware environment - Add notice about MOTU AVB Switch and Summit X430/X440 firmware updating.
		3	1.4 Reference - Update reference document version.
1.20	Jan. 29, 2018	-	Update Arm trademark
		3	1.4 Reference - Update reference document version.
		9	4.2.1 How to execute Simple application with Launcher application - Remove notice about selection of configuration file of daemon_cl affected by link speed.
		10	4.2.2 How to send PCM audio data using MSE with Launcher application - Remove notice about selection of configuration file of daemon_cl affected by link speed.
		12	4.2.4 How to send MJPEG data using MSE with Launcher application - Remove "Step3 Create MJPEG data (For Talker)".
1.30	Feb. 22, 2018	All	Add R-Car E3 support.
		2	1.3 Hardware environment - Add R-Car E3 System Evaluation Board (EBISU).
		3	1.4 Reference - Update reference document version.
1.40	Apr.11, 2018	2	1.3 Hardware environment - Add notice that MOTU AVB Switch require using AVB protocols.
		3	1.4 Reference - Update reference document version.
1.50	Oct. 5, 2018	3	1.4 Reference - Update reference document version.
		10	4.2.2 How to send PCM audio data using MSE with Launcher application - In Step 2, Add loading MCH and MCH Adapter modules.
		11	4.2.3 How to send H.264 video data using MSE with Launcher application - In Step 2, Add loading MCH and MCH Adapter modules.
		12	4.2.4 How to send MJPEG data using MSE with Launcher application - In Step 2, Add loading MCH and MCH Adapter modules.
		13	4.2.5 How to send MPEG2TS data using MSE with Launcher application - In Step 2, Add loading MCH and MCH Adapter modules.
2.00	Dec. 25, 2018	2	1.3 Hardware environment - Add R-Car M3-SiP System Evaluation Board Salvator-X. - Add R-Car H3-SiP/M3-SiP/M3N-SiP System Evaluation Board Salvator-XS.
		3	1.4 Reference - Update reference document version.
		15	6.1 How to start Linux using a USB Ethernet adapter - In Step 2.1, Remove "<supported board name>/" from defconfig file path. - In Step 2.2, Remove "<supported board name>/" from defconfig file path.
2.10	Apr. 06, 2021	-	Update AddressList
2.20	Aug. 16, 2021	1-2,5	Add R-Car D3 support
		3	Table 1.2 Reference - Update version for Reference
2.30	Dec. 01, 2021	-	Update Notice page

2.31	Dec. 25, 2023	All	Update version of the document.

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