MPC5746R Boot Loader

Release Notes

PRODUCT:	MPC5746R Bootloader
PRODUCT VERSION:	V 1.2
DESCRIPTION:	
RELEASE DATE:	Apr , 18th , 2019

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1. Read Me First

1.1 Requirements

1.1.1 Development Tools

This release of MPC5746R Bootloader was compiled and tested with the following development tools:

- S32 Design Studio for Power Architecture Version: 2017.R1
- Rappid Bootloader Version 1.6.7.35

1.1.2 System Requirements

The system requirements are defined by the development tools requirements. There are no special host system requirements for hosting the MPC5746R Bootloader itself.

1.1.3 Target Requirements

The MPC5746R Bootloader v1.2 in this release is targeted to all NXP MPC5746R. However, the program was tested and demonstrated on the following evaluation boards. There are no special requirements for the target hardware which would be out of scope of what each board requires for its operation (power supply, cabling, jumper settings etc).

Development Board	MPC5746R-252DC MPC57xx-MOTHERBOARD
Processor	PPC5746RTMMT5 - 1N83M

There is no special instruction needed.

1.1.4 Overview

The overview of Bootloader can be seen in the Flow Chat below:

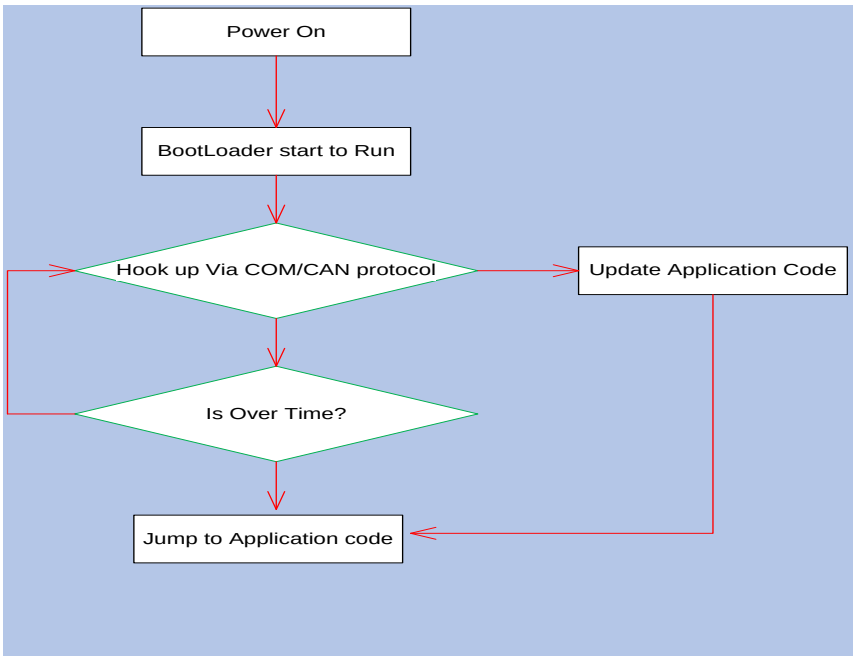

Figure 1: Software Flow Chat

2. What is New?

MPC5746R	Mini Board	Mother Board

	SCH-27770 RevA	SCH-27237 RevC
UART_2/ LINFlexD_2 (115200b/s)	PF0-PF1	P11 (Pin14-Pin15)
CAN_0 (500Kb/s)	PF12/ PF13	J5(Comport)

3. Release Content

This section gives an overview about the release content.

Deliverable	Location	Description
RBF	[install-dir]/ RBF	Include rbf file for MPC5746R
Test_Log_and_Report	[install-dir]/ Test_Log_and_Report	Test cases and reports
Source	[install-dir]/App	Include source code for user application sample and test cases.
	[install-dir]/ Bootload	Include source code for bootloader
	[install-dir]/doc	Include Specification and Release note.
Images	[install-dir]/ Images	Include images for hardware setup and connect to PC or other device

4. What is Missing

- NA

5. Known Issues and Limitations

- The Rappid bootloader tool read/write the flash each 32 bytes, sometimes lead to some issues.
- The tested boards is not many.
- Connecting external resistors is a must.

6. Note

6.1 The detail for boot-loader and appsource areas as the following Table 1:

BOOT-LOADER	RCHW + Boot	0x00F9C000 - 0x00F9FFFF
	Boot-loader application	0x00FA8000 - 0x00FAFFFF
APPLICATION SOURCE	RCHW + Boot	0x00FA0000 - 0x00FA3FFF
	User application	0x01000000 - 0x0137FFFF

Table 1: Flash memory map areas

If the address of Interrupt Vector Table is written in the linker file, it is needed to be modified.

6.2 Bootloader noticed error when any address of application code is belonged to bootloader code area or outside of flash.

6.3 The apploc and appkey is written in flash. For exam:

Add this code for Key in main.c

```
const volatile uint32_t APPKEY __attribute__ ((section(".appkey"))) = 0x55AA55AA;
const uint32_t __attribute__ ((section(".rchw"))) RCHW [] = {
                                                    RCHW_VAL,
                                /* cpu0_reset_vector */ (uint32_t)_start,
                                        /* delay */                    0x2DC6C0,
                                /* application key */   (uint32_t)&APPKEY,
                                /* cpu2_reset_vector */ (uint32_t)_startcore2,
                                /* cpu1_reset_vector */ (uint32_t)_startcore1};
```

6.4 The boot-loader support RAM target from address 0x40002400 , length = 251K.

6.5 With Ram target, the application can't load after reset devices

7. Change Log

Effective Date	Version	Change Item	*A,D,M	Change description
18-Apr-2019	1.2		A	Create new version for both UART and add CAN communication supported