6AO Resource Allocation

Resource allocation summary for standard 6AO.x releases (Kernel 4.4 + Android Marshmallow). Most of below points could also be inferred from Kernel dts files.

Contents

Memory Reservations

Following table summarizes the memory carveouts in 6AO.x release

Memory Carveouts

Name	Start	End	Size	Usecase
CMEM	0x9540_0000	0x9580_0000	4 MB	IPC, Radio
IPU2 CMA	0x9580_0000	0x9900_0000	56 MB	
DSP1 CMA	0x9900_0000	0x9d00_0000	64 MB	
IPU1 CMA	0x9d00_0000	0x9f00_0000	32 MB	
DSP2 CMA	0x9f00_0000	0x9f80_0000	8 MB	(only for DRA75x)
OPTEE	0xbdb0_0000	0xbfb0_0000	32 MB	Security
SR0	0xbfb0_0000	0xbfc0_0000	1 MB	IPC, Radio
LATEA_PGT1	0xbfc0_0000	0xbfd0_0000	1 MB	Late-attach use case

OCMC Usage

For HS devices following region in OCMC is reserved for secure world use

OCMC reservation

Name	Start	End	Size	Usecase
OCMCRAM1	0x4030_0000	0x4030_1000	4 KB	Reservations on HS device.

Timers

Following timers are used in 6AO.x release

- Timer 1 - Used by Kernel
- Timer 3 - IPU2 OS tick
- Timer 4 - IPU2 watchdog
- Timer 5 - DSP1 OS tick
- Timer 6 - DSP2 OS tick
- Timer 7 - IPU1 watchdog
- Timer 8 - IPU1 watchdog
- Timer 9 - IPU2 watchdog
- Timer 10 - DSP1 watchdog
- Timer 11 - IPU1 OS tick

McASP

Following McASPs are used in standard 6AO.x release

- McASP2 - DSP interface to tuner
- McASP3 - ARM audio
- McASP6 - DSP audio
- McASP8 - Not used as McASP, but instead as GIO for HDMI use case.

MailBox

- IPC uses mailbox 5 and 6 for communication between A15 and remote cores.
- IPC uses mailbox 7 and 8 for communication between remote cores.

HWSpinLock

Hwspinlocks 1 to 20 are used for GateMP use case (Radio)

RVC resource allocations

This section highlights the changes that Robust RVC (Rear View Camera) package adds on top of standard 6AO.x release

Memory changes

Memory carveout differences highlighted here

Memory Carveout delta

Name	Start	End	Size	Usecase
CMEM	0xa200_0000	0xa240_0000	4 MB	
IPU2 CMA	0x9400_0000	0x9900_0000	80 MB	
DSP2 CMA	0x9f00_0000	0xa000_0000	16 MB	

Timer

The timer usage is same as mentioned in #Timers section, except that in RVC case timer 11 is also used for IPU2 and a new timer must be selected for IPU1.

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