

Box mode #5

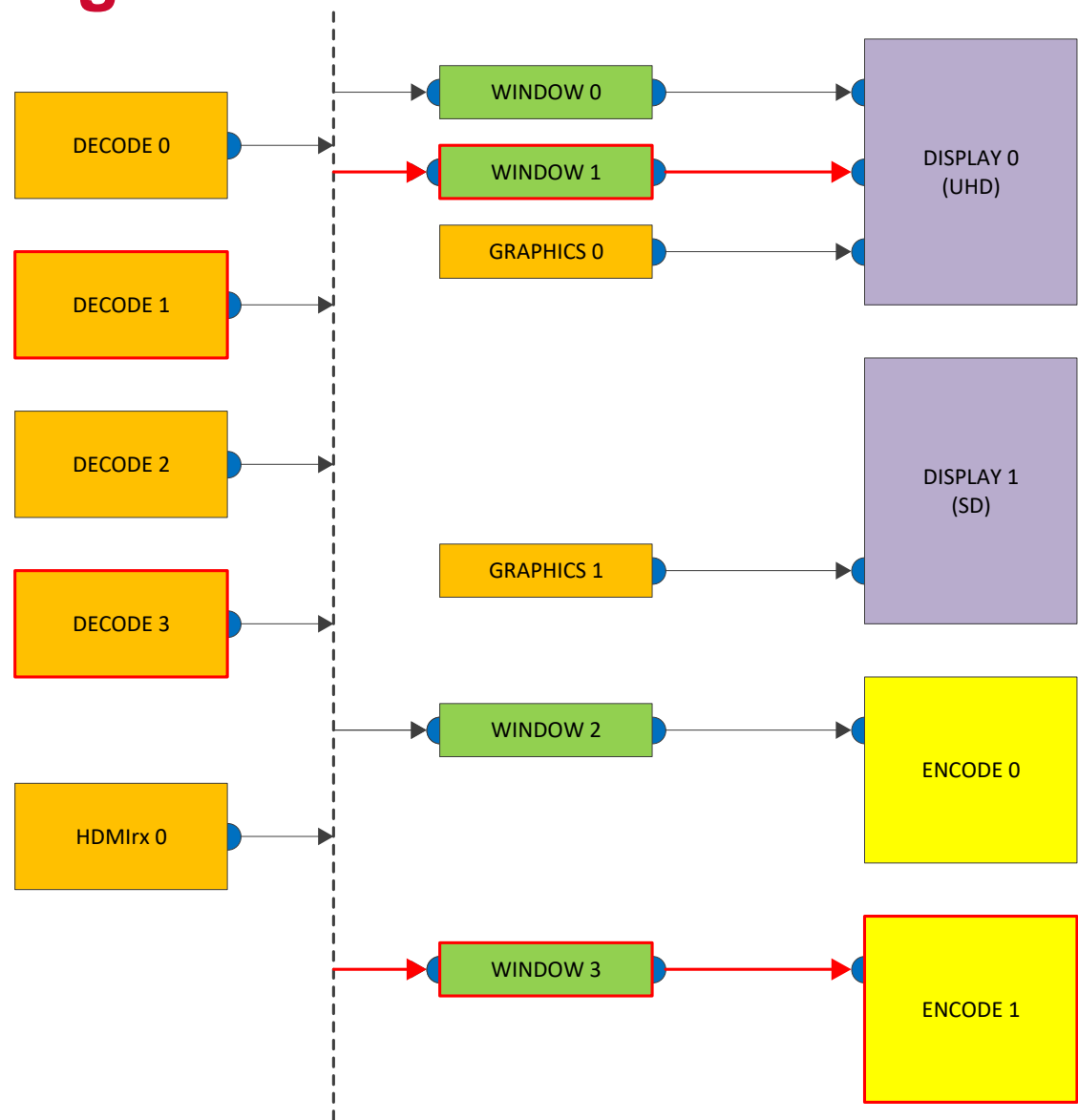
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Box mode #5 – summary

- Required memory speed: 2x 32-bit LPDDR4-3733
 - High-temperature refresh supported
- Features:
 - Two 4kp60 capable decoders
 - Each single 4kp60 decoder may transition to two independent 1080p60 decoders
 - UHD output
 - Additional SD output with graphics only
 - MAIN + PIP (limited)
 - Multi-PIP support (3+0)
 - HDMI input
 - One transcode to 1080p60 or two transcodes to 1080p30

Possible video routings



Source Limitations (Decode)

- Decode 0

- 3840x2160p60 10-bit HEVC / VP9
- 3840x2160p60 8-bit AVC
- 1920x1080p60 8-bit MPEG2
- Multi-PIP (3x)
 - 1920x1080p60 10-bit HEVC / VP9
 - 1920x1080p60 8-bit AVC / MPEG2
- MTG supported

- Decode 1

- Can only be enabled when Decode 0 is 1080p60 or less
- 1920x1080p60 10-bit HEVC / VP9
- 1920x1080p60 8-bit AVC / MPEG2
- MTG supported

- Decode 2

- 3840x2160p60 10-bit HEVC / VP9
- 3840x2160p60 8-bit AVC
- 1920x1080p60 8-bit MPEG2
- Multi-PIP (3x)
 - 1920x1080p60 10-bit HEVC / VP9
 - 1920x1080p60 8-bit AVC / MPEG2
- MTG supported

- Decode 3

- Can only be enabled when Decode 2 is 1080p60 or less
- 1920x1080p60 10-bit HEVC / VP9
- 1920x1080p60 8-bit AVC / MPEG2
- MTG supported

Source Limitations (non Decode)

- HDMIrx 0
 - Up to 3840x2160p60
- Graphics 0 (UHD)
 - 1080p60 32-bit ARGB
 - Requires graphics compression
- Graphics 1 (SD)
 - 480p60 32-bit ARGB
 - 576p50 32-bit ARGB

HARDWARE RESOURCE MAPPING

Decoder	MFD	Hardware
Decode 0	MFD0	HVD0
Decode 1	MFD2	HVD0
Decode 2	MFD1	HVD1
Decode 3	MFD3	HVD1

Window limitations

- Window 0 (MAIN / UHD)
 - Up to full-screen display (smooth scaling)
 - 1080i60 de-interlacing
 - Multi-PIP (3x)
 - Up to 480i60 de-interlacing
 - Each window is limited to 25% of the canvas
- Window 1 (MAIN / SD)
 - Up to ½ x ½ display (smooth scaling)
 - 1080i60 de-interlacing
- Window 2 (MAIN / Encode 0)
 - Full-screen only
 - 1080i60 de-interlacing
- Window 3 (MAIN / Encode 1)
 - Full-screen only
 - 1080i60 de-interlacing
- Only one shared CAP/VFD available for Window 2 and Window 3
 - Limits HDMI inputs and shared sources with the display path.

Display and encode limitations

- Display 0 (UHD)
 - 3840x2160p60
 - Can drive the SD CVBS output if the format is set to 480i60 or 576i50
- Display 1 (SD)
 - 480i60
 - 576i50
- Encode 0
 - Up to 1080p60 8-bit
- Encode 1
 - Can only be enabled if Encode 0 is 1080p30 or less.
 - 1080p30 8-bit