Box mode #5
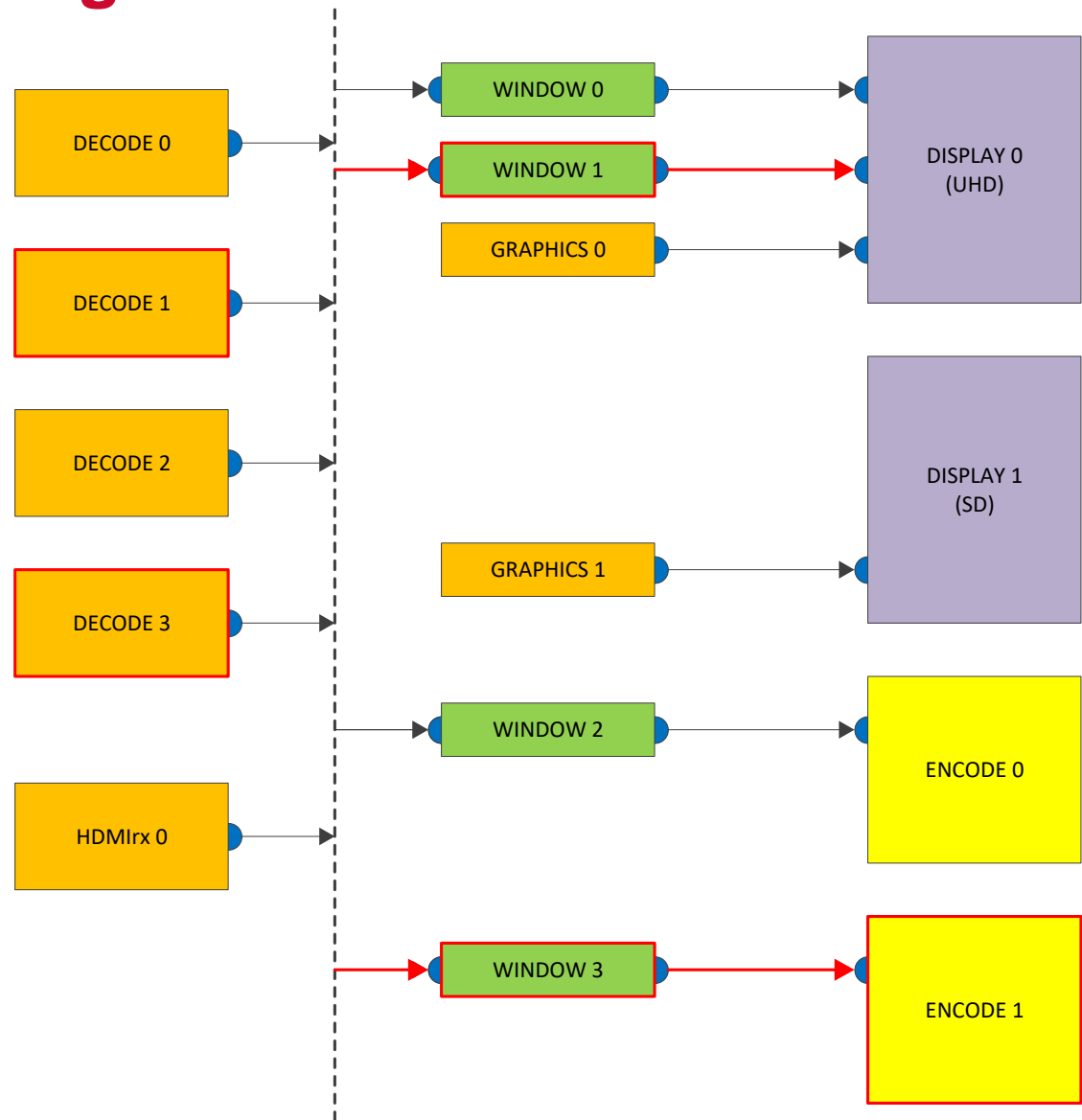
7278

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

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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

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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

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HARDWARE RESOURCE MAPPING

Decoder	MFD	Hardware
Decode 0	MFD0	HVD0
Decode 1	MFD1	HVD0
Decode 2	MFD2	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

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