



Box mode #12

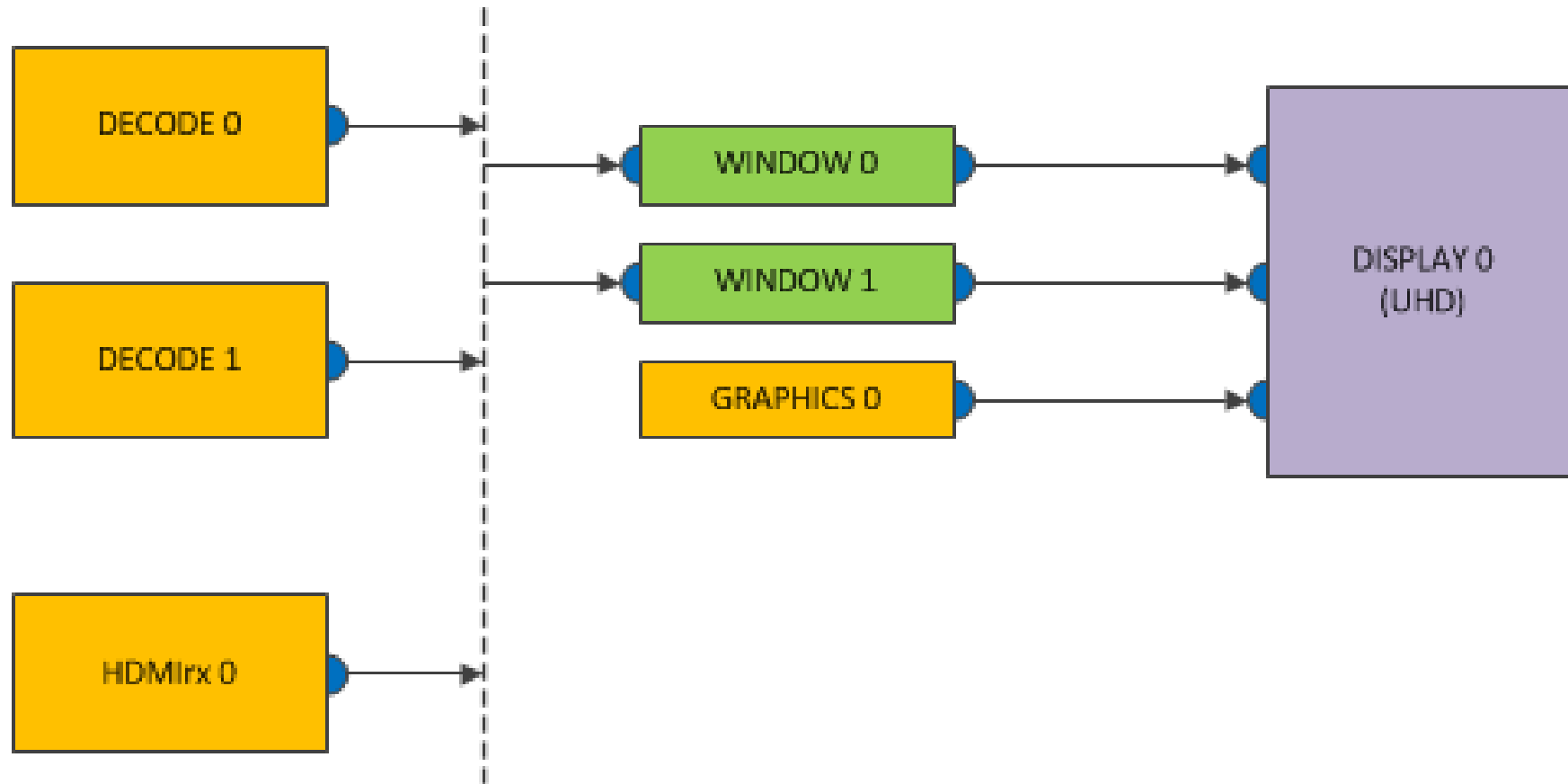
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Box mode #12

- Required memory speed: 1x 32-bit LPDDR4-3733
 - No high-temperature refresh
- Features:
 - Two decoders:
 - One 3840x2160p60 10-bit decode
 - One 1080p30/60i 10-bit
 - Multi-PIP supported (3+1)
 - UHD only (no SD)
 - Main + PIP
 - HDMI input
 - No transcoding

Possible video routings



Source limitations

- Decode 0
 - 3840x2160p60 10-bit HEVC
 - 3840x2160p60 10-bit VP9
 - 1920x1080p60 8-bit AVC / MPEG2
 - Multi-PIP (3x)
 - 1920x1080p30/60i 10-bit HEVC
 - 1920x1080p30/60i 8-bit VP9 / AVC / MPEG2
 - No MTG
- Decode 1
 - 1920x1080p30/60i 10-bit HEVC / VP9
 - 1920x1080p30/60i 8-bit AVC / MPEG2
 - No MTG
- HDMIrx 0
 - 3840x2160p60
- Graphics 0 (UHD)
 - 1080p60 32-bit ARGB
 - Does not require graphics compression

HARDWARE RESOURCE MAPPING

- Requires overclocking of HVD0 to achieve 4kp60 + 1080p30 rates
 - Implemented through a power profile

Decoder	MFD	Hardware
Decode 0	MFD0	HVD0
Decode 1	MFD1	HVD0

Window limitations

- Window 0 (MAIN / UHD)
 - Up to full-screen display (smooth scaling)
 - 1080i60 de-interlacing
 - Multi-PIP (3x)
 - 25% canvas coverage per mosaic window
 - 480i60 de-interlacing
- Window 1 (PIP / UHD)
 - When the source is 1080p or less, then full-screen display (no smooth scaling)
 - When the source is greater than 1080p, then PIP is limited to $\frac{1}{2} \times \frac{1}{2}$ canvas.
 - 1080i60 de-interlacing

Display and encode limitations

- Display 0 (UHD)
 - 3840x2160p60