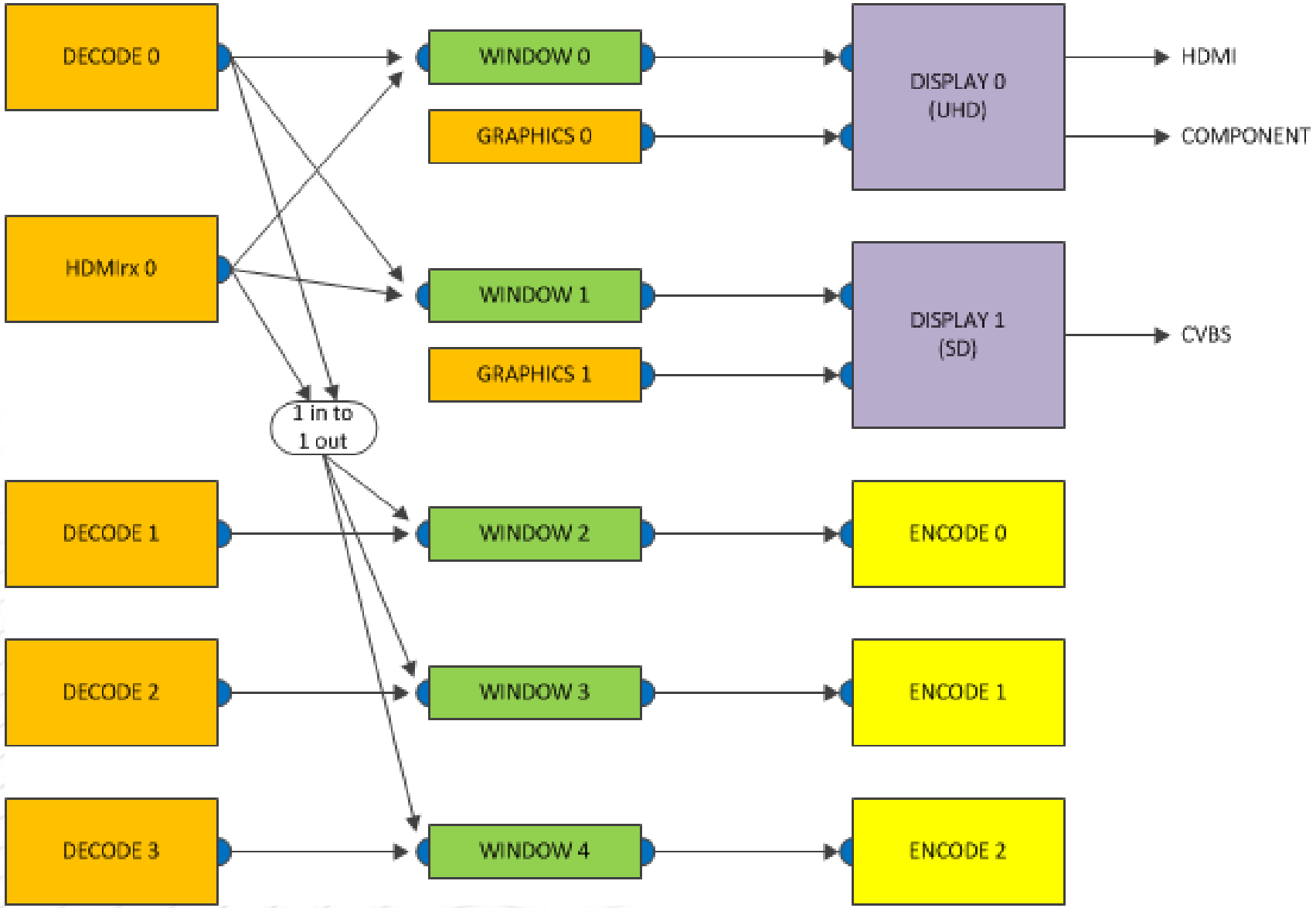
BOX MODE #3

7445 D0

BOX MODE 3 - SUMMARY

- **Memory speed: 3x 32-bit DDR3-2133**
- **Supports:**
  - 4kp60 10-bit HEVC decode
  - MAIN only (no PIP)
  - Multi-PIP (up to three displayed at a time)
  - UHD + SD simultaneous outputs
  - HDMI input
  - Three encodes up to 1080p30

POSSIBLE VIDEO ROUTINGS



SOURCE LIMITATIONS

- **For each source, you may toggle between any of the provided options.**
  - Only one option enabled at a given time.
- **Decode 0 (MAIN)**
  - 3840x2160p60 10-bit HEVC
  - 1080p60 8-bit AVC
  - Multi-PIP: (3x)
    - 1920x1080p60 10-bit HEVC
    - 1920x1080p30/60i 8-bit AVC
- **HDMIrx 0**
  - 4096x2160p60 12-bit 4:2:0
  - 4096x2160p60 12-bit 4:2:2
  - 4096x2160p60 8-bit 4:4:4
- **Decode 1 (Transcode 0)**
  - 1920x1080p60 8-bit HEVC
  - 1920x1080p30/60i 8-bit AVC
- **Decode 2 (Transcode 1)**
  - 1920x1080p60 8-bit HEVC
  - 1920x1080p30/60i 8-bit AVC
- **Decode 3 (Transcode 2)**
  - 1920x1080p60 8-bit HEVC
  - 1920x1080p30/60i 8-bit AVC
- **Graphics 0**
  - 1080p60 32-bit ARGB
- **Graphics 1**
  - 480p60 32-bit ARGB
  - 576p50 32-bit ARGB

WINDOW LIMITATIONS

- **Window 0 (MAIN)**
  - Up to full-screen display (smooth scaling)
  - Multi-PIP:
    - Up to three windows where the total combined display area is up to full-screen.
    - 480i60 / 576i50 8-bit de-interlacing
  - 10-bit support
  - 1080i60 10-bit de-interlacing
- **Window 1 (MAIN)**
  - Up to full-screen display (smooth scaling)
  - 8-bit support
- **Window 2 (Transcode 0)**
  - Size of final encode
  - 1080i60 de-interlacing
- **Window 3 (Transcode 1)**
  - Size of final encode
  - 1080i60 de-interlacing
- **Window 4 (Transcode 2)**
  - Size of final encode
  - 1080i60 de-interlacing

DISPLAY AND ENCODE LIMITATIONS

- **Display 0 (UHD)**
  - 3840x2160p60 12-bit 4:2:0 (HDMI)
  - 3840x2160p60 12-bit 4:2:2 (HDMI)
  - 3840x2160p60 8-bit 4:4:4 (HDMI)
  - 1920x1080p60 (component)
  - Only one display format at a time
    - If you want 1080p60 component, HDMI also needs to be 1080p60.
- **Display 1 (SD)**
  - 480i60 (CVBS)
  - 576i50 (CVBS)
  - 960x540 (component)

- **Encode 0**
  - 1080p30 8-bit AVC
- **Encode 1**
  - 1080p30 8-bit AVC
- **Encode 2**
  - 1080p30 8-bit AVC

MULTI-PIP USAGE

- **Multi-PIP is when a single decoder is capable of handling multiple full-resolution and a single display path can send them to the display.**
  - Here a “multi-PIP decode” is a standard 1080p30/60i 8-bit AVC channel.
- **These channels can be decoded, displayed and composited into a single display.**
  - In this box mode, the final display can provide three independent multi-PIP decodes.
  - The display can be up to 3840x2160p60.
- **For improved quality, each multi-PIP also has a 480i60 capable de-interlacer.**