

# IoT Yocto Feature Table (v24.0)

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| Version | Date      | Author    | Description                                |
|---------|-----------|-----------|--|
| 1.0     | 2024/6/28 | Bear Wang | Initial release version of IoT Yocto v24.0 |
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# IoT Yocto Feature List

|       |  |
|-------|--|
| V     | Function enabled by software and available on the EVK set                              |
| O     | Software integrated but cannot be validated due to hardware board limitations          |
| Patch | Requires getting patches from MediaTek or partners to enable this feature              |
| POC   | Proof-of-concept. Not a fully verified feature. Still lots works to do for production  |
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| --    | Not supported in this release  |
| EOL   | End-of-life. Do not support anymore  |

| Category     | Feature                                     | MT8365 (G350) |       | MT8370 (G510) |       | MT8390 (G700) |       | MT8395 (G1200) |       | NDA |
|--------------|---|---------------|-------|---------------|-------|---------------|-------|----------------|-------|-----|
|              |   | Support       | Rel   | Support       | Rel   | Support       | Rel   | Support        | Rel   |     |
| HDK          | EVK :: Reference Board                      | V             | v21.3 | V             | v23.2 | V             | v23.0 | V              | v23.0 |     |
| Boot         | Bootloader :: TF-A                          | V             | v21.3 | V             | v23.2 | V             | v23.0 | V              | v21.3 |     |
| Boot         | Bootloader :: U-Boot                        | V             | v21.3 | V             | v23.2 | V             | v23.0 | V              | v21.3 |     |
| Boot         | Boot Storage :: eMMC                        | V             | v21.3 | V             | v23.2 | V             | v23.0 | V              | v21.3 |     |
| Boot         | Boot Storage :: UFS                         | --            |       | --            |       | --            |       | V              | v23.0 |     |
| Boot         | Boot Storage :: NOR                         | --            |       | --            |       | --            |       | --             |       |     |
| Boot         | OS Boot Device :: eMMC                      | V             | v21.3 | V             | v23.2 | V             | v23.0 | V              | v21.3 |     |
| Boot         | OS Boot Device :: UFS                       | --            |       | --            |       | --            |       | V              | v21.3 |     |
| Boot         | OS Boot Device :: SD Card                   | --            |       | --            |       | --            |       | --             |       |     |
| Boot         | OS Boot Device :: USB                       | --            |       | --            |       | --            |       | --             |       |     |
| Boot         | OS Boot Device :: TFTP (Ethernet)           | --            |       | --            |       | --            |       | POC            | v24.0 |     |
| Boot         | Boot Standard :: FIP Boot                   | V             | v21.3 | V             | v23.2 | V             | v22.2 | V              | v21.3 |     |
| Boot         | Boot Standard :: EBBR Boot                  | --            |       | --            |       | --            |       | --             |       |     |
| Boot         | Bootloader :: Update (Capsule)              | V             | v23.1 | V             | v23.2 | V             | v23.1 | V              | v23.1 |     |
| Boot         | Bootloader :: Update :: A/B Partition       | V             | v23.1 | V             | v23.2 | V             | v23.1 | V              | v23.1 |     |
| Boot         | Bootloader :: Update :: OTA :: LVFS (Demo)  | --            |       | --            |       | --            |       | --             |       |     |
| Boot         | Bootloader :: Fast Boot Optimization        | --            |       | V             | v23.2 | V             | v23.1 | V              | v23.1 |     |
| Linux Kernel | Version :: Kernel 5.10                      | EOL           |       | --            |       | --            |       | --             |       |     |
| Linux Kernel | Version :: Kernel 5.15                      | V             | v22.2 | V             | v23.2 | V             | v23.0 | V              | v22.1 |     |
| Linux Kernel | Kernel :: 32-bit                            | --            |       | --            |       | --            |       | --             |       |     |
| Linux Kernel | Kernel :: 64-bit                            | V             | v21.3 | V             | v23.2 | V             | v23.0 | V              | v21.3 |     |
| Linux Kernel | RTLinux                                     | --            |       | --            |       | --            |       | --             |       |     |
| Yocto        | 3.1 Dunfell (LTS)                           | EOL           |       | --            |       | --            |       | --             |       |     |
| Yocto        | 4.0 Kirkstone (LTS)                         | V             | v22.2 | V             | v23.2 | V             | v23.0 | V              | v22.1 |     |
| System       | RTC   | V             | v21.3 | V             | v23.2 | V             | v23.0 | V              | v22.1 |     |
| System       | Watchdog                                    | V             | v21.3 | V             | v23.2 | V             | v23.0 | V              | v22.1 |     |
| System       | Frequency Hopping / Spread Spectrum Control | --            |       | --            |       | --            |       | --             |       |     |
| Security     | TEE OS :: OP-TEE                            | V             | v21.3 | V             | v23.2 | V             | v23.0 | V              | v22.0 |     |
| Security     | Secure Boot                                 | V             | v22.1 | V             | v23.2 | V             | v23.0 | V              | v22.2 | V   |
| Security     | Secure Boot :: RSA2048+SHA256               | V             | v22.1 | V             | v23.2 | V             | v23.0 | V              | v23.0 | V   |
| Security     | Secure Boot :: RSA3072+SHA256               | V             | v24.0 | --            |       | --            |       | V              | v24.0 | V   |
| Security     | Secure Boot :: RSA3072+SHA384               | --            |       | V             | v24.0 | V             | v24.0 | --             |       | V   |

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|                  |  | Support       | Rel   | Support       | Rel   | Support       | Rel   | Support        | Rel   |     |
| Security         | Hardware KDF (Key Derivation Function)     | V             | v22.1 | V             | v23.2 | V             | v23.0 | V              | v22.1 |     |
| Security         | Anti-Rollback                              | V             | v23.1 | V             | v23.2 | V             | v23.1 | V              | v23.1 | V   |
| Security         | Anti-Clone                                 | --            |       | --            |       | --            |       | --             |       |     |
| Security         | Full Disk Encryption                       | --            |       | --            |       | --            |       | --             |       |     |
| Security         | File Base Encryption                       | --            |       | --            |       | --            |       | --             |       |     |
| Security         | Secure JTAG                                | --            |       | --            |       | --            |       | --             |       |     |
| Security         | SELinux                                    | --            |       | --            |       | --            |       | --             |       |     |
| Security         | eFuse Custome Field                        | V             | v23.1 | V             | v23.2 | V             | v23.1 | V              | v23.1 | V   |
| Security         | eFuse Reader/Writer                        | V             | v22.0 | V             | v23.2 | V             | v23.0 | V              | v22.0 | V   |
| Security         | RPMB                                       | V             | v23.1 | V             | v23.2 | V             | v23.1 | V              | v23.1 |     |
| Power Mgnt       | Idle                                       | V             | v21.3 | V             | v23.2 | V             | v23.0 | V              | v22.1 |     |
| Power Mgnt       | Suspend to RAM                             | V             | v21.3 | V             | v23.2 | V             | v23.0 | V              | v22.1 |     |
| Power Mgnt       | Suspend to DISK                            | --            |       | --            |       | --            |       | --             |       |     |
| Power Mgnt       | USB Host Suspend & Remote Wakeup           | V             | v21.3 | V             | v23.2 | V             | v23.0 | V              | v22.2 |     |
| Power Mgnt       | CPU Idle                                   | V             | v21.3 | V             | v23.2 | V             | v23.0 | V              | v22.0 |     |
| Power Mgnt       | CPU Hotplug                                | V             | v21.3 | V             | v23.2 | V             | v23.0 | V              | v22.0 |     |
| Power Mgnt       | Power Charger                              | --            |       | --            |       | --            |       | --             |       |     |
| Power Mgnt       | PMIC (Regulator framework)                 | V             | v21.3 | V             | v23.2 | V             | v23.0 | V              | v22.0 |     |
| Power Mgnt       | Clock Manager (Linux CCF)                  | V             | v21.3 | V             | v23.2 | V             | v23.0 | V              | v22.0 |     |
| Power Mgnt       | Thermal Framework                          | V             | v21.3 | V             | v23.2 | V             | v23.0 | V              | v22.0 |     |
| Power Mgnt       | Thermal Framework :: Cooling Device :: CPU | V             | v21.3 | V             | v23.2 | V             | v23.0 | V              | v22.0 |     |
| Power Mgnt       | Thermal Framework :: Cooling Device :: GPU | --            |       | --            |       | --            |       | --             |       |     |
| Power Mgnt       | Thermal Framework :: Cooling Device :: APU | --            |       | --            |       | --            |       | --             |       |     |
| Power Mgnt       | DVFS :: cpufreq                            | V             | v21.3 | V             | v23.2 | V             | v23.0 | V              | v22.0 |     |
| Power Mgnt       | DVFS :: gpufreq                            | V             | v21.3 | V             | v23.2 | V             | v23.0 | V              | v22.0 |     |
| Power Mgnt       | EAS (Energy Aware Scheduler)               | --            |       | --            |       | --            |       | --             |       |     |
| Power Mgnt       | Low Power Optimization: Idle               | --            |       | V             | v23.2 | V             | v23.1 | V              | v23.0 |     |
| Power Mgnt       | Low Power Optimization: Suspend to RAM     | --            |       | V             | v23.2 | V             | v23.1 | V              | v23.0 |     |
| Power Mgnt       | Auto Power On                              | V             | v21.3 | V             | v23.2 | V             | v23.1 | V              | v23.1 |     |
| Image            | HW Decode :: JPEG                          | --            |       | V             | v23.2 | V             | v23.0 | V              | v23.0 |     |
| Image            | HW Encode :: JPEG                          | --            |       | V             | v23.2 | V             | v23.0 | V              | v22.2 |     |
| Video Processing | Gstreamer :: video4linux :: v4l2jpegdec    | --            |       | V             | v23.2 | V             | v23.0 | V              | v23.0 |     |
| Video Processing | Gstreamer :: video4linux :: v4l2jpegenc    | --            |       | V             | v23.2 | V             | v23.0 | V              | v22.2 |     |
| Video Processing | MDP (Multimedia Data Path)                 | V             | v21.3 | V             | v23.2 | V             | v23.0 | V              | v22.1 |     |

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|------------------|--|---------------|-------|---------------|-------|---------------|-------|----------------|-------|-----|
|                  |  | Support       | Rel   | Support       | Rel   | Support       | Rel   | Support        | Rel   |     |
| Video Processing | Gstreamer :: video4linux :: v4l2convert              | V             | v21.3 | V             | v23.2 | V             | v23.0 | V              | v22.1 |     |
| Camera           | ISP + Raw Sensor (MediaTek Imgsensor Architecture)   | --            |       | V             | v24.0 | V             | v24.0 | V              | v22.2 | V   |
| Camera           | ISP :: 3A :: AE                                      | --            |       | V             | v24.0 | V             | v24.0 | V              | v23.0 | V   |
| Camera           | ISP :: 3A :: AWB                                     | --            |       | V             | v24.0 | V             | v24.0 | V              | v23.0 | V   |
| Camera           | ISP :: 3A :: AF                                      | --            |       | O             | v24.0 | O             | v24.0 | O              | v23.0 | V   |
| Camera           | ISP :: Capture :: LPNR                               | --            |       | V             | v24.0 | V             | v24.0 | V              | v23.0 | V   |
| Camera           | ISP :: Video :: MCNR                                 | --            |       | V             | v24.0 | V             | v24.0 | V              | v23.0 | V   |
| Camera           | RAW Sensor :: IMX214 :: 4 Lane                       | --            |       | V             | v24.0 | V             | v24.0 | V              | v22.2 |     |
| Camera           | RAW Sensor :: IMX214 :: 2 Lane                       | --            |       | V             | v24.0 | V             | v24.0 | V              | v23.1 |     |
| Camera           | CamSV + YUV Sensor (MediaTek Imgsensor Architecture) | --            |       | V             | v23.2 | V             | v23.1 | V              | v23.0 | V   |
| Camera           | CamSV + YUV Sensor (V4L2 Sensor Architecture)        | V             | v21.3 | V             | v23.2 | V             | v23.2 | V              | v23.2 |     |
| Camera           | YUV Sensor :: OnSemi AP1302 + AR0430 :: 4 Lane       | V             | v21.3 | O             | v23.2 | O             | v23.0 | O              | v23.0 |     |
| Camera           | YUV Sensor :: OnSemi AP1302 + AR0430 :: 2 Lane       | --            |       | --            |       | --            |       | --             |       |     |
| Camera           | YUV Sensor :: OnSemi AP1302 + AR0830 :: 4 Lane       | --            |       | V             | v23.2 | V             | v23.1 | V              | v23.1 |     |
| Camera           | YUV Sensor :: OnSemi AP1302 + AR0830 :: 2 Lane       | --            |       | V             | v23.2 | V             | v23.1 | V              | v23.1 |     |
| Camera           | YUV Sensor :: Serdes :: MAX9286 + MAX96705           |               |       | (V)           | v24.0 | (V)           | v24.0 | (V)            | v24.0 |     |
| Camera           | Single-Sensor :: RAW                                 | --            |       | V             | v24.0 | V             | v24.0 | V              | v22.2 |     |
| Camera           | Single-Sensor :: YUV                                 | V             | v21.3 | V             | v23.2 | V             | v23.1 | V              | v23.0 |     |
| Camera           | Multi-Sensor :: YUV + YUV                            | (V)           | v22.0 | (V)           | v23.2 | (V)           | v23.2 | (V)            | v23.2 |     |
| Camera           | Multi-Sensor :: RAW + RAW                            | --            |       | (V)           | v24.0 | (V)           | v24.0 | O              | v24.0 |     |
| Camera           | Multi-Sensor :: RAW + YUV                            | --            |       | (V)           | v24.0 | (V)           | v24.0 | O              | v24.0 |     |
| Camera           | Multi-Sensor :: RAW + RAW + RAW                      | --            |       | --            |       | --            |       | --             |       |     |
| Camera           | Multi-Sensor :: RAW + RAW + YUV                      | --            |       | --            |       | --            |       | O              | v24.0 |     |
| Camera           | Multi-Sensor :: RAW + YUV + YUV                      | --            |       | --            |       | --            |       | O              | v24.0 |     |
| Camera           | Multi-Sensor :: RAW + RAW + YUV + YUV                | --            |       | --            |       | --            |       | --             |       |     |
| Camera           | Gstreamer :: video4linux :: v4l2src                  | V             | v21.3 | V             | v23.2 | V             | v23.0 | V              | v22.2 |     |
| Camera           | libcamera :: simple pipeline                         | V             | v21.3 | --            |       | --            |       | --             |       |     |
| Video            | HW Decode :: H.264                                   | V             | v21.3 | V             | v23.2 | V             | v23.0 | V              | v22.1 |     |
| Video            | HW Decode :: H.265                                   | V             | v22.0 | V             | v23.2 | V             | v23.0 | V              | v22.1 |     |
| Video            | HW Decode :: VP8                                     | V             | v22.0 | V             | v23.2 | V             | v23.0 | V              | v22.1 |     |
| Video            | HW Decode :: VP9                                     | V             | v22.0 | V             | v23.2 | V             | v23.0 | V              | v22.1 |     |
| Video            | HW Decode :: AV1                                     | --            |       | --            |       | --            |       | --             |       |     |
| Video            | HW Decode :: MPEG-4                                  | V             | v22.0 | V             | v23.2 | V             | v23.1 | V              | v22.1 |     |
| Video            | HW Encode :: H.264                                   | V             | v21.3 | V             | v23.2 | V             | v23.0 | V              | v22.1 |     |

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|----------|---|---------------|-------|---------------|-------|---------------|-------|----------------|-------|-----|
|          |   | Support       | Rel   | Support       | Rel   | Support       | Rel   | Support        | Rel   |     |
| Video    | HW Encode :: H.265                                | V             | v22.2 | V             | v23.2 | V             | v23.0 | V              | v22.1 |     |
| Video    | Gstreamer :: video4linux2 :: v4l2h264dec          | V             | v21.3 | V             | v23.2 | V             | v23.0 | V              | v22.1 |     |
| Video    | Gstreamer :: video4linux2 :: v4l2h265dec          | V             | v22.0 | V             | v23.2 | V             | v23.0 | V              | v22.1 |     |
| Video    | Gstreamer :: video4linux2 :: v4l2vp8dec           | V             | v22.0 | V             | v23.2 | V             | v23.0 | V              | v22.1 |     |
| Video    | Gstreamer :: video4linux2 :: v4l2vp9dec           | V             | v22.0 | V             | v23.2 | V             | v23.0 | V              | v22.1 |     |
| Video    | Gstreamer :: video4linux2 :: v4l2mpeg4dec         | V             | v22.0 | V             | v23.2 | V             | v23.1 | V              | v22.1 |     |
| Video    | Gstreamer :: video4linux2 :: v4l2h264enc          | V             | v21.3 | V             | v23.2 | V             | v23.0 | V              | v22.1 |     |
| Video    | Gstreamer :: video4linux2 :: v4l2h265enc          | V             | v22.2 | V             | v23.2 | V             | v23.0 | V              | v22.1 |     |
| Video    | GStreamer :: mtk plug-ins                         | --            |       | --            |       | --            |       | --             |       |     |
| Video    | SVP (Secure Video Path)                           | --            |       | --            |       | --            |       | --             |       |     |
| Display  | TX :: Built-in :: DSI                             | V             | v21.3 | V             | v23.2 | V             | v23.0 | V              | v22.2 |     |
| Display  | TX :: Built-in :: DSI :: DSC                      | --            |       | --            |       | --            |       | --             |       |     |
| Display  | TX :: Built-in :: DSI :: Spread Spectrum          | --            |       | --            |       | --            |       | --             |       |     |
| Display  | TX :: Built-in :: DPI                             | --            |       | --            |       | --            |       | --             |       |     |
| Display  | TX :: Built-in :: DPI :: Spread Spectrum          | --            |       | --            |       | --            |       | --             |       |     |
| Display  | TX :: Built-in :: eDP                             | --            |       | (V)           | v23.2 | (V)           | v23.0 | (V)            | v22.1 |     |
| Display  | TX :: Built-in :: eDP :: DSC                      | --            |       | --            |       | --            |       | --             |       |     |
| Display  | TX :: Built-in :: eDP :: Spread Spectrum          | --            |       | --            |       | --            |       | --             |       |     |
| Display  | TX :: Built-in :: HDMI                            | --            |       | V             | v23.2 | V             | v23.0 | V              | v22.1 |     |
| Display  | TX :: Built-in :: HDMI :: HDCP                    | --            |       | Patch         | v24.0 | Patch         | v24.0 | Patch          | v24.0 |     |
| Display  | TX :: Built-in :: HDMI :: CEC                     | --            |       | V             | v24.0 | V             | v24.0 | V              | v24.0 |     |
| Display  | TX :: Built-in :: HDMI :: HDR                     | --            |       | --            |       | --            |       | --             |       |     |
| Display  | TX :: Built-in :: HDMI :: DSC                     | --            |       | --            |       | --            |       | --             |       |     |
| Display  | TX :: Built-in :: HDMI :: Spread Spectrum         | --            |       | --            |       | --            |       | --             |       |     |
| Display  | TX :: Built-in :: DP                              | --            |       | V             | v23.2 | V             | v23.0 | V              | v22.1 |     |
| Display  | TX :: Built-in :: DP :: HDCP                      | --            |       | --            |       | --            |       | --             |       |     |
| Display  | TX :: Built-in :: DP :: HDR                       | --            |       | --            |       | --            |       | --             |       |     |
| Display  | TX :: Built-in :: DP :: DSC                       | --            |       | --            |       | --            |       | --             |       |     |
| Display  | TX :: Built-in :: DP :: Spread Spectrum           | --            |       | --            |       | --            |       | --             |       |     |
| Display  | TX :: Built-in :: DP :: Type-C                    | --            |       | V             | v23.2 | V             | v23.0 | V              | v22.1 |     |
| Display  | TX :: Built-in :: DP :: Type-C (Pin Assignment D) | --            |       | V             | v23.2 | V             | v23.1 | V              | v23.1 |     |
| Display  | TX :: Built-in :: DP :: DP Connector              | --            |       | Patch         | v23.2 | Patch         | v23.0 | Patch          | v23.0 |     |
| Display  | TX :: Built-in :: LVDS                            | (V)           | v23.2 | --            |       | --            |       | --             |       |     |
| Display  | TX :: Built-in :: LVDS :: Spread Spectrum         | --            |       | --            |       | --            |       | --             |       |     |

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| Category | Feature  | MT8365 (G350) |       | MT8370 (G510) |       | MT8390 (G700) |       | MT8395 (G1200) |       | NDA |
|----------|--|---------------|-------|---------------|-------|---------------|-------|----------------|-------|-----|
|          |  | Support       | Rel   | Support       | Rel   | Support       | Rel   | Support        | Rel   |     |
| Display  | TX :: External Bridge :: DPI to HDMI :: IT66121FN      | V             | v21.3 | --            |       | --            |       | --             |       |     |
| Display  | TX :: External Bridge :: eDP to LVDS :: TX18D204VM0BAA | --            |       | --            |       | --            |       | (V)            | v23.0 |     |
| Display  | TX :: External Bridge :: DSI to LVDS :: IT6122         | --            |       | (V)           | v23.2 | (V)           | v23.1 | --             |       |     |
| Display  | TX :: Headless   | V             | v23.1 | V             | v23.2 | V             | v23.1 | V              | v23.1 |     |
| Display  | TX :: Single Display :: DSI                            | V             | v21.3 | V             | v23.2 | V             | v23.0 | V              | v22.2 |     |
| Display  | TX :: Single Display :: eDP                            | --            |       | (V)           | v23.2 | (V)           | v23.0 | (V)            | v22.1 |     |
| Display  | TX :: Single Display :: HDMI                           | V             |       | V             | v23.2 | V             | v23.0 | V              | v22.1 |     |
| Display  | TX :: Single Display :: DP                             | --            |       | V             | v23.2 | V             | v23.0 | V              | v22.1 |     |
| Display  | TX :: Single Display :: DPI                            | --            |       | --            |       | --            |       | --             |       |     |
| Display  | TX :: Single Display :: LVDS                           | (V)           | v23.2 | (V)           | v23.2 | (V)           | v23.1 | (V)            | v23.0 |     |
| Display  | TX :: Dual Display :: DSI + HDMI                       | V             | v21.3 | V             | v23.2 | V             | v23.0 | V              | v22.2 |     |
| Display  | TX :: Dual Display :: DSI + DP                         | --            |       | V             | v23.2 | V             | v23.0 | V              | v22.2 |     |
| Display  | TX :: Dual Display :: eDP + HDMI                       | --            |       | (V)           | v23.2 | (V)           | v23.0 | (V)            | v22.1 |     |
| Display  | TX :: Dual Display :: eDP + DP                         | --            |       | (V)           | v23.2 | (V)           | v23.0 | (V)            | v22.1 |     |
| Display  | TX :: Dual Display :: eDP + DSI                        | --            |       | (V)           | v23.2 | (V)           | v23.0 | (V)            | v23.0 |     |
| Display  | TX :: Dual Display :: eDP + LVDS                       | --            |       | (V)           | v23.2 | (V)           | v23.1 | --             |       |     |
| Display  | TX :: Dual Display :: LVDS + HDMI                      | --            |       | (V)           | v23.2 | (V)           | v23.1 | (V)            | v23.0 |     |
| Display  | TX :: Dual Display :: LVDS + DP                        | --            |       | (V)           | v23.2 | (V)           | v23.1 | (V)            | v23.0 |     |
| Display  | TX :: Dual Display :: LVDS + DSI                       | --            |       | --            |       | --            |       | (V)            | v23.0 |     |
| Display  | TX :: Dual Display :: DP + HDMI                        | --            |       | V             | v23.2 | V             | v23.0 | V              | v23.0 |     |
| Display  | TX :: Triple Display :: DSI + DP + HDMI                | --            |       | --            |       | --            |       | V              | v23.1 |     |
| Display  | TX :: Triple Display :: DSI + eDP + HDMI               | --            |       | --            |       | --            |       | (V)            | v23.1 |     |
| Display  | TX :: Triple Display :: DSI + eDP + DP                 | --            |       | --            |       | --            |       | (V)            | v23.1 |     |
| Display  | TX :: Triple Display :: eDP + DP + HDMI                | --            |       | --            |       | --            |       | (V)            | v23.1 |     |
| Display  | TX :: Triple Display :: DSI + LVDS + HDMI              | --            |       | --            |       | --            |       | (V)            | v23.1 |     |
| Display  | TX :: Triple Display :: DSI + LVDS + DP                | --            |       | --            |       | --            |       | (V)            | v23.1 |     |
| Display  | TX :: Triple Display :: LVDS + DP + HDMI               | --            |       | --            |       | --            |       | (V)            | v23.1 |     |
| Display  | TX :: Wi-Fi Display                                    | --            |       | --            |       | --            |       | --             |       |     |
| Display  | TX :: Wi-Fi Display :: HDCP                            | --            |       | --            |       | --            |       | --             |       |     |
| Display  | TX :: Boot Logo :: DSI                                 | --            |       | V             | v23.2 | V             | v23.1 | V              | v23.1 |     |
| Display  | TX :: Boot Logo :: HDMI                                | --            |       | --            |       | --            |       | --             |       |     |
| Display  | TX :: Boot Logo :: eDP                                 | --            |       | Patch         | v23.2 | Patch         | v23.2 | Patch          | v23.2 |     |
| Display  | TX :: Boot Logo :: DP                                  | --            |       | --            |       | --            |       | --             |       |     |
| Display  | TX :: Boot Logo :: LVDS                                | --            |       | --            |       | --            |       | --             |       |     |

|       |  |
|-------|--|
| V     | Function enabled by software and available on the EVK set                              |
| O     | Software integrated but cannot be validated due to hardware board limitations          |
| Patch | Requires getting patches from MediaTek or partners to enable this feature              |
| POC   | Proof-of-concept. Not a fully verified feature. Still lots works to do for production  |
| ( )   | Unable to verify this feature with out-of-stock EVK set. It may require extra hardware |
| --    | Not supported in this release  |
| EOL   | End-of-life. Do not support anymore  |

| Category | Feature  | MT8365 (G350) |       | MT8370 (G510) |       | MT8390 (G700) |       | MT8395 (G1200) |       | NDA |
|----------|--|---------------|-------|---------------|-------|---------------|-------|----------------|-------|-----|
|          |  | Support       | Rel   | Support       | Rel   | Support       | Rel   | Support        | Rel   |     |
| Display  | RX :: Built-in :: HDMI                         | --            |       | --            |       | --            |       | V              | v23.1 |     |
| Display  | RX :: Built-in :: HDMI :: HDCP                 | --            |       | --            |       | --            |       | --             |       |     |
| Display  | RX :: Built-in :: HDMI :: CEC                  | --            |       | --            |       | --            |       | --             |       |     |
| Display  | RX :: Built-in :: HDMI :: HDR                  | --            |       | --            |       | --            |       | --             |       |     |
| Display  | RX :: Built-in :: HDMI :: DSC                  | --            |       | --            |       | --            |       | --             |       |     |
| Display  | RX :: External Bridge :: DP to CSI :: IT6510   | --            |       | (POC)         | v23.2 | (POC)         | v23.2 | (POC)          | v23.2 |     |
| Display  | RX :: External Bridge :: HDMI to CSI :: LT6911 | --            |       | (POC)         | v24.0 | (POC)         | v24.0 | (POC)          | v24.0 |     |
| Display  | RX :: Wi-Fi Display Sink                       | --            |       | --            |       | --            |       | --             |       |     |
| Display  | RX :: Wi-Fi Display Sink :: HDCP               | --            |       | --            |       | --            |       | --             |       |     |
| Display  | PQ :: Gamma                                    | --            |       | --            |       | --            |       | --             |       |     |
| Display  | PQ :: Dither                                   | --            |       | --            |       | --            |       | --             |       |     |
| Display  | PQ :: CCM (Color Correction Matrix)            | --            |       | --            |       | --            |       | --             |       |     |
| Display  | Display Server :: Wayland                      | V             | v21.3 | V             | v23.2 | V             | v23.0 | V              | v22.0 |     |
| Display  | Display Server :: Wayland :: Weston            | V             | v21.3 | V             | v23.2 | V             | v23.0 | V              | v22.0 |     |
| Display  | Display Server :: X11                          | --            |       | --            |       | --            |       | --             |       |     |
| Display  | Direct Render Manager (DRM)                    | V             | v21.3 | V             | v23.2 | V             | v23.0 | V              | v22.0 |     |
| Display  | Linux Framebuffer (fbdev)                      | V             | v21.3 | V             | v23.2 | V             | v23.0 | V              | v22.0 |     |
| Display  | GStreamer :: waylandsink                       | V             | v21.3 | V             | v23.2 | V             | v23.0 | V              | v22.0 |     |
| Display  | GStreamer :: kmssink                           | POC           | v23.2 | POC           | v23.2 | POC           | v23.2 | POC            | v23.2 |     |
| Audio    | IN :: PDM :: DMIC                              | V             | v21.3 | V             | v23.2 | V             | v23.0 | V              | v22.0 |     |
| Audio    | IN :: TDM                                      | --            |       | --            |       | --            |       | --             |       |     |
| Audio    | IN :: PMIC :: AMIC                             | V             | v21.3 | V             | v23.2 | V             | v23.0 | V              | v23.0 |     |
| Audio    | IN :: I2S :: PIN                               | --            |       | V             | v23.2 | O             | v23.0 | O              | v22.0 |     |
| Audio    | IN :: UAC :: 1.0                               | V             | v21.3 | V             | v23.2 | V             | v23.0 | V              | v22.0 |     |
| Audio    | IN :: SPDIF                                    | --            |       | --            |       | --            |       | --             |       |     |
| Audio    | IN :: eARC                                     | --            |       | --            |       | --            |       | --             |       |     |
| Audio    | IN :: Headphone:: Jack                         | V             | v21.3 | V             | v23.2 | V             | v23.0 | V              | v22.0 |     |
| Audio    | OUT :: Lineout :: Jack                         | V             | v21.3 | V             | v23.2 | V             | v23.0 | V              | v22.0 |     |
| Audio    | OUT :: Headphone:: Jack                        | V             | v21.3 | V             | v23.2 | V             | v23.0 | V              | v22.0 |     |
| Audio    | OUT :: Handset                                 | --            |       | --            |       | --            |       | --             |       |     |
| Audio    | OUT :: TDM                                     | --            |       | --            |       | --            |       | --             |       |     |
| Audio    | OUT :: UAC :: 1.0                              | V             | v21.3 | V             | v23.2 | V             | v23.0 | V              | v22.0 |     |
| Audio    | OUT :: SPDIF                                   | --            |       | --            |       | --            |       | --             |       |     |
| Audio    | OUT :: DP Audio                                | --            |       | V             | v23.2 | V             | v23.0 | V              | v22.1 |     |



|       |  |
|-------|--|
| V     | Function enabled by software and available on the EVK set                              |
| O     | Software integrated but cannot be validated due to hardware board limitations          |
| Patch | Requires getting patches from MediaTek or partners to enable this feature              |
| POC   | Proof-of-concept. Not a fully verified feature. Still lots works to do for production  |
| ( )   | Unable to verify this feature with out-of-stock EVK set. It may require extra hardware |
| --    | Not supported in this release  |
| EOL   | End-of-life. Do not support anymore  |

| Category   | Feature  | MT8365 (G350) |       | MT8370 (G510) |       | MT8390 (G700) |       | MT8395 (G1200) |       | NDA |
|------------|--|---------------|-------|---------------|-------|---------------|-------|----------------|-------|-----|
|            |  | Support       | Rel   | Support       | Rel   | Support       | Rel   | Support        | Rel   |     |
| Audio      | OUT :: HDMI Audio                                    | V             | v22.0 | V             | v23.2 | V             | v23.0 | V              | v22.1 |     |
| Audio      | OUT :: I2S :: PIN                                    | --            |       | V             | v23.2 | O             | v23.0 | O              | v22.0 |     |
| Audio      | DSP :: HiFi4   | --            |       | --            |       | --            |       | V              | v24.0 |     |
| Audio      | DSP :: HiFi5   | --            |       | V             | v24.0 | V             | v24.0 | --             |       |     |
| Audio      | Jack :: Detection                                    | --            |       | --            |       | --            |       | --             |       |     |
| Audio      | Gstreamer :: alsasink                                | V             | v21.3 | V             | v23.2 | V             | v23.0 | V              | v22.0 |     |
| Audio      | ALSA-lib   | V             | v21.3 | V             | v23.2 | V             | v23.0 | V              | v22.0 |     |
| Audio      | ALSA UCM   | --            |       | --            |       | --            |       | --             |       |     |
| Audio      | SOF (Sound Open Firmware)                            | --            |       | V             | v24.0 | V             | v24.0 | V              | v24.0 |     |
| GPU        | EGL :: Display Backend :: Wayland                    | V             | v21.3 | V             | v23.2 | V             | v23.0 | V              | v22.0 |     |
| GPU        | EGL :: Display Backend :: X11                        | --            |       | --            |       | --            |       | --             |       |     |
| GPU        | Graphics API :: EGL :: 1.5                           | V             | v23.1 | V             | v23.2 | V             | v23.1 | V              | v23.1 |     |
| GPU        | Graphics API :: OpenGL ES :: 3.2                     | V             | v21.3 | V             | v23.2 | V             | v23.0 | V              | v22.0 |     |
| GPU        | Graphics API :: Vulkan :: 1.3                        | V             | v21.3 | V             | v23.2 | V             | v23.0 | V              | v22.0 |     |
| GPU        | Computation API :: OpenCL :: 3.0                     | V             | v21.3 | V             | v23.2 | V             | v23.0 | V              | v22.0 |     |
| AI/ML      | NeuroPilot :: Neuron Runtime :: APU Backend          | --            |       | V             | v23.2 | V             | v23.0 | V              | v22.1 |     |
| AI/ML      | NeuroPilot :: Host Compiler :: ncc_tflite            | --            |       | V             | v23.2 | V             | v23.0 | V              | v22.1 |     |
| AI/ML      | TFLite Interpreter :: ANN Delegate :: VP6 Backend    | V             | v21.3 | --            |       | --            |       | --             |       | V   |
| AI/ML      | TFLite Interpreter :: Neuron Delegate :: APU Backend | --            |       | V             | v24.0 | V             | v24.0 | V              | v24.0 |     |
| AI/ML      | TFLite Interpreter :: ArmNN Delegate :: CPU Backend  | V             | v21.3 | V             | v23.2 | V             | v23.0 | V              | v22.0 |     |
| AI/ML      | TFLite Interpreter :: ArmNN Delegate :: GPU Backend  | V             | v21.3 | V             | v23.2 | V             | v23.0 | V              | v22.0 |     |
| AI/ML      | NNStream   | V             | v23.1 | V             | v23.2 | V             | v23.1 | V              | v23.1 |     |
| Peripheral | I2C  | V             | v21.3 | V             | v23.2 | V             | v23.0 | V              | v21.3 |     |
| Peripheral | I3C  | --            |       | --            |       | --            |       | --             |       |     |
| Peripheral | UART   | V             | v21.3 | V             | v23.2 | V             | v23.0 | V              | v21.3 |     |
| Peripheral | UART :: DMA  | V             | v23.2 | V             | v23.2 | V             | v23.2 | V              | v23.2 |     |
| Peripheral | UART :: HW Flow Control                              | --            |       | --            |       | --            |       | --             |       |     |
| Peripheral | USB :: TYPE-C :: MT6360 + IT5205                     | --            |       | --            |       | --            |       | V              | v22.1 |     |
| Peripheral | USB :: TYPE-C :: RT1715 + IT5205                     | --            |       | V             | v23.2 | V             | v23.0 | --             |       |     |
| Peripheral | USB :: TYPE-C :: USB 3.0                             | --            |       | V             | v23.2 | V             | v23.0 | V              | v22.1 |     |
| Peripheral | USB :: 2.0 OTG                                       | --            |       | --            |       | --            |       | --             |       |     |
| Peripheral | USB :: 2.0 Host Only                                 | V             | v21.3 | V             | v23.2 | V             | v23.0 | V              | v21.3 |     |
| Peripheral | USB :: 2.0 Device Only                               | --            |       | V             | v23.2 | V             | v23.0 | V              | v22.1 |     |
| Peripheral | USB :: 2.0 Host+Device (Dual-Role-Switch)            | V             | v21.3 | V             | v23.2 | V             | v23.0 | V              | v22.1 |     |

|       |  |
|-------|--|
| V     | Function enabled by software and available on the EVK set                              |
| O     | Software integrated but cannot be validated due to hardware board limitations          |
| Patch | Requires getting patches from MediaTek or partners to enable this feature              |
| POC   | Proof-of-concept. Not a fully verified feature. Still lots works to do for production  |
| ( )   | Unable to verify this feature with out-of-stock EVK set. It may require extra hardware |
| --    | Not supported in this release  |
| EOL   | End-of-life. Do not support anymore  |

| Category   | Feature                                   | MT8365 (G350) |       | MT8370 (G510) |       | MT8390 (G700) |       | MT8395 (G1200) |       | NDA |
|------------|---|---------------|-------|---------------|-------|---------------|-------|----------------|-------|-----|
|            |   | Support       | Rel   | Support       | Rel   | Support       | Rel   | Support        | Rel   |     |
| Peripheral | USB :: 3.0 OTG                            | --            |       | --            |       | --            |       | --             |       |     |
| Peripheral | USB :: 3.0 Host Only                      | --            |       | V             | v23.2 | V             | v23.0 | V              | v22.0 |     |
| Peripheral | USB :: 3.0 Device Only                    | --            |       | O             | --    | O             | --    | V              | v22.0 |     |
| Peripheral | USB :: 3.0 Host+Device (Dual-Role-Switch) | --            |       | O             | --    | O             | --    | V              | v22.1 |     |
| Peripheral | USB :: UVC                                | V             | v21.3 | V             | v23.2 | V             | v23.0 | V              | v22.0 |     |
| Peripheral | USB :: UVC Gadget                         | --            |       | V             | v23.2 | V             | v23.2 | V              | v23.2 |     |
| Peripheral | Gstreamer :: uvcsink                      | --            |       | --            |       | --            |       | --             |       |     |
| Peripheral | PCIe :: Gen2 (1 lane)                     | --            |       | V             | v23.2 | V             | v23.0 | V              | v22.1 |     |
| Peripheral | PCIe :: Gen3 (2 lane)                     | --            |       | --            |       | --            |       | V              | v22.0 |     |
| Peripheral | SPI :: Master                             | V             | v21.3 | V             | v23.2 | V             | v23.0 | V              | v21.3 |     |
| Peripheral | PWM                                       | V             | v21.3 | V             | v23.2 | V             | v23.0 | V              | v23.0 |     |
| Peripheral | GPIO                                      | V             | v21.3 | V             | v23.2 | V             | v23.0 | V              | v21.3 |     |
| Peripheral | MSDC :: eMMC                              | V             | v21.3 | V             | v23.2 | V             | v23.0 | V              | v22.0 |     |
| Peripheral | MSDC :: SD Card                           | V             | v21.3 | V             | v23.2 | V             | v23.0 | V              | v21.3 |     |
| Peripheral | MSDC :: SDIO                              | V             | v21.3 | V             | v23.2 | V             | v23.1 | --             |       |     |
| Peripheral | Storage :: SFI (Serial NOR Flash)         | --            |       | --            |       | --            |       | --             |       |     |
| Peripheral | Storage :: NFI (RAW NAND)                 | --            |       | --            |       | --            |       | --             |       |     |
| Peripheral | Storage :: UFS                            | --            |       | --            |       | --            |       | V              | v21.3 |     |
| Peripheral | Keypad Scanner                            | V             | v21.3 | --            |       | --            |       | --             |       |     |
| Peripheral | IR :: RX                                  | --            |       | --            |       | --            |       | --             |       |     |
| Peripheral | IR :: TX                                  | --            |       | --            |       | --            |       | --             |       |     |
| Peripheral | Ethernet :: 10M/100M (RMII)               | V             | v21.3 | --            |       | --            |       | --             |       |     |
| Peripheral | Ethernet :: 10M/100M (MII)                | --            |       | --            |       | --            |       | --             |       |     |
| Peripheral | Ethernet :: Gigabit (RGMII)               | --            |       | V             | v23.2 | V             | v23.0 | V              | v21.3 |     |
| Peripheral | Ethernet :: Gigabit (GMII)                | --            |       | --            |       | --            |       | --             |       |     |
| Peripheral | Ethernet :: WoL :: MAC                    | --            |       | V             | v23.2 | V             | v23.1 | V              | v23.1 |     |
| Peripheral | Ethernet :: WoL :: PHY                    | --            |       | --            |       | --            |       | --             |       |     |
| Peripheral | Ethernet :: TSN                           | --            |       | V             | v23.2 | V             | v23.0 | V              | v22.1 |     |
| Peripheral | Touch :: Goodix GT9271 (I2C)              | V             | v22.0 | V             | v23.2 | V             | v23.0 | V              | v22.2 |     |
| Peripheral | CAN :: MCP2518 (SPI)                      | --            |       | --            |       | --            |       | POC            | v23.1 |     |
| MT7663     | SDIO Module :: AzureWave (AW-CB451NF)     | V             | v22.0 | --            |       | --            |       | --             |       |     |
| MT7663     | CoB (Chip on Board Design)                | --            |       | --            |       | --            |       | --             |       |     |
| MT7663     | Wi-Fi :: Wi-Fi 5                          | V             | v22.0 | --            |       | --            |       | --             |       |     |
| MT7663     | Wi-Fi :: STA                              | V             | v22.0 | --            |       | --            |       | --             |       |     |

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| POC   | Proof-of-concept. Not a fully verified feature. Still lots works to do for production  |
| ( )   | Unable to verify this feature with out-of-stock EVK set. It may require extra hardware |
| --    | Not supported in this release  |
| EOL   | End-of-life. Do not support anymore  |

| Category      | Feature                                | MT8365 (G350) |       | MT8370 (G510) |       | MT8390 (G700) |       | MT8395 (G1200) |       | NDA |
|---------------|--|---------------|-------|---------------|-------|---------------|-------|----------------|-------|-----|
|               |  | Support       | Rel   | Support       | Rel   | Support       | Rel   | Support        | Rel   |     |
| MT7663        | Wi-Fi :: SoftAP                        | --            |       | --            |       | --            |       | --             |       |     |
| MT7663        | Wi-Fi :: SoftAP+STA                    | --            |       | --            |       | --            |       | --             |       |     |
| MT7663        | Bluetooth :: Bluetooth 5.2             | V             | v23.1 | --            |       | --            |       | --             |       |     |
| MT7663        | Bluetooth :: Host :: BlueDroid :: GATT | V             | v23.1 | --            |       | --            |       | --             |       |     |
| MT7663        | Bluetooth :: Host :: BlueDroid :: HID  | V             | v23.1 | --            |       | --            |       | --             |       |     |
| MT7663        | Bluetooth :: Host :: BlueDroid :: HoGP | V             | v23.1 | --            |       | --            |       | --             |       |     |
| MT7921        | PCIe Module :: AzureWave (#AW-XB468NF) | --            |       | V             | v23.2 | V             | v23.0 | V              | v22.1 |     |
| MT7921        | SDIO Module :: AzureWave (#AW-XB554NF) | --            |       | (V)           | v23.2 | (V)           | v23.1 | --             |       |     |
| MT7921        | CoB (Chip on Board Design)             | --            |       | --            |       | --            |       | --             |       |     |
| MT7921        | Wi-Fi :: Wi-Fi 6                       | --            |       | V             | v23.2 | V             | v23.0 | V              | v22.1 |     |
| MT7921        | Wi-Fi :: STA                           | --            |       | V             | v23.2 | V             | v23.0 | V              | v22.2 |     |
| MT7921        | Wi-Fi :: SoftAP                        | --            |       | --            |       | --            |       | --             |       |     |
| MT7921        | Wi-Fi :: SoftAP+STA                    | --            |       | --            |       | --            |       | --             |       |     |
| MT7921        | Bluetooth :: Bluetooth 5.2             | --            |       | V             | v23.2 | V             | v23.0 | V              | v22.1 |     |
| MT7921        | Bluetooth :: Host :: BlueZ             | --            |       | V             | v23.2 | V             | v23.0 | V              | v22.1 |     |
| MT7921        | Bluetooth :: Host :: BlueZ :: GATT     | --            |       | V             | v23.2 | V             | v23.0 | V              | v22.1 |     |
| MT7921        | Bluetooth :: Host :: BlueZ :: HID      | --            |       | V             | v23.2 | V             | v23.0 | V              | v22.2 |     |
| MT7921        | Bluetooth :: Host :: BlueZ :: HoGP     | --            |       | V             | v23.2 | V             | v23.0 | V              | v22.2 |     |
| Modem         | 5G :: Quectel T700 PCIe Module         | --            |       | (POC)         | v23.2 | (POC)         | v23.0 | (POC)          | v22.1 |     |
| App Framework | Qt (Yocto meta-qt)                     | POC           | v21.3 | POC           | v23.2 | POC           | v23.0 | POC            | v22.1 |     |
| App Framework | ROS (Yocto meta-ros)                   | POC           | v22.1 | POC           | v23.2 | POC           | v23.0 | POC            | v22.2 |     |
| Application   | Chromium Browser                       | POC           | v24.0 | POC           | v24.0 | POC           | v24.0 | POC            | v24.0 |     |
| Tool          | Flash Tool :: x86_64:: Windows10       | V             | v21.3 | V             | v23.2 | V             | v23.0 | V              | v21.3 |     |
| Tool          | Flash Tool :: x86_64:: Ubuntu 18.04    | V             | v21.3 | V             | v23.2 | V             | v23.0 | V              | v21.3 |     |
| Tool          | Flash Tool :: x86_64:: Ubuntu 22.04    | V             | v23.2 | V             | v23.2 | V             | v23.2 | V              | v23.2 |     |
| Tool          | Flash Tool :: aarch64 :: Ubuntu 22.04  | V             | v23.2 | V             | v23.2 | V             | v23.2 | V              | v23.2 |     |
| Tool          | Flash Tool :: aarch64 :: MacOS         | --            |       | --            |       | --            |       | --             |       |     |
| Tool          | Build Env :: x86_64:: Ubuntu 18.04     | V             | v22.0 | V             | v23.2 | V             | v22.0 | V              | v22.0 |     |
| Tool          | Build Env :: x86_64:: Ubuntu 22.04     | V             | v23.2 | V             | v23.2 | V             | v23.2 | V              | v23.2 |     |
| Tool          | ADB (Android Debug Bridge)             | V             | v22.0 | V             | v23.2 | V             | v23.0 | V              | v22.0 |     |
| Tool          | SDK :: Yocto SDK                       | V             | v22.0 | V             | v23.2 | V             | v23.0 | V              | v22.0 |     |
| Tool          | Stress Test Suite                      | V             | v22.1 | V             | v23.2 | V             | v23.0 | V              | v22.1 |     |
| Tool          | Benchmark Suite                        | V             | v22.0 | V             | v23.2 | V             | v23.0 | V              | v22.0 |     |
| Tool          | Compliance :: PCIe (SOP+Patch)         | --            |       | Patch         | v23.2 | Patch         | v23.0 | Patch          | v22.1 | V   |

|       |  |
|-------|--|
| V     | Function enabled by software and available on the EVK set                              |
| O     | Software integrated but cannot be validated due to hardware board limitations          |
| Patch | Requires getting patches from MediaTek or partners to enable this feature              |
| POC   | Proof-of-concept. Not a fully verified feature. Still lots works to do for production  |
| ( )   | Unable to verify this feature with out-of-stock EVK set. It may require extra hardware |
| --    | Not supported in this release  |
| EOL   | End-of-life. Do not support anymore  |

|          |                                      | MT8365 (G350) |       | MT8370 (G510) |       | MT8390 (G700) |       | MT8395 (G1200) |       |     |
|----------|--------------------------------------|---------------|-------|---------------|-------|---------------|-------|----------------|-------|-----|
| Category | Feature                              | Support       | Rel   | Support       | Rel   | Support       | Rel   | Support        | Rel   | NDA |
| Tool     | Compliance :: USB (SOP+Patch)        | --            |       | Patch         | v23.2 | Patch         | v23.0 | Patch          | v22.1 | V   |
| Tool     | Compliance :: HDMI (SOP)             | --            |       | V             | v23.2 | V             | v23.0 | V              | v22.1 | V   |
| Tool     | Compliance :: DP (SOP+Patch)         | --            |       | Patch         | v23.2 | Patch         | v23.0 | Patch          | v22.1 | V   |
| Tool     | Compliance :: eDP (SOP+Patch)        | --            |       | Patch         | v23.2 | Patch         | v23.0 | Patch          | v22.1 | V   |
| Tool     | Factory Tool :: Multi Download       | --            |       | --            |       | --            |       | --             |       |     |
| Tool     | Ethernet :: TSN (Test Environment)   | --            |       | V             | v23.2 | V             | v23.0 | V              | v22.2 |     |
| Tool     | ISP :: ImagiQ (ISP Tuning Tool)      | --            |       | --            |       | --            |       | V              | v23.0 | V   |
| Tool     | ISP :: CCT (Camera Calibration Tool) | --            |       | --            |       | --            |       | V              | v23.0 | V   |
| Demo     | AI Demo App (GstInference)           | EOL           |       | EOL           |       | EOL           |       | EOL            |       |     |
| Demo     | AI Demo App (NNStream)               | V             | v23.1 | V             | v23.2 | V             | v23.1 | V              | v23.1 |     |

## Build Flavor

|                     | Definition   | G350  | G510/G700   | G1200   |   |
|---------------------|--|---|---|---|---|
| rity-bring up       | Contain the most basic feature that bring-up to console. Similar scope to what is request by SystemReady   | + EMMC<br>+ DRAM<br>+ Power Management<br>+ USB<br>+ UART/I2C<br>+ Ethernet<br>+ Debug Tools  | + EMMC<br>+ DRAM<br>+ Power Management<br>+ USB/PCIE<br>+ UART/I2C<br>+ Ethernet-TSN<br>+ Debug Tools   | + EMMC/UFS<br>+ DRAM<br>+ Power Management<br>+ USB/PCIE<br>+ UART/I2C<br>+ Ethernet-TSN<br>+ Debug Tools   | public image (nda_build = 0)<br>(will not have private image) |
| rity-bsp            | Contain most features provided by the SoC, with basic user space mw/framework to use the SoC features.<br>For most BSP developer may use this flavor   | + rity-bring-up<br>+ Display (+DRM)<br>+ Audio (+ALSA)<br>+ Video (+GStreamer)<br>+ eFuse Writer<br>+ Auto Test Suite<br>+ CAN utils<br>+ Bluedroid E9<br>+ GPU (OpenGLES, Vulkan, OpenCL)                        | + rity-bring-up<br>+ Display (+DRM)<br>+ Audio (+ALSA)<br>+ Video (+GStreamer)<br>+ Image Codec<br>+ Camera(YUV)(+GStreamer)<br>+ Camera(RAW+ISP)(+GStreamer) [NDA]<br>+ Neuro SDK + ncc_tflite<br>+ eFuse Writer [NDA]<br>+ Auto Test Suite<br>+ CAN utils<br>+ GPU (OpenGLES, Vulkan, OpenCL) | + rity-bring-up<br>+ Display (+DRM)<br>+ Audio (+ALSA)<br>+ Video (+GStreamer)<br>+ Image Codec<br>+ Camera(YUV)(+GStreamer)<br>+ Camera(RAW+ISP)(+GStreamer) [NDA]<br>+ Neuro SDK + ncc_tflite<br>+ eFuse Writer [NDA]<br>+ Auto Test Suite<br>+ CAN utils<br>+ GPU (OpenGLES, Vulkan, OpenCL) | public image (nda_build = 0)<br>private image (nda_build =1)  |
| rity-demo           | Contain more user space applications, framework, suites to demonstrate the capability of Genio platform. Easier for customer to evaluate and test Genio platforms without build the image from scratch.<br>This will be the software for SQC | + rity-bsp<br>+ Graphics CTS Suite<br>+ Benchmark Suite<br>+ Stress Suite<br>+ LTP/xTest<br>+ OpenCV<br>+ AI Demo App<br>+ QT Demo<br>+ Xtensa-ANN (+TFLite prebuild-bin) [NDA]<br>+ ARMNN (+TFLite prebuild-bin) | + rity-bsp<br>+ Graphics CTS Suite<br>+ Benchmark Suite<br>+ Stress Suite<br>+ LTP/xTest<br>+ TSN Test Suite<br>+ OpenCV<br>+ AI Demo App<br>+ QT Demo<br>+ ARMNN (+TFLite prebuild-bin)  | + rity-bsp<br>+ Graphics CTS Suite<br>+ Benchmark Suite<br>+ Stress Suite<br>+ LTP/xTest<br>+ TSN Test Suite<br>+ OpenCV<br>+ AI Demo App<br>+ QT Demo<br>+ ARMNN (+TFLite prebuild-bin)  | public image (nda_build = 0)<br>private image (nda_build =1)  |
| rity-bsp-src        | Same scope as rity-bsp, but MTK proprietary pre-build modules (AI/ISP/Video/Security, etc.) will build from source. Used for static scan such as Coverity. This build flavor is only used by MTK internal only                               |   |   |   |   |
| Manual Config/Build |  | ROS<br>Secure Boot<br>Compliance Test<br>EBBR   | ROS2<br>Secure Boot<br>Compliance Test<br>EBBR  | ROS2<br>Secure Boot<br>Compliance Test<br>EBBR  |   |

## USB

| G350       |        |                            |           |                            |             |                          |                             |             |           |
|------------|--------|----------------------------|-----------|----------------------------|-------------|--------------------------|-----------------------------|-------------|-----------|
|            |        | SoC Capability (Datasheet) |           |                            |             |                          | Genio 350-EVK Configuration |             |           |
|            |        | DL                         | Host Mode | #Endpoint of Host mode     | Device Mode | #Endpoint of Device mode | Host Mode                   | Device Mode | Connector |
| USB Port 0 | USB2.0 | V                          | V         | 64 per USB port (15 slots) | V           | 8tx & 8rx                | V                           | V (adb)     | MicroB    |
| USB Port 1 | USB2.0 | NA                         | V         | 64 per USB port (15 slots) | NA          | NA                       | V                           | NA          | TypeA     |

\* Endpoint: It means the maximum number that you can define as total TX and RX.

\* Slot: It means the maximum number of devices that you can connect to this USB IP. Some design one USB IP for two USB ports, which means those two USB ports share the maximum number of slots

| G510/G700  |             |                            |           |                            |             |                          |                             |             |            |
|------------|-------------|----------------------------|-----------|----------------------------|-------------|--------------------------|-----------------------------|-------------|------------|
|            |             | SoC Capability (Datasheet) |           |                            |             |                          | Genio 700-EVK Configuration |             |            |
|            |             | DL                         | Host Mode | #Endpoint of Host mode     | Device Mode | #Endpoint of Device mode | Host Mode                   | Device Mode | Connector  |
| USB Port 0 | USB2.0      | V                          | V         | 32 per USB port (15 slots) | V           | 8tx & 8rx                | V                           | V (adb)     | MicroB     |
| USB Port 1 | USB3.1 Gen1 | NA                         | V         | 64 per USB port (15 slots) | V           | 16tx & 16rx              | V                           | NA          | (5G+TypeC) |
|            | USB2.0      | NA                         | V         | 64 per USB port (15 slots) | V           | 16tx & 16rx              | V                           | NA          |            |
| USB Port 2 | USB2.0      | NA                         | V         | 32 per USB port (15 slots) | V           | 8tx & 8rx                | V                           | NA          | M.2 (7921) |

Note: 8390 can use trap ping to configure download from port 0 or port 1

Note: 8390 have hw design limitation. Enter suspend can not turn-off infra, will consume extra ~12mw

Note: When enter device mode, the device may not enter suspend mode

\* Endpoint: It means the maximum number that you can define as total TX and RX.

\* Slot: It means the maximum number of devices that you can connect to this USB IP. Some design one USB IP for two USB ports, which means those two USB ports share the maximum number of slots

| G1200      |             |                            |           |                            |             |                          |                              |             |                      |
|------------|-------------|----------------------------|-----------|----------------------------|-------------|--------------------------|------------------------------|-------------|----------------------|
|            |             | SoC Capability (Datasheet) |           |                            |             |                          | Genio 1200-EVK Configuration |             |                      |
|            |             | DL                         | Host Mode | #Endpoint of Host mode     | Device Mode | #Endpoint of Device mode | Host Mode                    | Device Mode | Connector            |
| USB Port 0 | USB3.1 Gen1 | NA                         | V         | 64 per USB port (15 slots) | V           | 8tx & 8rx                | V                            | V (adb)     | TypeC (Mux)          |
|            | USB2.0      | V                          | V         | 64 per USB port (15 slots) | V           | 8tx & 8rx                | V                            | V (adb)     |                      |
| USB Port 1 | USB3.1 Gen1 | NA                         | V         | 64 per USB port (15 slots) | NA          | 8tx & 8rx                | V                            | NA          | Hub<br>(5G+TypeAx2 ) |
|            | USB2.0      | NA                         | V         | 64 per USB port (15 slots) | NA          | 8tx & 8rx                | V                            | NA          |                      |
| USB Port 2 | USB2.0      | NA                         | V         | 32 per USB port (15 slots) | V           | 8tx & 8rx                | V                            | V (MSC*)    | MicroB               |
| USB Port 3 | USB2.0      | NA                         | V         | 32 per USB port (15 slots) | V           | 8tx & 8rx                | V                            | NA          | M.2 (7921)           |

Note: 8395 have hw design limitation. Enter suspend can not turn-off infra, will consume extra ~12mw

Note: When enter device mode, the device may not enter suspend mode

\* We use a file formatted in fat32 format and mount it as an USB mass storage gadget device, as the USB port 2 device

\* Endpoint: It means the maximum number that you can define as total TX and RX.

\* Slot: It means the maximum number of devices that you can connect to this USB IP. Some design one USB IP for two USB ports, which means those two USB ports share the maximum number of slots

# Display

| G350           |                         |  |  |                            |    |     |     |      |                       |                                       |
|----------------|-------------------------|--|--|----------------------------|----|-----|-----|------|-----------------------|---------------------------------------|
| Configuration  | Display                 | SoC Spec Max Resolution                | Genio 350-EVK                          | Bit Mode                   | PQ | OVL | HDR | HDCP | dtbo                  | Note (compliance, boot logo, etc)     |
| Headless       | Headless                | Headless                               | Headless                               | NA                         | NA | NA  | NA  | NA   | display-headless.dtbo |                                       |
| Single Display | DSI                     | 1200x1920@60                           | 1200x1920@60                           | 8bit                       | NA | NA  | NA  | NA   | display-dsi.dtbo      |                                       |
|                | LVDS                    | 1366x768@60                            | 1366x768@60                            | 8bit                       | NA | NA  | NA  | NA   | display-lvds.dtbo     | MIPI port outputs LVDS signal         |
|                | DPI-HDMI (Bridge)       | 1280x720@60                            | 1280x720@60                            | 8bit                       | NA | NA  | NA  | NA   | display-hdmi.dtbo     | Using DPI to HDMI Bridge IC (IT66121) |
| Dual Display   | DSI + DPI-HDMI (Bridge) | DSI: 1200x1920@60<br>HDMI: 1280x720@60 | DSI: 1200x1920@60<br>HDMI: 1280x720@60 | follow single display spec |    |     |     |      | default configuration |                                       |

  

| Genio 350-EVK Panel | Part Number           | Note                        |
|---------------------|-----------------------|-----------------------------|
| DSI: 1200x1920@60   | startek-kd070fhfid015 | Panel comes with EVK        |
| LVDS: 1366x768@60   | auo g156xtn01.0       | Request PM to get the panel |

# Display

| G510/G700      |                    |  |  |                            |    |     |     |      |                       |   |
|----------------|--------------------|--|--|----------------------------|----|-----|-----|------|-----------------------|---|
| Configuration  | Display            | SoC Spec Max Resolution                  | Genio 700-EVK                            | Bit Mode                   | PQ | OVL | HDR | HDCP | dtbo                  | Note (compliance, boot logo, etc)                           |
| Headless       | Headless           | Headless                                 | Headless                                 | NA                         | NA | NA  | NA  | NA   | display-headless.dtbo |   |
| Single Display | DSIO               | 1200x1920@60                             | 1200x1920@60                             | 8bit                       | NA | 4L  | NA  | NA   | display-dsi.dtbo      | Supports Bootlogo in U-boot stage                           |
|                | DSI1               | 1200x1920@60                             | NA                                       | NA                         | NA | NA  | NA  | NA   | NA                    | IoT Yocto do not support DSI1                               |
|                | DSIO-LVDS (Bridge) | 1920x1080@60                             | 1920x1080@60                             | 8bit                       | NA | 4L  | NA  | NA   | display-dsi2lvds.dtbo | Using DSI to LVDS Bridge IC (IT6122)                        |
|                | eDP                | 1920x1080@60                             | 1920x1080@60                             | 8bit                       | NA | 4L  | NA  | NA   | display-edp.dtbo      | Supports Bootlogo in U-boot stage (extra patches needed)    |
|                | HDMI               | 3840x2160@60                             | 3840x2160@60                             | 8bit                       | NA | 4L  | NA  | Yes  | display-hdmi.dtbo     | Provides Compliance Test SOP                                |
|                | DP                 | 3840x2160@60                             | 3840x2160@60                             | 8bit                       | NA | 4L  | NA  | NA   | display-dp.dtbo       | Provides Compliance Test SOP                                |
| Dual Display   | DSIO + eDP         | DSIO: 1200x1920@60<br>eDP: 1920x1080@60  | DSIO: 1200x1920@60<br>eDP: 1920x1080@60  | follow single display spec |    |     |     |      | display-dsiedp.dtbo   |   |
|                | DSIO + HDMI        | DSIO: 1200x1920@60<br>HDMI: 3840x2160@60 | DSIO: 1200x1920@60<br>HDMI: 3840x2160@60 | follow single display spec |    |     |     |      | default configuration |   |
|                | DSIO + DP          | DSIO: 1200x1920@60<br>DP: 3840x2160@60   | DSIO: 1200x1920@60<br>DP: 3840x2160@60   | follow single display spec |    |     |     |      | display-dsidp.dtbo    |   |
|                | DSIO-LVDS + eDP    | LVDS: 1920x1080@60<br>eDP: 1920x1080@60  | LVDS: 1920x1080@60<br>eDP: 1920x1080@60  | follow single display spec |    |     |     |      | display-lvdsedp.dtbo  |   |
|                | DSIO-LVDS + HDMI   | LVDS: 1920x1080@60<br>HDMI: 3840x2160@60 | LVDS: 1920x1080@60<br>HDMI: 3840x2160@60 | follow single display spec |    |     |     |      | display-lvdshdmi.dtbo |   |
|                | DSIO-LVDS + DP     | LVDS: 1920x1080@60<br>DP: 3840x2160@60   | LVDS: 1920x1080@60<br>DP: 3840x2160@60   | follow single display spec |    |     |     |      | display-lvdsdp.dtbo   |   |
|                | eDP + HDMI         | eDP: 1920x1080@60<br>HDMI: 3840x2160@60  | eDP: 1920x1080@60<br>HDMI: 3840x2160@60  | follow single display spec |    |     |     |      | display-edphdmi.dtbo  |   |
|                | eDP + DP           | eDP: 1920x1080@60<br>DP: 3840x2160@60    | eDP: 1920x1080@60<br>DP: 3840x2160@60    | follow single display spec |    |     |     |      | display-edpdp.dtbo    |   |
|                | HDMI + DP          | HDMI: 3840x2160@30<br>DP: 3840x2160@60   | HDMI: 3840x2160@30<br>DP: 3840x2160@60   | follow single display spec |    |     |     |      | display-hdmidp.dtbo   | HDMI using VDOSYS0, performance may only reach 3840x2160@30 |

| Genio 510/700-EVK Panel | Part Number   | Note                        |
|-------------------------|---|-----------------------------|
| DSI: 1200x1920@60       | startek-kd070fhfid078 (G510 P1V2)<br>startek-kd070fhfid015 (G700 P1V3)<br>startek-kd070fhfid078 (G700 P1V4) | Panel comes with EVK        |
| LVDS: 1920x1080@60      | koe tx18d204vm0baa  | Request PM to get the panel |
| eDP: 1920x1080@60       | auo-g156han03.0   | Request PM to get the panel |



# Display

| G1200          |  |  |  |                            |    |     |                     |                          |                       |  |
|----------------|--|--|--|----------------------------|----|-----|---------------------|--------------------------|-----------------------|--|
| Configuration  | Display                                | SoC Spec Max Resolution  | Genio 1200-EVK   | Bit Mode                   | PQ | OVL | HDR                 | HDCP                     | dtbo                  | Note (compliance, boot logo, etc)  |
| Headless       | Headless                               | Headless   | Headless   | NA                         | NA |     | NA                  | NA                       | display-headless.dtbo |  |
| Single Display | DSIO                                   | 1200x1920@60   | 1200x1920@60   | 8bit                       | NA | 4L  | NA                  | NA                       | display-dsi.dtbo      | Supports Bootlogo in U-boot stage  |
|                | DSI1                                   | 1200x1920@60   | NA   | NA                         | NA |     | NA                  | NA                       | NA                    | IoT Yocto do not support DSI1  |
|                | eDP-LVDS (Bridge)                      | 1920x1200@60   | 1920x1080@60   | 8bit                       | NA | 4L  | NA                  | NA                       | display-edp2lvds.dtbo | Jumper (J49) Short for eDP-LVDS (Bridge). Using eDP to LVDS Bridge IC (CH7513)   |
|                | eDP                                    | 3840x2160@60   | 3840x2160@60   | 8bit                       | NA | 4L  | NA                  | NA                       | display-edp.dtbo      | Jumper (J49) Open for eDP. Supports Bootlogo in U-boot stage (extra patches needed)  |
|                | HDMI                                   | 3840x2160@60   | 3840x2160@60   | 8bit                       | NA | 4L  | NA                  | Yes                      | display-hdmi.dtbo     | Provides Compliance Test SOP   |
|                | DP                                     | 3840x2160@60   | 3840x2160@60   | 8bit                       | NA | 4L  | NA                  | NA                       | display-dp.dtbo       | Provides Compliance Test SOP   |
| Dual Display   | DSIO + eDP                             | DSIO: 1200x1920@60<br>eDP: 3840x2160@60                        | DSIO: 1200x1920@60<br>eDP: 3840x2160@60                        | follow single display spec |    |     |                     | display-dsiedp.dtbo      |                       |  |
|                | DSIO + eDP-LVDS                        | DSIO: 1200x1920@60<br>LVDS: 1920x1080@60                       | DSIO: 1200x1920@60<br>LVDS: 1920x1080@60                       | follow single display spec |    |     |                     | display-dsilvds.dtbo     |                       |  |
|                | DSIO + HDMI                            | DSIO: 1200x1920@60<br>HDMI: 3840x2160@60                       | DSIO: 1200x1920@60<br>HDMI: 3840x2160@60                       | follow single display spec |    |     |                     | default configuration    |                       |  |
|                | DSIO + DP                              | DSIO: 1200x1920@60<br>DP: 3840x2160@60                         | DSIO: 1200x1920@60<br>DP: 3840x2160@60                         | follow single display spec |    |     |                     | display-dsidp.dtbo       |                       |  |
|                | eDP + HDMI                             | eDP: 3840x2160@60<br>HDMI: 3840x2160@60                        | eDP: 3840x2160@60<br>HDMI: 3840x2160@60                        | follow single display spec |    |     |                     | display-edphdmi.dtbo     |                       |  |
|                | eDP + DP                               | eDP: 3840x2160@60<br>DP: 3840x2160@60                          | eDP: 3840x2160@60<br>DP: 3840x2160@60                          | follow single display spec |    |     |                     | display-edpdp.dtbo       |                       |  |
|                | eDP-LVDS + HDMI                        | LVDS: 1920x1080@60<br>HDMI: 3840x2160@60                       | LVDS: 1920x1080@60<br>HDMI: 3840x2160@60                       | follow single display spec |    |     |                     | display-lvdshdmi.dtbo    |                       |  |
|                | eDP-LVDS + DP                          | LVDS: 1920x1080@60<br>DP: 3840x2160@60                         | LVDS: 1920x1080@60<br>DP: 3840x2160@60                         | follow single display spec |    |     |                     | display-lvdsdp.dtbo      |                       |  |
| HDMI + DP      | HDMI: 3840x2160@60<br>DP: 3840x2160@60 | HDMI: 3840x2160@60<br>DP: 3840x2160@60                         | follow single display spec                                     |                            |    |     | display-hdmidp.dtbo |                          |                       |  |
| Triple Display | DSIO + eDP + HDMI                      | DSIO: 1200x1920@60<br>eDP: 3840x2160@30<br>HDMI: 3840x2160@60  | DSIO: 1200x1920@60<br>eDP: 3840x2160@30<br>HDMI: 3840x2160@60  | follow single display spec |    |     |                     | display-dsiedphdmi.dtbo  |                       | eDP using VDOSYS0 sub path, performance may only reach 3840x2160@30  |
|                | DSIO + eDP + DP                        | DSIO: 1200x1920@60<br>eDP: 3840x2160@30<br>DP: 3840x2160@60    | DSIO: 1200x1920@60<br>eDP: 3840x2160@30<br>DP: 3840x2160@60    | follow single display spec |    |     |                     | display-dsiedpdp.dtbo    |                       | eDP using VDOSYS0 sub path, performance may only reach 3840x2160@30  |
|                | DSIO + eDP-LVDS + HDMI                 | DSIO: 1200x1920@60<br>LVDS: 1920x1080@60<br>HDMI: 3840x2160@60 | DSIO: 1200x1920@60<br>LVDS: 1920x1080@60<br>HDMI: 3840x2160@60 | follow single display spec |    |     |                     | display-dsilvdshdmi.dtbo |                       |  |
|                | DSIO + eDP-LVDS + DP                   | DSIO: 1200x1920@60<br>LVDS: 1920x1080@60<br>DP: 3840x2160@60   | DSIO: 1200x1920@60<br>LVDS: 1920x1080@60<br>DP: 3840x2160@60   | follow single display spec |    |     |                     | display-dsilvdsdp.dtbo   |                       |  |
|                | DSIO + HDMI + DP                       | DSIO: 1200x1920@60<br>HDMI: 3840x2160@60<br>DP: 3840x2160@30   | DSIO: 1200x1920@60<br>HDMI: 3840x2160@60<br>DP: 3840x2160@30   | follow single display spec |    |     |                     | display-dsihdmidp.dtbo   |                       | DP using VDOSYS0 sub path, performance may only reach 3840x2160@30   |
|                | eDP + HDMI + DP                        | eDP: 3840x2160@30<br>HDMI: 3840x2160@30<br>DP: 3840x2160@60    | eDP: 3840x2160@30<br>HDMI: 3840x2160@30<br>DP: 3840x2160@60    | follow single display spec |    |     |                     | display-edphdmidp.dtbo   |                       | eDP using VDOSYS0 main path, performance may only reach 3840x2160@30<br>HDMI using VDOSYS0 sub path, performance may only reach 3840x2160@30 |
|                | eDP-LVDS + HDMI + DP                   | LVDS: 1920x1080@60<br>HDMI: 3840x2160@30<br>DP: 3840x2160@60   | LVDS: 1920x1080@60<br>HDMI: 3840x2160@30<br>DP: 3840x2160@60   | follow single display spec |    |     |                     | display-lvdshdmidp.dtbo  |                       | HDMI using VDOSYS0 sub path, performance may only reach 3840x2160@30   |

| Genio 1200-EVK Panel | Part Number           | Note                        |
|----------------------|-----------------------|-----------------------------|
| DSI: 1200x1920@60    | startek-kd070fhfid078 | Panel comes with EVK        |
| LVDS: 1920x1080@60   | koe tx18d204vm0baa    | Request PM to get the panel |
| eDP: 3840x2160@60    | innolux-hk173vb-01b   | Request PM to get the panel |

# HDMI-RX

| G1200                             |   | Video  |                       |              |  | Audio         |  |  |
|-----------------------------------|---|--|-----------------------|--------------|--|---------------|--|--|
| Input Format                      | Input Timing  | Output Format  | Max Output Resolution | Input Format | PCM Sample Rate  | PCM Channel # | Audio Bits   |  |
| YUV444<br>YUV422<br>YUV420<br>RGB | SD mode resolutions:<br>720 × 480p @ 59.94/60 Hz<br>720 × 576p @ 50 Hz<br><br>HD/FHD/UFHD mode resolutions:<br>1280 × 720p @ 59.94/60/50 Hz<br>1920 × 1080p @ 59.94/60/50 Hz<br>1920 × 1080p @ 23.97/24 Hz<br>1920 × 1080p @ 25 Hz<br>1920 × 1080p @ 29.97/30 Hz<br>3840 × 2160p @ 29.97/30 Hz<br>3840 × 2160p @ 59.94/60/50 Hz | ABGR32<br>ARGB32<br>BGR24<br>GREY<br>I420 (YV12)<br>I422 (YV16)<br>NV12<br>NV12M<br>NV16<br>NV16M<br>NV21<br>NV21M<br>NV61<br>NV61M<br>RGB24<br>RGB565<br>RGB565X<br>UYVY<br>VYUY<br>YUV420(YU12/I420)<br>YUV420M<br>YUYV(YUY2)<br>YVU420(YV12)<br>YVU420M<br>YVYU | 3840x2160@60          | PCM          | 32 kHz<br>44.1 kHz<br>48 kHz<br>88.2 kHz<br>96 kHz<br>176.4 kHz<br>192 kHz | 2~8           | up to 24 bits<br>(Total 32bit =<br>24bit + 8bit 0) |  |

# Camera

| G350    | Feature                                   | MediaTek Imgsensor Architecture* |            | V4L2 Sensor Architecture* |                       |
|---------|---|----------------------------------|------------|---------------------------|-----------------------|
|         |   | Raw Sensor                       | YUV Sensor | Raw Sensor                | YUV Sensor            |
| Sensor  | Sensor Module                             | NA                               | NA         | NA                        | AP1302+AR0430         |
|         | Camera DTB Name                           | NA                               | NA         | NA                        | G350-EVK CAM_DTB      |
|         | Single Sensor                             | NA                               | NA         | NA                        | V                     |
|         | Multi-Sensor                              | NA                               | NA         | NA                        | V (YUV+YUV)           |
|         | Sensor Driver Interface                   | NA                               | NA         | NA                        | V4L2 Sensor Interface |
| ISP     | Hue Adjustment                            | NA                               | NA         | NA                        | Module Firmware       |
|         | Brightness Adjustment                     | NA                               | NA         | NA                        | Module Firmware       |
|         | Saturation Adjustment                     | NA                               | NA         | NA                        | Module Firmware       |
|         | Contrast Adjustment                       | NA                               | NA         | NA                        | Module Firmware       |
| 3A      | Auto Flicker                              | NA                               | NA         | NA                        | Module Firmware       |
|         | Auto Focus                                | NA                               | NA         | NA                        | Module Firmware       |
|         | Auto Exposure                             | NA                               | NA         | NA                        | Module Firmware       |
|         | Auto White Balance (AWB)                  | NA                               | NA         | NA                        | Module Firmware       |
| Preview | Size                                      | NA                               | NA         | NA                        | 2316x1746@30          |
|         | Format                                    | NA                               | NA         | NA                        | YUV422 8-bit (UYVY)   |
|         | MCNR (Motion Compensated Noise Reduction) | NA                               | NA         | NA                        | Module Firmware       |
| Capture | Capture Size                              | NA                               | NA         | NA                        | NA                    |
|         | Format                                    | NA                               | NA         | NA                        | NA                    |
|         | LPNR (Low Pass Noise Reduction)           | NA                               | NA         | NA                        | NA                    |
| G350    | Camera Calibration Tuning (CCT) Tool      | NA                               | NA         | NA                        | 3rd Party Tool        |
|         | ImagiqSimulator Camera Tuning Tool        | NA                               | NA         | NA                        | 3rd Party Tool        |

\* G350 does not support MediaTek Imgsensor Architecture

## Camera

| G510/G700 | Feature                                   | MediaTek Imgsensor Architecture*               |  | V4L2 Sensor Architecture* |                           |
|-----------|---|--|--|---------------------------|---------------------------|
|           |   | Raw Sensor                                     | YUV Sensor                                   | Raw Sensor                | YUV Sensor                |
| Sensor    | Sensor Module                             | IMX214   | AP1302+AR0830                                | NA                        | AP1302+AR0830             |
|           | Camera DTB Name                           | CAM_DTB_VERSION_D2                             | CAM_DTB_VERSION_D6                           | NA                        | CAM_DTB_VERSION_D6        |
|           | Single Sensor                             | V  | V  | NA                        | V                         |
|           | Multi-Sensor                              | V  | V  | NA                        | V (YUV+YUV)               |
|           | Sensor Driver Interface                   | MediaTek Imgsensor Interface                   | MediaTek Imgsensor Interface                 | NA                        | V4L2 Sensor Interface     |
| ISP       | Hue Adjustment                            | V  | Module Firmware                              | NA                        | Module Firmware           |
|           | Brightness Adjustment                     | V  | Module Firmware                              | NA                        | Module Firmware           |
|           | Saturation Adjustment                     | V  | Module Firmware                              | NA                        | Module Firmware           |
|           | Contrast Adjustment                       | V  | Module Firmware                              | NA                        | Module Firmware           |
| 3A        | Auto Flicker                              | V  | Module Firmware                              | NA                        | Module Firmware           |
|           | Auto Focus                                | O (not validated)                              | Module Firmware                              | NA                        | Module Firmware           |
|           | Auto Exposure                             | V  | Module Firmware                              | NA                        | Module Firmware           |
|           | Auto White Balance (AWB)                  | V  | Module Firmware                              | NA                        | Module Firmware           |
| Preview   | Size                                      | max. 4000x3000@30                              | 3840x2160@24<br>2560x1440@30<br>1920x1080@30 | NA                        | Follow Onsemi AP1302 spec |
|           | Format                                    | RGB (RGB888)<br>YUV420 (NV12)<br>YUV422 (YUYV) | YUV422 8-bit (UYVY)                          | NA                        | YUV422 8-bit (UYVY)       |
|           | MCNR (Motion Compensated Noise Reduction) | V  | Module Firmware                              | NA                        | Module Firmware           |
| Capture   | Capture Size                              | 4000x3000                                      | NA   | NA                        | NA                        |
|           | Format                                    | JPEG   | NA   | NA                        | NA                        |
|           | LPNR (Low Pass Noise Reduction)           | V  | NA   | NA                        | NA                        |
| Tuning    | Camera Calibration Tuning (CCT) Tool      | V  | 3rd Party Tool                               | NA                        | 3rd Party Tool            |
|           | ImagiqSimulator Camera Tuning Tool        | V  | 3rd Party Tool                               | NA                        | 3rd Party Tool            |

\* The MediaTek Imgsensor Architecture and V4L2 Sensor Architecture are mutually exclusive software architectures. Users may choose to use only one of them.

## Camera

| G1200   | Feature                                   | MediaTek Imgsensor Architecture*               |  | V4L2 Sensor Architecture* |                           |
|---------|---|--|--|---------------------------|---------------------------|
|         |   | Raw Sensor                                     | YUV Sensor                                   | Raw Sensor                | YUV Sensor                |
| Sensor  | Sensor Module                             | IMX214   | AP1302+AR0830                                | NA                        | AP1302+AR0830             |
|         | Camera DTB Name                           | CAM_DTB_VERSION_D2                             | CAM_DTB_VERSION_D6                           | NA                        | CAM_DTB_VERSION_D6        |
|         | Single Sensor                             | V  | V  | NA                        | V                         |
|         | Multi-Sensor                              | V  | V  | NA                        | V**                       |
|         | Sensor Driver Interface                   | MediaTek Imgsensor Interface                   | MediaTek Imgsensor Interface                 | NA                        | V4L2 Sensor Interface     |
| ISP     | Hue Adjustment                            | V  | Module Firmware                              | NA                        | Module Firmware           |
|         | Brightness Adjustment                     | V  | Module Firmware                              | NA                        | Module Firmware           |
|         | Saturation Adjustment                     | V  | Module Firmware                              | NA                        | Module Firmware           |
|         | Contrast Adjustment                       | V  | Module Firmware                              | NA                        | Module Firmware           |
| 3A      | Auto Flicker                              | V  | Module Firmware                              | NA                        | Module Firmware           |
|         | Auto Focus                                | O (not validated)                              | Module Firmware                              | NA                        | Module Firmware           |
|         | Auto Exposure                             | V  | Module Firmware                              | NA                        | Module Firmware           |
|         | Auto White Balance (AWB)                  | V  | Module Firmware                              | NA                        | Module Firmware           |
| Preview | Size                                      | max. 4000x3000@30                              | 3840x2160@24<br>2560x1440@30<br>1920x1080@30 | NA                        | Follow Onsemi AP1302 spec |
|         | Format                                    | RGB (RGB888)<br>YUV420 (NV12)<br>YUV422 (YUYV) | YUV422 8-bit (UYVY)                          | NA                        | YUV422 8-bit (UYVY)       |
|         | MCNR (Motion Compensated Noise Reduction) | V  | Module Firmware                              | NA                        | Module Firmware           |
| Capture | Capture Size                              | 4000x3000                                      | NA   | NA                        | NA                        |
|         | Format                                    | JPEG   | NA   | NA                        | NA                        |
|         | LPNR (Low Pass Noise Reduction)           | V  | NA   | NA                        | NA                        |
| Tunning | Camera Calibration Tuning (CCT) Tool      | V  | 3rd Party Tool                               | NA                        | 3rd Party Tool            |
|         | ImagiqSimulator Camera Tuning Tool        | V  | 3rd Party Tool                               | NA                        | 3rd Party Tool            |

\* The MediaTek Imgsensor Architecture and V4L2 Sensor Architecture are mutually exclusive software architectures. Users may choose to use only one of them.

\*\* The CSI ports design for G1200-EVK does not support multi-sensor, due to shared reset and control pin design among different CSI ports.

## Video Dec

| G350         |                            |           |                 |                    |                |                |                |
|--------------|----------------------------|-----------|-----------------|--------------------|----------------|----------------|----------------|
| Codec        | Profile                    | Max Level | Max Decode Spec | Max Bitrate (Mbps) | Max Bit Number | Max Resolution | Min Resolution |
| MPEG-4       | Advanced Simple            | L5        | 1920x1080@60    | 40Mbps             | 8              | 1920x1080      | 64x64          |
|              | Simple                     | L6        | 1920x1080@60    | 40Mbps             | 8              | 1920x1080      | 64x64          |
| H.264        | Constrained Baseline (CBP) | L4.2      | 1920x1080@60    | 40Mbps             | 8              | 1920x1080      | 64x64          |
|              | Main (MP)                  | L4.2      | 1920x1080@60    | 40Mbps             | 8              | 1920x1080      | 64x64          |
|              | High (HiP)                 | L4.2      | 1920x1080@60    | 40Mbps             | 8              | 1920x1080      | 64x64          |
| H.265 (HEVC) | Main                       | L4        | 1920x1080@60    | 40Mbps             | 8              | 1920x1080      | 64x64          |
| VP8          | -                          | -         | 1920x1080@60    | 40Mbps             | 8              | 1920x1080      | 64x64          |
| VP9          | -                          | -         | 1920x1080@60    | 40Mbps             | 8              | 1920x1080      | 64x64          |

Note: Maximum support 16 video instances

## Video Dec

| <b>G510</b>  |                            |           |                 |               |                |                |                |
|--------------|----------------------------|-----------|-----------------|---------------|----------------|----------------|----------------|
| Codec        | Profile                    | Max Level | Max Decode Spec | Max BR (Mbps) | Max Bit Number | Max Resolution | Min Resolution |
| MPEG-4       | Advanced Simple            | L5        | 1920x1080@60    | 60Mbps        | 8              | 1920x1080      | 64x64          |
|              | Simple                     | L6        | 1920x1080@60    | 60Mbps        | 8              | 1920x1080      | 64x64          |
| H.264        | Constrained Baseline (CBP) | L5.2      | 3840x2160@60    | 160Mbps       | 8              | 4096x2176      | 64x64          |
|              | Main (MP)                  | L5.2      | 3840x2160@60    | 160Mbps       | 8              | 4096x2176      | 64x64          |
|              | High (HiP)                 | L5.2      | 3840x2160@60    | 160Mbps       | 8              | 4096x2176      | 64x64          |
| H.265 (HEVC) | Main                       | L5.1      | 3840x2160@60    | 160Mbps       | 8              | 4096x2176      | 64x64          |
| VP8          | -                          | -         | 1920x1080@60    | 40Mbps        | 8              | 1920x1080      | 64x64          |
| VP9          | 0/2                        | -         | 3840x2160@60    | 120Mbps       | 8              | 4096x2176      | 64x64          |
| AV1          | Main                       | L5.1      | 3840x2160@60    | 120Mbps       | 8              | 4096x2176      | 64x64          |

Note: GStreamer does not support AV1

Note: Maximum support 16 video instances

| <b>G700</b>  |                            |           |                 |               |                |                |                |
|--------------|----------------------------|-----------|-----------------|---------------|----------------|----------------|----------------|
| Codec        | Profile                    | Max Level | Max Decode Spec | Max BR (Mbps) | Max Bit Number | Max Resolution | Min Resolution |
| MPEG-4       | Advanced Simple            | L5        | 1920x1080@60    | 60Mbps        | 8              | 1920x1080      | 64x64          |
|              | Simple                     | L6        | 1920x1080@60    | 60Mbps        | 8              | 1920x1080      | 64x64          |
| H.264        | Constrained Baseline (CBP) | L5.2      | 3840x2160@75    | 160Mbps       | 8              | 4096x2176      | 64x64          |
|              | Main (MP)                  | L5.2      | 3840x2160@75    | 160Mbps       | 8              | 4096x2176      | 64x64          |
|              | High (HiP)                 | L5.2      | 3840x2160@75    | 160Mbps       | 8              | 4096x2176      | 64x64          |
| H.265 (HEVC) | Main                       | L5.1      | 3840x2160@75    | 160Mbps       | 8              | 4096x2176      | 64x64          |
| VP8          | -                          | -         | 1920x1080@60    | 40Mbps        | 8              | 1920x1080      | 64x64          |
| VP9          | 0/2                        | -         | 3840x2160@75    | 120Mbps       | 8              | 4096x2176      | 64x64          |
| AV1          | Main                       | L5.1      | 3840x2160@75    | 120Mbps       | 8              | 4096x2176      | 64x64          |

Note: GStreamer does not support AV1

Note: Maximum support 16 video instances

## Video Dec

| G1200        |                            |           |                 |               |                |                |                |
|--------------|----------------------------|-----------|-----------------|---------------|----------------|----------------|----------------|
| Codec        | Profile                    | Max Level | Max Decode Spec | Max BR (Mbps) | Max Bit Number | Max Resolution | Min Resolution |
| MPEG-4       | Advanced Simple            | L5        | 1920x1080@60    | 60Mbps        | 8              | 1920x1080      | 64x64          |
|              | Simple                     | L6        | 1920x1080@60    | 60Mbps        | 8              | 1920x1080      | 64x64          |
| H.264        | Constrained Baseline (CBP) | L5.2      | 3840x2160@90    | 160Mbps       | 8              | 4096x2176      | 64x64          |
|              | Main (MP)                  | L5.2      | 3840x2160@90    | 160Mbps       | 8              | 4096x2176      | 64x64          |
|              | High (HiP)                 | L5.2      | 3840x2160@90    | 160Mbps       | 8              | 4096x2176      | 64x64          |
| H.265 (HEVC) | Main                       | L5.1      | 3840x2160@90    | 160Mbps       | 8              | 4096x2176      | 64x64          |
| VP8          | -                          | -         | 1920x1080@60    | 40Mbps        | 8              | 1920x1080      | 64x64          |
| VP9          | 0/2                        | -         | 3840x2160@90    | 120Mbps       | 8              | 4096x2176      | 64x64          |
| AV1          | Main                       | L5.1      | 3840x2160@90    | 120Mbps       | 8              | 4096x2176      | 64x64          |

Note: GStreamer does not support AV1

Note: Maximum support 16 video instances



## Video Enc

| G350  |                                       |                          |       |                 |                    |                |                |                |
|-------|---------------------------------------|--------------------------|-------|-----------------|--------------------|----------------|----------------|----------------|
| Codec | Input Format                          | Profile                  | Level | Max Record Spec | Max Bitrate (Mbps) | Max Bit Number | Max Resoultion | Min Resolution |
| H.264 | NV12<br>NV21<br>YV12<br>YUV420 (I420) | Baseline<br>Main<br>High | L4.1  | 1920x1080@60    | 17Mbps             | 8              | 1920x1088      | 160x128        |
| H.265 | NV12<br>NV21<br>YV12<br>YUV420 (I420) | Main                     | L5.1  | 1920x1080@60    | 17Mbps             | 8              | 1920x1088      | 160x128        |

Note: Maximum support 10 video instances

## Video Enc

| G510/G700 |   |                          |       |                 |                    |                |                |                |
|-----------|---|--------------------------|-------|-----------------|--------------------|----------------|----------------|----------------|
| Codec     | Input Format  | Profile                  | Level | Max Record Spec | Max Bitrate (Mbps) | Max Bit Number | Max Resoultion | Min Resolution |
| H.264     | NV12<br>NV21<br>YV12<br>YUV420 (I420)<br>RGBA8888<br>RGB888 | Baseline<br>Main<br>High | L5.1  | 3840x2160@30    | 100Mbps            | 8              | 4096x2176      | 320x320        |
| H.265     | NV12<br>NV21<br>YV12<br>YUV420 (I420)<br>RGBA8888<br>RGB888 | Main                     | L5.1  | 3840x2160@30    | 100Mbps            | 8              | 4096x2176      | 320x320        |

Note: Maximum support 10 video instances

## Video Enc

| G1200 |   |                          |       |   |                    |                |                |                |
|-------|---|--------------------------|-------|---|--------------------|----------------|----------------|----------------|
| Codec | Input Format  | Profile                  | Level | Max Record Spec                               | Max Bitrate (Mbps) | Max Bit Number | Max Resoultion | Min Resolution |
| H.264 | NV12<br>NV21<br>YV12<br>YUV420 (I420)<br>RGBA8888<br>RGB888 | Baseline<br>Main<br>High | L5.2  | 1920x1080@120<br>3840x2160@60<br>4096x2176@30 | 100Mbps            | 8              | 4096x2176      | 320x320        |
| H.265 | NV12<br>YV12<br>YUV420(I420)<br>RGBA8888<br>RGB888          | Main                     | L5.1  | 1920x1080@120<br>3840x2160@60<br>4096x2176@30 | 100Mbps            | 8              | 4096x2176      | 320x320        |

Note: Maximum support 10 video instances

# MDP

|              |                   | G350                                      |           | G510/G700                                  |           | G1200                                      |           |
|--------------|-------------------|---|-----------|--|-----------|--|-----------|
|              |                   | Input                                     | Output    | Input                                      | Output    | Input                                      | Output    |
| Throughput   |                   |   |           | 3840x2160@90                               |           | 3840x2160@90                               |           |
| Resize       | Min Resolution    | 80x60                                     | 80x60     | 64x64                                      | 64x64     | 64x64                                      | 64x64     |
|              | Max Resolution    | 4096x4096                                 | 4096x4096 | 8192x8192                                  | 8192x8192 | 8192x8192                                  | 8192x8192 |
|              | Resize limit      | W: (1/32)x ~ (32)x<br>H: (1/255)x ~ (32)x |           | W: (1/128)x ~ (64)x<br>H: (1/128)x ~ (64)x |           | W: (1/128)x ~ (64)x<br>H: (1/128)x ~ (64)x |           |
| Rotation     | 0°                |   | V         |  | V         |  | V         |
|              | 0° + H_Flip       |   | V         |  | V         |  | V         |
|              | 90°               |   | V         |  | V         |  | V         |
|              | 90° + H_Flip      |   | V         |  | V         |  | V         |
|              | 180°              |   | V         |  | V         |  | V         |
|              | 180° + H_Flip     |   | V         |  | V         |  | V         |
|              | 270°              |   | V         |  | V         |  | V         |
|              | 270° + H_Flip     |   | V         |  | V         |  | V         |
| Convert      | ABGR32            | V   | V         | V  | V         | V  | V         |
|              | ARGB32            | V   | V         | V  | V         | V  | V         |
|              | ARGB8888          | NA  | NA        | NA   | NA        | NA   | NA        |
|              | BGR24             | V   | V         | V  | V         | V  | V         |
|              | BGRA8888          | NA  | NA        | NA   | NA        | NA   | NA        |
|              | GREY              | NA  | NA        | V  | V         | V  | V         |
|              | I420 (YV12)       | V   | V         | V  | V         | V  | V         |
|              | I422 (YV16)       | NA  | NA        | V  | V         | V  | V         |
|              | MT21              | V   | NA        | V  | NA        | V  | NA        |
|              | MT21C             | V   | NA        | V  | NA        | V  | NA        |
|              | NV12              | V   | V         | V  | V         | V  | V         |
|              | NV12M             | V   | V         | V  | V         | V  | V         |
|              | NV16              | V   | V         | V  | V         | V  | V         |
|              | NV16M             | V   | V         | V  | V         | V  | V         |
|              | NV21              | V   | V         | V  | V         | V  | V         |
|              | NV21M             | V   | V         | V  | V         | V  | V         |
|              | NV24              | NA  | NA        | NA   | NA        | NA   | NA        |
|              | NV42              | NA  | NA        | NA   | NA        | NA   | NA        |
|              | NV61              | NA  | NA        | V  | V         | V  | V         |
|              | NV61M             | NA  | NA        | V  | V         | V  | V         |
|              | RGB24             | V   | V         | V  | V         | V  | V         |
|              | RGB565            | V   | V         | V  | V         | V  | V         |
|              | RGB565X           | NA  | NA        | V  | V         | V  | V         |
|              | UYVY              | V   | V         | V  | V         | V  | V         |
|              | VYUY              | V   | V         | V  | V         | V  | V         |
|              | XBGR32            | V   | V         | NA   | NA        | NA   | NA        |
|              | XRGB32(RGB888)    | V   | V         | NA   | NA        | NA   | NA        |
|              | Y8                | NA  | NA        | NA   | NA        | NA   | NA        |
|              | YUV420(YU12/I420) | V   | V         | V  | V         | V  | V         |
|              | YUV420M           | V   | V         | V  | V         | V  | V         |
|              | YUV422P           | V   | V         | NA   | NA        | NA   | NA        |
|              | YUYV(YUY2)        | V   | V         | V  | V         | V  | V         |
| YV24         | NA                | NA  | NA        | NA   | NA        | NA   |           |
| YVU420(YV12) | V                 | V   | V         | V  | V         | V  |           |
| YVU420M      | V                 | V   | V         | V  | V         | V  |           |
| YVYU         | V                 | V   | V         | V  | V         | V  |           |

# JPEG

## G510/G700

| HW JPEG Decoder |                    |              |                |                | HW JPEG Encoder              |               |              |                |                |
|-----------------|--------------------|--------------|----------------|----------------|------------------------------|---------------|--------------|----------------|----------------|
| Input Format    | Output Format      | Decode Spec  | Max Resoultion | Min Resolution | Input Format                 | Output Format | Encode Spec  | Max Resoultion | Min Resolution |
| JPEG            | YUV420M<br>YUV422M | 3840x2160@30 | 65535x65535    | 32x32          | NV12<br>NV21<br>YUYV<br>YVYU | JPEG          | 3840x2160@30 | 65535x65535    | 32x32          |

## G1200

| HW JPEG Decoder |                    |              |                |                | HW JPEG Encoder              |               |              |                |                |
|-----------------|--------------------|--------------|----------------|----------------|------------------------------|---------------|--------------|----------------|----------------|
| Input Format    | Output Format      | Decode Spec  | Max Resoultion | Min Resolution | Input Format                 | Output Format | Encode Spec  | Max Resoultion | Min Resolution |
| JPEG            | YUV420M<br>YUV422M | 3840x2160@30 | 65535x65535    | 32x32          | NV12<br>NV21<br>YUYV<br>YVYU | JPEG          | 3840x2160@30 | 65535x65535    | 32x32          |

# Audio

| G350                  |                  | (x): Software not support. e.g. 12K and 24K are not supported in ALSA framework |   |  |           | Support Status                       |                   |
|-----------------------|------------------|---|---|--|-----------|--------------------------------------|-------------------|
| Part                  | Audio Interfaces | Count   | Platform Specification  |  |           | Support Status                       |                   |
|                       |                  |   | Sample Rate   | Channel                                    | Bitrate   | G350-EVK (P1V3)                      | Software Support* |
| MT8365                | I2S Out          | 2 (master)  | 8, 11.025, 12(x), 16, 22.05, 24(x), 32, 44.1, 48, 88.2, 96, 176.4, and 192 kHz in master mode | 2  | 16/24-bit | 1 (to IT66121 HDMI Bridge)           | V                 |
|                       | I2S In           | 1 (master/slave w/ SRC)<br>1 (master)   | 8, 11.025, 12(x), 16, 22.05, 24(x), 32, 44.1, 48, 88.2, 96, 176.4, and 192 kHz in master mode | 2  | 16/24-bit | 0                                    | NA                |
|                       | SPDIF Out        | 1   | 32, 44.1, 48, 88.2, 96, 176, 192 kHz  | 2  |           | 0                                    | NA                |
|                       | SPDIF In         | 1   | 32, 44.1, 48, 88.2, 96, 176, 192 kHz  | 2  |           | 0                                    | NA                |
|                       | PCM Out          | 1 (master/slave)  | 8, 16, 32, 48 kHz   | 2  |           | 1 (to MT7663)                        | NA                |
|                       | PCM In           | 1 (master/slave)  | 8, 16, 32, 48 kHz   | 2  |           | 1 (to MT7663)                        | NA                |
|                       | PDM              | 4   | 8, 16, 32, 48 kHz   | 2 ch * 4 = 8                               |           | 1 (2ch two-wire mode to 1 AP DMIC)   | V                 |
|                       | TDM (Tx)         | 1 (master)  | 8, 11.025, 12(x), 16, 22.05, 24(x), 32, 44.1, 48, 88.2, 96, and 192 kHz                       | 2/4/8 and configuration by 1/2/4 data pins |           | 0                                    | NA                |
| TDM (Rx)              | 1 (master)       | 8, 11.025, 12(x), 16, 22.05, 24(x), 32, 44.1, 48, 88.2, 96, and 192 kHz         | 2/4/8 in one serial data pin  |  | 0         | NA                                   |                   |
| MT6357<br>Audio CODEC | ACCDDET          | 1   | NA  | NA   | NA        | 1                                    | NA                |
|                       | Playback         | 3   | 8, 11.025, 12(x), 16, 22.05, 24(x), 32, 44.1, and 48 kHz                                      | Headset: 2<br>Audio Out: 1                 |           | 1 (2ch Headset)<br>1 (1ch Audio Out) | V                 |
|                       | Record           | 3   | 8, 16, 32, and 48 kHz   | Headset: 1<br>AMIC: 1                      |           | 1 (1ch Headset)<br>1 (1ch AMIC)      | V                 |

\* Software Support : This feature is able to validate on Genio-EVK

# Audio

| G510                  |   | (x): Software not support. e.g. 12K and 24K are not supported in ALSA framework |  |                                 |              | Support Status                      |                   |
|-----------------------|---|---|--|---------------------------------|--------------|-------------------------------------|-------------------|
| Part                  | Audio Interfaces                                | Count   | Platform Specification   |                                 |              | Support Status                      |                   |
|                       |   |   | Sample Rate  | Channel                         | Bitrate      | G510-EVK (P1V2)                     | Software Support* |
| MT8390                | TDM Out / I2S Out (I2SO1)                       | 1 (master)  | As I2S Out: from 8 kHz to 192 kHz<br>As TDM Out: from 8 kHz to 48 kHz                      | As I2S Out: 2<br>As TDM Out: 16 | up to 32-bit | 0                                   | NA                |
|                       | TDM Out / I2S Out (I2SO2)                       | 1 (master/slave)  | As I2S Out: from 8 kHz to 192 kHz<br>As TDM Out: 48 kHz                                    | As I2S Out: 8<br>As TDM Out: 16 | up to 32-bit | 1 (on I2S pin header)               | V                 |
|                       | TDM In / I2S In (I2SIN)                         | 1 (master/slave)  | As I2S In: from 8 kHz to 192 kHz<br>As TDM In: 16 ch @ from 8 kHz to 48 kHz / 16 ch direct | As I2S In: 8<br>As TDM In: 16   | up to 32-bit | 1 (on I2S pin header)               | V                 |
|                       | TDM In / I2S In (TDMIN)                         | 1 (master/slave)  | As I2S In: from 8 kHz to 192 kHz<br>As TDM In: 48 kHz                                      | As I2S In: 2<br>As TDM In: 16   | up to 32-bit | 0                                   | NA                |
|                       | I2S In (AUDIO IN)                               | 1 (slave)   | from 8 kHz to 192 kHz  | 8                               | up to 24-bit | 0                                   | NA                |
|                       | SPDIF Out                                       | 1   | 32, 44.1, 48, 88.2, 96, and 192 kHz  | 2                               | 24-bit       | 0                                   | NA                |
|                       | SPDIF In  | 1   | 32, 44.1, 48, 88.2, 96, 176.4 and 192 kHz  | 2                               | 24-bit       | 0                                   | NA                |
|                       | PCM Out   | 1 (master/slave w/ SRC)   | 8, 16, 32, 44.1 and 48 kHz   | 2                               | up to 24-bit | 1 (on pin header)                   | V                 |
|                       | PCM In  | 1 (master/slave w/ SRC)   | 8, 16, 32, 44.1 and 48 kHz   | 2                               | up to 24-bit | 1 (on pin header)                   | V                 |
|                       | PDM   | 4 (master)  | 8, 16, 32, and 48 kHz  | 2 ch * 4 = 8                    | up to 24-bit | 2 (2ch one-wire mode to 2 AP DMIC)  | V                 |
|                       | HDMI (Tx)                                       | 1   | from 8 kHz to 192 kHz  | 8                               | up to 32-bit | 1 (SoC internal)                    | V                 |
|                       | DP (Tx)   | 1   | from 8 kHz to 192 kHz  | 8                               | up to 24-bit | 1 (SoC internal)                    | V                 |
|                       | Proprietary Audio DAC Interface (to PMIC CODEC) | 1   | up to 192 kHz  | 2                               |              | 1 (to MT6365 PMIC)                  | V                 |
|                       | Proprietary Audio ADC Interface (to PMIC CODEC) | 1   | up to 192 kHz  | 2                               |              | 1 (to MT6365 PMIC)                  | V                 |
| MT6365<br>Audio CODEC | ACCDDET   | 1   | NA   | NA                              | NA           | 1                                   | NA                |
|                       | Playback  | 3   | 8/11.025/12(x)/16/22.05/24(x)/32/44.1/48/96/192 kHz  | Earphone: 2<br>Speaker: 1       | 24-bit       | 1 (2ch Earphone)<br>1 (1ch Speaker) | V                 |
|                       | Record  | 4   | 8/16/32/48/96/192 kHz  | Earphone: 1<br>AMIC: 1          | 24-bit       | 1 (1ch Earphone)<br>1 (1ch AMIC)    | V                 |

\* Software Support : This feature is able to validate on Genio-EVK

# Audio

| G700                  |   | (x): Software not support. e.g. 12K and 24K are not supported in ALSA framework |  |                                 |              | Support Status                             |                   |
|-----------------------|---|---|--|---------------------------------|--------------|--|-------------------|
| Part                  | Audio Interfaces                                | Count   | Platform Specification   |                                 |              | Support Status                             |                   |
|                       |   |   | Sample Rate  | Channel                         | Bitrate      | G700-EVK (P1V3)                            | Software Support* |
| MT8390                | TDM Out / I2S Out (I2SO1)                       | 1 (master)  | As I2S Out: from 8 kHz to 192 kHz<br>As TDM Out: from 8 kHz to 48 kHz                      | As I2S Out: 2<br>As TDM Out: 16 | up to 32-bit | 0  | NA                |
|                       | TDM Out / I2S Out (I2SO2)                       | 1 (master/slave)  | As I2S Out: from 8 kHz to 192 kHz<br>As TDM Out: 48 kHz                                    | As I2S Out: 8<br>As TDM Out: 16 | up to 32-bit | 1 (Compatible with MTK internal Audio DTB) | V                 |
|                       | TDM In / I2S In (I2SIN)                         | 1 (master/slave)  | As I2S In: from 8 kHz to 192 kHz<br>As TDM In: 16 ch @ from 8 kHz to 48 kHz / 16 ch direct | As I2S In: 8<br>As TDM In: 16   | up to 32-bit | 1 (Compatible with MTK internal Audio DTB) | V                 |
|                       | TDM In / I2S In (TDMIN)                         | 1 (master/slave)  | As I2S In: from 8 kHz to 192 kHz<br>As TDM In: 48 kHz                                      | As I2S In: 2<br>As TDM In: 16   | up to 32-bit | 0  | NA                |
|                       | I2S In (AUDIO IN)                               | 1 (slave)   | from 8 kHz to 192 kHz  | 8                               | up to 24-bit | 0  | NA                |
|                       | SPDIF Out                                       | 1   | 32, 44.1, 48, 88.2, 96, and 192 kHz  | 2                               | 24-bit       | 0  | NA                |
|                       | SPDIF In  | 1   | 32, 44.1, 48, 88.2, 96, 176.4 and 192 kHz  | 2                               | 24-bit       | 0  | NA                |
|                       | PCM Out   | 1 (master/slave w/ SRC)   | 8, 16, 32, 44.1 and 48 kHz   | 2                               | up to 24-bit | 1 (on pin header)                          | V                 |
|                       | PCM In  | 1 (master/slave w/ SRC)   | 8, 16, 32, 44.1 and 48 kHz   | 2                               | up to 24-bit | 1 (on pin header)                          | V                 |
|                       | PDM   | 4 (master)  | 8, 16, 32, and 48 kHz  | 2 ch * 4 = 8                    | up to 24-bit | 2 (2ch one-wire mode to 2 AP DMIC)         | V                 |
|                       | HDMI (Tx)                                       | 1   | from 8 kHz to 192 kHz  | 8                               | up to 32-bit | 1 (SoC internal)                           | V                 |
|                       | DP (Tx)   | 1   | from 8 kHz to 192 kHz  | 8                               | up to 24-bit | 1 (SoC internal)                           | V                 |
|                       | Proprietary Audio DAC Interface (to PMIC CODEC) | 1   | up to 192 kHz  | 2                               |              | 1 (to MT6365 PMIC)                         | V                 |
|                       | Proprietary Audio ADC Interface (to PMIC CODEC) | 1   | up to 192 kHz  | 2                               |              | 1 (to MT6365 PMIC)                         | V                 |
| MT6365<br>Audio CODEC | ACCDET  | 1   | NA   | NA                              | NA           | 1  | NA                |
|                       | Playback  | 3   | 8/11.025/12(x)/16/22.05/24(x)/32/44.1/48/96/192 kHz  | Earphone: 2<br>Speaker: 1       | 24-bit       | 1 (2ch Earphone)<br>1 (1ch Speaker)        | V                 |
|                       | Record  | 4   | 8/16/32/48/96/192 kHz  | Earphone: 1<br>AMIC: 1          | 24-bit       | 1 (1ch Earphone)<br>1 (1ch AMIC)           | V                 |

\* Software Support : This feature is able to validate on Genio-EVK



# Audio

| G1200   |   | (x): Software not support. e.g. 12K and 24K are not supported in ALSA framework |  |  |   | Support Status                      |                   |
|---|---|---|--|--|---|-------------------------------------|-------------------|
| Platform Specification                          |   |   |  |  |   |                                     |                   |
| Part  | Audio Interfaces                                | Count   | Sample Rate  | Channel  | Bitrate                                     | G1200-EVK (P1V2)                    | Software Support* |
| MT8395  | TDM Out / I2S Out (I2SO1)                       | 1 (master)  | As I2S Out: from 8 kHz to 384 kHz<br>As TDM Out: from 8 kHz to 48 kHz<br>As DSD-out: 6 ch @ 2.8 MHz / 2 ch @ 5.6 MHz or 11.2 | As I2S Out: 24<br>As TDM Out: 16<br>As DSD-out: 6 or 2 | up to 32-bit                                | 0                                   | NA                |
|   | TDM Out / I2S Out (I2SO2)                       | 1 (master/slave)  | As I2S Out: from 8 kHz to 384 kHz<br>As TDM Out: 24 ch @ 16 kHz / 16 ch @ 48 kHz   | As I2S Out: 8<br>As TDM Out: 24 or 16                  | up to 32-bit                                | 0                                   | NA                |
|   | TDM In / I2S In (I2SIN)                         | 1 (master/slave)  | As I2S In: from 8 kHz to 384 kHz<br>As TDM In: 8 ch @ from 8 kHz to 48 kHz / 16 ch direct                                    | As I2S In: 8<br>As TDM In: 8 or 16                     | up to 32-bit                                | 0                                   | NA                |
|   | TDM In / I2S In (TDMIN)                         | 1 (master/slave)  | As I2S In: from 8 kHz to 384 kHz<br>As TDM In: 24 ch @ 16 kHz / 16 ch @ 48 kHz   | As I2S In: 2<br>As TDM In: 24 or 16                    | up to 32-bit                                | 0                                   | NA                |
|   | I2S In (AUDIO IN)                               | 1 (slave)   | from 8 kHz to 192 kHz  | 8  | up to 24-bit                                | 0                                   | NA                |
|   | SPDIF Out                                       | 1 (master)  | 32, 44.1, 48, 88.2, 96, and 192 kHz  | 2  | 24-bit                                      | 0                                   | NA                |
|   | SPDIF In / ARC In                               | 1 (slave)   | 32, 44.1, 48, 88.2, 96, 176.4 and 192 kHz  | As SPDIF In: 2<br>As ARC In: 8                         | 24-bit                                      | 0                                   | NA                |
|   | PCM Out   | 1 (master/slave w/ SRC)   | 8, 16, 32, 44.1 and 48 kHz   | 2  | up to 24-bit                                | 1 (on Rpi header)                   | V                 |
|   | PCM In  | 1 (master/slave w/ SRC)   | 8, 16, 32, 44.1 and 48 kHz   | 2  | up to 24-bit                                | 1 (on Rpi header)                   | V                 |
|   | PDM   | 4 (master)  | 8, 16, 32, 48, 96 and 192 kHz  | 2 ch * 4 = 8   | up to 24-bit                                | 1 (2ch one-wire mode to 1 AP DMIC)  | V                 |
|   | HDMI (Tx)                                       | 1   | from 8kHz to 192 kHz   | 8  | up to 24-bit                                | 1 (SoC internal)                    | V                 |
|   | HDMI (Rx) / eARC (Rx) / DSD In                  | 1   | 1. PCM: 192 kHz<br>2. Compress audio: 768 kHz<br>3. DSD: 2.8 MHz   | 1. PCM: 8<br>2. DSD: 6                                 | 1. PCM: 24-bit<br>2. Compress audio: 16-bit | 1 (SoC internal)                    | V                 |
|   | DP (Tx)   | 1 (master)  | from 8 kHz to 192 kHz  | 8  | up to 24-bit                                | 1 (SoC internal)                    | V                 |
|   | Proprietary Audio DAC Interface (to PMIC CODEC) | 1   | up to 192 kHz  | 2  |   | 1 (to MT6365 PMIC)                  | V                 |
| Proprietary Audio ADC Interface (to PMIC CODEC) | 1   | up to 192 kHz   | 3  |  | 1 (to MT6365 PMIC)                          | V                                   |                   |
| MT6365 Audio CODEC                              | ACCDDET   | 1   | NA   | NA   | NA  | 1                                   | NA                |
|   | Playback  | 3   | 8/11.025/12(x)/16/22.05/24(x)/32/44.1/48/96/192 kHz  | Earphone: 2<br>Speaker: 1                              | 24-bit                                      | 1 (2ch Earphone)<br>1 (1ch Speaker) | V                 |
|   | Record  | 4   | 8/16/32/48/96/192 kHz  | Earphone: 1<br>AMIC: 3                                 | 24-bit                                      | 1 (1ch Earphone)<br>1 (3ch AMIC)    | V                 |

## Wi-Fi / BT

|               | Platform SoC                | <b>G350</b>                         | <b>G510/G700/G1200</b>             |
|---------------|-----------------------------|-------------------------------------|------------------------------------|
|               | Connectivity SoC            | MT7663                              | MT7921                             |
|               | Driver Architecture Version | Gen4m-7663<br>(MTK Proprietary)     | MT76<br>(Upstream version)         |
|               | CoB/Module support          | Module only                         | Module only                        |
| Hardware      | Radio                       | 2x2 11ac wave2 Dual Band Wi-Fi + BT | 2x2 11ax Dual Band Wi-Fi + BT      |
|               | Support Band                | 2.4G/5G                             | 2.4G/5G                            |
|               | Wi-Fi TX/RX CH              | 2T2R                                | 2T2R                               |
|               | Interface to Host           | SDIO                                | Wi-Fi PCIe 2.0 + BT USB2.0<br>SDIO |
|               | RF Front-End                | Chip Internal                       | Chip Internal                      |
|               | Antenna                     | module: 2xANT or 3xANT              | module: 2xANT                      |
| Wi-Fi Feature | Wi-Fi version               | 802.11 a/b/g/n/ac wave2             | 802.11 a/b/g/n/ac/ax               |
|               | Support Max CH BW           | 80MHz                               | 80MHz                              |
|               | MU-MIMO                     | TX/RX                               | TX/RX                              |
|               | Security                    | WPA/WPA2/WAPI/WPS2.0/WPA3 personal  | WPA/WPA2/WAPI/WPS2.0/WPA3 personal |
|               | DBDC                        | NA                                  | NA                                 |
|               | Software AP                 | NA                                  | NA                                 |
|               | STA                         | V                                   | V                                  |
|               | Software AP+STA             | NA                                  | NA                                 |
|               | P2P GO or GC                | NA                                  | NA                                 |
|               | Wake on Wi-Fi               | NA                                  | NA                                 |
|               | Wi-Fi Aware                 | NA                                  | NA                                 |
| Wi-Fi Roaming | NA                          | NA                                  |                                    |
| BT Feature    | BT version                  | BT5.1                               | BT5.2                              |
|               | Bluetooth Stack             | Bluedroid                           | Blue-Z                             |
|               | Support BT Profiles         | GATT/HID/HOGP                       | GATT/HID/HOGP                      |
|               | Wake on BT                  | NA                                  | NA                                 |

## Benchmark Suite

| Domain           | Tools                       | Version           |
|------------------|-----------------------------|-------------------|
| CPU              | Dhrystone                   | v2.2              |
| CPU              | Coremark                    | v20190727         |
| CPU              | Whetstone sp                | N/A*              |
| CPU              | c-ray                       | v1.1              |
| Memory Bandwidth | Stream                      | v20130117         |
| Memory Bandwidth | Imbench                     | v2.5              |
| Memory Bandwidth | perf mem                    | Yocto builtin     |
| GPU              | glmark2                     | v20210830         |
| AI/ML            | TFLite Model Benchmark Tool | v2.8.0, v2.14.1** |

\* The program source didn't contain version information

\*\* The v2.14.1 binaries are installed in rootfs, but not run by default

## Stress Suite

| Tools                      | Version  | Test Scope | Scenario Brief Description  |
|----------------------------|----------|------------|---|
| stress-ng                  | v0.13.12 | CPU/Memroy | CPU stressor stresses all 8 ARM cores                                   |
| fio                        | v3.30    | Storage    | Stress following disks: eMMC, SD card, USB type-A disk, USB type-C disk |
| iperf3                     | v3.14    | Ethernet   | Used for stressing GiB ethernet & Wifi. Default bandwidth: 20Mbps*      |
| glmark2                    | v2021.12 | GPU        | Render a 800x600 window on display                                      |
| Gstreamer                  | v1.20.7  | Video      | Playback a H264 4K@30 video on display                                  |
| NeuroPilot evaluation tool | v6.3.3   | APU        | A script provided in rity-demo-image for running the tool               |

\* The default bandwidth is limited by the capacity of network equipments.

## DTBO

| G350-EVK |                                       |                   |  |
|----------|---------------------------------------|-------------------|--|
| Category | dtbo                                  | Loaded by default | Description  |
| GPU      | gpu-mali.dtbo                         | Y                 | Enables GPU.   |
| Video    | video.dtbo                            | Y                 | Enables hardware video encoder and decoder   |
| Ethernet | net-ethernet.dtbo                     |                   | Enables on-board ethernet port and disables HDMI port. The on-board switch SW2101 must be set to Off-LAN when using this dtbo. |
| Camera   | camera-ap1302-ar0430-single-csi0.dtbo |                   | Single camera on MIPI-CSIO.  |
| Camera   | camera-ap1302-ar0430-single-csi1.dtbo |                   | Single camera on MIPI-CS1.   |
| Camera   | camera-ap1302-ar0430-dual.dtbo        |                   | Dual camera on MIPI-CSIO and MIPICSI1.   |
| Display  | display-dsi.dtbo                      |                   | Single display setup with DSI panel. Disables the HDMI output.   |
| Display  | display-hdmi.dtbo                     |                   | Single display setup with HDMI. Disables the DSI panel.  |
| Display  | display-lvds.dtbo                     |                   | Single display setup with LVDS panel. Disables the DSI panel and the HDMI output.  |
| Display  | display-headless.dtbo                 |                   | Disables all display interfaces.   |

# DTBO

| G510-EVK/G700-EVK |   |                   |  |
|-------------------|---|-------------------|--|
| Category          | dtbo  | Loaded by default | Description  |
| GPU               | gpu-mali.dtbo                                     | ✓                 | Enables GPU.   |
| Video             | video.dtbo  | ✓                 | Enables hardware video encoder and decoder.  |
| AI/ML             | apusys.dtbo                                       | ✓                 | Enables APU (AI Processing Unit).  |
| Camera            | camera-ar0830-ap1302-csi0.dtbo                    |                   | Genio 700-CAM DTB-D1V2-D6 w/ Onsemi AR0830 sensor, connected to CSIO, use 4-lane MIPI CSI  |
| Camera            | camera-ar0830-ap1302-csi1.dtbo                    |                   | Genio 700-CAM DTB-D1V2-D6 w/ Onsemi AR0830 sensor, connected to CS1, use 4-lane MIPI CSI   |
| Camera            | camera-ar0830-ap1302-2lanes-csi0.dtbo             |                   | Genio 700-CAM DTB-D1V2-D6 w/ Onsemi AR0830 sensor, connected to CSIO, use 2-lane MIPI CSI  |
| Camera            | camera-ar0830-ap1302-csi0-std.dtbo                |                   | Genio 700-CAM DTB-D1V2-D6 w/ Onsemi AR0830 sensor, connected to CSIO, use 4-lane MIPI CSI, use V4L2 sensor driver.   |
| Camera            | camera-ar0830-ap1302-dual-std.dtbo                |                   | Dual Genio 700-CAM DTB-D1V2-D6 w/ Onsemi AR0830 sensor, connected to CSIO and CS1, use 4-lane MIPI CSI, use V4L2 sensor driver.  |
| Camera            | camera-it6510-csi0-std.dtbo                       |                   | Genio DTB-DP to MIPI w/ ITE IT6510 connected to CSIO, use 4-lane MIPI CSI, use V4L2 sensor driver.   |
| Camera            | camera-it6510-dual-std.dtbo                       |                   | Dual Genio DTB-DP to MIPI w/ ITE IT6510 connected to CSIO and CS1, use 4-lane MIPI CSI, use V4L2 sensor driver.  |
| Camera            | camera-ar0830-ap1302-csi0-it6510-csi1-std.dtbo    |                   | Genio 700-CAM DTB-D1V2-D6 w/ Onsemi AR0830 sensor connected to CSIO, Genio DTB-DP to MIPI w/ ITE IT6510 connected to CS1, use 4-lane MIPI CSI, use V4L2 sensor driver.                 |
| Display           | display-dp.dtbo                                   |                   | Single display setup with only DPoC output enabled.  |
| Display           | display-dsi.dtbo                                  |                   | Single display setup with only DSI panel enabled.  |
| Display           | display-edp.dtbo                                  |                   | Single display setup with only eDP panel enabled.  |
| Display           | display-hdmi.dtbo                                 |                   | Single display setup with only HDMI output enabled.  |
| Display           | display-dsi2lvds.dtbo                             |                   | Single display setup with the IT6122 DSI-to-LVDS converter and a LVDS panel.   |
| Display           | display-edpdp.dtbo                                |                   | Dual display setup with eDP panel and DPoC enabled.  |
| Display           | display-edphdmi.dtbo                              |                   | Dual display setup with eDP panel and HDMI enabled.  |
| Display           | display-dsidp.dtbo                                |                   | Dual display setup with DSI panel and DPoC output enabled.   |
| Display           | display-dsiedp.dtbo                               |                   | Dual display setup with DSI panel and eDP panel enabled.   |
| Display           | display-hdmidp.dtbo                               |                   | Dual display setup with HDMI and DPoC output enabled.  |
| Display           | display-lvdsdp.dtbo                               |                   | Dual display setup with DSI-to-LVDS converter/panel and DPoC output enabled.   |
| Display           | display-lvdshdmi.dtbo                             |                   | Dual display setup with DSI-to-LVDS converter/panel and HDMI output enabled.   |
| Display           | display-lvdsedp.dtbo                              |                   | Dual display setup with DSI-to-LVDS converter/panel and eDP panel enabled.   |
| Display           | display-headless.dtbo                             |                   | Disables all display interfaces.   |
| Audio             | audio-sof.dtbo                                    |                   | Enable ADSP through SOF framework.   |
| Camera            | camera-ag190c-max9286-csi0-std.dtbo               |                   | IoT-CAM-DTB D7 w/ 4x ABEO AG190C sensor, connected to CSIO, use 2-lane MIPI CSI, use V4L2 sensor driver.   |
| Camera            | camera-ag190c-max9286-dual-std.dtbo               |                   | Dual IoT-CAM-DTB D7 w/ 8x ABEO AG190C sensor, connected to CSIO and CS1, use 2-lane MIPI CSI, use V4L2 sensor driver.  |
| Camera            | camera-ar0830-ap1302-csi0-ar0830-ap1302-csi1.dtbo |                   | Dual Genio 700-CAM DTB-D1V2-D6 w/ Onsemi AR0830 sensor, connected to CSIO and CS1, use 4-lane MIPI CSI.  |
| Camera            | camera-ar0830-ap1302-csi0-imx214-csi1.dtbo        |                   | Genio 700-CAM DTB-D1V2-D6 w/ Onsemi AR0830 sensor, connected to CSIO, use 4-lane MIPI CSI. Genio 700-CAM DTB-D1V1-D2 w/ Sony IMX214 RAW sensor, connected to CS1, use 4-lane MIPI CSI. |
| Camera            | camera-imx214-2lanes-csi0.dtbo                    |                   | Genio 700-CAM DTB-D1V1-D2 w/ Sony IMX214 RAW sensor, connected to CSIO, use 2-lane MIPI CSI.   |
| Camera            | camera-imx214-csi0-ar0830-ap1302-csi1.dtbo        |                   | Genio 700-CAM DTB-D1V1-D2 w/ Sony IMX214 RAW sensor, connected to CSIO, use 4-lane MIPI CSI. Genio 700-CAM DTB-D1V2-D6 w/ Onsemi AR0830 sensor, connected to CS1, use 4-lane MIPI CSI. |
| Camera            | camera-imx214-csi0-imx214-csi1.dtbo               |                   | Dual Genio 700-CAM DTB-D1V1-D2 w/ Sony IMX214 RAW sensor, connected to CSIO and CS1, use 4-lane MIPI CSI.  |
| Camera            | camera-imx214-csi0.dtbo                           |                   | Genio 700-CAM DTB-D1V1-D2 w/ Sony IMX214 RAW sensor, connected to CSIO, use 4-lane MIPI CSI.   |
| Camera            | camera-imx214-csi1.dtbo                           |                   | Genio 700-CAM DTB-D1V1-D2 w/ Sony IMX214 RAW sensor, connected to CS1, use 4-lane MIPI CSI.  |
| Camera            | camera-lt6911uxe-csi0-std.dtbo                    |                   | Genio DTB-HDMI to MIPI w/ Lontium LT6911UXE connected to CSIO, use 4-lane MIPI CSI, use V4L2 sensor driver.  |
| Camera            | camera-lt6911uxe-dual-std.dtbo                    |                   | Dual Genio DTB-HDMI to MIPI w/ Lontium LT6911 connected to CSIO and CS1, use 4-lane MIPI CSI, use V4L2 sensor driver.  |

# DTBO

| G1200-EVK |                                       |                   |  |
|-----------|---------------------------------------|-------------------|--|
| Category  | dtbo                                  | Loaded by default | Description  |
| GPU       | gpu-mali.dtbo                         | ✓                 | Enables GPU.   |
| Video     | video.dtbo                            | ✓                 | Enables hardware video encoder and decoder.  |
| AI/ML     | apusys.dtbo                           | ✓                 | Enables APU (AI Processing Unit).  |
| Camera    | camera-imx214-csi0.dtbo               |                   | Genio 700-CAM DTB-D1V1-D2 w/ Sony IMX214 RAW sensor, connected to CSI0, use 4-lane MIPI CSI.                       |
| Camera    | camera-imx214-csi1.dtbo               |                   | Genio 700-CAM DTB-D1V1-D2 w/ Sony IMX214 RAW sensor, connected to CSI1, use 4-lane MIPI CSI.                       |
| Camera    | camera-imx214-csi2.dtbo               |                   | Genio 700-CAM DTB-D1V1-D2 w/ Sony IMX214 RAW sensor, connected to CSI2, use 4-lane MIPI CSI.                       |
| Camera    | camera-imx214-2lanes-csi0.dtbo        |                   | Genio 700-CAM DTB-D1V1-D2 w/ Sony IMX214 RAW sensor, connected to CSI0, use 2-lane MIPI CSI.                       |
| Camera    | camera-ar0830-ap1302-csi0.dtbo        |                   | Genio 700-CAM DTB-D1V2-D6 w/ Onsemi AR0830 sensor, connected to CSI0, use 4-lane MIPI CSI.                         |
| Camera    | camera-ar0830-ap1302-csi1.dtbo        |                   | Genio 700-CAM DTB-D1V2-D6 w/ Onsemi AR0830 sensor, connected to CSI1, use 4-lane MIPI CSI.                         |
| Camera    | camera-ar0830-ap1302-csi2.dtbo        |                   | Genio 700-CAM DTB-D1V2-D6 w/ Onsemi AR0830 sensor, connected to CSI2, use 4-lane MIPI CSI.                         |
| Camera    | camera-ar0830-ap1302-2lanes-csi0.dtbo |                   | Genio 700-CAM-DTB-D6 w/ Onsemi AR0830 sensor, connected to CSI0, use 2-lane MIPI CSI                               |
| Camera    | camera-ar0830-ap1302-csi0-std.dtbo    |                   | Genio 700-CAM DTB-D1V2-D6 w/ Onsemi AR0830 sensor, connected to CSI0, use 4-lane MIPI CSI, use V4L2 sensor driver. |
| Camera    | camera-it6510-csi0-std.dtbo           |                   | Genio DTB-DP to MIPI w/ ITE IT6510 connected to CSI0, use 4-lane MIPI CSI, use V4L2 sensor driver.                 |
| Display   | display-dsi.dtbo                      |                   | Single display setup with only DSI panel enabled.  |
| Display   | display-dp.dtbo                       |                   | Single display setup with only DPoC output enabled.  |
| Display   | display-hdmi.dtbo                     |                   | Single display setup with only HDMI output enabled.  |
| Display   | display-edp.dtbo                      |                   | Single display setup with only eDP panel enabled.  |
| Display   | display-edp2lvds.dtbo                 |                   | Single-display set for eDP-to-LVDS converter and LVDS panel. Disables all other display outputs.                   |
| Display   | display-dsiedp.dtbo                   |                   | Dual display setup with DSI panel and eDP panel enabled.   |
| Display   | display-dsidp.dtbo                    |                   | Dual display setup with DSI panel and DPoC output enabled.   |
| Display   | display-hdmidp.dtbo                   |                   | Dual display setup with HDMI and DPoC output enabled.  |
| Display   | display-edphdmi.dtbo                  |                   | Dual display setup with eDP panel and HDMI enabled.  |
| Display   | display-edpdp.dtbo                    |                   | Dual display setup with eDP panel and DPoC enabled.  |
| Display   | display-lvdshdmi.dtbo                 |                   | Dual display setup with LVDS and HDMI enabled.   |
| Display   | display-lvdsdp.dtbo                   |                   | Dual display setup with LVDS and DPoC enabled.   |
| Display   | display-dsilvds.dtbo                  |                   | Dual display setup with DSI panel and LVDS panel enabled.  |
| Display   | display-edphdmidp.dtbo                |                   | Triple-display setup with eDP panel, HDMI output, and DPoC output enabled.   |
| Display   | display-dsihdmidp.dtbo                |                   | Triple display setup with DSI panel, HDMI output, and DPoC output enabled.   |
| Display   | display-dsiedphdmi.dtbo               |                   | Triple display setup with DSI panel, eDP panel, and HDMI output enabled.   |
| Display   | display-dsiedpdp.dtbo                 |                   | Triple display setup with DSI panel, eDP panel, and DPoC output enabled.   |
| Display   | display-lvdshdmidp.dtbo               |                   | Triple display setup with LVDS, HDMI, and DPoC output enabled.   |
| Display   | display-dsilvdshdmi.dtbo              |                   | Triple display setup with DSI panel, LVDS panel, and HDMI output enabled   |
| Display   | display-dsilvdsdp.dtbo                |                   | Triple display setup with DSI panel, LVDS panel, and DPoC output enabled   |
| Display   | display-headless.dtbo                 |                   | Disables all display interfaces.   |

## Binary & License Release Modules

|                             |   |
|-----------------------------|---|
| <b>AIOT SLA</b>             | <b>AIOT Software License Agreement.</b> Redistribution is allowed under the terms specified in the agreement. If the software is received under another NDA, the redistribution rights are constrained by the terms of that NDA.  |
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| Feature      | Category   | Module                       | Release Channel | IP Owner | G350 | G1200 | G510 G700 | Public Release |                  |                               | Private Release<br>(Contact MTK/PM or Authorized Partners to Sign NDA) |                      |                           | License Release<br>(Contact PM to Sign LSA) |                 |                        |
|--------------|------------|------------------------------|-----------------|----------|------|-------|-----------|----------------|------------------|-------------------------------|--|----------------------|---------------------------|---|-----------------|------------------------|
|              |            |                              |                 |          |      |       |           | Src/Bin        | License          | Repo Name                     | Src/Bin  | License              | Repo Name                 | Src/Bin                                     | License         | Repo Name              |
| Flash        | Firmware   | Download Agent               | Gitlab          | MTK      | V    | V     | V         | Bin            | AIOT SLA         | rity/lk-prebuilt              | Src  | AIOT SLA             | nda/lk                    | N/A   |                 |                        |
| Flash        | Tool       | Flash Tool (BROM cmd lib)    | Gitlab          | MTK      | V    | V     | V         | Bin            | AIOT SLA         | bsp/genio-bootrom             | Src  | MediaTek Proprietary | nda/bootrom-tool          | N/A   |                 |                        |
| Platform     | TF-A       | Platform Security Module     | Gitlab          | MTK      | V    | V     | V         | Bin            | AIOT SLA         | bsp/libbase-prebuilt          | N/A  |                      |                           | N/A   |                 |                        |
| Platform     | TF-A       | Dram Calibration Module      | Gitlab          | MTK      | V    | V     | V         | Bin            | AIOT SLA         | rity/libdram-prebuilt         | Src  | MediaTek Proprietary | nda/libdram               | N/A   |                 |                        |
| Platform     | Firmware   | System/Power Mgmt. Firmware  | Gitlab          | MTK      | V    | V     | V         | Bin            | AIOT SLA         | bsp/trusted-firmware-a        | N/A  |                      |                           | N/A   |                 |                        |
| Video        | User Space | Video User Space Driver      | Gitlab          | MTK      | V    | V     | V         | Bin            | AIOT SLA         | rity/vpud                     | N/A  |                      |                           | N/A   |                 |                        |
| Video        | User Space | MDP User Space Driver        | Gitlab          | MTK      | V    | N/A   | N/A       | Bin            | AIOT SLA         | rity/mdp-prebuilt             | Src+Bin  | MediaTek Proprietary | nda/mdpd                  | N/A   |                 |                        |
| Video        | Firmware   | MDP (SCP) Firmware           | Gitlab          | MTK      | N/A  | V     | V         | Bin            | LICENSE.mediatek | rity/meta-MediaTek-bsp        | N/A  |                      |                           | N/A   |                 |                        |
| GPU          | User Space | MALI GPU Middleware          | Gitlab          | ARM*     | V    | V     | V         | Bin            | AIOT SLA         | rity/libmali                  | N/A  |                      |                           | N/A   |                 |                        |
| Connectivity | Firmware   | MT7921 (Wi-Fi/BT) Firmware   | kernel.org      | MTK      | N/A  | V     | V         | Bin            | LICENSE.mediatek | linux-firmware                | N/A  |                      |                           | N/A   |                 |                        |
| AI/ML        | User Space | NeuroPilot Middleware/Tool   | Gitlab          | MTK      | N/A  | V     | V         | Bin            | AIOT SLA         | rity/mtk-neuropilot-prebuilts | N/A  |                      |                           | N/A   |                 |                        |
| AI/ML        | Firmware   | APU Firmware                 | Gitlab          | MTK      | N/A  | V     | V         | Bin            | AIOT SLA         | bsp/mtk-apusys-firmware       | N/A  |                      |                           | N/A   |                 |                        |
| AI/ML        | Firmware   | VP6 Firmware                 | Gitlab          | Cadence* | V    | N/A   | N/A       | N/A            |                  |                               | Bin  | AIOT SLA             | nda-cadence/prebuilts     | N/A   |                 |                        |
| Security     | OP-TEE     | eFuse Writer/Reader PTA Lib  | Gitlab          | MTK      | V    | V     | V         | N/A            |                  |                               | Bin  | AIOT SLA             | nda/libefuse-pta-prebuilt | N/A   |                 |                        |
| Security     | User Space | eFuse Writer/Reader Tool     | Gitlab          | MTK      | V    | V     | V         | N/A            |                  |                               | Src  | MediaTek Proprietary | nda/optee-ewriter         | N/A   |                 |                        |
| Connectivity | Firmware   | MT7663 (Wi-Fi/BT) Firmware   | Gitlab          | MTK      | V    | N/A   | N/A       | Bin            |                  |                               | Bin  | AIOT SLA             | nda/wireless-firmware     | N/A   |                 |                        |
| Camera       | User Space | Camera Middleware (RAW, YUV) | Gitlab          | MTK      | N/A  | V     | V         | N/A            |                  |                               | Bin  | AIOT SLA             | nda/mtk-camisp-prebuilts  | Src   | MTK Proprietary | mtk-camisp-mw**        |
| Camera       | User Space | Camera 3A Algo (RAW)         | Gitlab          | MTK      | N/A  | V     | V         | N/A            |                  |                               | Bin  | AIOT SLA             | nda/mtk-camisp-prebuilts  | Bin   | MTK Proprietary | mtk-camisp-libcamera** |
| Audio        | Firmware   | ADSP SOF Firmware            | Gitlab          | MTK      | N/A  | V     | V         | Bin            | BSD 3 Clause     | rity/meta-MediaTek-bsp        | N/A  |                      |                           | N/A   |                 |                        |

\* MTK received the license from ARM & Cadence to release the related SWIP in binary form under the AIOT Software License Agreement

\*\* Adding RAW/YUV sensors in the MediaTek Imagesensor Architecture requires signing an LSA and obtaining the related source and binary of the middleware.  
Please note that this "libcamera" is not the open-source Libcamera project.

| Feature | Category | Module          | Release Channel | IP Owner | G350 | G1200 | G510 G700 | 3rd Party License |                                       |                |
|---------|----------|-----------------|-----------------|----------|------|-------|-----------|-------------------|---------------------------------------|----------------|
|         |          |                 |                 |          |      |       |           | Bin/SC            | License                               | Repo Name      |
| Camera  | Firmware | AP1302 Firmware | OnSemi Github   | OnSemi   | V    | V     | V         | Bin               | AP1302 Software License Agreement.pdf | OnSemi Github* |