

IoT Yocto Feature Table (v23.2)

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Version	Date	Author	Description
1.0.0	2024/1/4	Bear Wang	Initial release version of IoT Yocto v23.2
1.0.1	2024/1/10	Bear Wang	[Feature Table] Fix the NeuroPilot's NDA column. NDA license is not required starting with the v23.2 release
1.0.2	2024/1/12	Bear Wang	[Audio Section] Fix a typo from "MT8390" to "MT8370" for G510
1.0.3	2024/1/23	Bear Wang	[Video Dec Section] Fix the wrong max resolution support of G510, change from 4K75 to 4K60
1.0.4	2024/3/21	Bear Wang	[Feature Table] Update the support status for U3 Device mode from "V" to "O" for G510/G700

IoT Yocto Feature List

V	Function enabled by software and available on the EVK set
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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)	--		--		--		--		
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 (root of trust)	V	v22.1	V	v23.2	V	v23.0	V	v22.2	V
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	--		--		--		--		

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		Support	Rel	Support	Rel	Support	Rel	Support	Rel	
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	
Video Processing	Gstreamer :: video4linux :: v4l2convert	V	v21.3	V	v23.2	V	v23.0	V	v22.1	
Camera	ISP + Raw Sensor (MTK IMG Sensor Interface)	--		--		--		V	v22.2	V
Camera	ISP :: 3A :: AE	--		--		--		V	v23.0	V
Camera	ISP :: 3A :: AWB	--		--		--		V	v23.0	V
Camera	ISP :: 3A :: AF	--		--		--		O	v23.0	V
Camera	ISP :: Capture :: LPNR	--		--		--		V	v23.0	V
Camera	ISP :: Video :: MCNR	--		--		--		V	v23.0	V
Camera	RAW Sensor :: IMX214 :: 4 Lane	--		--		--		V	v22.2	
Camera	RAW Sensor :: IMX214 :: 2 Lane	--		--		--		V	v23.1	

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Camera	CamSV + YUV Sensor (MediaTek Imgsensor Interface)	--		V	v23.2	V	v23.1	V	v23.0	V
Camera	CamSV + YUV Sensor (V4L2 Sensor Interface)	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	Single-Sensor :: RAW	--		--		--		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	--		--		--		--		
Camera	Multi-Sensor :: RAW + YUV	--		--		--		--		
Camera	Multi-Sensor :: RAW + RAW + RAW	--		--		--		--		
Camera	Multi-Sensor :: RAW + RAW + YUV	--		--		--		--		
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 :: simplepipe	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	
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 Interface :: DSI	V	v21.3	V	v23.2	V	v23.0	V	v22.2	
Display	TX :: Built-in Interface :: DSI :: Spread Spectrum	--		--		--		--		
Display	TX :: Built-in Interface :: DPI	--		--		--		--		
Display	TX :: Built-in Interface :: DPI :: Spread Spectrum	--		--		--		--		

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		Support	Rel	Support	Rel	Support	Rel	Support	Rel	
Display	TX :: Built-in Interface :: eDP	--		(V)	v23.2	(V)	v23.0	(V)	v22.1	
Display	TX :: Built-in Interface :: eDP :: Spread Spectrum	--		--		--		--		
Display	TX :: Built-in Interface :: HDMI	--		V	v23.2	V	v23.0	V	v22.1	
Display	TX :: Built-in Interface :: HDMI :: Spread Spectrum	--		--		--		--		
Display	TX :: Built-in Interface :: DP	--		V	v23.2	V	v23.0	V	v22.1	
Display	TX :: Built-in Interface :: DP :: Spread Spectrum	--		--		--		--		
Display	TX :: Built-in Interface :: DP :: Type-C	--		V	v23.2	V	v23.0	V	v22.1	
Display	TX :: Built-in Interface :: DP :: Type-C (Pin Assignment D)	--		V	v23.2	V	v23.1	V	v23.1	
Display	TX :: Built-in Interface :: DP :: DP Connector	--		Patch	v23.2	Patch	v23.0	Patch	v23.0	
Display	TX :: Built-in Interface :: LVDS	(V)	v23.2	--		--		--		
Display	TX :: Built-in Interface :: LVDS :: Spread Spectrum	--		--		--		--		
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	

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		Support	Rel	Support	Rel	Support	Rel	Support	Rel	
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	--		--		--		--		
Display	TX :: DP :: HDCP	--		--		--		--		
Display	TX :: DP :: HDR	--		--		--		--		
Display	TX :: HDMI :: HDCP	--		--		--		--		
Display	TX :: HDMI :: CEC	--		--		--		--		
Display	TX :: HDMI :: HDR	--		--		--		--		
Display	RX :: HDMI	--		--		--		V	v23.1	
Display	RX :: HDMI :: HDCP	--		--		--		--		
Display	RX :: HDMI :: CEC	--		--		--		--		
Display	RX :: HDMI :: HDR	--		--		--		--		
Display	RX :: Wi-Fi Display Sink	--		--		--		--		
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	--		--		--		--		
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	--		--		--		--		

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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	
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	--		--		--		--		
Audio	DSP :: HiFi5	--		--		--		--		
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	--		--		--		--		
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	TFLite Interpreter :: ANN Delegate :: VP6 Backend	V	v21.3	--		--		--		V
AI/ML	TFLite Interpreter :: Neuron Delegate :: VP6 Backend	--		--		--		--		
AI/ML	TFLite Interpreter :: Neuron Delegate :: CPU Backend	--		--		--		--		
AI/ML	TFLite Interpreter :: Neuron Delegate :: GPU Backend	--		--		--		--		
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	NeuroPilot :: Neuron Runtime :: APUSYS 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	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	--		--		--		--		

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Patch	Requires getting patches from MediaTek or partners to enable this feature
POC	Proof-of-concept. Not a fully verified feature
()	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 :: 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	
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	

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Category	Feature	MT8365 (G350)		MT8370 (G510)		MT8390 (G700)		MT8395 (G1200)		NDA
		Support	Rel	Support	Rel	Support	Rel	Support	Rel	
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	--		--		--		
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	
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

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Category	Feature	MT8365 (G350)		MT8370 (G510)		MT8390 (G700)		MT8395 (G1200)		NDA
		Support	Rel	Support	Rel	Support	Rel	Support	Rel	
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 + DRAM + Power Management + USB + UART/I2C + Ethernet + Debug Tools	+ EMMC + DRAM + Power Management + USB/PCIE + UART/I2C + Ethernet-TSN + Debug Tools	+ EMMC/UFS + DRAM + Power Management + USB/PCIE + UART/I2C + Ethernet-TSN + Debug Tools	public image (nda_build = 0) (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. For most BSP developer may use this flavor	+ rity-bring-up + Display (+DRM) + Audio (+ALSA) + Video (+GStreamer) + eFuse Writer + Auto Test Suite + CAN utils + Bluedroid E9 + GPU (OpenGLES, Vulkan, OpenCL)	+ rity-bring-up + Display (+DRM) + Audio (+ALSA) + Video (+GStreamer) + Image Codec + ISP (+GStreamer) [NDA] + Neuro SDK + ncc_tflite + eFuse Writer [NDA] + Auto Test Suite + CAN utils + GPU (OpenGLES, Vulkan, OpenCL)	+ rity-bring-up + Display (+DRM) + Audio (+ALSA) + Video (+GStreamer) + Image Codec + ISP (+GStreamer) [NDA] + Neuro SDK + ncc_tflite + eFuse Writer [NDA] + Auto Test Suite + CAN utils + GPU (OpenGLES, Vulkan, OpenCL)	public image (nda_build = 0) 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. This will be the software for SQC	+ rity-bsp + Graphics CTS Suite + Benchmark Suite + Stress Suite + LTP/xTest + OpenCV + AI Demo App + QT Demo + Xtensa-ANN (+TFLite prebuild-bin) [NDA] + ARMNN (+TFLite prebuild-bin)	+ rity-bsp + Graphics CTS Suite + Benchmark Suite + Stress Suite + LTP/xTest + TSN Test Suite + OpenCV + AI Demo App + QT Demo + ARMNN (+TFLite prebuild-bin)	+ rity-bsp + Graphics CTS Suite + Benchmark Suite + Stress Suite + LTP/xTest + TSN Test Suite + OpenCV + AI Demo App + QT Demo + ARMNN (+TFLite prebuild-bin)	public image (nda_build = 0) 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 Secure Boot Compliance Test EBBR	ROS2 Secure Boot Compliance Test EBBR	ROS2 Secure Boot Compliance Test 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	Hub (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 (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
Dual Display	DPI-HDMI (Bridge)	1280x720@60	1280x720@60	8bit	NA	NA	NA	NA	display-hdmi.dtbo	Using DPI to HDMI Bridge IC (IT66121)
	DSI + DPI-HDMI (Bridge)	DSI: 1200x1920@60 HDMI: 1280x720@60	DSI: 1200x1920@60 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	NA	display-hdmi.dtbo	Provides Compliance Test SOP
DP	3840x2160@60	3840x2160@60	3840x2160@60	8bit	NA	4L	NA	NA	display-dp.dtbo	Provides Compliance Test SOP
Dual Display	DSIO + eDP	DSIO: 1200x1920@60 eDP: 1920x1080@60	DSIO: 1200x1920@60 eDP: 1920x1080@60	follow single display spec				display-dsiedp.dtbo		
	DSIO + HDMI	DSIO: 1200x1920@60 HDMI: 3840x2160@60	DSIO: 1200x1920@60 HDMI: 3840x2160@60	follow single display spec				default configuration		
	DSIO + DP	DSIO: 1200x1920@60 DP: 3840x2160@60	DSIO: 1200x1920@60 DP: 3840x2160@60	follow single display spec				display-dsidp.dtbo		
	DSIO-LVDS + eDP	LVDS: 1920x1080@60 eDP: 1920x1080@60	LVDS: 1920x1080@60 eDP: 1920x1080@60	follow single display spec				display-lvdsedp.dtbo		
	DSIO-LVDS + HDMI	LVDS: 1920x1080@60 HDMI: 3840x2160@60	LVDS: 1920x1080@60 HDMI: 3840x2160@60	follow single display spec				display-lvdsdmi.dtbo		
	DSIO-LVDS + DP	LVDS: 1920x1080@60 DP: 3840x2160@60	LVDS: 1920x1080@60 DP: 3840x2160@60	follow single display spec				display-lvdsdp.dtbo		
	eDP + HDMI	eDP: 1920x1080@60 HDMI: 3840x2160@60	eDP: 1920x1080@60 HDMI: 3840x2160@60	follow single display spec				display-edphdmi.dtbo		
	eDP + DP	eDP: 1920x1080@60 DP: 3840x2160@60	eDP: 1920x1080@60 DP: 3840x2160@60	follow single display spec				display-edpdp.dtbo		
	HDMI + DP	HDMI: 3840x2160@30 DP: 3840x2160@60	HDMI: 3840x2160@30 DP: 3840x2160@60	follow single display spec				display-hdmidp.dtbo		HDMI using VDOSYS0, performance may only reach 3840x2160@30

Genio 700-EVK Panel	Part Number	Note
DSI: 1200x1920@60	startek-kd070ffhid015	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	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
	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	NA	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 eDP: 3840x2160@60	DSIO: 1200x1920@60 eDP: 3840x2160@60	follow single display spec					display-dsiedp.dtbo	
	DSIO + eDP-LVDS	DSIO: 1200x1920@60 LVDS: 1920x1080@60	DSIO: 1200x1920@60 LVDS: 1920x1080@60	follow single display spec					display-dsilvds.dtbo	
	DSIO + HDMI	DSIO: 1200x1920@60 HDMI: 3840x2160@60	DSIO: 1200x1920@60 HDMI: 3840x2160@60	follow single display spec					default configuration	
	DSIO + DP	DSIO: 1200x1920@60 DP: 3840x2160@60	DSIO: 1200x1920@60 DP: 3840x2160@60	follow single display spec					display-dsidp.dtbo	
	eDP + HDMI	eDP: 3840x2160@60 HDMI: 3840x2160@60	eDP: 3840x2160@60 HDMI: 3840x2160@60	follow single display spec					display-edphdmi.dtbo	
	eDP + DP	eDP: 3840x2160@60 DP: 3840x2160@60	eDP: 3840x2160@60 DP: 3840x2160@60	follow single display spec					display-edpdp.dtbo	
	eDP-LVDS + HDMI	LVDS: 1920x1080@60 HDMI: 3840x2160@60	LVDS: 1920x1080@60 HDMI: 3840x2160@60	follow single display spec					display-lvdshdmi.dtbo	
	eDP-LVDS + DP	LVDS: 1920x1080@60 DP: 3840x2160@60	LVDS: 1920x1080@60 DP: 3840x2160@60	follow single display spec					display-lvdsdp.dtbo	
	HDMI + DP	HDMI: 3840x2160@60 DP: 3840x2160@60	HDMI: 3840x2160@60 DP: 3840x2160@60	follow single display spec					display-hdmidp.dtbo	
Triple Display	DSIO + eDP + HDMI	DSIO: 1200x1920@60 eDP: 3840x2160@30 HDMI: 3840x2160@60	DSIO: 1200x1920@60 eDP: 3840x2160@30 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 eDP: 3840x2160@30 DP: 3840x2160@60	DSIO: 1200x1920@60 eDP: 3840x2160@30 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	LVDS: 1920x1080@60 HDMI: 3840x2160@60	LVDS: 1920x1080@60 HDMI: 3840x2160@60	follow single display spec					display-dsilvdshdmi.dtbo	
	DSIO + eDP-LVDS + DP	DSIO: 1200x1920@60 LVDS: 1920x1080@60 DP: 3840x2160@60	DSIO: 1200x1920@60 LVDS: 1920x1080@60 DP: 3840x2160@60	follow single display spec					display-dsilvdsdp.dtbo	
	DSIO + HDMI + DP	DSIO: 1200x1920@60 HDMI: 3840x2160@60 DP: 3840x2160@30	DSIO: 1200x1920@60 HDMI: 3840x2160@60 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 HDMI: 3840x2160@30 DP: 3840x2160@60	eDP: 3840x2160@30 HDMI: 3840x2160@30 DP: 3840x2160@60	follow single display spec					display-edphdmidp.dtbo	eDP using VDOSYS0 main path, performance may only reach 3840x2160@30 HDMI using VDOSYS0 sub path, performance may only reach 3840x2160@30
	eDP-LVDS + HDMI + DP	LVDS: 1920x1080@60 HDMI: 3840x2160@30 DP: 3840x2160@60	LVDS: 1920x1080@60 HDMI: 3840x2160@30 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 YUV422 YUV420 RGB	SD mode resolutions: 720 × 480p @ 59.94/60 Hz 720 × 576p @ 50 Hz HD/FHD/UFHD mode resolutions: 1280 × 720p @ 59.94/60/50 Hz 1920 × 1080p @ 59.94/60/50 Hz 1920 × 1080p @ 23.97/24 Hz 1920 × 1080p @ 25 Hz 1920 × 1080p @ 29.97/30 Hz 3840 × 2160p @ 29.97/30 Hz 3840 × 2160p @ 59.94/60/50 Hz	ABGR32 ARGB32 BGR24 GREY I420 (YV12) I422 (YV16) NV12 NV12M NV16 NV16M NV21 NV21M NV61 NV61M RGB24 RGB565 RGB565X UYVY VYUY YUV420(YU12/I420) YUV420M	3840x2160@60	PCM	32 kHz 44.1 kHz 48 kHz 88.2 kHz 96 kHz 176.4 kHz 192 kHz	2~8	up to 24 bits (Total 32bit = 24bit + 8bit 0)

Camera

G350	Feature	MediaTek Proprietary Camera Architecture*		Standard V4L2 Camera 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
Tunning	Camera Calibration Tuning (CCT) Tool	NA	NA	NA	3rd Party Tool
	ImagiqSimulator Camera Tuning Tool	NA	NA	NA	3rd Party Tool

* The MediaTek Proprietary Camera Architecture and Standard V4L2 Camera Architecture are mutually exclusive software architectures. Users may choose to use only one of them.

Camera

G510/G700		MediaTek Proprietary Camera Architecture*		Standard V4L2 Camera Architecture*	
	Feature	Raw Sensor	YUV Sensor	Raw Sensor	YUV Sensor
Sensor	Sensor Module	NA	AP1302+AR0830	NA	AP1302+AR0830
	Camera DTB Name	NA	CAM_DTB_VERSION_D6	NA	CAM_DTB_VERSION_D6
	Single Sensor	NA	V	NA	V
	Multi-Sensor	NA	NA	NA	V (YUV+YUV)
	Sensor Driver Interface	NA	MediaTek Imgsensor Interface	NA	V4L2 Sensor Interface
ISP	Hue Adjustment	NA	Module Firmware	NA	Module Firmware
	Brightness Adjustment	NA	Module Firmware	NA	Module Firmware
	Saturation Adjustment	NA	Module Firmware	NA	Module Firmware
	Contrast Adjustment	NA	Module Firmware	NA	Module Firmware
3A	Auto Flicker	NA	Module Firmware	NA	Module Firmware
	Auto Focus	NA	Module Firmware	NA	Module Firmware
	Auto Exposure	NA	Module Firmware	NA	Module Firmware
	Auto White Balance (AWB)	NA	Module Firmware	NA	Module Firmware
Preview	Size	NA	3840x2160@24 2560x1440@30 1920x1080@30	NA	Follow Onsemi AP1302 spec
	Format	NA	YUV422 8-bit (UYVY)	NA	YUV422 8-bit (UYVY)
	MCNR (Motion Compensated Noise Reduction)	NA	Module Firmware	NA	Module Firmware
Capture	Capture Size	NA	NA	NA	NA
	Format	NA	NA	NA	NA
	LPNR (Low Pass Noise Reduction)	NA	NA	NA	NA
Tuning	Camera Calibration Tuning (CCT) Tool	NA	3rd Party Tool	NA	3rd Party Tool
	ImagiqSimulator Camera Tuning Tool	NA	3rd Party Tool	NA	3rd Party Tool

* The MediaTek Proprietary Camera Architecture and Standard V4L2 Camera Architecture are mutually exclusive software architectures. Users may choose to use only one of them.

Camera

G1200		MediaTek Proprietary Camera Architecture*		Standard V4L2 Camera Architecture*	
	Feature	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	NA	NA	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	NA	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 2560x1440@30 1920x1080@30	NA	Follow Onsemi AP1302 spec
	Format	RGB (RGB888) YUV420 (NV12) 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 Proprietary Camera Architecture and Standard V4L2 Camera Architecture are mutually exclusive software architectures. Users may choose to use only one of them.

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

G510							
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

G700							
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 NV21 YV12 YUV420 (I420)	Baseline Main High	L4.1	1920x1080@60	17Mbps	8	1920x1088	160x128
H.265	NV12 NV21 YV12 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 NV21 YV12 YUV420 (I420) RGBA8888 RGB888	Baseline Main High	L5.1	3840x2160@30	100Mbps	8	4096x2176	320x320
H.265	NV12 NV21 YV12 YUV420 (I420) RGBA8888 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 NV21 YV12 YUV420 (I420) RGBA8888 RGB888	Baseline Main High	L5.2	1920x1080@120 3840x2160@60 4096x2176@30	100Mbps	8	4096x2176	320x320
H.265	NV12 YV12 YUV420(I420) RGBA8888 RGB888	Main	L5.1	1920x1080@120 3840x2160@60 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 H: (1/255)x ~ (32)x		W: (1/128)x ~ (64)x H: (1/128)x ~ (64)x		W: (1/128)x ~ (64)x 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 YUV422M	3840x2160@30	65535x65535	32x32	NV12 NV21 YUYV 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 YUV422M	3840x2160@30	65535x65535	32x32	NV12 NV21 YUYV 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	
		Platform Specification						
Part	Audio Interfaces	Count	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) 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 Audio CODEC	ACCDET	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 Audio Out: 1		1 (2ch Headset) 1 (1ch Audio Out)	V	
	Record	3	8, 16, 32, and 48 kHz	Headset: 1 AMIC: 1		1 (1ch Headset) 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	
		Platform Specification						
Part	Audio Interfaces	Count	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 As TDM Out: from 8 kHz to 48 kHz	As I2S Out: 2 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 As TDM Out: 48 kHz	As I2S Out: 8 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 As TDM In: 16 ch @ from 8 kHz to 48 kHz / 16 ch direct	As I2S In: 8 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 As TDM In: 48 kHz	As I2S In: 2 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 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 Speaker: 1	24-bit	1 (2ch Earphone) 1 (1ch Speaker)	V	
	Record	4	8/16/32/48/96/192 kHz	Earphone: 1 AMIC: 1	24-bit	1 (1ch Earphone) 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					
Platform Specification						Support Status	
Part	Audio Interfaces	Count	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 As TDM Out: from 8 kHz to 48 kHz	As I2S Out: 2 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 As TDM Out: 48 kHz	As I2S Out: 8 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 As TDM In: 16 ch @ from 8 kHz to 48 kHz / 16 ch direct	As I2S In: 8 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 As TDM In: 48 kHz	As I2S In: 2 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 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 Speaker: 1	24-bit	1 (2ch Earphone) 1 (1ch Speaker)	V
	Record	4	8/16/32/48/96/192 kHz	Earphone: 1 AMIC: 1	24-bit	1 (1ch Earphone) 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				Platform Specification		Support Status	
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 As TDM Out: from 8 kHz to 48 kHz As DSD-out: 6 ch @ 2.8 MHz / 2 ch @ 5.6 MHz or 11.2	As I2S Out: 24 As TDM Out: 16 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 As TDM Out: 24 ch @ 16 kHz / 16 ch @ 48 kHz	As I2S Out: 8 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 As TDM In: 8 ch @ from 8 kHz to 48 kHz / 16 ch direct	As I2S In: 8 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 As TDM In: 24 ch @ 16 kHz / 16 ch @ 48 kHz	As I2S In: 2 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 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 2. Compress audio: 768 kHz 3. DSD: 2.8 MHz	1. PCM: 8 2. DSD: 6	1. PCM: 24-bit 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			
ACCDDET	1	NA	NA	NA	1	NA			
MT6365 Audio CODEC	Playback	3	8/11.025/12(x)/16/22.05/24(x)/32/44.1/48/96/192 kHz	Earphone: 2 Speaker: 1	24-bit	1 (2ch Earphone) 1 (1ch Speaker)	V		
	Record	4	8/16/32/48/96/192 kHz	Earphone: 1 AMIC: 3	24-bit	1 (1ch Earphone) 1 (3ch AMIC)	V		

Wi-Fi / BT

	Platform SoC	G350	G510/G700/G1200
	Connectivity SoC	MT7663	MT7921
	Driver Architecture Version	Gen4m-7663 (MTK Proprietary)	MT76 (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 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	lmbench	v2.5
Memory Bandwidth	perf mem	Yocto builtin
GPU	glmark2	v20210830
AI/ML	TFLite Model Benchmark Tool	v2.8.0

* The program source didn't contain version information

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	v6.2.3	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	V	Enables GPU.
Video	video.dtbo	V	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-CSI1.
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/G700-EVK		
Category	dtbo	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 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-ap1302-2lanes-csi0.dtbo	Genio 700-CAM DTB-D1V2-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-ar0830-ap1302-dual-std.dtbo	Dual Genio 700-CAM DTB-D1V2-D6 w/ Onsemi AR0830 sensor, connected to CSI0 and CSI1, 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.
Camera	camera-it6510-dual-std.dtbo	Dual Genio DTB-DP to MIPI w/ ITE IT6510 connected to CSI0 and CSI1, 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 CSI0, Genio DTB-DP to MIPI w/ ITE IT6510 connected to CSI1, 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.

DTBO

G1200-EVK			
Category	dtbo	Loaded by default	Description
GPU	gpu-mali.dtbo	V	Enables GPU.
Video	video.dtbo	V	Enables hardware video encoder and decoder.
AI/ML	apusys.dtbo	V	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-lvdsdmi.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-lvdsdhdmi.dtbo		Triple display setup with LVDS, HDMI, and DPoC output enabled.
Display	display-dsilvdsdhdmi.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

AIOT SLA	AIOT Software License Agreement. Able to re-distribution under the terms written in the agreement. If the software is received under another NDA, the re-distribution rights is constrained by the NDA. https://mediatek.gitlab.io/aiot/doc/aiot-dev-guide/master/license.html
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LICENSE.mediatek	MediaTek Linux Firmware License Agreement https://git.kernel.org/pub/scm/linux/kernel/git/firmware/linux-firmware.git/tree/LICENCE.mediatek

Feature	Category	Module	Release Channel	IP Owner	G350	G1200	G510 G700	Public Release			Private Release (Contact MTK/PM or Authorized Partners to Sign NDA)		
								Bin/SC	License	Repo Name	Bin/Src	License	Repo Name
Flash	Firmware	Download Agent	Gitlab	MTK	V	V	V	Bin	AIOT SLA	rity/lk-prebuilt	Src	AIOT SLA	nda/lk
Flash	Tool	Flash Tool (BROM cmd lib)	Gitlab	MTK	V	V	V	Bin	AIOT SLA	bsp/genio-bootrom	Src	MTK Proprietary	nda/bootrom-tool
Platform	TF-A	Platform Security Module	Gitlab	MTK	V	V	V	Bin	AIOT SLA	bsp/libbase-prebuilt	N/A		
Platform	TF-A	Dram Calibration Module	Gitlab	MTK	V	V	V	Bin	AIOT SLA	rity/libdram-prebuilt	Src	MTK Proprietary	nda/libdram
Platform	Firmware	System/Power Mgmt. Firmware	Gitlab	MTK	V	V	V	Bin	AIOT SLA	bsp/trusted-firmware-a	N/A		
Video	User Space	Video User Space Driver	Gitlab	MTK	V	V	V	Bin	AIOT SLA	rity/vpud	N/A		
Video	User Space	MDP User Space Driver	Gitlab	MTK	V	N/A	N/A	Bin	AIOT SLA	rity/mdp-prebuilt	Src+Bin	MTK Proprietary	nda/mdpd
Video	Firmware	MDP (SCP) Firmware	Gitlab	MTK	N/A	V	V	Bin	LICENSE.mediatek	rity/meta-MediaTek-bsp	N/A		
GPU	User Space	MALI GPU Middleware	Gitlab	ARM*	V	V	V	Bin	AIOT SLA	rity/libmali	N/A		
Connectivity	Firmware	MT7921 (Wi-Fi/BT) Firmware	kernel.org	MTK	N/A	V	V	Bin	LICENSE.mediatek	linux-firmware	N/A		
AI/ML	User Space	NeuroPilot Middleware/Tool	Gitlab	MTK	N/A	V	V	Bin	AIOT SLA	rity/mtk-neuropilot-prebuilts	N/A		
AI/ML	Firmware	APU Firmware	Gitlab	MTK	N/A	V	V	Bin	AIOT SLA	bsp/mtk-apusys-firmware	N/A		
AI/ML	Firmware	VP6 Firmware	Gitlab	Cadence*	V	N/A	N/A	N/A			Bin	AIOT SLA	nda-cadence/prebuilts
Security	OP-TEE	eFuse Writer/Reader PTA Lib	Gitlab	MTK	V	V	V	N/A			Bin	AIOT SLA	nda/libefuse-pta-prebuilt
Security	User Space	eFuse Writer/Reader Tool	Gitlab	MTK	V	V	V	N/A			Src	MTK Proprietary	nda/optee-ewriter
Connectivity	Firmware	MT7663 (Wi-Fi/BT) Firmware	Gitlab	MTK	V	N/A	N/A	Bin			Bin	AIOT SLA	nda/wireless-firmware
Camera	User Space	Camera Middleware (RAW, YUV)	Gitlab	MTK	N/A	V	V	N/A			Bin	AIOT SLA	nda/mtk-camisp-prebuilts
Camera	User Space	Camera 3A Algo (RAW)	Gitlab	MTK	N/A	V	V	N/A			Bin	AIOT SLA	nda/mtk-camisp-prebuilts

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

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	https://github.com/ONSemiconductor/ap1302_binaries	