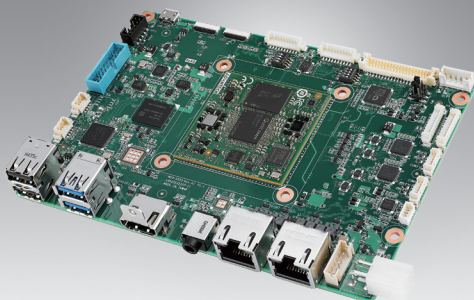


# MIO-5355

Qualcomm® Dragonwing™ QCS6490/  
QCS5430 on 3.5" SBC

NEW



## Features

- Qualcomm® QCS6490/QCS5430, support extend operating temperature -20~70°C
- Powerful but Low Power with 8x Kryo 670 CPU from 1.9 up to 2.7 GHz + Adreno GPU 643 + up to 12.3 TOPs iNPU
- Rugged Design with On-board 8GB LPDDR5 and 128GB UFS or eMMC
- Flexible Displays with HDMI and LVDS or eDP & Rich I/Os: 2x GbE, 6x USB, 4x COM, 2x MIPI-CSI, 1x Audio
- 3x M.2 Expansions: M.2 E-Key 2230 for WiFi/BT, M.2 B-Key 3052 for 4G/LTE, M.2 B-Key 2280 for NVMe Storage
- Various OS Support: Yocto, Windows on Arm, and Ubuntu

**Software APIs:**

- GPIO
- SMBus/I<sup>2</sup>C
- Watch Dog Timer
- Backlight On/Off
- Brightness

**Utilities:**

- Hardware Monitor
- System Throttling
- Thermal Protection
- Data Security
- System Info

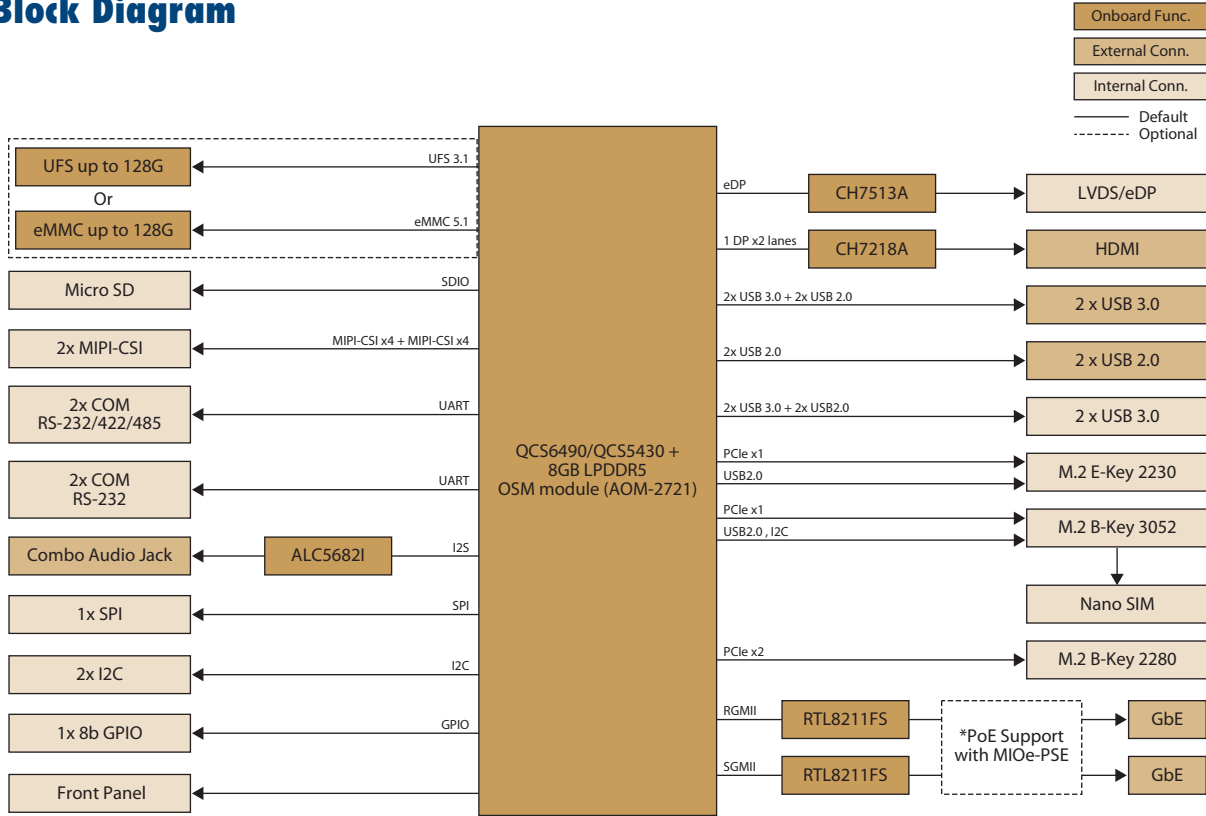
Qualcomm Windows 11 Ubuntu DeviceOn CE FCC

## Specifications

|               |   | QCS6490  | QCS5430                            |  |
|---------------|---|--|------------------------------------|--|
| CPU           | SoC   | QCS6490  | QCS5430                            |  |
|               | Clock Speed   | 1x A78 @ 2.7 GHz, 3x A78 @ 2.4 GHz, 4x A55 @ 1.9 GHz   | 2x A78 @ 2.1 GHz, 4x A55 @ 1.8 GHz |  |
|               | Number of CPU Cores   | 8  | 6                                  |  |
| Memory        | Technology  | LPDDR5 8533MT/s  |                                    |  |
|               | Max. Capacity   | Up to 8GB  |                                    |  |
| Storage       | UFS   | Up to 128GB  |                                    |  |
|               | eMMC  | Up to 128GB  |                                    |  |
| GPU & AI      | GPU   | Adreno™ 643  | Adreno™ 642L                       |  |
|               | Clock Speed   | Up to 812 MHz  | Up to 315 MHz                      |  |
|               | AI DSP  | Hexagon™ 770   | Hexagon™ 770                       |  |
|               | Clock Speed   | 1.45 GHz   | 912 MHz                            |  |
| Display I/F   | LCD   | 1 x LVDS, up to 1920x1200, or 1 x eDP1.4 (Selected by Switch Setting)  |                                    |  |
|               | HDMI/DP   | 1 x HDMI 2.0, up to 4096 x 2160 @ 60Hz   |                                    |  |
|               | Multi Display   | 2 simultaneous displays by LVDS or eDP + HDMI  |                                    |  |
| Ethernet      | Controller  | LAN1/LAN2: RTL8211FS   |                                    |  |
|               | Speed   | LAN/LAN2: GbE  |                                    |  |
| External I/O  | Ethernet  | 2 x RJ-45  |                                    |  |
|               | HDMI  | 1  |                                    |  |
|               | Audio   | 1 x Combo Audio Jack   |                                    |  |
|               | USB   | 2 x USB 3.0 + 2 x USB 2.0  |                                    |  |
| Internal I/O  | Micro SD  | 1  |                                    |  |
|               | USB   | 2 x USB 3.0  |                                    |  |
|               | Serial Bus  | 2 x I <sup>2</sup> C   |                                    |  |
|               | COM Port  | 2 x RS-232/422/485, 2 x RS-232   |                                    |  |
|               | MIPI-CSI  | 2 x 4-Lane MIPI-CSI  |                                    |  |
|               | GPIO  | 8-bit general purpose input output I/O   |                                    |  |
|               | Front Panel Control   | Power-on, Reset, Power LED   |                                    |  |
| Board Feature | Security  | Qualcomm® Trusted Execution Environment (TEE) v5.3   |                                    |  |
|               | iManager 3.0  | SW API for Hardware Monitor, Brightness Control, I <sup>2</sup> C, GPIO, WDT   |                                    |  |
| Expansion     | M.2 E-Key   | 1 x E-Key 2230 (PCIe x1, USB2.0)   |                                    |  |
|               | M.2 B-Key   | 1 x B-Key 2280 (PCIe x2) Note: Only for Storage.<br>1 x B-Key 3052 (PCIe x1, USB 2.0) w/ Nano-SIM  |                                    |  |
| Power         | Supply Voltage  | Vin: DC 12V ± 10%; RTC Battery: Lithium 3V/200mAH, support w/o CMOS Battery  |                                    |  |
|               | Connector   | ATX 2x2pin 90D (*BOM Option to ATX 2x2pin 180D or DC-IN Jack by request)   |                                    |  |
|               | Power Management  | AT, ATX  |                                    |  |
|               | Max. Consumption (*Ref. data. Contact FAE for adapter selection.) | 18.08W   | TBD                                |  |
|               | Idle Consumption  | 8.26W  | TBD                                |  |
| Environment   | Temperature   | Operating: Standard: 0 ~ 60 °C (32 ~ 140 °F) with 0.7m/s airflow; Extend: -20~70 °C (-4~158 °F) with 0.7m/s airflow<br>Storage: -40 ~ 85 °C (-40 ~ 185 °F) |                                    |  |
|               | Humidity  | Operating: 40 °C @ 95% relative humidity, non-condensing<br>Storage: 60 °C @ 95%relative humidity, non-condensing  |                                    |  |
|               | Vibration Resistance  | 3.5 Grms   |                                    |  |
| Certification | EMC   | CE, FCC Class B, ESD 8KV/15KV Criteria A   |                                    |  |
| Mechanical    | Dimensions  | 146 x 102 mm (5.7" x 4")   |                                    |  |
|               | Net Weight  | 128g (without Heatsink)  |                                    |  |

\*Note: Support by request

## Block Diagram



## Ordering Information

| Part No.          | SoC     | CPU Core                         | GPU         | AI DSP       | Memory     | Storage   | OS        | Thermal Solution | Operating Temperature | COO    |
|-------------------|---------|----------------------------------|-------------|--------------|------------|-----------|-----------|------------------|-----------------------|--------|
| MIO-5355Q6Z-U7A1U | QSC6490 | 8 Cores (1x A78, 3x A78, 4x A55) | Adreno™ 643 | Hexagon™ 770 | 8GB LPDDR5 | 128GB UFS | Yocto BSP | Passive          | -20 ~ 70 °C           | Taiwan |
| MIO-5355Q6Z-U7A1  | QSC6490 | 8 Cores (1x A78, 3x A78, 4x A55) | Adreno™ 643 | Hexagon™ 770 | 8GB LPDDR5 | 128GB UFS | Yocto BSP | Passive          | -20 ~ 70 °C           | China  |

## Packing List

| Part No.       | Description                     | Quantity |
|----------------|---------------------------------|----------|
|                | MIO-5355 SBC                    | 1        |
| 1970006216T001 | CPU Heatsink (Passive Solution) | 1        |

## Optional Accessories

| Part No.      | Description                             |
|---------------|---|
| TBD           | CPU Heatspreader                        |
| 1700032181-01 | Dual USB 3.0 Cable 35cm                 |
| 1700030404-01 | COM1/COM2 Cable 20cm                    |
| 1700031582-01 | COM3/COM4 Cable 20cm                    |
| MIOe-PSE-DPA1 | MIOe-PSE Dual Port 15.4W PoE PSE module |

## Rear I/O View



## Embedded OS/API

| OS/API           | Part No.         | Description                     |
|------------------|------------------|---------------------------------|
| Windows 11 LTSC  | TBD              | Win11 IoT Ent. LTSC 2024 64bit  |
| Ubuntu 24.04 LTS | TBD              | Ubuntu Desktop 24.04 LTS 64-bit |
| Software API     | Website Download | SUSI v4.0                       |