

深圳金亚太科技有限公司

Shenzhen Geniatech Co.,Ltd.

## SPECIFICATION

MODEL:CBD-iMX8MM-OSM

| APPROVED BY GENIATECH |               |                |
|-----------------------|---------------|----------------|
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|                      |                  |                 |

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CONTENT

1. GENERAL DESCRIPTION.....1

2. PRODUCT PICTURE..... 1

3. FEATURES.....1

4. Support FORMATS..... 4

5. PRECAUTIONS FOR USE ..... 5

Revision History

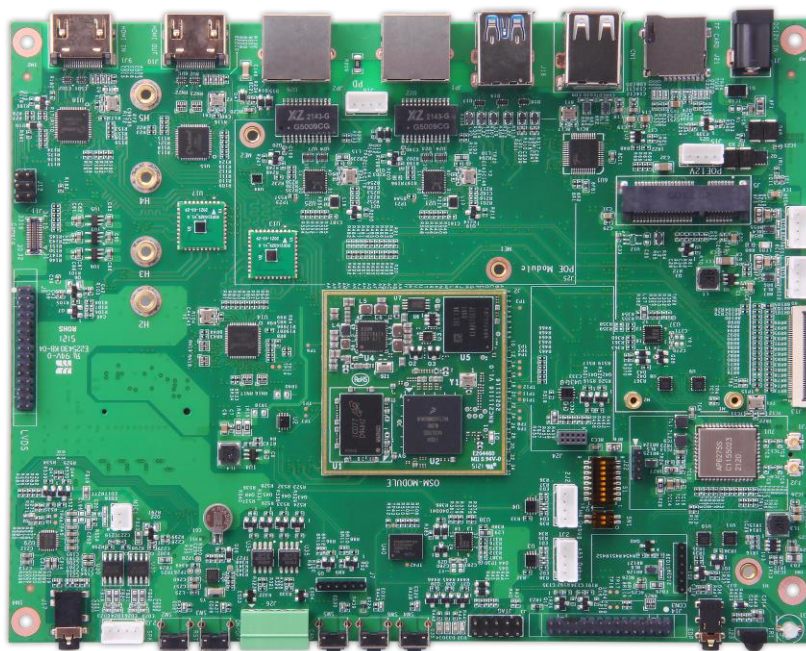
| VERSION | DATE   | BOARD ID  | PAGE | DESCRIPTION | AUTHOR |
|---------|--------|-----------|------|-------------|--------|
| V1.0    | 22/2/9 | RCB211030 |      |             |        |
|         |        |           |      |             |        |
|         |        |           |      |             |        |
|         |        |           |      |             |        |

## 1. GENERAL DESCRIPTION

The i.MX 8M Mini OSM Development Platform incorporates i.MX 8M Mini SoC based OSM SOM and OSM Carrier board for complete validation of i.MX 8M Mini SoC functionality. The Development board CBD-IMX8MM-OSM can be used for quick prototyping of various applications targeted by the i.MX 8M Mini Applications Processor. With the 195mmx150mm size, OSM Carrier board is highly packed with all the necessary on-board connectors to validate the features of i.MX 8M Mini OSM SOM. With the high SOC performance, Applications focusing on Machine Learning and Artificial Intelligence, NPU & Vision System, advanced multimedia and industrial automation, Vision and advanced sensing, Factory Automation, Machine Vision and more.

## 2. PRODUCT OVERVIEW

Below picture is for reference only, please prevail in kind.

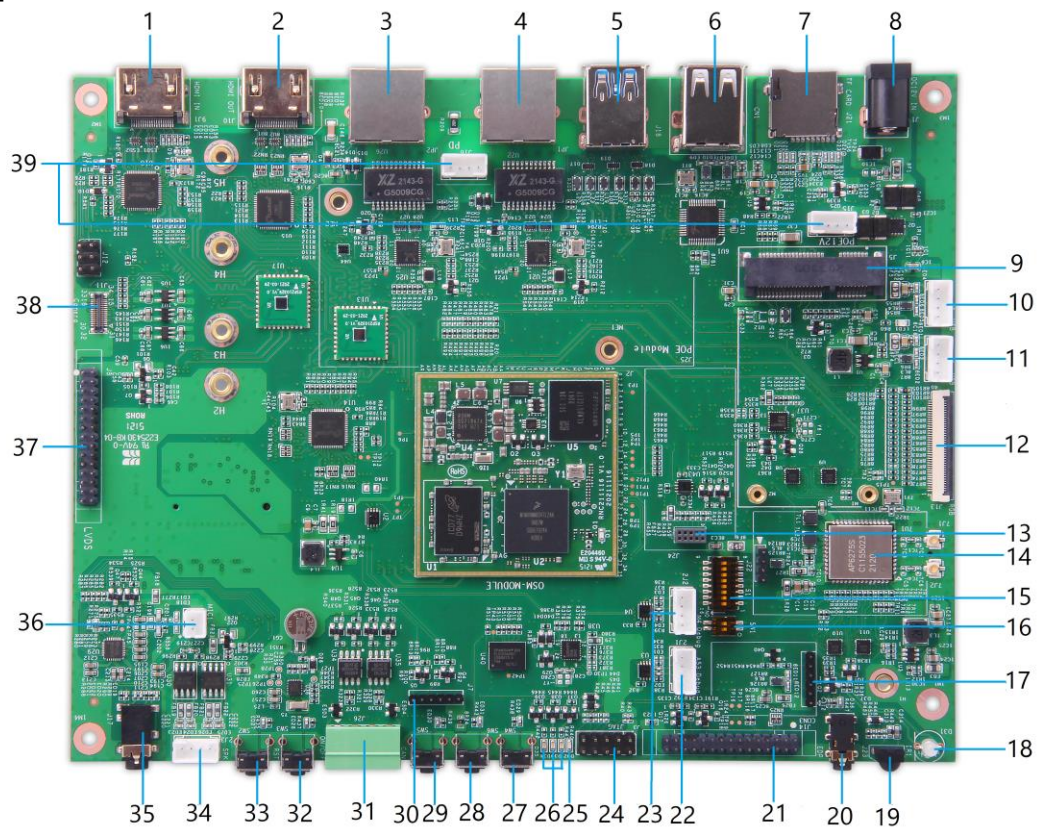


## 3.FEATURES

|             |                |                                                                           |
|-------------|----------------|---------------------------------------------------------------------------|
| CHIPSET     | NXP iMX8M Mini |                                                                           |
| MARKET AREA | Global         |                                                                           |
| OSM-Module  | OS             | Yocto(Linux)/Android                                                      |
|             | CPU            | 4xCortex-A53 core up to 1.8GHz per core<br>1x Cortex-M4 core up to 400MHz |
|             | LPDDR4         | 2GB (1G-8G optional)                                                      |
|             | EMMC FLASH     | 8GB eMMC5.1(8-32GB Optional)                                              |

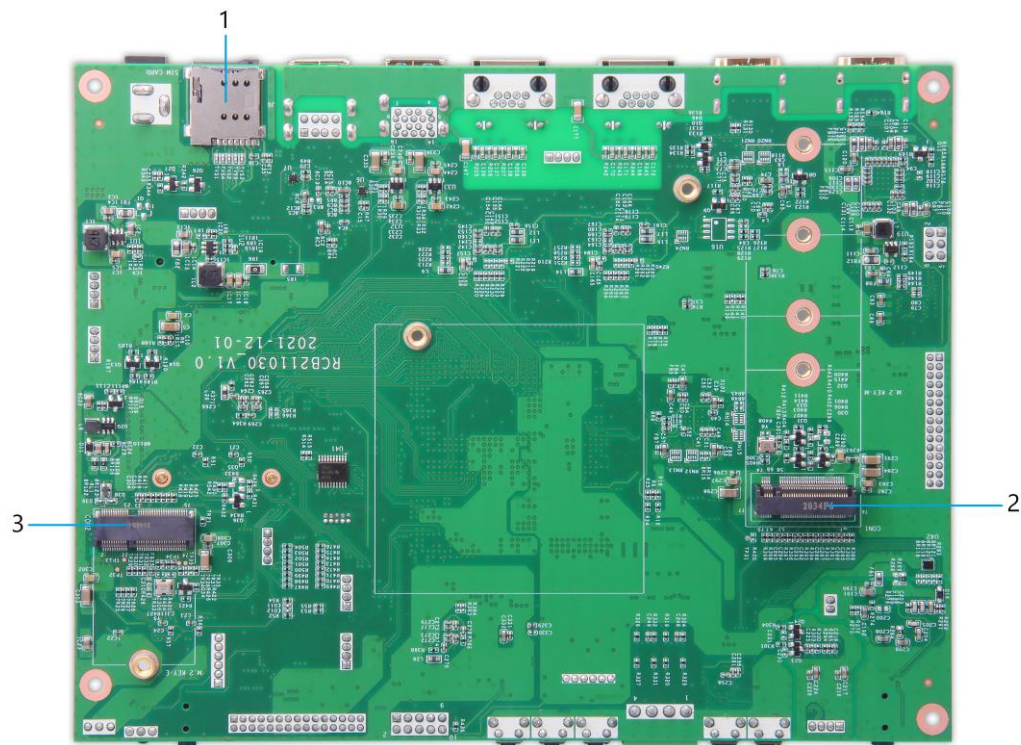
|                                    |                         |                                                       |                                                                                                               |
|------------------------------------|-------------------------|-------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|
| Development<br>board<br>Interfaces | <b>Gigabit Ethernet</b> | *2 Port (JP2 Support POE PD Function with POE Module) |                                                                                                               |
|                                    | <b>Wi-Fi/BT</b>         | AP6275S module, support 802.11 a/b/g/n/ac             |                                                                                                               |
|                                    | <b>USB 3.0</b>          | *2 (SOM-iMX8MM-OSM not support )                      |                                                                                                               |
|                                    | <b>USB 2.0</b>          | *4 (2* USB2.0 TypeA, 2* Expansion Connector )         |                                                                                                               |
|                                    | <b>HDMI OUT</b>         | *1 (HDMI 1.4A)                                        |                                                                                                               |
|                                    | <b>HDMI IN</b>          | *1                                                    |                                                                                                               |
|                                    | <b>TF Slot</b>          | *1                                                    |                                                                                                               |
|                                    | <b>SIM Card Slot</b>    | *1                                                    |                                                                                                               |
|                                    | <b>Mini-PCIE</b>        | *1(Support 4G module)                                 |                                                                                                               |
|                                    | <b>RGB Conn</b>         | *1                                                    |                                                                                                               |
|                                    | <b>GTIOT Conn</b>       | *1                                                    |                                                                                                               |
|                                    | <b>LVDS</b>             | *1                                                    |                                                                                                               |
|                                    | <b>MIPI CSI</b>         | *1                                                    |                                                                                                               |
|                                    | <b>eDP</b>              | *1                                                    |                                                                                                               |
|                                    | <b>JTAG</b>             | *1                                                    |                                                                                                               |
|                                    | <b>IR Module</b>        | *1 (Support USB IR RECEIVE MODULE)                    |                                                                                                               |
|                                    | <b>Speaker</b>          | *1                                                    |                                                                                                               |
|                                    | <b>CAN</b>              | *2                                                    |                                                                                                               |
|                                    | <b>M.2 Key-E</b>        | *1(Support Wifi/BT Module)                            |                                                                                                               |
|                                    | <b>M.2 Key-M</b>        | *1 (Support PCIe4)                                    |                                                                                                               |
|                                    | <b>DC-IN</b>            | 12V2A                                                 |                                                                                                               |
|                                    | <b>SW</b>               | SW1                                                   | 1.4pin Switch for Wi-Fi onboard module and M.2 Key-E Module<br>2.3pin Switch for USB Firmware update function |
|                                    |                         | SW2                                                   | System Reset                                                                                                  |
|                                    |                         | SW3                                                   | Power ON/OFF                                                                                                  |
|                                    |                         | SW4/SW5/SW6                                           | User customize                                                                                                |
|                                    |                         | S1                                                    | BOOT Module Switch                                                                                            |
|                                    | <b>Indicators</b>       | D31                                                   | System status indicator                                                                                       |
|                                    |                         | D32                                                   | System power indicator                                                                                        |
|                                    |                         | D33/D34/D35                                           | User customize indicator                                                                                      |
| <b>Dimensions</b>                  | 190*150mm               |                                                       |                                                                                                               |

**Top**



| Num       | Function         | Num       | Function                 | Num       | Function        |
|-----------|------------------|-----------|--------------------------|-----------|-----------------|
| <b>1</b>  | HDMI IN          | <b>14</b> | WiFi Module              | <b>27</b> | SW4             |
| <b>2</b>  | HDMI OUT         | <b>15</b> | Boot Module SW           | <b>28</b> | SW5             |
| <b>3</b>  | Gigabit Ethernet | <b>16</b> | SW1                      | <b>29</b> | SW6             |
| <b>4</b>  | Gigabit Ethernet | <b>17</b> | USB IR Module            | <b>30</b> | LVDS Power      |
| <b>5</b>  | USB 3.0 TypeA    | <b>18</b> | System Status Indicator  | <b>31</b> | CAN             |
| <b>6</b>  | USB 2.0 TypeA    | <b>19</b> | IR Receiver              | <b>32</b> | Power ON/OFF    |
| <b>7</b>  | TF Card Slot     | <b>20</b> | IR Blaster               | <b>33</b> | System Reset    |
| <b>8</b>  | DC-IN Jack       | <b>21</b> | eDP Conn                 | <b>34</b> | Speaker         |
| <b>9</b>  | Mini-PCIE(4G)    | <b>22</b> | A53 Debug UART           | <b>35</b> | Headphone Jack  |
| <b>10</b> | USB 2.0 Conn     | <b>23</b> | M4 Debug UART            | <b>36</b> | Mic Conn        |
| <b>11</b> | USB 2.0 Conn     | <b>24</b> | JTAG                     | <b>37</b> | LVDS Conn       |
| <b>12</b> | RGB Conn         | <b>25</b> | System power indicator   | <b>38</b> | MIPI CSI Conn   |
| <b>13</b> | GTIOT Conn       | <b>26</b> | User customize indicator | <b>39</b> | POE Module Conn |

## Bottom



| Num | Function      | Num | Function         | Num | Function         |
|-----|---------------|-----|------------------|-----|------------------|
| 1   | SIM Card Slot | 2   | M.2 KEY-M (PCIe) | 3   | M.2 KEY-E(Wi-Fi) |

## 4.SUPPORT FORMATS

### Audio

- S/PDIF input and output, including a new Raw Capture input mode
- Five synchronous audio interface (SAI) modules supporting I2S, AC97, TDM, codec/DSP, and DSD interfaces, including one SAI with 8 Tx and 8 Rx lanes, one SAI with 4 Tx and 4 Rx lanes, two SAI with 2 Tx and 2 Rx lanes, and one SAI with 1 Tx and 1Rx lane. Support over 20 channels of audio subject to I/O limitations.
- 8-Channel Pulse Density Modulation (PDM) input

### Video

- 1080p60 VP9 Profile 0, 2 (10-bit)
- 1080p60 HEVC/H.265 Decoder
- 1080p60 AVC/H.264 Baseline, Main, High decoder
- 1080p60 VP8
- 1080p60 AVC/H.264 Encoder
- 1080p60 VP8
- Trust Zone support

## **5. Precautions for use**

1. Relative humidity:  $\leq 80\%$  .
2. Operation temperature: Commercial field: 0~ 75℃; Industrial field: -20~85℃.
3. Keep the Board away from static electricity.
4. Keep the Board away from water and other liquid.
5. Don't use long connect wires which may affect performance and image quality.