Thundercomm

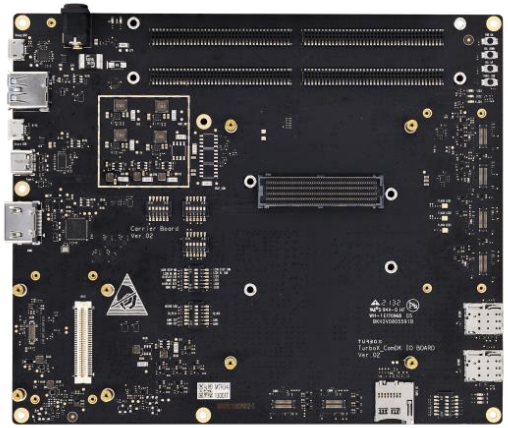
Thundercomm TurboX C6490 Development Kit

Quick Start Guide

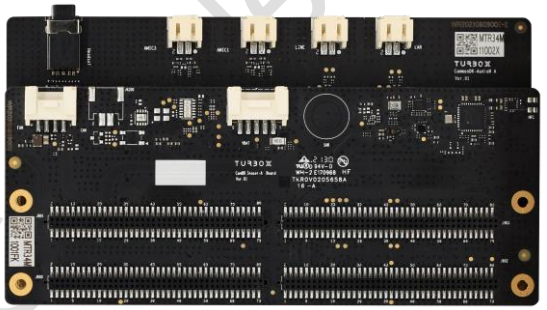
Rev. V1.0
DN: tc-x1-2110

Package List

C6490 Interposer Board



Main Board



Audio Board + Senser Board (assembly)

LCD Touch Panel*

Power Adapter

Wi-Fi/BT Antenna

Speaker (x2)

Camera Module

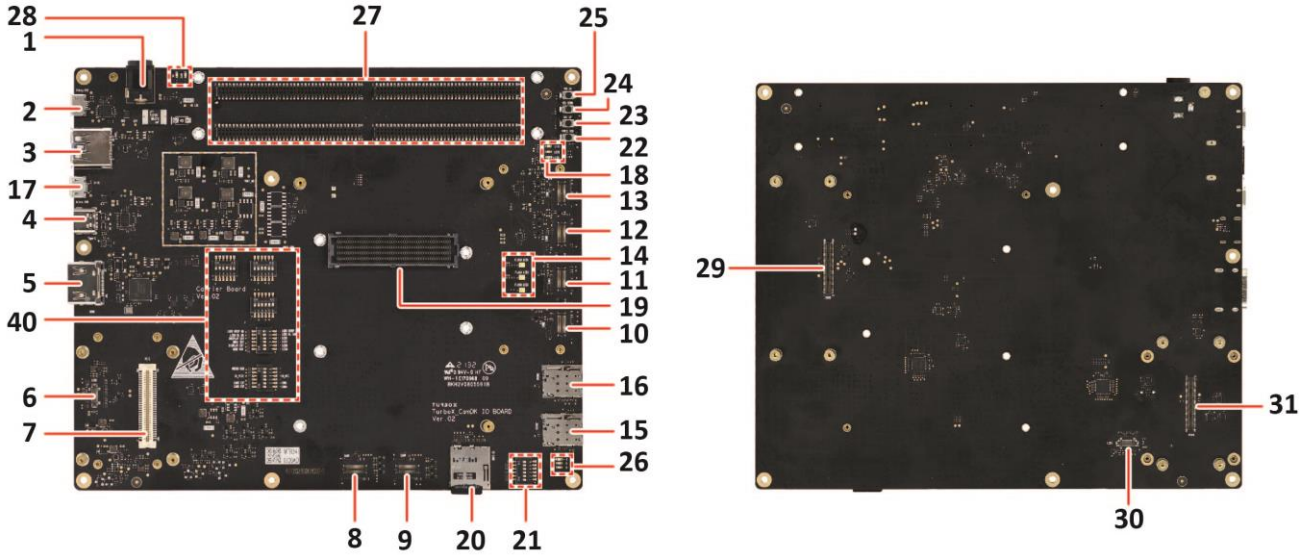
* Optional

.

Thundercomm Confidential

Copyright© 2022 Thundercomm Technology Co., Ltd. All rights reserved.

Main Board Interface List



Item	Reference	Description	Item	Reference	Description
1	J600	12V DC jack input, 2.5mm/5.5mm	16	SIM4200	Nano SIM card slot #1
2	USB3400	UART debug port, UART to USB	19	CON1000	500-pin connector to the Interposer Board
3	J3901 [a)]	USB Type-A port, only as host	20	J4100	SD card slot
17	USB3900 [b)]	Micro USB port, sharing DP/DM with USB Type C connector, **adb**/download/host/device	21	SW4404	6-pin switch, boot configuration and CBL • SW1, SDM_WDOG_DISABLE • SW2, SDM_FAST_BOOT_0 • SW3, SDM_FAST_BOOT_1 • SW4, SDM_FAST_BOOT_2 • SW5, SDM_FAST_BOOT_3 • SW6, CBL_PWR_N
4	J3900	USB Type-C port, **adb**/download/host/device	22	SW4403	Key, Force USB boot button
5	J3800	HDMI out interface, 2.0	23	SW4401	Key, Volume up button

Thundercomm Confidential

Copyright© 2022 Thundercomm Technology Co., Ltd. All rights reserved.

Item	Reference	Description	Item	Reference	Description
6	J3700 [c]	LCD1 interface (option)	24	SW4402	Key, Volume down button
7	J1200	PCIe expansion module connector, 2 x 2-lane	25	SW4400	Key, Power on button
8	J3401	Camera interface #5	26	• LED4406 • LED4407 • LED4411	3 x RGB LED from PMIC with independent brightness control: • LED4406, red LED • LED4407, green LED • LED4411, blue LED
9	J3400	Camera interface #4	18	• LED4400 • LED4402 LED4404	3 x RGB LED from GPIO: • LED4400, red LED • LED4402, green LED • LED4404, blue LED
10	J3300	Camera interface #2	27	• J1100 • J1101 • J1102 • J1103	• Low-speed connector to low-speed expansion board • 4 x 80-pin B2B connector
11	J3301	Camera interface #3	28	LED4401	LED4401, indicating Main Board power OK
				LED4403	LED4403, indicating SOM power input OK
12	J3200	Camera interface #0	29	J3500	90-pin B2B connector, for camera interface expansion such as HDMI in function and so on (with HDMI in)
13	J3201	Camera interface #1	30	J3600	LCD0 interface
14	LED4408 [d]	LED4408, Flash LED #3	31	J5000	90-pin B2B connector, for display interface expansion such as LVDs, 4k LCM
	LED4409	LED4409, Flash LED #2			
	LED4410	LED4410, Flash LED #1			
15	SIM4201	Nano SIM card slot #2	40	• SW1300 • SW1301 • SW2100 • SW2101 • SW2200	DIP switches for board function control

[a] Only HS 2.0 signal is available on C6490 SOM.

[b] C6490 USB0 is a complete Type-C port. By default, USB3900 is not used.

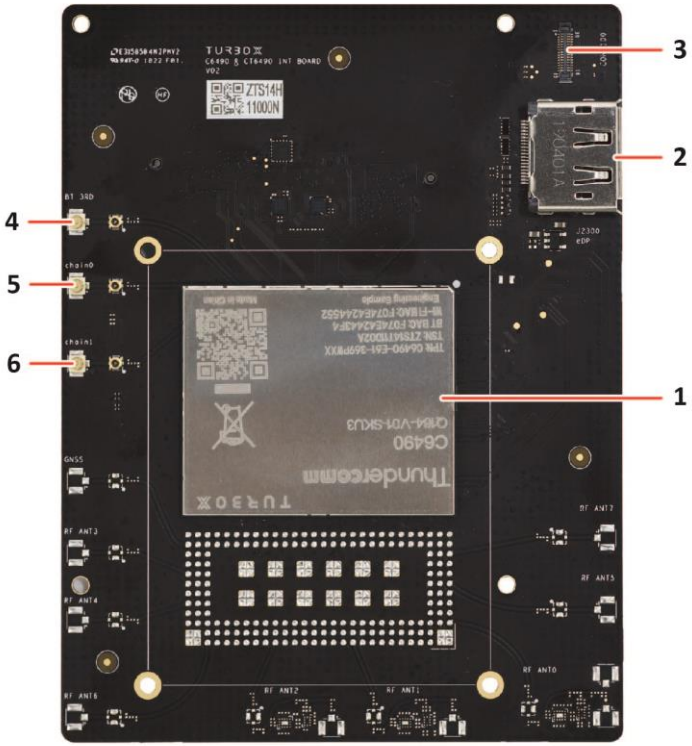
[c] C6490 has only one group of DSI0, and thus all LCD1 interfaces are unavailable.

[d] Unavailable on C6490.

Thundercomm Confidential

Copyright© 2022 Thundercomm Technology Co., Ltd. All rights reserved.

Interposer Board Interface List



Item	Reference	Description	Item	Reference	Description
1	U1100	C6490 SOM	4	J2004 [c]	ANT_BT_3RD, reserved for BT standalone antenna in 2-antenna solution
2	J2300 [a]	eDP connector	5	J2000	Wi-Fi/BT chain0
3	CON1100 [b]	Camera module connector, CSI4	6	J2002	Wi-Fi/BT chain1

[a] eDP is dedicated embedded DisplayPort, which is not supported with software temporarily.

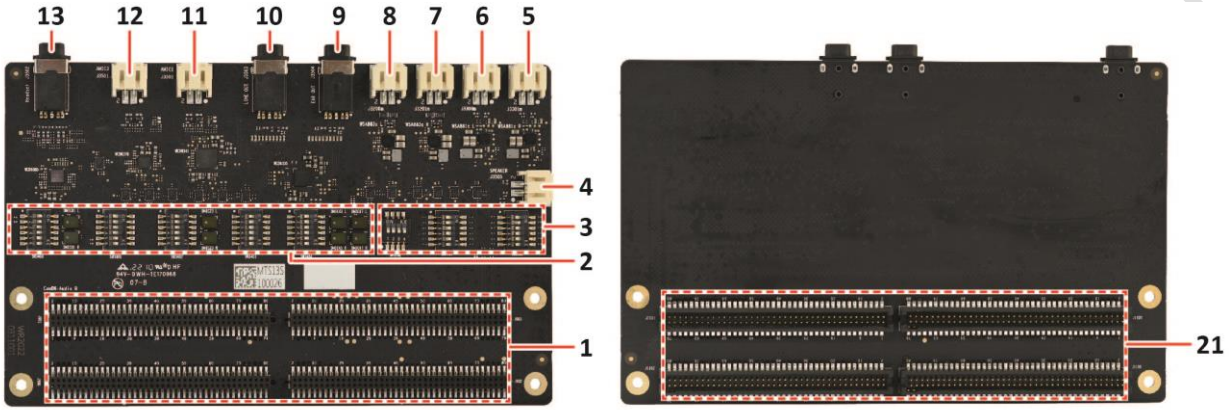
[b] This connector is reserved for internal CSI signal test only, and is thus unavailable to users.

[c] Reserved for BT standalone antenna solution; unavailable on C6490.

Thundercomm Confidential

Copyright© 2022 Thundercomm Technology Co., Ltd. All rights reserved.

Audio Board Interface List



Item	Reference	Description	Item	Reference	Description
1	J900 J901 J902 J903	• Low-speed connector to low-speed expansion board • 4 x 80-pin B2B connector	8	J3200M [b)]	Left WSA883x speaker connector
2	SW3400 SW3401 SW3402 SW3403 SW3404	DIP switch for DMIC connection selection	9	J3504	Ear out connector
3	SW3100 SW3101 SW3102	DIP switch to control Audio Board configuration	10	J3503	Line out connector
4	J3505 [a)]	Speaker connector	11	J3500	Analog microphone connector 1
5	J3301M [b)]	Right WSA881x speaker connector	12	J3501	Analog microphone connector 3
6	J3300M [b)]	Left WSA881x speaker connector	13	J3502	Headset connector
7	J3201M [b)]	Right WSA883x speaker connector	21	J1000 J1100 J1101 J1102	• Low-speed connector to Main Board • 4 x 80-pin B2B connector

[a)] Unavailable on C6490.

[b)] C6490 uses WSA8835 as the speaker amplifier, and thus J3201M and J3200M are available for C6490 speaker connection.

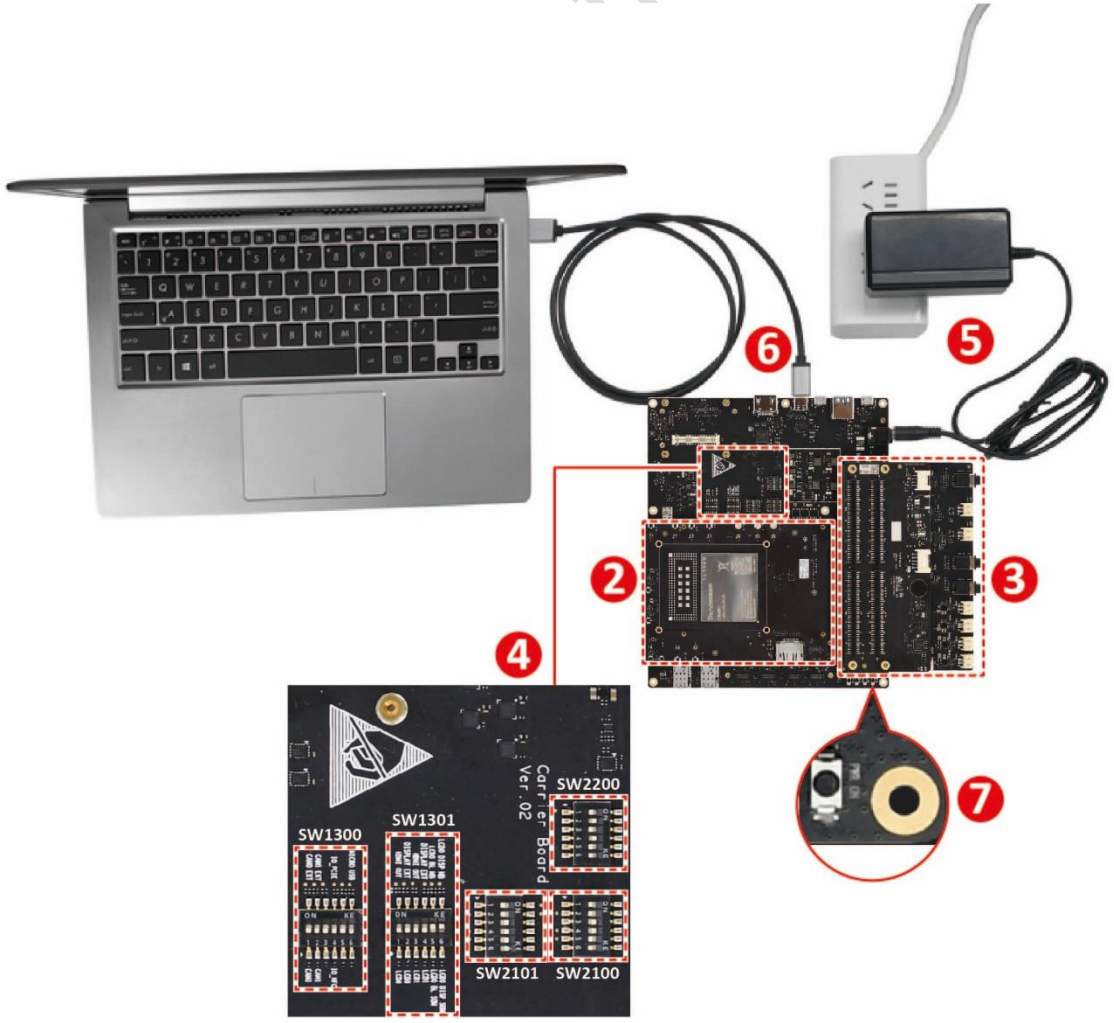
Thundercomm Confidential

Copyright© 2022 Thundercomm Technology Co., Ltd. All rights reserved.

Let’s Get Started

Follow the steps below to boot up your device.

1. Take out Interposer Board, Senser Board, and Main Board carefully from the package.
2. Connect the Interposer Board to the Main Board.
3. Connect the Senser Board and Audio Board to the Main Board.
4. Set the DIP switches on the Main board as follows:
   SW2200: 2, 4 - ON
   SW2100: 3, 4 - ON
   SW2101: 3~6 - ON
   SW1301: 5, 6 - ON
   SW1300: 1~6 - OFF
5. Connect the power adapter to the board assembly via **12V DC in jack** (connector 29).
6. Connect the board assembly to a computer via
   - **Type-C USB port** (connector 25) if **adb** tool is needed.
   - **Micro USB port (for UART debug)** (connector 28) if debug function is needed.
7. Press **Power on button** (connector 1) to boot up the device.



Thundercomm Confidential

Copyright© 2022 Thundercomm Technology Co., Ltd. All rights reserved.

Contact us

Email: service@thundercomm.com
Address: 1601 McCarthy Blvd Suite R-12 Milpitas CA,95035
Support software and documentation downloads: www.thundercomm.com

Notices and trademarks

Thundercomm may have patents or pending patent programs covering subject matter described in this document. The furnishing of this document does not give you any license to these patents. You can send license inquiries to service@thundercomm.com.

THUNDERCOMM PROVIDES THIS PUBLICATION "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some jurisdictions do not allow disclaimer of express or implied warranties in certain transactions; therefore, this statement may not apply to you.

Changes are made periodically to the information herein; these changes will be incorporated in new editions of the publication. To provide better service, Thundercomm reserves the right to improve and/or modify the products and software programs described in the manuals, and the content of the manual, at any time without additional notice.

The software interface and function and hardware configuration described in the manuals included with your development board or system on module might not match exactly the actual configuration of that you have purchased. For the configuration of the product, refer to the related contract (if any) or product packing list, or consult the distributor for the product sales. Thundercomm may use or distribute any of the information you supply in any way it believes appropriate without incurring any obligation to you.

The products described in this document are not intended for use in implantation or other life support applications where malfunction may result in injury or death to persons. The information contained in this document does not affect or change Thundercomm product specifications or warranties. Nothing in this document shall operate as an express or implied license or indemnity under the intellectual property rights of Thundercomm or third parties. All information contained in this document was obtained in specific environments and is presented as an illustration. The result obtained in other operating environments may vary.

The information of this document should not be as any invitation for offer or any advice to the visitors. Please consult the professional comments from the sales consultant prior to do any actions of investment or purchase.

Thundercomm may use or distribute any of the information you supply in any way it believes appropriate without incurring any obligation to you.

Any references in this publication to non-Thundercomm Web sites are provided for convenience only and do not in any manner serve as an endorsement of those Web sites. The materials at those Web sites are not part of the materials for this Thundercomm product, and use of those Web sites is at your own risk. Thundercomm shall not be responsible for the content of the third party.

Any performance data contained herein was determined in a controlled environment. Therefore, the result obtained in other operating environments may vary significantly. Some measurements may have been made on development-level systems and there is no guarantee that these measurements will be the same on generally available systems. Furthermore, some measurements may have been estimated through extrapolation. Actual results may vary. Users of this document should verify the applicable data for their specific environment.

This document is copyrighted by Thundercomm and the property right of the date mentioned in this document, including but not limited trademarks, patents, copyrights, trade name etc. are not covered by any open-source license. Thundercomm may update this document at any time without notice.

Anyone doesn’t have the right to amend, reprint, republication, reproduce, transmit, distribute or any other way to use this document in business or public purpose without the prior written consent by Thundercomm.

E-mail messages sent to Thundercomm via the Internet are not guaranteed to be completely secure. Thundercomm shall not be liable for any loss incurred by the surfer when transmitting any information over the Internet or for any loss incurred by Thundercomm when sending any information over the Internet at your request.

Thundercomm has all rights under other relevant exemptions provided by laws and regulations, and Thundercomm's failure to claim or delay in claiming such rights shall not be deemed to be a waiver of such rights by Thundercomm.

Thundercomm reserves the right of final interpretation of this document.

Thundercomm, Thundercomm Turbox, TURBOX, Thundersoft turbox are trademarks of Thundercomm Corporation or its associate companies in China and/or other countries. All other trademarks are the property of their respective owners.

Thundercomm
AIOT ENABLER