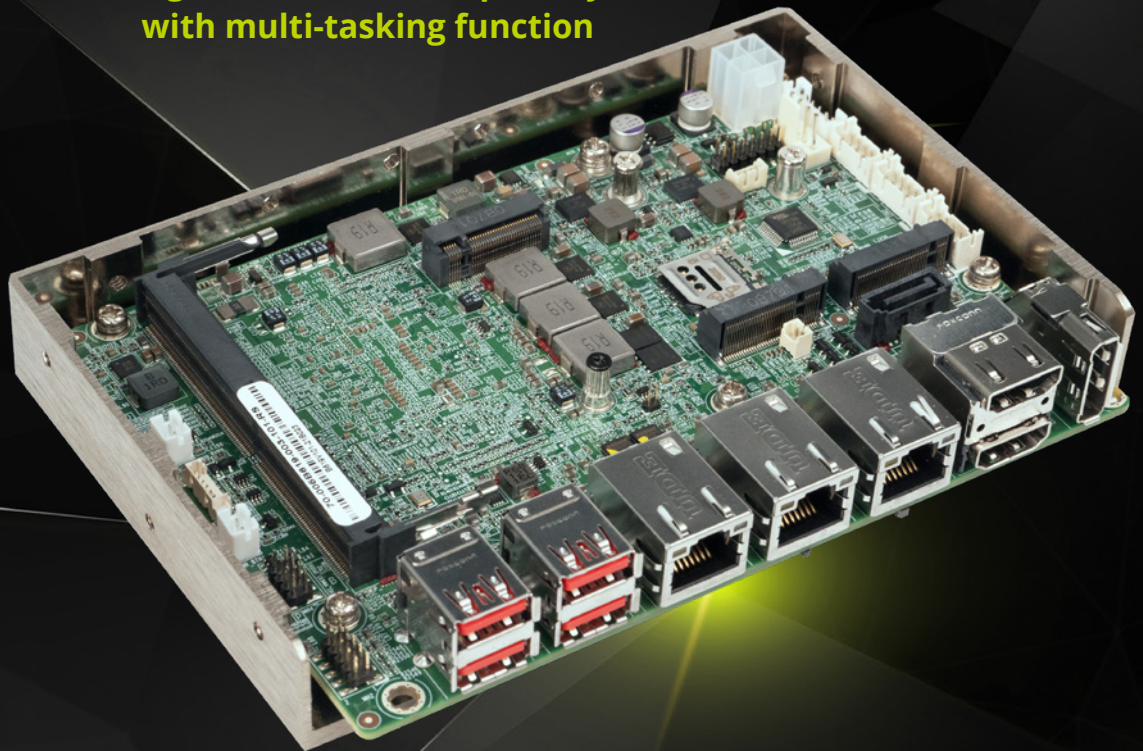


WAFER-TGL

Intel® Tiger Lake powered 3.5" embedded board, equipped with Intel® 11th Gen. Core™ i7/i5/i3, Celeron® UP3 processor

- Support four independent displays with 2 x HDMI 1.4, 1 x DP 1.4, 1 x IEI iDPM module.
- Support 4 x USB 3.2 gen2 (10Gb/s), 2 x USB 2.0, 1 x SATA 6Gb/s, 1 x RS-232, 2 x RS-232/422/485
- Support triple Intel® I225V 2.5GbE LAN
- Support M.2 A Key, B key expansions

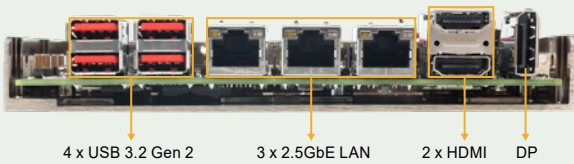
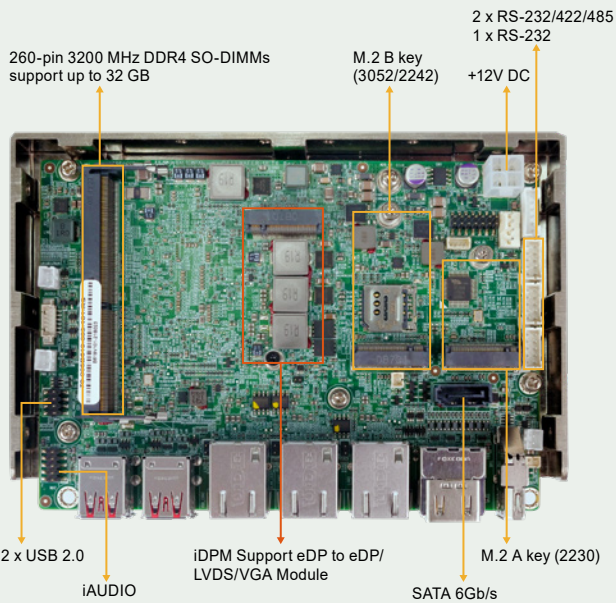
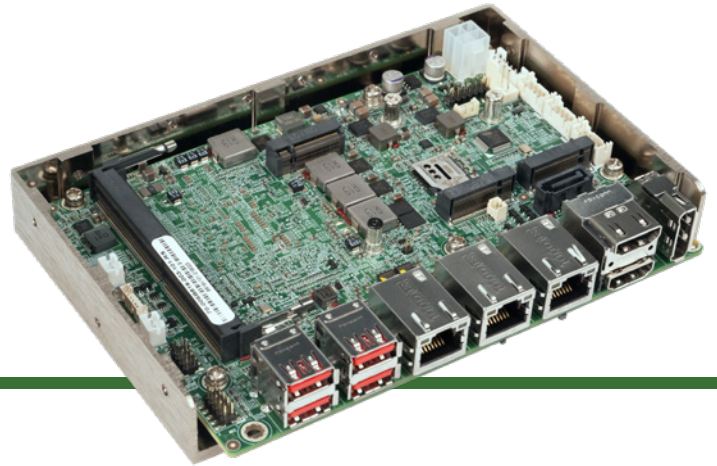
**High Performance Capability
with multi-tasking function**



www.ieiworld.com

WAFER-TGL

3.5" SBC with 10nm 11th Gen. Intel® Tiger Lake-UP3 Core™ i7/i5/i3 and Celeron® on-board SoC with HDMI, DP, iDPM, triple 2.5 GbE LAN , USB 3.2 Gen 2, M.2, SATA 6Gb/s, COM, iAUDIO, 0°C ~60°C and RoHS



Support Intel® Tiger Lake-UP3 Processors

Equipped with 11th Gen. Intel® Core™ i7/i5/i3, Celeron® UP3 processor, the WAFER-TGL features high performance, and can handle multitasking efficiently.



Support Intel® I225V 2.5GbE Network Controller

Two Gigabit RJ45 network ports are provided via Intel® I225V 2.5GbE network controller to achieve up to 2.5GbE network transmission rate.



Support USB 3.2 Gen 1 / Gen 2 up to 10Gb/s

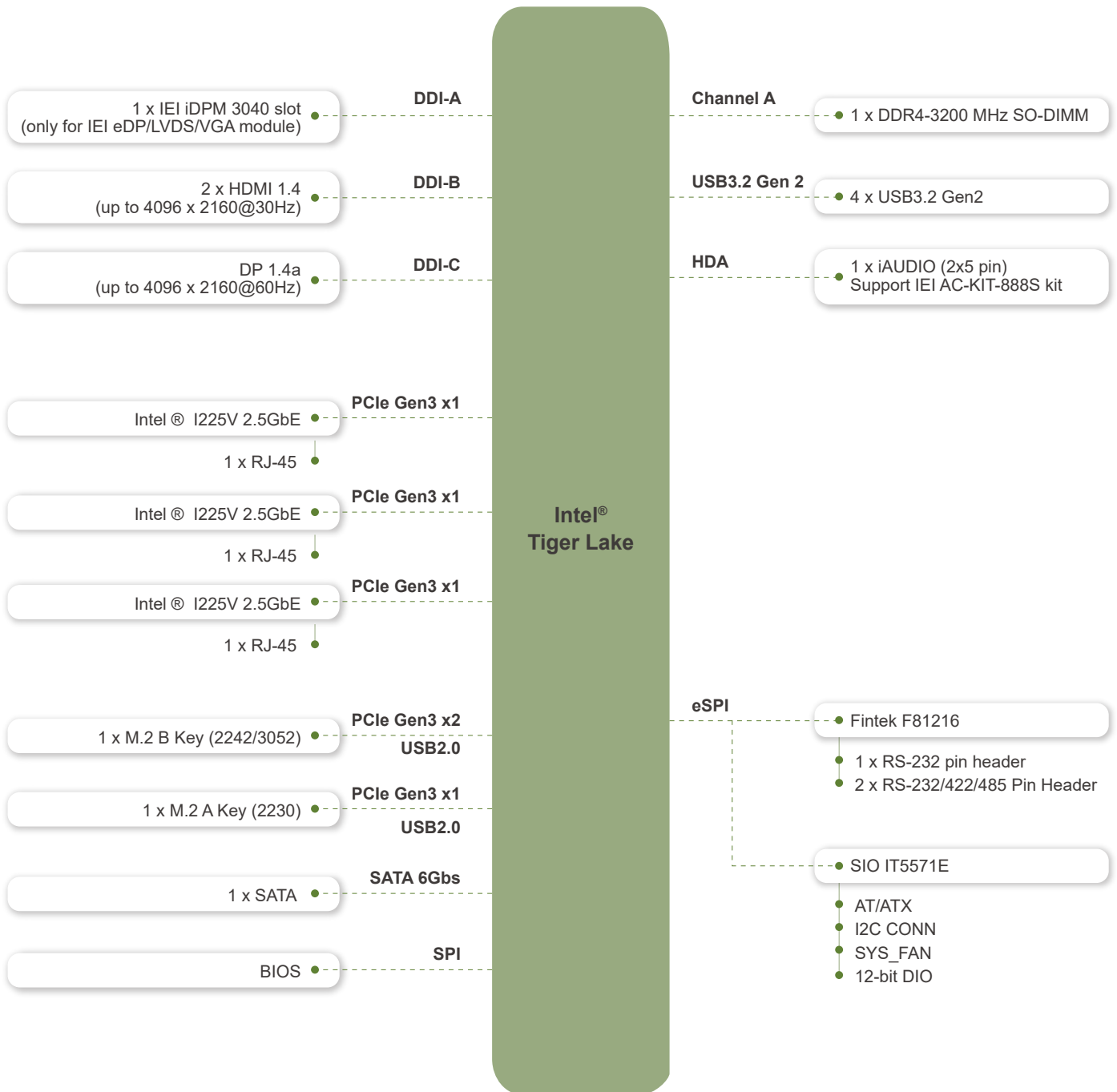
The design of the motherboard is based on USB 3.2 protocol. Four USB 3.2 Gen 2 (10Gb/s) are provided through external I/O for efficient data transfer rate. The WAFER-TGL also supports two internal USB 2.0 ports for additional wiring options.



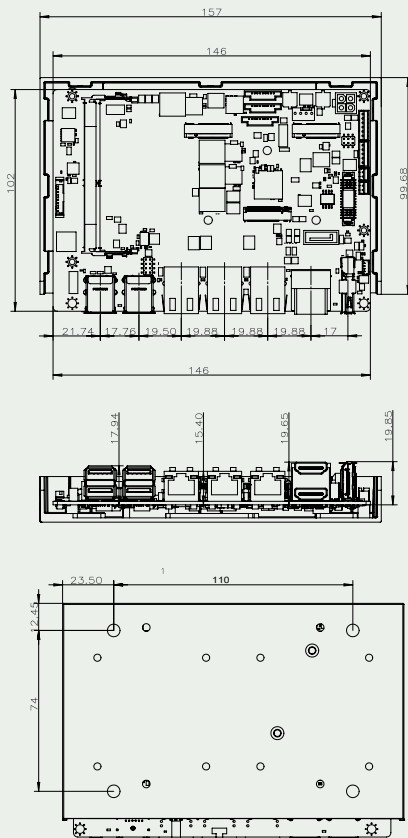
iEi-specific iDPM Interface

iEi uniquely designs a iDPM interface that can connect to display modules, enabling users to add LVDS/eDP/VGA display interface upon requirements.

WAFER-TGL Block Diagram



Dimensions



Optional accessories



Specifications

Model	WAFER-TGL
SOC	11th Gen. Intel® mobile Tiger Lake-UP3 SoC Intel® Core™ i7-1185G7E (up to 4.8GHz, quad-core, 12M Cache, TDP=28/15/12W) Intel® Core™ i5-1145G7E (up to 4.4GHz, quad-core, 8M Cache, TDP=28/15/12W) Intel® Core™ i3-1115G4E (up to 4.1GHz, quad-core, 6M Cache, TDP=28/15/12W) Intel® Celeron® 6305 (up to 1.8GHz, dual-core, 4M Cache, TDP=15W)
BIOS	AMI UEFI BIOS
Memory	1 x 260-pin 3200 MHz DDR4 SO-DIMMs support up to 32 GB
Graphics Engine	Intel® Gen11 UHD Graphics for Core™ i3-1115G4E and Celeron® 6305E, Intel® Iris® Xe Graphics for i5-1145G7E and i7-1185G7E
Display Output	Four Independent Displays 2 x HDMI 1.4 (up to 4096 x 2160@30Hz) 1 x DP 1.4 (up to 4096 x 2160 @60Hz) 1 x IEI iDPM 3040 slot (only for IEI eDP/LVDS/VGA module)
Ethernet	LAN1: Intel® I225V 2.5GbE LAN2: Intel® I225V 2.5GbE LAN3: Intel® I225V 2.5GbE
External I/O	4 x USB 3.2 Gen 2 (10Gb/s)
Internal I/O	1 x SATA 6Gb/s 2 x USB 2.0 pin header (P=2.0) 2 x RS-232/422/485 (2x5 pin, P=2.0) 1 x RS-232 (2x5 pin, P=2.0)
I ² C	1 x I ² C (1x4 pin)
Audio	1 x iAUDIO (2x5 pin) supporting IEI AC-KIT-888S kit
Front Panel	1 x Power LED & HDD LED (1x6 pin P=2.0) 1 x Power button (1x2 pin P=2.0) 1 x Reset button (1x2 pin P=2.0)
LAN LED	3 x LAN LED (1x2 pin)
Expansion	1 x M.2 A key for Wi-Fi & BT (2230) (PCIe Gen3 x1/USB 2.0 signal) 1 x M.2 B key (3052/2242) w/ SIM holder (PCIe Gen3 x2/USB 2.0 signal)
Digital I/O	1 x 12-bit digital I/O (2x7pin)
TPM	Intel® PTT (TPM 2.0)
Fan Connector	1 x System fan connector (1x4 pin)
Power Supply	+12V DC input power (AT/ATX mode)
Watchdog Timer	Software Programmable support 1~255 sec. System reset
Power Consumption	12V@4.0A (11th Gen Intel® Core™ i5-1145G7E 2.6GHz with 8GB 3200MHz DDR4 memory and EUP enabled)
Operating Temperature	0°C ~ 60°C
Storage Temperature	-20°C ~ 70°C
Operating Humidity	5% ~95%, non-condensing
Dimension	146mm x 102mm
Weight	GW: 850g / NW: 350g
Certification	CE/FCC Compliant

Packing List

1 x WAFER-TGL-U single board computer	1 x SATA with power cable kit
1 x Power cable for P4	1 x QIG

Ordering Information

WAFER-TGL-U-C-R10	3.5" SBC with Intel® Tiger Lake-UP3 Celeron® 6305 Processor, DDR4 SO-DIMM, 12V DC input, quad display, triple Intel® 2.5 GbE, SATA, USB 3.2, M.2, SoC, RoHS
WAFER-TGL-U-i3-R10	3.5" SBC with Intel® Tiger Lake-UP3 Core™ i3-1115G4E Processor, DDR4 SO-DIMM, 12V DC input, quad display, triple M.2 A/B key, triple Intel® 2.5 GbE, SATA, USB 3.2, SoC, RoHS
WAFER-TGL-U-i5-R10	3.5" SBC with Intel® Tiger Lake-UP3 Core™ i5-1145G7E Processor, DDR4 SO-DIMM, 12V DC input, quad display, triple M.2 A/B key, triple Intel® 2.5 GbE, SATA, USB 3.2, SoC, RoHS
WAFER-TGL-U-i7-R10	3.5" SBC with Intel® Tiger Lake-UP3 Core™ i7-1185G7E Processor, DDR4 SO-DIMM, 12V DC input, quad display, triple M.2 A/B key, triple Intel® 2.5 GbE, SATA, USB 3.2, SoC, RoHS

Optional Accessories

CB-USB02A-RS	Dual port USB cable with bracket, 300mm, P=2.0
AC-KIT-888S-R10	Realtek ALC888S 7.1 Channel HD Audio peripheral board, RoHS
32205-002700-200-RS	RS-232/422/485, 200mm, P=2.0
CM-WAFER-WF-R10	Cooler Module (W/FAN); Mechanical; for 3.5" WAFER series, RoHS
CM-WAFER-WOF-R10	Cooler Module (W/O FAN); Mechanical; for 3.5" WAFER series, RoHS
iDPM-eDP-R10	eDP to eDP DisplayPort converter board (for IEI iDPM connector)
iDPM-LVDS-R10	eDP to LVDS DisplayPort converter board (for IEI iDPM connector)