



ECM-TGU

11th Gen Intel® Core™ SoC i7/i5/i3 & Celeron BGA Processor 3.5" Micro Module

- > Bottom Layer Soldered Processor
- > Single 260-pin SO-DIMM DRAM Socket, Max, Up to 32GB DDR4 3200MTs (non-ECC Supported)
- > Four Display, 2 x DP++, 1 x 2CH LVDS, 1 x eDP
- > Expansion Slot, M.2 Key-B, M.2 Key-E, M.2 Key-M
- > Three Gigabit Ethernet, 1 x 2.5GbE, 2 x 1GbE
- > Wide Temperature -20°C ~ 60°C sku supported
- > DC-Input, +12~+24VDC

+ Spec

-System Information-	
Processor	Onboard 11th Gen. Intel® Core™ SoC i7/i5/i3 & Celeron® BGA Processor Intel® Core™ i7-1185G7E, i7-1185GRE (up to 4.4GHz, quad-core, 12M Cache, TDP: 28/15W) Intel® Core™ i5-1145G7E, i5-1145GRE (up to 4.1GHz, quad-core, 8M Cache, TDP: 28/15W) Intel® Core™ i3-1115G4E, i3-1115GRE (up to 3.9GHz, dual-core, 6M Cache, TDP: 28/15W) Intel® Celeron® 6305E (up to 1.8GHz, dual-core, 4M Cache, TDP: 15W)
System Memory	Single 260-pin DDR4 SODIMM Socket, Supports Up to 32GB DDR4 3200MTs SDRAM (non ECC only)
I/O Chipset	ITE IT8528E
BIOS Information	AMI BIOS, 256Mbit SPI Flash ROM
Watchdog Timer	HW Reset, 1sec. ~ 65535sec and 1sec. or 1min./step
H/W Status Monitor	CPU & system temperature monitoring Voltages monitoring
TPM	TPM 2.0 (Onboard NuvoTon NPCT754AADYX)
Expansion	
Expansion	1 x M.2 Key E 2230 support WiFi module (with PCIe x1 & USB 2.0 Signal) 1 x M.2 Key B 3042/2242 (with PCIe x1, SATA and USB2.0 signal, with 1 x SIM card slot) standard package with 52 to 42 bracket + screw set ; Support 4G, no 5G (no USB3.0 signal). 1 x M.2 Key M support 2260/2242 (with 1 x PCIe Gen4 x4 signal), standard package with 60 to 42 bracket + screw set
Storage	
Storage	1 x M.2 (Key-B, 2242) 1 x M.2 (Key-M, 2260/2242) 1 x SATA III
I/O	
USB Port	4 x USB 3.2 Gen 2x1 4 x USB 2.0
COM Port	2 x RS-232/422/485 4 x RS232
SATA	1 x SATA III
DIO	1 x 2 x 6 pin, pitch 2.00mm connector for GPIO: 8 bits & +3.3S Level
Other	3 x LAN
Display	
Graphic Chipset	Intel® Tiger Lake UP3 SoC Processor integrated Gen12 graphics
Spec. & Resolution	DP++ Max resolution 4096x2160@60Hz LVDS Max resolution 1920 x 1080 Dual channel 18/24-bits eDP1.3 Max resolution 4096x2160@60Hz
Multiple Display	Four Display
LVDS	1 x LVDS: 1920 x 1080 Dual channel 18/24-bits LVDS (Chrontel CH7511B-BFI eDP to LVDS)
Audio	
Audio Codec	Realtek ALC888S
Audio Interface	Mic-In, Line-In, Line-Out
Audio Amplifier	3W Amplifier
Certifications	
Certification Information	CE FCC Class B
Ethernet	
LAN Chipset	Intel® I226LM for standard temperature Intel® I226IT for extend temperature
Ethernet Interface	3 x Intel® I226LM/I226IT 2.5 Gigabit Ethernet (I226IT for Extend Temperature SKU)
LAN Port	3 x RJ-45
Mechanical & Environmental	
Operating Temperature	Standard Temperature: 0°C ~ 60°C (-4~140°F) with 0.5m/s air flow Wide Temperature: -20°C ~ 60°C(32~140°F) with 0.5m/s air flow for Wide Temp CPU SKU
Storage Temperature	-40°C ~ 75°C (-40°F ~ 167°F)



Operating Humidity	40°C @ 95% Relative Humidity, Non-condensing
Weight	0.44lbs (0.2kg)

Vibration Test	1.5Grms, IEC 60068-2-64, Random, 5 ~ 500Hz, 30min/Axis, 3 Axis
Shock Test	10G, IEC 60068-2-27, Half Sine, 11ms, Z Axis
Drop Test	ISTA 2A, IEC-60068-2-32 Test : Ed, 1 Corner, 3 Edges, 6 Faces
Power Requirement	DC in +12V ~ +24V
ACPI	Single power ATX Support S0,S3, S4, S5 ACPI 5.0 Compliant
Power Mode	AT/ATX (Default Setting: AT)
Dimension (L x W)	5.7" x 4" (146mm x 101mm)

Software Support

OS Information	Win 10 Linux
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Ordering Information

Ordering Information	<p>ECM-TGU-85-B1R 3.5" W/71185G7E/6COM/8USB/15W/I226/B1</p> <p>ECM-TGU-45-B1R 3.5" W/51145G7E/6COM/8USB/15W/I226/B1</p> <p>ECM-TGU-15-B1R 3.5" W/31115G4E/6COM/8USB/I226/15W/B1</p> <p>ECM-TGU-85W-B1R 3.5" W/71185GRE/6COM/8USB/15W/I226/B1</p> <p>ECM-TGU-45W-B1R 3.5" W/51145GRE/6COM/8USB/15W/I226/B1</p> <p>ECM-TGU-15W-B1R 3.5" W/31115GRE/6COM/8USB/15W/I226/B1</p> <p>ECM-TGU-85W-B1-1R 3.5" W/71185GRE/6COM/8USB/28W/I226/B1</p> <p>ECM-TGU-45W-B1-1R 3.5" W/51145GRE/6COM/8USB/28W/I226/B1</p> <p>ECM-TGU-15W-B1-1R 3.5" W/31115GRE/6COM/8USB/28W/I226/B1</p> <p>ECM-TGU-6305-B1R 3.5" W/6305E/6COM/8USB/I226/15W/B1</p>
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