



ECM-TGUC

11th Gen Intel® Core™ SoC i5/i3 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)
- > Triple display, 2 x DP++, 1 x 2CH LVDS/1x eDP (Default LVDS)
- > Expansion Slot, M.2 Key-B, M.2 Key-E, M.2 Key-M
- > Dual Gigabit Ethernet, 1 x 2.5GbE, 1 x 1GbE
- > TPM
- > DC-Input, +12~+24VDC

+ Spec

-System Information-	
Processor	Onboard 11th Gen. Intel® Core™ SoC i5/i3 BGA Processor Intel® Core™ i3-1115G4 (up to 4.1GHz, dual-core, 6M Cache, TDP: 28/15W) Intel® Core™ i5-1135G7 (up to 4.2GHz, quad-core, 8M Cache, TDP: 28/15W)
System Memory	Single 260-pin DDR4 SODIMM Socket, Supports Up to 32GB DDR4 3200MTs SDRAM (non ECC only)
I/O Chipset	NCT6126
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	Onboard NuvoTon NPCT750AADYX support TPM 2.0, co lay Infineon SLB9670VQ2.0 & 國民技術 Z32H330TC-SQN-755
Expansion	
Expansion	1 x M.2 Type M 2280 (with 1 x PCI-e Gen4 x4) 1 x M.2 Type B 3042/3052/2242 (with SATA and USB2.0, USB 3.0, with 1 x SIM card slot, support WWAN+GNSS or SSD) * Only supports one SIM card (co-lay 1 x 10pin FPC connector for uSIM card adapter) 3.8V for 5G 1 x M.2 Key E 2230 support WiFi module (1 x PCI-e x 1 & USB 2.0 Signal))
Storage	
Storage	1 x M.2 (Key-B, 3052) 1 x M.2 (Key-M, 2280) 1 x SATA III
I/O	
USB Port	3 x USB 3.2 Gen 2x1 5 x USB 2.0
COM Port	1 x RS-232/422/485 5 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	2 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 or 1x eDP 1920 x 1080@60Hz (2 Lanes), default LVDS
Multiple Display	Triple Display
LVDS	1 x LVDS: 1920 x 1080 Dual channel 18/24-bits LVDS (Chrontel CH7513A-BF eDP to LVDS)
Audio	
Audio Codec	RealTek ALC888S-VD2-GR
Audio Interface	Mic-In, Line-In, Line-Out in pin header
Certifications	
Certification Information	CE FCC Class B
Ethernet	
LAN Chipset	Intel® I219LM Gigabit Ethernet Intel® I225V Gigabit Ethernet
Ethernet Interface	1 x 10/100/1000/2.5G Base-Tx GbE compatible 1 x 10/100/1000 Base-Tx GbE compatible
LAN Port	2 x RJ-45
Mechanical & Environmental	
Operating Temperature	Standard Temperature: 0°C ~ 60°C (-4~140°F) with 0.5m/s air flow
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 ACPI5.0 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
Ordering Information	
Ordering Information	ECM-TGUC-15-A1R, ECM-TGUC/i31115G4/1SATA/6COM/8USB/15W/A1 ECM-TGUC-35-A1R, ECM-TGUC/i51135G7/1SATA/6COM/8USB/15W/A1