ROScube Pico TGL

Embedded Real-Time Robotic Controller with 11th Gen Intel® Core Processor

Features

- x86-64 mainstream architecture for ROS 2 development
- Ruggedized, secure connectivity with locking USB ports
- Integrated hard and soft real-time mechanism



Introduction

ADLINK's ROScube Pico TGL is a real-time ROS 2 enabled robotic controller based on the 11th Gen Intel® Core™ i7/i5/i3 processors with Intel® Iris® Xe Graphics featuring exceptional I/O connectivity and supporting a wide variety of sensors and actuators for unlimited robotic applications. The ROScube Pico TGL supports the full complement of resources developed with ADLINK Neuron SDK, a perfect platform for development of industrial use service robotic applications such as autonomous mobile robots (AMR) and autonomous mobile industrial robots (AMIR)

Software Support

- **Ubuntu 20.04**
- **ADLINK Neuron SDK**
- **ROS/ROS 2**

Ordering Information

- **RQP-T37**
  11th Gen Intel® Core™ i7-1185G7E, 32GB DDR4 3200MHz, 256GB NVMe SSD
- **RQP-T35**
  11th Gen Intel® Core™ i5-1145G7E, 16GB DDR4 3200MHz, 128GB NVMe SSD
- **RQP-T33**
  11th Gen Intel® Core™ i3-1115G4E, 8GB DDR4 3200MHz, 64GB NVMe SSD

Optional Accessories

- **Wireless Module**
  Intel® Wireless-AC 9260 M.2 2230, Dual-Band 2x2 Wi-Fi + Bluetooth+ 5 kit (P/N: 91-95278-0010)
- **AC/DC power adapter**
  90W AC/DC power adapter (P/N: 31-62137-0000)

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ROScube Pico TGL

Specifications

Model Name	RQP-T37	RQP-T35	RQP-T33
System Core			
Processor	Intel® Core™ i7-1185G7E 28W	Intel® Core™ i5-1145G7E 28W	Intel® Core™ i3-1115G4E 28W
Cores	4	4	2
Threads	8	8	4
Base Freq.	1.8GHz @ 15W	1.5GHz @ 15W	2.2GHz @ 15W
Max. Turbo Freq.	4.4GHz	4.1GHz	3.9GHz
Memory	2x 16GB DDR4 3200MHz	2x 8GB DDR4 3200MHz	2x 4GB DDR4 3200MHz
Front I/O Interfaces			
Display	1x DP, 1x HDMI		
Ethernet	1x 1GbE, 1x 2.5GbE		
	LAN1: Intel® I219LM 10/100/1000 Mbps		LAN1: Intel® I219V 10/100/1000 Mbps
	LAN2: Intel® I225LM, 10/100/1000/2500 Mbps		
USB	1x USB 3.2 Gen2 Type A port with lockable connectors 1x USB 3.2 Gen2 Type A port		
Rear I/O Interface			
Audio	1x headphone, 1x microphone jack		
USB	1x USB 3.2 Gen2 Type A port with lockable connectors 1x USB 3.2 Gen2 Type A port 2x USB 3.2 Gen2 Type C ports		
Internal I/O Interfaces			
M.2	1x M.2 Key-E 2230 for Wi-Fi 1x M.2 Key-M for NVMe PCIe Gen4 x4 SSD		
TPM	TPM 2.0		
Side I/O interface			
Series Ports	COM 1: RS-232		
Power Management	COM 2: 1x power button, 1x reset button, 1x power LED		
Storage Devices			
M.2 M Key	256GB NVMe	128GB NVMe	64GB NVMe
Power Requirements			
DC Power Input	12-19VDC (±10% tolerance, reverse polarity protection)		
Power Consumption	60.5 W		
AC/DC Power Adapter	90W AC/DC power adapter (optional, see ordering information)		
Mechanical			
Dimensions (WxDxH)	140 x 110 x 63 mm (5.5 x 4.33 x 2.48 inches)		
Weight	1,086 g		
Mounting	Wall mount kit		
Environmental			
Operating Temperature	0°C-50°C (with 0.6 m/s airflow)		
Operating Humidity	~95% @40°C (non-condensing)		
Storage Temperature	-40°C to 85°C (-40°F to 185°F)		
Vibration	IEC 60068-2-64: Operating 3Grms, 5-500 Hz, 3 axes w/ M.2 2280 SSD		
Shock	Operating: 50G, half sine 11ms duration w/ M.2 SSD		
EMI	CE & FCC Class B with validated AC/DC adapter (EN 55032/35, EN 61000-6-4/-2)		
EMS	IEC 61000-4-2: ESD, contact: ±4kV, air: ±8kV IEC 61000-4-3: RS, 10V/m from 80-1000MHz, 3V/m from 1400-2000MHz, 1V/m from 2000-2700MHz, 1kHZ sine wave, 80% AM IEC 61000-4-4: EFT, ±1kVat 5KHz on power port, ±0.5kV at 5KHz on signal port IEC 61000-4-5: Surge, ±1kV line to earth CM on power port, ±0.5kV line to earth CM on signal port IEC 61000-4-6: CS, 1Vrms with 1kHz sine wave, 80% AM from 0.15MHz-80MHz IEC 61000-4-8: power-frequency magnetic fields IEC 61000-4-11: voltage dips & voltage interruptions		
Safety	LVD		
MTBF information			
MTBF	50°C, ≦ 98,196 Hrs		
Software			
SDK	ADLINK Neuron SDK		
Environment	Compatible with Ubuntu 20.04		
Middleware	ROS/ROS 2 Intel® Distribution of OpenVINO™		

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