

DATA SHEET



TigoMASTER 2TH-PN
CT241-0003t2-02

TigoMASTER 2TH-EIP
CT241-0004t2-01

TigoMASTER 2TH-CAT
CT241-0008t2-01

TigoMaster 2TH is an industrial-grade IP67 IO-Link Wireless Master platform. It has two IO-Link Wireless tracks, each supporting up to 8 devices, 16 IO-Link Wireless devices simultaneously. Each transmission track is designed with its own transceiver and dedicated antenna.

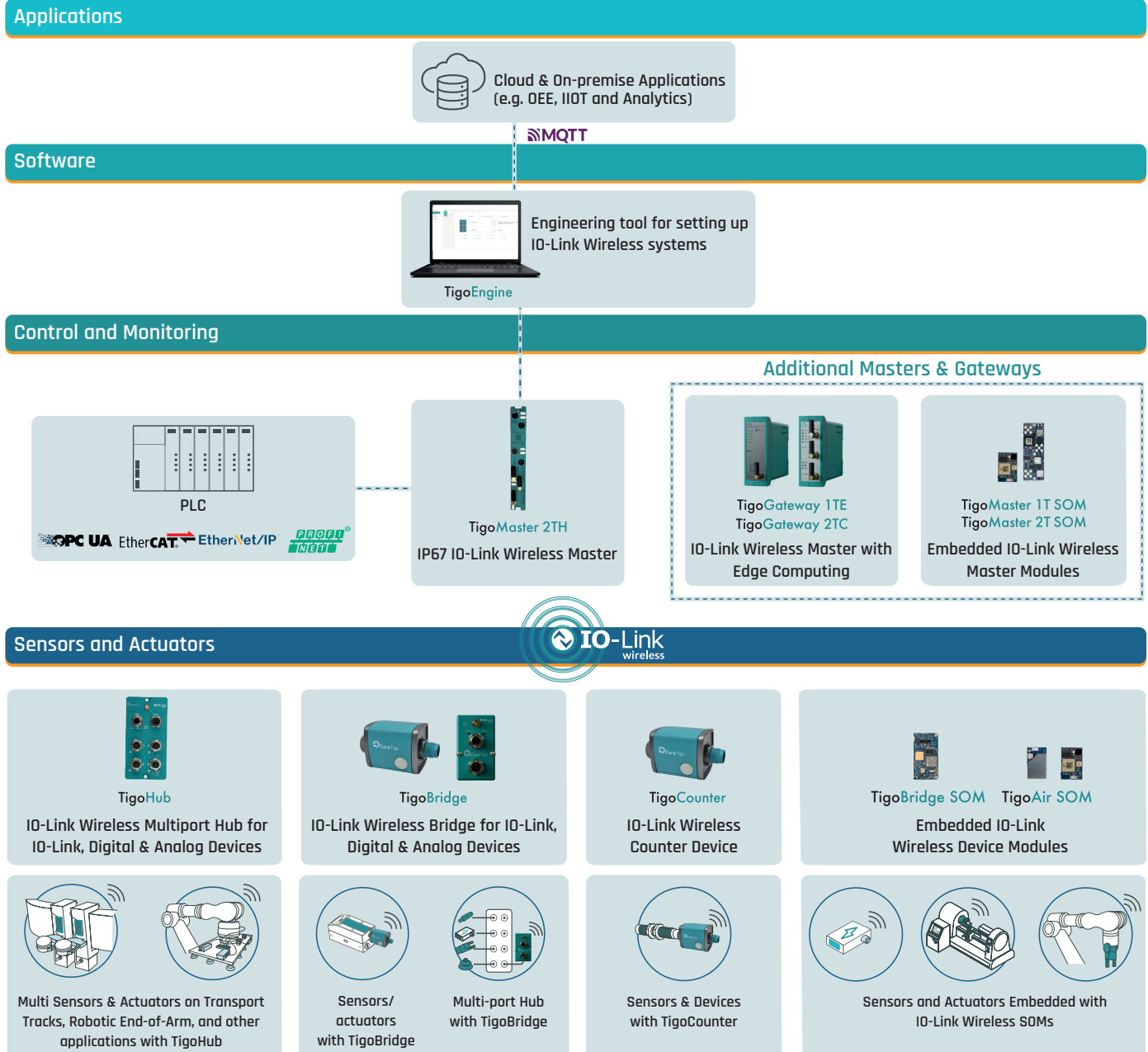
The TigoMaster 2TH includes interfaces to a variety of Industrial Ethernet protocols, such as EtherNet/IP, PROFINET, EtherCAT and OPC UA. It connects directly to both the PLC and the IT network. The TigoMaster 2TH can be setup, configured and monitored by the TigoEngine (CoreTigo's Engineering Tool for IO-Link Wireless systems), via an internal Web Server interface or by a PLC.

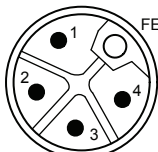
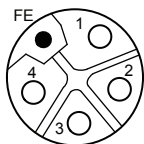
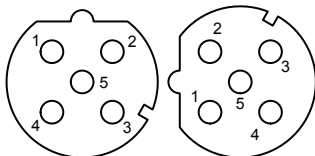
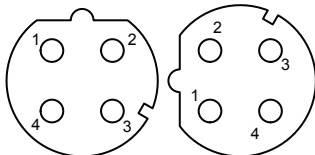
The TigoMaster 2TH is used in a variety of industrial applications, such as:

- Machine Retrofit – Collecting data wirelessly from multiple IO-Link Wireless sensors for condition monitoring and predictive maintenance.
- Communicating with IO-Link Wireless end effectors on robots/cobots.
- Enabling smart transport track and conveying solutions by wirelessly communicating with IO-Link Wireless grippers and vacuum pumps on-board fast-moving shuttles/movers.
- Communicating with IO-Link Wireless intelligent machine tools while rotating rapidly on machines such as CNC, grinding and milling.



TigoMaster 2TH Network Topology



Electrical					
Operating Voltage	24VDC, -25%/+30% (18 V DC ... 31.2 VDC)				
Typical Current consumption (w/o DI/DO)	1L: 0.2 A (at 24 VDC), 2L: 0.1 A (at 24 VDC)				
Power consumption (power connectors)	Max. 16A Max. current of the device including pass-through must not exceed 16A for 1L and 2L				
Interfaces					
LEDs	System and application	SYS	System status	green/yellow	
		APL	Application status	red/green	
	Power supply	1L (X21)	1L power supply (DC 24 V)	red/green	
		2L (X21)	2L power supply (DC 24 V)	red/green	
	EtherNet/IP communication PROFINET IO communication EtherCAT communication	MS/NS	Module status / Network status	red/green	
		SF/BF	System failure / Bus failure	red/green	
		RUN/ERR	Run status / Error status	red/green	
	System and application	LINK (X31)	Link status, connector X31	green	
		ACT (X31)	Activity status, connector X31	yellow	
		LINK (X32)	Link status, connector X32	green	
		ACT (X32)	Activity status, connector X32	yellow	
	Wireless tracks	WT01 ... WT03	IO-Link Wireless track status, antenna X1 ... X3	red/yellow/ green	
Wireless ports	WP01 ... WP08	Port status, IO-Link Wireless ports 1 to 8	red/yellow/ green		
	WP09 ... WP16	Port status, IO-Link Wireless ports 9 to P16	red/yellow/ green		
Connectors					
Connectors: X21 -Power-In X22 -Power-Out	Supply voltage input  M12, L-coded, plug, 5-pin (4 + FE)	Supply voltage output  M12, L-coded, socket, 5-pin (4 + FE)	Pin	Signal	Description
			1	1L+	24VDC supply voltage for system and sensor/ actuator U1L
			2	2L-	Reference potential for 2L
			3	1L-	Reference potential for 1L
			4	2L+	24VDC auxiliary/control voltage U2L
			FE	FE	Functional earth
Connectors X31, X32 EtherNet/IP	Ethernet  M12, D-coded, socket, 5-pin		Pin	Signal	Description
			1	TX+	Transmit data positive
			2	RX+	Receive data positive
			3	TX-	Transmit data negative
			4	RX-	Receive data negative
			5	FE	Functional earth
Connectors X31, X32 PROFINET and EtherCAT	Ethernet  M12, D-coded, socket, 4-pin		Pin	Signal	Description
			1	TX+	Transmit data positive
			2	RX+	Receive data positive
			3	TX-	Transmit data negative
			4	RX-	Receive data negative

Communication, Supported Protocols

Communication controller	Type	netX 90
Integrated memory	RAM	16MB SDRAM
	Flash	8MB
Ethernet communication	Real-Time Ethernet	PROFINET, EtherCAT, EtherNet/IP Adapter
Ethernet interface	Interface type	100BASE-T, 10BASE-T, isolated
	Auto-negotiation, Auto crossover	yes
	Connectors	X31: Ethernet interface, M12, D-coded, port 1 X32: Ethernet interface, M12, D-coded, port 2

Communication, Supported Protocols

IO-Link Wireless	Radio*	2 track = 16 IO-Link Wireless devices (sensors/actuators), 3 SMA antennas
		Unlicensed 2401-2480 MHz ISM band*

Mounting

Mounting holes	· Mark the positions to fasten the device with screws and cut the M4 holes · Fasten the device with the screws · Ground the device · Mount all three SMA antennas
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Operation Conditions and Reliability

Ambient conditions	Ambient temperature range (working)	-25°C ... +70°C
	Ambient temperature (nonworking, storage)	-40°C ... +85°C
	Max. temperature change	3K/min
	Humidity	5 ... 95% relative humidity, no condensation permitted
	Operating height	0 ... 2000m
	Over voltage category	II (EN 60664-1)
Device	Dimensions (L x W x H)	200 x 30 x 20 mm
	Housing	Plastic
	Mounting/installation	Screw mounting, with 2x M4 screws to the 2 mounting holes These screws make contact to FE (functional earth)
	Tightening torque	1,2Nm
	IP rating	IP67

* All RF characteristics comply with the IO-Link Wireless Standard

Certifications and Approvals

FCC	- FCC ID: 2ATSM-COR2TH - Part 15B + ICES-003 (Co-location and EMC) - Part15C RSS-247 - RF Exposure
CE	- EN 301489 - EN 62479 RF Exposure - EN 300328 Radio - EN 61326 EMC, Immunity - EN 61000-6-2 - RF Output - IEC 62368-1 - Notified Body EU Examination Certificate
Japan (MIC)	- MIC Certificate - MIC 2.4G - Final Report
Immunity	- Electrostatic discharge (ESD) (air and contact discharge method) - EN 61000-4-2 - Radiated immunity - EN 61000-4-3 - Fast transient interferences (Burst) - EN 61000-4-4 - Surge immunity - EN 61000-4-5 - Conducted immunity - EN 61000-4-6 - Wideband transmission systems - EN 300328 V2.2.2
Reach & RoHS	Complied

SMA Antenna

Category	Parameter	Value
Electrical specifications	Frequency Range	2401-2480MHz
	Max Gain	1.6dBi
	Impedance	50Ω
	Polarization	Vertical
	Radiation	Omni
Mechanical specifications	Connector	Regular SMA-Male



Note: It is not permitted to use an alternative SMA antenna from the one supplied by CoreTigo Ltd. Using an alternative SMA antenna may result in a loss of device approval. Additionally, all three SMA antennas (X1, X2 and X3) must be mounted for proper device functionality

Note: TigoMaster 2TH and the IO-Link Wireless stack on it utilize two antennas by default to support 16 IO-Link Wireless devices. The third antenna may be used for custom projects only with the support and consent of CoreTigo.

Model Numbers

TigoMaster 2TH-PN - CT241-0003t2-02: PROFINET interface

TigoMaster 2TH-EIP - CT241-0004t2-01: EtherNet/IP interface

TigoMaster 2TH-CAT - CT241-0008t2-01: EtherCAT interface



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