MegaChips

100BASE-T1 Ethernet PHY

Model Number : MAAE1003S

MegaChips is the only company who is selling and supporting 100BASE-T1 compliant Ethernet PHY in Japan. This module enables to save wiring and space for robots and industrial equipment by using one single-pair of twisted cables. Also, this allows further wiring/space saving by leveraging PoDL (Power over Data Line) feature.

■ Features

1. 100BASE-T1 compliant Ethernet PHY

Enables 100Mbps full-duplex communication with a pair of UTP cables.
Achieve high-speed communication with a light weight and low-cost wire harness.

2. Wire-saving/Space-saving

One pair of cables (no shield required). No on-board transducer is required.

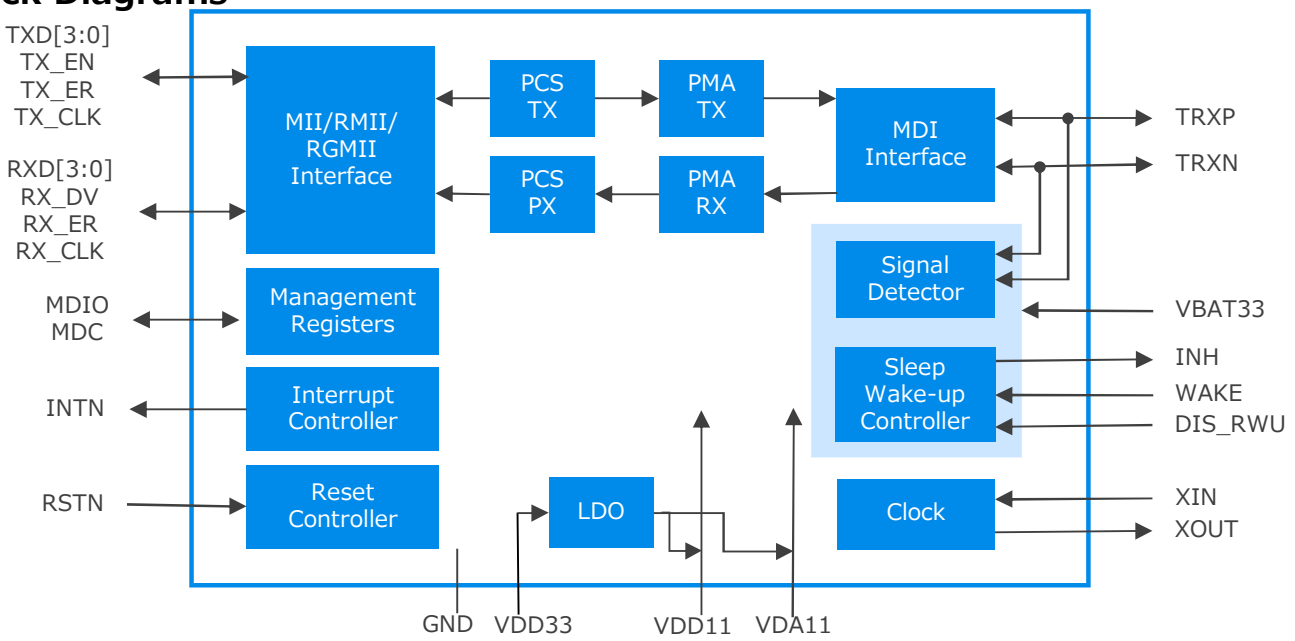
3. PoDL support

Supports PoDL which allows to supply power over the data line.

QFN 36pin
<6x6mm>

Package appearance

■ Block Diagrams



■ MAAE1003S Specifications

Specification	100BASE-T1 Compliant Ethernet PHY	Power	3.3 V single (Either 3.3V, 2.5V or 1.8V is available for MAC I/F power supply)
Package	QFN 36pin (6×6mm,Wettable Flank)	Power saving function	Low power consumption sleep mode : 10uA(standby) Remote wake-up Local wake-up Supported external power control (INH)
Operating temperature(Ta)	-40℃ ~ +125℃	ESD	HBM: 6 KV (MDI pin), 2KV (others) CDM: 500V
Number of ports	1port	MDI	Built-in LPF on transmitter side
Data Rate	100Mbps (PHY rate)	Third Party Certification	UNH, FTZ, C&S
MAC I/F	MII, RMII, RGMII	Communication Range	15m (25m in case MAAE1003S on both transmitter and receiver)
Diagnostic・ Fail - safe	MDIO timeout detection Various loopbacks	Communication System	Full-duplex communication

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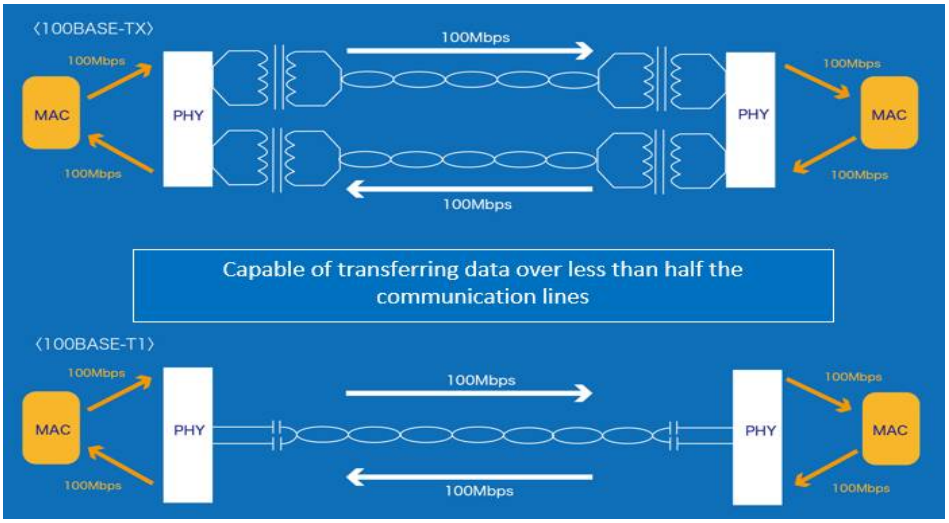
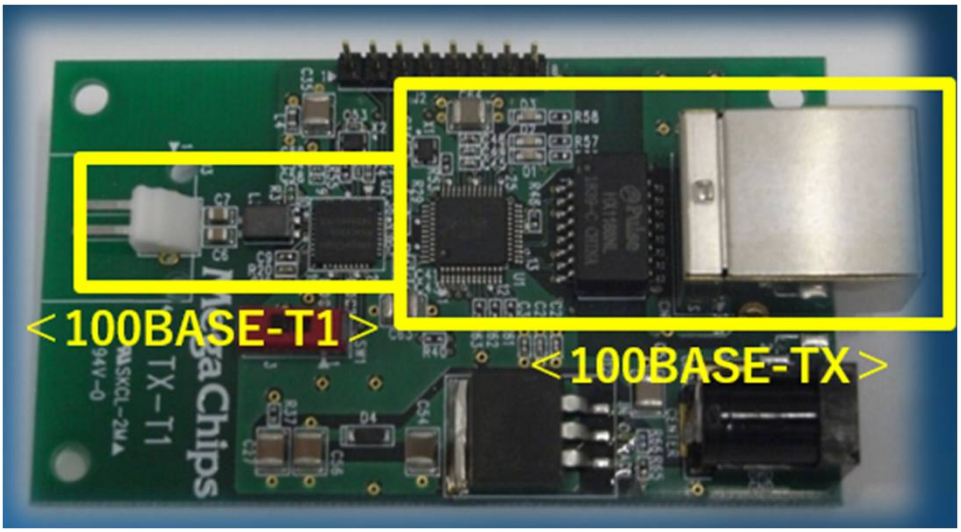
■ 100BASE-T1 connection image



■Wire-saving, space-saving image



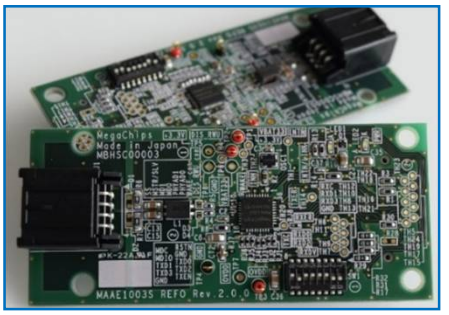
No on-board transducer required ・ flexible connector type
Saving 2/3 of area compared to 100BASE-TX

■ MAAE1003S evaluation environment

Reference boards are ready for customer development.

- Device evaluation board
- 100BASE-TX⇔100BASE-T1conversion board
- Board for embedded EtherCAT®
- PoDL evaluation boards, etc.

These boards allows customer to quickly evaluate and develop 100BASE-T1 system.



MegaChips

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