MultiConnect® Conduit™ IP67 Base Station PoE Application Note

For MTCDTIP models xxx-266x-xxx, xxx-267x-xxx, xxx-270x-xxx, xxx-275x-xxx.

Terminology

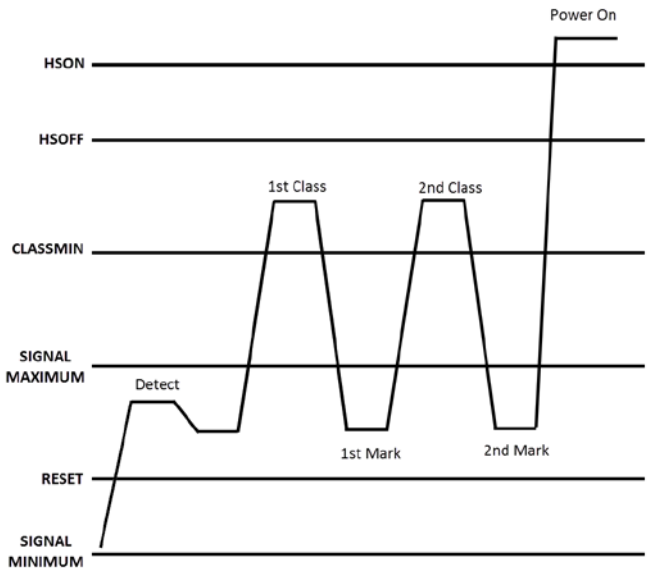
Term	Description
PoE	Power over Ethernet (802.3af). Provides DC power and high speed data through a single RJ45 connector.
PoE+	Power over Ethernet higher power (802.3at)
PSE	Power source equipment, also called an injector or supply.
PD	Power Device, for example the MultiConnect Conduit IP67 (MTCDTIP)
802.3af or 802.3at Type 1	PoE device with power rating up to 13W
802.3at Type 2	PoE device with power rating above 13 W and MUST be 25W or greater to turn on the device.

Detection and Classification

During the detection and classification process the PSE looks for a 25kΩ signature resistor which identifies the device as a PD. The process varies depending on whether the PSE is Type 1 or Type 2.

A Type 1 PSE, after a successful PoE detection, may apply a classification probe voltage of 15.5V to 20.5V and measure current.

A Type 2 PSE probes for power classification twice, as shown. The PoE supply on the MTCDTIP recognizes this and pulls a pin up to VCC to signal the load detect circuit that Type 2 power is available. Otherwise it does not pull up on the pin, indicating that only Type 1 power is available.



Recommended PSE

The following PSEs have been tested and work with the MTCDTIP:

- For standard MTCDTIP xxx-266x-xxx and xxx-267x-xxx models:
  - Phihong PoE29W-1AT
  - Microsemi PD-9001GR/AC =35W
  - Trendnet TPE-115GI = 30W
- For V2.1 MTCDTIP xxx-270x-xxx and xxx-275x-xxx models:
  - Intellinet Network Solutions Part Number 561235

Troubleshooting

Problem: MTCDTIP fails to power up:

Possible Causes:

- PSE underpowered.
- PSE not 802.3at compliant.
- Ground loops affecting the 802.3at protocol and interfering with capacitance detection.

If the power LED lights up and then shuts off, the PSE is not providing enough power.