

PoE Modules – PSE Modules Output Interface Design

A. Scope

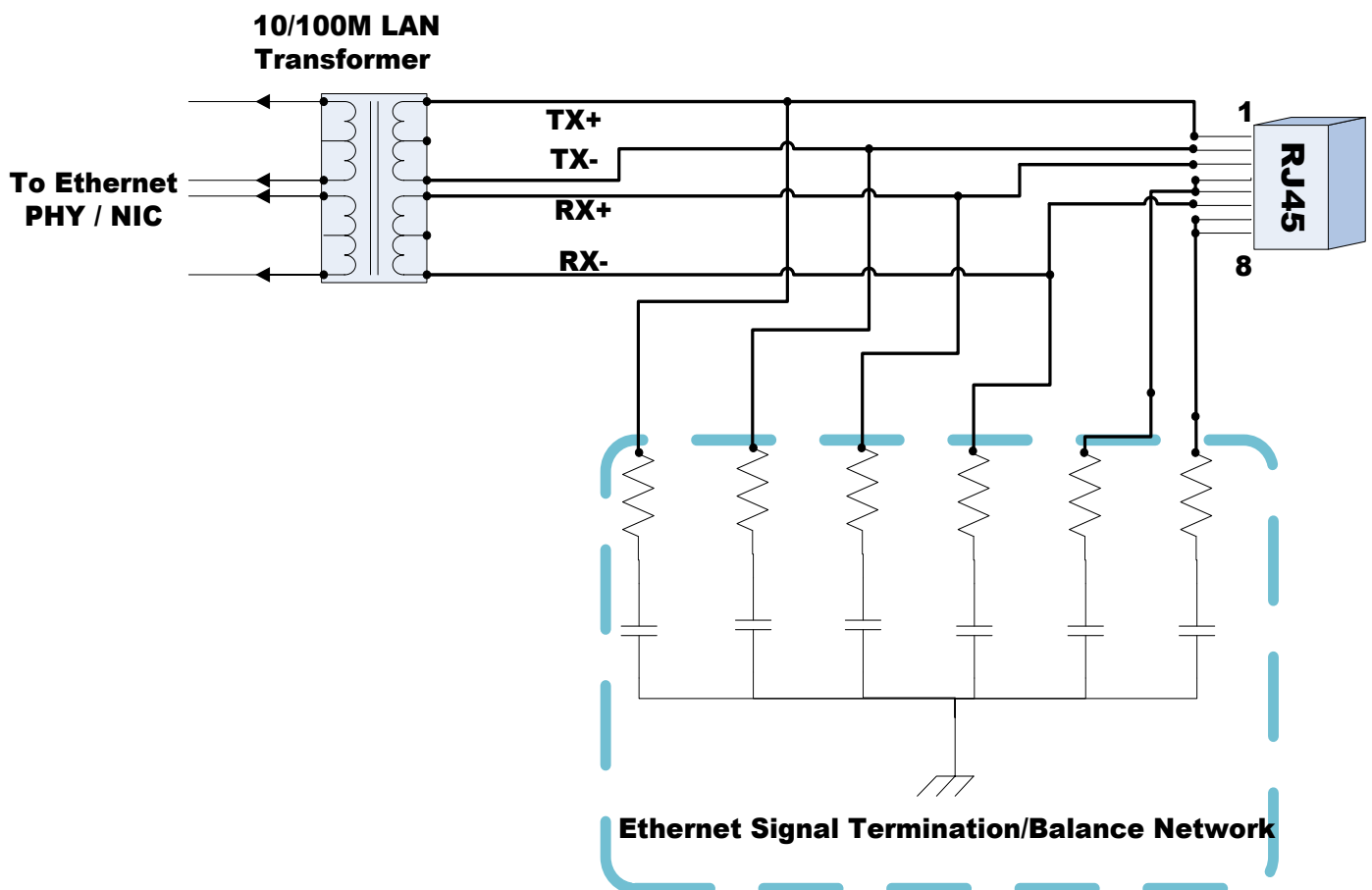
This document can be applied on all of Befact PoE PSE modules. Current models of Befact PoE PSE module are PSE-QD and PSE-HQD.

B. Typical Circuit Without PoE PSE Modules

1. Regular Design

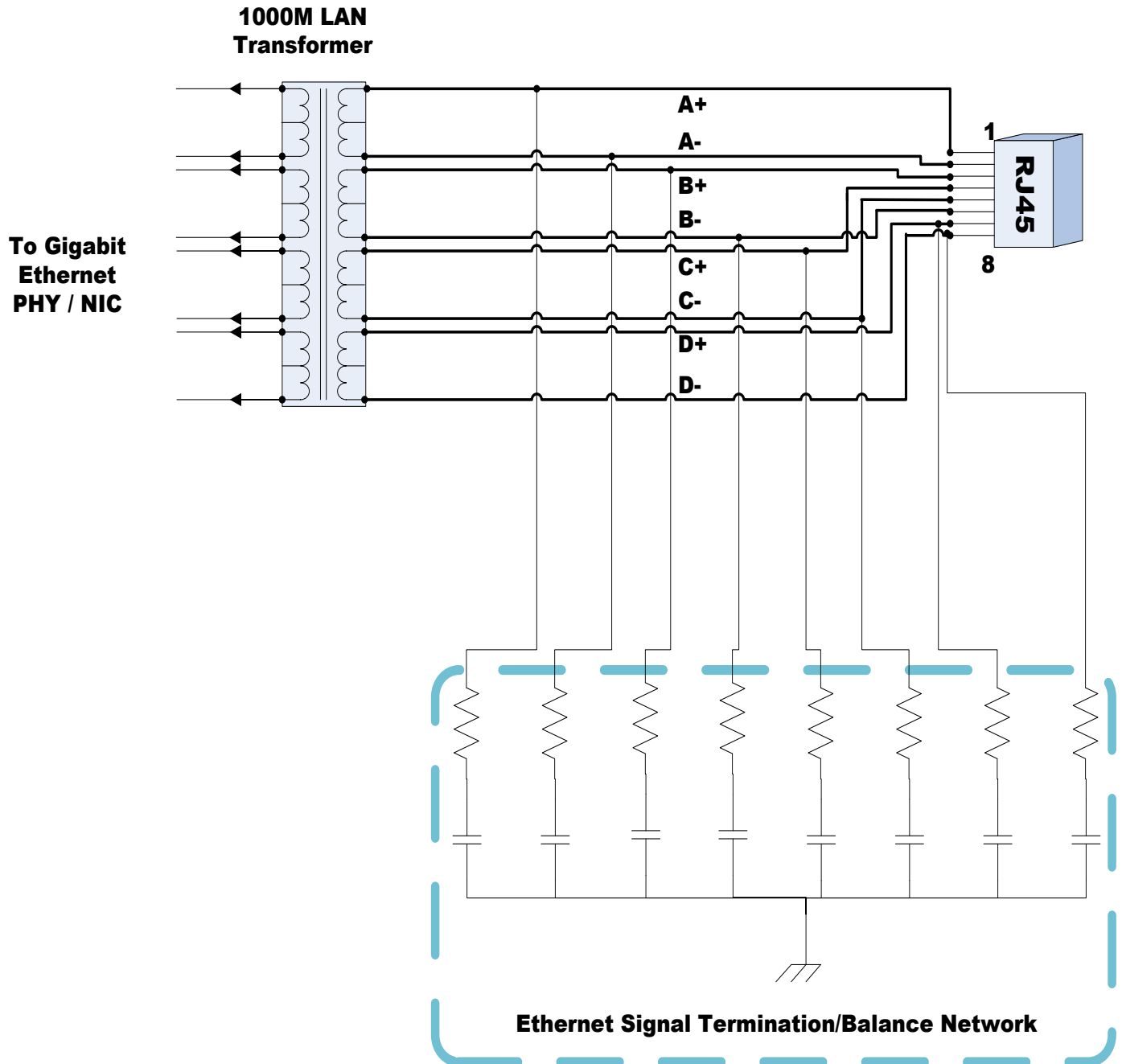
1-1. Fast Ethernet –

The Ethernet signal termination / balance network can work well with no any issue.



1-2. Gigabit Ethernet –

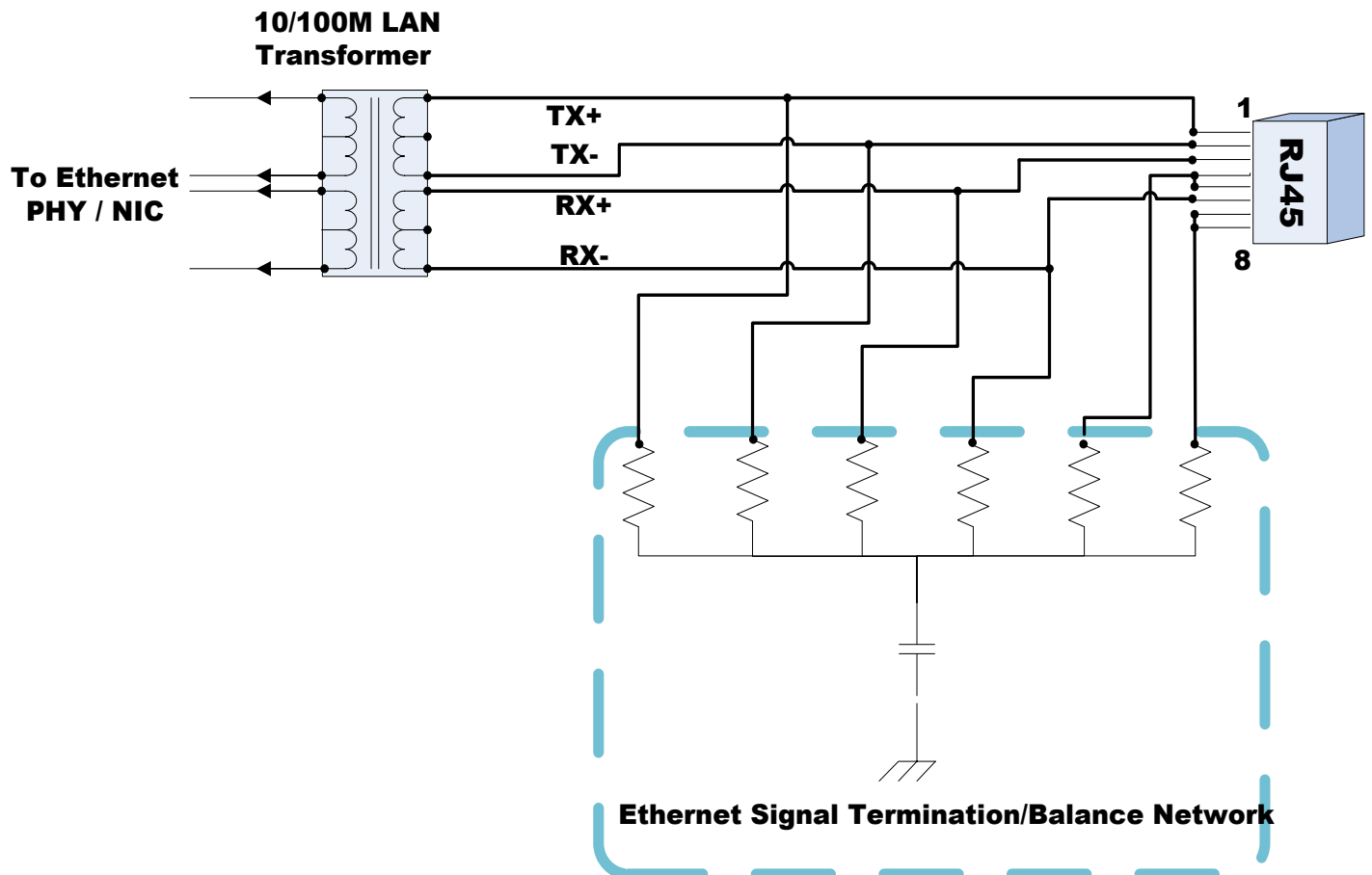
The Ethernet signal termination / balance network can work well with no any issue.



2. Alternative Design

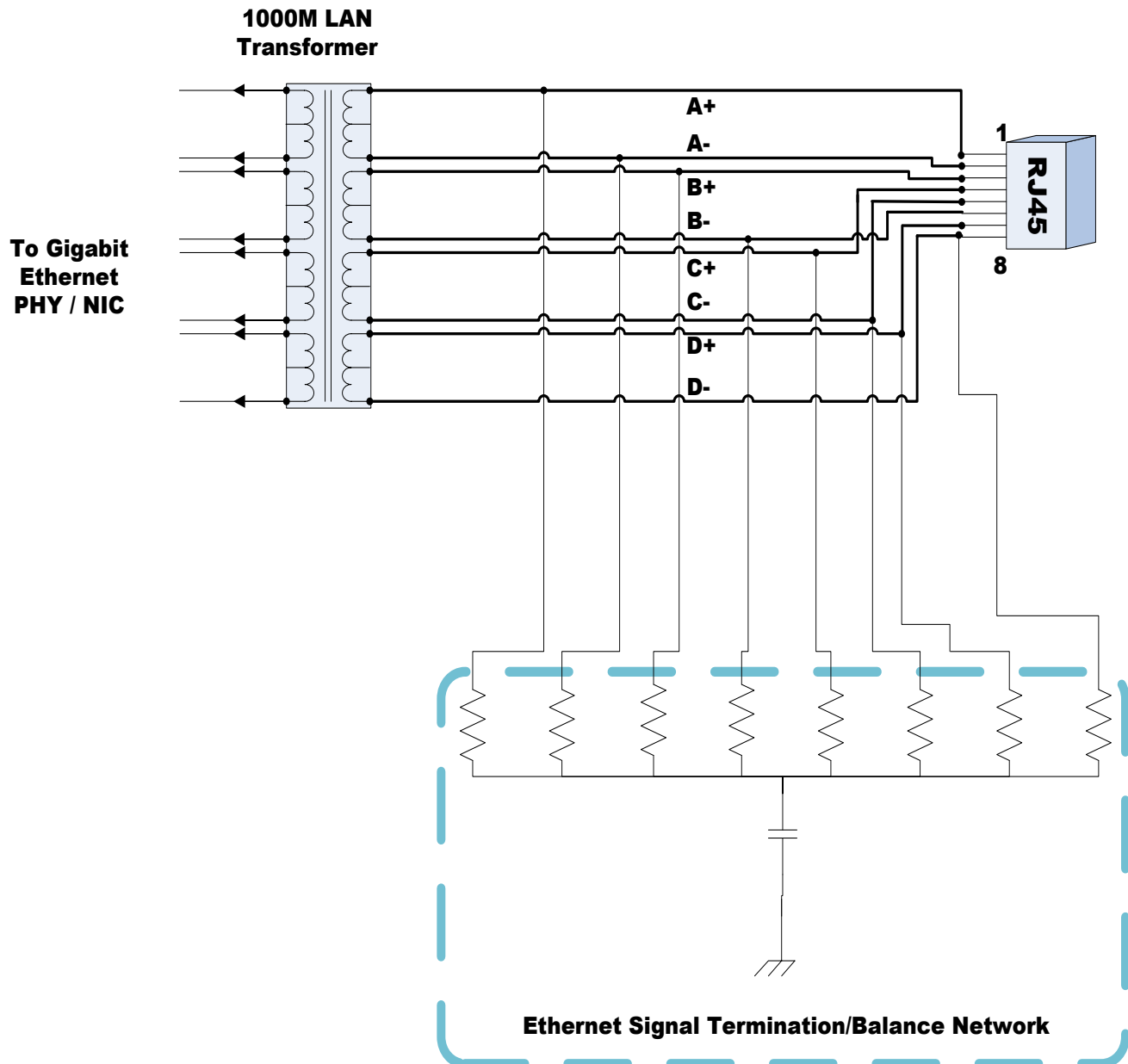
2-1. Fast Ethernet –

The Ethernet signal termination / balance network can work well if there is no power relay application or PoE application. This Ethernet signal termination / balance network does signaling balance and termination only.



2-2. Gigabit Ethernet –

The Ethernet signal termination / balance network can work well if there is no power relay application or PoE application. This Ethernet signal termination / balance network does signaling balance and termination only.

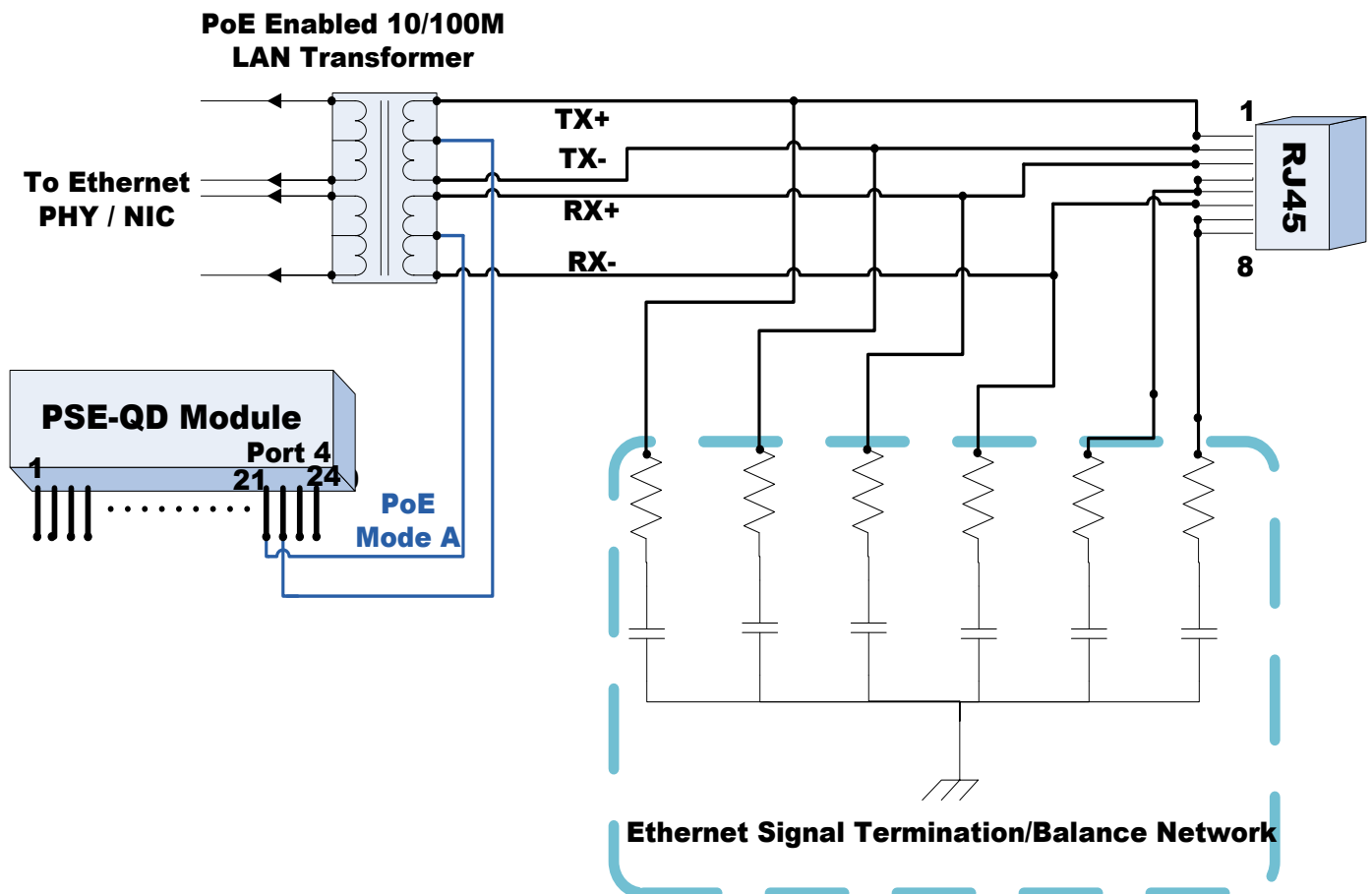


C. Typical Circuit With PoE PSE Modules

1. Regular Design

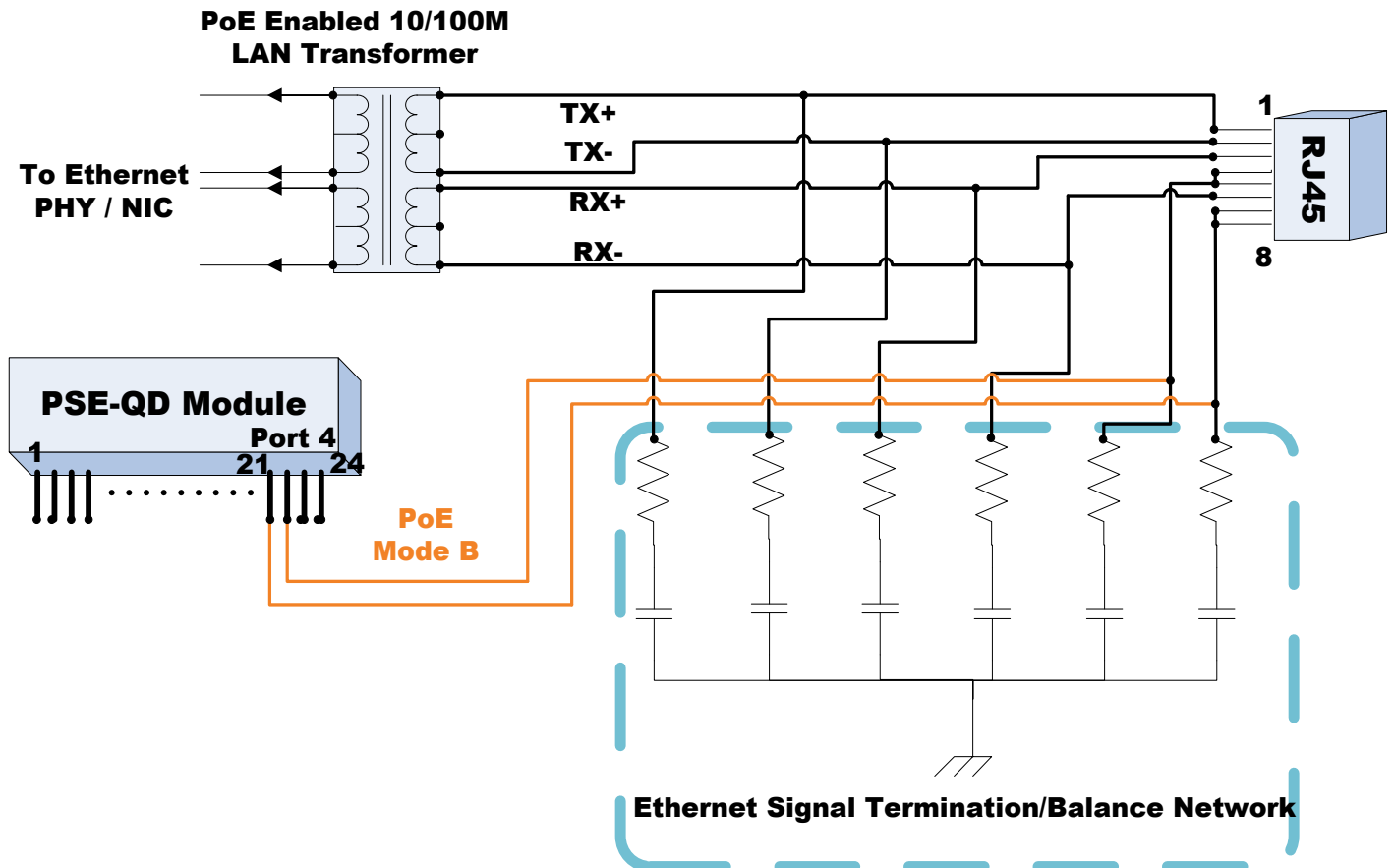
1-1. Fast Ethernet (Mode A)–

The Ethernet signal termination / balance network does signaling balance / termination and can block DC power (from PoE application) and avoid DC power being short circuit condition.



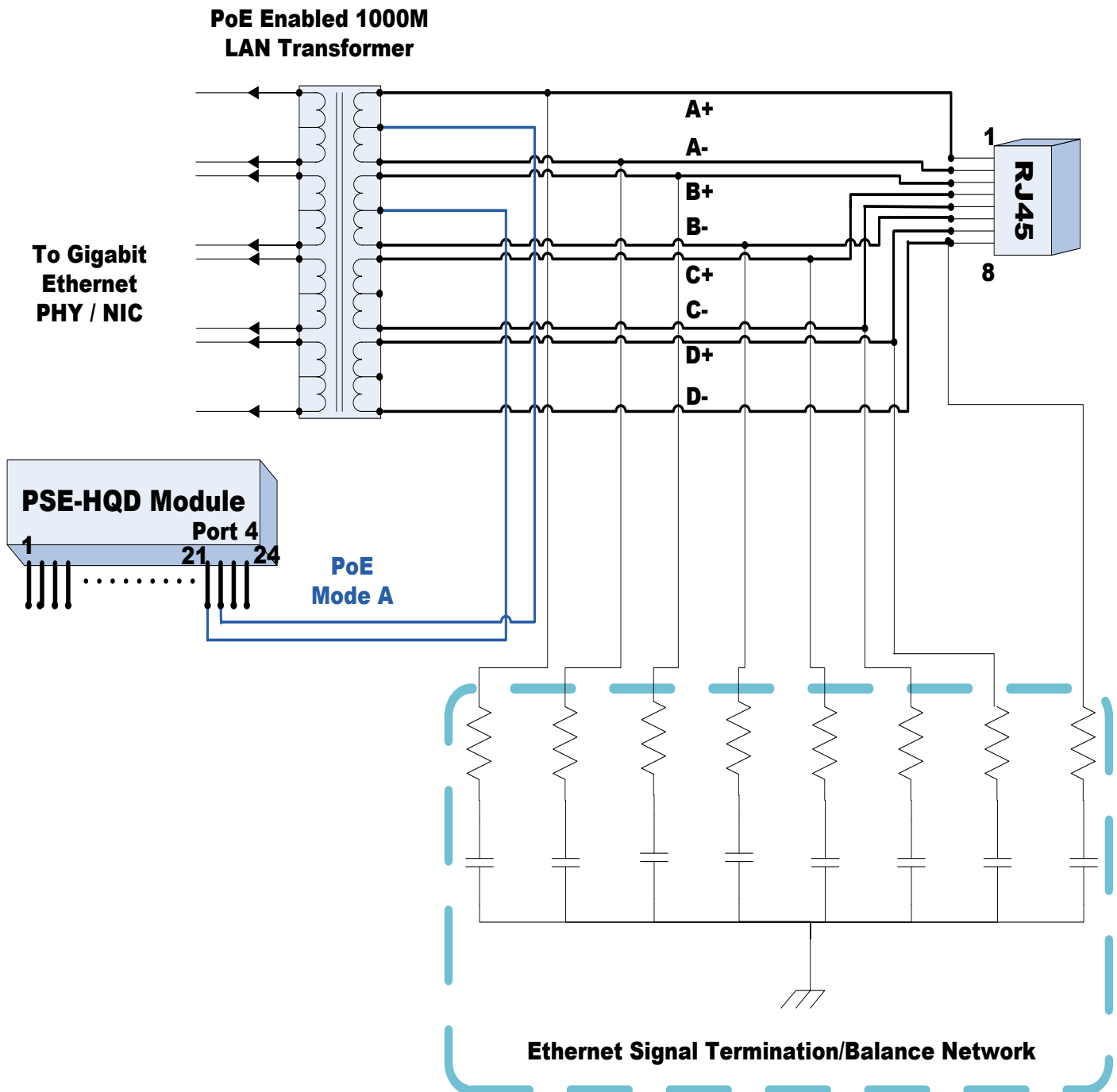
1-2. Fast Ethernet (Mode B)–

The Ethernet signal termination / balance network does signaling balance / termination and can block DC power (from PoE application) and avoid DC power being short circuit condition.



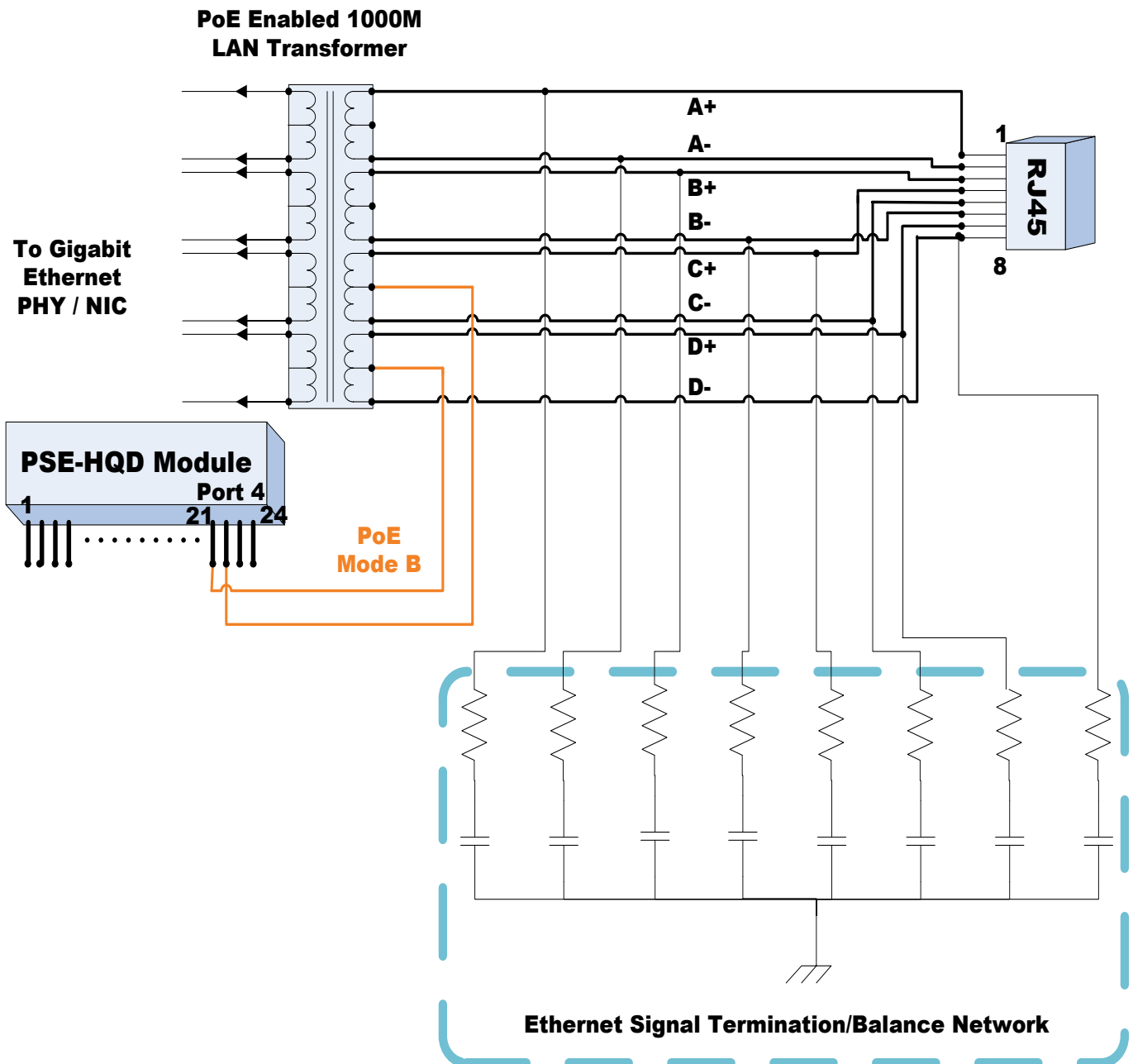
1-3. Gigabit Ethernet (Mode A)–

The Ethernet signal termination / balance network does signaling balance / termination and can block DC power (from PoE application) and avoid DC power being short circuit condition.



1-4. Gigabit Ethernet (Mode B)–

The Ethernet signal termination / balance network does signaling balance / termination and can block DC power (from PoE application) and avoid DC power being short circuit condition.

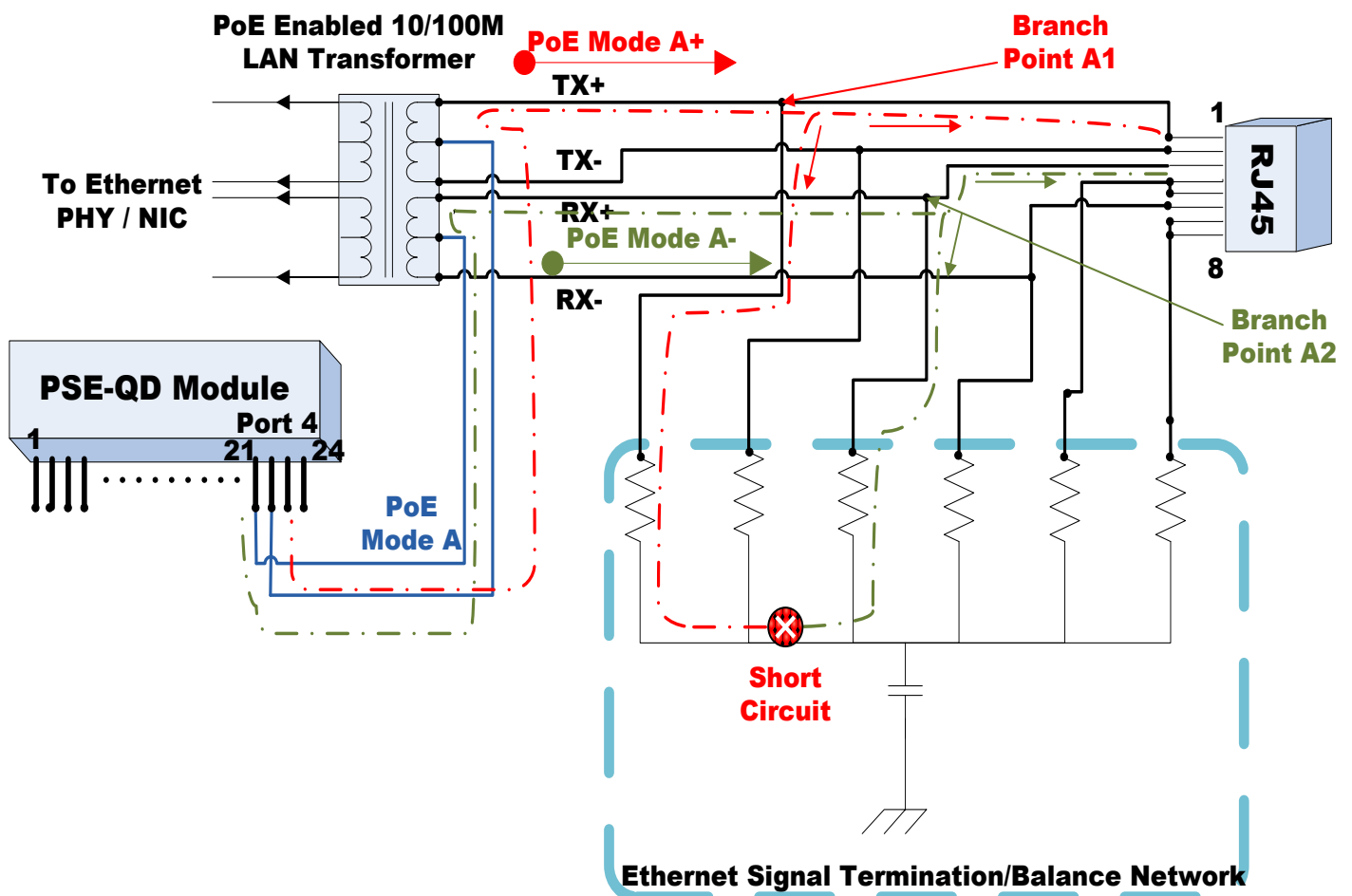


2. Alternative Design (Incorrect Design)

2-1. Fast Ethernet (Mode A) –

The Ethernet signal termination / balance network can work well if there is no power relay application or PoE application. This Ethernet signal termination / balance network does signaling balance and termination only. So, the DC power from PoE shall be shorted in this termination / balance network.

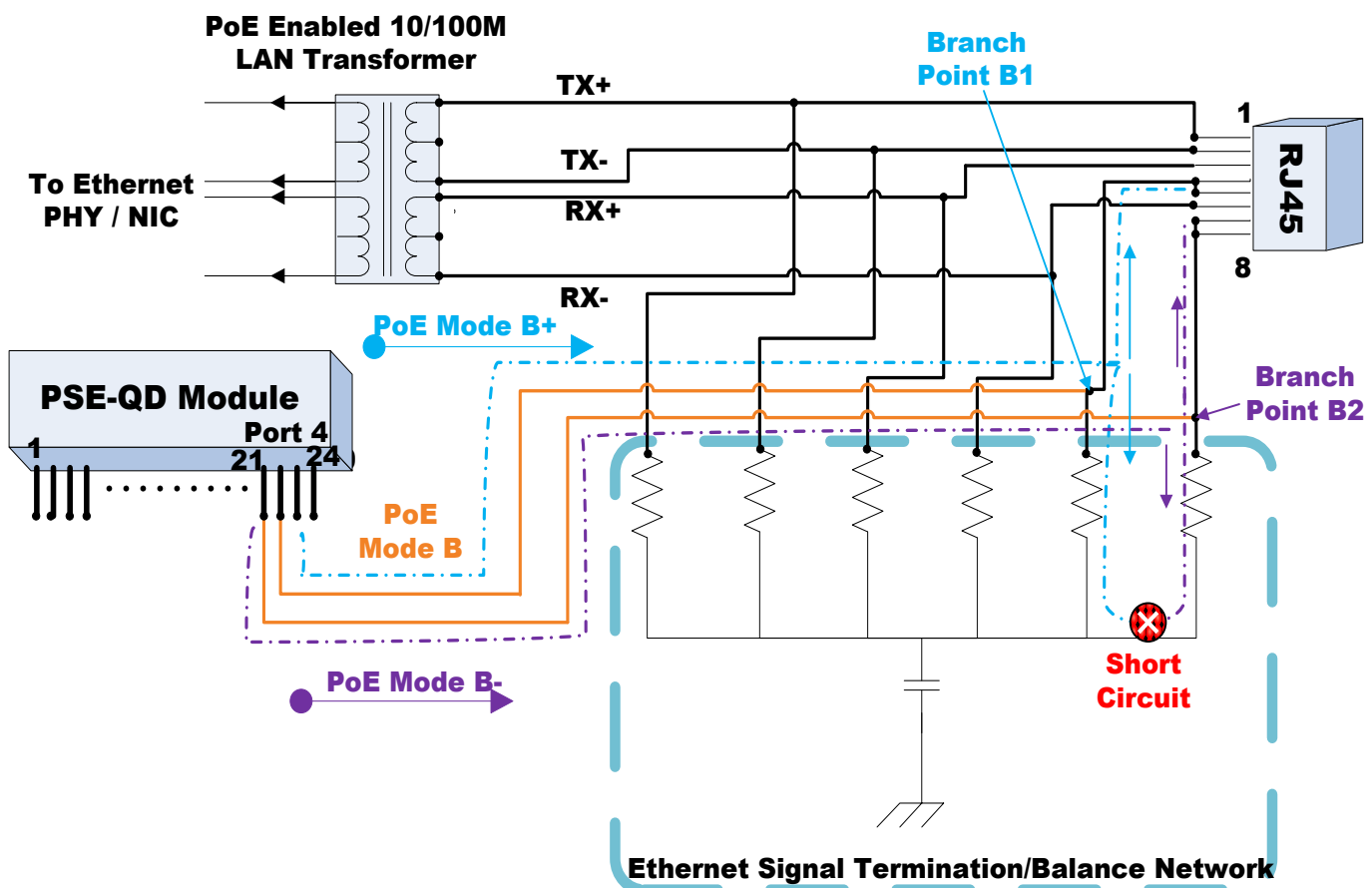
The DC power of PoE Mode A (red line / green line) will be branched at “**Branch Point A1**” and “**Branch Point A2**”. The partial current from positive pole / negative pole shall go to the signal termination / balance network and are looped together after resistors.



2-2. Fast Ethernet (Mode B) –

The Ethernet signal termination / balance network can work well if there is no power relay application or PoE application. This Ethernet signal termination / balance network does signaling balance and termination only. So, the DC power from PoE shall be shorted in this termination / balance network.

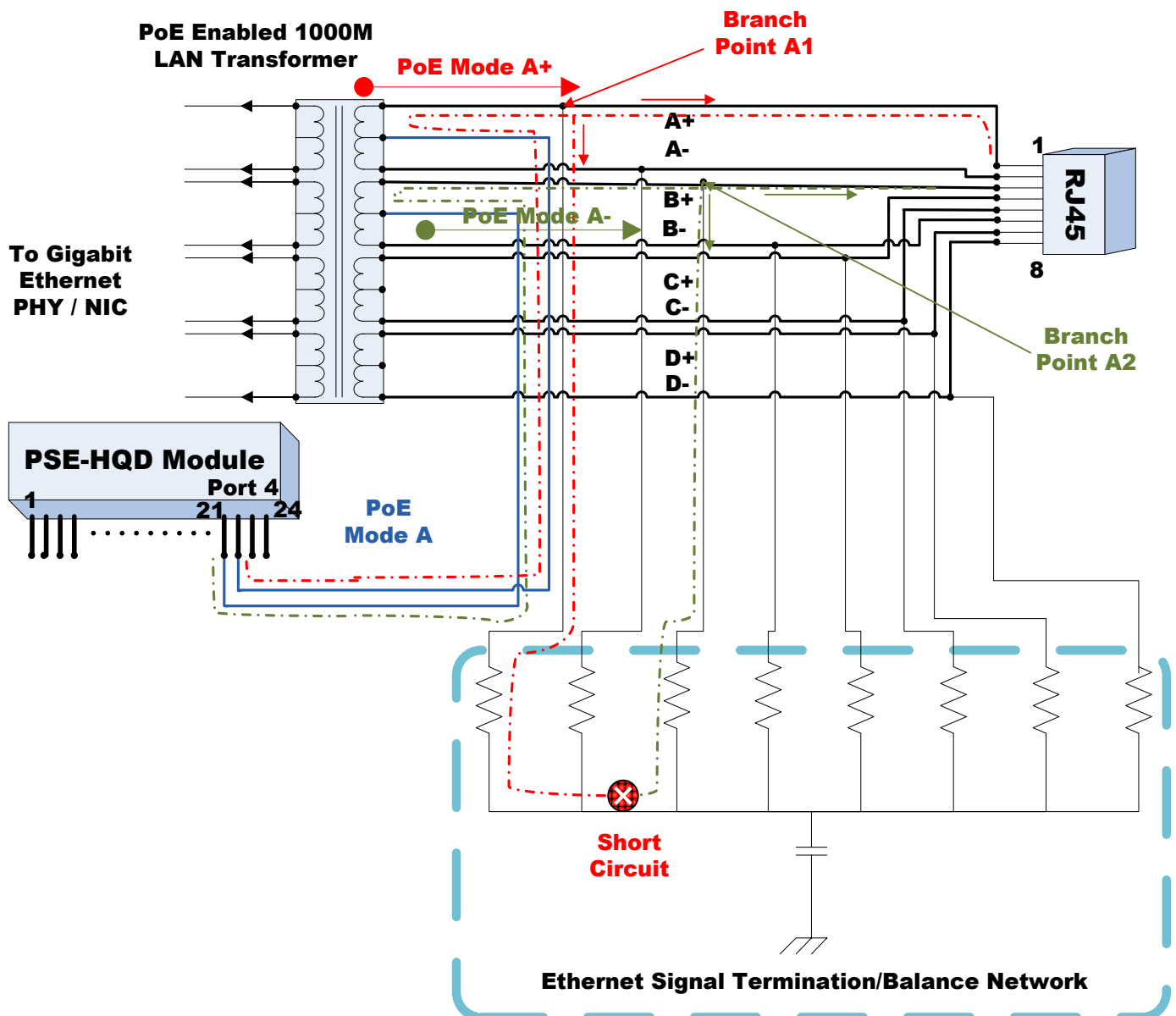
The DC power of PoE Mode B (blue line / purple line) will be branched at “Branch Point B1” and “Branch Point B2”. The partial current from positive pole / negative pole shall go to the signal termination / balance network and are looped together after resistors.



2-3. Gigabit Ethernet (Mode A) –

The Ethernet signal termination / balance network can work well if there is no power relay application or PoE application. This Ethernet signal termination / balance network does signaling balance and termination only. So, the DC power from PoE shall be shorted in this termination / balance network.

The DC power of PoE Mode A (red line / green line) will be branched at “Branch Point A1” and “Branch Point A2”. The partial current from positive pole / negative pole shall go to the signal termination / balance network and are looped together after resistors.



2-4. Gigabit Ethernet (Mode B) –

The Ethernet signal termination / balance network can work well if there is no power relay application or PoE application. This Ethernet signal termination / balance network does signaling balance and termination only. So, the DC power from PoE shall be shorted in this termination / balance network.

The DC power of PoE Mode B (blue line / purple line) will be branched at “Branch Point B1” and “Branch Point B2”. The partial current from positive pole / negative pole shall go to the signal termination / balance network and are looped together after resistors.

