

# TIME SYNCHRONIZATION – Typical Installations

## Introduction

There are increasing worldwide demands for greater efficiency of power transmission infrastructure to enable the power industry to operate closer to capacity limits.

More accurate time synchronization systems are required for close monitoring and control across whole networks.

## Electrical Isolation

In power stations and electrical substations time synchronization sub-systems, electrical isolation is needed:

1. Between the time sync generator to the equipment being synchronized
2. Between the different equipment bays being synchronized.

## Copper-based Sync Architecture

TCG 01 and MOFR 01 products have been designed for 2.5kV electrical isolation.

TCG 01 has built-in isolation on all outputs for isolation between the TCG 01 and any of the equipment being synchronized.

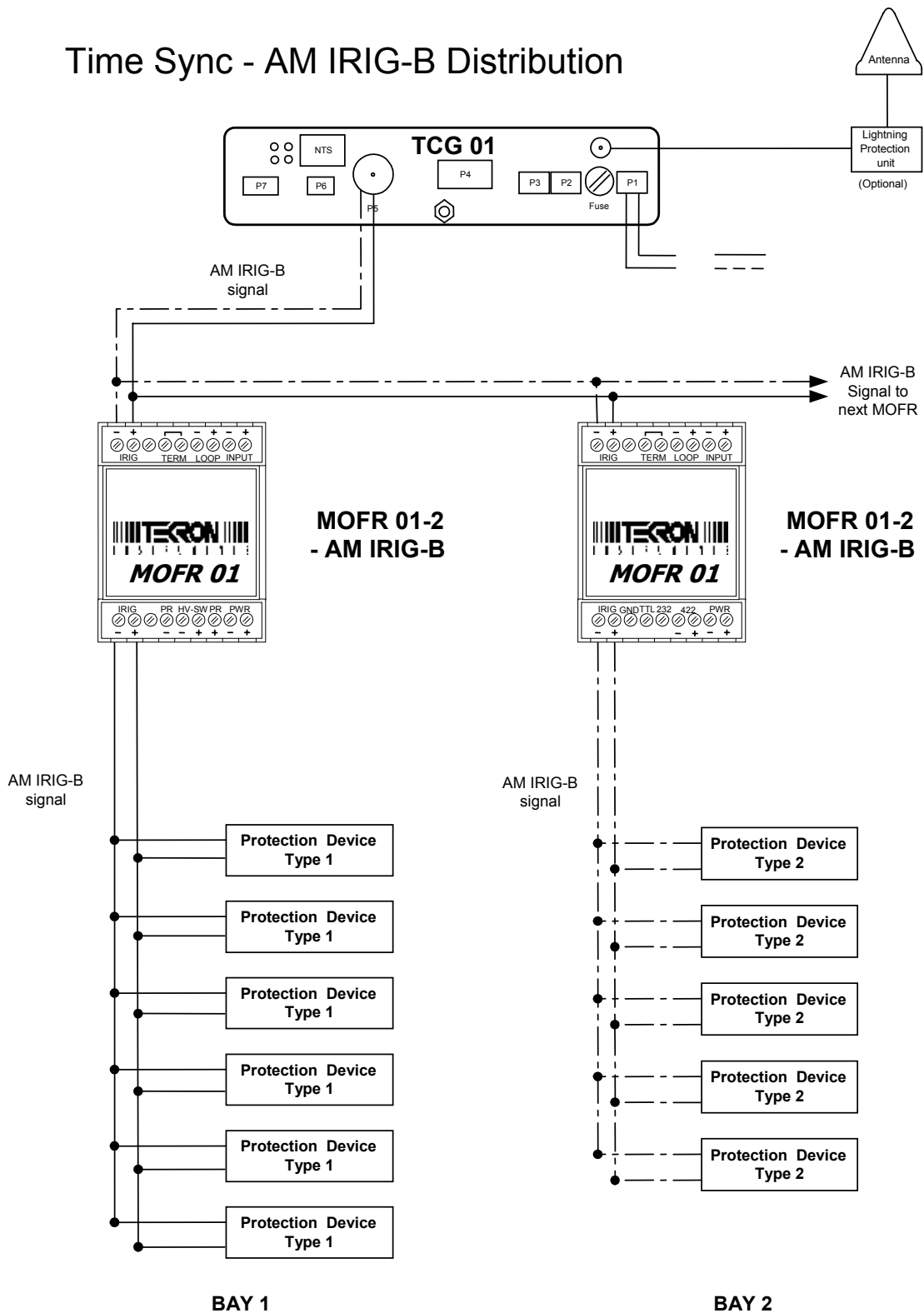
MOFR 01 signal repeater units provide isolation between equipment being time synced by a single multi-drop cable from the TCG 01.

## Fibre-based Sync Architecture

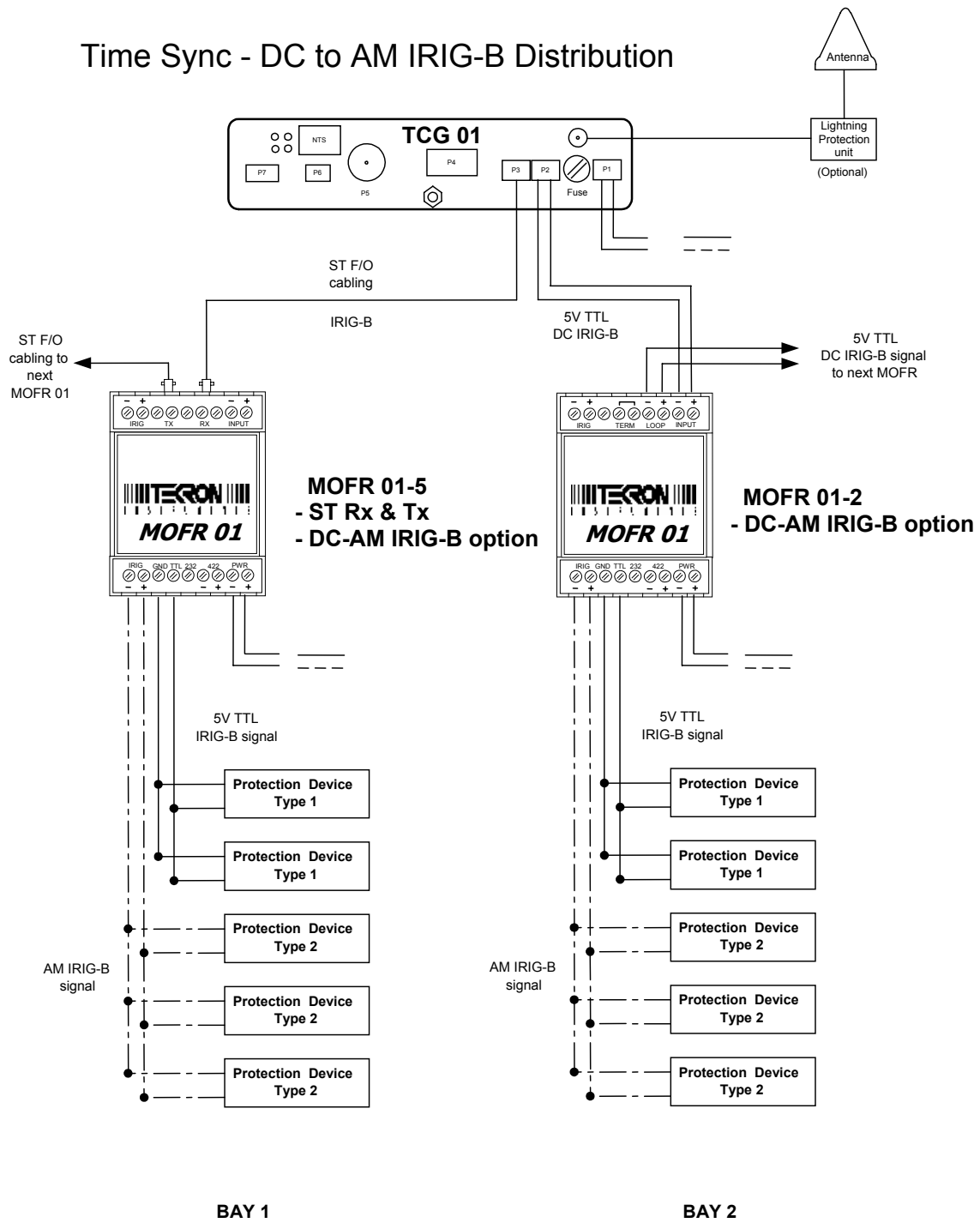
We also have a MOFR 01 with ST fibre optic I/O to allow "daisy-chaining" of the time synchronization signals via ST fibre.

It thus becomes practical to implement a fully fibre-based sync distribution architecture catering for a wide variety of IEDs to receive time synchronization signals at the voltage levels they require.

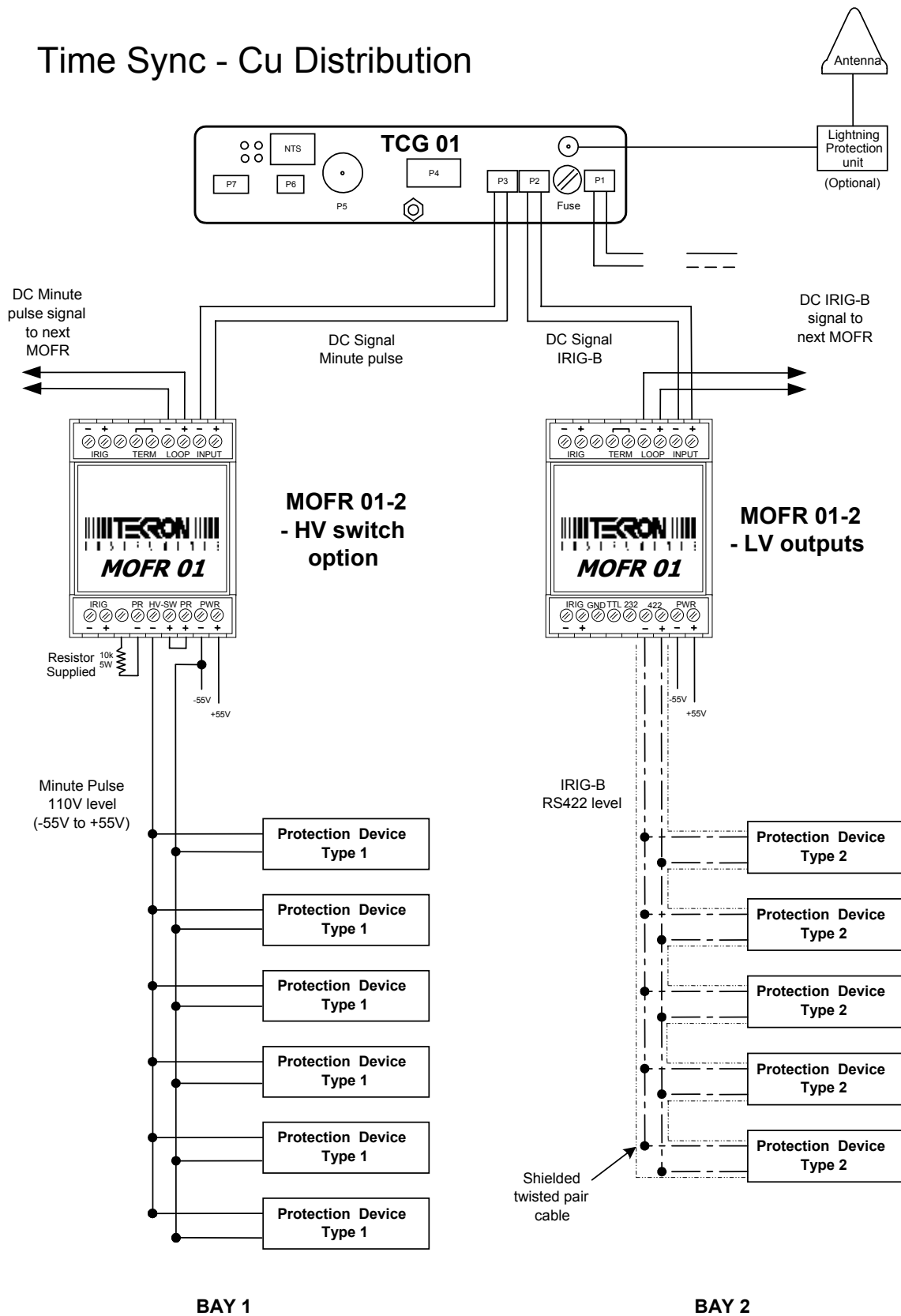
# Time Sync - AM IRIG-B Distribution



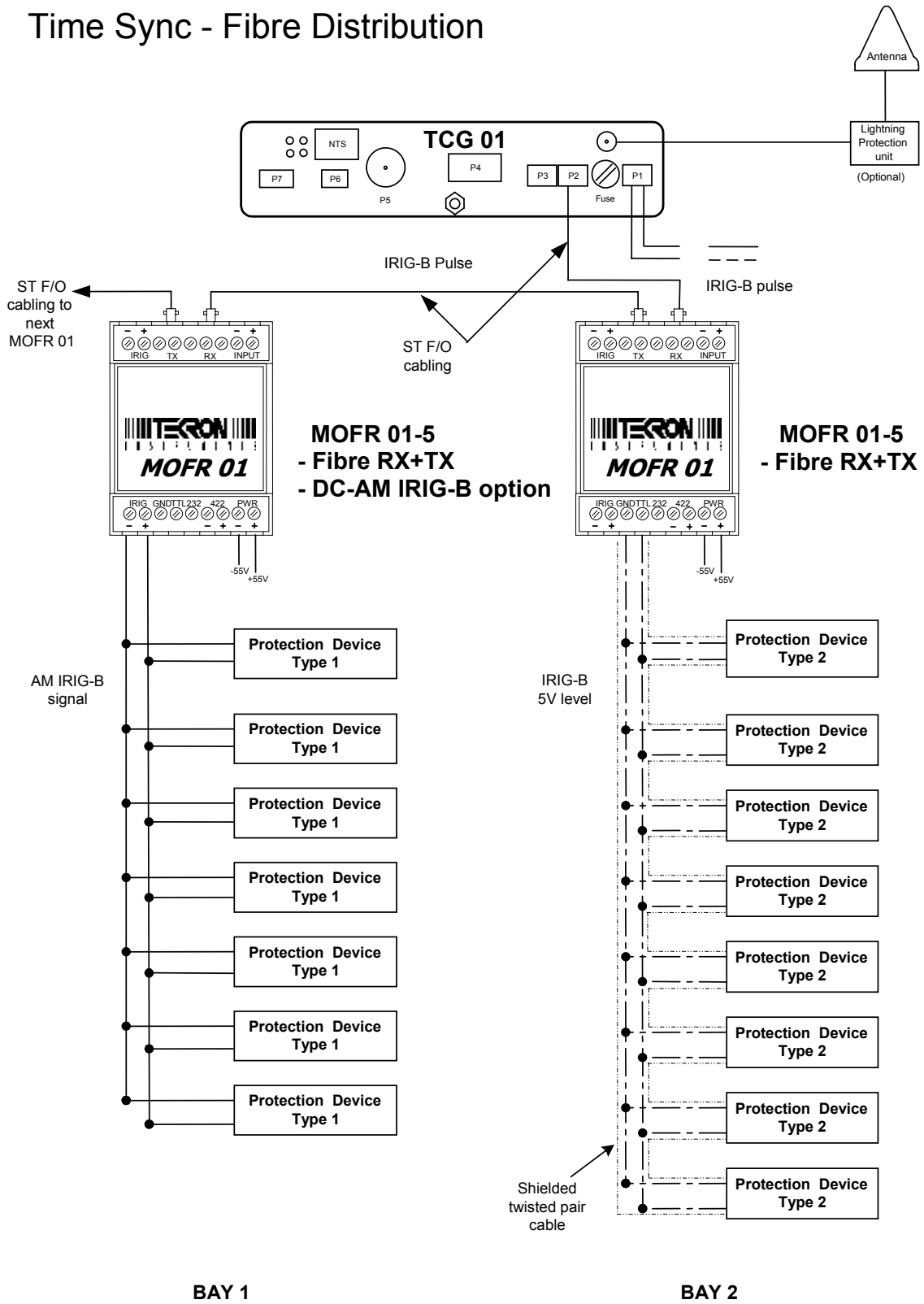
# Time Sync - DC to AM IRIG-B Distribution



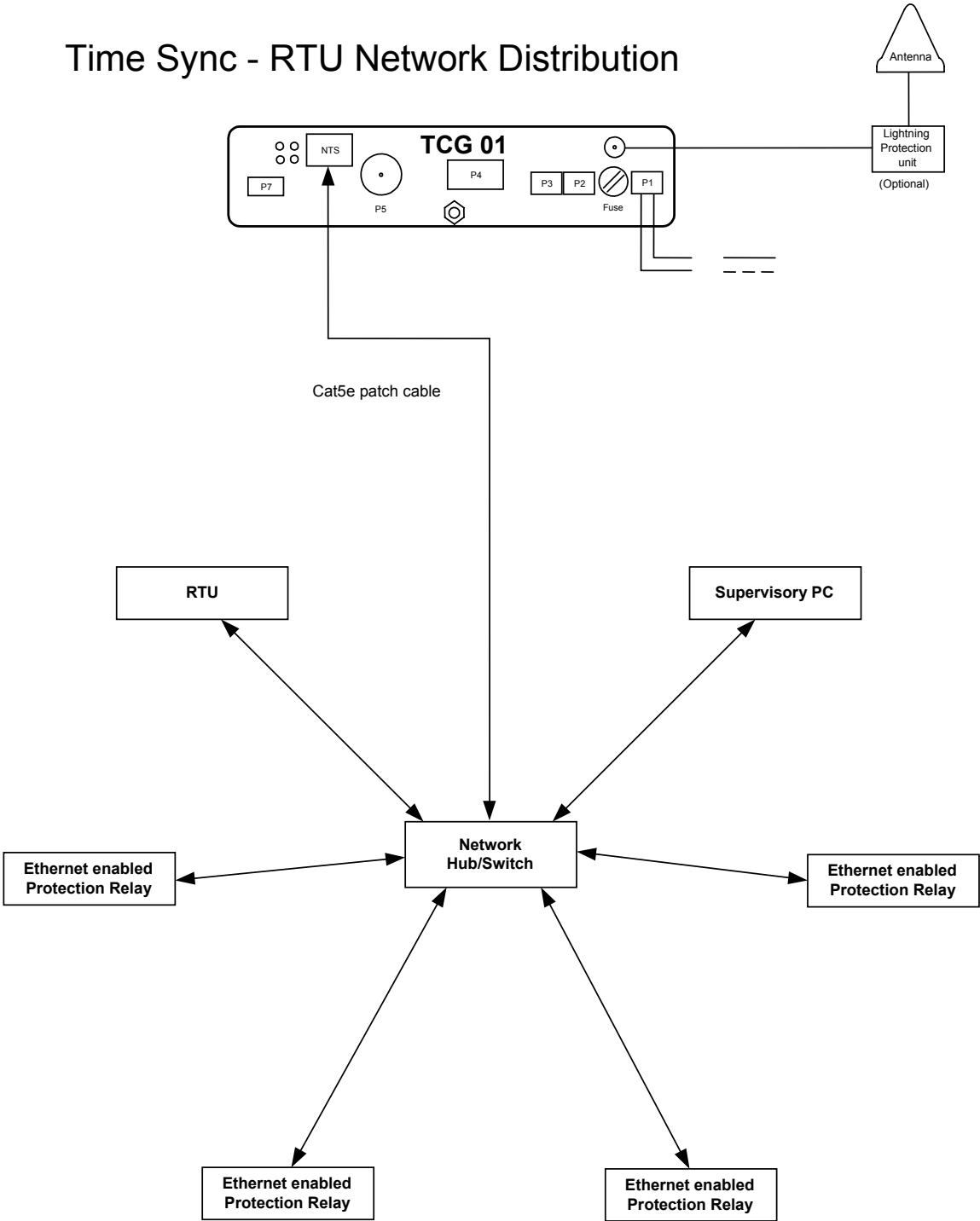
# Time Sync - Cu Distribution



# Time Sync - Fibre Distribution



# Time Sync - RTU Network Distribution



# Time Sync - PC Network Distribution

