



Telecom Technology That Works For You

Utility Network Specialists

Precision Timing
From RFL Communications plc

Time Synchronisation Application Note

Time Synchronisation- 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.

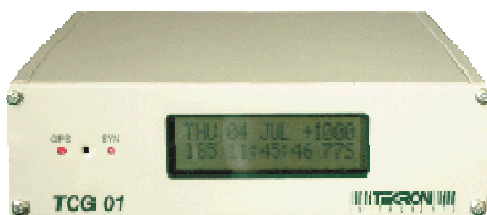
More accurate time synchronisation systems are required for close monitoring and control across whole networks.



Electrical Isolation

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

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

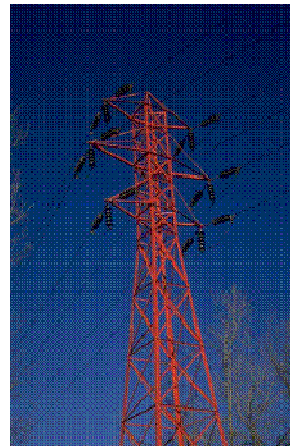


Copper-based Sync Architecture

TCG01 and MOFR01 products have been designed for 2.5kV electrical isolation.

TCG01 has built-in isolation on all outputs for isolation between the TCG01 and any of the equipment being synchronised.

MOFR01 signal repeater units provide isolation between equipment being time synced by a single multi-drop cable from the TCG01.

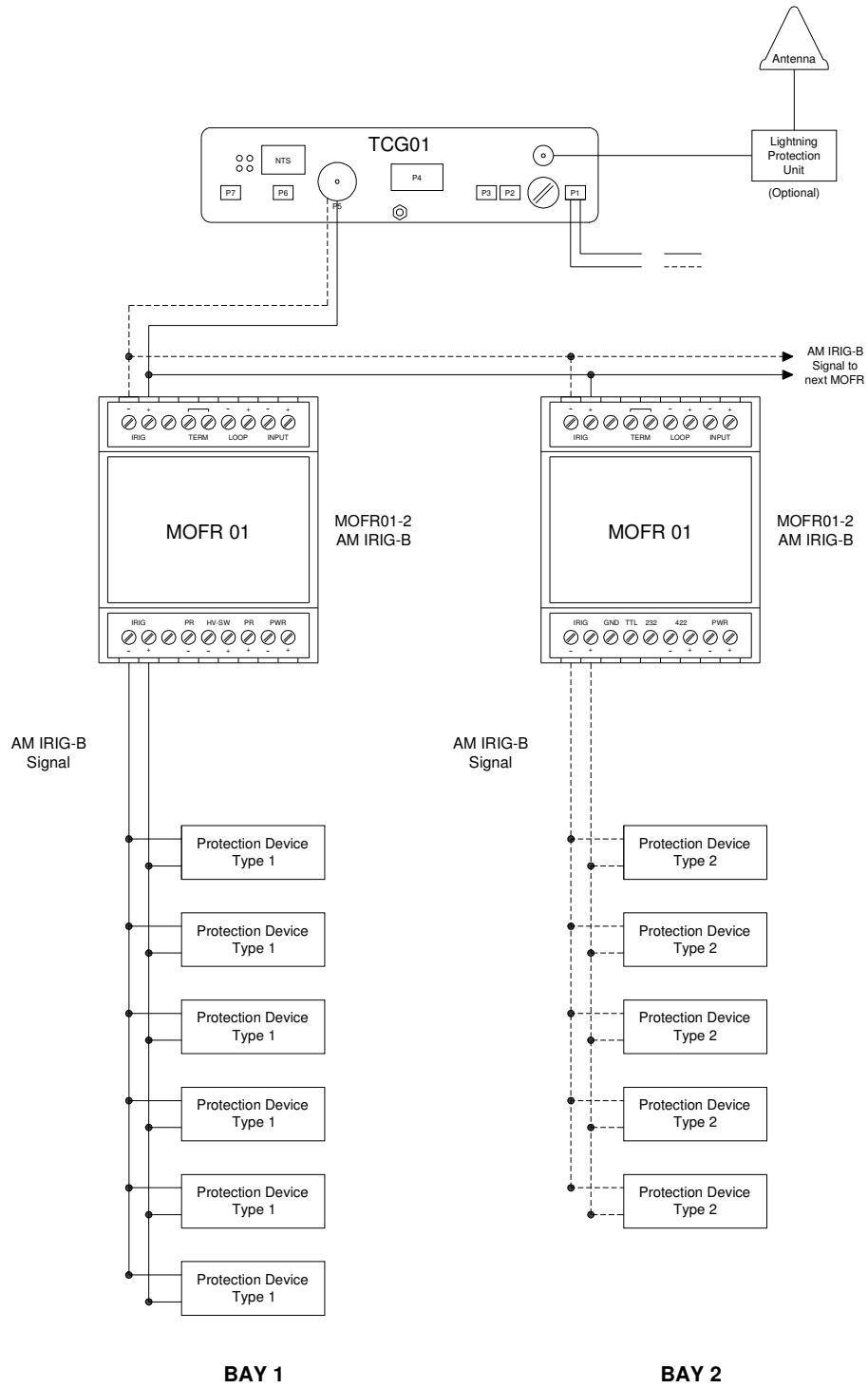


Fibre-based Sync Architecture

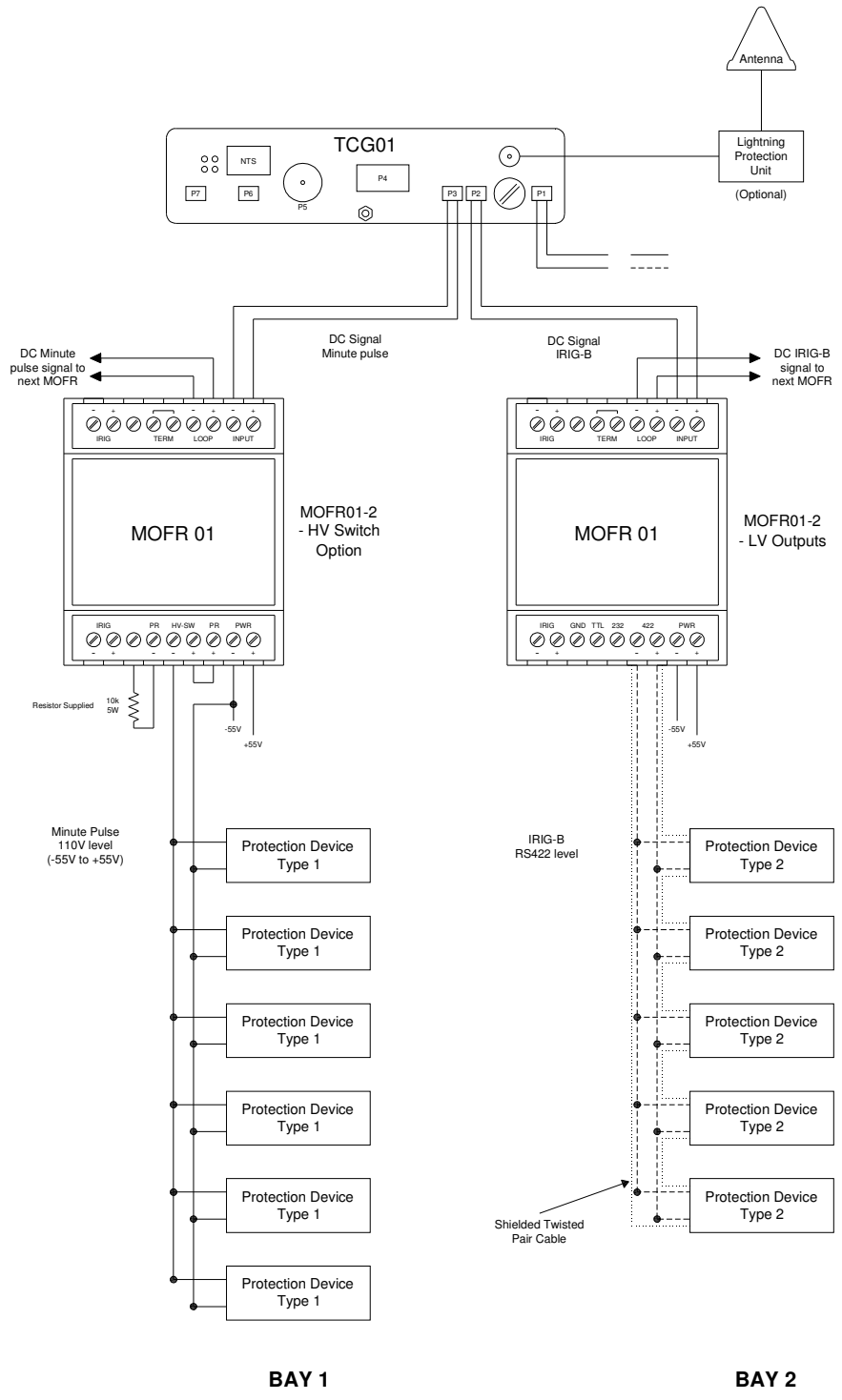
MOFR01 with ST fibre optic I/O units are also available to allow “daisy-chaining” of the time synchronisation signals via ST fibre.

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

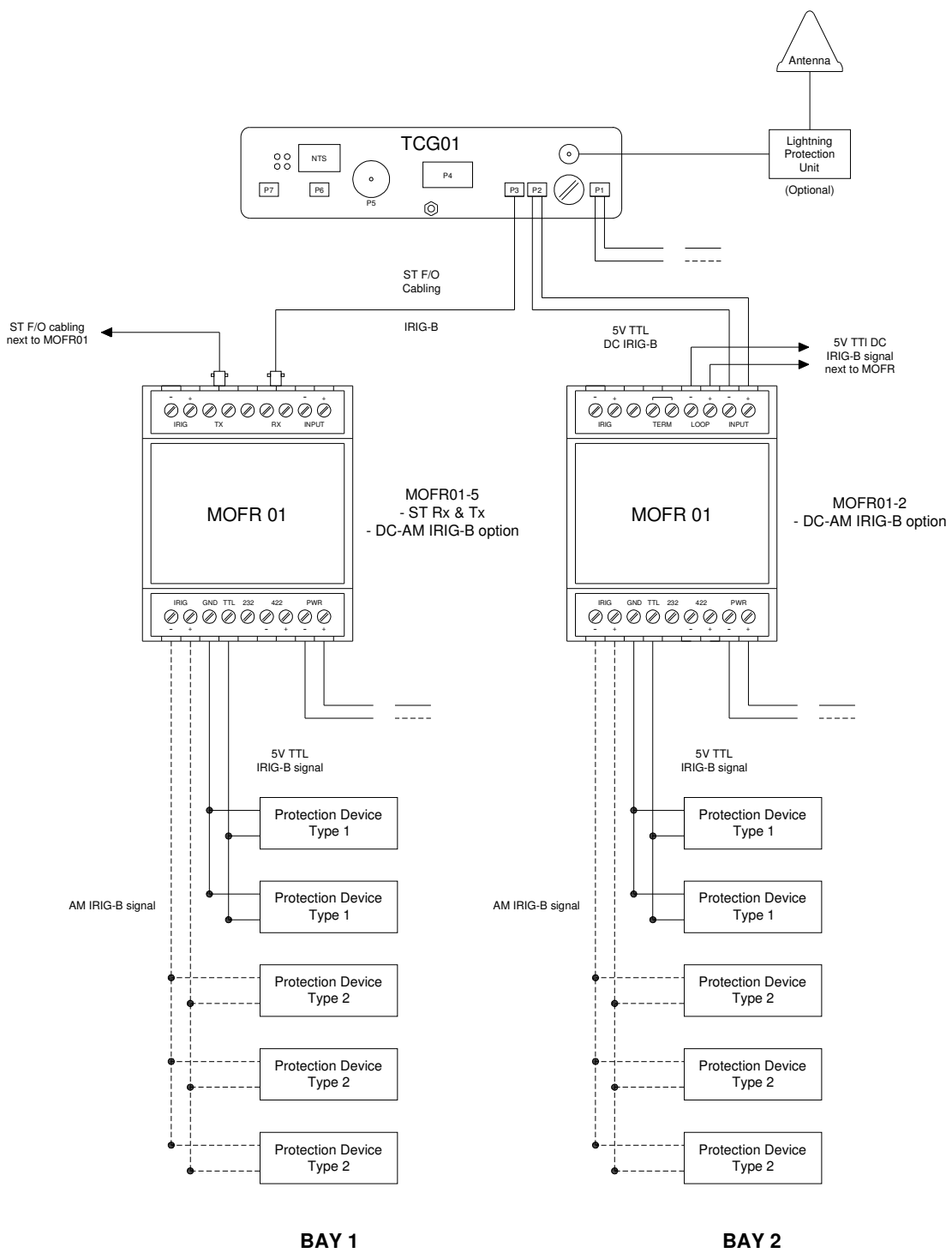
Time Sync – AM IRIG-B Distribution



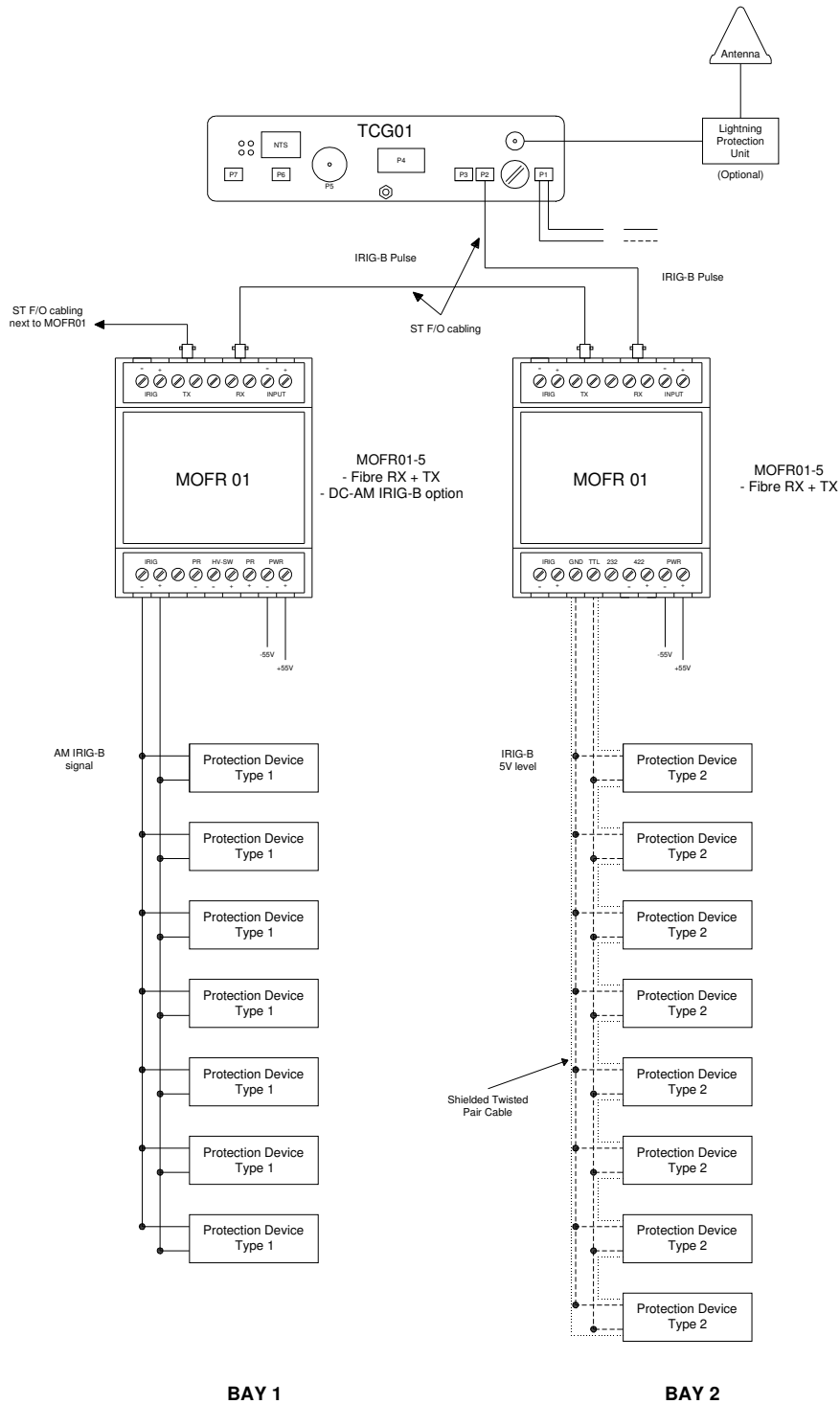
Time Sync – Cu Distribution



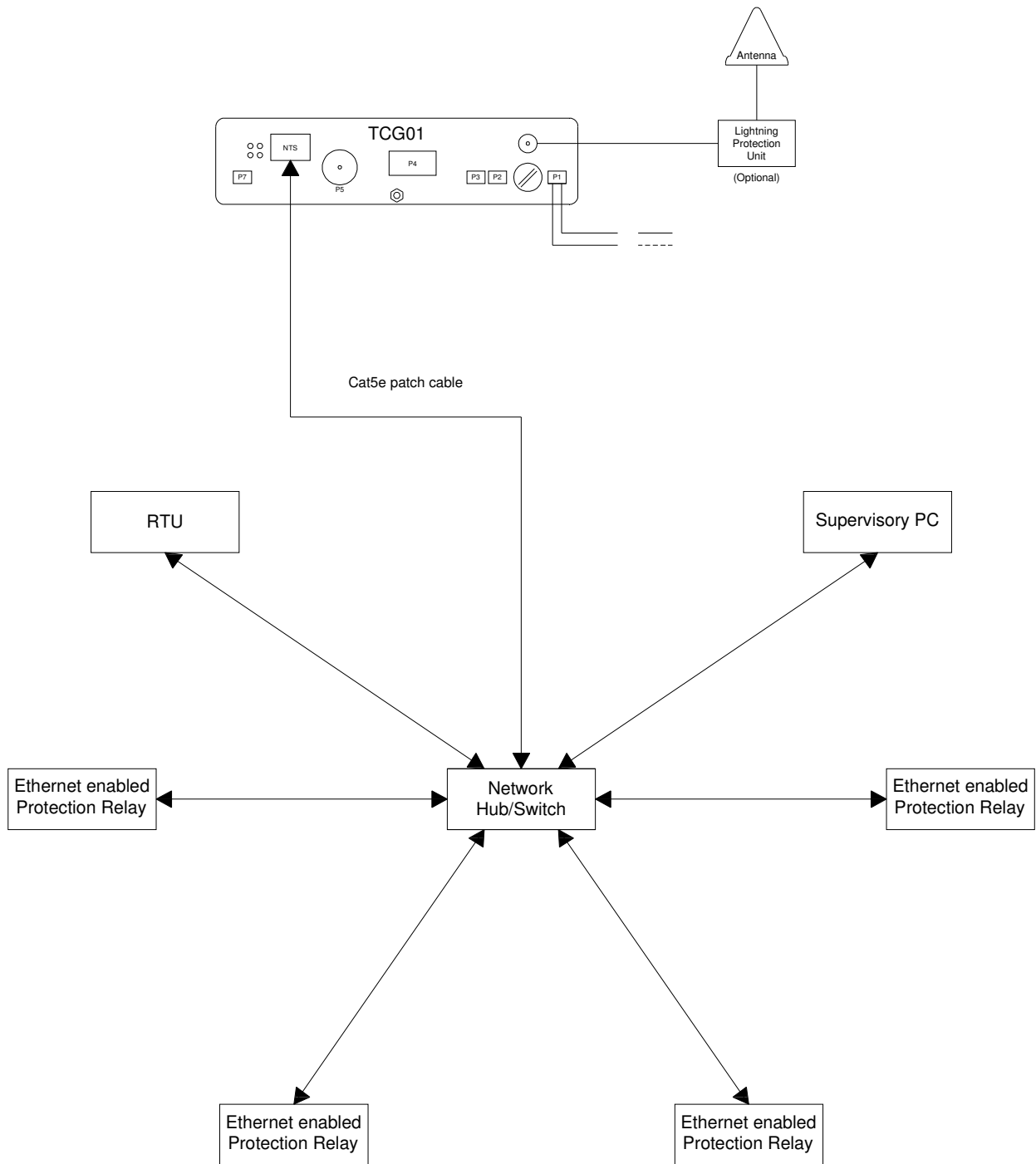
Time Sync – DC to AM IRIG-B Distribution



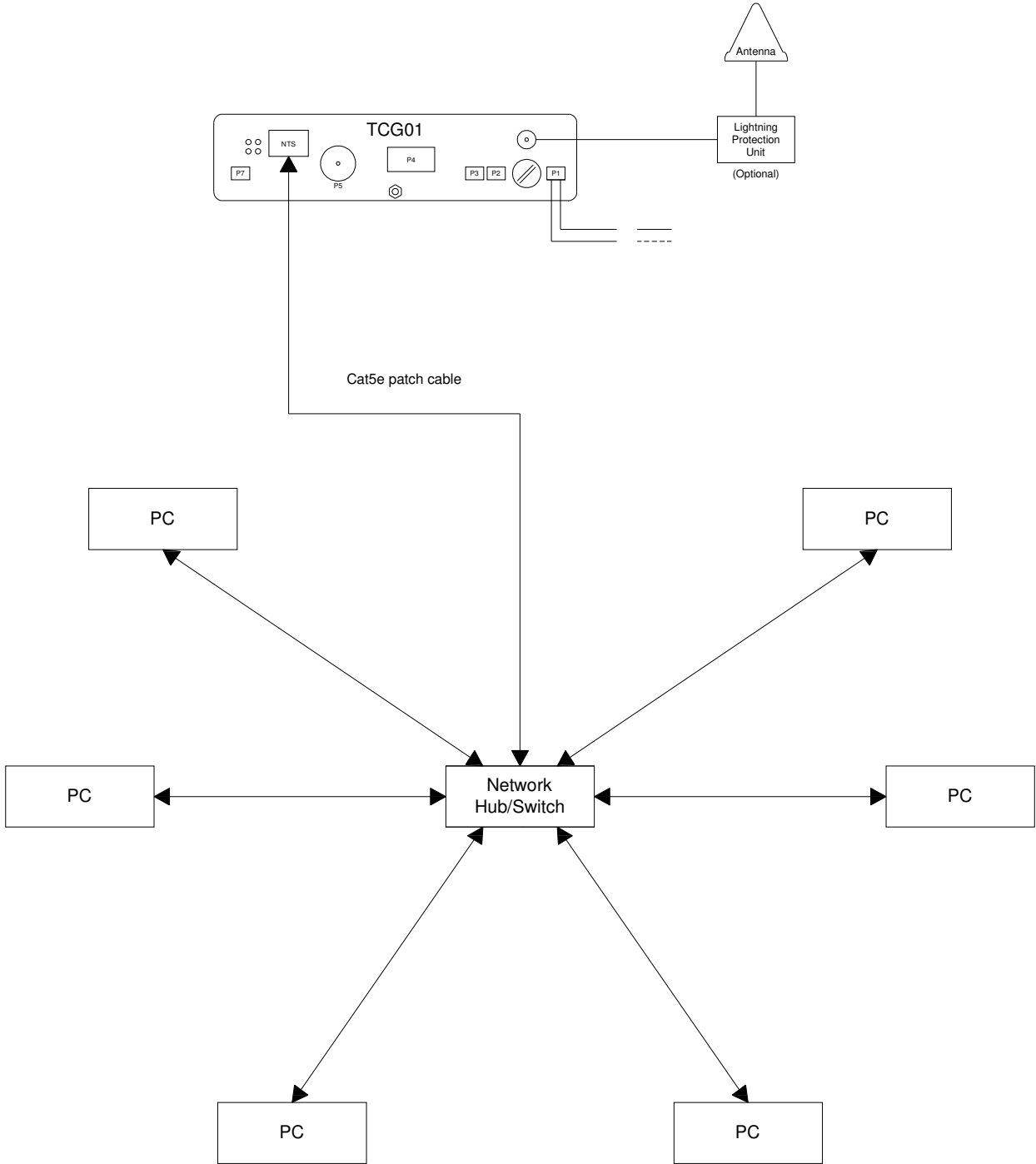
Time Sync – Fibre Distribution



Time Sync – RTU Network Distribution



Time Sync – PC Network Distribution



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