Basic principles of wind power lightning protection for communication base stations

Can radio communication sites be protected from lightning?
The protection from lightning of radio communication sites can be achievedand protection from even direct lightning strikes is possible. The author is familiar with many examples where direct strikes have occurred and full protection has been achieved. The mechanism of a lightning strike must first be fully understood.

How should a lightning protection System (RBS) be formed?
The earthing network of an RBS should be formed by a ring loopsurrounding the tower,equipment room and fence,at a minimum. The mean radius re of this ring loop should be not less than l1,as indicated in Figure 1 and this value depends on the lightning protection system (LPS) class and on the soil resistivity.

Is there a systematic approach to lightning protection?
The only time proven method of lightning protection is to adopt a systematic approach. Lightning protection standards,particularly those revised since 1990,advise on this systematic approach.

Where can I find information about lightning protection?
For lightning protection best resources are Polyphasers book the ARRL Handbook along with the book "Grounding and Bonding for the Radio Amateur". The ARRL Handbook contains good electrical safety information for the amateur radio operator. Links on the next few pages to references and info. Links are also available at:

Why are radio communications stations prone to lightning strikes?
It is not difficult to understand why radio communications stations are so prone to lightning strikes. Sites are generally located on elevated ground and mountain topsand have an antenna tower or mast prominently located to optimize radio coverage to the surrounding areas.

How does a lightning protection system work?
The geometry of the interconnections in and around the building are of vital significance to the effectiveness of the lightning protection system. The objective is to provide a path for the potentially destructive lightning current flowing from the antenna to the AC supply line via a path that does not include the interior of the building.

The design of the external lightning protection and the choice of Class I lightning current arresters de-pends on the lightning protection class of the wind turbine.

Since all Mentor Radio base radios come equipped with surge suppressors, they afford some degree of protection. However, should the surge be greater than the MOV"s installed in the ...

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The mobile communication system includes wireless devices: a computer room, a station, an iron tower, an antenna feeder, etc., and the antenna feeder system is set up high, ...

Lightning and surge protection - basic principles Synopsis This publication discusses the nature of the threat to electronic instrumentation and communications networks posed by voltage surges ...

Abstract: This paper describes lightning protection for mobile phone base stations by combining quarter wave short and open stubs. MPBS (Mobile Phone Base Stations) have antenna towers ...

For lightning protection best resources are Polyphasers book the ARRL Handbook along with the book "Grounding and Bonding for the Radio Amateur". The ARRL Handbook contains good ...

The purpose of this Recommendation is to give detailed guidance on protection procedures, so that an engineer who is not a lightning protection expert can accomplish the design of the ...

This paper examines the reasons for this phenomenon and discusses protection techniques which may be applied to all radio communication sites whether used as microwave repeaters, ...

The lightning protection of the communication room should include the lightning protection grounding of the room building, the lightning protection grounding of the room equipment and ...

The following describes how to implement lightning and surge protection measures for the electrical and electronic devices / systems of a wind turbine. The complex problems ...

Install lightning rods, grounding, surge protectors, shielding, and follow standards for effective communication station protection.

An effective lightning protection design for a telecommunication facility requires an integrated approach to a number of key factors: Protection against direct

A systems approach to power surge protection must be applied to the protection of power services. Surge voltages and energies may be very high should a power line receive a direct ...

1.1 The need for surge protection Most process control or telemetry installations are interconnected by power and signal cables which run on trays, in ducting or via overhead ...

SDP intended to be install in a installation equipped with a Lightning Protection System, where a part of the current of the direct lightning strike could flow through the device.

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The contents of the book, distributed over 23 chapters, covers all aspects of lightning protection including lightning parameters of engineering interest, the evaluation of the risk imposed by ...

In conclusion, it"s more eco-friendly and economic to construct a wind solar hybrid power system for the communication base station cause ...

same discarded concept is being used by some lightning protection system manu-facturers to create and commercialize lightning protection systems. Recent research has shown that when ...

physics of lightning. However, most of the principles of lightning protection can be related to the characteristics of the lightning current waveform. Although lightning currents have been ...

It is the intention of this application note to discuss suitable techniques to protect electronic cir-cuits and equipment from high voltages and surge currents induced by light-ning and other ...

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