



PRODUCT APPLICATION NOTE

Electrical Protection of Cell Sites

Raycap provides connectivity and electrical protection solutions for traditional and distributed base station architectures

As mobile operators in Africa begin to launch new wireless networks and services they are

exploring the best options to ensure the stability and reliability of those networks.

The Challenge

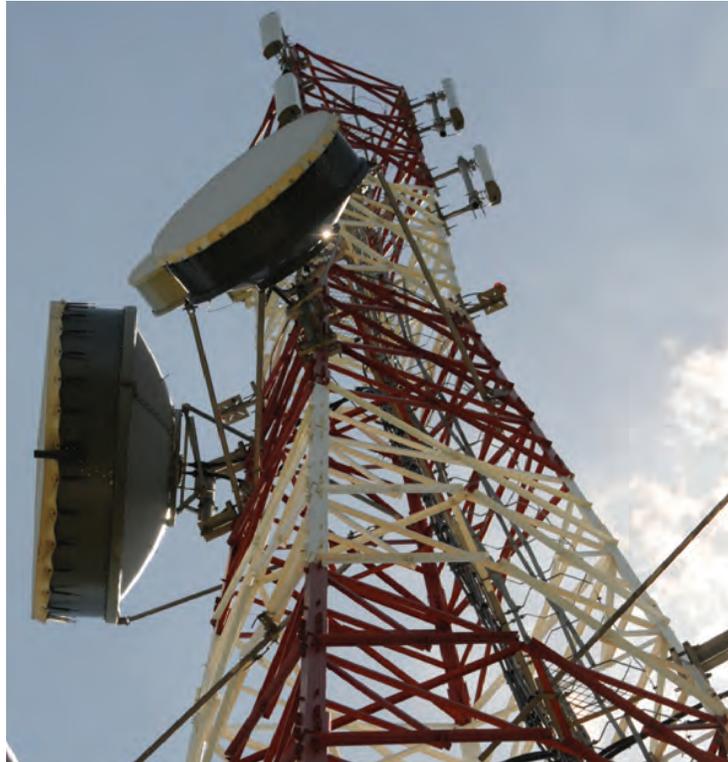
Over the past five years, operators in Africa have been rolling out Remote Radio Head (RRH) architectures on their networks to reduce costs and improve efficiency. But deploying the radios at the tower tops exposes them to direct lightning events, which can lead to catastrophic failures on their networks.

Raycap is the recognized leader in providing custom lightning surge protection and connectivity solutions for Remote Radio Head (RRH) architectures. In 2013 a large African operator asked Raycap to supply RRH protection products during a trial period that would evaluate their effectiveness in protecting against equipment failure, revenue loss and increases in operating expenses.

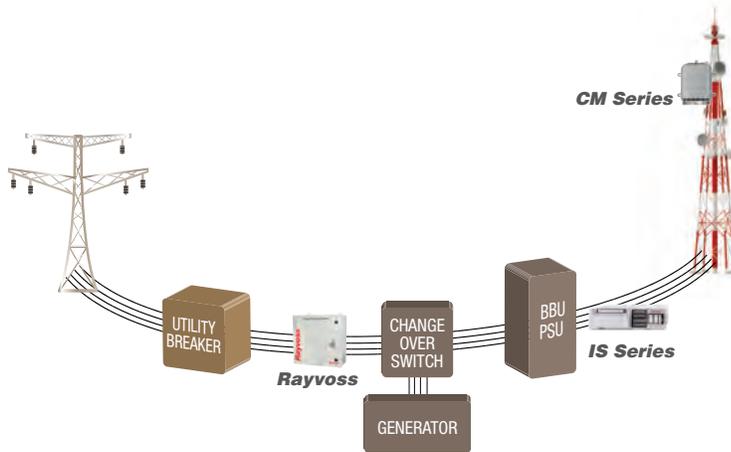
Solution

Raycap provided turn key solutions that protected both the AC and DC power. They included protection at three (3) points:

- Rayvoss after the main utility breaker to protect the automatic change over switch, generator control panels and entire power supply distribution.
- IS Series solutions installed on the DC cables entering the shelter and protecting the rectifier and power supply unit (PSU) from lightning surges coming from the towers RRH DC feeders.
- CM Series products installed on the DC power supply adjacent to each RRH to protect the RRH from lightning on the tower.



Ensure unparalleled reliability and availability of electrical equipment and operational infrastructures with Strikesorb®, a surge protection technology field proven and customized for cell site installations.



Raycap provides turn-key electrical protection and connectivity solutions focusing on total protection of the sites, from the RRHs and Base Band Unit (BBU) to the Power Supply Unit (PSU).

Raycap



I N N O V A T I N G P O W E R P R O T E C T I O N W O R L D W I D E

All the products provided relied on Raycap's superior Strikesorb surge protective device (SPD) technology, which is capable of taking multiple lightning strikes or surges while continuing to safeguard the equipment it is designed to protect. Strikesorb carries a 10-year module replacement warranty.

Conclusion

The three trial sites chosen by the operator were the most problematic and most frequently hit by lightning. One of the sites had a record of being hit seven times in one lightning season, and the current surge protection at all sites had to be removed and upgraded to Raycap's customized solutions.

The trial ran for more than one year, including throughout the heavy lightning season, and was regularly monitored by the operator's technical teams. At the trial's end not a single power-related issue was encountered. The operator was shown the resulting benefits of the Raycap protection and connectivity solutions which included reduced downtime and large operating expense savings. In future installations, Raycap solutions could also become a positive driver for increases in customer satisfaction.



Rayvoss Family of Products

Figure 2: Remote Radio Head on tower at one of the test sites.

Figure 1: A Raycap surge protection Rack Mount IS Series installed inside the shelter.

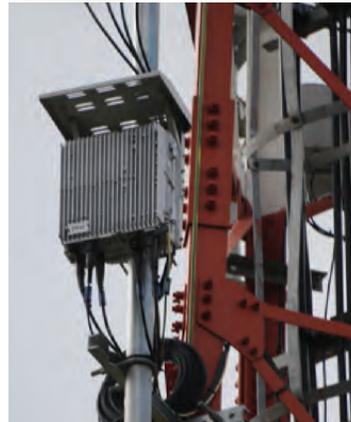


Figure 3: Installing a Raycap CM surge protection device adjacent to the RRH.

“ Raycap has the experience and the expertise to develop the best customized solutions for RRH and traditional cell site protection and connectivity, even in the world's harshest environments. ”

Strikesorb Benefits

- Maintenance-free operation
- Safe operation: No smoke, fire or explosion
- Unique capability to withstand multiple high-energy transients
- Ultra-high short circuit current rating
- Low let-through voltage, therefore providing excellent protection compared with competitive SPD products
- Class I/Class II compliant SPD per IEC 61643-11:2011
- Global standards compliance: UL 1449 4th Edition, IEC, IEEE, NEMA
- 10 year global product warranty



Raycap is a trusted partner, providing maintenance-free electrical protection solutions for mission-critical applications in hundreds of thousand installations worldwide. For a detailed presentation on how Raycap's Strikesorb-based solutions can protect your wireless network, contact us today!

Raycap

www.raycap.com

