

# Charles Edge Computing Enclosure Solutions

## Edge Data Centers

A whole host of new data-intensive and latency-sensitive applications are pushing data computing resources to the edge of the network. Emerging applications such as autonomous vehicles, augmented reality, and IoT aggregation require real-time processing for optimized decision making and functioning of the application. This will foster a myriad of small scale compute nodes or micro data centers located very close to the data being generated.

These micro data centers can be located anywhere such as a cell site or a Smart City pole. Locating outdoors presents a very harsh environment and many challenges for reliable equipment installations. With more than 50 years protecting outside plant equipment, Charles Industries has deep expertise with providing enclosed solutions that overcome these challenges. Charles enclosures guard equipment against environmental impairments such as heat, cold, rain, wind, vibration, and corrosion.

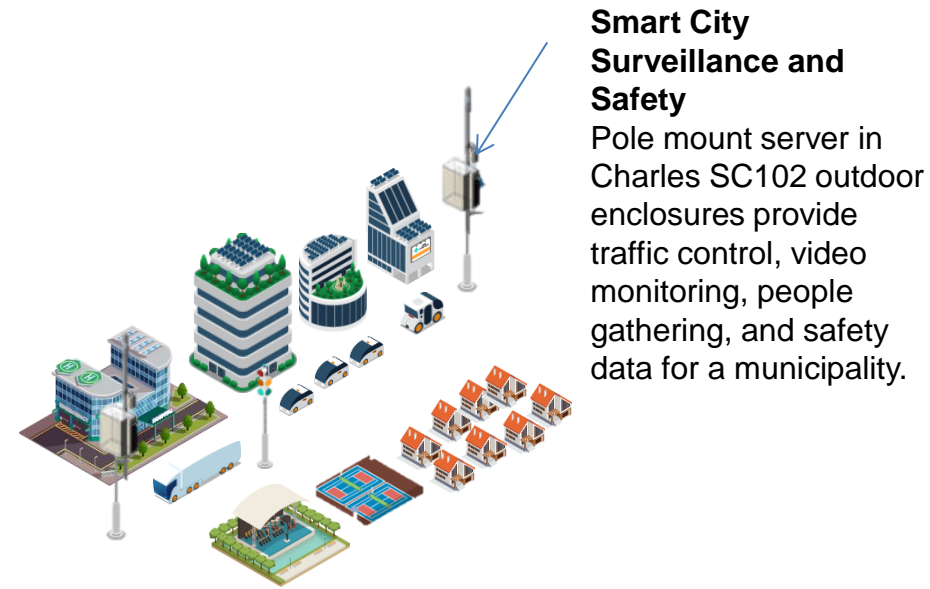
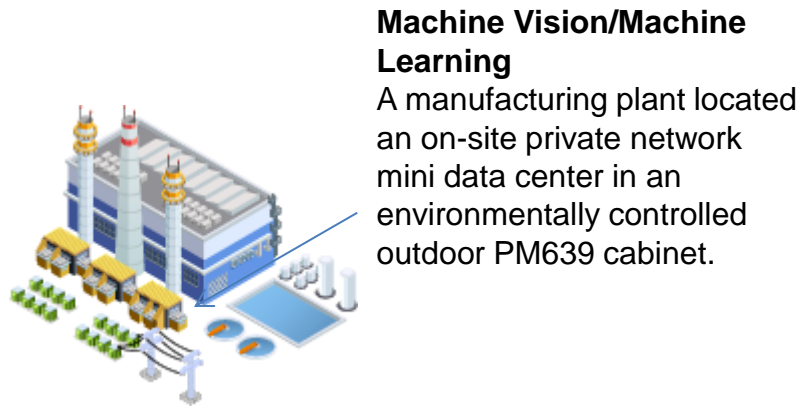
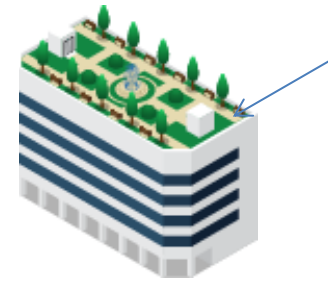
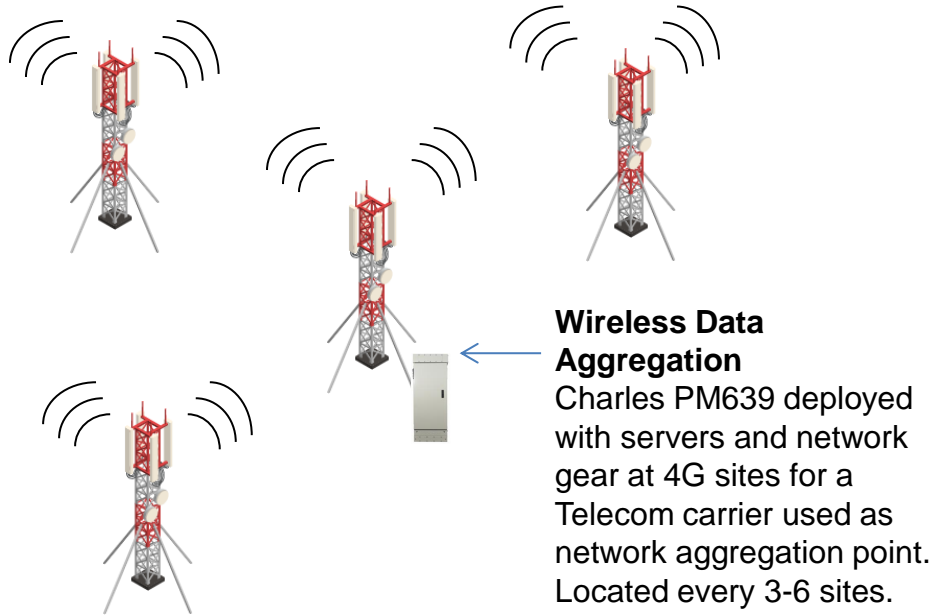


## Charles Edge Enclosure Solutions

Charles' Edge enclosures provide a reliable and protected environment to locate an edge computing platform or smart city node anywhere. These enclosures are self-contained, secure units that come integrated with power and thermal management, as well as space to add IT equipment. Use space-saving Charles Edge Enclosures to set up a Micro Edge data center anywhere, anytime — no building structure required.



# Outdoor Edge Use Case Examples



# Outdoor Edge Enclosure Solutions

## Pole mount Solutions

The Charles SC102 enclosure was designed to house high power MEC servers and provides a reliable and protected environment to position a compute node on a small cell/5G or city pole. The enclosures are self-contained, secure low profile units that come with integrated power and thermal management. Additional low profile SC enclosures are available to protect up to 4U pole mount servers. Compliant with GR-487-CORE.



## Pad Mount Solutions

Charles Pad Mount (PM) Edge Cabinet series are available in 30, 39, and 44 RU units. The cabinets are available with either 19" or 23" rails. They come with integrated power, in either AC or DC format. A number of heating and cooling systems are available depending on thermal load of the equipment. Remote monitoring options include door intrusion, temperature, humidity, thermal system, as well as electronic door access. The cabinets are compliant with GR-487-CORE.



## Modular Cabinet Solutions

Charles new modular cabinet platform offers the ultimate in flexibility for outdoor edge equipment deployments. Multiple standard bays can be mixed and matched to suit specific site requirements. The cabinet line-ups are built and shipped from the factory in the desired configuration up to 4 bays. Additional bays can be integrated on site at a later time. A variety of power and thermal management options are available.







## Walk in Cabinet Solutions

Charles Walk in Cabinet (WIC) solutions are a lighter weight alternative to concrete shelters. The WIC provides the ability for remote site installation with limited maintenance required. With hardened computing equipment and use of Charles Thermal Management System (CMTS), the WIC can provide valuable energy savings over current concrete sheds and huts. While typically available with a 10" by 10" footprint, the WIC can be custom designed to end user requirements,



# Outdoor Edge Enclosure Selection Guide

Series	SC102	PM630/PM639/PM644	MC1/MC2/MC3	WIC
View				
Description	Pole mount edge server node enclosure	Pad mount micro-data center enclosure	Modular micro-data center enclosures	Walk-in cabinet edge data center
Deployment	Low profile pole mount	Pad mount	Pad mount	Platform mount
Material	0.125 Welded Aluminum	0.125 Welded Aluminum	0.125 Welded Aluminum	12 GA Welded Steel
Size	36"H x 24"W x 14"D	60" x 32" x 32" D 72" x 32" x 32" D 84" x 32" x 32" D	62" x 32" x 32" D per bay 72" x 32" x 36" D per bay 84" x 32" x 36" D per bay	10' x 10' x 10'
Rack positions	2RU	30RU 39RU 44RU	31RU 39RU 44RU	4 bays with 44RU each
Typical # servers	1 – 3	4 – 6	12 – 24	6 – 8 per rack
Ambient external temperature	-40°C to + 46°C (-40°F to + 115°F)	-40°C to + 46°C (-40°F to + 115°F)	-40°C to + 46°C (-40°F to + 115°F)	-40°C to + 46°C (-40°F to + 115°F)
Thermal options	1.8KW Heat Exchanger 4K BTU HVAC	10K – 24K BTU HVAC	40K BTU per 4 bay unit	Charles Thermal Management System or various HVAC systems
Typical alarms	Door, temperature, thermal	Door, temperature, thermal	Door, temperature, thermal	Door, temperature, thermal
Notes	Designed for 2U of servers Contact Charles for 3U/4U options	Versatile general purpose cabinet with options to meet nearly any requirement	Designed to provide 2-4 integrated bays. Additional bays can be added on site.	Developed as a 10'x10'x10' unit. Contact Charles for other size requirement

**For more information and help on your project, contact Charles today!**

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