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Sunsea Small Cell Cases

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Application Scenario 1 - Indoor Hot Spot and Blind Spot

Application scenario

Small indoor scenarios such as homes, offices, hotels, conference rooms.

Application features

The deployment of integrated small cell can make full use of existing broadband resources for flexible access with its own capacity. It can effectively meet requirements of indoor data, voice complaints and indoor accurate blindness coverage.

Application products

Sunlight 1000, Sunlight 2000

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Case - Indoor Small Area Coverage

Background

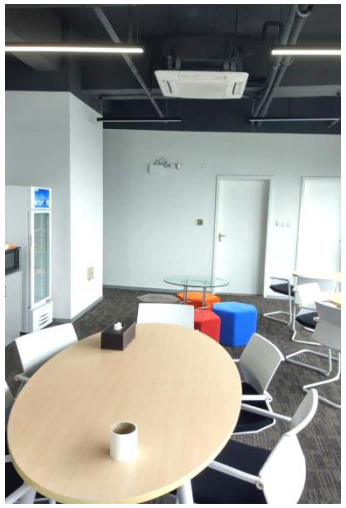
Traditional small-area blindness supplementation uses methods such as rectification of existing network, establishing new base stations, room divisions or additions, etc., Network construction is facing a long construction cycle and unsatisfied ROI so as a lower cost and easy deployment solution is urgent required.

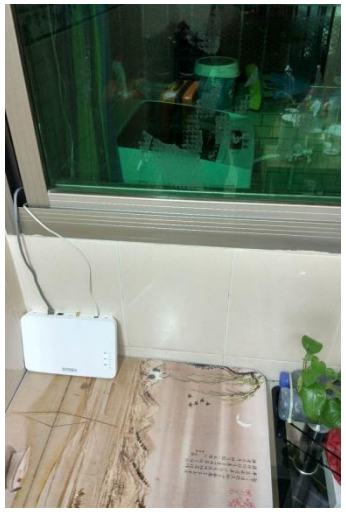
Solution

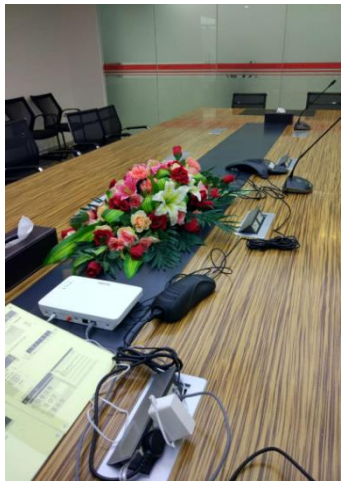
Sunsea indoor small cell are adopted to solve the transmission and power supply problems through a network cable. The existing transmission resources can be flexibly selected and accessed from anytime and anywhere, which can meet various indoor small-area coverage.

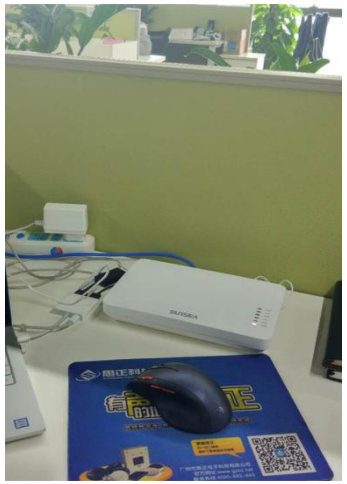
Summary

Small-area or single-site deployment can achieve accurate indoor coverage and quickly fill blindness, which can effectively improve the surrounding network environment, quickly resolve indoor user complaints, provide protection for temporary indoor network capacity, and improve user voice and data experience.









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Case - Elevator Network Coverage Deployment

Background

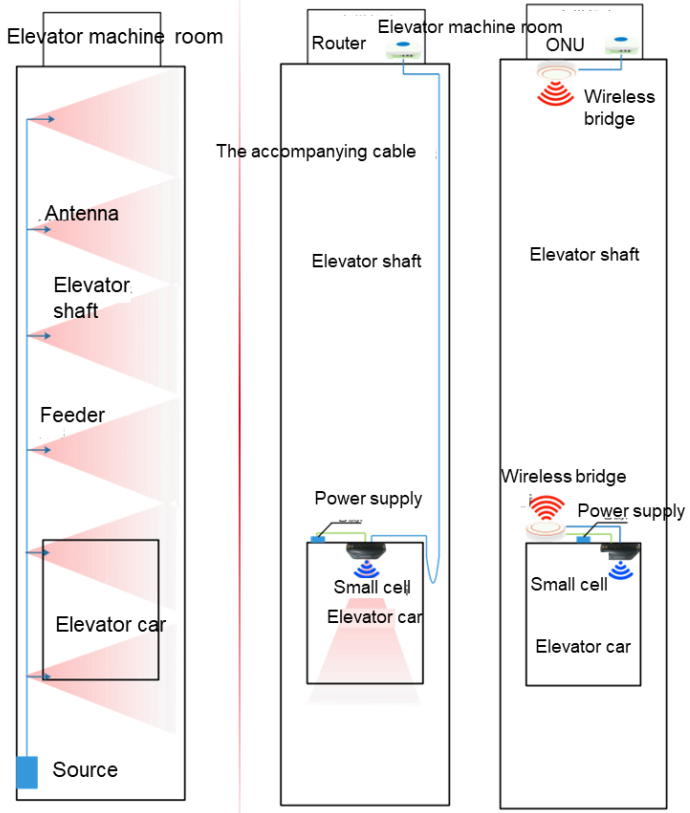
The elevator signal of the building has always been the most obvious place for users to feel and it is also a battleground for operators. However, the high investment in the construction and the complex construction in the elevator shaft has always been a difficult problem.

Solution

This solution uses a Sunsea 125mW integrated small cell, which is transmitted between the elevator shafts through a wireless bridge and is accessed by broadband at the back end of the cell, which easily realizes a network cable + a small cell to complete an elevator coverage.

Summary

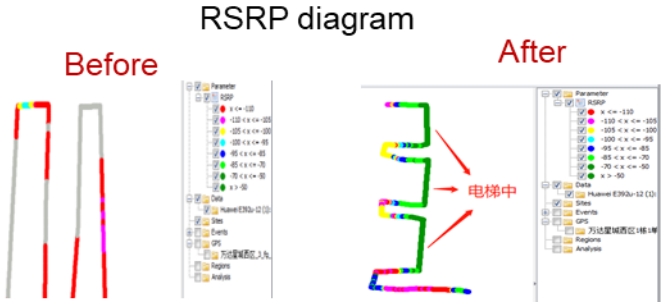
Effectively avoid complex wiring and construction in the elevator shaft, simple and fast deployment, effectively reduce the cost and quickly achieve accurate deployment of the elevator.



Traditional solution

Source + feeder + passive device + antenna

RSRP diagram



Building X							
Band	Band1	BM	20M	Downlink frequency	100	Broadband bandwidth	20M
enodeb ID	473229	cellid	6	TAC	28213	PCI	364
RSRP	-66.37dbm	SINR	30db	RSRQ	-5.25db	Attach success rate	100%
FTP peak downlink speed	22.6mbps			FTP peak uplink speed	5.1mbps		

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Case - Underground Parking Lots Network Coverage

Background

Due to its special geographical location, underground parking lots have always been an important area covered by indoor signals. This scenario is usually empty, high network coverage cost and long investment recovery period.

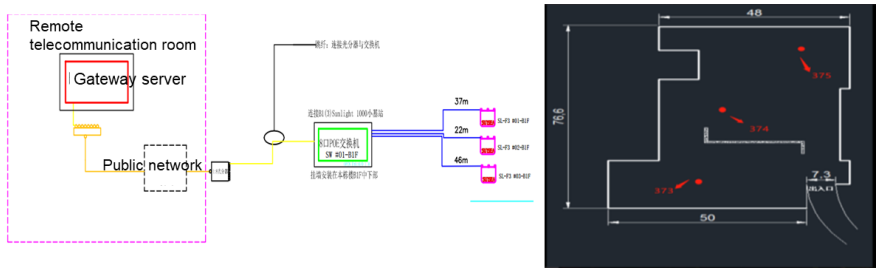
Solution

This solution adopts 3 indoor integrated small cell, through simple network wiring, switch aggregation and POE power supply, to meet the wireless signal coverage of nearly 4,000 square meters of underground parking lots.

Summary

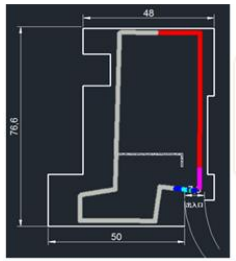
It is simple to deploy small cell for regional networking, saving investment on traditional sources, passive components, antennas and feeders. Flexible access and easy construction make the construction cost of wireless network coverage of the underground parking lot effectively reduced.

Solution

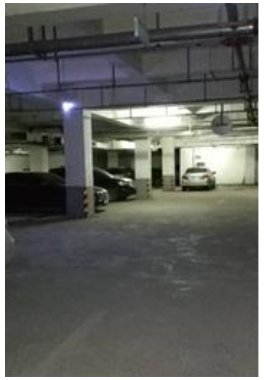


RSRP diagram

Before



After



Underground parking lot		
Test item		Test result
Attach success rate (10 times)		100.00%
Downward FTP	RSRP	-68.3dBm
	Average SINR	30dB
	Average downlink throughput	88.6mbps
	Downlink peak value	93.9mbps
Uplink FTP	RSRP	-74.7dBm
	Average SINR	27.6dB
	Average uplink throughput	40.0mbps
	Downlink peak value	43.4mbps
Ping delay (ms)		30
Small station and macro station switching success rate (10 times)		100.00%
Small station and macro station reselection success rate (10 times)		100.00%

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Application Scenario 2 - Indoor hot spot blind spot

Application scenario

Street road, street shops, residential area, urban village, etc.

Application features

Outdoor integrated small cell can effectively improve the capacity of outdoor small area blind area and hot area. It can access to existing transmission resources, low cost, easy construction and deployment which effectively solve the difficulties of property, site shortage and emergency support scenarios. It is rapid deployment plan for light pole station, street site small area.

Application products

Sunlight 2000

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Case - Tower Pole Small Cell Integration

Background

Old-fashioned residential area with seven floors high on both sides, small space between buildings, sensitive property. The lack of base station sites has led to insufficient coverage of buildings, streets, and shops along the street.

Solution

Base on the street poles, utilize a cement pole + high-gain directional plate antenna through the outdoor small cell.

Summary

Effectively address the sensitive issues of residential property and deep network coverage for street shops. After deployment, the download rate is twice as high as the original macro station which effectively improves RSRP in residential areas.

Place		A	B	C	D	E	F	G
Before	Max.	-61.06	-83.31	-92	-112.3	-85.12	-68	-89.75
	Min.	-116.9	-119	-117.3	-128.2	-110.4	-109.5	-133.5
	Avg.	-93.29	-101.4	-107	-118.6	-96.93	-87.47	-108.7
RSRP test								
After	Max.	-53.25	-60.12	-63.18	-71.81	-67.25	-79.62	-54.37
	Min.	-101.2	-101.7	-102.3	-102.9	-96.43	-81.12	-94
	Avg.	-76.62	-80.52	-87.93	-84.95	-80.27	-80.39	-71.23
RSRP test								

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Case - Old Community Blind Supplement

Background

The residential district has a high population density and dense buildings, and it is difficult for the macro station to cover in depth. In addition, property negotiation is difficult and site selection is lacking.

Solution

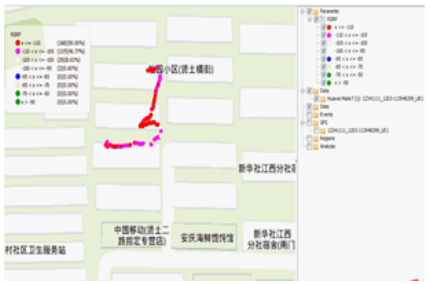
Deploy multiple 1W integrated baseband, radio frequency and antenna small cell between residential buildings, and hang them outside the residential buildings for concealment. Utilize the original transmission resources to quickly organize network.

Summary

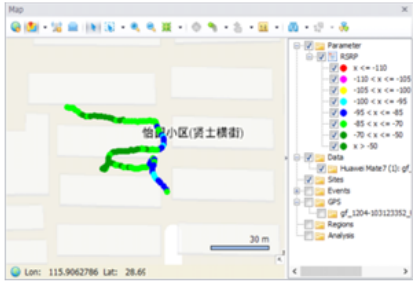
Effectively solve the problem of sensitive station construction in residential areas, greatly improve the RSRP in the coverage area. 100M download rate improves the user experience and perception.

RSRP diagram

Before



After



Marco network	FTP downlink throughput	RSR	-84.31dBm
		SINR	7.4
		Downlink throughput	52Mbps
	FTP uplink throughput	RSR	-83.31dBm
		SINR	18.4
		Uplink throughput	36.1Mbps
Station X	FTP downlink throughput	RSR	-54.5dBm
		SINR	30
		Downlink throughput	97.7Mbps
	FTP uplink throughput	RSR（dBm）	-54.06
		SINR	30
		Uplink throughput	34Mbps

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Application Scenario 3 - Comprehensive Coverage

Application scenario

Campus, port, smart park and other enterprise private network coverage area.

Application features

The enterprise wireless private network covers a relatively large area, the traffic volume and data traffic are unevenly distributed, and the business is accompanied by tidal effects. Comprehensive coverage can be achieved with indoor, internal and external small base station equipment, which not only effectively solves the problem of wide area coverage but also focuses on high-traffic value areas for deep coverage requirements.

Application products

Sunlight 1000, Sunspeed2000, Sunpower3000

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Case – Wide Area Coverage

Background

The army barracks area is in a blind area of wide area coverage, with overall RSRP of the barracks area is ≤-100dBm which cannot meet the daily voice and data traffic requirements in the barracks.

Solution

An integrated high-power outdoor small cell + high-gain plate-shaped directional antenna is used for directional coverage, which eliminates the need for a computer room environment and uses original installations such as concrete poles for field deployment.

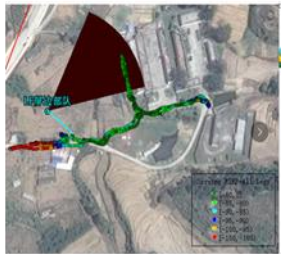
Summary

Effectively solve user data and voice needs, further improve user perception, and greatly reduce supporting investment. Realize the need for accurate blind correction in the wide area and stimulate the release of data traffic in hot areas.

RSRP diagram

Before

After



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Thank you!