Wireless Monitoring
in
Xuzhou Rural Area

Requirement Background

With the rapid development of the economy of our country, rural economic level increases, the quality of life of rural residents have greatly improved; demands for people's own security are also getting stronger and stronger.

From the point of view of the present stage, security construction in rural area of China is still relatively backward and uneven development; most areas are almost blind security.

The people and the government all hope to establish a complete set of remote video surveillance system through modern technology in order to keep social order, crack down on various illegal and criminal activities, Protect citizens' lives and property, promote the economic development, and it is also an important symbol of the modernization of the country.

Requirement Analysis

The video surveillance system needs to cover major public occasions for reducing crime and enhancing security, it needs advanced technology, reliable quality, economical and practical, and convenient management.

Rural overall construction of security is backward, there are many defects of the traditional wired plan, such as sparsely populated, living scattered, fiber-optic wiring difficulties, high price and long construction cycle.

Using wireless transmission scheme is not subject to geographical factors and distance constraints, which is greatly reducing the local construction difficulty of rural poor infrastructure, the network mode is more flexible and expandable, convenient maintenance, shorten the construction period, and lower cost.

System Topology

The requirement of rural surveillance is to understand the situation of the intersection of each village in real time. Monitoring center in the village. Each monitoring point to the village will be covered by trees or other buildings, so it is particularly important to choose a high ground. In general we choose the village near the base station as the commanding heights of the tower. A plurality of receiving devices are installed on the base station, covering 360 degrees, receiving the data of all the monitoring points around, and then transmitting the aggregated data from the base station to the village committee through the wireless transmission.
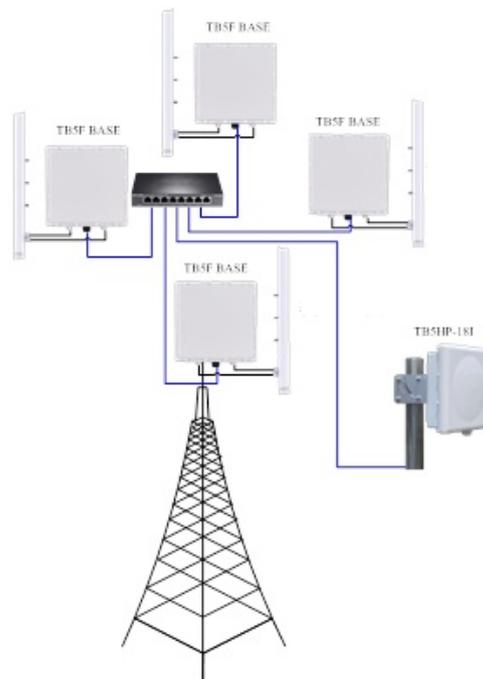
Monitoring equipment installation:

In the rural environment, the monitoring point is generally selected at the cross road, so the camera and wireless devices can be installed on the roadside poles. Use TB5E to send the monitoring data to the base station tower.TB5E can connect to two cameras.
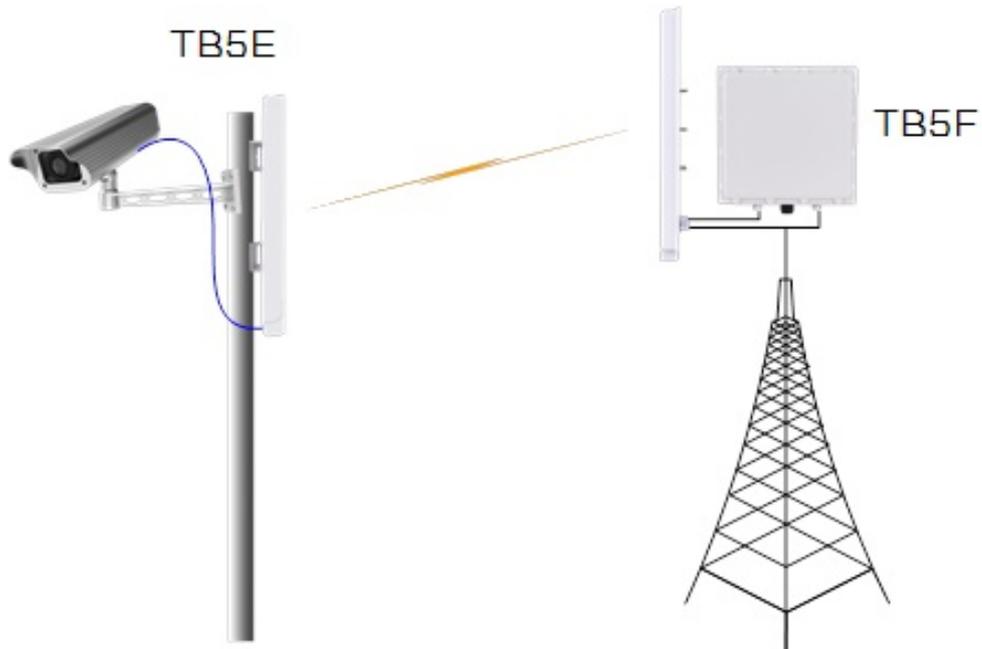

Base station tower equipment installation：

Using 4 TB5F devices, can be achieved around 360 degrees of coverage. Use a pair of TB5HP-18I were set up in the base station tower and roof village as backhaul link.
The bandwidth of TB5HP-18I in the range of 5km is up to 200 ~ 400Mbps, which can satisfy the transmission of backbone links in most cases.
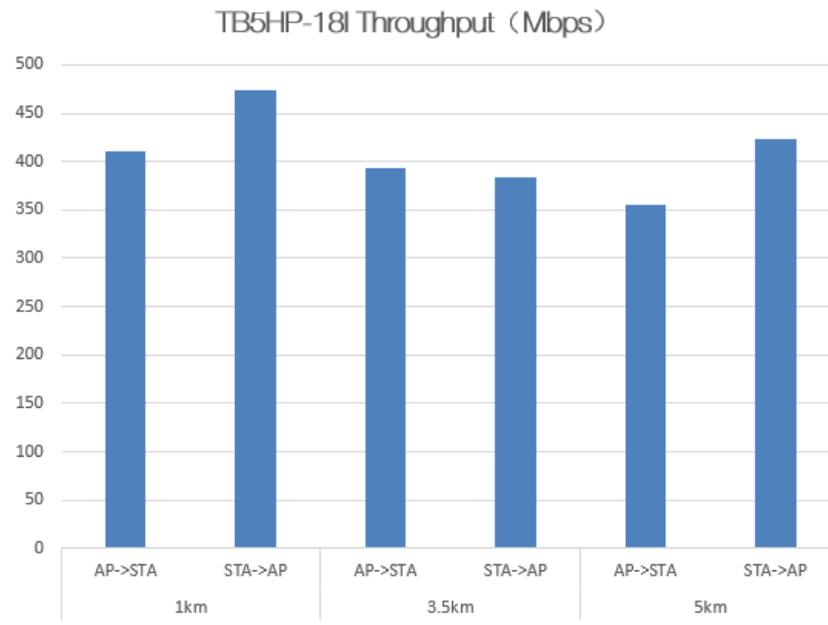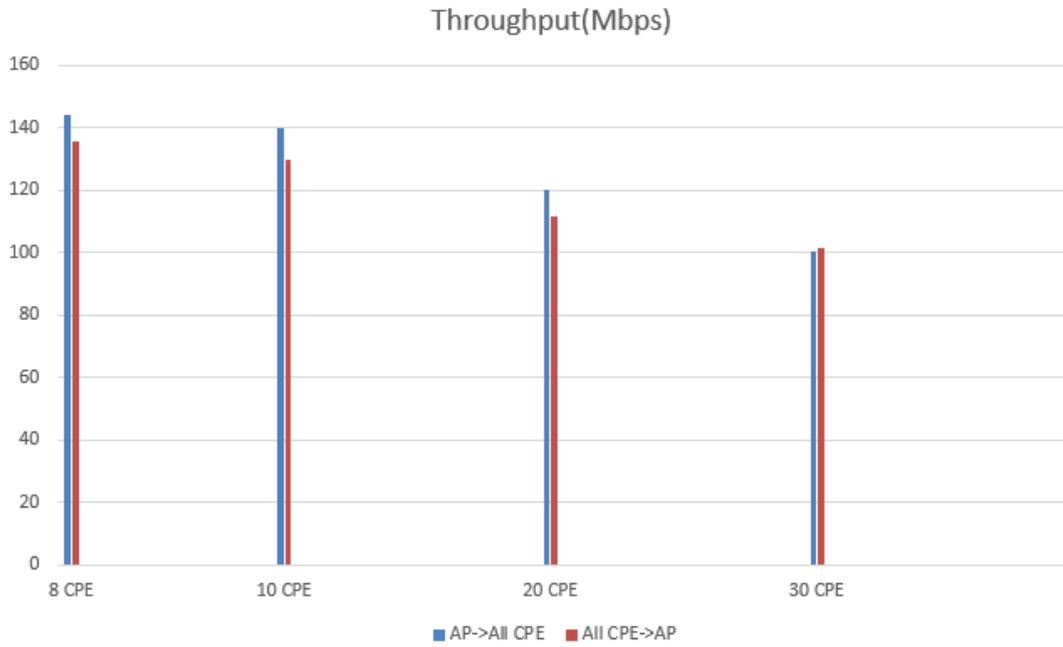
Village committee equipment installation:

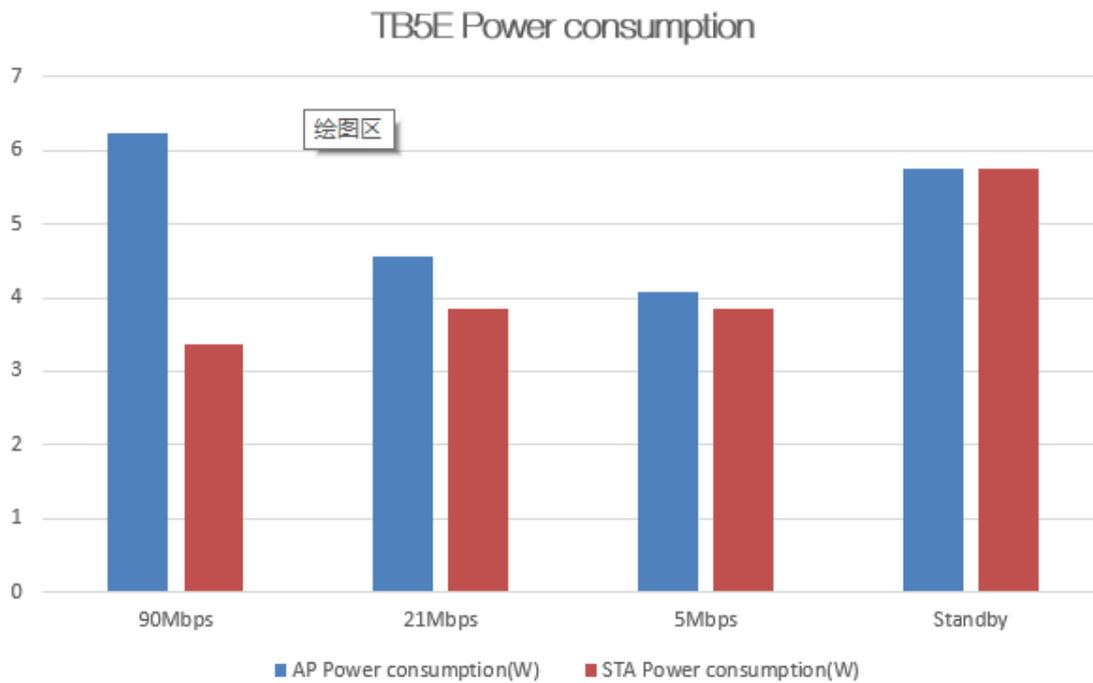TB5HP-18I receives data from the base station tower.
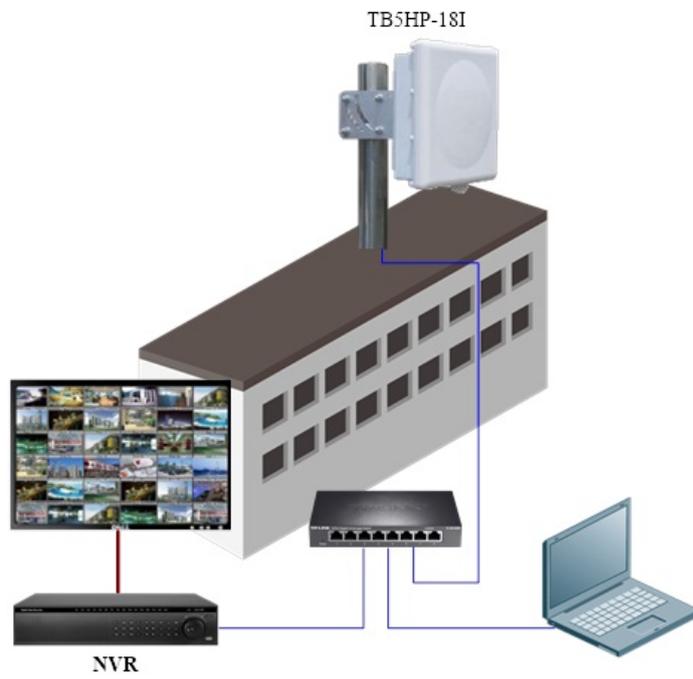
Throughput

AP: TB5F; CPE: TB5E

Power consumption

TB5F Power consumption

Legend: ■ AP Power consumption(W) ■ STA Power consumption(W)

TB5E Power consumption

绘图区

Legend: ■ AP Power consumption(W) ■ STA Power consumption(W)
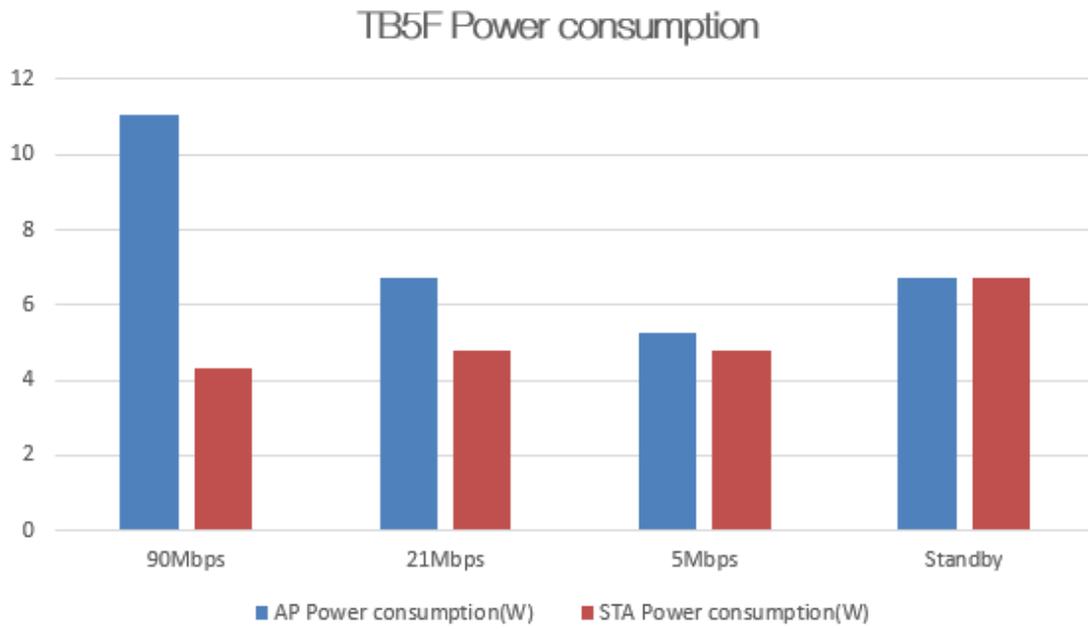
TB5HP-18I Power consumption

Bar chart showing power consumption (W) across different data rates:

	400Mbps	200Mbps	100Mbps	20Mbps	Standby
AP Power consumption(W)	~8.7	~5.8	~4.8	~4.8	~4.3
STA Power consumption(W)	~5.3	~4.8	~4.3	~4.3	~4.3

■ AP Power consumption(W) ■ STA Power consumption(W)

Application Case