



# Unmanned Telecommunication Station Monitoring System

To meet the demand for the protection of expensive telecommunication equipments while reducing unnecessary labor, Five-Star Technology Corp. developed an easy to expand, open-architecture unmanned monitoring system for WUHAN's telecom. station.

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## INTRODUCTION

Ever since the take-off of China mobile phone industry, WUHAN has enjoyed a strong demand of implementing a new telecommunication infrastructure in the city. There are many mobile stations built or under construction in the past two years. However, most of high - tech. facilities inside the station are very expensive and without proper take-care. Only few manpower are assigned to travel within stations and this put the telecommunication company in big risk. Since these facilities are mostly run within certain environment conditions. Five - star has been asked for help by WUHAN government to develop a reliable unmanned telecom. station monitoring system.

## SYSTEM REQUIREMENTS

The city government requests Five-Star to design the system to monitor the abnormal happening within each mobile station and feedback alarms to regional control center automatically. There are three major requirements for this system.

1. Reliability and Safety:  
The system must release alarm, since any abnormal occurred.
2. Open architecture:  
The system can link to other PCs and support different kinds of communication media such as radio modem and telephone line.

### 3. Scaleability:

WUHAN is a fast-growing inland city. Future expansion is taken into consideration.

## SYSTEM DESCRIPTION

Five-Star designed the unmanned telecom. station monitoring system in three parts. The application software is developed by Borland C/C++.

### Part 1: Alarm Supervision Center

Several unmanned telecom. Stations are linked through networking and monitored by the alarm supervision center in the regional center. The alarm center can collect real-time data from locally and display alarming message and do reporting.

### Part 2: Local Monitoring Station

The station is composed of sensors, ADAM-5510 PC-base programmable controller, ADAM-5017 AI and -5050 DIO modules and power supply. The station will monitor temperature, moisture, AC/DC voltage, electric current, smoke and illegal entry, then send these data to supervision center.

### Part 3: Transmission

There are 3 different communication ways applied in the whole system through PSTN/DDN/FR.

The reasons for choosing ADAM-5510 are the following:

1. ADAM-5510 is PC-based, open and very flexible to execute complex control logic.
2. ADAM-5510 offers high data storage memory than PLCs. User can develop its application flexible in C language.
3. Its analog I/O is much cost-effective than traditional PLC.
4. ADAM-5510 can communicate through modem.

## CONCLUSION

After the installation, Five-Star has proved Advantech's ADAM-5510 PC-base controller serving as a reliable, highly scaleable and standalone executable solution. Besides, its feature of easy to program with C language gives programmers a easy way to adjust the system for any modification and expansion. ■

