

Setup more cameras over single cable by Daisy-Chain connection

Site Name	ITE Chuangsin Office
Country/ City	Hsinchu, Taiwan
Industry	Commercial Building
Solution	UST DTV FHD Digital DVR(V100) UST DTV FHD Digital Cam Series UST CMS
Solution Provider	Ubiquity Smart Technology Inc. (UST)
Reasons of Adoption	<ul style="list-style-type: none"> ■ Retrofit without recabling ■ System Expansion by Daisy Chain ■ Cabling cost reduction ■ Long-distance transmission ■ Other (short setup time)



CUSTOMER NEEDS AND PROBLEMS

In this case, the customer is ITE Tech. Inc., a listed company specialized in IC design with a total capital of NT\$ 1.6 billion. ITE Tech' s Chuangsin Office is located in a building at Hsinchu Science Park. Because the video from the old CCTV surveillance system in the building was getting blurry, ITE decided to renovate the system and to upgrade the security level at the same time. The staff from the General Affairs Department contacted with several surveillance system installers and called for proposals to address the following issues and needs:

1. The camera videos were blurry or had ripples. ITE was looking for an upgrade to HD system and a solution to the problem that "one can see something, but not the details" (Figure 1).
2. The transmission distance from B2F to 7F was too long for cameras which were far away from the security control center. The horizontal-line noise on the screen increased with the transmission distance (Figure 3).
3. The cameras located at the basement parking lot had IR, but did not support low-lux. As the distance increased, there was nothing but darkness in the video, which was useless as far as surveillance was concerned (Figure 5).
4. As an IC design company, the management team wanted to add cameras at highly-confidential areas to enhanced security-level.
5. The installation had to be done by contractors certified by ITE to protect the company' s top trade secrets.

EVALUATION

In the market, there are currently analog HD (AHD/TVI/CVI) and digital HD (IP/DTV) solutions. It is claimed that analog HD requires no cable change. In other words, the cameras work in the existing cables. However, it is well known that deteriorating with transmission distance is the physical property of analog signals. The quality of the existing cables should be above some level in order for the claim “working in the existing cables” to be valid. In addition, even though the old cables may be good at the time of the upgrade, they are expected to age in the years to come. There is no guarantee for how long the cables can support analog HD. In addition, to add extra cameras, one has to install new cables from the new cameras all the way to the security control center. The customer’s certified contractor had conducted a field survey and suggested that, considering the vast size of the building, it would probably take five days to install the 16 extra cameras. That is to say, the hardware of analog HD solution may be inexpensive, but the installation is relatively expensive. An alternative choice is the digital IP solution. However, to use IP solution, all the existing coaxial cables have to be replaced with network cables. For 50 to 60 cameras, the cost can be astronomical.

Ubiquity Smart Technology Inc. (UST) proposed the DTV digital full HD solution. One of the advantages of this solution is that it can work with the existing coaxial cables, and not like analog HD, it is less sensitive to the cable quality. Moreover, because DTV supports daisy-chain connection, there are even chances to reduce the required cables, which is a benefit for future maintenance. Considering both equipment and installation, the total cost is lower than both analog and IP solution. After reviewing all submitted proposal and comparing the estimated schedule and price quote, ITE decided to go for the DTV solution.

BENEFITS

Working with a surveillance contractor approved by ITE, it took only one day for UST to replace the old system with 4 DTV video servers and 54 cameras. In addition, the possibility of branching over the original coaxial cable allowed the connection of cameras from B2F to 7F in the tree topology, which reduced the number of required cables significantly and the complexity of the cable management. Finally, UST installed its central monitoring system (CMS) at both the security control center and the supervisor’s office, allowing those with the authorization to oversee all surveillance channels remotely.

In one morning during the month after the installation, the staff from the General Affairs Department walked with the ITE executives floor by floor and gave security briefing. The vice general manager pointed out that he would like to add two more cameras at one of the restricted areas. By two o’ clock that afternoon, the two 1080P DTV cameras were installed as requested, thanks to “the support of daisy-chain connection” feature of the DTV products.

Before upgrade – CCTV



Figure 1. In the elevator, CCTV.



Figure 3. In the staircase, CCTV.



Figure 5. In the parking lot, CCTV

After upgrade – DTV HD



Figure 2. In the elevator, DTV HD.



Figure 4. In the staircase, DTV HD.

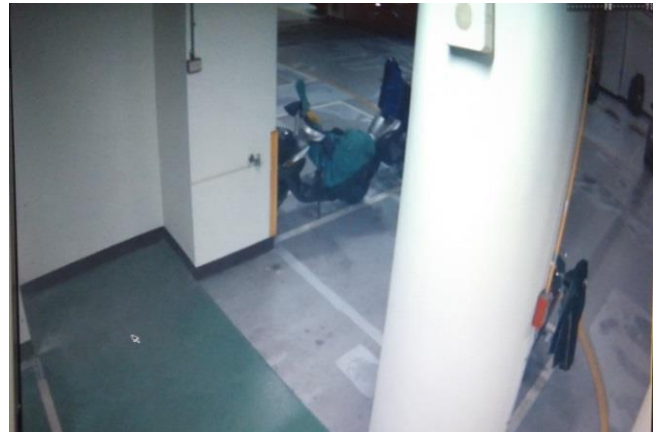


Figure 6. In the parking lot, DTV HD.