

The logo for SC&T, featuring the letters 'S', 'C', '&', and 'T' in a bold, black, sans-serif font. The letters are contained within a white, rounded rectangular shape that is set against a blue background. The 'S' and 'C' are connected, and the '&' is positioned between them. The 'T' is to the right of the '&'.

SC&T

CCTV SMART CABLING
Twisted Pair Transmission
System

Index

- Why use UTP
- Where to use UTP
- Transmission Comparisons
- Twisted Pair Transmission Products
- Application Guides

Why use UTP?

SC&T twisted pair transmission products are designed for CCTV signal transmission over unshielded twisted pair wire (CAT 5 network cable). These smart cabling system transmission are an alternative solution to coaxial and fiber based systems, providing following benefits:

- Fast, easy wire installation
- Low labor costs
- Less costly cabling
- Easier maintenance
- Long range transmission
- Better interference immunity
- Multiple video signals in the same bundle.
- RS485/RS422 data signal transmission
- 24VAC/DC power transmission
- Take advantage of Structured Building Wiring

Where to use UTP?

Perfect for larger CCTV installations where need install many cameras, difficult in using coaxial cable, existing many interference environment. To Provide: Clear Video Signal, Fewer Cable to Manage, Lower Cost Per Connection, Centralized Wiring For Greater Control. Such As:

- Modern structured cabling systems in new construction
- Installations with a high camera count
- High Interference areas
- Where there is existing structured cabling
- School Campuses, Casinos, Hospitals, Apartment
- Warehouses, Entry Gates, Elevator
- Parking Lot
- Power Plant
- Prisons
- Shopping Mall
- Traffic Control

Transmission Comparisons

- ❑ Smaller conductors
- ❑ More flexible and dense
- ❑ Color coded
- ❑ Superior interference immunity
- ❑ Low cable costs
- ❑ Easy Wiring
- ❑ Active units built in transient protection
- ❑ Active units built in ground loop lifting
- ❑ Active unit built in gain control
- ❑ Long range transmission (up to 2.4 KMS)



UTP Transmission Range

Passive: No Power Required

Active:

External Power Required

Built in Gain Control, Transient Protection, Built in Ground Loop Isolation



UTP Installation Tools

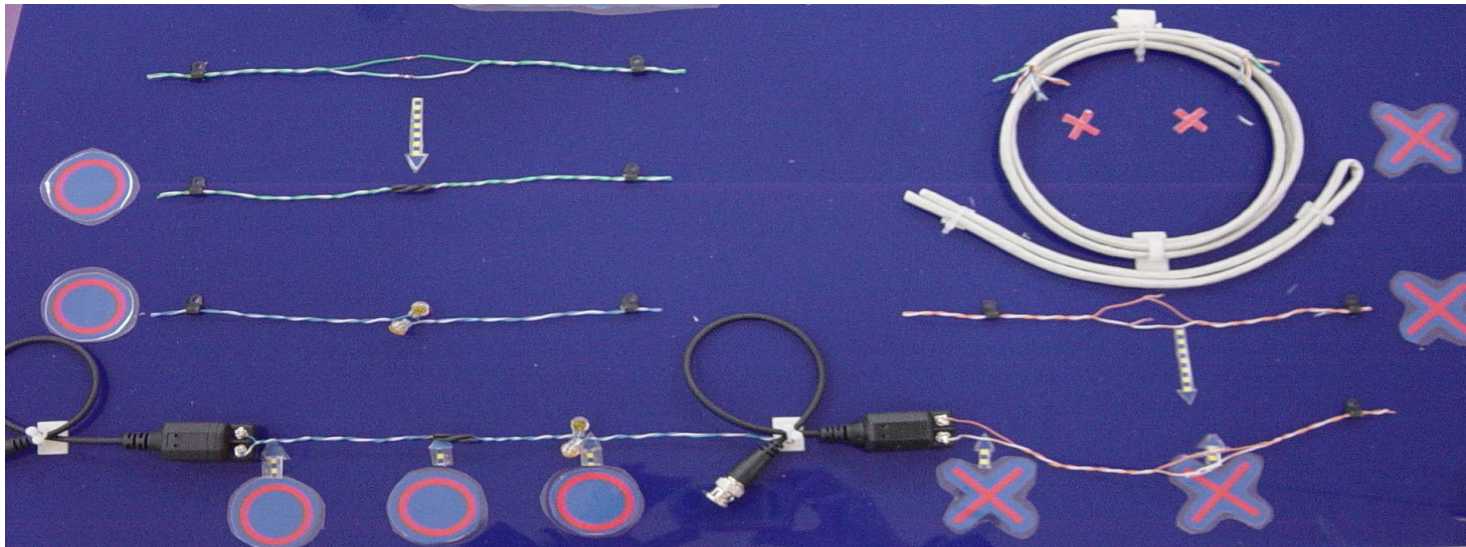


- ◆ 3M brand UY connector for 2 wire combinations with AT007 crimp tool



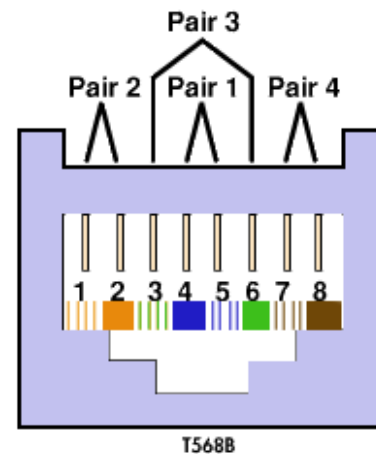
- ◆ RJ45 cable connector & Tool Kit

UTP Wire Connection



RJ - 45 Jack		
PIN	Color	Function
1	W-O	S2
2	O	S1
3	W-G	Audio +
4	BL	A1
5	W-BL	A2
6	G	Audio -
7	W-BR	Video +
8	BR	Video -

RJ-45 Jack Pin Define



NOTE : These devices is reversible, BNC connector = RJ45
 PAIR3 : POWER (TTP111VP, TDP414VP) → POWER+ : PIN 4, POWER- : PIN 5
 PAIR4 : VIDEO

Twisted Pair Transmission Products



Passive Series



Active Series



Cable Hub Series



1U Rack Panel Series



3U Rack Card Series



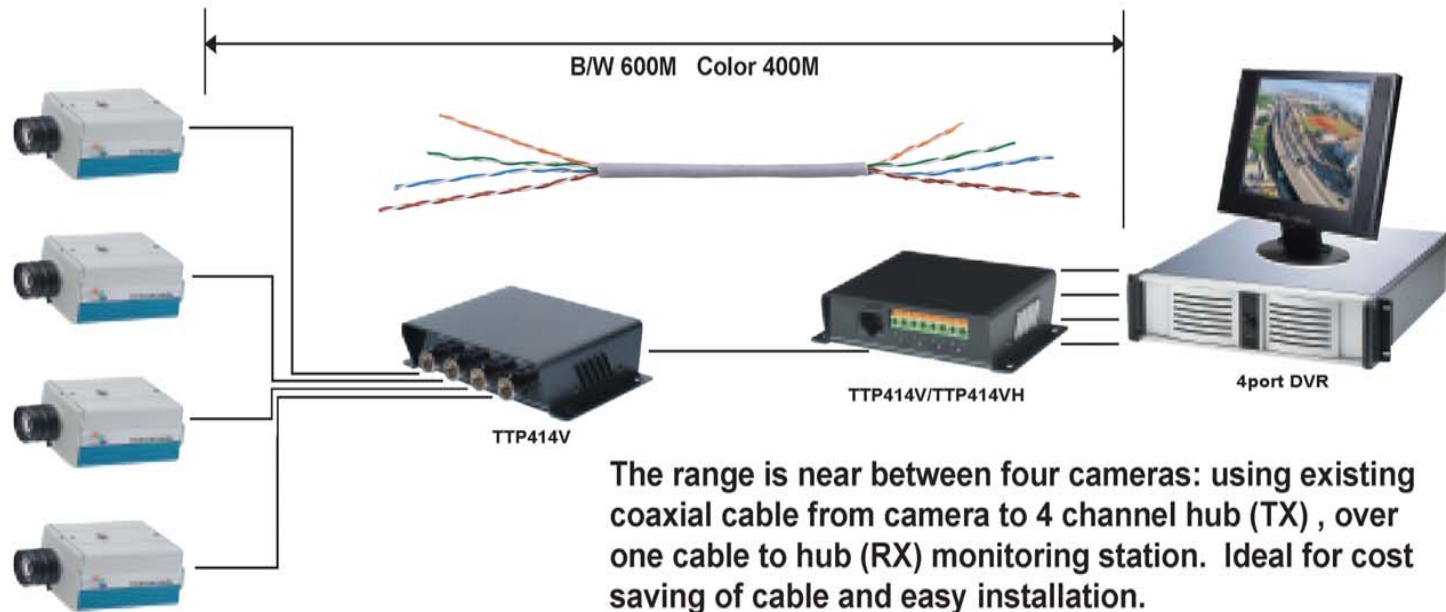
UTP Video Distributor Series



VGA Extender

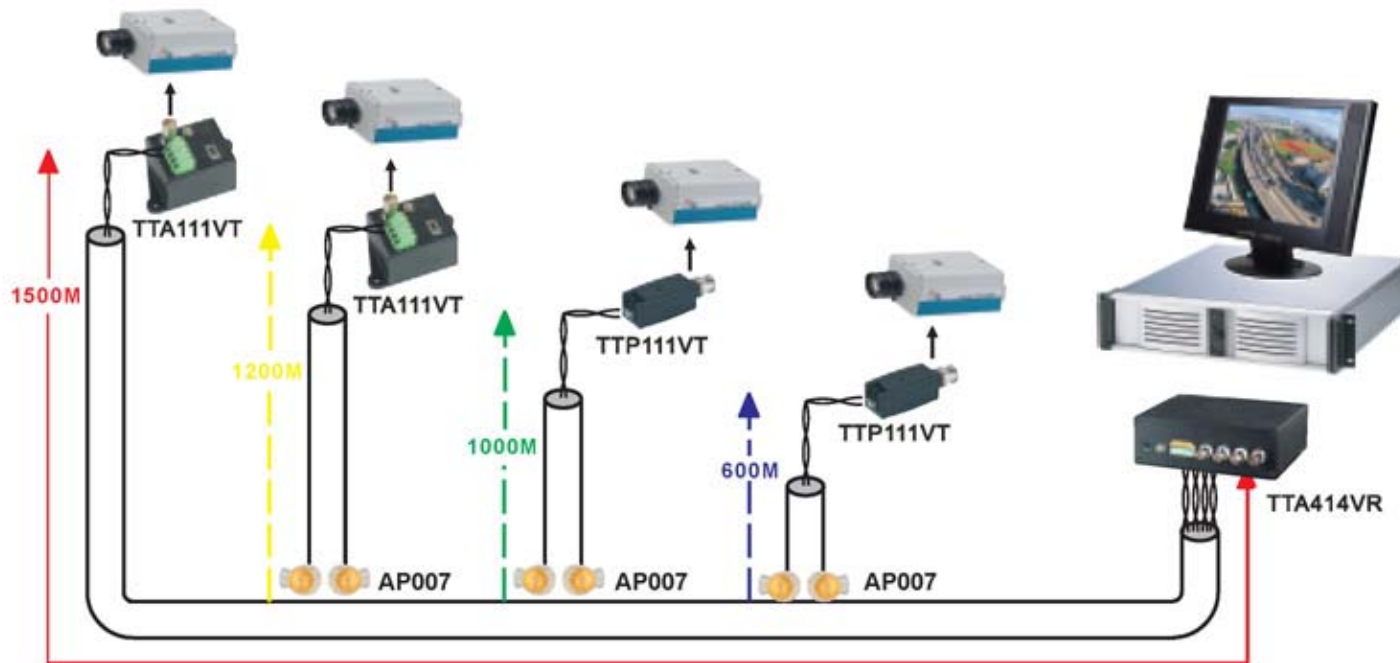
Application: 4 Cameras Over One Cable

4 Channel Hub to Hub CCTV Distribution Application



Application: 4 Channel Hub

One Cable For Variety Range Application



Passive or active video transceiver for series connection to use one CAT5 4 pairs cable, transmit 4 video signals for different range.

Application: 1U Rack Panel

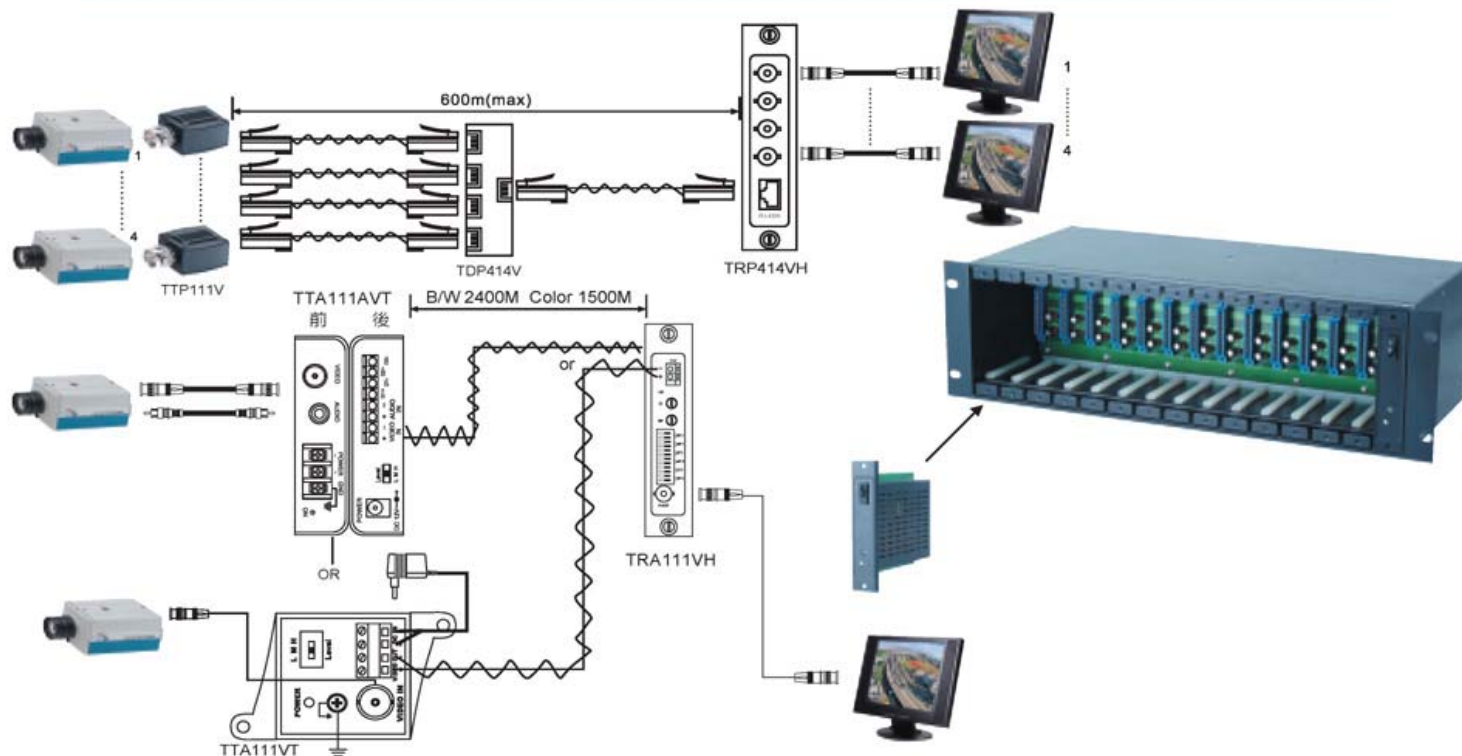
Multi-Port 8 or 16 Channel Multiplexer / DVR Application



Using 8 or 16 receiver 1U panel on monitoring station, Professional 1U panel could reside in the same rack as other equipment, such as switcher, multiplexer, DVR...etc.

Application: 3U Rack Solution

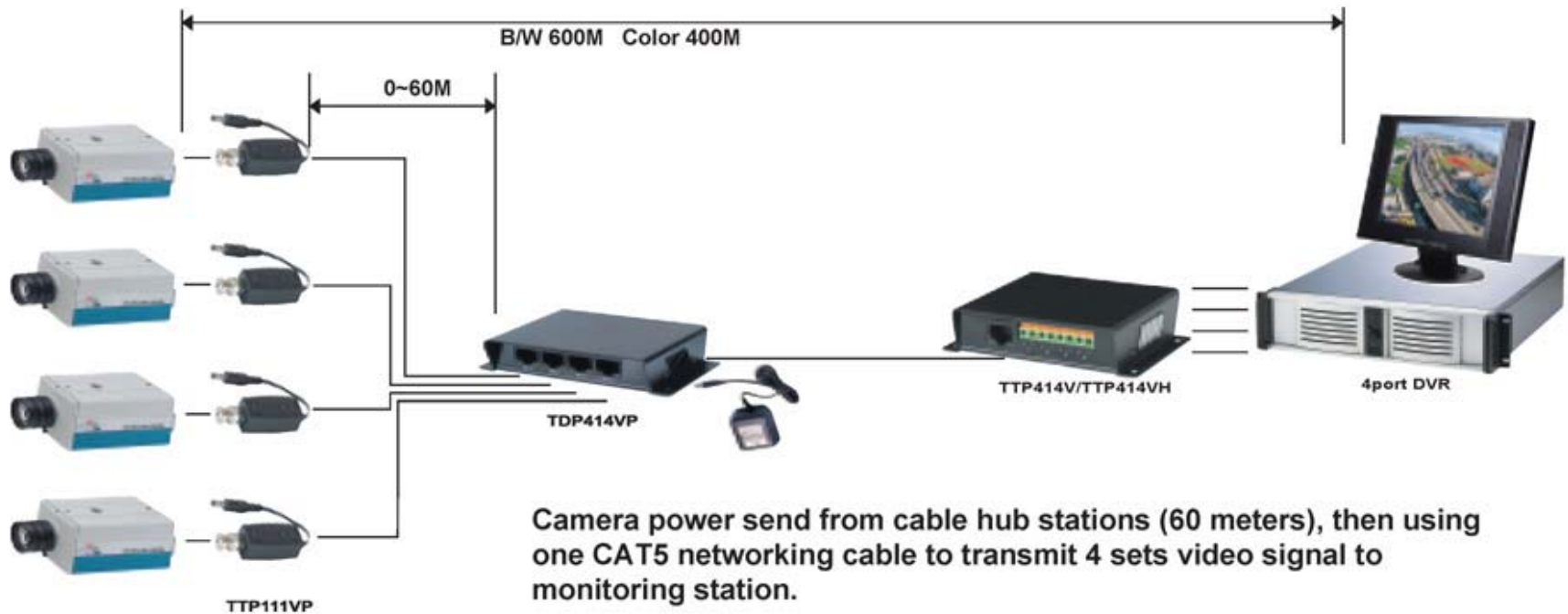
Building or Large CCTV installation with Rack Cabinet



Using rack card type, could insert passive or active receiver card at TRN012 Rack Cabinet, the maximum receiving channel could up to 60 channels (passive).

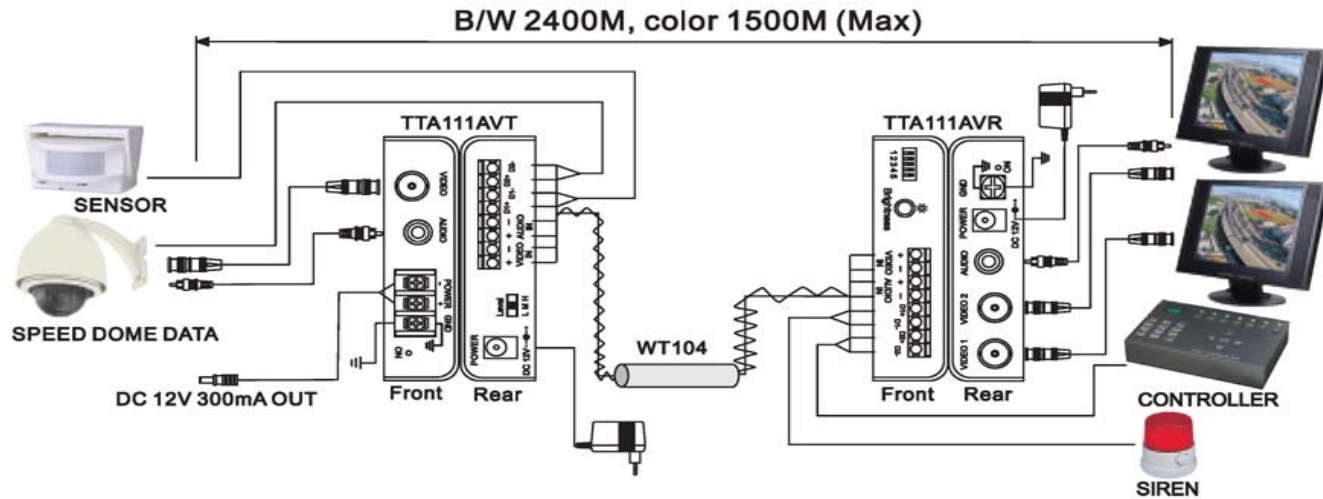
Application: UTP Video & Power

4 Cameras Power From Cable Hub Station

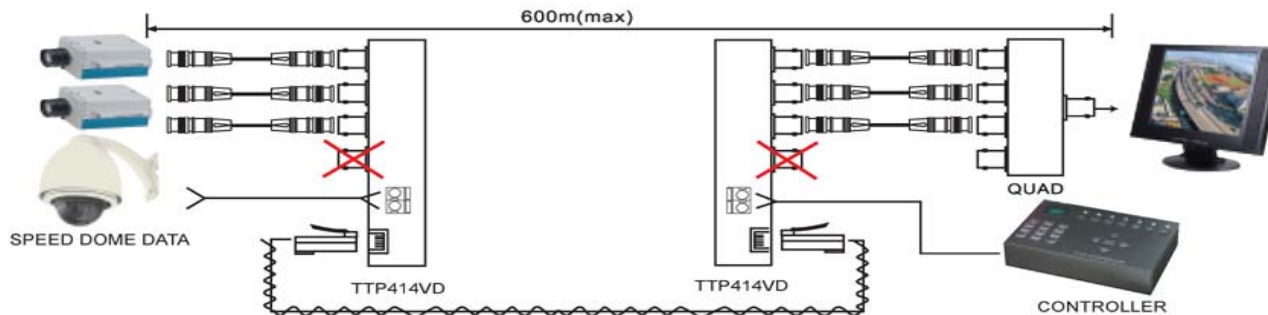


Application: UTP Video & Data

Speed Dome Camera Application



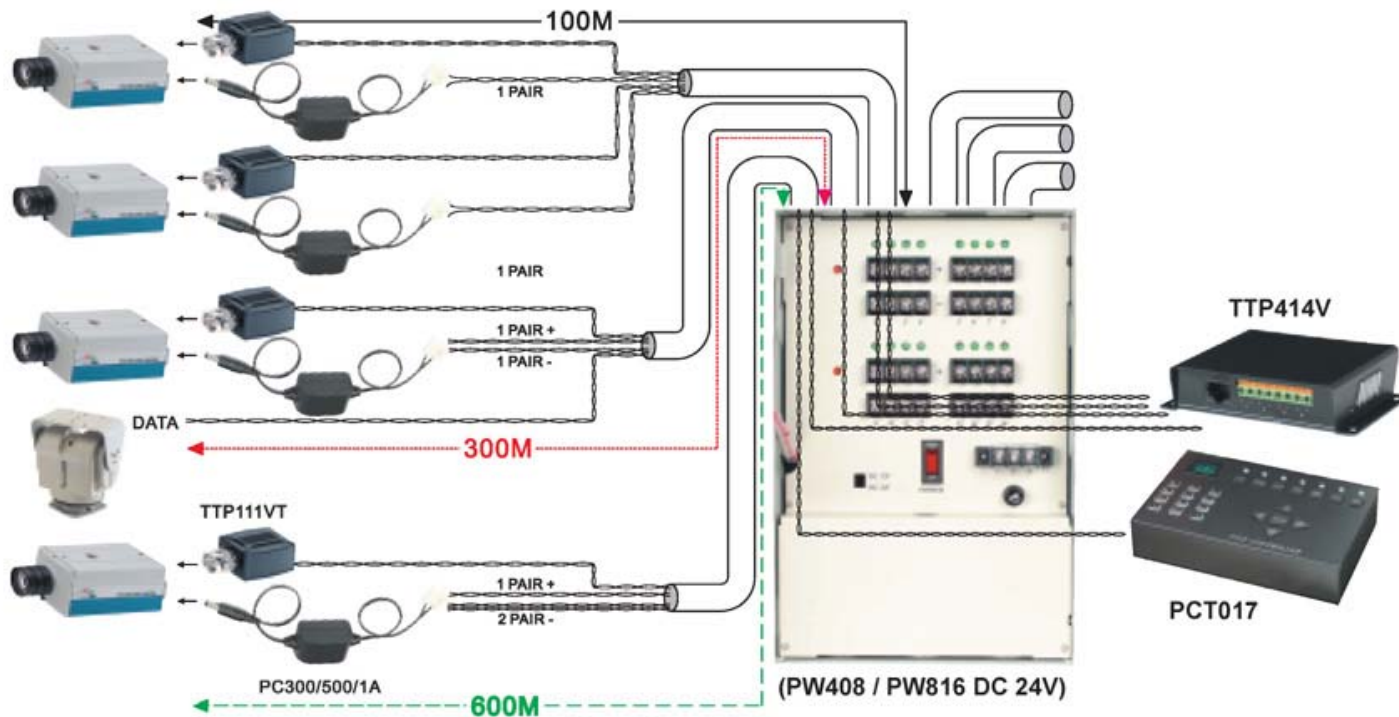
Using TTA111AV could transmit video, audio, 2 data signal, range up to 1.5KM (Color), 2.4Km (B/W)



Using one 4 pair UTP cable to transmit/receive 4 sets video signals or use 3 pairs to transmit/receive 3 sets video signal, plus one data signal (RS422,485).

Application: UTP Video & Power & Data

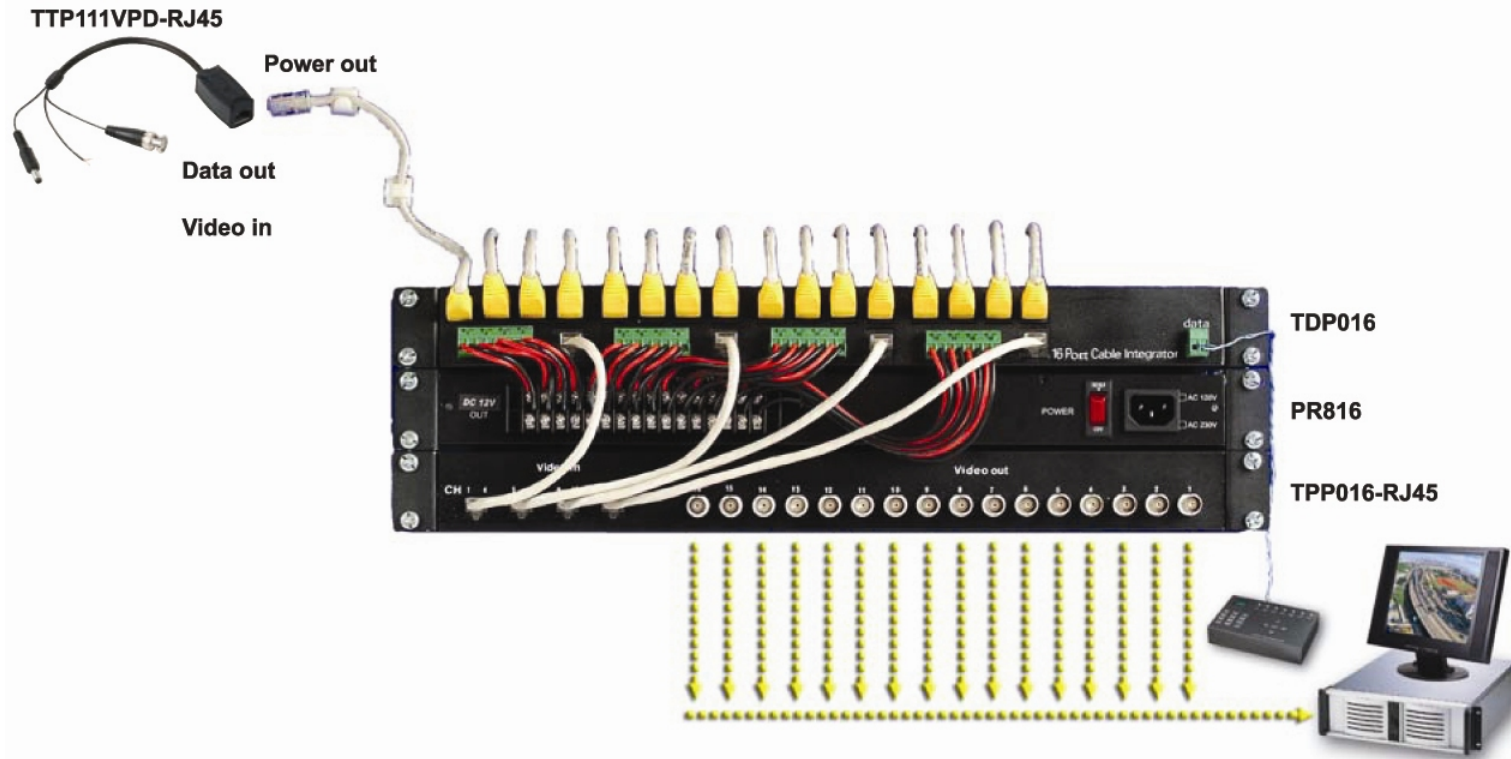
Video, Power, Data Transmission Application



Using CAT 5 cable to transmit Video, Power, Data Signal for best & professional cabling management.

Application: CCTV Professional Cable Integrator

Professional Cable Integrator

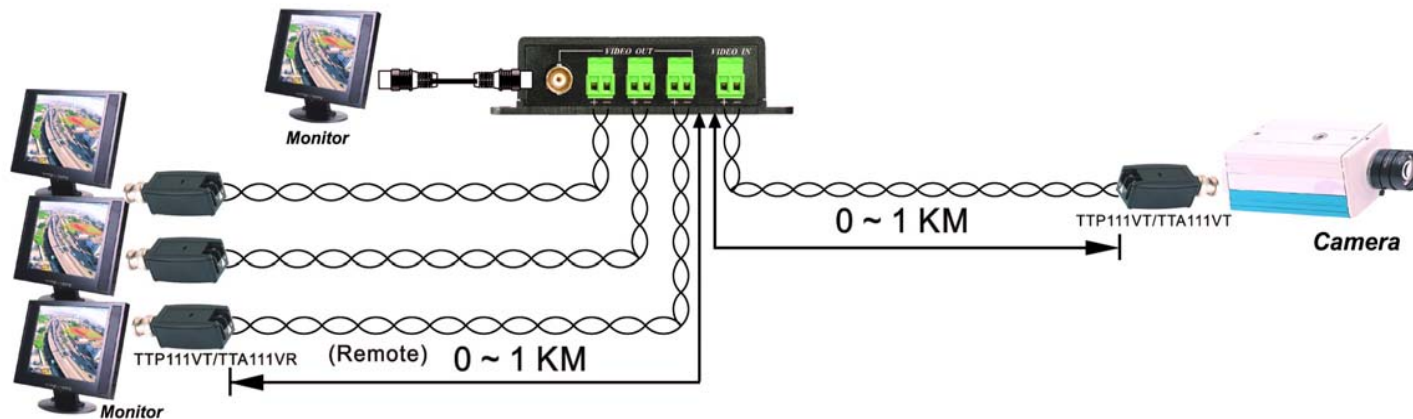


16 port cable integrator, to carry Video, Power, Data over CAT 5 & RJ45 connectors.

Application: UTP Video Distributor

They are designed for far distance, different floor in a building or different electrical field which all cabling via cost effective twisted pair cable. One or multi video input to multi output, with one BNC output (coaxial cable) for local side, others are terminal output (twisted pair cable) at remote side. All of them built in amplifiers for long-range video transmission up to 1000 meters when work with Active receiver at remote side.

UTP Video Distributor



TDA102



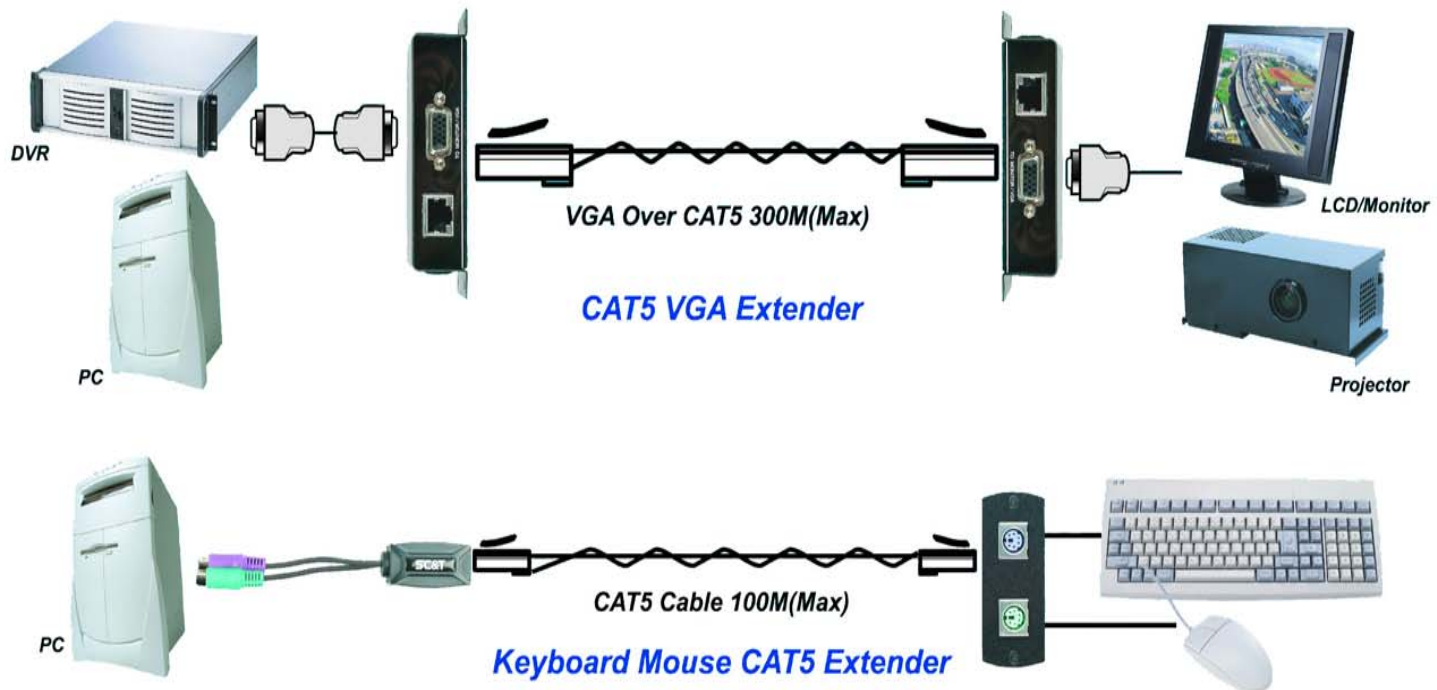
TDA104



TDA1632

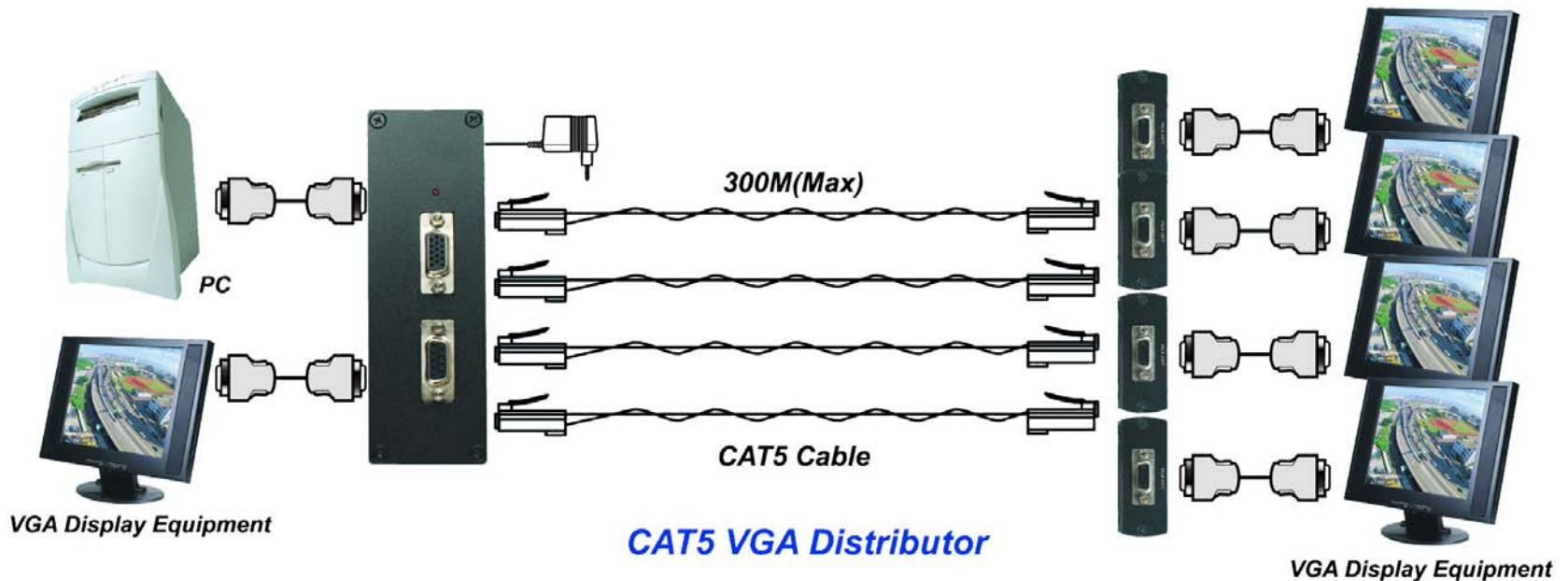
Application: CAT5 VGA Extender

Used in pairs, the VGA extender is used in home or commercial applications as a smart, fast and cost-effective, eliminates costly and bulky VGA cable, allowing VGA monitors to be connected extended distances from the PC (DVR) via low costs CAT5 twisted pair cable.



Application: CAT5 VGA Distributor

VD102, VD105 are designed for long range VGA distribution over cost effective CAT5 UTP cable. One or multi video input to multi output, with one VGA LOOP output (VGA cable) for local side, others are RJ45 output (CAT5 UTP cable) at remote side. All of them built in amplifiers for long-range VGA signal transmission up to 300 meters when work with TTA111VGA-R VGA receiver at remote side



UTP Cable Power Distance Chart

UTP CABLE AWG
Power Supply Voltage
Camera Power Consumption

CAT-5 Cable	Range 50M			100M			300M		
24 AWG	1 PAIR	2 PAIR	3 PAIR	1 PAIR	2 PAIR	3 PAIR	1 PAIR	2 PAIR	3 PAIR
DC12V									
50mA	11.4	11.7	11.8	10.8	11.3	11.6	9.6	10.6	11
100mA	11	11.5	11.5	9.7	10.8	11.2		9.2	10.1
150mA	10.5	11.2	11.3	9	10.4	10.9			9.3
200mA		11	11.2		9.9	10.6			
250mA		10.7	11		9.4	10.2			
300mA		10.5	10.8			9.9			
350mA		10.3	10.6			9.7			
400mA		10	10.4			9.4			
450mA		9.6	10.2						
500mA		9.2	9.8						

UTP CABLE AWG
Power Supply Voltage
Camera Power Consumption

CAT-5 Cable	Range 50M			100M			300M			600M		
24 AWG	1 PAIR	2 PAIR	3 PAIR	1 PAIR	2 PAIR	3 PAIR	1 PAIR	2 PAIR	3 PAIR	1 PAIR	2 PAIR	3 PAIR
DC15V												
50mA	14.4	14.7	14.8	13.8	14.3	14.6	11.9	13.6	14		12	12.9
100mA	14	14.5	14.5	12.7	13.8	14.2		12.2	13.1			11.1
150mA	13.5	14.2	14.3	12	13.4	13.9		11.1	12.3			
200mA	12.6	14	14.2	11.3	12.9	13.6			11.5			
250mA	12.1	13.7	14	10.3	12.4	13.2						
300mA	11.8	13.5	13.8		12	12.9						
350mA	11.3	13.3	13.7		11.7	12.7						
400mA	10.8	13	13.5		11.2	12.4						
450mA		12.7	13.3		10.7	12.1						
500mA		12.4	13.1			11.6						

UTP CABLE AWG
Power Supply Voltage
Camera Power Consumption

CAT-5 Cable	Range 50M			100M			300M			600M		
24 AWG	1 PAIR	2 PAIR	3 PAIR	1 PAIR	2 PAIR	3 PAIR	1 PAIR	2 PAIR	3 PAIR	1 PAIR	2 PAIR	3 PAIR
DC24V												
50mA							21	22.4	23	18.1	21.2	22.1
100mA							18.7	21.1	22.2	12.9	18.7	20.4
150mA							16.2	20	21.3		16.1	18.9
200mA							13.7	18.1	20.5		13.5	17.1
250mA							10.9	17.4	19.6		11.1	15.4
300mA								16.1	18.8			13.8
350mA								15	18.1			12.2
400mA								13.9	17.3			10.7
450mA								12.7	16.6			
500mA								11.3	15.4			