

# 1. DT-IPG application and schematic diagram

## 1.1 Application

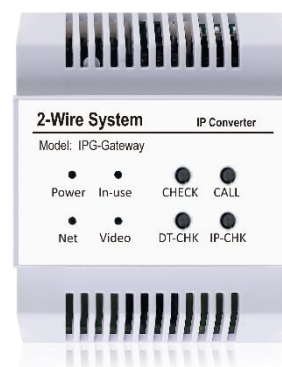
DT-IPG is 2-Wire module which could use as a memory and divert module.

**Without Internet:**

As Memory Module provide video/picture memory for all monitor connected. Support to link to ONVIF camera, could check IP Camera on 2-Wire monitor

**With Internet:**

Divert calls to mobile from DT-IPG



## 1.2 Operations and indicators

On DT-IPG, there are DIP Switches, Buttons and Indicator LEDs for setup DT-IPG, bellows are some generally explains.

**DIP Switch:**

When DIP Switches all in OFF position, means DT-IPG is in Dynamic IP address. When any DIP switches address, means DT-IPG is in Static IP address, and DIP switch value is subnet address.

**Buttons:**

Buttons function as below, you could also find more details on following chapter.

Buttons	Press Once	Press until "In-use" on	Press until "Video" on
<b>Check</b>	Copy picture and log to SD card.	None	None
<b>Call</b>	If test configure file exist start auto-test. If not divert once for test.	None	Delete All call logs and format SD card, twice to confirm.
<b>DT-CHK</b>	DT 2-Wire door stations and monitor online check.	*Long press 4 times to initialize DT-IPG, format all data.	None
<b>IP-CHK</b>	Linked IP Camera quantity check.	If update firmware exist then update. If not search IP Cameras.	Delete All linked IP cameras, twice to confirm.

**Indicator LEDs**

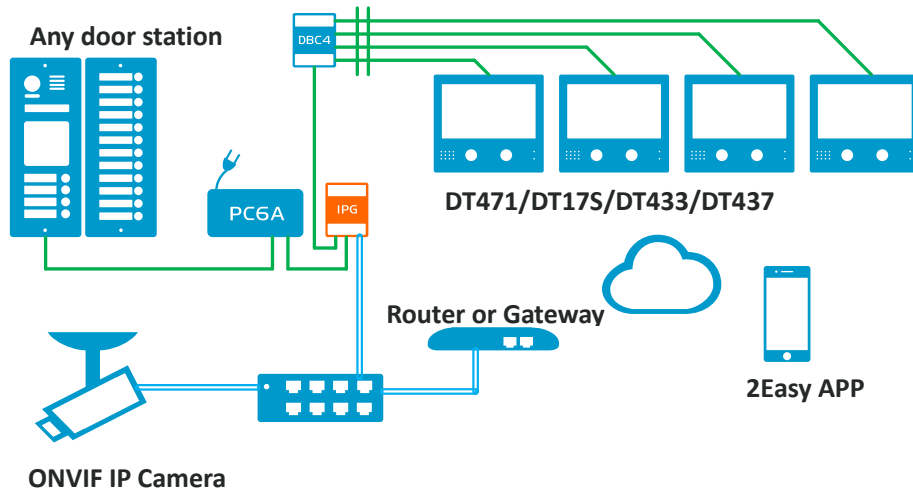
Indicators as below, you could also find more details on following chapter.

Buttons	Off	Solid On	Quick flash	Regularly flash
<b>Power</b>	No Power	Standby and power on	None	Starting
<b>In-use</b>	Standby/No Power	None	-	In auto-testing
<b>Net</b>	Not connected	Connected without SIP registered	None	Connected with SIP registered
<b>Video</b>	Standby/No Power	As video output	Checking IPC	Recording/Playback

### 1.3 DT-IPG typical appliance

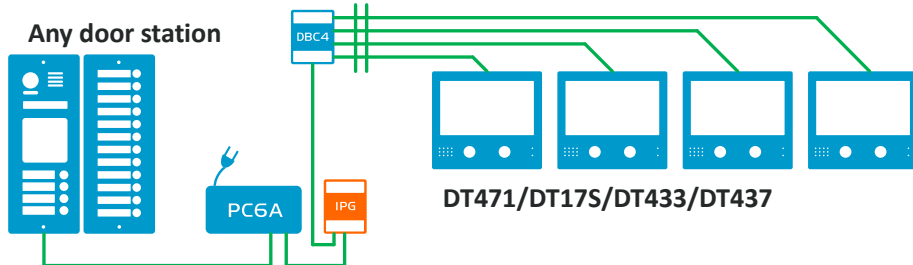
#### Divert, Memory and IP Camera integration

-with Interconnect, support memory/IP Camera/Divert for maximum 32 monitors



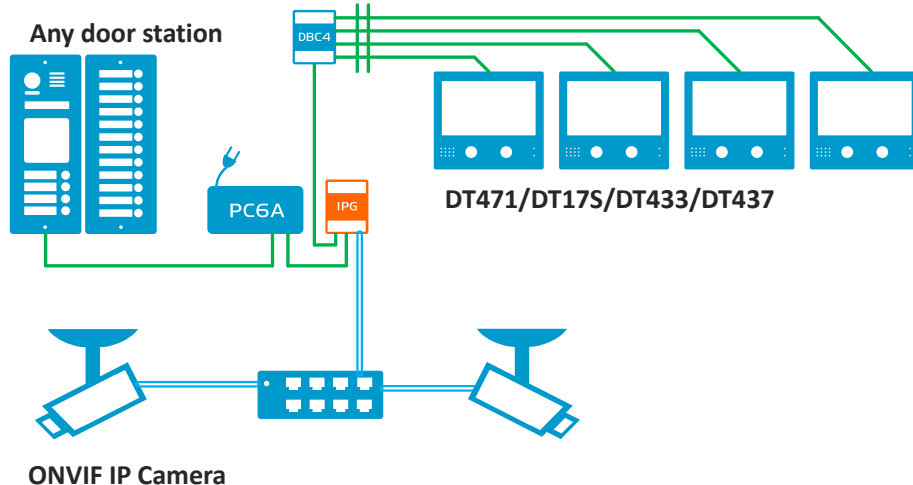
#### Simplify with only Memory:

-without router or LAN switch, provide only memory function.



#### Simplify with Memory and IP Camera:

-with only LAN switch using static IP address connect with cameras. (Max.16), or without LAN switch 1 IP Camera



## 2. Record Memory

### 2.1 Function Overview

Automatically picture/video record via DT-IPG during monitors has been called. Memories playback/manage per different address of monitor.

**Features:**

- ✧ Security access to each users own private memories.
- ✧ Enable/disable auto-rec by users.
- ✧ 30 Days loop record.
- ✧ Unattended records without user operate.
- ✧ Built-in flash for picture memory.

**Strat up and limitations:**

Plug and play feature, once DT-IPG connected, record enable.

Not able to playback memories when in monitoring/talking state.

Calling will break playback due to it has highest priority.

Not able to manually record.

Monitors with built-in memory will use its own memory (Such as DT37MG/DT47MG), but is flexible.

### 2.2 Built-in flash memory or SD card

DT-IPG has its own built-in flash, which could use as picture memory, but if insert SD card, DT-IPG could record video memory, below are specifications for two different storage.

**IPG Built-in flash:**

Only storage picture memory, as .JPG picture files. Maximum 100pcs picture share to all users.

**SD card:**

When SD card inserted, DT-IPG will take video memory, storage as 10s .AVI videos, each record will takes around 3Mb storage, DT-IPG could use 90% storage of SD card. SD card shall be:

No more than 64 GB

Codec in FAT32

No less than Class 10

## 2.3 End user related operation with memory

Below are operations which could be done with end-users during use.

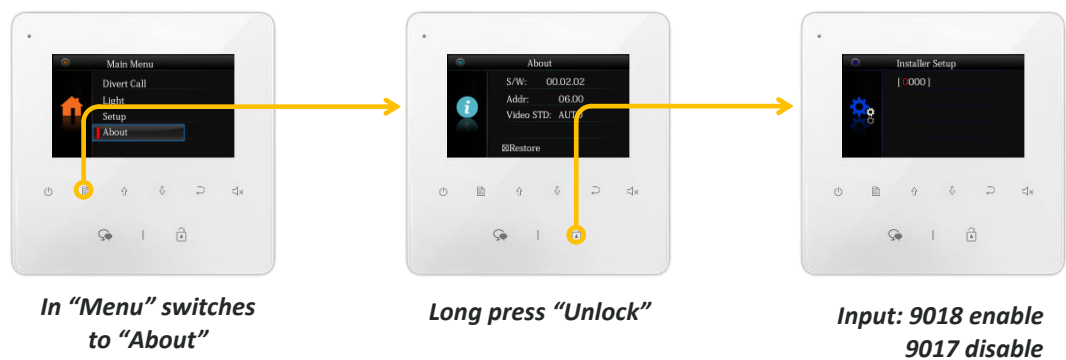
### 2.3.1 Enable/Disable Auto-Rec

Auto record could be enable/disable by end-users, normally by default setting is enable, and each monitor's setting is separately, that means settings only change the monitor itself. To enable/disable auto-rec function on monitor as below:

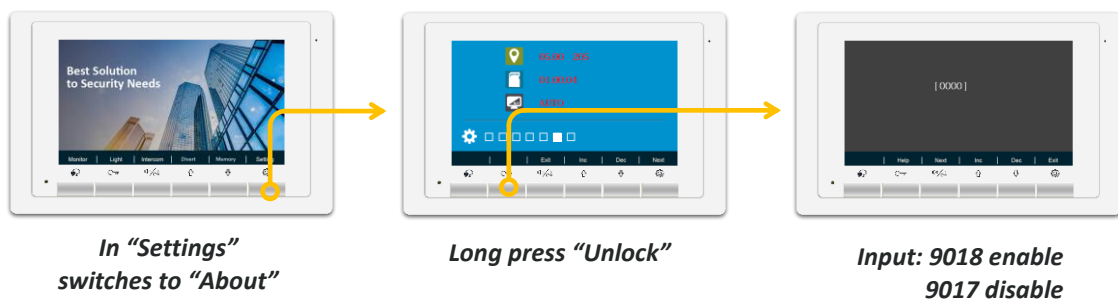
#### DT471:



#### DT437:



#### DT433/DT17S(same setting, take DT17S as example):

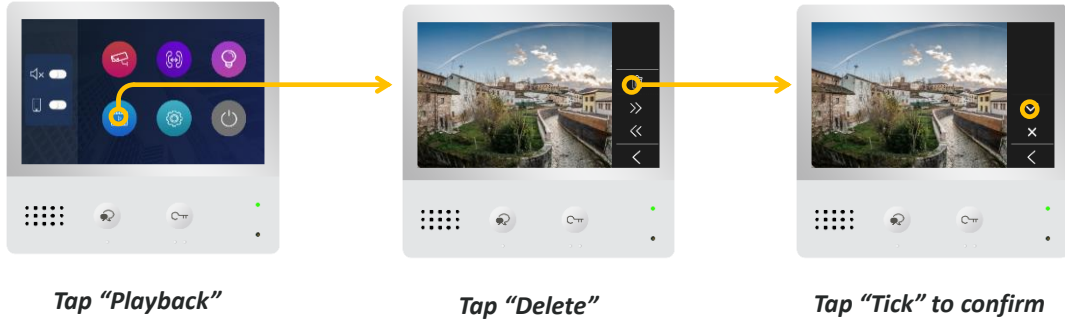


\*DT433 and DT17S settings procedure is same.

### 2.3.2 Playback and delete selected memory

Each monitor could only playback its own private memory storage from DT-IPG, it is also possible to delete one or all memory by users, below form shows how to playback and delete record by selected.

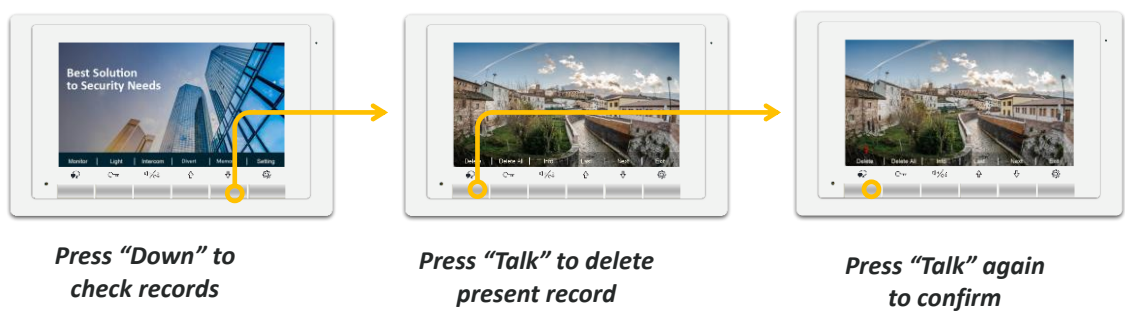
**DT471:**



**DT437:**



**DT433/DT17S(same setting, take DT17S as example):**

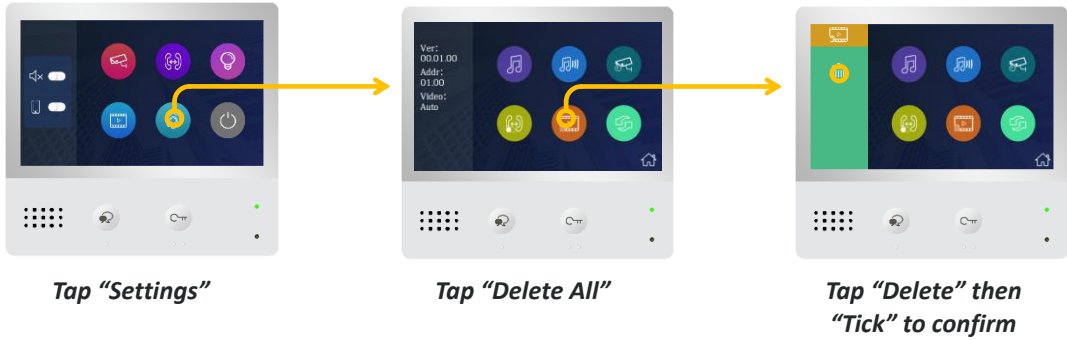


**\*DT433 and DT17S settings procedure is same.**

### 2.3.3 Delete one user's all record

Monitors provide a way to delete all one user's record, procedure could only delete its own record separately, only DT471/DT433/DT17S has delete all functions.

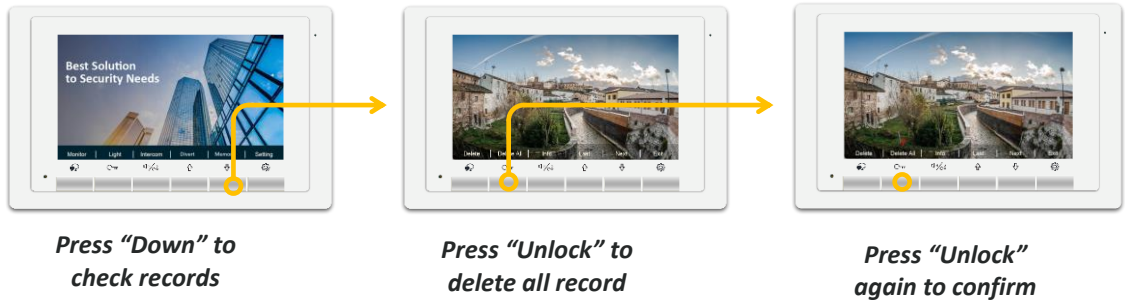
**DT471:**



**DT437:**

Is not able to delete all by once, could only delete one by one

**DT433/DT17S(same setting, take DT17S as example):**



\*DT433 and DT17S settings procedure is same.

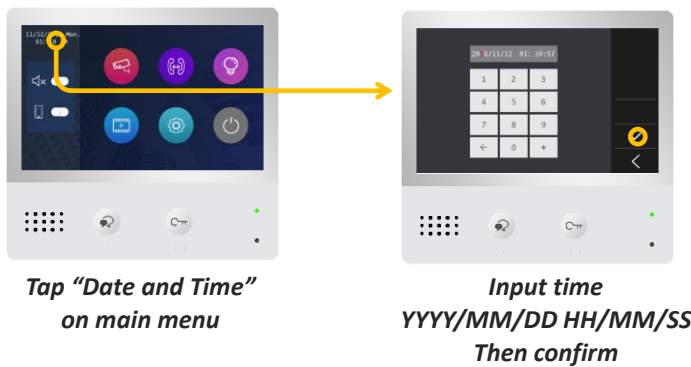
## 2.4 Installer related operation with memory

Below are operations which could be done with installer/ technician after install.

### 2.4.1 Setup Date & Time for DT-IPG

DT-IPG could provide Date & Time for monitors and records, Time storage in IPG so only need to setup once from any connected monitor, all monitor will share this Date & Time, so this setting is only for installer/ technician.

#### DT471:



#### DT437:



#### DT433/DT17S(same setting, take DT17S as example):

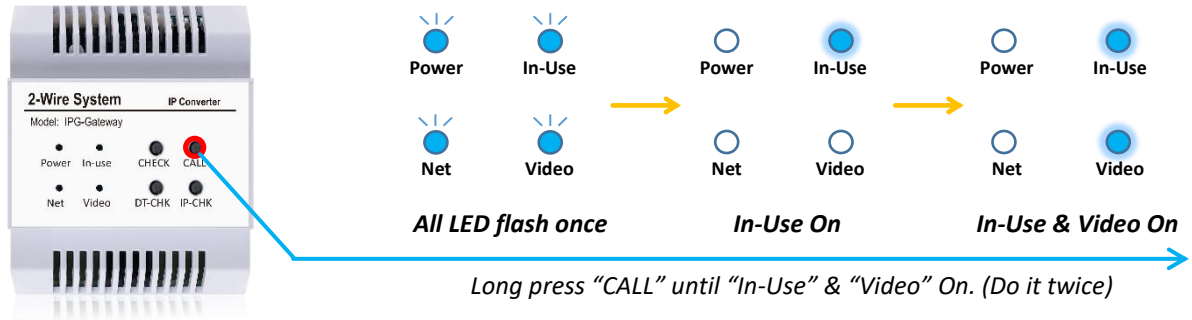


\*DT433 and DT17S settings procedure is same.

### 2.4.2 Format DT-IPG's memory

To clean all records and memories, also will format SD card if inserted. Please backup important files or records before format.

When IPG in standby, long press "Call" button until you see "In-Use" and "Video" light up as below(all LED will flash once, and "In-Use" first light up then "Video"), release "Call" button all LEDs off, and long press "Call" button as the same with above, "Net" flashes 3 times means formatting ,and all LED flash once means

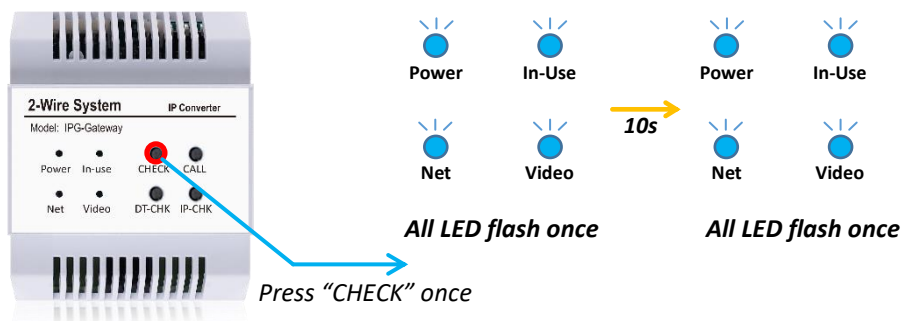


memory and SD card formatted.

### 2.4.3 Copy Picture memory to SD card

DT-IPG's picture memory could also copy to SD card, follow by below procedure, you could copy all picture memory to SD card.

Insert SD card, and when IPG is in standby, press "CHECK" button once, all led flash once, and wait for around 5s (depends on how many picture storage), all LED will flash once after copy is finish.

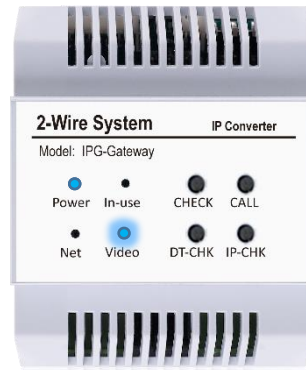




## 2.5 Function check and diagnose

### Function check:

During record, you will see “•” or “• REC” on the top of the screen means is capturing picture or video, during the meantime, DT-IPG’s “Video” will flash regularly. Normally auto-rec will start at 5s after call to monitor.



### Diagnose:

If DT-IPG is connected but no picture memory is recorded, please check with above information to see if record function is working or not. Also check below:

- ✓ Monitor’s Auto-Rec is enable
- ✓ IPG is in standby. (Every time power it up need to wait 30s until it initializes)
- ✓ For video record, SD card is no more 64 GB and formatted as FAT32

## 3. IPC(IP Camera) integration

### 3.1 Function and Operation

Different from traditional 2-Wire analog camera, DT-IPG support to connect with ONVIF® IP Camera, that means with DT-IPG, users could check ONVIF® IP Camera on 2-Wire monitors.

- ✓ Support standard ONVIF® IP Camera, replace to analog camera before.
- ✓ DT-IPG could share IP Camera with NVR system, non-interfering.
- ✓ Users could check different IP Camera by selected.
- ✓ Switch and view camera during call from door station.
- ✓ Maximum 16 IP Camera supported



### 3.2 IP Camera Specification Requirement and Setup

DT-IPG could works with compliance ONVIF® IP Cameras, require some special specification or setup, and check as below, you could also confirm this with IP Cameras' manufacturer.

#### IP cameras technical specification requirements

DT-IPG could only works with IP Cameras which compliant to:

- ✚ Accord with ONVIF® Profile-S
- ✚ Able to provide H.264 video in Baseline profile
- ✚ At least 1 stream/channel extra for DT-IPG, and must in QVGA/VGA
- ✚ IP Camera powered by POE must be connected with POE Switch

#### IP camera setup

Also DT-IPG could only works with IP Cameras which access settings as below:

In order to quickly link to DT-IPG, IP Cameras require user's Username/Password set as default.

User Name: **admin**

Password: **admin**

Please contact support@v-tec.com.cn if you are using different access settings. preload configure files via SD card to DT-IPG.

#### ONVIF® Configuration Manger

## 3.3 Install and Setup with IP Camera

Below are necessary procedures when you try to connected IP cameras with DT-IPG

### 3.3.1 Planning for DT-IPG and IP Camera

Before setup DT-IPG and IP Camera, please confirm your IP strategy:

IP Strategy	Subnet	DHCP Server	DT-IPG DIP Switch
Static IP	192.268.243.XXX	Not Required	Addressed(as Subnet)
Dynamic	Rent from DHCP	Required	ALL OFF

#### Static IP address

When use free-running network, is more recommend use static IP address. While all device (IP Cameras) should set in below subnet:

**192.168.243.XXX**

While set any DIP address but not 0 on DT-IPG, IP address for IPG will be:

**192.168.243.DIP Switch Value**

Please make sure there all IP addresses are not duplicate.

#### Dynamic IP address (DHCP)

While using dynamic IP address, DHCP server is a must, normally could use Router as DHCP server. All IP Cameras' name cannot be duplicate.

Set you DT-IPG DIP address to all 0, means in auto-IP address. (Dynamic)

#### How to sort IP Cameras?

DT-IPG will sort IP cameras by IP address, from CAM1~CAM16, you could manually change your IP Camera IP address to sort IP cameras.

### 3.3.2 Setup IP Cameras

Please set up all you IP Cameras before link to DT-IPG, settings should be:

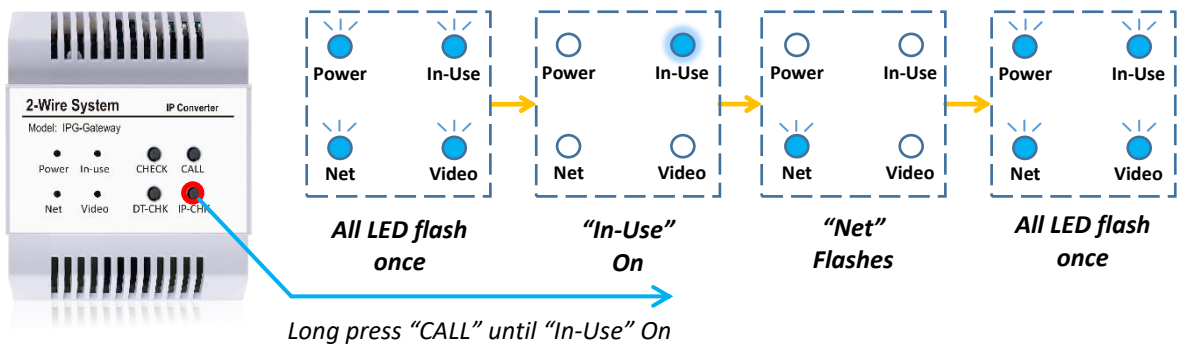
1. IP address  
According to your planning IP strategy, setup IP address or use DHCP.
2. Video Stream  
Set at least 2<sup>nd</sup> stream/channel or sub-stream/channel as below,  
  - Quality/Resolution:** VGA/QVGA (320\*240/640\*480)
  - Codec:** H.264, H.264b if may.
  - Profile:** Baseline profile
3. Access settings:
  - User Name:** admin
  - Password:** admin

### 3.3.3 Link IP Camera/s to DT-IPG

Before link, setup DT-IPG’s DIP switches by your IP strategy, after please connect all IP cameras with DT-IPG under Switch or Router, and power up DT-IPG, wait until DT-IPG finish initialize, “Power” LED solid on. “Net” should be light on also, otherwise please check network connection.

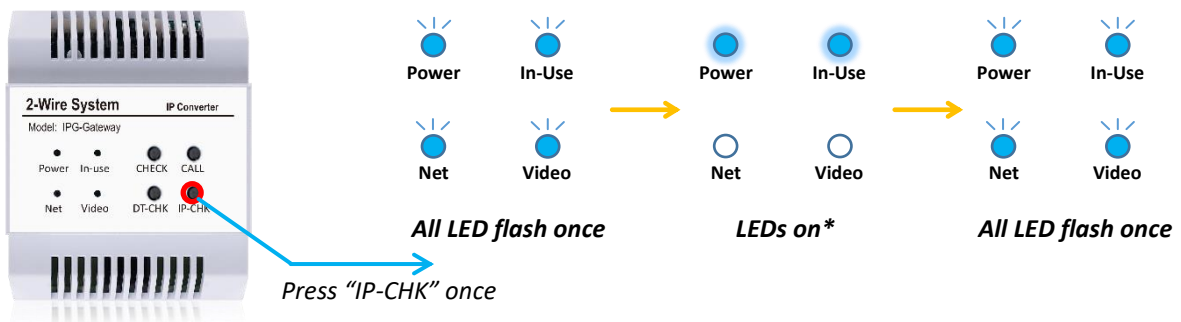
**To link DT-IPG with IP cameras:**

Long press “IP-CHK” until “In-Use” light up, release “IP-CHK” immediately (otherwise it will goes to update procedure), “Net” will flashes means DT-IPG is searching and linking to IP cameras, when is finish, all LED will flash once



### 3.3.4 Check present linked IP Cameras quantity

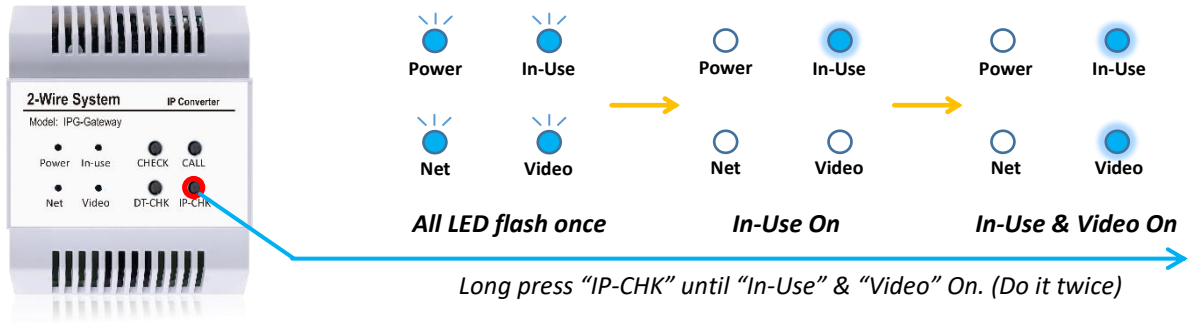
After linked to all IP cameras, you could also check how may IP cameras are linked to DT-IPG, simply press “IP-CHK”, DT-IPG will indicator quantity with LEDs, is recommend to check after linked to see if IP cameras are linked successfully or not.



\*LEDs On, total 4 LEDs, the quantity of lights up LEDs, means how many IP Camera connected. If more than 4 IP Cameras connect, all 4 LEDs will light up. (could identity 1,2,3,4 or more than 4 cameras)

### 3.3.5 Delete all IP Cameras

Follow by below procedures could delete all linked IP cameras, while you still could link them after delete. When IPG in standby, long press “IP-CHK” button until you see “In-Use” and “Video” light up as below (all LED will flash once, and “In-Use” first light up then “Video”), release “IP-CHK” button all LEDs off, and long press “IP-CHK” button as the same with above, with all LEDs flash once means the procedure is down.



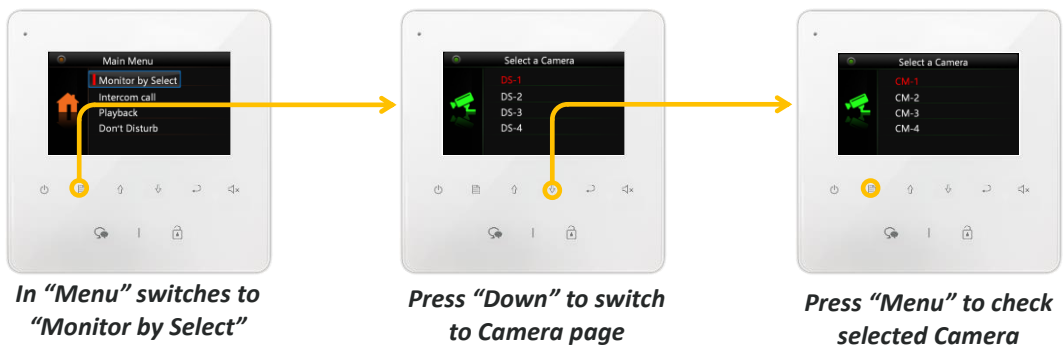
### 3.4 Check IP Camera on Monitors

IP Camera linked with DT-IPG will automatically name as CM-1 to CM-2 and sort by IP address's subnet, the quantity of IP Cameras will make a list and broadcast to monitor, while if DT-IPG linked to camera you could find IP Cameras on monitoring list or use "Down" key to switch cameras as below:

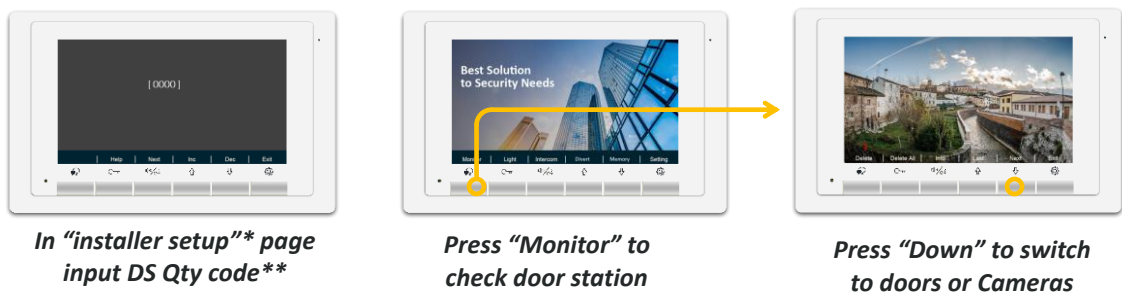
**DT471:**



**DT437:**



**DT433/DT17S(same setting, take DT17S as example):**



*\*On DT17S/DT433, "Settings" -> switch to "About" -> Long press "Unlock" to go into "Install setup" page*  
*\*\*according to connected DS quantity, input code 9101~9104, means 1~4 door stations*  
*\*\*\*DT433 and DT17S settings procedure is same.*

During monitoring IP Cameras, on DT-IPG "In-Use" will quickly flash, means DT-IPG is communicating with IP Cameras.

## 3.5 IP Cameras trouble shooting

### **Cannot linked to IP Cameras.**

Please check your IP Cameras specification, make sure is compliance to DT-IPG's required, especially access settings.

### **Only Black image when check IP Cameras.**

Check if codec and profile settings are correctly as requires. H.264 Baseline, VGA/QVGA.

## 4. SIP Divert

### 4.1 Features

DT-IPG could expand monitors with SIP divert function, with SIP divert could transfer door station calling to mobile via 2Easy APP. When system connected with DT-IPG, will get below features:

- ✚ Divert calls to mobile via 2Easy or VOIP app even with normal 2-Wire monitors.
- ✚ Built-in 33 SIP accounts for maximum 32 monitors, also could replace with 3rd SIP account via SD card.
- ✚ Calls back to monitor while divert failure.
- ✚ Able to force to break diverting from monitor.

*\*Monitoring form 2Easy is disable when using DT-IPG as divert module.*

### 4.2 Network Requirement and Setup

If you want to use DT-IPG as divert module, there will be some necessary requirement for network and network settings.

#### Network requirement

- ✓ 10M/100M Ethernet connect.
- ✓ Capable for Internet connection. (Via router a configured gateway)

#### Planning your IP strategy

Before you install DT-IPG and start up divert function, you should be aware DT-IPG's IP settings, bellows are general IP address:

IP Strategy	Subnet	DHCP Server	Router(Gateway) IP	DT-IPG DIP Switch
Dynamic IP	Rent from DHCP	Required	Depends	ALL OFF
Static IP (Default)	192.268.243.XXX	Not Required	192.168.243.200	Addressed(as Subnet)
Static IP (Configure)	Configure by SD	Not Required	Configure by SD	Addressed(as Subnet)

#### Dynamic IP Address (Recommended)

Set DT-IPG's DIP switch to all off, means DT-IPG in auto-IP mode, could rent IP address from DHCP server (normally Network Router could provide it).

Make sure DHCP server is available, while using network router make sure DHCP is enable.

#### Static IP (Default)

By DT-IPG default configuration, DT-IPG will works in subnet "192.168.243.XXX", and it will link to network Router (Gateway) in IP address 192.168.243.200. DIP switch value will subnet address, please setup your router or gateway IP address in 192.168.243.200 in order to get DT-IPG on internet by default.

#### Static IP (Configure)

You could also manually configure DT-IPG's static IP address subnet and gateway IP address by SD card. For further assistance please contact [support@v-tec.com.cn](mailto:support@v-tec.com.cn)

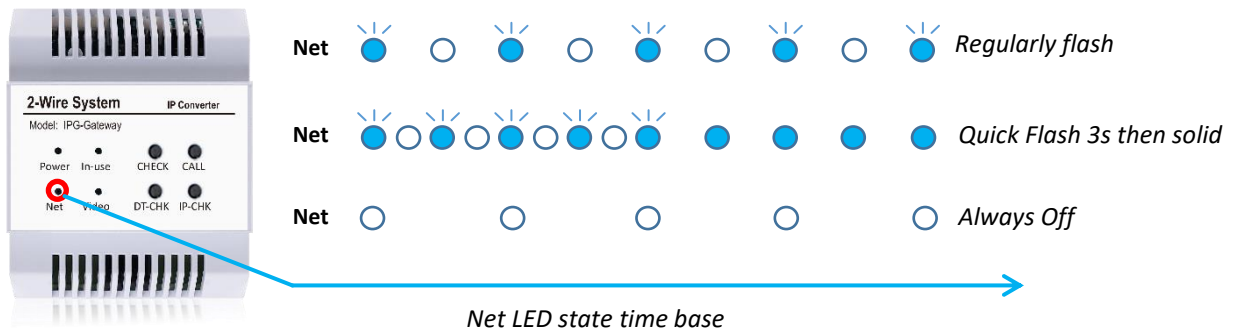


### 4.3 DT-IPG SIP state indication

After install and setup with right network setting, you could check if DT-IPG’s SIP account is register on internet or not by following ways:

#### By DT-IPG’s indictor LED

You could check DT-IPG’s SIP state by “Net” indicator, after power on and wait until DT-IPG initialize, and check for “NET” indicator:



Since power on, “Power” indicator become solid on (or plug in network cable):

“Net” indicator	State
Regularly Flash	DT-IPG is online and SIP account is registered.
Quick flash for 3s than solid on	DT-IPG is offline and SIP account register failure.
Always off	DT-IPG is not connect to any network.

Regularly flash (per seconds) means DT-IPG is online and SIP account is registered, ready for divert, otherwise please check your network and DT-IPG setup.

#### By Monitor’s Divert Icon

Once enable “Divert” on monitor, there will some icon or item you could easily understand the states of SIP, check with following form:

After “Divert” setup is enable (Check next step how to enable “Divert” on monitor):

DT471:	DT437:	DT17S/DT433:
<b>Main Menu</b>	<b>Main Menu</b>	<b>Divert Menu</b>
Online: nothing will display	Online:	Online: nothing will display
Offline:	Offline:	Offline:

## 4.4 Setup Divert and Connect to 2Easy APP

### 4.4.1 Setup Divert and get QR code for login

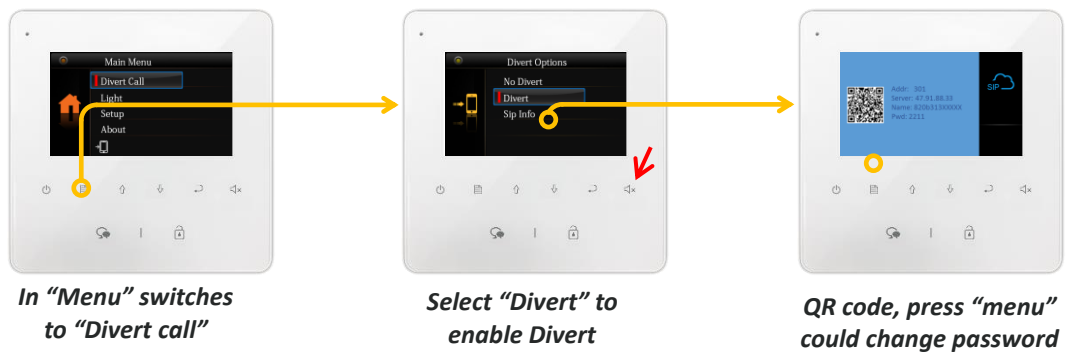
To enable divert on monitors which connected with DT-IPG, please check with below procedure, also shows how to get QR code for 2Easy APP to scan and login

#### DT471:



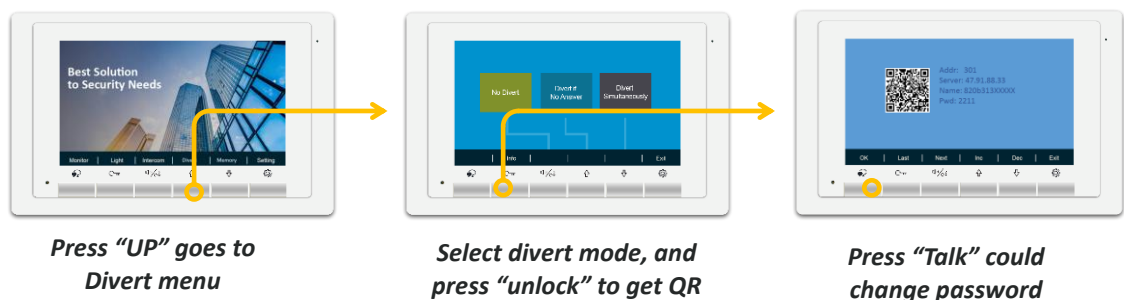
✚ If turn on "Do not Disturb" (red arrow) with "Divert" at same time, monitor will divert immediately, if only "Divert" is turn on, monitor will divert if no answer on the monitor.

#### DT437:



✚ If turn on "Do not Disturb" (red arrow) with "Divert" at same time, monitor will divert immediately, if only "Divert" is turn on, monitor will divert if no answer on the monitor.

#### DT433/DT17S(same setting, take DT17S as example):



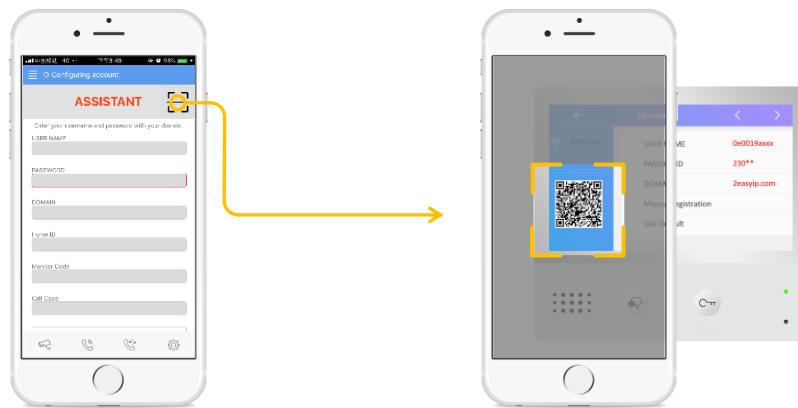
\*DT433 and DT17S settings procedure is same.

### 4.4.2 Download Setup 2Easy APP

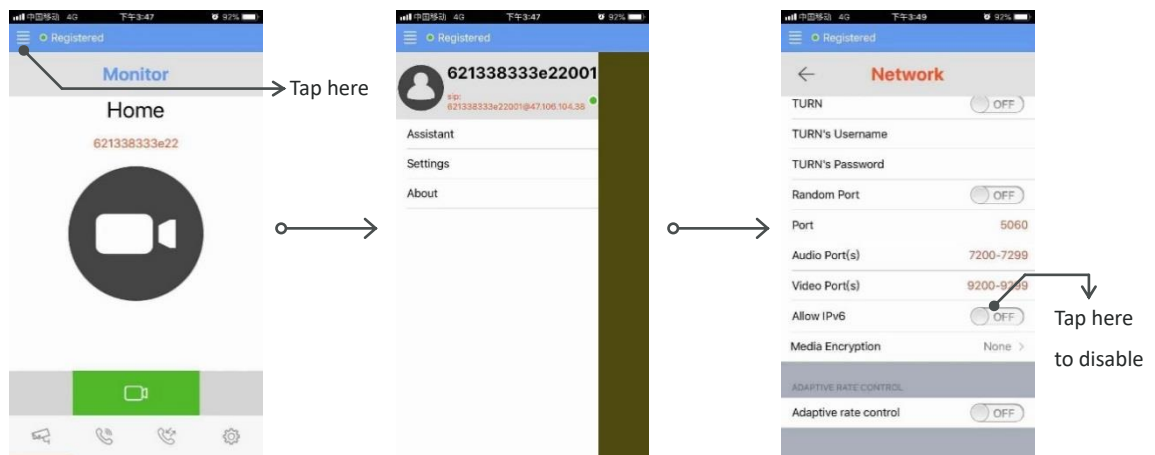
- 1) Scan and download 2Easy APP, or search “2Easy” on APP store. Android version is temporary test version, and is not available on Google play yet.



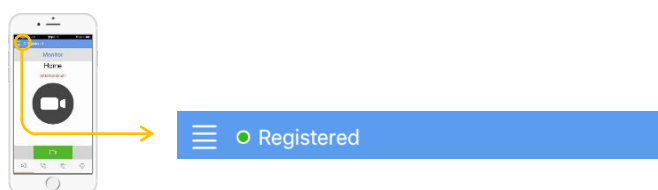
- 2) Permit “2Easy” with internet access and camera, on DX monitor, tap “SIP Server” icon on main menu, and keep in “SIP config”, on 2Easy APP, tap on top-right, to scan QR code on monitors, and tap “Save”.



- 3) Disable “IPV6” on 2Easy APP  
Most of internet provide doesn’t support IPV6 feature, please manually disable it with follow steps:  
Goes to “menu” page -> “Settings”-> “Network” -> disable “Allow IPV6”, as below shows.



- 4) After login SIP account on 2Easy APP, check on status bar, or tap on the “Registered” area to manually register, until 2Easy APP display:



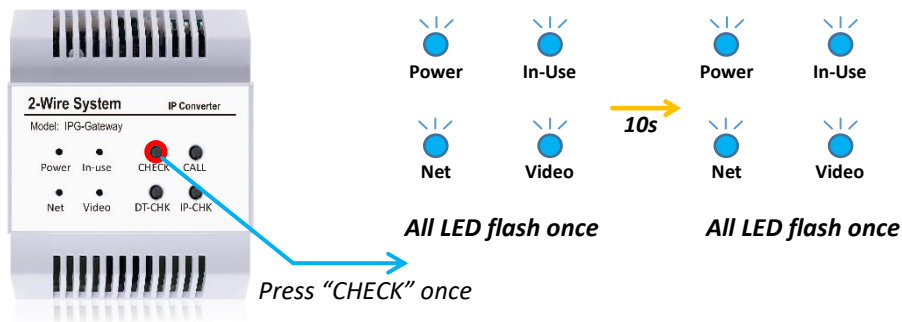
## 4.5 Call diagnose log and Auto-test

### 4.5.1 Call diagnose log

DT-IPG could create call diagnose log for technical support, if you have issues with divert, you could copy call log for further assistance, to copy call log, please follow:

Insert SD card, and when IPG is in standby, press "CHECK" button once, all led flash once, and wait for around 5s (depends on how many picture storage), all LED will flash once after copy is finish.

Be aware, picture storage will also been copy in the meantime, please keep only log file to technical support.



### 4.5.2 Auto-test

DT-IPG could also start an auto-test, leave DT-IPG and Door Station unattended, DT-IPG will try to divert to mobile regularly for certain times.

By following steps to start Auto-test:

1. Copy test configure file to root directory of SD card, Please contact [support@v-tec.com.cn](mailto:support@v-tec.com.cn)
2. Open configure file with "Notebook" to edit counts or other testing settings.
3. Insert SD card, and power on DT-IPG, login account on address 01 monitor.
4. Press "Call" button, and DT-IPG will start auto-test

During testing, "In-use" LED will flash regularly means is in testing mode.

You could also copy your call log after test and sent it to [support@v-tec.com.cn](mailto:support@v-tec.com.cn) for assistance.