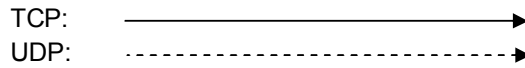
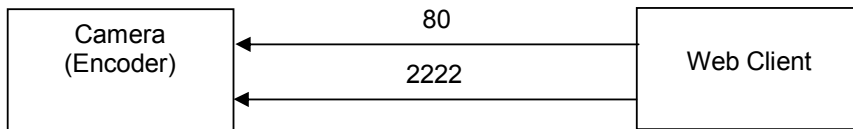


**Legend**



**1. Camera(Encoder) -> Web**



80: HTTP port in the camera  
 2222: base port in the camera

TCP-based proprietary protocol is used for web viewing.

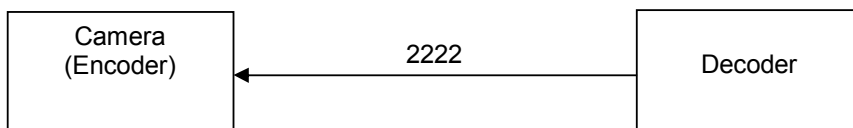
**Port-forwarding requirement**

Camera(Encoder)	Web Client	Port-forwarding
Public IP	Private IP under IP sharer	None
Private IP under IP-sharer	Public IP	Camera side IP-sharer: 80--(TCP)--> camera IP/80 2222--(TCP)--> camera IP/2222
Private IP under IP-sharer	Private IP under IP sharer	Camera side IP-sharer: 80--(TCP)--> camera IP/80 2222--(TCP)--> camera IP/2222

**2. Camera(Encoder) -> Decoder**

**(1) Proprietary protocol (VSNM, default)**

<TCP mode>

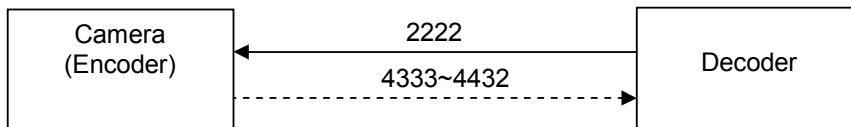


2222: base port in the camera

**Port-forwarding requirement**

Camera(Encoder)	Decoder	Port-forwarding
Public IP	Private IP under IP sharer	None
Private IP under IP-sharer	Public IP	Camera side IP-sharer: 2222 -- (TCP) --> camera IP/2222
Private IP under IP-sharer	Private IP under IP sharer	Camera side IP-sharer: 2222 -- (TCP) --> camera IP/2222

**<UDP mode>**

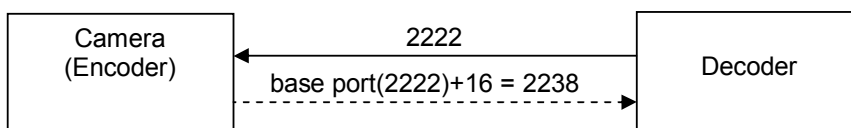


2222: base port in the camera  
4333~4432 (100 ports) are fixed in the decoder (not configurable)

**Port-forwarding requirement**

Camera(Encoder)	Decoder	Port-forwarding
Public IP	Private IP under IP sharer	Decoder side IP-sharer: 4333~4432 -- (UDP) --> Decoder IP/4333~4432
Private IP under IP-sharer	Public IP	Camera side IP-sharer: 2222 -- (TCP) --> camera IP/2222
Private IP under IP-sharer	Private IP under IP sharer	Camera side IP-sharer: 2222 -- (TCP) --> camera IP/2222  Decoder side IP-sharer: 4333~4432 -- (UDP) --> Decoder IP/4333~4432

**<Multicast mode>**



2222: base port in the camera

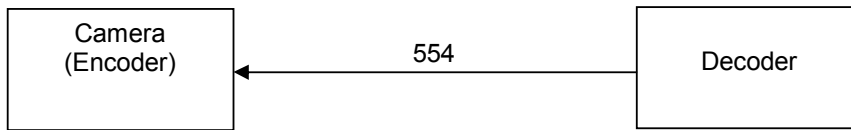
base port + 16: audio/video multicast ports. base port: camera's base port.

**Port-forwarding requirement**

Camera(Encoder)	Decoder	Port-forwarding
Public IP	Private IP under IP sharer	Decoder side IP-sharer: 2238 --(UDP)--> Decoder IP/2238
Private IP under IP-sharer	Public IP	Camera side IP-sharer: 2222 --(TCP)--> camera IP/2222
Private IP under IP-sharer	Private IP under IP sharer	Camera side IP-sharer: 2222 --(TCP)--> camera IP/2222  Decoder side IP-sharer: 2238 --(UDP)--> Decoder IP/2238

**(2) RTSP/RTP protocol**

**<TCP mode>**



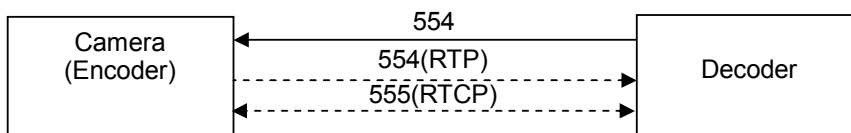
554: RTSP port in the camera

**Port-forwarding requirement**

Camera(Encoder)	Decoder	Port-forwarding
Public IP	Private IP under IP sharer	None
Private IP under IP-sharer	Public IP	Camera side IP-sharer: 554 --(TCP)--> camera IP/554
Private IP under IP-sharer	Private IP under IP sharer	Camera side IP-sharer: 554 --(TCP)--> camera IP/554

**<UDP mode>**

Only video is supported now.



554: RTSP port in the camera

554~555(UDP) for video: 554 for RTP and 554+1 for RTCP. These are determined according to RTSP port in the camera. For example, if RTSP port in the camera is set to 600, these ports become 600~601.

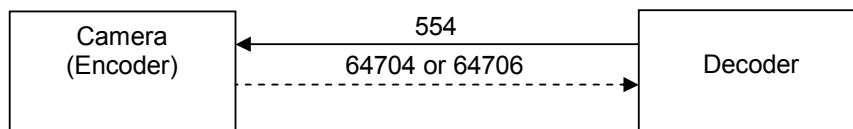
574~575(UDP) for audio: not supported now. 574=554+20

### Port-forwarding requirement

Camera(Encoder)	Decoder	Port-forwarding
Public IP	Private IP under IP sharer	Decoder side IP-sharer: 554~555 -- (UDP) --> Decoder IP/554~555
Private IP under IP-sharer	Public IP	Camera side IP-sharer: 554 -- (TCP) --> camera IP/554
Private IP under IP-sharer	Private IP under IP sharer	Camera side IP-sharer: 554 -- (TCP) --> camera IP/554 555 -- (UDP) --> camera IP/555  Decoder side IP-sharer: 554~555 -- (UDP) --> Decoder IP/554~555

### <Multicast mode>

Only video is supported now.



554: RTSP port in the camera

64704 or 64706: multicast port for video data delivery is dependent on the URL for stream selection

- rtsp://IP/video1 (primary stream) => 64704
- rtsp://IP/video1s (secondary stream) => 64706

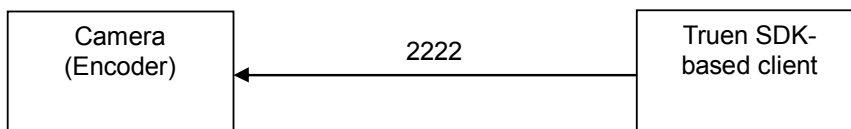
### Port-forwarding requirement

Camera(Encoder)	Decoder	Port-forwarding
Public IP	Private IP under IP sharer	Decoder side IP-sharer: 64704 or 64706 -- (UDP) --> Decoder IP/64704 or 64706

Private IP under IP-sharer	Public IP	Camera side IP-sharer: 554 -- (TCP) --> camera IP/554
Private IP under IP-sharer	Private IP under IP sharer	Camera side IP-sharer: 554 -- (TCP) --> camera IP/554  Decoder side IP-sharer: 64704 or 64706 -- (UDP) --> Decoder IP/64704 or 64706

### 3. Camera(Encoder) -> Truen SDK (including TVMS)

#### <TCP mode>

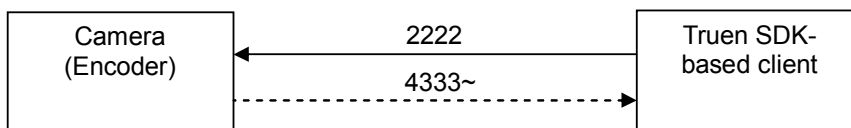


2222: base port in the camera

#### Port-forwarding requirement

Camera(Encoder)	SDK Client	Port-forwarding
Public IP	Private IP under IP sharer	None
Private IP under IP-sharer	Public IP	Camera side IP-sharer: 2222-- (TCP) --> camera IP/2222
Private IP under IP-sharer	Private IP under IP sharer	Camera side IP-sharer: 2222 -- (TCP) --> camera IP/2222

#### <UDP mode>



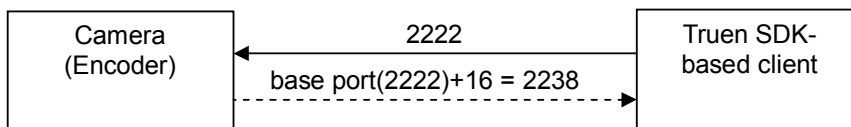
2222: base port in the camera

4333~ are fixed in the SDK's Active-X control. As a client can connect to multiple cameras, a couple of port are allocated for each camera. For example, (4333, 4334) are used for the first camera, (4335, 4336) for the second camera and so forth.

#### Port-forwarding requirement

Camera(Encoder)	SDK Client	Port-forwarding
Public IP	Private IP under IP sharer	SDK Client side IP-sharer: 4333~ --(UDP)--> Client IP/4333~
Private IP under IP-sharer	Public IP	Camera side IP-sharer: 2222 --(TCP)--> camera IP/2222
Private IP under IP-sharer	Private IP under IP sharer	Camera side IP-sharer: 2222 --(TCP)--> camera IP/2222  SDK Client side IP-sharer: 4333~ --(UDP)--> Client IP/4333~

#### <Multicast mode>



2222: base port in the camera

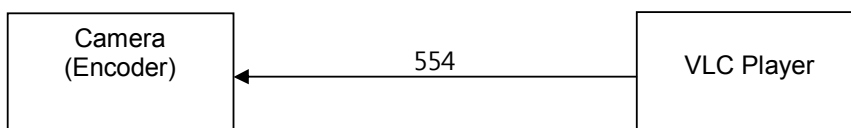
base port + 16: audio/video multicast ports. base port: camera's base port.

#### Port-forwarding requirement

Camera(Encoder)	Decoder	Port-forwarding
Public IP	Private IP under IP sharer	Decoder side IP-sharer: 2238 --(UDP)--> Decoder IP/2238
Private IP under IP-sharer	Public IP	Camera side IP-sharer: 2222 --(TCP)--> camera IP/2222
Private IP under IP-sharer	Private IP under IP sharer	Camera side IP-sharer: 2222 --(TCP)--> camera IP/2222  Decoder side IP-sharer: 2238 --(UDP)--> Decoder IP/2238

#### 4. Camera(Encoder) -> VLC Player(or other RTSP Client)

##### <TCP mode>

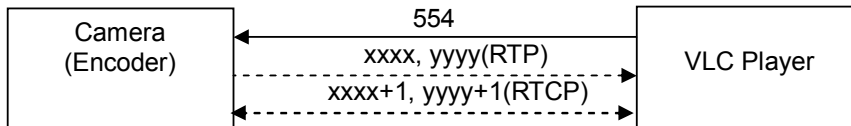


554: RTSP port in the camera

**Port-forwarding requirement**

Camera(Encoder)	VLC Player	Port-forwarding
Public IP	Private IP under IP sharer	None
Private IP under IP-sharer	Public IP	Camera side IP-sharer: 554 -- (TCP) --> camera IP/554
Private IP under IP-sharer	Private IP under IP sharer	Camera side IP-sharer: 554 -- (TCP) --> camera IP/554

**<UDP mode>**



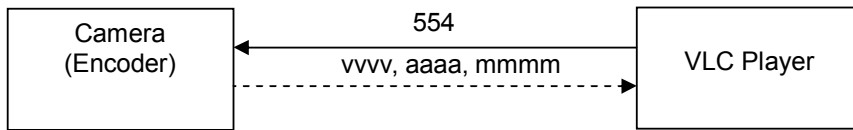
554: RTSP port in the camera

xxx(video RTP port), yyyy(audio RTP port): determined by VLC player

**Port-forwarding requirement**

Camera(Encoder)	VLC Player	Port-forwarding
Public IP	Private IP under IP sharer	VLC side IP-sharer: xxxx~xxxx+1 -- (UDP) --> VLC IP/ xxxx~xxxx+1 yyyy~yyyy+1 -- (UDP) --> VLC IP/ yyyy~yyyy+1
Private IP under IP-sharer	Public IP	Camera side IP-sharer: 554 -- (TCP) --> camera IP/554  Camera side IP-sharer: (not mandatory) xxxx~xxxx+1 -- (UDP) --> camera IP/xxxx~xxxx+1 yyyy~yyyy+1 -- (UDP) --> camera IP/yyyy~yyyy+1
Private IP under IP-sharer	Private IP under IP sharer	Camera side IP-sharer: 554 -- (TCP) --> camera IP/554  VLC side IP-sharer: xxxx~xxxx+1 -- (UDP) --> VLC IP/ xxxx~xxxx+1 yyyy~yyyy+1 -- (UDP) --> VLC IP/ yyyy~yyyy+1

**<Multicast mode>**



554: RTSP port in the camera

vvvv, aaaa, mmmm: multicast ports for video, audio and metadata respectively. Dependent on the RTSP URL used.

**/video1**

- video port : 64704
- metadata port : 64904

**/video1s**

- video port : 64706
- metadata port : 64906

**/video1+audio1**

- video port : 64702
- audio port : 64802
- metadata port : 64902

**/audio1**

- audio port : 64808
- metadata port : 64908

**/video1s+audio1**

- video port : 64718
- audio port : 64818
- metadata port : 64918

**Port-forwarding requirement**

Camera(Encoder)	VLC Player	Port-forwarding
Public IP	Private IP under IP sharer	VLC side IP-sharer: vvvv, aaaa, mmmm -- (UDP) --> Client IP/vvvv, aaaa, mmmm
Private IP under IP-sharer	Public IP	Camera side IP-sharer: 554 -- (TCP) --> camera IP/554
Private IP under IP-sharer	Private IP under IP sharer	Camera side IP-sharer: 554 -- (TCP) --> camera IP/554  VLC side IP-sharer: vvvv, aaaa, mmmm -- (UDP) --> Client IP/vvvv, aaaa, mmmm