IP cameras

Notes and reviews for random IP cameras, usually in regard with their use with ZoneMinder DVR.

- IP camera Techage TA-XM-608GP-AI-30 (3MP)
- IP camera Techage TA-XM-605GP-AI-50G (5MP)
- IP camera TP-Link Tapo C110

IP camera Techage TA-XM-608GP-AI-30 (3MP)

Specifications

- **Full AliExpress name:** *Techage H.265 3MP Two Way Audio POE IP Camera IP66 Waterproof Outdoor Video CCTV Security Surveillance Camera for POE NVR System*
- Bought on **AliExpress**, **at the time for $35** (shipped from EU warehouse)
- **Model:** `Techage TA-XM-608GP-AI-30`
- **Lens:** `3.6 mm`
- **Power:** either 12 V DC, or 48V PoE
- **Default login:** `admin` / `null`
- **Administration:** requires Internet Explorer + ActiveX plugin
- **Resolution:** on the sticker 3MP, but within the settings the highest resolution is actually **4MP** at `2560x1440` (so something like 3.6 megapixels, also called 1440p or QHD)
- **Framerate:** 1-25 fps (can be adjusted)

Worth mentioning

- This camera can do both H264 and H265 (HEVC) stream. When the codec is set to H.265X, the stream is actually x264 (and H265 is actual x265).
- The stream carries wrong aspect ratio metadata (should be 16:9, but it's actually 64:27). See `ffprobe` output bellow. Can be fixed without re-encoding, but it's annoying.
- There is some (2-way) speaker that was always buzzing. I cut it off. NOTE: Other Techage camera was the same way, but only when powered on by 12 V. When powered over ethernet (POE) it was quited. So POE is preffered way of powering.
- Default IP is `192.168.1.10` with DHCP disabled.

RTSP stream URL for ZoneMinder or VLC:

```
rtsp://192.168.1.150:554/user=admin_password=tlJwpbo6_channel=1_stream=0&protocol=unicast.sdp?real_stream
```

Random settings:

```
# In-camera setting: "H.265X" + "4MP"
Video: h264 (High), yuvj420p(pc, progressive), 2560x1440 [SAR 4:3 DAR 64:27], 25 fps, 10 tbr, 90k tbn

# In-camera setting:"H.265" + "4MP"
Video: hevc (Main), yuvj420p(pc), 2560x1440 [SAR 4:3 DAR 64:27], 25 fps, 10 tbr, 90k tbn

# In-camera setting: "H.265X" + "3MP"
Video: h264 (High), yuvj420p(pc, progressive), 2304x1296 [SAR 4:3 DAR 64:27], 25 fps, 10 tbr, 90k tbn
```

Fixing the wrong aspect ratio without re-encoding

With ZoneMinder's pass-through recording, for some reason my camera's raw footage is saved with a 64:27 aspect ratio. This means that it is a bit more noodly than it should be. This is fairly easy to fix with ffmpeg:

```
ffmpeg -i in.mp4 -aspect 16:9 -c copy out.mp4
```

Since I couldn't get ZoneMinder to force this parameter (`-aspect 16:9`) directly this as it saves the stream, I use this quick and dirty solution that runs via crontab every hour or so and fixes the recordings for me:

```
#!/bin/bash

# FIND ALL MP4 in /CCTV/1 OLDER THAN 60 MIN BUT YOUNGER THAN 4 HOURS (ASSUMING SCRIPT WILL RUN EVERY UNDE 4 HRS)
# CHECK WITH FFPROBE WHETHER THE FILE HAS BEEN FIXED YET
# IF NOT, FFMPEG WITH proper AR

CCTVDIR=/cctv/1

while IFS= read -r input; do
    ffprobe "$input" &>/tmp/ffprobe-techage.txt
    filecheck=$(cat /tmp/ffprobe-techage.txt | grep Stream | grep 16:9)
    if [ -z "$filecheck" ]; then
        echo "Recording "$input" needs to be fixed. Proceeding..."
```

```
    oldname=$(basename "$input")
    fixedname=fixed-$(basename "$input")
    directory=$(dirname $input)
    ffmpeg -i "$directory"/"$oldname" -aspect 16:9 -c copy "$directory"/"$fixedname" </dev/null
    mv "$directory"/"$oldname" "$directory"/"$oldname".old
    mv "$directory"/"$fixedname" "$directory"/"$oldname"
    rm "$directory"/"$oldname".old
  else
    echo "Recording "$input" has been fixed already.  Skipping..."
  fi
  rm /tmp/ffprobe-techage.txt
done < <(/usr/bin/find $CCTVDIR -name '*-video.mp4' -mmin +15 -mmin -1440 -type f)
```

Sample footage

Will add at some point. Overall very nice image for $35.

IP camera Techage TA-XM-605GP-AI-50G (5MP)

Specification

- **Full AliExpress name:** *Techage H.265 5MP Security POE IP Camera Human Detection Outdoor Two Way Audio Video Surveillance AI IP Camera for NVR System*
- Bought on **AliExpress** (version `48V POE AI Camera`), at the time for $49 (shipped from EU warehouse)
- **Model:** `Techage TA-XM-605GP-AI-50G`
- **Lens:** `3.6 mm`
- **Power:** either 12 V DC, or 48V PoE
- **Default login:** `admin` / `null`
- **Administration:** requires Internet Explorer + ActiveX plugin
- **Resolution:** 2880x1616 (4.6 mpix.)
- **Framerate:** 1-22 fps

Worth mentioning

- This camera can do both H264 and H265 (HEVC) stream. When the codec is set to H.265X, the stream is actually x264 (and H265 is actual x265).
- The two-way speaker is buzzing/cracking while on 12 V power, but stays quiet while on POE.
- Didn't need to adjust the DHCP settings - the camera appeared on my 192.168.15.0/24 network despite the DHCP being turned off in the settings.

RTSP stream URL for ZoneMinder or VLC:

```
rtsp://<IP-ADDRESS>:554/user=admin_password=tlJwpbo6_channel=1_stream=0&protocol=unicast.sdp?real_stream
```

Random settings:

```
# H265X + 5M + Best + SmartEncode: Closing
Video: h264 (Baseline), yuvj420p(pc, bt709, progressive), 2880x1616, 20 fps, 20 tbr, 90k tbn

# H265X + 5M + Best + SmartEncode: H265X
Video: h264 (Baseline), yuvj420p(pc, bt709, progressive), 2880x1616, 20 fps, 20 tbr, 90k tbn,
40 tbc

# H265 + 5M + Best + SmartEncode: H265+
Video: hevc (Main), yuvj420p(pc, bt709), 2880x1616, 20 fps, 20 tbr, 90k tbn, 20 tbc

# H265X + 4M + Best + SmartEncode: H265X
Video: h264 (Baseline), yuvj420p(pc, bt709, progressive), 2560x1440, 20 fps, 20 tbr, 90k tbn,
40 tbc
```

Sample footage

Will add at some point. Do not recommend, the resolution is high, but the image quality seems to be upscaled from 1080p at best. This is confirmed by one of the reviews at AliExpress: "In short, the quality of Techage has ended, I will not take anything else here. The module in this camera ivg-g5 marking gk7605v100. but the matrix here 2 MP and resolutions 5 and 4 MP interpolate from it. Hanged instead of the old one and immediately it became clear that something was wrong, the vertical coverage field decreased strongly, and the clarity of the details disappeared, the picture was soap."

IP camera TP-Link Tapo C110

Specifications

- **Model:** `TP-Link Tapo C110`
- **Lens:** `? mm`
- **EAN:** 4897098682760
- **Power:** 9V adapter
- **Resolution:** 2304x1296 (3 MPX]
- **Framerate:** 15 fps

Worth mentioning

- Video feed can be viewed from anywhere over the Tapo app.

RTSP stream URL for ZoneMinder or VLC:

```
# NOTE: Login needs to be first set up in the Tapo app.
rtsp://{username}:{passwrod}@{ip_address}:554/stream1
```

Random settings:

```
# Default settings (not sure if can be adjusted)
Video: h264 (Main) (avc1 / 0x31637661), yuv420p, 2304x1296, 697 kb/s, 14.99 fps, 20 tbr, 90k tbn, 30 tbc (default)
Audio: aac (LC) (mp4a / 0x6134706D), 8000 Hz, mono, fltp, 20 kb/s (default)
```

Sample footage

Will add at some point. Overall very for interior monitoring (pets).