

Video quality between Douyin and Muse

1. Tool

- StreamEye on mac

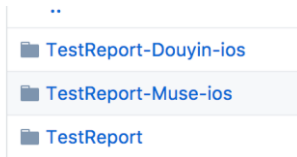
<https://www.elecard.com/software>

- Parser scripts for mp4 video bit stream encoded parameters

<https://github.com/shihuade/MultiMedia-Scripts/tree/master/StreamEye>

2. Test data

<https://github.com/shihuade/MultiMedia-Scripts/tree/master/StreamEye>



3. Test summary for iOS

3.1 Summary

Generated by:

https://github.com/shihuade/MultiMedia-Scripts/blob/master/StreamEye/run_CalculateAverage.sh

| EncodeParam | Douyin | Muse | Diff (%) | comment |
|-----------------------|-----------|-----------|----------|---------|
| MP4FileSize | 1.92 | 2.96 | 54.17 | |
| VideoPSNR | 38.26 | 38.58 | 0.84 | |
| FrameNumAll | 67.96 | 67.48 | -0.71 | |
| FrameNumI | 2 | 1 | -50.00 | |
| FrameNumP | 153.3 | 185.6 | 21.07 | |
| FrameNumB | 206 | 165.4 | -19.71 | |
| FrameNumRatioI | 0.26 | 0.13 | -50.00 | |
| FrameNumRatioP | 42.16 | 53.25 | 26.30 | |
| FrameNumRatioB | 57.26 | 46.44 | -18.90 | |
| FrameSizeAll | 1824331.4 | 2950797.6 | 61.75 | |
| FrameSizeI | 78338.3 | 30696.7 | -60.82 | |
| FrameSizeP | 1384583.7 | 2215659.1 | 60.02 | |
| FrameSizeB | 361409.4 | 704441.8 | 94.92 | |
| FrameSizeRatioI | 4.24 | 1.02 | -75.94 | |
| FrameSizeRatioP | 73.68 | 75.23 | 2.10 | |
| FrameSizeRatioB | 22.05 | 23.72 | 7.57 | |
| FrameSizeAvg | 4998.72 | 8376.85 | 67.58 | |
| FrameSizeAvgI | 39169.15 | 30696.7 | -21.63 | |
| FrameSizeAvgP | 8720.55 | 11939.77 | 36.92 | |
| FrameSizeAvgB | 1791.62 | 4297.26 | 139.85 | |
| FrameSizeMaxI | 46113.8 | 30696.7 | -33.43 | |
| FrameSizeMaxP | 15386.3 | 20354.6 | 32.29 | |
| FrameSizeMaxB | 5666.7 | 7450.7 | 31.48 | |
| FrameSizeMinI | 32224.5 | 30696.7 | -4.74 | |
| FrameSizeMinP | 2062.6 | 3100.6 | 50.32 | |
| FrameSizeMinB | 584.1 | 1176.9 | 101.49 | |
| FrameCompressedRatio | 165.95 | 92.83 | -44.06 | |
| FrameCompressedRatioI | 23.8 | 33.71 | 41.64 | |
| FrameCompressedRatioP | 93.58 | 65.53 | -29.97 | |
| FrameCompressedRatioB | 443.36 | 182.61 | -58.81 | |
| BitRateAvg | 1171.87 | 1636.09 | 39.61 | |
| BitRateAvgFPS30 | 1171.87 | 1964.04 | 67.60 | |
| BitRateIn1S | 1263.56 | 1864.72 | 47.58 | |
| BitRateIn2S | 1191.07 | 1674.37 | 40.58 | |
| BitRateIn3S | 1183.37 | 1704.73 | 44.06 | |
| BitRateIn4S | 1151.94 | 1655.54 | 43.72 | |
| BitRateIn5S | 1147.02 | 1668.29 | 45.45 | |
| BitRateIn6S | 1153.31 | 1641.45 | 42.33 | |
| FramePSNRAvg | 38.17 | 38.6 | 1.13 | |
| FramePSNRI | 40.73 | 39.82 | -2.23 | |
| FramePSNRP | 37.5 | 38.22 | 1.92 | |
| FramePSNRB | 38.63 | 38.99 | 0.93 | |
| FramePSNRMaxI | 41.94 | 39.82 | -5.05 | |
| FramePSNRMaxP | 43.11 | 41.54 | -3.64 | |
| FramePSNRMaxB | 43.11 | 41.54 | -3.64 | |
| FramePSNRMinI | 39.52 | 39.82 | 0.76 | |
| FramePSNRMinP | 32.11 | 33.54 | 4.45 | |
| FramePSNRMinB | 32.22 | 36.25 | 12.51 | |
| FrameQPAvg | 26.31 | 24.33 | -7.53 | |
| FrameQPI | 22.5 | 24.8 | 10.22 | |
| FrameQPP | 24.87 | 23.4 | -5.91 | |

| | | | | |
|-------------|-------|-------|--------|--|
| FrameQPB | 27.51 | 25.42 | -7.60 | |
| FrameQPMaXI | 23.3 | 24.8 | 6.44 | |
| FrameQPMaXP | 28.2 | 27.8 | -1.42 | |
| FrameQPMaXB | 33.6 | 29.9 | -11.01 | |
| FrameQPMinI | 21.7 | 24.8 | 14.29 | |
| FrameQPMinP | 22.7 | 20.5 | -9.69 | |
| FrameQPMinB | 23.2 | 23.2 | 0.00 | |

3.2. Test mp4 info

| Sequence No | Test mp4 for Douyin | Test MP4 for Muse |
|-------------|---|---|
| 01 | Apps-Douyin-Muse-01-iphone7:7-Douyin.mp4 | Apps-Douyin-Muse-01-iphone7:7-Muse.mp4 |
| 02 | Apps-Douyin-Muse-02-iphone7:7-Douyin.mp4 | Apps-Douyin-Muse-02-iphone7:7-Muse.mp4 |
| 03 | Apps-Douyin-Muse-03-iphone7:7-Douyin.mp4 | Apps-Douyin-Muse-03-iphone7:7-Muse.mp4 |
| 04 | Apps-Douyin-Muse-04-iphone7:7-Douyin.mp4 | Apps-Douyin-Muse-04-iphone7:7-Muse.mp4 |
| 05 | Apps-Douyin-Muse-05-iphone7:7-Douyin.mp4 | Apps-Douyin-Muse-05-iphone7:7-Muse.mp4 |
| 06 | Apps-Douyin-Muse-06-iphone7:7-Douyin.mp4 | Apps-Douyin-Muse-06-iphone7:7-Muse.mp4 |
| 07 | Apps-Douyin-Muse-07-iphone7:7p-Douyin.mp4 | Apps-Douyin-Muse-07-iphone7:7p-Muse.mp4 |
| 08 | Apps-Douyin-Muse-08-iphone7:7p-Douyin.mp4 | Apps-Douyin-Muse-08-iphone7:7p-Muse.mp4 |
| 09 | Apps-Douyin-Muse-09-iphone7:7p-Douyin.mp4 | Apps-Douyin-Muse-09-iphone7:7p-Muse.mp4 |
| 10 | Apps-Douyin-Muse-10-iphone7:7p-Douyin.mp4 | Apps-Douyin-Muse-10-iphone7:7p-Muse.mp4 |

3.3. Basic info

| DoiyinMP4 | | Basic info | | | | | | |
|-----------|--------------|------------|-------|-------|-----------|--------|--------------|-------|
| | Filesize(MB) | profile | level | EncM | Resol | FrRate | Dura | PSNR |
| 01 | 2.32 | High | 3.1 | CABAC | 540 x 960 | 30 | 00:00:14:866 | 38.43 |
| 02 | 2.47 | High | 3.1 | CABAC | 540 x 960 | 30 | 00:00:15:100 | 38.44 |
| 03 | 1.67 | High | 3.1 | CABAC | 540 x 960 | 30 | 00:00:11:733 | 39.03 |
| 04 | 2.45 | High | 3.1 | CABAC | 540 x 960 | 30 | 00:00:14:733 | 37.49 |
| 05 | 2.2 | High | 3.1 | CABAC | 540 x 960 | 30 | 00:00:11:600 | 34.7 |
| 06 | 2.57 | High | 3.1 | CABAC | 540 x 960 | 30 | 00:00:12:266 | 35.81 |
| 07 | 1.11 | High | 3.1 | CABAC | 540 x 960 | 30 | 00:00:09:833 | 40.59 |
| 08 | 1.27 | High | 3.1 | CABAC | 540 x 960 | 30 | 00:00:10:666 | 38.98 |
| 09 | 1.06 | High | 3.1 | CABAC | 540 x 960 | 30 | 00:00:09:733 | 41.26 |
| 10 | 2.12 | High | 3.1 | CABAC | 540 x 960 | 30 | 00:00:09:900 | 37.93 |

| Muse MP4 | | Basic info | | | | | | |
|----------|--------------|------------|-------|-------|-----------|--------|--------------|-------|
| | Filesize(MB) | profile | level | EncM | Resol | FrRate | Dura | PSNR |
| 01 | 3.71 | High | 3.1 | CABAC | 540 x 960 | 25 | 00:00:17:480 | 39.16 |
| 02 | 3.81 | High | 3.1 | CABAC | 540 x 960 | 25 | 00:00:18:080 | 37.73 |
| 03 | 2.86 | High | 3.1 | CABAC | 540 x 960 | 25 | 00:00:13:720 | 38.81 |
| 04 | 3.71 | High | 3.1 | CABAC | 540 x 960 | 25 | 00:00:17:240 | 37.28 |
| 05 | 2.85 | High | 3.1 | CABAC | 540 x 960 | 25 | 00:00:13:560 | 36.57 |
| 06 | 3.03 | High | 3.1 | CABAC | 540 x 960 | 25 | 00:00:14:560 | 35.53 |
| 07 | 2.39 | High | 3.1 | CABAC | 540 x 960 | 25 | 00:00:11:360 | 43.01 |
| 08 | 2.49 | High | 3.1 | CABAC | 540 x 960 | 25 | 00:00:11:880 | 41.2 |
| 09 | 2.38 | High | 3.1 | CABAC | 540 x 960 | 25 | 00:00:11:360 | 40.82 |
| 10 | 2.44 | High | 3.1 | CABAC | 540 x 960 | 25 | 00:00:11:560 | 35.72 |

3.4. IPPP structure

Douyin: IBBBPBBBP...

Muse: IBPBPBPBP...

Frame Num

| Doiyin MP4 | FrameNum | | | | FrameRatio(%) | | |
|---------------|----------|---|-----|-----|---------------|-------|-------|
| | All | I | P | B | I | P | B |
| 01 | 446 | 2 | 207 | 237 | 0.44 | 46.41 | 53.13 |
| 02 | 453 | 2 | 194 | 257 | 0.44 | 42.82 | 56.73 |
| 03 | 352 | 2 | 132 | 218 | 0.56 | 37.5 | 61.93 |
| 04 | 442 | 2 | 183 | 257 | 0.45 | 41.4 | 58.14 |
| 05 | 348 | 2 | 174 | 172 | 0.57 | 50 | 49.42 |
| 06 | 368 | 2 | 166 | 200 | 0.54 | 45.1 | 54.34 |
| 07 | 295 | 2 | 104 | 189 | 0.67 | 35.25 | 64.06 |
| 08 | 320 | 2 | 123 | 195 | 0.62 | 38.43 | 60.93 |
| 09 | 292 | 2 | 90 | 200 | 0.68 | 30.82 | 68.49 |
| 10 | 297 | 2 | 160 | 135 | 0.67 | 53.87 | 45.45 |

| Muse MP4 | FrmNum | | | | FrmNumRatio(%) | | |
|-------------|--------|---|-----|-----|----------------|-------|-------|
| | All | I | P | B | I | P | B |
| 01 | 437 | 1 | 222 | 214 | 0.22 | 50.8 | 48.97 |
| 02 | 452 | 1 | 227 | 224 | 0.22 | 50.22 | 49.55 |
| 03 | 343 | 1 | 178 | 164 | 0.29 | 51.89 | 47.81 |
| 04 | 431 | 1 | 216 | 214 | 0.23 | 50.11 | 49.65 |
| 05 | 339 | 1 | 170 | 168 | 0.29 | 50.14 | 49.55 |
| 06 | 364 | 1 | 183 | 180 | 0.27 | 50.27 | 49.45 |
| 07 | 284 | 1 | 211 | 72 | 0.35 | 74.29 | 25.35 |
| 08 | 297 | 1 | 156 | 140 | 0.33 | 52.52 | 47.13 |
| 09 | 284 | 1 | 145 | 138 | 0.35 | 51.05 | 48.59 |
| 10 | 289 | 1 | 148 | 140 | 0.34 | 51.21 | 48.44 |

3.5 Frame size

Frame size and ratio

| Doiyin MP4 | FrmSize (Byte) | | | | FrmSize Ratio(%) | | |
|---------------|-------------------|--------|---------|--------|---------------------|-------|-------|
| | All | I | P | B | I | P | B |
| 01 | 2181849 | 74729 | 1723617 | 383503 | 3.42 | 78.99 | 17.57 |
| 02 | 2345496 | 76335 | 1823251 | 445910 | 3.25 | 77.73 | 19.01 |
| 03 | 1558457 | 76234 | 1135033 | 347190 | 4.89 | 72.83 | 22.27 |
| 04 | 2325851 | 100179 | 1814677 | 410995 | 4.3 | 78.02 | 17.67 |
| 05 | 2107719 | 116154 | 1703160 | 288405 | 5.51 | 80.8 | 13.68 |
| 06 | 2487022 | 140794 | 1993690 | 352538 | 5.66 | 80.16 | 14.17 |
| 07 | 1001513 | 37232 | 635650 | 328631 | 3.71 | 63.46 | 32.81 |
| 08 | 1227243 | 59605 | 848078 | 319560 | 4.85 | 69.1 | 26.03 |
| 09 | 947027 | 33883 | 536110 | 377034 | 3.57 | 56.6 | 39.81 |
| 10 | 2061137 | 68238 | 1632571 | 360328 | 3.31 | 79.2 | 17.48 |

| Muse MP4 | FrmSize (Byte) | | | | FrmSize Ratio(%) | | |
|-------------|-------------------|-------|---------|--------|---------------------|-------|-------|
| | All | I | P | B | I | P | B |
| 01 | 3687007 | 36948 | 2721497 | 928562 | 1 | 73.81 | 25.18 |
| 02 | 3785072 | 35213 | 2749984 | 999875 | 0.93 | 72.65 | 26.41 |
| 03 | 2842632 | 28188 | 2156960 | 657484 | 0.99 | 75.87 | 23.12 |
| 04 | 3693393 | 40499 | 2800978 | 851916 | 1.09 | 75.83 | 23.06 |
| 05 | 2830065 | 27770 | 2134711 | 667584 | 0.98 | 75.42 | 23.58 |
| 06 | 3010393 | 55915 | 2277099 | 677379 | 1.85 | 75.64 | 22.5 |
| 07 | 2381447 | 7401 | 2044841 | 329205 | 0.31 | 85.86 | 13.82 |
| 08 | 2480845 | 20120 | 1735105 | 725620 | 0.81 | 69.94 | 29.24 |
| 09 | 2371545 | 19634 | 1697044 | 654867 | 0.82 | 71.55 | 27.61 |
| 10 | 2425577 | 35279 | 1838372 | 551926 | 1.45 | 75.79 | 22.75 |

Frame size and compressed ratio

| Dolbyin MP4 | Compressed Ratio | | | | AvgSize (Byte) | | | |
|----------------|---------------------|-------|--------|--------|-------------------|---------|----------|---------|
| | Avg | I | P | B | Avg | I | P | B |
| 01 | 158.95 | 20.81 | 93.38 | 480.54 | 4892.03 | 37364.5 | 8326.65 | 1618.15 |
| 02 | 150.18 | 20.37 | 82.73 | 448.17 | 5177.69 | 38167.5 | 9398.2 | 1735.05 |
| 03 | 175.63 | 20.4 | 90.43 | 488.25 | 4427.43 | 38117 | 8598.73 | 1592.61 |
| 04 | 147.77 | 15.52 | 78.41 | 486.24 | 5262.1 | 50089.5 | 9916.26 | 1599.2 |
| 05 | 128.38 | 13.38 | 79.44 | 463.74 | 6056.66 | 58077 | 9788.27 | 1676.77 |
| 06 | 115.06 | 11.04 | 64.74 | 441.14 | 6758.21 | 70397 | 12010.18 | 1762.69 |
| 07 | 229.04 | 41.77 | 127.22 | 447.21 | 3394.95 | 18616 | 6112.01 | 1738.78 |
| 08 | 202.75 | 26.09 | 112.77 | 474.5 | 3835.13 | 29802.5 | 6894.94 | 1638.76 |
| 09 | 239.76 | 45.89 | 130.54 | 412.48 | 3243.24 | 16941.5 | 5956.77 | 1885.17 |
| 10 | 112.04 | 22.79 | 76.2 | 291.33 | 6939.85 | 34119 | 10203.56 | 2669.09 |

| Muse MP4 | Compressed Ratio | | | | AvgSize (Byte) | | | |
|-------------|---------------------|--------|-------|--------|-------------------|-------|----------|---------|
| | Avg | I | P | B | Avg | I | P | B |
| 01 | 92.16 | 21.04 | 63.43 | 179.2 | 8437.08 | 36948 | 12258.9 | 4339.07 |
| 02 | 92.85 | 22.08 | 64.18 | 174.2 | 8374.05 | 35213 | 12114.46 | 4463.72 |
| 03 | 93.82 | 27.58 | 64.17 | 193.96 | 8287.55 | 28188 | 12117.75 | 4009.04 |
| 04 | 90.74 | 19.2 | 59.96 | 195.33 | 8569.35 | 40499 | 12967.49 | 3980.91 |
| 05 | 93.14 | 28 | 61.92 | 195.68 | 8348.27 | 27770 | 12557.12 | 3973.71 |
| 06 | 94.02 | 13.9 | 62.49 | 206.63 | 8270.31 | 55915 | 12443.16 | 3763.21 |
| 07 | 92.73 | 105.06 | 80.23 | 170.06 | 8385.37 | 7401 | 9691.18 | 4572.29 |
| 08 | 93.09 | 38.64 | 69.91 | 150.02 | 8353.01 | 20120 | 11122.46 | 5183 |
| 09 | 93.12 | 39.6 | 66.44 | 163.86 | 8350.51 | 19634 | 11703.75 | 4745.41 |
| 10 | 92.64 | 22.04 | 62.6 | 197.24 | 8393 | 35279 | 12421.43 | 3942.32 |

Max/Min frame size

| Dolbyin MP4 | MaxSize (Byte) | | | MinSize (Byte) | | |
|----------------|-------------------|-------|------|-------------------|------|-----|
| | I | P | B | I | P | B |
| 01 | 48518 | 17041 | 5813 | 26211 | 183 | 91 |
| 02 | 50014 | 16443 | 5419 | 26321 | 4510 | 805 |
| 03 | 41333 | 15876 | 4981 | 34901 | 2471 | 178 |
| 04 | 51814 | 16442 | 6753 | 48365 | 223 | 468 |
| 05 | 71796 | 18427 | 3700 | 44358 | 341 | 567 |
| 06 | 78702 | 18916 | 8047 | 62092 | 3182 | 703 |
| 07 | 18837 | 10840 | 5642 | 18395 | 3456 | 638 |
| 08 | 32790 | 12547 | 4580 | 26815 | 2765 | 613 |
| 09 | 21992 | 9182 | 3500 | 11891 | 3168 | 972 |
| 10 | 45342 | 18149 | 8232 | 22896 | 327 | 806 |

| Muse MP4 | MaxSize (Byte) | | | MinSize (Byte) | | |
|-------------|-------------------|-------|-------|-------------------|------|------|
| | I | P | B | I | P | B |
| 01 | 36948 | 22146 | 10257 | 36948 | 1064 | 332 |
| 02 | 35213 | 18442 | 8417 | 35213 | 1816 | 904 |
| 03 | 28188 | 25901 | 6498 | 28188 | 2606 | 214 |
| 04 | 40499 | 21691 | 6269 | 40499 | 1266 | 919 |
| 05 | 27770 | 22122 | 6287 | 27770 | 2989 | 1344 |
| 06 | 55915 | 18480 | 6608 | 55915 | 2276 | 1228 |
| 07 | 7401 | 15732 | 7844 | 7401 | 6216 | 2900 |
| 08 | 20120 | 18709 | 7101 | 20120 | 4007 | 1394 |
| 09 | 19634 | 22247 | 8369 | 19634 | 4110 | 850 |
| 10 | 35279 | 18076 | 6857 | 35279 | 4656 | 1684 |

3.6. Bitrate

Bitrate

| Douyin MP4 | Bitrate (kbps) | | | | | | | |
|---------------|-------------------|----------|---------|---------|---------|---------|---------|---------|
| | avg | avgfps30 | 1s | 2s | 3s | 4s | 5s | 6s |
| 01 | 1147.08 | 1147.08 | 1254.19 | 1154.14 | 1196.51 | 1166.71 | 1153.17 | 1160.1 |
| 02 | 1213.52 | 1213.52 | 1412.98 | 1325.01 | 1329.34 | 1322.55 | 1324.39 | 1294.3 |
| 03 | 1037.97 | 1037.97 | 1137.64 | 989.37 | 1008.34 | 1025.65 | 1035.89 | 1094.33 |
| 04 | 1233.58 | 1233.58 | 1278.64 | 1173.05 | 1252.23 | 1177.58 | 1091.44 | 1112.46 |
| 05 | 1419.53 | 1419.53 | 1352.78 | 1326.8 | 1343.34 | 1306.85 | 1341.75 | 1322.17 |
| 06 | 1584.81 | 1584.81 | 1835.25 | 1924.72 | 1660.25 | 1538.74 | 1458.07 | 1498.53 |
| 07 | 795.96 | 795.96 | 838 | 824.33 | 794.73 | 817.96 | 787.3 | 806.37 |
| 08 | 899.42 | 899.42 | 1108.7 | 918.62 | 898.87 | 820.05 | 907.14 | 884.45 |
| 09 | 760.39 | 760.39 | 602.07 | 669.42 | 725.13 | 699.61 | 721.6 | 729.67 |
| 10 | 1626.52 | 1626.52 | 1815.38 | 1605.28 | 1625.03 | 1643.74 | 1649.49 | 1630.72 |

| Muse MP4 | Bitrate (kbps) | | | | | | | |
|-------------|-------------------|----------|---------|---------|---------|---------|---------|---------|
| | avg | avgfps30 | 1s | 2s | 3s | 4s | 5s | 6s |
| 01 | 1647.86 | 1978.34 | 1954.71 | 1694.49 | 1729.21 | 1679.64 | 1692.77 | 1644.67 |
| 02 | 1635.55 | 1963.53 | 1899.71 | 1669.86 | 1722.4 | 1678.55 | 1674.5 | 1608.12 |
| 03 | 1618.66 | 1942.96 | 1929.4 | 1639.3 | 1701.22 | 1640.47 | 1670.6 | 1618.56 |
| 04 | 1673.7 | 2009.37 | 1861.29 | 1696.43 | 1778.03 | 1654.59 | 1640.2 | 1606.26 |
| 05 | 1630.52 | 1956.62 | 1807.33 | 1651.19 | 1681.76 | 1651.93 | 1669.7 | 1636.25 |
| 06 | 1615.29 | 1938.88 | 2039.25 | 1774.71 | 1716.07 | 1655.84 | 1697.12 | 1689.88 |
| 07 | 1637.76 | 1966.7 | 1622.14 | 1618.61 | 1624.69 | 1663.55 | 1632.21 | 1637.91 |
| 08 | 1631.44 | 1957.73 | 1819.45 | 1653.91 | 1681.21 | 1627.84 | 1683.17 | 1655.78 |
| 09 | 1630.95 | 1958.53 | 1859.66 | 1654.78 | 1674.48 | 1629.04 | 1650.96 | 1662.21 |
| 10 | 1639.25 | 1967.79 | 1854.32 | 1690.49 | 1738.24 | 1673.97 | 1671.71 | 1654.9 |

3.7. Frame PSNR

Frame PSNR

| Douyin MP4 | Frame PSNR(db) | | | | | | | | | |
|---------------|-------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | Avg | I | P | B | MaxI | MaxP | MaxB | MinI | MinP | MinB |
| 01 | 38.42 | 41.3 | 37.57 | 39.14 | 42.81 | 41.1 | 43.49 | 39.8 | 31.09 | 29.7 |
| 02 | 38.43 | 40.52 | 37.23 | 39.32 | 42.15 | 41.04 | 41.6 | 38.89 | 34.42 | 34.17 |
| 03 | 38.81 | 40.44 | 38.23 | 39.15 | 41.22 | 43.88 | 52.77 | 39.66 | 34.16 | 31.8 |
| 04 | 37.35 | 41.26 | 36.24 | 38.1 | 42.39 | 44.08 | 42.24 | 40.13 | 30.11 | 30.29 |
| 05 | 34.24 | 38.27 | 33.53 | 34.91 | 38.67 | 43.72 | 40.59 | 37.87 | 23.62 | 24.65 |
| 06 | 35.8 | 38.15 | 35.48 | 36.04 | 39.71 | 39.33 | 40.07 | 36.6 | 30.58 | 31.15 |
| 07 | 40.58 | 42.84 | 39.75 | 41.02 | 43.96 | 42.71 | 44.46 | 41.72 | 35.98 | 35.75 |
| 08 | 38.94 | 41.48 | 38.34 | 39.29 | 43.29 | 41.68 | 42.44 | 39.68 | 32.34 | 32.77 |
| 09 | 41.25 | 42.84 | 40.91 | 41.39 | 43.13 | 45 | 43.64 | 42.56 | 38.11 | 38.33 |
| 10 | 37.92 | 40.21 | 37.81 | 38.02 | 42.13 | 44.12 | 39.84 | 38.3 | 30.77 | 33.66 |

| Muse MP4 | Frame PSNR(db) | | | | | | | | | |
|-------------|-------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | Avg | I | P | B | MaxI | MaxP | MaxB | MinI | MinP | MinB |
| 01 | 39.15 | 39.24 | 38.76 | 39.56 | 39.24 | 40.74 | 41.48 | 39.24 | 32 | 36.24 |
| 02 | 38.36 | 39.71 | 37.87 | 38.85 | 39.71 | 41.2 | 42.71 | 39.71 | 30.33 | 35.13 |
| 03 | 38.8 | 39.26 | 38.53 | 39.09 | 39.26 | 41.08 | 41.08 | 39.26 | 33.28 | 36.61 |
| 04 | 37.09 | 39.23 | 36.68 | 37.5 | 39.23 | 39.18 | 40.31 | 39.23 | 29.94 | 33.81 |
| 05 | 36.47 | 39.16 | 36.16 | 36.78 | 39.16 | 39.26 | 40.57 | 39.16 | 33.96 | 34.7 |
| 06 | 35.44 | 36.24 | 35.19 | 35.69 | 36.24 | 39.56 | 39.69 | 36.24 | 31.39 | 32.74 |
| 07 | 43 | 43.6 | 42.96 | 43.1 | 43.6 | 45.03 | 44.86 | 43.6 | 39.89 | 41.38 |
| 08 | 41.19 | 41.27 | 40.81 | 41.62 | 41.27 | 44.16 | 43.25 | 41.27 | 37.65 | 39.58 |
| 09 | 40.81 | 40.93 | 40.09 | 41.56 | 40.93 | 42.18 | 43.43 | 40.93 | 35.01 | 38.89 |
| 10 | 35.71 | 39.59 | 35.22 | 36.2 | 39.59 | 38.46 | 38.04 | 39.59 | 31.95 | 33.42 |

3.8. Frame QP

Frame QP

| DouyinMP4 | Frame QP | | | | | | | | | |
|-----------|----------|------|-------|-------|------|------|------|------|------|------|
| | Avg | I | P | B | MaxI | MaxP | MaxB | MinI | MinP | MinB |
| 01 | 26.5 | 22.5 | 24.88 | 27.94 | 23 | 28 | 35 | 22 | 23 | 26 |
| 02 | 26.36 | 23.5 | 24.66 | 27.66 | 24 | 27 | 31 | 23 | 23 | 25 |
| 03 | 25.13 | 22 | 23.94 | 25.87 | 23 | 27 | 33 | 21 | 22 | 14 |
| 04 | 27.73 | 22 | 25.31 | 29.49 | 23 | 29 | 36 | 21 | 23 | 25 |
| 05 | 30 | 23.5 | 27.55 | 32.56 | 24 | 35 | 42 | 23 | 22 | 28 |
| 06 | 27.57 | 22.5 | 25.67 | 29.19 | 24 | 28 | 36 | 21 | 24 | 24 |
| 07 | 24.04 | 21.5 | 23.28 | 24.49 | 22 | 25 | 29 | 21 | 23 | 22 |
| 08 | 25.41 | 22.5 | 24.41 | 26.08 | 24 | 28 | 33 | 21 | 23 | 23 |
| 09 | 23.79 | 21.5 | 23.52 | 23.94 | 22 | 25 | 26 | 21 | 22 | 20 |
| 10 | 26.6 | 23.5 | 25.54 | 27.9 | 24 | 30 | 35 | 23 | 22 | 25 |

| Muse MP4 | Frame QP | | | | | | | | | |
|----------|----------|----|-------|-------|------|------|------|------|------|------|
| | Avg | I | P | B | MaxI | MaxP | MaxB | MinI | MinP | MinB |
| 01 | 23.79 | 25 | 22.99 | 24.61 | 25 | 29 | 32 | 25 | 21 | 23 |
| 02 | 24.62 | 25 | 23.67 | 25.59 | 25 | 30 | 33 | 25 | 20 | 23 |
| 03 | 23.64 | 25 | 22.78 | 24.57 | 25 | 27 | 29 | 25 | 20 | 23 |
| 04 | 26.1 | 25 | 25.18 | 27.04 | 25 | 31 | 33 | 25 | 22 | 25 |
| 05 | 26.36 | 25 | 25.44 | 27.3 | 25 | 28 | 30 | 25 | 20 | 24 |
| 06 | 27.13 | 26 | 26.02 | 28.26 | 26 | 31 | 33 | 26 | 22 | 23 |
| 07 | 20.08 | 24 | 19.4 | 22.02 | 24 | 22 | 23 | 24 | 17 | 20 |
| 08 | 22.02 | 24 | 21.13 | 23 | 24 | 25 | 27 | 24 | 19 | 22 |
| 09 | 21.95 | 24 | 20.86 | 23.08 | 24 | 25 | 27 | 24 | 19 | 22 |
| 10 | 27.68 | 25 | 26.62 | 28.82 | 25 | 30 | 32 | 25 | 25 | 27 |