

Full capture, from app start to key exchange, retrieve devices and identify devices

The capture was made using vmware fusion and a python script to display and colorize the exchange in a useful format, leveraging the open source usb analyser script from vmware.

When the app is launched, it sends 02, 04, fa

```
86.897 EP1 OUT > 02 04 fa
```

If the dongle has just been plugged in, it will send back 43 05 ff b9, otherwise it sends nothing back.

```
86.897 EP2 IN < 43
86.898 EP2 IN < 05
86.898 EP2 IN < ff
86.899 EP2 IN < b9
```

From there on, frames always start and end with C0, and are always acknowledged with a single byte 0x55 (not shown in this log), in both directions.
The next two bytes are assumed to be the frame size, without counting the two C0.
The next three bytes are unknown, but always 01 00 00
The next byte seems to be a frame-type byte, or 'command' byte.

The app sends a sequence (i call it 'challenge') that changes each time, but the response is always the same, whatever the challenge was. But the frame type is always 06.

We assume the following is a request for mouse config:

```
87.097 EP1 OUT > c0 00 25 01 00 00 06 94 f0 02 31 7b 7f 11 3b 6f 3a a4 85 88 03 26 ed 62 84 16 fa 16 e2 da 56 54 d9 0a e0 55 6e fb c0
```

and the response contains the config (longer frame):

```
87.101 EP2 IN < c0 00 95 01 00 00 04 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d 96 f2 32 59 6e 9b dc 25 35 1e d4 00 eb 25 c2 09 bf 25 86 2f
c6 b5 35 25 be 03 3c 12 5d 69 24 97 70 66 9a cc e6 78 ca b4 ce
87.102 EP2 IN < ee 2c e3 3d 06 9b 4a 9d 09 e1 77 05 1a b1 bf 37 05 83 61 e7 7e e8 f9 47 bb 53 dd 0e 7a 22 a8 de e1 42 60 f4 e6 31 72 fb f1 44
17 7f fd 0d 9d c8 81 34 ce 70 45 eb 34 9d 09 e1 77 05 1a b1 bf
87.102 EP2 IN < 37 05 83 61 e7 7e e8 07 9d 09 e1 77 05 1a b1 bf 37 05 c2 e0 4d d4 42 ad c0
```

After this, some configuration (?), that changes each time. The response from the mouse is always the same.

Could it be that the encryption is only in one direction?

```
87.300 EP1 OUT > c0 00 25 01 00 00 0c 2b de ca 98 26 0d a3 7f 27 c6 bc 1c 8b 07 42 d6 a5 38 57 67 b3 c5 a1 22 4c 26 4f 58 80 16 f5 c0
87.303 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef fe 58 2d 5e 91 58 77 47 35 04 7a 43 1d 46 f3 c0
87.503 EP1 OUT > c0 00 25 01 00 00 0c da b8 3a c2 55 9b c2 fe ed a2 42 d3 3a e7 2a 4b 1a da b4 f8 8c 75 b0 93 24 e6 b5 b7 76 25 24 c0
87.506 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef 1e 5b f6 5c 91 58 77 47 35 04 7a 43 1d 46 f3 c0
```

On incoming bytes, we often have the 'red' header pattern, then 5 bytes that change, then the 'yellow' trailer pattern.

At this point the mouse is configured.

The next step is to request the security key. Here the key is provided by a two way touch screen remote, using the 'copy remote' function.

```
-----
148.626
```

148.629 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef f8 5b 4b 15 91 58 77 47 35 04 7a 43 1d 46 f3 c0

The timings show first an immediate response from the mouse (3ms), then a pause of a few seconds before another response, which could be from the radio or from the mouse with a timeout. Indeed the key transfer did not work immediately, it took me a few tries

The 5 bytes 'ef f8 5b 4b 15' see to show as response from the mouse when it is in listening mode on RF.

The next sequence is very long but I suspect a lot of re-transmits and that the devices were discovered several times by the windows app.

```
-----
152.767 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef fb 5b 61 7d 91 58 77 47 35 04 7a 43 1d 46 f3 c0
152.797 EP1 OUT > c0 00 25 01 00 00 0b c3 a8 b4 8b 13 ec d1 02 b7 8c 51 4c b3 54 d6 a8 16 c8 f2 7b 0b b1 20 84 6b 3d 37 85 de b2 44 c0
153.004 EP1 OUT > c0 00 25 01 00 00 0c fb 68 63 ab af 05 8d ce 87 4c 8f 68 69 f0 b0 91 7f 96 c6 7a 4a 91 32 27 e7 09 9d d3 2f 25 68 c0
153.011 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef 1e 5b f6 5c 91 58 77 47 35 04 7a 43 1d 46 f3 c0
-----
157.817 EP1 OUT > c0 00 25 01 00 00 03 0c de 16 d1 ad ce 33 6f b0 f2 ef a9 01 2f 27 8e 60 0c e4 a2 48 3b 3b 1f 72 bc 0f c4 5c 11 de c0
157.823 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef f8 5b 4b 15 91 58 77 47 35 04 7a 43 1d 46 f3 c0
-----
161.962 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef fb 5b 61 7d 91 58 77 47 35 04 7a 43 1d 46 f3 c0
161.968 EP1 OUT > c0 00 25 01 00 00 0b c8 96 aa cb 59 47 e8 a7 5a 5f b3 dd 87 da 0b 49 92 4d f8 bd ce 14 14 94 3e 29 16 2e a1 32 ee c0
162.592 EP1 OUT > c0 00 25 01 00 00 0c 14 4f a2 00 2c 78 ce a3 78 f4 36 e4 48 fa 4a ee 39 86 62 03 48 ac 79 44 ba 6d 97 b7 26 2c fb c0
162.595 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef 1e 5b f6 5c 91 58 77 47 35 04 7a 43 1d 46 f3 c0
-----
176.395 EP1 OUT > c0 00 25 01 00 00 03 a3 cf e4 9e c2 21 dc 03 6b 68 dd 9c 71 f8 15 56 9e 54 24 dd d6 f2 b2 7b 13 e1 65 7f 8e af b3 c0
176.399 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef f8 5b 4b 15 91 58 77 47 35 04 7a 43 1d 46 f3 c0
-----
180.563 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef fb 5b 61 7d 91 58 77 47 35 04 7a 43 1d 46 f3 c0
180.566 EP1 OUT > c0 00 25 01 00 00 0b df f3 6d 2e d8 2c 78 84 ab 94 87 ce ad 33 e9 22 cd 9e 63 82 d4 8f 78 52 7c 43 0b ca 3a 87 82 c0
180.769 EP1 OUT > c0 00 25 01 00 00 0c 4e 00 6e a1 02 1d fd 83 e3 37 75 d0 bb d4 13 e9 72 41 31 83 a1 f3 8e d2 fe c0 dc 28 50 6d 18 c0
180.774 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef 1e 5b f6 5c 91 58 77 47 35 04 7a 43 1d 46 f3 c0
-----
185.569 EP1 OUT > c0 00 25 01 00 00 03 e9 9d 8d 1a 57 7d 5d 8e b8 ff 5e 90 cb f5 6a 19 5d f2 30 03 0b b9 51 22 54 25 e6 52 d6 dc 48 c0
185.579 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef f8 5b 4b 15 91 58 77 47 35 04 7a 43 1d 46 f3 c0
-----
189.719 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef fb 5b 61 7d 91 58 77 47 35 04 7a 43 1d 46 f3 c0
189.771 EP1 OUT > c0 00 25 01 00 00 0b 27 3e 9c 7f b8 5b 27 47 fa 51 90 c0 ab 2f 43 79 4e be 04 14 9a 87 98 4f d9 5f cc 0c 62 50 2b c0
190.372 EP1 OUT > c0 00 25 01 00 00 0c 5d d5 41 a9 86 de f4 13 eb 38 ee 20 88 f2 7b dc 76 73 09 aa 07 1b c0 fe d0 2a 81 c7 da 00 a5 c0
190.376 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef 1e 5b f6 5c 91 58 77 47 35 04 7a 43 1d 46 f3 c0
-----
197.549 EP1 OUT > c0 00 25 01 00 00 03 0b c8 ee fe 02 ac 17 85 fe 59 41 32 2c 06 19 f3 ec da 59 1d b2 e4 a6 33 cd 6c 66 98 a9 5f 79 c0
197.554 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef f8 5b 4b 15 91 58 77 47 35 04 7a 43 1d 46 f3 c0
-----
203.100 EP2 IN < c0 00 45 01 00 00 05 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ce 3c 87 0c c0 60 16 fa 6d b9 87 bf 79 0e d2 99 c8 5b 7e ef
62 51 ac f4 db 39 46 3e 4a 03 5c 6e a5 a4 74 ac 25 7b 50 ed 97
203.106 EP2 IN < b6 eb 18 a7 c4 d6 cb c0
203.116 EP1 OUT > c0 00 25 01 00 00 0b 9f 6b 98 d6 d9 eb f2 06 2e 70 43 28 66 42 54 d0 17 60 47 f9 2c bd 00 42 a4 64 2f 3f a7 ea ab c0
203.118 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef fb 5b 61 7d 91 58 77 47 35 04 7a 43 1d 46 f3 c0
203.119 EP1 OUT > c0 00 25 01 00 00 0b 79 93 5b 2a 9e 27 c7 f3 84 6d da 9a 43 16 26 17 ee bb e6 72 98 31 4d 3a 61 ff 6c c6 02 d1 0b c0
203.124 EP1 OUT > c0 00 25 01 00 00 05 f5 34 00 cf eb 23 d3 3f 81 c1 ba bb 2f 42 b5 47 80 ff 7f 97 bc 78 ab fe 1d b9 e6 c8 7f 4d 62 c0
203.126 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef f8 5b 4b 15 91 58 77 47 35 04 7a 43 1d 46 f3 c0
```

203.246 EP2 IN < c0 00 35 01 00 00 08 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d 8f c6 85 a4 99 7a 0e 94 f8 b0 b6 9b ef 56 c8 cd 7e 95 82 1b
31 4b 98 09 2b eb c6 03 33 07 0d ae c0
203.248 EP1 OUT > c0 00 25 01 00 00 0b 22 3b 86 20 b4 e6 c2 a5 ba 4f 54 b4 a4 12 36 56 07 00 89 fa ad 4b 02 e5 8b 83 2c 14 85 02 bb c0
203.251 EP1 OUT > c0 00 25 01 00 00 0c 8a c1 b5 fd 69 bd 4a 9d 73 bd 4c 76 a1 10 9c 3e f5 a7 94 49 3a eb 48 04 b3 86 27 80 f2 f1 de c0
203.257 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef 1e 5b f6 5c 91 58 77 47 35 04 7a 43 1d 46 f3 c0
203.436 EP1 OUT > c0 00 45 01 00 00 01 31 52 72 54 fb 6d 76 06 85 76 f6 12 95 01 f2 ef 20 7d 8c 3a 36 7f fb c0 4a da 1b 7b 26 40 cc ca 78 f6 ed
82 1c 13 d1 2a 42 d7 55 42 cd 60 30 59 81 1c d6 39 b6 35 6e ae 37 32 bc c4 88 f5 4d c0
203.440 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef 1c 5b c5 ec 91 58 77 47 35 04 7a 43 1d 46 f3 c0
203.467 EP1 OUT > c0 00 35 01 00 00 01 d5 91 12 4a 5a ca c5 f8 54 ca 10 df 47 f9 72 1f 0f e0 b6 28 7c ca 98 bd 9c af 70 cb a7 ac 3e 4c 2c 70 8e
d0 b7 b9 0d 02 6c e2 4d ac e0 e7 f3 c0
203.470 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef f8 5b 4b 15 91 58 77 47 35 04 7a 43 1d 46 f3 c0

217.725 EP2 IN < c0 00 45 01 00 00 05 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ce 3c 87 0c c3 60 16 fa a9 b2 87 bf 2d e6 6f 99 74 ef 42 59
ca d8 80 1e cd 91 54 94 70 d6 d3 34 e2 78 ea 37 04 09 6e bd 00
217.729 EP2 IN < 91 e4 7a f1 13 84 8e c0
217.731 EP1 OUT > c0 00 25 01 00 00 0b e3 ea 87 d2 62 5a 00 62 bf 12 7d b7 29 42 c7 fe d8 e1 56 35 42 f3 cf db 7e ec 06 91 c1 73 45 c0
217.735 EP2 IN < c0 00 45 01 00 00 05 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ce 3c 87 0c c3 60 16 ae 85 04 87 bf 2d e6 6f 99 e6 c2 b1 e6
f4 fb fb 3d d5 70 3e fc 79 af cd be 67 f2 26 e9 e7 90 82 80 31
217.741 EP2 IN < cd dd 8f 83 ef d6 bc c0
217.743 EP1 OUT > c0 00 25 01 00 00 0b f3 3c 7d 63 44 b1 52 ee 77 bf d3 a8 f0 49 90 7a 86 4b 98 f0 c0 00 e4 80 4d 23 fd 0f 04 ce 8e c0
217.746 EP2 IN < c0 00 45 01 00 00 05 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ce 3c 87 0c c3 60 16 01 7a 7f 87 bf 82 19 14 99 d0 66 80 74
fb f5 65 16 6e cb 60 a4 5f 99 2f dd 67 f2 26 e9 e7 90 82 80 31
217.747 EP2 IN < 82 ce 8f 83 ef d6 bc c0
217.749 EP1 OUT > c0 00 25 01 00 00 0b 9c d2 9c 15 53 8c cf 68 68 b2 6b 9e fe 4a 9d e7 c1 e1 dc 19 ef 60 e5 c4 4e bb 74 84 35 7a a9 c0
217.759 EP2 IN < c0 00 45 01 00 00 05 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ce 3c 87 0c c3 60 16 28 d1 78 87 bf 82 19 14 99 83 01 f9 e6
2a 83 f1 d5 65 67 1c ff 7d 15 c0 2c e2 78 ea 37 04 09 6e bd 00
217.769 EP2 IN < e3 96 7a f1 13 84 8e c0
217.779 EP1 OUT > c0 00 25 01 00 00 0b fb 68 6a 79 c0 f8 68 8c 10 60 65 60 0c 7c 78 80 ba 4e 56 10 a9 1a 77 2f e5 83 01 4b 9b bc 92 c0
217.790 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef fb 5b 61 7d 91 58 77 47 35 04 7a 43 1d 46 f3 c0
217.790 EP1 OUT > c0 00 25 01 00 00 0b 14 a5 0a 46 ba 2c 11 4b 98 24 89 9d fa 69 06 fa 09 3e 42 74 da 0a 03 b8 db 65 85 5f 55 7c 96 c0
218.001 EP1 OUT > c0 00 25 01 00 00 0c 7e 69 58 29 61 b2 5e 65 f5 7e 34 a9 75 48 7e d9 3e 84 70 5a 90 d4 45 e5 3d 63 b9 2a d9 b1 fb c0
218.011 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef 1e 5b f6 5c 91 58 77 47 35 04 7a 43 1d 46 f3 c0
218.014 EP1 OUT > c0 00 45 01 00 00 0f 55 56 6c 67 a1 44 5f a5 b0 96 72 cc ae 81 4e 91 d5 86 de 36 29 fc 5d 0c bb 97 42 80 39 7e 15 f5 c8 9c 0d
b2 e7 92 3f 73 c2 a3 2e 7c b3 e7 65 da 42 01 6f f5 80 d4 8f 46 01 18 04 ba cd fe 1b c0
218.017 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef 1c 5b c5 ec 91 58 77 47 35 04 7a 43 1d 46 f3 c0
218.021 EP1 OUT > c0 00 45 01 00 00 01 7d 70 e0 cf 6a 7e c0 6c cb dd 92 ce 39 97 3c 05 eb 71 2a 02 d9 23 23 f3 a9 56 d1 ac 26 43 f6 47 c8 c5 9e
75 94 2d 82 4f f4 84 5e 8d b5 0c 13 0b 8a 16 b8 3c eb 2d cc 12 f1 ec a9 cb cd bb a6 c0
218.024 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef 1c 5b c5 ec 91 58 77 47 35 04 7a 43 1d 46 f3 c0
218.025 EP1 OUT > c0 00 45 01 00 00 01 b9 82 5c d0 00 7f 29 41 9d 6e 5c c2 94 d6 16 12 36 61 66 2e fd 91 11 71 88 7b 5b ad 40 de 6d f6 c5 6e de
35 74 50 de 6f c5 20 d0 f9 2c bf c0 96 39 13 84 8f de 0a 9f 78 42 c8 91 f0 2d 89 37 c0
218.032 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef 1c 5b c5 ec 91 58 77 47 35 04 7a 43 1d 46 f3 c0
218.046 EP1 OUT > c0 00 45 01 00 00 01 37 d6 8c 63 69 c3 c9 04 4a 72 f5 3d 1a 6d 15 6a 3a 6b 86 b8 ae 9f e9 d7 08 12 47 d7 8c 8c bf 8a 51 8a f6
3b 18 de 8c a6 3d b1 42 06 ef 0b 59 17 25 a5 72 25 ee 53 32 25 e1 fc 79 36 ee da b2 c0
218.050 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef 1c 5b c5 ec 91 58 77 47 35 04 7a 43 1d 46 f3 c0
218.050 EP1 OUT > c0 00 45 01 00 00 01 a4 ae ff 74 45 9a cc 8c 09 93 c8 b3 d3 cf 46 8d 23 a6 b3 5b 2a 29 ea eb d9 49 c2 34 94 f2 dc 10 8c 54 35
1f c7 b8 05 b1 48 b2 42 2c 3c 4a d9 b9 dc 6f 39 36 c6 e4 f6 26 cc 50 c2 08 f7 96 29 c0
218.054 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef 1c 5b c5 ec 91 58 77 47 35 04 7a 43 1d 46 f3 c0


```
218.055 EP1 OUT > c0 00 45 01 00 00 01 96 26 a1 3d 0e cd 22 67 4f 6b 2c 77 03 4f 72 8c c5 5d 2b 8d 67 e2 b6 cb 9c d4 54 c2 9b 96 10 ca 78 f6 ed
82 1c 13 d1 2a 42 d7 55 42 cd 60 30 59 81 1c d6 39 b6 35 6e ae 37 32 bc c4 88 f5 4d c0
218.058 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef 1c 5b c5 ec 91 58 77 47 35 04 7a 43 1d 46 f3 c0
218.060 EP1 OUT > c0 00 35 01 00 00 01 f1 4d 85 f6 e1 47 7b af 14 fc 35 9c f6 6e 64 ac 4b 9a 04 52 44 de 7b 74 ed 39 ff b2 f2 9c d3 19 27 e3 a7
63 fb ba db 05 f8 2d 54 41 d7 c2 17 c0
218.062 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef f8 5b 4b 15 91 58 77 47 35 04 7a 43 1d 46 f3 c0
-----
222.213 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef fb 5b 61 7d 91 58 77 47 35 04 7a 43 1d 46 f3 c0
222.216 EP1 OUT > c0 00 25 01 00 00 0b 14 c2 a2 55 9c 2c 48 1d fe 26 ff ec ff f6 c5 6f 86 68 59 4a c7 7b 8f df 92 0c 26 ee ad 31 19 c0
222.409 EP1 OUT > c0 00 25 01 00 00 0c e4 65 35 8e 72 a5 ea 93 72 f8 66 66 2a 28 06 c2 d3 26 82 55 92 34 d3 46 6e bd 92 6d 21 5a 51 c0
222.412 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef 1e 5b f6 5c 91 58 77 47 35 04 7a 43 1d 46 f3 c0
222.412 EP1 OUT > c0 00 45 01 00 00 0f 45 64 d2 87 bc a0 6c 14 27 ca d7 b1 03 46 c2 1c 3b bb 85 45 8c ca 7b d7 cc 46 a6 41 7b 36 89 f5 c8 9c 0d
b2 e7 92 3f 73 c2 a3 2e 7c b3 e7 65 da 42 01 6f f5 80 d4 8f 46 01 18 04 ba cd fe 1b c0
222.416 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef 1c 5b c5 ec 91 58 77 47 35 04 7a 43 1d 46 f3 c0
222.418 EP1 OUT > c0 00 45 01 00 00 01 31 b3 d6 a8 5c ac 2e b3 6f 9b a5 42 98 89 ec 07 1b 81 ab b3 b4 fb 84 17 0d 6b 89 7e 11 ac 21 47 c8 c5 9e
75 94 2d 82 4f f4 84 5e 8d b5 0c 13 0b 8a 16 b8 3c eb 2d cc 12 f1 ec a9 cb cd bb a6 c0
222.422 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef 1c 5b c5 ec 91 58 77 47 35 04 7a 43 1d 46 f3 c0
222.429 EP1 OUT > c0 00 45 01 00 00 01 6b 9e 81 2f 31 5c cd 8f c0 2e 42 53 6e 01 ae 60 04 87 82 bf 21 50 7a 52 45 b4 1b 41 56 be 71 f6 c5 6e de
35 74 50 de 6f c5 20 d0 f9 2c bf c0 96 39 13 84 8f de 0a 9f 78 42 c8 91 f0 2d 89 37 c0
222.432 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef 1c 5b c5 ec 91 58 77 47 35 04 7a 43 1d 46 f3 c0
222.434 EP1 OUT > c0 00 45 01 00 00 01 c2 da 33 eb 05 d6 d3 a4 03 81 8e 49 97 42 c8 9a 44 55 62 e6 f0 82 c7 82 82 58 9e ae bf 18 80 8a 51 8a f6
3b 18 de 8c a6 3d b1 42 06 ef 0b 59 17 25 a5 72 25 ee 53 32 25 e1 fc 79 36 ee da b2 c0
222.442 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef 1c 5b c5 ec 91 58 77 47 35 04 7a 43 1d 46 f3 c0
222.444 EP1 OUT > c0 00 45 01 00 00 01 4b 06 fe 2f 17 2c 40 52 e5 30 ab 7a d6 41 6f 47 75 63 be bd bd c4 cb 8c 55 6c f6 c4 01 ba 7b 10 8c 54 35
1f c7 b8 05 b1 48 b2 42 2c 3c 4a d9 b9 dc 6f 39 36 c6 e4 f6 26 cc 50 c2 08 f7 96 29 c0
222.448 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef 1c 5b c5 ec 91 58 77 47 35 04 7a 43 1d 46 f3 c0
222.449 EP1 OUT > c0 00 45 01 00 00 01 5a 7a 30 19 cf 36 5b 74 4e 9a c4 d9 2a 2d d3 5b fe e9 57 0c 5e 34 d7 53 37 05 4c ee bc 68 b0 ca 78 f6 ed
82 1c 13 d1 2a 42 d7 55 42 cd 60 30 59 81 1c d6 39 b6 35 6e ae 37 32 bc c4 88 f5 4d c0
222.454 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef 1c 5b c5 ec 91 58 77 47 35 04 7a 43 1d 46 f3 c0
222.456 EP1 OUT > c0 00 25 01 00 00 05 97 5b ba 8f e5 ed a3 c7 f8 c0 3c 18 ab c2 c9 f3 9b 44 d4 58 23 48 a6 b4 3a 8e 16 6f 54 29 8a c0
222.466 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef f8 5b 4b 15 91 58 77 47 35 04 7a 43 1d 46 f3 c0
222.753 EP2 IN < c0 00 35 01 00 00 04 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d 97 13 32 a6 81 c9 8b 7c 69 4d 91 15 95 7d ef 6a 28 85 09 d2
a8 65 80 a0 8d 80 90 db 51 c6 98 43 c0
222.754 EP1 OUT > c0 00 25 01 00 00 0b 21 6b 44 0b e9 b4 a0 03 c9 ee c8 db cb eb f1 14 57 8b 71 61 b1 40 e9 98 af c0 99 ad 05 a1 f1 c0
222.801 EP1 OUT > c0 00 25 01 00 00 01 81 ee c8 00 0e 21 8b d9 67 76 39 47 34 66 a6 eb cf c5 f8 fc 20 72 f2 83 48 ac e0 2e a3 14 fc c0
222.804 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef f8 5b 4b 15 91 58 77 47 35 04 7a 43 1d 46 f3 c0
222.858 EP2 IN < c0 00 45 01 00 00 0e 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d 63 ed 57 1e 3a 14 40 9b 51 db 0a 7b ce ec 21 86 b2 37 d6 cf
c7 88 0e cd e3 f2 db 2c c4 a1 03 58 51 4f 3f 41 72 08 75 50 17
222.860 EP2 IN < c3 ae bd 4d f3 7a 7f c0
222.861 EP1 OUT > c0 00 25 01 00 00 0b 96 a7 8c db 91 29 cd 4a 08 6a 48 98 84 db fa 97 6b 7b c5 79 d1 9f a5 62 86 50 51 da db 6c 47 c0
222.867 EP1 OUT > c0 00 25 01 00 00 05 51 58 27 81 41 ac a5 e1 c4 b9 50 b7 ca cd 54 6e 2c 87 a2 bf 39 80 23 cc c7 cd a6 3e 93 4a 5b c0
222.872 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef f8 5b 4b 15 91 58 77 47 35 04 7a 43 1d 46 f3 c0
222.913 EP2 IN < c0 00 35 01 00 00 04 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d 97 13 32 a6 81 cc 8d 7e 61 47 94 15 95 7d ef 4a 6f 28 62 14
21 96 c6 d2 6a 11 69 d7 18 ba 25 60 c0
222.916 EP1 OUT > c0 00 25 01 00 00 0b c1 e7 4e a7 21 23 5b c9 45 e3 33 2a db ae 10 85 4e b9 99 11 c5 7f c0 35 04 20 c0 64 f7 2e 80 c0
222.918 EP1 OUT > c0 00 25 01 00 00 01 37 bc 0b 9b a8 31 5a 9d 04 7b c9 1b f1 0e 5d 77 d2 3f 11 6a 2e ac 1e 61 cc 58 4a 97 52 88 c0 c0
222.922 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef f8 5b 4b 15 91 58 77 47 35 04 7a 43 1d 46 f3 c0
223.040 EP2 IN < c0 00 45 01 00 00 0e 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d 63 ed 57 1e 3a 14 40 9b 51 db 0a 7b ce ec 21 86 b2 37 d6 cf
c7 88 0e cd e3 f2 db 2c c4 a1 0c 58 0c 94 de 15 4e 20 de c6 95
223.042 EP2 IN < 32 0d c0 fc 61 af 70 c0
223.044 EP1 OUT > c0 00 25 01 00 00 0b 83 4e 57 25 0d a6 87 8c 05 05 40 ee 13 ab 8a 89 b8 98 58 b2 e3 a1 b3 19 f6 45 00 e8 94 63 35 c0
```

223.048 EP1 OUT > c0 00 25 01 00 00 05 53 3e b4 03 84 bf 36 a9 4f 59 dc 25 3f 58 86 d9 b2 57 8f 09 ae ba 35 36 a2 bc 99 c5 7b 05 95 c0
223.055 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef f8 5b 4b 15 91 58 77 47 35 04 7a 43 1d 46 f3 c0
223.141 EP2 IN < c0 00 35 01 00 00 04 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d 97 13 32 a6 81 cc 8d 7e 61 47 94 15 b3 75 ef 55 44 be 68 e1
ff 02 1c 09 7a 98 81 d8 bd 8d 7d f7 c0
223.142 EP1 OUT > c0 00 25 01 00 00 0b 09 88 e0 f9 dd 7d ba 2a 6d 48 37 1f 36 42 63 39 8e f5 f0 5c 4f c6 ee 61 a5 e4 be 16 b6 21 de c0
223.144 EP1 OUT > c0 00 25 01 00 00 01 fc 66 95 2b 3e 49 8b 92 ab 9c 49 ae 02 99 31 cb fa 1e 8b 91 16 c8 ea 35 6a 3b 5a 94 20 b0 2b c0
223.147 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef f8 5b 4b 15 91 58 77 47 35 04 7a 43 1d 46 f3 c0
223.199 EP2 IN < c0 00 45 01 00 00 0e 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d 63 ed 57 1e 3a 14 40 9b 51 db 0a 7b ce ec 21 86 b2 37 d6 cf
c7 88 0e cd e3 f2 db 2c c4 a1 0e 58 e8 09 c6 d3 b1 ba 6d db 95
223.202 EP2 IN < 31 d5 31 fe bc 32 94 c0
223.204 EP1 OUT > c0 00 25 01 00 00 0b 8d f1 3d cd a5 56 93 72 07 60 8b 72 e3 81 29 73 23 da a2 cd 59 25 27 2f bc 10 b7 9e f3 0f ff c0
223.209 EP1 OUT > c0 00 25 01 00 00 05 1e a6 d4 89 66 3a e9 91 5a a7 88 c5 53 b1 76 2c 45 60 1f 29 7e 89 40 56 7b 2b 93 4f 5d 41 10 c0
223.212 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef f8 5b 4b 15 91 58 77 47 35 04 7a 43 1d 46 f3 c0
223.338 EP2 IN < c0 00 35 01 00 00 04 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d 97 13 32 a6 81 c9 8b 7c 69 4d 91 15 b3 75 ef 6c 05 97 8c 3e
d9 05 ac 2c ba 83 a7 e0 e8 ca 40 37 c0
223.340 EP1 OUT > c0 00 25 01 00 00 0b 1d 10 a1 bf 47 93 d9 8f 3f f3 6c 1e a0 0b 45 9a 29 dd 88 72 1d 66 bd a8 80 93 27 0b 24 df f3 c0
223.342 EP1 OUT > c0 00 25 01 00 00 01 bf a1 28 27 95 14 a4 17 f3 64 92 5c f6 e8 65 24 35 ec 26 1d 14 6d cc 53 bc 91 10 fa d8 01 af c0
223.344 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef f8 5b 4b 15 91 58 77 47 35 04 7a 43 1d 46 f3 c0
223.441 EP2 IN < c0 00 45 01 00 00 0e 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d 63 ed 57 1e 3a 14 40 9b 51 db 0a 7b ce ec 7e 94 50 48 7a 27
81 f0 6d c0 3f 3c 2d e0 45 80 be be 2f 8e ea ba 63 63 39 14 49
223.442 EP2 IN < e1 49 86 6e 41 f9 4b c0
223.445 EP1 OUT > c0 00 25 01 00 00 0b c0 5d 7c ba 43 24 cd 29 cd f3 2f 55 2a e1 74 a5 b5 0d e5 15 99 73 33 c3 78 6c 53 79 95 71 53 c0
223.785 EP1 OUT > c0 00 25 01 00 00 0c fd dc 93 ad 71 f8 44 31 12 b6 bf d6 3c d5 c8 0c 49 d9 e1 4b b2 0e a6 23 b4 87 09 d7 55 c2 e9 c0
223.787 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef 1e 5b f6 5c 91 58 77 47 35 04 7a 43 1d 46 f3 c0
223.788 EP1 OUT > c0 00 45 01 00 00 0f cf 5c 82 06 0c 6f ea fa 7d c9 17 fb 39 54 49 ff d8 2a 38 46 b3 c4 03 c4 d9 29 a5 26 2f 97 49 f5 c8 9c 0d
b2 e7 92 3f 73 c2 a3 2e 7c b3 e7 65 da 42 01 6f f5 80 d4 8f 46 01 18 04 ba cd fe 1b c0
223.791 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef 1c 5b c5 ec 91 58 77 47 35 04 7a 43 1d 46 f3 c0
223.792 EP1 OUT > c0 00 45 01 00 00 01 cf d5 1b 73 df e7 6e f5 92 10 5c 53 db 80 ca f9 17 f1 e2 5e 80 8b 0f c3 5c cf 9a 5f 0e 06 c1 47 c8 c5 9e
75 94 2d 82 4f f4 84 5e 8d b5 0c 13 0b 8a 16 b8 3c eb 2d cc 12 f1 ec a9 cb cd bb a6 c0
223.798 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef 1c 5b c5 ec 91 58 77 47 35 04 7a 43 1d 46 f3 c0
223.799 EP1 OUT > c0 00 45 01 00 00 01 00 76 50 ff e4 e8 a7 dd d4 c5 0a 93 97 48 bb 41 ef 75 4a 49 2c 44 59 f9 ba c6 ba ce 13 6c c4 f6 c5 6e de
35 74 50 de 6f c5 20 d0 f9 2c bf c0 96 39 13 84 8f de 0a 9f 78 42 c8 91 f0 2d 89 37 c0
223.802 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef 1c 5b c5 ec 91 58 77 47 35 04 7a 43 1d 46 f3 c0
223.809 EP1 OUT > c0 00 45 01 00 00 01 15 9c b6 9b 1e 1c ae 6e 00 c0 d6 ec 16 71 fb b2 87 e9 0a 1c 7d ea 66 52 db 64 ff 81 ec d4 67 8a 51 8a f6
3b 18 de 8c a6 3d b1 42 06 ef 0b 59 17 25 a5 72 25 ee 53 32 25 e1 fc 79 36 ee da b2 c0
223.813 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef 1c 5b c5 ec 91 58 77 47 35 04 7a 43 1d 46 f3 c0
223.819 EP1 OUT > c0 00 45 01 00 00 01 84 13 90 22 43 fb 1b a1 b4 15 0a b2 34 8d 76 c5 70 0c 58 4d f7 a4 88 59 2e 21 c9 7f be 22 6a 10 8c 54 35
1f c7 b8 05 b1 48 b2 42 2c 3c 4a d9 b9 dc 6f 39 36 c6 e4 f6 26 cc 50 c2 08 f7 96 29 c0
223.828 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef 1c 5b c5 ec 91 58 77 47 35 04 7a 43 1d 46 f3 c0

devices identified

255.357 EP1 OUT > c0 00 25 01 00 00 03 a2 9d 27 ba 0a a5 a9 31 33 eb 6d c3 10 04 bd b1 cc b7 9e c8 6b c9 95 cd 44 73 b6 76 d3 c3 6b c0
255.359 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef f8 5b 4b 15 91 58 77 47 35 04 7a 43 1d 46 f3 c0

```

-----
266.214 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef fb 5b 61 7d 91 58 77 47 35 04 7a 43 1d 46 f3 c0
266.215 EP1 OUT > c0 00 25 01 00 00 0b dd fb 8e 5a 04 97 8e e7 a5 f8 1d 92 58 93 be 03 f7 ba d8 65 48 ce b5 92 04 58 21 98 de 49 ea c0
266.405 EP1 OUT > c0 00 25 01 00 00 0c aa 23 f9 4c 7d 04 eb db 46 53 c7 8d 64 32 e7 42 ae b6 7d 88 60 cf 16 e8 d7 d7 88 6a 0a bd 14 c0
266.411 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef 1e 5b f6 5c 91 58 77 47 35 04 7a 43 1d 46 f3 c0
266.412 EP1 OUT > c0 00 45 01 00 00 0f a4 b5 aa e0 d0 46 9f 45 1b 41 4a db 57 39 57 66 a4 7f ae d9 d8 ac f4 ca 14 8b f0 72 24 10 6b f5 c8 9c 0d
b2 e7 92 3f 73 c2 a3 2e 7c b3 e7 65 da 42 01 6f f5 80 d4 8f 46 01 18 04 ba cd fe 1b c0
266.421 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef 1c 5b c5 ec 91 58 77 47 35 04 7a 43 1d 46 f3 c0
266.423 EP1 OUT > c0 00 45 01 00 00 01 e4 77 bf 57 67 be 74 a3 1c 2c 66 6d ef 0f fd dc 0c c3 13 60 a8 50 22 af 9a aa 27 e8 1c 34 8a 47 c8 c5 9e
75 94 2d 82 4f f4 84 5e 8d b5 0c 13 0b 8a 16 b8 3c eb 2d cc 12 f1 ec a9 cb cd bb a6 c0
266.427 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef 1c 5b c5 ec 91 58 77 47 35 04 7a 43 1d 46 f3 c0
266.428 EP1 OUT > c0 00 45 01 00 00 01 08 ab 1b 48 34 d7 03 eb 6e 45 de 6f 15 62 5f 30 6c 08 7a 33 d8 a1 70 bd 47 05 7a 58 42 60 65 f6 c5 6e de
35 74 50 de 6f c5 20 d0 f9 2c bf c0 96 39 13 84 8f de 0a 9f 78 42 c8 91 f0 2d 89 37 c0
266.433 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef 1c 5b c5 ec 91 58 77 47 35 04 7a 43 1d 46 f3 c0
266.439 EP1 OUT > c0 00 45 01 00 00 01 53 65 c9 34 8e 10 2c 72 d3 89 0d 8f 64 af 54 f8 cf fd 59 2d f3 d3 52 32 4d 36 de fc dc 40 01 8a 51 8a f6
3b 18 de 8c a6 3d b1 42 06 ef 0b 59 17 25 a5 72 25 ee 53 32 25 e1 fc 79 36 ee da b2 c0
266.443 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef 1c 5b c5 ec 91 58 77 47 35 04 7a 43 1d 46 f3 c0
266.444 EP1 OUT > c0 00 45 01 00 00 01 af b6 08 53 c4 ad 1e 34 6a bf 47 5b d1 be 5d 9c 2d ac e3 c3 1e f5 4a ea 1c f0 6f 93 3c 22 57 10 8c 54 35
1f c7 b8 05 b1 48 b2 42 2c 3c 4a d9 b9 dc 6f 39 36 c6 e4 f6 26 cc 50 c2 08 f7 96 29 c0
266.448 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef 1c 5b c5 ec 91 58 77 47 35 04 7a 43 1d 46 f3 c0
266.449 EP1 OUT > c0 00 25 01 00 00 03 c9 b9 95 a8 0d d1 bf 97 b0 6f c6 6c d1 04 82 99 b0 e4 a6 76 4d 7f 23 a4 61 1c bc 73 1e 6a a8 c0
266.451 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef f8 5b 4b 15 91 58 77 47 35 04 7a 43 1d 46 f3 c0
-----
270.601 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef fb 5b 61 7d 91 58 77 47 35 04 7a 43 1d 46 f3 c0
270.602 EP1 OUT > c0 00 25 01 00 00 0b 95 c9 36 76 bb 80 ff fe 55 74 cf a5 c6 ee f9 6c 25 7f 20 7c 3e 64 87 0d 1a 99 d6 6f d3 15 e9 c0
270.797 EP1 OUT > c0 00 25 01 00 00 0c 65 c0 7a 71 18 10 23 35 e1 7b 85 42 e1 d0 28 a9 3a a9 7c 98 4a eb f6 c2 d4 1d 2c 7e 1c 91 21 c0
270.799 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef 1e 5b f6 5c 91 58 77 47 35 04 7a 43 1d 46 f3 c0
270.799 EP1 OUT > c0 00 45 01 00 00 0f 92 ea df 48 f4 8d 75 78 37 40 0d 3b 85 e6 50 95 32 09 0c d2 01 ae 39 2e 02 5a a9 0b 0b 23 d1 f5 c8 9c 0d
b2 e7 92 3f 73 c2 a3 2e 7c b3 e7 65 da 42 01 6f f5 80 d4 8f 46 01 18 04 ba cd fe 1b c0
270.802 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef 1c 5b c5 ec 91 58 77 47 35 04 7a 43 1d 46 f3 c0
270.803 EP1 OUT > c0 00 45 01 00 00 01 11 60 83 24 00 1c 60 54 28 4c 6d 95 62 02 23 14 ea 78 c2 5f 71 81 74 1d 0b 8d 59 49 ef f8 ac 47 c8 c5 9e
75 94 2d 82 4f f4 84 5e 8d b5 0c 13 0b 8a 16 b8 3c eb 2d cc 12 f1 ec a9 cb cd bb a6 c0
270.806 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef 1c 5b c5 ec 91 58 77 47 35 04 7a 43 1d 46 f3 c0
270.807 EP1 OUT > c0 00 45 01 00 00 01 fc 76 47 ae 98 f4 c2 b1 52 2a db 5e c1 56 66 97 9e 36 c1 5d be 9d 04 e8 43 d0 87 c5 f6 17 ba f6 c5 6e de
35 74 50 de 6f c5 20 d0 f9 2c bf c0 96 39 13 84 8f de 0a 9f 78 42 c8 91 f0 2d 89 37 c0
270.810 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef 1c 5b c5 ec 91 58 77 47 35 04 7a 43 1d 46 f3 c0
270.810 EP1 OUT > c0 00 45 01 00 00 01 32 12 7d 1a 1c b6 14 d5 58 f2 df 0c c3 04 28 79 fb f5 7b fb 0a 25 fc 97 84 3b 6a 3b 12 fa 49 8a 51 8a f6
3b 18 de 8c a6 3d b1 42 06 ef 0b 59 17 25 a5 72 25 ee 53 32 25 e1 fc 79 36 ee da b2 c0
270.814 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef 1c 5b c5 ec 91 58 77 47 35 04 7a 43 1d 46 f3 c0
270.814 EP1 OUT > c0 00 45 01 00 00 01 4c f0 01 c9 3d c8 11 17 00 02 33 30 66 2d 35 4f 85 0f b1 33 8a 60 db 9e e6 38 c0 7d 18 b4 0a 10 8c 54 35
1f c7 b8 05 b1 48 b2 42 2c 3c 4a d9 b9 dc 6f 39 36 c6 e4 f6 26 cc 50 c2 08 f7 96 29 c0
270.817 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef 1c 5b c5 ec 91 58 77 47 35 04 7a 43 1d 46 f3 c0

```

devices detected (again)


```
-----
287.177 EP1 OUT > c0 00 35 01 00 00 01 b9 d5 a2 01 94 42 1f ec 94 42 54 30 b3 73 2b 56 e8 04 c9 7a 1b 53 43 a6 39 39 5d a6 1a a5 ce 4c 2c 70 8e
d0 b7 b9 0d 02 6c e2 4d ac e0 e7 f3 c0
287.180 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef f8 5b 4b 15 91 58 77 47 35 04 7a 43 1d 46 f3 c0
-----
297.816 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef fb 5b 61 7d 91 58 77 47 35 04 7a 43 1d 46 f3 c0
297.818 EP1 OUT > c0 00 25 01 00 00 0b 2f df 49 15 b8 d6 90 1a e4 25 96 07 c3 c8 59 88 5d 01 93 b3 23 7f 05 34 85 05 67 f5 db 13 b5 c0
298.013 EP1 OUT > c0 00 25 01 00 00 0c 6a 74 81 bb b9 d8 60 fc 63 85 86 8e 0e 1f b8 14 c9 2b a4 6f d5 12 c4 2e 96 d3 96 04 03 bd 8c c0
298.016 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef 1e 5b f6 5c 91 58 77 47 35 04 7a 43 1d 46 f3 c0
298.016 EP1 OUT > c0 00 45 01 00 00 0f 85 d5 c8 b9 a5 c7 c1 fc 6b 6f f3 b7 f4 af 75 b6 af 73 e2 5c f6 43 0e 50 d9 77 8c ce 7f e2 7c f5 c8 9c 0d
b2 e7 92 3f 73 c2 a3 2e 7c b3 e7 65 da 42 01 6f f5 80 d4 8f 46 01 18 04 ba cd fe 1b c0
298.019 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef 1c 5b c5 ec 91 58 77 47 35 04 7a 43 1d 46 f3 c0
298.020 EP1 OUT > c0 00 45 01 00 00 01 d9 3e b7 d3 f3 8b 5e 1e 91 72 a4 85 19 6d a9 b1 4f 81 6d 90 38 04 ee 7e 02 88 da f7 6d 7f d6 47 c8 c5 9e
75 94 2d 82 4f f4 84 5e 8d b5 0c 13 0b 8a 16 b8 3c eb 2d cc 12 f1 ec a9 cb cd bb a6 c0
298.023 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef 1c 5b c5 ec 91 58 77 47 35 04 7a 43 1d 46 f3 c0
298.024 EP1 OUT > c0 00 45 01 00 00 01 94 aa 4f d9 c5 0e 97 a4 87 3f fa 77 68 90 14 2d 90 de f3 b6 2b e5 ab 65 ac d9 e1 b3 fa b5 d8 f6 c5 6e de
35 74 50 de 6f c5 20 d0 f9 2c bf c0 96 39 13 84 8f de 0a 9f 78 42 c8 91 f0 2d 89 37 c0
298.027 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef 1c 5b c5 ec 91 58 77 47 35 04 7a 43 1d 46 f3 c0
298.027 EP1 OUT > c0 00 45 01 00 00 01 50 85 f4 a4 a1 ee 7b 3f e3 1f 82 d9 8a 3b a4 e7 b9 e3 80 79 d7 09 9b 77 0f 2e ca f0 b1 4a cd 8a 51 8a f6
3b 18 de 8c a6 3d b1 42 06 ef 0b 59 17 25 a5 72 25 ee 53 32 25 e1 fc 79 36 ee da b2 c0
298.031 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef 1c 5b c5 ec 91 58 77 47 35 04 7a 43 1d 46 f3 c0
298.031 EP1 OUT > c0 00 45 01 00 00 01 1d b0 2f ec e8 36 66 5e de af 39 4e 76 ce b4 fd 7f 1d 03 7d 1e 48 35 e8 49 04 d1 6e 5c bb c6 10 8c 54 35
1f c7 b8 05 b1 48 b2 42 2c 3c 4a d9 b9 dc 6f 39 36 c6 e4 f6 26 cc 50 c2 08 f7 96 29 c0
298.034 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef 1c 5b c5 ec 91 58 77 47 35 04 7a 43 1d 46 f3 c0
298.036 EP1 OUT > c0 00 35 01 00 00 01 9c 75 aa f4 50 27 9c a8 ad 59 01 f0 34 6b a3 02 a7 7b ec 31 32 83 b2 59 63 5f 91 9a b0 4b be 19 27 e3 a7
63 fb ba db 05 f8 2d 54 41 d7 c2 17 c0
298.040 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef f8 5b 4b 15 91 58 77 47 35 04 7a 43 1d 46 f3 c0
-----
302.191 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef fb 5b 61 7d 91 58 77 47 35 04 7a 43 1d 46 f3 c0
302.193 EP1 OUT > c0 00 25 01 00 00 0b 3c a4 61 17 56 89 6d d6 34 52 bf 58 d0 7e 1f b1 fe 84 b7 42 79 d1 f2 51 29 ba 1a 92 70 a5 bf c0
302.405 EP1 OUT > c0 00 25 01 00 00 0c f6 92 eb 1f e4 8e cc 66 05 2d 47 e5 d9 6e 50 e6 16 48 86 50 4c 0b 98 52 ac 29 00 65 4a 45 a3 c0
302.409 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef 1e 5b f6 5c 91 58 77 47 35 04 7a 43 1d 46 f3 c0
302.410 EP1 OUT > c0 00 45 01 00 00 0f 6b 63 67 c1 86 38 38 36 02 88 fe ba 09 71 0d 8f 1a 26 18 1c 18 72 50 7a 8e e7 59 ed 24 bf e7 f5 c8 9c 0d
b2 e7 92 3f 73 c2 a3 2e 7c b3 e7 65 da 42 01 6f f5 80 d4 8f 46 01 18 04 ba cd fe 1b c0
302.414 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef 1c 5b c5 ec 91 58 77 47 35 04 7a 43 1d 46 f3 c0
302.417 EP1 OUT > c0 00 45 01 00 00 01 cb 3a 57 03 ba a3 8d e6 f0 0d 1e f2 2d 73 f4 b0 76 2f a8 1b 9c 17 8b 60 13 3c e2 a4 5f b9 bc 47 c8 c5 9e
75 94 2d 82 4f f4 84 5e 8d b5 0c 13 0b 8a 16 b8 3c eb 2d cc 12 f1 ec a9 cb cd bb a6 c0
302.420 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef 1c 5b c5 ec 91 58 77 47 35 04 7a 43 1d 46 f3 c0
302.431 EP1 OUT > c0 00 45 01 00 00 01 3c 29 26 2b e1 ca 60 d7 cc 4e d5 04 db 90 13 bd 24 eb 81 60 85 ad 64 23 60 46 16 20 e5 67 04 f6 c5 6e de
35 74 50 de 6f c5 20 d0 f9 2c bf c0 96 39 13 84 8f de 0a 9f 78 42 c8 91 f0 2d 89 37 c0
302.437 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef 1c 5b c5 ec 91 58 77 47 35 04 7a 43 1d 46 f3 c0
302.441 EP1 OUT > c0 00 45 01 00 00 01 3a 79 dd 19 45 51 69 1a 9d 56 ec ca 15 b0 6a a4 58 77 74 70 07 22 4b a0 0d 72 25 ad 93 d9 ea 8a 51 8a f6
3b 18 de 8c a6 3d b1 42 06 ef 0b 59 17 25 a5 72 25 ee 53 32 25 e1 fc 79 36 ee da b2 c0
302.448 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef 1c 5b c5 ec 91 58 77 47 35 04 7a 43 1d 46 f3 c0
302.452 EP1 OUT > c0 00 45 01 00 00 01 1f 43 c9 b7 ee 3e 18 b4 4b 1e d0 d4 1c eb 2c 94 0c 47 d5 c4 f3 55 b8 f1 b0 67 35 3b 09 df 29 10 8c 54 35
1f c7 b8 05 b1 48 b2 42 2c 3c 4a d9 b9 dc 6f 39 36 c6 e4 f6 26 cc 50 c2 08 f7 96 29 c0
302.455 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef 1c 5b c5 ec 91 58 77 47 35 04 7a 43 1d 46 f3 c0
```

all devices detected and list confirmed complete

going to retrieve info from device roller hall:

```
-----
334.236 EP1 OUT > c0 00 25 01 00 00 05 f3 ba 56 64 00 11 fa 0e 85 23 71 01 97 59 fd ab b3 dc 85 82 37 51 95 55 dd fc 78 d2 0b 2f f7 c0
334.238 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef f8 5b 4b 15 91 58 77 47 35 04 7a 43 1d 46 f3 c0
334.291 EP2 IN < c0 00 35 01 00 00 04 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d 97 13 32 a6 81 c9 8b 7c 69 4d 91 15 b3 75 ef 6c 05 97 8c 3e
d9 05 ac 2c b6 83 0e 40 e8 ca 40 37 c0
334.292 EP1 OUT > c0 00 25 01 00 00 0b 6e 35 8b 1f 4a 9d 1e cd c1 9e 2b a1 cc 74 13 02 e1 60 b3 5d 1d e5 b6 9b c6 e9 c7 14 57 d8 74 c0
```

done.

will identify device roller hall:

```
-----
355.675 EP1 OUT > c0 00 35 01 00 00 0f c4 99 2d 65 d2 e8 2b 82 98 13 c0 e6 d1 d2 71 ff 26 5a f6 36 cb 70 62 00 eb b7 9c 4e 8d 94 05 45 59 c7 e0
58 18 0f 57 84 20 6f fd d3 00 bf 05 c0
355.677 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef f8 5b 4b 15 91 58 77 47 35 04 7a 43 1d 46 f3 c0
355.752 EP2 IN < c0 00 25 01 00 00 06 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d d4 1f c6 40 29 1b 89 81 bf cf 19 cf 46 a7 75 00 c0
355.753 EP1 OUT > c0 00 25 01 00 00 0b 7a d3 75 e9 e1 49 ba 23 1b ec db cf 6e 5b 0f 15 f0 12 3d c1 5e 45 85 98 6f 74 2b 7a d0 2f 63 c0
```

finished identifying

will retrieve info from roller nils

```
-----
416.365 EP1 OUT > c0 00 25 01 00 00 05 81 01 ff 10 ad 03 25 e5 fa d5 28 83 f3 15 ed 91 a1 73 82 31 29 a1 24 f1 eb 2f 19 eb 3b 57 cd c0
416.367 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef f8 5b 4b 15 91 58 77 47 35 04 7a 43 1d 46 f3 c0
416.405 EP2 IN < c0 00 35 01 00 00 04 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d 97 13 32 a6 81 cc 8d 7e 61 47 94 15 95 7d ef 4a 6f 28 62 14
21 96 c6 d2 66 11 c0 77 18 ba 25 60 c0
416.406 EP1 OUT > c0 00 25 01 00 00 0b 7c a1 f7 7a 5b 0b d4 eb df 3c 4e 99 ac b6 07 ff cd 92 9f 4c ae 95 0c 8e 55 be ed 22 45 f1 6b c0
```

finished retrieving roller nils

will retrieve window hall

```
-----
442.520 EP1 OUT > c0 00 25 01 00 00 05 ae ae f7 31 f5 cb 0c 09 2a 05 b3 77 9c c8 23 c0 09 d5 71 e7 73 05 f1 e9 48 56 b3 6d 45 d0 d6 c0
442.523 EP2 IN < c0 00 25 01 00 00 0b 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d ef f8 5b 4b 15 91 58 77 47 35 04 7a 43 1d 46 f3 c0
442.560 EP2 IN < c0 00 35 01 00 00 04 6f f8 7f 48 07 50 f7 a0 e7 8e bd 26 75 be 4d 97 13 32 a6 81 cc 8d 7e 61 47 94 15 b3 75 ef 55 44 be 68 e1
ff 02 1c 09 74 98 1b c8 bd 8d 7d f7 c0
442.561 EP1 OUT > c0 00 25 01 00 00 0b e7 5b 79 f7 a1 be fb 48 9d 95 45 81 2d bc c0 d8 d3 26 42 95 72 70 92 df 16 59 5c 35 44 72 7f c0
```

finished

will retrieve window nils

