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World's First Nvidia GTX Titan X cudaHashcat Benchmarks

⟨⟩ **TitanX.md**

Nvidia GTX Titan X cudaHashcat Benchmarks

Product: Sagitta Inceptus (PN S1430X-GTX-TITANX) (my dev box)

Software: cudaHashcat 1.36b31, ForceWare 346.35

Accelerator: 1x Nvidia GTX Titan X reference design

Observations

1. 60% faster than AMD Radeon R9 290X at stock clocks – up to 85% faster with +225 Mhz OC.
2. Measured maximum 273W draw from the wall (100% load, 100% fan, +225 Mhz OC). PSU is 86% efficient, so card itself is drawing ~ 235W max. That's about 17% ~ 21% less than the R9 290X.
3. First single GPU card to break 35 GH/s on NTLM. Can actually break 40 GH/s with +275 Mhz OC, but it's not stable for all algorithms at this clockrate.
4. Max observed GPU temperature is 64C at 100% fan (22.7C ambient temp, no external air flow)
5. This card kicks some serious, serious ass!

```
sagitta@inceptus:~$ nvidia-smi -L
GPU 0: GeForce GTX TITAN X (UUID: GPU-7bef890b-ade1-3eee-0026-782c3a63318b)
```

Benchmarks – Stock Clocks

```
cudaHashcat v1.36 starting in benchmark-mode...

Device #1: GeForce GTX TITAN X, 12287MB, 1215Mhz, 24MCU

Hashtype: MD4
Workload: 1024 loops, 256 accel

Speed.GPU.#1.: 35227.1 MH/s

Hashtype: MD5
Workload: 1024 loops, 256 accel

Speed.GPU.#1.: 16904.6 MH/s

Hashtype: SHA1
Workload: 1024 loops, 256 accel

Speed.GPU.#1.:  5301.7 MH/s

Hashtype: SHA256
Workload: 1024 loops, 256 accel

Speed.GPU.#1.:  2113.0 MH/s

Hashtype: SHA384
Workload: 256 loops, 256 accel

Speed.GPU.#1.:   663.0 MH/s

Hashtype: SHA512
Workload: 256 loops, 256 accel

Speed.GPU.#1.:   655.6 MH/s
```

```
Hashtype: SHA-3(Keccak)
Workload: 128 loops, 256 accel

Speed.GPU.#1.:    471.7 MH/s

Hashtype: RipeMD160
Workload: 1024 loops, 256 accel

Speed.GPU.#1.:   3546.1 MH/s

Hashtype: Whirlpool
Workload: 512 loops, 32 accel

Speed.GPU.#1.:    140.3 MH/s

Hashtype: GOST R 34.11-94
Workload: 512 loops, 64 accel

Speed.GPU.#1.:    197.8 MH/s

Hashtype: SAP CODVN B (BCODE)
Workload: 1024 loops, 64 accel

Speed.GPU.#1.:   1264.9 MH/s

Hashtype: SAP CODVN F/G (PASSCODE)
Workload: 1024 loops, 32 accel

Speed.GPU.#1.:    623.8 MH/s

Hashtype: SAP CODVN H (PWDSALTEDHASH) iSSHA-1
Workload: 1024 loops, 16 accel

Speed.GPU.#1.:   4078.9 kH/s

Hashtype: Lotus Notes/Domino 5
Workload: 256 loops, 32 accel

Speed.GPU.#1.:    177.1 MH/s

Hashtype: Lotus Notes/Domino 6
Workload: 256 loops, 32 accel

Speed.GPU.#1.: 57800.4 kH/s

Hashtype: Lotus Notes/Domino 8
Workload: 1024 loops, 64 accel

Speed.GPU.#1.:    459.7 kH/s

Hashtype: SHA-1(Base64), nsldap, Netscape LDAP SHA
Workload: 1024 loops, 256 accel

Speed.GPU.#1.:   5306.9 MH/s

Hashtype: SSHA-1(Base64), nsldaps, Netscape LDAP SSHA
Workload: 1024 loops, 256 accel

Speed.GPU.#1.:   5285.0 MH/s

Hashtype: descrypt, DES(Unix), Traditional DES
Workload: 128 loops, 64 accel

Speed.GPU.#1.:    143.7 MH/s

Hashtype: md5crypt, MD5(Unix), FreeBSD MD5, Cisco-IOS MD5
Workload: 1000 loops, 32 accel

Speed.GPU.#1.:   7110.1 kH/s

Hashtype: sha256crypt, SHA256(Unix)
Workload: 1024 loops, 4 accel

Speed.GPU.#1.:    310.2 kH/s

Hashtype: sha512crypt, SHA512(Unix)
Workload: 1024 loops, 8 accel
```

```
Speed.GPU.#1.:    112.5 kH/s

Hashtype: bcrypt, Blowfish(OpenBSD)
Workload: 32 loops, 2 accel

Speed.GPU.#1.:    14440 H/s

Hashtype: LM
Workload: 1024 loops, 256 accel

Speed.GPU.#1.:  2145.2 MH/s

Hashtype: NTLM
Workload: 1024 loops, 256 accel

Speed.GPU.#1.: 34969.3 MH/s

Hashtype: DCC, mscash
Workload: 1024 loops, 256 accel

Speed.GPU.#1.:  9440.8 MH/s

Hashtype: NetNTLMv1-VANILLA / NetNTLMv1+ESS
Workload: 1024 loops, 256 accel

Speed.GPU.#1.: 14208.6 MH/s

Hashtype: NetNTLMv2
Workload: 1024 loops, 256 accel

Speed.GPU.#1.:  1098.4 MH/s

Hashtype: Kerberos 5 AS-REQ Pre-Auth etype 23
Workload: 256 loops, 32 accel

Speed.GPU.#1.:   183.6 MH/s

Hashtype: EPiServer 6.x < v4
Workload: 512 loops, 256 accel

Speed.GPU.#1.:  3843.6 MH/s

Hashtype: EPiServer 6.x > v4
Workload: 512 loops, 256 accel

Speed.GPU.#1.:  1936.7 MH/s

Hashtype: MSSQL(2000)
Workload: 512 loops, 256 accel

Speed.GPU.#1.:  5380.4 MH/s

Hashtype: MSSQL(2005)
Workload: 512 loops, 256 accel

Speed.GPU.#1.:  5414.1 MH/s

Hashtype: MSSQL(2012)
Workload: 256 loops, 256 accel

Speed.GPU.#1.:   672.0 MH/s

Hashtype: MySQL323
Workload: 512 loops, 256 accel

Speed.GPU.#1.: 37121.9 MH/s

Hashtype: MySQL4.1/MySQL5
Workload: 512 loops, 256 accel

Speed.GPU.#1.:  2471.1 MH/s

Hashtype: Oracle 7-10g
Workload: 512 loops, 64 accel

Speed.GPU.#1.:   603.8 MH/s
```

```
Hashtype: Sybase ASE
Workload: 512 loops, 32 accel

Speed.GPU.#1.:    192.3 MH/s

Hashtype: Oracle 11g/12c
Workload: 1024 loops, 256 accel

Speed.GPU.#1.:   5308.7 MH/s

Hashtype: PostgreSQL Challenge-Response Authentication (MD5)
Workload: 1024 loops, 256 accel

Speed.GPU.#1.:   4180.2 MH/s

Hashtype: MySQL Challenge-Response Authentication (SHA1)
Workload: 1024 loops, 256 accel

Speed.GPU.#1.:   1570.2 MH/s

Hashtype: OSX v10.4, v10.5, v10.6
Workload: 512 loops, 256 accel

Speed.GPU.#1.:   3845.7 MH/s

Hashtype: OSX v10.7
Workload: 128 loops, 256 accel

Speed.GPU.#1.:    657.4 MH/s

Hashtype: OSX v10.8+
Workload: 1024 loops, 2 accel

Speed.GPU.#1.:     8160 H/s

Hashtype: Android PIN
Workload: 1024 loops, 16 accel

Speed.GPU.#1.:   4055.7 kH/s

Hashtype: Android FDE <= 4.3
Workload: 1024 loops, 32 accel

Speed.GPU.#1.:    566.2 kH/s

Hashtype: scrypt
Workload: 1 loops, 64 accel

Speed.GPU.#1.:    130.8 kH/s

Hashtype: Cisco-PIX MD5
Workload: 1024 loops, 256 accel

Speed.GPU.#1.: 10657.2 MH/s

Hashtype: Cisco-ASA MD5
Workload: 1024 loops, 256 accel

Speed.GPU.#1.: 10988.6 MH/s

Hashtype: Cisco-IOS SHA256
Workload: 1024 loops, 256 accel

Speed.GPU.#1.:   2108.0 MH/s

Hashtype: Cisco $8$
Workload: 1024 loops, 8 accel

Speed.GPU.#1.:    46826 H/s

Hashtype: Cisco $9$
Workload: 1 loops, 4 accel

Speed.GPU.#1.:     4788 H/s

Hashtype: Juniper IVE
Workload: 1000 loops, 32 accel
```

```
Speed.GPU.#1.:   7173.9 kH/s

Hashtype: Citrix NetScaler
Workload: 512 loops, 256 accel

Speed.GPU.#1.:   4849.4 MH/s

Hashtype: DNSSEC (NSEC3)
Workload: 512 loops, 256 accel

Speed.GPU.#1.:   2301.8 MH/s

Hashtype: WPA/WPA2
Workload: 1024 loops, 32 accel

Speed.GPU.#1.:    279.2 kH/s

Hashtype: IKE-PSK MD5
Workload: 512 loops, 128 accel

Speed.GPU.#1.:   1198.4 MH/s

Hashtype: IKE-PSK SHA1
Workload: 512 loops, 128 accel

Speed.GPU.#1.:    395.3 MH/s

Hashtype: Password Safe v2
Workload: 1000 loops, 16 accel

Speed.GPU.#1.:    205.2 kH/s

Hashtype: Password Safe v3
Workload: 1024 loops, 16 accel

Speed.GPU.#1.:    923.8 kH/s

Hashtype: 1Password, agilekeychain
Workload: 1000 loops, 64 accel

Speed.GPU.#1.:   2263.5 kH/s

Hashtype: 1Password, cloudkeychain
Workload: 1024 loops, 2 accel

Speed.GPU.#1.:     7104 H/s

Hashtype: AIX {ssha1}
Workload: 64 loops, 128 accel

Speed.GPU.#1.: 28144.4 kH/s

Hashtype: TrueCrypt 5.0+ PBKDF2-HMAC-RipeMD160 + AES
Workload: 1024 loops, 64 accel

Speed.GPU.#1.:    820.9 kH/s

Hashtype: TrueCrypt 5.0+ PBKDF2-HMAC-SHA512 + AES
Workload: 1000 loops, 16 accel

Speed.GPU.#1.:    295.4 kH/s

Hashtype: TrueCrypt 5.0+ PBKDF2-HMAC-Whirlpool + AES
Workload: 1000 loops, 8 accel

Speed.GPU.#1.:    30266 H/s

Hashtype: TrueCrypt 5.0+ PBKDF2-HMAC-RipeMD160 + AES + boot-mode
Workload: 1000 loops, 64 accel

Speed.GPU.#1.:   1636.9 kH/s

Hashtype: Office 2007
Workload: 1024 loops, 32 accel

Speed.GPU.#1.:    93823 H/s

Hashtype: Office 2010
```

```
Workload: 1024 loops, 32 accel

Speed.GPU.#1.:     46940 H/s

Hashtype: Office 2013
Workload: 1024 loops, 4 accel

Speed.GPU.#1.:      6816 H/s

Hashtype: MS Office <= 2003 MD5 + RC4, oldoffice$0, oldoffice$1
Workload: 1024 loops, 32 accel

Speed.GPU.#1.:    168.5 MH/s

Hashtype: MS Office <= 2003 SHA1 + RC4, oldoffice$3, oldoffice$4
Workload: 1024 loops, 32 accel

Speed.GPU.#1.:    236.2 MH/s

Hashtype: PDF 1.1 - 1.3 (Acrobat 2 - 4)
Workload: 1024 loops, 32 accel

Speed.GPU.#1.:    258.4 MH/s

Hashtype: PDF 1.1 - 1.3 (Acrobat 2 - 4) + collider-mode #1
Workload: 1024 loops, 32 accel

Speed.GPU.#1.:    292.1 MH/s

Hashtype: PDF 1.1 - 1.3 (Acrobat 2 - 4) + collider-mode #2
Workload: 1024 loops, 32 accel

Speed.GPU.#1.:   2702.9 MH/s

Hashtype: PDF 1.4 - 1.6 (Acrobat 5 - 8)
Workload: 70 loops, 256 accel

Speed.GPU.#1.: 12333.1 kH/s

Hashtype: PDF 1.7 Level 3 (Acrobat 9)
Workload: 1024 loops, 256 accel

Speed.GPU.#1.:   2107.8 MH/s

Hashtype: PDF 1.7 Level 8 (Acrobat 10 - 11)
Workload: 64 loops, 8 accel

Speed.GPU.#1.:         0 H/s

Hashtype: Drupal7
Workload: 1024 loops, 8 accel

Speed.GPU.#1.:     41049 H/s

Hashtype: HMAC-MD5 (key = $pass)
Workload: 512 loops, 256 accel

Speed.GPU.#1.:   1669.0 MH/s

Hashtype: HMAC-MD5 (key = $salt)
Workload: 512 loops, 256 accel

Speed.GPU.#1.:   4622.7 MH/s

Hashtype: HMAC-SHA1 (key = $pass)
Workload: 256 loops, 256 accel

Speed.GPU.#1.:    362.5 MH/s

Hashtype: HMAC-SHA1 (key = $salt)
Workload: 256 loops, 256 accel

Speed.GPU.#1.:    542.7 MH/s

Hashtype: HMAC-SHA256 (key = $pass)
Workload: 128 loops, 128 accel

Speed.GPU.#1.:    402.7 MH/s
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Hashtype: HMAC-SHA256 (key = $salt)
Workload: 128 loops, 128 accel

Speed.GPU.#1.:   908.2 MH/s

Hashtype: HMAC-SHA512 (key = $pass)
Workload: 128 loops, 128 accel

Speed.GPU.#1.: 88728.4 kH/s

Hashtype: HMAC-SHA512 (key = $salt)
Workload: 128 loops, 128 accel

Speed.GPU.#1.:   208.8 MH/s

Hashtype: IPMI2 RAKP HMAC-SHA1
Workload: 256 loops, 256 accel

Speed.GPU.#1.:  1107.5 MH/s

Hashtype: Half MD5
Workload: 1024 loops, 256 accel

Speed.GPU.#1.: 10448.1 MH/s

Hashtype: Double MD5
Workload: 1024 loops, 256 accel

Speed.GPU.#1.:  4662.2 MH/s

Hashtype: GRUB 2
Workload: 1024 loops, 2 accel

Speed.GPU.#1.:   29060 H/s

Hashtype: phpass, MD5(Wordpress), MD5(phpBB3), MD5(Joomla)
Workload: 1024 loops, 32 accel

Speed.GPU.#1.:  4555.8 kH/s

Hashtype: SIP digest authentication (MD5)
Workload: 1024 loops, 32 accel

Speed.GPU.#1.:  1895.7 MH/s

Hashtype: SipHash
Workload: 1024 loops, 256 accel

Speed.GPU.#1.: 20456.9 MH/s

Hashtype: Joomla < 2.5.18
Workload: 1024 loops, 256 accel

Speed.GPU.#1.: 16680.3 MH/s

Hashtype: osCommerce, xt:Commerce
Workload: 1024 loops, 256 accel

Speed.GPU.#1.:  9093.2 MH/s

Hashtype: PrestaShop
Workload: 1024 loops, 256 accel

Speed.GPU.#1.:  5751.4 MH/s

Hashtype: IPB2+, MyBB1.2+
Workload: 1024 loops, 256 accel

Speed.GPU.#1.:  2135.8 MH/s

Hashtype: vBulletin < v3.8.5
Workload: 1024 loops, 256 accel

Speed.GPU.#1.:  4695.6 MH/s

Hashtype: PHPS
Workload: 1024 loops, 256 accel
```

```
Speed.GPU.#1.:  4654.3 MH/s

Hashtype: vBulletin > v3.8.5
Workload: 1024 loops, 256 accel

Speed.GPU.#1.:  2091.6 MH/s

Hashtype: SMF > v1.1
Workload: 512 loops, 256 accel

Speed.GPU.#1.:  3849.6 MH/s

Started: Tue Apr 21 10:39:09 2015
Stopped: Tue Apr 21 11:08:29 2015
```

Benchmarks – +225Mhz OC

```
cudaHashcat v1.36 starting in benchmark-mode...

Device #1: GeForce GTX TITAN X, 12287MB, 1215Mhz, 24MCU

Hashtype: MD4
Workload: 1024 loops, 256 accel

Speed.GPU.#1.: 39290.7 MH/s

Hashtype: MD5
Workload: 1024 loops, 256 accel

Speed.GPU.#1.: 18841.2 MH/s

Hashtype: SHA1
Workload: 1024 loops, 256 accel

Speed.GPU.#1.:  6175.5 MH/s

Hashtype: SHA256
Workload: 1024 loops, 256 accel

Speed.GPU.#1.:  2432.1 MH/s

Hashtype: SHA384
Workload: 256 loops, 256 accel

Speed.GPU.#1.:   753.6 MH/s

Hashtype: SHA512
Workload: 256 loops, 256 accel

Speed.GPU.#1.:   742.2 MH/s

Hashtype: SHA-3(Keccak)
Workload: 128 loops, 256 accel

Speed.GPU.#1.:   521.7 MH/s

Hashtype: RipeMD160
Workload: 1024 loops, 256 accel

Speed.GPU.#1.:  3954.3 MH/s

Hashtype: Whirlpool
Workload: 512 loops, 32 accel

Speed.GPU.#1.:   164.7 MH/s

Hashtype: GOST R 34.11-94
Workload: 512 loops, 64 accel

Speed.GPU.#1.:   231.7 MH/s

Hashtype: SAP CODVN B (BCODE)
Workload: 1024 loops, 64 accel

Speed.GPU.#1.:  1408.5 MH/s
```

```
Hashtype: SAP CODVN F/G (PASSCODE)
Workload: 1024 loops, 32 accel

Speed.GPU.#1.:    656.1 MH/s

Hashtype: SAP CODVN H (PWDSALTEDHASH) iSSHA-1
Workload: 1024 loops, 16 accel

Speed.GPU.#1.:   4587.7 kH/s

Hashtype: Lotus Notes/Domino 5
Workload: 256 loops, 32 accel

Speed.GPU.#1.:    207.4 MH/s

Hashtype: Lotus Notes/Domino 6
Workload: 256 loops, 32 accel

Speed.GPU.#1.: 67593.7 kH/s

Hashtype: Lotus Notes/Domino 8
Workload: 1024 loops, 64 accel

Speed.GPU.#1.:    517.2 kH/s

Hashtype: SHA-1(Base64), nsldap, Netscape LDAP SHA
Workload: 1024 loops, 256 accel

Speed.GPU.#1.:   6201.2 MH/s

Hashtype: SSHA-1(Base64), nsldaps, Netscape LDAP SSHA
Workload: 1024 loops, 256 accel

Speed.GPU.#1.:   6153.6 MH/s

Hashtype: descrypt, DES(Unix), Traditional DES
Workload: 128 loops, 64 accel

Speed.GPU.#1.:    165.5 MH/s

Hashtype: md5crypt, MD5(Unix), FreeBSD MD5, Cisco-IOS MD5
Workload: 1000 loops, 32 accel

Speed.GPU.#1.:   8092.6 kH/s

Hashtype: sha256crypt, SHA256(Unix)
Workload: 1024 loops, 4 accel

Speed.GPU.#1.:    357.7 kH/s

Hashtype: sha512crypt, SHA512(Unix)
Workload: 1024 loops, 8 accel

Speed.GPU.#1.:    129.1 kH/s

Hashtype: bcrypt, Blowfish(OpenBSD)
Workload: 32 loops, 2 accel

Speed.GPU.#1.:     16890 H/s

Hashtype: LM
Workload: 1024 loops, 256 accel

Speed.GPU.#1.:   2463.8 MH/s

Hashtype: NTLM
Workload: 1024 loops, 256 accel

Speed.GPU.#1.:  39148.9 MH/s

Hashtype: DCC, mscash
Workload: 1024 loops, 256 accel

Speed.GPU.#1.:  10598.7 MH/s

Hashtype: NetNTLMv1-VANILLA / NetNTLMv1+ESS
Workload: 1024 loops, 256 accel
```

```
       Speed.GPU.#1.: 16539.9 MH/s

       Hashtype: NetNTLMv2
       Workload: 1024 loops, 256 accel

       Speed.GPU.#1.:  1250.6 MH/s

       Hashtype: Kerberos 5 AS-REQ Pre-Auth etype 23
       Workload: 256 loops, 32 accel

       Speed.GPU.#1.:   214.9 MH/s

       Hashtype: EPiServer 6.x < v4
       Workload: 512 loops, 256 accel

       Speed.GPU.#1.:  4472.1 MH/s

       Hashtype: EPiServer 6.x > v4
       Workload: 512 loops, 256 accel

       Speed.GPU.#1.:  2238.3 MH/s

       Hashtype: MSSQL(2000)
       Workload: 512 loops, 256 accel

       Speed.GPU.#1.:  6316.0 MH/s

       Hashtype: MSSQL(2005)
       Workload: 512 loops, 256 accel

       Speed.GPU.#1.:  6269.4 MH/s

       Hashtype: MSSQL(2012)
       Workload: 256 loops, 256 accel

       Speed.GPU.#1.:   755.5 MH/s

       Hashtype: MySQL323
       Workload: 512 loops, 256 accel

       Speed.GPU.#1.: 42663.2 MH/s

       Hashtype: MySQL4.1/MySQL5
       Workload: 512 loops, 256 accel

       Speed.GPU.#1.:  2831.2 MH/s

       Hashtype: Oracle 7-10g
       Workload: 512 loops, 64 accel

       Speed.GPU.#1.:   709.1 MH/s

       Hashtype: Sybase ASE
       Workload: 512 loops, 32 accel

       Speed.GPU.#1.:   224.9 MH/s

       Hashtype: Oracle 11g/12c
       Workload: 1024 loops, 256 accel

       Speed.GPU.#1.:  6162.7 MH/s

       Hashtype: PostgreSQL Challenge-Response Authentication (MD5)
       Workload: 1024 loops, 256 accel

       Speed.GPU.#1.:  4817.1 MH/s

       Hashtype: MySQL Challenge-Response Authentication (SHA1)
       Workload: 1024 loops, 256 accel

       Speed.GPU.#1.:  1763.7 MH/s

       Hashtype: OSX v10.4, v10.5, v10.6
       Workload: 512 loops, 256 accel

       Speed.GPU.#1.:  4505.4 MH/s
```

```
Hashtype: OSX v10.7
Workload: 128 loops, 256 accel

Speed.GPU.#1.:    742.1 MH/s

Hashtype: OSX v10.8+
Workload: 1024 loops, 2 accel

Speed.GPU.#1.:     9420 H/s

Hashtype: Android PIN
Workload: 1024 loops, 16 accel

Speed.GPU.#1.:   4675.5 kH/s

Hashtype: Android FDE <= 4.3
Workload: 1024 loops, 32 accel

Speed.GPU.#1.:    643.3 kH/s

Hashtype: scrypt
Workload: 1 loops, 64 accel

Speed.GPU.#1.:    147.9 kH/s

Hashtype: Cisco-PIX MD5
Workload: 1024 loops, 256 accel

Speed.GPU.#1.: 11866.6 MH/s

Hashtype: Cisco-ASA MD5
Workload: 1024 loops, 256 accel

Speed.GPU.#1.: 12392.5 MH/s

Hashtype: Cisco-IOS SHA256
Workload: 1024 loops, 256 accel

Speed.GPU.#1.:   2429.5 MH/s

Hashtype: Cisco $8$
Workload: 1024 loops, 8 accel

Speed.GPU.#1.:    54023 H/s

Hashtype: Cisco $9$
Workload: 1 loops, 4 accel

Speed.GPU.#1.:     5024 H/s

Hashtype: Juniper IVE
Workload: 1000 loops, 32 accel

Speed.GPU.#1.:   8110.3 kH/s

Hashtype: Citrix NetScaler
Workload: 512 loops, 256 accel

Speed.GPU.#1.:   5594.3 MH/s

Hashtype: DNSSEC (NSEC3)
Workload: 512 loops, 256 accel

Speed.GPU.#1.:   2645.4 MH/s

Hashtype: WPA/WPA2
Workload: 1024 loops, 32 accel

Speed.GPU.#1.:    317.3 kH/s

Hashtype: IKE-PSK MD5
Workload: 512 loops, 128 accel

Speed.GPU.#1.:   1369.2 MH/s

Hashtype: IKE-PSK SHA1
Workload: 512 loops, 128 accel
```

```
Speed.GPU.#1.:    464.9 MH/s

Hashtype: Password Safe v2
Workload: 1000 loops, 16 accel

Speed.GPU.#1.:    239.3 kH/s

Hashtype: Password Safe v3
Workload: 1024 loops, 16 accel

Speed.GPU.#1.:   1062.1 kH/s

Hashtype: 1Password, agilekeychain
Workload: 1000 loops, 64 accel

Speed.GPU.#1.:   2547.5 kH/s

Hashtype: 1Password, cloudkeychain
Workload: 1024 loops, 2 accel

Speed.GPU.#1.:     8338 H/s

Hashtype: AIX {ssha1}
Workload: 64 loops, 128 accel

Speed.GPU.#1.: 31682.7 kH/s

Hashtype: TrueCrypt 5.0+ PBKDF2-HMAC-RipeMD160 + AES
Workload: 1024 loops, 64 accel

Speed.GPU.#1.:    927.2 kH/s

Hashtype: TrueCrypt 5.0+ PBKDF2-HMAC-SHA512 + AES
Workload: 1000 loops, 16 accel

Speed.GPU.#1.:    341.5 kH/s

Hashtype: TrueCrypt 5.0+ PBKDF2-HMAC-Whirlpool + AES
Workload: 1000 loops, 8 accel

Speed.GPU.#1.:     34997 H/s

Hashtype: TrueCrypt 5.0+ PBKDF2-HMAC-RipeMD160 + AES + boot-mode
Workload: 1000 loops, 64 accel

Speed.GPU.#1.:   1828.8 kH/s

Hashtype: Office 2007
Workload: 1024 loops, 32 accel

Speed.GPU.#1.:    106.7 kH/s

Hashtype: Office 2010
Workload: 1024 loops, 32 accel

Speed.GPU.#1.:     53395 H/s

Hashtype: Office 2013
Workload: 1024 loops, 4 accel

Speed.GPU.#1.:     7689 H/s

Hashtype: MS Office <= 2003 MD5 + RC4, oldoffice$0, oldoffice$1
Workload: 1024 loops, 32 accel

Speed.GPU.#1.:    197.6 MH/s

Hashtype: MS Office <= 2003 SHA1 + RC4, oldoffice$3, oldoffice$4
Workload: 1024 loops, 32 accel

Speed.GPU.#1.:    276.5 MH/s

Hashtype: PDF 1.1 - 1.3 (Acrobat 2 - 4)
Workload: 1024 loops, 32 accel

Speed.GPU.#1.:    302.2 MH/s

Hashtype: PDF 1.1 - 1.3 (Acrobat 2 - 4) + collider-mode #1
```

```
Workload: 1024 loops, 32 accel

Speed.GPU.#1.:    341.6 MH/s

Hashtype: PDF 1.1 - 1.3 (Acrobat 2 - 4) + collider-mode #2
Workload: 1024 loops, 32 accel

Speed.GPU.#1.:   3019.9 MH/s

Hashtype: PDF 1.4 - 1.6 (Acrobat 5 - 8)
Workload: 70 loops, 256 accel

Speed.GPU.#1.: 14222.6 kH/s

Hashtype: PDF 1.7 Level 3 (Acrobat 9)
Workload: 1024 loops, 256 accel

Speed.GPU.#1.:   2433.0 MH/s

Hashtype: PDF 1.7 Level 8 (Acrobat 10 - 11)
Workload: 64 loops, 8 accel

Speed.GPU.#1.:        0 H/s

Hashtype: Drupal7
Workload: 1024 loops, 8 accel

Speed.GPU.#1.:    45798 H/s

Hashtype: HMAC-MD5 (key = $pass)
Workload: 512 loops, 256 accel

Speed.GPU.#1.:   1942.8 MH/s

Hashtype: HMAC-MD5 (key = $salt)
Workload: 512 loops, 256 accel

Speed.GPU.#1.:   5256.4 MH/s

Hashtype: HMAC-SHA1 (key = $pass)
Workload: 256 loops, 256 accel

Speed.GPU.#1.:    422.6 MH/s

Hashtype: HMAC-SHA1 (key = $salt)
Workload: 256 loops, 256 accel

Speed.GPU.#1.:    620.8 MH/s

Hashtype: HMAC-SHA256 (key = $pass)
Workload: 128 loops, 128 accel

Speed.GPU.#1.:    471.7 MH/s

Hashtype: HMAC-SHA256 (key = $salt)
Workload: 128 loops, 128 accel

Speed.GPU.#1.:   1046.5 MH/s

Hashtype: HMAC-SHA512 (key = $pass)
Workload: 128 loops, 128 accel

Speed.GPU.#1.:    103.8 MH/s

Hashtype: HMAC-SHA512 (key = $salt)
Workload: 128 loops, 128 accel

Speed.GPU.#1.:    243.3 MH/s

Hashtype: IPMI2 RAKP HMAC-SHA1
Workload: 256 loops, 256 accel

Speed.GPU.#1.:   1261.8 MH/s

Hashtype: Half MD5
Workload: 1024 loops, 256 accel

Speed.GPU.#1.: 11702.4 MH/s
```

```
Hashtype: Double MD5
Workload: 1024 loops, 256 accel

Speed.GPU.#1.:   5266.1 MH/s

Hashtype: GRUB 2
Workload: 1024 loops, 2 accel

Speed.GPU.#1.:     33125 H/s

Hashtype: phpass, MD5(Wordpress), MD5(phpBB3), MD5(Joomla)
Workload: 1024 loops, 32 accel

Speed.GPU.#1.:   5156.6 kH/s

Hashtype: SIP digest authentication (MD5)
Workload: 1024 loops, 32 accel

Speed.GPU.#1.:   2182.3 MH/s

Hashtype: SipHash
Workload: 1024 loops, 256 accel

Speed.GPU.#1.:  23051.8 MH/s

Hashtype: Joomla < 2.5.18
Workload: 1024 loops, 256 accel

Speed.GPU.#1.:  18811.3 MH/s

Hashtype: osCommerce, xt:Commerce
Workload: 1024 loops, 256 accel

Speed.GPU.#1.:  10400.1 MH/s

Hashtype: PrestaShop
Workload: 1024 loops, 256 accel

Speed.GPU.#1.:   6495.0 MH/s

Hashtype: IPB2+, MyBB1.2+
Workload: 1024 loops, 256 accel

Speed.GPU.#1.:   2506.9 MH/s

Hashtype: vBulletin < v3.8.5
Workload: 1024 loops, 256 accel

Speed.GPU.#1.:   5302.3 MH/s

Hashtype: PHPS
Workload: 1024 loops, 256 accel

Speed.GPU.#1.:   5271.6 MH/s

Hashtype: vBulletin > v3.8.5
Workload: 1024 loops, 256 accel

Speed.GPU.#1.:   2452.9 MH/s

Hashtype: SMF > v1.1
Workload: 512 loops, 256 accel

Speed.GPU.#1.:   4498.7 MH/s

Started: Tue Apr 21 12:17:53 2015
Stopped: Tue Apr 21 12:46:41 2015
```