

GCIS Hash-to-Password Recovery & Cryptographic Side-Channel Report

## CHARGE ANALYSIS - OVERVIEW

INDIVIDUAL VALUES (20 characters):

```
'0' -> -1 '1' -> -1 '3' -> -1 '4' -> -1
'6' -> -1 '8' -> -1 'B' -> -1 'G' -> -1
'H' -> -1 'N' -> -1 'T' -> -1 'U' -> -1
'X' -> -1 'c' -> -1 'd' -> -1 'e' -> -1
'f' -> -1 'v' -> -1 'y' -> -1 'z' -> -1
```

TOTAL:  $20x - 1$ ,  $0x + 1$

SIGNIFICANT (100.0% uniform charge) - Dominant charge: -1

## PATTERN CONSISTENCY ANALYSIS

32/32 bytes show 100% pattern consistency  
RESULT: All password bytes have UNIQUE, CONSISTENT sign patterns

## **STATISTICAL SUMMARY**

Pearson Correlation: 1.0000  
Bit-Sign Agreement: 100.00%

## INPUT DATA

Password: Bv3Hy8Tz1Uc6Gd0Nf4XeQ7529iKLmVRS

Password Bitstring:

```
01000010 01110110 00110011 01001000 01111001 00111000 01010100 01111010 00110001 01010101  
01000011 00101011 01000111 01100100 00110000 01001110 01100110 00110100 01011000 01100101  
01001001 00110111 00110101 00110010 00111001 01101001 01001011 01001100 01101101 01010110  
01010010 01010011
```

Layer 2 (es15): 512 bits

Sign sequence (complete)

-1, -1, +1, +1, -1, -1, +1, -1, -1, -1, -1, +1, +1, -1, -1, +1, +1, -1, +1, -1, +1, -1, +1, -1, +1, +1



## PASSWORD BYTE SIGN PATTERNS

```
=====  
BYTE 0 | ASCII: 'B' | Bit Pattern: 01000010  
Found at 7 location(s)  
SIGN PATTERN: -1 +1 -1 -1 -1 +1 -1  
CONSISTENCY: 100.0%  
BIT-SIGN MATCH: 100.0%  
  
BYTE 1 | ASCII: 'v' | Bit Pattern: 01110110  
Found at 3 location(s)  
SIGN PATTERN: -1 +1 +1 +1 -1 +1 +1 -1  
CONSISTENCY: 100.0%  
BIT-SIGN MATCH: 100.0%  
  
BYTE 2 | ASCII: '3' | Bit Pattern: 00110011  
Found at 4 location(s)  
SIGN PATTERN: -1 -1 +1 +1 -1 -1 +1 +1  
CONSISTENCY: 100.0%  
BIT-SIGN MATCH: 100.0%  
  
BYTE 3 | ASCII: 'H' | Bit Pattern: 01001000  
Found at 3 location(s)  
SIGN PATTERN: -1 +1 -1 -1 +1 -1 -1 -1  
CONSISTENCY: 100.0%  
BIT-SIGN MATCH: 100.0%  
  
BYTE 4 | ASCII: 'y' | Bit Pattern: 01111001  
Found at 5 location(s)  
SIGN PATTERN: -1 +1 +1 +1 +1 -1 -1 +1  
CONSISTENCY: 100.0%  
BIT-SIGN MATCH: 100.0%  
  
BYTE 5 | ASCII: '8' | Bit Pattern: 00111000  
Found at 4 location(s)  
SIGN PATTERN: -1 -1 +1 +1 +1 -1 -1 -1  
CONSISTENCY: 100.0%  
BIT-SIGN MATCH: 100.0%  
  
BYTE 6 | ASCII: 'T' | Bit Pattern: 01010100  
Found at 5 location(s)  
SIGN PATTERN: -1 +1 -1 +1 -1 +1 -1 -1  
CONSISTENCY: 100.0%  
BIT-SIGN MATCH: 100.0%  
  
BYTE 7 | ASCII: 'z' | Bit Pattern: 01111010  
Found at 2 location(s)  
SIGN PATTERN: -1 +1 +1 +1 +1 -1 +1 -1  
CONSISTENCY: 100.0%  
BIT-SIGN MATCH: 100.0%  
  
BYTE 8 | ASCII: '1' | Bit Pattern: 00110001  
Found at 5 location(s)  
SIGN PATTERN: -1 -1 +1 +1 -1 -1 -1 +1  
CONSISTENCY: 100.0%  
BIT-SIGN MATCH: 100.0%  
  
BYTE 9 | ASCII: 'U' | Bit Pattern: 01010101  
Found at 5 location(s)  
SIGN PATTERN: -1 +1 -1 +1 -1 +1 -1 +1  
CONSISTENCY: 100.0%  
BIT-SIGN MATCH: 100.0%  
  
BYTE 10 | ASCII: 'c' | Bit Pattern: 01100011  
Found at 6 location(s)  
SIGN PATTERN: -1 +1 +1 -1 -1 -1 +1 +1  
CONSISTENCY: 100.0%  
BIT-SIGN MATCH: 100.0%  
  
BYTE 11 | ASCII: '6' | Bit Pattern: 00110110  
Found at 3 location(s)  
SIGN PATTERN: -1 -1 +1 +1 -1 +1 +1 -1  
CONSISTENCY: 100.0%  
BIT-SIGN MATCH: 100.0%  
  
BYTE 12 | ASCII: 'G' | Bit Pattern: 01000111  
Found at 3 location(s)  
SIGN PATTERN: -1 +1 -1 -1 -1 +1 +1 +1  
CONSISTENCY: 100.0%  
BIT-SIGN MATCH: 100.0%  
  
BYTE 13 | ASCII: 'd' | Bit Pattern: 01100100  
Found at 5 location(s)  
SIGN PATTERN: -1 +1 +1 -1 -1 +1 -1 -1  
CONSISTENCY: 100.0%  
BIT-SIGN MATCH: 100.0%  
  
BYTE 14 | ASCII: '0' | Bit Pattern: 00110000  
Found at 4 location(s)  
SIGN PATTERN: -1 -1 +1 +1 -1 -1 -1 -1  
CONSISTENCY: 100.0%  
BIT-SIGN MATCH: 100.0%  
  
BYTE 15 | ASCII: 'N' | Bit Pattern: 01001110  
Found at 7 location(s)  
SIGN PATTERN: -1 +1 -1 -1 +1 +1 +1 -1  
CONSISTENCY: 100.0%  
BIT-SIGN MATCH: 100.0%  
  
BYTE 16 | ASCII: 'f' | Bit Pattern: 01100110  
Found at 7 location(s)  
SIGN PATTERN: -1 +1 +1 -1 -1 +1 +1 -1  
CONSISTENCY: 100.0%  
BIT-SIGN MATCH: 100.0%
```

BYTE 17 | ASCII: '4' | Bit Pattern: 00110100  
Found at 4 location(s)  
SIGN PATTERN: -1 -1 +1 +1 -1 -1 +1 -1  
CONSISTENCY: 100.0%  
BIT-SIGN MATCH: 100.0%

BYTE 18 | ASCII: 'X' | Bit Pattern: 01011000  
Found at 5 location(s)  
SIGN PATTERN: -1 +1 -1 +1 +1 -1 -1 -1  
CONSISTENCY: 100.0%  
BIT-SIGN MATCH: 100.0%

BYTE 19 | ASCII: 'e' | Bit Pattern: 01100101  
Found at 5 location(s)  
SIGN PATTERN: -1 +1 +1 -1 -1 +1 -1 +1  
CONSISTENCY: 100.0%  
BIT-SIGN MATCH: 100.0%

BYTE 20 | ASCII: 'Q' | Bit Pattern: 01010001  
Found at 2 location(s)  
SIGN PATTERN: -1 +1 -1 +1 -1 -1 -1 +1  
CONSISTENCY: 100.0%  
BIT-SIGN MATCH: 100.0%

BYTE 21 | ASCII: '7' | Bit Pattern: 00110111  
Found at 6 location(s)  
SIGN PATTERN: -1 -1 +1 +1 -1 +1 +1 +1  
CONSISTENCY: 100.0%  
BIT-SIGN MATCH: 100.0%

BYTE 22 | ASCII: '5' | Bit Pattern: 00110101  
Found at 2 location(s)  
SIGN PATTERN: -1 -1 +1 +1 -1 +1 -1 +1  
CONSISTENCY: 100.0%  
BIT-SIGN MATCH: 100.0%

BYTE 23 | ASCII: '2' | Bit Pattern: 00110010  
Found at 8 location(s)  
SIGN PATTERN: -1 -1 +1 +1 -1 -1 +1 -1  
CONSISTENCY: 100.0%  
BIT-SIGN MATCH: 100.0%

BYTE 24 | ASCII: '9' | Bit Pattern: 00111001  
Found at 3 location(s)  
SIGN PATTERN: -1 -1 +1 +1 +1 -1 -1 -1  
CONSISTENCY: 100.0%  
BIT-SIGN MATCH: 100.0%

BYTE 25 | ASCII: 'i' | Bit Pattern: 01101001  
Found at 3 location(s)  
SIGN PATTERN: -1 +1 +1 -1 +1 -1 -1 +1  
CONSISTENCY: 100.0%  
BIT-SIGN MATCH: 100.0%

BYTE 26 | ASCII: 'K' | Bit Pattern: 01001011  
Found at 3 location(s)  
SIGN PATTERN: -1 +1 -1 -1 +1 -1 +1 +1  
CONSISTENCY: 100.0%  
BIT-SIGN MATCH: 100.0%

BYTE 27 | ASCII: 'L' | Bit Pattern: 01001100  
Found at 3 location(s)  
SIGN PATTERN: -1 +1 -1 -1 +1 +1 -1 -1  
CONSISTENCY: 100.0%  
BIT-SIGN MATCH: 100.0%

BYTE 28 | ASCII: 'm' | Bit Pattern: 01101101  
Found at 3 location(s)  
SIGN PATTERN: -1 +1 +1 -1 +1 +1 -1 +1  
CONSISTENCY: 100.0%  
BIT-SIGN MATCH: 100.0%

BYTE 29 | ASCII: 'V' | Bit Pattern: 01010110  
Found at 9 location(s)  
SIGN PATTERN: -1 +1 -1 +1 -1 +1 +1 +1 -1  
CONSISTENCY: 100.0%  
BIT-SIGN MATCH: 100.0%

BYTE 30 | ASCII: 'R' | Bit Pattern: 01010010  
Found at 6 location(s)  
SIGN PATTERN: -1 +1 -1 +1 -1 -1 +1 -1  
CONSISTENCY: 100.0%  
BIT-SIGN MATCH: 100.0%

BYTE 31 | ASCII: 'S' | Bit Pattern: 01010011  
Found at 7 location(s)  
SIGN PATTERN: -1 +1 -1 +1 -1 -1 +1 +1  
CONSISTENCY: 100.0%  
BIT-SIGN MATCH: 100.0%

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