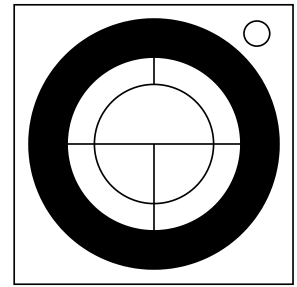# On the Subject of the Dreamcipher

I'm not awake enough for this nonsense. I'm going back to bed.

- A sequence of glyphs will be displayed along the bottom half of the circular screen. Some of the glyphs in the sequence correspond to letters of the English alphabet; the other glyphs are decoys.
- To figure out which glyphs map to which letters, refer to "Recreating the Glyph Alphabet" on the next page.
- Afterwards, to obtain the decrypted word, convert each glyph on the module back to a letter in order of appearance. Treat outlined versions of glyphs the same as their filled counterparts, and ignore any glyphs that are not in the glyph alphabet.
- The decrypted word will always be a valid English word between 8 and 15 characters in length.

- While in display mode, the outer arrow buttons cycle through the glyphs quickly, the X button stops the glyphs from automatically cycling, and the O button restarts the automatic cycling.
- After decrypting the word, press the ENTER button on the top half of the module to put the module into input mode.
- While in input mode, the outer arrow buttons cycle through letters, the O button inputs the highlighted letter, and the X button deletes the last letter that was input. The top half of the circular screen will show what has currently been entered.
- To leave input mode, press the ENTER button again. If any text has been entered, it will be submitted at this time.
- If the submitted text does not match the decrypted word, the module will strike and return to display mode. However, if no text was entered, the module will return to display mode without any penalty.

Recreating the Glyph Alphabet

- Start by creating a string of 16 bits from the glyphs shown on the module, where each bit is 0 if the glyph is outlined and 1 if it is filled.
  (The leftmost bit corresponds to the first glyph displayed.)
- Take the leftmost eight bits in the string, and convert them to a decimal number. This is the number of the starting glyph, starting from zero in the top-left, proceeding in reading order, and wrapping around if necessary.
- Take the next four bits in the string, and convert them to a decimal number. Add one to that number, and advance that many additional glyphs, again wrapping around if necessary. The resulting glyph maps to the last letter in the serial number.
- Proceed likewise for the next four bits in the string, mapping the result to the next letter of the English alphabet, wrapping from Z to A if necessary.
- Once every bit in the string has been used, derive a new string of 16 bits from the original string by doing the following:

    - Let x be the previous bit string.
    - Shift x left by one plus the first digit in the serial number, XOR that with x, and save the result as x.
    - Shift x right by one plus the last digit in the serial number, XOR that with x, and save the result as x.
    - Shift x left by one plus (the sum of digits in the serial number, mod 15), and XOR that with x. The result is the new series of bits.
    - All shifts are logical shifts—always shift in zeroes.

- The glyph alphabet cannot contain duplicate glyphs. If a glyph that has already been used is landed on, advance one additional glyph.
- Repeat the above operations until every letter in the English alphabet has been mapped to a glyph.

Notes

- The table below only shows the filled versions of each glyph.
- The display on the module orients glyphs upright at the southmost point.
- The separator is a small horizontal line that does not appear in the table. It marks the end of the sequence, and does not translate to a letter; however, it can be filled or outlined like any other glyph.

Known Glyphs