

Getting Started with 'A Sign in Space'

Please review the User's Guide for installation instructions and usage.

For processing the A Sign in Space bitstream the best place to start is with the data17.bin file. The suggested (but not required) folder structure for data and other files is something like: This is what is initially installed when the application is installed under the installation directory.

Data

BMP files

last.bmp	This is set in app Settings dialog, it will contain a .BMP file representation of the the last output image file operation. This was done to make viewing the last image file (binary) operation easier without the need to explicitly export the output result to a BMP file.
*.bmp	bitmap image files saved

Convolution

kernel.txt	Convolution kernel text file(s)
....	

ReOrder

reorder.txt	reorder kernel text file(s)
....	

OriginalSource

Data17.bin	The original message source, (you may wish to mark the file readonly)
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*.raw	Raw image files, these are binary 2D image files with a 32 byte header which can be loaded into Photoshop or Gimp easily. Photoshop expected a raw file to have the extension .raw. You can the properties of an image file under the Image tools -> Image file properties menu selection.
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*.txt	text files, such as csv or report file
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Extracting the various parts of the Bitstream file Data17.bin

Extract the entire bitstream to a text file

Bit tools -> Extract full bitstream to text

Extract full packed bitstream file to text file

C:\MySETIapp\Data\OriginalSource\data17.bin Packed bitstream input file

80 # bits in prologue 65696 Filesize (bits) Browse

0 #bits in header for a block ☐ swap MSB to LSB for bytes in input file

65536 #bits in block 256 X size

1 Number of blocks ☐ Invert bits

C:\MySETIapp\Data\data17.txt Text Output

(doesn't save settings) Convert Browse

(only save settings) OK Cancel (don't save settings)

Extract the header as an image

Bit Tools -> BitStream to Binary Image

Convert packed bitstream file to Image file

C:\MySETIapp\Data\OriginalSource\data17.bin Packed bitstream input file

0 # bits in prologue (skipped) 65696 Filesize (bits) Browse

0 #bits in header for a block (skipped) ☐ swap MSB to LSB for bytes in input file

80 #bits in block 8 X size 1 image bit depth

1 Number of blocks 0 end X size (if end X size > than X size then batch mode)

☐ swap MSB to LSB, pixels output file ☐ Scale binary 0,1 to 0,255 in output image ☐ Invert bits

C:\MySETIapp\Data\header8x10.raw Image Output file

ANY FOOTER BITS ARE SKIPPED

(doesn't save settings) Convert Browse

(only save settings) OK Cancel (don't save settings)

Extract the message body as an image

This is what has been referred to online as the 'starmap'.

Bit Tools -> BitStream to Binary Image

Convert packed bitstream file to Image file

C:\MySETIapp\Data\OriginalSource\data17.bin Packed bitstream input file

80 # bits in prologue (skipped 65696 Filesize (bits) Browse

0 #bits in header for a block (skipped) ☐ swap MSB to LSB for bytes in input file

65536 #bits in block 256 X size 1 image bit depth

1 Number of blocks 0 end X size (if end X size > than X size then batch mode)

☐ swap MSB to LSB, pixels output file ☐ Scale binary 0,1 to 0,255 in output image ☐ Invert bits

C:\MySETIapp\Data\Message256x256.raw Image Output file

ANY FOOTER BITS ARE SKIPPED (doesn't save settings) Convert Browse

(only save settings) OK Cancel (don't save settings)

Extract the footer as an image

Bit Tools -> BitStream to Binary Image

Convert packed bitstream file to Image file

C:\MySETIapp\Data\OriginalSource\data17.bin Packed bitstream input file

65616 # bits in prologue (skipped 65696 Filesize (bits) Browse

0 #bits in header for a block (skipped) ☐ swap MSB to LSB for bytes in input file

80 #bits in block 8 X size 1 image bit depth

1 Number of blocks 0 end X size (if end X size > than X size then batch mode)

☐ swap MSB to LSB, pixels output file ☐ Scale binary 0,1 to 0,255 in output image ☐ Invert bits

C:\MySETIapp\Data\footer.raw Image Output file

ANY FOOTER BITS ARE SKIPPED (doesn't save settings) Convert Browse

(only save settings) OK Cancel (don't save settings)

These are just the start. A number of files are included in the installation that have already been converted or extracted from the bitstream.

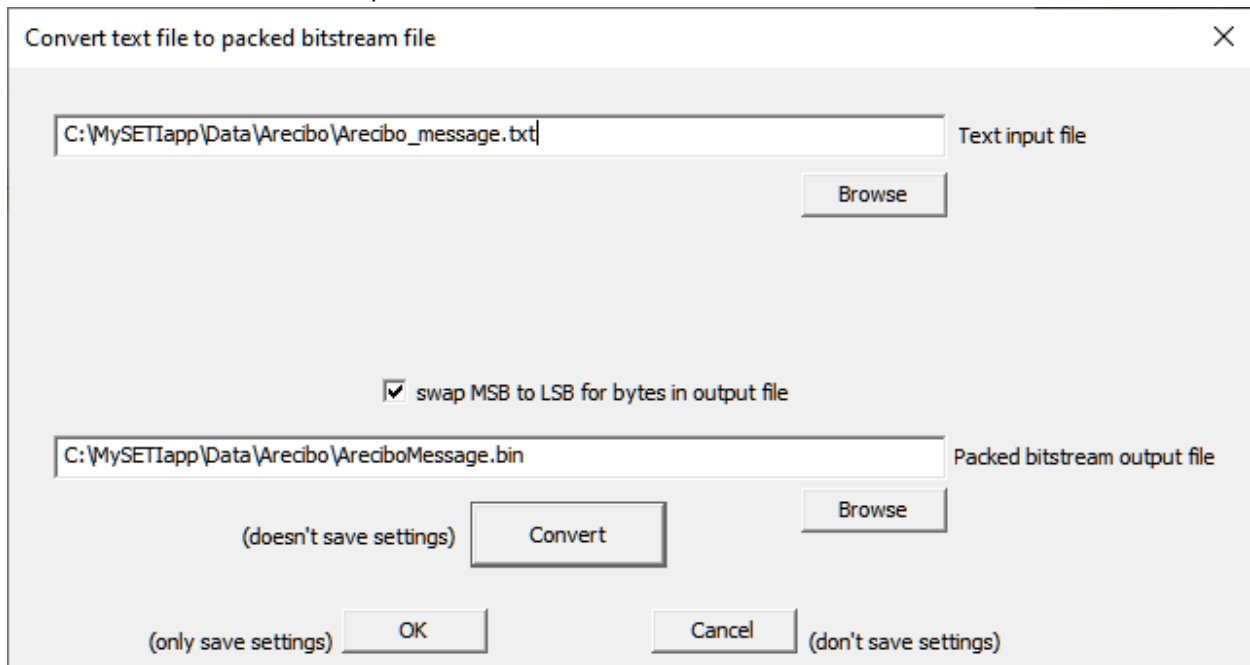
Happy deciphering.

The Arecibo message

The Arecibo message was a message transmitted by the Arecibo radio telescope on November 16, 1974. It was focused at Messier 13 a globular cluster approx. 25,000 lightyears away. The text file for the message is in the directory, C:\MySETIapp\Data\Arecibo\Arecibo_message.txt.

Converting the Arecibo_message.txt into a binary bitstream file.

Bit tools -> Convert text file to packed bitstream



You can try turning the MSB to LSB swap on and off to see its effect on the decoded message.

Convert packed bitstream file to Image file

C:\MySETIapp\Data\Arecibo\AreciboMessage.bin Packed bitstream input file

0 # bits in prologue (skipped) 1680 Filesize (bits) Browse

0 #bits in header for a block (skipped) ☐ swap MSB to LSB for bytes in input file

1679 #bits in block 23 X size 1 image bit depth

1 Number of blocks 0 end X size (if end X size > than X size then batch mode)

☐ swap MSB to LSB, pixels output file ☐ Scale binary 0,1 to 0,255 in output image ☐ Invert bits

C:\MySETIapp\Data\Arecibo\AreciboMeessage.raw Image Output file

ANY FOOTER BITS ARE SKIPPED
(doesn't save settings) Convert Browse

(only save settings) OK Cancel (don't save settings)

The Arecibo message

