

## PIT Tag Display Formats

A PIT tag sends 8 data bytes (64 bits) plus a 2 byte checksum. The raw data represented in binary would be a string of 1's and 0's:

**1000000000000000111000010011010010011110101001110010101001010000**

The reader calculates a checksum on the 64 data bits and compares it with the checksum sent by the tag. If they match, the tag was read correctly.

A more compact way to display 64 bits is with hexadecimal digits where each group of 4 bits is represented by one hex digit (0-9, A-F). A table of binary to hex is on the next page. Computer programmers use hexadecimal because the conversion can be done easily.

**1000 0000 0000 0000 1110 0001 0011 0100 1001 1110 1010 0111 0010 1010 0101 0000**  
**8 0 0 0 E 1 3 4 9 E A 7 2 A 5 0**

The ISO 11784 standard divides the 64 data bits into seven fields.

Bits	Length	Field
1	1	Animal flag (1=yes)
2-4	3	Reserved
5-9	5	Reserved
10-15	6	Reserved
16	1	Additional data flag
17-26	10	Country/manufacturer
27-64	38	Identifier

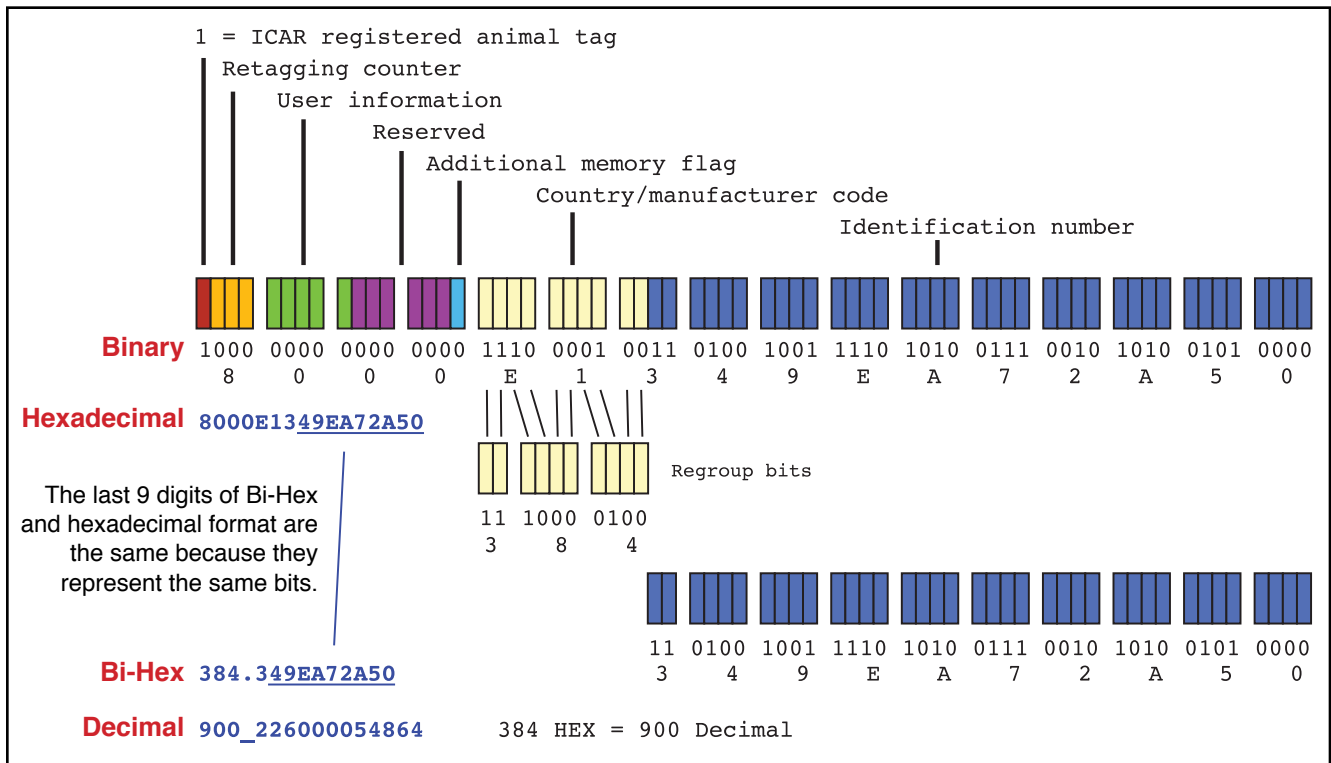
When the Animal flag is set to 1, the tag numbering has been coordinated by ICAR, the International Committee for Animal Recording to assure that tag manufacturers use unique sequences. ISO PIT tag readers display the tag's manufacturer/country code and the tag number (bits 17-26 and 27-64), usually as two decimal numbers.

**900\_226000054864**

The Columbia River Basin's PTAGIS database system uses bi-hex format, which shows the two fields in hexadecimal:

**384.349EA72A50**

Here are the bit fields defined by ISO 11784 with examples of different forms of output.



	Binary	HEX	Binary	HEX
	0000	0	1000	8
Hexadecimal is	0001	1	1001	9
a compact way	0010	2	1010	A
to represent	0011	3	1011	B
groups of 4 bits	0100	4	1100	C
	0101	5	1101	D
	0110	6	1110	E
	0111	7	1111	F

Non-ICAR numbering

When the Animal bit is 0, Texas Instruments HDX tags use a different bit allocation for the fields called TIRIS format:

Bits	Length	Field
1	1	Animal flag (0=no)
2-12	1	Application code
13-64	52	Identifier

PIT tag readers usually have a setting for TIRIS format or will automatically recognize the difference. Tags that do not properly read TIRIS format will display a different (incorrect) tag number from the ISO field layout.

