

# Package ‘ISO11784Tools’

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**Title** ISO11784 PIT Tag ID Format Converters

**Version** 1.1.4

**Description** Some tools to assist with converting International Organization for Standardization (ISO) standard 11784 (ISO11784) animal ID codes between 4 recognised formats commonly displayed on Passive Integrated Transponder (PIT) tag readers. The most common formats are 15 digit decimal, e.g., 999123456789012, and 13 character hexadecimal 'dot' format, e.g., 3E7.1CBE991A14. These are referred to in this package as isodecimal and isodothex. The other two formats are the raw hexadecimal representation of the ISO11784 binary structure (see <[https://en.wikipedia.org/wiki/ISO\\_11784\\_and\\_ISO\\_11785](https://en.wikipedia.org/wiki/ISO_11784_and_ISO_11785)>). There are two 'flavours' of this format, a left and a right variation. Which flavour a reader happens to output depends on if the developers decided to reverse the binary number or not before converting to hexadecimal, a decision based on the fact that the PIT tags will transmit their binary code Least Significant Bit (LSB) first, or backwards basically.

**License** GPL-3

**Encoding** UTF-8

**Language** en-GB

**RoxygenNote** 7.2.3

**Imports** stringr, stringi, dplyr, tibble

**Suggests** knitr, rmarkdown, testthat

**VignetteBuilder** knitr

**NeedsCompilation** no

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## Contents

binary_to_decimal . . . . .	2
-----------------------------	---

binary_to_hexadecimal . . . . .	3
convert_to_all . . . . .	3
convert_to_iso64bitl . . . . .	4
convert_to_iso64bitr . . . . .	4
convert_to_isodecimal . . . . .	5
convert_to_isodothex . . . . .	5
decimal_to_binary . . . . .	6
decimal_to_hexadecimal . . . . .	6
get_iso11784_format . . . . .	7
hexadecimal_to_binary . . . . .	7
hexadecimal_to_decimal . . . . .	8
iso64bitleft_to_isodecimal . . . . .	8
iso64bitright_to_isodecimal . . . . .	9
isodecimal_to_iso64bitleft . . . . .	9
isodecimal_to_iso64bitright . . . . .	10
isodecimal_to_isodothex . . . . .	10
isodothex_to_isodecimal . . . . .	11
<b>Index</b>	<b>12</b>

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binary_to_decimal	<i>Binary to Decimal converter</i>
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**Description**

Binary to Decimal converter

**Usage**

binary\_to\_decimal(bin)

**Arguments**

bin                    A single binary number as a string - nchar(bin) <= 54

**Value**

A single decimal number as a string

**Examples**

binary\_to\_decimal('1001100')

---

binary\_to\_hexadecimal *Binary to Hexadecimal converter*

---

**Description**

Binary to Hexadecimal converter

**Usage**

```
binary_to_hexadecimal(bin)
```

**Arguments**

bin                    A single binary number as a string

**Value**

A single hexadecimal number as a string

**Examples**

```
binary_to_hexadecimal('1001101')
```

---

convert\_to\_all            *Convert a list of codes to all other formats*

---

**Description**

Convert a list of codes to all other formats

**Usage**

```
convert_to_all(.data)
```

**Arguments**

.data                    A vector of character strings

**Value**

A tibble containing the original codes with a detected format column plus a column for each known format

**Examples**

```
convert_to_all(c('3DD.ABC4567890'))
```

---

convert\_to\_iso64bitl *Convert any recognised ISO11784/5 format to Raw Hexadecimal format, animal tag bit on the Left*

---

### Description

Convert any recognised ISO11784/5 format to Raw Hexadecimal format, animal tag bit on the Left

### Usage

```
convert_to_iso64bitl(.data)
```

### Arguments

.data            A vector of character strings

### Value

A converted vector of character strings

### Examples

```
convert_to_iso64bitl(c('999012345678901', '3E7.02DFDC1C36', 'EC383BFB439F0001'))
```

---

convert\_to\_iso64bitr *Convert any recognised ISO11784/5 format to Raw Hexadecimal format, animal tag bit on the Right*

---

### Description

Convert any recognised ISO11784/5 format to Raw Hexadecimal format, animal tag bit on the Right

### Usage

```
convert_to_iso64bitr(.data)
```

### Arguments

.data            A vector of character strings

### Value

A converted vector of character strings

### Examples

```
convert_to_iso64bitr(c('999012345678901', '8000F9C2DFDC1C36', '3E7.02DFDC1C37'))
```

---

convert\_to\_isodecimal *Convert any recognised ISO11784/5 format to Decimal format*

---

**Description**

Convert any recognised ISO11784/5 format to Decimal format

**Usage**

```
convert_to_isodecimal(.data)
```

**Arguments**

.data            A vector of character strings

**Value**

A converted vector of character strings

**Examples**

```
convert_to_isodecimal(c('3E7.02DFDC1C35', '8000F9C2DFDC1C36', 'EC383BFB439F0001'))
```

---

convert\_to\_isodothex *Convert any recognised ISO11784/5 format to Dot Hexadecimal format*

---

**Description**

Convert any recognised ISO11784/5 format to Dot Hexadecimal format

**Usage**

```
convert_to_isodothex(.data)
```

**Arguments**

.data            A vector of character strings

**Value**

A converted vector of character strings

**Examples**

```
convert_to_isodothex(c('999012345678901', '8000F9C2DFDC1C36', 'EC383BFB439F0001'))
```

decimal\_to\_binary      *Decimal to Binary converter*

---

**Description**

Decimal to Binary converter

**Usage**

```
decimal_to_binary(dec)
```

**Arguments**

dec                      A single decimal number as a string

**Value**

A single binary number as a string

**Examples**

```
decimal_to_binary('1234')
```

---

decimal\_to\_hexadecimal  
*Decimal to Hexadecimal converter*

---

**Description**

Decimal to Hexadecimal converter

**Usage**

```
decimal_to_hexadecimal(dec)
```

**Arguments**

dec                      A single decimal number as a string

**Value**

A single hexadecimal number as a string

**Examples**

```
decimal_to_hexadecimal('1234')
```

---

get\_iso11784\_format    *ISO11784 Pattern detection routine to identify (as far as possible) the input format*

---

**Description**

ISO11784 Pattern detection routine to identify (as far as possible) the input format

**Usage**

```
get_iso11784_format(.data)
```

**Arguments**

.data                    A vector of character strings

**Value**

A vector of character strings, each item being one of 5 formats: c('unknown', 'isodecimal', 'isodothex', 'iso64bitl', 'iso64bitr')

**Examples**

```
get_iso11784_format(c('3DD.ABC4567890'))
```

---

hexadecimal\_to\_binary    *Hexadecimal to Binary converter This is simply a wrapper for decimal\_to\_binary and hexadecimal\_to\_decimal*

---

**Description**

Hexadecimal to Binary converter This is simply a wrapper for decimal\_to\_binary and hexadecimal\_to\_decimal

**Usage**

```
hexadecimal_to_binary(hex)
```

**Arguments**

hex                    A single hexadecimal number as a string

**Value**

A single binary number as a string

**Examples**

```
hexadecimal_to_binary('ABC123')
```

---

```
hexadecimal_to_decimal
```

*Hexadecimal to Decimal converter*

---

**Description**

Hexadecimal to Decimal converter

**Usage**

```
hexadecimal_to_decimal(hex)
```

**Arguments**

hex                    A single hexadecimal number as a string. Max '400000000000000'

**Value**

A single decimal number as a string

**Examples**

```
hexadecimal_to_decimal('ABC123')
```

---

```
iso64bitleft_to_isodecimal
```

*ISO 11784 Raw Hexadecimal format, animal ID on the LEFT, To  
ISO11784 15 Digit Decimal*

---

**Description**

ISO 11784 Raw Hexadecimal format, animal ID on the LEFT, To ISO11784 15 Digit Decimal

**Usage**

```
iso64bitleft_to_isodecimal(.data)
```

**Arguments**

.data                    A vector of Raw Hexadecimal format strings.

**Value**

A vector of ISO11784 15 Digit Decimal format strings.



**Examples**

```
iso64bitleft_to_isodecimal(c('8000ABCDEF123456'))
```

---

```
iso64bitright_to_isodecimal
```

*ISO 11784 Raw Hexadecimal format, animal ID on the RIGHT, To  
ISO11784 15 Digit Decimal*

---

**Description**

ISO 11784 Raw Hexadecimal format, animal ID on the RIGHT, To ISO11784 15 Digit Decimal

**Usage**

```
iso64bitright_to_isodecimal(.data)
```

**Arguments**

.data            A vector of Raw Hexadecimal format strings.

**Value**

A vector of ISO11784 15 Digit Decimal format strings.

**Examples**

```
iso64bitright_to_isodecimal(c('ABCDEF1234560001'))
```

---

```
isodecimal_to_iso64bitleft
```

*ISO11784 15 Digit Decimal format To ISO11784 Raw Hexadecimal  
format, animal ID on the LEFT*

---

**Description**

ISO11784 15 Digit Decimal format To ISO11784 Raw Hexadecimal format, animal ID on the LEFT

**Usage**

```
isodecimal_to_iso64bitleft(.data)
```

**Arguments**

.data            A vector of ISO11784 15 Digit Decimal format strings.

**Value**

A vector of Raw Hexadecimal format strings.

**Examples**

```
isodecimal_to_iso64bitleft(c('989737733408912'))
```

---

```
isodecimal_to_iso64bitright
```

*ISO11784 15 Digit Decimal format To ISO11784 Raw Hexadecimal format, animal ID on the RIGHT*

---

**Description**

ISO11784 15 Digit Decimal format To ISO11784 Raw Hexadecimal format, animal ID on the RIGHT

**Usage**

```
isodecimal_to_iso64bitright(.data)
```

**Arguments**

.data            A vector of ISO11784 15 Digit Decimal format strings.

**Value**

A vector of Raw Hexadecimal format strings.

**Examples**

```
isodecimal_to_iso64bitright(c('989737733408912'))
```

---

```
isodecimal_to_isodothex
```

*ISO11784 15 Digit Decimal format To ISO11784 Dot Hexadecimal*

---

**Description**

ISO11784 15 Digit Decimal format To ISO11784 Dot Hexadecimal

**Usage**

```
isodecimal_to_isodothex(.data)
```

**Arguments**

.data            A vector of ISO11784 15 Digit Decimal format strings.

**Value**

A vector of Dot Hexadecimal format strings.

**Examples**

```
isodecimal_to_isodothex(c('989737733408912'))
```

---

*isodothex\_to\_isodecimal*  
*ISO 11784 Dot Hexadecimal format To ISO11784 15 Digit Decimal*

---

**Description**

ISO 11784 Dot Hexadecimal format To ISO11784 15 Digit Decimal

**Usage**

```
isodothex_to_isodecimal(.data)
```

**Arguments**

.data            A vector of Dot Hexadecimal format strings.

**Value**

A vector of ISO11784 15 Digit Decimal format strings.

**Examples**

```
isodothex_to_isodecimal(c('3DD.3BC4567890'))
```

# Index

binary\_to\_decimal, [2](#)  
binary\_to\_hexadecimal, [3](#)

convert\_to\_all, [3](#)  
convert\_to\_iso64bitl, [4](#)  
convert\_to\_iso64bitr, [4](#)  
convert\_to\_isodecimal, [5](#)  
convert\_to\_isodothex, [5](#)

decimal\_to\_binary, [6](#)  
decimal\_to\_hexadecimal, [6](#)

get\_iso11784\_format, [7](#)

hexadecimal\_to\_binary, [7](#)  
hexadecimal\_to\_decimal, [8](#)

iso64bitleft\_to\_isodecimal, [8](#)  
iso64bitright\_to\_isodecimal, [9](#)  
isodecimal\_to\_iso64bitleft, [9](#)  
isodecimal\_to\_iso64bitright, [10](#)  
isodecimal\_to\_isodothex, [10](#)  
isodothex\_to\_isodecimal, [11](#)