

Opticon OCR Guide

* Menu labels *

CODE	TITLE	Description	Default
BJ4	Enable readable codes	Enable OCR	
BJ5	Disable readable codes	Disable OCR	Yes
BJ6	Enable single read. Code	OCR only	
BJ7	Options for OCR	All directions	Yes
BJ8	Options for OCR	Forward direction	
BJ9	Options for OCR	Inverse direction	
BJA	Options for OCR	Check CD	Yes
BJB	Options for OCR	Not check CD	
BJC	Options for OCR	Transmit CD	Yes
BJD	Options for OCR	Not transmit CD	
BJE	Options for OCR	Set modulus	'10'
BJF	Options for OCR	Set CD weight	'1'
BJG	Options for OCR	Set string template	"
BJH	Options for OCR	End setting	
BJI	Set prefix	OCR Prefix	
BJJ	Set suffix	OCR Suffix	'\r'
BJP	Options for OCR	Set default normal OCR	
BK0	Options for OCR	OCR-A font	
BK1	Options for OCR	OCR-B font	Yes

* Specification *

1. Enable OCR (※1)

Enable OCR reading.

2. Disable OCR

Disable OCR reading.

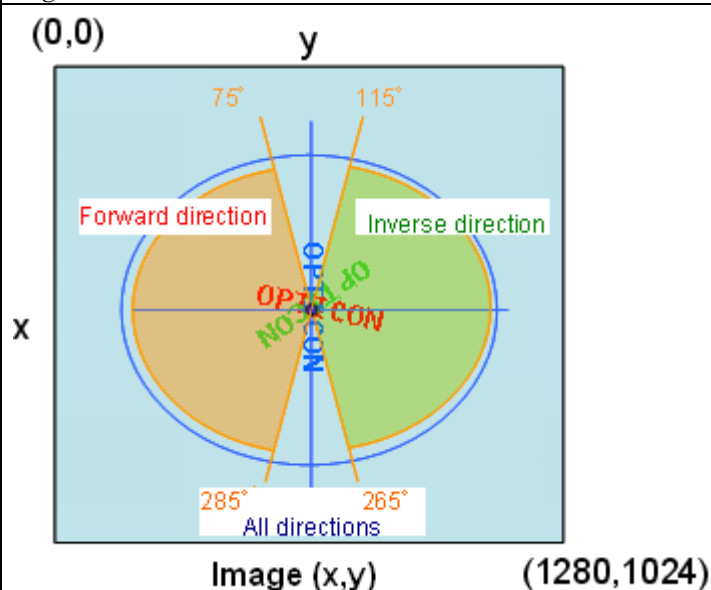
3. OCR only

Enable OCR reading only by disabling all other codes.

4. All directions

Enable all direction read (see Fig 1.).

Fig1. Scan Directions



The scanning directions of the “OPTICON” string are shown in this figure. In the forward direction, the string which head is in the orange area (red characters) is read.

In inverse direction, the string which head is in the green area (green characters) is read.

In all direction, the string (blue characters) is read within the blue circle area (360°) since the score in the verification will determine which direction should be the head of the string.

5. **Forward direction**

Enable reading of forward direction only. Scanning angle 285 to 75° (See Fig1.)

6. **Inverse direction**

Enable reading of inverse direction only. Scanning angle 105 to 265° (See Fig1.)

7. **Check CD** ※2)

Enable check digit. The result is not output when the check digit does not match.

8. **Not check CD**

Disable check digit.

9. **Transmit CD**

Output check digit.

10. **Not transmit CD**

Not output check digit.

11. **Set CD modulus** (※3)

Set the modulus of check digit.

12. **Set CD weight** (※4)

Set the weight of check digit.

13. **Set string template** (※5)

Set the OCR string format. The string template can set the characters, digits and columns of OCR. Input the edit symbols listed in Tab 2. by using the menu barcodes or commands.

14. OCR Prefix

Set OCR prefix.

15. OCR Suffix

Set OCR suffix.

16. Set default normal OCR

Set default of normal OCR. Initialize OCR string template and enable OCR-B.

17. OCR-A font

Set the font to OCR-A.

18. OCR-B font

Set the font to OCR-B.

* Description *

*1.0) OCR (Optical Character Recognition)

Overview

Characters can be automatically recognized from an image and processed as text. This software can read the strings specified with ISBN, Passport, String Template. The basic performance is shown in the Tab 1.

Tab1. Basic Performance

Feature	Description
Font	OCR-A, OCR-B
Type of Character	ABCDEFGHIJKLMNOPQRSTUVWXYZ 0123456789 <\-
Number of Characters	128
Scan Angle (tilt)	360°

*2.0) CD (Check Digit)

<Overview>

CD is added to prevent the error read of a string. The example is shown below.

String Template : ddddddddg
Modulus : 10
Weight : 1
String : 012345672
< Computing method >

$$(c > 0)$$

$$(1 \times 0 + 1 \times 1 + 1 \times 2 + 1 \times 3 + 1 \times 4 + 1 \times 5 + 1 \times 6 + 1 \times 7 + c) \pmod{10} = 0$$

$$(28 + c) \pmod{10} = 0$$

$$c = 2$$

When “c” and the check digit is the same, it determines that the string without check digit is read correctly.

*3.0) CD modulus

<Set modulus>

(1) Read ‘Set CD modulus” menu.

Command: **[BJE**

(2) Read numeric with “Direct input” menu.

(3) Read ‘End setting menu.

Command: **[BJH**

*4.0) CD weight

<Set weight>

(1) Read ‘Set CD weight’ menu.

Command: **[BJF**

(2) Read numeric with “Direct input” menu.

(3) Read ‘End setting menu.

Command: **[BJH**

The weight is specified with numeric. When the modulus is shorter than the string, add the specified modulus in repeat until being the same length as the string.

Example:

String	:	012345672
Specified weight	:	13
Used weight	:	13131313

<CD settings>

The following three items are set for check digit.

I . CD modulus setting

(Set modulus to 10)

(1) Read ‘Set CD modulus” menu.

(2) Read “10” with “Direct input numeric” menu.

(3) Read ‘End setting menu.

Command
[BJE
Q1Q0
[BJH

II. CD weight setting

(Set weight)

- (1) Read '**Set CD weight**' menu.
- (2) Read "**13**" with "Direct input numeric" menu.
- (3) Read '**End setting**' menu.

Command
[BJE Q1Q3 [BJH

III. CD string setting (Seet * 5 String Template)

(Set the length to 7digit- numeric)

- (1) Read '**Set string template**' menu.
- (2) Read "d7**g**" with "Direct input" menu.
- (3) Read '**End setting**' menu.

Example of a readable string (mod 10, weight 1):
12345672

Command
[BJG \$DQ7\$ G [BJH

*5.0) String Template

<Overview>

String Template is the string format in OCR read. The rule is provided depending the number and type of character.

<OCR string template setting>

Set the string template with following step reading the menu barcodes or inputting the commands.

- (1) Read 'Set string template' menu.

Command: [BJG

- (2) Read Edit Symbols (Tab2).

- (3) Read 'End setting' menu.

Command: [BJH

Refer to the following options in **Universal Menu** for the details of the commands and barcodes .

String options -> Direct input character misc.

● Setting the number of characters

(Set the length to 5digit- numeric)

- (1) Read 'Set string template' menu.

- (2) Read "d5" with "Direct input" menu.

- (3) Read 'End setting' menu.

Example of a readable string:

21368

Command
[BJG \$D\$D\$D\$D\$D [BJH

● Continuous character setting

(Set 10digit- alphabet)

- (1) Read 'Set string template' menu.

- (2) Read "c10" with "Direct input" menu.

- (3) Read 'End setting' menu.

Example of a readable string:

FSALKJIVWE

Command
[BJG \$CQ1Q0 [BJH

● Numeric

(Set 5digit- numeric)

- (1) Read 'Set string template' menu.

- (2) Read "d5" with "Direct input" menu.

- (3) Read 'End setting' menu.

Example of a readable string:

21368

Command
[BJG \$DQ5 [BJH

● Alphabet

(Set 7digit- alphabet)

- (1) Read '**Set string template**' menu.
- (2) Read "**c**7" with "Direct input" menu.
- (3) Read '**End setting**' menu.

Example of a readable string:
ABCDEFG

Command
[BJG \$CQ7 [BJH

● Numeric / Alphabet

(Set 7digit- numeric + alphabet)

- (1) Read '**Set string template**' menu.
- (2) Read "**a**7" with "Direct input" menu.
- (3) Read '**End setting**' menu.

Example of a readable string:
A23D5F7

Command
[BJG \$AQ7 [BJH

● Space

(Set variable length with 7digit- numeric + alphabet + space)

- (1) Read '**Set string template**' menu.
- (2) Read "xxx xxx" with "Direct input" menu.
- (3) Read '**End setting**' menu.

Example of a readable string:
A23 5F7

Command
[BJG \$AQ35A\$AQ3 [BJH

● Numeric / Alphabet / Variable length

(Set variable length with 7digit- numeric + alphabet)

- (1) Read '**Set string template**' menu.
- (2) Read "**b**7" with "Direct input" menu.
- (3) Read '**End setting**' menu.

Example of a readable string:
A23D5

Command
[BJG \$BQ7 [BJH

● Numeric / Alphabet / Space / Variable length

(Set variable length with 7digit- numeric + alphabet + space)

- (1) Read '**Set string template**' menu.
- (2) Read "**e**7" with "Direct input" menu.
- (3) Read '**End setting**' menu.

Example of a readable string:
A2 D5

Command
[BJG \$EQ7 [BJH

● Linefeed setting

Use the edit symbol “r” to specify linefeed.

(Set numeric in the first line and alphabet in the second line)

(1) Read ‘**Set string template**’ menu.

(2) Read “d5rc5” with “Direct input” menu.

(3) Read ‘**End setting**’ menu.

Example of a readable string:

46573

TEVOX

Command
[BJG \$DQ5\$R\$CQ5 [BJH

● CD setting

(Set check digit to 7 digit- numeric)

(1) Read ‘**Set string template**’ menu.

(2) Read “d7g” with “Direct input” menu.

(3) Read ‘**End setting**’ menu.

Example of a readable string (mod 10, weight 1):

12345672

Command
[BJG \$DQ7\$G [BJH

● ISBN CD setting

(Set ISBN check digit to 8 digit- numeric)

(1) Read ‘**Set string template**’ menu.

(2) Read “d8i” with “Direct input” menu.

(3) Read ‘**End setting**’ menu.

Example of a readable string (mod 11, weight 98765432):

433900684X

Command
[BJG \$DQ8\$I [BJH

Table 2. OCR string template edit symbols

Edit Symbol	Description	Scanned Characters
a	Numeric, Alphabet (uppercase)	“0123456789 ABCDEFGHIJKLMNOPQRSTUVWXYZ”
d	Numeric	“0123456789”
c	Alphabet (uppercase)	“ABCDEFGHIJKLMNOPQRSTUVWXYZ”
e	Numeric, Alphabet, ‘ ’, Variable length	“0123456789 ABCDEFGHIJKLMNOPQRSTUVWXYZ ’ ’(space)”
b	Numeric, Alphabet, Variable length	“0123456789 ABCDEFGHIJKLMNOPQRSTUVWXYZ”
“	Space symbol	“ ’(space)”
r	Linefeed symbol	“\r”(linefeed)
g	CD symbol CD for the string before set.	“0123456789”
i	ISBN CD symbol	“0123456789X”