Programming Guide

Based on Newland Unified Commands Set (UCS)

Revision History

Version	Description	Date
V1.0.0	Initial release.	February 12, 2018

1. UCS protocol syntax

{prefix}{storage}{Tag subtag}{data}[,subtag{data}][;Tag subtag{data}][…]{suffix}

Among which, {data} means integrant while [data] means optional data.

2. Command to device

- Prefix:

Setting/enquiring command	ASCII: ~<SOH> 0000 HEX: 7E 01 30 30 30 30

- Storage type:

@	"@" means permanent setting which will not be lost by removing power from the scanner or rebooting it (Stored in flash)
#	"#" means temporary setting which will be lost by removing power from the scanner or rebooting it. (Stored in RAM)

- Tag:

Category, 3 characters

See "programming command" under "program barcode" from corresponding **product user guide**

- Subtag:

Function item under “Tag”, 3 characters

- Data:

- Suffix:

end	ASCII: ;<ETX> HEX: 3B 03

3. Device response

- Prefix:

Head	ASCII: <STX><SOH>0000 HEX: 02 01 30 30 30 30

- Storage type:

@	"@" means permanent setting which will not be lost by removing power from the scanner or rebooting it (Stored in flash)
#	"#" means temporary setting which will be lost by removing power from the scanner or rebooting it. (Stored in RAM)

- Data: Following which, a special responding character will be sent to the host

<ACK> HEX: 06	Successful operation
<NAK> HEX: 15	Data is not belong to the supported range (while setup) or incorrect format (while enquiry)
<ENQ> HEX: 05	Function or type not exist

- Suffix

End	ASCII: ;<ETX> HEX: 3B 03

4. Inquiring commands

Following {Tag subtag}, below three symbols are on behalf of special meaning:

* 2A	enquiring present configuration
& 26	enquiring factory default value
^ 5E	enquiring available value range

If {subtag} omitted, means enquiry of all configuration value under the {Tag}

If {Tag subtag} omitted, means enquiry of all configuration value of the device

Within “available value range”, “-“ means continuous range, “|” means separated value. For example:

1|3-5|7|9-20 means all those 17 digits from 1 to 20 except for 2, 6, 8.

For those configuration items having both setup value range and preset value, we use “_” to separate setup value range and preset value, “|” to separate each preset value, and “:” to separate presetting name and preset value. For example:

Good read beep frequency range:

GRBFRQ20-20000_Lowest:800|Low:1600|Medium:2730|High:4200;

5. Examples

- Example 1: enable CODE11, set minimum length as 12 and maximum length as 22

Tag: C11

Subtag: ENA

Data: 1

Subtag: MIN

Subtag: MAX

Sending:

HEX: 7E 01 30 30 30 30 40 43 31 31 45 4E 41 31 2C 4D 49 4E 31 32 2C 4D 41 58 32 32 3B 03

ASCII: ~<SOH>0000@C11ENA1,MIN12,MAX22;<ETX>

Response:

HEX: 02 01 30 30 30 30 40 43 31 31 45 4E 41 31 06 2C 4D 49 4E 31 32 06 2C 4D 41 58 32 32 06 3B 03

ASCII: <STX><SOH>0000@C11ENA1<ACK>,MIN12<ACK>,MAX22<ACK>;<ETX>

- Example 2: enquire all configuration of CODE 128

{Tag} of CODE 128 is 128

Sending:

HEX: 7E 01 30 30 30 30 40 31 32 38 2A 3B 03

ASCII: ~<SOH>0000@128*;<ETX>

Response:

HEX: 02 01 30 30 30 30 40 31 32 38 44 45 46 06 2C 45 4E 41 31 06 2C 4D 49 4E 35 06 2C 4D 41 58 38 30 06 2C 43 48 4B 31 06 2C 46 4E 43 06 2C 3B 03

ASCII:

<STX><SOH>0000@128DEF<ACK>,ENA1<ACK>,MIN5<ACK>,MAX80<ACK>,CHK1<ACK>,FNC<ACK>;<

ETX>

- Example 3: set RS232 baud rate as 115200

Sending:

HEX: 7E 01 30 30 30 30 40 32 33 32 42 41 44 38 3B 03

ASCII: ~<SOH> 0000@232BAD8;<ETX>

Response:

HEX: 02 01 30 30 30 30 40 32 33 32 42 41 44 38 06 3B 03

ASCII: <STX><SOH> 0000@232BAD8<ACK>;<ETX>

- Example 4: set decode session timeout as 5000ms

Sending:

HEX: 7E 01 30 30 30 30 40 4F 52 54 53 45 54 35 30 30 30 3B 03

ASCII: ~<SOH>0000@ORTSET5000;<ETX>

Response:

HEX: 02 01 30 30 30 30 40 4F 52 54 53 45 54 35 30 30 30 06 3B 03

ASCII: <STX><SOH> 0000@ORTSET5000<ACK>;<ETX>

- Example 5: set custom prefix as AB (HEX: 0x41 0x42)

Sending:

HEX: 7E 01 30 30 30 30 40 43 50 52 53 45 54 34 31 34 32 3B 03

ASCII: ~<SOH>0000@CPRSET4142;<ETX>

Response:

HEX: 02 01 30 30 30 30 40 43 50 52 53 45 54 34 31 34 32 06 3B 03

ASCII: <STX><SOH>0000@CPRSET4142<ACK>;<ETX>

- Example 6: start/stop scanning (device stop scanning if exceed “one read timeout” or barcode decoded or receive command of stop scanning), that’s valid in trigger mode and level trigger mode.

1) Set device scanning mode as level trigger mode

Sending:

HEX: 7E 01 30 30 30 30 40 53 43 4E 4D 4F 44 30 3B 03

ASCII: ~<SOH>0000@SCNMOD0;<ETX>

Response:

HEX: 02 01 30 30 30 30 40 53 43 4E 4D 4F 44 30 06 3B 03

ASCII: <STX><SOH>0000@SCNMOD0<ACK>;<ETX>

2) To start scanning

Sending:

HEX: 7E 01 30 30 30 30 23 53 43 4E 54 52 47 31 3B 03

ASCII: ~<SOH>0000#SCNTRG1; <ETX>

Response:

HEX: 02 01 30 30 30 30 23 53 43 4E 54 52 47 31 06 3B 03
ASCII: <STX><SOH>0000#SCNTRG1<ACK>;<ETX>

3) To stop scanning

Sending:

HEX: 7E 01 30 30 30 30 23 53 43 4E 54 52 47 30 3B 03

ASCII: ~<SOH>0000#SCNTRG0; <ETX>

Response:

HEX: 02 01 30 30 30 30 23 53 43 4E 54 52 47 30 06 3B 03
ASCII: <STX><SOH>0000#SCNTRG0<ACK>;<ETX>

Newland EMEA
+31 (0) 345 87 00 33
info@newland-id.com

Newland D-A-CH
+49 (0) 6182 82916-16
info@newland-id.de

Newland UK
+44 (0) 1442 212 020
sales@newland-id.co.uk

Newland Nordic
+46 (0) 708 847 767
nordic@newland-id.com

Newland Ibérica
+34 (0) 93 303 74 66
info@newland-id.es

Newland France
+31 (0) 345 87 00 33
france@newland-id.com

Newland Middle East
+31 (0) 345 87 00 33
middleeast@newland-id.com

Newland South Africa
+27 (0) 11 553 8010
info@newland-id.co.za

Newland Italy
+39 (0) 342 056 2227
italy@newland-id.com

Newland Russia
+31 (0) 345 87 00 33
russia@newland-id.com

Newland Turkey & Iran
+90 (0) 544 538 40 49
turkey@newland-id.com
iran@newland-id.com