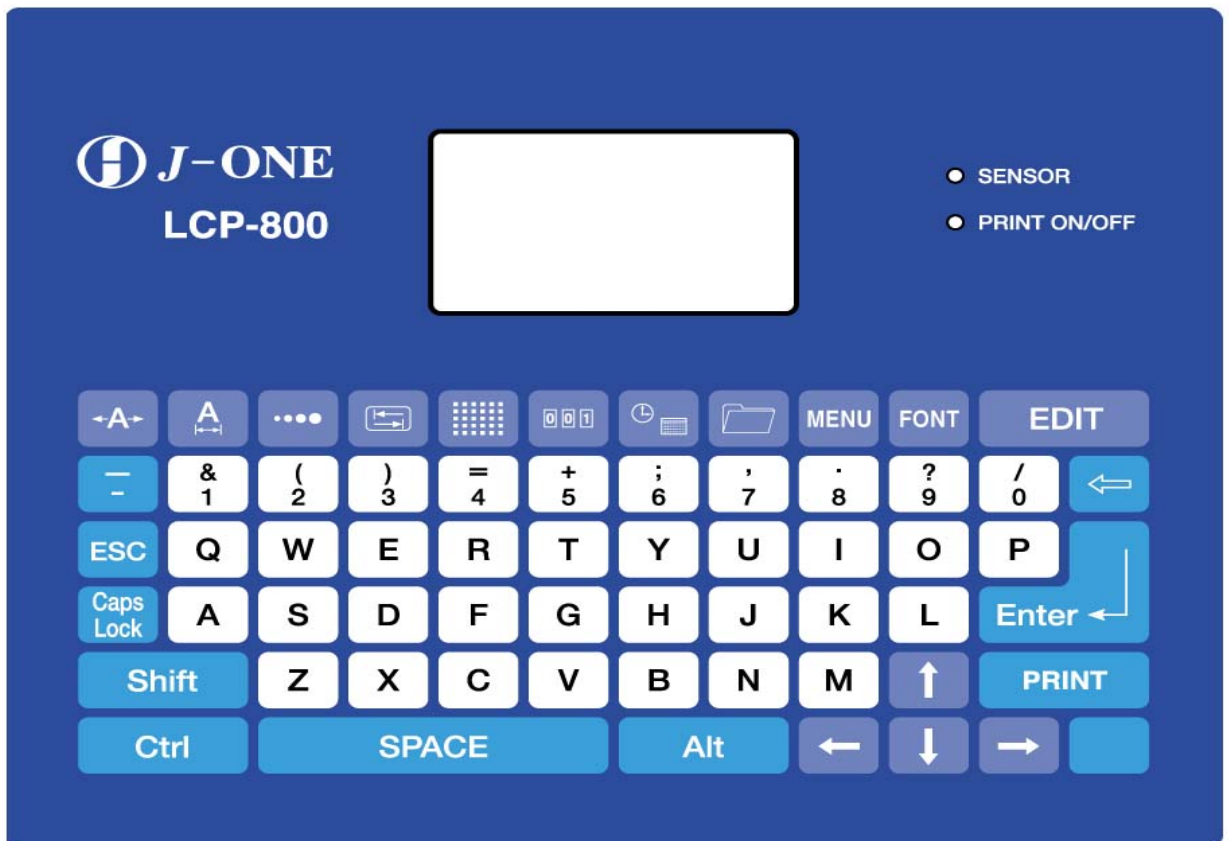


RS-232C Protocol Interface

[For LCP-800+]



()

<http://www.seamyung.co.kr>

TEL. 055) 372-1333 FAX. 055) 372-1332

=

=

1.

2.

3.

4.

4.1.

4.2.

4.3.

5. LCP - 800

ASCII Control Chart



1.

(RS-232C Serial Communication Cable Pinout)

- Host(25 Pin) LCP-800(9 Pin)

Host	LCP-800
2	2
3	3
7	5

- Host(9 Pin) LCP-800(9 Pin)

Host	LCP-800
2	3
3	2
5	5

2.

(RS-232C Serial Communication Port)

(Baud Rate)	9600 BPS
(Data Bit)	8 Bit
(Stop Bit)	1 Bit
(Parity Bit)	NONE



3.

[]

STX	COMMAND	DATA	EOT
-----	---------	------	-----

- STX : HEX(02) 1 :
- COMMAND : 1 Byte
- DATA : 가 0~25 Byte(ASCII CODE)
- EOT : Hex(04) 1 Byte :

[LCP-800]

SOH	COMMAND	DATA	ETX
-----	---------	------	-----

- SOH : HEX(01) 1 :
- COMMAND : 1 Byte
- DATA : 가 0~25 Byte(ASCII CODE)
- ETX : Hex(03) 1 Byte :

Host가 (STX COMMAND DATA EOT) LCP-800

[ACK]

[NAK]

가

SOH	COMMAND	DATA	ETX
-----	---------	------	-----

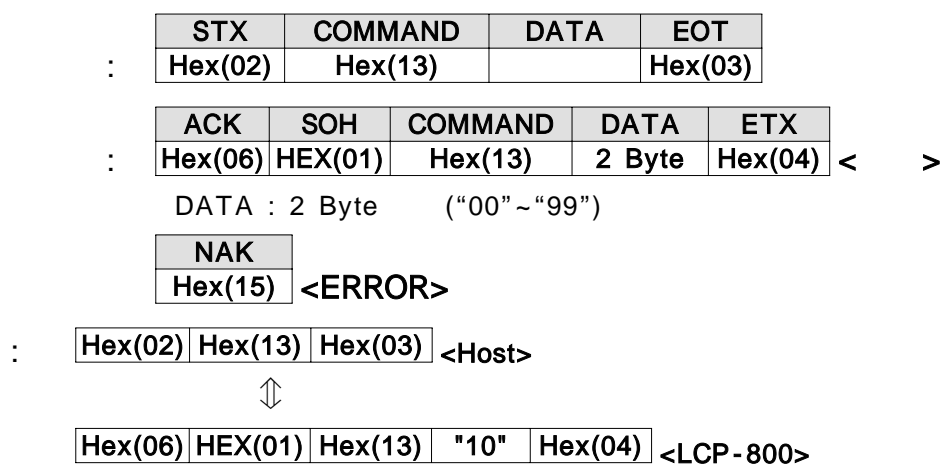


4.

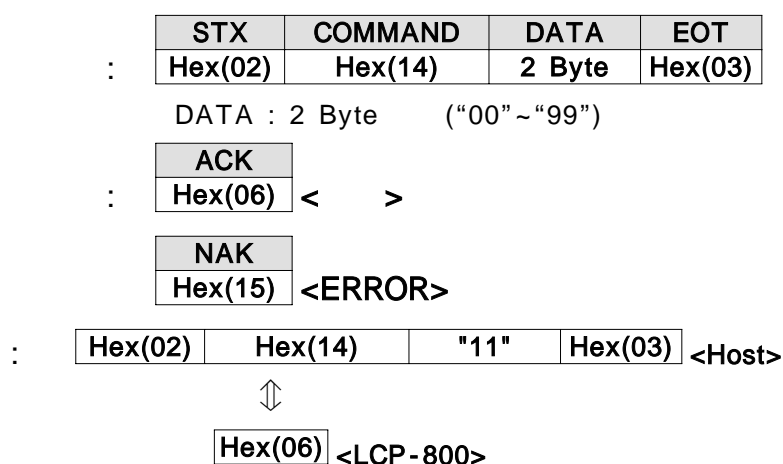
PC LCP-800 / .

4.1.

4.1.1. < HEX(13) >



4.1.2. < HEX(14) >



4.1.3. (Remote Date) < HEX(16) >



STX	COMMAND	DATA	EOT
Hex(02)	Hex(16)	가 (ASCII)	Hex(03)

DATA : 0~252 Byte 가 (ASCII)

ACK
Hex(06) < >

NAK
Hex(15) <ERROR>

: Hex(02) Hex(16) "1234567890ABCDEF" Hex(03) <Host>

⇕

Hex(06) <LCP-800>
<LCP-800 >
A) 1 : *****abcd*****
2 : 1234***
B) 1 : AB*****
C) 1 : 12*****
A) 1 : 12345abcd67890
2 : 1234ABC
B) 1 : AB1234567890ABCDEF
C) 1 : 1212345

가
(SPACE) . 가

4.1.4. < HEX(50) : 'P' >

STX	COMMAND	DATA	EOT
Hex(02)	Hex(50) or ' P '		Hex(03)

ACK
Hex(06) < >

NAK
Hex(15) <ERROR>

: Hex(02) ' P ' Hex(03) <Host> Hex(06) <LCP-800>

LCP-800 OFF

4.2.



4.2.1. < HEX(61) : 'a' >

:

STX	COMMAND	DATA	EOT
Hex(02)	Hex(61) or 'a'		Hex(03)

:

ACK	SOH	COMMAND	DATA	ETX
Hex(06)	HEX(01)	Hex(61) or 'a'	2 Byte	Hex(04)

< >

DATA : 2 Byte ("00" ~ "99")

NAK
Hex(15) <ERROR>

:

Hex(02)	Hex(61)	Hex(03)
---------	---------	---------

<Host>



Hex(06)	HEX(01)	Hex(61)	"10"	Hex(04)
---------	---------	---------	------	---------

<LCP-800>

4.2.2. < HEX(41) : 'A' >

:

STX	COMMAND	DATA	EOT
Hex(02)	Hex(41) or 'A'	2 Byte	Hex(03)

DATA : 2 Byte ("00" ~ "99")

:

ACK
Hex(06) < >

NAK
Hex(15) <ERROR>

:

Hex(02)	HEX(41)	"11"	Hex(03)
---------	---------	------	---------

<Host>



Hex(06)

<LCP-800>



4.2.3. < HEX(62) : 'b' >

STX	COMMAND	DATA	EOT
Hex(02)	Hex(62) or 'b'		Hex(03)

ACK	SOH	COMMAND	DATA	ETX
Hex(06)	HEX(01)	Hex(62) or 'b'	2 Byte	Hex(04)

DATA : 2 Byte ("00" ~ "99")

NAK
Hex(15) <ERROR>

: Hex(02) Hex(62) Hex(03) <Host>



Hex(06) HEX(01) Hex(62) "10" Hex(04) <LCP-800>

4.2.4. < HEX(42) : 'A' >

STX	COMMAND	DATA	EOT
Hex(02)	Hex(42) or 'B'	2 Byte	Hex(03)

DATA : 2 Byte ("00" ~ "99")

ACK
Hex(06) < >

NAK
Hex(15) <ERROR>

: Hex(02) HEX(42) "11" Hex(03) <Host>



Hex(06) <LCP-800>



4.2.5. < HEX(63) : 'c' >

STX	COMMAND	DATA	EOT
Hex(02)	Hex(63) or 'c'		Hex(03)

ACK	SOH	COMMAND	DATA	ETX
Hex(06)	HEX(01)	Hex(63) or 'c'	2 Byte	Hex(04)

DATA : 2 Byte ("00" ~ "99")

NAK
Hex(15) <ERROR>

: Hex(02) Hex(63) Hex(03) <Host>



Hex(06) HEX(01) Hex(63) "10" Hex(04) <LCP-800>

4.2.6. < HEX(43) : 'C' >

STX	COMMAND	DATA	EOT
Hex(02)	Hex(43) or 'C'	2 Byte	Hex(03)

DATA : 2 Byte ("00" ~ "99")

ACK
Hex(06) < >

NAK
Hex(15) <ERROR>

: Hex(02) HEX(43) "11" Hex(03) <Host>



Hex(06) <LCP-800>



4.2.7. < HEX(64) : 'd' >

	STX	COMMAND	DATA	EOT
:	Hex(02)	Hex(64) or 'd'		Hex(03)

	ACK	SOH	COMMAND	DATA	ETX		
:	Hex(06)	HEX(01)	Hex(64) or 'd'	2 Byte	Hex(04)	<	>

DATA : 2 Byte ("00" ~ "99")

	NAK	
:	Hex(15)	<ERROR>

:	Hex(02)	Hex(64)	Hex(03)	<Host>
---	---------	---------	---------	--------



	Hex(06)	HEX(01)	Hex(64)	"10"	Hex(04)	<LCP-800>
--	---------	---------	---------	------	---------	-----------

4.2.8. < HEX(44) : 'D' >

	STX	COMMAND	DATA	EOT
:	Hex(02)	Hex(44) or 'D'	2 Byte	Hex(03)

DATA : 2 Byte ("00" ~ "99")

	ACK	
:	Hex(06)	< >

	NAK	
:	Hex(15)	<ERROR>

:	Hex(02)	HEX(44)	"11"	Hex(03)	<Host>
---	---------	---------	------	---------	--------



	Hex(06)	<LCP-800>
--	---------	-----------



4.2.9. < HEX(65) : 'e' >

STX	COMMAND	DATA	EOT
Hex(02)	Hex(65) or 'e'		Hex(03)

ACK	SOH	COMMAND	DATA	ETX
Hex(06)	HEX(01)	Hex(65) or 'e'	2 Byte	Hex(04)

DATA : 2 Byte ("00"~"99") - 1~2
'0' - , '1' -

NAK
Hex(15) <ERROR>

: Hex(02) Hex(65) Hex(03) <Host>



Hex(06) HEX(01) Hex(65) "10" Hex(04) <LCP-800>

4.2.10. < HEX(43) : 'E' >

STX	COMMAND	DATA	EOT
Hex(02)	Hex(45) or 'E'	2 Byte	Hex(03)

DATA : 2 Byte ("00"~"99") - 1~2
'0' - , '1' -

ACK
Hex(06) < >

NAK
Hex(15) <ERROR>

: Hex(02) HEX(45) "11" Hex(03) <Host>

Hex(06) <LCP-800>

Hex(02) HEX(45) "1X" Hex(03) <Host>

Hex(06) <LCP-800> :

Hex(02) HEX(45) "2X" Hex(03) <Host>

Hex(15) <LCP-800>

[]

"X"



4.2.11. (Extra-Space) < HEX(66) : 'f' >

STX	COMMAND	DATA	EOT
Hex(02)	Hex(66) or 'f'		Hex(03)

ACK	SOH	COMMAND	DATA	ETX
Hex(06)	HEX(01)	Hex(66) or 'f'	4 Byte	Hex(04)

DATA : 4 Byte (1 : "00" ~ "99", 2 : "00" ~ "99")

NAK
Hex(15) <ERROR>

: Hex(02) Hex(66) Hex(03) <Host>



Hex(06) HEX(01) Hex(66) "1020" Hex(04) <LCP-800>

4.2.12. (Extra-Space) < HEX(46) : 'F' >

STX	COMMAND	DATA	EOT
Hex(02)	Hex(46) or 'F'	2 Byte	Hex(03)

DATA : 4 Byte (1 : "00" ~ "99", 2 : "00" ~ "99")

[] "X"

ACK
Hex(06) < >

NAK
Hex(15) <ERROR>

: Hex(02) HEX(46) "1122" Hex(03) <Host> Hex(06) <LCP-800>

Hex(02) HEX(46) "11XX" Hex(03) <Host> Hex(06) <LCP-800> :

Hex(02) HEX(46) "221X" Hex(03) <Host> Hex(15) <LCP-800>

[] "XX"



4.2.13. < HEX(67) : 'g' >

STX	COMMAND	DATA	EOT
Hex(02)	Hex(67) or 'g'		Hex(03)

ACK	SOH	COMMAND	DATA	ETX
Hex(06)	HEX(01)	Hex(67) or 'g'	1 Byte	Hex(04)

DATA : 1 Byte ("0"~"9")

NAK
Hex(15) <ERROR>

: Hex(02) Hex(67) Hex(03) <Host>



Hex(06) HEX(01) Hex(67) "3" Hex(04) <LCP-800>

4.2.14. < HEX(47) : 'G' >

STX	COMMAND	DATA	EOT
Hex(02)	Hex(47) or 'G'	1 Byte	Hex(03)

DATA : 1 Byte ("0"~"9")

ACK
Hex(06) < >

NAK
Hex(15) <ERROR>

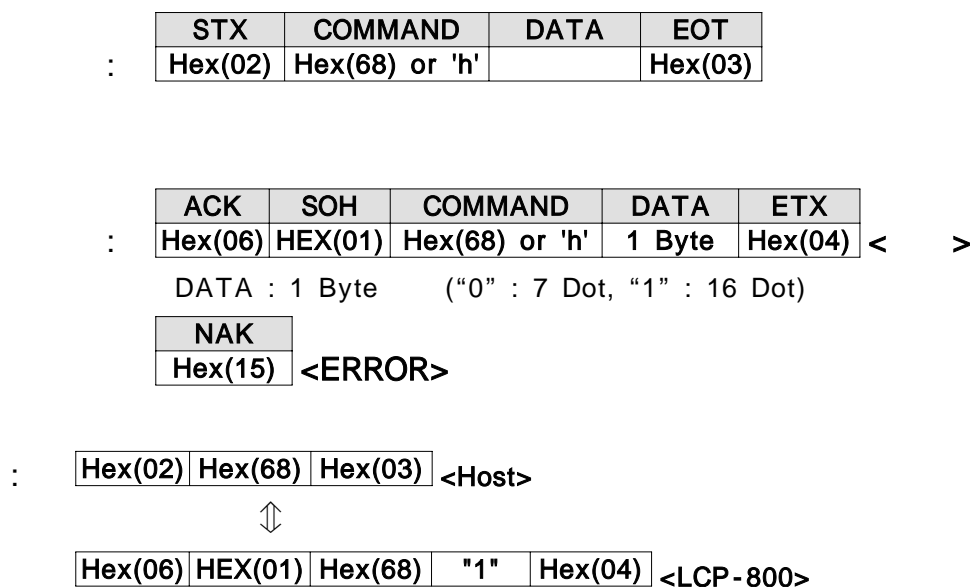
: Hex(02) HEX(47) "1" Hex(03) <Host>



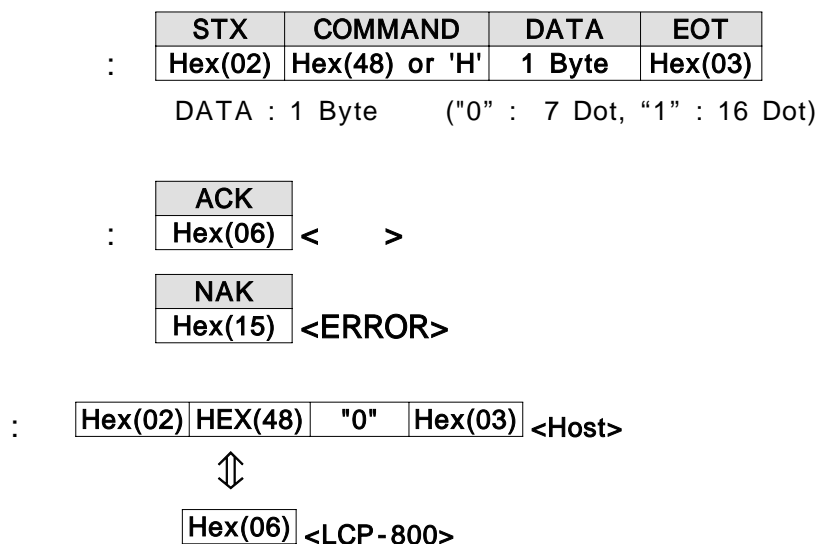
Hex(06) <LCP-800>



4.2.15. < HEX(68) : 'h' >



4.2.16. < HEX(48) : 'H' >





4.2.17. < HEX(69) : 'i' >

STX	COMMAND	DATA	EOT
Hex(02)	Hex(69) or 'i'		Hex(03)

ACK	SOH	COMMAND	DATA	ETX
Hex(06)	HEX(01)	Hex(69) or 'i'	1 Byte	Hex(04)

DATA : 1 Byte ("0" : ON, "1" : OFF)

NAK
Hex(15) <ERROR>

: Hex(02) Hex(69) Hex(03) <Host>



Hex(06) HEX(01) Hex(69) "1" Hex(04) <LCP-800>

4.2.18. < HEX(49) : ' I ' >

STX	COMMAND	DATA	EOT
Hex(02)	Hex(49) or ' I '	1 Byte	Hex(03)

DATA : 1 Byte ("0" : ON, "1" : OFF)

ACK
Hex(06) < >

NAK
Hex(15) <ERROR>

: Hex(02) HEX(49) "0" Hex(03) <Host>



Hex(06) <LCP-800>



4.2.19. < HEX(6A) : 'j' >

:

STX	COMMAND	DATA	EOT
Hex(02)	Hex(6A) or 'j'		Hex(03)

:

ACK	SOH	COMMAND	DATA	ETX
Hex(06)	HEX(01)	Hex(6A) or 'j'	1 Byte	Hex(04)

< >

DATA : 1 Byte ("0" : ON, "1" : OFF)

NAK
Hex(15) <ERROR>

:

Hex(02)	Hex(6A)	Hex(03)
---------	---------	---------

<Host>



Hex(06)	HEX(6A)	Hex(70)	"1"	Hex(04)
---------	---------	---------	-----	---------

<LCP-800>

4.2.20. < HEX(4A) : ' J ' >

:

STX	COMMAND	DATA	EOT
Hex(02)	Hex(4A) or ' J '	1 Byte	Hex(03)

DATA : 1 Byte ("0" : ON, "1" : OFF)

:

ACK
Hex(06) < >

NAK
Hex(15) <ERROR>

:

Hex(02)	HEX(4A)	"0"	Hex(03)
---------	---------	-----	---------

<Host>



Hex(06) <LCP-800>



4.2.21. < HEX(6B) : 'k' >

STX	COMMAND	DATA	EOT
Hex(02)	Hex(6B) or 'k'		Hex(03)

ACK	SOH	COMMAND	DATA	ETX
Hex(06)	HEX(01)	Hex(6B) or 'k'	1 Byte	Hex(04)

DATA : 1 Byte ("0" : ON, "1" : OFF)

NAK
Hex(15) <ERROR>

: Hex(02) Hex(6B) Hex(03) <Host>



Hex(06) HEX(01) Hex(6B) "1" Hex(04) <LCP-800>

4.2.22. < HEX(4B) : 'K' >

STX	COMMAND	DATA	EOT
Hex(02)	Hex(4B) or 'K'	1 Byte	Hex(03)

DATA : 1 Byte ("0" : ON, "1" : OFF)

ACK
Hex(06) < >

NAK
Hex(15) <ERROR>

: Hex(02) HEX(4B) "0" Hex(03) <Host>



Hex(06) <LCP-800>

4.3.



4.3.1. < HEX(6C) : ' I ' >

STX	COMMAND	DATA	EOT
Hex(02)	Hex(6C) or 'I'		Hex(03)

ACK	SOH	COMMAND	DATA	ETX
Hex(06)	HEX(01)	Hex(6C) or 'I'	1 Byte	Hex(04)

DATA : 9 Byte ("000000000" ~ "999999999")

NAK
Hex(15) <ERROR>

: Hex(02) Hex(6C) Hex(03) <Host>



Hex(06) HEX(01) Hex(6C) "123456789" Hex(04) <LCP-800>

4.3.2. < HEX(4C) : 'L' >

STX	COMMAND	DATA	EOT
Hex(02)	Hex(4C) or 'L'	1 Byte	Hex(03)

DATA : 9 Byte ("000000000" ~ "999999999")

ACK
Hex(06) < >

NAK
Hex(15) <ERROR>

: Hex(02) HEX(4C) "123456789" Hex(03) <Host>



Hex(06) <LCP-800>



4.3.3. < HEX(6D) : 'm' >

STX	COMMAND	DATA	EOT
Hex(02)	Hex(6D) or 'm'		Hex(03)

ACK	SOH	COMMAND	DATA	ETX
Hex(06)	HEX(01)	Hex(6D) or 'm'	1 Byte	Hex(04)

DATA : 9 Byte ("0000000000" ~ "9999999999")

NAK
Hex(15) <ERROR>

: Hex(02) Hex(6D) Hex(03) <Host>



Hex(06) HEX(01) Hex(6D) "123456789" Hex(04) <LCP-800>

4.3.4. < HEX(4D) : 'M' >

STX	COMMAND	DATA	EOT
Hex(02)	Hex(4D) or 'M'	1 Byte	Hex(03)

DATA : 9 Byte ("0000000000" ~ "9999999999")

ACK
Hex(06) < >

NAK
Hex(15) <ERROR>

: Hex(02) HEX(4D) "123456789" Hex(03) <Host>



Hex(06) <LCP-800>



4.3.5. < HEX(6E) : 'n' >

STX	COMMAND	DATA	EOT
Hex(02)	Hex(6E) or 'n'		Hex(03)

ACK	SOH	COMMAND	DATA	ETX
Hex(06)	HEX(01)	Hex(6E) or 'n'	1 Byte	Hex(04)

DATA : 9 Byte ("0000000000" ~ "9999999999")

NAK
Hex(15)

<ERROR>

: Hex(02) Hex(6E) Hex(03) <Host>



Hex(06) HEX(01) Hex(6E) "123456789" Hex(04) <LCP-800>

4.3.6. < HEX(4E) : 'N' >

STX	COMMAND	DATA	EOT
Hex(02)	Hex(4E) or 'N'	1 Byte	Hex(03)

DATA : 9 Byte ("0000000000" ~ "9999999999")

ACK
Hex(06)

< >

NAK
Hex(15)

<ERROR>

: Hex(02) HEX(4E) "123456789" Hex(03) <Host>



Hex(06) <LCP-800>

4.3.7. < HEX(6F) : 'o' >



STX	COMMAND	DATA	EOT
Hex(02)	Hex(6F) or 'o'		Hex(03)

ACK	SOH	COMMAND	DATA	ETX
Hex(06)	HEX(01)	Hex(6F) or 'o'	1 Byte	Hex(04)

DATA : 9 Byte ("0000000000" ~ "9999999999")

NAK
Hex(15)

<ERROR>

Hex(02)	Hex(6F)	Hex(03)	<Host>
---------	---------	---------	--------

⇕

Hex(06)	HEX(01)	Hex(6F)	"123456789"	Hex(04)	<LCP-800>
---------	---------	---------	-------------	---------	-----------

4.3.8. < HEX(4F) : 'O' >

STX	COMMAND	DATA	EOT
Hex(02)	Hex(4F) or 'O'	1 Byte	Hex(03)

DATA : 9 Byte ("0000000000" ~ "9999999999")

ACK
Hex(06)

< >

NAK
Hex(15)

<ERROR>

Hex(02)	HEX(4F)	"123456789"	Hex(03)	<Host>
---------	---------	-------------	---------	--------

⇕

Hex(06)	<LCP-800>
---------	-----------



5. LCP-800

LCP-800 Controller
ENQ[HEX(05)] .

Host



ASCII Control Chart

	Char	Dec	Hex	Char	Dec	Hex	Char	Dec	Hex	Char	Dec	Hex
Ctrl@	NUL	0	00		32	20	@	64	40	`	96	60
CtrlA	SOH	1	01	!	33	21	A	65	41	a	97	61
CtrlB	STX	2	02		34	22	B	66	42	b	98	62
CtrlC	EXT	3	03	#	35	23	C	67	43	c	99	63
CtrlD	EOT	4	04	\$	36	24	D	68	44	d	100	64
CtrlE	ENQ	5	05	%	37	25	E	69	45	e	101	65
CtrlF	ACK	6	06	&	38	26	F	70	46	f	102	66
CtrlG	BEL	7	07		39	27	G	71	47	g	103	67
CtrlH	BS	8	08	(	40	28	H	72	48	h	104	68
Ctrl I	HT	9	09	)	41	29	I	73	49	i	105	69
Ctrl J	LF	10	0A	*	42	2A	J	74	4A	j	106	6A
CtrlK	VT	11	0B	+	43	2B	K	75	4B	k	107	6B
CtrlL	FF	12	0C	,	44	2C	L	76	4C	l	108	6C
CtrlM	CR	13	0D	.	45	2D	M	77	4D	m	109	6D
CtrlN	SO	14	0E	.	46	2E	N	78	4E	n	110	6E
CtrlO	SI	15	0F	/	47	2F	O	79	4F	o	111	6F
CtrlP	DLE	16	10	0	48	30	P	80	50	p	112	70
CtrlQ	DC1	17	11	1	49	31	Q	81	51	q	113	71
CtrlR	DC2	18	12	2	50	32	R	82	52	r	114	72
CtrlS	DC3	19	13	3	51	33	S	83	53	s	115	73
CtrlT	DC4	20	14	4	52	34	T	84	54	t	116	74
CtrlU	NAK	21	15	5	53	35	U	85	55	u	117	75
CtrlV	SYN	22	16	6	54	36	V	86	56	v	118	76
CtrlW	ETB	23	17	7	55	37	W	87	57	w	119	77
CtrlX	CAN	24	18	8	56	38	X	88	58	x	120	78
CtrlY	EM	25	19	9	57	39	Y	89	59	y	121	79
CtrlZ	SUB	26	1A	:	58	3A	Z	90	5A	z	122	7A
Ctrl [	ESC	27	1B	;	59	3B	[	91	5B	{	123	7B
Ctrl |	FS	28	1C	<	60	3C		92	5C	|	124	7C
Ctrl]	GS	29	1D	=	61	3D	]	93	5D	}	125	7D
Ctrl^	RS	30	1E	>	62	3E	^	94	5E	~	126	7E
Ctrl_	US	31	1F	?	63	3F	-	95	5F		127	7F