

## SE800 RS-232 Remote Control Command

VER: 1.11

Release date: 2003/10/07

### 1 Physical layer

1.1 Control output format: RS-232C

1.2 Communication rate: 57600 BPS

1.3 Data format: 8 bits serial, LSB first, 1 start bit, 1 stop bit, odd parity

### 2. Data link layer

#### 2.1 Frame format

1st	2nd	3rd	4th	5th	6th	7th	,,,	Last-2	Last-1	Last
Header	ID	Length	Data0	Data1	Data2	Data3	,,,	Chksum_L	Chksum_H	End

#### 1) Header

Code consisting of one byte for frame synchronization.

The frame header send from the master machine is termed the command header.

The frame header send from the slave machine is termed the return header.

The command header byte is fixed as fallow.

1st: F0h (base 16)

The return header byte is fixed as fallow.

1st: FCh (base 16)

#### 2) ID number

The equipment ID number is composed of 8 bits

The ID of SE800 : 21h (base 16)

### 3) Length

The length is the sum of bytes from the header to the end.

It is composed of 8 bits.

$6h \text{ (base 16)} < \text{Length} \leq 80h \text{ (base 16)}$

### 4) Data

Data block used by application layer.

Refer to Section 3.

### 5) Checksum

The 8 bits checksum is obtain from header to the last data, then convert to two numeric ASCII code.

$\text{Checksum} = \text{header} + \text{ID} + \text{legth} + \text{data0} + \text{data1} + \dots + \text{data\_last}$

$\text{chksum\_L} = (\text{low nibble of checksum}) + 30h$

$\text{chksum\_H} = (\text{high nibble of checksum}) + 30h$

### 6) End

The end byte are fixed to FFh(base 16).

### 3. Application layer

The application layer designates the command structure and contents.

#### 3.1 Command data format

4 <sup>th</sup>	5th	6th	7th	8th	9th	10th	11th	...
Command group	Operated #0	Operated #1	Operated #2	Operated #3	Operated #4	Operated #5	Operated #6	...

1) The command group

03h(base 16) = SE800 control command

2) The operated refer to section 4.

#### 3.2 Return data format

4 <sup>th</sup>	5th	6th	7 <sup>th</sup>	8th	9th	10th	11th	...
Command status	parameter #0	parameter #1	parameter #2	parameter #3	parameter #4	parameter #5	parameter #6	...

1) The command status

03h=SE800 control command status

2) The parameter refer to section 6.

#### 4. The operated of SE800 control command

5th	6th	7th	8th	9th	10th	11th
Operated #0	Operated #1	Operated #2	Operated #3	Operated #4	Operated #5	Operated #6
Key code	T-bar low	T-bar high	X_low	X_high	Y_low	Y_high

4.1. OP#0 = control key code.( refer to section 5)

4.2. OP#1 and OP#2 = T-BAR control value

The T-bar control value is 10 bits and 1 enable bit.

The bit7 of OP#1 = T-bar control enable bit

The bit4 to bit 0 of OP#1 = the low 5 bits of the T-bar control value.

The bit4 to bit 0 of OP#2 = the high5 bits of the T-bar control value.

4.3. OP#3 to OP#6 = joy-stick control value

The joy-stick control value is 1 enable bit ,10 bits of X value and 10 bits Y value.

The bit7 of OP#3 = joy-stick control enable bit.

The bit4 to bit 0 of OP#3 = the low 5 bits of the joy-stick's X control value.

The bit4 to bit 0 of OP#4 = the high5 bits of the joy-stick's X control value.

The bit4 to bit 0 of OP#5 = the low 5 bits of the joy-stick's Y control value.

The bit4 to bit 0 of OP#6 = the high5 bits of the joy-stick's Y control value.

## 5. The SE800 control key code

(base 16)

01h = key\_main\_A

02h = key\_main\_B

03h = key\_main\_C

04h = key\_main\_D

05h = key\_main\_BK

06h = key\_sub\_A

07h = key\_sub\_B

08h = key\_sub\_C

09h = key\_sub\_D

0ah = key\_sub\_BK

0bh = key\_audio\_A

0ch = key\_audio\_B

0dh = key\_audio\_C

0eh = key\_audio\_D

0fh = key\_a+v

10h = key\_gpi

11h = key\_gpi\_play

12h = key\_take = key\_paly

13h = key\_Tbar\_audio

14h = key\_Tbar\_video

18h = key\_f10

19h = key\_f20

1ah = key\_f1

1bh = key\_f2

1ch = key\_f3

1dh = key\_f4

1eh = key\_f5

1fh = key\_f6

20h = key\_f7

21h = key\_f8

22h = key\_f9

23h = key\_f0



24h = key\_position = key\_R.G.B\_correction

25h = key\_wipe

26h = key\_miscel = key\_anim.

27h = key\_zoom

28h = key\_freeze

29h = key\_fade

2ah = key\_border\_on

2bh = key\_border\_style

2ch = key\_border\_color

2dh = key\_border\_soft

2eh = key\_background\_on

2fh = key\_background\_color

30h = key\_0

31h = key\_1

32h = key\_2

33h = key\_3

34h = key\_4

35h = key\_5

36h = key\_6

37h = key\_7

38h = key\_8

39h = key\_9

3ah = key\_enter

3bh = key\_speed

3ch = key\_up

3dh = key\_down

3eh = key\_left

3fh = key\_right

40h = key\_mosaic

41h = key\_mosaic\_up

42h = key\_mosaic\_down

43h = key\_paint

44h = key\_paint\_up

45h = key\_paint\_down

46h = key\_pip



47h = key\_pip\_up  
48h = key\_pip\_down  
49h = key\_chroma\_key  
4ah = key\_chmky\_clr\_up  
4bh = key\_chmky\_clr\_down  
4ch = key\_chmky\_lvl\_up  
4dh = key\_chmky\_lvl\_down  
4eh = key\_input\_format\_ABCD  
4fh = key\_input\_type\_select

50h = key\_brightness\_up  
51h = key\_brightness\_down  
52h = key\_contrast\_up  
53h = key\_contrast\_down  
54h = key\_color\_up  
55h = key\_color\_down  
56h = key\_tint\_up (NTSC only) = key\_reset  
57h = key\_tint\_down (NTSC only) = key\_reset\_all  
58h = key\_voice\_sync  
59h = key\_delay\_minus  
5ah = key\_delay\_plus  
5bh = key\_mic\_aux2 = key\_mix\_aux  
5ch = key\_aux1 = key\_music  
5dh = key\_video = key\_VCR  
5eh = key\_master  
5fh = key\_audio\_monitor

## 6. The return parameter of SE800 control command status

5th	6th	7 <sup>th</sup>	8th	9th	10th	11th	12th	„„
parameter #0	parameter #1	parameter #2	parameter #3	parameter #4	parameter #5	parameter #6	Parameter #7	„„
Error code	Effect No.	Effect Speed	LED1	LED2	LED3	LED4	LED5	„„

### 1) The error code

01h = Time out (over 15ms)

02h = length error

03h = checksum error

04h = not support command

05h = operated error

### 2) The effect No.

The value from 0 to 99(63h)

### 3) The effect No.

The effect speed from 0 to 15(fh)

### 4) LED data

The bit = high = LED on

Bit0 of LED1 = LED of key\_take (on the right down angle of the speed LED of SE800)

Bit1 of LED1 = LED of key\_gpi\_play

Bit2 of LED1 = LED of key\_gpi

Bit3 of LED1 = LED of key\_tbar\_audio

Bit4 of LED1 = LED of key\_tbar\_video

Bit5 of LED1 = LED of key\_wipe

Bit6 of LED1 = LED of key\_zoom

Bit7 of LED1 = LED of key\_fade

Bit0 of LED2 = LED of key\_main\_a

Bit1 of LED2 = LED of key\_main\_b

Bit2 of LED2 = LED of key\_main\_c

Bit3 of LED2 = LED of key\_main\_d

Bit4 of LED2 = LED of key\_main\_bk

Bit5 of LED2 = LED of key\_miscel = key\_anim.

Bit6 of LED2 = LED of key\_freeze

Bit7 of LED2 = LED of key\_position





Bit0 of LED3 = LED of key\_sub\_a  
Bit1 of LED3 = LED of key\_sub\_b  
Bit2 of LED3 = LED of key\_sub\_c  
Bit3 of LED3 = LED of key\_sub\_d  
Bit4 of LED3 = LED of key\_sub\_bk  
Bit5 of LED3 = LED of border\_on  
Bit6 of LED3 = LED of border\_soft  
Bit7 of LED3 = LED of background\_on

Bit0 of LED4 = LED of key\_aud\_a  
Bit1 of LED4 = LED of key\_aud\_b  
Bit2 of LED4 = LED of key\_aud\_c  
Bit3 of LED4 = LED of key\_aud\_d  
Bit4 of LED4 = LED of key\_a+v  
Bit5 of LED4 = LED of key\_voice\_sync.  
Bit6 of LED4 = LED of key\_mic  
Bit7 of LED4 = LED of key\_aux2 = key\_aux

Bit0 of LED5 = LED of key\_f1  
Bit1 of LED5 = LED of key\_f2  
Bit2 of LED5 = LED of key\_f3  
Bit3 of LED5 = LED of key\_f4  
Bit4 of LED5 = LED of key\_f5  
Bit5 of LED5 = LED of key\_f6  
Bit6 of LED5 = LED of key\_f7  
Bit7 of LED5 = LED of key\_f8

Bit0 of LED6 = LED of key\_f9  
Bit1 of LED6 = LED of key\_f0  
Bit2 of LED6 = LED of key\_f10  
Bit3 of LED6 = LED of key\_f20  
Bit4 of LED6 = LED of mosaic.  
Bit5 of LED6 = LED of paint  
Bit6 of LED6 = LED of pip  
Bit7 of LED6 = LED of key\_RGB\_correction



Bit0 of LED7 = LED of key\_aux1 = key\_music

Bit1 of LED7 = LED of key\_video = key\_VCR

Bit2 of LED7 = LED of key\_master

Bit3 of LED7 = LED of monitor\_mic

Bit4 of LED7 = LED of monitor\_aux2

Bit5 of LED7 = LED of monitor\_aux1 (music)

Bit6 of LED7 = LED of monitor\_video

Bit7 of LED7 = LED of monitor\_master

Bit0 of LED8 = LED of input\_format\_A

Bit1 of LED8 = LED of input\_format\_B

Bit2 of LED8 = LED of input\_format\_C

Bit3 of LED8 = LED of input\_format\_D

Bit4 of LED8 = LED of input\_type\_CV

Bit5 of LED8 = LED of input\_type\_S

Bit6 of LED8 = LED of input\_type\_YUV

Bit7 of LED8 = LED of input\_type\_DV

Bit0 of LED9 = LED of key\_chromakey\_internal (video)

Bit1 of LED9 = LED of key\_chromakey\_external (PC)

Bit2 of LED9 = LED of

Bit3 of LED9 = LED of led\_bar\_1

Bit0 of LED10 = LED of led\_bar\_2

Bit1 of LED10 = LED of led\_bar\_3

Bit2 of LED10 = LED of led\_bar\_4

Bit3 of LED10 = LED of led\_bar\_u

Bit4 of LED10 = LED of led\_bar\_5

Bit5 of LED10 = LED of led\_bar\_6

Bit6 of LED10 = LED of led\_bar\_7

Bit7 of LED10 = LED of led\_bar\_8

## 7. EXAMPLE

1) RMC90 control SE800, key command = key\_take

The command stream = F0h,21h,0eh,03h,12h,00h,00h,00h,00h,00h,00h,34h,33h,ffh

Length = 14 bytes=0eh

checksum= (f0h+21h+0eh+03h+12h+00h+00h+00h+00h+00h+00h) = 34h

checksum\_low =04h+30h = 34h

checksum\_high=03h+30h = 33h

2) SE800 return data,

The return data stream =

Fch,21h,14h,03h,00h,00h,00h,01h,01h,03h,01h,00h,00h,00h,00h,00h,3ah,33h,ffh

Length =20 bytes=14h

Checksum = (fch+21h+13h+03h+00h+01h+01h+03h+01h+0+0+0+0+0+0) = 3ah

checksum\_low =0ah+30h = 3ah

checksum\_high=03h+30h = 33h

Note: The SE800 automatically return data every video field to update the LED data,

And scan the remote control command every video field.