

HITACHI CONFIDENTIAL

SPEC No. S434R-001

Dec. 21, 2004

For _____

**SPECIFICATIONS
of
Chassis Zoom Camera
VK-S434R**

-Receipt sign-

APPROVED BY

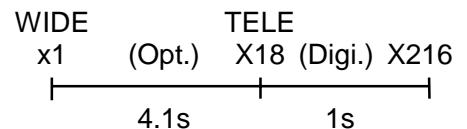
**HITACHI, Ltd., Digital Media Division
HITACHI America Ltd., Home Electronics Division**

A. GENERAL SPECIFICATIONS

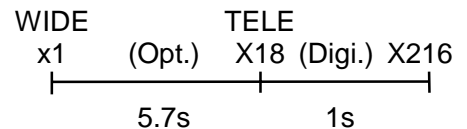
“ * ” mark: default mode

- (1) Signal Format NTSC
- (2) Scanning System 2 : 1 interlacing
- (3) Scanning Frequency Horizontal : 15.734 kHz
 Vertical : 59.94 Hz
- (4) Image Sensor 1/4 type solid state Progressive Scan CCD
 Effective Pixels: 724(H) x 494(V) 360k
 Total Pixels : 758(H) x 504(V) 380k
- (5) Lens F1.6~3.1, f=3.8~68.4mm, X18 Zoom, Video Auto Focus
 Angle of View H : 51°(wide) , 3.0°(tele)
 High Durability Zoom Lens
 - a) Zoom Durability More than 500k Cycles at room temperature (See Page 8.)
 - b) Focus Durability More than 500k Cycles at room temperature (See Page 8.)
 - c) Iris Durability More than 500k Cycles at room temperature (See Page 8.)
 - d) IR Removeable More than 50k Cycles at room temperature (See Page 8.)
- (6) Focus Length ∞~1.0m(tele)~0.01m(wide)*
- (7) Signal Process Digital Signal Processor DSP-6 system
- (8) Sync System Internal* / External Sync (Line Lock: AC-Line Pulse Signal)
- (9) Camera Function Control through RS-232C Signal
 - a) Optical Zoom TELE~WIDE* (Zoom Speed: 4.1s* / 5.7s)
 - b) Digital Zoom OFF* / ON (max. 12* times)

[1] 4.1s Zoom Mode : AF



[2] 5.7s Zoom Mode : AF

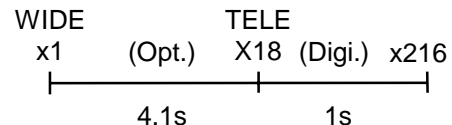


- c) Video Focus Auto* / Manu (NEAR~FAR)
- d) White Balance Auto* / Manu (R Gain/B Gain, Level: UP~DOWN)

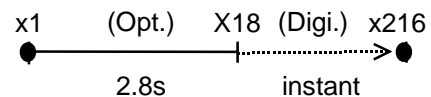
- e) IRcf Control Auto* / Man (soft)
- f) Wide Dynamic Range OFF* / ON (soft)
- g) Shutter Speed Auto: Pro AE (1/60~1/4k s : Seamless)
 Pro AE+* (1/2~1/4*~1/4k s : Seamless)
 Pro AER ([IRcf OFF - ON] + Pro AE)
 Pro AER+ ([IRcf OFF - ON] + Pro AE+)
 Manu: Shutter Priority (1/2~1/60~1/30k s) (w/o WDR)
- h) Iris Control Auto*: (Auto Iris Control Level: UP~DOWN)
 Manu: Exposure Priority (F1.6~F34) (w/o WDR)
- i) Gain Control Auto*: (Maximum Auto Gain Control Level: UP~DOWN)
 Manu: AGC Priority (0dB~30dB) (w/o WDR)
- j) Image Mirror OFF* / ON (w/o WDR) (soft)
- k) Image Flip OFF* / ON (soft)
- l) Image Freeze OFF* / ON (soft)
- m) Privacy Zone Masking OFF* / ON: 2 positions/movement cont.(soft)
- n) Position Preset

[1] Zoom Trace Preset Mode: MF, Trace

- in case of memory
(Ex. Memory Point: ●)

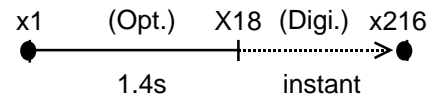


- in case of preset



[2] Preset Mode: MF, No-Trace

- in case of preset



- o) Image Reverse OFF* / ON (w/o WDR) (soft)
- p) Position Preset store Store max.111

(10) Video Output Level

Video level	0.714±0.07 V (100±10 IRE)
Sync level	0.286±0.035 V (40± 5 IRE)
Burst level	0.286±0.035 V (40± 5 IRE)

(11) Color Reproduction

	Red	Yellow	Cyan	Burst
Phase	108±15°	165±18°	280±18°	180° (Base)
Level	240±20%	130±30%	190±35%	100% (Base)

(12) Horizontal Resolution

More than 470 TVL

(13) Luminance S/N

More than 50 dB

(14) Sensitivity

3.0 lx (typ.) [Pro-AE :1/60s , F1.6(wide) , AGC-Gain:28 dB, IRcf ON]

0.2 lx (typ.) [Pro-AE+:1/4s* , F1.6(wide) , AGC-Gain:28dB , IRcf ON]

0.02 lx (typ.) [Pro-AER+*:1/4s* , F1.6(wide) , AGC-Gain:28dB , IRcf OFF]

...at signal level : 40 IRE

(15) Supplied Voltage

9.0 V~12.0V±0.5 V (See Page 9 for restrictions)

(16) Supplied Current

310 mA (steady-state)

540 mA (max.) ...under the zooming and focusing operation

(17) Power Consumption

4.7 W (max.)

(18) Dimensions

50(W) x 60(H) x 89.5(D) mm (excluding connector)

(19) Weight

230 g (approx.)

(20) Appearance/Dimensions

See file: [Out_S434R.tif](#)

(21) Body Color

Black

(22) Packing Ass'ys

See file: [Pac_S434R.tif](#)

(23) Labeling

See file: [Lab_S434R.tif](#)

(24) Optional Accessories

704CNCT118B (118mm length flat-flex cable)

234CNCT140B (140mm length flat-flex cable)

704CNCT200B (200mm length flat-flex cable)

B. MEASUREMENT SPECIFICATIONS

- Standard measurement condition and measurement procedure
See file: [Ms_S434R.doc](#)

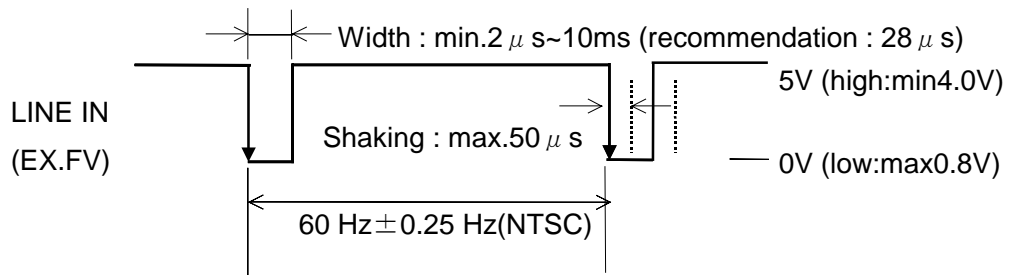
C. EXTERNAL CONTROL SPECIFICATIONS

- External control using RS-232C (command list)
See file: [S434_Comm_E**.doc](#) [**: revision no]

D. INTERFACE

- 9pin-FPC (ELCO : PG-FPC9SM-T) Connecting Condition

Pin No.	Name	I/O	Level
1	RD (for RS-232C)	input	CMOS 5V (low: max 0.8V , high: min 2.0V)
2	SD (for RS-232C)	output	CMOS 5V (low: max 0.1V , high: min 4.4V)
3	GND (for RD&SD)		
4	DC IN	input	DC9.0~12.0V \pm 0.5V
5	GND (for power)		
6	VIDEO OUT	output	1.0V \pm 0.2Vp-p
7	GND (for video)		
8	LINE IN	input	External V-sync (EX.FV : Negative , 5Vp-p)
9	GND (for line)		



Signal Spec. of AC-Line Pulse (EX.FV)

E. ENVIRONMENT CONDITION AND TEST

(1) Operating condition Temperature 0 ~ 60 °C (recommendation : 0 ~ 40 °C)

Humidity 10 ~ 90 %

[Note] Condensation should not occur.

(2) Storage condition Temperature -20 ~ 60 °C

Humidity 0 ~ 95 %

[Note] Condensation should not occur.

(3) High temperature storage test

Leaving the packed sample at temperature of +60 °C for 48 hours, and then after leaving it at normal temperature for 8 hours, there should be no problem in performance.

(4) Low temperature storage test

Leaving the packed sample at temperature of 0 °C for 48 hours, and then after moving it at normal temperature for 8 hours, there should be no problem in performance.

[Note] Condensation should not occur.

(5) Temperature characteristics test

When it is operated at temperature of 0 ~ 60 °C, there should be no problem in performance.

(6) Vibration test

When it is vibrated for 30 min at 8.3-25Hz random frequency and 1G , there should be no physical damage
And no operational damage.

[Note] Bulk packaged, Each 3 directions

(7) Drop test

When it is dropped less than 60cm, there should be no physical damage and no operational damage.

[Note] Bulk packaged, 6 faces (Less than 40cm ; Bulk packaged, 1 corner, 3 edges)

F. CAUTION

(1) Installation and Storage Location

Avoid the following locations :

- Where the unit is exposed to extremely high temperatures.
- Where there is excessive dust.
- Where the unit will be subject to violent vibration.

(2) Handling

Avoid dropping or shaking the unit.

(3) Safety

Never disassemble the chassis.

There is a danger of electric shock if you touch internal parts.

(4) Static charge prevention

When working, use an earth band and non-chargeable gloves.

G. RELIABILITY

MTBF 52,000 hours

[Note] When it is operated at temperature of 0 ~ 60 °C .

H. INDUSTRIAL PROPERTY

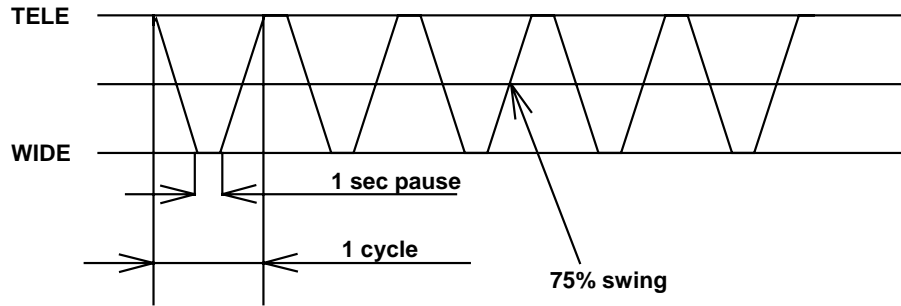
Hitachi Ltd. should be responsible for the problem of industrial property.

Hitachi is not responsible for the unit which is modified.

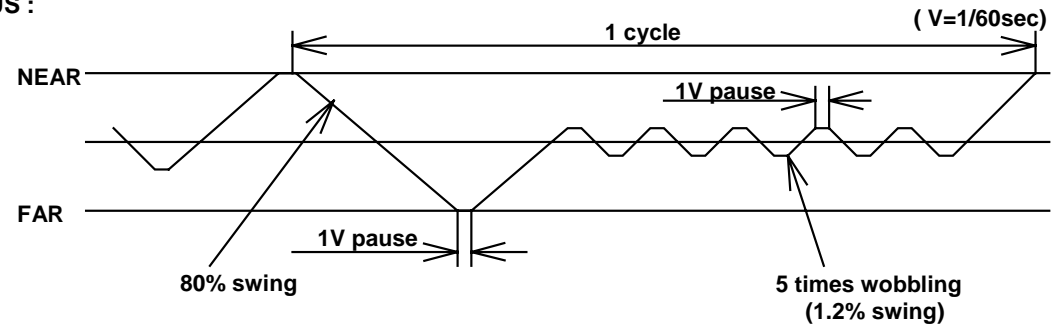
Hitachi's responsibility is limited to product itself, not to the system installed.

DURABILITY TEST PATTERN

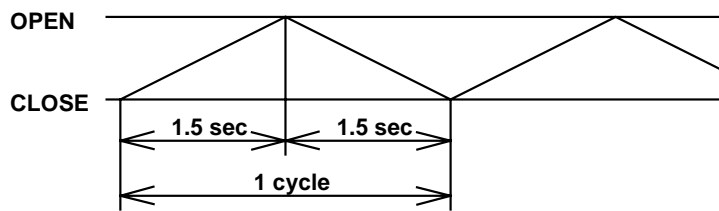
1. ZOOM :



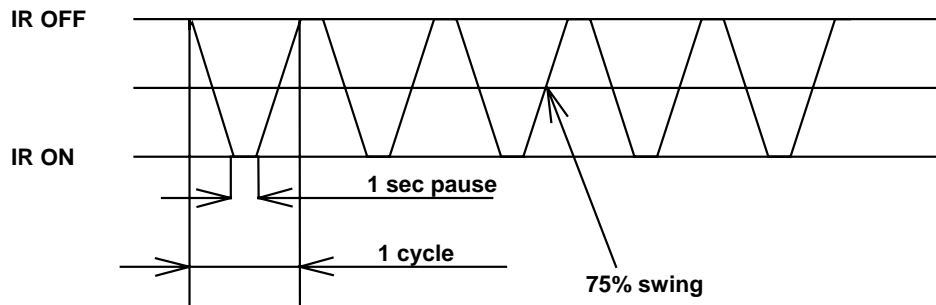
2. FOCUS :



3. IRIS :

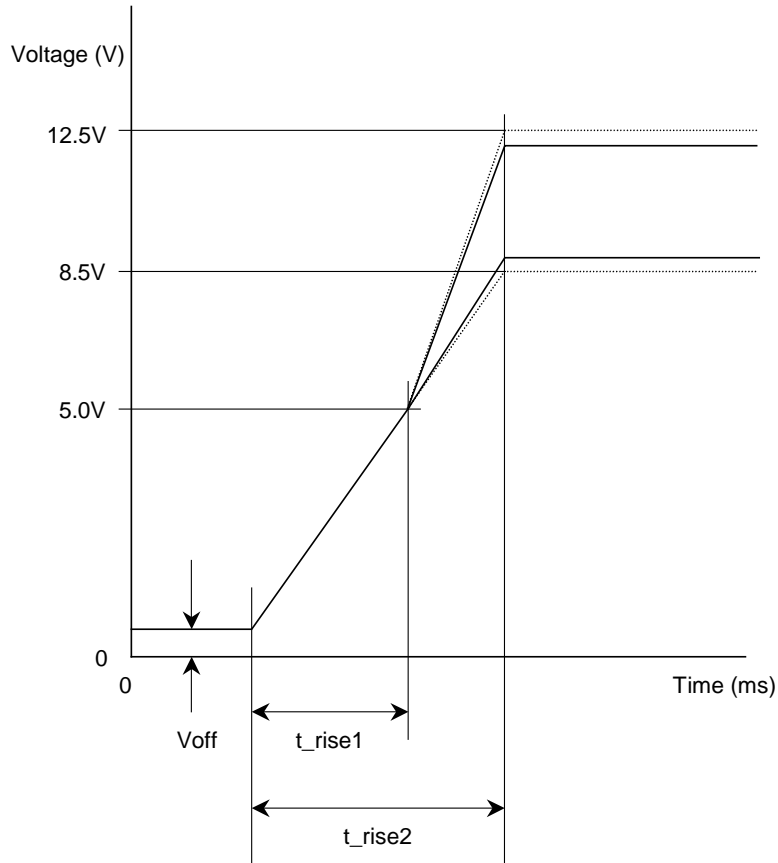


4. IRcf :



UUUPOWER SUPPLY CONDITION

The rise-up of power supply to camera should be under following condition.



- V_{off} ≤ 0.2V
- t_{rise1} ≤ 65ms
- t_{rise2} ≤ 115ms
- Ripple < 100mVp-p (DC9.0V ± 0.5V)
- Ripple < 140mVp-p (DC12.0V ± 0.5V)