

## 2 Product Specifications

### 2-1 LE15V\* Specifications

Item		Description
Picture Tube:		15-Inch (38 cm): 13.8-inch (35 cm) viewable, Full-square flat-face tube, 90° Deflection, Semi- tint, Non-glare, Invar shadow mask, Anti-static silica coating, 0.28 mm Dot pitch
Scanning Frequency	Horizontal Vertical	30 KHz ~ 55 KHz (Automatic) 50 Hz ~ 120 Hz (Automatic)
Display Colors		Unlimited colors
Maximum Resolution	Horizontal Vertical	1024 Dots 768 Lines
Input Video Signal		Analog, 0.7 Vp-p positive at 75 $\Omega$ , internally terminated
Input Sync Signal		Separate Sync : TTL level positive/negative
Maximum Pixel Clock rate		65 MHz
Active Display		Horizontal : 267 mm $\pm$ 4 mm, Vertical : 200 mm $\pm$ 4 mm
Input Voltage		AC 90 ~ 264 Volts, 60 Hz / 50 Hz $\pm$ 3 Hz
Power Consumption		70 Watt (Max)
Dimensions Set (W x D x H) Package		14.2 x 14.8 x 11.5 Inches (361 x 376 x 292 mm) Stand of stand installed 17.3 x 18.3 x 14.8 Inches (439 x 464 x 376 mm)
Weight (Set/Package)		11.0 kg (24.3 lbs) Stan of stand installed / 12.5 kg (27.6 lbs)
Environmental Considerations		Operating Temperature : 32°F ~ 104°F (0°C ~ 40°C) Humidity : 10 % ~ 80 % Storage Temperature : -4°F ~ 113°F (-20°C ~ 45°C) Humidity : 5 % ~ 95 %
<ul style="list-style-type: none"> <li>• Designs and specifications are subject to change without prior notice.</li> </ul>		

## 2-2 LE17LS/LE17LT/LE17KS/LE17KT/LE17JS/LE17JT Specifications

Item	Description
Picture Tube	17-Inch (43 cm): 16-inch (40.6 cm) viewable, Flat-face, 90° Deflection, 0.20 mm (Horizontal) Dot pitch, Silica coated with anti-electrostatic properties (TCO: Multilayer coating), Medium-short persistence phosphor
Scanning Frequency	Horizontal : 30 kHz ~ 70 kHz , 30kHz ~ 85 kHz Vertical : 50 Hz ~ 160 Hz
Display Colors	Unlimited colors
Maximum Resolution	Horizontal : 1280 Dots, 70K / 1600 Dots, 85K Vertical : 1024 Lines, 70K / 1200 Dots, 85K
Input Video Signal	Analog, 0.7 Vp-p positive at 75 $\Omega$ , internally terminated
Input Sync Signal	Separate Sync: TTL level, positive/negative
Maximum Pixel Clock rate	110 MHz
Active Display	Horizontal : 312 mm $\pm$ 4 mm, Vertical : 234 mm $\pm$ 4 mm
Input Voltage	AC 100 - 240C, 60 / 50 Hz 1.2A
Power Consumption	90 Watt (Max) 85K, 80Watt (Max) 70K
Dimensions Set (W x D x H) Package	15.8 x 16.1 x 12.7 Inches (401 x 410 x 323 mm) Stand of stand installed 18.3 x 20.4 x 18.1 Inches (464 x 518 x 459 mm)
Weight (Set/Package)	14.3 kg (31.5 lbs) Stand of stand installed / 16.2 kg (35.7 lbs)
Environmental Considerations	Operating Temperature : 32°F ~ 104°F (0°C ~ 40°C) Humidity : 10 % ~ 80 %  Storage Temperature : -4°F ~ 113°F (-20°C ~ 45°C) Humidity : 5 % ~ 95 %
<ul style="list-style-type: none"> <li>• Designs and specifications are subject to change without prior notice.</li> </ul>	

### 2-3 Pin Assignments

<div>Sync Type</div> <div>Pin No.</div>	Separate	Macintosh
1	Red	GND-R
2	Green	Red
3	Blue	H/V Sync
4	GND	Sense 0
5	DDC Return	Green
6	GND-R	GND-G
7	GND-G	Sense 1
8	GND-B	Reserved
9	DC 5V	Blue
10	GND-Sync/Self-raster	Sense 2
11	GND	GND
12	DDC Data	V-Sync
13	H-Sync	GND-B
14	V-Sync	GND
15	DDC Clock	H-Sync

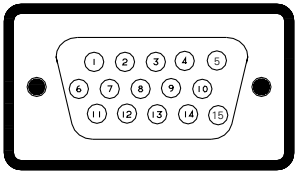


Figure 2-1. Male Type

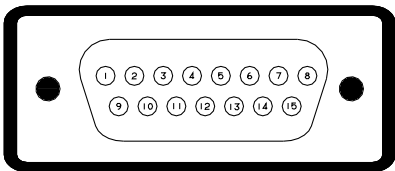


Figure 2-2. Male Type

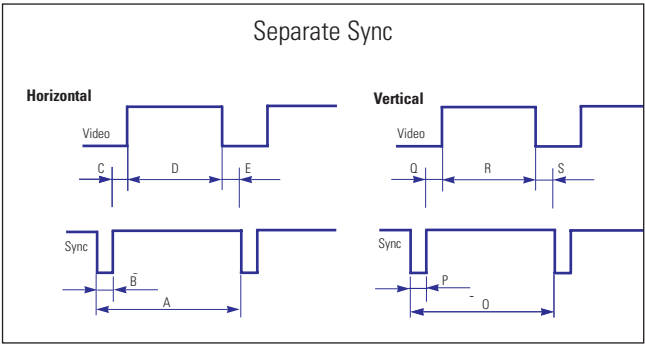
2-4 Timing Chart

This section of the service manual describes the timing that the computer industry recognizes as standard for computer-generated video signals.

2-4-1 LE15V\*

Table 2-1 Timing Chart

<div>Mode</div> <div>Timing</div>	VESA (LE15V* Only)		
	640/75 Hz 640 x 480	640/85 Hz 640 x 480	800/85 Hz 800 x 600
fH (kHz)	37.500	43.269	53.674
A μsec	26.667	23.111	18.631
B μsec	2.032	1.556	1.138
C μsec	3.810	2.222	2.702
D μsec	20.317	17.778	14.222
E μsec	0.508	1.556	0.569
fV (Hz)	75.000	85.008	85.061
O msec	13.333	11.764	11.756
P msec	0.080	0.671	0.056
Q msec	0.427	0.578	0.503
R msec	12.800	11.093	11.179
S msec	0.027	0.023	0.019
Clock Frequency (MHz)	31.500	36.000	56.250
Polarity H.Sync	Negative	Negative	Positive
V.Sync	Negative	Negative	Positive
Remark	Separate	Separate	Separate

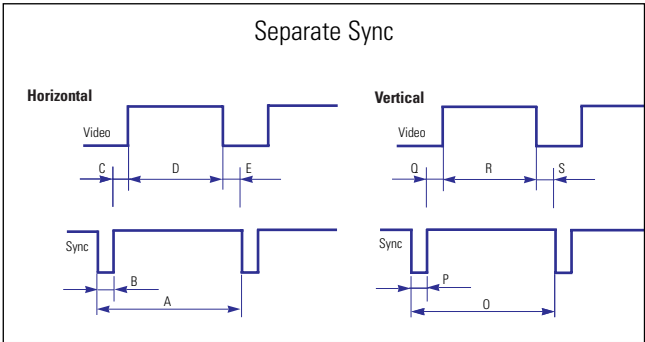


A : Line time total	B : Horizontal sync width	O : Frame time total	P : Vertical sync width
C : Back porch	D : Active time	Q : Back porch	R : Active time
E : Front porch		S : Front porch	

2-4-2 LE17LS/LE17LT/LE17KS/LE17KT

Table 2-2 Timing Chart

<div>Mode</div> <div>Timing</div>	VESA		
	640/75 Hz 640 x 480	800/85 Hz 800 x 600	1024/85 Hz 1024 x 768
fH (kHz)	37.500	53.674	68.677
A $\mu$ sec	26.667	18.631	14.561
B $\mu$ sec	2.032	1.138	1.016
C $\mu$ sec	3.810	2.702	2.201
D $\mu$ sec	20.317	14.222	10.836
E $\mu$ sec	0.508	0.569	0.508
fV (Hz)	75.000	85.061	84.997
O msec	13.333	11.756	11.765
P msec	0.080	0.056	0.044
Q msec	0.427	0.503	0.524
R msec	12.800	11.179	11.183
S msec	0.027	0.019	0.015
Clock Frequency (MHz)	31.500	56.250	94.500
Polarity			
H.Sync	Negative	Positive	Positive
V.Sync	Negative	Positive	Positive
Remark	Separate	Separate	Separate

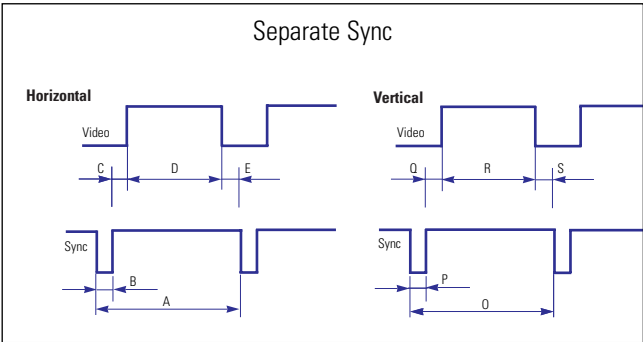


A : Line time total	B : Horizontal sync width	O : Frame time total	P : Vertical sync width
C : Back porch	D : Active time	Q : Back porch	R : Active time
E : Front porch		S : Front porch	

2-4-3 LE17JS/LE17JT

Table 2-3 Timing Chart

<div>Mode</div> <div>Timing</div>	VESA		
	640/75 Hz 640 x 480	1024/85 Hz 1024 x 768	1280/75 Hz 1280 x 1024
fH (kHz)	37.500	68.677	79.976
A μsec	26.667	14.561	12.504
B μsec	2.032	1.016	1.067
C μsec	3.810	2.201	1.837
D μsec	20.317	10.836	9.481
E μsec	0.508	0.508	0.119
fV (Hz)	75.000	84.997	75.025
O msec	13.333	11.765	13.329
P msec	0.080	0.044	0.038
Q msec	0.427	0.524	0.475
R msec	12.800	11.183	12.804
S msec	0.027	0.015	0.013
Clock Frequency (MHz)	31.500	94.500	135.000
Polarity H.Sync	Negative	Positive	Positive
V.Sync	Negative	Positive	Positive
Remark	Separate	Separate	Separate



A : Line time total	B : Horizontal sync width	O : Frame time total	P : Vertical sync width
C : Back porch	D : Active time	Q : Back porch	R : Active time
E : Front porch		S : Front porch	