

2 Product Specifications

2-1 Specifications

Item	Description	
	RS21A*	RS24A*
LCD Panel	TFT-LCD panel, RGB vertical stripe, normally black transmissive, (21.3-Inch) viewable, 0.27 pixel pitch	TFT-LCD panel, RGB vertical stripe, normally black transmissive, (24.06-Inch) viewable, 0.27 pixel pitch
Scanning Frequency	Horizontal : 30 kHz ~ 85 kHz (Analog) Vertical : 55 Hz ~ 85 Hz	
Display Colors	16,777,216 Million colors	
Maximum Resolution	Horizontal : 1600 Pixels Vertical : 1200 Pixels	1920 Pixels 1200 Pixels
Input Video Signal	Analog, 0.7 Vp-p ± 5% positive at 75 Ω, internally terminated	
Input Sync Signal	Type : Seperate H/V sync, Composite H/V, Sync-on-Green Level : TTL level	
Maximum Pixel Clock rate	162 MHz	193 MHz
Active Display Horizontal/Vertical	518.4 ± 3 mm / 324 ± 3 mm	
AC power voltage & Frequency	AC 90 ~ 264 Volts, 60~50 Hz ± 3 Hz	
Power Consumption	110W (max)	120W (max)
Dimensions Unit (W x D x H) Carton (W x D x H)	25.98 x 8.38 x 18.58 Inches (568.5 x 213 x 472 mm) 30.55 x 24.01 x 13.62 Inches (687 x 608 x 340 mm)	25.98 x 8.38 x 18.58 Inches (660 x 213 x 472 mm) 30.55 x 24.01 x 13.62 Inches (776 x 610 x 346 mm)
Weight (Net / Gross)	10.0 kg (26.78 lbs) / 20.2 kg (49.6 lbs)	12.15 kg (26.78 lbs) / 22.5 kg (49.6 lbs)
Environmental Considerations	Operating Temperature : 50°F ~ 104°F (10°C ~ 40°C) Humidity : 10 % ~ 80 % Storage Temperature : -4°F ~ 113°F (-20°C ~ 45°C) Humidity : 5 % ~ 95 %	
TV System	Tunning	Frequency Synthesize
	Color	PAL, SECAM
	Sound	NICAM, A2 STEREO
Antena Input	75Ω, Coaxial Cable	
Sound Characteristics	<ul style="list-style-type: none">•Max Internal speaker Out : Right ≤ 5 W / Left≤ 5 W•Bass control Range : -6 ± 2dB ~ +6 ± 2dB•TREBLE control Range : -10 ± 2dB ~ +10 ± 2dB•Output frequency : RF≤ 80 Hz~15 KHz / A/V≤ 80 Hz~20 KHz•Line out : RF≤ 80 Hz~15 KHz / A/V≤ 80 Hz~20 KHz	
<ul style="list-style-type: none">• SyncMaster RS21A*/RS24A* comply with SWEDAC (MPRII) recommendations for reduced electromagnetic fields.• Designs and specifications are subject to change without prior notice.		

2-2 Pin Assignments

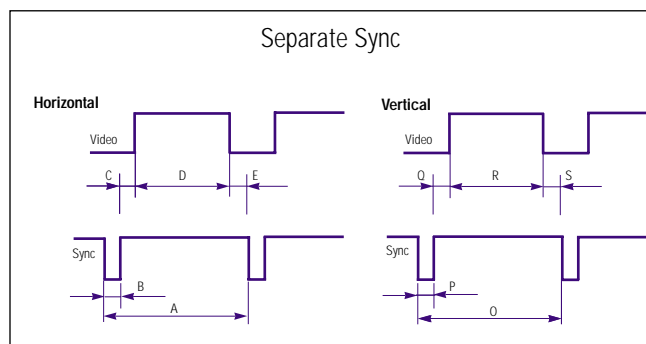
Pin No.	Sync Type	15-Pin Signal Cable Connector		
		Separate	Composite	Sync-on-green
1		Red	Red	Red
2		Green	Green	Green + H/V Sync.
3		Blue	Blue	Blue
4		GND	GND	GND
5		GND (DDC Return)	GND (DDC Return)	GND (DDC Return)
6		GND-Red	GND-Red	GND-Red
7		GND-Green	GND-Green	GND-Green
8		GND-Blue	GND-Blue	GND-Blue
9		No Connection	No Connection	Not Used
10		GND-Sync./Self Test	GND-Sync./Self Test	GND-Sync./Self Test
11		GND	GND	GND
12		DDC Data	DDC Data	DDC Data
13		Horizontal sync.	H/V-Sync.	Not Used
14		Vertical sync.	Not Used	Not Used
15		DDC Clock	DDC Clock	DDC Clock

2-3 Timing Chart

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

Table 2-1 Timing Chart

Mode Timing	VGA3/60 Hz 640 x 480	VGA/72 Hz 640 x 480	VGA/75 Hz 640 x 480	VGA/85 Hz 640 x 480	MAC/60 Hz 640 x 480	MAC/66 Hz 640 x 480	SVGA/56 Hz 800 x 600	SVGA/60 Hz 800 x 600	SVGA/72 Hz 800 x 600
fH (kHz)	31.5	37.9	37.5	43.3	31.5	35.0	35.2	37.9	48.1
A μ sec	800	832	840	832	800	864	1024	1056	1040
B μ sec	96	40	64	56	96	64	72	128	120
C μ sec	40	120	120	80	48	96	128	88	64
D μ sec	640	640	640	640	640	640	800	800	800
E μ sec	8	16	16	56	16	64	24	40	56
fV (Hz)	60.0	72.8	75.0	85.0	60.0	66.7	56.3	60.3	72.2
O msec	525	520	500	509	525	525	625	628	666
P msec	2	3	3	3	2	3	2	4	6
Q msec	25	20	16	25	33	39	22	23	23
R msec	480	480	480	480	480	480	600	600	600
S msec	2	1	1	1	10	3	1	1	37
Clock Freq. (MHz)	25.175	31.500	31.500	36.000	25.175	30.240	36.000	40.000	50.000
Polarity H.Sync	Negative	Negative	Negative	Negative	Negative	Negative	-/+	Positive	Positive
V.Sync	Negative	Negative	Negative	Negative	Negative	Negative	-/+	Positive	Positive
Remark	Separate	Separate	Separate	Separate	Separate	Separate	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

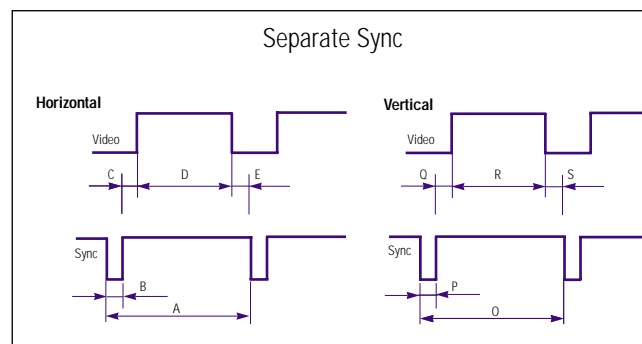
R : Active time

E : Front porch

S : Front porch

Table 2-2 Timing Chart (continued)

Mode Timing	SVGA/75 Hz 800 x 600	SVGA/85 Hz 800 x 600	MAC/74 Hz 832 x 624	XGA/60 Hz 1024 x 768	XGA/70 Hz 1024 x 768	XGA/75 Hz 1024 x 768	XGA/85 Hz 1024 x 768	MAC/60 Hz 1024 x 768	MAC/74 Hz 1024 x 768	VESA/75 Hz 1152 x 864	MAC/75 Hz 1152 x 870
fH (kHz)	46.9	53.7	49.7	48.4	56.5	60.0	68.7	48.8	60.2	67.5	68.7
A μ sec	1056	1048	1152	1344	1328	1312	1376	1312	1328	1600	1456
B μ sec	80	64	64	136	136	96	96	96	96	128	128
C μ sec	160	152	224	160	144	176	208	128	176	256	144
D μ sec	800	800	832	1024	1024	1024	1024	1024	1024	1152	1152
E μ sec	16	32	32	24	24	16	48	64	32	64	32
fV (Hz)	75.0	85.1	74.6	60.0	70.1	75.0	85.0	60.0	74.9	75.0	75.1
O msec	625	631	667	806	806	800	808	813	804	900	915
P msec	3	3	3	6	6	3	3	6	3	3	3
Q msec	21	27	39	29	29	28	36	33	30	32	39
R msec	600	600	624	768	768	768	768	768	768	864	870
S msec	1	1	1	3	3	1	1	6	3	1	3
Clock Freq. (MHz)	49.500	56.250	57.284	65.000	75.000	78.750	94.500	64.000	80.000	108.000	100.000
Polarity H.Sync	Positive	Positive	Negative	Negative	Negative	Positive	Positive	Negative	Negative	Positive	Negative
V.Sync	Positive	Positive	Negative	Negative	Negative	Positive	Positive	Negative	Negative	Positive	Negative
Remark	Separate	Separate	Separate	Separate	Separate	Separate	Separate	Separate	Separate	Separate	Separate



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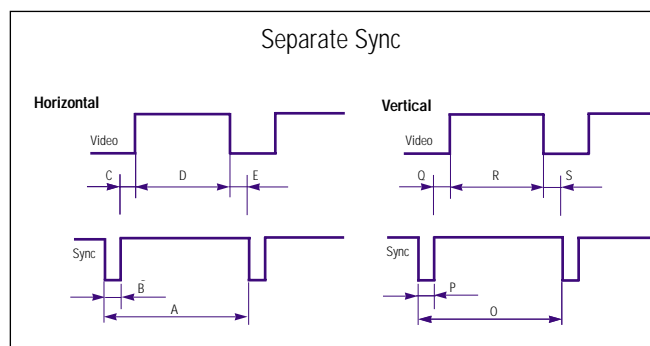
R : Active time

E : Front porch

S : Front porch

Table 2-3 Timing Chart (continued)

Mode Timing	SUN/66 Hz 1152 x 900	SUN/76 Hz 1152 x 900	SXGA/60 Hz 1280 x 1024	NCD/70 Hz 1280 x 1024	HP/72 Hz 1280 x 1024	SXGA/75 Hz 1280 x 1024	SUN/76 Hz 1280 x 1024
fH (kHz)	61.8	71.7	64.0	74.4	78.1	80.0	81.1
A μ sec	1528	1472	1688	1680	1728	1688	1664
B μ sec	128	96	112	160	192	144	64
C μ sec	208	208	248	208	192	248	288
D μ sec	1152	1152	1280	1280	1280	1280	1280
E μ sec	40	16	48	32	64	16	32
fV (Hz)	66.0	76.0	60.0	70.0	72.0	75.0	76.1
O msec	937	943	1066	1063	1085	1066	1066
P msec	4	8	3	3	3	3	8
Q msec	31	33	38	36	55	38	32
R msec	900	900	1024	1024	1024	1024	1024
S msec	2	2	1	0	3	1	2
Clock Frequency (MHz)	94.500	105.561	108.000	125.000	135.000	135.000	135.000
Polarity H.Sync	-/+	Negative	Positive	Negative	Negative	Positive	Negative
V.Sync	-/+	Negative	Positive	Negative	Negative	Positive	Negative
Remark	Separate	Separate	Separate	Separate	Separate	Separate	Separate



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B : Horizontal sync width

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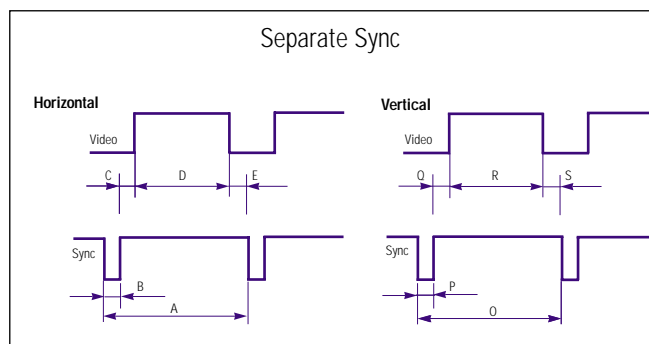
R : Active time

E : Front porch

S : Front porch

Table 2-4 Timing Chart (continued)

Mode Timing	UXGA/60Hz 1600 x 1200	UXGA/65Hz 1600 x 1200	UXGA/70Hz 1600 x 1200	NCD/64Hz 1600 x 1200	SUN/66 Hz 1600 x 1200	WUXGA2/60 Hz 1920 x 1200
fH (kHz)	75	81.25	87.5	80.038	89.286	74.52
A μ sec	2160	2160	2160	2124	2240	2592
B μ sec	192	192	192	160	256	208
C μ sec	304	304	304	308	368	336
D μ sec	1600	1600	1600	1600	1600	1920
E μ sec	64	64	64	56	16	128
fV (Hz)	60	65	70	64.443	66.931	60
O msec	1250	1250	1250	1242	1334	1242
P msec	3	3	3	3	10	3
Q msec	46	46	46	38	44	38
R msec	1200	1200	1200	1200	1200	1200
S msec	1	1	1	1	80	1
Clock Frequency (MHz)	162.000	175.500	189.000	170.000	200.000	193.156
Polarity H.Sync	-/+	-/+	-/+	-/+	-/+	Negative
V.Sync	-/+	-/+	-/+	-/+	-/+	Positive
Remark	Separate	Separate	Separate	Separate	Separate	Separate



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