



SiteStand™ Mobile Docking Station with Basket Service Manual



SonoSite

SiteStand™ Mobile Docking Station with Basket
Service Manual

Manufactured for

SonoSite, Inc.
21919 30th Drive SE
Bothell, WA 98021-3904
USA
Telephone: 1-888-482-9449 or +1-425-951-1200
Fax: +1-425-951-1201

SonoSite European Headquarters

Baystrait House, Station Road
Biggleswade SG18 8AL
UK
Telephone: +44-1767-313-117
Fax: +44-1767-312-400

SonoSite Asian Headquarters

Suite 2201, 50 Gloucester Road
Wanchai, Hong Kong
Telephone: +852-2529-2881
Fax: +852-2529-5881

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SonoSite products may be covered by one or more of the following U.S. patents: 4214269, 4387365, 4387597, 4432371, (4435614), 4454884, 4534357, 4542653, 4552607, 4581636, 4603702, (4607642), 4644795, 4670339, 4773140, 4817618, 4883059, 4887306, 5016641, 5095910, 5099847, 5123415, 5158088, 5197477, 5215094, 5226420, 5233994, 5255682, (5275167), 5287753, 5305756, 5353354, 5365929, 5386830, 5390674, (5,423,220), 5438994, 5450851, 5456257, 5471989, 5471990, 5474073, 5476097, 5482045, 5485842, 5492134, 5517994, 5529070, 5546946, 5555887, 5603323, 5606972, 5617863, (5634465), 5636631, 5645066, 5648942, 5669385, (5706819), 5715823, 5718229, 5720291, 5722412, 5752517, 5782769, 5800356, 5817024, 5833613, 5846200, 5860924, 5893363. Other patents pending.

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CHAPTER 1 Introduction

Before servicing the SiteStand™ mobile docking station (SiteStand), read and be familiar with the information in this manual.

1.1 SiteStand mobile docking station

The SiteStand station ([Figure 1.1](#)) does the following:

- Provides a mobile, ergonomic work surface with height and angle adjustment
- Holds the SonoSite system, transducers, a printer, and certain accessories
- Charges the system battery and consolidates the following peripheral connections: video out ports (3), an RS-232C port, a printer control port, and AC mains IEC power receptacles (2)
- Connects to the PC to download bitmap images
- Provides a locking feature to secure system against theft

1.2 SiteStand system Display

The SiteStand system may include an optional flat panel display with the following features:

- A high resolution, 10.4-inch display
- An additional video display for patients, students, consulting professionals or others who require shared images
- Compatibility with all SiteStand mobile docking stations
- Convenient display positioning with an articulating arm
- Power supply and power cable

1.3 Setup and Operation

For setup and operation of the SiteStand mobile docking station, refer to the *SiteStand User Guide (P01542-xx)*.

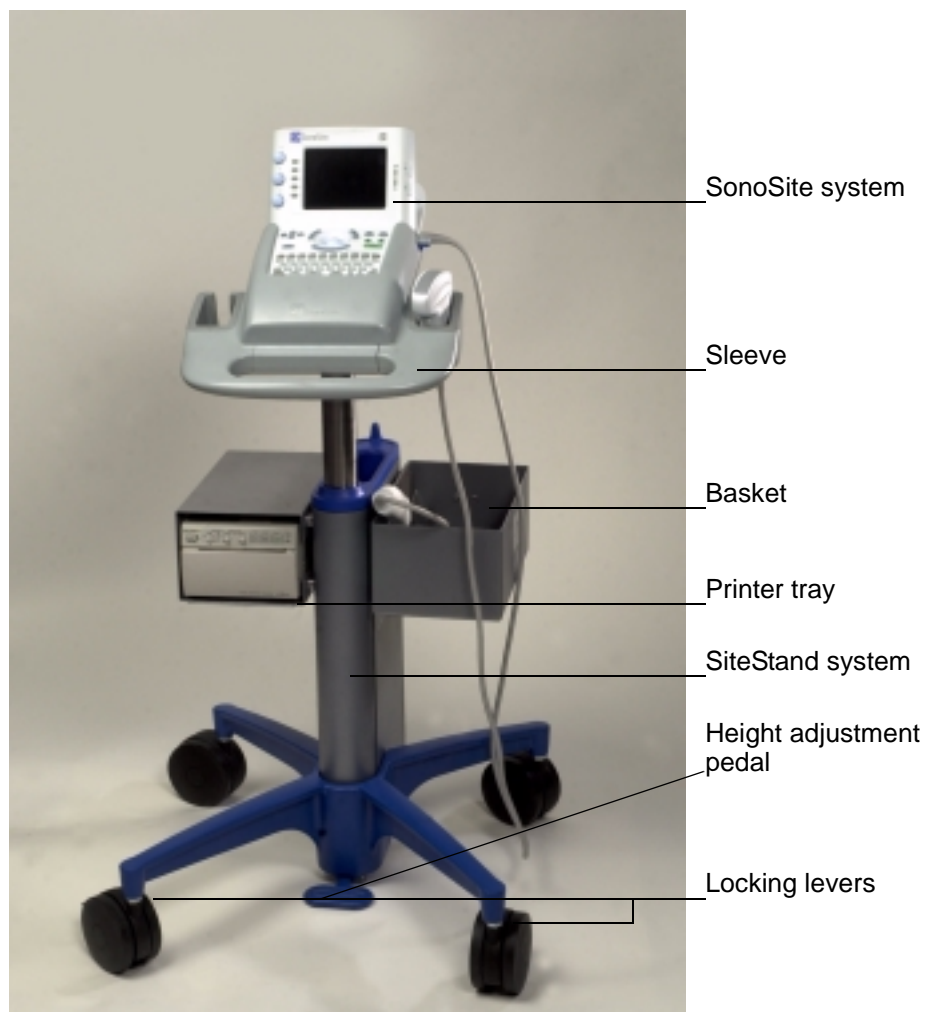


Figure 1.1 SiteStand mobile docking station with Basket

1.4 Specifications

1.4.1 SiteStand mobile docking station

The SiteStand mobile docking station operates on either 50 or 60-Hertz alternating current (AC) power (Table 1.1).

Table 1.1 SiteStand station AC Electrical Power Specifications

DEVICE	INPUT VOLTAGE (VAC)	NOMINAL CURRENTS (AMPS)	OUTPUT VOLTAGE (VAC)	NOMINAL CURRENTS (AMPS)
SiteStand	100 - 120 220 - 240 50/60 Hz	1.0 - 0.50	+ 16 Vdc 100 - 120 220 - 240 50/60 Hz	2.8 2.0 (2x)
AC power adapter	100 - 120 220 - 240 50/60 Hz	1.0 - 0.50	+ 16 Vdc	2.8

1.4.2 SiteStand mobile docking station Display

The SiteStand station display operates on either 50 or 60-Hertz alternating current (AC) power (Table 1.2).

1.4.2.1 Display Type

TFT LCD 640 x 480 pixels

Table 1.2 SiteStand station Display AC Electrical Power Specifications

DEVICE	INPUT VOLTAGE (VAC)	NOMINAL CURRENTS (AMPS)	OUTPUT VOLTAGE (VAC)	NOMINAL CURRENTS (AMPS)
SiteStand display	+ 12 Vdc	2.75		
AC power adapter	100 - 120 220 - 240 50/60 Hz	0.85 max	+ 12 Vdc	2.75

CHAPTER 2 Safety

Please read this information before servicing the SiteStand mobile docking station with basket.

A **WARNING** describes precautions necessary to prevent injury or loss of life.

A **CAUTION** describes precautions necessary to protect the products.

2.1 Electrical Safety

For maximum safety observe the following warnings and cautions:

WARNINGS:

Shock hazards exist if the AC power adapter is not properly grounded. Grounding reliability can only be achieved when equipment is connected to a receptacle marked “Hospital Only,” “Hospital Grade,” or the equivalent. The grounding wire must not be removed or defeated.

To avoid the risk of electrical shock and fire hazard, inspect the AC power adapter cord and plug on a regular basis. Ensure they are not damaged.

Connection of peripherals not recommended by SonoSite could result in electrical shock. Avoid electrical shock hazards by using peripherals and accessory cables recommended by SonoSite.

To avoid the risk of electrical shock, use commercial grade peripherals recommended by SonoSite on battery power only. Do not connect these product to AC mains power when using the system to scan or diagnose a patient/subject. Call SonoSite technical support or your local representative for a list of the commercial grade peripherals available from or recommended by SonoSite.

CAUTIONS:

Electrostatic discharge (ESD), or static shock, is a naturally occurring phenomenon. ESD is common in conditions of low humidity, which can be caused by heating or air conditioning. Static shock is a discharge of the electrical energy from a charged body to a lesser or non-charged body. The degree of discharge can be significant enough to cause damage to a transducer or an ultrasound system. The following precautions can help reduce ESD: anti-static spray on carpets, anti-static spray on linoleum, and anti-static mats.

For labeling symbols used with the SiteStand mobile docking station, please refer to the *SonoSite Ultrasound System User Guide*. For information about the flat panel display, please refer to the *Operating Instructions for the Series DV-3000 Colour LCD Rugged Monitor*.

2.1.1 Equipment Protection

To protect your ultrasound system, transducer, and accessories, follow these precautions.

CAUTIONS:

Excessive bending or twisting of cables can cause a failure or intermittent operation.

Improper cleaning or disinfecting of any part of the system can cause permanent damage.

Do not handle PCBs without proper static protection. Damage to components may result from improper handling.

2.1.2 Electrical Safety Testing

**Note: 300uA is the limit for 120V stands only!*

Table 2.1 Acceptable Earth Leakage Current Values

AC VOLTAGE	LEAKAGE CURRENT (UA)	
	NC	SFC
100 - 240	$0 < I < 300 / 500 (*)$	$0 < I < 1000$

CHAPTER 3 Servicing the SiteStand mobile docking station

3.1 Introduction

Before servicing the SiteStand mobile docking station, read and be familiar with the information in this manual. The SiteStand assembly drawings and part lists are located in **Appendix A, Schematic and Parts List** on page 13.

3.1.1 Contacting SonoSite Technical Support

For technical support or to order spare parts, do one of the following:

- For U.S. & Canadian customers, call 1-877-657-8118.
- For all Worldwide customers, call +425-951-1330.
- Connect to SonoSite on the World Wide Web at www.sonosite.com. Select **Products**, then choose **Technical Support**.
- E-mail service@sonosite.com
- Facsimile to Technical Support, +425-951-6700

3.2 Troubleshooting the SiteStand mobile docking station

The intent of this section is to help isolate potential problems associated with the SiteStand station. [Table 3.1](#) provides an observation of the problem, the possible cause, and the corrective action for the SiteStand station.

Table 3.1 SiteStand Station Troubleshooting

OBSERVATION	POSSIBLE CAUSE	CORRECTIVE ACTION
The system battery doesn't charge in the SiteStand station.	<p>If the charge function of the system is acceptable, the possible causes are:</p> <ul style="list-style-type: none"> the power supply has failed or become disconnected the dock PCBA located in the sleeve assembly has failed the docking connectors on the sleeve assembly are broken or bent. 	Verify the SiteStand station is at fault by attempting to charge the battery with the power supply connected directly to the system. If it does not charge, refer to the <i>SonoSite Ultrasound System Service Manual</i> for troubleshooting.
There is no video from the SiteStand station video out connection.	<p>The SiteStand station docking PCBA has failed.</p> <p>The docking connections or the sleeve assembly have been broken.</p>	See <i>Replacing the Sleeve Assembly and the Docking PCBA</i> on page 9.
There is no AC power from the SiteStand station power connection.	The SiteStand station fuse has failed.	See <i>Replacing the SiteStand station Fuse</i> on page 11.
There is no remote printer control to the printer on the SiteStand station.	The printer remote control cable has failed or is not attached correctly.	Replace the printer remote cable (P00762).
There is no output from the RS-232 communication port.	<p>The SiteStand station docking PCBA has failed.</p> <p>The docking connections on the sleeve assembly are broken or bent.</p>	See <i>Replacing the Sleeve Assembly and the Docking PCBA</i> on page 9.
The sleeve assembly does not raise or lower.	<p>The foot pedal is damaged.</p> <p>The gas spring is loose or damaged.</p> <p>The foot pedal has fallen off.</p>	See <i>Replacing the Foot Pedal</i> on page 9.
The SiteStand station does not roll easily or in a straight line.	<p>A castor is broken or bent.</p> <p>The SiteStand station base is damaged.</p>	Replace the failed part.

3.3 Disassembling the SiteStand mobile docking station

Disassembly of the SiteStand station is dependent on the repairs required. The following order of disassembly is recommended in order to prevent damage to the SiteStand station and facilitate efficient repairs. The service provider uses professional judgement in altering this order to provide repairs to various parts of the SiteStand station.

3.3.1 Required Materials and Equipment

- #1 Phillips screwdriver
- Allen wrench (5/32 inch and 1/8 inch)
- Slotted screwdriver
- Socket (11/16 inch or 17 mm)

3.3.2 Replacing the Sleeve Assembly and the Docking PCBA

1. Tilt the sleeve assembly to its most upright position.
2. Use a #1 Philips screwdriver to remove the six screws from the metal base of the sleeve assembly.
3. Turn the sleeve assembly over and remove the two philips screws holding the cable connector to the sleeve assembly.
4. Unplug the connector and set the sleeve assembly aside.
5. Remove the five Phillips screws attaching the PCBA to the sleeve assembly.
6. To replace the sleeve assembly, follow steps 1 through 5 in reverse order.

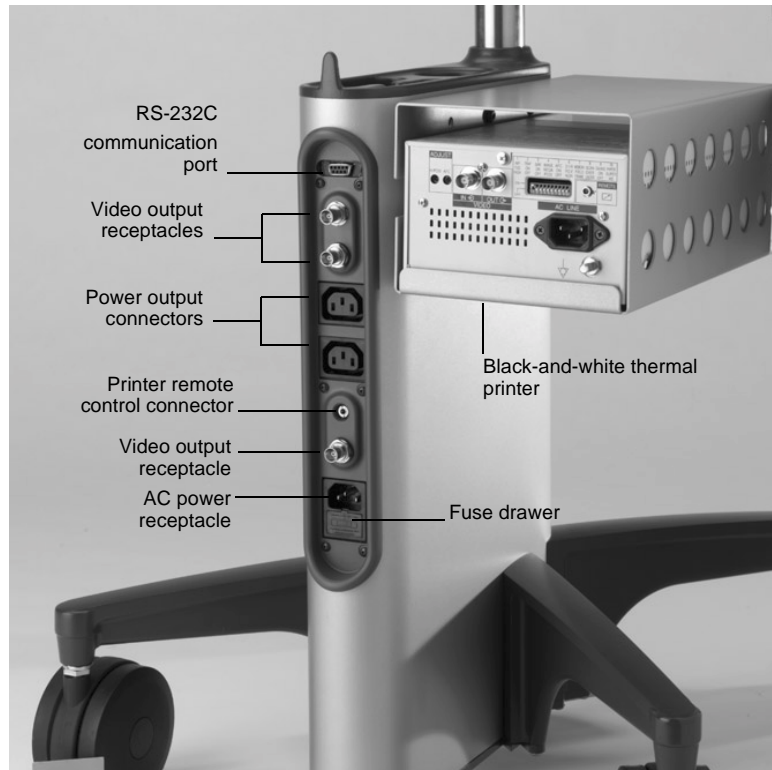
3.3.3 Replacing the Foot Pedal

1. Using the 1/8 inch allen wrench remove the shoulder bolt holding the foot pedal in place.
2. Remove the foot pedal.
3. Reinstall the foot pedal and insert the shoulder bolt.
4. Tighten the shoulder bolt so it is secure and the foot pedal moves freely.

3.3.4 Repairing or Replacing the Front Panel Connectors and the Power Supply

- 1.** To access the connectors and the power supply use a #1 philips screwdriver to remove the six connector cover philips screws. Pull the connector cover off and set it aside.
- 2.** Extend the gas spring to its maximum height by pressing the foot pedal.
- 3.** Remove the blade cap by gently prying it up from the sides with a flat blade prying tool. There are no screws holding it in place. The blade cap can also be removed by removing the SiteStand station base assembly and using a long blunt tool pushing up from the bottom of the blade assembly. This method will prevent possible damage caused by prying the blade cap off.
- 4.** Lift the blade cap to the top of the shaft and secure it in place out of the way.
- 5.** Remove the two flat head 1/8 allen screws from the subplate at the end of the blade assembly nearest the connector panel. Remove the two 5/32 allen screws located closest to the sides of the blade assembly at the end of the blade assembly with the shaft.
- 6.** Gently lift the subplate up and rotate it on the shaft to gain access to the connector panel.
- 7.** Gently pull the connector assembly out the top of the blade assembly. Note the attaching tabs at the top and bottom. This is important for successful reassembly.
- 8.** Any of the connectors and/or the power supply can now be repaired or replaced.
- 9.** To reassemble the SiteStand station perform the preceding steps 1 through 8 in reverse order.

3.3.5 Replacing the SiteStand station Fuse



To replace the electrical fuse:

1. Disconnect the AC line cord from the hospital-grade electrical outlet.
2. Disconnect the AC line cord from the bottom of the SiteStand mobile docking station.
3. Use a small, slotted screwdriver to remove the fuse drawer (located directly below the input AC receptacle on the SiteStand mobile docking station).
CAUTION: You should identify the cause of the blown fuse prior to plugging the docking station back into AC power.
4. Carefully replace the blown fuse with a 250 volt, 6.3 amp, 5.0 x 20 mm Slo-Blo®-type fuse.
5. Install the fuse drawer.
6. Connect the AC power to the SiteStand mobile docking station.

3.4 SiteStand mobile docking station Performance Tests

3.4.1 Setup

1. Install any SonoSite ultrasound system(without a battery) into the SiteStand mobile docking station.
2. Apply AC power, 120V 60Hz to SiteStand station “AC in” receptacle.

3.4.2 AC Power Verification

Use an AC Tester to verify both IEC output receptacles are wired correctly.

3.4.3 Docking Video

1. Turn on the system.
2. Connect a Test Monitor to each of the video outputs on the docking stand.
3. Verify the same video pattern exists on the Test Monitor as is present on the System LCD Display.

3.4.4 RS-232

The RS-232 interface can only be field tested using the SiteLink Image Management software. If that software is installed, verify the information on the PC according to the *SiteLink Image Management User Guide* on the SiteLink CD-ROM.

3.4.5 Printer Interface

1. Connect the black and white video printer to the SiteStand station. Ensure that the control and AC power cables are attached, but not the video cable.
2. Verify that the printer produces an audible beep and that the user interface replies with its own tone.
3. Repeat steps 1 and 2 (above) at least one more time to verify that the status line is connected.

A Schematic and Parts List

This section contains a list of field-replaceable parts.

A.1 Schematic and Wiring Diagram

This appendix provides a schematic diagram, a wiring diagram, and a cable diagram for the SiteStand station and the docking stand PCB.

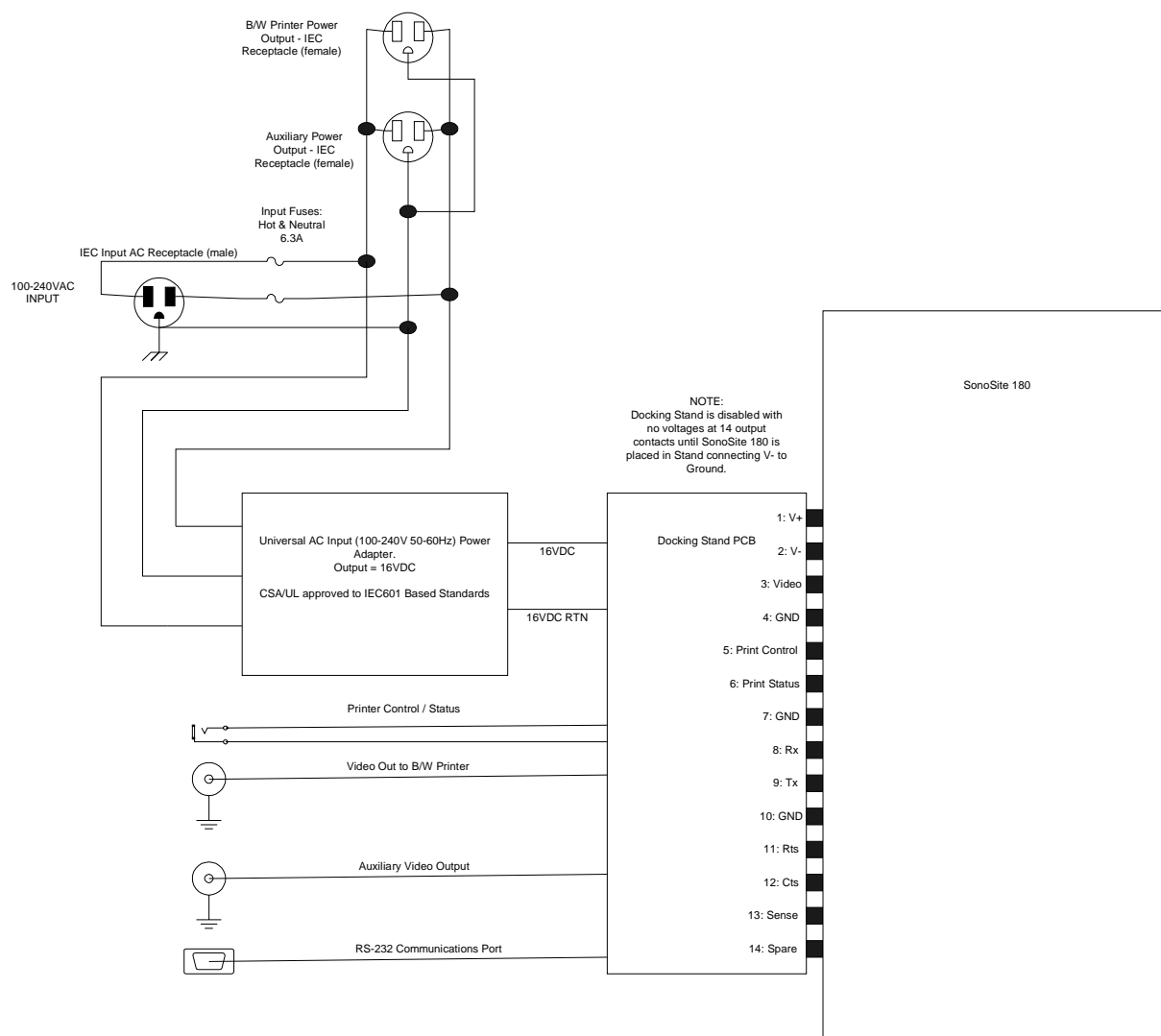
A.2 Replacement Parts List

This appendix also provides tables that contain all the replaceable parts for the SiteStand station. All quantities are one unless otherwise noted.

A.3 Ordering Replacement Parts

To order parts, contact SonoSite technical support at 1-877-657-8118 (U.S. and Canada) or +425-951-1330 (worldwide).

A.4 SiteStand mobile docking station Wiring Diagram



A.5 Cabling Diagram

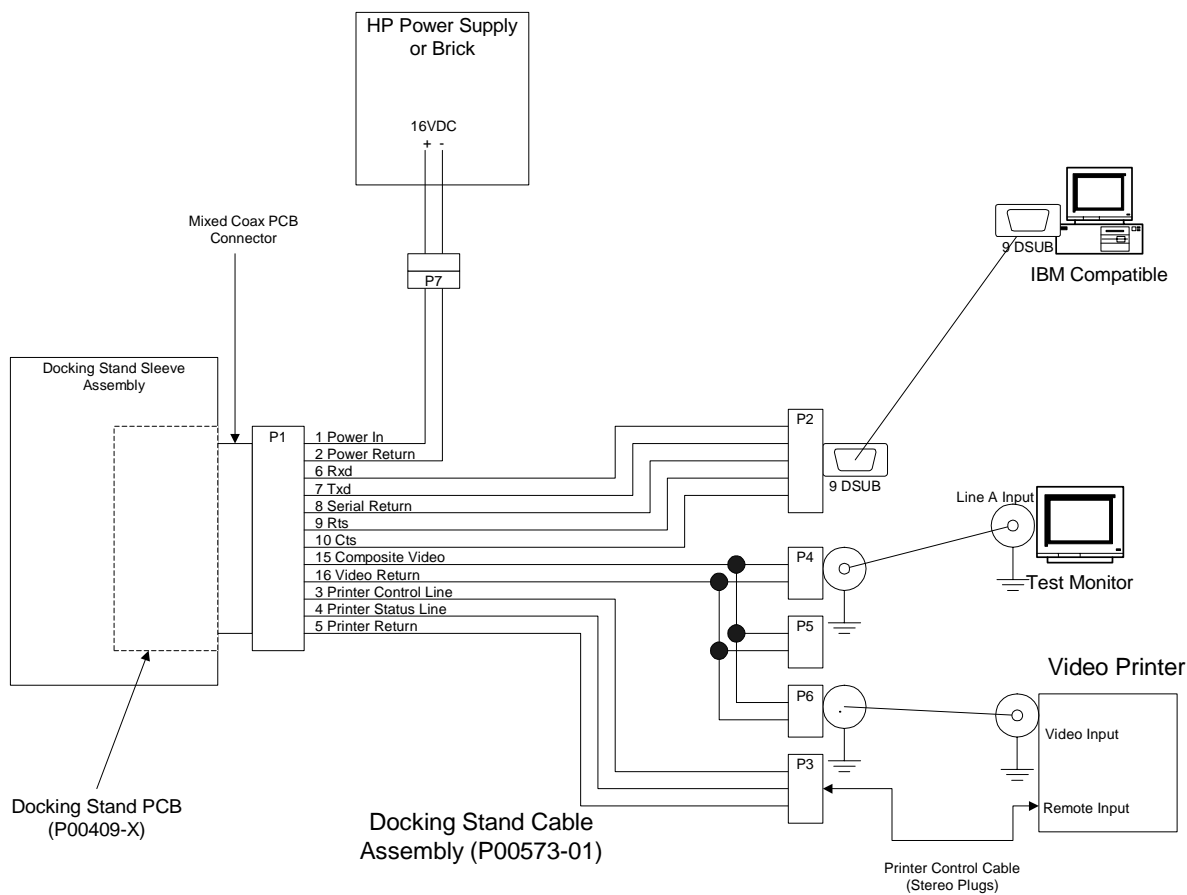


Table A.1 Mixed Signal Coax Connector P1

SIGNAL	PINS	I/O	LEVEL	DESCRIPTION
pwrin	1	i	+16.0 v	input from ac/dc adapter
gnd	2	-	0v	power return
control_line	3	o	ttl	print control/api_line
stat_frame	4	i	ttl	print status/api_frm
prnret	5	-	0v	print/status return
rx	6	i	±12v	receive data
tx	7	o	±5v	transmit data
dgnd	8	-	0v	data ground
rts	9	i	±5v	request to send
cts	10	o	±5v	clear to send
spare	a1	-	-	nc
cvb/y_video	a2	o	+1vpp	composite video / luminance
chroma	a3	o	+1vpp	chroma

Table A.2 External Video P4-6

SIGNAL	PIN(S)	I/O	LEVEL	DESCRIPTION
ext_video	center	o	1 vpp	composite video output
gnd	outer ring	-	0 v	signal return

Table A.3 RS-232 Com Port P2

SIGNAL	PIN(S)	I/O	LEVEL	DESCRIPTION
rx	2	i	±12v	receive data
tx	3	o	±5v	transmitted data
dgnd	5	-	0 v	data ground
rts	7	o	±5v	request to send
cts	8	i	±5v	clear to send

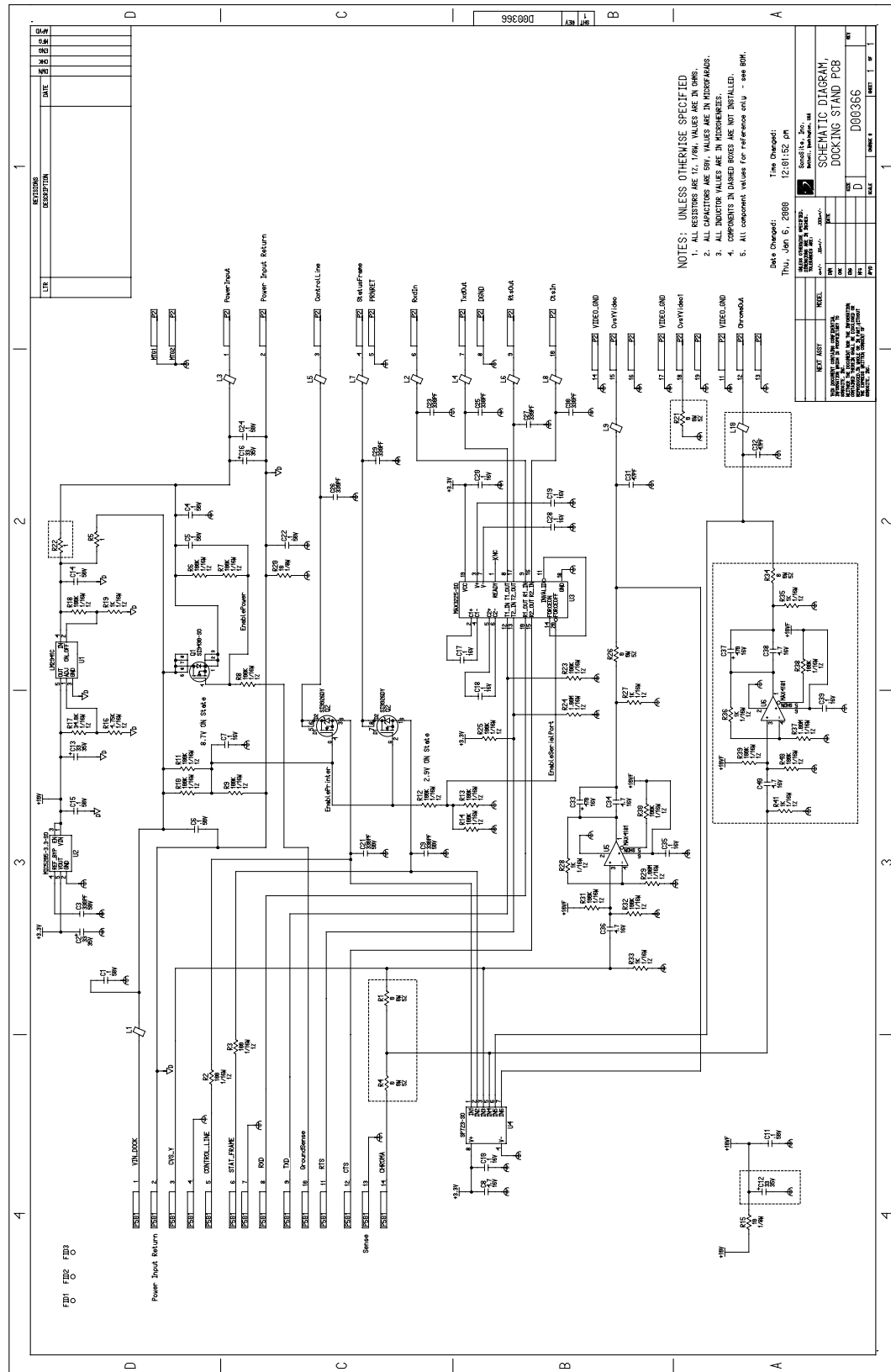
Table A.4 Video Printer Control P3

SIGNAL	PIN(S)	I/O	LEVEL	DESCRIPTION
control_line	tip(2)	o	+5v	printer control
stat_frame	center ring(3)	o	+5v	printer status
gnd	outer ring(1)	-	0 v	printer return

Table A.5 AC/DC Adapter P7

SIGNAL	PIN(S)	I/O	LEVEL	DESCRIPTION
+16v	striped	i	16 v	power supply input
gnd	plain	-	0 v	power return

A.6 Schematic Diagram, Docking Stand PCB



A.7 SiteStand station Assembly

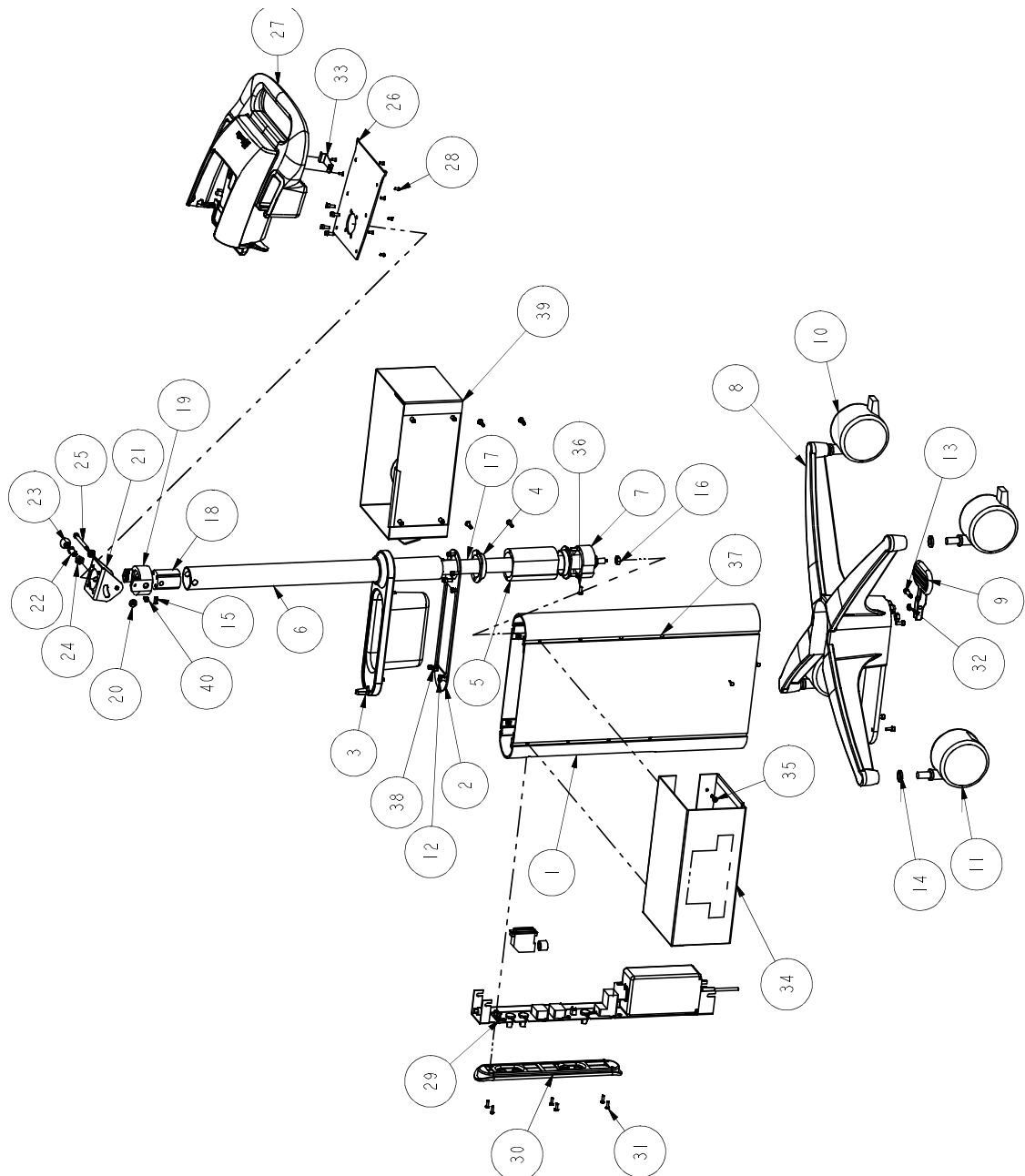


Table A.6 SiteStand station Assembly Parts List

FIND NUMBER	QTY	ITEM NUMBER	PART DESCRIPTION
1	1	P01607	assembly, blade
2	1	P01619	subplate, body, top
3	1	P00589	blade cap
4	2	P01620	bushing, flanged
5	1	P01621	housing, bearing
6	1	P01622	tube, lift
7	1	P01623	bushing, clocking
8	1	P01624	base, machined
9	1	P00994	pedal, actuator
10	2	P00693	caster
11	2	P00694	caster, nonlocking
12	16	P01501	screw, shcs,10-32 x .50lg, stl alloy
13	1	P01602	screw, shoulder, .250 dia x .75 long alloy
14	4	P01532	washer, lock, 1/2,split,sstl
15	1	P01055	.25 dia x .500 roll pin, stainless
16	2	P01627	nut, m10 x 1.25 x 5 jam
17	1	P00678	gas spring
18	1	P01618	plug, float
19	1	P00991	collar, tilt
20	2	P01653	bushing, flanged, 1/4x.375x .12lg, nylon
21	1	P00989	bracket, tilt
22	1	P00974	plunger, indexing,3/8-24,m5,sstl
23	1	P01497	knob, ball, blk, m5, 20mm
24	1	P01658	nut, lock, 3/8-24, sstl
25	1	P00978	bolt, shoulder,.25 x2.25lg, modified
26	1	P00596	plate, sleeve mounting
27	1	P00657	assembly, sleeve, stand
28	8	P00787	screw, k35x8, type 1, recess panhead, tf
29	1	P01609	assembly, bracket/wiring harness, dock stand

Table A.6 SiteStand station Assembly Parts List, *Continued*

FIND NUMBER	QTY	ITEM NUMBER	PART DESCRIPTION
30	1	P00590	cover, connector
31	6	P01566	screw, phpls, 6-32x.50lg, zinc-chromate
32	1	P00976	bumper, elastomeric
33	1	P00908	sitestand support bracket
34	1	P01637	housing, printer
35	8	P01625	screw, bhcs, 10-32 x .75 lg, stainless
36	1	P01788	rivet, 3/16 x .50 opn end, stl
37	12	P01648	plug, tapered, vinyl .2 x .1 x .5lg
38	4	P01500	nut, sleeve, non-locking
39	1	P01701	assembly, basket sitestand
40	1	P01029	screw, shcs, 10-32 x .25lg, alloy

A.8 SiteStand station Sleeve Assembly

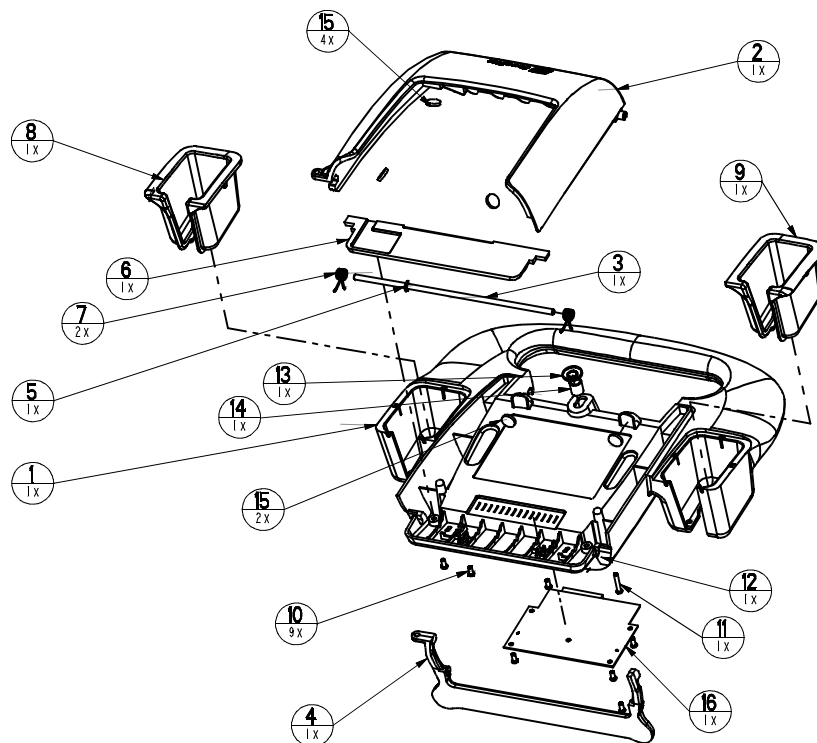


Table A.7 SiteStand station Sleeve Assembly Parts List

FIND NUMBER	QTY	ITEM NUMBER	PART DESCRIPTION
	1	P01969	assembly sleeve, stand, less PCB
16	1	P00409	assembly, PCB, docking stand

B Service Event Report

The Service Event Report provides information about product failures to the manufacturer and to authorized service facilities, which provide approved warranty services for SonoSite products. For all repairs completed, complete the form and return a copy of it to the following address:

SonoSite, Inc.

Technical Support

21919 30th Drive SE

Bothell, Washington 98021-3904

telephone: 1-877-657-8118 (U.S. & Canada)
+425-951-1330 (Worldwide)

facsimile: +425-951-6700

e-mail: service@sonosite.com

website: www.sonosite.com
Select **Products**, then Technical Support.

Service Event Report



Service Provider

Name:	Date:
Company:	
Address:	
Phone Number:	Fax Number:
E-mail address:	

Device Description

Name:	Serial Number:	
Part Number:	Lot Number:	Revision:
Software Version:	Other Identifiers:	

Event Description

Diagnosis

Service Performed

Performed By:	Date:
Actions:	

Parts Removed

Part Name	Part Number	Serial Number	Lot Number	Rev	Replaced By

Parts Installed

Part Name	Part Number	Serial Number	Lot Number	Rev	Replaced By

Tests Performed (attach test data)

Test:	Test:
Performed By:	Performed By:
Result: Pass <input type="checkbox"/> Fail <input type="checkbox"/>	Result: Pass <input type="checkbox"/> Fail <input type="checkbox"/>

Attach additional sheets as required

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