Appendix I: Measurement Procedures

Each frequency was measured in both the horizontal and vertical antenna polarizations.

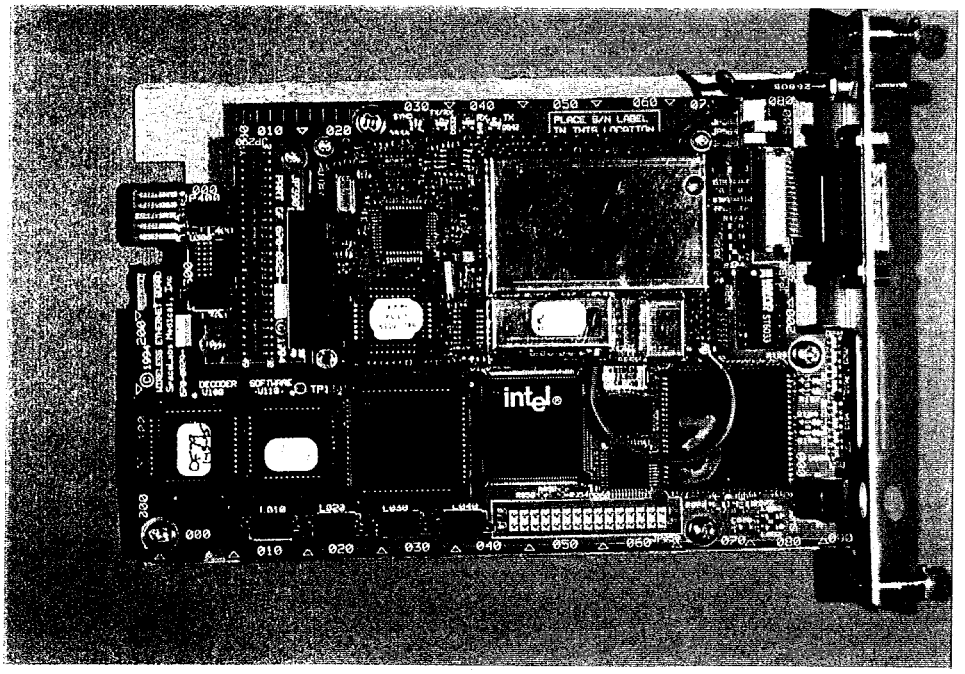
The EUT position was maximized for each frequency, for both the horizontal and vertical antenna polarizations, using a remotely controlled turntable.

The antenna height was varied from 1 - 4 meters at each frequency, for both the horizontal and vertical positions to maximize the emission level.

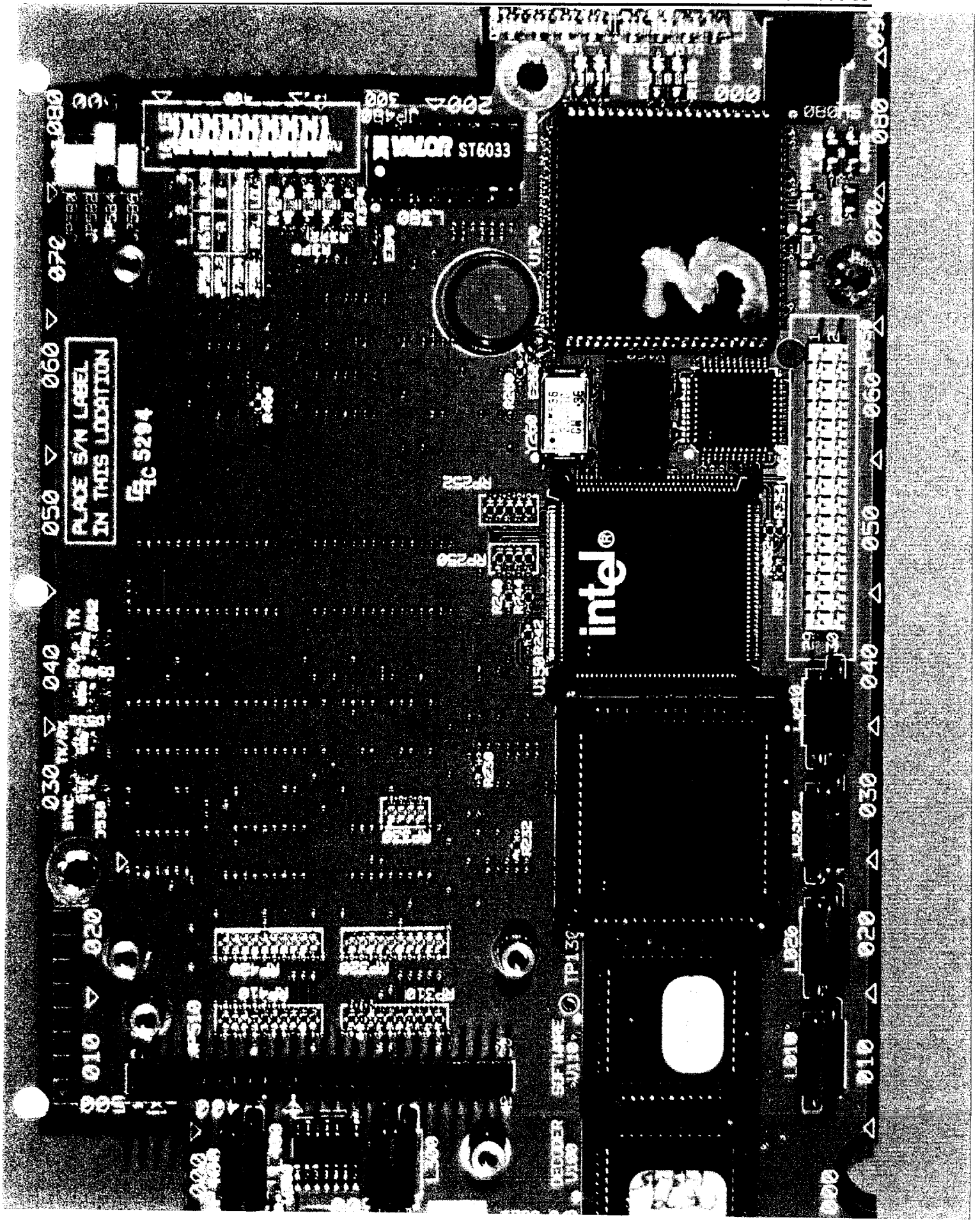
The cable and peripheral positions were manipulated to ensure maximum levels at each frequency for both horizontal and vertical antenna polarizations.

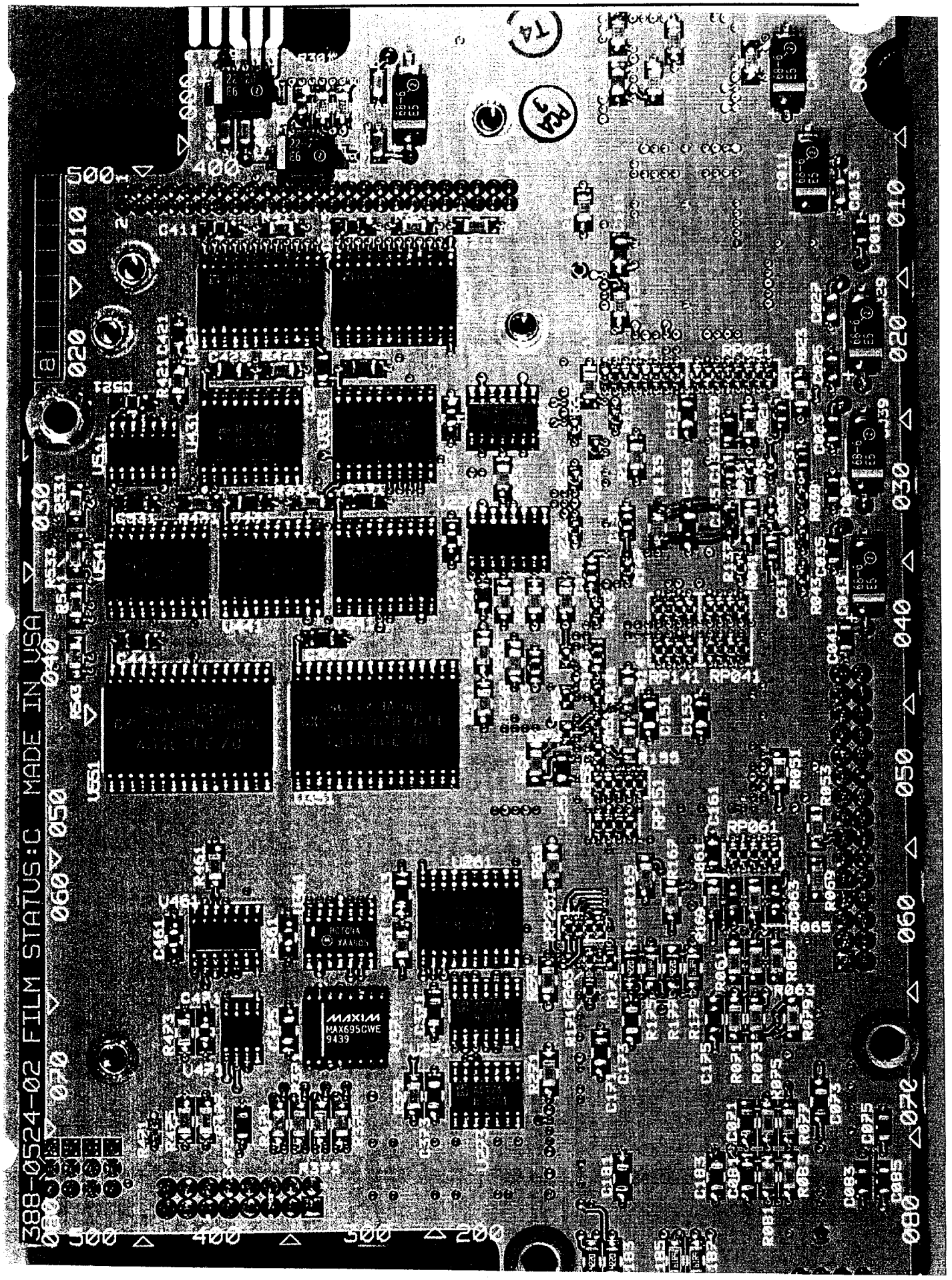
All measurements are made at an antenna to EUT distance of 3 meters.

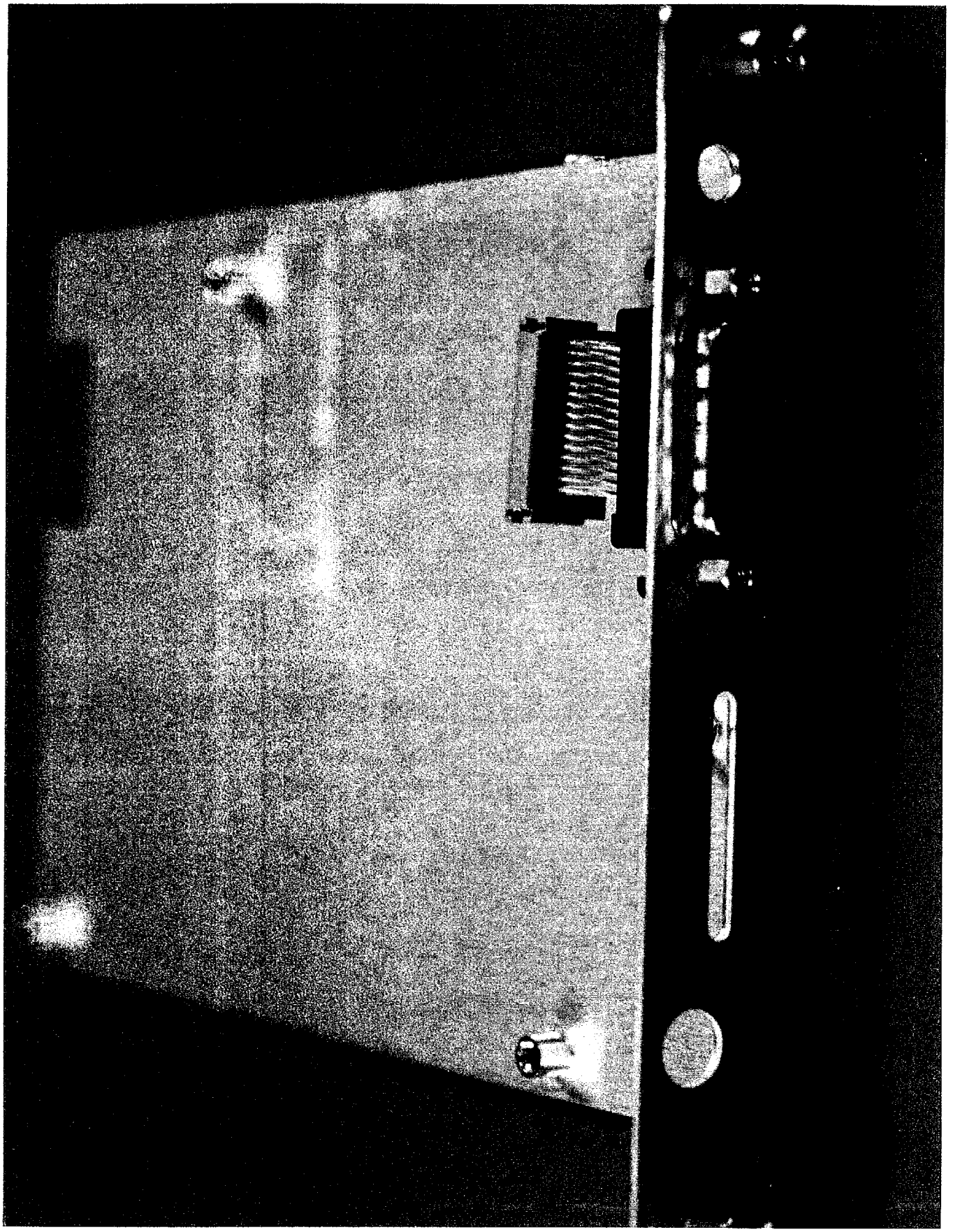
11.0 Photographs of Tested EUT

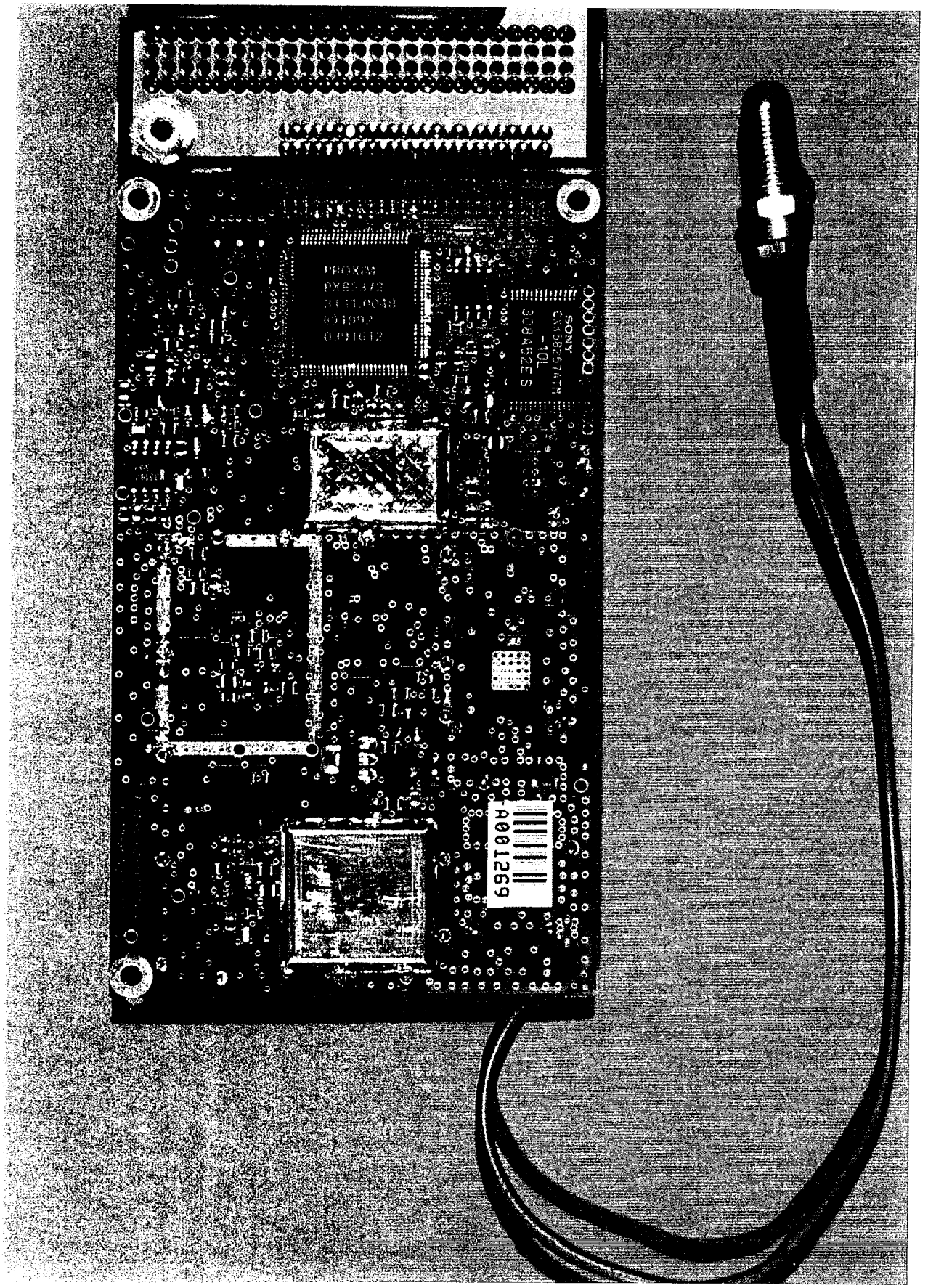


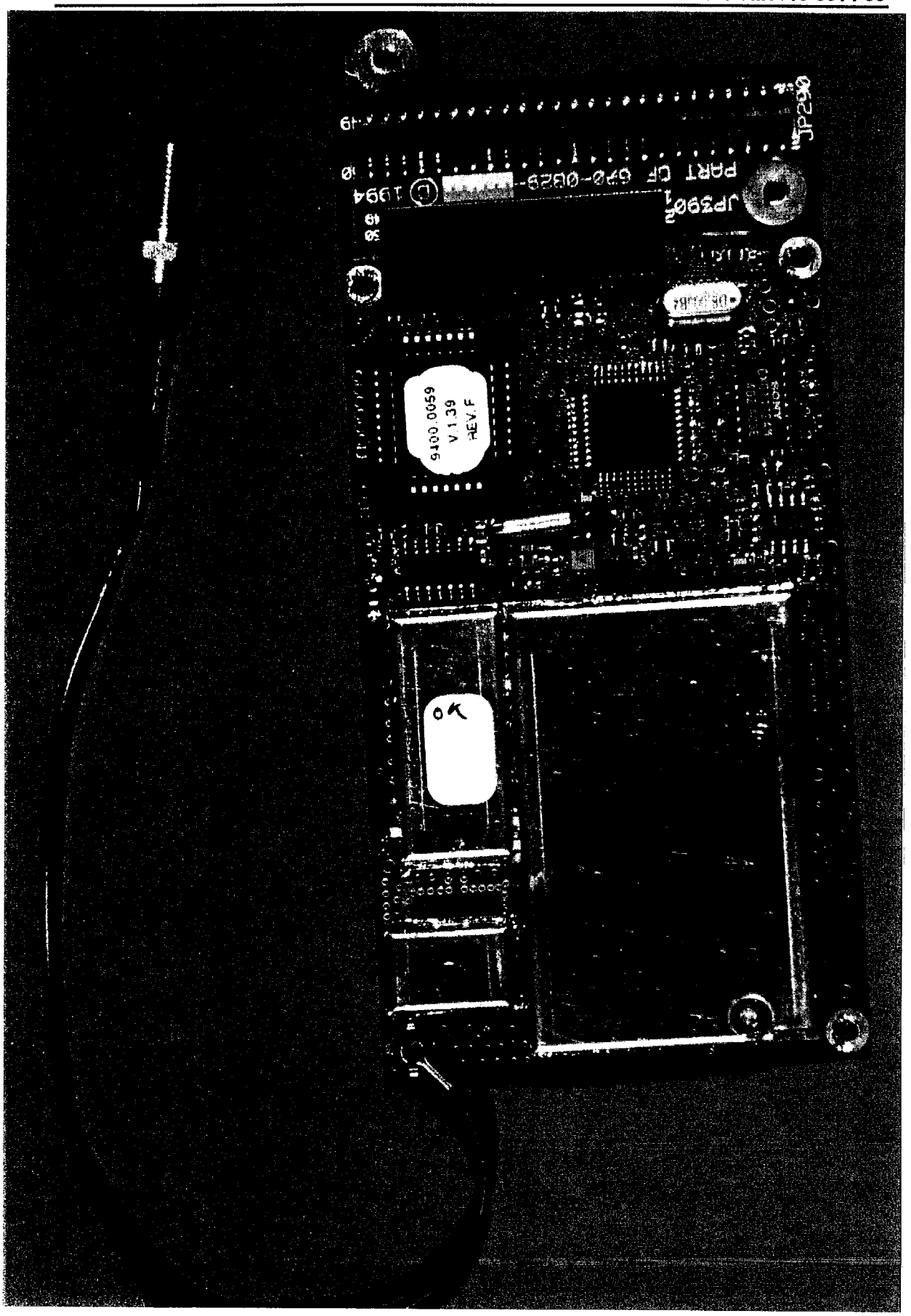
EUT Mated to SpaceLabs Mediical Interface Board

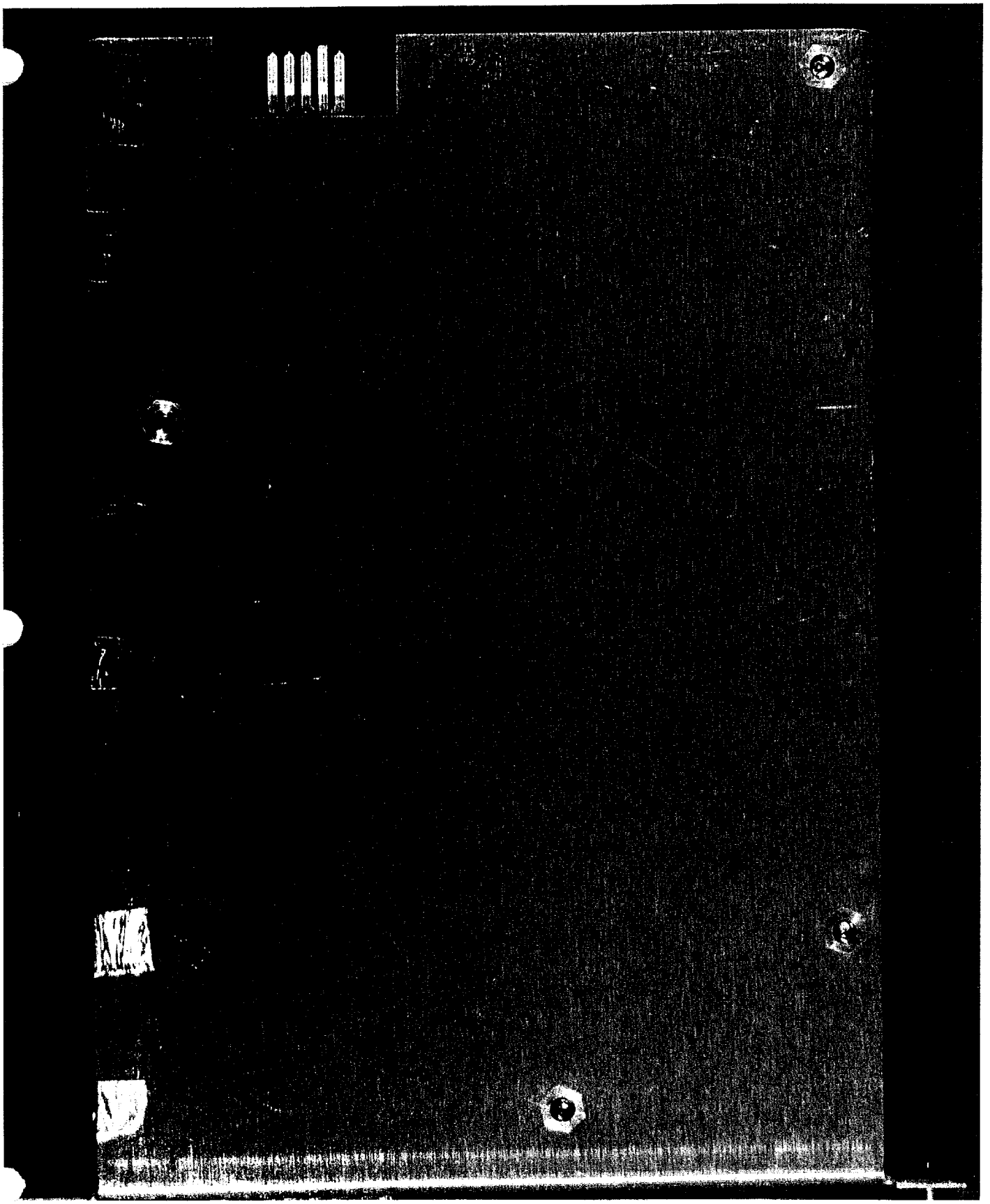

ST6033
PLACE S/N LABEL
IN THIS LOCATION
intel

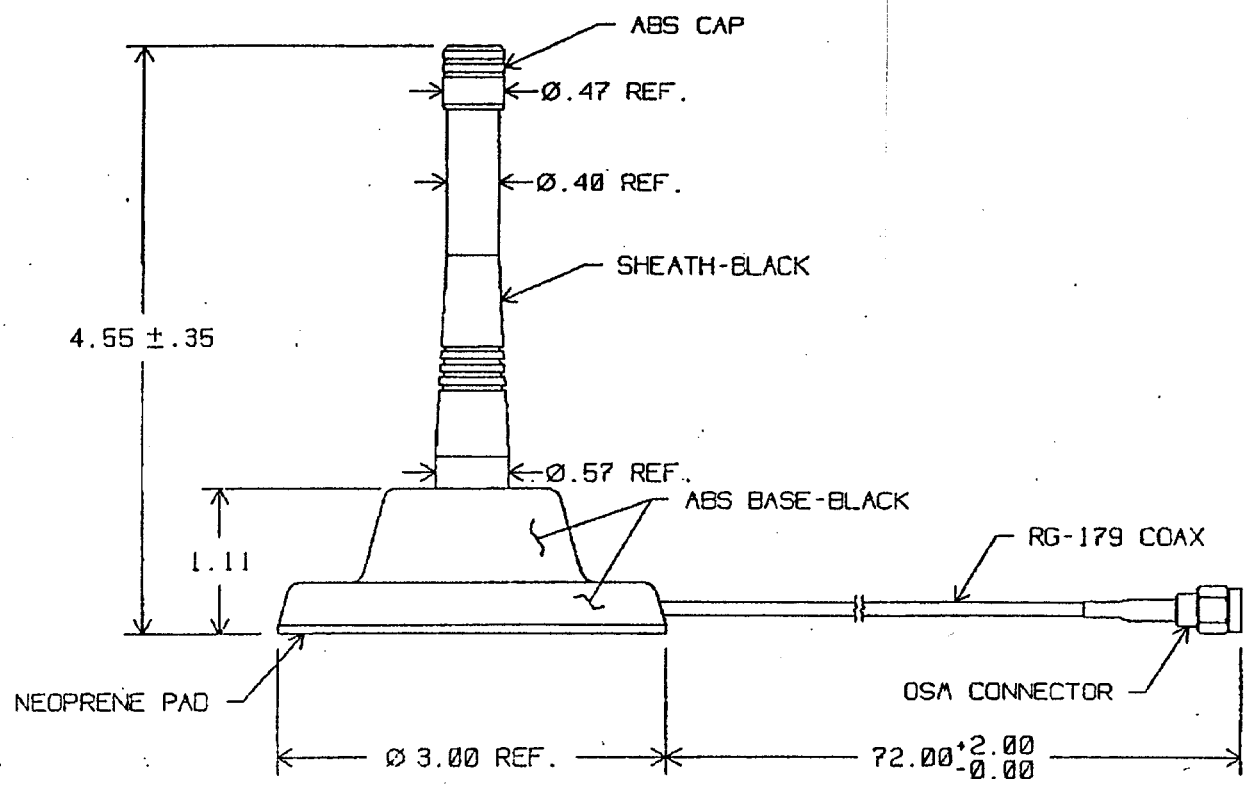

388-0524-02 FILM STATUS:C MADE IN USA
MAXIM
MAX695CWE
9439
RP021
RP141
RP041
RP061




A001269


JP290
9100.0059
V 1.39
REV.F
OK





PPROVED
'N 3 1995

Model 90310 Antenna

SPECIFICATIONS:

GAIN: UNITY (>-2.5dBdI

VSWR: 1.5:1 MAX. AT RESONANCE

POWER RATING: 50 WATTS

IMPEDANCE: 50 OHMS NOMINAL

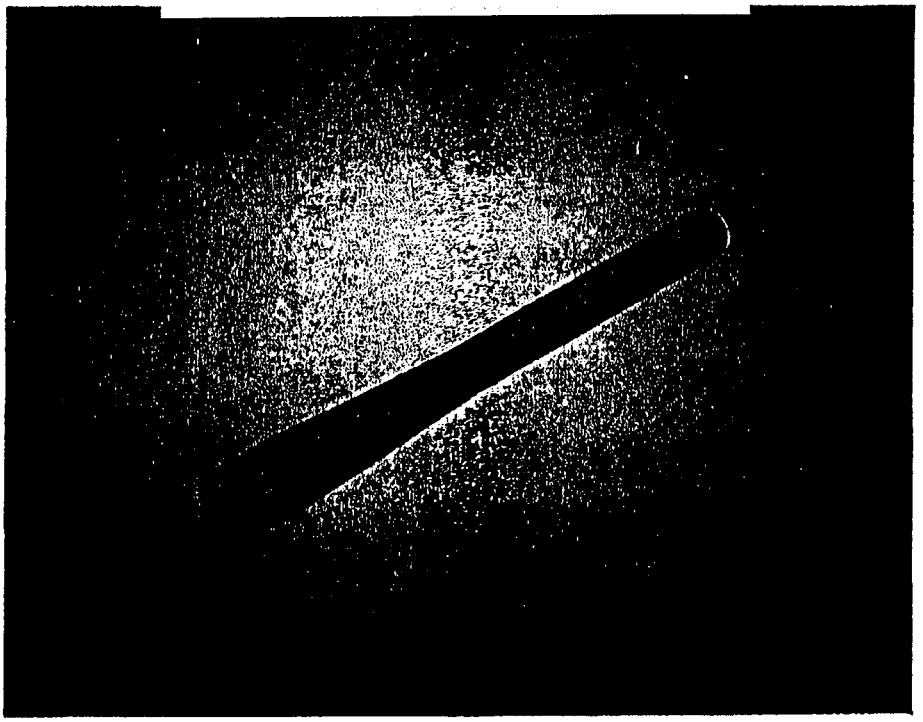
OPERATING TEMPERTURE: -40°C TO +85°C

LINEAR PULL CONNECTOR: 15 lbs. MINIMUM

CENTURION PART NO.	CUSTOMER	FREQUENCY
CAF95651	PROXIM	2.4GHZ

WIRELESS ANTENNA
PRODUCT DATA SHEET

Model 90309 Antenna



2.4 GHz Dipole Antenna for ISM Band
M/A-COM P/N: 3380-8030-0024

Frequency:	2400-2485 MHz	**Weight:**	1.0 oz. Max
Polarization:	Vertical	**VSWR:**	2.0:1
Size:	3.5" Tall, .40" Max Dia.	**Input Connector:**	SMA Male
Patterns:	Omnidirectional in Azimuth	**Applications:**	Phones, Computers, Hand Held Devices, Free Space
Gain:	2.0 dBi Peak		

Wireless Option for PC Scout™ Monitor 90309-W

* Communicates with the Cellular Network Interface (CNI) 90310 to provide wireless transmission of data to the Central Station and hard wired Ethernet network.

* Integrated into the 90309's I/O Bay - no external cables required.

* Hard wired Ethernet operation also provided via AUI and 10BASE-T connections.

* Employs spread spectrum technology for interference free operation.

* Hardware scrambling technique used to provide data security.

Network Information

The wireless network is comprised of an unlimited number of non-overlapping cells. Each cell consists of from one to fifteen sub-networks or channels each having the capacity to carry 20 waveforms (10 90309's transmitting 2 waveforms each, 5 90309's @ 4 waveforms, etc) for a total of 300 waveforms.

Channel numbers are selected to direct transmissions from 90309's to particular CNI's. Thereby level-loading the wireless network traffic. They are selected at the time of installation. Channel numbers may be reused in different cells.

Radio

Range - 90309's may be located up to 250 ft from the CNI in normal hospital environments.

Frequency band - 2.4 to 2.4836 Ghz depending on country group

Radio type - Spread Spectrum (frequency hopping)
Output power - 100 Mw

Antenna - omni directional mounted to rear of 90309

Electrical Requirements

DC Input Current - 1.0A @ 5.0 VDC
Supplied by the 90309 - no external cables required.

Physical Dimensions

Depth:	Adds 1 inch to depth of 90309
Weight:	Adds 1.5 lbs of weight to 90309

Option Ordering Information

W - Wired (Ethernet) and wireless communications, external communications port (SDLC), alarm relay output and internal Flexport interface ready.
Option W is not compatible with Option C or M.

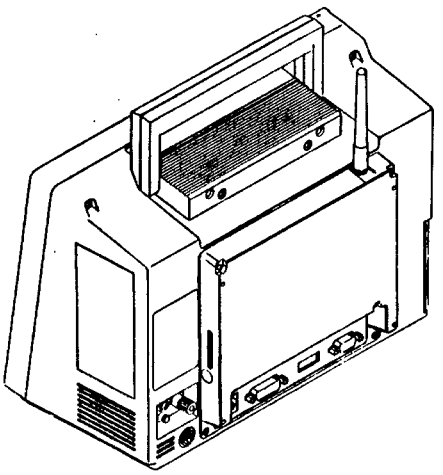
Note : Country Group must be separately specified - Part Number: 655-XXXX-XX

FCC Statement added Here

DRAFT

PC Scout Wireless Network - Option W

Please see Option W
Data Sheet for information
about the PC Scout
Wireless Network



USER NOTICE

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by Spacelabs Medical will void the user's authority to operate the equipment.

DRAFT

PC Scout External Power Supply Connection

To connect to an external power supply:

1. Attach the DC outlet cable to J1
2. Connect the power cord of the external power supply to an AC outlet

The connection for the external power supply is shown below. The green LED on the front panel should light up whenever the unit is powered by the external power supply.

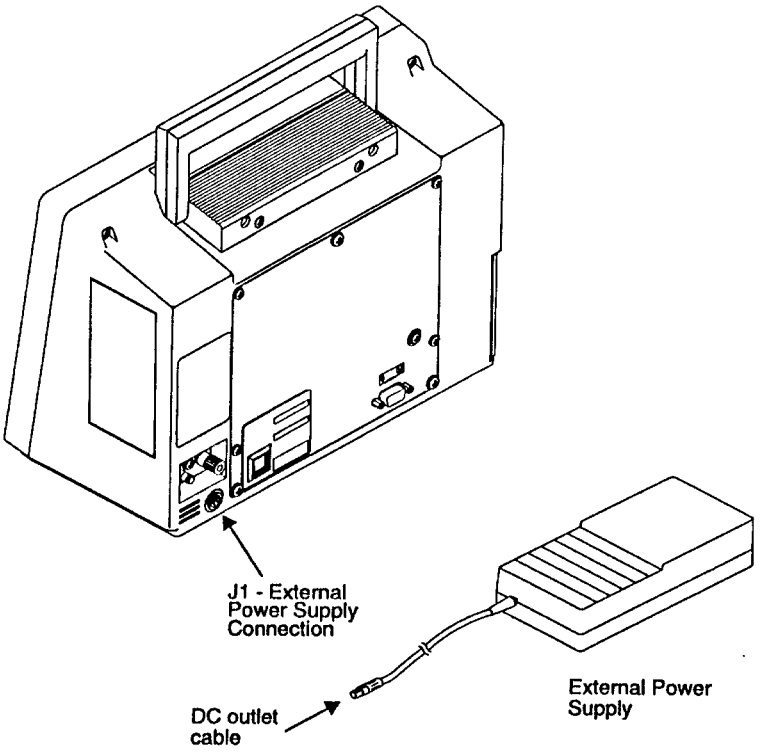


Figure Bed-11: PC Scout External Power Supply Connection

PC Scout Flexport Interface - Option C

To connect to the internal Flexport interface (Option C):

1. Plug one end of a modular cable into the modular jack J2 on the back of the PC Scout monitor
2. Plug the other end of the modular cable into the transition connector
3. Plug the transition connector into the RS-232 connector on the device to be interfaced

To connect to an external Flexport interface:

1. Attach the SDLC terminator to the SDLC cable
2. Plug the SDLC connector at one end of the cable into the SDLC connector on the back of the PC Scout monitor
3. Plug the SDLC connector at the other end of the cable into the Flexport interface
4. Plug one end of the modular cable into the modular jack on the Flexport interface
5. Plug the other end of the modular cable into the transition connector
6. Plug the transition connector into the RS-232 connector on the device to be interfaced

If your PC Scout monitor is equipped with the internal Flexport interface option, cable your device directly to the Flexport interface connection as shown in Figure Bed-5. If your PC Scout monitor does not have the internal Flexport interface option, you will need a separate external Flexport interface. See Figure Bed-6.

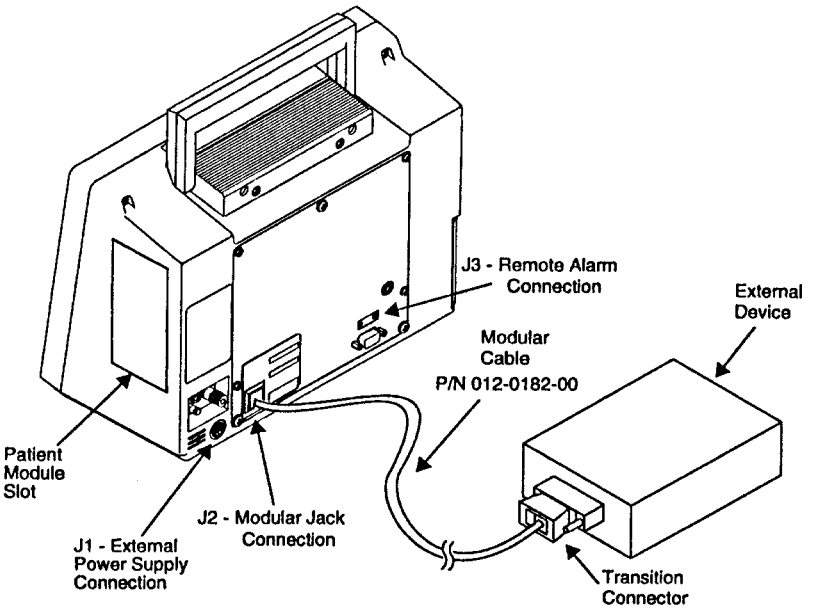


Figure Bed-5: PC Scout Internal Flexport Connection - Option C

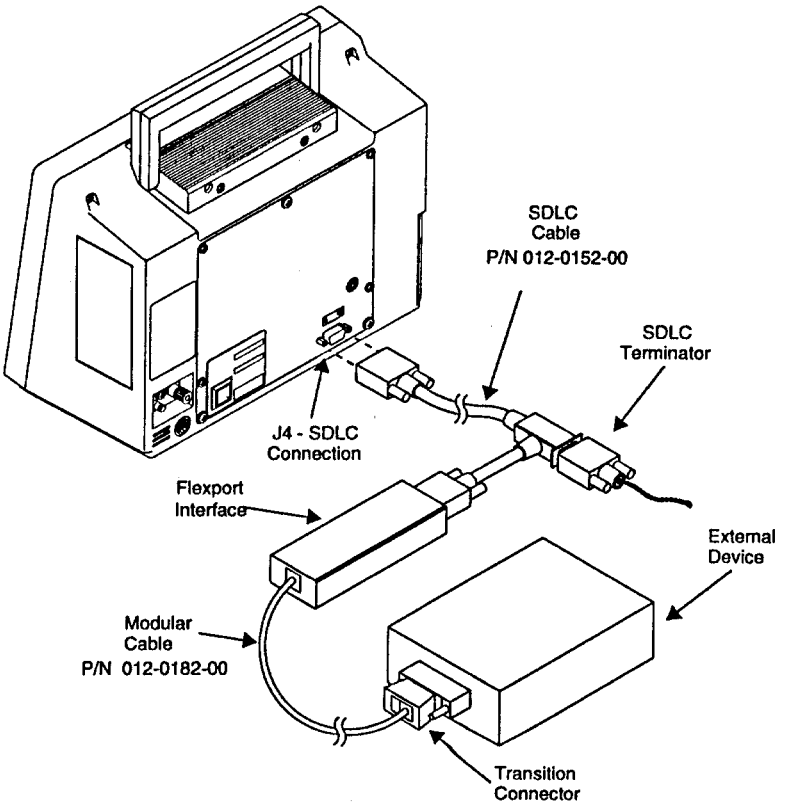


Figure Bed-6: PC Scout External Flexport Connection - Option C

PC Scout Flexport Interface - Option M

To connect to the internal Flexport interface (Option M):

1. Plug one end of a modular cable into the modular jack J2 on the back of the PC Scout monitor
2. Plug the other end of the modular cable into the transition connector
3. Plug the transition connector into the RS-232 connector on the device to be interfaced

To connect to an external Flexport interface:

1. Attach the SDLC terminator to the SDLC cable
2. Plug the SDLC connector at one end of the cable into the SDLC connector on the back of the PC Scout monitor
3. Plug the SDLC connector at the other end of the cable into the Flexport interface
4. Plug one end of the modular cable into the modular jack on the Flexport interface
5. Plug the other end of the modular cable into the transition connector
6. Plug the transition connector into the RS-232 connector on the device to be interfaced

If your PC Scout monitor is equipped with the internal Flexport interface option, cable your device directly to the Flexport interface connection as shown in Figure Bed-7. If your PC Scout monitor does not have the internal Flexport interface option, you will need a separate external Flexport interface. See Figure Bed-8.

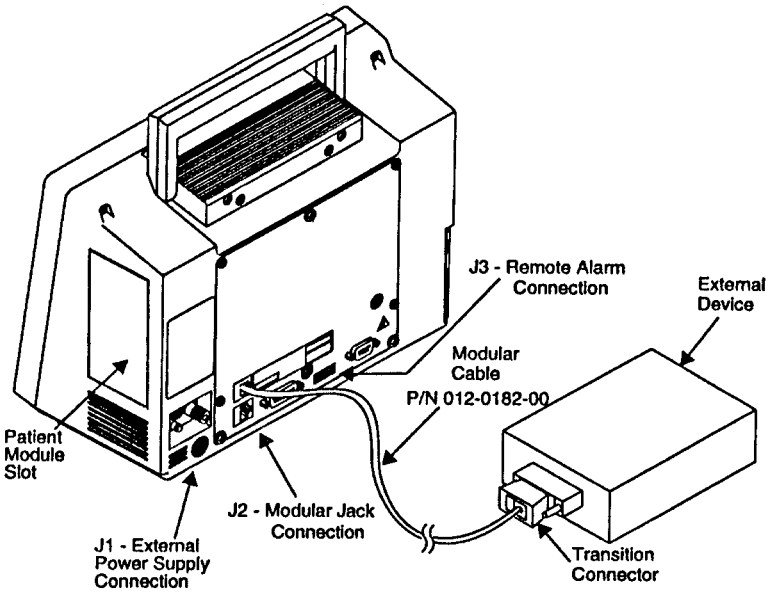


Figure Bed-7: PC Scout Internal Flexport Connection - Option M

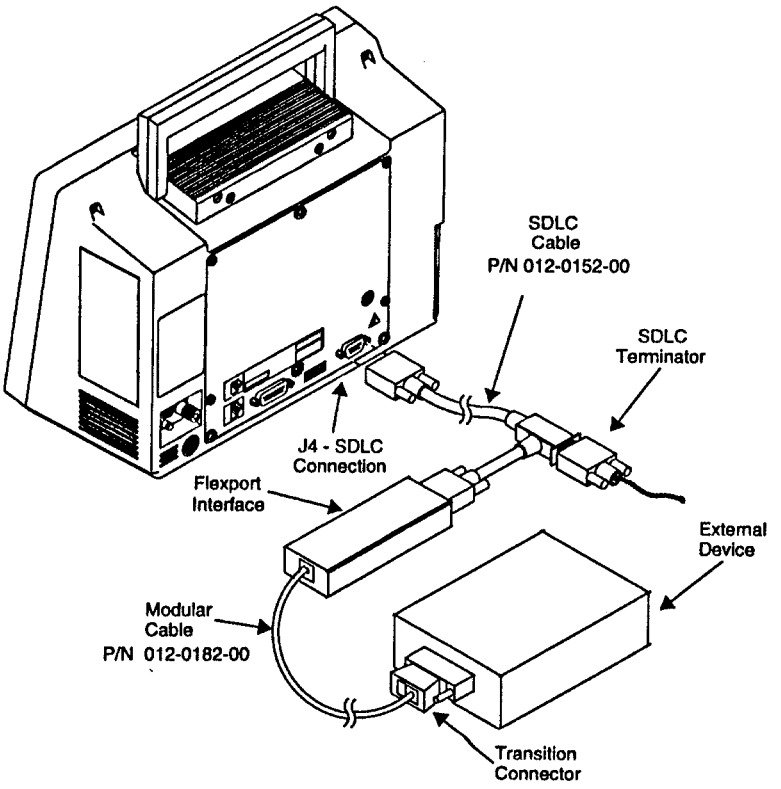
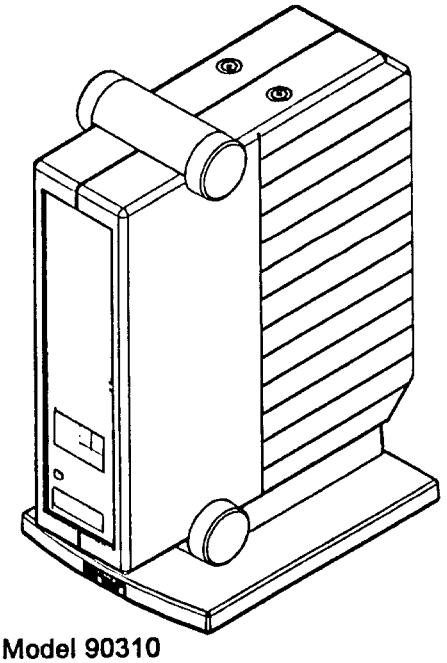


Figure Bed-8: PC Scout External Flexport Connection - Option M

Cellular Network Interface 90310



Model 90310
Cellular Network Interface
(shown with optional pedestal mount)

* The Cellular Network Interface (CNI)™ provides connection between wireless PC Scouts (90309-W) and the Ethernet network.

* Employs spread spectrum technology for interference free operation.

* Multiple CNI's may be used to support up to 150 PC Scouts within each cell.

* Hardware scrambling technique used to provide data security.

* Unique mounting options permit the 90310 to be integrated with 90485 module housings.

SPECIFICATIONS

Network Information

Capacity - 20 waveforms per channel

Channels - 15 channels (300 waveforms) may be used within each cell. Channels are selected at the time of installation. 90310's are offerred in single or dual channel configurations.

Cells - the number of cells is unlimited as long as they do not overlap (CNI's separated by more than 1000 ft). Channel numbers may be reused in different cells.

Range - Up to 250 ft in normal hospital environments. Multiple 90310's may be used to extend coverage.

Radio

Frequency band - 2.4 to 2.4836 Ghz depending on country group

Radio type - Spread Spectrum (frequency hopping)
Output power - 100 Mw
Antenna - pedestal type, omni directional

Electrical Requirements

DC Input Current - 1.0A @ 4.8 - 5.2 VDC
Note : DC power can be supplied by 90486 DC Power Supply, Universal Clinical Workstation (UCW)™ or other Central Station PCMS Monitor using one of the following cables:

90310 CNI to 90385 UCW cable -
2 ft (61.0 cm) Part Number: 012-0391-02
4 ft (121.9 cm) Part Number: 012-0391-04
8 ft (243.8 cm) Part Number: 012-0391-08
10 ft (304.8 cm) Part Number: 012-0391-10

90310 CNI to 90486 DC Power Supply cable -
3 ft (91.4 cm) Part Number: 012-0387-00
(included with 90486)

Cellular Network Interface 90310

SpaceLabs Medical, Inc.
15220 N.E. 40th Street
P.O. Box 97013
Redmond, WA 98073-9713
(206) 882-3700

061-0348-00 Rev. B 07/94

SPECIFICATIONS continued

90310 CNI to PC1/PC2 cables - (both required)
Power & SDLC Part Number: 175-0795-40
Adapter cable Part Number: 012-0390-00

90310 CNI may be "daisy-chained" with other CNI's or 90485 module housings to receive and pass through power and SDLC signals using the following cable:
1 ft (30 cm) Part Number: 012-0392-00

Ordering Information

Single Channel	Part Number: 90310-A
Dual Channel	Part Number: 90310-B

Note: Country Group must be separately specified for each order.

Accessories

Pedestal Mount

Single	Part Number: 016-0365-00
Double	Part Number: 016-0364-00

Regulatory

Meets UL544 and CSA standards for electrical safety.

Physical Dimensions

Height:	10.3 in (26.0 cm)
Depth:	9.3 in (23.5 cm)
Width:	3.0 in (7.6 cm)
Weight:	
Single channel	4.3 lbs (2.0 kg)
Dual channel	4.8 lbs (2.2 kg)

Environmental Requirements

Storage -
Temperature: -40 to 167 F (-40 to 75 C)
Humidity: 10 to 100% @ 32 C (condensing
Altitude: 0 to 40,000 ft (0 to 12,195 m)

Operating -
Temperature: 50 to 104 F (10 to 40 C)
Humidity: 95% RH @ 30 C, 75% RH @ 4C
Altitude: 0 to 10,000 ft (0 to 3,048 m)

FCC Statement being added here

(3)

FCC Statement

USER NOTICE

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by Spacelabs Medical will void the user's authority to operate the equipment.

90310

CELLULAR NETWORK INTERFACE

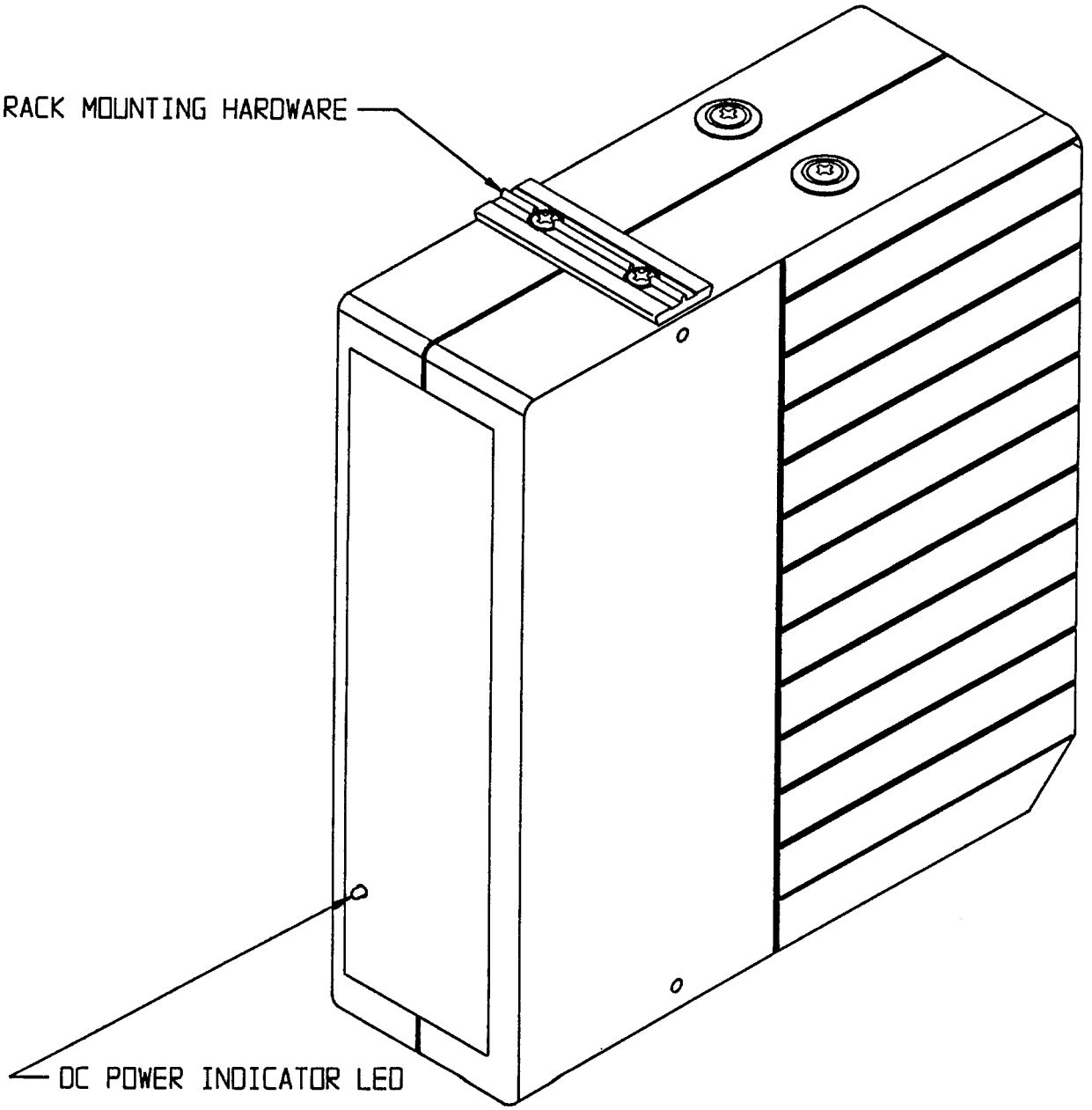


FIGURE 1

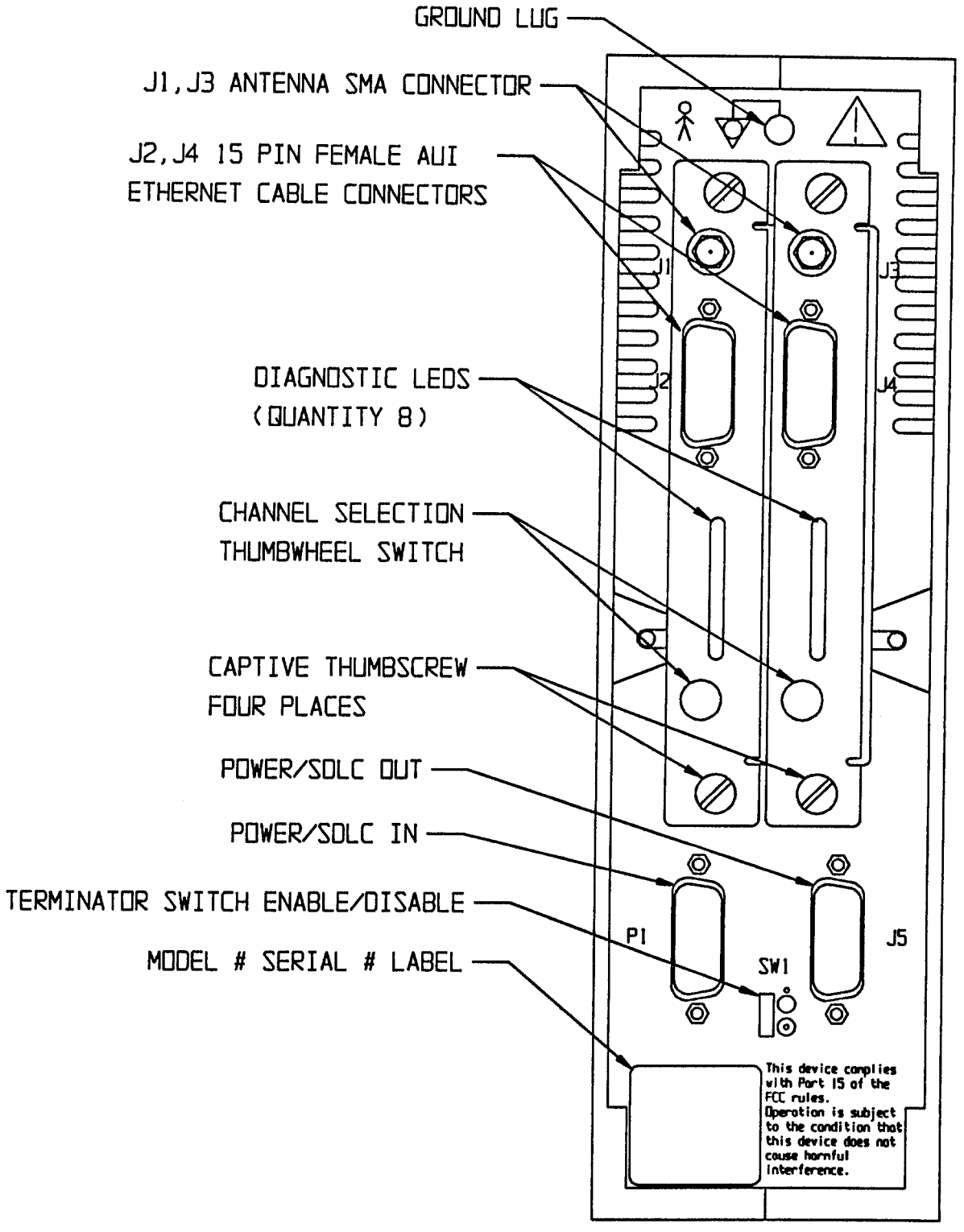

GROUND LUG
J1, J3 ANTENNA SMA CONNECTOR
J2, J4 15 PIN FEMALE AUI
ETHERNET CABLE CONNECTORS
DIAGNOSTIC LEDS
(QUANTITY 8)
CHANNEL SELECTION
THUMBWHEEL SWITCH
CAPTIVE THUMBSCREW
FOUR PLACES
POWER/SDLC OUT
POWER/SDLC IN
TERMINATOR SWITCH ENABLE/DISABLE
MODEL # SERIAL # LABEL
J1
J3
J2
J4
P1
SW1
J5
This device complies with Part 15 of the FCC rules. Operation is subject to the condition that this device does not cause harmful interference.

FIGURE 2

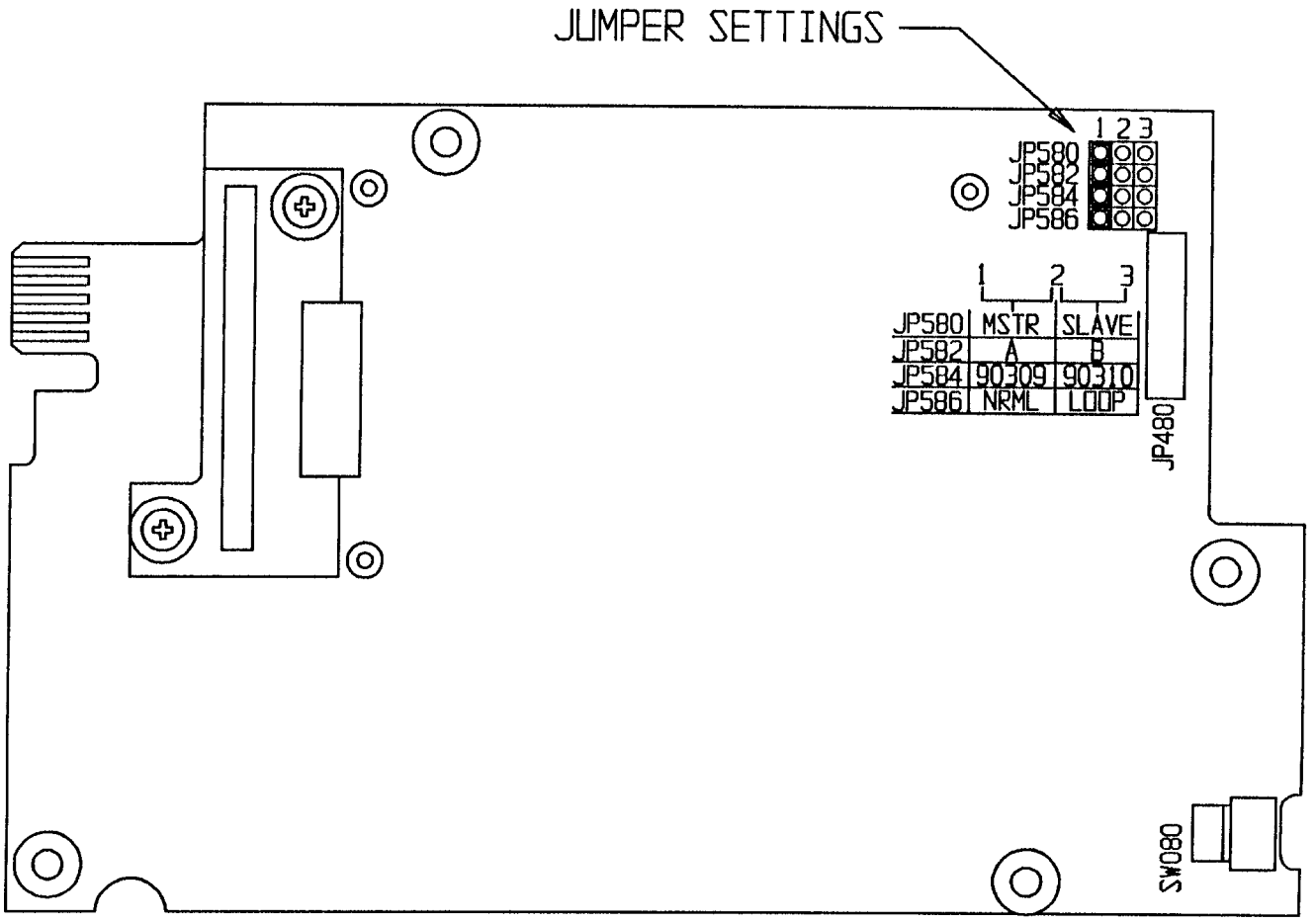

JUMPER SETTINGS
1 2 3
JP580
JP582
JP584
JP586
1 2 3
JP580 MSTR SLAVE
JP582 A B
JP584 90309 90310
JP586 NRML LOOP
JP480
SW080

FIGURE 3

90310 USER INFORMATION GUIDE

1.0 Mounting (refer to figure 1)

"RACK MOUNTING HARDWARE" is screwed into the top side of the 90310 housing. This hardware is used to mount the 90310 housing on the 90485 (kit P/N: 016-0342-00)

2.0 Front Panel (refer to figure 1)

On the front panel of the 90310 housing will be a green light emitting diode. When illuminated, this LED indicates the presence of DC voltage to the 90310 housing.

3.0 Ground Lug (refer to figure 2)

On the rear panel, this lug can be used for any chassis grounding requirements.

4.0 J1, J3 Antenna SMA Connector (refer to figure 2)

This screw on type connector is used to attach to the pedestal mount antenna. These antenna connectors are found on the rear panel of the housing

5.0 J2, J4 15 pin Female AUI Ethernet Cable Connectors (refer to figure 2)

This sub DB 15 connector connects the 90310 to the SpaceLabs Ethernet network. The cable from J2 & J4 plug directly into a multi-port repeater. These 15 pin connectors are found on the rear panel of the housing

6.0 Diagnostic LED's (refer to figure 2)

Upon power up the 90310 automatically executes hardware diagnostics. If any failures are detected, the LED's will indicate by displaying a hexadecimal number. Most any type of failure will require servicing this 90310 card assembly. These LED's are found on the rear panel of the housing.

7.0 Channel Selection (refer to figure 2)

Beneath the plastic cover is a turnable thumbwheel. Using a small phillips or regular screwdriver the channel may be changed. The 90310 systems communicate based on this thumbwheel setting. 90310 and equipped 90309 systems must be

This jumper is always set to the 90310 setting, pins 2 & 3 shorted, when the card assembly is used in the 90310 housing. The jumper is located on the card assembly inside the housing.

JP586 is used to select between normal and looping operating modes. This jumper is always set to normal, pins 1 & 2 shorted. This jumper is located on the card assembly inside the housing.

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