

	Fujitsu Transaction Solutions	<b>SUPPORT PLANNING GUIDE</b> <b>iPAD100</b>	SPG/RRV690596
	Sustaining Engineering		Issue: 4.0
	San Diego, CA		August 24, 2006

---

**Subject:    iPAD100 Handheld Product Family**

---

**SYNOPSIS**

This document is intended to supply sufficient information to North American service planners to enable them to plan for the introduction of the above product(s).

This SPG is the generic version, released by the product authority, Fujitsu Transaction Solutions (FTXS), Sustaining Engineering. Each group releasing the product will use the information contained as the basis for their Logistics and Field Service planning activities.

This document details only the corporate philosophies, and does not seek to cover such subjects as additional services offered by Managed Services, third party service providers, low level repairs, or the local sourcing of components and consumable items.

The service descriptions in this document are guidelines, detailing the recommendations of the product authority. The information within this document has been reviewed for accuracy, but as with most documents, errors may be found and corrected in future revisions. Fujitsu Transaction Solutions (FTXS) cannot be held liable for any inaccurate information found in this document.

This document supercedes all previously released versions of SPG/RRV690596.

<u>INQUIRIES TO:</u>		<u>DATE</u>
Fujitsu Transaction Solutions Inc.		
Exchange:	Sustaining Engineering	_____
Mail:	Fujitsu USA04, Sustaining Engineering	_____
FAX:	858-731-4781 (7888-4781)	_____
Internet:	<a href="mailto:sustainingengineering@ftxs.fujitsu.com">sustainingengineering@ftxs.fujitsu.com</a>	_____
FTP:	<a href="ftp://ftp.ftxs.fujitsu.com/">ftp://ftp.ftxs.fujitsu.com/</a>	_____
Original signature copies maintained by Sustaining Engineering.		

<b>0.</b>	<b>DOCUMENT CONTROL.....</b>	<b>3</b>
0.1.	ISSUE LEVEL .....	3
0.2.	CHANGES FROM PREVIOUS ISSUE.....	3
0.3.	TERMS AND ABBREVIATIONS .....	3
0.4.	REFERENCE DOCUMENTS.....	3
<b>1.</b>	<b>OVERVIEW .....</b>	<b>4</b>
1.1.	TARGET MARKET .....	4
1.2.	RELEASE SCHEDULE.....	4
1.3.	PRODUCT DESCRIPTION.....	4
1.4.	SOFTWARE.....	5
1.5.	HARDWARE.....	5
1.6.	SPECIFICATIONS.....	10
1.7.	PRODUCT PERFORMANCE.....	12
1.7.1.	RELIABILITY.....	12
1.7.2.	LIFE EXPECTANCY.....	12
<b>2.</b>	<b>RESOURCES .....</b>	<b>13</b>
2.1.	SKILLS REQUIRED .....	13
2.2.	TRAINING .....	13
2.3.	TECHNICAL PUBLICATIONS.....	13
2.4.	SPARES .....	14
2.4.1.	CONSUMABLE PARTS .....	14
2.5.	REPAIR .....	14
2.5.1.	REPAIR STRATEGY.....	15
2.5.2.	REPAIR TIME.....	15
2.6.	TOOLS.....	16
2.6.1.	DIAGNOSTICS.....	16
<b>3.</b>	<b>SERVICE PROFILES.....</b>	<b>17</b>
3.1.	PREVENTATIVE MAINTENANCE.....	17
3.2.	CORRECTIVE MAINTENANCE.....	17
3.3.	ESCALATION PROCEDURES .....	17
<b>4.</b>	<b>APPENDIX A: FAILURE PER YEAR WORKSHEET .....</b>	<b>18</b>
<b>5.</b>	<b>APPENDIX B: SWITCH AND JUMPER SETTINGS .....</b>	<b>19</b>
	<b>APPENDIX C: CONNECTORS AND PINOUTS .....</b>	<b>20</b>
<b>7.</b>	<b>APPENDIX D: ORDERABLE CONFIGURATIONS.....</b>	<b>21</b>
<b>8.</b>	<b>APPENDIX E: SPARES LIST.....</b>	<b>22</b>

	Fujitsu Transaction Solutions	<b>SUPPORT PLANNING GUIDE</b> <b>iPAD100</b>	SPG/RRV690596
	Sustaining Engineering		Issue: 4.0
	San Diego, CA		August 24, 2006

## 0. DOCUMENT CONTROL

### 0.1. ISSUE LEVEL

This is the 4th issue of this document, introducing the iPAD100-20.  
This document supercedes all previously released versions of SPG/RRV690596.

### 0.2. CHANGES FROM PREVIOUS ISSUE

Updated document format.  
Added iPAD100-20 version to the existing -10, -12 and -14 versions.

### 0.3. TERMS AND ABBREVIATIONS

AFR	Annualized Failure Rate
CLD	Confidence Level Diagnostic Software
EMI	Electromagnetic Interference
ESD	Electrostatic Discharge
FRU	Field Replaceable Units
FPY	Failures Per Year
HDD	Hard Disk Drive
MSR	Magnetic Strip Reader
MTBF	Mean Time Between Failures
MTTR	Mean Time To Repair
POH	Power On Hours
PSU	Power Supply Unit
UPC	Universal Product Code (Bar Code)

### 0.4. REFERENCE DOCUMENTS

Part Number	Description
CE-123-G026-08EN	iPAD100 Series Product Specification - Rev. 4.1, Aug '06
N/A	iPAD Series Maintenance Drawings - 4th Edition, Aug '06
PA-MS-1002	iPAD100-10 Product Announcement Issue 2.0
PA-LA-040104-01	iPAD Product Announcement Date: April 5, 2004

## 1. OVERVIEW

The iPAD100-XX combines powerful functionality and industry standard communications in a rugged and lightweight design. The iPAD100 weighs about eleven ounces and comes standard with Microsoft© Windows® CE.NET and the new Intel® XSCALE™ processor. The iPAD100 was designed for the retail environment and is perfectly suited for the portable Point of Service applications. The integrated scanner, magnetic-stripe reader (MSR), encryption PIN pad (optional) and VoIP capability allows it to support multiple applications in any retail environment. There are several versions and sub-versions of the iPAD100 family of Handheld products (refer to the matrix under Product Description for more details).

### 1.1. TARGET MARKET

Tier 1 retailers are the target market for the iPAD100. Ideal prospects for the iPAD100 are those that are currently using older Symbol/Telxon equipment. In addition, customers with existing 802.11 RF backbone are particularly attractive. General Merchandise and Specialty Markets will be pursued as a first priority followed by Grocery. Primary applications will center on mobile point of service. Secondary applications include merchandising applications, loss prevention and managers terminals.

Initial Target Customers	Geography	Market Segment / Application
Staples	US	Retail, Office Supply
Direct Source	US	Retail
Maurices/Dress Barn	US	Retail
Business Depot	Canada	Retail, Office Supply
Eastern Mountain Sports	Eastern US	Retail, Sporting Goods
Danier Leather	Canada	Retail, Specialty
StoreNext	US	Retail, Dealer/VAR Channel
A&P	US	U-Scan, Mobile Attendant
Kroger	US	U-Scan, Mobile Attendant
Lowblaws	Canada	U-Scan, Mobile Attendant
Other U-Scan Customers	US/Canada	U-Scan, Mobile Attendant

### 1.2. RELEASE SCHEDULE

Description	Release Date
iPAD100-10 General Release	April 2003
iPAD100-12 General Release	December 2003
iPAD100-14 General Release, North America Only	June 2004
iPAD100-14 EOL and End Of Stock	September 2006
iPAD100-20 General Release	August 2006

### 1.3. PRODUCT DESCRIPTION

The iPAD100 is a mobile device designed for the Retail marketplace. It was designed to be a multi functional retail appliance. The core of this platform is a powerful Intel XSCALE CPU. It comes with Microsoft Windows CE.NET operating system embedded. The operating system gives the user the flexibility for a standalone batch system or a client server system with RF-LAN for real-time updates to the host systems. Other embedded software that will be available for the iPAD100 is Studio™ and Avalanche™ from Wavelink. Peripherals include a Charging Cradle with host connectivity, Battery Charger, AC Adapter and Scan Handle.

The major changes from previous models to the iPAD100-20 are:

- Single Antenna (previous used Dual Antenna)
- CE.NET 5.0 OS
- Higher Capacity Battery (can also be used in all previous versions)
- 270 XSCALE 520Mhz CPU
- LED Rear Lit Display (previous used FL Front Lit)
- Increased Battery Life; due to lower power consumption and higher rated battery
- RoHS Compliant

## 1.4. SOFTWARE

The iPAD100-10 OS is Microsoft© Windows® CE.NET 4.1.  
The iPAD100-12 OS is Microsoft© Windows® CE.NET 4.2.  
The iPAD100-14 OS is Microsoft© Windows® CE.NET 4.2.  
The iPAD100-20 OS is Microsoft© Windows® CE.NET 5.0.

A Software Developers Kit is included with the Programmers Reference Guide.

Applications are available from MobileReady™ Independent Software Vendors (ISVs) and partners.

## 1.5. HARDWARE

Following is a matrix of the various iPAD100 features illustrating the similarities and differences between models.

	iPAD100-10	iPAD100-12	iPAD100-14	iPAD100-20
CPU	250/255 XSCALE 400Mhz	255 XSCALE 400Mhz	255 XSCALE 400Mhz	270 XSCALE 520Mhz
Memory				
ROM	32Mb	32Mb	32Mb	64Mb
SDRAM	64Mb	64Mb	64Mb	128Mb
Flash	32Mb	32Mb	32Mb	64Mb
RF LAN	Compact Flash	Compact Flash	Compact Flash	Internal, Mini PCI
Antenna	Dual, Internal	Dual, Internal	Dual, Internal	Single, Internal
Type	802.11b	802.11b	802.11b	802.11b/g
Encryption	WEP128	WEP128, WPA	WEP128, WPA	WEP128, WPA
External I/O				
Card Slot	Compact Flash	Compact Flash	Compact Flash	None
Audio	Headphone I/F	Headphone I/F	Headphone I/F	Headphone I/F
Cradle I/F	Battery, USB	Battery, USB	Battery, USB	Battery, USB
Display	3.5" TFT LCD	3.5" TFT LCD	3.5" TFT LCD	3.5" TFT LCD
Resolution	240x320	240x320	240x320	240x320
Colors	65,536	65,536	65,536	65,536
Lighting	FL Front Lit	FL Front Lit	FL Front Lit	LED Back Lit
Operator Input				
Touch	Resistive Film	Resistive Film	Resistive Film	Resistive Film
Keypad	See Note 2	See Note 2	See Note 2	See Note 2
Scan Triggers	Left & Right	Left & Right	Left & Right	Left & Right
Built In I/O				
MSR	JIS I, JIS II, ISO1/2	JIS I, JIS II, ISO1/2	JIS I, JIS II, ISO1/2	JIS I, JIS II, ISO1/2
Scanner	1D Laser (SE923)	1D Laser (SE923)	1D Laser (SE923)	1D Laser (SE955)
Barcodes	See Note 1	See Note 1	See Note 1	See Note 1
Audio	Speaker/Microphone	Speaker/Microphone	Speaker/Microphone	Speaker/Microphone
Bluetooth	V1.1	V1.1	V1.1	V1.2
Main Battery	Lithium Ion	Lithium Ion	Lithium Ion	Lithium Ion
Capacity	3.7V, 1700mAh	3.7V, 1700mAh	3.7V, 1700mAh	3.7V, 1800mAh
Back Up Battery	Lithium Ion	Lithium Ion	Lithium Ion	Lithium Ion
Capacity	25mAh	25mAh	25mAh	25mAh
OS	CE.NET 4.1	CE.Net 4.2	CE.NET 4.2	CE.NET 5.0

Notes: 1 – The following barcode symbologies are supported:

All: UPCA & E, EAN/JAN 8 & 13, NW-7, Code 39, Code 128, Interleaved 2/5  
-20: Code 11, RSS 14, RSS-Limited, RSS-Expanded

2 – The following user keys are available on the keypad:

All: Power, Function (F1, F2), Set, Cursor, Clear, Numeric, x, /, Decimal (.), Enter, and Shift

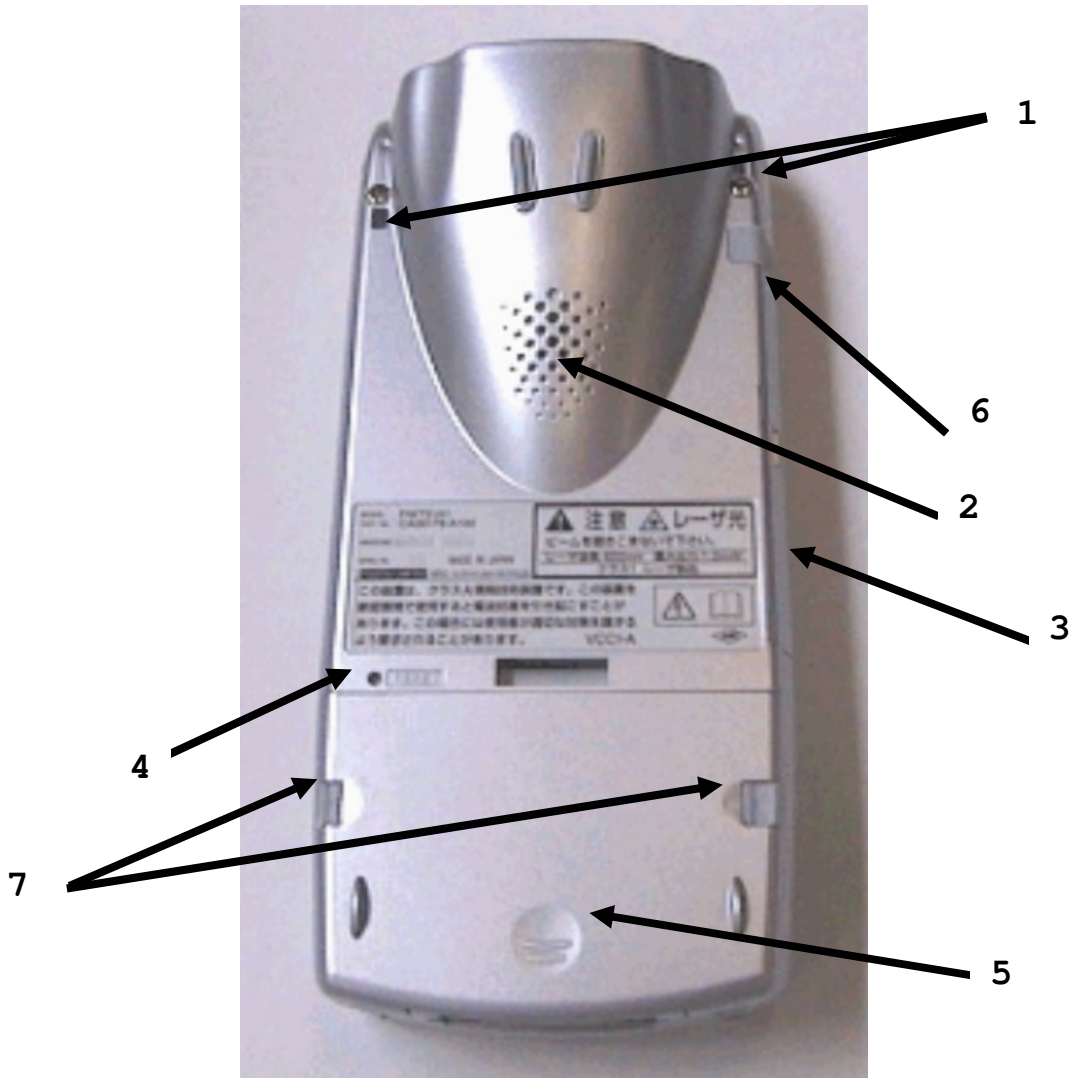
3 – Bluetooth cannot be used simultaneously with either the MSR (the applications SW must be written to switch between MSR and Bluetooth when needed) or with the RF-LAN function.

**1.5.1.1. User Controls**  
**Front View**



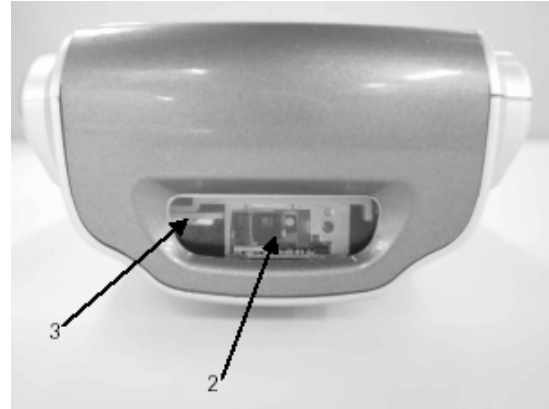
NO	Description	Remarks	
1	LED	Green	At Power On (ON then OFF) Barcode Scanning (Good read ON then OFF) Reading Magnetic Card (Good read ON then OFF) Charging Complete
		Orange	Charging Main Battery
		Yellow	Charging Error
2	MSR	Magnetic Stripe Reader	
3	Scanner Trigger Key	Initiate Barcode Scanning	
4	LCD/Touch Panel	Touch Panel Data Entry	
5	Microphone	Speech Input	

**Top View**



NO	Description	Remarks
1	Strap Hole	Hand Strap
2	Speaker	
3	Compact Flash Card (CF) Slot	Models -10, -12, and -14 only
4	Reset Switch	Force Terminate or Restart Do not use this switch during normal operation
5	Main Battery Compartment	Lithium Ion Battery Compartment
6	Headset Connector	Cell Phone Style Microphone and Earphone Device Connector
7	Main Battery Compartment Latches	Used to Open and Lock the Battery Compartment

**Rear/Top View**



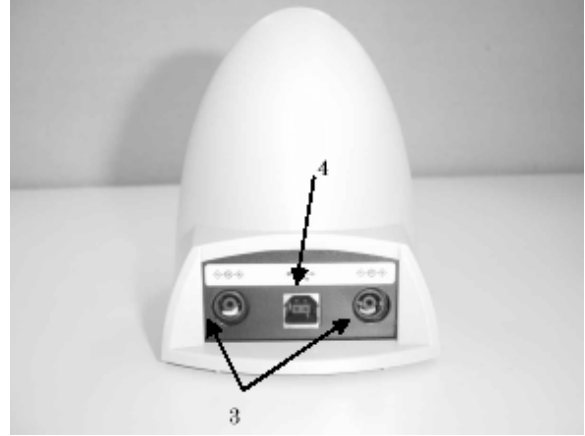
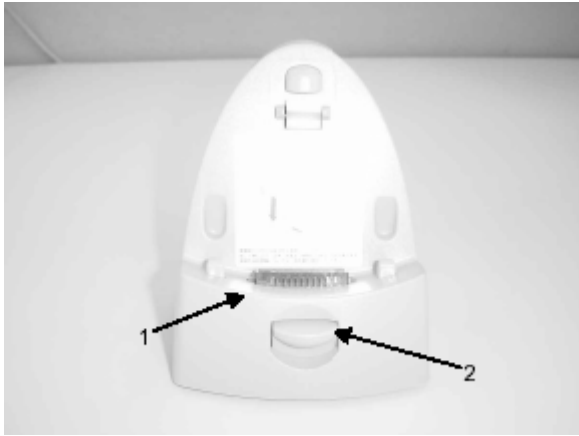
NO	Description	Remarks
1	Cradle Interface	Charges iPAD100 and Transfers Data While Mounted
2	Barcode Scanner	Internal to Device
3	Bluetooth Antenna	Internal to Device

**Keypad**



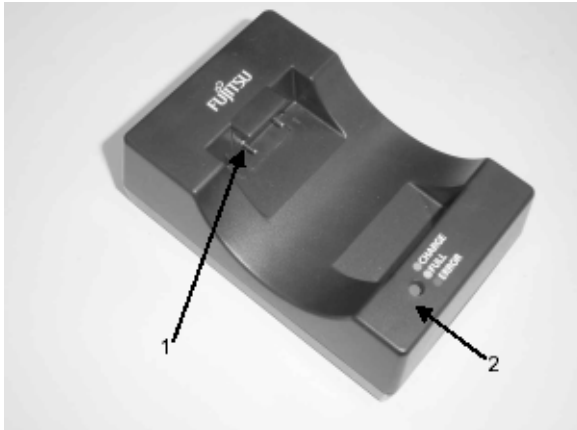
NO	Description	Remarks
1	Cursor Keys	Moves Cursor
2	Function Key 1	Invokes an Application Defined Function
3	Function Key 2	Invokes an Application Defined Function
4	Clear Key	
5	Shift Key	
6	Enter Key	
7	Cancel Key	
8	Power Key	
9	X / . (Decimal Point) Keys	
10	Set Key	

**Cradle**



NO	Description	Remarks
1	Cradle I/F Connector	
2	Release Button	
3	AC Adapter Connector	DC Input and DC Output (Daisy Chained Cradles or Chargers)
4	USB I/F Connector	Active Sync Connection

**Single Pack Charger**



NO	Description	Remarks	
1	Charger Connector		
2	LED	Green	Charging Complete
		Amber	Charging In Process
		Red	Error Condition
3	AC Adaptor Connector	DC Input	

## 1.6. SPECIFICATIONS

### 1.6.1.1. Dimensions

#### iPAD100 Handheld

Height	23mm	0.91in
Width	84mm	3.31in
Depth	187mm	7.36in
Weight	340g	11.64oz

### 1.6.1.2. Power

#### iPAD100 Handheld

Main Battery	Lithium Ion Battery, 3.7VDC 1800mAh
Charging Period	Approximately 2.5 hours @ ambient temperature

#### Cradle Assembly

Output Voltage	4.8VDC $\pm$ 3%
Output Current	2.0A
I/F Connector	Cradle I/F (For charging and USB communications) DC Input/Output
Input Voltage	14.4VDC – 17.6VDC (AC Adapter input)
Input Current	3.36A (AC Adapter input)

#### Single Pack Charger

Output Voltage	Charging (1.5A)	4.2VDC $\pm$ 0.05VDC
	Non-Charging (0A)	4.2VDC $\pm$ 0.05VDC
Output Current	1.5A $\pm$ 0.15A	
Charging Time	~2.5 Hours @ ambient temperature	
Input Voltage	14.4VDC – 17.6VDC (AC Adapter input)	
Input Current	1A	
LED Indicators	Green = Fully Charged Amber = Charging Red = Error: Short, Over Voltage, Time Out	
Short Protect	Discontinues charging when a short is detected	
Over Voltage Protect	Discontinues charging when the voltage reaches 4.35VDC	
Charger Timer	Discontinues charging when full charge not completed in 5 hours	
Charge Complete Detect	Discontinues charging when battery voltage stabilized at 4.15VDC	
Error Change Timer	Discontinues charging if battery voltage has not reached 3.0VDC within 1.5 hours	
Recharging Detect	After fully charged, starts recharging when the battery voltage detect is less than 3.7VDC	

### 1.6.1.3. Temperature & Humidity

#### iPAD100 Handheld

Temperature	Operating	0°C ~ 40°C (32° to 104°F); 15° C/Hr (Non-Condensing)
	Non-Operating	-20°C ~ 60°C (-4° to 140°F); 15° C/Hr (Non-Condensing)
Humidity	Operating	20 ~ 85% (Non-Condensing)
	Non-Operating	8 ~ 95% (Non-Condensing)

#### Cradle Assembly

Temperature	Operating	0°C ~ 40°C (32° to 104°F); 15° C/Hr (Non-Condensing)
	Non-Operating	-20°C ~ 60°C (-4° to 140°F); 15° C/Hr (Non-Condensing)
Humidity	Operating	10 ~ 90% (Non-Condensing)
	Non-Operating	5 ~ 95% (Non-Condensing)

### Single Pack Charger

Temperature	Operating	0°C ~ 40°C (32° to 104°F); 15° C/Hr (Non-Condensing)
	Non-Operating	-10°C ~ 60°C (14° to 140°F); 15° C/Hr (Non-Condensing)
Humidity	Operating	30 ~ 80% (Non-Condensing)
	Non-Operating	20 ~ 80% (Non-Condensing)

### 1.6.1.4. Shock & Vibration iPAD100 Handheld

Vibration	Operating	0.4G, 5~100Hz 15min sweep, every 15 minutes (X, Y, & Z Axis)
	Non-Operating	1.0G, 5~100Hz 15 min sweep, every hour (X, Y, & Z Axis)
Drop	Operating	Drop of 150cm (4' 11") to a concrete floor twelve times to the face, 8 times to each corner, and 6 times to each side.

### Cradle Assembly

Vibration	Operating	0.1G, 3~100Hz 2 min sweep, every 10 minutes (X, Y, & Z Axis) 0.2G 2~10HZ 12 sec sweep, every 1 minute (X, Y, & Z Axis)
	Non-Operating	0.4G, 3~60Hz 2 min sweep, every 10 min (X, Y, & Z Axis)

### Single Pack Charger

Vibration	Operating	0.4G, 16.7Hz every 30 minutes; (X, Y, & Z Axis)
	Non-Operating	1.0G, 16.7Hz every 30 minutes; (X, Y, & Z Axis)

### 1.6.1.5. Environmental iPAD100 Handheld

Water Resistance	IP52 (EC) Excluding the MSR slot
------------------	----------------------------------

### 1.6.1.6. Safety & Regulatory

ESD	Air Discharge	±15KV
	Contact Discharge	±9KV
FCC	Intel RF	FCC ID#QL9-IPAD100INT IC: 4432A-IPAD100I
	USI RF	FCC ID#C9S-CFBIPAD IC: 337G-CFBIPAD
EMI Standards	FCC part 15 class B, Canada ICES-003 Class B EN55022: 1998 Class A (CE Mark)	
Safety Standard	UL/60950 3 <sup>rd</sup> Edition CSA C22.2 No 60950 EN60950 3 <sup>rd</sup> Edition, EN60825-1: 1994/A11: 1996/A2: 2001 IEC60825-1: 1993/A1: 1997/A2: 2001 (Laser)	
Immunity	EN55024 1998/A1: 2001 EN61000-3-2 2001 EN61000-3-3 1995/A1: 2001 EN61000-4-2 1995/A1: 1998/A2: 2001 EN61000-4-3 1996/A1: 1998/A2: 2001 EN61000-4-4 1995/A1: 2001 EN61000-4-5 1995/A1: 2001 EN61000-4-6 1996/A1: 2001 EN61000-4-8 1993/A1: 2001 EN61000-4-11 1994/A1: 2001	

iPAD100-20 is RoHS compliant.

## 1.7. PRODUCT PERFORMANCE

### 1.7.1. RELIABILITY

Appendix A contains a work sheet for calculating the anticipated failure rate of a typical customer installation.

Description	MTBF	MEASURE
iPAD100	43,800	POH
Cradle (JISZ8703-1983, 20° ±15°C (68° ±59°F), RH 65% ±20%)	1,000,000	POH
Charger (JISZ8703-1983, 20° ±15°C (68° ±59°F), RH 65% ±20%)	80,000	POH
LCD	50,000	POH
FL Front Light (-10, -12, -14) – Luminosity to half brightness	10,000	POH
Scanner	43,800	POH
Touch Panel	1,000,000	Touches
MSR (Head must be cleaned every 1000 swipes)	300,000	Swipes
Sub Battery	5	Years
Main Battery	2 Years or 500 Charges	
Keyboard – 10 Key Keypad	3,000,000	Key Presses
Keyboard – Other Keys	1,000,000	Key Presses
Scanner Trigger Key	200,000	Key Presses
Cradle Connector	11,000	Insertions
Charger Connector	10,000	Insertions

### 1.7.2. LIFE EXPECTANCY

The design Service Life expectancy for the components are as follows.

Description	Life
iPAD100	5 Years

## 2. RESOURCES

The following sections list support, training, documentation, spares, repairs, and diagnostics available for this product.

### 2.1. SKILLS REQUIRED

#### Customer Service Representative:

A general understanding of Intel-based PC components and working knowledge of, Windows CE.NET, and basic knowledge of RF Communication and Wireless LAN's.

#### Consultant/Project Manager:

Good working knowledge of PCs, Windows CE, RF Communication and Wire less LAN's.

#### Repair Center Technician:

An in-depth understanding of Intel-based PC components, I/O cards, and Windows Operating systems is required. Experience with troubleshooting multi-layer PWAs, including surface mount technology (SMT) is required. Knowledge of commercial off-the-shelf PC diagnostics is assumed.

### 2.2. TRAINING

Field Service training is under the discretion of each specific business unit. Sustaining Engineering will provide 'train the trainer' operations. The schedule and funding for training will be established on an individual case by case basis. All requests for training by Sustaining Engineering should be forwarded to the Sustaining Mailbox (reference the cover page).

Sustaining Engineering estimates that the Technical Publications listed are adequate for this product and additional training will not be necessary for Field Service personnel currently trained on similar Fujitsu products. The iPAD100 should be included in any future standard training provided to Fujitsu Field Service personnel.

### 2.3. TECHNICAL PUBLICATIONS

The following documents are available on the FTP site (<ftp://ftp.ftxs.fujitsu.com>). The new -20 documents are under the directory '/MobileUser/iPAD100-20/Documents' in .PDF format. All units are shipped with a printed Quick Reference Guide.

Description	Model	Part Number
Programmer's Reference Guide	iPAD100-10	90000607
	iPAD100-12	90000990
	iPAD100-14	90000114
	iPAD100-20	D900000162
System User's Guide	iPAD100-10	90000608
	iPAD100-12	90000991
	iPAD100-14	90001247
	iPAD100-20	D900000159
Systems Integration Guide	iPAD100-10	90000777
	iPAD100-12	90000987
Quick Reference Guide	iPAD100-10,-12, -14, -20	90000609
Operations Guide	iPAD100-10,-12, -14	90000610
	iPAD100-20	D90000610
CD-ROM, Software Integration No Longer Available	iPAD100-10	<del>90000766</del>
	iPAD100-12	<del>90000988</del>
<b>Staples Specific Documentation</b>		
Systems Integration Guide	iPAD100-12	90001068
CD-ROM Software Integration	iPAD100-12	90001069
Label Overlay, USI only	iPAD100-12	90001029

	Fujitsu Transaction Solutions	<b>SUPPORT PLANNING GUIDE</b> <b>iPAD100</b>	SPG/RRV690596
	Sustaining Engineering		Issue: 4.0
	San Diego, CA		August 24, 2006

## 2.4. SPARES

The iPAD100 is a Fujitsu product and will follow standard spares lead times. It is assumed that organizations will spare the iPAD100 at the Whole Unit level in the field. Spares will be stocked at the North America Logistics Center (Frisco, USA24) and whole units should be returned on a RMA to the Logistics Center.

These part lists are provided as a reference only. The Fujitsu PORT System is the final authority on part numbers and availability.

The new Whole Unit levels introduced by the iPAD100-20 are downward compatible with previous versions. However, many internal parts are unique to each model. For spares planning purposes, when supply of these internal parts is depleted for previous models, the entire assembly should be replaced with the newer model.

### 2.4.1. CONSUMABLE PARTS

User consumable parts and spares are available via normal ordering Channels and are replaceable by customers. Order consumable parts from FTXS SupplyPoint at 800-538-8716

Description	Part Number	
Main Battery	CA50601-1002	Individually Packaged
	CA50601-1003	Bulk Packaged
Stylus	900001026	
Hand Strap	R5566FTXS	
MSR Cleaning Card	7737171	

## 2.5. REPAIR

North America Logistics Center (Frisco) offers repair services for the items they consider to be repairable. The OEM vendor also offers repair services that may be contracted by one of these repair centers or other organizations.

Logistics and Field Service organizations should utilize their own services to provide a test of units being returned from the field before shipment to repair centers as history has shown that not all units being returned from the field are actually faulty. If faulty, logistics organizations may elect to have the repair done down to a component level replacement if parts and resources permit. However, this would be a local decision.

### 2.5.1. REPAIR STRATEGY

The repair strategy for the iPAD100 is to replace an entire unit and return the defective to a depot or repair center. Internal repairs are not recommended in the field.

### 2.5.2. REPAIR TIME

The following are time estimates for removing and replacing internal assemblies. These time estimates do not include the time to diagnose the problem, or perform any software reloading to return the unit to full customer functionality. It is assumed that this service is performed by a qualified and trained Repair Technician.

Description	Replacement Time (min)
Upper Cover (Front)	10 Minutes
Lower Cover (Bottom)	10 Minutes
Main PCB	11 Minutes
MSR	8 Minutes
Scanner	4 Minutes
Keyboard Assy	10 Minutes
Side Cover	1 Minutes
LCD Display	7 Minutes
CF Card (-10, -12, and -14 only)	1 Minutes
Main Battery	1 Minutes
Inner Unit	5 Minutes
Blue Tooth Antenna	7 Minutes
Sub-Battery	7 Minutes
Average MTTR for Complete Unit	8 Minutes

Average MTTR for the Complete Unit is based upon these times and adjusted by the probability of a specific component failing.

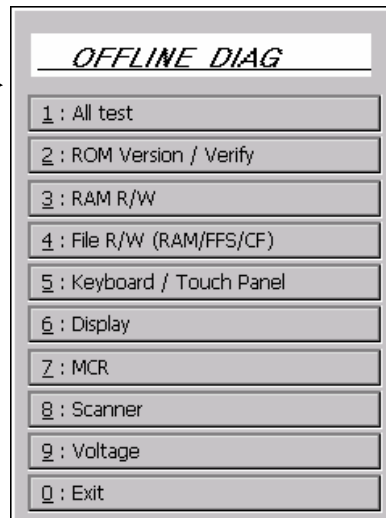
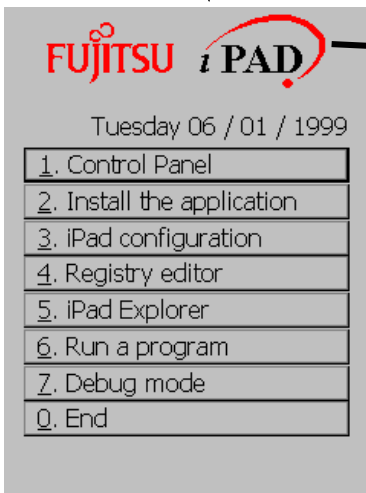
## 2.6. TOOLS

### 2.6.1. DIAGNOSTICS

The iPAD100 comes with an on board RAS Tool Diagnostic. Initialize the diagnostics by going to the Tools Menu.

At the Tools Menu press and hold the iPAD Logo for five seconds or more. Option "9" Diag will appear at the bottom of the menu. Press option "9" and the OFFLINE DIAG MENU will appear.

At the OFFLINE DIAG Menu a variety of diagnostic options are available. To exit diagnostics press "0".



	Fujitsu Transaction Solutions	<b>SUPPORT PLANNING GUIDE</b> <b>iPAD100</b>	SPG/RRV690596
	Sustaining Engineering		Issue: 4.0
	San Diego, CA		August 24, 2006

### 3. SERVICE PROFILES

#### 3.1. PREVENTATIVE MAINTENANCE

Beyond general cleaning of the iPAD100 there is no scheduled preventative maintenance required.

**Cleaning:**

Clean the cover of the iPAD using a cloth moistened with a solution of water and neutral detergent or a dry cloth. If a damp cloth is used, be sure to wring it out thoroughly to prevent water from getting into the iPAD. If moisture gets into the unit it could cause a malfunction.

Do not wipe the iPAD with thinner, benzene, or any other volatile solvents. Such materials can discolor the iPAD or erase printed characters.

Clean the display area of the iPAD using a cloth slightly moistened with water or a glass wipe with a very fine texture.

Occasionally clean the cradle interface using a dry cotton swab or gauze. If the terminals become dirty, contact may be poor, causing the iPAD to turn off or to disable normal charging and communication.

#### 3.2. CORRECTIVE MAINTENANCE

In the event of a failure the customer should be expected to confirm the malfunction by carrying out his or her own internal problem resolution procedures. If their procedures are unable to resolve the problem, they should contact their local Field Service/Support organization.

Field Service/Support organizations should provide a support desk facility whereby customers can telephone for advice before logging a service request. If telephone assistance is unable to resolve the problem, the local Field Service/Support organization should send a representative to assist, unless the RFR option/maintenance agreement was selected. Field Service/Support should affect on-site repairs to the FRU level recommended by their Field Service/Logistics management.

#### 3.3. ESCALATION PROCEDURES

The escalation of product error reports or requests for assistance should take place in the following order. While some of these steps may be in the same organization, they are listed as individual steps to illustrate the 'functional' process flow.

Customer's Internal Service

First Line Support Service (Help Desk)

Field Service Organization

Field or Local Technical Support (FTS)

National Technical Support (NTS)

Sustaining Engineering

Development/Supplier Engineering – with Mgmt Escalation

Product reports raised on supported products or general inquiries should be sent to the Sustaining mailbox (reference the cover page).

#### 4. APPENDIX A: FAILURE PER YEAR WORKSHEET

The following are specific variables that need to be determined for your specific customer configuration when calculating Failures Per Year (FPY).

Description	Variables
Avg. Power On Hours per Year (8736 max)	(A) _____
Avg. 'Green Mode' Power On Hours per Year	(B) _____
Avg. Transactions per Trading Hour	(C) _____
Avg. Trading Hours per day	(D) _____
Avg. Trading Days per Week	(E) _____
Avg. Keystrokes per Transaction	(F) _____
Avg. Keylock Cycles per Transaction	(G) _____
Avg. MSR Usage's per Transaction (1 out of 3=.33)	(H) _____
Avg. Print Lines per Transaction	(I) _____
Avg. Cash Drawer Openings per Transaction	(J) _____
Avg. Transaction per Terminal Year (C*D*E*52wks)	(K) _____

Units Affected by Power On Hours:

Device	Power On Hours	/ MTBF Hours	=	FPY
*	(A) _____ /	*	=	_____
*	(A) _____ /	*	=	_____
*	(A) _____ /	*	=	_____
*	(A) _____ /	*	=	_____
*	(A) _____ /	*	=	_____
Power On Total				_____

Units Affected by Green Mode Operational Hours:

Device	Power On Hours	/ MTBF Hours	=	FPY
*	(B) _____ /	*	=	_____
*	(B) _____ /	*	=	_____
*	(B) _____ /	*	=	_____
*	(B) _____ /	*	=	_____
*	(B) _____ /	*	=	_____
Green Mode Total				_____

Units Affected by Mechanical Usage:

Keyboard:	(F) x (K) / *	=	_____	
Keylock:	(G) x (K) / *	=	_____	
MSR:	(H) x (K) / *	=	_____	
Printer:	(I) x (K) / *	=	_____	
Cash Drawer:	(J) x (K) / *	=	_____	
Mechanical Total				_____

Total for your customer configuration (per lane):

Power On Total	_____
Green Mode Total	_____
Mechanical Total	_____
Total FPY Per Lane	_____

Note: This total does not include failures resulting from use of consumables (batteries, print heads, etc.), cables, software/firmware based problems, no-fault-founds, or resulting from use not considered standard for this type of equipment.

	Fujitsu Transaction Solutions	<b>SUPPORT PLANNING GUIDE</b> <b>iPAD100</b>	SPG/RRV690596
	Sustaining Engineering		Issue: 4.0
	San Diego, CA		August 24, 2006

5. **APPENDIX B: SWITCH AND JUMPER SETTINGS**  
 Not applicable to this product.

## 6. APPENDIX C: CONNECTORS AND PINOUTS

### iPAD100 Handheld & Cradle – Cradle I/F

PIN NO	SIGNAL	I/O	COMMENTS
1 (Large)	GND	-	Ground
2	GND	-	Ground
3	GND	-	Ground
4	GND	-	Ground
5	GND	-	Ground
6	N/C	-	Not Connected
7	USB-	I/O	USB Data
8	USB+	I/O	USB Data
9	USBPWR	-	USB Power (Not Used)
10	DETECT	O	Cradle Notification When iPad is Connected (GND)
11	*TRIG	I	Trigger Key Signal (Not connected in Cradle)
12	SD	O	Transmit Data Signal (For Serial Debug)
13	N/C	-	Not Connected
14	CHG(+)	-	Main Power (System Operation and Battery Charge)
15	CHG(+)	-	Main Power (System Operation and Battery Charge)
16	CHG(+)	-	Main Power (System Operation and Battery Charge)
18 (Large)	CHG(+)	-	Main Power (System Operation and Battery Charge)

### iPAD100 Handheld – Headset I/F

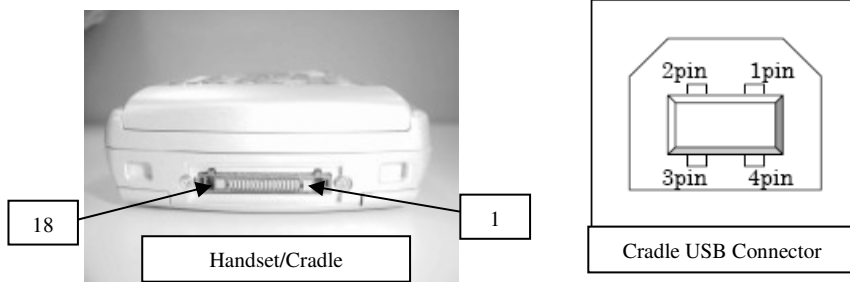
PIN NO	SIGNAL	I/O	COMMENTS
1	N/C	-	Not Connected
2	GNDAUDIO	-	Ground
3	HP1	O	Speaker Out
4	MIC2	I	Microphone In

### Cradle – USB I/F

PIN NO	SIGNAL	I/O	COMMENTS
1	VCC	-	USB Power (Not Used)
2	-Data	I/O	USB Data
3	+Data	I/O	USB Data
4	GND	-	Ground

### Cradle & Single Pack Charger – DC Power

PIN NO	SIGNAL	I/O	COMMENTS
1	+DC	-	DC Input/Output – Center Pin
2	GND	-	Ground – Outer Barrel



## 7. APPENDIX D: ORDERABLE CONFIGURATIONS

Below is the items that are Orderable or Whole Unit Configurations.

Crossed out items are withdrawn or made obsolete with this release, included for reference only.

DESCRIPTION	PIN NUMBER	-10	-12	-14	-20
iPad100 10 Handheld w/Battery	iPAD 10	X			
iPad100 12 Handheld w/Battery	iPAD 12		X		
iPad100 14 Handheld w/Battery	iPAD 14			X	
iPad100-20 Handheld w/Battery	iPAD-20				X
<del>Cradle w/AC Adapter</del>	<del>iPAD142-01</del>	X	X	X	
<del>Cradle w/AC Adapter &amp; USB Cable</del>	<del>iPAD142-02</del>	X	X	X	
<del>Cradle w/AC Adapter</del>	<del>iPAD142-51</del>	X	X	X	X
<del>Cradle w/AC Adapter &amp; USB Cable</del>	<del>iPAD142-52</del>	X	X	X	X
<del>Single Pack Charger</del>	<del>CA05951-7080</del>	X	X	X	
Single Pack Charger	CA05951-7081	X	X	X	X
Scan Handle	KD02902-1260	X	X	X	X
Scan Handle w/Charge-thru	KD02902-1260CH	X	X	X	X
Holster, Leatherette	Q5359FTXS	X	X	X	X
Keyboard Overlay - Staples	90001029	X	X	X	X

## 8. APPENDIX E: SPARES LIST

These part lists are provided as a reference and planning purposes only. The Fujitsu PORT System is the final authority on part numbers and availability. The iPad100 is intended for Whole Unit replacement in the field. The internal parts list is intended for Depot or Repair Center use. Crossed out parts are withdrawn or obsolete, included for reference only. For spares planning purposes, when supply of these internal parts is depleted for previous models, the entire assembly should be replaced with the newer model.

### iPAD100 Handheld

DESCRIPTION	PART NUMBER	-10	-12	-14	-20
<del>Whole Unit, iPad100-10 w/o Battery</del>	<del>CA06178-A210</del>	X			
<del>Whole Unit, iPad100-12 w/o Battery</del>	<del>CA06178-A310</del>		X		
<del>Whole Unit, iPad100-14 w/o Battery</del>	<del>CA06178-A360</del>			X	
<del>Whole Unit, iPad100-20 w/o Battery</del>	<del>CA06178-A510</del>				X
Battery Cover	CA32265-E004	X			
Battery Cover w/Label	CA06178-D910	X	X	X	
Battery Cover w/Label	CA06178-D928				X
Battery Notice Label	KD91305-0140	X	X	X	X
Battery Operation Label	CA92001-2031	X	X	X	X
Bluetooth Antenna	KD54004-L020	X	X	X	
Bluetooth Antenna	KD54004-L023				X
COA Label	CA40701-Z071	X			
COA Label	CA40701-Z647		X	X	
COA Label	CA40701-Z696				X
FFC Cable, Inverter	CA77464-0500	X	X	X	
FFC Cable, KB	CA77523-0400	X	X	X	
FFC Cable, KB	KD78222-0260				X
FFC Cable, MSR	CA77499-0290	X	X	X	
FFC Cable, Scanner	KD77000-0760	X	X	X	
FFC Cable, Scanner	KD78291-0860				X
FPC, CF/Charge/Battery/Audio	CA50601-0976	X	X	X	
FPC, Charge/Battery	CA50601-0973	X			
FPC, Charge/Battery/Audio	KD02902-2799				X
FPC, Compact Flash	CA50601-0972	X			
Inner Assy	CA32265-E008	X	X	X	
Inner Case	CA32265-Y170				X
Inverter Assy	CA06178-D903	X	X	X	
KB Assy (IKB01BA w/Contact Sheet)	CA06178-D904	X	X	X	
KB Assy w/Contact Sheet	CA06178-D923				X
KB Guide	CA32265-Y311				X
KB Lower Cover	CA32265-Y310				X
KB Rubber	CA50601-0982	X	X	X	
KB Rubber	KD50100-L381				X
KB Upper Cover Assy	CA32265-E302	X	X	X	X
LCD Assy	CA06178-D003	X	X	X	
LCD Assy	KD97100-L008				X
LCD Frame	CA32265-Y183				X
Lower Cover Assy w/Speaker	CA06178-D900	X			
Lower Cover Assy w/Speaker	CA06178-D911		X		
Lower Cover Assy w/Speaker	CA06178-D912			X	
Lower Cover Assy w/Speaker	CA06178-D930				X
Main PCB	CA06178-D510				X
Main PCB, IPD02CG	KD20016-B26X		X		
Main PCB, IPD02DA	KD20023-B80X	X			

DESCRIPTION	PART NUMBER	-10	-12	-14	-20
Main PCB, IPD02DE	KD20023-B84X		X	X	
MIC	CA06178-D929				X
MIC	KD02901-0005	X	X	X	
MSR Assy	CA06178-D002	X	X	X	
MSR Cover Assy w/LED PCB	CA06178-D907	X	X	X	
MSR Cover Assy w/LED PCB	CA06178-D927				X
MSR PCB, IMR01CA	CA21315-B90X	X	X	X	
Regulatory Label	KD91305-0040	X			
Regulatory Label	KD91305-0042		X		
Regulatory Label	KD91310-0473			X	
Regulatory Label	KD91314-Y318				X
Revision Label	F6-BLA1	X	X	X	
Revision Label	KD91310-0144				X
Scanner	CT-SE-923-I000A	X	X	X	
Scanner	KD54004-L980				X
Screw	CA82002-0962	X	X	X	X
Screw	CA82002-3512	X	X	X	
Screw	CA82002-3513	X	X	X	
Screw	CA82100-3003	X	X	X	X
Screw	CA82100-3006	X	X	X	
Screw	CA82100-3401	X	X	X	
Screw	KD30902-0030	X	X	X	
Screw	KD30902-0031	X	X	X	X
Screw	KD30902-0032				X
Screw, Audio	KD30902-0750				X
Screw, KB	KD30902-0751				X
Screw, Main PCB/Scan Holder/Charge	CA82100-3202	X	X	X	X
Sheet	CA32265-Y185				X
Sheet	CA32265-Y190				X
Side Cover Assy	CA32265-E005	X	X	X	
Side Cover Assy	CA32265-E009				X
SS Holder	CA32265-Y182				X
SS LAN Antenna	KD54004-L830				X
SS LAN Antenna (Left)	CA05951-7381	X			
SS LAN Antenna (Left)	KD02961-L053		X	X	
SS LAN Antenna (Right)	CA05951-7380	X			
SS LAN Antenna (Right)	KD02961-L052		X	X	
SS LAN Card	CA06178-D007			X	
SS LAN PCB	KD20056-B30X				X
Sub Battery Assy w/Holder	CA06178-D906	X	X	X	
Sub Battery Assy w/Holder	CA06178-D925				X
Tape	CA32265-Y192				X
Top Cover Assy	CA32265-E006	X	X	X	X
Trigger Assy (Left)	CA06178-D902	X	X	X	
Trigger Assy (Left)	CA06178-D922				X
Trigger Assy (Right)	CA06178-D901	X	X	X	
Trigger Assy (Right)	CA06178-D921				X
Upper Cover Assy	CA32265-E001	X	X	X	
Upper Cover Assy	CA32265-E021				X

**iPAD100 Handheld Options & Attachments**

DESCRIPTION	PART NUMBER	-10	-12	-14	-20
RF Card, CF, Intel 802.11b (w/Intel Firmware)	WCF2011BEWW	X			
RF Card, CF, Intel 802.11b (w/Intersil Firmware)	WCF2011BEWW-01		X		
RF Card, CF, USI 802.11b	CA06178-K850			X	
Cable, Charging, Daisy Chain	CA72001-1895	X	X	X	X
Cable, USB, 1.20 meters	90000602	X	X	X	X
Cable, 133UQ Keyboard, USB, 1.20 meters	90000602	X	X	X	X
Cable, 133UQ Keyboard, USB, 3.5 meters	90000849	X	X	X	X
<del>Main Battery, 3.7VDC 1700mAh</del>	<del>CA50601-1000</del>	X	X	X	
<del>Main Battery, 3.7VDC 1700mAh (Bulk Packed)</del>	<del>CA50601-1001</del>	X	X	X	
Main Battery, 3.7VDC 1800mAh	CA50601-1002	X	X	X	X
Main Battery, 3.7VDC 1800mAh (Bulk Packed)	CA50601-1003	X	X	X	X
Scan Handle	KD02902-1260	X	X	X	X
Scan Handle w/Charge-thru	KD02902-1260CH	X	X	X	X
Stylus	90001026	X	X	X	X
Handstrap	R5566FTXS	X	X	X	X
Holster, Leatherette	Q5359FTXS	X	X	X	X
Keyboard Overlay – Staples	90001029	X	X	X	X

**Cradle Assembly & Single Pack Charger**

DESCRIPTION	PART NUMBER	-10	-12	-14	-20
<del>Cradle</del>	<del>CA05951-7139</del>	X	X	X	
Cradle	KD02902-2991	X	X	X	X
<del>Single Pack Battery Charger</del>	<del>CA05951-7080</del>	X	X	X	
Single Pack Battery Charger	CA05951-7081	X	X	X	X
<del>AC Adapter 16VDC</del>	<del>CA05306-D500</del>	X	X	X	
AC Adapter 16VDC	CA05306-D520	X	X	X	X
Power Cord, AC, 6'7", 2.5A/125V, Black	1062.079	X	X	X	X