



**TITLE: Axiohm A760 Thermal Receipt/Impact Printer
 Service Planning Guide**

SYNOPSIS:

This document is intended to supply sufficient information to country level 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) - Product Quality.

This document details only the corporate philosophies, and does not seek to cover such subjects as additional services offered at the country level, low level repairs, which country service centers may be able to affect, 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. Consequently, Fujitsu cannot be held liable for any inaccurate information found in this document.

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0.0 DOCUMENT CONTROL.....3

0.1 CHANGES FROM PREVIOUS3

0.2 REFERENCE DOCUMENTS.....3

1.0 OVERVIEW.....3

1.1 TARGET MARKET3

1.2 PRODUCT DESCRIPTION3

 1.2.1 *HARDWARE DESCRIPTION*4

 1.2.3 *Enhancements*.....5

1.3 PHYSICAL & ENVIRONMENTAL CONSIDERATIONS6

 1.3.1 *PRINTER SPECIFICATION*.....7

1.4 PRODUCT PERFORMANCE9

 1.4.1 *RELIABILITY*.....9

 1.4.2 *LIFE EXPECTANCY*.....9

2.0 RESOURCES.....10

2.1 SKILLS REQUIRED.....10

2.2 TRAINING10

2.3 TECHNICAL PUBLICATIONS.....11

2.4 SPARES.....11

 2.4.1 *SPARES LIST*.....12

 2.4.2 *CONSUMABLES*.....13

2.5 REPAIRS.....13

 2.5.1 *REPAIR TIMES*.....13

 2.5.2 *SERVICE AIDS & DIAGNOSTICS*.....14

3.0 SERVICE PROFILES.....16

3.1 PREVENTATIVE MAINTENANCE16

3.2 CORRECTIVE MAINTENANCE.....16

3.3 ESCALATION PROCEDURES.....17



0.0 DOCUMENT CONTROL

0.1 CHANGES FROM PREVIOUS

This is the first release of this document introducing the high speed enhanced A760 Thermal Receipt/Impact Printer with MICR Reader.

0.2 REFERENCE DOCUMENTS

HCS057 FTXS Environmental and Regulatory Standard

1.0 OVERVIEW

The A760 is a FUJITSU marketed Thermal Receipt/Impact Printer with auto paper cutter and integrated MICR (Magnetic Ink Character Recognition) and optional Check Flipper for check validation. This release will introduce the high speed enhanced version that prints 53.3 LPS (180 mm/s). The front station remains a nominal 66-column impact Slip printer and the rear station is a nominal 44 column, 8-dot/mm high-speed thermal printer.

1.1 TARGET MARKET

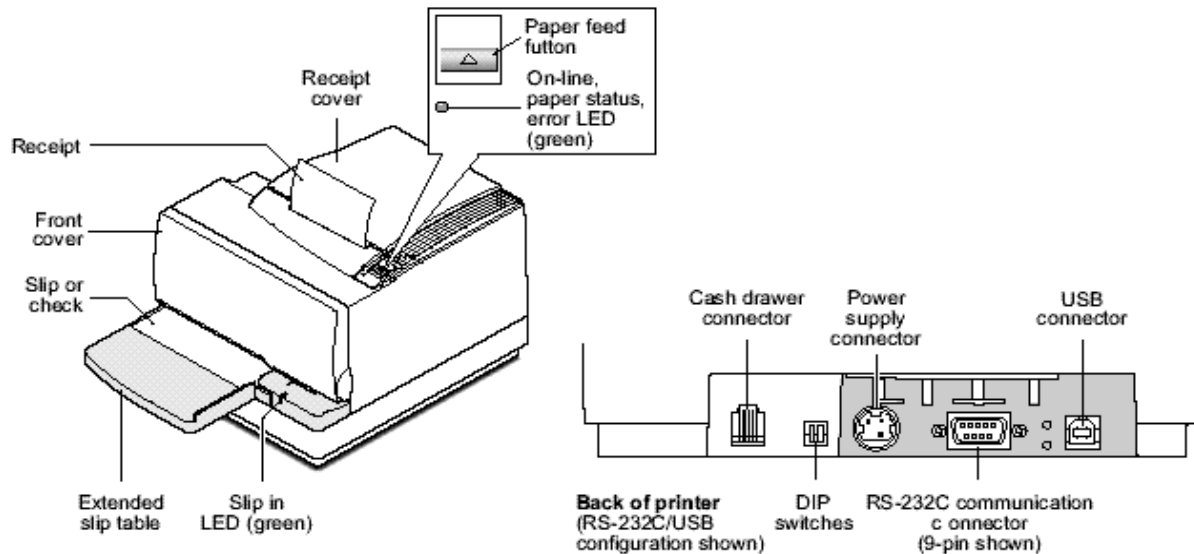
The A760 Printer is introduced as an enhancement to the current peripheral set offered for the FUJITSU TeamPoS Series for North America only.

1.2 PRODUCT DESCRIPTION

The A760 printer is a fast and quiet point-of-sale printer. It consists of two specialized printers in one compact package: a thermal printer on top that prints receipts, and an impact slip printer in front to print on forms and checks that you insert. There is no ribbon or ink cartridge to change, and paper is self loading. The impact printer provides the power and flexibility necessary to print on checks or multi-part forms up to five plies, in a wide variety of sizes and orientations.

It connects to any host computer that uses the standard RS-232C. The printer's standard command set allows it to work with software written for Axiohm, or other ESC/POS™ compliant printers. A variety of sensors enable the printer to communicate its status, and the printer's journal is kept electronically by the host computer.

Several check-handling options are also available. The Magnetic Ink Character Recognition (MICR) option enables the printer to read the special codes printed on checks and send this information to the host computer to verify the check. The check flip option enables the printer is able to flip the check over and print on the front of the check. The following sections describes the printer's features and options.



1.2.1 HARDWARE DESCRIPTION

STANDARD FEATURES

- ◆ Thermal Receipt and Impact SLIP Station
- ◆ Auto Knife Cutter
- ◆ RS232 Communications 9-pin & 25-pin
- ◆ Fully Epson Compatible

OPTIONS

- ◆ Communication cables: RS232 only (25 pin DB25 on printer side)
- ◆ MICR Reader with Extended SLIP Table
- ◆ Check Flipper Mechanism



BUTTONS

- ◆ Paper Feed
- ◆ Manual Reset Button, accessed by opening the front cover door of the printer.

LED'S

- ◆ Green LED, SLIP Inserted Indicator (Green LED adjacent to the right side of the SLIP Path)
- ◆ Green LED, Paper Status/Error Condition

Note: The LED stays constantly Green when the power is ON and the printer status is OK. The Green LED will flash ON/OFF when there is a paper error or the top cover is open.

The communication parameters and several operating modes are available via DIP switch settings on the back lower base of the printer, no tools are required. The A760 printers are shipped with all the functions and parameters pre-set at the factory.

1.2.2 Configurations

The A760 Printer comes in these configurations.

- ◆ Thermal Receipt SLIP Printer with MICR
- ◆ Thermal Receipt SLIP Printer with Check Flipper and MICR

NOTE 1: In a Stacked configuration, the SLIP extension table must be removed.

NOTE 2: The MICR reader option is Not field installable.

NOTE 3: The check printer option is Not field installable.

1.2.3 Enhancements

The new A760 has hardware changes to enable 53.3 lines/sec. vs 40 lines/sec. in the previous generation printers (A758). The new A760 is completely backward compatible to previous applications. Customers will be able to use the A760 in the same system configurations they are currently using. The A760 will also include advanced features such as enhanced print modes, Check Flipper, remote diagnostics, single button programming, and 90mm receipt paper roll, the largest in its class.

NOTE: The A760 requires a different cable (Epson compatible) than the previous A756 printer but same as A758. Refer to the spares list below for correct cables.



1.3 PHYSICAL & ENVIRONMENTAL CONSIDERATIONS

Height 178 mm (07.00 inches)
 With Receipt lid open 280 mm (11.00 inches)
 Width 229 mm (09.00 inches)
 Depth 264 mm (10.40 inches)
 With optional SLIP guide 347 mm (13.70 inches)
 Weight (with MICR) 4.4 kg (9.6 lbs) (without MICR) 4.3 kg (9.4 lbs)

The A760 is designed to operate reliably in a wide range of environmental conditions without preventative maintenance or special care. However, for optimal performance in certain extremes, Axiohm recommends a specific maintenance regimen to ensure continuous operations.

Operating temperature:

W/knife	5°C to 28 °C (41° F to 82°F)	28°C to 45 °C (82° F to 113 °F)
W/out knife	5°C to 35 °C (41° F to 95°F)	28°C to 45 °C (95° F to 122 °F)

Operating humidity:

W/knife	10% to 90%	10% to 35%
W/out knife	5% to 90%	5% to 40%

Storage:

Temperature	-10°C to 50 °C (14° F to 122°F)
Humidity	5% to 95%

Transit:

Temperature	-40°C to 60 °C (-40° F to 140°F)
Humidity	5% to 95%

Condensation:

Condensation may occur when the printer is moved from cold to warm areas after shipment. The printer's design permits operation after drying out and stabilizing at room temperature.

Note: If printer has an optional Magnetic Ink Character Recognition (MICR) check reader installed, additional adjustments to printer may be needed. Because devices such as CRT monitors or large metal surfaces affect the printer's magnetic field, which can cause intermittent check reading errors.



1.3.1 PRINTER SPECIFICATION

<u>Printing</u>	<u>Receipt Station</u>	<u>Slip Station</u>
Print	Direct Thermal, 203 DPI	9 Pin Impact
Speed	53.3 LPS (180 mm/s)	4.8 LPS (16 mm/s)
Character Cell Size	13x24, 10x24	7x7
CPI	15.6, 20.3	14, 17
Columns	44/56	66/80
Print Line Width	(72mm) 2.8"	(120mm) 4.75"
Character Sets	Resident character sets: Code Pages 437 (US), 850 (Multilingual), 737 (Greek), 852 (Slavic), 858 (with Euro symbol), 860 (Portuguese), 862 (Hebrew), 863 (French-Canadian), 865 (Nordic) 866 (Cyrillic), and 1252 (Windows Latin 1).	
Bar Codes	Prints standard bar codes: Code 39, UPC-A, UPC-E, JAN8 (EAN), JAN13 (EAN), Interleaved 2 of 5, Codabar, Code 93, Code 128, EAN 128, and PDF-417 (receipt station only) two-dimensional code. Also prints "ladder" bar codes.	
Graphics & Logos	320K up to 1320K, shared for graphics, logos, user defined characters and user data storage.	
Auto Cutter	Partial Cut	
Data Buffer	4K	
Communication Interface(s)	Mother/Daughter Board Architecture supports: Dual 9pin RS232/USB, 25pin RS232	
Cash Drawer Control	1-2 drawers	

STANDARD FEATURES

- ◆ Thermal Receipt and Impact SLIP Station
- ◆ Auto Knife Cutter
- ◆ RS232 Communications
- ◆ Fully Epson Compatible

OPTIONS

- ◆ Check Flipper Mechanism



MIN FORM SIZE (L x W)

- ◆ Front Insertion
 (w/o Check Flipper) 68mm x 51mm (2.68" x 2")
- ◆ Side Insertion
 (w/Check Flipper) 70mm x 51mm (2.75" x 2")

MICR READER (INTEGRATED IN SLIP STATION)

- ◆ Character Set/Fonts E-13B and CMC-7, autodiscriminate
- ◆ Check Read Rate 99% Minimum
- ◆ Parsing Formats Available E-13B only. Programmable to any format

1.4 PRODUCT PERFORMANCE

1.4.1 RELIABILITY

The MTBF figures are as follows.

Description	Failure Rate
Thermal Printer Mechanism *	45,000,000 Lines
Impact Printer Mechanism **	15,000,000 Lines
Impact Printhead	200,000,000 Characters
Auto Knife Cutter	1,500,000 Cuts
Slip Ribbon Cassette	3 to 5 million
MICR Reader	200,000 Reads
Check Flipper	200,000 Flips
Electronics	240,000 hours

Note: The Check Flipper has a specified MTBF Jam rate of 1%, (actual testing showing 0.1% Jam rate).

* Includes printed and blank lines at 7.52 lines/inch. Equals 150 KM Paper.

** Includes only printed lines.

1.4.2 LIFE EXPECTANCY

The design life expectancy for the A760 is greater than 5 years.



2.0 RESOURCES

This section estimates the needs for CS, Logistics, and other resources required to support the A760 Printer.

Axiohm Contacts:

Technical Support	Fred French fred.french@axiohm.com 1-877-209-0156
Technical Support – Drivers	Fred French fred.french@axiohm.com 1-877-209-0156
Axiohm Web Site	www.axiohm.com

2.1 SKILLS REQUIRED

Prior experience with TeamPoS terminals and associated peripherals and familiarity with TeamPoS Confidence Level Diagnostics (CLD) is recommended.

2.2 TRAINING

CS training is under the discretion of each specific business unit. FTXS will provide 'train the trainer' operations. The schedule and funding for will be established on an individual case by case basis. All requests for training by FTXS should be forwarded to the Product Quality Mailbox (reference the cover page). A training video is also available from Axiohm.

It is the Design Authority's estimate that the Technical Publications listed are adequate for this product and additional training will not be necessary for CS personnel currently trained on similar FUJITSU products. The A760 Printer should however be included in any future standard training provided to FUJITSU CS personnel.



2.3 TECHNICAL PUBLICATIONS

Manuals are available through the Axiohm. * Downloadable from Axiohm Web site
<http://www.axiohm.com>

Manuals are available on the Product Quality FTP Site <ftp://ftp.ftxs.fujitsu.com/>.

Description Axiohm Part Numbers

A760 Users Guide	A760-D100 (189-8200287 C) 8/01
A760 User Guide Programming Supplement	A760-D100PS (189-92000288 B) 08/01
A760 Setup Guide	A760-D110 (189-9200290) Rev. C 12/17/01
Service Guide	A760-D200 (189-9200289 C) 07/02

2.4 SPARES

Recommended Spare Parts List: Excel spreadsheet from Axiohm.

It is assumed that customers will spare the A760 Printer at the ORU level. Some customers, however, may choose to spare it at a major assembly level with the ORU repair performed at a central depot. The spares listing takes both of these methods into consideration.

The typical lead time for spares is 12 weeks.

SUPPORT PLANNING GUIDE



2.4.1 SPARES LIST

DESCRIPTION	Axiohm	FTXS PART	PIN
PTR A760 RS/MICR/CKFLP/ESTBL/FJ	A760-2225	90000755	90000755
PTR A760 R/S/MICR/ESTBL/FJCLR	A760-2215	90000697	90000697
Sensor Slip-In Assy.	189-1070152	N/A	N/A
Thermal Mech. Motor, Knife	189-1075924	N/A	N/A
Thermal Mech. Paper Feed Motor	189-1075926	N/A	N/A
Thermal Mech. Platen Kit-w/Paper Guide, w/K	189-1075929	N/A	N/A
Thermal Mech. Switch-Paper Out	189-1076521	N/A	N/A
Thermal Mech. Switch-Knife Home	189-1076522	N/A	N/A
Thermal Mech. Switch-Cover Open	189-1076523	N/A	N/A
Thermal Mech. (w/Knife)	189-7600031	N/A	N/A
Kit-Option Board 9-Pin RS232	189-9940928	N/A	N/A
Kit-Thermal Receipt Covers	189-9940930	N/A	N/A
Kit-Paper Low	189-9940931	N/A	N/A
Kit-MICR Bracket Assy. w/Arm	189-9940932	N/A	N/A
Kit-Slip Motor w/Shield	189-9940933	N/A	N/A
Kit-Slip Rollers w/Bearings	189-9940934	N/A	N/A
Kit-Carriage Motor	189-9940935	N/A	N/A
Kit-LED/Sensor Mount Assy. (Non Flip)	189-9940936	N/A	N/A
Kit-Sensor Home Assy.	189-9940937	N/A	N/A
Kit-Small Parts (non-check flip)	189-9940939	N/A	N/A
Kit-Motor/Sensor/Switch Assy. (Check Flip)	189-9940940	N/A	N/A
Kit-Belts, Check Flip Transfer	189-9940941	N/A	N/A
Kit-Small Parts (Check Flip)	189-9940942	N/A	N/A
Kit-LED Sensor Assy. (Check Flip)	189-9940943	N/A	N/A
Kit-Option Board 25-Pin RS232	189-9940986	N/A	N/A
Kit-Check Flip Assy. w/Hinge Arm	189-9940987	N/A	N/A
Kit-Hinge Arm (Non Flip)	189-9941051	N/A	N/A
Kit-Impact Printhead	189-9941059	N/A	N/A
Kit-Option Board USB	189-9941109	N/A	N/A
Kit-Option Board USB/9-Pin RS232	189-9941110	N/A	N/A
Kit-Board Switch	189-9941189	N/A	N/A
Kit-Cariage w/Belt	189-9941190	N/A	N/A
Kit-Carriage w/Belt	189-9941190	N/A	N/A
Kit-Main PC Board w/MICR, 2M	189-9941269	N/A	N/A
Kit-Board PC Board w/MICR, 1M	189-9941271	N/A	N/A
Kit-Board PC Board w/MICR, 2M	189-9941272	N/A	N/A



2.4.2 CONSUMABLES

The consumables listed below are available via normal ordering channels (SupplyPoint) and are customer replaceable. These items may also be locally purchased.

<u>Description</u>	<u>Axiohm Part Number</u>
Thermal Receipt Paper (Standard Density)	A152-0034
Thermal Receipt Paper (Light Density)	A152-0035
Ribbon Cassette 3 million character life (Purple)-Qty12	A152-0004
Ribbon Cassette 3 million character life (Black)-Qty12	A152-0005
Ribbon Cassette 5 million character life (Purple)-Qty12	A152-00011
Ribbon Cassette 5 million character life (Black)-Qty12	A152-00012

2.5 REPAIRS

Dallas Logistics Center for North America offer repair services.

Axiohm also offers repair services that may be contracted by one of these repair centers or other country organizations.

The tools required to gain access to the assemblies within the A760 printer is are:

- ◆ #1 Pozidriv or equivalent Phillips screwdrivers.
- ◆ #2 Pozidriv or equivalent Phillips screwdrivers.
- ◆ Small needle-nose pliers
- ◆ Small flat-blade screwdriver
- ◆ Diagonal cutters
- ◆ 7/16" open end wrench

2.5.1 REPAIR TIMES

The MTTR for the A760 SLIP/Impact Printhead (Thermal Printhead is not replaceable), Controller PWB, or Printer Mechanism is 15 minutes. This time does not include the time to diagnose the problem or gain access to the printer.



2.5.2 SERVICE AIDS & DIAGNOSTICS

The Printer Select Jumpers on the TeamPoS OPC must be set to the Epson Printer. The printer select jumpers on the TeamPoS TeamCOM board must be set to the ESC/POS Printer.

On Line Diagnostics (Level 0):

Tests which are executed automatically at power on and when the manual reset button is pressed. They include:

- ◆ Turn OFF motors and solenoids.
- ◆ Perform boot CRC check of the firmware ROM, read the external SRAM, test EEPROM, test main program CRC.

Note: Failure causes Startup Diagnostics to stop; the printer beeps and the LED flashes a set number of times, indicating the nature of the failure.

- ◆ Check if paper is present.
- ◆ Return the knife to the home position.

Note: Failure causes a fault condition.

- ◆ Check if cover closed.

Note: Failure does not interrupt the startup cycle.

When the startup diagnostics are complete, the printer makes a two-tone beep (low then high frequency), the paper feed button is enabled, and the printer is ready for normal operation.

If the printer has not been turned on before or a new EEPROM has been installed, the default values for the printer functions will be loaded into the EEPROM during startup diagnostics.


Off Line Diagnostics:

Out-of-service tests or printer settings invoked via the 2 position DIP switch on the back of the printer. Level 1 diagnostics is entered (or exited) by turning switch 1 ON (or OFF) and resetting or power cycling the printer.

Switch Setting	Paper Feed Button	Printer Function
Switch 1 OFF	OFF during reset	Printer ready for normal operation.
	ON during reset	Print configuration message.
Switch 1 ON	OFF during reset	Enter download mode to program Flash.
	ON during reset	Enter level 1 diagnostics scrolling menu.
Switches 2	Do not leave on	Do not leave on.

Level 1 Diagnostics:

This is a scrolling menu feature used to select certain functions and change printer settings. Level 1 diagnostics is entered by resetting the printer with Switch 1 ON while the paper feed button is depressed, the printer will beep once, print the current configuration, and then print the first question on the scrolling menu.

The user presses the paper feed button as instructed (either short or long clicks) to make each selection and exits by resetting the printer with Switch 1 OFF. The following functions are addressed:

- Serial Communications.
- Serial Communications Options.
- Continuous print test, or single receipt test.
- Printhead Resistance Setting (A or B).
- Partial Cut Setting.
- Datascope Mode.
- Other Special Settings (e.g. color printing) to be determined.

Level 2 Diagnostics:

Runs during normal printer operation. When the following conditions occur, the printer automatically turns OFF the appropriate motor, disables printing to prevent damage, and turns on the Green LED.

- Receipt Paper Out
- Receipt Cover Open
- Front Cover (Cassette Door) Open
- Receipt Knife Unable to Home
- SLIP Carriage Motor Jam
- Receipt Print Head Too Hot (LED Flashes)
- Voltages Out of Range (LED Flashes)



Level 3 Diagnostics:

Tracks the following tallies and prints them on the receipt during the receipt test.

- Model number
- Serial number
- CRC number
- Number of lines printed by receipt printer
- Number of knife cuts
- Number lines printed by slip printer
- Numbers of characters printed by the slip printer
- Number of MICR reads performed
- Number of hours the printer has been on
- Number of times the flash memory has been programmed
- Number of cutter jams
- Number of times the cover is opened
- Maximum temperature reached
- Number

In addition to the built in printer diagnostics above, the TeamPoS Confidence Level Diagnostics (CLD), has been modified to test both printer stations and the MICR reader, TeamCOM CLD version 01.16.

3.0 SERVICE PROFILES

3.1 PREVENTATIVE MAINTENANCE

Beyond general cleaning of the A760 Printer and periodic cleaning of paper dust there is no scheduled preventative maintenance required. The Thermal Printhead does not normally require cleaning if the recommended paper grades are used. If the Printhead appears dirty, wipe it with cotton swabs and rubbing alcohol. If the non-recommended paper is used it may cause permanent damage to the Printhead.

Following installation, the optional MICR reader may require a one-time adjustment after initial installation at the customer site. This procedure may also be required if the TeamPoS configuration is changed or moved, in particular if a CRT is added or moved.

3.2 CORRECTIVE MAINTENANCE

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

CS/Support should effect on-site repairs to the ORU level recommended by their CS/Logistics management.



3.3 ESCALATION PROCEDURES

The escalation of product error reports or requests for assistance should take place in the following order:

Customer's Internal Service
Country CS Organization
Country Support Organization
Product Quality

First Line Support Service
First Line Support Service
Second/Third Line Support Service
Fourth Line Support Service

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