Product Solutions Group

Version 1.13.0
Feb 29, 2012
Status: Rel
Channels: ALL
Author: DJ

Fujitsu *Team*PoS OPOS User's Guide

Fujitsu OPOS 1.13

(Release 1.13.0)

Configuration and Setup

FOR

Fujitsu *Team*PoS
&
POS Peripherals

02/29/2012

Table of Contents

1.0   Fujitsu - OPOS Overview

1.1   Fujitsu - OPOS Release Overview and History

The purpose of this document is to provide information needed to install and operate the POS peripheral device framework for client applications based on OPOS 1.10 (OLE for Retail POS). The OPOS specification fully describes the Fujitsu device interfaces and provides complete specifications for client applications to be developed immediately. Client applications call the OPOS device "Control Object" (CO) which in turn calls the OPOS device "Service Object" (SO).

Release 1.13.0

Release 1.13.0 provides support for the *Team**PoS*** 7000 POS Terminal and the new peripherals that are being introduced with the *Team**PoS*** 7000 release. It also is an update and maintenance release that includes corrections and updates to currently supported devices.

New Devices Supported:

- *Team**PoS*** 7000 Cash Drawer Service to support the on-board cash drawer port. The on-board cash drawer port is accessed via a HID USB interface. The port is controlled by firmware that manages the command and status messages needed to control the drawer.

- CT11 Single Station USB/HID interface Printer.

- VF35 Service for the Small 2 X 20 VFD display.

- VF70 Service for the Standard 2 X 20 VFD display.

- TeamMSR (and TeamKeypadMSR for the new USB/HID interface MSR that can be attached to the *Team**PoS*** 7000 Axxx LCD Display.

Hardware:

*Team**PoS*** 7000 A100/A200/A300:

Basic I/O ports:

- On-Board USB for Cash Drawer/Power/Proximity HID

- 2 x Standard 5V USB A Connector Ports

- 3 x 12V Powered USB Connector Ports

- On-Board 5V Standard USB Proprietary Connector for TeamMSR HID

- On-Board 12V Powered USB Proprietary Connector for VF35 VFD HID

- On-Board 24V Powered USB for POS Printer

Extended I/O Ports:

- 2 X Rs232 Serial 5V Ports

- 2 Standard 5V USB Ports

I/O Box Ports:

- 5 x RS232 Serial 5V

- 1 x PS2 Keyboard / Mouse Combo Port

Maintenance Items in Release 1.13.0:

- FJOPOS Install: Corrected extraneous VF60-2 Registry Data when VF60-2 not installed.

- FjScanSO.dll for SS1200 Scanner: Fixed Decode Data to set ScanDataType property correctly for ITF 2 of 5 and Code 39.

- FjScanSO.dll: Fix in Direct I/O m_Command not being cleared after use.

Release 1.10.8

Release 1.10.8 is primarily an update and maintenance release that includes corrections and updates for the following:

- 36xx Cash Drawer Service updated to support non-Fujitsu cash Drawers. Registry parameter 'Status_Mode' set to 'Invert' for non-Fujitsu drawers, and set to 'Normal' for Fujitsu drawers.

- VF60, CT10 and D22/25 MSR registry entries updated to include the driver restart parameters: 'RestartType' and 'RestartHardwareID'. This allows the services to restart the USB driver if device is disconnected due to ESD.

Release 1.10.7

Release 1.10.7 is primarily an update and maintenance release that includes corrections and updates for the following:

- *Team***PoS** 36xx Cash Drawer service added to support the Cash Drawer I/O Option Card for the *Team***PoS** 3600 POS Terminal.

- VF60 Line Display – support added for code page 1252 (selects character table 6).

- CCOVDF.EXE updated for code page 1252 testing.

- FjOPOS_1_10_7 install package updated to include 1252 in CharacterSetList registry entry.

- "*Team***PoS** 3000 VF60 Character Table Selection" PDF document added to the install

- CT10 Printer service object required additional fixes to handle CR/LF and LF/CR correctly.

- FjOPOSTest – Key lock test now checks for error codes and reports.

- D22/25 Key Lock service allows time for keyboard to respond to key position and reports a no-response.

- CT10 Printer – Code 128 corrections and default 128 code type added.

Release 1.10.6a

Release 1.10.6a is an update release that sets Threading Model to Apartment for the following device services: TP15 Cash Drawer, *Team***PoS** 3000 Power, CT10 Printer, CT10 Cash Drawer, D22/25 MSR and Key Lock, and the VF60 Line Display.

Release 1.10.6

Release 1.10.6 is primarily a maintenance release that incorporates the transition from Fujitsu Transaction Solutions Inc. (FTXS) to Fujitsu Frontech North America Inc. (FFNA) and also includes corrections and updates for the following:

- The install package has been renamed to FjOPOS_1_10_6.exe.

- The default install folder is changed from \Program Files\OPOS\FTXS to \Program Files\OPOS\Fujitsu.

- A message is added to the install stating that older versions of FTXS OPOS should be removed before installing Fujitsu OPOS 1.10.6. This message is only generated if the older version's Service Information Key is found in the registry.

- FTXSOPOSTest.exe and FTXSOPOSSetup.exe have been renamed to FjOPOSTest.exe and FjOPOSSetup.exe respectively.

- FJ.bmp (bit map logo for printer test) has been included in the CCO test programs install files.

- CT10 dual drawer install no longer sets the 'Status_Mode' registry parameter for both drawers to 'Invert'. It is now set to 'Normal'. A Fujitsu cable for Fujitsu drawers (TP10 and TP15) is now available.

Release 1.10.5

Release 1.10.5 is primarily a maintenance release with corrections and updates for the following:

- FTXS OPOS install now includes a selection to install the CCOxxx test programs and other utilities without having to install the corresponding Fujitsu device.

- FTXS OPOS install now includes selections for *Team***PoS** 3000 XL, XT, XL², XE, and *Team***PoS** 36xx platforms.

- FTXS OPOS install: Added SetSBCS=F (default), CharacterSet=101 (default) and SetInternational=0 (default) to the VF60 Line Display registry entry during installation. See Appendix B to utilize these settings to select VF60 character tables for characters in the range 128 – 255, and to select some international characters.

- FTXS OPOS install: Added all Character Sets to the VF60 Line Display registry entry for the CharacterSetList property.

- VF60 service object: Corrected a problem in selecting the Line Display's character page 19H.

- CCOvfd test program: Includes a 250ms delay between the text display and the display mapped characters command to properly display the character range selected.

- CCOvfd test program: Displays the CharacterSetList on the prompt to set the CharacterSet property.

- SymphSO (scanner/scale): Added support for the 9900 without long timeout delays for unsupported features.

- CT10 Printer service: Corrected to allow carriage return/linefeed in the text without causing extra linefeeds in the output.

Release 1.10.4

Release 1.10.4 is a release for the TeamPoS3000XL^2 and Windows 7™.

- A problem in the VF60 line display service object was fixed that was encountered with the TeamPoS3000XL^2 motherboards.

- A problem in the CT10 service object and port object was fixed that was encountered with the TeamPoS3000XL^2 motherboards.

- FTXSOPOSTest.exe was changed to allow the test program to run in normal mode on Windows 7 and Windows 7 when User Account Control is on.

Release 1.10.3

Release 1.10.3 is primarily a maintenance release with corrections and updates for the following:

- A problem was fixed in all the *Team**PoS*** 3000 device services that could cause a problem if the application made a request at the same time the device issued a notification.

- Corrections were made to the *Team**PoS*** 3000 device services event logging.

- Corrections were made to the *Team**PoS*** 3000 device services to resolve some missing exclusive queue accesses.

- Problems with close requests from multiple applications at the same time were corrected in the TP15 cash drawer and *Team**PoS*** 3000 power services.

- A temporary solution for the "taskkill /f" shutdown issue has been implemented in the TP15 cash drawer and *Team**PoS*** 3000 power services. The issue causes the application to take up to 5 minutes to shutdown if it is forcefully terminated while either the cash drawer or power device is open.

- Memory switch 3-8 of the CT10 printer needs to be set to "Closed" to prevent the printer from hanging in an error mode if the cover is opened while printing. Refer to the Printer's User's Manual for the switch setting procedure. Later firmware releases will have this setting as the default.

- CT10 Printer service object has been corrected to accept the PTR_BCS_Code128_Parsed symbology parameter to the PrintBarCode method.

- Error Reporting has been added to the D25 MSR service.

- The VF60 Line Display service object has a fix to the ReleaseDevice method for a hang that could occur if power notify is enabled.

- The NUMLOCK ON requirement has been removed from the 133PQ/104P/32K/A12 MSR.

- The 92U MSR error reporting has been corrected.

- Some of the CCO and FTXS test programs have corrections and enhancements.

Release 1.10.2

Release 1.10.2 was primarily a maintenance release with corrections and updates for the following:

- 100% CPU use by the Power Management Utility when main application terminates.

- D22/25 MSR sentinels decoding problem.

- RetrieveStatistics – XML format correction.

- 92R/M Error on Open/Claim.

- CT10 Dual Drawer Install updates.

- FTXSTEST corrections and enhancements.

- Internal SO changes for consistent use of synchronization objects.

With release 1.10.1 came support for the Fujitsu *Team**PoS*** 3000 POS terminal and additional POS devices. The new devices, except for the cash drawer and power management, are supported on both the *Team**PoS*** 2000 and *Team**PoS*** 3000 platforms.

Starting with release 1.10.1, only support of the Common Control Objects (CCOs) is provided. These are available from http://monroecs.com/. The CCOs should be downloaded and installed as a separate installation step from the FTXS OPOS installation.

Service Objects for all devices except the FJ Power and the FD20/21 dot matrix printers have been updated to either the OPOS 1.9 or OPOS 1.10 specification. The FD20/21 printers will remain at the OPOS 1.3 level; while the FJ Power (*Team***PoS** 2000 and *Team***PoS** 3000) is a custom implementation prior to POSPower being added to the OPOS specification. POSPower for OPOS 1.9 is available for the *Team***PoS** 3000 only.

Device Statistics Retrieval has been added to all of the 1.10 devices. Not all devices provide all of the statistical information identified in the OPOS specification, but the information that is provided is retrieved and can be obtained by the RetrieveStatistics() method. Some devices can provide additional information – this information is retrieved and reported as "Manufacturer Specific".

Features Added in 1.10.1 for specific Devices:

VF40/50 Line Display:

- DefineGlyph method added.
- Reverse and Reverse-Blink character attributes added.
- Escape sequence processing added for Reverse, Blink, Reverse-Blink and Normal added.
- Check Health Internal and External now request a response from the Line Display device.

133PQ and 92R/M/U MSR:

- Transmit Sentinels ON/OFF support added.
- ClearInputProperties method added.

Scanner (SlimScan 1200 and Symphony 9950)

- RSS14 barcode support added (requires firmware upgrades)
- RSS14 extended barcode support added (requires firmware upgrades)
- ClearInputProperties method added.

All Legacy Devices (not available for *Team***PoS** 3000 devices)

- Tracing (Logging) to a file (**Warning**: This can cause some performance issues so only use if necessary). The enable and maximum file size are controlled via registry entries. Available only in debug versions of the service objects.
- Periodic Statistics updates to the Registry. The enable and rate are controlled via registry entries.

New Devices Added in 1.10.1 Release:

- Cash Drawer for the *Team***PoS** 3000

- Power Management for *Team***PoS** 3000

- Fujitsu CT10 Single Station Thermal POS Printer and Cash Drawers

- VF60 USB 2 X 20 Line Display

- D22/25 MSR and Keylock

Hardware:

*Team***PoS 3000:**

Base Ports Configuration:

- 2x COM Ports with none, 5V, and 12V power configurations (COM1, COM2)

- 1x 24 Volt Retail USB Connector – for Printer

- 4x Standard USB - 2 in front and 2 in rear

- 1x Cash Drawer (Supports up to 2 cash Drawers)

- 1x Power Management Interface

I/O Board Configurations:

- None – No I/O boards are installed

- USB Option I – 3 X 12V Retail USB Connectors

- USB Option II – 6 X 12V Retail USB Connectors

- COMBO Only Option – 6 X 12V Retail USB Connectors + 24V DB15 Female Connector [COM3] + 5V DB9 Male Connector [COM4]

- COMBO + COM Option – 6 X USB (12V) Ports + 24V DB15 Female Connector [COM3] + 5V DB9 Male Connector) [COM4] + 5V DB9 Male Connector [COM5] + 5V DB9 Male [COM6] + 24V DB9 Female Connector [COM7]

The **COMBO Only Option** configuration provides 2 RS 232 serial ports and 6 12V Retail USB ports. This option provides 2 of the serial ports available on the *Team***PoS** 2000 TeamCOM (Retail I/O) board – the DB15 (24V) ESC/POS or Fujitsu printer port and a DB9 (5V) port.

The **COMBO + COM Option** configuration provides 5 RS 232 serial ports and 6 12V Retail USB ports. This option provides 5 of the serial ports available on the *Team***PoS** 2000 TeamCOM (Retail I/O) board – the 24V DB15 ESC/POS or Fujitsu printer port, 3 X 5V DB9 ports, and a 24V DB9 port

The **USB Option I** configuration for the *Team***PoS** 3000 has 3 X 12V USB powered ports. All communications between the External Control Interface and the Fujitsu USB device is through virtual COM ports (VCP).

The **USB Option II** configuration for the *Team***PoS** 3000 has 6 X 12V USB powered ports. All communications between the External Control Interface and the Fujitsu USB device is through virtual COM ports (VCP).

These options are in addition to the main *Team***PoS** 3000 board's 24V USB port to support USB POS printers and support for cash drawers and power management. COM1 and COM2 can also be configured to be non-powered, 5V, or 12V powered ports.

*Team***PoS 2000:**

*Team***PoS** 2000 POS terminals support up to 10 standard RS 232 serial ports using the **TeamCOM** board. The TeamCOM board provides eight powered RS232 compatible ports, in addition to two standard comm. ports available on the PC motherboard. The TeamCOM board supplies power to POS peripheral devices usually through pin 9 of the DB9 connector. The following serial ports are provided:

- COM 1-2   - Integrated on system board
- COM 3-10   - TeamCOM Board

A later revision of the TeamCOM board, named the **TeamCOMBO** board, provides support for four powered RS232 ports and four powered Retail USB ports. See section 4.4 for details on port assignments. The following serial ports are provided:

- COM 1-2   - Integrated on system board
- COM 3-6 & 10   - TeamCOMBO Board

The **TeamUSB** version of the I/O board provides 7 powered Retail USB 2.0 ports. Three ports are 12-volt powered USB and four ports are 24-volt powered USB.

> All communications between the External Control Interface and the PoS terminal hardware and software are through PoS terminal compatible virtual COM ports (VCP) or USB device interfaces. This hardware is recognized and supported by standard drivers supplied with the various Windows operating systems. The ability to use standard drivers supplied with the operating systems greatly simplifies development needed to support *Team***PoS** 2000 specific functionality and allows easy migration to new versions of operating system software.

Testing and Diagnostics:

Test programs are provided for each device listed in Section 1.2. These programs allow you to validate your configuration. The FTXS OPOS Install Utility installs these test programs. The test programs require that the Common Controls be installed.

In addition, **FTXSOposTest.exe** is installed in the Programs\FTXSOPOS Utilities folder and provides an install verification test for the basic OPOS devices. It can be accessed by clicking Start - Programs – "FTXSOPOS Utilities". The test only verifies the basic functionality of the device selected, it does not provide access to device functions as the CCO test programs do. Not all installed OPOS devices are supported by FTXSOposTest.exe. If a non-supported device is selected a "Not Supported" message is displayed.

Install/Registry Functions:

Registry updates are done automatically by the FTXS OPOS install utility but changes can be made by using the **FTXSOposSetup.exe** utility to change the port assignment, the port initialization string, and to add / remove logical device names. **FTXSOposSetup.exe** is installed in the Programs\"FTXSOPOS Utilities" folder and can be accessed by clicking Start - Programs – "FTXSOPOS Utilities".

Operating Systems:

FTXS OPOS peripheral device driver service objects (DLL or EXE) are functional under Windows 2000 and Windows XP. The FTXS OPOS drivers use standard RS232 drivers provided by these operating systems or special installable system level drivers required to access the USB VCOM devices.

Installation Procedures:

Installation procedures for the *Team***PoS** 2000 / 3000 Devices including the FTXS devices and the USB drivers can be found in the "*Team***PoS** 2000 / 3000 Device Install Document" available from the Fujitsu OPOS web page at the following link.

http://www.fujitsu.com/us/services/retailing/support/drivers/opos/index.html

1.2 FTXS - OPOS 1.10.1 and later Supported Devices

- Fujitsu Thermal Printer (CT11 – Single Station USB/HID Interface)
- Fujitsu VFD (VF35 & VF70 2 X 20 USB/HID Interface)
- Fujitsu TeamMSR (USB/HID Interface)
- Fujitsu Cash Drawer(s) (*Team***PoS** 7000)
- Fujitsu TeamKeyMSR and Tone (USB/HID Interface VCOM Interface)
- Fujitsu Thermal Printer (CT10 – Single Station VCOM Interface)
- Fujitsu Dot Printers (FD20/21 – OPOS 1.3 level)
- Fujitsu VFD (Serial - VF40/50 and USB – VF50)
- Fujitsu VFD (USB VCOM – VF60)
- Fujitsu SlimScan 1200 Scanner
- Fujitsu POS/PC Keyboard (133PQ, 104 & 32) with built-in Key Lock, MSR, and Tone Indicator
- Fujitsu MSR / Key Lock (D22/25 VCOM Interface)
- Fujitsu Cash Drawer(s) (*Team***PoS** 2000 / 3000)
- Fujitsu Power Management (*Team***PoS** 2000 / 3000)
- 92R/92M/92U Keyboard with built-in Line Display, Key Lock, MSR, and Tone Indicator
- Fujitsu 9900/9950 Symphony Scanner/Scale

OPOS Controls for the devices listed in the table below are currently available and are operational under Windows 2000 and Windows XP.

Device	Model	FJ Model #	FFNA Model	Service Object	OPOS Version	Description
CashDrawer	(TP7K)	KD02909-7XXX			1.13	
Power (FJ)	(TP7K)	KD02909-7XXX			1.13	Not supported on Axxx
Printer	FJ Thermal	KD02909-66XX	CT11		1.13	Single Station Receipt USB/HID
CashDrawer	FJ	KD02909-66XX	CT11		1.13	Cash Drawer – 1 Station Printer USB/HID
VDF	FJ VFD Display	KD02909-902X	VF70 & VF35		1.13	Fujitsu 2-Line Display USB/HID
Keyboard (MSR)	TeamMSR	KD02909-67XX	TeamMSR (TeamKeyPad MSR)		1.13	Fujitsu MSR USB/HID
CashDrawer	(TP3K)	KD03207-C310	TP15	FjCDrwSO.dll	1.9	Access via COM10, (1 or 2 drawers)
Power (FJ)	(TP3K)	N/A		FjPowSO.dll	1.9	Access via COM30
CashDrawer	(TP2K)	F7514DR11	TP10	Fjmcpso.dll	1.10	Access via the TeamCOM at COM10, (1 or 2 drawers)
Power (FJ)	(TP2K)	N/A		Fjmcpso.dll	N/A	Multi Comm. Port board
Printer	FJ Thermal	KD02906-1200	CT10	FjUPrt1SO.dll FjUPrt1PO.exe	1.9	1 Station, Rcpt 40 Col. Thermal
CashDrawer	FJ		CT10	FjUPrDwSO.dll FjUPrt1PO.exe	1.9	Cash Drawer - 1 Station Printer
VFD	FJ VFD Display	KD02906-1501	VF60	FjEVFDSO.dll	1.9	Fujitsu 2-Line Display
Keyboard (MSR, Lock)	D22/25 MSR D22/25 Lock	KD02906-????	D22/25 MSR/Lock	FjPOSKbPO.exe FjPOSkbSO.dll	1.9	D22/25 MSR and Lock only
Keyboard	POS-PC	N/A	133PQ/104/32	fjkbdso.dll fjklkso.dll fjmsrso.dll (fjkbd.dll) fjtoneso.dll	1.10	FJ POS/PC **Updated 133PQ keyboard Firmware is required for WinNT 4.0 (SP3 or later required) or later versions of Windows**
Keyboard	92R/M/U	N/A	92R/M/U	FjRKbdSO.dll FjRKbdPO.exe	1.10	92R/M/U Keyboard
Printer	FJ Dot Impact	F7514PR40	FD20	fjprtso.dll	1.3	2 ½ Station, R/J/S, 40 Col. Jour, 40 Slip
Printer	FJ Dot Impact	F7514PR70	FD21	fjprtso.dll	1.3	2 ½ Station, R/J/S, 40 Col. Jour, 70 Slip
Scanner/ Scale	FJ 9900/9950 Symphony	F7521E_S	9900/9950	fjsymphso.dll Fjsymphpo.exe	1.10	Integrated Scanner/Scale
Scanner	SlimScan1200	F7521C	PB600064	fjscanso.dll	1.10	SlimScan Hand Held scanner
VFD	FJ VFD Display	F7518CD	VF40/50	fjvfdso.dll	1.10	Fujitsu 2-Line Display

1.3   Default Scanner and Scale Programming

The OPOS installer program stores a file called **SCANNER-INIT.DOC** in the install directory**.** This document contains the default barcodes necessary to initialize Fujitsu's SlimScan1200, and the 9900 scale for use with FTXS OPOS drivers. Additional barcodes may need to be scanned if a 9900 scanner/scale is attached with a single cable. This information is also included at the end of this document for convenience.

<u>Scanner Notes</u>
The FTXS OPOS 1.10 Scanner SO defaults are defined in the table below. To change the COM port, port initialization string, and/or the terminator (end sentinel), the registry **MUST be changed**. Alternately, the scanners can be reprogrammed to match the registry values. Fujitsu scanners may not necessarily be initialized to these values and may require being initially programmed using programming barcodes.

Scanner Type	COM Port	Port Initialization String	End Sentinel	Flow Control	Enable /Disable	Service Object (DLL)
SlimScan 1200	COM4	9600,E,7,1	0x0D	CTS/RTS	No	Fjscanso.dll
Symphony 9900	COM1	9600,E,7,2	0x0D	CTS/RTS	Yes	FjsymphSO.dll FjsymphPO.exe

Note: The Scanner/Scale is only supported by the OPOS SO in the single-cable configuration in Magellan mode.

2.0   OPOS Architecture

Application
- Double byte code
- Multi Barcode
- Multi Item code
- Extended Printer Error Code

Direct Win32 API
- Display
- KBD
- Misc.

OPOS Device Framework

OPOS

Control Objects (CO)

Service Objects (SO)

RAFT

Fujitsu Retail Application Framework

ARTS/POS Business Rules

Win32 API (File I/O, multithreading, etc)

LAN DB

Win2000/Windows XP

System Devices
- KBD
- Display

Driver Interface

Standard Win2000/Windows XP
32-Bit RS 232 Port Driver

I/O Board
(24V/12V/5V Power)
COMxx

COM1, COM2 (IRQ 4,3)

Power/Data   Power (*Team***PoS** 3000) /Data

.... USB / RS 232 Devices….

3.0   Hardware/Software Interface

3.1   *Driver Registration*

The OPOS drivers are registered automatically by the FJ install utility. Use Regedit.exe to browse and make registry changes. The FTXS OPOS device registry information is located at:
HKEY_LOCAL_MACHINE\SOFTWARE\OleforRetail\ServiceOPOS.

3.1.1   USB Virtual COM (VCOM) Port Installation

USB and VCOM port drivers are installed in other installation processes. These drivers may be pre-installed or if needed are provided on the FTXS OPOS web page.

3.2   Team*PoS 3600*
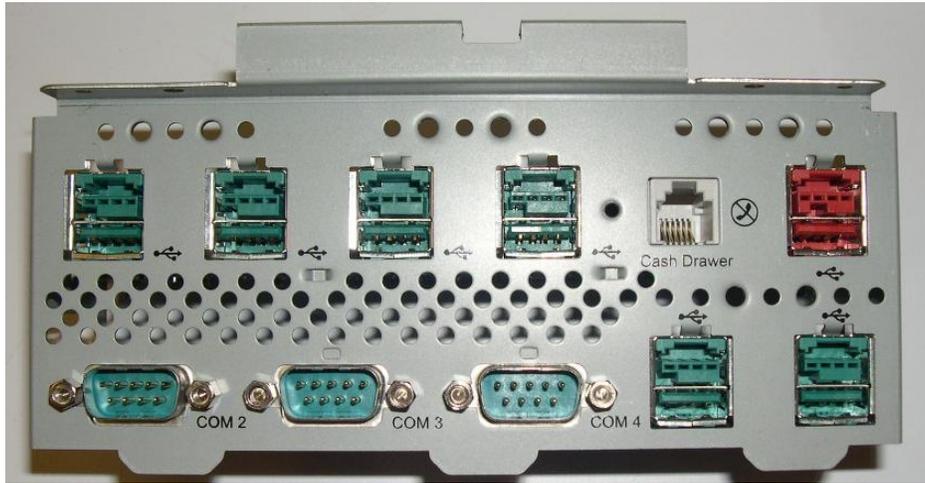

Standard Serial:
- COM1:   Port 1   On the motherboard
- COM2:   Port 2   Legacy I/O Option
- COM3:   Port 3   Legacy I/O Option
- COM4:   Port 4   Legacy I/O Option
-

VCOM(SOL)

- COM5:   Port 5   Intel® Active Management Technology - Serial Over LAN

VCOM(Bridge)
- COM10:   Cash Drawer (Optional) Silicon Labs CP2102 USB to UART Bridge

VCOM (USB):
- COM33   CT10 – Fujitsu Single Station Printer
- COM37   D22/25 MSR, Key Lock
- COM42:   USB VF60 - 2 (VFD2 driver maps USB port to COM port)
- COM46:   USB VF60 - 1 (VFD1 driver maps USB port to COM port)

3.3   Team*PoS* 3000

3.3.1   Legacy Ports Board (Team*PoS* 3000) Port Assignments

The legacy option provides both standard COM ports and virtual COM (VCOM) ports. The following is the ports configuration:

Standard Serial:
- *   COM3:   Port 3 (Printer) IRQ 5, Port Addr = 3E8h – 3EFh
- *   COM4:   Port 4   IRQ 7, Port Addr = 2E8h – 2EFh
- *   COM5:   Port 5   PCI Communications Port
- *   COM6:   Port 6   PCI Communications Port
- *   COM7:   Port 7   PCI Communications Port

VCOM (GPIO):
- *   COM10:   Cash Drawer
- *   COM30:   Power Management

VCOM (USB):
- *   COM33   CT10 – Fujitsu Single Station Printer
- *   COM37   D22/25 MSR, Key Lock
- *   COM42:   USB VF60 - 2 (VFD2 driver maps USB port to COM port)
- *   COM46:   USB VF60 - 1 (VFD1 driver maps USB port to COM port)

3.3.2   USB Option Board (Team*PoS* 3000) Port Assignments

The USB option provides virtual COM (VCOM) ports. The following is the ports configuration:

VCOM (GPIO):
* COM10: Cash Drawer
* COM30: Power Management

VCOM (USB):
* COM33 CT10 – Fujitsu Single Station Printer
* COM37 D22/25 MSR, Key Lock
* COM42: USB VF60 - 2 (VFD2 driver maps USB port to COM port)
* COM46: USB VF60 - 1 (VFD1 driver maps USB port to COM port)

3.4 Team*PoS 2000*

3.4.1 *TeamCOM (TeamPoS 2000) COM Port IRQ and IO Addresses*

The FTXS install utility automatically adds the COM port information to the system registry. The COM ports are configured as follows:

If the base address jumper is 230h (default for *Team***PoS** 5000, option for *Team***PoS** 2000):

* COM3: Printer Port IRQ 5, Port Addr = 230h – 237h
* COM4: Port 1 IRQ 5, Port Addr = 238h – 23Fh
* COM5: Port 2 IRQ 5, Port Addr = 240h – 247h
* COM6: Port 3 IRQ 5, Port Addr = 248h – 24Fh
* COM7: Port 4 IRQ 5, Port Addr = 250h – 257h
* COM8: Port 5 IRQ 5, Port Addr = 258h – 25Fh
* COM9: Port 6 IRQ 5, Port Addr = 260h – 267h
* COM10: Cash Drawer IRQ 5, Port Addr = 268h – 26Fh

If the base address jumper is 100h (default for *Team***PoS** 2000, option for *Team***PoS** 5000):

* COM3: Printer Port IRQ 5, Port Addr = 100h – 107h
* COM4: Port 1 IRQ 5, Port Addr = 108h – 10Fh
* COM5: Port 2 IRQ 5, Port Addr = 110h – 117h
* COM6: Port 3 IRQ 5, Port Addr = 118h – 11Fh
* COM7: Port 4 IRQ 5, Port Addr = 120h – 127h
* COM8: Port 5 IRQ 5, Port Addr = 128h – 12Fh
* COM9: Port 6 IRQ 5, Port Addr = 130h – 137h
* COM10: Cash Drawer IRQ 5, Port Addr = 138h – 13Fh

3.4.2 *TeamCOMBO (TeamPoS 2000) COM Port IRQ and IO Addresses*

The FTXS install utility automatically adds the COM port information to the system registry. The COM ports are configured as follows:

If the base address jumper is 230h (option for *Team***PoS** 2000):

* COM3: Port 1 IRQ 5, Port Addr = 230h – 237h
* COM4: Port 2 IRQ 5, Port Addr = 238h – 23Fh
* COM5: Port 3 IRQ 5, Port Addr = 240h – 247h
* COM6: Port 4 IRQ 5, Port Addr = 248h – 24Fh
* COM10: Cash Drawer IRQ 5, Port Addr = 268h – 26Fh

If the base address jumper is 100h (default for *Team***PoS** 2000):

* COM3: Port 1 IRQ 5, Port Addr = 100h – 107h
* COM4: Port 2 IRQ 5, Port Addr = 108h – 10Fh
* COM5: Port 3 IRQ 5, Port Addr = 110h – 117h

*   COM6:   Port 4   IRQ 5, Port Addr = 118h – 11Fh
*   COM10:   Cash Drawer   IRQ 5, Port Addr = 138h – 13Fh

3.4.3   *TeamUSB (*Team*PoS 2000) Virtual COM Port Assignments*

VCOM drivers are installed that map certain USB devices to virtual COM ports, allowing the existing OPOS service objects to run. The following are the default assignments:

* COM7:   USB VFD 1 (VFD1 driver maps USB port to COM port)
* COM8:   USB VFD 2 (VFD2 driver maps USB port to COM port)
* COM3:   USB 92U Keyboard/Key Lock/MSR/Line Display/Tone Indicator
* COM10:   Cash Drawer; Power Management

3.5   *COM Port Registry Setup (Team*PoS *2000) for Win2000/Windows XP*

3.5.1   TeamCOM COM Port Settings (7 RS 232 Ports)

The COM port configurations are setup automatically in the Win2000/Windows XP registry in
**HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Serial\Parameters\ Serial10000 -
Serial10007** by the install utility. The COM port registry settings are as follows if the base address jumper is set to
230h (PNT230.reg):

```
"PortAddress"=dword:00000230          "PortAddress"=dword:00000250
"ForceFifoEnable"=dword:00000001      "ForceFifoEnable"=dword:00000001
"DosDevices"="COM3"                   "DosDevices"="COM7"
"Interrupt"=dword:00000005            "Interrupt"=dword:00000005
"InterruptStatus"=dword:00000270      "InterruptStatus"=dword:00000270
"PortIndex"=dword:00000001            "PortIndex"=dword:00000005
"Indexed"=dword:00000001              "Indexed"=dword:00000001

"PortAddress"=dword:00000238          "PortAddress"=dword:00000258
"ForceFifoEnable"=dword:00000001      "ForceFifoEnable"=dword:00000001
"DosDevices"="COM4"                   "DosDevices"="COM8"
"Interrupt"=dword:00000005            "Interrupt"=dword:00000005
"InterruptStatus"=dword:00000270      "InterruptStatus"=dword:00000270
"PortIndex"=dword:00000002            "PortIndex"=dword:00000006
"Indexed"=dword:00000001              "Indexed"=dword:00000001

"PortAddress"=dword:00000240          "PortAddress"=dword:00000260
"ForceFifoEnable"=dword:00000001      "ForceFifoEnable"=dword:00000001
"DosDevices"="COM5"                   "DosDevices"="COM9"
"Interrupt"=dword:00000005            "Interrupt"=dword:00000005
"InterruptStatus"=dword:00000270      "InterruptStatus"=dword:00000270
"PortIndex"=dword:00000003            "PortIndex"=dword:00000007
"Indexed"=dword:00000001              "Indexed"=dword:00000001

"PortAddress"=dword:00000248          "PortAddress"=dword:00000268
"ForceFifoEnable"=dword:00000001      "ForceFifoEnable"=dword:00000001
"DosDevices"="COM6"                   "DosDevices"="COM10"
"Interrupt"=dword:00000005            "Interrupt"=dword:00000005
"InterruptStatus"=dword:00000270      "InterruptStatus"=dword:00000270
"PortIndex"=dword:00000004            "PortIndex"=dword:00000008
"Indexed"=dword:00000001              "Indexed"=dword:00000001
```

The Win2000/Windows XP COM port registry settings are as follows if the base address jumper is set to 100h (PNT100.reg):

```
"PortAddress"=dword:00000100
"ForceFifoEnable"=dword:00000001
"DosDevices"="COM3"
"Interrupt"=dword:00000005
"InterruptStatus"=dword:00000140
"PortIndex"=dword:00000001
"Indexed"=dword:00000001

"PortAddress"=dword:00000108
"ForceFifoEnable"=dword:00000001
"DosDevices"="COM4"
"Interrupt"=dword:00000005
"InterruptStatus"=dword:00000140
"PortIndex"=dword:00000002
"Indexed"=dword:00000001

"PortAddress"=dword:00000110
"ForceFifoEnable"=dword:00000001
"DosDevices"="COM5"
"Interrupt"=dword:00000005
"InterruptStatus"=dword:00000140
"PortIndex"=dword:00000003
"Indexed"=dword:00000001

"PortAddress"=dword:00000118
"ForceFifoEnable"=dword:00000001
"DosDevices"="COM6"
"Interrupt"=dword:00000005
"InterruptStatus"=dword:00000140
"PortIndex"=dword:00000004
"Indexed"=dword:00000001
```

```
"PortAddress"=dword:00000120
"ForceFifoEnable"=dword:00000001
"DosDevices"="COM7"
"Interrupt"=dword:00000005
"InterruptStatus"=dword:00000140
"PortIndex"=dword:00000005
"Indexed"=dword:00000001

"PortAddress"=dword:00000128
"ForceFifoEnable"=dword:00000001
"DosDevices"="COM8"
"Interrupt"=dword:00000005
"InterruptStatus"=dword:00000140
"PortIndex"=dword:00000006
"Indexed"=dword:00000001

"PortAddress"=dword:00000130
"ForceFifoEnable"=dword:00000001
"DosDevices"="COM9"
"Interrupt"=dword:00000005
"InterruptStatus"=dword:00000140
"PortIndex"=dword:00000007
"Indexed"=dword:00000001

"PortAddress"=dword:00000138
"ForceFifoEnable"=dword:00000001
"DosDevices"="COM10"
"Interrupt"=dword:00000005
"InterruptStatus"=dword:00000140
"PortIndex"=dword:00000008
"Indexed"=dword:00000001
```

3.5.2   TeamCOMBO (*Team*PoS 2000) COM Port Settings (4 RS 232 Ports)

The COM port configurations are setup automatically in the Win2000/Windows XP registry in
**HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Serial\Parameters\ Serial10000 -
Serial10004** by the install utility. The COM port registry settings are as follows if the base address jumper is set to
230h (UNT230.reg):

```
"PortAddress"=dword:00000230
"ForceFifoEnable"=dword:00000001
"DosDevices"="COM3"
"Interrupt"=dword:00000005
"InterruptStatus"=dword:00000270
"PortIndex"=dword:00000001
"Indexed"=dword:00000001
```

```
"PortAddress"=dword:00000248
"ForceFifoEnable"=dword:00000001
"DosDevices"="COM6"
"Interrupt"=dword:00000005
"InterruptStatus"=dword:00000270
"PortIndex"=dword:00000004
"Indexed"=dword:00000001
```

```
"PortAddress"=dword:00000238
"ForceFifoEnable"=dword:00000001
"DosDevices"="COM4"
"Interrupt"=dword:00000005
"InterruptStatus"=dword:00000270
"PortIndex"=dword:00000002
"Indexed"=dword:00000001
```

```
"PortAddress"=dword:00000268
"ForceFifoEnable"=dword:00000001
"DosDevices"="COM10"
"Interrupt"=dword:00000005
"InterruptStatus"=dword:00000270
"PortIndex"=dword:00000008
"Indexed"=dword:00000001
```

```
"PortAddress"=dword:00000240
"ForceFifoEnable"=dword:00000001
"DosDevices"="COM5"
"Interrupt"=dword:00000005
"InterruptStatus"=dword:00000270
"PortIndex"=dword:00000003
"Indexed"=dword:00000001
```

The Win2000/Windows XP COM port registry settings are as follows if the base address jumper is set to 100h
(UNT100.reg):

```
"PortAddress"=dword:00000100
"ForceFifoEnable"=dword:00000001
"DosDevices"="COM3"
"Interrupt"=dword:00000005
"InterruptStatus"=dword:00000140
"PortIndex"=dword:00000001
"Indexed"=dword:00000001
```

```
"PortAddress"=dword:00000118
"ForceFifoEnable"=dword:00000001
"DosDevices"="COM6"
"Interrupt"=dword:00000005
"InterruptStatus"=dword:00000140
"PortIndex"=dword:00000004
"Indexed"=dword:00000001
```

```
"PortAddress"=dword:00000108
"ForceFifoEnable"=dword:00000001
"DosDevices"="COM4"
"Interrupt"=dword:00000005
"InterruptStatus"=dword:00000140
"PortIndex"=dword:00000002
"Indexed"=dword:00000001
```

```
"PortAddress"=dword:00000138
"ForceFifoEnable"=dword:00000001
"DosDevices"="COM10"
"Interrupt"=dword:00000005
"InterruptStatus"=dword:00000140
"PortIndex"=dword:00000008
"Indexed"=dword:00000001
```

```
"PortAddress"=dword:00000110
"ForceFifoEnable"=dword:00000001
"DosDevices"="COM5"
"Interrupt"=dword:00000005
"InterruptStatus"=dword:00000140
"PortIndex"=dword:00000003
"Indexed"=dword:00000001
```

3.6 POS Key Scan Codes for 133PQ, 104 Key, and 32 Key Keyboards

POS keys are those keys, which are not normally recognized by Windows. These keys are not recognized because they don't generate normal "make and break" sequences.

The 133PQ device install will support the 133PQ, 104 Key, and 32 Key keyboards and attached devices (Key lock, Tone Indicator and the MSR).

3.6.1   133PQ Keyboard Layout

SYS REQ	Pause	F1	F3	F5	F7	F9	Ins	Home	Page up	Gray -	↑	Gray +	POS1	POS2	POS3	POS4	POS5	POS6	POS7
ESC	Scroll Lock	F2	F4	F6	F8	F10	Del	End	Page down	←	↓	→	POS8	POS9	POS10	POS11	POS12	POS13	POS14

~ `	! 1	@ 2	# 3	$ 4	% 5	^ 6	& 7	* 8	(9	) 0	_ -	+ =	BKSP	POS15	POS16	/	POS17	POS18	POS19	POS20
TAB	Q	W	E	R	T	Y	U	I	O	P	{ [	}]	| \	7	8	9	POS21	POS22	POS23	POS24
Caps Lock	A	S	D	F	G	H	J	K	L	: ;	" ,	ENTER		4	5	6	POS25	POS26	POS27	POS28
Shift	Z	X	C	V	B	N	M	< ,	> .	? /	Shift			1	2	3	POS29	POS30	POS31	POS32
Ctrl	Alt	SPACE BAR						Alt	Ctrl					POS33	0	POS34	POS35	POS36	POS37	POS38

3.6.2   104 Keyboard Layout

The default layout for the *Team**PoS*** 2000 104 keyboard is as follows:

ESC	F1	F2	F3	F4	F5	F6	Ins	Home	Page up	— -	+ =	BKSP
TAB	F7	F8	F9	F10	F11	F12	Del	End	Page down	7	8	9
Caps Lock	~ `	| \	{ [	}]	? /	: ;	" '	POS1	POS2	4	5	6
! 1	@ 2	# 3	$ 4	% 5	^ 6	& 7	* 8	(9	) 0	1	2	3
Q	W	E	R	T	Y	U	I	O	P	POS3	0	.
A	S	D	F	G	H	J	K	L	ENTER		POS5	POS6
Z	X	C	V	B	N	M	< ,	> .	↑	POS7	POS8	POS9
Shift	Ctrl	🪟	Alt	SPACE		Alt	Ctrl	←	↓	→	POS ENTER	

Rows are labeled A through H and columns are numbered 1 through 13, starting at the bottom left corner.

In this particular layout POS4 (C11) is used to widen the standard Enter key, POS 11 (A05) is used to widen the standard Space bar and POS10 (A12) is used to widen the POS Enter key.

3.6.3   32-Key Keypad Layout

The default layout for the *Team**PoS*** 2000 32-key keypad is as follows:

F1	**F2**	**F3**	**F4**
F5	**F6**	**F7**	**F8**
F9	**F10**	↑	↓
F11	**F12**	←	→
7	**8**	**9**	**+**
4	**5**	**6**	**-**
1	**2**	**3**	**=**
0	**00**	**.**	**ENTER**

Rows are labeled A through H and columns are numbered 1 through 4, starting at the bottom left corner

The OPOS driver returns key values for the 133PQ 38-POS keys as specified in the Windows registry. During the OPOS installation these values default to:

"POSKey01"=dword:000007d1	"POSKey20"=dword:000007e4
"POSKey02"=dword:000007d2	"POSKey21"=dword:000007e5
"POSKey03"=dword:000007d3	"POSKey22"=dword:000007e6
"POSKey04"=dword:000007d4	"POSKey23"=dword:000007e7
"POSKey05"=dword:000007d5	"POSKey24"=dword:000007e8
"POSKey06"=dword:000007d6	"POSKey25"=dword:000007e9
"POSKey07"=dword:000007d7	"POSKey26"=dword:000007ea
"POSKey08"=dword:000007d8	"POSKey27"=dword:000007eb
"POSKey09"=dword:000007d9	"POSKey28"=dword:000007ec
"POSKey10"=dword:000007da	"POSKey29"=dword:000007ed
"POSKey11"=dword:000007db	"POSKey30"=dword:000007ee
"POSKey12"=dword:000007dc	"POSKey31"=dword:000007ef
"POSKey13"=dword:000007dd	"POSKey32"=dword:000007f0
"POSKey14"=dword:000007de	"POSKey33"=dword:000007f1
"POSKey15"=dword:000007df	"POSKey34"=dword:000007f2
"POSKey16"=dword:000007e0	"POSKey35"=dword:000007f3
"POSKey17"=dword:000007e1	"POSKey36"=dword:000007f4
"POSKey18"=dword:000007e2	"POSKey37"=dword:000007f5
"POSKey19"=dword:000007e3	"POSKey38"=dword:000007f6

These hex values correspond to the decimal values in the range 2001 through 2038.

For the 104 keyboard, keys can be mapped as POS keys using the KEYMAP utility. The mapping values that correspond to POSKey01 through POSKey38 above are set in the mapping program by selecting the values in the ranges A-Z and F1-F12 and checking both the Attribute boxes "Returns Break code only" and "Prefix code add".

3.7   OPOS MSR Track Configurations for 133PQ, 104 and 32-Key Keyboards

The Fujitsu Keyboards may have MSR devices included. These MSR devices are available in several configurations. To insure the proper desired operation, the following registry entry may need to be changed to match the actual MSR type installed in the keyboard and enable reading of the desired track(s). Only the tracks defined by MSRType are enabled in these keyboards.

HKEY_LOCAL_MACHINE\SOFTWARE\OLEforRetail\ServiceOPOS\MSR\fjmsrso

String Value "MSRType" can have one of the following values:

- ISO12   - Track 1 & 2 Reader
- ISO23   - Track 2 & 3 Reader
- ISO123   - Track 1, 2, & 3 Reader
- ISO12JIS2   - Track 1, 2 ISO and Track 2 JIS Reader
- Other   - JIS Track 1 & 2 Reader

3.8   OPOS Test Utilities

The FJ OPOS device test utilities are installed in the directory selected at installation. The following shows the supported Fujitsu peripherals, their corresponding test utility names, and the default SO name used by the test program OPEN button command if no data is entered:

Device Class	Common Control Test Program Name
CashDrawer	CCOcd.exe
POSPower	CCOPwr.exe
FjPowerSupplyUnit	Fjpower.exe
CashDrawer	CCOcd.exe
LineDisplay	CCOvfd.exe
MSR	CCOmsr.exe
Keylock	CCOkeyl.exe
CashDrawer	CCOprt.exe
POSPrinter	CCOcd.exe
MICR	CCOMicr.exe
POSKeyboard	CCOkbd.exe
Scale	CCOscale.exe
Scanner	CCOscan.exe
ToneIndicator:	CCOtone.exe

Note: The 133PQ tests also work on the 104P devices.

See Section 6 for instructions regarding the running of these test programs.

Also provided is a single test utility (**FjOposTest.Exe)** that displays a button for each OPOS device found in the registry and provides a test for most of the basic devices (cash drawer, printer, MICR, MSR, scanner, scale, keyboard, key lock, line display, tone indicator, and FJ Power). If a device is selected for which no test is available, a "Not Supported" message is displayed. This utility provides a basic installation and configuration validation.

3.9   Microsoft Runtime Support Files

A number of Microsoft Visual C++ and Visual Basic runtime libraries are needed for the execution of the OPOS environment. These files are listed below. They are copied to the following directories during installation if needed:

Win2000   - WinNT\System32
Windows XP   - Windows\System32

|		
COMDLG32.ocx	MFC42u.dll	MSVCRT40.dll
COMCTL32.ocx	MSVBVM50.dll	OLEAUT32.dll
Asycfilt.dll	MSVCIRT.dll	OLEPRO32.dll
COMCAT.dll	MSVCP50.dll	STDOLE2.tlb
Ctl3D32.dll	MSVCRT.dll	
MFC42.dll	MSVCRT20.dll	

NOTE: The Microsoft runtime modules above are from Microsoft Visual Studio 6.0 Service Pack 5 or later.

NOTE: Microsoft's 2010 Redistributable package is installed if any of the *Team**PoS*** 7000 devices (OPOS version 1.13 Services) are installed.
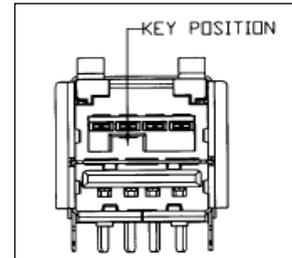
4.0 *Team*PoS **Hardware Setup**

4.1   Team*PoS 3600 and* Team*PoS 3000*
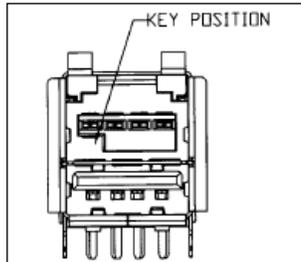
12V Retail USB Connector   **24V Retail USB Connector**
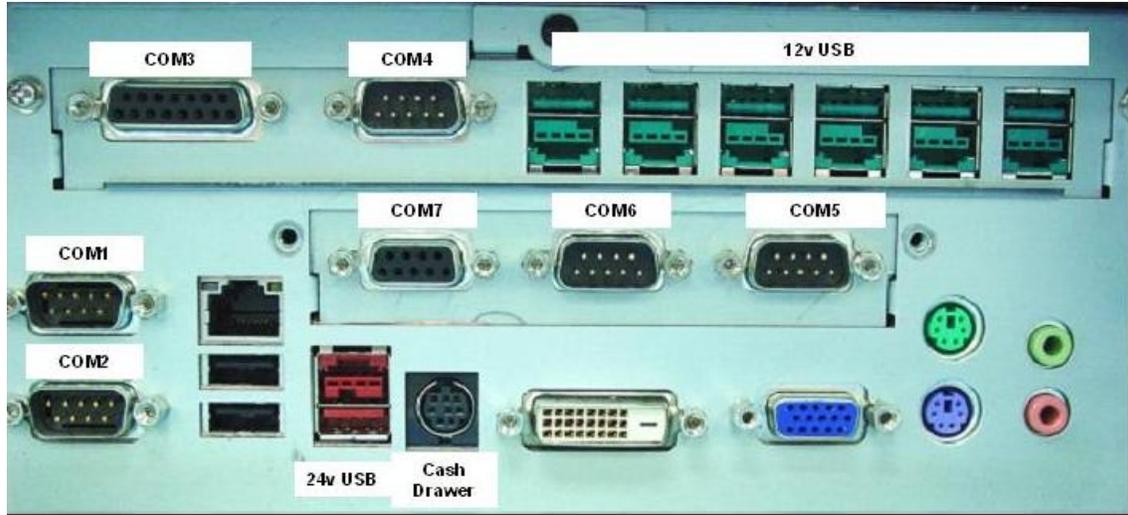

4.1.1   *Legacy Interface Option*

The figure below shows the *Team*PoS **3600** Legacy Interface Option:

The Legacy board contains six jumpers. Three of the jumpers (CN7, CN8, & CN9) will either provide +5 V on pin 9 of DB9 connector or provide the RI signal on that pin. Default is set as RI on that pin. Jumpers CN4, CN5, and CN6 enable the DCD signal on pin 1 of the DB9 connector and should remain in this default position.

The figure below shows the *Team*PoS 3000 legacy Interface Option configuration:

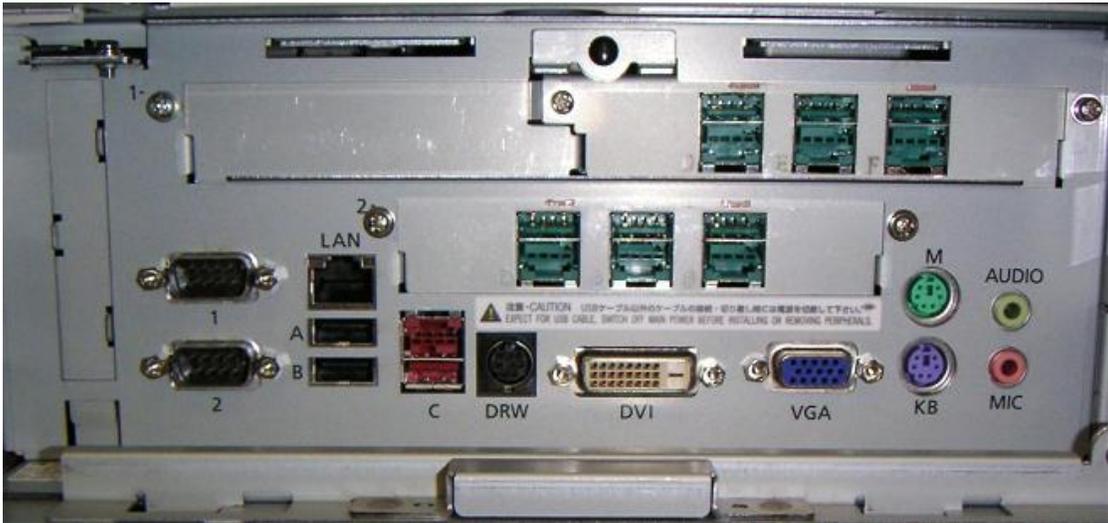| Standard Ports	Legacy Interface Option
2x COM Ports (COM1, COM2) [5V and 12V optional]	2 x 24VDC RS232 (COM3, COM7)
1x 24 Volt Powered USB – for Printer	3 x 5 VDC RS232 (COM4, COM5, COM6)
4x Standard USB, 2x in front 2x in rear	6 x 12 VDC Powered USB
1x Cash Drawer (Supports up to 2 cash Drawers)	
1x DVI-D – Digital Monitor	
1x Analog – VGA Monitor	Cash Drawer (COM10)
2x PS/2 keyboard and mouse	Power Management (COM30)
2x Audio, Mic In and Audio Out	CT10 Printer (COM33)
LAN - Ethernet	VF60-1 (COM46)
	VF60-2 (COM42)
	D22/25 MSR, Key lock (COM37)

4.1.2   USB Interface Option

The figure below shows the *Team**PoS 3600** Powered USB Interface Option:

The figure below shows the *Team**PoS 3600** Cash Drawer Interface Option:
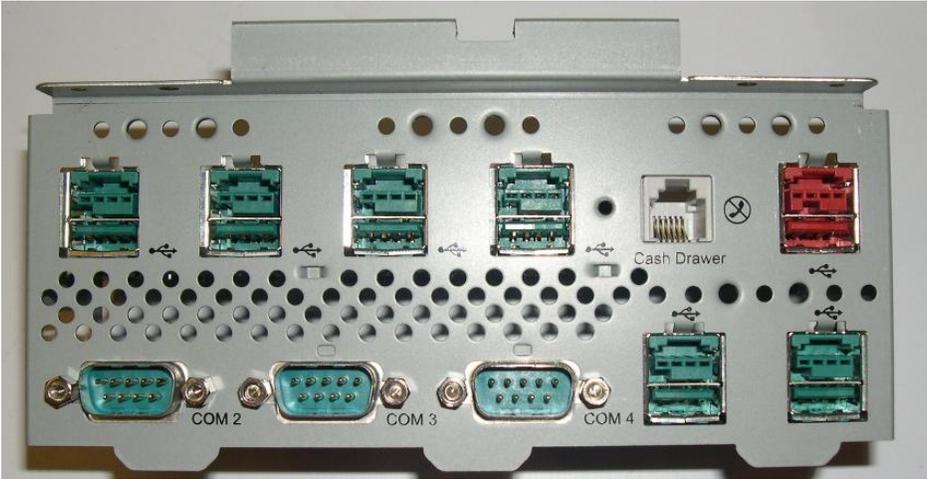
The figure below shows the *Team***PoS** 3000 USB configuration:

Standard Ports	
2x COM Ports (COM1, COM2) 1x 24 Volt Powered USB – for Printer 4x Standard USB, 2x in front 2x in rear 1x Cash Drawer (Supports up to 2 cash Drawers) 1x DVI-D – Digital Monitor 1x Analog – VGA Monitor 2x PS/2 keyboard and mouse 2x Audio, Mic In and Audio Out LAN - Ethernet	**Option I: 3 x 12 Volt USB** **Option II: 6 x 12 Volt USB** Cash Drawer (COM10) Power Management (COM30)

Backplane jumpers to enable COM1, COM2 power:

JP4 (COM1) and JP5 (COM2) Jumper Settings:

1 – 2	RI	(Standard COM)
3 – 4	5V	(Powered COM)
5 – 6	12V	(Powered COM)

4.2 *TeamPoS 2000*

There are three different configurations for the *Team***PoS** I/O Boards: **TeamCOM** (7 Rs232 Ports), **TeamCOMBO** (4 Rs232 and 4 USB Ports) and **TeamUSB** (7 USB Ports).

TeamCOM ports and standard PC COM ports do not use the same naming convention. The silk-screened numbers on the TeamCOM board refer to an ordinal that is not related to more familiar COM port names. COM1 and COM2 are always the standard PC motherboard ports. TeamCOM Port0 is silk screened as PTR and is COM3, Port1 is COM4, Port2 is COM5, and so on. DRW is attached to COM10. The following table shows the relationship between Windows COM ports and TeamCOM port naming conventions along with other details.

	Port 0	Port 1	Port 2	Port 3	Port 4	Port 5	Port 6	Port 7
Connector	D15 F/M	D9 MALE	D9 MALE	D9 F/M	D9 F/M	D9 MALE	D9 F/M	Internal
Power	+5V +12V +24V - 12V	5V	5V	5V - 24V	5V - 24V	5V	5V - 24V	
Typical Use	Printer	Scanner		VFD1 Cust.	VFD2 (OP) 92R/M/U			
WINDOWS COM Port #	COM 3	COM 4	COM 5	COM 6	COM 7	COM 8	COM 9	COM 10
Interrupt	5, 7, 9, 10, 11 and 12 Switch Selectable							
I/O Address	100/230	108/238	110/240	118/248	120/250	128/258	130/260	138/268

TeamCOM Interrupts & I/O Addresses (Interrupt selectable by jumper)

4.2.1 *OPOS 1.10 Installation Notes*
* The current default port assignments for the TeamCOM Board are:
    * Scanner = COM4
    * Line Display 1 = COM6 (VF40/50 Serial)
    * Line Display 2 = COM7 (VF40/50 Serial)
    * Printer = COM3
    * Scanner/Scale = COM1
    * 92R/M/U Keyboard = COM7 (Serial)
    * Cash Drawer = COM10 (internal)

* The current default port assignments for the TeamCOMBO Board are:
    * Scanner = COM3
    * Line Display 1 = COM5 (VF40/50 Serial)
    * Line Display 2 = COM6 (VF40/50 Serial)
    * Line Display 1 = COM7 (VF50 USB)
    * Line Display 2 = COM8 (VF50 USB)
    * Printer = Retail USB
    * Scanner/Scale = COM1
    * 92R/M/U Keyboard = COM6 (Serial)
    * 92R/M/U Keyboard = COM7 (USB)
    * Cash Drawer = COM10 (internal)

* The current default port assignments for the TeamUSB Board are:
    * Scanner = COM1 or COM2 (requires external power)

*	Line Display 1	= COM7 (VF50 USB)
*	Line Display 2	= COM8 (VF50 USB)
*	Printer	= Retail USB
*	Scanner/Scale	= COM1 or COM2
*	92U Keyboard	= COM3 (USB)
*	Cash Drawer	= COM10 (internal)

Additional Notes:

- The port assignments may be changed using the Install utility or Regedit.exe. The registry path for the OPOS devices is: **HKEY_LOCAL_MACHINE\SOFTWARE\OLEforRetail\ServiceOPOS**{OPOS device\FJ device}
- The Virtual COMM ports used for the USB devices can be changed by using the Device Manager and right clicking the port that is to change and select **Properties**. Select the **Port Settings** tab then select the **Advanced…** button. Use the **COMM Port Number** dropdown to change the port. Set the corresponding port in the registry entry for the device.

- TeamCOMBO - 92U (USB) and Line Display 1 (VF50U –USB) COMM port conflict. If these devices are used together – use the procedure above to reassign the COM port of one of the devices.

- An Error 104 on "Open" usually indicates incorrect port assignment or device not connected (no CTS)
- Use the supplied test utilities for initial test/diagnostics. See Section 6 for instructions regarding the running of these test programs.

### 4.2.2 TeamCOM (7 RS232 Ports) Board Setup for TeamPOS 2000

The TeamCOM version of the I/O Board provides seven (7) powered RS232 serial ports with optional jumper selected power distribution. The I/O Board also includes a microprocessor controlled External Control Interface to monitor and control external functions that are specific to the *Team***PoS** 2000.

The External Control Interface supports monitoring and control of the following units:

- PSU (Power Supply Unit)
- Dual Cash Drawers
- CMOS (Optional)
- Front Panel LEDs

All communications between the External Control Interface and the PoS terminal hardware and software are through standard PoS terminal compatible serial ports using a 16C550 UART or virtual com port (VCP) device. This hardware is recognized and supported by standard drivers supplied with the various Windows operating systems. The ability to use standard drivers supplied with the operating systems greatly simplifies development needed to support *Team***PoS** 2000 specific functionality and allows easy migration to new versions of operating system software.

The following diagram is a representation of the rear panel of the TeamCOM board showing the various connector locations.
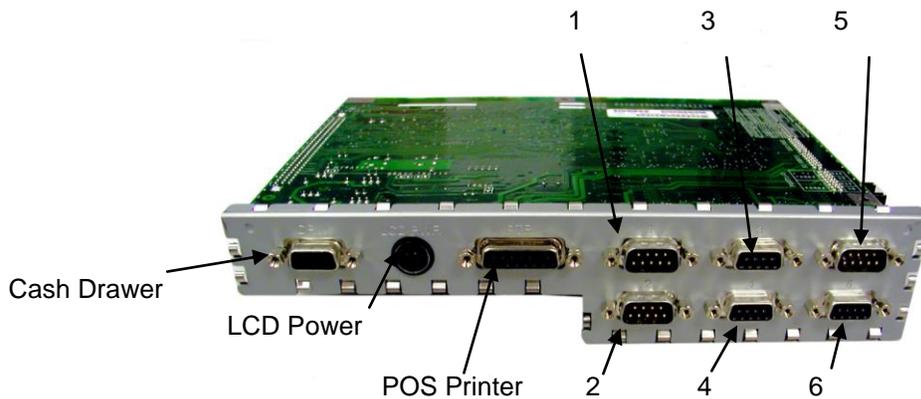
RS232 Port Assignments:

*	Printer Port	COM3: (24V)
*	Port 1	COM4: (5V)
*	Port 2	COM5: (5V)
*	Port 3	COM6: (24V)
*	Port 4	COM7: (24V)
*	Port 5	COM8: (5V)
*	Port 6	COM9: (24V)
*	Cash Drawer	COM10: (internal)

The following switches are shown viewed with the TeamCOM board above the motherboard with the *Team***PoS** 2000 chassis side panel removed:

TeamCOM Board Setup for *Team*PoS 2000

```
  Port 1:2   FJ(FD21)  ESC/POS    MISC        IRQ
87654321   7654321   7654321   87654321   87654321
xx   xx              xxxxxxx   vvvv       x
87654321   7654321   7654321   87654321   87654321
```

Switch Setting Legend (Default Settings in Bold):
    Port 1: 2

8=Port2	**DC Power on Pin 9**
7=Port2	**DC Power on Pin 9**
6=Port2	Standard RS232
5=Port2	Standard RS232
4=Port1	**DC Power on Pin 9**
3=Port1	**DC Power on Pin 9**
2=Port1	Standard RS232
1=Port1	Standard RS232

    FJ FD21
       1234567

    ESC/POS
       1234567   ; all jumpered for ESC/POS printer as default

    MISC/SW 3
       8=on=FAN3 ON
       7=on=FAN2 ON
       6=on=FAN1 ON
       5=on=BATTERY ENABLED
       4=off=COM3/4 or **MULTI**
       3=off=OPC or **MCP**
       2=off=OPC 278 or **378**
       1=off=UART 230 or **100**

    ISAIRQ, on some boards this switch is labeled SW 4
       8=IRQ5
       7=IRQ7
       6=IRQ9
       5=IRQ10
       4=IRQ11
       3=IRQ12
       2=VFD, ESC interface/**FJ interface OFF**
       1=RESET, ENA/**Disable**

Note: *Team***PoS** 2000 TeamCOM board **USES IRQ 5**. The BIOS must be configured with IRQ5 reserved as a "LEGACY DEVICE"; otherwise Plug-and-Play operating systems will not assign the TeamCOM IRQ correctly. This is the default BIOS setting as shipped from Fujitsu.

4.2.3   TeamCOMBO (4 RS232 / 4 USB Ports) Board Setup for Team*PoS 2000*

The TeamCOMBO board is differentiated from the TeamCOM board by fewer serial ports, (4 vs. 7) and the addition of a 4 port Retail USB Hub. Serial ports 1-4 are implemented on this version of the I/O board. See functional block diagram for details. Serial port interrupts can be selected by using jumper CN2009 and can be set to IRQ 5,7,9,10,11 & 12.

Serial Ports 1 & 2, CN5279, may be powered with 5V, the default setting, by plugging jumpers into JP1 as indicated on the schematic. Either or both of these serial ports may be reconfigured to be a standard serial port by installing the appropriate jumpers. Note that 5V optionally applied to Serial Ports 1 & 2 appear on pin 6 of the DB9 connector.

The permanently powered serial ports (3 & 4) have 24V on pin 4 of the DB9 connectors, CN5281, and 5V on pin 6. Power ground reference for serial ports 3 & 4 are pins 1 & 9 of CN5281, whereas logic ground reference is pin 5.

The TeamCOMBO Board features a 4-port USB Hub that differs from a conventional USB hub in that the connectors are of a special type that provides power to specially designed USB retail peripherals. The standard model has two 24V Retail USB ports and two 12v Retail USB ports.

The 24V and 12V USB powered connectors are shown below. **Note the keying of these connectors as shown below. Only peripheral connector cables that match the key may be attached.**
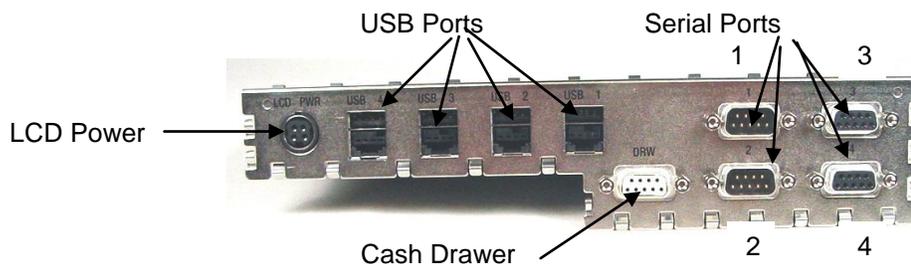
12V Retail USB Connector   **24V Retail USB Connector**
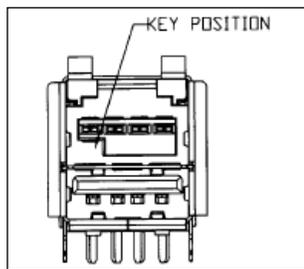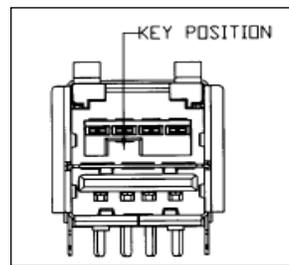
The following diagram is a representation of the rear panel of the TeamCOMBO board showing the various connector locations.

RS232 Port Assignments:

Port 1 == COM3, IRQ 5, I/O 0x100, +5v, D-sub 9(M), usage is Scanner (also DOS COM3 port)
Port 2 == COM4, IRQ 5, I/O 0x108, +5v, D-sub 9(M), usage is open
Port 3 == COM5, IRQ 5, I/O 0x110, +24v, D-sub 9(F), usage is Line Display
Port 4 == COM6, IRQ 5, I/O 0x118, +24v, D-sub 9(F), usage is 92R/M/U keyboard (also DOS COM4 port)

DRW == COM10, IRQ 5, I/O 0x138, D-sub 9(F), usage is Cash Drawer; also the I/O interface used for the CMOS
        & Fujitsu power.

Alternate I/O addresses start at 0x230, the same as for the current Retail I/O board.

USB1 == 24v, usage is USB version of the Epson TM6000 printer
USB2 == 24v, usage is USB version of the Line Display
USB3 == 12v or 24v depending on TeamCOMBO board type
USB4 == 12v, usage is (future) USB version of the Symphony 9900 Scanner/Scale

The following switches are shown viewed on the TeamCOMBO I/O board above the motherboard with the *Team***PoS 2000** chassis side panel removed:

TeamCOMBO Board Setup for *Team*PoS 2000

Port 1:2	SW3 MISC	ISA/IRQ
87654321	87654321	87654321
XX XX	**vvvv**	**v**
87654321	87654321	87654321

X = jumpered   **v = ON position**

Switch Setting Legend (Default Settings in Bold):
Port 1:2

8=Port2	**DC Power on Pin 9**
7=Port2	**DC Power on Pin 9**
6=Port2	Standard RS232
5=Port2	Standard RS232
4=Port1	**DC Power on Pin 9**
3=Port1	**DC Power on Pin 9**
2=Port1	Standard RS232
1=Port1	Standard RS232

MISC/SW 3
8 = on = FAN3 ON
7 = on = FAN2 ON
6 = on = FAN1 ON
5 = on = BATTERY ENABLED
4 = off = COM3/4 or **MULTI**
3 = off = NA
2 = off = NA
1 = off = UART 0230 or **0100**

ISA/IRQ, on some boards this switch is labeled SW 4
8 = IRQ5
7 = IRQ7
6 = IRQ9
5 = IRQ10
4 = IRQ11
3 = IRQ12
2 = VFD, ESC interface/**FJ interface OFF**
1 = RESET, ENA/**Disable**

Note: *Team***PoS** 2000 Retail I/O board by default **USES IRQ 5**. The BIOS must be configured with IRQ5 reserved as a "LEGACY DEVICE"; otherwise Plug-and-Play operating systems will not assign the Retail I/O IRQ correctly. This is the default BIOS setting as shipped from Fujitsu.

### *4.2.4   TeamUSB (7 USB Ports) Board Setup for* Team*PoS 2000*

The TeamUSB Board features a 7-port USB Hub that differs from a conventional USB hub in that the connectors are of a special type that provides power to specially designed USB retail peripherals. The standard model has four 24V Retail USB ports and three 12v Retail USB ports.

The 24V and 12V USB powered connectors are shown below. **Note the keying of these connectors as shown below. Only peripheral connector cables that match the key may be attached.**
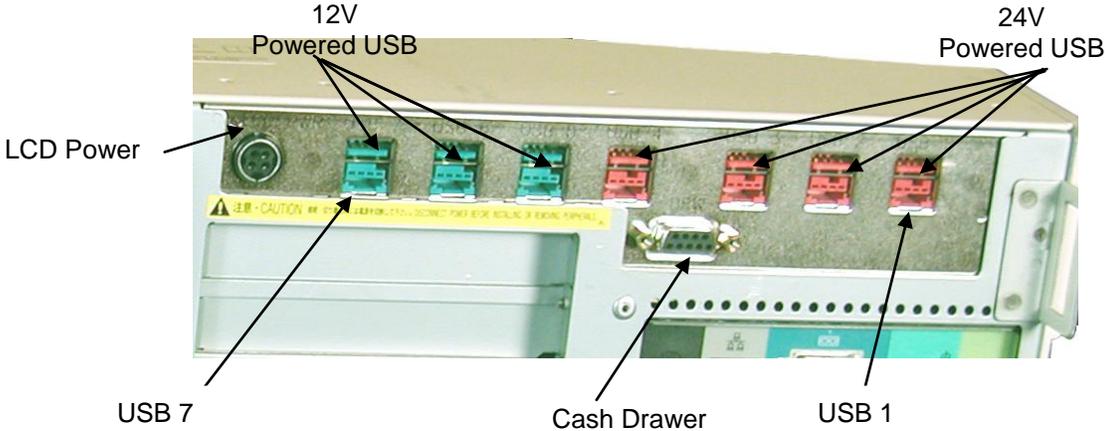
12V Retail USB Connector   **24V Retail USB Connector**
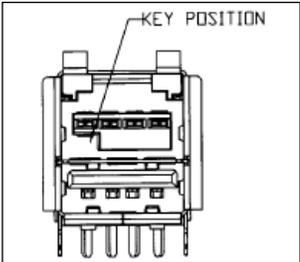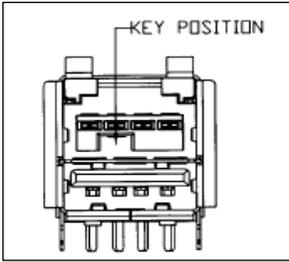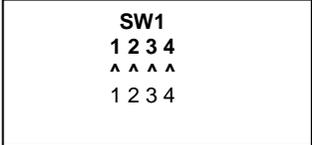

The following diagram is a representation of the rear panel of the TeamUSB board showing the various connector locations.

The following switch settings are shown viewed on the TeamUSB Board above the motherboard with the *Team*PoS 2000 chassis side panel removed.

TeamUSB Setup for *Team*PoS 2000

```
        SW1
       1 2 3 4
       ^ ^ ^ ^
       1 2 3 4
```

^ = on position

Team USB Switch Setting Legend (Default Settings in Bold):

SW1

1 = BATL	Detect Lead Acid Battery Alarm	**ON**/OFF
2 = FAN1	Detect CPU Fan Alarm	**ON**/OFF
3 = FAN 2	Detect PSU Fan Alarm	**ON**/OFF
4 = FAN 3	Detect Chassis Fan Alarm	**ON**/OFF

JP1	"M" Motherboard	"A" Motherboard
1-2	OPEN	OPEN
3-4	SHORT	OPEN
5-6	OPEN	SHORT
7-8	SHORT	OPEN
9-10	OPEN	SHORT
11-12	SHORT	OPEN
13-14	SHORT	OPEN
15-16	SHORT	OPEN
17-18	SHORT	OPEN
19-20	SHORT	OPEN

JP1 configures the TeamUSB board to use six or seven USB ports depending upon the motherboard being used.

JP2 – Cash Drawer – decodes each drawer open switch. Configures the type of cash drawer being used: Fujitsu cash drawer or NCR, Fujitsu is the default.

JP2	Fujitsu	NCR
1-2	**SHORT**	OPEN
3-4	**OPEN**	SHORT
5-6	**OPEN**	SHORT
7-8	**OPEN**	SHORT
9-10	**SHORT**	OPEN

JP3 – Determines the power source for the 12V on USB port 6. Options are from 24V power through DC-DC converter or directly from 12V power.

JP3 (USB 6 Power)	PSU-12V	DC-DC
1-2	**SHORT**	OPEN
3-4	**SHORT**	OPEN
5-6	**OPEN**	OPEN
7-8	**OPEN**	SHORT
9-10	**OPEN**	SHORT

4.2.4.1 TeamUSB default port details:

USB1 == 24v, usage is USB version of the Epson TM-H6000 or TM-T88 printer
USB2 == 24v, usage is USB version of the Line Display
USB3 == 24v, usage is USB version of the 92U Keyboard/Key Lock/MSR/Line Display/Tone Indicator
USB4 == 24v,

USB5 == 12v, usage is (future) USB version of the Scanner/Scale
USB6 == 12v,
USB7 == 12v,

4.2.5   TeamCOM Board Setup for TeamPoS 5000

IRQ	5
MCP	0x230
Parallel Port	0x378
Comm. Port	MULTI
Printer jumper (7)	FJ (FD21) for Fujitsu printers,
	ESC POS for all other vendor's printers.

4.5.1   TeamCOM POS Printer Jumper Setup

The TeamCOM board supports two types of POS printers, the Fujitsu POS printer(s) and the ESC/POS printer. The default POS printer jumper setting on the TeamCOM board is for the Fujitsu POS printer. The printer jumper group (consisting of 7 jumpers) is located directly behind the COM3 port on the TeamCOM board. To switch to a different POS printer type, change all 7 jumper settings from the 1-2 position (Fujitsu printer) to the 2-3 position (ESC/POS printer) or vice versa. Verify printer type with the label next the jumper group.

4.2.5.2 SMC Ethernet Card
Suggested setup, should be changed to fit individual requirements
I/O Address: 0x280
RAM Address: 0xD000
ROM Address: 0xDA00 or 0xDC00
IRQ: 10

4.2.5.3 3COM EtherLink III Card
Suggested setup, should be changed to fit individual requirements
Wake-Up ID Address: 0x150
I/O Address: 0x300
IRQ: 10

4.2.5.4 Sound Card
See note below on INTEL Motherboard
Port Address: 240
IRQ: 7

INTEL Motherboard

Onboard audio must be disabled through *TeamPoS* BIOS CMOS setup.

5.0   Troubleshooting

5.1   Common Problems

1. **D22 / D25 MSR "Open" returns 107 (No Hardware) error.** Insure that the separate A to B USB cable is connected to the LCD Unit. This MSR device does not use the powered USB cable for its USB or power connection.

2. **CT10 Printer Error Indicator stays ON.** Insure that the FW switch 3-8 is set to "Closed". Refer to the Printer's User's Manual for the switch setting procedure. Later firmware releases will have this setting as the default.

3. **WinNT can't access TeamCOM ports**. Verify that the TeamCOM RS232 ports can be accessed using the WinNT Diagnostics. If COM1-10 are present under the RESOURCES tab, the TeamCOM board is probably working. The most likely reason for failure is that the 100H/230H address selection jumper on the TeamCOM board does not match what was installed. Otherwise check the on-board fuses on TeamCOM board. They are socketed, and depending on the revision of board, there are either two or three fuses. The fuses may blow if devices are plugged into the TeamCOM board while the *Team***PoS** is powered on. Please try to avoid doing this! Also, ensure that the TeamCOM board MCP/OPC jumper is set to MCP mode.

4. **OPOS Open error on TeamCOM port or MSR does not work**. Ensure that the OPOS software installation process is performed under a user that has Administrator privileges.

5. **Printer Access Problems**. Ensure that the printer jumper settings (one block of jumpers that has to be changed as one) on the TeamCOM board are correctly positioned for either a Fujitsu printer or for an ESC/POS type printer.

6. **Keyboard access failure**. If there is no access to the MSR, POS keys, or the key switch, ensure that the keyboard has the correct keyboard controller chip. If running under WinNT 4.0 then Service Pack 3 must be installed. **Keyboards built prior to 11/97 will probably not work unless the keyboard controller chip is updated**. This is because the WinNT keyboard driver cannot send the necessary hex codes to enable and run the MSR and other keyboard devices. If the failure persists, ensure the checksum label on the keyboard controller chip (accessed by removing the bottom of keyboard) is 4684-031H. Verify that the "TYPE NO." on the bottom of the keyboard is **PB600335** and not 53256.

7. **MSR reads fail**. Check keyboard controller chip inside the keyboard (see above). Check the three-position switch setting in the keyboard where the MSR cover is and ensure it corresponds to the reader type (i.e. track 1/2 2/3 or JIS) installed in the keyboard compartment for the MSR reader. If so equipped, also ensure that the keyboard type switch is set for US standard. (Setting this switch incorrectly will cause the BIOS to not detect a keyboard).

8. **3COM port conflict**. If the TeamCOM address jumper is set to 100H, make sure that the 3COM wake up port address is set to 150H, using the 3COM utility dated 7-18-96. Then use REGEDIT hkey_local_machine\system\currentcontrolset\elnk32\parameters, setting the value of IDPORT:REG_DWORD:0x150. The standard wakeup port is 110H, this conflicts with the TeamCOM port 110H, when the base address is set to 100H. The preferred and recommended method is not to change anything on the 3COM board, and change the base address of the TeamCOM board to 230H.

9. **Cash drawer fails to open with the PAC2000 Motherboards (<u>Only a few of these Motherboards were ever shipped</u>)**. The Cash Drawer is not usable in the OPOS environment when the TeamCOM jumper base address is set to 230H.

10. **COM5 usage causes failure of other TeamCOM ports**. Incorrect registry information causes the COM5 conflict. An updated registration file is available that corrects this for TeamCOM base address 230H. The current installation software available from the WEB corrects this problem.

11. **Numeric keypad key does not input numeric characters or the MSR does not work**. Please choose the initially opened device from among Keylock, MSR and POSKeyboard, and change the corresponding registry entry "Ignore_Numlock" value to "F". This is most often caused by a VB application issuing multiple "SendKeys" commands. Refer to MSDN issue Q179987.

12. **Additional OEM serial board/driver installation**. Please install the other vendor's serial board and/or OPOS drivers after the FTXS OPOS software installation.

13. **CT10 Dual Cash Drawer**. If both cash drawer are installed a registry entry under the CT10_CD1 and CT10_CD2 "Status_Mode" with a value of "Invert" is added. This is needed along with special cables and cash drawers. For a single drawer the value of "Status_Mode" is "Normal". **Note this is changed in versions 1.10.6 and later back to "Normal" – a Fujitsu cable for Fujitsu drawers (TP10 and TP15) is now available.** To use drawers with inverted status signals – change the registry value of "Status_Mode" to "Invert".

14. **Epson OPOS Installation Fails on *Team*PoS.** Install the FTXS OPOS drivers first and then reboot to make Windows aware of the TeamCOM comm. ports. Then run Epson's installation program. The Epson installer needlessly verifies for overlapping comm. port conflicts with other similar OPOS devices. The Epson installer will fail if any other device such as another vendor's printer was previously assigned to comm. port 3. The same failure will occur if another vendor's MICR was installed. To work around this problem, BEFORE running Epson's OPOS installer, run REGEDIT.EXE from a DOS prompt and delete the OPOS key for this device type. For the printer, the registry key that should be deleted prior to running Epson's installer is:

    HKEY_LOCAL_MACHINE\SOFTWARE\OLEforRetail\ServiceOPOS\POSPrinter.

15. **WinNT 4.0 Keyboard Driver and Firmware Dependency**

    For correct POS/PC Keyboard operations under WinNT 4.0, an updated keyboard driver for WinNT 4.0 and updated POS/PC keyboard firmware are required from Microsoft and Fujitsu respectively.

    The required keyboard driver files are available in WinNT4.0 Service Pack #3 or later. The service pack is available from Microsoft's support website.

    The upgraded FJ POS/PC Keyboard firmware can be obtained from the Fujitsu Product group or through Fujitsu Customer Service.

5.2   3COM – TeamCOM Address Conflict

The following scenario applies to some older 3COM drivers for the 3C509B Ethernet adapter. The current driver is available from the 3COM WEB site at http://www.3com.com, and is the recommended driver to be used.

Note: The FTXS OPOS install utility does not include the 3COM diagnostics and drivers. These files can be downloaded from the 3COM WEB site. The following suggestions are for reference only. Please refer to 3COM WEB site or contact 3COM for current technical information and driver updates.

In order to avoid conflicts with the 3COM card, the base address jumper for the TeamCOM board should be set to 230H. If the base address jumper is set to 100H, then the following options should be considered.

WinNT:
1. Verify Plug and Play is disabled on the 3COM card.
- Power off; disconnect the data cable from the TeamCOM board.
- Boot DOS, run 3COM setup utility 3C5X9CFG.EXE to disable the Plug and Play option on the 3COM card. Verify the I/O address and IRQ setting. Exit the utility.
- Power off and reconnect the data cable to the TeamCOM board.

2. The 3COM EtherLink driver (Elnk3.sys dated after 7-18-96) loaded by WinNT does not resolve the Wake-Up address conflict. 3COM recommends the use of the version dated 7-18-96 as an interim solution. The

driver can be downloaded from the 3COM web site (file name is 3C5X9X.EXE), explode the package and copy the whole package on to a diskette. To install the driver:

- Remove the 3COM adapter from Control Panel/Network/Adapter
- Choose Add and Have Disk
- Insert the diskette that contains the 3COM driver package.

3. The Wake-Up address for the 3COM LAN Adapter conflicts with the I/O address setting for one of the COM ports on the TeamCOM board. The 3COM Wake-UP address should be changed to 0x150. The 3COM EtherLink utilities (3C5X9PD and 3C5X9CFG) are ineffective in changing the Wake-Up address for WinNT environment. The Wake-Up address **must be** set in the WinNT registry for the 3COM driver to resolve this conflict. Use RegEdt32.exe (or RegEdit.exe) to add the key value **IDPort:REG_DWORD:0x150** to the following WinNT registry location:

HKEY_LOCAL_MACHINE\System\CurrentControlSet\Services\Elnk31\Parameters

6.0   Test Instructions

6.1   Instructions for testing the FTXS OPOS Services for Team*PoS devices*

These test programs are installed as a result of selecting the corresponding devices for installation during the FTXS OPOS install process. They are installed into the target installation folder; the default target folder is **"C:\Program Files\OPOS\FTXS".**

Note: If the Fujitsu test programs were selected for installation, then the test program names will begin with FJ instead of CCO.

The following are basic test instructions that verify that the FTXS OPOS drivers are correctly installed and that the corresponding hardware is correctly configured and connected.

To test the 2 x 20 LineDisplay:
1   Run "CCOVFD.EXE"
2   Click Open, Click OK
3   Click Claim, Click OK
4   Click Enable Device
5   Click Display text normal, enter text, Click OK, text should show on the display
6   Click Close and then EXIT to terminate the testing

To test the Keylock in the 133PQ or 104 keyboards:
1   Run "CCOKEYL.EXE"
2   Click Open, Click OK
3   Don't Claim.
4   Click Enable Device
5   Click KeyPosition, move key; it should display a message box.
6   Click Close and then EXIT to terminate the testing

To test the Buzzer (ToneIndicator) in the 133PQ or 104 keyboards:
1   Run "CCOTONE.EXE"
2   Click Open, Click OK
3   Click Claim, Click OK
4   Click Device enable
5   For pitch, enter value(i.e.,1), Click set
6   For Duration, enter value(i.e.,100), Click set
7   For Volume, enter value(i.e.,100), Click set
8   Click "SOUND"
9   Click Close and then EXIT to terminate the testing

To test the MSR in the 133PQ or 104 keyboards:
1   Run "CCOMSR.EXE"
2   Click Open, Click OK
3   Click Claim, Click OK
4   Click Device Enable/on/off
5   Click Data event On/Off
6   Swipe card, keyboard will beep on successful swipe; data from track 1, 2, and/or 3 is displayed near the
        bottom of the window.
7   Click Close and then EXIT to terminate the testing

To test the POS keys in the 133PQ or 104 keyboards:
1   Run "CCOKBD.EXE"
2   Click Open, Click OK
3   Click Claim, Click OK
4   Click Enable device
5   Click Enable Data event
6   Click auto scan
7   Press a POSKey; you should see POSKey messages for each key depressed.
8   Click Close and then EXIT to terminate the testing

To test the FJ POS Printer (FD20, FD21):
1.   Run "CCOPRT.EXE"
2.   Click Open, Click OK
3.   Click Claim, Click OK
4.   Click Enable device
5.   Click Enable Data event
6.   Select "Receipt" from Print station drop down box
7.   Click PrintNormal. The text is over-printed 4 times and one more line is printed after a line feed.
8.   Click Close and then EXIT to terminate the testing

To test the Scanner:
1.   Run "CCOSCAN.EXE"
2.   Click Open, Click OK
3.   Click Claim, Click OK
4.   Click Enable device
5.   Click Enable Data event
6.   Make sure auto scan is checked
7.   Scan an item. The details should be displayed
8.   Click Close and then EXIT to terminate the testing

To test the Scale:
1.   Run "CCOSCALE.EXE"
2.   Click Open, should display OPENED
3.   Click Claim, should display CLAIMED
4.   Click Enable device, should display ENABLED
5.   Click Read Weight, place item on scale, should display Measured Weight value
6.   Click Closed, should display CLOSED
7.   Click Exit

To test the FJ Cash Drawer:
1.   Run "CCOCD.EXE"
2.   Click Open, Click OK
3.   Click Claim, Click OK
4.   Click Enable device
5.   Click Enable Data event
6.   Click open drawer. The drawer should open.
7.   Click Close and then EXIT to terminate the testing

To test the Fujitsu POS Power:
1.   Run "FJPOWER.EXE"
2.   Click Open, Click OK
3.   Click Claim, Click OK
4.   Click Enable device
5.   ….

6.2   Instructions for testing the FTXS OPOS Services for the 92R/M/U keyboard devices

These test programs are installed as a result of selecting the 92R/92M/92U device for installation during the FTXS OPOS installation process. They are installed into the target installation folder; the default target folder is **"C:\Program Files\OPOS\FTXS"**.

Note: If the Fujitsu test programs were selected for installation, then the test program names will begin with FJ instead of CCO.

To test the 2 x 20 keyboard display:
1   Run "CCOVFD.EXE"
2   Click Open, Select/Input device name "ICL92ROPERATOR", Click OK, keyboard beeps on initialization.
3   Click Claim, Click OK
4   Click Enable Device
5   Click Display text normal, enter text, Click OK, text should show on the display
6   Click Close and then EXIT to terminate the testing

To test the Keylock:
1   Run "CCOKEYL.EXE"
2   Click Open, Select/Input device name "ICL92RKEYLOCK", Click OK, keyboard beeps on initialization.
3   Don't Claim.
4   Click Enable Device
5   Click KeyPosition, move key, it should display message.
6   Click Close and then EXIT to terminate the testing

To test the Buzzer (ToneIndicator):
1   Run "CCOTONE.EXE"
2   Click Open, Select/Input device name "ICL92RTONE", Click OK, keyboard beeps on initialization.
3   Click Claim, Click OK
4   Click Device enable
5   For pitch, enter value (i.e., 1), Click set
6   For Duration, enter value(i.e., 100), Click set
7   For Volume, enter value(i.e., 100), Click set
8   Click "SOUND"
9   Click Close and then EXIT to terminate the testing

To test the MSR:
1   Run "CCOMSR.EXE"
2   Click Open, Select/Input device name "ICL92RMSR", Click OK, keyboard beeps on initialization.
3   Click Claim, Click OK
4   Click Device Enable/on/off
5   Click Data event On/Off
6   Swipe card, keyboard will beep on successful swipe; data from track 1, 2, and/or 3 is displayed near the bottom of the window.
7   Click Close and then EXIT to terminate the testing

To test the POS keys:
1   Run "CCOKBD.EXE"
2   Click Open, Select/Input device name "ICL92RKEYBOARD", Click OK, keyboard beeps on initialization.
3   Click Claim, Click OK
4   Click Enable device
5   Click Enable Data event
6   Click auto scan
7   Press a key; you should see POSKey messages for each key depressed.
8   Click Close and then EXIT to terminate the testing

6.3   Instructions for installing and verifying the Epson TM-H6000 or TM-T88 OPOS installation

Refer to FTXS OPOS web site:

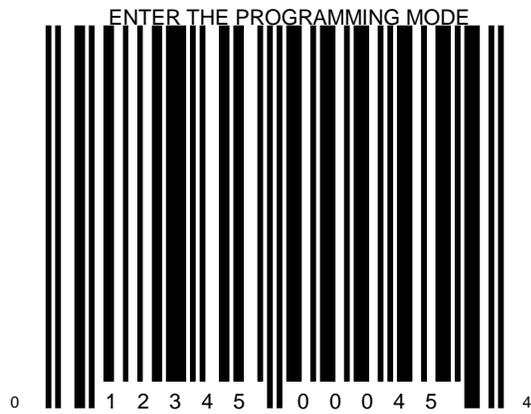http://www.fujitsu.com/us/services/retailing/

Click the **Support and Downloads** in the "Related Links" box located on the right side of the page. Then click the **OPOS Support** link on the page under the **Download *Team*PoS Support**. Click on the **Epson Printer Driver** link under the **Other OPOS Resources:** at the bottom of the page.

Epson Printer Driver link:

http://pos.epson.com/posindex.htm

6.4   Instructions for installing and verifying the Preh 133UQ Keyboard OPOS installation

Refer to FTXS OPOS web site:

http://www.fujitsu.com/us/services/retailing/

Click the **Support and Downloads** in the "Related Links" box located on the right side of the page. Then click the **OPOS Support** link on the page under the **Download *Team*PoS Support**. Click on the **Preh 133UQ POSKeyboard Driver** link under the **Other OPOS Resources:** at the bottom of the page.

Preh 133UQ POSKeyboard Driver link:

http://www.preh.de

6.5   Instructions for installing the Common Controls

Refer to FTXS OPOS web site:

http://www.fujitsu.com/us/services/retailing/

Click the **Support and Downloads** in the "Related Links" box located on the right side of the page. Then click the **OPOS Support** link on the page under the **Download *Team*PoS Support**. Click on the **OPOS Website** link under the **Other OPOS Resources:** at the bottom of the page.

Curtis Monroe link:

http://monroecs.com/opos.htm

7.0 SCANNER and SCALE HARDWARE INITIALIZATION BARCODES

7.1 *Scanner hardware initialization Barcodes for use with the FTXS OPOS Drivers*

ENTER THE PROGRAMMING MODE

0   1 2 3 4 5   0 0 0 4 5   4

(1)

Restore All Defaults

0   1 2 3 4 5   1 3 0 6 1   8

(2)

RS232 7 Data Bits

0   1 2 3 4 5   4 1 1 0 0   7

(3)

EXIT SAVE AND RESET

0   1 2 3 4 5   1 3 0 5 8   8

(4)

7.2 9900 Scanner/Scale hardware initialization Barcodes for use with the FTXS OPOS Drivers

NOTE: <u>Currently the 9900 Scanner/Scale is only verified and supported with the FTXS OPOS drivers when configured in the single cable Magellan configuration.</u>

1. ENTER THE PROGRAMMING MODE
2. RESTORE ALL DEFAULTS
3. SCAN **<u>ONE</u>** OF THE CONFIGURATION LABELS (SINGLE CABLE MAGELLAN CONFIGURATION for FTXS OPOS)
4. EXIT SAVE AND RESET

Enter Programming Mode

0 1 2 3 4 5 0 0 0 4 5 4

Restore All Defaults

0 1 2 3 4 5 1 3 0 6 1 8
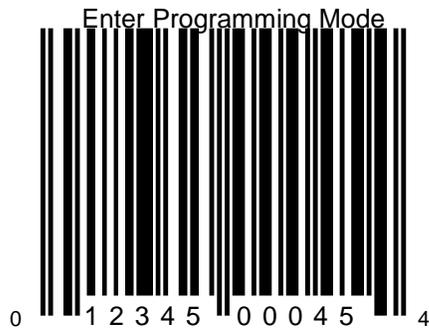
**DEFAULTS FOR SCANNER/SCALE
DUAL CABLE CONFIGURATION**

0 1 2 3 4 5 6 8 3 0 7 7

**DEFAULTS FOR SCANNER/SCALE
SINGLE CABLE MAGELLAN
CONFIGURATION (FTXS OPOS)**

0 1 2 3 4 5 6 8 3 0 1 5

**DEFAULTS FOR SCANNER/SCALE
SINGLE CABLE NCR7870
CONFIGURATION**

0 1 2 3 4 5 6 8 3 0 2 2

EXIT SAVE AND RESET

0 1 2 3 4 5 1 3 0 5 8 8

Appendix A. Notes on Windows 7

This appendix is intended to define some of the issues that may be encountered with a Windows 7 system. It in no way tries to address all of the nuances of Windows 7's User Account Control security features.

Note, Regedit.exe always modifies the real registry key, but vendor supplied utilities that run as normal users may modify and use a virtualized key. Applications are always run as normal users, even if logged on as an administrator, unless specifically requested to run elevated. This needs to be noted especially when changing port assignments and other registry values for OPOS services. If these values have been virtualized then the user mode application/service will use the virtualized value not the real value.

A-1   Virtualized Registry Hives & Associated Virtual Store Hive

HKEY_LOCAL_MACHINE\Software\... redirects writes to
HKEY_CURRENT_USER\Software\Classes\VirtualStore\MACHINE\Software\...

A-2   Virtualized Folders & Virtual Folder

C:\Program Files\   virtualized to
C:\Users\{username}\AppData\Local\VirtualStore\Program Files\

A-3   File and Registry Virtualization Enable/Disable; User Account Control (UAC) Enable/Disable via Control Panel

Start > Administrative Tools > Local Security Policy > Local Policies Security Options > User Account Control: Virtualized file and registry write failures to per-user locations

Start > Control Panel > User Accounts > Turn User Accounts on or off

A-4   File and Registry Virtualization Enable/Disable; User Account Control (UAC) Enable/Disable via Registry

HKLM\Software\Microsoft\Windows\CurrentVersion\Policies\System\
EnableVirtualization {0,1}

HKLM\Software\Microsoft\Windows\CurrentVersion\Policies\System\
EnableLUA {1,0}

A-5   Sample RegIni.exe usage

If it is desired that the Display_Select or OPOS use the real registry as a common user, then virtualization can be turned off for selected registry keys. Once virtualization is turned off, the permissions for the key and sub keys may need to be set. REGINI.EXE can create a registry key and values and set the permissions. REG.EXE can be used to turn off virtualization for the key.

Notes:

1. You will need to use RegIni first if the registry entry needs to be created then use Reg to turn off Virtualization.

Samples:

Input text file: Display_Select.ini (RegIni Display_Select.ini)

HKLM\Software\Fujitsu\TeamPOS [1 5 7 17]
VideoMode = REG_BINARY 4,0

Input text file: OPOS.ini (RegIni OPOS.ini)
HKLM\Software\OleforRetail [1 5 7 17]

For more information on REGINI parameters use **REGINI /?**

A-6   Sample Reg.exe usage

Notes:

1. Reg.exe needs to be run from a command prompt that was opened with the "Run as an administrator" to have access to the registry.
2. RegIni.exe must be run to create the registry key and a dummy entry and give user permissions to the registry key (see A-5), then the "DONT_VIRTUALIZE" flag can be set,.

Samples:

Registry Key used by Display_Select and SetDisp
reg flags HKLM\Software\Fujitsu\TeamPoS set DONT_VIRTUALIZE /s

Registry Key used by OPOS services and utilities
reg flags HKLM\Software\OleforRetail set DONT_VIRTUALIZE /s

For more information on REG use **REG FLAGS /?**

Appendix B. VF6x Character Table Selection

This section defines the registry and property values that are available for the VF6x Line Display. The following registry paths are where the parameters can be found for the VF60 Line Displays.

[HKEY_LOCAL_MACHINE\SOFTWARE\OLEforRetail\ServiceOPOS\LineDisplay\VF60-1]

[HKEY_LOCAL_MACHINE\SOFTWARE\OLEforRetail\ServiceOPOS\LineDisplay\VF60-2]

Parameters:

CharacterSet = 101 (default)

> The **CharacterSet** property can be set by the OPOS application or by using the registry parameter to any value in the **CharacterSetList**.

CharacterSetList = 101,102,437,850,858,860,863,865,932,936,949,950,998

> This is the list of available character sets.

SetSBCS = F (default)

> The **SetSBCS** registry parameter must be set to "T" (true) to enable selection of the Character Table or the International characters.

> **Note**: If this value is set back to "F" then the last character table selected for the VF60 will remain selected. A value of "F" blocks the service from writing table select and international select values to the display.

> A utility (Fujitsu Linedisplay Utility.exe) is provided that can also be used to set these display settings.

SetInternational = 0 (default)

> **SetInternational** selects the international character. See International table below for the character values for each country selection. This setting modifies characters in the 0 – 127 range.

Character Table Selection:

SetSBCS=T (registry parameter)
CharacterSet = value (set in registry or by the application)

Character Set	VF60 Table (see tables below)
101	6
850	2
858	19H
860	3
863	4
865	5
932	7
All Others	0

Euro (€) Character Tables 6 or 19H:

The Euro symbol (€) is available in character table 6 or 19H.

Table 6: **CharacterSet = 101**, **SetSBCS = T**   monetary symbols: € = 164, £ = 163, ¥ = 165

Or

Table 19H: **CharacterSet = 858** and **SetSBCS = T**   monetary symbols: € = 213, £ = 156, ¥ = 190

SetInternational = 0 – 10   Note: **SetSBCS = T** required for these selections to be activated.

Base Font Character Set

International Character Set

Character Tables:

Table 0

Table 1

Table 2

Table 3

Table 4

Table 5

Table 6

Table 7

Table 19H

Table 8 (Cyrillic if supported)