# Easy-Fax 90si

Secure Facsimile Gateway

# Reference Guide

GateWay
Fax
Systems, Inc.

Virginia, USA
Toll Free: 1-877-951-9800
Email: help@gwfs.com
**http://www.gwfs.com**

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*1. GateWay Fax Systems, Inc. would like to gratefully acknowledge the contribution of ETR Technical Services (336-698-9358) for providing the MODEM configuration procedure for the ATT 1100. And 1910

# 1.0 Configuring your STU-III for the 90si

The most common cause of 90si operational problems are attributed to not having the STU-III's Secure Data port configured for "Synchronous" operation. The following sections provide step-by-step instructions for configuring various secure telephones for "Synchronous" operation as well as setting "speed" and "duplex" to provide optimum performance with the 90si. The "Press" column indicates which button on the secure telephone should be pressed. The "Display" column indicates what the responding display will show. The first line indicates the state of the secure telephone before proceeding.

## 1.1 AT&T Security Plus

**Objective: To set Secure Data Mode for 4.8 Kbps, Full Duplex, Synchronous.**
**While On or Off-Hook:**

| Press | Display |
|---|---|
| Program | Program Mode |
| 3, 6, # | Operation Complete (Sets Synchronous) |
| 3, 4, # | Operation Complete (Sets 4.8 Kbps, Full Duplex) |
| 3, 0, # | SD:48 FDX SYNC (Displays new configuration) |
| Program | (Standby display) |

## 1.2 AT&T, Lucent and General Dynamics 1100

**Objective: To set Secure Data Mode for 9.6 Kbps, Full Duplex, Synchronous.**
**While On or Off-Hook:**

| Press | Display |
|---|---|
| MENU | MAIN MENU / Secure Voice |
| NEXT | MAIN MENU / Secure Data |
| SELECT | Ex. SD:9.6 FDX, ASYNC / 2.4 Full Duplex |
| NEXT (until...) | 9.6 Full Duplex |
| SELECT | Async |
| NEXT | Sync |
| SELECT | SD:9.6 FDX, SYNC / previous menu |
| MENU | (standby display) |

**Objective: To set MODEM; OUTPUT to -6 dBm and CONFIG to TRELLIS (*1)**
**While On Hook and with Master CIK inserted:**

| Press | Display |
|---|---|
| MENU | MAIN MENU / Secure Voice |
| NEXT (until…) | MAIN MENU / Change Config |
| SELECT | CHANGE CONFIG / Security Config |
| NEXT (until...) | CHANGE CONFIG / Network Config |
| SELECT | NETWORK CONFIG / Common Rining |
| NEXT | NETWORK CONFIG / Modem Output |
| SELECT | MODEM OUTPUT / Output = -10dBm |
| SELECT | OUTPUT / increment level |
| SELECT | OUTPUT = -9dBm / increment level |
| SELECT (3 times until…) | OUTPUT = -6dBm / increment level |
| NEXT (until…) | OUTPUT = -6dBm / save level |
| SELECT | OUTPUT = -6dBm / previous menu |
| SELECT | NETWORK CONFIG / modem output |
| NEXT (until…) | NETWORK CONFIG / previous menu |
| SELECT | CHANGE CONFIG / Network Config |
| NEXT | CHANGE CONFIG / Modem Config |
| SELECT | MODEM CONFIG / Trellis coding |
| SELECT | TRELLIS disabled / enable Trellis |
| SELECT | TRELLIS enabled / enable Trellis |
| MENU | (standby display) |

## 1.3 AT&T / Lucent / General Dynamics SDD 1900

**Objective: To set Secure Data Mode for 9.6 Kbps, Full Duplex, Synchronous, 8 Data Bits.**

**While On or Off-Hook, READY on or off:**

| Press | Display |
|---|---|
| MENU | MAIN MENU / Secure Data |
| SELECT | Ex. SD:9.6 H, ASYNC,8 / 2.4 Full Duplex |
| NEXT (until...) | 9.6 Full Duplex |
| SELECT | Ex. SD:9.6 F, ASYNC,8 / async |
| NEXT | SD:9.6 F, ASYNC,8 / sync |
| SELECT | SD:9.6 F, SYNC,8 / previous menu |
| MENU | On-Hook / Push Ready |

**Objective: To set MODEM; OUTPUT to -6 dBm and CONFIG to TRELLIS (*1)**

**While On Hook and with Master CIK inserted:**

| Press | Display |
|---|---|
| MENU | MAIN MENU / Secure Data |
| NEXT (until…) | MAIN MENU / Change Config |
| SELECT | CHANGE CONFIG / Security Config |
| NEXT (until...) | CHANGE CONFIG / Network Config |
| SELECT | NETWORK CONFIG / Common Rining |
| NEXT | NETWORK CONFIG / Modem Output |
| SELECT | MODEM OUTPUT / Output = -10dBm |
| SELECT | OUTPUT / increment level |
| SELECT | OUTPUT = -9dBm / increment level |
| SELECT (3 times until…) | OUTPUT = -6dBm / increment level |
| NEXT (until…) | OUTPUT = -6dBm / save level |
| SELECT | OUTPUT = -6dBm / previous menu |
| SELECT | NETWORK CONFIG / modem output |
| NEXT (until…) | NETWORK CONFIG / previous menu |
| SELECT | CHANGE CONFIG / Network Config |
| NEXT | CHANGE CONFIG / Modem Config |
| SELECT | MODEM CONFIG / Trellis coding |
| SELECT | TRELLIS disabled / enable Trellis |
| SELECT | TRELLIS enabled / enable Trellis |
| MENU | (standby display) |

## 1.4 GE / RCA 2400

**Objective: To set Secure Data Mode for 2.4 Kbps, Full Duplex, Synchronous.**

**While On-Hook (to permanently change set-up):**

| Press | Display |
|---|---|
| PROGRAM | RCA STU-III Type I |
| SET-UP (back of unit) | Do You Want To Set term Options? |
| * (YES) | Do You Want To Set Standard Options |
| # (NO) | TONE Dialing in ON/OFF Change? |
| # | Comm. Mode FULL/HALF DUX Change? |
| # | Remote Capability is DISABLED |
| # | Configure Data Port? |
| * | (Example) Data Mode 2400 ASYNC Change? |
| * (until...) | Data Mode 2400 SYNC Change? |
| # | (lines enabled display) |
| PROGRAM | SAVE the CHANGES? |
| * | (beep) Changes SAVED Press YES to GO ON |
| SET-UP (back of unit) | RCA STU-III Type I |

**While Off-Hook (to check set-up and/or change set-up for THIS call ONLY):**

| Press | Display |
|---|---|
| MENU | Comm. Mode FULL/HALF DUX Change? |
| # (NO) | Do You Want To Set Local Volume? |
| # | Configure Data Port for THIS Call ONLY? |
| * (YES) | Ex. Data Mode 2400 ASYNC Change? |
| * (until...) | Data Mode 2400 SYNC Change? |
| # | This Call 2400 SYNC WITHOUT EC Press YES |
| * | (current call status displayed) |

## 1.5 GE 9600

**Objective: To set Secure Data Mode for 9.6 Kbps, Full Duplex, Synchronous.**

**While On-Hook (to permanently change set-up):**

| Press | Display |
|---|---|
| MENU / DELETE | GE STU-III Type I (then...) View KSD or ID? |
| # (NO) | Configure Terminal? |
| * (YES) | Control is Local/Change? |
| # | Dialing Mode/Tone Change? |
| # | Communication Mode/Full Duplex Change? |
| # | Initial Voice Rate/Voice = 4800 Change? |
| # | Ex. Data Mode 4800, ASYNC,/EC OFF Change? |
| * | Data = ASYNC Change? |
| * | Data = SYNC Change? |
| # | Data = 4800 Change? |
| * | Data = 9600 Change? |
| # | Data is 9600, SYNC,/EC OFF Change? |
| MENU / DELETE | (standby display) |

**While Off-Hook (to check set-up and/or change set-up for THIS call ONLY):**

| Press | Display |
|---|---|
| MENU / DELETE | NONSECURE/Comm. Mode FDX Change? |
| # (NO) | NONSECURE/Voice = 4800 Change? |
| # | Ex. Data Mode 4800, ASYNC,/EC OFF Change? |
| * (YES) | .../Data = ASYNC Change? |
| * | .../Data = SYNC Change? |
| # | .../Data = 4800 Change? |
| * | .../Data = 9600 Change? |
| # | Data is 9600, SYNC,/EC OFF Change? |
| MENU / DELETE | (standby display) |

## 1.6 Motorola SECTEL 1000 / 1500

**Objective: To set Secure Data Mode for 2.4/9.6 Kbps, Full Duplex, Synchronous.**
**While Off-Hook and in CLEAR mode:**

| Press | Display |
|---|---|
| PRGM | Ex. DATA = 2400 ASYNC |
| SCROLL (until...) | DATA = SYNCHRONOUS |
| PRGM | PRGM (current call status displayed) |

**While On-Hook:**

| Press | Display |
|---|---|
| PRGM | PRGM (enunciator in display) |
| SCROLL | PLEASE WAIT (and then) |
| | # for COMSEC * TO SET OPTIONS |
| * | PRESS SCROLL TO CONTINUE |
| SCROLL (until...) | Ex. DATA=2400 ASYNC # TO CHANGE |
| # | DATA=SYNCHRONOUS # TO CHANGE |
| PRGM | PRGM (current call status displayed) |

**Note:**
Make sure that "HD" DOES NOT appear in the display. If it does, press the "HALF-DUPLEX" button to make it disappear.

If your telephone is black in color, make sure that 9.6 is displayed. If either 2.4 or 4.8 are displayed, depress the "MODEM" button until 9.6 is displayed.

## 1.7 Motorola SECTEL MMT 1500

**Objective: To set Secure Data Mode for 9.6 Kbps, Full Duplex, Synchronous.**
**While On-Hook:**

| Press | Display |
|---|---|
| PRGM | PRGM (enunciator in display) |
| SCROLL (until...) | USER OPTIONS # TO SELECT |
| # | PRESS SCROLL TO CONTINUE |
| SCROLL (until...) | Ex. DATA=2400 ASYNC # TO CHANGE |
| # | DATA=SYNCHRONOUS # TO CHANGE |
| PRGM | PRGM (current call status displayed) |

**Note:**
Make sure that "HD" DOES NOT appear in the display. If it does, press the "HALF-DUPLEX" button to make it disappear.

If your telephone is black in color, make sure that 9.6 is displayed. If either 2.4 or 4.8 are displayed, depress the "MODEM" button until 9.6 is displayed.

## 1.8 L-3 Communications STE

**Objective: To set Secure Data Mode for 9.6 Kbps, Synchronous.**

For STE's with **software V2.3** or earlier.

**While On-Hook:**

| Press | Display |
|---|---|
| MODE | SECURE DATA: A9.6 (Asynchronous, 9.6 Kbps) |
| CHANGE | Secure Data Asynchronous |
| CHANGE | Secure Data Synchronous (Sets Synchronous) |
| SCROLL | Ex. 2.4 Kbps |
| SCROLL (until...) | 9.6 Kbps |
| MODE | (blank display, standby) |

For STE's with **software V2.4** and later.

**While On-Hook:**

| Press | Display |
|---|---|
| MODE | SECURE SIGNALING MODE: STE/STU |
| SCROLL | SECURE DATA:/STU SECURE VOICE |
| CHANGE | SECURE DATA: A9.6 (Asynchronous, 9.6 Kbps) |
| CHANGE | Secure Data Asynchronous |
| CHANGE | Secure Data Synchronous (Sets Synchronous) |
| SCROLL | Ex. 2.4 Kbps |
| SCROLL (until...) | 9.6 Kbps |
| MODE | (blank display, standby) |

Note that to permanently set the Secure Data mode, the handset must be on-hook.

# 2.0 90si Status LED's

There are two LED's located on the front panel of the 90si. The following three sections explain what the various LED states indicate.

## 2.1 Power-up

Note: Before applying power to the 90si, make sure that all cables are securely connected and that your commercial fax device is in Auto-Receive (Fax) mode and answers on 1 or 2 rings.

There are a series of LED indications during the 90si power-up sequence. Before power is supplied to the unit, both LED's will be extinguished. When power is initially applied, the green "POWER" LED will flash intermittently indicating that a self-test is in progress. Once self-test is successfully completed, the green "POWER" LED will illuminate. The 90si is now in the "ready" state.

## 2.2 Communication Errors

If an error occurs during a reception or transmission of a fax, the red "FAULT" LED will illuminate. This indicates that a communications error has occurred. The unit will still operate. The red "FAULT" LED will go out after 90 seconds or once a new transmission begins.

## 2.3 System Errors

Flashing green and red LED's indicate that the 90si has detected an internal failure during self-test at power up, or during normal operation of the unit. If this occurs, press the white "RESET" button located on the right side of the unit. This will restart the 90si and should return it to the "ready" state (green "POWER" LED on, red "FAULT" LED off). If it does not, depress the "RESET" button a second time. If this is ineffective, unplug the unit from the wall, wait a moment, and plug it back in.

## 2.4 Contact GFS Customer Service

If all of these steps fail to return the unit to a "ready" state, contact Gateway Fax Systems' Customer Service Toll Free at **1-877-951-9800** or **757-312-9800**, via e-mail at **help@gwfs.com** or via the web at **http://www.gwfs.com**. Our service staff will get you back on-line promptly.

# 3.0 Glossary of Secure Facsimile Terms

Listed below are definitions of words and terms used in the 90si User's and Reference Guides.

**Broadcast**: A signaling option in the Mil-Std-161 mode in which the transmitting device does not look for any acknowledgements during a fax transmission.

**Commercial Fax Device**: A Commercial-Off-The-Shelf (COTS) "standard" Group III fax machine or computer-based fax device.

**Dual Mode**: A 90si configuration which allows the local fax machine to communicate with both secure and commercial fax machines.

**FEC**: (Forward Error Correction) An option available in the Mil-Std-161 mode that can decrease errors in fax transmission over noisy communication lines. Note that STU's provide "clean" communication lines therefore eliminating the need for FEC.

**Handshake**: A signaling option in the Mil-Std-161 mode in which the transmitting fax device looks for acknowledgements during a fax transmission.

**Mil-Std-161**: The SECDEF-mandated military standard protocol for digital data transmission between fax devices. Mil-Std-161 is compatible with NATO's STANAG 5000 protocols.

**Off-Hook**: The state created on a telephone line when a telephone handset is picked up.

**One-Touch Key**: A feature on a fax machine that allows designated buttons to be programmed to go "Off-Hook" and automatically dial a telephone number. In the case of the 90si, we recommend that you program one of your fax's one-touch keys to dial a "1" and designate it the "Secure Start" key.

**Public Fax**: A document that does not contain sensitive or secret information and, therefore, need not be transmitted in a secure manner.

**Ricoh / Compatibility**: A set of digital protocols for communication between secure fax devices. These protocols allow the 90si to be backwards compatible with older secure fax machines.

**SDD**: Secure Data Device. An SDD is a data only version of secure telephone.

**Secure Data Mode**: A STU-III's secure data mode encrypts confidential or classified information to be transmitted and received over standard telephone lines. It is this mode that secure faxes are transmitted using.

**Secure Fax**: A secure fax is a document that contains confidential or classified information that must be transmitted in a secure manner.

**Secure Fax Device**: A specially manufactured fax device that includes the interface and protocols necessary to communicate over secure telephones such as the STU-III.

**STE**: Secure Telephone Equipment. New secure telephone for use by the US Government.

**STU-IIB**: Secure Telephone Unit Generation Two Version B. NATO version of STU-III.

**STU-III**: Secure Telephone Unit Generation Three.

**STU-IIIA**: Secure Telephone Unit Generation Three Version A. US Secure telephone that can connect with a STU-IIB.