



FlexiAdapt for iTegno 3945

User Guide



Date : 16 Aug 2011
Document Version : 1.0
Our Reference : 02000C25

Document History

Revision	Date	Document History
1.0	16 Aug 2011	Initial Release
1.1		
1.2		

GENERAL NOTE

The aim of this document is to support the application of the iTegno FlexiAdapt device. This document is intended for testing, evaluation, integration, and information purposes.

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1 INTRODUCTION

All it takes to get your Smart Meters connected for remote reading is to plug-in our iTegno GPRS modem with FlexiAdapt. FlexiAdapt provides a cost effective and easy integration choice to the iTegno 3945 to enable RS-232 interface, IO connections and a power input to different power adaptor choices. Simply plug-in to iTegno modem via FlexiAdapt on your meter and you are ready to communicate.

This manual provides an overview of the operation of iTegno FlexiAdapt. It includes technical information on configuring the FlexiAdapt with iTegno 3945 modem.



1.1 Abbreviations

The following abbreviations are used in this document:

Abbreviation	Description
DC	Direct Current
AT	Attention; prefix for modem command
V	Voltage
LED	Light Emitting Diode
CTS	Clear to Send
DTE	Data Terminal Equipment
IMEI	International Mobile Equipment Identification
I/O	Input / Output
GND	Ground
GPIO	General Purpose Input Output
DTE	Data Terminal Equipment (refers to the host terminal/ application in control)
DCE	Data Communication Equipment (refers to the device controlled by the host)

1.2 References

S/N	Document	Our Reference
1	iTegno 39XX Hardware User Guide	02000C18
2	iTegno 39XX AT Commands Guide	02000C17

2 Overview

The general description of the FlexiAdapt is shown in the figure below.



Figure 1: FlexiAdapt front view



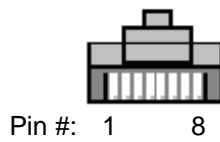
Figure 2: FlexiAdapt back view

2.1 Serial Link Interface

2.1.1 RJ-45

The iTegno 3945 connected to FlexiAdapt via the RJ-45 cable. The 8-pin RJ-45 plug consists of:

- Š Power input and Ground
- Š RJ-45 (RS-232) serial link connection

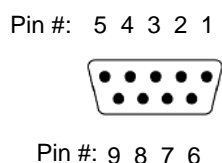


Pin#	Signal	I/O	Description
1	V+	I	DC Power Input
2	GPIO	O	Output
3	GPIO	I	Input
4	GND	-	Ground
5	RXD	I	RS-232 Receive Serial Data
6	TXD	O	RS-232 Transmit Serial Data
7	CTS	O	RS-232 Clear To Send
8	RTS	I	RS-232 Request To Send

RJ-45 Pin Assignments

2.1.2 RS-232

The iTegno 3945 with FlexiAdapt communicates with other devices via the RS-232 serial link. The diagram below shows the pin assignment of the DB9 connector.



Pin#	Signal	I/O	Description
1	NC	-	NC
2	RXD	O	RS-232 Receive Serial Data
3	TXD	I	RS-232 Transmit Serial Data
4	NC	-	NC
5	Ground	-	Signal Ground (SG)
6	NC	-	NC
7	RTS	I	RS-232 Request To Send
8	CTS	O	RS-232 Clear To Send
9	NC	-	NC

RS-232 DB9 Pin Assignments

Based on the conventions for DCE-DTE connection, the modem communicates with the DTE using the following signals:

Pin TXD: DTE sends data to the modem TXD pin.

Pin RXD: DTE receives data from the modem RXD pin.

2.2 Power Supply Interface

The FlexiAdapt DC IN terminal is a 2-pole DC Power Jack.

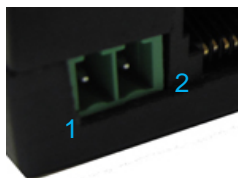
The power supply rating is:

Power Supply	Voltage
Minimum Voltage Input	5V
Maximum Voltage Input	32V

A regulated 12V DC input voltage is recommended for operating the modem. A power voltage exceeding 32V supplied to the modem may result in permanent damage.

2.3 GPIO Terminal Connector

The FlexAdapt 2-pin GPIO connector is using 3.5mm pitch male terminal block receptacle. Pin description of the connector is shown below.



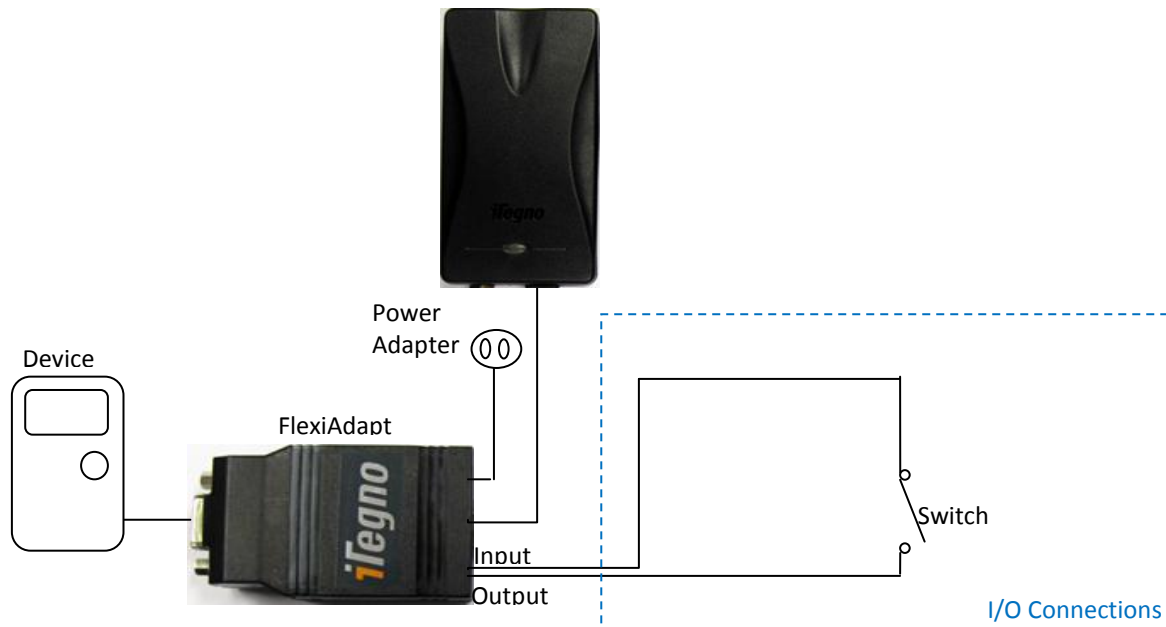
Pin#	Signal	I/O	Description
1	GPIO	O	Output
2	GPIO	I	Input

I/O Pin Assignments

3 Recommended GPIO Connections for alarm or intrusion detection

3.1 Connection Diagram

The following illustrates the set-up using iTegno 3945 with FlexiAdapt. A detention switch is connected to the FlexiAdapt I/O terminal, creating a 3.3 VDC circuit loop. A trigger on the switch will change the connection status of the circuit loop and alert will be sent to the predefine server.



3.2 Initiate Set-up of Modem

The following describes the initial set-up using AT commands to implement the use of auto GPRS and alert in the modem. For more detailed AT commands and parameters definitions, please refer to the AT Commands Guide.

First, connect the iTegno 3945 modem to PC with Hyper-Terminal software application. Run Hyper-Terminal and open the com port and perform the AT command before modem entered datamode. Make sure the following port setting is in place.

- § Bits per second: 9600
- § Data bits: 8
- § Parity: None
- § Stop bits: 1
- § Flow control: None

3.2.1 Set Modem as TCP Client Application using iCOMM Manager Stack:

Command	Possible Response(s)	Explanation
AT\$IPAPN=1,"apn","userid","password" For example: A T \$ I P A P N = 1 , " " s u n s u r	OK	Set APN server for GPRS Profile 1.
AT\$IPAPN?	\$APN: 1 , " s u n s u r f \$ A P N : 2 , " " OK	View GPRS settings.
AT\$IPCFG=1,1,"serverip",serverport For example: A T \$ I P C F G = 1 , 1 , " 2 0 0 .	OK	Set Connection-ID #1 to operate as a TCP client. Remote TCP server IP address and port is also specified
AT\$IPCFG=3,1,"serverip",serverport For example: A T \$ I P C F G = 3 , 1 , " 2 0 0 .	OK	Set Connection-ID #3 to receive the I/O Status Alerts
AT\$IPDATAMODE=1	OK	Select data-mode for data transfer.
AT\$IPDLE=0	OK	Disable DLE mode.
AT\$IPTXTIMEOUT=200		Recommend to set timeout timer to 200ms
AT&W	OK	Writes the active configuration into a non-volatile memory.
AT\$IPSTART	OK	Auto connect to predefined server IP

Once iTegno modem is powered on, it will automatically start a GRPS connection with predefined Server IP address and alerts will be sent when there is a change in I/O status.

3.3 Possible Response of Alerts due to Change in I/O status

When I/O status changes, the following alerts will be sent to the predefined Server.

Scenario	Possible Response(s)
The circuit is connected	" Mod e "m "l Yr / Mt h / D a y " " Hr : /0AMi For example: [002893] 11/08/15 16:44:25 P14=0/0A
The circuit is opened	" Mod e mY r / D Mt h / D a y " " Hr : /0An : For example: [002893] 11/08/15 16:58:00 P14=1/0A

Define Value

Modem ID	Last 6 digit of IMEI number of modem
Date	Event date stamp: Yr/Mth/Day
Time	Event time stamp: Hr:Min:Secs
Message	I/O status P14=0; Circuit loop is connected P14=1; Circuit loop is opened.
New line feed	/0A

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For online support (FAQs and drivers download), please visit www.iTegno.com.

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