REMOTE INTELLIGENT GATEWAY
USER MANUAL

for
ISO New England
Electronic Dispatch Project

Revision 1.0
September 2006

Qualitrol Company LLC
1385 Fairport Road
**Fairport, NY 14450**

Revision History

Revision	Date	Comments
Version 0.4	January 2002	Initial Release
Version 1.0	September 2006	Modifications: • Added Advantech CPU and chassis descriptions • Updated RIG graphic displays • Updated Modbus register definitions to include ASM reserve prices and to add the fractional component of select MW values • Updated FTP file format to cover the ASM reserve prices and to reflect the fractional component of select MW values

1.0 SYSTEM OVERVIEW

The ISO New England (ISO-NE) system interfaces with multiple generator sites that supply power to the New England area and with large commercial loads called *Dispatchable Asset-Related Demand* (DARD) within the same area. The Danaher DAS4000 system dispatches power data information from the ISO-NE to the participating *Generators* and *DARDs* in remote locations. The *dispatch message* calls for the startup or shutdown of specific generators and/or provides a generation/consumption setpoint based on the current system demands and other variables as defined in the Oracle Database.
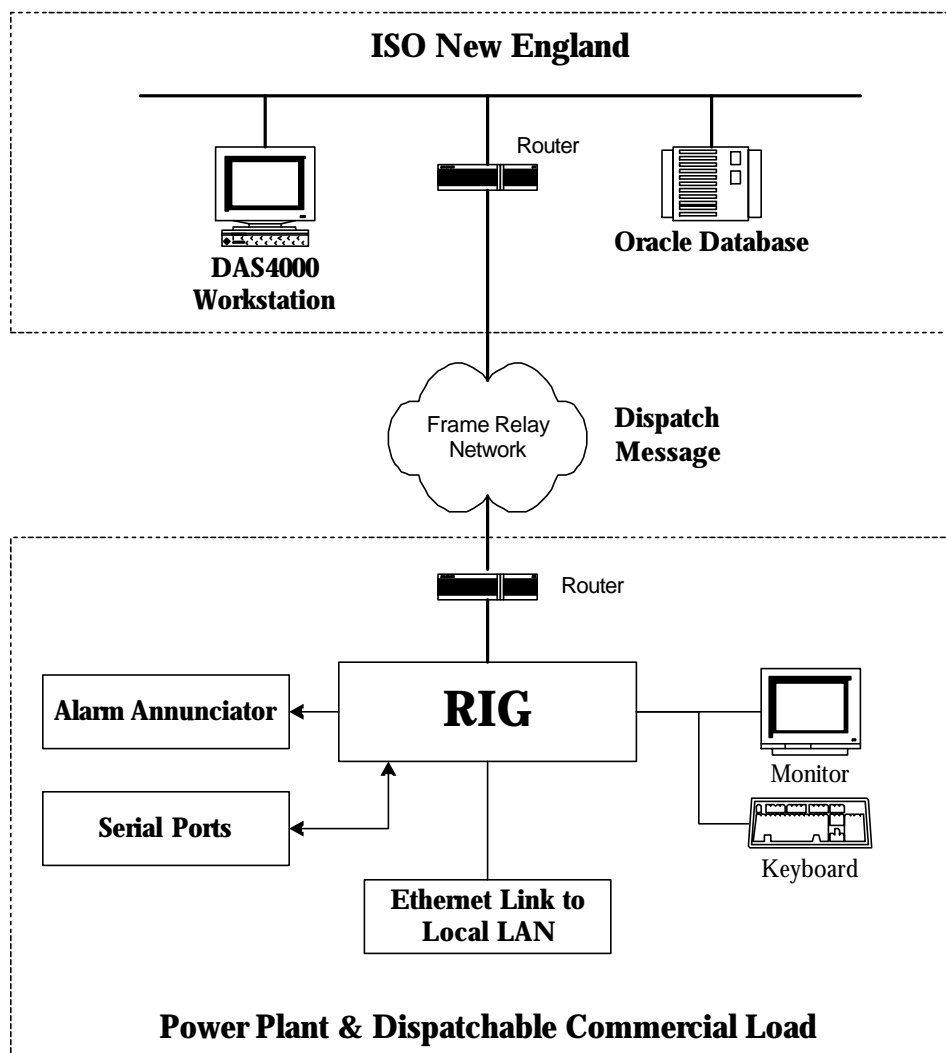
The dispatch message is sent to the RIG (Remote Intelligent Gateway) on a secure network through *Cisco* routers utilizing the *Verizon-Frame Relay* network protocol. Network security is maintained by utilizing *digital certificates* and preserved by requiring certificates to be renewed each year.

The RIG processes the dispatch message at the remote power plant or commercial load. The dispatch information is available in graphic displays at the RIG monitor and saved to internal files. The file data can be accessed by other computer systems on the local network for reporting purposes or additional processing.

1.1 ALARM ANNUNCIATOR

The Alarm Annunciator consists of a relay output module that can be connected to external audio or visual devices. This feature is used to notify RIG operators when a dispatch message has been received. The Annunciator can be configured to annunciate on an asset or system basis to meet the specific needs of the plant operation.

1.2 SERIAL / ETHERNET INTERFACE

During operation, dispatch data, historical data and system statistical data is maintained in the RIG. This information is available to computer systems on the plant network for data analysis or reporting purposes. The RIG supports the Modbus protocol on an RS232 serial port or TCP/IP on an optional Ethernet port.

2.0 RIG GRAPHIC DISPLAYS

The RIG graphic displays are accessed by pressing a keyboard function key. The displays include:

- Asset Summary Display
- Asset Detail / History Display
- RIG Health & Status Display

The graphic displays can also be opened by clicking on a *soft key* element located at the bottom of each RIG display.

- **F1 – SUMMARY** opens the Asset Summary Display
- **F2 – ASSET DETAIL/HISTORY** opens the Asset Detail / History Display
- **F3 – RIG STATUS** opens the RIG Health & Status Display

When a graphic is not available, the associated soft key will not be active as shown below. Only the **F1-SUMMARY** and **F3-RIG STATUS** displays can be selected from the screen.

NOTE

The **F12-ACK** soft key is used to acknowledge specific dispatch message types.

2.1 ASSET SUMMARY DISPLAY

The *Asset Summary Display* is the main RIG display. It can be accessed by pressing the keyboard **<F1>** key or clicking on the **F1 – SUMMARY** soft key at the bottom of the display.

The information available to the RIG user is presented in three sections.

2.1.1 General RIG Information

The following information appears in this section:

- **Version ASM Phase II – 10/01/2006**: Release version and date of the software installed on the RIG

- **Designated Entity RIG001**: Unique identifier of the designated entity responsible for the assets associated with the RIG.

- **RIG001**: The RIG name

- **Today**: The current date on the RIG

- **New DDP Received**: The time the last DDP was received

- **Mode**: Current mode of messages received for the assets associated with the RIG

NORMAL	Messages for all assets associated with the RIG are of type *NORMAL*
EMERGENCY	One or more of the messages for any asset associated with the RIG are of type *EMERGENCY*, *STARTUP*, or *SHUTDOWN*. This string will be highlighted.

- **Comm Status**: Indicates the current communications status with the Dispatch Data Server

OFF-LINE	RIG has lost communications with the data server. This string will be highlighted
ON-LINE	RIG is communicating with the data server

NOTE

When the RIG is connected to the data server, an indication of the *ON-LINE* status will be presented as a *heartbeat* below the **Comm Status** field each second. First, one asterisk (*) will appear, then two(**), then three (***). The sequence will repeat as long as the RIG is connected to the data server.

2.1.2 Real Time Prices

The following information appears in this section:

- **Time**: The current time on the RIG
- **Current 5-Minute Regulation Price:** The price $/MWh currently paid for regulation to generators on AGC control – generators in UCM 6

2.1.3 Asset Summary

The Asset Summary section is a tabular listing of the most recent message for each asset associated with the RIG. The messages are listed alphabetically by the **Asset ID**.

Asset Summary

Asset Id	Msg Type	U C M	Act Gen/ Con	DDP	Dev	Last Updt	Eco Max/ Max Cons	Reg High	Reg Low	Eco Min/ Min Cons	Emer Min	Self Sched	Resp Rate	Reg Range	Nodal Dsp Rt $/MWh	FTF	Pos
ARD11	N	1	3.0	7.0	4.0	1703	20	0	0	0	0		6.5	0	199.25		
ARD55	N	4	25.0	10.0	-15.0	1703	30	0	0	10	10	E	2.0	0	200.37		
GEN1	N	3	12.0	12.0	0.0	1703	12	12	12	12	12	B	15.0	0	214.84		
GEN7	N	2	0.0	0.0	0.0	1703	1080	260	130	130	125	E	4.0	65	201.66		
GEN8	N	3	16.0	16.0	0.0	1703	16	16	16	16	16	R	3.0	0	203.57		

A message entry in the Asset Summary display includes the following information:

- **Asset ID**: Unique asset identifier
- **Msg Type**: Displays the most recently received message type:

N	Normal
E	Emergency
U	Startup
D	Shutdown

- **UCM**: Unit Control Mode

1	Off-line Unavailable
2	Off-line Available

3	Fixed
4	Dispatchable
5	Postured (Generators only)
6	On Regulation (Generators only)

- **Act Gen/Con**: Actual MW of generation for a generator or consumption for an asset-related demand, displayed with one digit after the decimal point.

- **DDP**: The requested dispatch MW data point, displayed with one digit after the decimal point.

- **Dev**: Deviation between actual generation/consumption and the DDP value, displayed with one digit after the decimal point.

- **Last Updt**: The time that the most recent message was generated. Format = hhmm

- **Eco Max / Max Cons**: Economic Maximum dispatch limit for a generator; Maximum Consumption dispatch limit for an asset-related demand

- **Reg High**: Maximum Regulation MW limit – The maximum MW value to which a Participant is willing to operate a generator when the generator is under automatic generation control by the ISO. *Not applicable to asset-related demands.*

- **Reg Low**: Minimum Regulation MW limit – The Minimum MW value to which a Participant is willing to operate a generator when the generator is under automatic generation control by the ISO. *Not applicable to asset-related demands.*

- **Eco Min / Min Cons**: Economic Minimum dispatch limit for a generator; Minimum Consumption dispatch limit for an asset-related demand

- **Emer Min**: Emergency Minimum dispatch limit for a generator. *Not applicable to asset-related demands.*

- **Self Sched**: The self schedule status of the asset. There are four possibilities:

blank	Not self-scheduled
E	Self-scheduled for Energy
R	Self-scheduled for Regulation. Not applicable to asset-related demands.
B	Self-scheduled for both Energy and Regulation. Not applicable to asset-related demands.

- **Resp Rate**: Response Rate of the asset as offered/bid by the Participant or as re-declared. It is the response rate corresponding to the asset's actual generation/consumption if the Participant submitted offers/bids with multiple response rates and the response rate has not been redeclared. For generators in AGC control mode (UCM 6), the response rate shown is the Automatic Response Rate in effect.

- **Reg Range**: Regulating Range – Applicable only to generators under automatic generation control by the ISO, i.e., generators in AGC control mode (UCM 6).

- **Nodal Dsp Rt $/MWh**: Ex-ante nodal dispatch rate at the node where the asset is located, as calculated by the pricing and dispatch software.

- **FTF**: Failure-to-Follow flag – *F* is displayed if the asset is not following its DDP

- **Pos**: Postured Flag – *P* is displayed if the asset is postured and being sent a manual DDP

2.1.4 Asset Summary Message Entry

The message entries in the Asset Summary display are color coded according to message type. The message entry color indicates the following:

- **Green** – *Normal* message type that has **not** changed since the last DDP

- **Yellow** – *Normal* message type that **has** changed since the last DDP

- **Flashing Red** – An *Emergency*, *Startup*, or *Shutdown* message type that requires operator acknowledgement.

- **Red** – An *Emergency*, *Startup*, or *Shutdown* message type that has been acknowledged.

2.1.4.1 Message Selection

To select a message in the Asset Summary display, use the up/down arrow keys or click on the message line with the mouse pointer. The selected message is highlighted.

2.1.4.2 Message Acknowledgement

When an Emergency (E), Startup (U) or Shutdown (D) dispatch message is sent to the RIG, the message entry in the **Asset Summary** display flashes and audio and visual alarms (if installed) are activated. The RIG operator must acknowledge receipt of the message by selecting the message, then pressing the keyboard <**F12**> key or clicking on the **F12-ACK** softkey at the bottom of the display.

When the acknowledgement is processed, the message entry stops flashing and alarms are deactivated. If an Emergency (E), Startup (U) or Shutdown (D) dispatch message is sent for more than one asset associated with the RIG, the operator must acknowledge each asset individually. The operator then initiates the appropriate action based upon plant procedures.

NOTE

The dispatch message can also be automatically acknowledged by using an optional Modbus or FTP Interface.

2.2 ASSET DETAIL/HISTORY DISPLAY

To open the *Asset Detail/History Display*, select a message entry in the *Asset Summary Display* for the desired asset. Press the keyboard **<F2>** key or click on the **F2** - **ASSET DETAIL/HISTORY** soft key at the bottom of the display.

The selected asset is identified in the center of the display after **Asset ID** and the current time appears after **Time**.

The information available to the RIG user is presented in three major sections.

2.2.1 General RIG Information

The following information appears in this section:

- **Version ASM Phase II – 10/01/2006**: Release version and date of the software installed on the RIG

- **Designated Entity RIG001**: Unique identifier of the designated entity responsible for the assets associated with the RIG.

- **RIG001**: The RIG name

- **Today**: The current date on the RIG

- **New DDP Received**: The time the last DDP was received

- **Mode**: Current mode of messages received for the assets associated with the RIG

  NORMAL   Messages for all assets associated with the RIG are of type NORMAL

  EMERGENCY   One or more of the messages for any asset associated with the RIG are of type EMERGENCY, STARTUP, or SHUTDOWN. This string will be highlighted.

- **Comm Status**: Indicates the current communications status with the Dispatch Data Server

  OFF-LINE   RIG has lost communications with the data server. This string will be highlighted

  ON-LINE   RIG is communicating with the data server

NOTE

When the RIG is connected to the data server, an indication of the *ON-LINE* status will be presented as a *heartbeat* below the **Comm Status** field each second. First, one asterisk (*) will appear, then two(**), then three (***). The sequence will repeat as long as the RIG is connected to the data server.

2.2.2 Pricing Information

Reserve market clearing prices are particular to each reserve zone. Since the assets associated with a RIG do not necessarily belong to the same reserve zone, the reserve prices for the zone, in which the selected asset is found, are shown in this section.

```
          Time:     16:48:40
   Current 5-Minute Reserve Price
       Product          $/MWh

       TMSR             50.00
       TMNSR             0.00
       TMOR              0.00
```

TMSR   Ten-Minute Spinning Reserve market clearing price.
The price in $/MWh paid to generation capability within the reserve zone that is synchronized to the system and can respond within 10 minutes to provide contingency protection.

TMNSR   Ten-Minute Non-Spinning Reserve market clearing price.
The price in $/MWh paid to generation capability within the reserve zone that is not synchronized to the system and can respond within 10 minutes to provide contingency protection.

TMOR   Thirty-Minute Operating Reserve market clearing price
The price in $/MWh paid to generation capability within the reserve zone that can respond within 30 minutes to provide contingency protection over and above the 10-minute reserve capability.

2.2.3 Asset Detail/History Information

The section contains a tabular listing of messages for the selected asset. The messages are listed in chronological order with the most recently received message listed at the top. The user can scroll through the messages by using the up and down arrow keys on the keyboard

Each message entry is color coded:

Green   Normal message type (N)

Red   Emergency (E), Startup (U), or Shutdown (D) message type

Asset Detail / History — Asset ID: ARD55

Msg Type	UCM	Act Gen/Cons	DDP	Dev	Last Updt	Eco Max/Max Cons	Reg High	Reg Low	Eco Min/Min Cons	Emer Min	Self Sch	Resp Rate	Reg Range	Nodal Dsp Rt $/MWh	Emer Ack	FTF	Pos
N	4	25.0	10.0	-15.0	1703	30	0	0	10	10	E	2.0	0	200.37	0		
N	4	25.0	10.0	-15.0	1698	30	0	0	10	10	E	2.0	0	200.37	0		
N	4	25.0	10.0	-15.0	1693	30	0	0	10	10	E	2.0	0	200.37	0	F	
N	4	25.0	10.0	-15.0	1688	30	0	0	10	10	E	2.0	0	200.92	0	F	
N	4	25.0	10.0	-15.0	1683	30	0	0	10	10	E	2.0	0	200.92	0	F	
N	4	25.0	10.0	-15.0	1678	30	0	0	10	10	E	2.0	0	159.99	0	F	
N	4	25.0	10.0	-15.0	1673	30	0	0	10	10	E	2.0	0	159.99	0		P
N	4	25.0	10.0	-15.0	1668	30	0	0	10	10	E	2.0	0	135.42	0	F	
N	4	25.0	10.0	-15.0	1663	35	0	0	7	7	E	2.0	0	135.42	0		
N	4	25.0	10.0	-15.0	1658	35	0	0	7	7	E	2.0	0	135.42	0		
N	4	25.0	10.0	-15.0	1653	35	0	0	7	7	E	2.0	0	129.94	0	F	

- **Msg Type**: Displays the most recently received message type:

N	Normal
E	Emergency
U	Startup
D	Shutdown

- **UCM**: Unit Control Mode

1	Off-line Unavailable
2	Off-line Available
3	Fixed
4	Dispatchable
5	Postured (Generators only)
6	On Regulation (Generators only)

- **Act Gen/Con**: Actual MW of generation for a generator or consumption for an asset-related demand, displayed with one digit after the decimal point.

- **DDP**: The requested dispatch MW data point, displayed with one digit after the decimal point.

- **Dev**: Deviation between actual generation/consumption and the DDP value, displayed with one digit after the decimal point.

- **Last Updt**: The time that the most recent message was generated. Format = hhmm

- **Eco Max / Max Cons**: Economic Maximum dispatch limit for a generator; Maximum Consumption dispatch limit for an asset-related demand

- **Reg High**: Maximum Regulation MW limit – The maximum MW value to which a Participant is willing to operate a generator when the generator is under automatic generation control by the ISO. *Not applicable to asset-related demands.*

- **Reg Low**: Minimum Regulation MW limit – The Minimum MW value to which a Participant is willing to operate a generator when the generator is under automatic generation control by the ISO. *Not applicable to asset-related demands.*

- **Eco Min / Min Cons**: Economic Minimum dispatch limit for a generator; Minimum Consumption dispatch limit for an asset-related demand

- **Emer Min**: Emergency Minimum dispatch limit for a generator. *Not applicable to asset-related demands.*

- **Self Sched**: The self schedule status of the asset. There are four possibilities:

blank	Not self-scheduled
E	Self-scheduled for Energy
R	Self-scheduled for Regulation. Not applicable to asset-related demands.
B	Self-scheduled for both Energy and Regulation. *Not applicable to asset-related demands.*

- **Resp Rate**: Response Rate of the asset as offered/bid by the Participant or as re-declared. It is the response rate corresponding to the asset's actual generation/consumption if the Participant submitted offers/bids with multiple response rates and the response rate has not been redeclared. For generators in AGC control mode (UCM 6), the response rate shown is the Automatic Response Rate in effect.

- **Reg Range**: Regulating Range – Applicable only to generators under automatic generation control by the ISO, i.e., generators in AGC control mode (UCM 6).

- **Nodal Dsp Rt $/MWh**: Ex-ante nodal dispatch rate at the node where the asset is located, as calculated by the pricing and dispatch software.

- **Emer Ack**: Emergency Acknowledge flag. If the message type is E (Emergency), U (Startup), or D (Shutdown), a 1 (one) appears in this column if the message was acknowledged and a 0 (zero) appears if the message was not acknowledged. If the message type is N (Normal), a 0 (zero) appears in this column.

- **FTF**: Failure-to-Follow flag – *F* is displayed if the asset is not following its DDP

- **Pos**: Postured Flag – *P* is displayed if the asset is postured and being sent a manual DDP

2.3 RIG HEALTH AND STATUS DISPLAY

The *RIG Health and Status Display* is accessed by pressing the keyboard **<F3>** key or clicking on the **F3 – RIG STATUS** soft key at the bottom of the screen.

A description of each section of the display follows…

2.3.1 General RIG Information

The following information appears in this section:

- **Version ASM Phase II – 10/01/2006**: Release version and date of the software installed on the RIG

- **Designated Entity RIG001**: Unique identifier of the designated entity responsible for the assets associated with the RIG.

- **RIG001**: The RIG name

- **Today**: The current date on the RIG

- **New DDP Received**: The time the last DDP was received

- **Mode**: Current mode of messages received for the assets associated with the RIG

    NORMAL   Messages for all assets associated with the RIG are of type *NORMAL*

    EMERGENCY   One or more of the messages for any asset associated with the RIG are of type *EMERGENCY*, *STARTUP*, or *SHUTDOWN*. This string will be highlighted.

- **Comm Status**: Indicates the current communications status with the Dispatch Data Server

    OFF-LINE   RIG has lost communications with the data server. This string will be highlighted

    ON-LINE   RIG is communicating with the data server

NOTE

When the RIG is connected to the data server, an indication of the *ON-LINE* status will be presented as a *heartbeat* below the **Comm Status** field each second. First, one asterisk (*) will appear, then two(**), then three (***). The sequence will repeat as long as the RIG is connected to the data server.

2.3.2 RIG Health and Status Information Section

The following blocks of information are shown in this section:

RIG Information
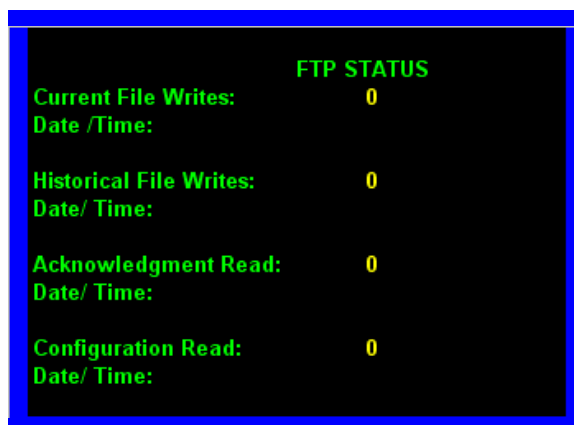
- **RIG ID**: Unique name for this RIG

- **Date & Time**: Shows the current date and time

- **Last Reboot**: Shows the date and time that this RIG was last rebooted.

MODBUS STATUS Information

- **# Input Messages**: Number of acknowledgements written to the RIG by an external Modbus Master device over the RIG Modbus slave port

- **# Output Messages**: Number of messages read by an external Modbus Master device over the RIG Modbus slave port

- **Last Message (SEC)**: Number of seconds since any communication occurred over the RIG Modbus slave port

- **MOD Stats Reset**: Status
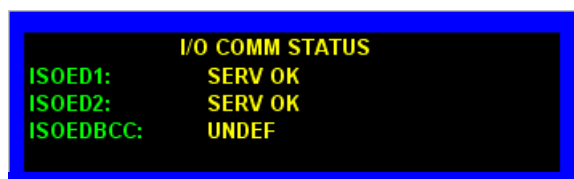
FTP STATUS Information

- **Current File Writes**: The total number of CURDDP.TXT files written to the Designated Entities' FTP file server since the last reboot. Also shown are the date and time of the last file transfer.

- **Historical File Writes**: The total number of HDDP<*date*>.TXT files written to the Designated Entities' FTP file server since the last reboot. Also shown are the date and time of the last file transfer.

- **Acknowledgment Read**: The total number of times an alarm acknowledgment has been read from the Designated Entities' FTP file server since the last reboot. Also shown are the date and time of the last file transfer.

- **Configuration Read**: The total number of times an FTP configuration file has been read from the Designated Entities' FTP file server since the last reboot. Also shown are the date and time of the last file transfer.

I/O COMM STATUS Information

- **ISOED1**: Shows the communication status of the named RIG at the ED workstation ISOED1

- **ISOED2**: Shows the communication status of the named RIG at the ED workstation ISOED2

- **ISOEDBCC**: Shows the communication status of the named RIG at the ED workstation ISOEDBCC

ORACLE STATUS Information

- Current Server Name – Shows the name of the ED workstation providing dispatch data.

- Start of Session Time – The date and time that the current Oracle session was established

- Last Message Received – Shows the date and time that the last message was received from the current ED workstation.

- # Messages Received – Count of ED dispatch data messages received by the RIG

- # Messages Sent – Count of alarm acknowledgment messages sent by the RIG

3.0 RIG HARDWARE DESCRIPTION

The RIG is an industrial type personal computer system that runs the VxWorks operating system. Two types of RIG units are currently installed in the field. Both are functionally the same and only differ in the physical appearance and internal hardware components.

The older RIG chassis style uses the Motorola chassis and the PV5000-200 CPU. This will be referred to as the *Motorola Unit*.

The current RIG chassis style uses the Advantech chassis and the Advantech CPU. This will be referred to as the *Advantech Unit*.

3.1 MOTOROLA UNIT

The Motorola unit is shown below.
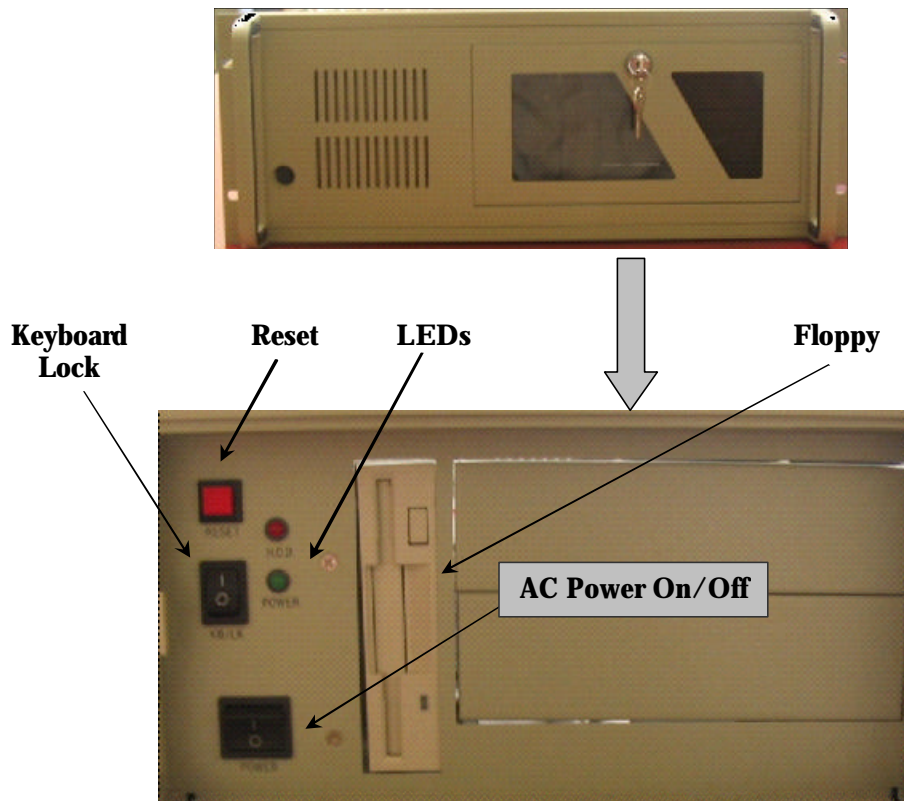
- **Reset** – Initiates a reset and restart of the internal CPU

- **Keyboard Lock** – When the switch is set to ON, no keyboard inputs are processed by the system

NOTE

The keyboard should **never be locked** during normal system operation.

- **Floppy Drive** – Factory use only

- **LEDs** – The Red **HDD** LED flashes when the internal solid state disk is accessed; the Green **Power** LED is illuminated when AC power is applied to the system.

- **AC Power On/Off** – Switch used to remove or apply power to the chassis

3.1.1 Internal Components / Connections

The following identifies the components within the Motorola Unit chassis.

PV5000 CPU Module   **Secondary Ethernet**   **Relay Output Module**

To Hard Drive

To Floppy Drive

Chassis Connections

Solid State Hard Drive

3.1.1.1 Chassis Connections

The Motorola unit front panel switches, LEDs, and other chassis devices must be connected to the CPU module. The view shown is looking down on the CPU module from the rear of the chassis.

3.1.1.2 Solid State Hard Drive

The Solid State Hard Drive contains all operation system and application software required for network connectivity and RIG operation.
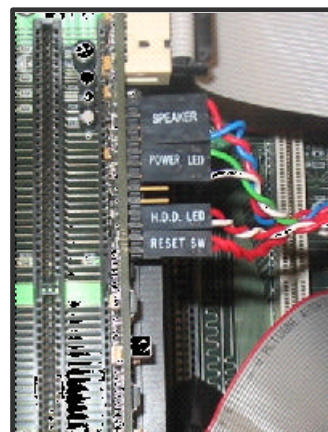
3.1.2 External Connections

The Motorola Unit external connections are located on the rear of the chassis and identified below:
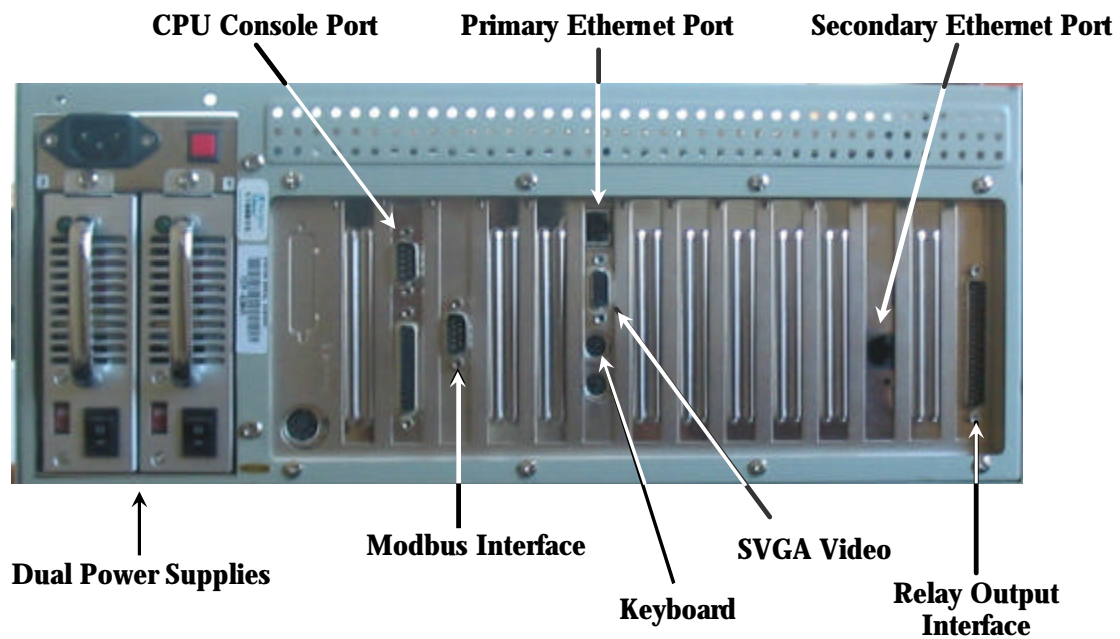
3.1.3 PV5000-200 CPU

The Motorola Unit CPU module is shown below.

CPU and Fan   **Hard Drive Connector**   **Chassis Connections**

System Memory   **Floppy Drive Connector**
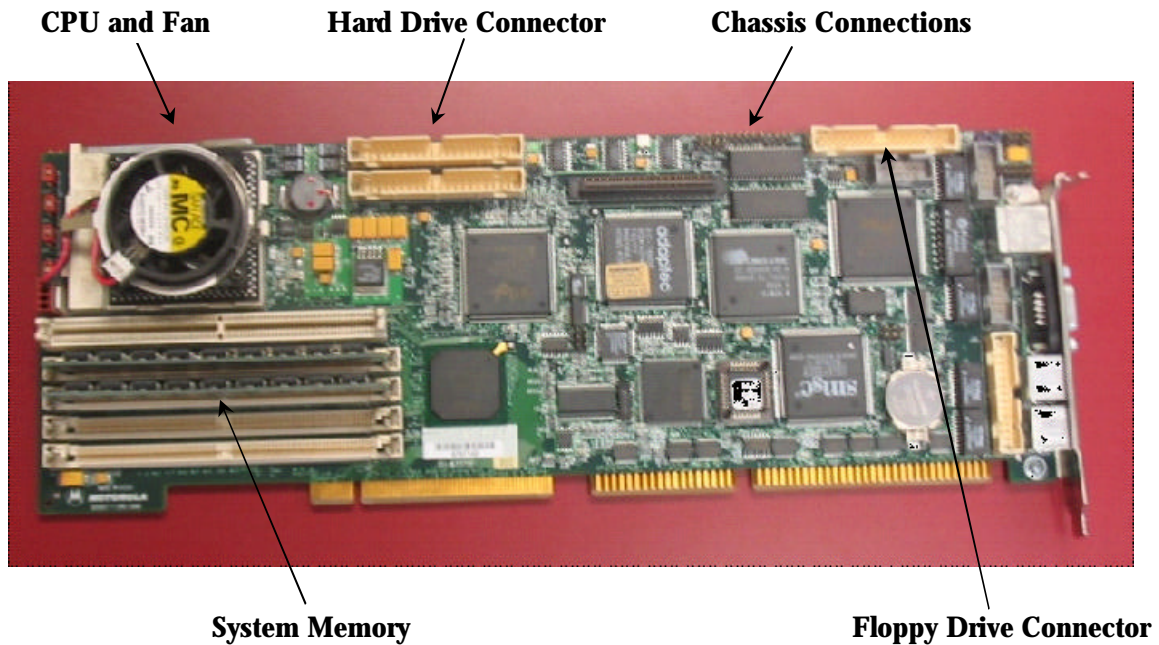
NOTE

No hardware configuration is required when a CPU module is replaced. The technician must ensure that power is removed when replacing the module and all cables are securely connected to the correct device.

3.2 ADVANTECH UNIT

The Advantech unit is shown below.
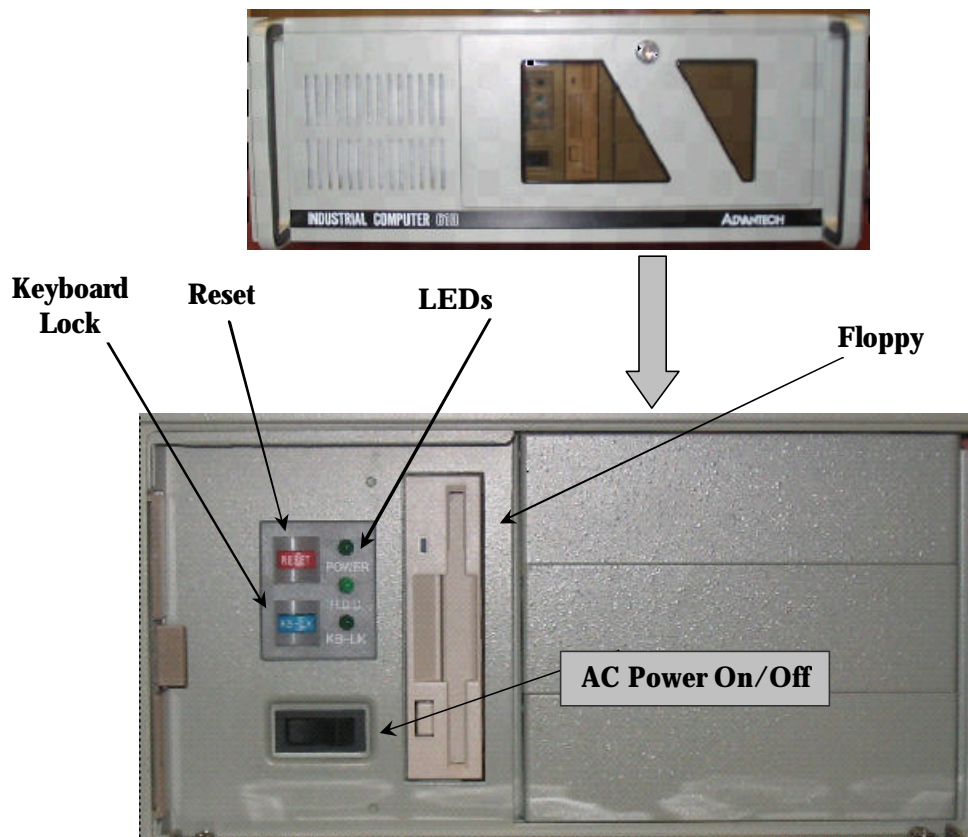
- **Reset** – Initiates a reset and restart of the internal CPU

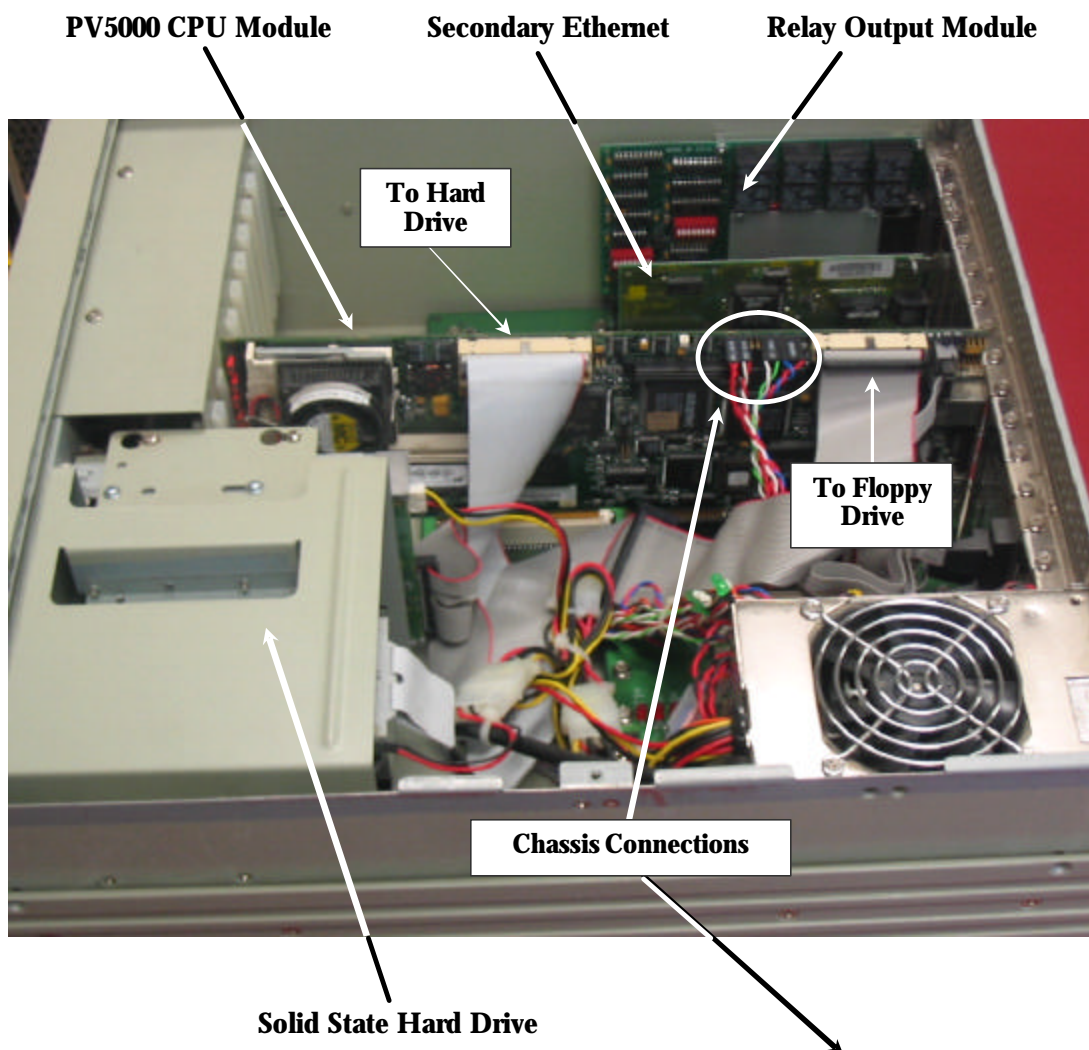- **Keyboard Lock** – When the switch is set to ON, no keyboard inputs are processed by the system

NOTE

The keyboard should **never be locked** during normal system operation.

- **Floppy Drive** – Factory use only

- **LEDs** – The Green **Power** LED is illuminated when AC power is applied to the system. The Green **HDD** LED flashes when the internal disk is accessed. The Red **KB-LK** LED lights when the keyboard has been locked with the **Keyboard Lock** switch.

- **AC Power On/Off** – Switch used to remove or apply power to the chassis

NOTE

The AC On/Off is a toggle switch on original Advantech units and a momentary switch on newer units.

3.2.1 Internal Components

The following identifies the components within the Advantech Unit chassis.
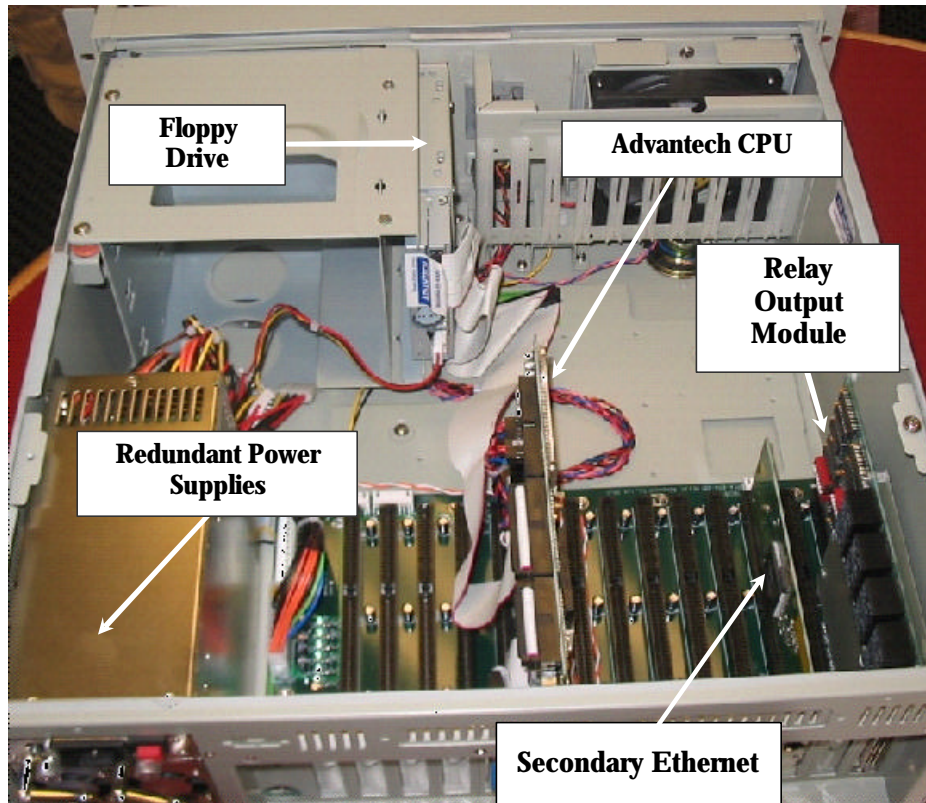
3.2.2 CPU Connections

The following identifies the CPU module connections within the Advantech Unit chassis.
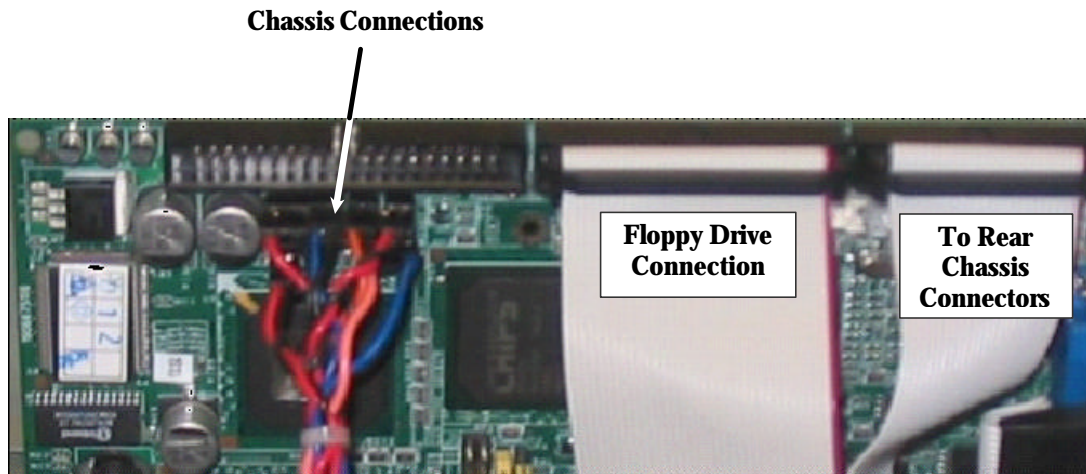
3.2.2.1 Chassis Connections

The Advantech unit front panel switches, LEDs and other chassis devices must be connected to the CPU module. The cables are shown above. The CPU connector end is labeled and connected per the following drawing. The label side of the connector faces the backplane.:
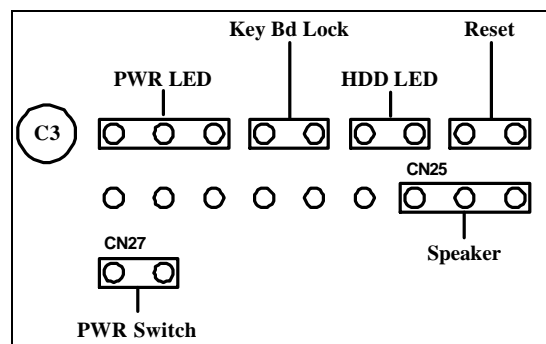
NOTE

These connections must be installed for proper RIG operation.

3.2.3 External Connections

The Advantech Unit external connections are identified below:
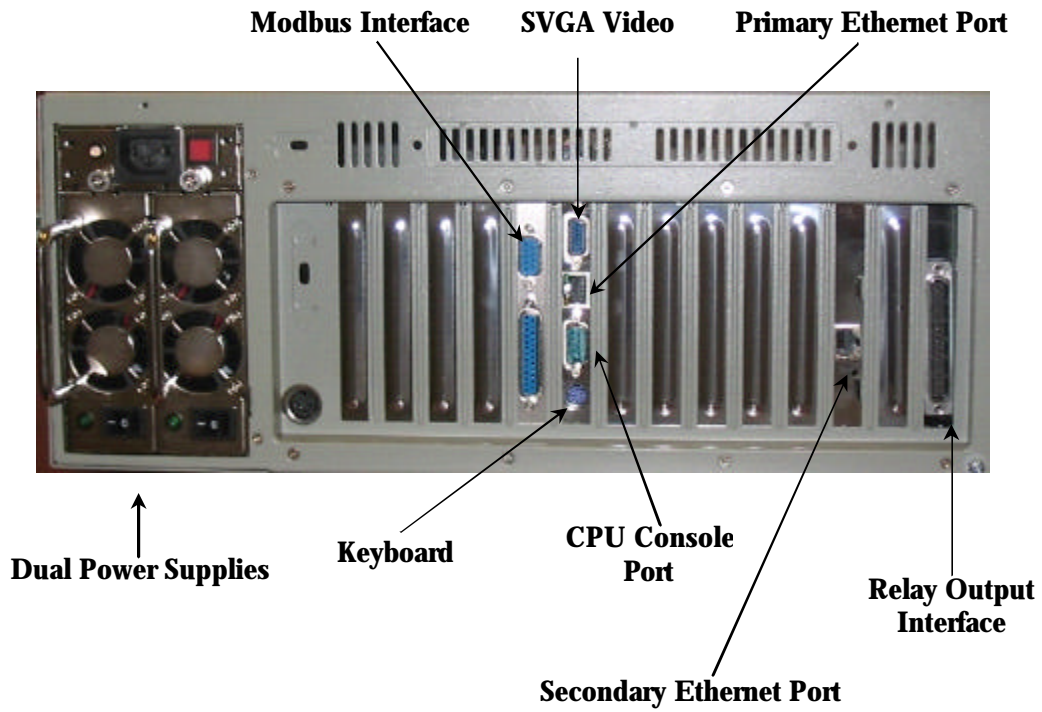
3.2.4 Advantech CPU

The Advantech Unit CPU module has components and cable connections on each side of the module.

Compact Flash Drive   **System Memory**

Chassis Connections   **To Floppy Drive**   **To Rear Panel**
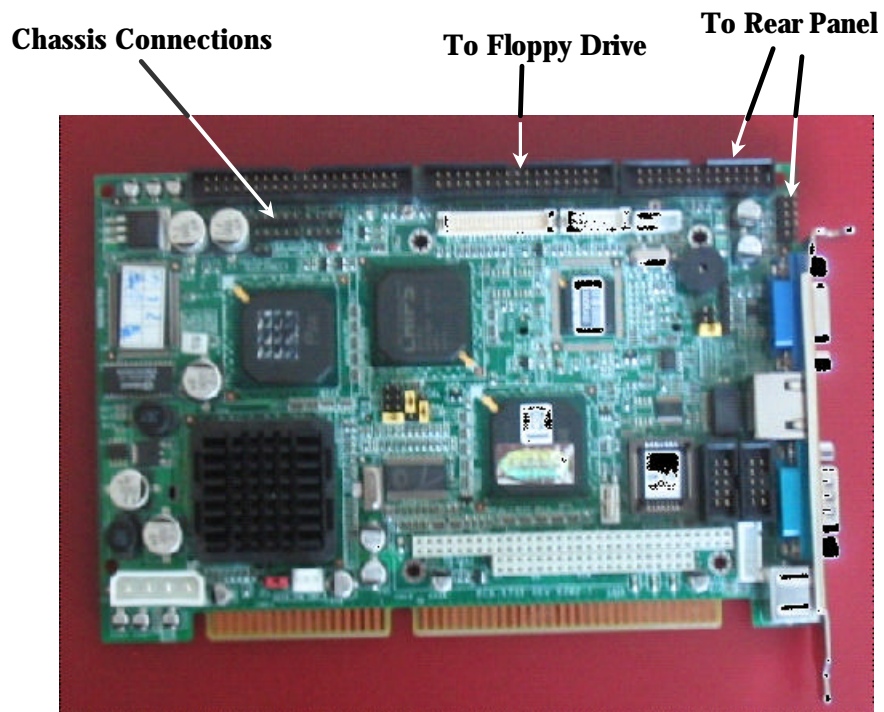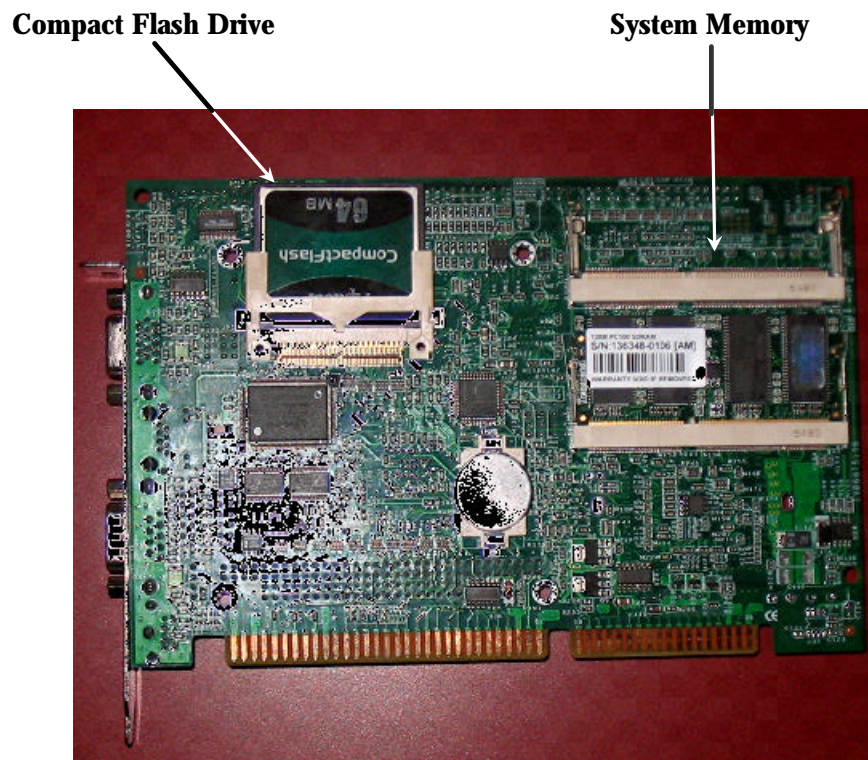
3.2.4.1 Compact Flash Drive

The Advantech Unit does not use an internal hard drive. The operating system and all application software is contained on a Flash Drive. This drive can be from different manufacturers and have different drive capacities. A 64MB *Apacer'* drive is shown.

4.0 RIG ALARM SYSTEM

The RIG Alarm System is used to provide an audio or visual indication of communication failures and unit dispatch messages that require operator acknowledgment. A Relay Output Module is installed in the RIG for this purpose.

4.1 RELAY OUTPUT MODULE

The Relay Output Module is shown below.
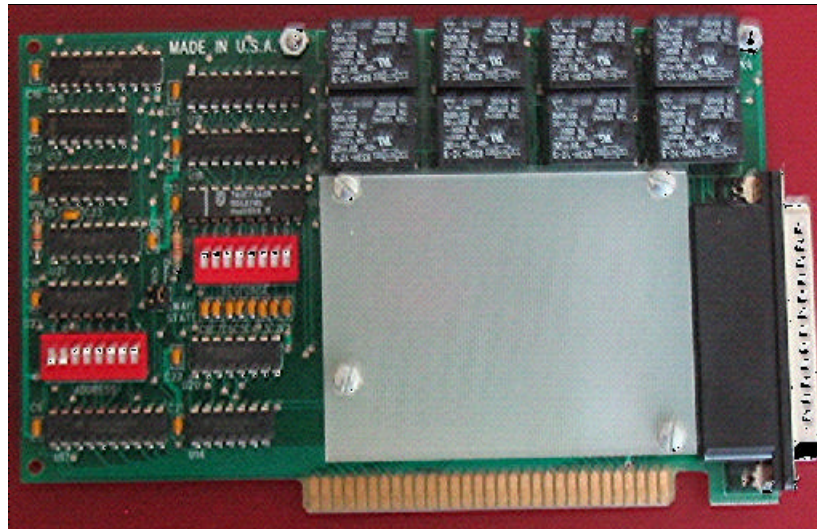
4.1.1 Module Installation

The Relay Output module is configured at the Qualitrol factory. If a module is replaced, one must be sure that the new module has the same switch settings as the module replaced.

4.1.2 Electrical Connection

A cable with 8 pairs of five foot leads is included with the module. Each pair supplies a 0.5A, 24VDC signal. An assembly drawing is included with the cable when it is shipped.

4.2 ALARM SYSTEM OPERATION

There are two modes of operation – **Unit Status Mode** and **System Status Mode**. Each RIG is configured for one particular mode as specified by the customer at the time of purchase.

NOTE

The alarm contact outputs are configured in the *System Status Mode* by default. In order to select the *Unit Status Mode*, complete the **Generator Alarm Contact Output Mode Selection** form and submit it to the appropriate ISO-NE representative. Refer to Appendix A.

4.2.1 System Status Mode

In the System Status Mode, the dispatch related alarms must be acknowledged on a per asset basis from the RIG or by using the Modbus or FTP Interface.

NOTE

This configuration can be used when a maximum of three assets are associated with the RIG.

SYSTEM STATUS MODE

Relay #	Status Point	Alarm State		
		New Alarm	ACK	No Alarm
1	Comm Status Bad	Flash	N/A	Off
2	Emergency	Flash	On	Off
3	Startup	Flash	On	Off
4	Shutdown	Flash	On	Off
5	Deviation (Optional)	Flash	On	Off
6	Asset 1 Alarm	Flash	On	Off
7	Asset 2 Alarm	Flash	On	Off
8	Asset 3 Alarm	Flash	On	Off

- The RIG communication status alarm flashes when the RIG loses communication to ISO-NE.

- An asset has an *Alarm* status if the MESSAGE_TYPE is Emergency, Startup, or Shutdown.

- Relays 2-5 are dedicated to specific alarm conditions that apply to all assets at the RIG. Each asset must be individually acknowledged before the alarm state will change.

- Relays 6-8 are used to indicate an alarm condition for the first three assets listed on the RIG summary display.

- The *Flash* rate for unacknowledged alarms (new alarms) is approximately one second on and one second off.

4.2.2 Unit Status Mode

In the Unit Status Mode, the dispatch related alarms must be acknowledged on a per asset basis from the RIG or by using the Modicon or FTP Interface.

NOTE

This configuration is used when four or more assets are associated with a RIG.

UNIT STATUS MODE

Relay #	Status Point	Alarm State		
		New Alarm	ACK	No Alarm
1	Comm Status Bad	Flash	N/A	Off
2	Asset 1 Alarm	Flash	On	Off
3	Asset 2 Alarm	Flash	On	Off
4	Asset 3 Alarm	Flash	On	Off
5	Asset 4 Alarm	Flash	On	Off
6	Asset 5 Alarm	Flash	On	Off
7	Asset 6 Alarm	Flash	On	Off
8	Asset 7 Alarm	Flash	On	Off

- The RIG communication status alarm flashes when the RIG loses communication to ISO-NE.

- An asset has an *Alarm* status if the MESSAGE_TYPE is Emergency, Startup, or Shutdown.

- Relays 2-8 are used to indicate an alarm condition for up to seven (7) assets

- The *Flash* rate for unacknowledged alarms (new alarms) is approximately one second on and one second off.

5.0 MODBUS SLAVE INTERFACE

The dispatch data located at the RIG can be accessed by a Modbus *Master* device over a dedicated RS232 port utilizing the Modbus protocol. During operation, the RIG appears as a Modicon PLC *Slave* to the polling Master. This connection allows the dispatch data to be available to DCS or SCADA systems on the local plant network.

5.1 MODBUS INTERFACE CONNECTION

Typically, the serial port on the CPU module is used for the Modbus interface. The port is configured at the Qualitrol factory with the following parameter settings:

- 9600 baud
- 8 Data Bits
- Even Parity
- 1 Start Bit
- 1 Stop Bit

NOTE

The user must configure the communication driver to read data from **PLC Address 1** with the above settings. There are no provisions for software flow control.

5.1.1 Electrical Connection

The physical connection to the RIG is a standard serial cable with a DB9 Male connector. A null modem cable is used unless a modem is installed between the RIG equipment and the polling device.

5.2 DISPATCH DATA ACCESS

The asset order of electronic dispatch data in the Modbus Registers is determined by the ISO-NE and the Customer. The first set of Modbus Register starting with 30001 and ending with 30100 typically contain data for the **first** asset associated with a particular RIG.

There are certain limitations imposed by the Modbus protocol on the maximum number of bytes which can be read at the same time. If the Modbus Master Software permits a block register read, it is recommended to read data for a single asset at a time. This way, only 100 registers will be read at once and will result in an acceptable byte count with respect to the Modbus protocol (128 max).

The following Modbus function codes are supported by the RIG Modbus Slave driver:

Function Code	Function	Register type
1	Read Coils	0
2	Read Input Status	1
3	Read Holding Register	4
4	Read Input Register	3
5	Force Single Coil	0
6	Force Single Register	4
15	Force Multiple Coils	0
16	Force Multiple Registers	4

- To access the dispatch data, the user should use Modbus Code 4 to read the data, and Modbus Code 5 to write to the Message Acknowledgment coil assigned to each asset.

- To ensure that the dispatch data is from the same time interval, the data should be read in as short a period of time as possible, and no more often than once per minute.

5.3 DISPATCH DATA LAYOUT

The layout and range of the asset data values are as defined in the following table. Except as noted below, the values stored in the registers may be used directly without any conversions.

- The time stamp as received from ISO-NE is in Greenwich Mean Time

- In cases where a dispatch data value does not fit into a single 16 bit register, the data has been parceled into a number of adjacent registers. Refer to TIMESTAMP_DDP in the following table

- Dollars and cents values are stored in two adjacent registers with dollars and cents components. Numbers such as 7234.12 are too large for a single 16 bit Modicon type register. Refer to NODAL_DISP_RATE in the following table.

- The whole values and fraction values for ACTUAL_GEN, DDP, DEVIATION, and RESPONSE_RATE are stored in separate registers. For example, the whole number portion of DDP is stored in register 30009 and the fraction portion is stored in 30047. Refer to the table.

Oracle Field Name	Range	Description	Modbus Registers
First Asset			**30001 - 30100**
UNIT_ID		Reserved (Not Used)	30001
TIMESTAMP_DDP	2000-9999	Year (GMT)	30002
	1-12	Month (GMT)	30003
	1-31	Date (GMT)	30004
	0-23	Hour (GMT)	30005
	0-59	Minute (GMT)	30006
	0-59	Second (GMT)	30007
MESSAGE_TYPE	1-4	1 = Normal 2 = Emergency 3 = Start Up 4 = Shut Down	30008
DDP	0-9999	Integer portion of the DDP	30009
ACTUAL_GEN	0-9999	Integer portion of the Actual MW generation or consumption	30010
DEVIATION	-999 to 999	Integer portion of the difference between the Actual and the DDP MW values	30011
MARKET_FLAG		Reserved (Not Used)	30012
OPER_INFO_FLAG1		Reserved (Not Used)	30013
OPER_INFO_FLAG2		Reserved (Not Used)	30014
OPER_INFO_FLAG3		Reserved (Not Used)	30015
ECOMAX	0-9999	Economic Maximum MW Limit	30016
REG_HIGH	0-9999	Regulation High Limit	30017
ECOMIN	0-9999	Economic Minimum MW Limit	30018
REG_LOW	0-9999	Regulation Low Limit	30019
SELFSCHEDULE	0-3	0 = Not self scheduled 1 = Self scheduled for Energy 2 = Self scheduled for Regulation 3 = Self scheduled for both Energy and Regulation	30020
EMERMIN	0-9999	Emergency Minimum MW Limit	30021

Oracle Field Name	Range	Description	Modbus Registers
MANUAL_DOWN	0-9999	Reserved (Not Used)	30022
RESPONSE_RATE	0-9999	Integer portion of the Response Rate in MW/sec	30023
REG_RANGE	0-9999	Regulation Range in MW	30024
ACK_REQUIRED	0,1	0 = No acknowledgment required 1 = Acknowledgment required	30025
TRANSMIT		Reserved (Not Used)	30026
PERIODID		Reserved (Not Used)	30027
AGC	0,1	0 = Not on AGC 1 = On AGC	30028
UCM	1-6	Unit Control Mode 1 = Off-line Unavailable 2 = Off-line Available 3 = Fixed 4 = Dispatchable 5 = Postured 6 = On Regulation (AGC)	30029
CURR_REG_PRICE	0-9999	Current Regulation Clearing Price – Dollars	30030
	0-99	Current Regulation Clearing Price – Cents	30031
TMSRPRICE	0-9999	TMSR Market Clearing Price – Dollars	30032
	0-99	TMSR Market Clearing Price – Cents	30033
TMNSRPRICE	0-9999	TMNSR Market Clearing Price – Dollars	30034
	0-99	TMNSR Market Clearing Price – Cents	30035
NODAL_DISP_RATE	0-9999	Ex-ante nodal dispatch rate – Dollars	30036
	0-99	Ex-ante nodal dispatch rate – Cents	30037
AGCPRICE		Reserved (Not Used)	30038
		Reserved (Not Used)	30039
FAILURE_TO_FOLLOW	0,1	0 = Following DDP 1 = Failure to Follow DDP	30040
POSTURED	0,1	0 = Not postured 1 = Postured	30041
TMOR		Reserved (Not Used)	30042
HOURAHEADDDP	0-9999	Reserved (Not Used)	30043
TMORPRICE	0-9999	TMOR Market Clearing Price – Dollars	30044
	0-99	TMOR Market Clearing Price – Cents	30045
ACTUAL_GEN	0-9	Fractional portion of the Actual MW generation or consumption	30046
DDP	0-9	Fractional portion of the DDP	30047
DEVIATION	0-9	Fractional portion of the difference between the Actual and the DDP MW values	30048
RESPONSE_RATE	0-9	Fractional portion of the Response Rate in MW/sec	30049
MESSAGE_ACK	1	Message Acknowledgment	00001

Oracle Field Name	Range	Description	Modbus Registers
Second Asset			**30101-30200**
MESSAGE_ACK	1	Message Acknowledgment	00011
ACK_REQUIRED	0,1	0 = No acknowledgment required 1 = Acknowledgment required	30125
Third Asset			**30201 - 30300**
MESSAGE_ACK	1	Message Acknowledgment	00021
ACK_REQUIRED	0,1	0 = No acknowledgment required 1 = Acknowledgment required	30225

5.4 DDP ALERT MESSAGE ACKNOWLEDGMENT

The ACK_REQUIRED register is set to a 1 when the Dispatch data is in either *Emergency, Startup* or *Shutdown* mode.

Oracle Field Name	Range	Description	Modbus Register
ACK_REQUIRED	0,1	0 = no acknowledgment required 1 = acknowledgment required	30025

The system can acknowledge receipt of the message by writing a value of one **1** into the MESSAGE_ACK coil for the particular asset.

Oracle Field Name	Range	Description	Modbus Register
MESSAGE_ACK	1	Generator Message Acknowledgment	00001

The DAS4000 system will immediately process the asset acknowledgement and reset the MESSAGE_ACK coil. The ACK_REQUIRED value will remain set until a new dispatch message is received from the ISO with the ACK_REQUIRED value set to **zero (0)**. Note that messages are generated and acknowledged on a per asset basis.

NOTE

The *Alert Message Acknowledgement* example described above shows the ACK_REQUIRED and MESSAGE_ACK registers that are used for the first asset configured in the RIG. The table below lists the appropriate acknowledgement registers for other assets within the RIG.

Oracle Field Name	Description	1st Asset	2nd Asset	3rd Asset	4th Asset
ACK_REQUIRED	0 = no acknowledgment required 1 = acknowledgment required	30025	30125	30225	30325
MESSAGE_ACK	Generator Message Acknowledgment	00001	00011	00021	00031

6.0 FTP INTERFACE

The FTP Interface provides a means for a dedicated computer to receive current dispatch data in a file format over a local area network. The customer must provide a computer configured with an ftp file transfer program, and a connection to the secondary Ethernet module installed in the RIG. The RIG sends an updated file containing current dispatch data for all assets as new data is received. The RIG can also provide an ftp transfer of the daily history file at the end of the day.

NOTE

It is recommended that the ftp program included with WIN2000 or NT Server be used. Testing has revealed problems with several after market ftp programs.

The RIG is the master of all file transfers to and from the ftp designated workstation. When asset messages require acknowledgment, the RIG writes the new dispatch file to the ftp directory and looks for the acknowledgement file in the same directory. The ftp workstation system must *watch* for the new dispatch data file and automatically create an *acknowledgment file*. When the RIG finds the acknowledgement file, it is processed and then deleted.

This option also allows for data to be viewed using a web browser on a PC connected on the same network.

The customer must provide the IP address of both the RIG secondary Ethernet card, the address of the receiving computer, and directory and login information of the computer to receive the dispatch data.

In order to enable the ftp interface and web browser options, the customer must supply IP addresses, directory information, and login information by completing and submitting the Generator File Transfer Form located in *Appendix B*.

6.1 FTP INTERFACE CONFIGURATION

6.1.1 Second Ethernet Module

The FTP Interface requires that a second Ethernet module be installed in the RIG. The module is configured at the Qualitrol factory based on the information supplied in the **Generator File Transfer Form**. The module is shown below:
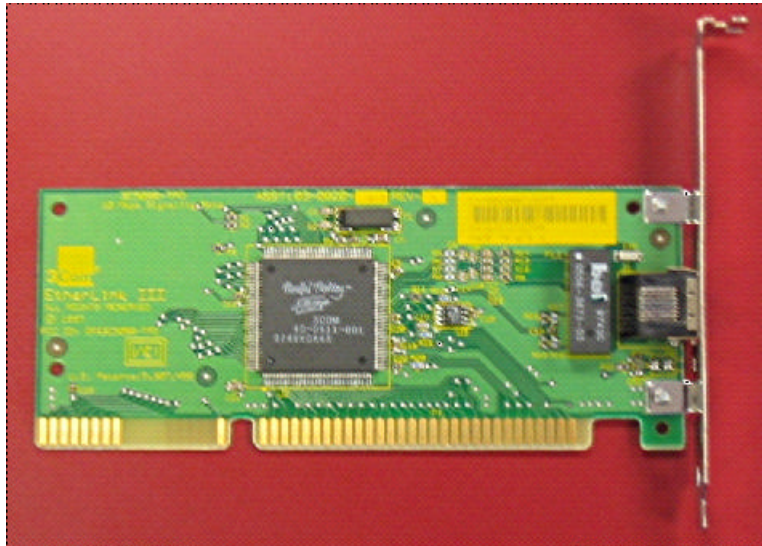
6.1.1.1 Electrical Connection

The RIG is connected to the same local area network as the ftp workstation. A 10/100 BaseT connector is used to connect the RIG to a switch, router or hub within the LAN (Local Area Network).

6.2 DISPATCH DATA ACCESS

During operation, dispatch data is transmitted via the FTP protocol into a pre-defined *ftp transfer directory* at the ftp client computer in a file named CURDDP.TXT. At this point, the user only needs to extract the data as required.

6.3 FTP DATA FILES

The following describes the files that appear in the ftp transfer directory at the user workstation:

Filename	Contents	Source
CURDDP.TXT	Current DDP data for all RIG assets	RIG
HDDPMMDD.TXT	All DDP messages for the day and month	RIG
ACK.TXT	Acknowledgment message for unit(s) in an alert condition.	FTP Client
CFG.TXT	Configuration information defining update intervals and other parameters.	Default supplied with system, but can be modified by the user.

6.3.1 CURDDP.TXT File Fields

The **CURDDP.TXT** file is sent via ftp to the user designated computer and directory whenever new dispatch data is received, but no more frequently than specified by the user in the **CFG.TXT** file. The CURDDP.TXT file contains dispatch data for **all** assets associated with the RIG, even if only a single unit recorded a change.

The CURDDP.TXT file is an ASCII, comma delimited text file in which each row is delimited by a carriage return character and contains the current dispatch message for one asset. There is one row for each asset associated with the RIG. The fields of the message are delimited by the commas. The following table describes each of the fields.

MESSAGE_ID	Oracle Data Type	FTP Value	Description
DESIGNATEDENTITY	VARCHAR2(14)	14 characters	Designated Entity
RIG_ID	VARCHAR2(14)	8 characters	Unique RIG Identifier
UNITID	VARCHAR2(14)	5 characters	Asset Identifier
TIMESTAMP_DDP	DATE	mm/dd/yyyy hh:mm:ss	Date/Time of DDP (GMT)
MESSAGE_TYPE	VARCHAR2(25)	EMERGENCY NORMAL STARTUP SHUTDOWN	Message Type

MESSAGE_ID	Oracle Data Type	FTP Value	Description
UCM	NUMBER	1-6	Unit Control Mode 1 = Off-line Unavailable 2 = Off-line Available 3 = Fixed 4 = Dispatchable 5 = Postured (Generators only) 6 = On Regulation (Generators only)
AGC	NUMBER	0 or 1	0 = Not on AGC 1 = On AGC (Generators only)
DDP	NUMBER	xxxx.x	Desired Dispatch Point (MW)
ACTUAL_GENERATION	NUMBER	xxxx.xxx	Actual generation/consumption MW value
DEVIATION	NUMBER	xxxx.xxx	Difference between DDP and Actual_Generation MW values
HOL	NUMBER	xxxx	Not Used. Data in field is not meaningful.
AHL	NUMBER	xxxx	Not Used. Data in field is not meaningful.
ALL	NUMBER	xxxx	Not Used. Data in field is not meaningful.
LOL	NUMBER	xxxx	Not Used. Data in field is not meaningful.
SELFSCHEDULE	NUMBER	0-3	0 = Not Self-Scheduled 1 = Self-Scheduled for Energy 2 = Self-Scheduled for Regulation (Generators only) 3 = Self-Scheduled for both Energy and regulation (Generators only)
MANUP	NUMBER	xxxx.xxx	Not Used. Data in field is not meaningful.
MANDOWN	NUMBER	xxxx.xxx	Not Used. Data in field is not meaningful.
AUTOUP	NUMBER	xxxx.xxx	Not Used. Data in field is not meaningful.
AUTODOWN	NUMBER	xxxx.xxx	Not Used. Data in field is not meaningful.
HOURAHEADDDP	NUMBER	xxxx.xxx	Not Used. Data in field is not meaningful.
ENERGYPRICE	NUMBER	xxxx.xxx	Not Used. Data in field is not meaningful.
TMSR	NUMBER	dddd.cc	TMSR Market Clearing Price – dollars and cents
TMNSR	NUMBER	dddd.cc	TMNSR Market Clearing Price – dollars and cents

MESSAGE_ID	Oracle Data Type	FTP Value	Description
TMOR	NUMBER	dddd.cc	TMOR Market Clearing Price – dollars and cents
AGCPRICE	NUMBER	xxxx.xxx	Not Used
ACK_REQUIRED	NUMBER	0 or 1	0 = Acknowledgment NOT Required 1 = Acknowledgment Required
ECOMAX	NUMBER	xxxx	Economic Maximum MW Limit
REG_HIGH	NUMBER	xxxx	Maximum Regulation MW Limit (Generators only)
REG_LOW	NUMBER	xxxx	Minimum Regulation MW Limit (Generators only)
ECOMIN	NUMBER	xxxx	Economic Minimum MW Limit
EMERMIN	NUMBER	xxxx	Emergency Minimum MW Limit (Generators only)
RESPONSE_RATE	NUMBER	xxxx.x	Response Rate of the asset
REG_RANGE	NUMBER	xxxx	Regulating Range in MW (Generators only)
CURR_REG_PRICE	NUMBER	dddd.cc	Regulation Clearing Price – dollars and cents
NEXT_REG_PRICE	NUMBER	xxxx.xxx	Not Used. Data in field is not meaningful.
SPINRES_PRICE	NUMBER	xxxx.xxx	Not Used. Data in field is not meaningful.
NODAL_DISP_RATE	NUMBER	dddd.cc	Ex-ante nodal dispatch rate – dollars and cents
FAILURE_TO_FOLLOW	NUMBER	0 or 1	0 = Following DDP 1 = Failure to Follow DDP
POSTURED	NUMBER	0 or 1	0 = Not Postured 1 = Postured

6.3.2 CURDDP.TXT File Structure

The current DDP file is an ASCII, comma delimited text file containing the current dispatch data for all assets assigned to a RIG. The following is an example of the file from a RIG that supports five assets:

```
RIG001        ,RIG001        ,AMOS          ,08/23/2006 15:39:28 ,NORMAL                    ,
3,0,    15.0,       15.000,        0.000,       15,       15,        15,       15,        1,
15.000,     15.000,        0.000,        0.000,        0,     102.690,        0.000,        0.000,
0.000,       0.000,        0,       15,       15,        15,       15,       15,     15.0,        0,
11.000,       0.000,        0.000,     102.690,        0,        0

RIG001        ,RIG001        ,CBTF          ,08/23/2006 15:39:28 ,NORMAL                    ,
4,0,    42.0,       42.000,        0.000,       66,       66,        42,       42,        1,
25.000,     25.000,        0.000,        0.000,        0,     107.200,        0.000,        0.000,
0.000,       0.000,        0,       66,       66,        42,       42,        2,     25.0,        0,
11.000,       0.000,        0.000,     107.200,        0,        0

RIG001        ,RIG001        ,LINDE         ,08/23/2006 15:39:28 ,NORMAL                    ,
4,0,    12.0,       25.000,       -13.000,       40,        0,         2,        0,        1,
2.000,       2.000,        2.000,        2.000,        0,     102.540,        0.000,        0.000,
0.000,       0.000,        0,       40,        0,         0,        2,        2,      2.0,        0,
0.000,       0.000,        0.000,     102.540,        1,        0

RIG001        ,RIG001        ,NFLD          ,08/23/2006 15:39:28 ,STARTUP                   ,
2,0,   130.0,        0.000,       130.000,      810,      260,       130,      130,        0,
6.000,       6.000,       60.000,       60.000,        0,     103.540,        0.000,        0.000,
0.000,       0.000,        1,      810,      260,       130,      130,      125,      6.0,       65,
11.000,       0.000,        0.000,     103.540,        0,        0

RIG001        ,RIG001        ,NFLDP         ,08/23/2006 15:39:28 ,NORMAL                    ,
2,0,     0.0,        0.000,        0.000,     1080,        0,         1,        0,        0,
200.000,    200.000,      200.000,      200.000,        0,     103.540,        0.000,        0.000,
0.000,       0.000,        0,     1080,        0,         0,        1,        1,    200.0,        0,
0.000,       0.000,        0.000,     103.540,        0,        0
```

The field definitions are listed below:

```
DESIGNATEDENTITY,    RIG_ID,     UNIT_ID,      TIMESTAMP_DDP (GMT),      MESSAGE_TYPE,
UCM,    AGC,    DDP,      ACTUAL_GENERATION,      DEVIATION,    HOL,     AHL,     ALL,     LOL,
SELFSCHEDULE,      MANUP,      MANDOWN,      AUTOUP,      AUTODOWN,      HOURAHEADDDP,
ENERGYPRICE,    TMSR,      TMNSR,      TMOR,      AGCPRICE,      ACK_REQUIRED,      ECOMAX,
REG_HIGH,     REG_LOW,      ECOMIN,      EMERMIN,      RESPONSE_RATE,     REG_RANGE,
CURR_REG_PRICE,      NEXT_REG_PRICE,      SPINRES_PRICE,      NODAL_DISP_RATE,
FAILURE_TO_FOLLOW,     POSTURED
```

6.3.3 HDDPMMDD.TXT File Structure

The historical DDP file contains an ASCII, comma delimited record for each DDP update received from the Electronic Dispatch system for the entire day. A new file is created every day with a corresponding change to the **MMDD** part of the file name. **Files are retained for seven days.** The field definitions follow the same structure as the **CURDDP.TXT** file.

6.3.4 ACK.TXT File Structure

Typically, ISO-NE messages are acknowledged by the RIG operator. The ftp connection can be utilized to automatically acknowledge messages by creating a file named **ACK.TXT** in the ftp transfer directory. The file must contain the asset information and the appropriate acknowledge flag to be sent to the RIG. An example of an **ACK.TXT** file is shown below:

Middleton 2,MIDDLET2,BRAN,Y

Middleton 2,MIDDLET2,CC10,N

Middleton 2,MIDDLET2,CC11,N

Middleton 2,MIDDLET2,CC12,N

Middleton 2,MIDDLET2,FRDR,N

Middleton 2,MIDDLET2,TT10,N

The field definitions are as follows:

DESIGNATEDENTITY, RIG_ID, UNITID, ACKFLAG

6.3.5 CFG.TXT File Structure

The **CFG.TXT** file contains the configuration information that is used by the RIG for FTP communications. The active copy of the file resides on the RIG.

If the CFGMODE parameter value is greater than zero (0), the RIG will periodically check the FTP directory at the local computer for a new cfg.txt file. If a new file is found, the RIG will retrieve it and replace the previous version. This allows RIG owners to modify FTP parameters.

Field Name	Data Type	Contents
IPADDR	String	IP Address of user specified PC
ACCT	String	ftp user name
PSWD	String	ftp user password
DIRECTORY	String	ftp directory
CURDDPMODE	Number	0 = do not send updates 1 = send updates on change >1 = minimum number of seconds between transfers
HDDPMODE	Number	0 = do not send updates 1 = send updates at the end of the day
ACKMODE	Number	0 = no acknowledgments >0 how often in seconds to check for a new acknowledgment file
CFGMODE	Number	0 = no user supplied CFG.TXT file >0 = how often in minutes to check for a new CFG.TXT on the user's computer

An example of the **CFG.TXT** file is shown below:

> **ip:192.168.240.2**
>
> **account:RIGDATA**
>
> **password:FTPPSWD**
>
> **dir:/rigftp/**
>
> **curddpmode:120**
>
> **ackmode:10**
>
> **cfgmode:1**
>
> **hddpmode:1**

7.0 APPENDIX A - ALARM INTERFACE MODE SELECTION

Contact the appropriate ISO-NE representative and be prepared to provide the following information:

Generator Name	
Street Address	
City	
State	
Zip Code	
Authorized by	
Phone	
Email Address	

RIG Name	System Status Mode	Unit Status Mode

8.0 APPENDIX B - GENERATOR FILE TRANSFER FORM

Contact the appropriate ISO-NE representative and be prepared to provide the following information:

Generator Name	
Street Address	
City	
State	
Zip Code	
Authorized by	
Phone	
Email Address	

Field	Description	Value
IP Address of RIG	IP Address RIG Ex: 192.168.0.1	
IP Address of User Workstation or PC	IP Address of user specified workstation or PC Ex: 192.168.0.2	
Network Mask	Network mask for User local network Ex: 255.255.255.0	
Network Gateway	Network Gateway if RIG & User PC are not on same subnet Ex: 192.168.0.255	
ftp transfer directory	The name of the user directory to be used for file transfers (this directory may be specified in either the cfg.txt file **or** in the user setup of the ftp daemon.) Ex: /rig/dispatch_data/	
ftp user name	ftp user name Ex: Rigftpuser	
ftp password	ftp user password Ex: Rigftppwd	
dispatch data update frequency	0 = do not send updates 1 = send updates on change >1 = minimum number of seconds between transfers Default = 10	
Daily historical log file updates	0 = do not send updates 1 = send updates at the end of the day	
Message Acknowledgment Check Frequency	0 = no acknowledgments >0 how often in seconds to check for a new acknowledgment file. Default = 30	
New Configuration File Check Frequency	0 = no user supplied CONFIG.TXT >0 = how often in minutes to check for a new CFG.TXT on the user's computer Default = 10	