

## DESCRIPTION

**APPLICATIONS:** GALAXYnet System Software is the host software installed on a utility-supplied personal computer that controls and operates the GALAXY® fixed network radio-frequency automatic meter reading system. GALAXYnet is available in two configurations: GALAXYnet Single User and GALAXYnet Multi User.

Both versions function to retrieve meter data from the Data Collectors, create and store a database of meter account data, export data to external billing systems and other programs, and allow management of various GALAXY system components. GALAXYnet analyzes the meter data according to standard and customized parameters, generates reports of results of analyses, and allows multiple users on a networked configuration. GALAXYnet Single User can easily be upgraded to GALAXYnet Multi-User.

### GALAXYnet Software

The system is a powerful but easy-to-use system that utilizes a graphical user interface that allows the operator to easily monitor functions, manage the hardware, collect data, generate reports, and import and export data. The system utilizes Microsoft® Windows® 2000 or XP. In addition, the system incorporates Magic® and Pervasive SQL; both are supplied as applications within GALAXYnet. The software itself is provided to the utility on a standard CD ROM for loading on a customer-supplied personal computer. Within the software, there are various data elements stored, including consumer information, consumer-type attributes that can be defined by the utility for use in analyzing utility operations, historical and current meter reading data, and data about the meter itself.

GALAXYnet has routine functions necessary to program and manage the Data Collectors, retrieve data from the Data Collectors, view and analyze meter data, convert data and send to the billing system, and control the various data files. Functions include:

- Manage the Data Collectors: Configuring and programming each Data Collector is accomplished through GALAXYnet.
- Scheduled and Unscheduled Reads: Downloading of a Data Collector is controlled by GALAXYnet. While the typical download will occur once a day, unscheduled downloads are possible whenever desired. The user can define which data collectors are to be called, in what sequence, and how the data collected is to be used.
- Download Data Collector for display, review, and reporting: Data that has been downloaded can be reviewed at the level of each meter connection, with the ability to sort the downloaded data according to a variety of data parameters. Transmission and reading events are reported as well as data collector status.



- Export Data: Data is easily transferred to external systems such as a billing system through the development and use of user-defined standard and customized templates. The desired data elements fill the template and are then exported via user-defined formats. Export formats include CSV (Excel) and Fixed Length Records.
- Import data: Just as in exporting data, the import function takes data from the billing system based on user-defined standard or customized templates.
- Print reports: Standard reports and screen data can be easily printed.
- Maintain a Database of Historical Reads: Each download is saved in a file for later access.
- Search and Display a Consumer: The data file allows searching for a specific consumer by name, address, or other parameter. Once the consumer file is retrieved, the historical meter data is displayed.
- View Data Collector: A display of all transmission activity and other statistics by transmitter is available. The program also calculates the net changes between two user-defined dates.
- Maintenance Tasks: Managing data collectors, deleting consumers and collectors, updating tables, and defining various system settings are accomplished here.

In addition, GALAXYnet incorporates comprehensive tools for managing, reporting and archiving consumption data. The software also allows multiple users on a network within a utility. Functions include:

- Sorts and Searches: Data can be presorted by Data Collector, resulting in faster searching. The search is achieved through the use of various drop-down menus, and by defining various search parameters.
- Non-Advancing Meters: If a meter reflects zero consumption between the download dates selected, they will be automatically identified and reported as suspected non-advancing meters. The definition of non-advancing can be established by the utility as a

default for all consumers, by consumption group, or even by individual consumer.

- Suspected Leakage: Those meters that have suspected leakage can be grouped by type of consumer for later follow-up by the utility.
- Standard Reading Reports: Simply select a date and the standard reading report will be displayed. The user can view it, print it, or select another date.
- Exception Reports: Instances of unexpected consumption can be identified and grouped by type of consumer. Consumers can then be advised by the utility to check for possible problems. The definition of unexpected consumption can be established by the utility as a default for all consumers, by consumption group, or even by individual consumer.
- Consumption Graphing: Using the historical meter reading files, a consumer profile graph can be readily created and displayed
- Status Report: By selecting a data collector, start date and end date, a complete status report with consumption data and transmission information is presented. This report simplifies the process of special reads for move-ins/move-outs.
- Group Reading: This details the consumption between a main meter and the grouped meters downstream from the main meter. This allows for searching for unaccounted losses.
- System Performance Reports: These reports provide detailed system infrastructure information through a Repeaters Report, which identifies each transmitter activity, and the Transmission Report that identifies reception activity of each transmitter.
- Maintenance Functions: Drop down menus allow the creation of new data collectors, activate or deactivate a data collector, create meter data and values, and create and add consumers.
- Meter Data: Allows storing data for work order or replacement requirements. Data includes meter location, meter manufacturer, model number, installation date, and other site information.
- Monthly Action Items: This function can identify malfunctions, receptions/transmissions, and status (non-advancing meters, unusual consumption, other errors). Corrections can then be updated, and a new review report can be generated after updating.

**MIXED TECHNOLOGY SYSTEMS:** GALAXYnet can easily be configured with other AMR technologies that utilize Badger Meter's CONNECT software. This solution allows a utility to continue to utilize other AMR technologies, either for a short term while a total transition to GALAXY® is implemented, or indefinitely where both solutions are utilized.

**INTERFACE TO BILLING SYSTEM:** GALAXYnet can be interfaced to the utility billing system in several ways. GALAXYnet can utilize standard predefined templates to export data directly to the billing system. Alternatively, if a

mixed technology AMR system exists within a utility that utilizes Badger Meter's CONNECT software, CONNECT and GALAXY software can be interfaced so that one system interfaces to the billing system as well as the other system. Badger Meter can assist in identifying the various alternatives for a specific situation and then developing the appropriate solution.

**UPGRADING FROM SINGLE USER TO MULTI USER:** The two versions of software are configured so that a seamless upgrade from Single User to Multi User can be easily accomplished at any time. The upgrade saves all current system settings and data.

#### **SYSTEM REQUIREMENTS**

GALAXYnet software utilizes a customer-supplied computer. The minimum computer system configuration required for GALAXYnet system software includes:

##### **Computer**

CPU – Pentium III or above  
Hard disk drive – 20 GB or larger (5 GB available for CONNECT use if applicable)  
CDROM Drive – for software installation  
Operating System – Windows® 2000 or XP  
RAM – 512 MB or higher  
USB ports – one slot dedicated for GALAXYnet security key; additional ports may be needed for other equipment  
Parallel Port – for local printer  
Modem – internal 56K or higher to dial concentrator or dedicated serial port for direct connection from PC to Collector  
Monitor – 17" or larger  
Mouse – PS/2 style  
Keyboard – standard  
Other software – Microsoft Excel can be utilized for importing and exporting data

##### **Other Recommended Equipment**

Printer – Laser or Ink Jet  
Network Adapter – User specific (for GALAXYnet Multi-User)  
Power Strip or console – 6 outlet with Surge Protection  
Backup Power Supply – to insure uninterrupted power

##### **Backup Considerations**

A means to back up GALAXYnet data must be provided. If it is not done through a network, a Zip Drive or other means of removable backup can be used.

#### **INSTALLATION AND MAINTENANCE**

Comprehensive operator training and assistance loading the system software on the customer-supplied computer is included with the sale of GALAXYnet Software. Software/hardware maintenance agreements are available and sold separately to provide ongoing service and access to future software upgrades.

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