



# Field Computing News

Volume 4

Juniper Systems, Inc.

February 2003

## Our Commitment to Rugged, Reliable Field PCs

### New Allegro CE Field PC

The Allegro CE™ was introduced in 2002 as part of our ongoing commitment to provide Field PCs for rugged applications.



Like our time-tested Allegro CE/DOS, the Allegro CE has become a field computing standard in the traditional

natural resource and agriculture research markets that we serve. The Allegro is also widely used in other rugged applications such as mobile GIS/GPS and land survey.



In addition to the standard Allegro Field PC features that include a rugged, waterproof, field-ergonomic design and long battery life, the Allegro CE offers these benefits:

#### ▼ Fast Processor for Superior Performance

Intel's® StrongARM® SA1110 206 MHz processor provides great speed and performance.

#### ▼ Display Provides Excellent Visibility

The clarity of the display and non-glare touchscreen make information easy to read outdoors. The 1/4 VGA display offers 18 percent more viewing area than other units.

#### ▼ Plenty of Memory for Program Execution

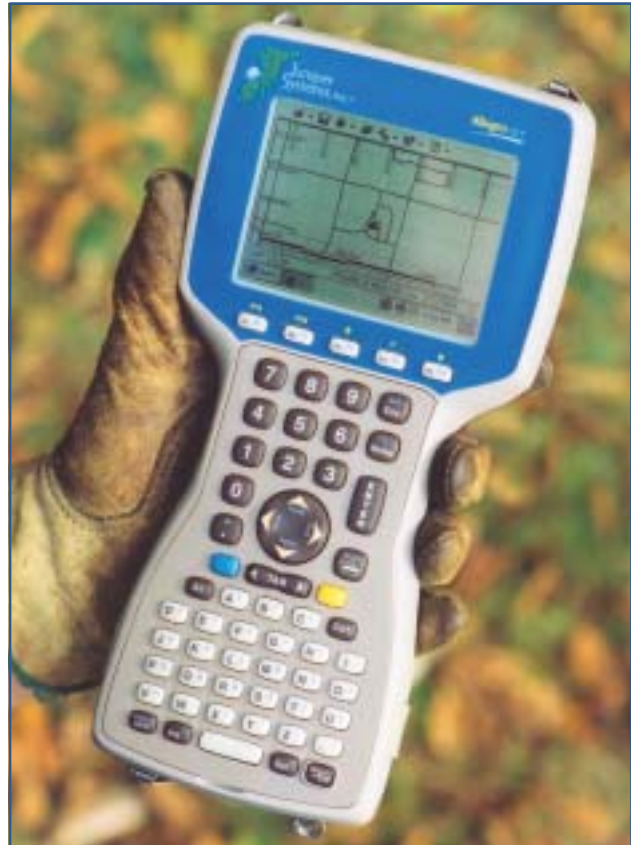
SDRAM from 32 to 64 M is available, providing sufficient memory to run programs like GIS.

#### ▼ Secure Data and Program Storage

Solid state disk storage options range from 32 to 256 M.

#### ▼ Fast File Transfer and Synchronization

The USB port provides fast file transfer. Using the USB/Power Dock™ you can quickly transfer



and synchronize files between the Allegro CE and a PC. The Allegro is charged while it is docked. Multiple USB/Power Docks can be attached to one PC.

Contact us for more information or visit our web site: [www.junipersys.com](http://www.junipersys.com). ■

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Juniper Systems, Inc. Provides:

- Rugged Field Computers
- Mobile GIS and GPS
- HarvestMaster™ Brand Data Collection Tools for Agriculture



## HydroPlus Software Suite for Water Quality Data Collection

*HydroPlus offers a suite of software choices for collecting position tagged water quality data.*

Three versions of HydroPlus™ are available to accommodate different computer operating systems and application needs:

- *New HydroPlus GIS runs on the Allegro CE*
- *HydroPlus CE runs on the Allegro CE*
- *HydroPlus DOS runs on the Allegro CE/DOS*

HydroPlus links the Allegro Field PC, a Hydrolab multiparameter probe, and GPS receiver, allowing you to collect water quality and GPS location at the click of a button. In addition, HydroPlus:

- Allows automatic and manual data collection, hand key annotation of data files, and creation of waypoints
- Provides GPS navigation for easy location of sample and waypoints
- Stores data in spreadsheet importable files
- Provides files that can be used in the GIS as linked tables



*Water quality data are collected using a HydroPlus probe attached to an Allegro Field PC running Hydroplus software.*

*Photo credit: Electronic Data Solutions*

### DataPlus® CE Applications Generator Being Developed

Electronic Data Solutions will soon be releasing DataPlus CE, the Windows CE module for their DataPlus Professional Applications Generator. Data collection applications are quickly created and tested on a desktop PC, then transferred to the Allegro CE.

DataPlus versions for generating DOS programs have been used successfully for many years on the Allegro CE/DOS and the Pro4000 DOS Field Computer. Current DataPlus users will be able to run existing DataPlus applications, without modification, on the Allegro CE. This feature will give you the ability to upgrade to the latest Windows CE hardware without having to redesign your software.

For more information, go to:  
[www.elecdata.com/dataplus/index.html](http://www.elecdata.com/dataplus/index.html). ■

### HydroPlus GIS Program

HydroPlus GIS retains the full functionality of ArcPad 6 and adds the data collection features of HydroPlus. You can collect water quality and other types of data and completely integrate the data into the GIS in the field. GPS locations recorded with a Trimble GPS receiver can be differentially corrected using Trimble GPScorrect™ software. You can choose which fields get recorded in the shapefile.

HydroPlus GIS, developed by Electronic Data Solutions, won the best ArcPad™ 6 Template contest at the 2002 ESRI User Conference.

### HydroPlus DOS and HydroPlus CE Programs

Both HydroPlus DOS and HydroPlus CE allow direct communication with the Hydrolab multiparameter probe for configuration, calibration, and data retrieval. Recorded data can be imported into DataSight™, a powerful database with graphing and analysis capability. DataSight can easily import data from a variety of diverse sources, including different data-logger formats, into one fully configurable database. Hydroplus CE gives you the added ability to do grab samples, real time graphing as well as create graphs of historical data.

Electronic Data Solutions has a comparison document that lists the features of each of the programs in the HydroPlus suite. You can view it at:

[www.elecdata.com/hydroplus/index.html](http://www.elecdata.com/hydroplus/index.html).

*Author: N. R. Rusty Munn, Water Resource Manager, Electronic Data Solutions. HydroPlus software can be purchased from Juniper Systems or from Electronic Data Solutions: [www.elecdata.com](http://www.elecdata.com). ■*

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## New EASYDC CE Universal Data Collection Software Released

*EASYDC CE empowers you to quickly and effectively build and alter your applications for the Allegro CE.*

EASYDC CE from R. White Woods Inc., builds on the success of EASYDC DOS, which is in use on five continents and in several languages, assessing everything from trees, to fish, to power poles.

Drop down lists, validations, calculations, prompts and individualized help are all available for each field and record. When electronic devices are interfaced to the Allegro, data automatically migrate to the correct fields and records. You can create applications in Microsoft Access as .mdb or .mde files on your desktop PC and send them to the Allegro as a .cdb (compact database). Make alterations and refinements to your application on the Allegro while at the site.



*EASYDC CE is used to assess fresh water fish species.*

*Photo credit: Jim Pelttari of R. White Woods Inc.*

*Author: Ralph White, President, R. White Woods Inc. This software can be purchased from: [www.whitewoods.com](http://www.whitewoods.com). ■*

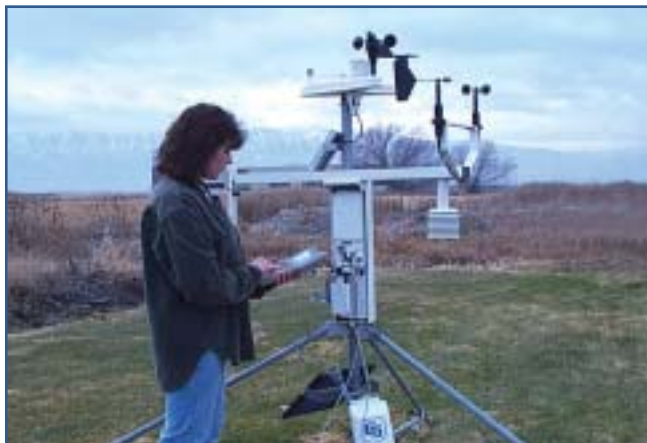
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## PConnect CE Software

*PConnect CE allows Allegro Field PCs to communicate with dataloggers from Campbell Scientific, Inc.*

You no longer need to risk damaging your laptop PC by taking it into the field to retrieve your data or service your CSI datalogger. The Allegro Field PC is built to withstand use in inclement weather and harsh conditions. PConnect CE runs on the Allegro CE, allowing you to perform the (continued on page 7)



*On-site functions with an Allegro include: monitoring real-time data and retrieving stored data from a datalogger.*

*Photo credit: Angela Johnson*

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## TCruise for Forest Inventory Applications

*TCruise software was developed by Haglof Inc. and Heuristic Solutions to provide foresters with a complete inventory solution.*



*Timber cruise data are collected using a Haglof digital caliper connected to an Allegro CE.*

*Photo credit: Sean White and R. White Woods, Inc.*

### Simple to Use

TCruise consists of a suite of powerful, yet simple to use forestry applications that can perform flawlessly during the smallest to the largest forest inventory. With easy to set up template systems and the flexibility to operate on many software platforms, TCruise has brought forest inventory software to a new level.

### TCruise for Windows CE

TCruise Win CE runs on the Allegro CE, providing a spreadsheet interface for collecting point, plot, double point, and timber trespass cruise data. Plot data are recordable by geographic coordinates (lat/long) and strata. A cruise data file can easily be post stratified into component stands for processing individually or as a stratified sample.

The primary features of TCruise Win CE are:

- Template based to easily maintain multiple cruise specifications
- User definable species, products and grade codes
- Administrator protection of parameters to prevent unauthorized changes (continued on page 7)

## NZ Rock Lobster Fisheries Implement Electronic Data Collection ERNIE: Electronic Recording of Nature, Investigation of Environment

*The NZ RLIC implemented new hardware and software technologies to improve the quality and quantity of fisheries research data and management decision making.*



*Electronic transactions—Simon Anderson and ERNIE at work.  
Photo credit: C. Visser*

The management of New Zealand rock lobster fisheries is contingent upon a credible time series of biological information derived from monitoring of the fisheries from catch, effort, and landing data provided by commercial fishermen, and from statutory catch and processing reports made by commercial and customary fishermen. This information is essential to the annual rock lobster stock assessment process and fisheries management decision making.

### Manual Data Collection

Traditionally, fisheries stock monitoring entails trained technicians in two-person teams on board fishing vessels manually recording information about rock lobster length, sex, maturity, injury index, as well as weather and sea conditions, water depth, method of capture etc. This is a time-consuming and laborious process and the need to record data accurately is made all the more difficult by the unstable working platform and the conditions encountered on the deck of a working fishing vessel.

The manual records are subsequently compiled for electronic data entry. There are two error checking procedures that comprise part of the elaborate standards and specifications for data entry and data base management set by the Ministry of Fisheries. The electronic data entry process is time consuming, and therefore expensive.

### The Search for Innovation

The notion of electronic data collection lingered for many years because of a lack of technology and funding. However, in 2000 the New Zealand Rock Lobster Industry Council decided that it was an idea whose time had come. Inspiration for the project came from retired Southland rock lobster fisherman Ernie Cave, for whom the system was named. Ernie was a good fisherman, a stalwart of the CRA 8 industry, an active representative for that industry over many years, an advocate, and an innovator. Long before there were any affordable handheld computers, Ernie was outlining the potential for industry generated electronic data collection on board fishing vessels.

Simon Anderson, Senior Field Technician for the NZ RLIC (former commercial fisherman, MFish observer, and marine research contractor), found the hardware technology—an Allegro Field PC manufactured by North American company Juniper Systems. The Allegro PC is a fully waterproof and shock-proof machine that can operate in extreme conditions. With long battery life, GPS and GIS capabilities, the ability to integrate additional components, and a keypad suitable for gloved hands, the compact Allegro was an ideal choice for the project.

Enter Ralph White, owner of R. White Woods Inc., a forestry consulting firm based in Victoria, BC. Ralph confirmed that moving from logs to lobsters was not an impossible task. Guided and encouraged by the NZ RLIC office, Simon and Ralph transformed the MFish standards and specifications for field data collection and data entry into an electronic format using EASYDC data collection software. *(continued on page 5)*



*Digital calipers, GPS position, Allegro Field PC—fast, accurate recording with ERNIE. Photo credit: T. Burkhart*

Lat. 37

Operating from the Bay of Plenty in the North Island of New Zealand, Lat 37 specializes in the development of innovative solutions for natural resource applications.

Lat37 is a reseller for Juniper Systems in New Zealand and currently supports the Allegro units being used for the ERNIE project and for Interpine.

Globally, Lat37 is developing further solutions with the Allegro for fisheries applications. These include a wireless electronic fish measuring board and the interface of numerous other measurement devices like electronic calipers, spectrophotometers, and GPS.

[www.lat37.com](http://www.lat37.com)

*“There is no similar technology in use in the world’s rock lobster fisheries. ERNIE technology is transferable across fisheries in New Zealand and other countries. NIWA has already purchased a system for use in scampi fishery research.”*

# Allegro Finds Success in New Zealand

## Interpine Standardizes on the Allegro CE for Data Collection

Over the past 20 years Interpine has found its niche in New Zealand and International forestry through developing innovative tools and techniques to monitor and reduce value loss from forestry investments as they progress from pre-harvest to mill gate.

Interpine Forestry currently can have up to 35 hand-held field computers collecting data on any working day to manage forestry value loss for our customers, who are often the forest owners.

### Field Computer Requirements

Our field computers are exposed to a range of environmental conditions, from heavy rain to dusty and muddy harvesting or mill sites. They must also withstand exposure to tree sap, splashed paint, and drops by users. We cannot afford to have any data loss, so a reliable power supply (including rechargeable and alkaline battery options), adequate memory capacity, and pure ruggedness are important considerations. We need flexibility for downloading requirements (flashcard, com ports, modem and infrared) and the computers must be appealing and 'easy to learn' for the operators who are not traditionally computer literate. A range of applications are required that utilize various operating systems from DOS, EPOC16 and recently Windows CE.

### Software for Data Entry

Customized DOS data entry systems are implemented for some services using DataPlus™ Professional,

### NZ RLIC ERNIE Project *(continued from page 4)*

#### Benefits of the ERNIE System

The ERNIE system enables more data to be collected in the time that is available on board fishing vessels, and allows the direct download of electronic data into the research database, providing a more cost effective and timely analysis for inclusion in stock assessments. Existing field staff can be more efficiently deployed given that observations, measurements and recording can be undertaken by one person. Another benefit is a reduction in data entry and data loading errors.

In marine or freshwater fisheries where observers and/or field technicians are required to log extensive biological data for use in subsequent stock assessment or population analyses, the ERNIE system has an application. From the deck of a lobster boat in Southland to everyday use in fisheries stock monitoring – Ernie inspired ERNIE – new technology at work in support of sustainable utilization of NZ rock lobster fisheries.

*The information for this article was taken from an outline of the project by NZ RLIC Executive Officer and Research Program Manager, Daryl Sykes. ■*



Russell Judd, Interpine Resource Forester, collects data with an Allegro CE running ATLAS Cruiser inventory software.

Russell looks after valuation and inventory planning for clients.

Credit for photos: ATLAS Group, NZ Forest Research

MARVL (Method of Assessing Recoverable Volume by Log Type) and LOGGER. With the introduction of Windows CE, a new software system released by New Zealand Forest Research called ATLAS Cruiser™ is being used in the field to collect pre-harvest resource inventory. The data are downloaded daily to PC databases and processed, sometimes via modem. Reports are generated and automatically displayed on our clientzone area on our website: [www.interpine.co.nz](http://www.interpine.co.nz) within 24 hours for viewing.

### Updating our Technology

We needed to begin replacing older, no longer serviceable, ruggedized HP200LX computers. Interpine's rigorous requirements for field computers quickly reduced our options for replacement units. The trial process began in October 2001 with the purchase of an Allegro Field PC. Trials were also run on some of the other options in the industry such as the Husky FEX21. At this time the forestry industry in New Zealand required some leadership in the area of field data collection tools and Interpine was the first forestry services company to make the jump away from a pure DOS device.

During this initial trial period, the Allegro Field PCs stood out as the obvious choice. We standardized our upgrade with the Allegro CE, and now operate three units within our field teams. The PocketDOS emulator enables us to transition legacy DOS applications to the new Allegro CE units. We would like to compliment Juniper Systems on their service and response to our queries.

David Herries, Interpine Principal, Business Development, assisted with this article. ■



*"Speed, reliability and accuracy are key elements within this data supply chain."*



## JC Robinson Seeds, a Golden Harvest Member Company, Uses Allegros for Corn Research

JC Robinson purchased Allegro CE/DOS handhelds to collect data at their corn research stations located in the Midwest.

They also use the Plot Harvest Data System on their New Holland split combines.

Corn data are collected on replicated field plots and in nurseries on the Allegro CE/DOS.

Photo credit: Angela Johnson



Allen Wilson is an assistant station manager at the Henrietta, MO location of JC Robinson Seeds, a Golden Harvest Member Company. His primary focus is to assist in the planting, maintenance and harvest of mid to late-season corn hybrids that are drought

and disease resistant for the western corn belt region.

Wilson has used handheld computers for many years to collect corn data on replicated field plots as well as in nurseries. He primarily uses the PTab™ spreadsheet program on the Allegro CE/DOS to collect flowering dates, stalk counts and general plot ratings.

“I like the ergonomic feel of the Allegro, the large display, full keyboard and fast processing speed. It is easy to take with you and use in the field,” Wilson remarked. “On my PC, I am able to export information from my database program to Excel. I copy this template directly to the Allegro where the data are collected in the PTab spreadsheet program.”

The Allegro can be used with a bar code scanner, electronic scale, and on a research combine with the Plot Harvest Data System, making it very versatile. Wilson invests in

the Allegro because he expects that the units are going to last them for many years to come.

Allen Wilson was interviewed for this article by Keith Hunt, Seed Trade Sales Manager for Juniper Systems. ■

“The decision to use the Allegro was partially based on the reliability and durability of the product. The quality service that Juniper Systems provides for its HarvestMaster products was also a key factor.”

## Automated Weight Data Capture for Forage Harvesters

An automated plot weight data collection system for Swift forage harvesters is now available, saving time and reducing errors.

Juniper Systems worked closely with Swift Machine and Welding Ltd. to put together a system that automates the collection of plot weights on Swift harvesters. An Allegro Field PC is mounted on the harvester and connected to the weight readout box. Two programs run on the Allegro, allowing weight readings to be captured: FieldNotes Plus™ application software, and DOS Wedge™ from Tal Technologies Inc.

To collect data, a field map representing your field layout is created in FieldNotes Plus. After harvesting a plot, the weight reading is sent to the Allegro for storage and the software advances to the next plot in the sequence.

The addition of the Allegro to the forage harvester provides several advantages:

- Weight data are securely stored on the Allegro
- Errors are reduced by eliminating the need to manually write weight readings down on paper
- A hard copy of your data can be obtained in the field with the addition of a field printer
- Data are transferred directly to your desktop PC into an Excel spreadsheet, eliminating manual data entry and making report generation fast and easy

With this system, the time required transform data from the field to a finished report is greatly reduced.

For details regarding the purchase and installation of this forage data collection system, contact Swift Machine and Welding Ltd.:

[www.t2.net/swiftmachine](http://www.t2.net/swiftmachine), or Juniper Systems. ■



Forage data are collected with an Allegro Field PC.

### HarvestMaster Service Update

Effective January 1, 2003, we stopped providing service for the HM-301 HarvestData System and HM-286 Field Computer. These products were discontinued five years ago and many components are obsolete. Please contact our customer service department if you have any questions. ■

## Introducing the New High Capacity GrainGage

The High Capacity GrainGage system provides increased data accuracy and improved cycle time over standard weigh bucket systems. It is used in conjunction with the HarvestMaster Plot Harvest Data System electronics and Allegro Field PC.

Using the patented GrainGage as a foundation, the High Capacity GrainGage's unique design handles 450 bushels per hour and provides accurate data at a rate of more than three plot pairs per minute (less than 20 seconds per plot pair). Compared with standard bucket systems, it provides increased measurement accuracy and provides a greater spectrum in moisture and test weight measurement. The High Capacity GrainGage is available in two models: the HM-2200 Twin Plot and the HM-2100 Single Plot. ■



Our High Capacity GrainGage allows you to collect plot weight, moisture, and test weight on split plot combines.

## PConnect CE Software (continued from page 3)



PConnect CE allows you to collect data from CSI data loggers using the Allegro CE.

Photo credit: Angela Johnson

following functions at the datalogger site:

- Collect and store data
- Transfer programs to and from the datalogger
- Display real-time measurements
- Create unique station files for each datalogger
- Set datalogger flags and ports
- Use terminal mode
- Set datalogger clock
- Enter security codes
- Display and edit labels from datalogger programs

When you return to the office, the datalogger files are transferred to your desktop PC.

Campbell Scientific dataloggers that are supported by PConnect CE include the CR500, CR510, CR10, CR10X, CR23X, 21x and CR7.

PConnect can be purchased from Juniper Systems. ■

## TCruise Software (continued from page 3)

- Required sample size and rough volume estimates can be obtained in the field
- Downloads cruise data to a PC as an ASCII text file
- Comprehensive data validation procedures
- Custom definable tract, plot, and tree level fields
- Automatic backup facility for added data security
- Limiting distance calculator
- Ability to record and hide data columns
- Dot tally input grid

### TCruise for the Desktop PC

For the desktop PC, TCruise is a professional level stand and forest inventory data summarization program for processing data downloaded from TCruise Win CE on the Allegro, entered manually from tally cards, or downloaded from other cruise data collection units via the custom import dll facility.

The main data processing capabilities are:

- Selectable volume reports range from simple

executive summaries to detailed reports by DBH, product, and grade

- Custom report generator
- Forward and backward stand table projection
- Supports height sub-sampling and/or usable height data recording
- Generates reports for any species grouping
- Exports reports to text, word processing, or spreadsheet programs
- Complete dynamic link library facilities are available for importing external data, producing custom reports, exporting volumes and data to text or database files, and accessing user created volume equations, tables, and profile functions

For a complete description of the TCruise product suite and companion products, visit Haglof's North American website at [www.timbercruise.com](http://www.timbercruise.com).

Author: Mike Phelps, Haglof Sales, North America. TCruise software can be purchased from Juniper Systems or from Haglof: [www.timbercruise.com](http://www.timbercruise.com). ■

# Announcements

## New Products and Services

### ▼ ESRI and Trimble Navigation Partnerships:

Our business partnerships with ESRI and Trimble Navigation Ltd. allow us to provide superior systems for mobile GPS and GIS applications with the Allegro CE.



▼ **Mobile GIS/GPS Lease Kits:** GIS/GPS Lease kits are available for organizers of GIS/GPS classes, seminars and training courses. Kits consist of five Allegro CE's with GPS expansion pods which are compatible with several mobile GIS programs.



▼ **Allegro Screen Protectors:** A good source for screen protectors is located on the following web site: [www.purplemoo.com](http://www.purplemoo.com). Enter Allegro in the search box to display the ordering information. The Screen IT! protectors are thin sheets of plastic polymer that help protect the screen from scratches without inhibiting visibility.



▼ **Display Upgrade, Allegro CE/DOS:** If you have an older version of the display (300 x 240 resolution), you can upgrade to our new 1/4 VGA display with 320 x 240 resolution. Improvements offered by the new display include greater contrast and visibility. An upgrade includes a new case front, display, and touch panel. Special pricing is available until May 31. Contact our customer service department for complete specifications, pricing, and an RMA number.



▼ **Updating Windows CE on Your Allegro:** For the Allegro CE, the most recent version of Windows CE Version 3.0 is release 1.01. If you have an earlier version, we recommend that you upgrade your operating system for free from our FTP site. From your browser, go to:

[ftp.junipersys.com](http://ftp.junipersys.com). Select Pub/Allegro CE/WinCE\_Release\_Update\_1.01/WinCERel\_1\_01. Copy this zip file to the hard drive on your PC and execute it. Follow the instructions in the document to update the operating system. For the Allegro CE/DOS, if you still have Windows CE 2.12, an update to Windows CE 3.0 is available. Contact our sales department for pricing and details.

▼ **Improved Battery Door Gasket:** The battery door gasket has been redesigned as part of our continuous improvements to the Allegro Field PC. When a unit comes in for servicing, this gasket is replaced. We began using these gaskets in October 2002.



**If your Allegro has the new gasket, follow these tips to make sure the battery door is securely latched:**

Firmly press the battery door closed using your thumbs on the lower two corners of the door. You will hear two clicks when the door is closed. Push down on the door latches to make sure the door is securely closed.

▼ **New Allegro Shipping Box:** Korrvu® retention packaging is now being used to ship Allegro Field PC products, offering the following benefits:

- 1) This packaging provides vastly superior electrostatic discharge protection compared to the foam shipping material we were using.
- 2) The Allegro and accessories are securely held in place in the center of the container, protecting them from shock and vibration.
- 3) Juniper Systems is dedicated to using environmentally sound materials in our manufacturing processes. Korrvu packaging contains at least 30% recovered paper fiber and is readily recyclable.
- 4) This packaging can be reused for shipment. Please follow the directions included in the box for proper use.



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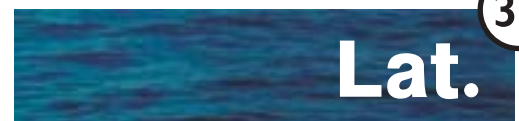


a Campbell Scientific Company  
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*Waterproof and rugged, the Allegro Field PC® keeps your data safe.*

Our Representative in Your Area:



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