

Your Data?



SAFE

Allegro CE/DOS™

Allegro CE/DOS Field PC

Windows CE™ and MS DOS™ in a Rugged, Waterproof Field PC

We are pleased to introduce the Allegro CE/DOS Field PC, a tool for today that meets the demands of the future. The Allegro Field PC defines a new Windows CE product that is built for long-term field use in harsh conditions.

Both Windows CE and DOS for Versatility

An outstanding feature of the Allegro CE/DOS is its ability to run both Windows® CE 3.0 and MS-DOS® 6.22 operating systems. This capability allows you to run all of your existing DOS applications while you develop new applications to run in Windows CE. With its 100 MHz 486 processor, the Allegro speeds through any Windows CE or DOS application with ease.

Rugged, Field-Ergonomic Case Design

Don't let the attractive design fool you. The Allegro is built to withstand the harshest field environments. Keeping the user in mind, we made it lightweight, comfortable to hold, and easy to maneuver while working in less than ideal conditions.

- ▼ The ergonomic shape and smooth edges make it easy to hold, maximizing comfort and usability in the field.
- ▼ The polycarbonate ABS material is rugged, shock resistant, and chemical resistant. During testing, the Allegro was dropped on each corner and face from five feet onto a hard surface.
- ▼ Gaskets completely seal the case from water and dust. The Allegro can be submerged; it even floats.
- ▼ The Allegro weighs less than two pounds. The weight distribution is carefully balanced.
- ▼ No tools are required to access the batteries and PC card.

Superior Keyboard Layout

- ▼ Special keys assist with the operation of Windows CE. The touchscreen toggle key allows you to suspend the screen and clean it without inadvertently making selections.
- ▼ Large numeric keys are located in the center of the keyboard for easy access.
- ▼ Two special coatings prevent the key labels from rubbing off after extended use.
- ▼ With the use of the blue and gold shift keys, twelve functions keys are available.
- ▼ The keyboard bezel protects the keys from tearing. It can be removed, allowing you to clean the keyboard.



Convenient Hand Strap and Shoulder Strap

- ▼ There are four metal cleats, one on each corner of the Allegro case. Each cleat has two metal rings that are used to attach the hand strap and shoulder strap onto the Allegro. The straps can be attached in multiple configurations.

LED Indicators Keep You Informed

- ▼ The LED indicators provide you with information about the battery charge status, external power, charging status, solid state disk access, and PC card access.

Multiple Communication Options

- ▼ There are two standard RS-232 communication ports on the top of the Allegro case.
- ▼ Additional power is provided on COM 1 to power bar code wands and other sensors.
- ▼ There are two IrDA communication ports, one on the top of the unit and one on the bottom. The bottom port has docking pins to connect to a docking cradle.



Large Display With Touchscreen

- ▼ The new display is 1/4 VGA with a resolution of 320 x 240 pixels. The active viewing area is 3.3" wide x 2.5" high (4.1" diagonal), 18% larger than comparable units. (Display upgrades from our previous display models are available.)
- ▼ An adjustable backlight provides visibility in low light conditions.
- ▼ A display heater allows operation in cold temperatures.
- ▼ Four different font sizes are available in DOS, allowing you to select the size that best fits the application.
- ▼ The display touchscreen is used to interface with programs in Windows CE. An onboard stylus snaps into a holding bay built into the top of the case. A full size pen-type stylus is also provided.



Advanced Power Features

- ▼ A standard rechargeable nickel metal hydride battery pack (NiMH) is included. This pack is readily available.
- ▼ During a typical application, you can work 10 to 16 hours between charges. It is possible to work as long as 30 hours.
- ▼ A holder for three AA alkaline cells is optional.



- ▼ An intelligent charging circuit allows you to properly charge the NiMH batteries without over-charging them.
- ▼ A dedicated standard external DC power input jack is located on the top

of the Allegro.

- ▼ A universal AC power adapter is included.

Plenty of Memory and Secure Data Storage

- ▼ 16 or 32 M of low power RAM.
- ▼ 24 or 32 M of non-volatile solid state disk storage.
- ▼ Data are secure without battery backup.
- ▼ A user-accessible PC card slot allows you to add mass data storage and I/O capabilities to the Allegro. It accepts Type I and Type II ATA Flash and SRAM cards, or input/output device cards.



Expandability Gives You More Options

- ▼ Custom expansion pods allow you to integrate additional components as they become available. Possible options include a GPS receiver (pictured), RF network, RF tag reader, bar code scanner, parallel port and analog sensor input.



Software to Get Going Right Away

- ▼ The Allegro Windows CE software suite includes PTab™ from Z4Soft, a spreadsheet program compatible with Excel® on the desktop PC (shown on the display of the large Allegro photograph). Microsoft® programs include Windows Explorer®, InBox®, Pocket Internet Explorer®, and Pocket Word®. The CE Services® file transfer and management program is provided to run on your PC.
- ▼ The MS-DOS utilities include FileScout™ DOS File Manager, a Text Editor, and a Terminal Program. The Lynx™ File Transfer Utility is provided for your desktop PC.

DOS Application Development Made Easy

- ▼ DataPlus Professional™ is a robust application setup, data collection, and data transfer software package from Electronic Data Solutions™. Applications are set up in Windows® on a PC then transmitted to the Allegro.
- ▼ EASYDC™ from R. White Woods Inc.™, is a do-it-yourself application generator which combines features of a spreadsheet, database and text editor in one program.

GPS/GIS Options

The Allegro runs the programs listed below for GPS data collection and mobile GIS applications. LandMark GPS runs in MS-DOS. The remaining programs run in Windows CE.



Our LandMark GPS™ provides sub-meter, real-time, differentially corrected GPS data for mapping, distance and area determination, and navigation. GPS data can be exported for use with a GIS.

ESRI's ArcPad™ is a mobile GIS technology. ArcPad provides database access, mapping, GIS, and GPS integration to users out in the field via handheld and mobile devices. We are business partners with ESRI.



SOKKIA's IMap software is the ideal GIS data collection and data maintenance tool for utility, urban and natural resource databases. The software integrates seamlessly with industry-standard GIS systems, range of GPS receivers, and the Spectrum Survey processing software.

Farm Site Mate™ from Farm Works Software™ provides site specific mapping and scouting in the field. It allows you to easily create maps of field boundaries, weed areas, tile lines, spray paths, and soil sample locations. These maps may then be added to your permanent records in Farm Site™ or Site Pro™.



StarPal StarPal HGIS® GPS mapping software from StarPal, Inc.®, enables the Allegro to perform GPS scouting, crop and weed mapping, soil sampling, ground truthing, spatial data collection, and automatic logging of geophysical instruments (optional). HGIS maps are compatible with ArcView®, MapInfo®, and most desktop GIS software.

SOKKIA's SDR Survey software runs with Survey RTK GPS receivers and Total Stations alike! Connect to Radian or GSR GPS receivers for cm accuracy Or use the GSR2650 for 0.2 meters positioning

Designed for Your Rugged Field Data Collection Application

Enter Field Notes Electronically

Enter your field observations directly into the Allegro. Use your existing DOS data collection program or create one to run in Windows CE. You can design a spreadsheet to run in Windows CE using PTab. DOS applications can be created using DataPlus Professional or EASYDC.



Shyrl Clawson is shown observing his wheat research plots. Shyrl is a Research Associate in the Plant Science Department, Utah State University, Logan, Utah.

(Photo used with permission of USU Media Relations.)

Collect Data From Sensors and Instruments

For automatic data collection, integrate the Allegro with sensors and instruments including laser rangefinders, GPS receivers, electronic scales, and bar code scanners.



George White connects a laser rangefinder to an Allegro to automatically record tree height. George works for R. White Woods, Inc., B.C., Canada.

(Photo courtesy of Sean White Photography)



The Allegro stores yield, position, weight, and time information received from a HarvestMaster Yield Monitor installed on a tomato harvester. (Photo courtesy of Sano Farms in Firebaugh, CA)

Field Data Collection Applications

▼ **Agriculture:** HarvestMaster specializes in data collection tools for the agricultural market. Allegro applications include:

- Field Note Taking for Replicated Plot Experiments
- Mobile Computing for Yield Monitoring and Mapping
- Electronic ID Tag Readout and Database
- DHIA Data Logging
- Crop Insurance Adjusting and Sales
- Ag GIS Field Data Collection
- Soil Survey Data Collection
- Greenhouse Notes
- Seed and Fertilizer Sales
- Agronomy and Pest Field Scouting

Programs for Agriculture include: Field Notes Plus™, MilkHand™, Dairy Master™, and Cyber-Pig PC™.

▼ **Natural Resources:** Our Juniper Systems Division provides field computing solutions for natural resource applications. These applications include:

- Forest Management: Forest Inventory, Timber Cruising, Regeneration Surveys, Street Tree Inventory
- Forest Products: Log Scaling, Log Buying, Lumber Grading, Log Yard Inventory, Nursery Inventory
- Rangeland Monitoring: Range Analysis, Inventory, Range Classification, Vegetative and Trend Studies

For Forestry, the USDA FS National Cruise Program, National Scale Program, NED/SIPS Forest Inventory Program, and TwoDog™ Forest Inventory Program run on the Allegro.

- Fisheries and Wildlife Management: Resource Assessment, Goede Fish Health Assessment, Stream Survey, Creel and Animal Census, Habitat Classification, Water Quality Monitoring, Hunting Check Stations
- Environmental Consulting: Wetland Delineation, Land Mapping, Hydrology Studies, Wildlife and Restoration Ecology

▼ **GPS/GIS Options:** For GPS data collection and mobile GIS, the Allegro runs LandMark GPS™, ArcPad™, IMap™ software, StarPal®, and Farm Site Mate™ software (details inside).



▼ **Pick Your Application:** The Allegro Field PC is the ideal all-weather mobile computing tool for a diverse variety of applications:

- U.S. Military
- Pipeline Safety Monitoring
- Plant Maintenance
- Insurance Claims Adjustment
- Meter Reading for Gas and Electric Utilities
- Warehousing and Inventory
- Geophysics
- Geology and Mining
- Plus Many Others...

Don Burge, Paleontologist, examines a fossil found on the San Rafael Desert in Eastern Utah. Don is the Director of the CEU Prehistoric Museum, Price, Utah.





Allegro Field PC Technical Specifications

Processor

- 486 AMD processor, AMD SC 400, 100 MHz

Operating Systems

- Windows CE 3.0 and MS-DOS 6.22

Programs (for Allegro and PC)

- Windows CE
 - Desktop PC: CE Services
 - Allegro Suite: PTab Spreadsheet, Calculator, Terminal Program, and Microsoft Windows Explorer, Email InBox, Pocket Internet Explorer, and Pocket Word
- DOS Utilities:
 - Desktop PC: Lynx File Transfer Utility
 - Allegro Utilities: FileScout DOS File Manager, Text Editor, Terminal Program

Physical Specifications

- Size: 10" high x 5.25" wide at display x 3.1" wide at narrowest point x 1.5" deep (256 mm x 133 mm x 79 mm x 38 mm)
- Weight: 1.78 lbs or 28 oz (807 grams)
- Operating Temperature: -22 to 130° F (-30 to 54° C)
- Storage Temperature: -30 to 140° F (-35 to 60° C)
- Waterproof: Passes MIL-810E-512.3 and IP67 leak (immersion) tests. To pass these tests the Allegro is submerged under 2 meters of water for 2 hours.
- Shockproof: Passes MIL-810E-512.4 shock (drop) test. To pass this test the Allegro is dropped on each face and corner from 5 feet onto 2 inches of plywood backed by concrete.

Communication Ports

- Two 9 pin D RS-232 ports (up to 115 Kbaud)
- 5 V power at 250 mA for external devices on COM1
- Two IrDA ports (run under Windows CE only) for wireless communication (located on the top and bottom of the case)

Display

- Large LCD has an EL backlight with adjustable brightness capability for visibility in low lighting conditions
- Padding around the display protects against impact
- Display heater for operation in cold environments
- Active viewing area: 3.3" wide x 2.5" high (4.1" diagonal), 18% larger than comparable units
- CGA graphics in DOS mode
- 1/4 VGA, resolution is 320 wide x 240 pixels
- Touchscreen for operating Windows CE: onboard mini stylus and a full size stylus, Touchscreen Disable key for cleaning
- In DOS text mode four font sizes are user selectable with a hot key: 25 lines by 40 characters, 16 x 40, 16 x 32, or 12 x 20
- Full screen in memory (DOS text mode): 25 lines x 80 characters

Keyboard

- Large keys for use with gloved hands
- 12 Function keys located directly under the display; convenient for use in applications as soft keys
- Special keys: Windows Start, Task Manager, Touch Screen Disable, DOS Break, Reset, large round rocking arrow button
- Numeric keys are large and centrally located

- Forward and backward tab keys, unshifted
- All printable ASCII characters are on the keyboard; extended characters are accessible through ALT# # # key sequences
- Key labels are coated with special finishes that prevent them from rubbing off
- Keys have a snappy tactile feel

Case Design

- Field-ergonomic shape with balanced weight distribution
- Rugged, 100% sealed against water and dust
- Designed for one-handed operation
- Rings on all 4 corners of the case for straps
- Adjustable hand and shoulder straps

Memory/Storage

- 16 or 32 M low power RAM
- 24 or 32 M non-volatile solid state disk storage; data are secure without battery backup

PC Card Slot

- User accessible without special tools
- Accepts Type I or II 3V/5V PC cards
- Compatible with ATA Flash, SRAM, and I/O cards
- Compact Flash card adapter is available

Power

- Rechargeable NiMH quick change battery pack (replacements are readily available)
- NiMH batteries last 10 to 16 hours between charges during typical use; actual battery life can be longer or shorter, depending on the application, backlight and heater usage, and power management
- Alkaline battery holder uses 3 AA alkaline cells (optional)
- Battery charge status LED indicators, low battery warning
- Resume mode allows you to resume where you left off when you turn the Allegro on
- Adjustable performance/power management
- Power manager automatically switches unit into low power mode for optimum efficiency
- Separate power input connector for charging and direct power
- Rapid internal smart-charging in 3 hours

Sound

- Produces basic computer sounds and plays WAV files
- Volume can be controlled when playing WAV files
- Sound Blaster Pro compatible

Clock

- Internal battery-backed real time clock
- +/- 3 minutes per month accuracy

Certifications

- CE Mark approval
- FCC Class A

Expandability

- Custom expansion pods allow you to integrate additional components; the pods replace the PC card door and are sealed (contact us about availability)

Customer Input Guides the Design Process

During the envisioning process for the Allegro Field PC, key customers were selected to provide insights on their needs for a rugged hand-held computer for the 21st century. These customers and our product development team shared information about technical trends, applications, required features, and price constraints throughout the product definition process.

An engineering team with long-term knowledge and experience in the design and manufacture of rugged field computers was assembled. The following critical success factors were defined and used as maxims throughout the Allegro development process:

- 1) Lightweight and easy to hold in either hand
- 2) Well designed key placement and feel
- 3) Large display size and visibility in all lighting conditions with multiple font sizes in DOS
- 4) Rugged, waterproof, and reliable for use in very harsh outdoor conditions
- 5) Batteries available off-the-shelf that provide long-term life for a full 10 hour day in the field
- 6) Dual operating system with full compatibility with Windows CE and MS-DOS

We are proud to say that our development team was able to meet all of the Allegro maxims.



Early in the development process Ron Nail, a log scaler for Plum Creek Timber Company, Columbia Falls, Montana, discusses the features he would like to see in a new rugged field computer with our engineers. Ron has used our Field Computer for several years.

Log Scalers really test the ruggedness of a Field Computer, often working in temperature extremes and wet, muddy, field conditions. During one shift they can press the keys as often as 30,000 times. The Allegro is designed to handle this type of application.

Our Commitment to Customer Service

Our customers are important to us. When you call with a question or a problem, you talk directly to one of our skilled Service Technicians or Sales Representatives.

- No getting the run-around or incomplete answers.
- No impersonal phone machines.
- No unreturned phone calls.

We take care of you personally. Customer references are available upon request.



Allegro Field PC Package

You receive everything you need with the Allegro to begin collecting data in the field:

Allegro Field Computer
Windows CE Software Suite
DOS Utility Programs
NiMH Battery Pack
Universal AC Adapter
Communication Cable
Mini and Full Size Stylus
Hand and Shoulder Straps
User's Manual

Optional accessories and software packages are also available.

For More Information

For more information about the Allegro CE, the Allegro CE/DOS, and our complete line of field data collection products, please contact our sales department or our representative in your area. Demonstration units are available.

 **Juniper Systems, Inc.**[™] a Campbell Scientific Company
1740 N. Research Park Way
Logan, UT 84341-1977 USA

Telephone: 435-753-1881
Fax: 435-753-1896
Email: js@junipersys.com
Web Sites: www.junipersys.com,
www.harvestmaster.com

Our Representative in Your Area:



Juniper Systems Provides Rugged Field Computers, Mobile GIS and GPS, and HarvestMaster[™] Brand Data Collection Tools for Agriculture

