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# Orbit 48

## Technical Specification

### Bench top power

The Orbit 48 is equally at home in today's hi-tech laboratory. Its smaller size footprint keeps the engineer's workstation tidy with the added flexibility of being able to move freely around the laboratory.

### Ruggedised Construction

The tough, powder-coated metal casing of the Orbit 48 provides dual benefits: minimised EMI and RFI effects, and considerable impact resistance in even the harshest of environments.

The keypad is of a splash resistant design to prevent the ingress of moisture and dust.

Internally, surface mount construction and full ATE test procedures contribute to high reliability.

### Easy to Use

Ease of use is one of the chief attributes on the Orbit 48's list of features. A high contrast SuperTwist LCD, menu-driven operation and a clear and uncluttered custom designed keypad make the Orbit 48 particularly straightforward in operation.

Although supplied with a comprehensive operating manual, even comparative novices will feel sufficiently confident to leave this back at the factory when venturing into the world with the Orbit 48.

### Mobile Power

Internal rechargeable batteries provide Orbit 48's power source when away from the bench.

Up to 30 hours use in edit mode is available with data retention in stand-by mode for at least seven months.

The supplied charger unit provides mains operation and enables a boost charge facility to get Orbit 48 up and running as quickly as possible.

### Windows / DOS PC Interface

The optional high quality PC software package includes a high tech, true Windows application and a simple to use production style DOS application.

Windows provides graphically enhanced remote control for Orbit 48 from a PC (desk-top OR lap-top).



The Windows GUI with its 'intuitive' way of working with icons and mouse provides arguably the simplest way to operate any of Stag's latest range of programmers.

The on screen 'program command' keypad offers the novice Windows user simple key push operation.

Both PC applications allow full remote control file transfer and full file management.

## High Speed Computer Data Link

To complement the Orbit 48's comprehensive stand-alone capability, it is equipped with a 9-pin D-type serial port which supports baud rates to 115,200 and a 25-pin D-type bi-directional parallel port for fast data interchange.

All popular data transfer formats are supported including the JEDEC standard JESD 3C for PLD programming data.



## Wide Range Device Support

The Orbit 48 offers an extensive range of device support which includes popular devices from the world's major manufacturers in the following categories: CMOS PROMs, EPROMs, EEPROMs, FLASH & Intel style MICROS as standard and EPLDs via a low cost docking module.

With a 48-pin Wide Blade ZIF socket and RAM expandable to 16 Mbits, Orbit 48 is also equipped to program 16-bit EPROMs, MROM pinout EPROMs and 8-pin Serial EEPROMs – all as standard and without using any additional adaptors.

## Protected Device Library

In keeping with Stag's quality engineering philosophy, all the data required to program this vast array of devices is held in FLASH (non-volatile) memory.

This has two distinct advantages over other systems: 1) the data cannot be corrupted in the way certain RAM based systems can, and 2) updating the information can be performed without opening up the programmer – data transfer occurs via an I/O port or the programming ZIF socket.

## RAM Expansion to 16 Mbits

Orbit 48 has a standard RAM of 4 Mbits which can be expanded to 16 Mbits as required. This means the user only has to purchase as much RAM as required.

The inherent benefits of this extra RAM are of course support for large devices in single blocks and the ability to emulate larger devices than any other portable programming system.

## Data Editing

As a professional development tool, Orbit 48 has a complete suite of memory device data editing tools. These include:

- **List or Change the Data** – where data is listed in a format consisting of the RAM address in

hexadecimal followed by the data value at that location in hexadecimal and decimal, plus the equivalent ASCII character. The required address is located either by 'scrolling' using the cursor keys or by direct keypad input. The corresponding hexadecimal or decimal data fields can then be edited by overwriting the existing value with new data entered from the keypad.

- **Insert / Delete Bytes** – allows a pattern of bytes to be inserted into RAM at a specified location or permits a given number of bytes to be deleted. When bytes are inserted, the data above the insertion point is moved upward in memory, and when bytes are deleted, the data moves downward to 'fill the hole'.
- **Fill the RAM** – where the RAM can be filled with a test pattern of Zeros, FFs or a user specified string;
- **Block Move** – a defined block of data can be moved to another address;
- **String Search** – which permits the RAM to be interrogated for the location of a particular data string.
- **8, 16 and 32-bit modes** are supported in line with other Stag programmers, and any required splitting and shuffling of 16 and 32-bit data is done automatically by Stag's 'Interlace 2' feature. This does not need to be invoked by the user and functions in a completely transparent way. Additionally, Orbit 48 allows upper and lower addresses to be set to confine device and data functions to within specified limits.

Data integrity can be checked using the Checksum and Cyclic Redundancy Check (CRC) functions. Each provides a value relating to the total data value in RAM. The CRC is a more sophisticated version of the checksum in that the specific location in RAM of each data byte is also considered.

## High Speed Emulation

Incorporated into the Orbit 48's design is a high speed EPROM emulator which enables code to be run in a target system without having to first commit time and resource to programming and erasing devices.

Furthermore, Orbit 48 can emulate large multi-megabit devices up to 8 Mbit as well as 16-bit wide devices – another first for Stag.

Connection to the target system is via a buffered cable. This permits greater distance between emulator and target system without loss of data integrity. Orbit 48 is also equipped with an additional earth socket which can be used to provide a solid ground during emulation.

The buffered pod allows device size selection via a series of clearly marked DIP switches.

## 'Edit While You Run'

The Orbit 48's emulator incorporates Stag's unique 'Edit While You Run', the feature which allows, where permitted, the code to be altered even as it is being run in the target system.

## EPLDs and Beyond...

In addition to the comprehensive range of memory devices supported in the

48-pin ZIF socket, Orbit 48 can be fitted with an optional slim-line docking module to provide EPLD programming. A socket is located on the side of the main unit to accept this module and provide future expansion. Working in a DOS environment or in StagCom Windows<sup>a</sup> 'Edit while you run' allows data editing while emulating

## SPECIFICATIONS

### Device Support:

- EPROMs, EEPROMs, FLASH & CMOS PROMs, Serial EEPROMs & MICROs
- up to 48-pins with 0.3" to 0.6" pitch as standard with Wide Blade ZIF socket
- EPLDs for up to 24 pins with optional docking module

### Device Library:

- Internal, in non-volatile FLASH memory

### Emulation:

- Internal high speed EPROM emulator with an 'Edit While You Run' feature
- Emulates 8-bit and 16-bit devices via optional buffered cable kit

### Bit Modes:

- 8, 16 and 32-bit modes: automatically handled by 'Interlace 2'

### Display:

- 4 line x 20 character, alphanumeric SuperTwist LCD provides interactive menu functions

### Keypad:

- Ergonomically designed splash resistant keypad
- 24 key layout including all hex characters, functions and cursor

### RAM:

- 4 Mbits. Expandable to 16 Mbits

### Ports:

- 1 x Serial 9-pin D-type Baud rate to 115,200
- 1 x Bi-directional Parallel 25-pin D-type

### I/O Formats:

- All popular including: Hex ASCII, Motorola S-Record, Binary, Intellec, Tek Hex, JESD 3C, etc.

### Remote Control:

- As standard – conforming to Stag standard protocol
- StagCom PC software package available for enhanced operation under Windows & DOS

### Power:

- Internal rechargeable batteries – providing up to 30 hours use in edit mode seven months data retention in stand-by mode
- Mains operation from supplied charger unit.
- Fast boost charge facility

### Dimensions & Weight:

(Width x Depth x Height)

260mm x 188mm x 29mm (10.24" x 7.40" x 1.14")

600 grams 1.32 lbs

## SYSTEM OPTIONS

- Orbit 48 with 4 Mbit RAM, PSU & Manual
- Orbit 48-2 with 16 Mbit RAM, PSU & Manual
- OrbPLD Docking Module for EPLD (up to 24 pins)
- OrbBEC 32 Buffered Cable Kit for 24, 28 & 32 pin DIL
- OrbBEC 40 Buffered Cable Kit for 40 pin DIL
- OrbRX002 4Mbit to 16 Mbit Memory Expansion
- StagCom Win Windows<sup>®</sup>/ DOS PC Application Software
- CC 48 Soft Carrying Case

## ENVIRONMENTAL

**Humidity:**

- 20-80% non-condensing

**EMC Emissions:**

- Complies with EN50081-1 class B & EN55022 class B
- FCC part 15 - sub part J class A

**EMC Immunity:**

- Complies with EN50082-1

**Operating temperature:**

- 0C – 35C

**Battery charging temperature:**

- 10C – 35C

**Safety:**

- Complies with EN60950, IEC950 & CSA C22-950

**Leaders in innovation**

For two decades Stag has been at the forefront of design and manufacture of high quality and reliable device programmers.

Today Stag Programmers carry forward this reputation in products ranging from Universal, Gang and In-Circuit Programmers to PLD Compilers and UV Erasers – and now hand-held and portable programmers.

We are dedicated to continuous research and development to maintain our lead in both product and software support so that our customers can keep pace with rapidly changing programmable device technology.

**Worldwide sales and support**

The Orbit 48 is backed by Stag's international network of exclusive professional sales and support agents.

*To order on-line click [here](#)  
or click here for nearest appointed [Stag sales office](#).*

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