



# Stag Instruments Limited

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## QUASAR 1084 PLUS Advanced 84-Pin Universal Device Programmer

- *Proven Industrial Quality*
- *Free Lifetime S/W Updates via WEB*
- *True Low Voltage Support down to 1.8v*
- *Gang/Set Expandable*
- *CE Certified*

### UNIVERSAL AND FLEXIBLE:

- One unit supports all types of programmable devices: PALs, GALs, parallel and serial PROMs, E/EPROMs, FLASH memories, micro-controllers, Altera MAX devices, AMD MACHs, Lattice isp/pLSI, WSI PSDs, Xilinx EPLDs, and others.
- Provides true low voltage support for new devices which require low levels of Vcc and digital inputs. (i.e. supports devices which are not 5-volt tolerant.)
- Software controlled from desktops or notebooks based on 386, 486, Pentium, or compatibles. Easy new device updates via software from floppies, BBS or Internet (WEB).
- Pins are controlled by programmable software pin drivers.
- Device technologies supported include CMOS, BiCMOS, NMOS, HMOS, EE erasable, Flash, bipolar, ECL, etc.
- PLCC, LCC, TSOP, PSOP, SOIC, PGA, BGA, QFP and TQFP devices optionally supported by reliable Stag-made modules, not from third party vendors.
- Expandable to support high pin-count devices up to 208 pins.

### COMPLETE MEMORY/MICRO DEVICES SUPPORT:

- Supports EPROMs from 2716 up to the newest 64 megabit (and beyond) EPROMs and FLASH memories.
- Accepts various file formats including Intel HEX, Intel Extended Hex, Motorola S-records, POF, ASCII and binary.
- Virtual memory feature: makes use of RAM and disk space on your PC. No RAM expansion modules ever needed, even for burning large size devices.
- Automatic splits (1 to 2, 1 to 4, 1 to 8) for both 8-bit and 16-bit memories.

- Supports all programming algorithms including Standard, Fast, Intelligent, Quick-Pulse, Flashrite, etc.-- and exactly according to IC manufacturers' specifications.
- Supports advanced device functions such as individual sector-protection and un-protection, S/W write protection, programming of configuration words, etc.
- Functions provided include: read, program, verify, sector protect, edit, checksum, file offset, buffer offset, partial address programming, ASCII buffer edit, etc.
- Release control features: automatically generates serial numbers, checksums, and date/time stamping information for memory devices.

### COMPLETE LOGIC DEVICE SUPPORT:

- Accepts POF files from ALTERA, standard JEDEC outputs from CUPL, MINC, ABEL, PALASM, ORCAD, etc.
- Test vector function (functional testing) automatically reports failed pins and states.
- Convenient screen-based editing of fuse values and test vectors.
- Other functions include: read, program, erase, verify, security, checksum, automatic PAL to GAL JEDEC files conversion, etc.

### SOFTWARE USER-FRIENDLY:

- Powerful PC-based software gives you more power, utilities and conveniences than stand-alone programmers.
- Full screen human interface provides plenty of useful information.
- Batch/macro facility allows you to put frequently-used commands into command files. It also means allowing non-technical personnel to easily perform repeated command sequences.
- FREE Lifetime software updates: simply download from BBS or WEB.

## HARDWARE USER-FRIENDLY:

- Interfaces to PC through standard parallel printer port. No need to open up your PC, remove and reinstall special interface cards every time you move the programmer from one PC to another.
- Parallel interface eliminates the slowness and clumsiness of serial communication during normal operation.
- New device support via software, not firmware.
- Reverse device insertion check warns operator of accidental reverse placement of devices.
- Continuity check warns operator of misplaced device or broken device pins.
- Universal power supply automatically accepts input voltages from 85v AC to 264v AC. No need to switch between 110/230.

## DEPENDABLE AND RELIABLE:

- Approved by IC manufacturers.
- All programming signals are generated from programming instrument, not from a card inside the PC. Signals are noise-free and accurate.
- Metal chassis shields programmer from potentially damaging external static charges.
- Built-in power supply provides adequate and isolated power for programmer, avoids power deficiency problems common in smaller programmers.

- All sockets used have gold-plated contacts and are of the best quality in the industry.
- Designed and manufactured by a company that has over 30 years of experience in making and supporting programming instruments.
- Made in Silicon Valley, California, in proximity to many of the world's leading semiconductor companies.

## GUARANTEE, WARRANTY AND SUPPORT:

- 30-day unconditional money-back satisfaction guarantee.
- 1 year limited hardware warranty, including parts and labor.
- Factory-direct technical support.
- Free lifetime software updates via 24-hour BBS or WEB.

## GANG/SET EXPANDABLE:

- Available gang modules from Stag expand the machine into a Gang/Set programmer capable of programming eight EPROMs, EEPROMs, FLASH, or micros. Package types include DIP, PLCC, TSOP and PSOP.

## SPECIFICATIONS

### Pin Drivers

84 pin drivers. Each pin is software programmable to generate either digital or analog voltages.

Minimum slew rate: .001V/us; Maximum slew rate: 1000V/us.

Range: 0 to 25.5V in 100mV increments. Current limited.

### Device sizes supported

On standard equipment: up to 44 pins DIP  
 With UPA-84: up to 84 pins PLCC  
 With optional modules: up to 208 pins.  
 Functional testing: up to 84 pins

*For complete details, please see accompanying Supported Devices List.*

### Low Voltage Capability:

Down to 1.8v.

### Hardware Expandability:

Supports many different device packages with optional add-on modules: PLCC, LCC, TSOP, PSOP, SSOP, SOIC, PGA, BGA, QFP, TQFP. Expandable to support Gang/Set programming of EPROMs and Flash using Gang Modules.

### Special Functions

Reverse device insertion check. Continuity check.  
 Automatic diagnostics and calibration checks.

### Examples of available operations:

Configure Device	Configure Width	Config Set-size	Config Algo
Configure Security	Configure Port	Configure Save	Configure Others
Device Program	Device Erase	Device Secure	Device Chksum
Device Examine	Device Verify	Device Test	Device Blank-Check
File Directory	File Format	File Name	File Load
File Save	File Address	Buffer Edit Fuse	Buffer Checksum
Buffer Edit Vector	Buffer Edit UES	Buffer Fill	Buffer Load
Buffer Invert	Buffer Initialize	Even/odd byte swap	
Macro Execute	Macro Label	Macro JMP,JBE,JE	
Active Range	Sector Protect n	Sector Protect All	Sector Un-protect
Release-control Serial # Enter		Release-control Serial # Increment	
Release-control Address		Release-control Date/Time Stamp	
Macro Operator Prompt			

### Macro/Batch Facility

Similar to DOS batch files. Chaining of Macros: Yes. Nesting: No.  
 Number of parameters allowed: 9.

### File Formats Supported

Logic devices: Industry standard JEDEC, Altera POF.  
 Memory devices, micro controllers: ASCII, Binary, Intel HEX, Extended Hex, Motorola S-records.

### Programming through-put, examples (in min:sec)

GAL 16V8 .....0:03 Atmel 29C010 ..... 0:16  
 TIBPAL22V10 .....0:02 Altera EPM7032 ..... 0:09  
 Xilinx 1765D.....0:04 Altera EPM7128ELC84..... 0:17

*Note: Assuming programmer is controlled by 90MHZ Pentium. Programming pulse length is independent of computer speed. Programming overhead varies with computer speed.*

### System Requirements

IBM 386/486/Pentium/Notebook or compatible machines. No PC-slot required. DOS 3.1 or above, 640K RAM. Hard disk with at least 1.5 MB disk space. One parallel printer port (LPT1, 2 or 3).

### System Interface

PC connection .....standard parallel printer port  
 Equivalent transfer rate ..... at least 200K baud

### Electrical

Operating voltage ..... 85v to 264v, automatic switch  
 Power consumption: 50W. Power connector: Standard IEC

### Physical

Socket .....One 44-pin gold ZIF, accepts .3-.6" DIPs  
 Number of 50-pin headers used for add-on module connections .....2  
 Dimensions ..... 11"x12.5"x3" high  
 Instrument weight: .....6.5 lb. Shipping Weight: .....14 lb.

### Supplied Equipment

Programming hardware, control software, user manual, interface cable to PC parallel printer port, detachable power cord. (power cord included for domestic customers only).

### Optional Equipment

PLCC, LCC, SOIC, TSOP, PSOP, SSOP, PGA, BGA, QFP, TQFP modules; Gang/Set modules.