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Instruction Manual

1550nm ASE Source
19" 1HU with GPIB and RS232 Interface, FC/PC

(Version 1.0   April 2007)

Contents

Introduction

This ASE Source emits light over a broad wavelength range around 1550nm with a high stability. It can be switched on and off manually via a front panel button or remote via RS232 or GPIB simultaneously.
The device is housed in a full metal enclosed 19" 1HU rack mountable package. Power supply is via standard IEC320 main plug operating from 100 – 240 VAC.

1. Installation

- Ensure that the unit is switched off (mains switch at the rear panel „0") and use a standard IEC mains connector for mains input at the rear panel. A fuse F1A 250V is pre-installed for operation at 240 V ac. If the unit should be operated at a different voltage, ensure to replace the fuse with an appropriate type (e.g. F2A 120V for operation at 115 V ac).
- After turning on the mains switch at the rear panel the front panel LED 'Ready' lights up to indicate operation.
- Connect the FC/PC output to your device under test
- Operate the device manually or remote controlled

CAUTION:
This device emits continuously up to 20mW light. Never look directly into any optical output adapters!

2. Operation

2.1 Manual operation

Manual operation is quite simple. If power supply is present and the mains switch is turned on, a green 'Ready' LED on the front panel is lit.

Press the 'Emission' button to turn on and off the ASE Source. Emission is indicated by a blue LED on the front panel **(Caution: Don't look directly into any output connector!)**.

The red 'Error' LED is lit if an error occurred during the operation. Main cause for an error is a ambient temperature over the specified value. Light is still emitted but the neither value nor stability are guaranteed. Call service if errors don't disappear at normal conditions.

2.2 Serial Operation via RS232

2.2.1 Serial connection to the ASE Source

Use a standard 1:1 serial cable with DB9 female connectors for a connection to your PC.

After power-on reset the device adjusts its serial interface parameters to 9600 baud and 8,N,1. No handshake is used. Assure that the terminal software uses the same parameters. The device will send a "hello" message including the version number of its firmware. Receiving the hello message confirms that the reset was successful and that serial communication works well. Change the serial baud rate by typing **baud XXXX** with XXXX = baud rate in hexadecimal, e.g. sending **baud 9600** increases the baud rate to 38400. The maximum baud rate depends on the type and length of cable used.

2.2.2 Command structure

The device is controlled by sending simple commands based on the ASCII character set. In case of misspelling a command or in case of using an unknown command, an error message ("Sorry?") is the response.

During typing of a command typing errors can be corrected by using the backspace key (ASCII code $08). Commands are accepted after sending the carriage return key (ASCII code $0D). Commands can also be terminated with both carriage return (0D) and line feed (0A) because the line feed character will be ignored.

In response the device produces a new line on the terminal by sending the codes carriage return ($0D) and line feed ($0A).

If the command generates one or more response lines, each line again is terminated by $0D, $0A.

2.2.3 Functional list of commands

Serial interface:

hello	Display firmware version number
baud XXXX	Change baud rate to $XXXX
echo on	Echo input characters
echo off	No echo of input characters

General commands:

help	Display list of commands
ophour	Display 1/10 operating hours of the DL
sernb	Display the serial number

Operation commands:

ase on	Switch on the ASE Source
ase off	Switch off the ASE Source
temperr	Get Temperature error flag (0 - no error ; 1 - temperror)
rangeerr	Get Range error flag (0 - no error ; 1 - rangeerror)

2.2.4 Alphabetical list of commands

Command: **ase on**
Function:
Switch on ASE Source. Blue LED on front panel lights up.
Response: none

Command: **ase off**
Function:
Switch off ASE Source. Blue LED on front panel turns off.
Response: none

Command: **baud XXXX** (default XXXX = $2580)
Function:
Change the baud rate to $XXXX baud. Typical values are

9600 baud	$2580
14400 baud	$3840
19200 baud	$4B00
38400 baud	$9600

Response: none

Command: **echo off**
Function:
Stop echoing input characters via the serial interface.
Response: none

Command: **echo on** (default)
Function:
Echo input characters via the serial interface.
Response: none

Command: **help**

Function:
Display list of commands.
Response:
Several lines of ASCII character text.

Command: **ophour**
Function:
Display 1/10 operating hours.
Response:
A line with hex number YYYY.

Command: **rangeerr**
Function:
Read Range Error Flag from the device.
Response:
0 – No Range error
1 – Range error present (Red front panel LED turned on)

Command: **sernb**
Function:
Display serial number.
Response:
A line with hex number XXXX.

Command: **temperr**
Function:
Read Temperature Error Flag from the device.
Response:
0 – No Temperature error
1 – Temperature error present (Red front panel LED turned on)

2.3 GPIB Operation

The device has a built in GPIB – RS232 converter which converts external GPIB commands into RS232 format. This converter card is the 4806 model from ICS Electronics. The manual for this card is attached.
The default GPIB address is 4.
GPIB-commands are processed by the converter card itself. All other commands are directed to the ASE Source. See section 2.2 for command overview. All commands via GPIB have to be terminated with a line feed (0A). To send valid commands to the ASE Source these have to be terminated with carriage return (0D) and line feed (0A).
After sending a command to the ASE Source read the buffer of the converter card which carries the command echo and the device response. Otherwise communication problems can occur.

Command processing scheme:
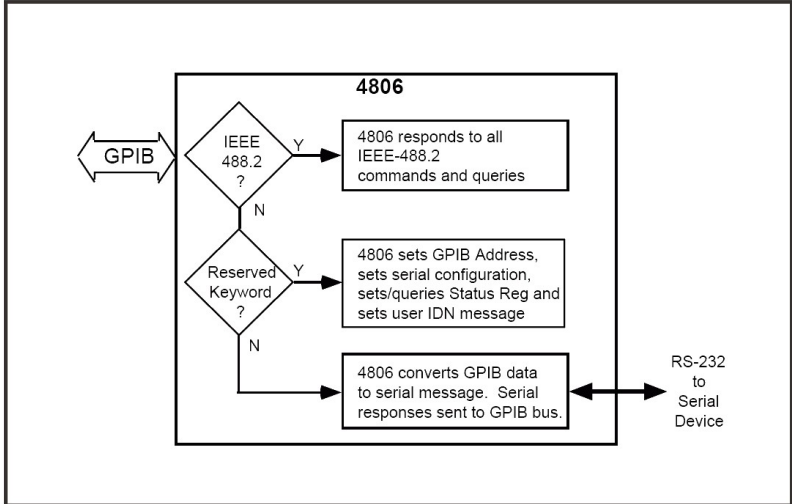
3. Technical Specifications

Power supply

Supply voltage	100 - 240 VAC @ <1A

Optical specifications

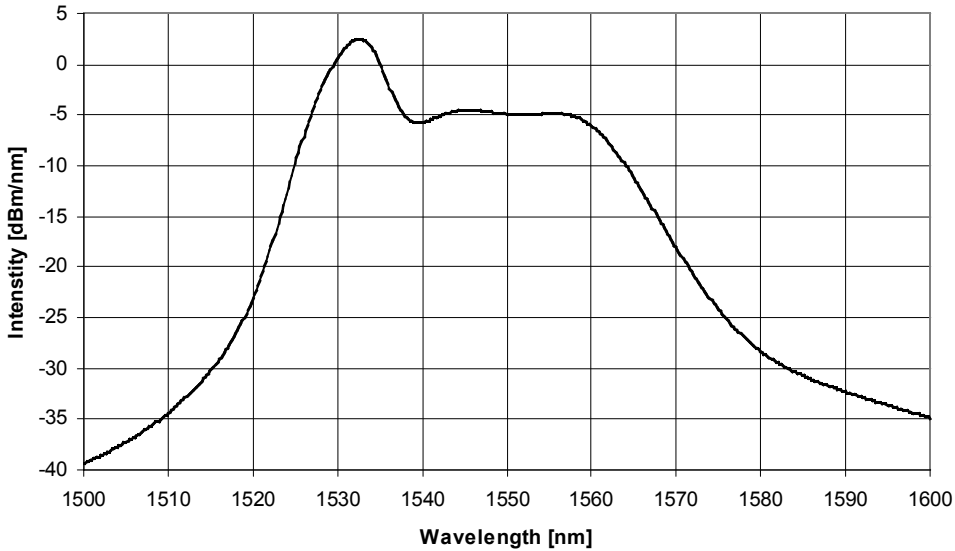|	
Output power	max. 20 mW
Fiber type	SM 9/125µm
Optical connector	FC/PC
Wavelength	1525 – 1565nm

Others

Module size	490 x 280 x 45 mm
Operating temp. range	0 – 40 °C (non-condensing)
Storage temp. range	-40 – 85 °C

4. Test report   s/n: 11071711020-0025

Spectrum

Stability