IQABC
Automatic Bias Controller
IQ Optimization Made Simple

KEY FEATURES

- Modulation Format Independent ABC Algorithm
- Independent Control of all DC Biases
- Compatible with OIF Standard IQ Modulators
- Accurate & Stable Tracking of Bias Drifts
- Easy to use Software

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complexity made simple.

IQABC, IQ Optimization Made Simple

Coherent Solutions' IQABC with its advanced ABC (Automatic Bias Control) algorithm, accurately and reliably controls and optimizes all the modulator bias points regardless of the modulation format or pattern. Now you just need to hit the AUTO button and focus on your research without worrying if your modulator is biased correctly.

Optimizing DC bias points of an IQ modulator is no trivial task. There are six different Mach-Zehnder structures inside one dual polarization IQ modulator, all simultaneously influencing the properties of a single optical signal. Trying to optimize bias points using just the intensity measurement of the optical signal is time consuming, inaccurate and it requires a lot of knowledge and experience.

But worry no more, IQABC is here to help. With its robust and adaptive ABC algorithm, IQABC will take care of finding optimal bias points and maintaining optimization against any bias drifts or changes to the driving signal. So put IQABC to work and enjoy having a stable and reliable optical signal for all your testing and development needs.

Convenient and simple to operate

Simply connect your OIF compliant IQ modulator to an IQABC modulator adaptor board and feed the modulator's optical output to IQABC, then you are ready to go!

IQABC starts to optimize the biases automatically upon start-up.
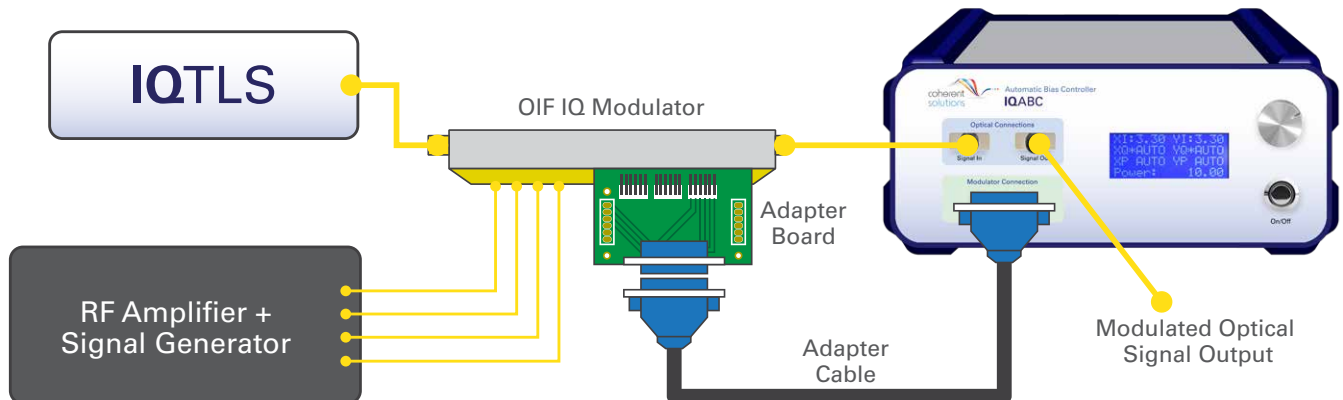
IQABC connection example diagram

Intuitive Graphical User Interface (GUI)

IQABC can be operated in stand-alone mode using its built-in front panel control and display. It also comes with a feature complete control software, IQSignalManager, which is an intuitive and easy-to-use GUI. With IQABC's Ethernet connectivity, you can access and control the unit from anywhere within your local access network and even automate the control using SCPI commands.
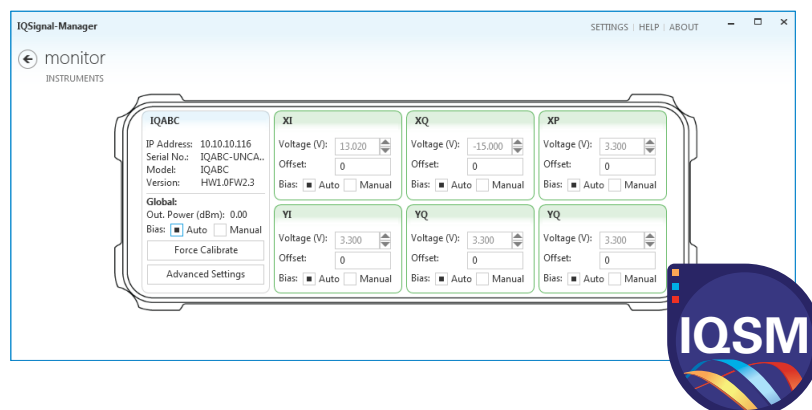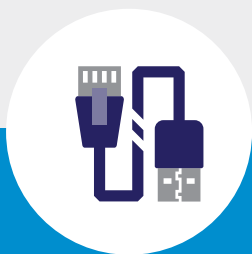
MODULATION FORMAT INDEPENDENT ABC ALGORITHM

The robust ABC algorithm works with any modulation formats for a truly automated operation
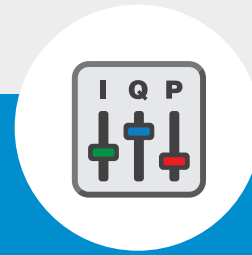
INDEPENDENT CONTROL OF ALL DC BIASES

Each of I, Q or Phase DC biases can be controlled independently in either automatic or manual mode

SUPERIOR CONNECTIVITY

You can control IQABC locally or remotely via USB or Ethernet. With its SCPI compatibility, the option is yours

COMPATIBLE WITH OIF STANDARD IQ MODULATORS

The external modulator adaptor board provides simple and quick connectivity to any IQ Modulator with OIF compatibility

ACCURATE & STABLE TRACKING OF BIAS DRIFTS

The advanced ABC algorithm constantly tracks any drift, so you get stable and repeatable results every time

EASY TO USE SOFTWARE

IQABC software controller provides access to all the functions in a clean, simple and intuitive graphical layout

Technical Specifications

Supported modulator types	Single & dual pol. IQ Mach Zehnder
Supported modulation formats	Any modulation format
Bias control options	Automatic locking and individual manual bias
Maximum bias voltage range	28 V
Number of bias control channels	6
Start up time until settled	< 3 minutes, < 1minute typical
Quadrature error	Averaged mean < ± 0.3°, Standard deviation > 24 hours: < 2°
ABC impact on EVM	< 1%
Wavelength range PM fiber	1510 nm - 1610 nm
Wavelength range SM fiber	1260 nm - 1620 nm
Dither size vs Vpi*	max 5%, typical 2%
Max optical input power to ABC	+10 dBm
Optical insertion loss	< 0.15 dB
Optical power operating range	-5 dBm to +10 dBm
RF drive levels supported	0 to 1.9 Vpi
Manual bias control range:	± 13 V

Notes: Specifications are valid at 23 °C ± 3 °C. *A small low frequency dither is applied to the biases as part of the control mechanism.

GENERAL SPECIFICATION

Dimensions (h) x (w) x (d)	115 x 222 x 332 mm | 4.53 x 8.74 x 13.07 inches
Weight	4 kg | 8.8 lbs
PC interface method	USB 2.0, Ethernet
Operating system requirement	Windows 7, 8 or 10 (32 or 64 bit)
Power supply	~100 - 240 V; 50/60 Hz; 60 W
Operating temperature range	5 °C to 45 °C | 41 °F to 113 °F
Storage temperature range	-40 °C to 70 °C | -40 °F to 158 °F

Product Warranty

standard 3 yr warranty

All Coherent Solutions' products come with a standard 3 year warranty.

The IQABC's physical appearance is subject to change.

To find out more, get in touch with us today

Coherent Solutions Ltd
Unit A, 28 Canaveral Drive
Auckland 0632, New Zealand

General enquiries:
info@coherent-solutions.com
Technical support:
support@coherent-solutions.com

Tel: +64 9 478 4849
Fax: +64 9 478 4851

www.coherent-solutions.com

Ordering Information

IQABC:

IQABC - XXX

Fiber Type
SMF = Single Mode Fiber
PMF = Polarization Maintaining Fiber

Accessories:

IQAdapter - XXX

Options
SPBOARD = Adapter board for use with OIF compatible single polarization IQ modulator
DPBOARD = Adapter board for use with OIF compatible dual polarization IQ modulator
CABLE   = Cable for use with SPBOARD or DPBOARD
CUSTOM = Break-out cable for use with any IQ modulator