Planning

Microwave Test Equipment and Optical Equipment

Prifysgol Bangor / Bangor University

F01: Prior information notice
Reducing time limits for receipt of tenders
Notice identifier: 2021/S 000-019367
Procurement identifier (OCID): ocds-h6vhtk-02d316
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Section I: Contracting authority

I.1) Name and addresses

Prifysgol Bangor / Bangor University

Finance Office, Cae Derwen, College Road

Bangor

LL57 2DG

Contact

Nicola Day

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Country

United Kingdom

NUTS code

UKL12 - Gwynedd

Internet address(es)

Main address

http://www.bangor.ac.uk

Buyer's address

https://www.sell2wales.gov.wales/search/Search_AuthProfile.aspx?ID=AA0340

I.3) Communication

Additional information can be obtained from the above-mentioned address

Tenders or requests to participate must be submitted electronically via

https://etenderwales.bravosolution.co.uk

I.4) Type of the contracting authority

Body governed by public law

I.5) Main activity

Education

Section II: Object

II.1) Scope of the procurement

II.1.1) Title

Microwave Test Equipment and Optical Equipment

Reference number

DSP08/21

II.1.2) Main CPV code

- 38300000 - Measuring instruments

II.1.3) Type of contract

Supplies

II.1.4) Short description

Bangor University's Digital Signal Processing (DSP) Centre of Excellence is a 6M GBP research centre undertaking highly specialised

research into the application of DSP in digital communication systems such as 5G and beyond networks and ecosystems. The DSP Centre

has now received ~3M GBP in funding support from the North Wales Growth Deal. The DSP Centre requires specialised microwave and

optical test equipment to significantly expand their lab capacity and capabilities by procuring high performance, high bandwidth, test

equipment for both the generation and analysis of microwave and optical signals.

II.1.6) Information about lots

This contract is divided into lots: Yes

The contracting authority reserves the right to award contracts combining the following lots or groups of lots:

Any combination of Lots.

II.2) Description

II.2.1) Title

Arbitrary waveform generator 65GS/s with synchronisation function

Lot No

1

II.2.2) Additional CPV code(s)

- 38000000 - Laboratory, optical and precision equipments (excl. glasses)

II.2.3) Place of performance

NUTS codes

- UKL12 - Gwynedd

Main site or place of performance

Bangor University

II.2.4) Description of the procurement

Arbitrary waveform generator 65GS/s with synchronisation function.

Minimum Requirements:

Sample rate - 64GS/s

Minimum DAC sample resolution - 8 bits

Number of channels - 2

Sample memory depth per channel - 16 GSa

Analogue bandwidth (3dB) - 25 GHz

Output impedance - 50

Output type - Single-ended and Differential

Output amplitude - 1Vpp (SE), 2Vpp (Diff)

-Compatible with MatLab generated sample files.

-Fine adjustment of channel skew.

-Digital pre-distortion for frequency response compensation of the equipment output and any external circuit.

-When operating with the Real-time oscilloscope (Lot 2, 3 and 4) it should be possible to automatically measure the system frequency response to then flatten the channel response via digital pre-distortion in the AWG.

-Reference clock inputs and outputs

-Ability to synchronise with up to 3 other AWGs of the same type. Any additional hardware required for synchronisation to be included in the quotation.

-Continuous repeat of waveform segment.

-Trigger input to start waveform playback.

-Remote control via SCPI commands.

II.2.10) Information about variants

Variants will be accepted: Yes

II.2.11) Information about options

Options: Yes

Description of options

Bangor University reserves the right to purchase associated consumables or services (e.g. warranties, calibration) at a later date.

II.2.13) Information about European Union Funds

The procurement is related to a project and/or programme financed by European Union funds: No

II.2) Description

II.2.1) Title

Real-Time Oscilloscope 40GHz - 2 channels

Lot No

2

II.2.2) Additional CPV code(s)

- 38342000 - Oscilloscopes

II.2.3) Place of performance

NUTS codes

- UKL12 - Gwynedd

Main site or place of performance

Bangor University

II.2.4) Description of the procurement

Minimum Requirement:

Operating Bandwidth - 40GHz

Number of channels - 2

Sample rate per channel - 256 GSa/s

Memory depth per channel - 2Gpts

ADC Resolution - 10 bits

SSD storage - 1 TB

Input Impedance 50

-Compatible with MatLab for processing of captured waveforms.

-When operating with Arbitrary Waveform Generators from the same vendor it should be possible to automatically measure the system frequency response to then apply digital pre-distortion in the AWG to equalise the frequency response.

-Support for future bandwidth upgrade to minimum 50GHz either via software or hardware upgrade (all channels).

-Remote control via SCPI commands.

-Complies with the general note on page 1.

II.2.10) Information about variants

Variants will be accepted: Yes

II.2.11) Information about options

Options: Yes

Description of options

Bangor University reserves the right to purchase associated consumables or services (e.g. warranties, calibration) at a later date

II.2.13) Information about European Union Funds

The procurement is related to a project and/or programme financed by European Union funds: No

II.2) Description

II.2.1) Title

Real-Time Oscilloscope 40GHz - 4 channels

Lot No

3

II.2.2) Additional CPV code(s)

- 38342000 - Oscilloscopes

II.2.3) Place of performance

NUTS codes

- UKL12 - Gwynedd

Main site or place of performance

Bangor University

II.2.4) Description of the procurement

Minimum Requirement:

Operating Bandwidth - 40GHz

Number of channels - 4

Sample rate per channel - 256 GSa/s

Memory depth per channel - 2Gpts

ADC Resolution - 10 bits

SSD storage - 1 TB

Input Impedance -50

-Compatible with MatLab for processing of captured waveforms.

-When operating with Arbitrary Waveform Generators from the same vendor it should be possible to automatically measure the system frequency response to then apply digital pre-distortion in the AWG to equalise the frequency response.

-Support for future bandwidth upgrade to minimum 50GHz either via software or hardware upgrade (all channels).

-Remote control via SCPI commands.

-External reference clock input and output.

II.2.10) Information about variants

Variants will be accepted: Yes

II.2.11) Information about options

Options: Yes

Description of options

Bangor University reserves the right to purchase associated consumables or services (e.g. warranties, calibration) at a later date.

II.2.13) Information about European Union Funds

The procurement is related to a project and/or programme financed by European Union funds: No

II.2) Description

II.2.1) Title

Real-Time Oscilloscope 60GHz - 2 channel

Lot No

4

II.2.2) Additional CPV code(s)

- 38342000 - Oscilloscopes

II.2.3) Place of performance

NUTS codes

- UKL12 - Gwynedd

Main site or place of performance

Bangor University

II.2.4) Description of the procurement

Minimum Requirement:

Operating Bandwidth - ≥59GHz

Number of channels - 2

Sample rate per channel - 256 GSa/s

Memory depth per channel - 2Gpts

ADC Resolution - 10 bits

SSD storage - 1 TB

Input Impedance - 50

-Compatible with MatLab for processing of captured waveforms.

-When operating with Arbitrary Waveform Generator (Lot 1) it should be possible to automatically measure the system frequency response to then apply digital pre-distortion in the AWG to equalise the frequency response.

-Support for future bandwidth upgrade to minimum 80GHz either via software or hardware upgrade (for 2 channels).

-Future upgrade to 4 channels possible.

-Remote control via SCPI commands.

-External reference clock input and output.

II.2.10) Information about variants

Variants will be accepted: Yes

II.2.11) Information about options

Options: Yes

Description of options

Bangor University reserves the right to purchase associated consumables or services (e.g. warranties, calibration) at a later date

II.2.13) Information about European Union Funds

The procurement is related to a project and/or programme financed by European Union funds: No

II.2) Description

II.2.1) Title

Arbitrary Waveform Generator 12 GS/s

Lot No

5

II.2.2) Additional CPV code(s)

- 38000000 - Laboratory, optical and precision equipments (excl. glasses)

II.2.3) Place of performance

NUTS codes

- UKL12 - Gwynedd

Main site or place of performance

Bangor University

II.2.4) Description of the procurement

Minimum Requirement:

Sample rate - 12GS/s

Minimum DAC sample resolution - 12 bits

Number of channels - 2

Sample memory depth per channel - ≥1 GSa

Analogue bandwidth (3dB) - 5 GHz 1 (Can be with compensation.)

Low frequency cut-off - ≤100MHz

Spurious free dynamic range - -60 dBc

Output impedance - 50

Output type - Single-ended and Differential

Output amplitude - 0.5Vpp (SE), 1Vpp (Diff)

-Compatible with MatLab generated sample files

-Fine adjustment of channel skew

-Digital pre-distortion for frequency response compensation of the equipment output and any external circuit.

-When operating with the Real-time oscilloscope (Lot 6) it should be possible to automatically measure the system frequency response to then flatten the channel response via digital pre-distortion in the AWG.

-Reference clock inputs and outputs

-Ability to synchronise with other AWGs of the same type.

-Continuous repeat of waveform segment.

-Trigger input to start waveform playback.

-Remote control via SCPI commands.

II.2.10) Information about variants

Variants will be accepted: Yes

II.2.11) Information about options

Options: Yes

Description of options

Bangor University reserves the right to purchase associated consumables or services (e.g. warranties, calibration) at a later date.

II.2.13) Information about European Union Funds

The procurement is related to a project and/or programme financed by European Union funds: No

II.2) Description

II.2.1) Title

Real-Time Oscilloscope 6GHz - 2 channels

Lot No

6

II.2.2) Additional CPV code(s)

- 38342000 - Oscilloscopes

II.2.3) Place of performance

NUTS codes

- UKL12 - Gwynedd

Main site or place of performance

Bangor University

II.2.4) Description of the procurement

Minimum Requirement:

Operating Bandwidth - 6GHz

Number of channels - 2

Sample rate per channel - ≥16 GSa/s

Memory Depth - 400Mpts/Channel

ADC Resolution - 10 bits

SSD storage - 1 TB

Input Impedance - 50

-Compatible with MatLab for processing of captured waveforms.

-When operating with Arbitrary Waveform Generator (Lot 4) it should be possible to automatically measure the system frequency response to then apply digital pre-distortion in the AWG to equalise the frequency response.

-Remote control via SCPI commands.

-External reference clock input and output.

II.2.10) Information about variants

Variants will be accepted: Yes

II.2.11) Information about options

Options: Yes

Description of options

Bangor University reserves the right to purchase associated consumables or services (e.g. warranties and calibration) at a later date.

II.2.13) Information about European Union Funds

The procurement is related to a project and/or programme financed by European Union funds: No

II.2) Description

II.2.1) Title

Optical Coherent Modulation Transmitter

Lot No

7

II.2.2) Additional CPV code(s)

- 38636000 - Specialist optical instruments

II.2.3) Place of performance

NUTS codes

- UKL12 - Gwynedd

Main site or place of performance

Bangor University

II.2.4) Description of the procurement

Minimum Requirement:

Polarization multiplex - X and Y

E-O bandwidth (3dB) - 35 GHz

Wavelength range - 1528 nm - 1570 nm

RF input type - Single-ended and Differential

RF input voltage -

Insertion loss -