

# SINGLE SOURCE CERTIFICATION

Authority is requested to make the following purchase under the provision of USF System Regulation USF4.02010(IV)(A)(2)(b) as a non-competitive purchase available from only one source. By submitting this form, department acknowledges that existing exemptions will not apply to this purchase. Single source requests exceeding \$75,000 must be signed by a Procurement Director and posted publicly for (3) business days.

DATE: 10/18/2022

ITEM(S): M8190A Arbitrary Waveform Generator, MXR404A Infiniium Real-Time Oscilloscope, M9502A AXIe Chassis

PRICE: \$ 105,916.15 FUND #: 10009 210600 ENG200 0158022

SUPPLIER ID: 0000086537 REQUISITION#: 164134789

SUPPLIER NAME: Keysight

FEDERAL GRANT:  Y  N

**In your words, describe the equipment, commodity, or contractual service. Explain how these specifications are essential to the accomplishment of your work:**

The M8190A is high precision 2 channel Arbitrary Waveform Generator (AWG) capable of generating high precision multi-tone signals, wideband digital modulated signals with amplitude correction to be used for applications such as phased array, radar, and wireless communications. The proposal includes a Keysight 4 channel 4GHz MXR404A oscilloscope with 10 bit of vertical resolution and an architecture that would allow a growth path to up to 6GHz of BW and 8 channels that would be used as a receiver to analyze the signals created with the AWG, using Keysight 89600 VSA software which has been previously donated to USF. These capabilities are of utmost importance to support the wide bandwidth requirements of both generating and receiving wireless signals with improved degrees of freedom at the USF Center for Wireless and Microwave Information Systems .

**In your own words, describe the reason(s) the item is not subject to competition from other sources and how the stated specification(s) restrict the requisition to only one supplier. Description may include unique features/compatibility/specifications/availability/delivery time frame etc. (Note: Price is not a valid reason).**

The Keysight M8190A along with the MXR404A Infiniium Real-Time Oscilloscope , and the M9502A AXIe Chassis is a unique equipment combination that can transmit and receive arbitrary signals with more than 4 GHz analog bandwidth with up to 14 Bit resolution for 8 GS/s and up to 12 Bit resolution for 12 GS/s sampling rate. The USF Center for Wireless and Microwave Information Systems also has the Keysight 89600 VSA software donated to them, which is a unique software for capturing and analyzing signals and can give the wireless group ' s unique research capabilities. Additionally, the M8190A can calibrate the transmitted signals based on feedback from the MXR404A, which is not the case when using equipment from different brands. This is very important when executing high-accuracy experiments in a non-ideal environment.

**In your own words, describe the due diligence conducted to validate this supplier as Single Source. Description SHOULD list all other suppliers with item(s)/service(s) with similar functions, your efforts to identify other suppliers, and why these suppliers would not qualify to submit a competitive quote.**

The faculty has requested quotes from Rohde & Schwarz for a SMW200A Signal Generator, which for a bandwidth of 2 GHz was quoted at \$90398.00 . Unfortunately, 2 GHz bandwidth is not enough for the interests of the USF Center for Wireless and Microwave Information Systems because most modern automotive radar signals utilize around 4 GHz of bandwidth. Additionally, the faculty has requested quotes from Tabor Electronics for an arbitrary waveform generator P9082D for a total \$51165.75 but this arbitrary waveform generator cannot generate signals with more than 16 Bit resolution for bandwidths larger than 2 GHz. The other option is bandwidth of 4.5 GHz but only 8 Bit resolution. The faculty was only able to find only one oscilloscope quote with 4 GHz of bandwidth from Rohde & Schwarz. He was able to acquire a \$31200.00 quote for the RTO6 Digital Oscilloscope. This oscilloscope unfortunately does not collaborate with the arbitrary waveform generator and does not use the Keysight 89600 VSA software, which is very important for our research.

DocuSigned by:

*Brianne Motier*

11/1/2022

START 11/1/2022 END 11/4/22

Approved By: (Procurement)

DATE

PUBLIC POSTING DATES

Authority: USF4.02010(IV)(A)(2)(b)

Last Modified: 05/10/2021

**OFFICE OF THE UNIVERSITY CONTROLLER, PROCUREMENT SERVICES**

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