ASTI-FM 03-11
REV 1/13 January 2020

DOST-ASTI Bids and Awards Committee
Invitation to Bid (Public Bidding)

ITB No:	20-06-3137	**Date:**	June-26-2020
PR No:	GRASPED-20-06-9985	**Date:**	June-12-2020

Source of Funds:	
Total ABC:	Php 5,500,000.00
Time, Date & Venue of Pre-bid Conference:	July 16, 2020, 1:30 PM at Via Videoconferencing
Time and Date of Submission of Bids:	July 28, 2020, 12:00 PM
Time, Date & Venue of Opening Bids:	July 29, 2020, 1:30 PM at DOST-ASTI / Via videoconferencing
Date of availability of Complete Set of Documents:	July 08, 2020
Deadline of Potential Bidder's Clarifications:	July 18, 2020
Deadline of ASTI's Supplemental Bid Bulletin:	July 21, 2020
Delivery Schedule:	

The Advanced Science and Technology Institute (ASTI), through its Bids and Awards Committee (BAC), hereby invites all interested bidders to submit their bids for the item(s) listed below. Guidelines regarding the format, eligibility, technical and financial documents needed are described in the Instruction to Bidders of the Philippine Bidding Documents

Bidding will be conducted through open competitive bidding procedures using a non discretionary "pass/fail" criterion as specified in the 2016 R-IRR of RA 9184.

A complete set of Bidding Documents may be purchased by interested bidders upon payment of a fee for the Bidding Documents. It is also downloadable for free of charge at DOST-ASTI's website - ***www.asti.dost.gov.ph***

For further inquiries, contact ASTI's BAC Secretariat via email at ***bac-sec@asti.dost.gov.ph***. Interested bidders may also call the number - (632)-426-7423 and look for ASTI's BAC Secretariat.

Respectfully,

Digitally signed by
Paul John M. Serrano

PAUL JOHN M. SERRANO
Chairperson, BAC-2

NO.	TECHNICAL SPECIFICATIONS	QTY	UNIT	UNIT PRICE(Php)	TOTAL PRICE(Php)
1	**Spectrum Analyzer** Note: Listed specifications are minimum specifications. Bidder may provide better model as long as it does not deviate too much from the intent of the original specifications. The model must comply with all the other specifications listed below. 1. Spectrum analyzer with vector network analyzer and cable and antenna tester 1.1. Spectrum analyzer 1.1.1. Frequency range: 5 kHz to 26.5 GHz or better 1.1.2. Amplitude accuracy: ± 0.6 dB or better, full band, at full temperature range 1.1.3. Measurement range: DANL to +20 dBm or better 1.1.4. Reference Frequency accuracy: ± 0.4 ppm	1	lot	5500000.00	5,500,000.00

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	(typical, at full temperature range) 1.1.5. Resolution: 1 Hz or better 1.1.6. Marker frequency resolution: 1 Hz or better 1.1.7. Spur-free dynamic range: 105 dB or better 1.1.8. Noise Floor (DANL at 1 GHz, Preamp On): -155 dBm or better 1.1.9. Phase noise at 1 GHz, 10 kHz offset: -111 dBc/Hz or better 1.1.10. RF input VSWR: 2.2:1 or better (7.5 to 26.5 GHz) 1.1.11. Third order intercept at 1 GHz: +15 dBm or better 1.1.12. Resolution bandwidth: 10 Hz to 5 MHz (zero span), 1 Hz to 5 MHz (Non-zero span) 1.1.13. Maximum safe input level: +27 dBm, 0.5 watts (average CW power) 1.1.14. Maximum safe input level: ± 50 VDC (DC) 1.1.15. Must include independent continuous wave source 1.1.16. Real time analysis 1.1.16.1. 10 MHz real-time bandwidth or better 1.1.16.2. Resolution bandwidth: 1 Hz to 500 kHz or better 1.1.16.3. Density spectrum, spectrogram and real-time spectrum measurements 1.1.16.4. Spur-free dynamic range: 63 dB or better 1.1.16.5. Capable of record and playback 1.2. Must also include the following modules and functionalities: 1.2.1. Cable and antenna Test and Vector network analyzer 1.2.1.1. Reference frequency accuracy: ± 0.4 ppm (typical, at full temperature range) 1.2.1.2. Frequency resolution: at least 1 Hz (for frequencies less than 5GHz), at least 3 Hz (for frequencies less than 20GHz) or better 1.2.1.3. System impedance: 50 ohms, 75 ohms using adapter and calibration kit 1.2.1.4. Test port output power (typical, varies with frequency): -12 to 1 dBm or better 1.2.1.5. Power level accuracy (for frequencies more than 250 kHz): ± 1.5 dB at −15 dBm or better 1.2.1.6. Dynamic range: 100 dB (9 GHz), 90 dB (18 GHz) or better 1.2.1.7. IF bandwidth (selectable): 3 Hz to 100 kHz (or better) 1.2.1.8. Cable and antenna tester measurements includes but not limited to distance-to-fault, return loss, return loss and DTF, VSWR, distance-to-fault (VSWR), cable loss (1-port), insertion loss (2-port), distance-to-fault (Lin) 1.2.1.9. Full 2-port S parameters 1.2.1.10. Transmission/reflection (S21, S11), magnitude and phase 1.2.1.11. Frequency range: 30 kHz to 26.5 GHz or better 1.2.1.12. All four S-parameters (S21, S11, S12, S22), magnitude and phase 1.2.1.13. Directivity: at least 32 dB 1.2.1.14. Load match: at least 25 dB					

	1.2.1.15. Source match: at least 25 dB 1.2.1.16. Flat output power (± 1 dB) across whole frequency range, adjustable in 1 dB steps 1.2.1.17. Trace noise: 0.004 dB or better 1.2.1.18. Time domain mode (includes but not limited to): 1.2.1.18.1. Time stimulus modes - low-pass step, low-pass impulse, bandpass impulse 1.2.1.18.2. Window - Minimum, medium and maximum, Kaiser Beta and impulse width 1.2.1.18.3. Gating 1.2.1.18.3.1. Type – notch, bandpass 1.2.1.18.3.2. Shapes - maximum, wide, normal, minimum 1.2.2. Power meter 1.2.2.1. Frequency range: 100 kHz to 26.5 GHz or better 1.2.2.2. Accuracy: ±0.6 dB (or better) for CW signals 1.2.2.3. Power range: -120 to +20 dBm or better 1.2.2.4. Does not require device warm-up 1.2.2.5. Capable of absolute and relative measurements 1.2.2.6. Must be built-in and programmable 1.2.3. Pre-amplifier 1.2.3.1. Frequency range: 100 kHz to 26.5 GHz or better 1.2.3.2. Gain: 20 dB or better, over the frequency range 1.2.4. IQ analyzer 1.2.4.1. Range: 1 MHz - 26.5 GHz or better 1.2.4.2. Analysis bandwidth: 10MHz or better (for both time and frequency domain) 1.2.4.3. Measurements must include magnitude spectrum, RF enveloped, I/Q waveform 1.2.4.4. I/Q data can be exported as CSV, MAT, text, or any other file format 1.2.4.5. Capable of displaying simultaneous and multi-domain measurement views 1.2.5. Over-the-air (OTA) measurements 1.2.5.1. Capable of 5G OTA measurements 1.2.5.2. OTA analysis frequency range: 1 MHz to 26.5 GHz or better 1.2.5.3. Modulation analysis of downlink primary and secondary synchronization signals (P-SS and S-SS) 1.2.5.4. Scan results of key performance indicators includes but not limited to cell ID, channel power, P-SS, S-SS, sync correction 1.2.6. With built-in calibration capability 1.3. Supports the following measurements: insertion loss/gain, 1-port cable loss, return loss, distance-to-fault and S-parameters 2. Other Items 2.1. RF connector interface for test ports at user end: 3.5 mm (m) SMA connectors 2.2. Calibration kit, 4-in-1, open, short, load and through, DC to 26.5 GHz, 3.5 mm(f) 2.3. Commercial calibration certificate with test data 2.4. AC to DC adapter - 100 to 250 VAC, 50 to 60 Hz 2.5. Power cord - compatible with AC plugs in the Philippines 2.6. Rechargeable battery – can operate at least 3.5				

hours (typical)
2.7. LAN cable
2.8. Case and bag
3. Additional requirements:
3.1. Environmental
3.1.1. MIL-PRF-28800F Class 2
3.2. Temperature range
3.2.1. From -10 to 50°C (14 to 122°F), or better
3.3. EMC
3.3.1. IEC/EN 61326−1 EN 301 489-1, EN 301 489-19 CISPR Pub 11 Group 1, Class B AS/NZS CISPR 11 ICES/NMB−001
3.4. Safety
3.4.1. IEC/EN 61010-1
3.5. Display
3.5.1. Color LCD with LED backlit
3.6. Connection
3.6.1. LAN (RJ 45)
3.6.2. Mini USB - Hi-speed at least USB 2.0
3.6.3. USB-A – at least USB 2.0
3.7. Data storage
3.7.1. Internal: at least 4 GB
3.7.2. Supports external USB 2.0 compatible memory devices and SD or SDHC memory cards
3.7.3. Trace, trace and state, picture, data, S1P, S2P
3.8. Reference
3.8.1. Output
3.8.1.1. 50 ohms impedance
3.8.1.2. Output amplitude: greater than or equal to 0 dBm
3.8.2. Input
3.8.2.1. 50 ohms impedance
3.8.2.2. Trigger input: 3.3 or 5 V TTL logic levels

3. Post Qualification
3.1. Trial testing must be conducted within five (5) working days.
3.1.1 Trial testing may be conducted through online demonstration to confirm if offered unit is compliant to the technical specifications.

4. Warranty and Calibration
4.1. Warranty Security must cover 5% of the total amount of the item.
4.2. Product must have at least three years standard warranty.
4.3 Unit must be factory calibrated upon delivery.
4.4 Supplier must provide calibration certificates upon delivery
4.5 Supplier must provide yearly instrument calibration for three (3) years.
4.6 The calibration must be conducted by an accredited laboratory with ANSI Z540-1-1994 certification
4.7 Shipping costs for repair and calibration must be shouldered by the supplier.

5. Delivery
5.1. Delivery must be made within sixty (60) calendar days upon receipt of Notice to Proceed (NTP)

6. Others

	6.1. Bidder should provide certificate of distributorship from the manufacturer. 6.2. The winning bidder should conduct a training/workshop about the operation and usage of the equipment to be procured. The training should be conducted within the prescribed delivery period, that is, within sixty (60) calendar days upon receipt of NTP. 6.2.1. Estimated No. of Participants: Ten (10) persons 6.2.2. Duration: One (1) to three (3) days 6.2.3. Tentative Venue: DOST-ASTI 6.2.4. The schedule of training/workshop shall be agreed upon with the End-user. 6.2.5. All costs, including meals, rental of equipment/venue (if any), supplies (if any) and other requirements related to the training/workshop, will be shouldered by the winning bidder 6.2.6 Option to conduct online training may be given upon notice from the end-users. Note: Price must be inclusive of Tax, Vat, Delivery fee, and other government-related fees				
TOTAL APPROVED BUDGET FOR THE CONTRACT (ABC):					**Php 5,500,000.00**

RESERVATION CLAUSE

The Advanced Science and Technology Institute reserves the right to accept or reject any proposal, to annul the bidding process, and to reject all proposals at any time prior to contract award, without thereby incurring any liability to the affected proponent or proponents.