BIDFORM FOR THE PUBLIC BIDDING OF: **UPLB-S-056-8-17 SUPPLY AND DELIVERY OF ENGINEERING AND LABORATORY TESTING EQUIPMENT OF BIOMECH**
DATE OF PRE-BID CONFERENCE: **Wednesday, 19 July, 2017 2:30 PM**
DEADLINE OF SUBMISSION OF BIDS: **Wednesday, 02 August, 2017 1:45 PM**

BIOMECH, PR# 8218, 8229
RCC: 9151032, 536-8745

LOT #	ITEM #	REQUIRED SECIFICATIONS	OFFERED SPECIFICATIONS (write down detailed offered specifications)	REFERENCES (include supporting documents)	COMMENTS/ REMARKS (clarify inclusion/ exclusion)	EVALUATION
1	1	**Data Acquisition Equipment, Brand New and Branded**				
		Components: one compact digital acquisition four-slot chassis, one module analog input, one module analog output and one module thermocouple input; including drivers for the modules				
		Software compatibility: LabVIEW Suite; LabVIEW 2011; and Windows 8.1 and 10				
		[Component 1] Compact Digital Acquisition Four-Slot USB Chassis				
		Analog Input				
		Input FIFO: 127 samples per slot				
		Maximum sample rate: Determined by the I/O module or modules				
		Timing accuracy: 50 ppm of sample rate				
		Timing resolution: 12.5 ns				
		Number of channels supported: Determined by the I/O module or modules				
		Analog Output				
		Number of channels supported				
		Hardware-timed task				
		Onboard regeneration: 16				
		Non-regeneration: Determined by the I/O module or modules				
		Non-hardware-timed task: Determined by the I/O module or modules				
		Maximum update rate				
		On-board regeneration: 1.6 MS/s (multi-channel, aggregate)				
		Non-regeneration: Determined by the I/O module or modules				
		Timing accuracy: 50 ppm of sample rate				
		Timing resolution: 12.5 ns				
		Output FIFO size				

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		Onboard regeneration: 8,191 samples shared among channels used				
		Non-regeneration: 127 samples per slot				
		AO waveform modes: Non-periodic waveform, periodic waveform regeneration mode from onboard memory, periodic waveform regeneration from host buffer including dynamic update				
		Digital Waveform Characteristics				
		Waveform acquisition (DI) FIFO: 127 samples per slot				
		Waveform generation (DO) FIFO: 2,047 samples				
		Digital input sample clock frequency				
		Streaming to application: System-dependent memory				
		Finite: 0 to 10 MHz				
		Digital output sample clock frequency				
		Streaming from application: System-dependent				
		Regeneration from FIFO: 0 to 10 MHz				
		Finite: 1 to 10 MHz				
		Timing accuracy: 50 ppm				
		General-Purpose Counters/Timers				
		Numbers of counters/timers: 4				
		Resolution: 32 bits				
		Counter measurements: Edge counting, pulse, semi-period, period, two-edge separation, pulse width				
		Position measurements:: X1, X2, X4 quadrature encoding with Channel Z reloading: two pulse encoding				
		Output applications: Pulse, pulse train with dynamic updates, frequency division, equivalent				
		Internal base clocks: 80 MHz, 20 MHz, 100 kHz				

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		External base clock frequency: 0 to 20 MHz				
		Base clock accuracy: 50 ppm				
		Output frequency: 0 to 20 MHz				
		Inputs: Gate, Source, HW-Arm, Aux, A, B, Z, Up-Down				
		Routing options for inputs: Any module PFI, analog trigger, many internal signals				
		FIFO: Dedicated 127-sample FIFO				
		Frequency Generator				
		Number of channels: 1				
		Base clocks: 20 MHz, 10 MHZ, 100 kHz				
		Divisors: 1 to 16 triggers				
		Base clock accuracy: 50 ppm				
		Output: Any module PFI terminal				
		Power Requirement: Adapted for 220VAC				
		Module PFI characteristics				
		Functionality: Static digital input, static digital output, timing input, and timing output				
		Timing output sources: many analog input; analog output, counter, digital input, and digital output timing signals				
		Timing input frequency: 0 to 20 MHz				
		Timing output frequency: 0 to 20 MHz				
		Digital Triggers				
		Source: any module PFI terminal				
		Polarity: software-selectable for most signals				
		Analog input function: Start Trigger, reference Trigger, pause Trigger, sample Clock, sample Clock Time base				
		Counter/timer function: Gate, Source, HW_Arm, Aux, A, B, Z, Up_Down				
		Module I/O States				
		At power on: Module-dependent				
		Power Requirements				
		Input voltage range: 9 to 30 V				
		Maximum required input power: 15 W				

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		Power input connector: 2 positions 3.5 mm pluggable screw terminal with screw locks similar to Sauro CTMH020F8-0N001				
		Power input mating connector: Sauro CTf020V8, Phoenix Contact 1714977 or equivalent				
		Power consumption from USB: 500 µA maximum				
		Bus Interface				
		USB specification: USB 2.0 Hi-Speed				
		High performance data streams: 7				
		Data stream types available: Analog input, analog output, digital input, digital output, counter/timer input, digital output, counter/timer input, counter/timer output				
		Environmental				
		Operating temperature: -20 to 55°C (IEC-60068-2-1 and IEC-60068-2-2)				
		Storage temperature: -40°C to 85°C (IEC-60068-2-1 and IEC-60068-2-2)				
		Ingress Protection: IP 30				
		Operating humidity: 10 to 90% RH, non-condensing (IEC-60068-2-56)				
		Storage humidity: 5 to 95% RH, non-condensing (IEC-60068-2-56)				
		Pollution degree (IEC 60664): 2				
		Maximum altitude: 5000 m				
		Safety				
		The product meets the following standards of safety for electrical equipment for measurement, control and laboratory use: IEC 61010-1, EN 61010-1; UL 61010-1, CSA 61010-1				
		Electromagnetic Compatibility				

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		The product meets the following EMC standards of for electrical equipment for measurement, control and laboratory use: EN 61326-1 (IEC 61326-1), class A emissions, Basic immunity; EN 55011 (CISPR 11) Group 1, Class A emissions; AS/NZS CISPR 11, Group I, Class A emissions; FCC 47 CFR part 15B, Class A emissions; ICES-001, Class A emissions				
		CE Compliance				
		The product meets the essential requirements of applicable European directives as follows: 2006/95/EC, Low Voltage Directive (safety); 2004/108/EC, Electromagnetic Compatibility Directive (EMC)				
		[Component 2] Analog Input Module				
		Input Characteristics				
		Type of terminal/connectivity: screw terminal				
		Number of channels: 4 analog input channels, differential				
		Sample rate: 100 kS/s/ch, simultaneous				
		ADC resolution: 16 bits				
		Type of ADC: Successive approximation register (SAR)				
		Input range: ± 10.0V				
		Input Voltage Ranges:				
		Measurement Voltage, AI+ to AI-				
		Minimum (V): ± 10.2				
		Typical (V): ±10.4				
		Maximum (V): ± 10.6				
		Maximum Voltage (Signal + Common Mode): ± 10.2 V of common for screw terminal				
		Overvoltage protection: ±30V				
		Conversion time:				
		Channel 0 only: 4.4 µs				

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		Channels 0 and 1: 6 µs				
		Channels 0, 1 and 2: 8 µs				
		Channels 0, 1, 2 and 3: 10 µs				
		Accuracy				
		Calibrated, Maximum (-40°C to 70°C): 0.2 percent of reading/gain error; 0.082 percent of range/offset error				
		Calibrated, Typical (23°C ±5°C): 0.02 percent of reading/gain error; 0.014 percent of range/offset error				
		Uncalibrated, Maximum (-40°C to 70°C): 1.05 percent of reading/gain error; 0.82 percent of range/offset error				
		Uncalibrated, Typical (23°C ±5°C): 0.6 percent of reading/gain error; 0.38 percent of range/offset error				
		Stability, gain drift: 10 ppm/°C				
		Stability, offset drift: 60 µV/°C				
		CMRR (f_{in} = 60 Hz): 73 dB min				
		Input bandwidth (-3 dB): 420 kHz minimum				
		Input impedance, resistance with screw terminal (AI-to-COM): 1 GΩ				
		Input bias current: 10 nA				
		Input noise: 1.2 LSB_{rms} (RMS); 7 LSB (Peak-to-peak)				
		Crosstalk: -80 dB				
		Settling time (to 2 LSBs), with screw terminal, 10 V step: 10 µs				
		Settling time (to 2 LSBs), with screw terminal, 20 V step: 15 µs				
		No missing codes: 15 bits guaranteed				
		DNL: -1.9 to 2 LSB				
		INL: ± LSB maximum				
		MTBF: 1,167,174 hours at 25°C; Bellcore Issue 6, Method 1, Case 3, Limited Part Stress Method				

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		Traceability of calibration: NIST traceable				
		Power Requirements				
		Power consumption from chassis: Active mode 560 mW maximum; Sleep mode 25 µW maximum				
		Thermal dissipation at 70°C: Active mode 560 mW maximum; Sleep mode 25 µW maximum				
		Physical Characteristics				
		Screw terminal wiring: 0.2mm^2 to 2.5 mm^2 (26 to 14 AWG) copper conductor wire with 13 mm of insulation stripped from the end				
		Ferrules: 0.25 mm^2 to 2.5 mm^2				
		Weight: 150 g				
		Safety				
		The product meets the following standards of safety for electrical equipment for measurement, control and laboratory use: IEC 61010-1, EN 61010-1; UL 61010-1, CSA 61010-1; EN 60079-0:2012, EN 60079-15:2010; IEC 60079-0:Ed 6, IEC 60079-15:Ed 4; UL 60079-0:ed 5; UL 60079-15:Ed 3; CSA 60079-0:2011, CSA 60079-15:2012				
		Electromagnetic Compatibility				
		The product meets the following EMC standards of for electrical equipment for measurement, control and laboratory use: EN 61326-1 (IEC 61326-1), class A emissions, Industrial immunity; EN 55011 (CISPR 11) Group 1, Class A emissions; AS/NZS CISPR 11, Group I, Class A emissions; FCC 47 CFR part 15B, Class A emissions; ICES-001, Class A emissions				
		CE Compliance				

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		The product meets the essential requirements of applicable European directives as follows: 2014/35/EU, Low Voltage Directive (safety); 2014/30/EU, Electromagnetic Compatibility Directive (EMC); 94/9/EC, Potentially Explosive Atmospheres (ATEX)				
		Environmental				
		Operating temperature: -40 to 70°C (IEC-60068-2-1 and IEC-60068-2-2)				
		Storage temperature; -40°C to 85°C (IEC-60068-2-1 and IEC-60068-2-2)				
		Ingress Protection: IP 40				
		Operating humidity: 10 to 90% RH, non-condensing (IEC-60068-2-78)				
		Storage humidity: 5 to 95% RH, non-condensing (IEC-60068-2-78)				
		Pollution degree (IEC 60664): 2				
		Maximum altitude: 2000 m				
		[Component 3] Analog Output Module				
		Output Characteristics				
		Number of channels: 4 analog output channels				
		Sample rate: 100 kS/s/ch, simultaneous				
		DAC resolution: 16 bits				
		Type of DAC: String				
		Power-on output state: Channels off				
		Startup/Power down voltage: 0 V				
		Output voltage range: ±10V (nominal), ±10.3V (minimum), ±10.7V (typical), ±11V (maximum)				
		Current drive: ±1 mA per channel max				
		Output impedance: 0.1Ω				
		Accuracy				

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		Calibrated, Maximum (-40 to 70°C): 0.35 percent of reading/gain error; 0.75 percent of range/offset error				
		Calibrated, Typical (25°C, ±5°C): 0.01 percent of reading/gain error; 0.1 percent of range/offset error				
		Uncalibrated, Maximum (-40°C to 70°C): 2.2 percent of reading/gain error; 1.7 percent of range/offset error				
		Uncalibrated, Typical (25°C, ±5°C): 03 percent of reading/gain error; 0.25 percent of range/offset error				
		Stability: 6 ppm/°C gain drift; 80µV/°C offset drift				
		Protection: ±30 overvoltage; indefinitely for short circuit				
		Update time: 1 channel- 3µs, 2 channels - 5µs, 3 channels - 7.5 µs, 4 channels - 9.5 µs				
		Noise: 260μV_{rms}				
		Slew rate: 4 V/µs				
		Crosstalk: 76 dB				
		Settling time (10 0pF load, to 1 LSB): 20 µs (Full-scale step), 10 µs (3 V step), 8 µs (0.1 V step)				
		Glitch energy (256 steps, worst case): 2 mV for 2 µs				
		Capacitive drive: 1,500 pF min				
		Monotonicity: 16 bits				
		DNL: -1 to 2 LSBs max				
		INL (endpoint): 16LSBs max				
		MTBF: 1,732,619 hours at 25C; Bellcore Issue 2, Method 1, Case 3, Limited Part Stress Method				
		Power Requirements				
		Power consumption from chassis: 625 mW max (Active mode), 25 µW (Sleep mode)				

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		Thermal dissipation (70°C): 625 mW max (Active mode), 25 µW (Sleep mode)				
		Physical Characteristics				
		Screw terminal wiring: 12 to 24 AWG copper conductor wire 10 mm of insulation stripped from the end				
		Ferrules: 0.25 mm^2 to 2.5 mm^2				
		Weight: 150 g				
		Safety				
		The product meets the following standards of safety for electrical equipment for measurement, control and laboratory use: IEC 61010-1, EN 61010-1; UL 61010-1, CSA 61010-1				
		Electromagnetic Compatibility				
		The product meets the following EMC standards of for electrical equipment for measurement, control and laboratory use: EN 61326-1 (IEC 61326-1), class A emissions, Industrial immunity; EN 55011 (CISPR 11) Group 1, Class A emissions; AS/NZS CISPR 11, Group I, Class A emissions; FCC 47 CFR part 15B, Class A emissions; ICES-001, Class A emissions				
		CE Compliance				
		The product meets the essential requirements of applicable European directives as follows: 2006/95/EC, Low Voltage Directive (safety); 2004/108/EC, Electromagnetic Compatibility Directive (EMC)				

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		Environmental				
		Operating temperature: -40 to 70°C (IEC-60068-2-1 and IEC-60068-2-2)				
		Storage temperature; -40°C to 85°C (IEC-60068-2-1 and IEC-60068-2-2)				
		Ingress Protection: IP 40				
		Operating humidity: 10 to 90% RH, non-condensing (IEC-60068-2-56)				
		Storage humidity: 5 to 95% RH, non-condensing (IEC-60068-2-56)				
		Pollution degree (IEC 60664): 2				
		Maximum altitude: 2000 m				
		[Component 4] Thermocouple module				
		Input Characteristics				
		Number of channels: 16 thermocouple channels, 1 internal auto zero channel, 1 internal cold-junction compensation channel				
		ADC resolution: 24 bits				
		Type of ADC: delta-Sigma				
		Sampling mode: scanned				
		Voltage measurement range: ±78.125 mV				
		Temperature measurement ranges; works over temperature ranges defined by Nist (J, K, T, E, N, B, R, S thermocouple types)				
		Timing modes and sample rates (all channels): High-resolution (1 S/s); High-speed (75 S/s); sample rate may be faster if fewer than all channels are used				
		Common-mode voltage range: ±1.2V minimum (Channel-to-COM); ±250V (COM-to-earth ground)				
		Common mode rejection ratio, High resolution mode (at DC and 50 hz to 60 Hz); (100 dB (Channel-to-COM; >170 dB (COM-to-earth ground)				

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		Common mode rejection ratio, High-speed mode (at 0 Hz to 60 Hz): 70 dB (Channel-to-COM); >150dB (COM-to-earth ground)				
		Input bandwidth: 14.4 Hz (high-resolution mode); 78 Hz (high-speed mode)				
		High-resolution noise rejection (at 50 Hz and 60 hz): 60 dB				
		Overvoltage protection: ±30 V between ant two inputs				
		Differential input impedance: 78MΩ				
		Input current: 50nA				
		Input noise; 200 n Vrms (high-resolution mode); 7 μV_{rms} (high-speed mode)				
		Gain error, high-resolution mode: 0.03% typical (at 25°C); 0.07% typical and 0.15% maximum (at -40°C to 70°C)				
		Gain error, high-speed mode: 0.08% typical and 0.16% maximum (-40°C to 70°C)				
		Offset error, high-resolution mode: 4 µV typical, 6 µV maximum				
		Offset error, high-speed mode: 14 µV typical, 17 µV maximum				
		Offset error from source impedance: add 0.05 µV per Ω, when source impedance >50Ω				
		Cold-junction compensation accuracy: 0.8 °C typical, 1.7 °C maximum (0 °C to 70 °C); 1.1 °C typical, 2.1 °C maximum (-40 °C to 70 °C)				
		MTBF: 852,407 hours at 25 °C; Bellcore Issue 2, Method 1, Case 3, Limited Part Stress Method				
		Temperature Measurement Accuracy				
		High-resolution mode: <0.02 °C (types J, K, T, E, N); <0.15 °C (types B, R, S)				

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		High-speed mode: <0.25 °C (types J, K, T, E), <0.35 °C (type N), <1.2 °C (type B), <2.8 °C (types R, S)				
		Power Requirements				
		Power consumption from chassis: 490 mW maximum (active mode), 25 µW maximum (sleep)				
		Thermal dissipation, at 70 °C: 840 mW maximum (active mode), 710 mW maximum (sleep mode)				
		Physical Characteristics				
		Spring type terminal wiring: 0.08 m^2 to 1.0 mm^2 (28 AWG to 18 AWG), 7 mm of insulation stripped from the end				
		Wires per spring terminal: 1 wire				
		Weight: 159 g				
		Safety				
		The product meets the following standards of safety for electrical equipment for measurement, control and laboratory use: IEC 61010-1, EN 61010-1; UL 61010-1, CSA 61010-1; EN 60079-0:2012, EN 60079-15:2010; IEC 60079-0:Ed 6, IEC 60079-15:Ed 4; UL 60079-0:ed 5; UL 60079-15:Ed 3; CSA 60079-0:2011, CSA 60079-15:2012				
		Electromagnetic Compatibility				
		The product meets the following EMC standards of for electrical equipment for measurement, control and laboratory use: EN 61326-1 (IEC 61326-1), class A emissions, Industrial immunity; EN 55011 (CISPR 11) Group 1, Class A emissions; AS/NZS CISPR 11, Group I, Class A emissions; FCC 47 CFR part 15B, Class A emissions; ICES-001, Class A emissions				

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RCC: 9151032, 536-8745

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		CE Compliance				
		The product meets the essential requirements of applicable European directives as follows: 2014/35/EU, Low Voltage Directive (safety); 2014/30/EU, Electromagnetic Compatibility Directive (EMC); 94/9/EC, Potentially Explosive Atmospheres (ATEX)				
		Environmental				
		Operating temperature: -40 to 70°C (IEC-60068-2-1 and IEC-60068-2-2)				
		Storage temperature; -40°C to 85°C (IEC-60068-2-1 and IEC-60068-2-2)				
		Ingress Protection: IP 40				
		Operating humidity: 10 to 90% RH, non-condensing (IEC-60068-2-56)				
		Storage humidity: 5 to 95% RH, non-condensing (IEC-60068-2-56)				
		Pollution degree (IEC 60664): 2				
		Maximum altitude: 2000 m				
		OTHER REQUIREMENTS: Manufacturer's brochures/data sheets to be submitted by bidder				
		Availability of manufacturer's trained technician for after sales service.				
		Warranty Period: 3 years on all parts and service Delivery Period: 60 calendar days upon receipt of Notice to Proceed				
2	**1**	**Moisture Analyzer, Brand New and Branded**				
		Fully Automatic Infrared Moisture Analyzer for Daily Routine Operation				
		Maximum weighing capacity: 70 g				
		Repeatability, average: ±0.2% for initial sample weight approximately > 1 g; ±0.05% for initial sample weight approximately > 5 g:				

BIDFORM FOR THE PUBLIC BIDDING OF: **UPLB-S-056-8-17 SUPPLY AND DELIVERY OF ENGINEERING AND LABORATORY TESTING EQUIPMENT OF BIOMECH**
DATE OF PRE-BID CONFERENCE: **Wednesday, 19 July, 2017 2:30 PM**
DEADLINE OF SUBMISSION OF BIDS: **Wednesday, 02 August, 2017 1:45 PM**

BIOMECH, PR# 8218, 8229
RCC: 9151032, 536-8745

LOT #	ITEM #	REQUIRED SECIFICATIONS	OFFERED SPECIFICATIONS (write down detailed offered specifications)	REFERENCES (include supporting documents)	COMMENTS/ REMARKS (clarify inclusion/ exclusion)	EVALUATION
		Readability: 1 mg, 0.01%				
		Typical sample quantity: 5 to 15 g				
		Result display: Moisture content in %M and g; dry matter in %S and g; ATRO in %M/S				
		Temperature range and settings: 40°C - 160°C; stand-by temperature selectable from 40 - 100°C in increments of 1°C				
		Sample heating: Infrared metal heating elements				
		Heating programs: Standard drying; gentle drying				
		Shutoff parameter: Optional. Fully automatic; Semi-automatic mg (1 - 50 mg / 5 - 300 sec.); Semi-automatic % (0.1 - 5.0% / 5 - 300 sec.); Timer settings (02:00 - 99.59 min.; Manual)				
		Access to sample chamber: Removable hood with wide opening angle, soft close mechanism				
		Measuring program: 1 program saved in a non-volatile memory (freely selectable method parameters)				
		Memory for data storage: Results are saved until the start of the next measurement				
		Operator guidance features: Intuitive user interface, including touch screen and easy to understand menu guidance				
		Language selection: includes English				
		Status light: displays the status "analysis running/START", "analysis completed/STOP" or "analysis error"				
		Sample inspection: LED-illuminated sample chamber, inspection window with grid above the hood				
		Draft shield: integrated draft shield				

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		Cleaning: removable hood, inspection window with grid and sample chamber plate for easy cleaning in the dish washer				
		Log printout: can be connected to an optional printer				
		Monitoring of inspection and testing equipment: External calibration using optional calibration weights				
		Data interface: Mini USB. Direct data transfer to Microsoft Windows programs without any additional software; Programmable data output interval; Data transfer protocols SBI, table format, text format				
		Power supply: automatic voltage detection 115/230V; 60 hz				
		Power consumption: Maximum 640 VA				
		Temperature range: 10°C to 30°C				
		Housing dimensions (W x D x H): 215 x 400 x 210 mm				
		Weight: approx. 6.2 kg				
		Includes power cord, user manual, aluminum sample pans and glass fiber filter				
		Applications: The moisture analyzer can be used for quick and reliable determination of the moisture content of liquid, pasty and solid substances using the thermogravimetric method. Typical applications include the analysis of foods, beverages, pharmaceuticals, chemicals, paper materials and environmental protection products.				

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		Performance: The moisture analyzer monitors the drying process and stops the measurement once the sample weight is constant. The built-in weighing system with 1 mg resolution is specifically optimized for use in higher temperature ranges and delivers the required measurement accuracy. Two powerful metal tube heating elements heat the samples. These heating elements are fast, extremely rugged and durable. Compared to glass heating lamps, e. g. infrared lamps or halogen heaters, they are especially resistant to dirt and vibrations.				
		Availability of manufacturer's trained technician for after sales service. Delivery Period: 60 calendar days upon receipt of Notice to Proceed				
		Warranty: 1 year on all components				

Note: Please fill-up applicable columns.

Signature of Representative: _____

Name of Representative: _____

End-user:

Position: _____

_____
Signature over Printed Name

Company: _____

Address: _____

Telephone/ Fax: _____

Email: _____