



आईटीआई लिमिटेड ITI Limited  
बेंगलूरु प्लांट Bangalore Plant  
बेंगलूरु Bangalore - 560 016

Ref: CAPX4G035

Date: 20.09.2022

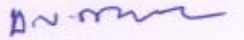
### CORRIGENDUM

**Subject: Change in Technical Specification**

Kind attention is invited to the schedule of the tender “ RFP No CAPX4G035” for “**ICT FUNCTIONAL TESTER.**”

RFP CAPX4G035 Dated 12-09-2022	EXISTING	AMENDED
	Section III to be deleted	Refer New Section III –Page No 1 to 4
Section V to be deleted	Refer New Section V –Page No 5	

In this context, it is intimated that the **Change in Technical Specification in Section 3 and section 5 are Amended as below (Page 1 to 5).**

  
For ITI Limited

### SECTION III

## Specification of ICT Functional Tester

Sl.No	Description	Compliance
	<b>General Specifications ( ***Detailed and Specific requirements are provided in subsequent sections*** )</b>	
1.1	In-Circuit Tester(ICT) setup shall be integrated rack based combinational test setup comprising of the following modules:	
1.2	<b>ICT system</b>	
1.3	TEST Fixture/Jig with Bed of Nail/Connectors	
1.4	Additional 3rd party test equipments	
1.5	Software: Test and Debug programs, Code Programmers and Report generation	
1.6	Support for standard Communication Protocols: USB, CAN, Ethernet etc	
	<b>It shall be capable of conducting following functions with DUT</b>	
1.7	In circuit RLC measurements	
1.8	In circuit board level Function Tests	
1.9	In Circuit Parametric Measurements: Voltage, Current	
1.10	Boundary Scan tests with Complete run time environment	
1.11	In-circuit programming with JTAG	
1.12	Support for standard Digital buses : I2C, SPI, UART etc	
	<b>ICT system should integrate and demonstrate the interfacing of Thirdparty Test Equipments ( ***Equipments will be provided by ITI***)</b>	
1.13	<b>RF Vector signal Generators (Chapter Chapter 6, 7 and 8 of 3GPP) Make: R&amp;S, Model: SMW200A</b>	
1.14	<b>RF vector signal Analyzers (Chapter 6, 7 and 8 of 3GPP) Make: R&amp;S, Model: FSV3000</b>	
1.15	<b>VSA/VSG (As per chapter 6, 7 and 8 of 3GPP) Make: Keysight, Model: E6680E</b>	
1.16	<b>Analog signal Generator Make: R&amp;S, Model: SMB100A</b>	
2	<b>Input power shall be 220V AC with 50Hz</b>	
3	<b>Test instruments and Modules shall be interfaced using GPIB/VXI/PXI standards</b>	

Sl.No	Description	Qty required	Compliance
4	<b>ICT system shall interface with custom made Test Fixture / Jigs</b>		
	<b>ICT to Test Fixture interface</b>		
4.1	TEST Fixture/ Jig shall be interfaced over any industry standard electrical interface		
	<b>Test Fixture/JIG Customization</b>		
4.2	Device under Test (DUT) shall be suitably mounted on Test Jig built with Bed-of-Nails as a standard methodology		

4.3	In case it is not feasible for Bed-of-Nails, suitable Test fixture shall be made with Connectors		
4.4	Combination Bed-of-Nails and Minimum number of connectors needs to be explored		
4.5	Connectors when used, shall be of auto insert type, while it shall be manually connected when unavoidable		
4.5A	To enable auto insertion of connectors, suitable PCBs as required may be provided		
	<b>Types of Fixture/JIG for DUT</b>		
4.6	<b>Types of cards to be supported will be decided after finalising ICT functional tester</b>		
4.6	Customised Fixture/JIG and Connector PCBs for each card type	Yes	
4.7	Number of Test points to be supported	132(Max)	
4.8	Category of Test points	Mixed Type : Power, Analog, Digital and RF	

Sl.No	Description	Compliance
5	<b>ICT System software package shall comprises of Platform Software and Tester Applications</b>	
	<b>Software for ICT platform</b>	
5.1	Win 10 Operating System	
5.2	LabVIEW	
5.3	Interfaced with Third-party simulators viz., Mentor, Quicksim etc.,	
5.4	Interfaced with Boundary scan Test System	
	<b>Tester Applications should be designed, developed and customised each type of Card</b>	
	<b>Features of Tester Application</b>	
5.5	User Login Management control to run the Software ( Admin, Engineer, operator)	
5.6	Built using LabVIEW, Python, .NET or any standard based development environment	
5.7	Multiple Tests are to be supported per Card type towards 90% component coverage	
5.8	User Interface (UI) shall be designed to be Graphical based and user friendly	
5.9	Provision to select GO-NO-GO as well as individual tests to be provided	
5.10	Provision to run tests in continuous loops to be supported	
5.11	Provision to conduct Short Test, Open Test and RLC measurement test	
5.12	Provision to execute, debug all tests from single user application	
5.13	Should be able to support Probe guide for each test for hardware debugging	
5.14	Should be able to connect to all digital and Analog test pins	
5.15	Should be able to interface over Digital bus protocols viz., I2C, SPI, UART and JTAG	
5.16	Should be able to interface over USB, Ethernet, Serial Bus	
5.17	Should be able to program CPLD/Flash /Memory Card as a part of Test suit	
5.18	Should be able to import standard file types and generate Netlist/Schematics	

5.19	Test report generation and printing option to be supported for each DUT	
5.20	Should be able to generate Fault dictionary and analytics based insights	
5.21	Should support transfer of "Fault report" to "Card level Debugging setup" to enable bug fixing	

Sl.No	Description	Qty required	Compliance
<b>6</b>	<b>Specifications of ICT module</b>		
<b>6.1</b>	ICT shall comprises of Computing system and add-on modules		
	<b>Computing system specifications</b>		
<b>6.2</b>	Embedded Computing system or industrial grade Desktop system		
<b>6.3</b>	Intel core i5, 64 bit or better		
<b>6.4</b>	DDR3	4GB	
<b>6.5</b>	HDD	128GB	
<b>6.6</b>	USB 2.0	4 Ports	
<b>6.7</b>	USB 3.0	2 Ports	
<b>6.8</b>	Ethernet	4 Ports 10/100/1000Mbps base T	
<b>6.8A</b>	CAN bus	1 Port	
<b>6.9</b>	PXI Express 4 & 2	1Port	
<b>6.10</b>	HDMI	1Port	
<b>6.11</b>	IEEE 488	1 Port	
	<b>Monitor</b>		
<b>6.12</b>	21 Inch size and Tilt adjustable		
<b>6.13</b>	1920X1080 Pixel Full HD		
<b>6.14</b>	LED Backlit		
<b>6.15</b>	16:9 Aspect ratio		
<b>6.16</b>	Touch screen		
<b>6.17</b>	<b>Bar code reader</b>		
<b>6.18</b>	<b>Keyboard, Mouse and other accessories</b>		
	<b>LCR meter Module</b>		
<b>6.19</b>	Capacitance	1PF to 1F	
<b>6.20</b>	Inductance	1uH to 1H	
<b>6.21</b>	Resistance	1ohm to 10Mohm	
	<b>Programmable DC power Supply Module</b>		
<b>6.22</b>	80Volts @ 3Amps	2 Ports	
<b>6.23</b>	12Volts @ 5 Amps	2 Ports	
<b>6.24</b>	5Volts @ 5Amps	2 Ports	
	<b>Multimeter Module</b>		
<b>6.25</b>	Input Voltage	100Volts Max	
<b>6.26</b>	Resolution	6 Digits	
	<b>Serial Channels</b>	4	

6.27	RS232		
	RS485/422		
6.28			
	<b>Multiplexer and Switch Module</b>		
6.29	100V Max inputs	4Ports	
6.30	50V Max inputs	4Ports	
6.31	16V Max inputs	128Ports	
6.32	<b>Oscilloscope Module</b>		
6.33	Number of Channels with 4GHz Bandwidth	2	
6.34	Number of Channels with 2GHz Bandwidth	2	
6.34A	<b>Waveform Generator</b>		
6.34B	Digital Clock signal	40Mhz	
6.35	<b>Digital I/O</b>		
6.36	Bidirectional channels	96	
6.37	Voltage Range	16V	
6.38	Digital Channel frequency	100Khz	
	<b>Analog I/O</b>		
6.39	Analog Input and Output Channels	16	
6.40	Voltage Range	16V, 100V	
	<b>UUT Power supply</b>		
6.41	3.3V @10A		
6.42	5V @10A		
6.43	12V @30A		
6.44	60V @5A		
	<b>Test Clips/Probes</b>		
6.45	1GHZ, 300V CAT-II, 10Mohm, 4PF	4 Numbers	
6.46	100MHZ, 10Mohm, 10PF	6 Numbers	
6.47	Multimeter Probe	2 Sets	
6.48	RF power meters (40W)	1 No	
6.49	RF vector signal Analyzers (As per chapter 6, 7 and 8 of 3GPP)	1 No	
6.50	RF Vector signal Generators (As per chapter 6, 7 and 8 of 3GPP)	1 No	
	<b>Programmiers / Emulators</b>		
6.51	Lattice HW-USBN-2B or equivalent (for CPLD)	1 No	
6.52	Xilinx HW-USB-II-G or equivalent (for FPGA)	1 No	
6.53	Lauterbach JTAG-ARMV8-A-A with ARM20-MIPS14 adapter or equivalent (for Processor)	1 No	
6.54	Spectrum Digital XDS560v2 System Trace USB & Ethernet or equivalent (for Processor)	1 No	
6.55	SF600 SPI NOR Flash Programmer or equivalent	1 No	
6.56	Serial Memory I2C Evaluation Kit - DM160237 or equivalent (for EPROM)	1 No	
6.57	Micro-SD Card programmer (1 slot)	1 No	

**SECTION- V: PRICE BID FORMAT**

Sl No	Item Description	Qty Nos	Rate	Other charges if any	Tax & Duties	Total
1	ICT Functional Test System and its accessories	01				
1a)	Inbuilt Measuring Instruments - individual Price					
2	ICT Software Package	01				
3	AMC for ICT Functional Test System					
3.1	AMC Charges for 1 <sup>st</sup> Year					
3.2	AMC Charges for 2nd Year					
3.3	AMC Charges for 3rd Year					
<b>Total</b>						

**Note:**

- 1) L1 Status will be evaluated based on sum of all the cost (Sl. No. 1 to 3).
- 2) The AMC Rates will be fixed as per the Quote / PO, however firm PO for AMC shall be released only if Purchaser desires to go for AMC after the completion of Warranty Period.
- 3) Unit Rate will be in US \$ /European € /Japanese Yen ¥ /UK Pound £ /Indian Rupees.
- 4) The Rates should be on DOOR DELIVERY AT ITI BANGALORE basis including Loading & unloading and other incidental expenses.
- 5) Indigenous suppliers quote will be in Indian currency only.

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(Authorized signatory of the bidder with date and seal)