No. B.V-7/2013-14-C(QRs)-(2)1589

भारत सरकार/Government of India

गृह मंत्रालय/Ministry of Home Affairs

पुलिस आधुनिकीकरण प्रभाग /Police Modernization Division

संभरण-I डेस्क /Prov.I Desk

Jaisalmer House, 26 Man Singh Road,
New Delhi, dated the 13th Aug, 2015

To,

The DsG: AR, BSF, CISF, CRPF, ITBP, SSB, NSG & BPR&D.

Subject: QRs and Trial Directives of Diagnostic and Repair system for PC based Equipment.

Sir,

The undersigned is directed to refer to the subject mentioned above and to say that the QRs and Trial Directives in respect of Diagnostic and Repair system for PC based Equipment as per Annex- "A" and Annex-"B", respectively have been approved by the competent authority in MHA.

2. Henceforth, all the CAPFs should trial evaluate and procure the above item, required by them. strictly as per the laid down QRs.

3. Concerned CAPF will be accountable for correctness of the QRs and Trial Directives of Diagnostic and Repair system for PC based Equipment.

Yours faithfully,

(M. N. Sukole)
Under Secretary to the Govt. of India

Encl: As above.

Copy forwarded for necessary action to:

SO (IT), MHA - with the request to host the QRs and Trial Directives of Diagnostic and Repair system for PC based Equipment on official website of MHA (under the page of Organizational Set up, Police Modernization Division-Communication Equipments).

Copy to: DDG (Procurement), MHA

(R.K. Soni)
Section Officer (Prov.I)

QRs/SPECIFICATIONS OF DIAGNOSTIC AND REPAIR SYSTEM FOR PC BASED EQUIPMENT

S l No.	PARAMETERS	Specification
1	General :- System Model should be Desk Top type with inbuilt software controlled programmable power supply and operates with Standard PC on Windows 7 or better with USB 2.0/PCI Express or better.	
	a) PXI Instrumentation Support	System should have compatibility for Integrated PXI Hardware. PXI instrument control should be Available from main System Software test sequencer mode.
	b) Boundary Scan Test	Built in Integrated J-TAG port on the front panel of equipment along with Digital Channels for Boundary Scan Testing and coverage of Non Boundary Scan compatible devices through Digital Channels.
	c) Data Protection	Software and Data available should be protected with Smart Card or dongle. Authorized personal should Only be able to access Test system & available data Interface of system with PC on USB 2.0/PCI Express or better.
2	Test Points	
	a) Digital	Minimum 96 channel expandable up to 256
	b) Analog	Minimum 3 channel which will multiplex with 96/256.
	c) VI curve	Minimum 96 channels further Expandability up to 256 channels
3	Test Speed	
	a) Digital	10 MHz or better
	b) Data Rate	Programmable from 100 nano seconds to 200 micro seconds or better.
	c) Analog &VI Sampling Rate	20 MHz or better
	d) VI test Frequency	DC to 100 KHz (user controlled) or better.
4	Digital Drivers & Sense (For Digital Components)	
	a) Drive& Sense Level & Resolution	-10V to +10 V Programmable in steps, or -12V to +12V programmable in steps.
	b) Memory Behind each Pin	8K or better in single burst mode
	c) Current & Drive state	Minimum ± 650mA, High, Low and Tri-State
5	Analog Drive Level & Sense (For Analog Components)	
	a) Drive Pattern	Sin / Triangular / Rectangle / Ramp / DC,
	b) Source Impedance & Resolution	Programmable up to 100 K. 12 Bit DAC / ADC or better
	c) Drive Current & Voltage	+/- 250 mA / Per Channel minimum & +/- 13V per Channel
6	VI Signature (Power Off Test)	
	a) Live Comparison	Dual Clip & Probes.
	b) Drive Voltage &Freq	-13 V to +13 V programmable, DC to 100 KHz
	c) Drive Patterns	Sine. Square , Tri-angular, Ramp , DC
	d) Source Impedance	Programmable to 100KOhms
	e) Modes	VI, VT and VZ
7	Unit Under Test (UUT) Power Supply	Programmable Power Supply 36V @6A. integrated software controlled Programmable Power Supply with provision of setting the Voltage and Current from main Software and fixed supplies +/- 5V @ 8Amps, +/- 12V @ 3.3Amps, 3.3.V @ 8Amps.

8	Measurements for General Analog Components		
	a) Resistance, Capacitor, Frequency, Inductance, Voltage	Resistance: Upto 1 M Ohm Capacitance upto 10000μF, Frequency: upto 48 MHz, Inductance upto 10H, Voltage: +/- 13V or more		
	b) Built in Digital Oscilloscope	With min 03 Channels, Resolution & Amplitude min 12 bit or better, 0-13Volt, Sampling Rate 20 Ms/s and Bandwidth 20 MHz		
	c) Built in Function Generator	With minimum 03 Channels, Resolution & Amplitude minimum 12 bit or better, 0-13V, Frequency 10MHz, Sin, Square, Tri-angular, Ramp, DC		
9	Simulator	IEEE based Global Standard VHDL Simulator. For testing LSI / RAM Devices in various Configuration.		
10	Library	System should have minimum device Model Library size of more than 30000 devices including 12VCMOS, 3V3, 74CMOS, Analog, BSDL CMOS, DTL, ECL, EIA, Mixed, OPTO, PECL, REGULATOR, Russian, Tiny, TTL, Flash RAM etc.. Free software Updating of library for three years should be provided by firm.		
11	Clock Pin Termination	Termination Voltage & Imp ±10V Programmable, 50Ohms to 100KOhms		
12	Test Interface			
	Interface Type	Clip, Probes, Fixtures, Card Edge Test, JTAG port.		
	Out Circuit Adaptor	For testing Flash RAMs of different packages of different Radio/Communication Sets.		
13	Software	Software should have VHDL Test program generation Capability User defined Templates for Customized report generation Capability of Image & Schematic Integration under various Test Programs for component Identification by User. BUS Devices isolation facility		
14	i) PC with latest configurations including color LED Monitor of 17/18" size, Keyboard, optical mouse, or ii) Laptop with latest configurations (User may decide and quote during tendering as per requirement)			

(SI/RM Bjendra Singh, BSF)

(M S Yadav, AC (Tech), CRPF)

(Sunil Kumar, DC (Tele), ITBP)

(S K Singh, Comdt (C-Eqpt), BSF)

(Shailendra Kumar, IG (Cemn), CRPF)

(SI/ Exe Sohrab Ansari, CISF)

(Gurbachan Singh, SSO (E), BPR&D)

(Major Kapil Dahiya, TC (Eqpt), NSG)

(Virendra Agrawal, DIG(Eqpt), CRPF)

Approved/ Not Approved

(Pranay Sahay, IPS)
DG, CRPF

TRIAL DIRECTIVE OF DIAGNOSTIC AND REPAIR SYSTEM FOR PC BASED EQUIPMENT

Trial of equipment will be conducted by a Board of Officers in the presence of Vendor or representative of Vendor/Firms to assess the actual performance of the equipment.

2) Al parameter / Specifications mentioned in the QRs will be checked by board of officers by ascertaining /verifying following checks.

    i) **Physical Checks**: In this category specifications of the equipment will be checked physically as per QRs.

    ii) **Functional Check**:- The vendors will show the all features/ configuration of the equipment to the board of officers during technical evaluation.

    iii) **Submission of certificates**:- Specification which cannot be checked due to lack of testing facilities/ expertise, a certificate of test shown against each will be provided by vendor/firm during technical and physical trial.

Sl No.	Parameters	Specification	Trial/ Test Procedure
1	General Requirement	System Model should be Desk Top type with inbuilt software controlled programmable power supply and operates with Standard PC on Windows 7 or better with USB 2.0/PCI Express or better.	Functional and Physical check
	a) PXI Instrumentation Support	System should have compatibility for Integrated PXI Hardware. PXI instrument control should be Available from main System Software test sequencer mode.	Physical and Functional check by live demonstration / practically shown the parameters of the equipment
	b) Boundary Scan Test	Built in Integrated J-TAG port on the front panel of equipment along with Digital Channels for Boundary Scan Testing and coverage of Non Boundary Scan compatible devices through Digital Channels.	
	c) Data Protection	Software and Data available should be protected with Smart Card or dongle. Authorized personal should Only be able to access Test system & available data. Interface of system with PC on USB 2.0/PCI Express or better.	
2	Test Points		
	a) Digital	Minimum 96 channel expandable up to 256	Physical and Functional check by live demonstration / practically shown the parameters of the equipment
	b) Analog	Minimum 3 channel which will multiplex with 96/256.	
	c) V-I curve	Minimum 96 channels further Expandability up to 256 channels	
3	Test Speed		
	a) Digital	10 MHz or better	Physical and Functional check by live demonstration / practically shown the parameters of the equipment
	b) Data Rate	Programmable from 100 nano seconds to 200 micro seconds or better.	
	c) Analog &VI Sampling rate	20 MHz or better	
	c) VI test Frequency	DC to 100 kHz (user controlled) or better.	

#	Parameter	Specification	Verification
4	**Digital Drivers & Sense (For Digital Components)**		
	a) Drive & Sense Level & Resolution	-10V to +10 V Programmable in steps, or -12V to +12V programmable in steps.	Physical and Functional check by live demonstration / practically shown the parameters of the equipment
	b) Memory Behind each Pin	8K or better in single burst mode	
	c) Current & Drive state	Minimum ± 650mA, High, Low and Tri-State	
5	**Analog Drive Level & Sense (For Analog Components)**		
	a) Drive Pattern	Sin / Triangular / Rectangle / Ramp / DC	Physical and Functional check by live demonstration of the equipment
	b) Source Impedance & Resolution	Programmable up to 100 K., 12 Bit DAC / ADC or better.	
	c) Drive Current & Voltage	+/- 250 mA / Per Channel minimum & +/- 13V per Channel	
6	**VI Signature (Power Off Test)**		
	a) Live Comparison	Dual Clip & Probes.	Physical and Functional check by live demonstration / practically shown the parameters of the equipment
	b) Drive Voltage & Freq	-13 V to +13 V programmable, DC to 100 KHz	
	c) Drive Patterns	Sine, Square, Tri-angular, Ramp, DC	
	d) Source Impedance	Programmable to 100KCEms	
	e) Modes	VI, VT and VZ	
7	**Unit Under Test (UUT) Power Supply**	Programmable Power Supply 36V @6A, integrated software controlled Programmable Power Supply with provision of setting the Voltage and Current from main Software and fixed supplies +/- 5V @ 8Amps, +/- 12V @ 3.3Amps, 3.3.V @ 8Amps.	do
8	**Measurements for General Analog Components**		
	a) Resistance, Capacitor, Frequency, Inductance, Voltage	Resistance: Upto 1 M Ohm Capacitance: upto 10000μF, Frequency: upto 48 MHz, Inductance: upto 10H. Voltage: +/- 13V or more	Physical and Functional check by live demonstration / practically shown the parameters of the equipment
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12	Test Interface		
	Interface Type	Clip, Probes, Fixtures, Card Edge Test, JTAG port.	
	Out Circuit Adaptor	For testing Flash RAMs of different packages of different Radio/Communication Sets.	
13	Software	Software should have VHDL Test program generation Capability User defined Templates for Customized report generation Capability of Image & Schematic Integration under various Test Programs for component Identification by User. BUS Devices isolation facility	
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