

General requirements-1	<p>1. The Radiated Immunity Test System shall be supplied, installed and commissioned.</p> <p>2. A tentative list of equipment and their broad specifications are given in the following sections. However any other equipment/ component(s)/accessory not explicitly indicated in this requirement but is/are considered essential for the system performance, operation and maintenance shall be indicated and included in the offer.</p> <p>3. It is the sole responsibility of the vendor to prove the performance specifications of the integrated system as per the required standards, irrespective of the constituent equipment and their specifications offered or used in it.</p>
General requirements-2	Test and Measuring Equipments to conduct Radiated Immunity test (RS 103) as per MIL-STD 461G need to be supplied with specifications of Electric field, 30 MHz to 18 GHz, field strength 20V/m
General requirements-3	Complete automated radiated Immunity test system to generate electric field strength of 20 V/m from 30 MHz to 18 GHz as per MIL-STD 461G requirements to be provided. The Radiated Immunity test system shall be provided in rack. The rack containing instrumentation should have wheels for easy movement.
Microwave Signal Generator: Frequency range:	30MHz – 18 GHz
Microwave Signal Generator:Frequency Resolution :	0.001Hz
Microwave Signal Generator: Levels:	-120dBm to +10 dBm (min.); f > 30 MHz
Microwave Signal Generator:Harmonics	>30 MHz : <- 30dBc
Microwave Signal Generator:RF Reverse power:	0.5W
Microwave Signal Generator:Modulation types :	AM, FM ,Pulse , PM
Microwave Signal Generator:Remote control :	USB /LAN /IEEE 488
Microwave Signal Generator:Frequency Error, Stability :	< 1 × 10 ⁻⁷
Microwave Signal Generator:Ageing :	< 1 × 10 ⁻⁶ /year
Solid State RF Amplifiers :Frequency range	30MHz to 18 GHz (The frequency may be split into multiple bands according to suppliers capability to cover the entire frequency range)
Solid State RF Amplifiers : RF output power:	Should not exceed 1dB compression point to produce field strength
Solid State RF Amplifiers : Input / output impedance :	50 Ohm
Solid State RF Amplifiers : Remote interfaces :	GPIB /USB/LAN
Solid State RF Amplifiers : Cooling :	Forced Air (Self-contained fans)/Liquid cooling
Solid State RF Amplifiers : load:	50 ohm Amplifier Load to be provided for Amplifier performance test.
Solid State RF Amplifiers : Harmonic Distortion:	<- 15 dBc
Solid State RF Amplifiers : Power output @1dB compression point	700W(min): 30MHz to 250MHz, 70W (min) : 250 MHz to 1GHz, 5W (min) :1GHz to 18GHz
Directional Couplers	Suitable Directional coupler as per amplifier range to be provided .
Antennas: Frequency Range	30 MHz to 18GHz (The frequency may be split into multiple bands according to suppliers capability to cover the entire frequency range)
Antennas: Tripod	Shall provide dedicated tripod for mounting the antenna for height adjustment up to 2 meter and polarization adjustments for each antenna
Bi-conical/equivalent Antenna: Frequency Range:	30 MHz – 200 MHz
LOG Periodic Antenna: Frequency range	200MHz-1000MHz
Horn Antenna : Frequency range	1000 – 18000 MHz
Laser Powered Eelctric Field Probes: Frequency range	30MHz to 18 GHz (The frequency may be split into multiple bands according to suppliers capability to cover the entire frequency range)
Laser Powered Eelctric Field Probes: Level Range	2V/m to 1000 V/ m or better
Laser Powered Eelctric Field Probes: Resolution	0.1 dB
Laser Powered Eelctric Field Probes: Probe stand	non conducting field Probe Stand for every field probe
Power meter	Three channel Power meter to be supplied to allow simultaneous monitoring of forward and reflected power of power amplifier during test.
Power meter : Power Range	As per the power requirements from sensing port of directional couplers connected with Power Amplifier
Power meter : Impedance	50 Ohm
Power meter :Range Selection	Automatic / Manual
Power meter : Remote control operation	IEEE 488/LAN
Power meter	Power meter should not affect VSWR and attenuation.
power sensors for power meter: Frequency range and Quantity	3 No. of power sensors with each sensor having frequency range from 30MHz to 18GHz
power sensors for power meter: Level Range	-70 dBm - 20 dBm
RF components/ Accessories	All the necessary RF cables, adaptors and terminations shall be provided. Amplifier to antenna connection, flexible RF cables of length 5-meters (5 No.) and 10-meter length (5 No) to be provided.

Sytem Controller & software	<p>All the necessary software, hardware and accessories including the interconnecting cable assemblies for fully automated Radiated immunity testing as per MIL STD 461G to be provided.</p> <p>The software should have the following features:</p> <ol style="list-style-type: none"> 1. Windows based, menu-driven, user friendly interactive operation 2. Modular and flexible enough to allow the user to adapt the system to new Regulations / Standards or extend or modify the hardware due to new test requirements. 3. User's selection of MIL STD 461G for EUT susceptibility threshold levels. 4. Software program should comply with any make of USB/ IEEE 488 Compatible instruments. 5. Generating test reports in graphical and tabulated data format. 6. Ability to export reports to RTF, PDF or HTML 7. Measurements may be stopped during testing runtime to evaluate signals or repeat individual measurements while working in the semi – automatic mode. After evaluation the measurement can be resumed. 8. Graphical representation of the results on computer screen. 9. Download the results /data in internal / external memory.
RF Switching Unit	<ol style="list-style-type: none"> 1. RF Signal Switching Unit with suitable power rating shall be provided between the signal generator and the Power amplifiers from 30 MHz to 18 GHz. 2. Terminations from 30 MHz to 18 GHz with suitable power rating cable, adaptor, termination and attenuator set necessary to conduct test shall be provided. 3. Test rack with power distribution system, Heat dissipation fans and all necessary cables shall be provided.
System Engineering and Installation	<ol style="list-style-type: none"> 1. The system shall have complete menu driven and operator interactive software for automatic operation of the system for performing EMI/EMC tests as per MIL STD 461G STANDARD. 2. The system shall have the facility for self- checks, self-diagnostic functions using USB/ LAN/IEEE-488 bus compatible equipment 3. The system shall be configured and engineered such that all the constituent equipment required for EMI/EMC testing as per MIL-STD-461G 4. Standard requirement is assembled in 19" system racks with lockable castor wheels. Each 19" rack (height <= 1.8 meter) shall be provided with Internal air cooling, internal cabling. 5. Relay switch unit for automatic switching off signal paths to eliminate change of connectors manually. Relay switch unit should cover entire frequency range up to 18 GHz. This switching unit path should be operated through system controller. 6. 230V, 50Hz Power distribution unit having power line filter to be included to eliminate conducted noise. 7. GPIB Bus extender for use when rack moves in the chamber. 8. Power Supply: The System with all its constituent equipment shall operate on single phase, 230V AC± 10%, 50Hz. 9. The equipment plugs shall be compatible to the Indian type socket.
Safety	Emergency RF off should exist.
Manuals	<p>Two sets of hard copies and one set of soft copies for the following are to be supplied</p> <ol style="list-style-type: none"> 1. Detailed block diagrams with cable layouts for the system 2. Comprehensive flow diagrams 3. Calibration Certificates for all Equipment/ Accessories.
Local service support	Repair/service facilities should be available in India.
Training	Training to be given.
Warranty and Calibration	<ol style="list-style-type: none"> 1. Warranty of 5 years from date of supply 2. 5 years calibration (every year calibration of Signal Generator and Power sensors). 3. Measuring and Generating equipment, such as Signal Generator, Power sensors, Field probe to be delivered along with calibration certificate
General	Quote should contain complete system including required accessories