


महानिदेशालय, राश्ट्रीय सुरक्षा गारद भारत सरकार (गृह मंत्रालय) सम्भरण षाखा/आयुद्ध अनुभाग मेहराम नगर, पालम, नई दिल्ली- 110037 फैक्स नम्बर- 011.25663258 25671639		Directorate General National Security Guard Govt. of India/Ministry of Home Affairs (Provisioning Branch/Ord Section) Mehram Nagar, Palam, New Delhi-110037 Fax No. 011-25663258/25671639
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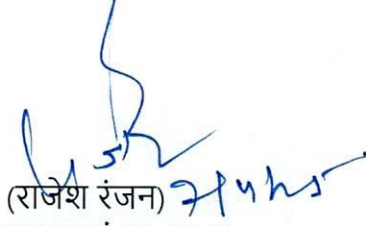
सं०-पी/604/389/2025/एचएचएमडी/सम्भ०(ऑर्ड)/मु०रा०सु०गा०/ई/151563/1781 दिनांक ०७ अप्रैल 2025

अनुभाग अधिकारी  
आई०टी०सेल, गृह मंत्रालय  
एन०आई०सी०, नार्थ ब्लॉक  
नई दिल्ली  
Email : soit@nic.in

**CORRIGENDUM TO SER NO 3 OF QUALITATIVE REQUIREMENT (QRs) AND  
TRIAL DIRECTIVES (TDs) OF HAND HELD METAL DETECTOR AGAINST  
PARAMETER "POWER SOURCE"**

1. Kindly refer MHA (PM Division) letter No IV.17018/03/2007-Prov-I dated 12 Feb 2013 and letter No IV-17018/3/2007-Prov-I/1069 dated 21 Aug 2012.
2. In this regard, Directorate General, BSF vide letter No. P-63011/Pro-II(HHMD)/Ord/BSF/5 dated 01<sup>st</sup> Jan 2025 requested to amend parameter "Power source" at sl. No. 3 of MHA approved QRs and TDs of Hand Held Metal Detector (HHMD).
3. In this regard, Corrigendum to S. No 3 of the above QRs/ TDs against parameter "Power Source" approved by DG, NSG is enclosed herewith for uploading the same along with existing QRs/ TDs of Hand Held Metal Detector (HHMD) approved vide MHA (PM Division) letter No IV.17018/03/2007-Prov-I dated 12 Feb 2013 and letter No IV-17018/3/2007-Prov-I/1069 dated 21 Aug 2012 on MHA website (PM Division - QRs under BDD Equipment Category) in approved QRs/TDs and delete the old QRs/ TDs shown at Sl No. 46 of BDDs equipment category please.
4. Submitted for your information and further necessary action please.

Encl: As above

  
(राजेश रंजन)  
ग्रुप कमांडर (क्रय)  
फोन- 011-25663100  
ईमेल- gcproc@nsg.gov.in

सं०-पी/604/389/2025/एचएचएमडी/सम्भ०(ऑर्डर)/मु०रा०सु०गा०/ई'151563/1780 दिनांक १५ अप्रैल 2025

1. IG/Director (R&D), BPR&D, Mahipalpur, New Delhi Email : igmod@bprd.nic.in dd-mod@bprd.nic.in	2. ADG, PP & T, DGQA, Govt of India, MoD, Department Defence Production, Directorate of Quality Assurance, New Delhi-110011 Email : saarmt-dgqa@gov.in
3. DIG (Prov), CRPF, CGO Complex, New Delhi Email : digprov@crpf.gov.in	4. DIG (Prov), BSF, CGO Complex, New Delhi Email : digprovfhq@bsf.gov.in comdtord@bsf.nic.in
5. DIG (Prov), CISF, CGO Complex, New Delhi Email : digprov@cisf.gov.in	6. DIG (Prov), ITBP, CGO Complex, New Delhi Email : digprov@itbp.gov.in
7. DIG (Prov), SSB, RK Puram, New Delhi Email : cr.ssbdel@nic.in digprov@ssbdel@nic.in	8. DIG (Prov), Assam Rifle (Through LOAR) Email : loar-mha@nic.in

**CORRIGENDUM TO SER NO 3 OF QUALITATIVE REQUIREMENT (QRs) AND  
TRIAL DIRECTIVES (TDs) OF HAND HELD METAL DETECTOR AGAINST  
PARAMETER "POWER SOURCE"**

1. Kindly refer MHA (PM Division) letter No IV.17018/03/2007-Prov-I dated 12 Feb 2013 and letter No IV-17018/3/2007-Prov-I/1069 dated 21 Aug 2012.
2. In this regard, as per request of Directorate General, BSF vide letter No. P-63011/Pro-II (HHMD)/Ord/BSF/5 dated 01<sup>st</sup> Jan 2025, a meeting under the Chairmanship of IG (Prov), HQ NSG along with technical experts of all CAPFs and representative of BPR&D was assembled at HQ NSG on 20<sup>th</sup> Mar 2025 to discuss on SI. No.3 of the above QRs/ TDs against parameter "**Power Source**".
3. Further, after exhaustive deliberation, the members of the Board of Officers opined/ recommended that draft QRs/TDs of parameter 'Power Source' in Ser No. 3 of existing MHA approved Technical Specification/QRs dated 21<sup>st</sup> Aug 2012 and TDs dated 12<sup>th</sup> Feb 2013 should be amended and corrigendum against the parameter may be issued to all concerned after approval of competent authority.


Contd°...



4. Hence, corrigendum to Sl. No.3 of the above QRs/ TDs against parameter "**Power Source**" is forwarded herewith as under: -

S. No	For		Read	
	Existing QRs	Existing Trial Directives	Revised QR	Revised Trial Directives
3.	<b>Power Source</b> Alkaline battery 3 volt (1.5 x 2), volt should run minimum 550 hrs on 10% detection rate.	Certificate from a national / international accredited lab will be the acceptance criteria.	<b>Power Source</b> (a) <b>Primary Battery.</b> Any primary battery like Alkaline/ Lithium/ Silver Oxide/ Zinc-Carbon etc 3 volt (1.5 x 2). Battery should run minimum 550hrs on 10% detection rate.  <b>OR</b> (b) <b>Secondary Battery.</b> Any commercially available rechargeable battery having endurance of minimum 12 hours on single charge & lifespan of minimum two years.	Certificate from a national / international accredited lab/ Special Instrument Workshop of BSF/ Base Repair Workshop of concerned CAPFs will be the acceptance criteria.  Battery usage to be checked physically by BOO by keeping the equipment switched 'ON' for 12 hrs continuously and checking detection of any metallic object for minimum 5 mins duration every hour.

5. This has the approval of DG, NSG on E-Note Sheet No # 05 dated 03 Apr 2025.

  
 (राजेश रंजन)  
 ग्रुप कमांडर (क्रय)  
 फोन- 011-25663100  
 ईमेल- gcproc@nsg.gov.in

**Copy to: -**

1.	JS (PM), MHA, Jaisalmer House, New Delhi	For information please.
2.	Ops (WE), HQ NSG	For info and necessary action please.
3.	SC (Prov) GeM, HQ NSG	For info and necessary action for uploading in GeM.

Proceeding of : Board of Officers

Assembled at : HQ NSG, Palam, New Delhi

On the day of : 20<sup>th</sup> Mar 2025

By the order of : HQ NSG letter No P/604/2025/389/ESM/Prov(Ord)/HQ NSG/E-150554/1468 dated 17<sup>th</sup> Mar 2025.

For the purpose of : To discuss the issue of lab certificate against parameter "Power Source" at S. No 3 of existing QRs and TDs of Hand Held Metal Detector (HHMD) as intimated by Directorate General BSF and to issue corrigendum to the same.

**BOARD OF OFFICERS**

Presiding Officer : Princee Rani, IPS, IG (Prov), HQ NSG

Members

1. : Sh. Akhilesh Kumar Tiwari, GC (Proc), HQ NSG
2. : Lt Col Sumit Kumar, WE Br, HQ NSG
3. : Maj Sagar Singh, TC, BD Unit, NSG
4. : Sh. Rahul Khalsa, DC (ATO), SSB.
5. : Sh. Nemi Chand, DC, ITBP.
6. : Sh. Nitish Tomar, Dy Comdt, CISF.
7. : Sh. Swapan Chakraborty, Insp, SIW BSF.
8. : Sub Jagdish Prasad Gaur, Assam Rifles.

Co-opted member : Col Atul Chopra (Retd.) BPR&D

1. The board had assembled to discuss the issue raised by Directorate General, BSF vide their letter No. P-63011/Pro-II (HHMD)/Ord/BSF/5 dated 01 Jan 2025 regarding Trial Directives of parameter "Power Source" at S. No 3 of MHA approved QRs dated 21 Aug 2012 and TDs dated 12 Feb 2013 of Hand Held Metal Detector (HHMD).



2. The existing QR/ TD of parameter "Power Source" of Hand Held Metal Detector (HHMD) is as under: -

<u>Srl No of QRs/ TDs</u>	<u>QRs</u>	<u>Trial Directives Read For</u>
3	Power Source: Alkaline battery 3 volt (1.5 x 2), volt should run minimum 550 hrs on 10% detection rate.	Certificate from a national / international accredited lab will be the acceptance criteria.

3. Directorate General, BSF asked comments on their suggestion that, if the above parameter is checked by Special Instrument Workshop (SIW) of BSF, will its report be valid for Standing Technical Evaluation Committee (STEC) during the procurement stage.

4. The board of officers had carried out detailed discussion on the above issue and enquired about difficulties being faced by other CAPFs for getting national/ international accredited lab certificate for QRs "Power Source" by vendors during the procurement process. After exhaustive deliberation, the members of the board opined to amend the existing QRs/TDs of Hand Held Metal Detector (HHMD) against parameter "Power Source" as under: -

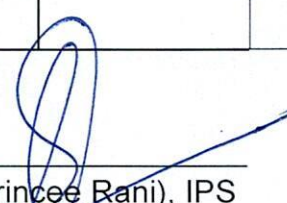
<u>Srl No of QRs/ TDs</u>	<u>Existing QRs</u>	<u>Existing Trial Directives</u>	<u>Revised QR</u>	<u>Revised Trial Directives</u>
3	Power Source: Alkaline battery 3 volt (1.5 x 2), volt should run minimum 550 hrs on 10% detection rate.	Certificate from a national / international accredited lab will be the acceptance criteria.	<p><b><u>Power Source</u></b></p> <p>(a) <b><u>Primary Battery.</u></b> Any primary battery like Alkaline/ Lithium/ Silver Oxide/ Zinc-Carbon etc 3 volt (1.5 x 2). Battery should run minimum 550hrs on 10% detection rate.</p> <p><b>OR</b></p> <p>(b) <b><u>Secondary Battery.</u></b> Any commercially available rechargeable battery having endurance of minimum 12 hours on single charge &amp; lifespan of minimum two years.</p>	<p>Certificate from a national / international accredited lab/ Special Instrument Workshop of BSF/ Base Repair Workshop of concerned CAPFs will be the acceptance criteria.</p> <p>Battery usage to be checked physically by BOO by keeping the equipment switched 'ON' for 12 hrs continuously and checking detection of any metallic object for minimum 5 mins duration every hour.</p>

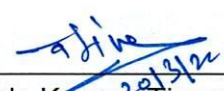



### RECOMMENDATION OF BOARD OF OFFICERS


It is recommended that the QRs & TDs of parameter '**Power Source**' in Ser No 3 of existing MHA approved Technical Specification/QRs dated 21 Aug 2012 and TDs dated 12 Feb 2013 of Hand Held Metal Detector (HHMD) should be amended and corrigendum against the said parameter may be issued to all concerned as under after approval of competent authority: -

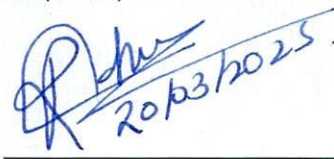
<u>Srl No of QRs/ TDs</u>	<u>Existing QRs</u>	<u>Existing Trial Directives</u>	<u>Revised QR</u>	<u>Revised Trial Directives</u>
3	Power Source: Alkaline battery 3 volt (1.5 x 2), volt should run minimum 550 hrs on 10% detection rate.	Certificate from a national / international accredited lab will be the acceptance criteria.	<b>Power Source:</b> (a) <b><u>Primary Battery.</u></b> Any primary battery like Alkaline/ Lithium/ Silver Oxide/ Zinc-Carbon etc 3 volt (1.5 x 2). Battery should run minimum 550hrs on 10% detection rate. <b>OR</b> (b) <b><u>Secondary Battery.</u></b> Any commercially available rechargeable battery having endurance of minimum 12 hours on single charge & lifespan of minimum two years.	Certificate from a national / international accredited lab/ Special Instrument Workshop of BSF/ Base Repair Workshop of concerned CAPFs will be the acceptance criteria.  Battery usage to be checked physically by BOO by keeping the equipment switched 'ON' for 12 hrs continuously and checking detection of any metallic object for minimum 5 mins duration every hour.


  
(Princee Rani), IPS  
IG (Prov), HQ NSG


  
Akhilesh Kumar Tiwari,  
GC (Proc), HQ NSG


  
Maj Sagar Singh, TC  
BD Unit, NSG


  
Lt Col Sumit Kumar,  
WE Br, HQ NSG

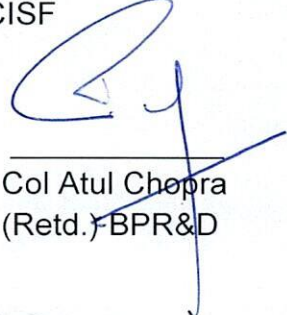
  
Rahul Khasa, DC (ATO)  
SSB

  
Nemi Chand, DC  
ITBP

  
Nitish Tomar, Dy Comdt  
CISF

  
Swapan Chakraborty,  
Insp SIW, BSF

  
Sub Jagdish Prasad Gaur,  
Assam Rifles

  
Col Atul Chopra  
(Retd.) BPR&D

15/11/13

18

16 (H-1)

No.IV.17018/03/2007-Prov-I  
Bharat Sarkar/Government of India  
Griha Mantralaya/Ministry of Home Affairs  
PM Division/Prov. I Desk  
\*\*\*\*\*

26, Man Singh Road, Jaisalmer House  
New Delhi, Dated : 12. February'2013

To,

DsG : AR (through LOAR), BSF, CISF, CRPF, ITBP, SSB, NSG & BPR&D.

Subject : Trial Directives for Hand Held Metal Detector (HHMD)

The Trial Directives in respect of Hand Held Metal Detector (HHMD) as per the Annexure have been accepted by the Competent Authority in MHA.

2. Henceforth, all the CAPFs should trial evaluate the above items strictly as per the laid down Trial Directive.

स. ग. नि. (स. ग. नि.) DIO (Prov.)	15/11/13
16 (H-1)	18

Yours faithfully,

(Smt. S. B. Nanda)

Under Secretary to the Govt. of India

Tel : 23381278

Copy forwarded for necessary action to :-

- (i) Director, NIC, MHA : It is requested to host the Trial Directives (soft copy attached) on the MHA website (under the page of Organisational Set up-Police Modernisation Division under equipments head - Qualitative Requirements).

Copy to : Director (Procurement), MHA.  
Copy for information to : PS to JS (PM)

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

NO. DV. No. 16/11/13



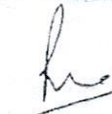

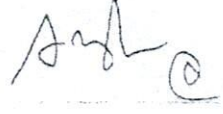





286

(5)


TRIAL DIRECTIVE : HAND HELD METAL DETECTOR


Ser No	QRs	Remarks
1	<u>Dimensions</u> (a) Length -Maximum 500 mm (b) Probe width - Maximum 120 mm (c) Body width - Maximum 65 mm	<i>Trial Directives</i> To be physically checked by the BOO.
2	<u>Weight</u> - Maximum 500 gms	To be physically checked by the BOO.
3	<u>Power Source</u> Alkaline battery 3 volt (1.5x2), volt should run minimum 550 hrs on 10% detection rate.	Certificate from a national/internationally accredited lab will be the acceptance criteria.
4	<u>Battery protection</u> . To be provided against damage due to reverse polarity	1. OEM/Firm to provide certificate. 2. To be physically checked by the BOO.
5.	<u>Indication</u> (a) Single LED based audio and visual multiple indication for :- (i) Switch on (ii) Metal Detection (iii) Low Battery Indication	To be physically checked by the BOO.
6	<u>Operation</u> . Single push button operation.	To be physically checked by the BOO.
7.	<u>Construction</u> . Should be rugged and impact resistant ABS moulded casing.	To be physically checked by the BOO.
8.	<u>Scan rate</u> . Minimum 3" to 24"/sec.	To be physically checked by the BOO.
9.	<u>Detection</u> Should be able to detect ferrous and Non Ferrous metals. (a) Pistol .22 at min 6" (b) Cartridge .22 at min 2" (c) Razor Blade at min 1"	To be physically checked by the BOO
10.	<u>Tuning</u> . Automatic to ensure equal results on wide range of metals and alloys.	To be physically checked by the BOO.

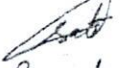


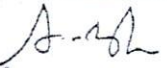
11.	<b>Miscellaneous.</b> The firm should be able to provide the following, as applicable, along with the equipment :- (a) Cleaning Kit. (b) Technical Manual giving full description of the item. (c) User's Hand Book.	(a) For technical literature undertaking by the OEM/firm, to provide the technical literature along with the delivery of the equipment, will be obtained. (b) Remaining items, to be physically checked by the BOO.
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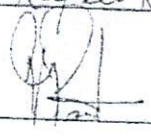
  
S/T MANISH RAJ, BSF

  
A.K. Shukla AC, CUP

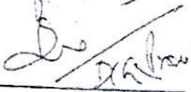
  
Rajeev Kano, AC, SSB


  
Shiv Prasad Sati AC  
ITBP

  
LT COL A. BALAKRISHNA  
OC 20 UNIT

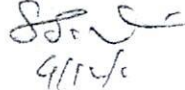
  
LT COL VIRENDRA PANT  
210 (WE) HQ ISS

  
G. (Am)

  
D. (Am) NSS

  
MAJ ARVIND SINGH  
SI SAG

Approved/Not approved

  
9/11/16  
(Subhash Joshi)  
Director General, NSG

13 SEP 2012

F. no. IV-17018/3/2007-Prov. I / 1069  
Bharat Sarkar/Government of India  
Griha Mantralaya/Ministry of Home Affairs  
PM Division/Prov. I Desk

26, Man Singh Road, Jaisalmer House  
New Delhi, Dated: August, 2012

To, DsG : AR (through LOAR), BSG, CISF, CRPF, ITBP, NSG, SSB & BPR&D  
Subject : Technical Specifications/QRs for HHMD.

The Technical Specifications/QRs for Hand Held Metal Detector (HHMD) as per Annexure has been accepted by the Competent Authority in MHA.

2. Henceforth, all the CAPFs should procure the above items required by them strictly as per the laid down Technical Specifications/QRs.
3. The trial directive for Hand Held Metal Detector (HHMD) will be circulated later after these are prepared by NSG and approved by the competent authority in MHA.

उ. म. नि. (विभाग)	
DIG (Prov.)	17/9
युवा कमा (विभाग)	
G.C. (Prov.)	18/9
सहा. कम.	
अधीक्षक	
प्रमुख	
Team Clr	
1st	
Head Clk	

(S. B. Nanda)  
Under Secretary to the Govt. of India  
Tel : 23381278

~~Copy forwarded for necessary action :-~~

- (i) NSG is requested to formulate the trial directives for Hand Held Metal Detector (HHMD) keeping in view the instructions issued by MHA on 13.06.2012 and forward the same to the Ministry for approval at the earliest.
- (ii) Director, NIC, MHA with the request to host the revised QRs (soft copy attached) of Hand Held Metal Detector (HHMD) on the MHA website (under the page of Organisational Set up-Police Modernisation Division- Qualitative Requirements) by replacing the existing QRs.

(Ritesh Kumar)  
Section Officer (Prov.II)

Copy to : Director (Procurement), MHA.  
Copy for information to : PS to JS (PM)

NGO Dy No.-VI/ 32/2

DATE. 12/09/12

P. E. to I.G. (HQ)  
By No. 2925



# QRs FOR HAND HELD METAL DETECTOR

242 129

1.	<u>Dimensions</u>	
	Length	Maximum 500 mm
	Probe width	Maximum 120 mm
	Body width	Maximum 65 mm
2.	Weight	Maximum 500 gms
3.	Power Source	Alkaline battery 3 volt (1.5x2), volt should run minimum 550 hrs on 10% detection rate.
4.	Battery Protection	To be provided against damage due to reverse polarity.
5.	Indication	(a) Single LED based audio and visual multiple indication for :- (i) SWITCH ON (ii) METAL DETECTION (iii) LOW BATTERY INDICATION
6.	Operation	Single push button operation
7.	Construction	Should be rugged and impact resistant ABS moulded casing.
8.	Scan rate	Minimum 3" to 24"/sec.
9.	Detection	Should be able to detect Ferrous and Non-Ferrous metals. - Pistol .22 at min 6" - Cartridge .22 at min 2" - Razor Blade at min 1"
10.	Tuning	Automatic to ensure equal results on wide range of metals and alloys.
11.	<u>Miscellaneous</u>	The firm should be able to provide the following, as applicable, along with the equipment :- (a) Cleaning kit. (b) Technical Manual giving full description of the item. (c) User's Hand Book.

[Signatures and stamps]

Approved - (RK Medhekar) Director General, NSG

Approved/Not approved

[Additional signatures and stamps]



HQ National Security Guard  
Prov Branch (Ord Section)

Sub: Forward of Qualitative Requirement (QRs) and Trial Directives (TDs) of Hand Held Explosive Detector (HHED).

The final QRs and TDs of Hand Held Explosive Detector (HHED) duly approved by competent authority is forwarded herewith for your information and necessary action please.



(P C Sharma)  
Group Commander (Proc)  
Tele: 011-25663170  
Email: gcproc@nsg.gov.in

**Encl:** As above.

**Distribution:-**






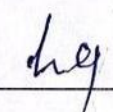

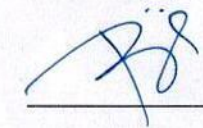
1.	JS (PM), MHA, Jaisalmer House, New Delhi	For information please.
2.	Senior Technical Director, NIC, MHA, North Block, New Delhi Email : soit@nic.in	You are requested to upload the final approved QRs and TDs on MHA website PM Division- QRs under BDDS Equipment Category please.
3.	IG/Director (R&D), BPR&D, Mahipalpur, New Delhi Email : igmod@bprd.nic.in / dd-mod@bprd.nic.in	
4.	ADG, PP & T, Room No 37, H Block, DGQA, Govt of India, Min of Defence, Department Defence Production, Directorate of Quality Assurance, New Delhi-110011, Email : saarmt-dgqa@gov.in	
5.	DIG (Prov), CRPF, CGO Complex New Delhi, Email : digprov@crpf.gov.in	
6.	DIG (Prov), BSF, CGO Complex New Delhi Email : digprovfhq@bsf.gov.in / comdtord@bsf.nic.in	
7.	DIG (Prov), CISF, CGO Complex New Delhi, Email : digprov@cisf.gov.in	
8.	DIG (Prov), ITBP, CGO Complex, New Delhi, Email : digprov@itbp.gov.in	
9.	DIG (Prov), SSB, R K Puram, New Delhi, Email : cr.ssbdel@nic.in	
10.	DIG (Prov), Assam Rifle (Through LOAR), Email : loar-mha@nic.in	
11.	GC,Ops (WE), HQ NSG- For info and necessary action	
12.	SC(Prov), HQ NSG- For info and necessary action for uploading in GeM	
13.	HQ CTF- for information	
14.	OC, BD Unit- for information.	

No. P/604/2020/389/E-75656/HHED/Prov/Ord/NSG/ 1376 Date: 12 Jul 2024



**QUALITATIVE REQUIREMENT (QR) AND TRIAL DIRECTIVE (TD) OF HAND HELD EXPLOSIVE DETECTOR (HHED)**

S No	Parameter	Qualitative Requirement	Trial Directive
1.	General	The said Explosive Detector shall be used to detect and identify <b>group of explosives</b> (bulk and trace quantities) in Anti Sabotage operations, Render Safe Procedure Operations (in terms of UXOs, IEDs, Home Made Explosives, etc) and Post Blast Investigations, in addition to other operations related to Bomb Disposal and Explosives	-
2.	Detection Technology	Ion Mobility Spectrometry (IMS) or Amplifying Fluorescent Polymer (AFP) or Mass Spectrometry (MS) or Micro Sensor or Gas Chromatography or Chemiluminescence or Thermo Redox or Metal oxide sensor or High Frequency Quartz Crystal microbalance or any equivalent/better technology	OEM to furnish certificate stating the type of technology used for detection – BOO to check the same
3.	Detection Capability	(a) The detector should be able to identify group of explosive or explosive precursors as listed in Annex A. The detector should be able to detect all types of organic and inorganic explosives in vapour, liquid, solid/powder, particle and mixture forms. The detector should be able to detect both the positive and negative ion groups of the explosives.	(i) BOO to test by keeping TNT, Nitro methane (in liquid form), RDX, PETN and Ammonium Nitrate (one explosive at a time) - all tested in both particle and vapour mode. For positive polarity explosive (such as TATP/HMTD) certification for detection to be provided by the NABL/ILAC certified lab.  (ii) Note: This test is purely for testing if the detector is able to detect these explosives and correctly identify them. It is not a test for the minimum threshold quantity of detection. Hence sufficiently high vapour/ particles are to be tested, as desired by vendors during testing.
4.	Sample collection	The detector should allow Sample collection in both: (a) Vapour mode by collection of explosive vapour in Group of explosive	Physically check by the BOO.  The below test is to be conducted for TNT, PETN, RDX, Ammonium Nitrate and Nitro Methane. Hence a total of 5 tests are to be conducted :-  (i) In a clean glass container (with volume of container between 100mL to 500 mL) with mouth of container being 1cm to 10 cm diameter, place at-least 10 g of Explosive (eg. TNT) and close the lid of the glass container.  (ii) Place the container in the temperature of 20°C to 30°C and wait for 8 hours.  (iii) Open the lid of the container. Within 1 min from the opening of the lid, the ETD should be placed at a distance less than 5cm without touching the mouth of the container for a duration of 20 seconds or less for collection, analysis & detection of sample from the suspected object.  (iv) The result shown in the detector is to be recorded.  (v) Separate containers to be catered for participating vendors.

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S No	Parameter	Qualitative Requirement	Trial Directive
4.		(b) Particle mode by detecting trace quantities of explosives (by using swabs)	(i) Use a swab and touch over the explosives/ precursors – TNT, PETN, RDX, Ammonium Nitrate and Nitro Methane – one swab per explosive/ precursor.  (ii) Test for each of the explosives.
5.	<b>Auto Calibration</b>	(a) Adjust/Resetting for further operation should be only automatic. (b) Time for auto calibration should not exceed 30 seconds.	Physically checked by BOO
6.	<b>Consumables</b>	Consumables for swab should be commercially available off the shelf without any specific dependence on the firm.  Qty of swab (with a life of 5 years) to be provided along with each equipment to be specified by the user <b>at the tender stage</b> .	BOO to physically check the following:  (a) Non dependence (on OEM/ vendor) nature of swab  (b) OEM/Firm undertaking for providing each swab for Rs. 5 or less for a period of <b>05 years</b> .
7.	<b>Operation Temperature</b>	(a) The offered Explosive Detector shall operate and detect in the Temperature range of -10°C to 55°C ( $\pm 3^\circ\text{C}$ ).  (b) The explosive detector shall be capable of being stored in the temperature range of -20°C to 60°C. OEM to furnish test certificate from a national/ international accredited lab.	BOO to check the lab certificate
8.	<b>Relative humidity</b>	The offered ETD shall operate in Relative humidity of upto 95%. OEM/ Firm to provide a test certificate from a national/ international accredited lab.	BOO to check the lab certificate









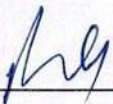


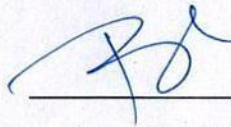



S No	Parameter	Qualitative Requirement	Trial Directive
9.	<b>False Detection/ False Alarms</b>	The offered ETD shall have a false alarm rate of less than 3%.	<p>Explosive and non-explosive placebos are to be placed inside identical containers (without lid so as to allow sufficient vapours) separately. The containers are to be numbered on the bottom side (which is not visible during the test). These containers are to be checked with the detector. A minimum of 35 containers are to be used for this test – 33 with placebos and 2 with explosives (1 with TNT, 1 with RDX). The detector should :-</p> <p>(i) Correctly detect and identify the explosive group– No error in detection or wrong identification of explosive shall be acceptable</p> <p>(ii) Not identify more than 1 of the placebos as explosives - Upto 1 error in wrong identification of placebo as explosive shall be acceptable</p> <p><b>Note:</b> Placebos should not have any chemical resemblance to RDX/ TNT and care should be take so that the placebos should not contain traces of these or any explosives. Suggested Placebos include Chalk powder, moulding clay, common salt, etc.</p>
10.	<b>Detection range</b>	<p>(a) The Explosive Detector shall detect the presence of small quantities of explosive by analysing the explosive vapour or trace available in the container, bag, etc. as well as outside in open in bulk quantities. The detector shall detect and identify the explosive groups.</p> <p>The OEM to provide datasheet / Certificate for the threshold of detection for vapour and trace modes.</p> <p>(b) Threshold for detecting low-volatile organic substances</p>	<p>BOO to check the datasheet/ certificate for the threshold of detection for both Vapor and Trace modes</p>





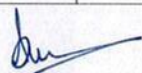





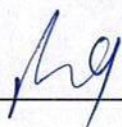




S No	Parameter	Qualitative Requirement	Trial Directive
		(i) <b>Trace Mode</b> –minimum of $0.5 \times 10^{-9}$ g for 2,4,6-trinitrotoluene (TNT)	<p><b>Trace Mode.</b> Firm to submit National (NABL accredited) lab certificates tested in accordance with ASTM E2677-20/ASTM E2520-21 (or latest versions of E2677/E2520 Standards) or equivalent standard specifically mentioning the threshold/sensitivity of detection. BOO will adopt following procedure will be adopted :-</p> <p>(i) Take Three glass bottles with one litre of acetone each.</p> <p>(ii) In 1<sup>st</sup> bottle, add 1 g to 1.5g of TNT and thoroughly shake such that the complete TNT is dissolved.</p> <p>(iii) After previous step, take 0.8 to 1 mL of acetone (mixed with TNT) from 1<sup>st</sup> bottle and add to 2<sup>nd</sup> glass bottle. Shake such that the solution is thoroughly mixed.</p> <p>(iv) After previous step, take 0.8 to 1 mL of acetone (mixed with TNT) from 2<sup>nd</sup> bottle and add to 3<sup>rd</sup> glass bottle. Shake such that the solution is thoroughly mixed.</p> <p>(v) After previous step, take 0.8 to 1 mL of the solution from 3<sup>rd</sup> glass bottle and apply on the trace paper. Let the acetone evaporate and then proceed for next step.</p> <p>(vi) Use one trace paper(with trace TNT) and one empty trace paper (without trace TNT) for tests in the explosive detector.</p> <p>The detector should indicate the presence of TNT in each of the swab/ trace paper with TNT and should NOT indicate in the empty trace paper.</p>
		(ii) <b>Vapour mode:</b> capable of testing RDX at saturation vapour pressure (as in TD) at 20°C to 25°C Celsius.	<p>The below test is to be conducted for RDX since RDX has a low explosive partial vapour pressure.</p> <p>(i) In a clean glass container (with volume of container between 100mL to 500 mL) with mouth of container being 1cm to 10 cm diameter, place atleast 10 g of RDX and close the lid of the glass container.</p> <p>(ii) Place the container in the temperature of 20°C to 30°C and wait for 8 hour.</p> <p>(iii) Open the lid of the container. Within 1 min from the opening of the lid, the ETD should be placed at a distance of 5cm or less from the mouth of the container for a duration of 5 seconds or less from the suspected object (vapour collection time of 5 seconds. Analysis and display can take another 15 seconds (5+15)).</p> <p>(iv) The result shown in the detector is to be recorded.</p>
		<b>Note :</b> The reference explosives are taken for standardization of detection, since different explosives have different explosive partial vapour pressures.	-








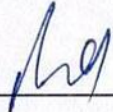










S No	Parameter	Qualitative Requirement	Trial Directive
11.	Operational weight	(a) Operational weight (with battery for operation) to be less than 2 Kg. (b) The total weight of the equipment including accessories in packed condition is to be less than 10 kg.	BOO to weigh and check the parameter BOO to weigh and check the parameter
12.	Safety – Ionisation Source	(a) The explosive detector should be with or without radioactive material. (b) In case of equipment with radioactive material, the firm has to provide safe handling certificate from AERB. (c) After completion of shelf life followed by codal formalities of condemnation procedure of the equipment. It is firm's responsibility to dispose of eqpt as per regulations of AERB. The undertaking certificate regarding the same may be obtained by both the firm & OEM	BOO to check the undertaking and Test Certificate BOO to check the undertaking and Test Certificate BOO to check the undertaking and Test Certificate.
13.	Initial Warm up time	Initial Warm up time should be less than 180 seconds	BOO to check by switching on the detector and noting the time the detector is ready – immediately after the detector being ready, it should be checked by detection of a bulk explosive such as a slab of TNT.
14.	Analysis Time	Time for analysis and detection shall not exceed 20 seconds (including vapour collection time)	BOO to physically check the same.
15.	Power	Battery Charger should operate on AC mains from 100-260V, 50 – 60 Hz. The battery charger to have the voltage rating clearly mentioned on it. The charger should have a short circuit protection for which an OEM letter is to be provided stating that short circuit protection is available. A 12V DC car cigarette charger or a 12 V DC (car cigarette Plug) to 230V adapter for charging the equipment using a car cigarette charger to be provided. Equipment should operate with rechargeable batteries	BOO to check the voltage rating as mentioned on the battery charger and the OEM letter for short circuit protection. BOO to physically use and check the same. BOO to physically check the same
		<u>Operational Time.</u> The minimum operational time should be 2 hours.	(i) Switch on the equipment (with a fully charged battery) and set the mode to vapour mode and Note the time. (ii) Keep testing the equipment using bulk explosives (eg. TNT slab) every 5 minutes or until the equipment goes into sleep mode, whichever is lesser in time. (iii) The minimum operational time should be 2 hours. Repeat the above procedure for trace mode, using another fully charged battery – Sufficient quantities of particles are to be present on the swab.

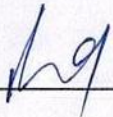








S No	Parameter	Qualitative Requirement	Trial Directive
		Spare set of batteries to be provided for continuous 8 hr operation (including the main battery). OEM to provide undertaking for the same.	BOO to check the OEM undertaking and physically test the batteries provided.
		Full Battery charging time to be maximum of 4 hours. There should be a provision to charge single\multiple batteries simultaneously (either using a single charger or multiple chargers, in which case multiple chargers to be provided)	BOO to physically check the same by using fully drained battery/ batteries
		Reverse polarity protection to be provided (both in charger and in the detector).	BOO the physically try (not forcefully so as to damage the equipment or battery) to charge or insert battery in reverse polarity and check if the equipment has reverse polarity protection.
		Battery warranty shall be inclusive for the instance when the operational time for the battery reduces less than 2 hours.	BOO to check the warranty card provided.
		Firm to provide a separate warranty card for the batteries clearly mentioning the above clause, duly laminated with each equipment supplied, as part of the accessories for the equipment.	
16	Display	(a) Equipment should have a full coloured LED/ LCD display. The display should be visible during peak hour of sunlight.	Physically check by the user
		(b) Equipment should display the following details (either in the coloured display or using a separate LED):-	Physically check by the user
		(i) Explosive/ Explosive Precursor or its ingredient (i.e. the generic group is acceptable)	Physically check by the user
		(ii) Low battery indication/ Battery level indicator	Physically check by the user



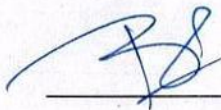
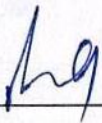






S No	Parameter	Qualitative Requirement	Trial Directive
17.	<b>Self Cleaning Time</b>	Not more than 300 seconds	BOO to check the feature and measure the time
18.	<b>Electromagnetic Interference</b>	The equipment should not get affected by any electromagnetic radiation or electronic/ magnetic devices in the surrounding.	BOO to check the NABL/ ILAC accredited lab certificate (complaint to either MIL Std-461/ MIL std – 704/ Mil Std-1265/ MIL std – 1399/ DEF STAN 59/411/ FCC part 15 class A/ FCC part 15 class B/ EN61000-6-1/ EN61000-6-2/ EN61000-6-3/ EN1000-6-4/IEC61326-1) for the same.
19.	<b>IP rating and Ruggedness</b>	Explosive detector rating to be atleast IP 50.  The carrying case with eqpt inside to be atleast tested for build and ruggedness as per MIL standard 810 G (from national/international lab)	BOO to check the IP and Mil Std 810G rating test certificates from ILAC/NABL for both the equipment and carry case.
20.	<b>Indication</b>	Explosive Detector should give detection alarm by audio or LED indication or video means.	BOO to check the same .
21.	<b>Data Transfer</b>	Explosive Detector should have the following for transfer of data and updation of library/ database:  Wired Connectivity - USB Port (mini/ B type/ C type, etc) or ethernet Port	
22.	<b>Database/ Library</b>	The explosive detector should have an upgradable/ extendable database/ library. If the user is not able to upgrade the database/ library, the OEM to provide necessary free of cost assistance for the same, within two weeks of such a request (upto the life of the equipment as in the QR/TD or as in Tender document, whichever is higher) – OEM to provide undertaking of the same	BOO to test the feature by upgrading the database/ library. BOO to check the undertaking by the OEM – The undertaking should not contain any conditions for such support
23.	<b>Ease of operation</b>	The result given by the equipment should be self explanatory (i.e. name of the explosive group to be directly displayed) and should not require any reference for assimilation.	BOO to operate the equipment and check the same.

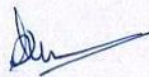




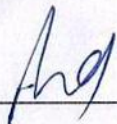
S No	Parameter	Qualitative Requirement	Trial Directive
24.	<b>Training</b>	OEM/ OEM's representative to provide operational training to minimum 10 bomb technicians/ individuals for a week	BOO will check the OEM undertaking for the same
		Optional – User may specify more training during tender stage	
		OEM/ OEM's representative to provide user level maintenance (for R1, R2 & R3 level maintenances) training to minimum 10 Bomb Technicians/ individuals for a week	BOO will check the OEM undertaking for the same
25.	<b>Manual</b>	Optional – User may specify more training during tender stage	
		(a) OEM to provide a user manual (in English)	BOO to check and ensure all manuals are provided
		(b) OEM to provide a maintenance manual (in English)	
26.	<b>Lifespan of the equipment</b>	(c) OEM to provide a CD/ DVD/ Pen Drive consisting of videos having maintenance and operational guidelines and training	
		(d) OEM to provide print/ digital training manual for updation of database/ library.	
		(a) The operational life of the equipment shall be atleast 07 years and shall not be limited by the number of hours of operation. If any such limitation exists, the OEM to provide free of cost consumables to bring back the equipment to serviceability within the operational life.	BOO to check the OEM certificate provided
		(b) OEM shall provide a laminated copy of certificate, clearly mentioning the operational life, shelf life and undertaking to provide consumables free of cost as per warranty to bring the equipment to serviceability within the operational life. This certificate shall form part of accessories of every equipment supplied.	BOO to check the OEM certificate provided

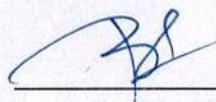


S No	Parameter	Qualitative Requirement	Trial Directive
27.	<b>Maintenance Support</b>	OEM/ OEM's representative to provide maintenance support for a period of atleast 07 years from the date of supply.	
		OEM/ OEM's representative to provide spare parts availability (within 60 calendar days from date of intimation by user (by email) beyond which the demanded spare parts shall be provided free of cost by the OEM) for a period of atleast 07 years from the date of supply.	
28.	<b>Carry case</b>	There are two types of carry cases to be provided:	BOO to check and ensure the carry cases are available. For shoulder carry case, BOO to also check if the carry case is shoulder carryable.
		Shoulder Carry Case: - The equipment and all its accessories should fit into one carry case which can be shoulder carried (by one person) for long duration operations. The carry case can be soft or hard type.	
		(a) Hard Carry Case – The equipment and all its accessories should fit into one hard carry case suitable for transportation by vehicle or aircraft.  Note : Wherein the shoulder carry case as provided above is itself a hard carry case, a separate hard carry case need not be provided.	
29.	<b>Accessories</b>	(a) OEM to a CD/ DVD/ Pen Drive having software and database/ library for formatting the system and installation of original firmware and database/ library.	BOO to check if all accessories as in QRs are provided
		(b) OEM/Bidder to provide a laminated copy of warranty card for the equipment and its accessories (excluding battery) and a laminated copy of warranty card for the batteries, as part of accessories along with each equipment.	BOO to check if all accessories as in QRs are provided
		(c) OEM/Bidder to provide a laminated copy of undertaking of compliance for all these QR/TDs as part of the accessories for knowledge of User regarding equipment's capabilities and compliances.	BOO to check if all accessories as in QRs are provided
		(d) Test samples – As recommended by OEM for operation of equipment compliant to this QR/TD.	BOO to check if all accessories as in QRs are provided
		(e) Any other consumables for operation as required.	BOO to check if all accessories as in QRs are provided
		(f) Manufacturer (OEM) Spare Parts List duly covering the complete list of spare parts.	BOO to check if all accessories as in QRs are provided
		(g) OEM /Bidder undertaking to provide service and spare parts availability in India for 10 years from the date of supply.	BOO to check if all accessories as in QRs are provided




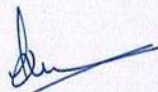








S No	Parameter	Qualitative Requirement	Trial Directive
30.	Tools	(a) OEM/bidder to provide tool kit with all necessary tools to carryout repair of the equipment at user level (list of tools to be furnished by OEM)	BOO to check the tools and cross-check with OEM list of tools provided.
		(b) OEM/Bidder to provide cleaning tool kit required for the equipment operation for 7 years (list of tool kit to be furnished by OEM)	
31.	Spares and Consumables	(a) Spares and consumables to be provided without any cost as per terms and condition of warranty.	BOO to check the OEM undertaking
32.	Warranty	To be specified at the time of tender. Wherever not specified, an all covered warranty of 2 years will be applicable	BOO to check the warranty certificate for the same. The warranty certificate shall not contain any conditional exclusions not mentioned in this QR/TD

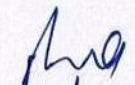
  
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 DC, ERPF


  
 Anil Singh  
 DC, CISF


  
 Maj Sagor Singh  
 TC, BD unit, NSG

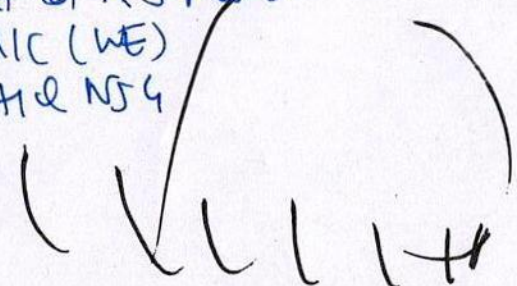
  
 S/D  
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 K.L. PURI  
 SP, BPR&D

  
 Lt Col R S Rana  
 AIC (WE)  
 HQ NSG

  
 Nalin Prabhat  
 Director General, NSG



**Annexure A****LIST OF EXPLOSIVE FOR FORMULATION OF QRs AND TDs OF  
HAND HELD EXPLOSIVE DETECTOR**

S No	Name	Marker
1	RDX	RDX
2	PETN	PETN
3	TETRYL (CE)	TETRYL (CE)
4	TNT	TNT
5	HMX	HMX
6	FOX-7	FOX-7
7	CL-20	CL-20
8	NTO	NTO
9	Ammonium Nitrate	Ammonium Nitrate
10	AFNO (Ammonium Nitrate – Fuel Oil)	Ammonium Nitrate : Fuel Oil 95:5
11	Amatol	Ammonium Nitrate : TNT : 50:50
12	Ammonal	Ammonium Nitrate : Aluminium : TNT : Carbon 59:21:18:2
13	Composition A	RDX : Wax 95:5
14	Composition B	RDX : TNT 60:40/RDX : TNT : Wax 59:5:39.5:1.0
15	Cyclotol	RDX : TNT 80:20
16	Dentex	RDX : TNT : Aluminium : Wax 48.5:33.5:18.0:1.0
17	LTPE (Low temperature Explosive) Plastic	RDX : Natural rubber : Diethylhexylsebacate : Mineral Jelly : Carbon black : DMNB taggant 88.00:2.25:7.65:2.00:0.15:0.70
18	Octol	HMX : TNT 70:30
19	Pentolite	PETN : TNT 50:50
20	PEK-I (Plastic Explosive Kirlee-I)	Tetryl (CE) : Rubber : Paraffin Oil 90:5:5
21	Torpex (4B)	TNT : RDX : Aluminium : Wax : 55:20:25:5 (Carbon black added)
22	Tritonal	TNT : Aluminium 80:20

