


INVITATION OF VENDOR COMMENTS ON QR/ TDs
OF MINIATURE THERMAL WEAPON SIGHT

1. It is intimated that firms/ vendors' comments are invited on the QR/ TDs of Miniature Thermal Weapon Sight. All firms are requested to offer their comments on e-mail address scord@nsg.gov.in or gcproc@nsg.gov.in as per under mentioned format.

QRs	TDs	Comments by the firm
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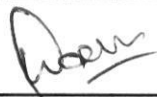






2. You are requested to offer comments within 15 days from the date of uploading on the website. The QR/ TDs of above mentioned equipment/ weapon are being considered by sub group committee meeting for finalization.

Dated : 05 July 2022

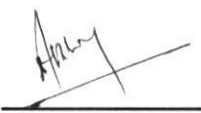


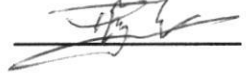





(Ankit Chaudhary)
Major
SC (Ord)

DRAFT QRS & TDS OF MINIATURE THERMAL WEAPON SIGHT : 24 JUNE 2022

Ser No	Parameters	Qualitative Requirements	Trial Directives
1.	General	<ul style="list-style-type: none"> A miniature light, ergonomic, new generation thermal weapon sight with excellent image quality and high range performance. Durable to mil envt condition and compatible with weapon MIL STD-1913 rail. The sight must remain zeroed and stable even after firing min 100 rounds. 	To be physically checked by board of officers.
		(Optional feature) Miniature thermal sight should be compatible with Reflex/ holographic/ day sight as a clip on feature. (To be specified by user at the time of tender)	To be physically checked by board of officers.
		<ul style="list-style-type: none"> Integrated Laser Pointer(Visible). 	To be physically checked by board of officers.
2.	Non Uniformity Correction (NUC)	<ul style="list-style-type: none"> Manual and automatic (shutter less technology) option. 	To be physically checked by board of officers.
3.	Field of View	<ul style="list-style-type: none"> 12 degree x 08 degree min. 	<ul style="list-style-type: none"> OEM to provide certificate in respect of the same. BOO to physically check the parameter at SIW, BSF or any other Indian government agency.
4.	Resolution	<ul style="list-style-type: none"> 640 x 480 or better with 10 to 12 mn(micron). 	<ul style="list-style-type: none"> OEM of microbolometer to provide certificate in respect of the same. BOO to check the certificates.
5.	Diopter Adjustment	<ul style="list-style-type: none"> +2D to -2D or better 	<ul style="list-style-type: none"> To be physically checked by BOO at SIW, BSF or any other govt agency.
6.	OLED Resolution	<ul style="list-style-type: none"> 640x480 or better. 	<ul style="list-style-type: none"> OEM certificate in respect of the same. BOO to check the certificates..

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Ser No	Parameters	Qualitative Requirements	Trial Directives
7.	Spectral Range	<ul style="list-style-type: none"> 8 to 14um. 	<ul style="list-style-type: none"> OEM certificate in respect of the same. BOO to check the certificates..
8.	Sensor / Detector	<ul style="list-style-type: none"> Micro bolometer or better. 	<ul style="list-style-type: none"> OEM of microbolometer to provide certificate in respect of the same. BOO to check the certificates.
9.	Frame Rate	<ul style="list-style-type: none"> 50 fps or better. 	Test Certificate from Indian Govt lab/ National accredited lab certificate <ul style="list-style-type: none"> Firm to provide OEM certificate in respect of the same.
10.	Electronic Zoom	<ul style="list-style-type: none"> Should have following modes 1x2x4. 	<ul style="list-style-type: none"> To be physically checked by board of officers.
11.	Bty Charger	<ul style="list-style-type: none"> A universal charger operating between 100V to 270 V AC main and 12 to 48 V DC (entire range). Should be able to charge battery fully in less than 4 hrs. The charger should be able to show the charging status of battery along with an auto-cut system to avoid over charging. 	<ul style="list-style-type: none"> To be physically checked by board of officers.
12.	Battery	<ul style="list-style-type: none"> Commercially available rechargeable lithium based battery with min endurance time of 6hrs on single/set of battery. 	<ul style="list-style-type: none"> To be physically checked by board of officers.

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Ser No	Parameters	Qualitative Requirements	Trial Directives
13.	Range	<ul style="list-style-type: none"> Detection – 200m. Recognition – 100m 	<ul style="list-style-type: none"> Detection – Detection of any standing/moving target at 200m. Recognition– Recognition of standing/moving human target at 100m. <p>BOO to physically check the same..</p>
14.	Reticle polarity	<ul style="list-style-type: none"> Sight should have dual colour(Black/ White) digital reticle or better. 	<ul style="list-style-type: none"> To be physically checked by the BOO.
15.	Size	<ul style="list-style-type: none"> Max 130 x 90 x 65 mm without eye piece cover and OG cover. 	<ul style="list-style-type: none"> To be physically checked by board of officers.
16.	Weight	Max 500 gm (with battery and mounting adapter, OG cover and Eye cup)	<ul style="list-style-type: none"> To be physically checked by board of officers.
17.	Locking Mechanism	<p>(a) It should have locking arrangement for quick attachment and detachment. Time < 1 min.</p> <p>(b) It should have a rugged locking mechanism compatible with Mil Std 1913 rail.</p>	<ul style="list-style-type: none"> To be physically checked by board of officers.
18.	Operational Switches	<ul style="list-style-type: none"> Brightness control, contrast control, Black hot & white hot, NUC, Laser on/off, reticle toggle option. 	<ul style="list-style-type: none"> To be physically checked by board of officers.
19.	Ruggedness	<p>QR:-</p> <p>(a) Weapon system should be ruggedized as per latest mil Std 810H or JSS 55555/JSS 5855 for following test :</p> <ul style="list-style-type: none"> -Shock. -Vibration. -Bump. -Thermal shock. -Humidity. -Low pressure(altitude) <p>(b) Should be IP-67 complied.</p> <p>(c) Should be able to withstand sustained firing with the weapon without any effect on zeroing optics of sight after firing 100 rds in burst mode</p>	<ul style="list-style-type: none"> Certificate from by Indian Govt lab/ National accredited lab certificate <p>BOO to physically check the same with the weapon at firing range.</p>

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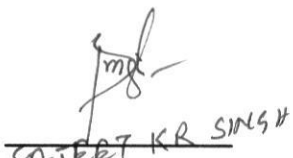

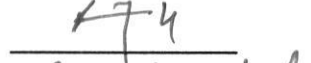
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Ser No	Parameters	Qualitative Requirements	Trial Directives
20.	Operating Temperature	-30 ⁰ C to +50 ⁰ C(+3 ⁰ C)	Test Certificate from Indian Govt lab/ National accredited lab certificate
21.	Storage Temperature	-40 ⁰ C to +50 ⁰ C(+3 ⁰ C)	Test Certificate from Indian Govt lab/ National accredited lab certificate
22.	Black Hot White Hot Mode	<ul style="list-style-type: none"> The equipment must work effectively and be successfully be able to show image in Black hot and white hot mode 	<ul style="list-style-type: none"> To be physically checked by board of officers
23.	Spare Battery	<ul style="list-style-type: none"> For Cycle of operation It must provide 02 x set spare battery 	<ul style="list-style-type: none"> To be physically checked by board of officers.
24.	Warranty min 02 years & shelf life of 10 years.	An undertaking in this regard must be obtained by the firm	<ul style="list-style-type: none"> Warranty of min 02 year and shelf life of 10 years
25.	Reticule	Fine cross hair with centre Dot and Stadimetric scale capable to zero the weapon in azimuth & elevation with resolution upto cm level on target. There should be facility of changing the colour of the reticule. The reticule pattern for 25m, 100m and 200 metres should be provided.	<p>(a) Switch on the equipment and observe for reticule pattern confirmation with the facility of changing colour.</p> <p>(b) Zero the sight with the weapon as per the procedure check the sight for the facility provided electronically to shift the aiming dot up to centimeter level with stadimetric scale in azimuth and elevation as per the requirement.</p> <p>(c) Three different reticules i.e. 25, 100 and 200 metre should be physically checked and their accuracy shall be checked by test fire (10 Rds per target).</p> <p>(i) For 9mm caliber weapon at 25 and 50 metre ranges.</p> <p>(ii) For 5.56mm/7.62mm caliber weapon at 25m and 100m ranges.</p> <p>(d) The weapon should be able to engage figure 11 target at both ranges.</p>
26.	Focusing	<ul style="list-style-type: none"> 10 m to Infinity 	<ul style="list-style-type: none"> To be physically checked by board of officers.



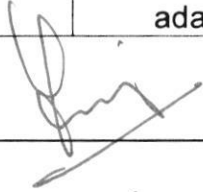

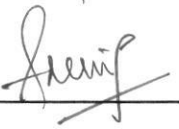


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Ser No	Parameters	Qualitative Requirements	Trial Directives
27	Visibility	<ul style="list-style-type: none"> Must be able to penetrate through fog, smoke, rain, thick foliage and complete darkness 	<ul style="list-style-type: none"> To be physically checked by board of officers.
28.	Technical Literature	User Hand-book, operating manual and technical manual to be provided.	<ul style="list-style-type: none"> To be physically checked by board of officers.
29.	Initialization Time	<ul style="list-style-type: none"> Time <10Secn 	<ul style="list-style-type: none"> To be physically checked by board of officers
30.	Readiness time	<ul style="list-style-type: none"> Time ≤1 min 	<ul style="list-style-type: none"> To be physically checked by board of officers
31.	Spare part list	<ul style="list-style-type: none"> Illustrated spare part list along with photograph and cat part number to be provided. 	<ul style="list-style-type: none"> To be physically checked by BOO.
32.	Training & Repairs	<ul style="list-style-type: none"> Operational user training for 3 days to be provided for at-least 50 persons at location decided by indenter. Base level Repair and maintenance training should be provided at-least to 5 technicians on 100 equipment for 1 week at firm premises. 	<ul style="list-style-type: none"> Firm to provide OEM certificate for the same.
33.	Minimum Resolvable Temperature Difference (MRTD)	<ul style="list-style-type: none"> Value to be specified by the OEM of the equipment 	<ul style="list-style-type: none"> OEM to provide CoC(Certificate of Confirmation) for the same and BOO to check correctness of the certificates.


			
Maj Anshu Singh, NSG		Kinay (DC) CRPF	Kinay (DC) CRPF
			
Maj Anant Dohoon TC, WE, NSG	SAsheet KR Singh AC, CISP	ASI/comm Harbans Singh SSB	Refender Singh AC/Armr 1TB P


TRIAL DIRECTIVES AND EXPECTED RESULTS FORVARIOUS FACTORS
TO BE CHECKED BY BOO OF MINIATURE THERMAL WEAPON SIGHT

Ser No	Parameters	Trial	Expected Result
1.	Miniature Thermal Weapon Sight mil std 1913 rail, The sight must be zeroed and stable even after fire of min 100 rounds	<ul style="list-style-type: none"> Check the adaptor and its compatibility with the weapon as deigned by the user. Mount the sight of the weapon and zero the sight with weapon. Fire 100 round as per procedure and check zeroing. 	<ul style="list-style-type: none"> A well compatible picatinny rail adaptor must be provided to mount the sight on the user deigned weapon. Sight must remain zeroed and stable even after fire of min 100 round.
2.	Mount for optional RMR Day Reflex Sight	<ul style="list-style-type: none"> Mount the sight on the rail. The mounting and dismounting of sight should be easy. 	<ul style="list-style-type: none"> The mount should be adaptable with the weapon rails and must provide a sturdy hold.
3.	Integrated Laser Pointer	<ul style="list-style-type: none"> To be physically checked by BOO 	<ul style="list-style-type: none"> The laser must produce sufficient bright light to allow aiming during variable ambient light condition
4.	NUC	<ul style="list-style-type: none"> The Non-uniformity compensator adjust for minor detector drift that acute as the scene and environment change. Put the Thermal Sight in a room with Temperature Control System. Change the temperature from (SRT) to 5⁰below. Switch on the camera and put it on manual and automatic mode consecutively. 	<ul style="list-style-type: none"> The Thermal camera needs few minutes to warm up and capture the image in a stable environment, the sight should show clear picture after a lag of few minutes in both automatic & manual mode.
5.	Battery	<ul style="list-style-type: none"> Insert the rechargeable Li-Ion battery inside battery compartment and switch on the system in the operational mode and also switch on the stop watch to start counting the functional hour. 	<ul style="list-style-type: none"> The Battery should be easily available in the market and must function for at least 06 hours.
6.	Battery Charger	<ul style="list-style-type: none"> Connect a fully discharged battery with the battery charger in any range of given input voltage 	<ul style="list-style-type: none"> The battery must be charged fully in< 4 hrs with on AC main & supply or on DC supply.
7.	Size	<ul style="list-style-type: none"> Size will be physically checked with help of suitable scale 	<ul style="list-style-type: none"> The value should be as per the data provided by firm
8.	Weight	<ul style="list-style-type: none"> The sight should be kept on a calibrated weight matching displaying weight in kg 	<ul style="list-style-type: none"> Max 500 gm (with battery and mounting adapter, OG cover and Eye cup)


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Ser No	Parameters	Trial	Expected Result
9.	Reticle	<ul style="list-style-type: none"> Fine cross hair with Centre det. The reticle should provide the scale of different range i.e., 25m & 100m. 	<ul style="list-style-type: none"> The reticle should be checked on a 200m Range for Centre dot and range estimation.
10.	Focusing	<ul style="list-style-type: none"> The sight should focusing on a target from 10m to Infinity 	<ul style="list-style-type: none"> There must be a facility for manual focusing from 10m to Infinity
11.	Sight locking	<ul style="list-style-type: none"> Check mechanism for quick attachment and detachment with lever locking mechanism during testing 	<ul style="list-style-type: none"> The sight must have lever locking mechanism to mount it on weapon Lever locking mechanism must keep the mount stable on weapon during firing.
12.	Visibility	<ul style="list-style-type: none"> Switch on the system in different conditions like full darkness, smoke, rain, fog and observe a target with eye piece. 	<ul style="list-style-type: none"> Sight must be capable to see through all conditions
13.	Electronic Zoom	<ul style="list-style-type: none"> Fix the equipment on acceptance test station and observe the TI target only and measure the magnification 	<ul style="list-style-type: none"> The system must be able to provide magnification as per parameter given.
14.	White Hot & Black Hot Mode	<ul style="list-style-type: none"> The Thermal imager should be kept in a dark room focus the imager on a target and observe the sight to distinguish between Black / White mode 	<ul style="list-style-type: none"> The sight must be able to present the target in black hot and whit hot mode.
15.	Initialization Time	<ul style="list-style-type: none"> The thermal sight should be able to initialization the initial sys setup within 20 sec. 	<ul style="list-style-type: none"> Switch on the power sup. The power from the battery will be provided to various circuits. The sight will run all internal test and set optimum temperature and display must be ready within 20 sec.
16.	Readiness	<ul style="list-style-type: none"> The sight should be able to detect target in ≤ 1 min. 	After initialization the sight must take not more than one minute to detect a target at a given distance

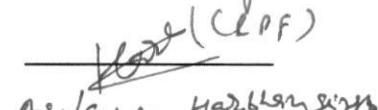

Major Anshu Singh, MScy.

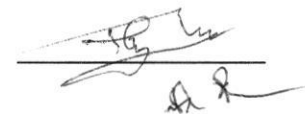

Major Anshu Singh
TC, WE, HQ MSG

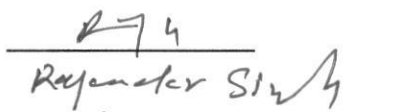



Major Anshu Singh
AC, CISC


Vincy (DC)


ASI/Comm Harbansinh
SSB




AC/Armr, ITBP