No. IV-21011/18/2010-Prov-I
भारत सरकार/Government of India
मंत्रालय/Ministry of Home Affairs
मन्त्रालय/Ministry of Home Affairs
पुलिस आधुनिकीकरण प्रभाग/Police Modernization Division
संभरण-I डेस्क/Prov-I Desk

26, Man Singh Road, Jaisalmer House,
New Delhi, the 5th December, 2014

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

Subject: Trial Directives of Solar Battery Charger for Radio Set.

The undersigned is directed to refer to the subject mentioned above and
to say that the Trial Directive in respect of Solar Battery Charger for Radio Set as
per Annex-I have been approved by the competent authority in MHA.

2. Henceforth, all the CAPFs should trial evaluate the above items strictly as
per the laid down QRs/Specifications issued vide letter of even number dated

3. Concerned CAPF will be accountable for the correctness of Trial
Directives.

Yours faithfully,

(P. K. Srivastava)
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 Trial Directives of Solar Battery
Charger for Radio Set on official website of MHA (under the page of
Organizational Set up, Police Modernization Division-Communication
Equipment). Soft copy is being sent through email also.

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

Copy to: DDG (Procurement), MHA
TRIAL DIRECTIVES OF SOLAR BATTERY CHARGER FOR RADIO SET

Trial of foldable solar battery charger will be conducted by a Board of Officers (B.O.O.) in the presence of representative of Firm to assess actual performance of the solar charger.

2. Methodology: - All parameter / Specifications mentioned in the QRs will be checked by board of officers by ascertaining verifying following check.

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

ii) Functional Check: - The vendors will show 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 the firm from any Government approved accredited Laboratory during physical trial of the equipment and will be acceptable to B.O.O.

<table>
<thead>
<tr>
<th>SI No.</th>
<th>PARAMETERS</th>
<th>SPECIFICATION FOR FOLDABLE</th>
<th>SPECIFICATION FOR FOLDABLE &amp; FLEXIBLE</th>
<th>TRIAL PROCEDURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Solar Panel Cell Material</td>
<td>Mono-Polycrystalline</td>
<td>Amorphous silicon</td>
<td>B.O.O will check it physically as well as supplier will produce certificate issued by govt accredited laboratory.</td>
</tr>
<tr>
<td>2</td>
<td>Solar battery Charging voltage should be field selectable</td>
<td>6V/12V</td>
<td>6V/12V</td>
<td>B.O.O will measure practically by using the standard measuring instrument during full sunlight.</td>
</tr>
<tr>
<td>3</td>
<td>Nominal peak power</td>
<td>60 W ± 2W</td>
<td>60 W ± 2W</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Peak power voltage while selected at 12 Volt</td>
<td>15 to 17 Volt</td>
<td>15 to 17 Volt</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Short Circuit Current while selected at 12 Volt</td>
<td>3.70 Amp</td>
<td>3.70 Amp</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Peak Power Current while selected at 12 Volt</td>
<td>3.4 To 3.5 Amp</td>
<td>3.4 To 3.5 Amp</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Peak open Circuit voltage while selected at 12 Volt</td>
<td>20 Volt ±2V</td>
<td>20 Volt ±2V</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Maximum Size while folded 405 x 385 x 88 (mm)</td>
<td></td>
<td>280 x 245 x 61 (mm)</td>
<td>B.O.O will measure size with the help of measuring tape/scale.</td>
</tr>
<tr>
<td>9</td>
<td>Maximum dimension while unfolded 1625 x 385 x 22 (mm)</td>
<td></td>
<td>1500 x 1095(mm)</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Solar Panel Weight</td>
<td>≤ 8.5 kg</td>
<td>≤ 2 Kg</td>
<td>B.O.O will measure weight with the help of weighing machine.</td>
</tr>
<tr>
<td>11</td>
<td>Operating Temperature</td>
<td>-10°C to +55°C</td>
<td>-10°C to +55°C</td>
<td>Firm will produce certificate issued by govt. accredited Laboratory.</td>
</tr>
<tr>
<td>12</td>
<td>Charging lead</td>
<td>Should be provided</td>
<td>Should be provided</td>
<td>B.O.O will check it practically by connecting battery with solar panel!</td>
</tr>
<tr>
<td>13</td>
<td>LED Indication</td>
<td>Charging and Discharging State</td>
<td>Charging and Discharging State</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>There should be option of online</td>
<td>load controller for connecting load also</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
General Tolerance other than Power and Vmp ±10%

Manpack/compact, Portable, light in weight & convenient to carry compact type (with folding) solar battery charging system for mobile use, charging of Ni-Mh /Lithium-ion battery (7.5 V 2000 to 2500 mAh). SMF/ Ni-Mh / Lithium-ion battery 12 V 7-15 Ah of HF Manpack Set Model- LHP-265, 2110 M & VX-1210 (BEL, CODAN & Vertex make).

Proper plug / coupling arrangement must be provided for charging of batteries of Motorola, ICOM. Vertex, Kenwood make hand held radio sets and Sealed Maintenance Free/ Ni-Mh / Lithium-ion batteries 12 V 7-15 Ah for HF Manpack Set Model- LHP-265 & VX-1210 (BEL & Vertex make) and battery of Laptop & Mobile phone (3.7 V 1000 m Amp Li-ion).

Inbuilt protection against low voltage, short circuiting, overcharge & deep discharge of battery should be provided.

B.O.O. will check physically / practically by connecting various types of battery one by one with solar panel and will ensure that battery is being charged properly.

B.O.O. will check physically / practically by connecting various types of battery one by one with solar panel through proper connector / coupling arrangement and will ensure that battery is being charged properly.

B.O.O. will check all practically and ensure their workability.

(SI/E Sohrab Ansari, CISF)

(R.K. Kumbhare, AC, SSB)

(Major Rahul J Rane, Sqn Comdr, NSG)

(Virendra Agrawal, DIG(Eqpt) CRPF)

(Shailendra Kumar, IG (Comn), CRPF)

(M S Yadav, AC, CRPF)

(U.C. Joshi, AC, BSF)

(Sunit Gupta, PSO (E), BPR&D)

(Mahesh Kumar, DIG (Comm), CRPF)

Approved/ Not approved

(Dilip Trivedi, IPS)

DG, CRPF