

**OFFICE OF THE SUPERINTENDENT OF POLICE (C) MPRO  
MEGHALAYA::SHILLONG**

**NOTICE INVITING TENDER**

Sealed tender affixing non-refundable court fee stamp of Rs.1000/- (Rupees One thousand) only are invited from bonafide, established, reputed manufacturers or their authorised dealers for entering into the rate contract for supply of:

**“RADIO EQUIPMENT”**

As per the Technical Specifications, Terms and conditions laid down in the Tender

**Terms and Conditions**

- i) Items offered must be of reputed companies/manufacturers and should meet with all the specifications as those given in Annexure. Tender should be accompanied with catalogue, warranty/ guarantee or any related papers & will be received upto 1400 hrs. on the 28<sup>th</sup> March, **2023** and will be opened on the same day at 1500 hrs. Bidders or their authorised representatives are invited at the time of opening of the tender. Tenders received after 1400 hrs. of 28<sup>th</sup> March, **2023** will be summarily rejected.
  - ii) Only those firms which are manufacturer (OEM) or genuine authorized dealers/distributor/agent of the OEM are eligible to quote in the tender
  - iii) OEM can either bid themselves or their authorized dealer/ distributor/agent can bid on their behalf
  - iv) Authorized dealers/ distributor/ agent should attach a certificate from the principals assuring their association for at least next 05 years
  - v) The bidder should have an experience of at least 5 years in manufacture/sales and service of Digital VHF/UHF radio and repeater sets in India
  - vi) The bidder should get the testing of Digital Radios Parameters on their Communication test Analyzer (without any additional cost) for offered Radios during Testing and Field Demonstrate. After clearing Lab test only, bidder will be allowed for Field Test and Interoperability test.
  - vii) Registered service center of the OEM to be present in India for prompt after sales service.
  - viii) In case of Indigenous manufacturer /Distributor/dealer/agent. The past performance and experience of the OEM will also be considered. The indigenous manufacturer will have to provide details/agreement of the manufacturing on TOT basis in their plants along with Manufacture permission in India from WPC Govt. of India with the bids.
  - ix) The Offer Radios and Repeater should able to transmit data of existing data communication systems working with Meghalaya police without any external radio Modem
  - x) The bidder is to offer turnkey project for the Supply installation and Commissioning of system along with interfacing with existing data communication network.
2. Tender must be accompanied by:-
- (a) Affixed non-refundable court fee stamp of Rs.1000/- (Rupees One thousand) only
  - (b) Earnest Money calculated at the rate of 2% of the total value of the items tendered. The Earnest Money as far as practicable should be in the form of either (i) Deposit at Call. Or (ii) Fixed Deposit or (iii) NSC/KVP from any Nationalised bank at Shillong, pledged in favour of the Superintendent of Police (C) MPRO, Meghalaya, Shillong. Tenderers belonging to Schedule Caste/Schedule Tribe may deposit 50% of the amount above subject to the production of such certificate.
  - (c) Recent passport size photograph of the Tenderer duly attested.
  - (d) Latest financial stability certificate from a Scheduled Bank certifying that the Tenderer is financially sound to undertake the contract.
  - (e) Valid Professional Tax certificate
  - (f) Dealership/distributorship certificate from the Principal manufacturers.
  - (g) Attested copy of valid Trading License in terms of United Khasi / Jaintia & Garo Hills District Trading (By non-tribal) Regulation Act 1954 by tenderers who are required to obtain such License.
  - (h) Valid and current Dealer Position License (DPL) for trading in wireless radio equipment as issued by the Ministry of Information & Telecommunication, Govt. of India.
  - (i) Valid GST Registration Certificate and TIN No. of the tenderer
  - (j) An undertaking stating that the tenderer himself/herself is satisfied with the terms & conditions of the N.I.T. and agrees to abide by the same for this tender.
  - (k) Attested copy of PAN

3. The following information must be mentioned on the body of the envelope containing the quotations, failing which the sealed envelope of the quoting firm will not be opened.
- |     |   |                |
|-----|---|----------------|
| (a) | Earnest money   | -is enclosed.  |
| (b) | Professional Tax certificate                                    | -is enclosed   |
| (c) | Court Fee stamp   | - is enclosed. |
| (d) | Dealership certificates from Principal manufacturers            | - is enclosed  |
| (e) | Trading License from KHADC/JHADC/GHADC (for non-Tribal)         | -is enclosed   |
| (f) | SC/ST Certificate.  | - is enclosed  |
| (g) | Passport size photograph  | - is enclosed  |
| (h) | Valid GST Registration Certificate                              | - is enclosed. |
| (i) | Income Tax certificate /PAN                                     | -is enclosed   |
| (j) | Latest financial stability Certificate from any recognized Bank | -is enclosed   |

Failure to enclose any one of these documents or enclosure of any invalid documents will result in automatic rejection of the quotation.

4. Rates quoted
- (a) should be inclusive of all charges, like custom duty, packing, insurance, taxes and other incidental charges. Local taxes should be shown separately if applicable. However the GST of the above mentioned taxes if any should be shown separately
  - (b) should be inclusive of cost of accessories.
  - (c) should be valid for one calendar year from the date of acceptance of tender.
  - (d) should be quoted F.O.R. destination, Shillong, door delivery Office of the Superintendent of Police (C) MPRO, Meghalaya, Shillong
  - (e) Should be written clearly in figure and in words. Any alteration or overwriting must be fully signed by the tenderers.
  - (f) Once the rates offered in the tender are accepted enhancement will not be entertained under any circumstances and tenderers will be liable to supply the items at the accepted rate. Failure to supply the items at the accepted rates will entail the offer being cancelled and the security money will be forfeited to the Government of Meghalaya.
5. The Tenders prepared by the Tenderers shall comprise the following of a two part bid. Viz. **i) Technical Bid and ii) Price Bid in separate covers**
- 5.1 The Tenderers shall arrange Technical presentation and live demonstration of their system/Equipment / Items quoted within 7(seven) days from the date of submission of quotation to show that they fully confirm to this tender. The bidder has to bring four numbers of Hand held sets for the demo & field trial. The Bids of the firms/vendors who do not arrange field trial and demonstration as above will be treated as rejected.
6. The successful tenderers will be:-
- (a) Intimated by a Letter of Acceptance/Supply order by the Superintendent of Police (C) MPRO, Meghalaya, Shillong. Till then no bidder has any right to assume that his/her tender has been accepted. There shall be no claim whatsoever for compensation for any expenditure incurred by any tenderers in anticipation of acceptance letter
  - (b) Required to furnish a security deposit as per rates mentioned below and execute the contract agreement to ensure fulfillment of the terms and conditions of the contract which successful bidder/s will have to enter into. Such security deposit will be subjected to forfeiture in case of non-fulfillment of terms and conditions of the tender notice on the contract agreement. The earnest money of the successful tenderer/s will not be released till the full security deposit is furnished. Earnest money of the successful tenderer/s will be forfeited to the Government in case of failure to furnish security money in full.
  - (c) Selected firm required to furnish Valid Trading License from the Khasi Hills Autonomous District Council before a final supply order is issued

7. **RATES OF SECURITY DEPOSIT**

For contract upto Rs.20,000/- 2% from local & 3% from non-Locals.

For contract upto Rs.50,000/- 3% from local & 4% from non-Locals.


For contract upto Rs.1,00,000/- 4% from local & 5% from non-Locals.

For contract over Rs.1,00,000/- 10% for all categories

The Security Deposit should be interest free and in the form of a valid Bank Draft/Deposit at Call pledged in favour of the undersigned.

8. The Superintendent of Police (C) MPRO, may rescind forthwith the contract in writing if,
- A Tenderer assigns or sublets any contract in respect of contract or any other contract entered into with the Government.
  - Tenderer or his agent/Servant are found guilty of fraud of this contract or any other contract.
  - Declines, neglect or delays to comply with the demand/requisition or in any other way fails to perform or observe any of or all the conditions of the contract agreement.
- In case of such rescission the Security Deposit in full shall stand forfeited and absolutely be at the disposal of the Government without prejudice to any other remedy or action that the Government shall be entitled to recover from the successful Tenderer any extra expenses Govt. may deem necessary in obtaining the supplies.
9. In the event of the successful Tenderer failing to perform his/her part of any or all the contract agreement to the satisfaction of the Department or disregarding any terms and conditions of the Tender Notice and or the contract agreement the successful Tenderer shall be liable to any of or all of the following action at the discretion of the Superintendent of Police (C) MPRO, Meghalaya, Shillong on behalf of the Government of Meghalaya.
- Forfeiture of security deposit in whole or part.
  - Making good the loss caused to the Government through the liability, neglect, delay in complying with the demand.
  - Cancellation of the contract without any prior notice to the contractor.
10. If the successful Tenderer/s willfully neglects, fails to perform or observe any or all conditions of the contract agreement or attempts to cheat or indulge in foul practices, the Superintendent of Police (C) MPRO, Meghalaya, Shillong may impose a ban upon such Tenderer(s) for future business within the Department.
11. Quantities mentioned in the list are only illustrative and may be increased/reduced on finalisation of order depending on the availability of fund and actual requirements
12. Once the sample/technical specification of the items are approved, no change of brand, name, shape, pattern, quality or specifications will be entertained even on the plea of non-availability of raw materials or alternative offer of the same quality.
13. The store, supplied must be of the same specifications, weight and quality as the tendered models/samples/Tech. Spec. If the items are rejected by the undersigned due to non-meeting of the Technical Specification the supplier must replace the rejected items at their own cost forthwith and in a period of 21 (twenty one) days from the date of rejection.
14. Delivery must be completed within thirty days from the date of receipt of firm orders. No extension of delivery & installation period will be entertained.
15. Payment will be made to the suppliers directly only on completion of supplies and on correct receipt of goods by the respective consignee in good condition. Documents/vouchers/ P.R. Bills etc. routed through Banks will not be accepted. Consignment will be dispatched by the firm after payment of all freight charges at the source. Freight to pay P.R. will not be accepted.
16. Risk of transportation will be borne by the Tenderer themselves.
17. Comprehensive on site warranty should be indicated alongwith after sale services facilities.
18. One set of manuals of (Instructions and Maintenance) should be supplied free of cost for each item wherever applicable.

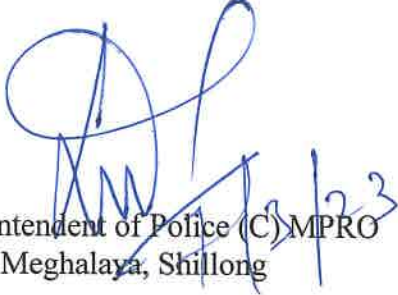
19. The Purchase Board reserves the right to reject the lowest rate or any of the tender without assigning any reason.
20. The Superintendent of Police (C) MPRO, Meghalaya, Shillong reserves the right to cancel the NIT floated or reject any of the tenders without assigning any reasons thereof
21. Any dispute arising out of or in respect of these terms and conditions of the Contract Agreement shall be in the Jurisdiction of the Courts in Meghalaya.

  
(W. Nongkynrih)  
Superintendent of Police (C) MPRO  
Meghalaya, Shillong

Dtd. Shillong the 7<sup>th</sup> March, 2023

L/No.MPRO/PLN/93(DMPRC)2018-23/72-A,  
Copy to:-

1. The Asstt. Inspector General of Police (A), Meghalaya Shillong for favour of kind information of the Director General of Police, Meghalaya
2. The Inspector General of Police (Commn.), Meghalaya, Shillong for favour of kind information
3. The Inspector General of Police (L&O) Meghalaya Shillong for favour of kind information
4. The Inspector General of Police (TAP) Meghalaya Shillong for favour of kind information
5. The Dy. Inspector General of Police (SB), Meghalaya Shillong for favour of kind information
6. The Dy. Inspector General of Police (ER), Meghalaya Shillong for favour of kind information
7. The Director Government Printing Press, Meghalaya, Shillong for favour of information with a request to publish in 2(two) consecutive issues of Meghalaya Gazette.
8. The Director of Information and Public Relation, Meghalaya, Shillong with a request to publish a brief gist of the tender notice in 2 (two) Newspaper (One impression), in Khasi and English each. Bills of the same may be submitted to the office of the undersigned of payment
9. The Superintendent of Police, East Khasi Hills, Shillong/West Khasi Hills, Nongstoin / South West Khasi Hills, Mawkyrwat / West Jaintia Hills, Jowai / East Jaintia Hills, Khliehriat / Ri-Bhoi District, Nongpoh / East Garo Hills, Williamnagar / North Garo Hills, Resubelpara / West Garo Hills, Tura / South Garo Hills, Baghmara / South West Garo Hills, Ampati / (F&ES), Meghalaya, Shillong / Spl. Supdt. of Police, (SB-I) / (SB-II), Meghalaya, Shillong
10. The Commandants, 1<sup>st</sup> MLP Bn. Shillong / 2<sup>nd</sup> MLBP Bn. Goeragre, Tura / 3<sup>rd</sup> MLP Bn. Sahnsein, Jaintia Hills / 4<sup>th</sup> MLP Bn. (IRBN), Sohpien, West Khasi Hills, Nongstoin, Commandant 5<sup>th</sup> MLP Bn. Samgong, Williamnagar. / Commandant 6<sup>th</sup> MLP Bn. Umran / Commandant SF10, Meghalaya, Shillong
11. Incharge Computer Wing (PHQ), Shillong with a request for uploading the Tender Notice in the Website of Meghalaya Police
12. Notice Board
13. M/S. \_\_\_\_\_


  
Superintendent of Police (C) MPRO  
Meghalaya, Shillong

**IMPRINT FOR PUBLICATION IN NEWSPAPERS (One Impression Only)**

**TENDER NOTICE**

Sealed tender affixing non-refundable court fee stamp of Rs.1000/-(Rupees One thousand) only are invited from bonafide, established, reputed manufacturers or their authorised dealers/agents/ representative for entering into the rate contract for the supply of “**Radio Equipment**”

Tender will be received upto 1400 hrs. on the 28<sup>th</sup> March, 2023 and will be opened on the same day at 1500 hrs. Detail information/related documents in connection with the tender can be collected from the office of the undersigned on any working day.

  
(W.Nongkynrih)  
Superintendent of Police (C) MPRO  
Meghalaya, Shillong

**CERTIFICATE OF ACCEPTANCE OF TERMS AND CONDITIONS  
(To be furnished along with the tender documents)**

I/We have read and fully understood the terms and conditions as laid down in the NIT Vide No. L/No.MPRO/PLN/93(DMPRC)2018-23/72-A, Dtd. 7<sup>th</sup> March, 2023, in respect of supply of "Radio Equipment" to the Office of the Superintendent of Police (C) MPRO, Meghalaya, Shillong due to be opened on 28<sup>th</sup> March, 2023

I/We agree to abide by the same

I/ We have signed all the pages of the tender documents as laid down.

Signature and seal of the Tenderer or  
his/her Authorized signatory.  
Dated.....

Name.....

Address.....

.....

Phone No.....

## SPECIFICATIONS

**Quantity**

**I. VHF Digital Handheld Radio**

**688 Nos.**

<b>Integrated Radio &amp; Data Communication systems</b>		
<b>Specification for Digital VHF Hand Held sets</b>		
<b>General</b>		The IP base portable radio should be Interoperability with Meghalaya Police existing DMR Radios in respect to all parameters. Radio should be lightweight capable of operating in conventional system in single location and automatic roaming to other areas of operation using IP based repeater network without manual intervention. Programmable buttons and an emergency button to seek help in critical situations must be common feature for all radios. The radio should be programme through USB port smart programming
Sl. No.	Description	Required Specifications
1.A	Frequency Range	136-174 MHz full band
1.B	TDMA	2-Slot
1.C	Number of Channels	255 or More channel
1.D	Channel spacing	12.5 KHz / 25 KHz
1.E	Battery Capacity	2400 mAh Li-ion or higher capacity
1.F	Frequency stability	± 0.5 PPM
1.G	Antenna Impedance	50Ω
1.H	Antenna	Helical Antenna
1.I	Weight	< 400 gm without battery
1.J	Radio	Open standard Digital Protocol ETSI based DMR TDMA Radio. It should work in 12.5 KHz channel spacing and Analog 12.5 / 25 KHz
1.K	Type of Operation	Simplex/Semiduplex/Press to talk
1.L	Type of Antenna	Rugged flexible antenna
<b>Essential features for Meghalaya Police</b>		
2		(i) In-built secrecy fully
		(ii) Pre assigned messaging feature
		(iii) Built in Bluetooth for voice and Data
		(iv) Should have in Built GPS. Radio should have application Protocol Interface along with software applications to provide locations and messaging on PC / Console
		(v) Capable to be integrated with wi-fi for Radio smart management programming, software upgradation.
		(vi) Radio should have provision for Text to Speech (This is very essential features for Meghalaya Police law & order duty, VVIP, special operation for minimums the talk time, use text to speech facility from dispatcher to radios, radios to radios).
		(vii) DMO Mode- For TDMA dual slot without Repeater
<b>3. Transmitter</b>		
3.A	RF Power output	Programmable/switchable up to 5W or higher
3.B	Deviation	± 2.5 KHz @ 12.5 KHz and ± 5 KHz at 25 KHz
3.C	FM Emission	11K0F3E for 12.5 KHz and 16K0F3E for 25 KHz

3.D	Digital Modulation	4 FSK modulation 7K60FXE
3.E	Modulation Limiting	±2.5KHz at 12.5KHz
3.F	FM Hum/Noise	(i) for 25 KHZ : 45 dB or better
		(ii) for 12.5 KHZ : 40 dB or better
3.G	Adjacent Channel Power	- 60dB or better
3.H	Audio distortion	Less than 3 % @ 1KHZ
3.I	Audio Response	+ 1 , -3dB
3.J	Digital Vocoder	AMBE +2
3.K	Communication Security	The radio set should have provision of standard facility for installation of encryption device. Till SAG approved encryption is made available the vendor will provide commercial grade 256 Bit AES encryption. The commercial grade encryption will be deleted by the vendor at no extra cost at the time of fitment of SAG approved encryption which shall be procured separately. The OEM of the radio should give an undertaking that they will give details of interface for developing encryption in India whenever required. The developing agency in India will give NDA (non disclosure agreement) to OEM.
<b>4. Receiver</b>		
4.A	Sensitivity (Digital)	0.3µV at 5% BER or better
4.B	Selectivity (Analog)	0.3µV(12SINAD) or better
4.C	Inter modulation	65dB as per ETSI standards
4.D	Adjacent Chanel Selectivity	60dB or better
4.E	Audio Distortion	less then 3%
4.F	Audio output	500 mW or higher
<b>5. General Essential Features</b>		
5.A	2 Slot operation on single frequency	Should have provision for two simultaneous transmission on single frequency
5.B	Remote Radio Killing/Stun/Revive Facility	Should be available
5.C	Channel announcement in desired language	Should be available
5.D	Automatic voice enhancement in noisy area	Should be available
5.E	Caller ID Display	Should be available
5.F	Networking	IP based for features like automatic roaming
5.G	Battery Charger	Single Unit Rapid Charger (100 % of number of sets)
<b>6. Environmental specifications ( Environmental standard (ILAC reports))</b>		
6.A	Operating Temperature	-30°C to + 60°C
6.B	Storage Temperature	-40°C to + 70°C
6.C	Humidity	90% at 50°C (as per MIL810E)
6.D	Environmental Standard	MIL 810 C,D,E,F,G
6.E	Water Proof Protection	IP68
7	GIS	Radio should have application protocol interface along with software application to provide location and GSM messaging on PC console



8	Accessories as per configuration	(i) RF flexible Antenna
		(ii) Headset for hands free operation
		(iii) One spare battery with each radio
	Manuals/Literature	(i) User manual with each radio
(ii) Service Manual		
9	Conditions (OEM Undertaking)	Warranty – 24 months for radios and 12 months for accessories
10	Programming	Field programming and PC USB port programming/ PC Wi-Fi programming as per the user's communication needs

## II. VHF Digital Mobile Radio

Quantity  
216 Nos.

<b>General</b>		<b>The IP base Mobile/ static radio should be Interoperability with Meghalaya Police existing DMR Radios in respect to all parameters. Radio should be lightweight capable of operating in conventional system in single location and automatic roaming to other areas of operation using IP based repeater network without manual intervention. Programmable buttons. The radio should be programme through USB port</b>
<b>S/No.</b>	<b>Description</b>	<b>Required Specifications</b>
1.A	Frequency Range	136-174 MHz full band
1.B	TDMA	2-Slot
1.C	Number of channels	255 or More Channel
1.D	Channel spacing	12.5 KHZ / 25 KHZ
1.E	Operating Voltage	11 V to 15 V DC
1.F	Protection	Reverse polarity and high VSWR
1.G	Frequency stability	± 0.5 PPM
1.H	Antenna Impedance	50Ω
1.I	Weight	< 2 Kg.
1.J	Radio	Open standard Digital Protocol ETSI based DMR TDMA Radio. It should work in 12.5 KHZ channel spacing and Analog 12.5 / 25 KHZ
1.K	Type of operation	Simplex/Semiduplex/Press to talk
1.L	Interoperability with minimum two vendors	IOP Certification
<b>Essential features for Meghalaya Police</b>		
2		(i) In-built secrecy fully
		(ii) Pre assigned messaging feature
		(iii) Built in Bluetooth for voice and Data
		(iv) Should have in Built GPS. Radio should have application Protocol Interface along with software applications to provide locations and messaging on PC / Console
		(v) Capable to be integrated with wi-fi for Radio smart management programming, software upgradation
		(vi) Radio should have provision for Text to Speech (This is very essential features for Meghalaya Police law & order duty, VVIP, special operation for minimum the talk time, use text to speech facility from dispatcher to radios, radios to radios
		(vii) DMO Mode- For TDMA dual slot without Repeater
		(viii) Radio should be capable for Data Communication with our existing IDT Data Communication systems

<b>3. Transmitter</b>		
3.A	RF Power output	Programmable/switchable up to 25 W
3.B	Deviation	± 2.5 KHZ @ 12.5 KHZ and ± 5 KHZ at 25 KHZ
3.C	FM Emission	11K0F3E for 12.5 KHZ and 16K0F3E for 25 KHZ
3.D	Digital Modulation	4 FSK modulation 7K60FXE
3.E	Modulation Limiting	±2.5KHz at 12.5KHz
3.F	FM Hum/Noise	(i) for 25 KHZ : 45 dB or better (ii) for 12.5 KHZ : 40 dB or better
3.G	Adjacent Channel Power	- 60dB or better
3.H	Audio distortion	Less than 3 % @ 1KHZ
3.I	Audio Response	+ 1 , -3dB
3.J	Digital Vocoder	AMBE +2
3.K	Communication Security	The radio set should have provision of standard facility for installation of encryption device. Till SAG approved encryption is made available the vendor will provide commercial grade 256 Bit AES encryption. The commercial grade encryption will be deleted by the vendor at no extra cost at the time of fitment of SAG approved encryption which shall be procured separately. The OEM of the radio should give an undertaking that they will give details of interface for developing encryption in India whenever required. The developing agency in India will give NDA (Non disclosure agreement) to OEM
<b>4. Receiver</b>		
4.A	Sensitivity (Digital)	0.3µV at 5% BER or better
4.B	Selectivity (Analog)	0.3µV(12SINAD) or better
4.C	Inter modulation	65dB as per ETSI standards
4.D	Adjacent Chanel Selectivity	60dB or better
4.E	Audio Distortion	less then 3%
4.F	Audio output	3W or higher
<b>5. General essential features</b>		
5.A	2 Slot operation on single frequency	Should have provision for two simultaneous transmission on single frequency
5.B	Remote Radio Killing/Stun/Revive Facility	Should be available
5.C	Channel announcement in desired language	Should be available
5.D	Automatic voice enhancement in noisy area	Should be available
5.E	Caller ID Display	Should be available
5.F	Networking	IP based for features like automatic roaming
<b>6. Environmental specifications (Environmental standard(ILAC reports))</b>		
6.A	Operating Temperature	-30°C to + 60°C
6.B	Storage Temperature	-40°C to + 70°C
6.C	Humidity	90% at 50°C (as per MIL810E)
6.D	Environmental Standard	MIL 810 C,D,E,F,G
7	GIS	Radio should have application protocol interface along with software application to provide location, VOIP and GSM messaging on PC console
8	Data Communication	Radio should be capable for Data Terminal communication software PC to PC and auto route other interface
9	Accessories as per configuration	(i) DTMF Microphone (ii) GPS Antenna
10	Manuals/Literature	(i) User manual with each radio (ii) Service Manual
11	Conditions (OEM Undertaking)	Warranty – 24 months for radios and 12 months for accessories
12	Programming	Field programming and PC USB port programming/ PC Wi-Fi programming as per the user's communication needs

### III. VHF DIGITAL REPEATER

Quantity  
10 Nos.

1. General		
Sl. No.	Description	Required Specifications
1.A	Frequency Band	136-174 MHz (full band)
1.B	TDMA	2-Slot
1.C	Channel spacing	12.5 KHZ for two voice slots in Digital mode
1.D	Channel Capacity	20 or more
1.E	Digital Repeater	(i) Analog – FM with auto sensing and change over to digital & analog mode (ii) Open standard Digital protocol DMR TDMA based 12.5 KHZ channel spacing for both Analog & Digital two way Radios
1.F	Antenna Impedance	50Ω
1.G	Type of Operation	Repeater mode at 100% duty cycle
1.H	Operating Voltage	(i) In built power supply for mains operation with automatic change over to battery in case of mains failure
		(ii) 12V DC ± 10% (negative ground) external with Battery Charging facility
2. Transmitter		
2.A	RF Power output	45 Watts @ 100 % duty cycle
2.B	FM Emission	11K0F3E for 12.5 KHZ and 16K0F3E for 25 KHZ
2.C	Digital Modulation	4 FSK modulation 7K60FXE
2.D	Modulation Limiting	±2.5KHz at 12.5KHz
2.E	Frequency stability	< 1 PPM
2.F	FM Hum/Noise	(i) for 25 KHZ : 45 dB or better
		(ii) for 12.5 KHZ : 40 dB or better
2.G	Adjacent Channel Power	- 60dB or better
2.H	Audio Response	+ 1 , -3dB
2.I	Audio distortion	Less than 3 % typical
3. Receiver		
3.A	Sensitivity	(i) Digital - 0.3μV at 5% BER or better
		(ii) Analog - 0.3μV or better for 12dB SINAD
3.B	Selectivity	70 dB @ 25KHZ or better
3.C	Inter - modulation	75dB as per ETSI standards
3.D	Audio response (6dB/Octave pre-emphasis from 300-3000 HZ)	+1 and -3 dB
3.E	Adjacent Channel Selectivity	60dB or better
3.F	Image Rejection	65dB or better
3.G	Audio distortion	< 3% typical
4	Networking	Should be capable to support existing IP Repeater and can integrate 15 or more repeater stations to enable wide area network of user radio sets operating in the network from one site to another without manual intervention and also have a facility A. Illegal features enable B. Repeater restricted access system C. Illegal carrier timer. Also functional for data communication with our IDT systems
5	Environmental	Enclosed ETDC/ERTL Lab Report
		(i) Operating temperature -30° to +60°C
		(ii) Storage temperature -40° to + 80° C

		(iii) Humidity – 90% at 90%
6	Interfaces	(i) Ethernet port RJ45 to provide the following provisions a. Wide area IP connectivity for voice & data upto 15 nos. repeater
		RJ 45 port for IP should be inbuilt
		b. Remote monitoring and status check
7	Manuals/Literature	(i) User manual with each radio
		(ii) Service Manual
8	Conditions	(i) Bidder must indicate OEM Service Centre in India for after sales warranty and post warranty support
		(ii) Warranty minimum for 24 months
		(iii) The firm should enclose DOT/WPC Licence for supplying Wireless equipment in India
9	Programming	USB port programming as per the user's communication needs
<b>4. Accessories</b>		
Battery cable & Mounting fixture		Should be supplied with Repeater
Antenna		6dB gain Omni Directional antenna with 30 meter RF Cable RG-217 for base station will be provided as per user's requirements
Programming Kit		All necessary Software and hardware required for programming of the set independently. Software must support latest Windows OS
Literature		i) User manual with each radio sets should be provided free of cost in soft as well as hard copy
		ii) Technical repairing & maintenance manual with complete block diagram in soft as well as hard copy

#### IV. Data Terminal

12 Nos.

4 Ports Data Terminal System	
Motherboard	Latest Motherboard
Memory	4 GB DDR4-2666 SDRAM (1 x 4 GB)
Memory & Storage	4 GB memory; 1 TB HDD storage
Internal Storage	1 TB 7200 rpm SATA
Processor Type	Intel Core i3
Processor	Inter @ Core™i3 processor (3.6 GHz, 6 MB cache, 4 cores)
Processor family	8 <sup>th</sup> Generation Intel® Core™ i3 processor
Processor Speed	3.6 GHz
Graphics	Integrated
Graphics Card	Intel® UHD Graphics 630
Ports	1 headphone/microphone combo; 2 USB 2.0; 2 USB 3.1 Gen 1
Expansion slots	1 M.2; 1 PCIe x 16; 1 PCIe x 1
Network Interface	Integrated 10/100/1000 GbE LAN
Wireless	802.11a/b/g/n/ac (1x1) Wi-Fi® and Bluetooth® 4.2. combo
Optical Drive	DVD-Writer
Dimensions	13.6 x 25.8 x 31 cm
Weight	4.1. kg
Power Supply Type	180 W internal power supply
Keyboard	USB wired keyboard with volume control
Input Devices-Mouse	USB wired optical mouse
Software	Windows Platform Message Communication Software complement our existing messaging medias such as AMSS (Auto alternate root/media) POLNET WAN Messaging / CCTNS /E-mail. It also a solution for last mail messaging up to police stations / out posts through DMR Digital Radios and (VHF/UHF) / HF Modem
	4 ports Data Terminal Message Communication solutions should be work 4 deferent interface medias such as POLNET Messaging, DMR Radios, CCTNS / E-mail