



**Republika ng Pilipinas**  
**Lungsod Quezon**  
**BIDS AND AWARDS COMMITTEE –**  
**GOODS AND SERVICES**

Second Floor, Civic Center Building F, Quezon City Hall Complex, Elliptical Road, Quezon City  
Tel. No. 8988-42-42 local 8709/8712



**BID BULLETIN NO. 22-2022**  
**Series of 2022**

Notice is hereby given to all concerned bidders for the following Project  
scheduled for Public Bidding on **25 July 2022**, viz:

<b>Project Title: SUPPLY, DELIVERY, INSTALLATION, TESTING, AND COMMISSIONING OF RADIO COMMUNICATION FOR QUEZON CITY LOCAL GOVERNMENT UNIT</b>	
<b>Project No.: OCM(QCDRRMO)-22-CE1-943</b>	
<b>FROM</b>	<b>TO</b>
<ul style="list-style-type: none"><li>• <b>Section VI. Schedule of Requirements</b></li><li>• <b>Section VII. Technical Specifications</b></li></ul> <p>SUPPLY, DELIVERY, INSTALLATION, TESTING AND COMMISSIONING OF RADIO COMMUNICATION FOR QUEZON CITY LOCAL GOVERNMENT UNIT (with the following minimum specifications)</p> <p>3 LOTS OF DIGITAL RADIO REPEATERS WITH CORRESPONDING ACCESSORIES</p> <p>A. Digital Radio Repeaters</p> <p>SPECIFICATIONS</p> <p>Frequency Range: 350-400 MHz Channel Capacity: 64 RF Output Power: 1-50 W Weight: 19 lbs (8.6 kg) Input Voltage: (AC) 100-240 VAC, 47-63 Hz Current (standby): 110 / 240 V 0.18 / 0.25 A Current (transmitting): 110 / 240 V 1.5 / 0.9 A Input Voltage: (DC) 11.0-14.4 Vdc Current (standby): 0.7 A Current (transmitting): 9.5 A Operating Temperature Range: -22 to +140 °F (-30 to +60 °C) Humidity RH of 95%: non-condensing at 50 °C (122 °F) Max Duty Cycle: 100% FCC Description: ABZ99FT3094 ABZ99FT4096 - IC Description: 109AB-99FT3094 109AB-99FT4096 - Digital Vocoder Type: AMBE+2™ Battery Charger Capacity 12 V: 3 A Connectivity Tx (N female), Rx (BNC female), USB A receptacle, 2x Ethernet Analog Conventional: MPT 1327</p> <p>RECEIVER</p> <p>Frequency Range: 350-400 MHz Channel Spacing: 12.5 / 20 / 25* kHz Frequency Stability: (-30°C, +60°C, +25°C Ref) +/- 0.5 ppm Sensitivity: 12dB SINAD 0.22 uV Sensitivity: 5% BER 0.22 uV Selectivity: (TIA603D), 12.5/20/25* kHz 55 / 83 / 83 dB 55 / 80 / 80 dB 55 / 80 / 80 dB</p>	<ul style="list-style-type: none"><li>• <b>Section VI. Schedule of Requirements</b></li><li>• <b>Section VII. Technical Specifications</b></li></ul> <p>SUPPLY, DELIVERY, INSTALLATION, TESTING AND COMMISSIONING OF RADIO COMMUNICATION FOR QUEZON CITY LOCAL GOVERNMENT UNIT (with the following minimum specifications)</p> <p>3 Lots Digital Radio Repeaters with Corresponding Accessories</p> <p>A. Digital Radio Repeaters</p> <p>GENERAL SPECIFICATIONS</p> <p>Within the Frequency Range: 400-470 MHz Channel Capacity: 64 RF Output Power: 1-50 W Input Voltage: (AC) 100-240 V AC, 47-63 Hz Current (standby): 110 / 240 V 0.18 / 0.25 A Current (transmitting): 110 / 240 V 1.5 / 0.9 A Input Voltage: (DC) 11.0-14.4 Vdc Current (standby): 0.7 A Current(transmitting): 9.5 A Operating Temperature Range: -22 to +140 °F (-30 to +60 °C) Humidity RH of 95%: non-condensing at 50 °C (122 °F) Max Duty Cycle: 100% FCC Description: ABZ99FT4096 IC Description: 109AB-99FT4096 Digital Vocoder Type: AMBE+2™ Battery Charger Capacity 12 V: 3 A Connectivity Tx (N female), Rx (BNC female), USB A receptacle, 2x Ethernet</p> <p>RECEIVER</p> <p>Within the Frequency Range: 400 – 470 MHz Channel Spacing: 12.5 / 20 / 25* kHz Frequency Stability: (-30°C, +60°C, +25°C Ref) +/- 0.5 ppm Sensitivity: 12dB SINAD 0.22 uV Sensitivity, 5% BER 0.22 uV Selectivity: (TIA603D), 12.5/20/25* kHz 55 / 80 / 80 dB Selectivity: (TIA603), 12.5/20/25* kHz 68 / 80 / 80 dB Selectivity (ETSI), 12.5/20/25* kHz 63 / 70 / 70 dB Intermodulation Rejection: (TIA603D/ETSI) 82 / 73 dB</p>



**Republika ng Pilipinas**  
**Lungsod Quezon**  
**BIDS AND AWARDS COMMITTEE –**  
**GOODS AND SERVICES**

Second Floor, Civic Center Building F, Quezon City Hall Complex, Elliptical Road, Quezon City  
Tel. No. 8988-42-42 local 8709/8712



<p>Selectivity: (TIA603), 12.5/20/25* kHz 68 / 83 / 83 dB 68 / 80 / 80 dB 68 / 80 / 80 dB Selectivity: (ETSI), 12.5/20/25* kHz 63 / 70 / 70 dB Intermodulation Rejection (TIA603D/ETSI): 82 / 73 dB Spurious Rejection (TIA603D/ETSI): 95 / 90 dB Audio Distortion: &lt; 1% Hum and Noise: 12.5/20/25* kHz -45 / -45 / -50 dB</p> <p><b>TRANSMITTER</b></p> <p>Frequency Range: 350-400 MHz RF Output Power: 1-50 W Max Duty Cycle: 100% Channel Spacing: 12.5 / 20 / 25* kHz Frequency Stability (-30°C, +60°C, +25°C Ref): +/- 0.5 ppm Intermodulation Attenuation: 40 dB Adjacent Channel Power (TIA603D): 25*/ 12.5 kHz 62 / 78 / 78 dB Adjacent Channel Power (ETSI): 25* / 12.5 kHz 62 / 78 / 78 dB Conducted Spurious Emissions: -36 dBm &lt; 1 GHz, -30 dBm &gt; 1 GHz Modulation Fidelity (4FSK) FSK Error 5%: FSK Magnitude 1% Audio Response: TIA603D Audio Distortion: &lt; 1% Hum and Noise: 12.5/20/25* kHz -45 / -45 / -50 dB Rated System Deviation: 12.5/20/25* kHz ±2.5 / ±4.0 / ±5.0 kHz</p> <p>Antenna Frequency: 320-380 MHz Gain: 5.5 dBi Power: 200 Watts Impedance: 50 Ohms VSWR : 1.5:1 (nominal) Rated wind velocity: 60 m/sec Mast diameter accepted: 30-62 mm Length: 1.7 m Weight: 0.9 kg Connector: MJ</p> <p>B. Two (2) units of Access Point</p> <p><b>SPECIFICATIONS</b> RF Connectors: (2) RP-SMA Weatherproof (CH0, CH1) (1) SMA Weatherproof (GPS) GPS Antenna: External, Magnetic Base Power Supply: 24V, 1A Gigabit PoE Adapter (included) Power Method: Passive Power over Ethernet Pins 1, 2, 4, 5 (+) and Pins 7, 8, 3, 6 (-) Max Power Consumption: 6-12W1 Supported Voltage Range: +18 to +54VDC2 Mounting: Rocket Mount Compatible GPS Pole Mount (included) Operating Temperature: -40 to 50° C (-40 to 131° F) Weatherproofing: IP673 Certifications: CE, FCC, IC</p>	<p>Spurious Rejection (TIA603D/ETSI): 95 / 90 dB Audio Distortion: &lt; 1% Hum and Noise: 12.5/20/25* kHz -45 / -45 / -50 dB</p> <p><b>TRANSMITTER</b></p> <p>Within the Frequency Range: 400-470 RF Output Power: 1-50 W Max Duty Cycle: 100% Channel Spacing: 12.5 / 20 / 25* kHz Frequency Stability (-30°C, +60°C, +25°C Ref): +/- 0.5 ppm Intermodulation Attenuation: 40 dB Adjacent Channel Power (TIA603D): 25*/ 12.5 kHz 62 / 78 / 78 dB Adjacent Channel Power (ETSI): 25* / 12.5 kHz 62 / 78 / 78 dB Conducted Spurious Emissions: -36 dBm &lt; 1 GHz, -30 dBm &gt; 1 GHz Modulation Fidelity (4FSK) FSK Error 5%: FSK Magnitude 1% Audio Response: TIA603D Audio Distortion: &lt; 1% Hum and Noise: 12.5/20/25* kHz -45 / -45 / -50 dB Rated System Deviation: 12.5/20/25* kHz ±2.5 / ±4.0 / ±5.0 kHz</p> <p><b>ANTENNA</b></p> <p>Within the Frequency Range: 400 – 470 MHz Gain: 5.5 dBi Power: 200 watts Impedance: 50 ohms VSWR: 1.5:1 (nominal) Rated wind velocity: 60m/sec Mast Diameter accepted: 30-62 mm Length: 1.7 m Weight: 0.9 kg Connector: MJ</p> <p>B. Two (2) units of Access Point</p> <p><b>GENERAL SPECIFICATIONS</b> RF Connectors: (2) RP-SMA Weatherproof (CHO, CH1) (1) SMA Weatherproof (GPS) GPS Antenna: External Magnetic Base Power Supply: 24V, 1A Gigabit PoE Adapter (included) Power Method: Passive Power over Ethernet Pins 1, 2, 4, 5 (+) and Pins 7, 8, 3, 6 (-) Max Power Consumption: 6-12W1 Supported Voltage Range: +18 to +54 VDC2 Mounting: Rocket Mount Compatible GPS Pole Mount (Included) Operating Temperature: -40 to 50° C (-40 to 131° F) Weatherproofing: IP673 Certifications: CE, FCC, IC</p> <p><b>SYSTEM</b> Maximum Throughput: 1.34Gbps4.5</p>
---	---



**Republika ng Pilipinas**  
**Lungsod Quezon**  
**BIDS AND AWARDS COMMITTEE –**  
**GOODS AND SERVICES**



Second Floor, Civic Center Building F, Quezon City Hall Complex, Elliptical Road, Quezon City  
Tel. No. 8988-42-42 local 8709/8712

<p>SYSTEM Maximum Throughput: 1.34Gbps4,5 Maximum Range: 100 km4 Packets per second: 2+ Million6 Latency: 1.5 ms- 3.5 ms7 Encryption: AES-256 Wireless Modes: PtP Master/Slave</p> <p>NETWORKING INTERFACE Data Port: (1) 10/100/1000 Ethernet Port Management Port: (1) 10/100/1000 Ethernet Port Bluetooth</p> <p>RADIO Max. Conducted TX Power: 29 dBm Frequency Accuracy: &lt;2 ppm Channel Bandwidth: 10/20/30/40/50/60/80/100 MHz Selectable Programmable Uplink and Downlink Duty Cycles</p> <p>OPERATING FREQUENCY (MHz) Worldwide: 4800-6200*</p> <p>BLUETOOTH LE MANAGEMENT RADIO (MHz) Worldwide: 2400-2483.5</p> <p>SUGGESTED MAX. TX POWER 12x: 12-15 dBm 10x: 19-20 dBm 8x: 21-22 dBm 6x: 23-24 dBm 4x: 29 dBm 2x: 29 dBm 1x: 29 dBm</p> <p>C. Two (2) units Antenna</p> <p>SPECIFICATIONS Antenna Frequency: 320-380 MHz Gain: 5.5 dBi Power: 200 Watts Impedance: 50 Ohms VSWR : 1.5:1 (nominal) Rated wind velocity: 60 m/sec Mast diameter accepted: 30-62 mm Length: 1.7 m Weight: 0.9 kg Connector: MJ</p> <p>D. One (1) 60 FT. Mast</p> <p>SPECIFICATIONS GI Pipe: (2") Ø60.20x2.90 (ASTM A53) Height: 18,000mm Paint: red and white Steps: 12mmØ round bar steps</p>	<p>Maximum Range: 100 km4 Packets per second: 2+ Million6 Latency: 1.5 ms- 3.5 ms' Encryption: AES-256 Wireless Modes: PP Master/Slave</p> <p>NETWORKING INTERFACE Data Port: (1) 10/100/1000 Ethernet Port Management Port: (1) 10/100/1000 Ethernet Port Bluetooth</p> <p>RADIO Max. Conducted TX Power: 29 dBm Frequency Accuracy: &lt;2 ppm Channel Bandwidth: 10/20/30/40/50/60/80/100 MHz Selectable Programmable Uplink and Downlink Duty Cycles</p> <p>OPERATING FREQUENCY (MHz) Worldwide: 4800-6200*</p> <p>BLUETOOTH LE MANAGEMENT RADIO (MHz) Worldwide: 2400-2483.5</p> <p>SUGGESTED MAX. TX POWER 12x: 12-15 dBm 10x: 19-20 dBm 8x: 21-22 dBm 6x: 23-24 dBm 4x: 29 dBm 2x: 29 dBm 1x: 29 dBm</p> <p>C. Two (2) units Antenna</p> <p>GENERAL SPECIFICATIONS Antenna Within the Frequency Range: 400-470 / 450-527 MHz Gain: 5.5 dBi Power: 200 Watts Impedance: 50 Ohms VSWR: 1.5:1 (nominal) Rated wind velocity: 60 m/sec Mast diameter accepted: 30-62 mm Length: 1.7 m Weight: 0.9 kg Connector: MJ</p> <p>D. One (1) 60 FT. Mast</p> <p>GENERAL SPECIFICATIONS GI Pipe: (2") Ø60.20x2.90 (ASTM A53) Height: 18,000mm Paint: red and white Steps: 12mmØ round bar steps Guy wire: AWG 0.0508</p>
--	---



**Republika ng Pilipinas**  
**Lungsod Quezon**  
**BIDS AND AWARDS COMMITTEE –**  
**GOODS AND SERVICES**



Second Floor, Civic Center Building F, Quezon City Hall Complex, Elliptical Road, Quezon City  
 Tel. No. 8988-42-42 local 8709/8712

<p>Guy wire: AWG 0.0508          Turnbuckle: 5/8x12          Base plate: 12mm THK. Plate</p> <p>E. One (1) lot Coaxial Cable</p> <p><b>SPECIFICATIONS</b>          RG Type: 8  <b>CONDUCTOR</b>          Size: 10 AWG          Stranding: Solid          Nom. Diameter: 0.108 in          Material: BC- Bare Cooper  <b>INSULATION</b>          Material: PE- Polyethylene (Semi-Solid)          Nom. Insulation Diameter: 0.285 in (7.24mm)  <b>OUTER SHIELD</b>          Layer 1: Tape outer shield type tri-laminate (alum+poly+alum)          Layer 2: Braid outer shield type Tinne Copper (TC)  <b>OUTER JACKET</b>          Material: PVC- Polyvinyl chloride          Nom. Diameter: 0.405 in (10.3 mm)          Voltage: 300 V  <b>MECHANICAL CHARACTERISTICS</b>          Operating Temperature: -30°C to +75 °C          Bend Radius: 4.0 in          Max pull tension: 184 lbs (83.5 kg)  <b>STANDARD COMPLIANCE</b>          Environment Suitability: Indoor (not Riser or Plenum), Indoor          Sustainability: CA Prop 65</p> <p>F. Ten (10) Connectors</p> <p><b>SPECIFICATIONS</b>          Cable RG-/U: 8, 9, 11, 13, 58, 63, 87A, 149, 213, 214, 216, 225          Conn Type: Plug          Outer Cable Attachment: Solder/Crimp/ FCP          Inner Cable Attachment: Solder/ Crimp/ Pliers</p> <p>G. One (1) lot NTC Permits and Licenses</p> <p>H. One (1) lot Lightning surge and arrester</p> <p>I. One (1) lot Mobilization Cost</p> <p>J. One (1) lot Installation Cost for the whole system Includes: Installation, configuration, testing, training, and commissioning</p> <p>Eight (8) lots of Digital Base Radios with Corresponding Accessories</p> <p>A. One (1) unit of Digital Base Radios</p> <p><b>SPECIFICATIONS</b></p>	<p>Turnbuckle: 5/8x12          Base plate: 12mm THK. Plate</p> <p>E. One (1) lot Coaxial Cable</p> <p><b>GENERAL SPECIFICATIONS</b>          RG Type: 8  <b>CONDUCTOR</b>          Size: 10 AWG          Stranding: Solid          Nom. Diameter: 0.108 in          Material: BC- Bare Cooper  <b>INSULATION</b>          Material: PE- Polyethylene (Semi-Solid)          Nom. Insulation Diameter: 0.285 in (7.24mm)  <b>OUTER SHIELD</b>          Layer 1: Tape outer shield type tri-laminate (alum+poly+alum)          Layer 2: Braid outer shield type Tinne Copper (TC)  <b>OUTER JACKET</b>          Material: PVC- Polyvinyl chloride          Nom. Diameter: 0.405 in (10.3 mm)          Voltage: 300 V  <b>MECHANICAL CHARACTERISTICS</b>          Operating Temperature: -30°C to +75° C          Bend Radius: 4.0 in          Max pull tension: 184 lbs (83.5 kg)  <b>STANDARD COMPLIANCE</b>          Environment Suitability: Indoor (not Riser or Plenum), Indoor          Sustainability: CA Prop 65</p> <p>F. Ten (10) Connectors</p> <p><b>GENERAL SPECIFICATIONS</b>          Cable RG-/U: 8,9, 11, 13, 58, 63, 87A, 149, 213, 214,216, 225          Conn Type: Plug          Outer Cable Attachment: Solder/Crimp/ FCP          Inner Cable Attachment: Solder/ Crimp/ Pliers</p> <p>G. One (1) lot NTC Permits and Licenses</p> <p>H. One (1) lot Lightning surge and arrester</p> <p>I. One (1) lot Mobilization Cost</p> <p>J. One (1) lot Installation Cost for the whole system Includes: Installation, configuration, testing, training, and commissioning</p> <p>8 Lots Digital Base Radios with Corresponding Accessories</p> <p>A. One (1) unit of Digital Base Radios</p> <p><b>GENERAL SPECIFICATIONS</b></p>
--	---





**Republika ng Pilipinas**  
**Lungsod Quezon**  
**BIDS AND AWARDS COMMITTEE –**  
**GOODS AND SERVICES**



Second Floor, Civic Center Building F, Quezon City Hall Complex, Elliptical Road, Quezon City  
Tel. No. 8988-42-42 local 8709/8712

<p>Frequency:350-400 MHz Low Power Output: 1-25 W - 1-25 W -- 1-25 W - 1-25 W High Power Output: 1-40W Channel Spacing: 12.5, 25 kHz Channel Capacity: 1000 Weight: 1.8 kg Power Supply (Nominal): 12 V Max Current Drain: Standby 0.8A Max Current Drain: Receive 2A Max Current Drain Transmit(Low Power): 11A Max Current Drain Transmit (High Power): 14.5A</p> <p><b>BLUETOOTH 4.0 STANDARD</b> Frequency Range: 2400 - 2483.5 MHz Channel BT ver &lt; 4: 0 ~ 78 BT ver 4: 0 ~ 39</p> <p>Max power Class: 1 - 100 mW (20 dBm) ~ 1m W (0 dBm) Max Bandwidth BT ver &lt; 4: 1 MHz BT ver 4: 2 MHz Technology: FHSS <b>WIFI STANDARD</b> Frequency Range: 2400 - 2483.5 MHz Channel: 1 ~ 13 Max Bandwidth: 20 MHz Max Power Rated: 14 dBm, max 16 dBm Technology: b/g/n</p> <p><b>TRANSMITTER SPECIFICATIONS</b> 4FSK Digital Modulation 12.5 kHz Data: 7K60F1D and 7K60FXD, 12.5 kHz Voice: 7K60F1E and 7K60FXE, Combination of 12.5 kHz Voice and Data: 7K60F1W Digital Protocol: ETSI TS 102 361-1, -2, -3, -4 Conducted/Radiated Emissions(TIA603D): -36 dBm &lt; 1GHz, -30 dBm &gt; 1GHz Adjacent Channel Power 60 dB (12.5 kHz channel): 70 dB (25 kHz channel) Frequency Stability: ± 0.5 ppm</p> <p><b>RECEIVER SPECIFICATIONS</b> Analogue Sensitivity (12dB SINAD): 0.22 uV typical Digital Sensitivity (5% BER): 0.19 uV typical Intermodulation (TIA603D) VHF : 78dB UHF1, 350 : 75dB Adjacent Channel Selectivity: (TIA603A)-1T UHF1, 350: 65 dB (12.5 kHz channel), 75 dB (25 kHz channel) Spurious Rejection (TIA603D) UHF1, 350: 75 dB</p> <p><b>AUDIO SPECIFICATIONS</b> Digital Vocoder Type AMBE+2™ Audio Response: TIA603D Rated Audio: 3 W (internal speaker) Audio Distortion at Rated Audio: 3% Hum and Noise: -40 dB (12.5 kHz channel),-45 dB (25 kHz channel) Conducted Spurious Emissions(TIA603D): -57 dBm</p>	<p>Within the Frequency Range: 403-470 MHz High Power Output: 25-40W Channel Spacing: 12.53, 25 kHz Channel Capacity: 1000 Power Supply (Nominal): 12 V Max Current Drain: Standby 0.8A Max Current Drain: Receive 2A Max Current Drain Transmit (High Power): 14.5A</p> <p><b>BLUETOOTH STANDARD SPECIFICATION</b></p> <p>Range: Class 2, 10m Supported Profiles: Bluetooth Headset Profile (HSP), Serial Port Profile (SPP), Motorola fast push-to-talk</p> <p><b>TRANSMITTER SPECIFICATIONS</b> 4FSK Digital Modulation 12.5 kHz Data: 7K60F1D and 7K60FXD, 12.5 kHz Voice: 7K60F1E and 7K60FXE, Combination of 12.5 kHz Voice and Data: 7K60F1W Digital Protocol: ETSI TS 102 361-1, -2, -3, -4 Conducted/Radiated Emissions(TIA603 D): -36 dBm &lt; 1GHZ, -30 dBm &gt; 1GHZ Adjacent Channel Power 60 dB (12.5 kHz channel): 70 dB (25 kHz channel) Frequency Stability: ± 0.5 ppm</p> <p><b>RECEIVER SPECIFICATIONS</b> Analogue Sensitivity (12dB SINAD): 0.22 uV typical Digital Sensitivity (5% BER): 0.19 uV typical Intermodulation (TIA603D) VHF:78dB UHF1,UHF2,350,800,75bB Adjacent Channel Selectivity. (TIA603D)-2T &amp; (TIA603C)-2T VHF : 50 dB (12.5 kHz channel), 80 dB (25 kHz channel) UHF1, UHF2, 350, 800 : 50 dB (12.5 kHz channel), 75 dB (25 kHz channel) Spurious Rejection (TIA603D) VHF:80dB UHF1,UHF2, 350,800:75dB</p> <p><b>AUDIO SPECIFICATIONS</b> Digital Vocoder Type AMBE+2TM Audio Response: TIA603D Rated Audio: 3 W (internal speaker) Audio Distortion at Rated Audio: 3% Hum and Noise: -40 dB (12.5 kHz channel),-45 dB (25 kHz channel) Conducted Spurious Emissions(TIA603D): -57 dBm</p> <p><b>BLUETOOTH SPECIFICATIONS</b> Version 4.0 Range Class 2,10 m Supported Profiles Bluetooth Headset Profile (HSP), Serial Port (SPP) Motorola Fast Push-To-Talk Simultaneous Connections 1 x audio accessory and 1x data device Permanent Discoverable Mode Optional</p>
--	--



**Republika ng Pilipinas**  
**Lungsod Quezon**  
**BIDS AND AWARDS COMMITTEE –**  
**GOODS AND SERVICES**



Second Floor, Civic Center Building F, Quezon City Hall Complex, Elliptical Road, Quezon City  
Tel. No. 8988-42-42 local 8709/8712

<p><b>*BLUETOOTH SPECIFICATIONS</b> Version 4.0 Range Class 2, 10 m Supported Profiles Bluetooth Headset Profile (HSP), Serial Port Simultaneous Connections 1 x audio accessory and 1 x data device Permanent Discoverable Mode Optional</p> <p><b>*GNSS SPECIFICATIONS</b> Constellation Support: GPS, BEIDOU Time To First Fix: Cold Start &lt; 60 s Time To First Fix: Hot Start &lt; 10 s Horizontal Accuracy: &lt; 5 m</p> <p><b>*Wi-Fi SPECIFICATIONS</b> Standards Supported IEEE 802.11b, 802.11g, 802.11n Security Protocol Supported WPA, WPA-2, WEP Maximum Number of SSIDs 128 (64 for Numeric Models)</p> <p><b>ENVIRONMENTAL SPECIFICATIONS</b> Operating Temperature: -30 °C to +60 °C Storage Temperature: -40 °C to +85 °C Electrostatic Discharge: IEC 61000-4-2 Level 4 Dust and Water Intrusion: IEC 60529 - IP54 Packaging Test: MIL-STD 810C, D, E, F, and G Antenna Frequency: 320-380 MHz Gain: 5.5 dBi Power: 200 Watts Impedance: 50 Ohms VSWR : 1.5:1 (nominal) Rated wind velocity: 60 m/sec Mast diameter accepted: 30-62 mm Length: 1.7 m Weight: 0.9 kg Connector: MJ</p> <p>B. One (1) unit Antenna</p> <p><b>SPECIFICATIONS</b> Antenna Frequency: 320-380 MHz Gain: 5.5 dBi Power: 200 Watts Impedance: 50 Ohms VSWR : 1.5:1 (nominal) Rated wind velocity: 60 m/sec Mast diameter accepted: 30-62 mm Length: 1.7 m Weight: 0.9 kg Connector: MJ</p> <p>C. One (1) 20 FT. Mast</p> <p><b>SPECIFICATIONS</b> GI Pipe: (2") Ø60.20x2.90 (ASTM A53) Height: 6000mm Paint: red and white</p>	<p><b>*GNSS SPECIFICATIONS</b> Constellation Support: GPS, BEIDOU Time To First Fix: Cold Start &lt; 60 s Time To First Fix: Hot Start &lt; 10s Horizontal Accuracy:&lt;5m</p> <p><b>*Wi-Fi SPECIFICATIONS</b> Standards Supported IEEE 802.11b, 802.11g, 802.11n Security Protocol Supported WPA, WPA-2, WEP Maximum Number of SSIDS 128 (64 for Numeric Models)</p> <p><b>ENVIRONMENTAL SPECIFICATIONS</b> Operating Temperature: -30 °C to +60°C Storage Temperature: -40 °C to +85 °C Electrostatic Discharge: IEC 61000-4-2 Level 4 Dust and Water Intrusion: IEC 60529 - IP54 Packaging Test: MIL-STD 810C, D, E, F, and G Antenna Within the Frequency Range: 400-470 MHz Gain: 5.5 dBi Power: 200 Watts Impedance: 50 Ohms VSWR: 1.5:1 (nominal) Rated wind velocity: 60 m/sec Mast diameter accepted: 30-62 mm Length: 1.7m Weight: 0.9 kg Connector: MJ</p> <p>B. One (1) unit Antenna</p> <p><b>GENERAL SPECIFICATIONS</b> Antenna Within the Frequency Range: 400-470 / 450-527 MHz Gain: 5.5 dBi Power: 200 Watts Impedance: 50 Ohms VSWR: 1.5:1 (nominal) Rated wind velocity: 60 m/sec Mast diameter accepted: 30-62 mm Length: 1.7 m Weight: 0.9 kg Connector: MJ</p> <p>C. One (1) 20 FT. Mast</p> <p><b>GENERAL SPECIFICATIONS</b> GI Pipe: (2") Ø60,20x2,90 (ASTM A53) Height: 6000mm Paint: red and white Steps: 12mmØ round bar steps Guy wire: A WG 0.0508 Turnbuckle: 5/8x12 Base plate: 12mm THK. Plate</p> <p>D. One (1) lot Coaxial Cable</p> <p><b>GENERAL SPECIFICATIONS</b></p>
---	--



**Republika ng Pilipinas**  
**Lungsod Quezon**  
**BIDS AND AWARDS COMMITTEE –**  
**GOODS AND SERVICES**

Second Floor, Civic Center Building F, Quezon City Hall Complex, Elliptical Road, Quezon City  
Tel. No. 8988-42-42 local 8709/8712



<p>Steps: 12mmØ round bar steps Guy wire: AWG 0.0508 Turnbuckle: 5/8x12 Base plate: 12mm THK. Plate</p> <p>D. One (1) lot Coaxial Cable</p> <p><b>SPECIFICATIONS</b> RG Type: 8 CONDUCTOR Size: 10 AWG Stranding: Solid Nom. Diameter: 0.108 in Material: BC- Bare Cooper INSULATION Material: PE- Polyethylene (Semi-Solid) Nom. Insulation Diameter: 0.285 in (7.24mm) OUTER SHIELD Layer 1: Tape outer shield type tri-laminate (alum+poly+alum) Layer 2: Braid outer shield type Tinne Copper (TC) OUTER JACKET Material: PVC- Polyvinyl chloride Nom. Diameter: 0.405 in (10.3 mm) Voltage: 300 V MECHANICAL CHARACTERISTICS Operating Temperature: -30°C to +75 °C Bend Radius: 4.0 in Max pull tension: 184 lbs (83.5 kg) STANDARD COMPLIANCE Environment Suitability: Indoor (not Riser or Plenum), Indoor Sustainability: CA Prop 65</p> <p>E. Five (5) Connectors</p> <p><b>SPECIFICATIONS</b> Cable RG-/U: 8, 9, 11, 13, 58, 63, 87A, 149, 213, 214, 216, 225 Conn Type: Plug Outer Cable Attachment: Solder/Crimp/ FCP Inner Cable Attachment: Solder/ Crimp/ Pliers</p> <p>F. One (1) Power Supply</p> <p><b>SPECIFICATIONS</b> Input Power: 220V Output Power: 13.8V DC Switch Mode Power Supply with Battery Charger, Wide input voltage range (220V ± 20%VAC), Display: Output voltage and output current meter Protection: output over voltage and over current protection, Battery backup function: 12V 1A Battery charging during normal operation automatically switches to battery on AC power loss, compact</p>	<p>RG Type: 8 CONDUCTOR Size: 10 AWG Stranding: Solid Nom. Diameter: 0.108 in Material: BC- Bare Cooper INSULATION Material: PE- Polyethylene (Semi-Solid) Nom. Insulation Diameter: 0.285 in (7.24mm) OUTER SHIELD Layer 1: Tape outer shield type tri-laminate (alum+poly+alum) Layer 2: Braid outer shield type Tinne Copper (TC) OUTER JACKET Material: PVC- Polyvinyl chloride Nom. Diameter: 0.405 in (10.3 mm) Voltage: 300 V MECHANICAL CHARACTERISTICS Operating Temperature: -30°C to +75° C Bend Radius: 4.0 in Max pull tension: 184 Ibs (83.5 kg) STANDARD COMPLIANCE Environment Suitability: Indoor (not Riser or Plenum), Indoor Sustainability: CA Prop 65</p> <p>E. Five (5) Connectors</p> <p><b>GENERAL SPECIFICATIONS</b> Cable RG-/U: 8,9, 11, 13, 58, 63, 87A, 149, 213, 214, 216, 225 Conn Type: Plug Outer Cable Attachment: Solder/Crimp/ FCP Inner Cable Attachment: Solder/ Crimp/ Pliers</p> <p>F. One (1) Power Supply</p> <p><b>GENERAL SPECIFICATIONS</b> Input Power: 220V Output Power: 13.8V DC Switch Mode Power Supply with Battery Charger, Wide input voltage range (220V ± 20%VAC), Display: Output voltage and output current meter Protection: output over voltage and over current protection, Battery backup function: 12V 1A Battery charging during normal operation automatically switches to battery on AC power loss, compact</p> <p>G. One (1) lot NTC Permits and Licenses</p> <p>H. One (1) lot Lightning Surge and arrester</p> <p>I. One (1) lot Mobilization Cost</p> <p>J. One (1) lot Installation Cost for the whole system</p>
---	---



**Republika ng Pilipinas**  
**Lungsod Quezon**  
**BIDS AND AWARDS COMMITTEE –**  
**GOODS AND SERVICES**



Second Floor, Civic Center Building F, Quezon City Hall Complex, Elliptical Road, Quezon City  
 Tel. No. 8988-42-42 local 8709/8712

<p>G. One (1) lot NTC Permits and Licenses</p> <p>H. One (1) lot Lightning Surge and arrester</p> <p>I. One (1) lot Mobilization Cost</p> <p>J. One (1) lot Installation Cost for the whole system Includes: Installation, configuration, testing, training, and commissioning</p> <p>A. One (1) Unit of Computer Workstation with Dispatch Communication</p> <p>Features  <b>VOICE DISPATCH</b>        Provide communications between the dispatcher and remote radios. Make broadcast, group, private, remote monitor, or emergency calls quickly using programmable shortcuts.</p> <p><b>EVENT LOGGING</b>        Log all system events including voice calls, text messages, and status changes. Customize rules, filter and group events or generate reports detailing location and radio status.</p> <p><b>TELEMETRY*</b>        Monitor and manage remote equipment from the control room.</p> <p><b>ALARM AND LONE WORKER</b>        Improve the safety of personnel with automatic alarms and lone worker protection. The alarm can also be sent as an automated message, e-mail or SMS.</p> <p><b>FLEET ADMINISTRATION</b>        Efficiently manage fleet operations and remotely control radios. Get live status updates and configure the radio to send online/offline reports to the server.</p> <p><b>JOB TICKETING*,</b>        ** Create, assign and monitor job tickets through the radio network to deliver routine tasks more efficiently. Radio users can accept or decline the job ticket by simply pushing a button.</p> <p><b>TEXT MESSAGES AND EMAIL</b>        When you need silent communications or referenceable instructions, send broadcast, group or private text messages. Radio users can text back to the dispatcher.</p> <p><b>DATA WEB CLIENT</b>        Empower remote dispatchers to access the system using a web interface.</p>	<p>Includes: Installation, configuration, testing, training, and commissioning</p> <p>Base – OVER THE AIR SOFTWARE updates        Indoor Location Tracking        MULTI CONSTELLATION GNSS for increased location accuracy        UL- approved to TIA 4950 for use in hazardous location</p> <p>One (1) Unit Computer Workstation with Dispatch Communication</p> <p>Features  <b>VOICE DISPATCH</b>        Provide communications between the dispatcher and remote radios. Make broadcast, group, private, remote monitor, or emergency calls quickly using programmable shortcuts.</p> <p><b>EVENT LOGGING</b>        Log all system events including voice calls, text messages, and status changes. Customize rules, filter and group events or generate reports detailing location and radio status.</p> <p><b>ALARM AND LONE WORKER</b>        Improve the safety of personnel with automatic alarms and lone worker protection. The alarm can also be sent as an automated message, email or SMS.</p> <p><b>FLEET ADMINISTRATION</b>        Efficiently manage fleet operations and remotely control radios. Get live status updates and configure the radio to send online/offline reports to the server</p> <p><b>JOB TICKETING".</b>        Create, assign and monitor job tickets through the radio network to deliver routine tasks more efficiently. Radio users can accept or decline the job ticket by simply pushing a button.</p> <p><b>TEXT MESSAGES AND EMAIL</b>        When you need silent communications or referenceable instructions, send broadcast, group or private text messages. Radio users can text back to the dispatcher.</p> <p><b>DATA WEB CLIENT</b>        Empower remote dispatchers to access the system using a web interface.</p> <p><b>VOICE RECORDING</b>        Continuous voice recording of all calls with playback for analysis, reporting or training purposes. Audio files are stored in MP3 format on the Radio Server and Dispatcher.</p> <p><b>GPS TRACKING</b></p>
--	---





**Republika ng Pilipinas**  
**Lungsod Quezon**  
**BIDS AND AWARDS COMMITTEE –**  
**GOODS AND SERVICES**



Second Floor, Civic Center Building F, Quezon City Hall Complex, Elliptical Road, Quezon City  
Tel. No. 8988-42-42 local 8709/8712

**VOICE RECORDING**

Continuous voice recording of all calls with playback for analysis, reporting or training purposes. Audio files are stored in MP3 format on the Radio Server and Dispatcher.

**GPS TRACKING**

Follow workers, vehicles and business assets in real-time to ensure maximum safety and productivity. View routes, set up geo-fencing and log radio movements using a configurable set of rules.  
Digital Portable Radios

A. 203 units of Digital Portable Radios

**SPECIFICATIONS**

Frequency: 350-400 MHz  
High Power Output: 4W  
Low Power Output: 1  
Channel Spacing: 12.5, 25 kHz  
Channel Capacity: 1000  
Weight Radio + Standard 1600 mAh Battery: 315g  
Digital / Analogue Battery Life<sup>2</sup>, Standard 1600 mAh Battery: 15.6 / 12 hrs  
Power Supply (Nominal): 7.5 V

**TRANSMITTER SPECIFICATIONS**

Channel Spacing: 12.5, 25 kHz  
4FSK Digital Modulation: 12.5 kHz Data: 7K60F1D and 7K60FXD,  
12.5 kHz Voice: 7K60F1E and 7K60FXE,  
Combination of 12.5 kHz Voice and Data: 7K60F1W  
Digital Protocol: ETSI TS 102 361-1, -2, -3, -4  
Conducted/Radiated Emissions:  
(TIA603D) -36 dBm < 1GHz, -30 dBm > 1GHz  
Adjacent Channel Power: 60dB (12.5 kHz channel), 70dB (25 kHz channel)

Frequency Stability: ± 0.5 ppm

**RECEIVER SPECIFICATIONS**

Analogue Sensitivity (12dB SINAD): 0.16 uV  
Digital Sensitivity (5% BER): 0.14 uV  
Intermodulation (TIA603D) :70 dB  
Adjacent Channel Selectivity (TIA603A)-1T: 60 dB (12.5 kHz channel), 70 dB (25 kHz channel)  
Adjacent Channel Selectivity (TIA603D)-2T & (TIA603C)-2T: 45 dB (12.5 kHz channel), 70 dB (25 kHz channel)  
Spurious Rejection (TIA603D): 70 dB

**AUDIO SPECIFICATIONS**

Digital Vocoder Type: AMBE+2™  
Audio Response: TIA603D  
Rated Audio: 0.5 W  
Audio Distortion at Rated Audio: 3%  
Hum and Noise: -40 dB (12.5 kHz channel), -45 dB (25\* kHz channel)  
Conducted Spurious Emissions (TIA603D): -57 dBm

Follow workers, vehicles and business assets in real-time to ensure maximum safety and productivity. View routes, set up geo-fencing and log radio movements using a configurable set of rules.

Two Hundred Three (203) Units Digital Portable Radios with Dispatch License of Digital Portable Radios

**GENERAL SPECIFICATIONS**

Frequency: 403-527 MHz  
High Power Output: 4W  
Low Power Output: 1  
Channel Spacing: 12.5, 25 kHz  
Channel Capacity: 1000  
Weight Radio + Standard 1600 mAh Battery: 315g  
Digital / Analogue Battery Life<sup>2</sup>, Standard 1600 mAh Battery: 15.5/11.5 hrs  
Power Supply (Nominal): 7.5 V

**TRANSMITTER SPECIFICATIONS**

Channel Spacing: 12.5, 25 kHz  
4FSK Digital Modulation: 12.5 kHz Data: 7K60F1D and 7K60FXD,  
12.5 kHz Voice: 7K60F1E and 7K60FXE,  
Combination of 12.5 kHz Voice  
Data: 7K60F1W  
Digital Protocol: ETSI TS 102 361 -1, -2, -3, -4  
Conducted/Radiated Emissions:  
(TIA603D) -36 dBm < 1GHz, -30 dBm > 1GHz  
Adjacent Channel Power: 60dB (12.5 kHz channel), 70dB (25 kHz channel)  
and

Frequency Stability: ± 0.5 ppm

**RECEIVER SPECIFICATIONS**

Analogue Sensitivity (12dB SINAD): 0.16 uV  
Digital Sensitivity (5% BER): 0.14 uV  
Intermodulation (TIA603D) :70 dB  
Adjacent Channel Selectivity (TIA603A)-1T: 60 dB (12.5 kHz channel), 70 dB (25 kHz channel)  
Adjacent Channel Selectivity (TIA603D)-2T & (TIA603C)-2T: 45 dB (12.5 kHz channel), 70 dB (25 kHz channel)  
Spurious Rejection (TIA603D): 70 dB  
**AUDIO SPECIFICATIONS**  
Digital Vocoder Type: AMBE+2™  
Audio Response: TIA603D

Rated Audio: 0.5 W

Audio Distortion at Rated Audio: 3%  
Hum and Noise: -40 dB (12.5 kHz channel), 45 dB (25\* kHz channel)  
Conducted Spurious Emissions (TIA603D): -57 dBm

**\*BLUETOOTH SPECIFICATIONS**

Version 4.0  
Range Class 2, 10 m



**Republika ng Pilipinas**  
**Lungsod Quezon**  
**BIDS AND AWARDS COMMITTEE –**  
**GOODS AND SERVICES**

Second Floor, Civic Center Building F, Quezon City Hall Complex, Elliptical Road, Quezon City  
Tel. No. 8988-42-42 local 8709/8712



<p>*BLUETOOTH SPECIFICATIONS Version 4.0 Range Class 2, 10 m Supported Profiles Bluetooth Headset Profile (HSP), Serial Port Simultaneous Connections 1 x audio accessory and 1 x data device Permanent Discoverable Mode Optional *GNSS SPECIFICATIONS Constellation Support GPS Time To First Fix, Cold Start &lt; 60 s Time To First Fix, Hot Start &lt; 10 s Horizontal Accuracy &lt; 5 m *Wi-Fi SPECIFICATIONS Standards Supported IEEE 802.11b, 802.11g, 802.11n Security Protocol Supported WPA, WPA-2, WEP Maximum Number of SSIDs 128 (64 for LKP and NKP models) ENVIRONMENTAL SPECIFICATIONS Operating Temperature: -30 °C to +60 °C Storage Temperature: -40 °C to +85 °C Electrostatic Discharge IEC 61000-4-2: Level 4 Dust and Water Intrusion IEC 60529 - IP68 Capable Packaging Test MIL-STD 810D and E</p> <p>B. 203 lot Dispatch License of Digital Portable Radios</p> <p>C. One (1) lot NTC Permits and Licenses</p> <p>D. One (1) lot Mobilization Cost</p> <p>E. One (1) lot configuration Cost, testing, training, and commissioning</p> <ul style="list-style-type: none"><li>• <b>Section III. Bid Data Sheet</b> <b>Organization:</b> -Certification for Trading and Distribution of TELCO Equipment or its equivalent -Certified True Copy of List of Track Record for at least (5) years in the Radio Communication Business and has supplied and delivered communication equipment.</li><li>• <b>Terms of Reference</b></li></ul>	<p>Supported Profiles Bluetooth Headset Profile (HSP), Serial Port Simultaneous Connections 1 x audio accessory and 1x data device Permanent Discoverable Mode Optional *GNSS SPECIFICATIONS Constellation Support GPS Time To First Fix, Cold Start &lt; 60 s Time To First Fix, Hot Start &lt; 10 s Horizontal Accuracy &lt;5 m *Wi-Fi SPECIFICATIONS Standards Supported IEEE 802.11b, 802.11g, 802.11n Security Protocol Supported WPA, WPA-2, WEP Maximum Number of SSIDS 128 (64 for LKP and NKP models) ENVIRONMENTAL SPECIFICATIONS Operating Temperature: -30 °C to +60 °C</p> <p>Storage Temperature: -40 °C to +85 °C Electrostatic Discharge IEC 61000-4-2: Level 4 Dust and Water Intrusion IEC 60529 - IP68 Capable Packaging Test MIL-STD 810D and E</p> <p>A. One (1) lot NTC Permits and Licenses</p> <p>B. One (1) lot Mobilization Cost</p> <p>C. One (1) lot configuration Cost, testing, training, and commissioning</p> <ul style="list-style-type: none"><li>• <b>Section III. Bid Data Sheet</b> <b>Organization:</b> - Track Record for at least three (3) years in the Radio and/or Communication Device Business and has supplied and delivered communication equipment.</li><li>• <b>Revised Terms of Reference</b></li></ul>
---	---

Please be guided accordingly.

By: **BIDS AND AWARDS COMMITTEE – GOODS AND SERVICES**

(Sgd.) **MS. MA MARGARITA T. SANTOS**  
Chairperson