



**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>Section VI. Schedule of Requirements</li> <li>Section VII. Technical Specifications</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>Section VI. Schedule of Requirements</li> <li>Section VII. Technical Specifications</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



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: < 1%  
Hum and Noise: 12.5/20/25\* kHz -45 / -45 / -50 dB

### TRANSMITTER

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 < 1 GHz, -30 dBm > 1 GHz  
Modulation Fidelity (4FSK) FSK Error 5%: FSK Magnitude 1%  
Audio Response: TIA603D  
Audio Distortion: < 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  
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

B. Two (2) units of Access Point

### SPECIFICATIONS

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

Spurious Rejection (TIA603D/ETSI): 95 / 90 dB  
Audio Distortion: < 1%  
Hum and Noise: 12.5/20/25\* kHz -45 / -45 / -50 dB

### TRANSMITTER

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 < 1 GHz, -30 dBm > 1 GHz  
Modulation Fidelity (4FSK) FSK Error 5%: FSK Magnitude 1%  
Audio Response: TIA603D  
Audio Distortion: < 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

### 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: 60m/sec  
Mast Diameter accepted: 30-62 mm  
Length: 1.7 m  
Weight: 0.9 kg  
Connector: MJ

B. Two (2) units of Access Point

### GENERAL SPECIFICATIONS

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

### SYSTEM

Maximum Throughput: 1.34Gbps4.5



# 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



#### SYSTEM

Maximum Throughput: 1.34Gbps<sup>4,5</sup>  
Maximum Range: 100 km<sup>4</sup>  
Packets per second: 2+ Million<sup>6</sup>  
Latency: 1.5 ms- 3.5 ms<sup>7</sup>  
Encryption: AES-256  
Wireless Modes: PtP Master/Slave

#### NETWORKING INTERFACE

Data Port: (1) 10/100/1000 Ethernet Port  
Management Port: (1) 10/100/1000 Ethernet Port  
Bluetooth

#### RADIO

Max. Conducted TX Power: 29 dBm  
Frequency Accuracy: <2 ppm  
Channel Bandwidth: 10/20/30/40/50/60/80/100 MHz  
Selectable Programmable Uplink and Downlink Duty Cycles

#### OPERATING FREQUENCY (MHz)

Worldwide: 4800-6200\*

#### BLUETOOTH LE MANAGEMENT RADIO (MHz)

Worldwide: 2400-2483.5

#### 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

#### C. Two (2) units Antenna

#### 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

#### D. One (1) 60 FT. Mast

#### SPECIFICATIONS

GI Pipe: (2") Ø60.20x2.90 (ASTM A53)  
Height: 18,000mm  
Paint: red and white  
Steps: 12mmØ round bar steps

Maximum Range: 100 km<sup>4</sup>

Packets per second: 2+ Million<sup>6</sup>

Latency: 1.5 ms- 3.5 ms<sup>7</sup>

Encryption: AES-256

Wireless Modes: PP Master/Slave

#### NETWORKING INTERFACE

Data Port: (1) 10/100/1000 Ethernet Port  
Management Port: (1) 10/100/1000 Ethernet Port  
Bluetooth

#### RADIO

Max. Conducted TX Power: 29 dBm  
Frequency Accuracy: <2 ppm  
Channel Bandwidth: 10/20/30/40/50/60/80/100 MHz  
Selectable Programmable Uplink and Downlink Duty Cycles

#### OPERATING FREQUENCY (MHz)

Worldwide: 4800-6200\*

#### BLUETOOTH LE MANAGEMENT RADIO (MHz)

Worldwide: 2400-2483.5

#### 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

#### C. Two (2) units Antenna

#### 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

#### D. One (1) 60 FT. Mast

#### 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





# 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



Guy wire: AWG 0.0508

Turnbuckle: 5/8x12

Base plate: 12mm THK. Plate

E. One (1) lot Coaxial Cable

### SPECIFICATIONS

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

F. Ten (10) Connectors

### SPECIFICATIONS

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

G. One (1) lot NTC Permits and Licenses

H. One (1) lot Lightning surge and arrester

I. One (1) lot Mobilization Cost

J. One (1) lot Installation Cost for the whole system  
Includes: Installation, configuration, testing, training, and commissioning

Eight (8) lots of Digital Base Radios with Corresponding Accessories

A. One (1) unit of Digital Base Radios

### SPECIFICATIONS

Turnbuckle: 5/8x12

Base plate: 12mm THK. Plate

E. One (1) lot Coaxial Cable

### GENERAL SPECIFICATIONS

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

F. Ten (10) Connectors

### GENERAL SPECIFICATIONS

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

G. One (1) lot NTC Permits and Licenses

H. One (1) lot Lightning surge and arrester

I. One (1) lot Mobilization Cost

J. One (1) lot Installation Cost for the whole system  
Includes: Installation, configuration, testing, training, and commissioning

8 Lots Digital Base Radios with Corresponding Accessories

A. One (1) unit of Digital Base Radios

### GENERAL SPECIFICATIONS



# 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



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

### BLUETOOTH 4.0 STANDARD

Frequency Range: 2400 - 2483.5 MHz  
Channel  
BT ver < 4: 0 ~ 78  
BT ver 4: 0 ~ 39

Max power Class: 1 - 100 mW (20 dBm) ~ 1m W (0 dBm)  
Max Bandwidth  
BT ver < 4: 1 MHz  
BT ver 4: 2 MHz  
Technology: FHSS  
WIFI STANDARD  
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

### TRANSMITTER SPECIFICATIONS

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 60 dB (12.5 kHz channel): 70 dB (25 kHz channel)

Frequency Stability:  $\pm 0.5$  ppm

### RECEIVER SPECIFICATIONS

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

### AUDIO SPECIFICATIONS

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

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

### BLUETOOTH STANDARD SPECIFICATION

Range: Class 2, 10m  
Supported Profiles: Bluetooth Headset Profile (HSP),  
Serial Port Profile (SPP), Motorola fast push-to-talk

### TRANSMITTER SPECIFICATIONS

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 < 1GHZ, -30 dBm > 1GHZ  
Adjacent Channel Power 60 dB (12.5 kHz channel): 70 dB (25 kHz channel)  
Frequency Stability:  $\pm 0.5$  ppm

### RECEIVER SPECIFICATIONS

Analogue Sensitivity (12dB SINAD): 0.22 uV typical  
Digital Sensitivity (5% BER): 0.19 uV typical  
Intermodulation (TIA603D) VHF: 78dB  
UHF1, UHF2, 350, 800, 75dB  
Adjacent Channel Selectivity. (TIA603D)-2T & (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

### AUDIO SPECIFICATIONS

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

### BLUETOOTH SPECIFICATIONS

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



# 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



### \*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, BEIDOU  
Time To First Fix: Cold Start < 60 s  
Time To First Fix: Hot Start < 10 s  
Horizontal Accuracy: < 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 Numeric  
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 - 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

B. One (1) unit Antenna

### 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

C. One (1) 20 FT. Mast

### SPECIFICATIONS

GI Pipe: (2") Ø60.20x2.90 (ASTM A53)

Height: 6000mm

Paint: red and white

### \*GNSS SPECIFICATIONS

Constellation Support: GPS, BEIDOU

Time To First Fix: Cold Start < 60 s

Time To First Fix: Hot Start < 10s

Horizontal Accuracy:<5m

### \*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 Numeric  
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 - 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

B. One (1) unit Antenna

### 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

C. One (1) 20 FT. Mast

### GENERAL SPECIFICATIONS

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

D. One (1) lot Coaxial Cable

### GENERAL SPECIFICATIONS



# 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



Steps: 12mmØ round bar steps

Guy wire: AWG 0.0508

Turnbuckle: 5/8x12

Base plate: 12mm THK. Plate

D. One (1) lot Coaxial Cable

### SPECIFICATIONS

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

E. Five (5) Connectors

### SPECIFICATIONS

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

F. One (1) Power Supply

### SPECIFICATIONS

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

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

E. Five (5) Connectors

### GENERAL SPECIFICATIONS

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

F. One (1) Power Supply

### GENERAL SPECIFICATIONS

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

G. One (1) lot NTC Permits and Licenses

H. One (1) lot Lightning Surge and arrester

I. One (1) lot Mobilization Cost

J. One (1) lot Installation Cost for the whole system



# 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 VOICE DISPATCH Provide communications between the dispatcher and remote radios. Make broadcast, group, private, remote monitor, or emergency calls quickly using programmable shortcuts.</p> <p>EVENT LOGGING 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>TELEMETRY* Monitor and manage remote equipment from the control room.</p> <p>ALARM AND LONE WORKER 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>FLEET ADMINISTRATION 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>JOB TICKETING*, ** 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>TEXT MESSAGES AND EMAIL 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>DATA WEB CLIENT 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 VOICE DISPATCH Provide communications between the dispatcher and remote radios. Make broadcast, group, private, remote monitor, or emergency calls quickly using programmable shortcuts.</p> <p>EVENT LOGGING 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>ALARM AND LONE WORKER 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>FLEET ADMINISTRATION 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>JOB TICKETING". 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>TEXT MESSAGES AND EMAIL 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>DATA WEB CLIENT Empower remote dispatchers to access the system using a web interface.</p> <p>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.</p> <p>GPS TRACKING</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:  $\pm 0.5$  ppm

#### RECEIVER SPECIFICATIONS

Analogue Sensitivity (12dB SINAD): 0.16  $\mu$ V

Digital Sensitivity (5% BER): 0.14  $\mu$ V

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:  $\pm 0.5$  ppm

#### RECEIVER SPECIFICATIONS

Analogue Sensitivity (12dB SINAD): 0.16  $\mu$ V

Digital Sensitivity (5% BER): 0.14  $\mu$ V

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



### \*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 < 60 s  
Time To First Fix, Hot Start < 10 s  
Horizontal Accuracy < 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

- B. 203 lot Dispatch License of Digital Portable Radios
- C. One (1) lot NTC Permits and Licenses
- D. One (1) lot Mobilization Cost
- E. One (1) lot configuration Cost, testing, training, and commissioning

- **Section III. Bid Data Sheet**

#### Organization:

-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.

- **Terms of Reference**

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 < 60 s  
Time To First Fix, Hot Start < 10 s

Horizontal Accuracy <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

A. One (1) lot NTC Permits and Licenses

B. One (1) lot Mobilization Cost

C. One (1) lot configuration Cost, testing, training, and commissioning

- **Section III. Bid Data Sheet**

#### Organization:

- Track Record for at least three (3) years in the Radio and/or Communication Device Business and has supplied and delivered communication equipment.

- **Revised Terms of Reference**

Please be guided accordingly.

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

  
MS. MA MARGARITA T. SANTOS  
Chairperson