### STATEMENT OF WORK

#### Work to be done:

a vendor is required to provide 5 stationary mobile radios, 15 covert radios, 3 mobile radios, 4 handled digital radios, and 20 voice recorders.

The radios should be certified by Ukrainian National commission for the state regulation of communication and information and be registered into the Register of radio electronic facilities and emitters that can be used in Ukraine (due to build-in WiFi and GPS module into the camera).

The vendor should also provide a **requested** warranty for each item with ability to replace critical parts **locally in Ukraine**.

**Deadline:** Requested items should be delivered within 30 days after signing the contract.

## VAT exemption/reimbursement requirement :

All offers should be submitted WITHOUT VAT.

\*How to get VAT exemption/reimbursement while performing contracts under our duly registered projects below at SOW.

Stationary Motorola DM4401 with accessories (BRAND NAME or equal)
 QUANTITY: 5



GENERAL SPECIFICATIONS	
Band	VHF
Frequencies	136-174 MHz
Channel Capacity	99

RF Output Power	Low: 1-25 W
·	High: 25-45 W
Dimensions (H x W x D)	53.3 x 175.3 x 205.7 mm (2.1 x 6.9 x 8.1 in)
Weight	1.8 kg (3.9 lbs)
Operating Voltage	10.8-15.6 VDC, 13.2 VDC Nomina
Current Drain	Standby: 0.81 A max
	Rx @ Rated Audio: 2 A max
	Transmit: 1-25 W: 11.0 A max 25-45 W: 14.5 A
	max
RECEIVER	
Frequency Range	136-174 MHz
Channel Spacing	12.5 kHz / 20 kHz1 / 25 kHz
Frequency Stability (-30°C, +60°C, +25°C Ref)	+/- 0.5 ppm
Analogue Sensitivity	0.3 μV (12 dB SINAD)
	0.22 μV (Typical)(12 dB SINAD)
	0.4 uV (20 dB SINAD)
Digital Sensitivity	0.22 uV5% BER : 0.25 μV
	0.19 μV (Typical)
Intermodulation	70 dB
Adjacent Channel Selectivity	60 dB @ 12.5 kHz
	70 dB @ 20/25 kHz
Spurious Rejection	70 dB
Rated Audio	3 W (Internal)
	7.5 W (External - 8 ohms)
	13 W (External - 4 ohms)
Audio Distortion @ Rated Audio	3% (typical)
Hum and Noise	-40 dB @ 12.5 kHz/-45 dB @ 25 kHz
Audio Response	+1, -3 dB
Conducted Spurious Emission (TIA603D)	57dBm
TRANSMITTER	
Frequency Range	136-174 MHz
Channel Spacing	12.5 kHz / 20 kHz1 / 25 kHz
Frequency Stability (-30°C, +60°C, +25°C Ref)	+/- 0.5 ppm
Low Power Output	1-25 W
High Power Output	25-40 W
Modulation Limiting	± 2.5 kHz @ 12.5 kHz / ± 4.0 kHz @ 20 kHz1 /
	± 5.0 kHz @ 25 kHz
FM Hum and Noise	-40 dB @ 12.5 kHz/-45 dB @ 25 kHz
Conducted/ Radiated Emission	-36 dBm < 1 GHz/-30 dBm > 1 GHz
Adjacent Channel	60 dB @ 12.5 kHz/70 dB @ 20/25 kHz1
Audio Response	TIA603D
Audio Distortion	3%
FM Modulation	12.5 kHz: 11K0F3E / 25 kHz: 16K0F3E
Digital Vocoder Type	AMBE+2™
Digital Protocol	ETSI TS 102 361-1, -2, -3
GPS	

	percentile values > 5 satellites visible at a nominal -130 dBm
signal strength)	
TTFF (Time To First Fix) Cold Start	< 1 minute
TTFF (Time To First Fix) Hot Start	< 10 seconds
Horizontal Accuracy	< 5 metres
BLUETOOTH	
Version	Supports Bluetooth® 2.1 + EDR Specification
Profiles Supported	Bluetooth Headset Profile (HSP), Serial Port
	Profile (SPP), Motorola fast push-to-talk.
Devices Supported	d Radio supports 1 Bluetooth audio accessory
	and 1 Bluetooth data device simultaneously
Range	Class 2, 10 metres
ENVIRONMENTAL SPECIFICATIONS	
Operating Temperature	-30° C / +60° C
Storage Temperature	40° C / +85° C
Thermal Shock	Per MIL-STD
Humidity	Per MIL-STD
ESD	IEC 61000-4-2 Level 3
Dust and Water Intrusion	IP54, MIL-STD
Warranty	Standard 2 years (plus additional 12
	months of the repairing service in
	Ukraine)
Security	256-bit AES256 encryption algorithm
•	activated
	Authenticated Radio Disable activated
ACCESSORIES	
Microphone	IMPRES Keypad Microphone RMN5127C
Antenna	162–174 MHz, Combo GPS/VHF ¼ Wave
	Through-Hole Mount, RAD4222
Power Cable to Battery	HKN4191, 10 foot, 20 amp
Low Profile Trunnion Kit	RLN6466

# 2. Covert Radio Motorola TCR 1000 (BRAND NAME OR EQUAL)



PHYSICAL SPECIFICATIONS	
Weight	< 180 Including battery
RF SPECIFICATIONS	

Frequency Bands (MHz)	
RF Channel Bandwidth (kHz)	
Transmitter RF Power	
RF Power Control	3 Steps of 5 dB
RF Power Level Accuracy	+/- db 2
Receiver Class	A and B
Receiver Static Sensitivity (dBm)	-112 minimum, -115 typical
Receiver Dynamic Sensitivity (dBm)	-103 minimum, -106 typical
ENVIRONMENTAL SPECIFICATIONS	
Operating Temperature	-30° C / +60° C
Storage Temperature	40° C / +85° C
Humidity	ETS300 019-1-7 class 7.3E, up to 95% R.H @ 50°C for 8 Hours
Shock, drop and vibration	ETS 300 019-1-7 class 5M3
Dust and Water Intrusion	IP54 (cat.2)
VOICE SERVICES	
Talkgroups	Stored: 2048 (TMO) & 1024 (DMO) Accessible via RCU: 10 TMO/DMO pairs from Talk Groups stored
Emergency	Smart emergency: TMO to DMO / DMO to TMO automatic switching options Hot Mic: Configurable timers for automatic open mic Location: Location (GPS) sent with emergency Target Address: Sent to individual or group address (selected or dedicated) Alarm: Emergency status
Other Services	DGNA Ambience Listening Transmit Inhibit (TxI): ETSI Enhanced Mode TxI with On / Off Status Messaging
Warranty	Standard 2 years (plus additional 12 months of the repairing service in Ukraine)
Security	256-bit AES256 encryption algorithm activated Authenticated Radio Disable activated

# 3. Mobile Radio Hytera MD655G (BRAND NAME OR EQUAL)

General Specifications	
Frequency range	VHF: 136 - 174 MHz
Supported operating modes	DMR Tier II
	in acc. with ETSI TS 102 361-1/2/3
	• Simulcast
	XPT Digital Trunking

	Analog
Channel capacity	1024
Zone capacity	64 (with max. 16 channels each)
Channel spacing	12.5 / 20 / 25 kHz (analog)
ename: spaemg	12.5 kHz (digital)
Operating voltage	13.6 ± 15% VDC
Max. power consumption	≤ 0.6 A
(in stand by)	20.071
Max. power consumption (during	≤ 2.0 A
reception)	
Max. power consumption	1 W: < 3 A
(during transmission)	25 W: < 8 A
Frequency stability	± 0.5 ppm
Antenna impedance	50 Ω
Dimensions (W × H × L)	165 × 46 × 140 mm
Weight	1050 g
TRANSMITTER	1050 g
Transmitting power	1 - 25 W (adjustable)
Modulation	11 K0F3E at 12.5 kHz
Modulation	14 K0F3E at 20 kHz
	16 K0F3E at 25 kHz
4FSK digital modulation	12.5 kHz (data only): 7K60FXD
41 3K digital illodulation	12.5 kHz (data only). 7k60FXW
Interfering signals and harmonics	- 36 dBm (< 1 GHz)
interreting signals and narmonics	- 30 dBm (< 1 dHz)
Modulation limiting	± 2.5 kHz at 12.5 kHz
Wodulation infilting	± 4.0 kHz at 20 kHz
	± 5.0 kHz at 25 kHz
Hum and noise	40 dB at 12.5 kHz
Train and noise	43 dB at 20 kHz
	45 dB at 25 kHz
Adjacent channel selectivity	60 dB at 12.5 kHz
Adjacent channel selectivity	70 dB at 20 / 25 kHz
Audio sensitivity	+ 1 to - 3 dB
Nominal audio distortion	≤3%
Digital vocoder type	AMBE +2
Receiver	AIVIDE 12
Sensitivity (analog)	0.3 μV (12 dB SINAD)
Sensitivity (analog)	0.22 μV (typical) (12 dB SINAD)
	0.22 μV (typical) (12 db 3NAb)
Sensitivity (digital)	0.3 μV / BER 5 %
Adjacent channel selectivity	0.5 μν / ΒΕΝ 5 /0
TIA-603	65 dB at 12.5 kHz / 75 dB at 20 / 25 kHz
ETSI	60 dB at 12.5 kHz / 70 dB at 20 / 25 kHz
Intermodulation	00 db dt 12.5 kHz / 70 db dt 20 / 25 kHz
TIA-603	70 dB at 12.5 / 20 / 25 kHz
ETSI	65 dB at 12.5 / 20 / 25 kHz
LIJI	03 db at 12.3 / 20 / 23 kHz

Spurious response rejection	
TIA-603	75 dB at 12.5 / 20 / 25 kHz
ETSI	75 dB at 12.5 / 20 / 25 kHz
Signal-to-noise ratio (S/N)	40 dB at 12.5 kHz
	43 dB at 20 kHz
	45 dB at 25 kHz
Nominal audio power output	Internal 3 W at 20 Ω,
	external 7.5 W at 8 $\Omega$
Nominal audio distortion	≤ 3 %
Audio sensitivity	+ 1 to - 3 dB
Conducted spurious emission	- 57 dBm
GPS	
Time to first position recognition	< 1 minute
(TTFF) cold start	
Time to first position recognition	< 10 seconds
(TTFF) warm start	
Horizontal accuracy	< 10 meter
Ambient data	
Operating temperature range	- 30 °C to + 60 °C
Storage temperature range	- 40 °C to + 85 °C
ESD	IEC 61000-4-2 (Level 4),
	± 8 kV (contact)
	± 15 kV (air)
Dust and water protection	IP54
Shock and vibration resistance	MIL-STD-810 C / D / E / F / G
Relative humidity	MIL-STD-810 C / D / E / F / G
WARRANTY	Standard 2 years (plus additional 12 months
	of the repairing service in Ukraine)

### Scope of delivery:

- Installation kit with installation clip BRK08
- Fuse POA33
- Battery connecting cable PWC12 (5 m)

### **Additional Acessories:**

Kit for concealed remote control of mobile radio (compatible with requested radio). Main functions:

- radio communication through a radio station at one of the two selected channels. Total number of served channels of the radio station 8;
- display the number of the working channel (1 8) on the digital red color indicator;
- transmission of a tone call signal;
- transmission of an emergency call signal;
- turning on/off the channel scan mode (selected mode shall be displayed by LED indicators);
- selecting two out of 8 possible channels for scanning;
- adjusting the volume of the received speech signal to the speakers in two ways slowly and quickly.

#### One kit should include:

- ¼ vehicle set-in antenna, radio type;
- external GPS antenna;
- loudspeaker for remote speaking.

# 4. Handheld digital radio Hytera X1E (BRAND NAME OR EQUAL)

General Specifications	
Frequency range	VHF: 136 - 174 MHz
Supported operating modes	DMR Tier II (conventional DMR), Simulcast XPT Digital Trunking DMR Tier III (DMR trunked radio) Analog, MPT 1327 DMR Tier II in accordance with ETSI TS 102 361-1/2/3 DMR Tier III in acc. with ETSI TS 102 361-1/2/3/4
Channel capacity	1024
Number of zones	3
Channel spacing	12.5 / 20 / 25 kHz (analog)
	12.5 kHz (digital)
Operating voltage	7.4 V (nominal)
Standard battery	1400 mAh (lithium-ion battery)
Battery service life (5-5-90 duty cycle, high transmitting	ca. 12 h (with 1400 mAh-battery)
power, digital, with lithium-ion battery)	
Frequency stability	±1.5 ppm
Antenna impedance	50 Ω
Dimensions (W × H × L)	119.5 × 57 × 20 mm (1400 mAh-battery)
Weight	240 g (with 1400 mAh-battery)
TRANSMITTER	
Transmitting power	
	VHF: 1 / 5 W UHF: 1 / 4 W
Modulation	UHF: 1 / 4 W  11 K0F3E at 12.5 kHz  14 K0F3E at 20 kHz
	UHF: 1 / 4 W  11 K0F3E at 12.5 kHz  14 K0F3E at 20 kHz  16 K0F3E at 25 kHz
Modulation  4FSK digital modulation	UHF: 1 / 4 W  11 K0F3E at 12.5 kHz  14 K0F3E at 20 kHz  16 K0F3E at 25 kHz  12.5 kHz (data only): 7K60FXD
4FSK digital modulation	UHF: 1 / 4 W  11 K0F3E at 12.5 kHz  14 K0F3E at 20 kHz  16 K0F3E at 25 kHz  12.5 kHz (data only): 7K60FXD  12.5 kHz (data and voice): 7K60FXW
	UHF: 1 / 4 W  11 K0F3E at 12.5 kHz  14 K0F3E at 20 kHz  16 K0F3E at 25 kHz  12.5 kHz (data only): 7K60FXD  12.5 kHz (data and voice): 7K60FXW  - 36 dBm (< 1 GHz)
4FSK digital modulation	UHF: 1 / 4 W  11 K0F3E at 12.5 kHz  14 K0F3E at 20 kHz  16 K0F3E at 25 kHz  12.5 kHz (data only): 7K60FXD  12.5 kHz (data and voice): 7K60FXW  - 36 dBm (< 1 GHz)  - 30 dBm (> 1 GHz)
4FSK digital modulation	UHF: 1 / 4 W  11 K0F3E at 12.5 kHz  14 K0F3E at 20 kHz  16 K0F3E at 25 kHz  12.5 kHz (data only): 7K60FXD  12.5 kHz (data and voice): 7K60FXW  - 36 dBm (< 1 GHz)
4FSK digital modulation  Interfering signals and harmonics	UHF: 1 / 4 W  11 K0F3E at 12.5 kHz  14 K0F3E at 20 kHz  16 K0F3E at 25 kHz  12.5 kHz (data only): 7K60FXD  12.5 kHz (data and voice): 7K60FXW  - 36 dBm (< 1 GHz)  - 30 dBm (> 1 GHz)
4FSK digital modulation  Interfering signals and harmonics	UHF: 1 / 4 W  11 K0F3E at 12.5 kHz  14 K0F3E at 20 kHz  16 K0F3E at 25 kHz  12.5 kHz (data only): 7K60FXD  12.5 kHz (data and voice): 7K60FXW  - 36 dBm (< 1 GHz)  - 30 dBm (> 1 GHz)  ± 2.5 kHz at 12.5 kHz

Adjacent channel selectivity AMBE +2  Receiver  Sensitivity (analog) AMBE +2  Receiver  Sensitivity (analog) AJ μV (12 dB SINAD) AJ μV (20 dB SINAD)  Sensitivity (digital) AJ μV (20 dB SINAD) AJ μV (20 dB SINAD)  Sensitivity (digital) AJ μV (20 dB SINAD) AJ μV (20 dB SINAD)  Sensitivity (digital) AJ μV (20 dB SINAD) AJ μV (20 dB SINAD)  Sensitivity (digital) AJ μV (20 dB SINAD) AJ μΣ		43 dB at 20 kHz
Adjacent channel selectivity Audio sensitivity Audio sensitivity Final audio distortion Signal vocoder type AMBE +2  Receiver  Sensitivity (analog) O.3 μV (12 dB SINAD) O.22 μV (typical) (12 dB SINAD) O.4 μV (20 dB SINAD) O.4 μV (20 dB SINAD) O.4 μV (20 dB SINAD)  Sensitivity (digital) O.3 μV / BER 5 %  Adjacent channel selectivity TIA-603 FTSI Od B at 12.5 kHz / 70 dB at 20 and 25 kHz Od B at 12.5 kHz / 70 dB at 20 and 25 kHz FTSI Od B at 12.5 / 20 / 25 kHz  Spurious response rejection TIA-603 TO dB at 12.5 / 20 / 25 kHz  Signal-to-noise ratio (S/N) Ominal audio power output Ominal audio power output Signal-to-noise ratio (S/N) Audio B at 25 kHz Ominal audio distortion Some W  Nominal audio distortion Some W  Nominal audio distortion Some W  Nominal audio distortion Some W  Time to first position recognition (TTFF) cold start Time to first position recognition (TTFF) cold start Horizontal accuracy Some W  Ambient data  Operating temperature range  -30 °C to + 60 °C		
Audio sensitivity	Adiacent channel selectivity	
Audio sensitivity + 1 to - 3 dB  Nominal audio distortion ≤ 3 %  Digital vocoder type AMBE +2  Receiver  Sensitivity (analog) 0.3 µV (12 dB SINAD) 0.22 µV (typical) (12 dB SINAD) 0.4 µV (20 dB SINAD) 0.5 µV / BER 5 %  Adjacent channel selectivity  TIA-603 60 dB at 12.5 kHz / 70 dB at 20 and 25 kHz 60 dB at 12.5 kHz / 70 dB at 20 and 25 kHz 11A-603 70 dB at 12.5 / 20 / 25 kHz 12.5 / 20 / 25 kHz 12.5 kHz 1	. Tagadan anama adiadan ka	
Nominal audio distortion       ≤ 3 %         Digital vocoder type       AMBE +2         Receiver         Sensitivity (analog)       0.3 μV (12 dB SINAD)         0.22 μV (typical) (12 dB SINAD)       0.4 μV (20 dB SINAD)         Sensitivity (digital)       0.3 μV / BER 5 %         Adjacent channel selectivity       60 dB at 12.5 kHz / 70 dB at 20 and 25 kHz         ETSI       60 dB at 12.5 kHz / 70 dB at 20 and 25 kHz         Intermodulation       70 dB at 12.5 / 20 / 25 kHz         ITIA-603       70 dB at 12.5 / 20 / 25 kHz         ETSI       65 dB at 12.5 / 20 / 25 kHz         Spurious response rejection       70 dB at 12.5 / 20 / 25 kHz         TIA-603       70 dB at 12.5 / 20 / 25 kHz         ETSI       70 dB at 12.5 / 20 / 25 kHz         Signal-to-noise ratio (5/N)       40 dB at 12.5 / 20 / 25 kHz         Signal-to-noise ratio (5/N)       40 dB at 12.5 / 20 / 25 kHz         Nominal audio power output       500 mW         Nominal audio distortion       ≤ 3 %         Conducted spurious emission       -57 dBm         GPS       70 dB at 12.5 / 20 / 25 kHz         Time to first position recognition       < 1 minute	Audio sensitivity	·
Digital vocoder type       AMBE +2         Receiver         Sensitivity (analog)       0.3 μV (12 dB SINAD)         0.4 μV (20 dB SINAD)       0.4 μV (20 dB SINAD)         Sensitivity (digital)       0.3 μV / BER 5 %         Adjacent channel selectivity       60 dB at 12.5 kHz / 70 dB at 20 and 25 kHz         ETSI       60 dB at 12.5 kHz / 70 dB at 20 and 25 kHz         Intermodulation       70 dB at 12.5 / 20 / 25 kHz         ETSI       65 dB at 12.5 / 20 / 25 kHz         Spurious response rejection       70 dB at 12.5 / 20 / 25 kHz         TIA-603       70 dB at 12.5 / 20 / 25 kHz         ETSI       70 dB at 12.5 / 20 / 25 kHz         Signal-to-noise ratio (S/N)       40 dB at 12.5 kHz         Ad 3 dB at 20 kHz       43 dB at 20 kHz         45 dB at 25 kHz       45 dB at 25 kHz         Nominal audio distortion       ≤ 3 %         Conducted spurious emission       -57 dBm         GPS       (Time to first position recognition (TTFF) cold start       < 1 minute	•	
Receiver         Sensitivity (analog)       0.3 μV (12 dB SINAD)         0.2 μV (typical) (12 dB SINAD)       0.4 μV (20 dB SINAD)         Sensitivity (digital)       0.3 μV / BER 5 %         Adjacent channel selectivity       60 dB at 12.5 kHz / 70 dB at 20 and 25 kHz         ETSI       60 dB at 12.5 kHz / 70 dB at 20 and 25 kHz         Intermodulation       70 dB at 12.5 / 20 / 25 kHz         ETSI       65 dB at 12.5 / 20 / 25 kHz         Spurious response rejection       70 dB at 12.5 / 20 / 25 kHz         TIA-603       70 dB at 12.5 / 20 / 25 kHz         Signal-to-noise ratio (S/N)       40 dB at 12.5 kHz         43 dB at 20 kHz       43 dB at 20 kHz         45 dB at 25 kHz       Nominal audio power output         Nominal audio distortion       ≤ 3 %         Conducted spurious emission       500 mW         Nominal audio distortion       < 1 minute		
Sensitivity (analog)   0.3 μV (12 dB SINAD)   0.22 μV (typical) (12 dB SINAD)   0.24 μV (20 dB SINAD)   0.4 μV (20 dB SINAD)   0.4 μV (20 dB SINAD)   0.3 μV / BER 5 %		AIVIDE 12
0.22 μV (typical) (12 dB SINAD)     0.4 μV (20 dB SINAD)     3 μV / BER 5 %     Adjacent channel selectivity     TIA-603		0.3 µV (12 dB SINAD)
0.4 μV (20 dB SINAD)   Sensitivity (digital)   0.3 μV / BER 5 %     Adjacent channel selectivity   TIA-603   60 dB at 12.5 kHz / 70 dB at 20 and 25 kHz     ETSI   60 dB at 12.5 kHz / 70 dB at 20 and 25 kHz     Intermodulation   70 dB at 12.5 / 20 / 25 kHz     ETSI   65 dB at 12.5 / 20 / 25 kHz     Spurious response rejection   70 dB at 12.5 / 20 / 25 kHz     Signal-to-noise ratio (S/N)   40 dB at 12.5 / 20 / 25 kHz     Signal-to-noise ratio (S/N)   40 dB at 12.5 kHz     43 dB at 20 kHz     45 dB at 25 kHz     Nominal audio power output   500 mW     Nominal audio distortion   ≤ 3 %     Conducted spurious emission   570 dBm     GPS   Time to first position recognition (TTFF) cold start   710 meter   710	Sensitivity (unalog)	
Sensitivity (digital)  Adjacent channel selectivity  TIA-603 ETSI  60 dB at 12.5 kHz / 70 dB at 20 and 25 kHz 60 dB at 12.5 kHz / 70 dB at 20 and 25 kHz 10 dB at 12.5 kHz / 70 dB at 20 and 25 kHz 11A-603 TIA-603 TO dB at 12.5 / 20 / 25 kHz 11A-603 TIA-603 TO dB at 12.5 / 20 / 25 kHz  Spurious response rejection TIA-603 TO dB at 12.5 / 20 / 25 kHz  Signal-to-noise ratio (S/N) 40 dB at 12.5 / 20 / 25 kHz  Signal-to-noise ratio (S/N) 40 dB at 12.5 kHz 43 dB at 20 kHz 45 dB at 25 kHz  Nominal audio power output 500 mW  Nominal audio distortion ≤ 3 % Conducted spurious emission GPS  Time to first position recognition (TTFF) cold start Time to first position recognition (TTFF) warm start Horizontal accuracy Ambient data  Operating temperature range  - 30 °C to + 60 °C		
Adjacent channel selectivity  TIA-603 ETSI 60 dB at 12.5 kHz / 70 dB at 20 and 25 kHz 60 dB at 12.5 kHz / 70 dB at 20 and 25 kHz Intermodulation  TIA-603 70 dB at 12.5 / 20 / 25 kHz ETSI 65 dB at 12.5 / 20 / 25 kHz  Spurious response rejection  TIA-603 70 dB at 12.5 / 20 / 25 kHz  Spurious response rejection  TIA-603 70 dB at 12.5 / 20 / 25 kHz  Signal-to-noise ratio (S/N) 40 dB at 12.5 / 20 / 25 kHz  Signal-to-noise ratio (S/N) 40 dB at 12.5 kHz 43 dB at 20 kHz 45 dB at 25 kHz  Nominal audio power output 500 mW  Nominal audio distortion ≤ 3 %  Conducted spurious emission 6PS  Time to first position recognition (TTFF) cold start Time to first position recognition (TTFF) warm start Horizontal accuracy 4 10 meter  Ambient data  Operating temperature range  - 30 °C to + 60 °C	Sensitivity (digital)	
TIA-603 ETSI 60 dB at 12.5 kHz / 70 dB at 20 and 25 kHz 60 dB at 12.5 kHz / 70 dB at 20 and 25 kHz 60 dB at 12.5 kHz / 70 dB at 20 and 25 kHz  Intermodulation TIA-603 70 dB at 12.5 / 20 / 25 kHz  ETSI 65 dB at 12.5 / 20 / 25 kHz  Spurious response rejection TIA-603 70 dB at 12.5 / 20 / 25 kHz  Spurious response rejection TIA-603 70 dB at 12.5 / 20 / 25 kHz  To dB at 12.5 / 20 / 25 kHz  Signal-to-noise ratio (S/N) 40 dB at 12.5 kHz 43 dB at 20 kHz 45 dB at 25 kHz  Nominal audio power output 500 mW  Nominal audio distortion ≤ 3 %  Conducted spurious emission  GPS  Time to first position recognition (TTFF) cold start Time to first position recognition (TTFF) warm start Horizontal accuracy 4 10 meter  Ambient data  Operating temperature range  - 30 °C to + 60 °C		0.5 μν / ΒΕΝ 3 /0
ETSI 60 dB at 12.5 kHz / 70 dB at 20 and 25 kHz  Intermodulation TIA-603 70 dB at 12.5 / 20 / 25 kHz  ETSI 65 dB at 12.5 / 20 / 25 kHz  Spurious response rejection TIA-603 70 dB at 12.5 / 20 / 25 kHz  ETSI 70 dB at 12.5 / 20 / 25 kHz  ETSI 70 dB at 12.5 / 20 / 25 kHz  Signal-to-noise ratio (S/N) 40 dB at 12.5 kHz 43 dB at 20 kHz 45 dB at 25 kHz  Nominal audio power output 500 mW  Nominal audio distortion ≤ 3 %  Conducted spurious emission 57 dBm  GPS  Time to first position recognition (TTFF) cold start Time to first position recognition (TTFF) warm start Horizontal accuracy < 10 meter  Ambient data  Operating temperature range -30 °C to + 60 °C	•	60 dB at 12.5 kHz / 70 dB at 20 and 25 kHz
Intermodulation  TIA-603 70 dB at 12.5 / 20 / 25 kHz  ETSI 65 dB at 12.5 / 20 / 25 kHz  Spurious response rejection  TIA-603 70 dB at 12.5 / 20 / 25 kHz  ETSI 70 dB at 12.5 / 20 / 25 kHz  ETSI 70 dB at 12.5 / 20 / 25 kHz  Signal-to-noise ratio (S/N) 40 dB at 12.5 kHz 43 dB at 20 kHz 43 dB at 20 kHz 45 dB at 25 kHz  Nominal audio power output  So0 mW  Nominal audio distortion ≤ 3 %  Conducted spurious emission -57 dBm  GPS  Time to first position recognition (TTFF) cold start  Time to first position recognition (TTFF) warm start  Horizontal accuracy <10 meter  Ambient data  Operating temperature range -30 °C to + 60 °C		•
TIA-603 70 dB at 12.5 / 20 / 25 kHz  Spurious response rejection TIA-603 70 dB at 12.5 / 20 / 25 kHz  ETSI 70 dB at 12.5 / 20 / 25 kHz  ETSI 70 dB at 12.5 / 20 / 25 kHz  Signal-to-noise ratio (S/N) 40 dB at 12.5 kHz 43 dB at 20 kHz 43 dB at 20 kHz 45 dB at 25 kHz  Nominal audio power output 500 mW  Nominal audio distortion ≤ 3 %  Conducted spurious emission -57 dBm  GPS  Time to first position recognition (TTFF) cold start  Time to first position recognition (TTFF) warm start  Horizontal accuracy < 10 meter  Ambient data  Operating temperature range -30 °C to + 60 °C	<u> </u>	
ETSI 65 dB at 12.5 / 20 / 25 kHz  Spurious response rejection  TIA-603 70 dB at 12.5 / 20 / 25 kHz  ETSI 70 dB at 12.5 / 20 / 25 kHz  Signal-to-noise ratio (S/N) 40 dB at 12.5 kHz 43 dB at 20 kHz 45 dB at 25 kHz  Nominal audio power output 500 mW  Nominal audio distortion ≤3 %  Conducted spurious emission -57 dBm  GPS  Time to first position recognition (TTFF) cold start  Time to first position recognition (TTFF) warm start  Horizontal accuracy <10 meter  Ambient data  Operating temperature range -30 °C to + 60 °C		70 dB at 12 5 / 20 / 25 kHz
Spurious response rejection  TIA-603  ETSI  70 dB at 12.5 / 20 / 25 kHz  FISI  70 dB at 12.5 / 20 / 25 kHz  FISI  Signal-to-noise ratio (S/N)  40 dB at 12.5 kHz  43 dB at 20 kHz  45 dB at 25 kHz  Nominal audio power output  500 mW  Nominal audio distortion  Som mW  Conducted spurious emission  FISH  GPS  Time to first position recognition (TTFF) cold start  Time to first position recognition (TTFF) warm start  Horizontal accuracy  Ambient data  Operating temperature range  70 dB at 12.5 / 20 / 25 kHz  70 dB at 12.5 / 20 / 25 kHz  140 dB at 12.5 kHz  140 dB at 20 kHz  140 dB at 12.5 kHz  140 dB at 12.5 kHz  140 dB at 12.5 kHz  140 dB at 20 k		
TIA-603  ETSI  70 dB at 12.5 / 20 / 25 kHz  70 dB at 12.5 / 20 / 25 kHz  Signal-to-noise ratio (S/N)  40 dB at 12.5 kHz 43 dB at 20 kHz 45 dB at 25 kHz  Nominal audio power output  500 mW  Nominal audio distortion  ≤ 3 %  Conducted spurious emission  GPS  Time to first position recognition (TTFF) cold start  Time to first position recognition (TTFF) warm start  Horizontal accuracy  Ambient data  Operating temperature range  70 dB at 12.5 / 20 / 25 kHz  70 dB at 12.5 / 20 / 25 kHz  140 dB at 12.5 / 20 / 25 kHz  40 dB at 12.5 / 20 / 25 kHz  41 dB at 20 kHz 43 dB at 20 kHz 43 dB at 20 kHz 45 dB at 25 kHz  81 dB at 25 kHz  45 dB at 25 kHz  45 dB at 25 kHz  81 dB at 20 kHz 45 dB at		03 dB dt 12:3 / 20 / 23 kH2
ETSI 70 dB at 12.5 / 20 / 25 kHz  Signal-to-noise ratio (S/N) 40 dB at 12.5 kHz 43 dB at 20 kHz 45 dB at 25 kHz  Nominal audio power output 500 mW  Nominal audio distortion ≤ 3 %  Conducted spurious emission -57 dBm  GPS  Time to first position recognition (TTFF) cold start  Time to first position recognition (TTFF) warm start  Horizontal accuracy < 10 meter  Ambient data  Operating temperature range -30 °C to + 60 °C		70 dB at 12.5 / 20 / 25 kHz
Signal-to-noise ratio (S/N) 40 dB at 12.5 kHz   43 dB at 20 kHz 45 dB at 25 kHz   Nominal audio power output 500 mW   Nominal audio distortion ≤ 3 %   Conducted spurious emission - 57 dBm   GPS < 1 minute		
A3 dB at 20 kHz 45 dB at 25 kHz  Nominal audio power output  500 mW  Nominal audio distortion  ≤ 3 %  Conducted spurious emission  GPS  Time to first position recognition (TTFF) cold start  Time to first position recognition (TTFF) warm start  Horizontal accuracy  Ambient data  Operating temperature range  43 dB at 20 kHz 45 dB at 25 kHz 45 dB at 20 kHz 45 dB at 25 kHz 45 dB at 20 kHz 45 dB at 20 kHz 45 dB at 20 kHz 45 dB at 25 kHz 45 dB at 25 kHz 45 dB at 20 kHz 45 dB at 25 kHz 45 dB at		
Nominal audio power output 500 mW   Nominal audio distortion ≤ 3 %   Conducted spurious emission - 57 dBm   GPS   Time to first position recognition < 1 minute		43 dB at 20 kHz
Nominal audio distortion ≤ 3 %   Conducted spurious emission - 57 dBm   GPS   Time to first position recognition (TTFF) cold start < 1 minute		45 dB at 25 kHz
Nominal audio distortion ≤ 3 %   Conducted spurious emission - 57 dBm   GPS   Time to first position recognition (TTFF) cold start < 1 minute	Nominal audio power output	
Conducted spurious emission -57 dBm  GPS  Time to first position recognition (TTFF) cold start  Time to first position recognition (TTFF) warm start  Horizontal accuracy < 10 meter  Ambient data  Operating temperature range -30 °C to +60 °C	' '	500 mW
Time to first position recognition (TTFF) cold start  Time to first position recognition (TTFF) warm start  Horizontal accuracy  Ambient data  Operating temperature range  < 1 minute < 10 seconds < 10 seconds < 10 meter  - 30 °C to + 60 °C	Nominal audio distortion	≤ 3 %
Time to first position recognition (TTFF) cold start  Time to first position recognition (TTFF) warm start  Horizontal accuracy  Ambient data  Operating temperature range  < 1 minute < 10 seconds < 10 seconds < 10 meter < 30 °C to + 60 °C	Conducted spurious emission	- 57 dBm
Time to first position recognition < 10 seconds (TTFF) warm start  Horizontal accuracy < 10 meter  Ambient data  Operating temperature range - 30 °C to + 60 °C	GPS	<u> </u>
Time to first position recognition (TTFF) warm start  Horizontal accuracy  Ambient data  Operating temperature range  < 10 seconds  < 10 meter  < 10 meter  - 30 °C to + 60 °C	Time to first position recognition	< 1 minute
(TTFF) warm start  Horizontal accuracy < 10 meter  Ambient data  Operating temperature range - 30 °C to + 60 °C	(TTFF) cold start	
Horizontal accuracy < 10 meter  Ambient data  Operating temperature range - 30 °C to + 60 °C	Time to first position recognition	< 10 seconds
Ambient data  Operating temperature range - 30 °C to + 60 °C	(TTFF) warm start	
Operating temperature range - 30 °C to + 60 °C	Horizontal accuracy	< 10 meter
	Ambient data	·
Storage temperature range - 40 °C to + 85 °C	Operating temperature range	- 30 °C to + 60 °C
- · · · · · · · · · · · · · · · · · · ·	Storage temperature range	- 40 °C to + 85 °C

IEC 61000-4-2 (level 4)
±8 kV (contact) ±15 kV (air)
IP67
MIL-STD-810 C / D / E / F / G
MIL-STD-810 C / D / E / F / G
Standard 2 years (plus additional 12
months of the repairing service in
Ukraine)

## Scope of delivery:

- Handheld radio X1e
- Lithium-ion battery
- Dual-slot charging cradle
- Power supply unit for charging cradle
- Standard antenna
- Hand strap
- Manual

#### **Additional Accessories:**

- 1. Additional battery compatible with radio 1400 mAh
- 2. Shoulder radio case SH-500
- 3. Kit for concealed radio remote control (compatible with requested radio). Main functions:
- radio communication through the radio station;
- transmission of a tone call signal;
- transmission of emergency call signal;
- adjust the volume of the received speech signal;
- switch on/off the speaker;
- turning on/off the vibrate.

### Kit should include:

- 2 bending antennas APP-01;
- connector to the radio station;
- loudspeaker with a built-in microphone and a control panel with connecting cables between

#### them.

# Olympus WS-811 Digital Stereo Voice Recorder with Flash 2GB Memory (BRAND NAME OR EQUAL)



#### **SPECIFICATIONS**

Type (Audio Input)	Microphone
Digital Storage Capacity	2 GB. 5 folders for file storage, 200 messages per
	folder
Subcategory (KB) (Audio System)	Dictaphones, transcribers
Height	10 cm
Width	4 cm
Depth	1.5 cm
Supported Flash Memory Cards	microSD/microSDHC
Supported Digital Audio Standards	High quality WMA/MP3 music playback
Digital Player Type	Flash based
Interface Supported	USB 2.0. With Retractable USB connector
Sound Output Mode	Stereo. Built-in stereo microphones. Voice and
	noise filter
Time of work without charging	27hours for recording; and 30 hours for playback
Additional accessories	Lapel microphone Mini jack 3.5, 42 db, 40-16 khz
Warranty	Not less than 2 years, in Ukraine service

In order to be exempt from paying VAT in Ukraine, the bidding company should, while submitting its VAT declaration to the tax authorities, point out the reasons for VAT exemption: number of project registration card under which the goods, services or works are to be provided; and name of the relevant international agreement. The underlying agreements are the Agreement between the Government of Ukraine and the Government of the United States of America regarding humanitarian and technical economic cooperation dated 07 May 1992 and the Letter of Agreement on Law Enforcement and Criminal Justice Sector Assistance between the Government of the United States of America and the Government of Ukraine dated 13 March 2015.

Additionally, the bidding company should keep in its records the following documents (may be provided by the US Embassy upon request):

- Duly certified copy of the project registration card;
- Duly certified copy of the procurement plan;
- Duly certified copy of the contract on procurement of goods, services or works.

In the event that the bidding company needs confirmation that it is "the performer" of the international aid project, the US Embassy would provide the relevant support letters stating that

the bidding company is providing goods, services or works under the relevant international technical assistance project and should be treated as "the performer" and, therefore, shall be exempt from paying VAT.

If the bidding company has already paid VAT, such VAT is subject to reimbursement by the tax authorities. The US Embassy has requested a clarification of the VAT reimbursement procedure from the Ministry of Finance of Ukraine. In the meantime, it is strongly recommended for the bidding company to contact its local tax authorities in order to clarify the procedure, required documents and any other information that might be requested by the tax authorities in order the VAT to be reimbursed.