

TSD-4416 5/1W UHF (410-470 MHz)  
TSD-4116 5/1W VHF (136-174 MHz)  
TSD-4424 5/1W UHF (410-470 MHz)  
TSD-4124 5/1W VHF (136-174 MHz)

**The TSD-4000 Series** of radios combine exceptional two-way radio functionality with analog and DMR Tier II TDMA digital technology.



TSD-4424/TSD-4124

TSD-4416/TSD-4116

- 512 Channels (Display: 32 Ch / 16 Zones, Non Display: 16 Ch / 32 Zones)
- 5W RF Output Power VHF & UHF
- 2600 mAh Li-Ion Battery  
Battery Life Based on a 90/5/5 Duty Cycle:  
23 Hours Digital and 17 Hours Analog
- 1 Watt Audio Output
- Direct or Repeater TDMA Tier II Mode
- Ch. Tri-Mode - DMR, Analog or Mixed
- Smooth Analog-to-Digital Transition
- Remote Stun/Revive
- Encryption AES (128, 192, 256)
- Contact Menu for Individual & Group Calling (Display)
- Voice Recording (Display)
- Lone Worker (Display)
- Call Log (Display)
- Flashlight (Display)
- Remote Monitoring
- CTCSS/DCS, VOX
- 2-Pin Audio Connector
- IP54 Certified



## SPECIFICATIONS

### GENERAL

|                        |   |
|------------------------|---|
| TSD-4116 VHF           | 136-174 MHz   |
| TSD-4416 UHF           | 410-470 MHz   |
| TSD-4124 VHF (Display) | 136-174 MHz   |
| TSD-4424 UHF (Display) | 410-470 MHz   |
| Channel Capacity       | 512; 16 Ch. w/32 Zones  |
| Digital                | DMR Tier II TDMA  |
| Channel Spacing        | 25/20/12.5 kHz (Analog)<br>12.5 kHz (Digital) 2 Time Slots of 6.25 Each |
| Operating Voltage      | 7.4VDC  |
| Battery Capacity       | 2600 mAh Li-Ion   |
| Frequency Stability    | ± 1.0 PPM (-30° to +60° C)  |
| Antenna Impedance      | 50 Ω  |
| Dimensions (H/W/D)     | 4.6 x 2.16 x 1.33" (118x55x34 mm)                                       |
| Weight (w/ Battery)    | 9.0 oz. (234 g.)  |
| Case/Frame             | Polycarbonate/Aluminum Die Cast   |
| Battery Life (Hours)   | Analog: 17 Hours, Digital: 23 Hours<br>90/5/5 duty cycle                |

### TRANSMITTER

|                             |  |
|-----------------------------|--|
| RF Output Power             | 5/1 Watts  |
| FM Modulation               | 11K0F3E (12.5 kHz), 14K0F3E (20 kHz), 16K0F3E (25 kHz)           |
| 4FSK Digital Modulation     | 12.5 kHz Data Only: 7K60FXD,<br>12.5 kHz Data & Voice: 7K60FXW   |
| Conducted/Radiated Emission | -36dBm<1GHz, -30dBm>1GHz   |
| Modulation Limiting         | ±2.5 kHz (12.5 kHz), ±4.0 kHz (20 kHz), ±5.0 kHz (25 kHz)        |
| FM Noise                    | 40dB (12.5 kHz)  |
| Adjacent Channel Power      | 60dB (12.5 kHz), 70dB (20/25 kHz)                                |
| Audio Distortion            | 3% maximum with 1kHz modulation                                  |
| Digital Vocoder Type        | AMBE3000 Vocoder Chip with AMBE+2<br>Voice Compression Algorithm |
| Digital Protocol            | ETSI-TS102 361-1-2-3   |

### RECEIVER

|                              |   |
|------------------------------|---|
| Sensitivity (Analog)         | 0.25µV @ 12dB SINAD   |
| Sensitivity (Digital)        | 0.22µ V/BER 5%  |
| Selectivity TIA-603 ETSI     | >65dB (12.5 kHz), 70dB (20/25 kHz)                            |
| Intermodulation TIA-603 ETSI | >70dB (12.5/20/25 kHz)  |
| S/N                          | 40dB (12.5 kHz), 43dB (20 kHz), 45dB (25 kHz)                 |
| Audio Output Power           | 1.0 Watt  |
| Audio Distortion             | < 3% at rated output  |
| Audio Response               | +1, ~ -3dB From 6dB per octave<br>de-emphasis characteristics |
| Spurious Emission            | 70dB  |

#### PACKAGE INCLUDES:

Radio, 2600 mAh Li-Ion battery, rapid rate desktop charger, antenna, belt clip and user manual.

Specifications are subject to change without notice.

## ACCESSORIES



### Charger Options

Dual Slot Rapid Rate Desktop Charger  
2600 mAh Li-Ion Battery  
TSA-6006TS4 - 6 Unit Gang Charger w/Dual Slot  
TSA-1020TS4 - 10 Unit Gang Charger w/Dual Slot



### Speaker Mic Options

Standard Speaker Microphone  
Heavy Duty Speaker Microphone  
Heavy Duty Speaker Microphone w/Vol Control



### Ear Piece Options

"D" Style Earhook Speaker w/Lapel Mic/PTT  
"C" Style Earhook Speaker w/Lapel Mic/PTT  
Clear Earbud Speaker w/Lapel Mic/PTT



### Other Options

Nylon Carrying Case  
Leather Carrying Case w/Belt Loop Swivel  
Programming Software and Cable (USB)

### ENVIRONMENTAL

|                         |                           |
|-------------------------|---------------------------|
| Operating Temperature   | -30° C to +60° C          |
| Storage Temperature     | -40° C to +85° C          |
| ESD                     | IEC 61000-4-2/±8KV/±15 KV |
| Dust & Water Protection | IP-54 Standard            |

| Approvals | FCC        | Industry Canada |
|-----------|------------|-----------------|
| TSD-4116  | VSOXP-100D | 184A-XP100D     |
| TSD-4416  | VSOXP-400D | 184A-XP400D     |
| TSD-4124  | VSOXP-100D | 184A-XP100D     |
| TSD-4424  | VSOXP-400D | 184A-XP400D     |



Manufactured to ISO-9002:2000 quality standard.

NOTE: Some features indicated by specifications listed are prohibited by FCC rule and are not available on models sold in the U.S. or its territories.

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