

# SCG22

## SERIES

### MOBILE RADIO



#### SIZE AND WEIGHT

##### TRANSCEIVER

Standard option:  
938g  
179mm x 50mm x 116mm

#### TETRA FREQUENCY BANDS

136 - 174 MHz - SCG2221  
380 - 470 MHz - SCG2229  
806 - 870 MHz - SCG2228\*

#### POWER SUPPLY

12V DC rated 90W  
Range 10.8 to 15.6V DC

#### RF PERFORMANCE

10 watt RF power output (Class 2)  
RF power adjustable in steps of 5dB,  
independently adjustable for TMO &  
DMO operations  
Adaptive power control supported  
Receiver static sensitivity -115dBm  
(-118dBm typical)  
Receiver dynamic sensitivity -107dBm  
(-109.5dBm typical)  
Receiver class A & B

#### AUDIO

Rated audio output - 8 W @1kHz into  
4 Ohms  
Fixed level line-out audio option  
enabling broadcast & recording support  
2x1W of additional audio drive via  
speaker mics or handsets attached to  
up to two SCC front-mounted accessory  
ports<sup>1</sup>  
Line-in audio for third-party console  
interface support  
Five independent volume controls for  
loudspeaker & audio accessories<sup>2,3</sup>  
Up to three audio accessories per  
console

#### ENVIRONMENTAL

Dust & water protection to IEC60529  
IP54  
ETS 300 019 -2-5 drop, vibration &  
humidity  
Operational temperature (min./max.)  
-30°C to +70°C<sup>4</sup>  
Operational temperature (conformance  
tested) -20°C to +55°C  
Storage temperature -40°C to +85°C<sup>4</sup>  
IP67 SCC3 console option  
IP67 HCU handlebar control unit option

#### PRODUCT OPTIONS<sup>5</sup>

GNSS support (GPS, BeiDou, GLONASS,  
Galileo) from SC2.0  
Bluetooth/Wi-Fi broadband module  
Micro SDHC card 32GB  
DMO Repeater type 1A (licence enabled)  
DMO Gateway (licence enabled)  
Air Interface encryption options  
End-to-end encryption options  
Wide range of languages supported  
including Cyrillic, Chinese, Korean &  
Arabic  
Coloured bezels on SCC3  
Local & remote smart card support  
Line in/out audio support (licence  
enabled)  
Extensive console support: SCC3, HBC3,  
AIU.  
Specialist solutions include HCU  
handlebar control unit & marine  
consoles, embedded car console.

#### FEATURE LICENSES

DMO Repeater  
DMO Gateway  
Virtual Console  
Audio Line In & Line Out  
Soft Key Function via PEI  
Callout  
Picture Message Push  
Premium Application Pack (SDA)  
Profile by Talkgroup  
Network Selection by Talkgroup  
DMO/TMO Selection by Talkgroup  
Reset to Default Status  
Extended Preferred & Fixed LA list  
Dynamic Home Screen  
Set DMO Power from MMI  
Air Interface Migration  
End-to-End Encryption  
Security Class 3G  
Lone Worker  
Packet Data  
WAP  
AT Commands  
Status Triggered Function

Sepura Public Protocol (SPP)  
Performance Monitoring  
Position Report Buffer

#### VOICE SERVICES

Full-duplex calls (to MS & PABX/PSTN)  
Half-duplex calls (individual & group)  
Priority call  
Emergency call (pre-emptive priority)  
Intelligent alarm reporting  
Talking party identity  
Calling line identity presentation  
DTMF dialling  
MSISDN dialling  
Abbreviated dialling  
Dynamic group number assignment  
Background (hidden) groups  
Ambience listening  
Privacy mode  
Whisper mode  
Group focus  
DMO individual call  
DMO group call  
DMO emergency call  
DMO intelligent emergency call  
Independent volume control  
Gateway pairing

#### DATA SERVICES

Status messaging (in TMO & DMO)  
SDS messaging (in TMO & DMO)  
SDS store & forward  
SDS via DMO gateway  
Auto-capitalisation on SDS text entry  
Concatenated SDS messaging  
Multi-slot packet data  
Circuit mode data  
TETRA paging & call out  
WAP browsing  
WAP shortcuts in SDS  
WAP support:  
• WAP 2.0  
• WAP browsing via TETRA  
• WAP shortcuts embedded in SDS for  
instant data access  
WAP onboard:  
• Micro SDHC-based WAP sites for instant  
access to intelligence, images, maps &  
text  
• Data maintained by Radio Manager 2  
Bluetooth module:  
• Bluetooth v2.1+EDR  
• Bluetooth v4.2  
Bluetooth audio:  
• Headset profile (HSP)  
• PTT extension to HSP support  
Bluetooth data services:  
• Serial Port Profile (SPP) for data  
connectivity  
• Dial-up networking (DUN)

# sepura

Going further in critical communications

- Discovery mode
- Generic attributes profile (GATT)
- Hardware-ready for:
  - Object push profile
  - Heart device (heart rate & temperature)
  - Battery service profile
  - Devices identity profile
  - Message Access profile
  - Human Interface Device (HID) profile
  - HID over GATT profile
- Bluetooth trusted device, auto re-connect
- Battery status advised immediately on start-up
- Short data applications (SDAs)
- Lone Worker feature
- Missed event application
- 30 quick status messages

## AppSPACE

Allows use of secure apps on your radio  
 Apps increase operational safety and productivity whilst reducing costs  
 Apps can be customised to suit your workflows  
 Controlled deployment by your fleet manager

## GNSS LOCATION-BASED SERVICES (OPTIONAL)<sup>6</sup>

GPS -194dBw (-164dBm) tracking sensitivity  
 Over-The-Air GPS reporting:
 

- ETSI location standard reporting (LIP)
- NMEA & Sepura compact messaging

 Max. simultaneous satellite track = 24  
 Integral antenna plus active external antenna input option for use in sky obscured vehicles  
 GPS-based compass  
 On-board mapping capable  
 Enhanced start-up & acquire through 'predictive ephemeris'
 

- GLONASS and BeiDou support<sup>6</sup>

 34-channel concurrent GPS/GLONASS receiver  
 SBAS differential GPS support  
 -191dBW (-161dBm) acquisition sensitivity  
 -191dBW (-161dBm) tracking sensitivity  
 Over-The-Air GPS reporting using the following protocols:
 

- ETSI location standard reporting (LIP)
- NMEA & Sepura compact messaging

 Active anti-jamming of Continuous

Wave (CW) jammers  
 Multipath mitigation

## SECURITY SERVICES<sup>5</sup>

Authentication: mutual and SwMI initiated  
 TMO & DMO Air Interface encryption support: TEA1, TEA2, TEA3 & TEA4  
 Trunked mode class 1, 2, 3 & 3G TETRA security  
 Direct mode DM-2C support  
 PIN & PUK entry temporary enable and disable  
 Fully integrated E2E hardware with tamper protection  
 Public & private algorithm E2E support enabled via software upgrade  
 Integral SIM connector for smart card-based E2EE options  
 Optional remote smart card reader  
 Dual E2EE algorithm support with dynamic switching of active algorithm  
 Software authenticity & protection employing digital signature

## GATEWAY SERVICES (LICENCE REQUIRED)

Group voice call between DMO & TMO  
 Individual voice calls between DMO & TMO  
 Emergency group call from DMO to TMO & TMO to DMO  
 Pre-emption (in either direction) of existing call  
 SDS messaging in either direction  
 Configurable routing of SDS messages to console or PEI intelligent handling of point to point calls & SDS messages whilst operating as a gateway

## REPEATER SERVICES (LICENCE REQUIRED)

DMO voice repeated  
 DMO tone signalling repeated  
 Group status & SDS repeated  
 Type 1A efficient operation over one RF channel  
 Presence signal support  
 Emergency call  
 Monitoring & participation in calls

## CONNECTIVITY

TETRA voice & data  
 Bluetooth support for voice & data  
 Wi-Fi support  
 PEI data via RS232, or USB data cables

direct to radio or via SCC3  
 Accessory connections via consoles and AIU  
 SASI high speed interface for feature-rich audio accessories  
 Digital I/O lines expandable via AIU or expand by second board in main unit  
 Line level audio connection  
 Remote control via status-triggered functions  
 Ethernet<sup>1</sup> (hardware ready)

## PROGRAMMING CAPABILITY

Micro SDHC contents manageable via Radio Manager 2  
 On-screen programming progress bar  
 High-speed programming via USB slave cable  
 Background 'over the air' programming via Wi-Fi Radio Manager 2 compatible

1- Factory fit option

2- Further information available on request

3- Accessories connected at the rear of a console use the same volume level

4- Operating at temperature extremes may limit some aspects of operational performance

5- Functionality is subject to an export license

6- GNSS any 3 of 4

\*Please contact your Sepura partner for availability

# sepura

Going further in critical communications

Sepura's policy is to continually improve its products and services. The features and facilities described in this document were correct at publication, but are subject to change without notice.

