

SCG22 SERIES MOBILE RADIO



SIZE AND WEIGHT

TRANSCIVER

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 and
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 ports¹
Line-in audio for third-party console
interface support
Five independent volume controls for
loudspeaker and audio accessories^{2,3}
Up to three audio accessories per console

ENVIRONMENTAL

Dust and water protection to
IEC60529 IP54
ETS 300 019 -2-5 drop, vibration
and humidity
Operational temperature (min./max.)
-30°C to +70°C⁴
Operational temperature (conformance
tested) -20°C to +55°C
Storage temperature -40°C to +85°C⁴
IP67 SCC3 console option
IP67 HCU handlebar control unit option

PRODUCT OPTIONS⁵

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
and Arabic
Coloured bezels on SCC3
Local and remote smart card support
Line in/out audio support (licence enabled)
Extensive console support: SCC3, HBC3, AIU
Specialist solutions include HCU
handlebar control unit and marine
consoles, embedded car console

FEATURE LICENSES

DMO Repeater
DMO Gateway
Virtual Console
Audio Line In and 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 and 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 and PABX/PSTN)
Half-duplex calls (individual and 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

TALKGROUP MANAGEMENT

- 9900 talkgroups including TMO
and DMO
 - 50 DGNA
 - 5000 folders
 - Five multi-level structure
 - Quick Groups/quick folder
 - Home Group
 - Group toggle
 - Talkgroup stack toggle
- Talkgroup selection:
- Single or User Defined Scan List (UDSL)
 - 20 UDSL each with 10 talkgroups

NETWORK

Multiple Home Networks
Up to 30 configurable networks
Simple and Mutual Authentication
Aliasing with Radio User Assignment (RUA)

- Radio user-initiated log-on/
log-off process
- Dispatcher-initiated log-on/
log-off process

Preferred Location Area
Fixed Location Area

PHONEBOOK

2000 Contact Names
Up to six numbers per contact (to a max.
of 6000 stored numbers)
64 Contact folders including
Favourite folder

DATA SERVICES

Status messaging (in TMO and DMO)
SDS messaging (in TMO and DMO)

sepura

Going further in critical communications

SDS store and forward
 SDS via DMO gateway
 Auto-capitalisation on SDS text entry
 Concatenated SDS messaging
 Multi-slot packet data
 Circuit mode data
 TETRA paging and 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 and 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)
- Discovery mode
- Generic attributes profile (GATT)
- Hardware-ready for:
 - Object push profile
 - Heart device (heart rate and 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)⁶

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

- ETSI location standard reporting (LIP)
- NMEA and 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 and acquire through 'predictive ephemeris'
 GLONASS and BeiDou support⁶
 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 and Sepura compact messaging

 Active anti-jamming of Continuous Wave (CW) jammers
 Multipath mitigation

SECURITY SERVICES⁵

Authentication: mutual and SwMI initiated
 TMO and DMO Air Interface encryption support: TEA1, TEA2, TEA3 and TEA4
 Trunked mode class 1, 2, 3 and 3G TETRA security
 Direct mode DM-2C support
 PIN and PUK entry temporary enable and disable
 Fully integrated E2E hardware with tamper protection
 Public and 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 and protection employing digital signature

GATEWAY SERVICES

(LICENCE REQUIRED)

Group voice call between DMO and TMO
 Individual voice calls between DMO and TMO
 Emergency group call from DMO to TMO and 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 and SDS messages whilst operating as a gateway

REPEATER SERVICES

(LICENCE REQUIRED)

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

CONNECTIVITY

TETRA voice and data
 Bluetooth support for voice and 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 ¹ (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



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