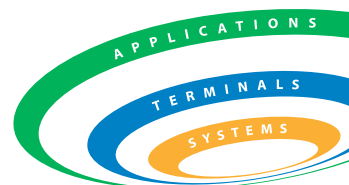# SRG**3900**

MOBILE RADIO

The SRG3900 is at the core of the world most successful gateway solution. Capable of extending network coverage, with unparalleled installation options including dual remote console support, the SRG3900 is designed to deliver the communication solutions demanded by today's mission critical communication users.

sepura

Going further in critical communications

APPLICATIONS

TERMINALS

SYSTEMS

SRG**3900** POWERFUL, FLEXIBLE, INTELLIGENT

SEPURA COLOUR CONSOLE

HANDSET BASED CONSOLE

EXTENDED COVERAGE

With a 10W RF TETRA engine – one of the most powerful and sensitive of any mobile radio – the SRG3900 extends communication, both on and off-network, into areas where it simply was not possible before.

- **Powerful**: Class 2 TETRA transmission, transmitting at 10W
- **Sensitive**: receiver sensitivity rated well beyond ETSI specifications

Smart gateway extends on-network coverage
The SRG3900 pioneered gateway mode and is the world's most widely deployed gateway solution.

An SRG3900 gateway – positioned within a vehicle with a high-gain antenna, to access the TMO network – retransmits information between on-network (TMO) and off-network users (DMO), allowing those working off-network to maintain communication with the control room as well as on-network users. Typically, this extends network coverage into blind spots such as buildings and tunnels.

- **Simplified communications**: to contact the team, the control room need only contact the SRG3900, which routes all communication to the team's hand-portable radios
- **Smart tracking, safer operation**: DMO user location, routed through the SRG, is tracked on control room AVL/APL mapping solutions, allowing for a swift response if assistance is required

Powerful repeater extends off-network coverage
Off-network users working in Direct Mode (DMO) are limited by the range of their hand-held radios. To extend operational range, a repeater can be used. The SRG3900's class-leading 10W Class 2 TETRA engine, combined with its repeater capability, extends coverage far beyond the range typically achieved by hand-portable radios alone.

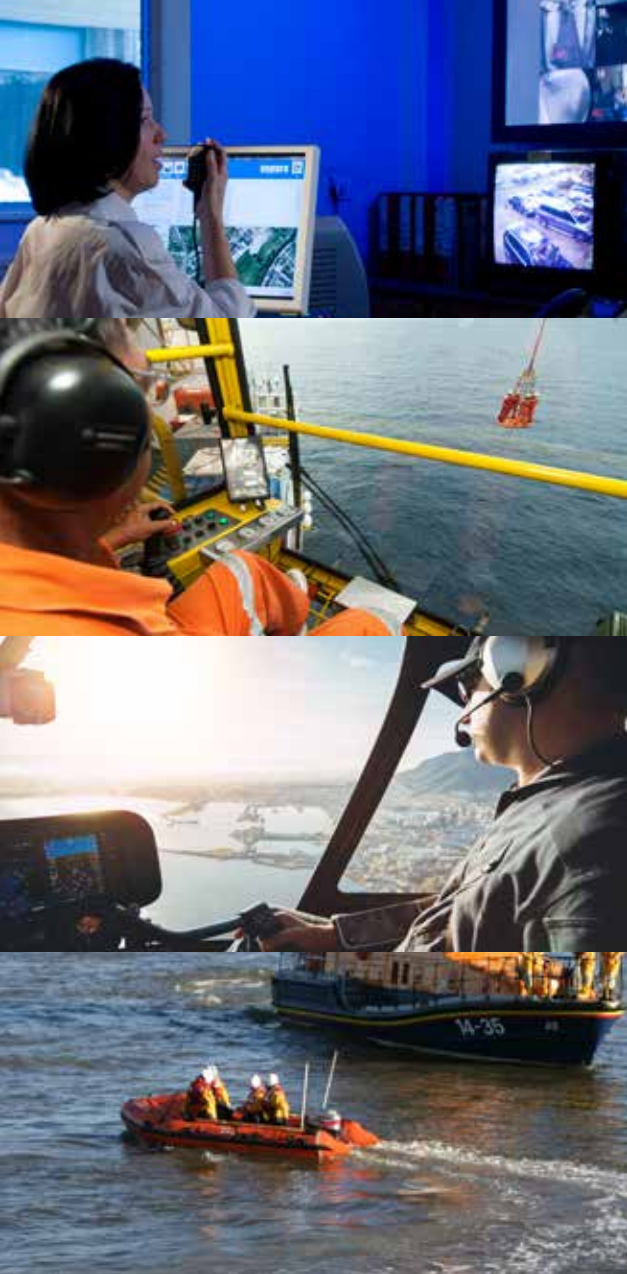## FLEXIBLE
Multiple installation options
The SRG3900 offers multiple installation options, allowing the SRG to be tailored to match the needs of the user in a variety of vehicles and scenarios.

- **Transceiver only** for remote RCU/SCADA telemetry operation
- **Single console** for car-, motorcycle-, marine-, desk-, air-[1] and rack-based solutions
- **Dual console** for larger vehicles and trains[1] requiring multiple control points, each mountable up to 30m from the transceiver

Widest range of consoles on the market
Each of our consoles is designed to address specific user, operational and environmental needs, allowing the user to precisely tailor the SRG3900 to their requirements.

- **DIN mountable console (SCC)**: high-resolution colour console, IP54 certified, AMPS or DIN-slot mounted, ideal for in-vehicle use or as desk-mounted station
- **IP67 full and mini handlebar-mountable consoles**: ideal for use on motorcycles and in the marine environment
- **Handset-based consoles (HBC)**: space-saving, high-resolution IP55 colour consoles. Ideal for use alongside legacy installations

› **Powerful**

- **Class-leading radio coverage** via the 10 Watt RF engine

- **Extended on- and off-network coverage**

- **Loud, clear audio** with 8W audio drive

› **Flexible**

- **Extensive installation options** and the widest range of consoles on the market

- **Support for up to six accessories** on a dual console installation

- **Adaptable audio** supports line-level audio for integration with third-party PA broadcast, local recording and radio equipment

- **Intuitive user interface** – with choice of presentation styles – minimises training costs

› **Intelligent**

- **Smart applications** streamline processes and boost productivity

- **Crypto-secure**: supports all Sepura's class-leading crypto solutions

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– allowing an easy migration to TETRA – or at the rear of ambulances and fire tenders
- **Virtual consoles**: allowing control from a PC or tablet running Microsoft Windows
- **Air-approved consoles**[1]
- **Train consoles**[1]

Perfectly tailored audio
The SRG supports an extensive package of audio capabilities and accessories that deliver loud and clear audio in locations as diverse as control rooms, cars and motorcycles, power boats or helicopters.

- Dual speaker support[1]
- Up to three audio accessories per console
- Wired and hot-swap accessories

USER-FRIENDLY

Intuitive interface offers three presentation styles – grid, list and compatibility mode – making the SRG3900 easy to use for both seasoned users and new users familiar with smartphones, helping to minimise training costs.

Customer-defined SmartMenus give intuitive access to hundreds of soft key features. Related functions can be grouped together, allowing features to be activated quickly with no need to remember complicated key combinations.

Macro keys allow a complex sequence of functions to be combined and activated at the touch of a single key.

Simple 'press and go' functionality enables advanced features such as repeater and gateway operation at the touch of a button.

INTELLIGENT

Sepura Picture Message securely transmits images and associated text to the radio, permitting simultaneous distribution to multiple user groups via SDS. This allows the rapid dissemination of data, such as missing person information.

Short Data Applications (SDAs), permit the deployment of applications that simply and intelligently interact with a back-end systems, allowing the automation of work flow and job allocation.

WAP and SDS URL shortcuts allow the user to browse images and text organised into a convenient and intuitive WAP site, accessed over the TETRA network.

Status-triggered functions facilitate remote control of SRG3900 over the air, from an authorised Sepura radio or backend control system.

GPS and Glonass satellite tracking – along with SBAS differential GPS support and CW anti-jamming technology – provides a greater degree of accuracy and security.

While functioning as a gateway, the SRG3900 will automatically translate received GPS location messages from DMO users of Sepura hand-held radios, allowing their continued tracking.

Network Performance monitoring: the SRG3900 can be remotely interrogated for a report on the signal level, location, neighbour cells and data latency of a TETRA network, allowing monitoring and auditing of the network service quality.

SRG**3900**

MOBILE RADIO

SIZE AND WEIGHT

TRANSCEIVER
980g,177mm x 50mm x 110mm

SEPURA COLOUR CONSOLE (SCC1, SCC2, SCC3)[7]
220g, 185mm x 58mm x 33mm

HANDSET-BASED CONSOLE (HBC2, HBC3)[7]
225g, 69mm x 162mm x 28mm

FREQUENCY BANDS

344 - 400MHz	380 - 430MHz
407 - 473MHz	806 - 870MHz

POWER SUPPLY

10.8 to 15.6V DC, typical 13.8V 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 -112dBm (-116dBm typical)
Receiver dynamic sensitivity -103dBm (-107dBm typical)
Receiver class A & B

AUDIO

Rated audio output - 8 W @1kHz into 4 Ohms
Dual speaker configuration capable of driving two 4 Ohm speakers (to be wired in parallel by installer)
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
Line-in audio for third-party console interface support
Five independent volume controls for loudspeaker & audio accessories [2, 4]
Up to three audio accessories per console

ENVIRONMENTAL

Dust & water protection to IEC529 IP54
ETS 300 019 -2-5 drop, vibration & humidity
Operational temperature (conformance tested) -20℃ to +60℃
Operational temperature (min./max.) -30℃ to +70℃[6]
Storage temperature -40℃ to +85℃[5]
IP67 radio marine enclosure option
IP67 SCC console option
IP67 HCU handlebar control unit option

PRODUCT OPTIONS

GPS/Glonass location tracking
DMO repeater type 1A (licence enabled)
DMO gateway (licence enabled)
Air Interface encryption options[3]
End-to-end encryption options[3]
Wide range of languages supported including Cyrillic, Chinese, Korean & Arabic
Coloured bezels
Local & remote smart card support
Virtual console support (licence enabled)
Line in/out audio support (licence enabled)
Extensive console support: SCC[7], HBC[7], Virtual Console, AIU. Specialist solutions include HCU handlebar control unit, air-approved & marine consoles, embedded car console.

USER INTERFACE

Normal, large & very large mode text[4]
Night mode
262k colours plus monochrome support
Dual remote console support
Call history
Phone book (2000 entries)

9900 talkgroups in TMO/DMO
5000 multi-level talkgroup folders
Intelligent search facility
Up to 50 dynamic group number assignment (DGNA) with support for lifetime timers
Efficient management of talkgroups using up to 5000 folders in a multilevel folder structure with up to 75 talkgroups per folder
Talkgroup folder management via PEI & SDS
Priority group scanning with support for background groups
Fast talkgroup access supports up to five TMO and five DMO groups
Query selected talkgroup
Macro keys: a single key can perform a sequence of complex functions
Quick groups
Transmit inhibit with on/off status messaging
Fixed & definable scan lists
Missed call indicator
Intuitively-enhanced user interface
Choice of three user interface presentation styles
Auto-capitalisation during SDS text entry
Context key support[7]
User profiles
Sepura Picture Message
SmartMenus, allowing easy access to hundreds of pre-programmed features

CONSOLE: SCC

High resolution 320 x 240 pixels QVGA TFT display
Large 57.6mm x 43.2mm active area
Three accessories supported: one front-mounted & two rear-mounted audio accessories
Front-mounted connector for data & configuration via Radio Manager
AMPS, on-dash & single DIN mount options
Fully compatible with existing accessories, cables & legacy mounting options
Common enhanced Sepura user interface
Context key support[7]
Missed event LED & soft key
Tri-colour status LED
16 configurable soft keys
Dual remote console support, each up to 30m from the transceiver
IP54 certified; IP67 variant available[9]

CONSOLE: HBC (HANDSET-BASED CONSOLE)

Large high resolution 320x240 pixels QVGA 2.2"TFT display
Hands-free mic & PTT option
Fist mic mode & handset installation modes
Magnetic cradle, AMPS mountable
Fully compatible with existing console cables
Common enhanced Sepura user interface
Context key support[7]
Missed event LED & soft key
Dedicated emergency key
Tri-colour status LED
16 configurable soft keys
Dual remote console support, up to 30m from the transceiver
IP55 certified

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
Battery status advised immediately on start-up
Short data applications (SDAs)
Lone Worker feature
Missed event application
30 quick status messages

LOCATION-BASED SERVICES (OPTIONAL)

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
Enhanced indoor start-up & acquire through 'predictive ephemeris'
Active anti-jamming of Continuous Wave (CW) jammers
Multipath mitigation
GPS-based compass

SECURITY SERVICES

Authentication: mutual and SwMI initiated
TMO & DMO Air Interface encryption support: TEA1, TEA2, TEA3 & TEA4[3]
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[3]
Integral SIM connector for smart card-based E2EE options[3]
Optional remote smart card reader
Dual E2EE algorithm support with dynamic switching of active algorithm[3]
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
PEI data via RS232, or USB data cables direct to radio or via SCC
Accessory connections via consoles and AIU
SASI high speed interface for feature-rich audio accessories (on SCC1 & SCC2)
Digital I/O lines (3 in, 1 out), expandable via AIU
Line level audio connection
Remote control via status-triggered functions

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1 – Further information available on request
2 – Accessories connected at the rear of a console use the same volume level
3 – Functionality subject to export licence
4 – Display mode/audio support changes when the legacy console, HBC1 or Virtual Console is connected

5 – As defined in ETSI EN300 019-2-1 and EN300 019-2-2
6 – Operating at temperature extremes may limit operational performance
7 – SCC1/2: STP-style UI (two context keys); SCC3/SCC3 (IP67): SC20-style UI (three context keys)

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.

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