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SRG3900

MOBILE RADIO



The SRG3900 is a fully featured TETRA mobile radio, with the adaptability and flexibility to meet the needs of demanding users within the public safety, utility, public transport and oil and gas markets. It features support for two colour console options, one with an IP67 protection rating, and also a handset-based console for even greater flexibility. As well as offering an intuitive, contemporary user interface, it is also hardware-ready to support direct mode gateway, direct mode repeater, PEI-based data and end-to-end encryption options.

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Going further in critical communications



SRG3900 CONSOLE OPTIONS



HANDSET BASED CONSOLE



SCC BLACK BEZEL



SCC BLUE BEZEL

SRG3900 TETRA Gateway / Repeater Radio –

The SRG3900 is a fully featured TETRA mobile radio that can be easily field upgraded to support DMO Gateway and DMO Repeater via a software license code.

- 10 Watts RF Power – a very powerful radio.
- Supports direct mode gateway, direct mode repeater, PEI-based data and end-to-end encryption options.
- Common UI with all Sepura radios – gives advantages of easy integration into existing fleets, whilst minimising user training.
- Flexible configuration, installation and audio options allow a solution to be tailored for all applications. The SRG3900 can be deployed as:
 - Transceiver only – for remote SCADA and telemetry operation.
 - Single Console – for vehicle, motorcycle, marine, desk and rack-based solutions.
 - Dual console – for larger vehicles which require multiple control points, each of which can be mounted up to 30m away from the transceiver.
 - Virtual Console – a software application allowing control of the radio from a Windows™ based computer.
 - Handset Based Console – offers a GSM-style handset solution, for where installation space is limited.

In addition, the SRG3900 also offers an array of options:

- Full and semi-covert installation.
- Applications Interface Unit – allows 3rd party control of the transceiver and user interface.
- Suitcase-transportable variants.
- Remote SIM reader allows smart card security solutions to be located near the user and up to 7m from the SRG3900.
- Optional GPS module, integral within the transceiver, with selectable support for NMEA, Sepura Compact or ETSI LIP messaging.
- Comprehensive Over-the-Air control, using Sepura status-triggered functions.
- Multi-lingual user interface: eastern and western European languages plus Cyrillic, Chinese, Korean and Arabic.
- Fully-configurable emergency call behaviour, including live microphone, status messaging and location reporting options.
- The SRG3900 has been built to address security issues by including tamper protected security processors and a smart card connector in all models. E2E Encryption can be implemented in the field by a software upgrade, thus minimising any operational disruption.
- A choice of user interfaces – Grid, List or Compatibility modes – to suit user preference.

> Adaptable

- Class-leading 10 Watts RF Power.
- Direct Mode Gateway option improves operational efficiency.
- Direct Mode Repeater provides communications outside network coverage.

> Flexible

- Feature licence codes to enable functionality when required in the field.
- Backwards compatible with existing Sepura mobile installations.
- Numerous installation solutions include Transceiver only, Dual Console, Virtual Console, Handset-Based Console and a Remote SIM Reader option.
- Audio presentation options support PA broadcast, local recording and 3rd party radio equipment.

> Intelligent

- Night mode for low-glare night use.
- Over-the-Air remote control via Sepura status-triggered functions.
- Variety of encryption options.
- Performance monitoring feature facilitates network analysis.



VIRTUAL CONSOLE SCREEN

Intelligent operation:

- Low glare night mode to enable safe night use.
- Dual data ports, as standard, enable support for two data applications.
- Multiple I/O lines available – activated locally or via status-triggered operation.
- Configurable audio presentation options allow:
 - Fixed level line-out audio for use with PA broadcast or local voice recorder².
 - Line-in Audio to support a 3rd party console interface².
 - Independent volume control of the loudspeaker and audio accessories².
- Sepura Advanced Serial Interface (SASI) on the Sepura Colour Console (SCC) provides future scope for advanced accessories with increased functionality.
- Macro keys allow a sequence of functions to be combined and activated by a single soft key action.
- Short Data Applications that allow system integrators to create and run complex, form-driven programs that can interact with back office systems via SDS messaging.
- Performance Monitoring, whereby the radio can be remotely interrogated for a report on the signal level, location, neighbour cells and data latency of a TETRA network, allowing an organisation to monitor the Quality of Service (QoS) provided.
- When operating in Gateway mode, the SRG3900 will translate any received GPS message so that the DMO originator's identity is maintained.

Adaptable design:

- Fully compatible with most existing Sepura accessories and cabling, allowing easy substitution and extending the life of existing installations.
- The SRG3900 will automatically vary the display mode to match the connected console and accessories⁴. The following modes are supported:
 - Hi-Colour
 - Colour
 - Monochrome

Direct Mode Gateway – Extending Coverage

Improved Coverage – This feature links radios operating in direct mode with the trunked radio network, thereby extending primary radio coverage into areas of unreliable coverage or network dead spots, such as those found inside buildings, deep inside tunnels or in remote rural locations.

Intelligent Communication – With Sepura Intelligent Call Conversion, the calling party only needs to call the TETRA identity of the SRG3900. Once switched to DMO gateway mode, the SRG3900 automatically converts and relays the incoming call or message to the direct mode users.

Operational Effectiveness – Status messaging and SDS-based messaging, including text and GPS location reports, are seamlessly transferred between the network and Direct Mode users. In operational terms, a control room dispatcher is able to track the positions of the individual users in a greater number of scenarios.

Direct Mode Repeater – Extending Operational Reach

In situations where there is no network coverage available, the 10 watt DMO Repeater allows multiple Direct Mode users to exchange voice and data messages over a wider area with increased reliability. The DMO Repeater is ETSI-Compliant Type 1A, which uses a single frequency, thus saving scarce spectrum.

Note: Direct Mode Gateway and Repeater services are enabled by a feature license code.

SRG3900

MOBILE RADIO

SIZE AND WEIGHT

TRANSCIEVER

980g – 180mm W x 54mm L x 110mm D

SEPARA COLOUR CONSOLE (SCC)

220g – 185mm W x 58mm L x 33mm D

HANDSET BASED CONSOLE

225g – 69mm W x 162mm L x 28mm D

FREQUENCY BANDS

406 - 430MHz
450 - 470MHz
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 and DMO operations Adaptive Power Control supported
Receiver Static Sensitivity -112dBm (-115dBm typical)
Receiver Dynamic Sensitivity -103dBm (-106dBm typical)
Receiver Class A & B

ENVIRONMENTAL

Dust & Water protection to IEC529 IP54
ETS 300 019 -2-5 drop, vibration and humidity
Storage Temp -40°C to +85°C⁵
Operating Temp -30°C to +70°C⁶
IP67 Console option available¹

GPS RECEIVER - OPTIONAL

12 channel GPS receiver
-155dBm / - 185dBW acquisition sensitivity
-159dBm / - 189dBW tracking sensitivity
ETSI LIP, Sepura Compact & NMEA protocol support
Position Assist
Over the Air GPS management Location reporting to two TETRA identities
Position & Direction Display¹

SECURITY

Authentication – Mutual and SwMI initiated
TMO and DMO Air Interface Encryption support - TEA1, TEA2, TEA3 and TEA4³
Trunked Mode Security Class 1, 2 and 3
Direct Mode DM-2C support
PIN and PUK Entry Temporary Enable and Disable
Fully Integrated E2E hardware with tamper protection
Public & Private Algorithm E2E support enabled via software upgrade³
Integral SIM connector for Smart Card based
E2EE options³
Dual E2EE Algorithm support with dynamic switching of active algorithm³
Software Authenticity and protection employing Digital Signature

CONSOLE

High resolution 320 x 240 pixels QVGA TFT display
Large 57.6mm x 43.2mm Active Area
262k colours
Three text sizes⁴
Night Mode⁴
Front mounted audio accessories
Front mounted connector for data and configuration via Radio Manager
AMPS and single DIN compatible
Fully compatible with existing accessories, cables and legacy mounting options
Common Sepura UI Two context sensitive keys⁴
Missed event LED
Tri colour status LED
18 configurable soft keys
Dual remote console support, each up to 30 meters from the Transceiver
Virtual and Handset Based Console (HBC) options available¹

LICENCES

DMO Gateway
DMO Repeater
Virtual Console
Line in/out audio available¹

GATEWAY SERVICES

(OPTION ENABLED BY A FEATURE LICENCE CODE)

Group voice call between DMO and TMO
Individual voice calls between DMO and TMO
Emergency group call from DMO to TMO
Emergency group call from TMO to DMO
Pre-emption (in either direction) of existing call
SDS messaging in either direction¹
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

(OPTION ENABLED BY A FEATURE LICENCE CODE)

DMO Gateway
DMO Repeater
Virtual Console
Line in/out audio available¹

AUDIO

Rated Audio Output - 8W @ 1kHz into 4 Ohms
Dual speaker configuration capable of driving 2 x 4 Ohms speakers
Fixed Level Line-out audio option enabling Broadcast and Recording support
Line-in Audio for 3rd party console interface support
Five independent volume controls for Loudspeaker and Audio Accessories^{2,4}
Three audio accessories per console

VOICE SERVICES

Full Duplex Calls (to MS and PABX/PSTN)
Half Duplex Calls (Individual and Group)
Late Entry
Priority Call
Emergency Call (Pre-emptive Priority Call)
Emergency Call preference
Talking Party Identity
Calling Line Identity Presentation
DTMF Dialing
Ambience Listening
Privacy Mode
Whisper Mode
Group Focus

DATA SERVICES

Status Messaging
Short Data Service Messaging
SDS via DMO Gateway
Circuit Switched Data Calls
Multi Slot Packet Data
Text Message Data Store
Short Data Applications (SDA)
Wireless Application Protocol (WAP)
SDS Store & Forward
Concatenated SDS (up to 1000 characters)

OTHER FUNCTIONS AND FEATURES

Support for up to 9900 pre-programmed Talkgroups and in any combination of TMO or DMO Talkgroups
Up to 50 Dynamic Group Number Assignment (DGNA) and supporting 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 and SDS
Fixed and User Defined Talkgroup Scan Lists
Priority Group Scanning with support for Background groups
Fast Talkgroup Access supports up to 5 TMO and 5 DMO groups
Query selected Talkgroup
Telephone and Radio user Address Book (2000 entries) across 64 Folders
Call History with Missed Call alerts
Transmit Inhibit (TXI) with On/Off Status messaging
DMO Group and Emergency Calls
DMO Gateway Interoperability supported
ETSI-compliant PEI port. AT-command interface for external applications
User Profiles
Remote control via Status triggered functions
Status triggered functions (up to 64 configurable actions driven by remote user)
Macro keys – operation of a single key will perform a sequence of complex functions
Digital I/O lines (3 in, 1 out)

1 – Further information available on request.

2 – Accessories connected at the rear of a console use the same volume level.

3 – Functionality is subject to an export license.

4 – Display mode and audio support will change when the legacy console, HBC or Virtual Console are connected.

5 – As defined in ETSI EN300 019-2-1 and EN300 019-2-2.

6 – Operating at temperature extremes may limit some aspects of operational performance.

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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