SC20 SERIES
HAND-PORTABLES

DIMENSIONS

Height: 139mm (excluding antenna and rotary)
Width: 61mm (54mm)
Depth – standard battery: 32.5mm
Depth – high-capacity battery: 38mm

WEIGHT

With standard battery: 241g (excluding antenna)
With high-capacity battery: 266g (excluding antenna)

TETRA FREQUENCY BANDS

380-430MHz – SC2020
403-470MHz – SC2024
806-870MHz – SC2028

POWER SUPPLY

7.4V (nominal) lithium polymer battery packs
Intelligent reporting batteries
1160mAh standard battery[1]
1880mAh high-capacity battery[1]

TETRA RF PERFORMANCE

RF power:
MS power Class 3 (2.7W)[1], Class 3L (1.8W), & Class 4 (1W)[1]
MSPD power Class 3 (2.7W)[1], Class 3L (1.8W) & Class 4 (1W)[1]
DMO repeater power Class 3 (2.7W)[1], Class 3L (1.8W), & Class 4 (1W)[1]
RF power customisable for:
• TMO/DMO/DM-repeater
• Adaptive power control
• Receiver class A & B
• Receiver static sensitivity -116dBm (-118dBm typical) (SC2028: -114dBm, -117dBm typical)
• Receiver dynamic sensitivity -107dBm (-109.5dBm typical) (SC2028: -104dBm, -107dBm typical)

AUDIO PERFORMANCE

Speaker audio power: 2W with EN-FI filtering
Rugged accessory connector (sRAC)[2]
Water porting technology continually clears water from mic/earpiece & speaker to allow use in constant rain

ENVIRONMENTAL PERFORMANCE

Operational temperature (conformance tested) -20℃ to +60℃
Operational temperature (min./max.) -30℃ to +65℃[3]
Storage temperature -40℃ to +85℃[4]

sepura

Going further in critical communications

Dust & water protection to IP65, IP66, IP67 & IP68
• IPx5 (weatherproof)
• IP6x (dustproof)
• IPx6 (waterproof – heavy rain/spraying/water-jet)
• IPx7 (waterproof – submersible, 1m depth for 30mins)
• IPx8 (waterproof – submersible, 2m depth for 1hour)
• 'Fit for purpose' tested for complete 8hr shifts "in the pouring rain"
Shock, drop & vibration: ETSI EN 300 019 5M3
Salt fog: MIL-STD-810G Method 509; duration 24hr salt[5]
Salt water: submersion, rated at 2m depth for 1hour[5]

RFID PERFORMANCE

Internal tag: HITAG S2048, short range, 125 KHz, ISO11784 & ISO11785 compliant
Range: 1 cm from back of individual radio box pack
User accessible storage: 2048 bits, passive technology pre-programmed (user editable):
• 32-bit unique identifier
• Serial number
• Hardware code
• TEI

PRODUCT OPTIONS

GPS with future Glonass & BeiDou2 support
Bluetooth/Wi-Fi broadband module
Man-Down alarm[7]
DM-Repeater Type-1A
Air Interface encryption
End-to-end encryption
Enhanced security module (ESM)
End-to-end encryption smart card support
Wide range of languages supported
Micro SDHC card up to 32GB
User-changeable coloured bar for easy identification

DISPLAY & USER INTERFACE

Screen:
• 37 x 49mm active LCD area
• High-resolution display QVGA (320 x 240 pixels)
• Sunlight-visible Transflective TFT display, 262K colours
Menu:
• Intuitively-enhanced user interface
• 'Favourite feature' shortcut & event notification bar, with missed call indicator LED
• Choice of three user interface presentation styles (compatibility, grid & list modes)
• Customisable top-level screen content
• Customisable SmartMenus supporting 100s of intuitively arranged soft keys
• Quick change menu for rapid & intuitive selection of talkgroups, status & user profile
• Custom zoom/normal, large & very large mode text
• 'Twist & zoom' portrait image viewer
• Night mode to reduce low-light glare in vehicles
• Invert display for easy viewing whilst lapel- or belt-mounted
• Customisable privacy screen image
• Customisable user profiles e.g. 'covert', 'quiet', 'in a meeting' & 'loud'
Controls:
• Dual-language alpha-numeric keypad option
• Four-way navigation keys
• Three context keys for intuitive menu interaction
• Three configurable feature-activation side keys: blind-find & glove-friendly
• 12 configurable keypad feature activation keys
• Manual & automatic keypad lock
• Hard-capped keys
• Large, easy reach, blind find, glove-friendly PTT
• Blind-find emergency key
• Single rotary
Haptics:
• Vibrate on call/message
• Haptic technology for enhanced key tactility when used with gloves

---

TALKGROUP MANAGEMENT

• 9900 talkgroups including TMO & 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
Folder selection:
• 4987 folder scan list of 22 scanned talkgroups each
• Each folder scan list with 75 talkgroups
• 10 editable folder scan lists
• Background talkgroups in folder scan list

NETWORK

Multiple home networks
Up to 30 configurable networks
Simple & 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

VOICE SERVICES

Individual/group/broadcast call
Half-duplex (individual & group)
Route pre-emptive half-duplex call to internal loudspeaker
Half-duplex audio toggle
Full-duplex calls (to MS & PABX/PSTN)
Full-duplex auto-answer
Independent volume control
Speed, one-touch & direct dialling
Call priority
Calling/talking party identification
DTMF/MSISDN/abbreviated dialling
Ambience listening
Privacy & whisper modes
Group focus
Transmit inhibit with on/off status messaging
Call history
Multiple alert tones

DMO SERVICES

DMO individual & group call
DMO emergency & intelligent emergency call
DM-repeater inter-working call
DM-gateway inter-working call
Channel-only talkgroup
DM-Gateway talkgroup pair

DATA SERVICES & APPLICATIONS

Dual-data-bearer support:
• TETRA & broadband Wi-Fi[6]
Single- & multi-slot packet data
WAP support:
• WAP 2.0
• WAP browsing via TETRA
• WAP high-speed browsing via Wi-Fi[6]
• WAP shortcuts embedded in S for instant data access
• WAP access OTA via TETRA or second data bearer
WAP onboard:
• Micro SDHC-based WAP sites for instant access to intelligence, images, maps & text
• Data maintained by Radio Manager2
Bluetooth module:

- Bluetooth v2.1+EDR
- Bluetooth v4.x

Bluetooth audio:
- Headset profile (HSP)
- PTT extension to HSP support

Bluetooth data services:
- Serial Port Profile (SPP) for data connectivity with body-worn printers/scanners
- Dial-up networking (DUN)
- Discovery mode
- Generic attributes profile (GATT)
- Hardware-ready for:
  – Object push profile
  – Heart device (heart rate & temperature)
  – Battery service profile
  – Devices identity profile
  – MAP
  – HID
  – HoG

Bluetooth trusted device, auto re-connect
PEI access
USB 2.0 support:
- Host support for interaction with body-worn accessories such as printers & scanners
- Slave support allows use of SC20 as a modem
- PEI access
- High-speed programming

Enhanced Short Data Applications (eSDAs):
- Supports all existing SDA capabilities from STP[7]
- Supports data accessories such as body-worn printers & scanners via Bluetooth or USB
- Supports online database access & interaction with returned data

Messaging:
- SDS messaging (in TMO & DMO)
- Picture Messaging via SDS or packet data
- Concatenated SDS messaging
- Auto-capitalisation in SDS text entry
- Status messaging (in TMO & DMO)
- 350 predefined status messages (up to 140 Unicode   characters)
- Up to 30 quick status messages

Callout & paging:
- TETRA simple callout/full callout/paging alert

AT commands:
- ETSI & enhanced commands
- via PEI serial port profile over Bluetooth & USB
- Voice call control supported

Over the air control & programming:
- Status-triggered functions
- Group management via Sepura Public Profile (SPP)
- Reprogramming over Wi-Fi with Radio Manager2

Battery status at start-up
Missed event application
Major radio status change notification application
User-expandable up to 32GB via Micro SDHC card

SAFETY FEATURES & APPLICATIONS

Emergency call:
- Pre-emptive priority
- Hands-free live mic operation
- Emergency voice call & alerting to current or defined talkgroup
- Emergency status/SDS/location report to defined control user/group
- Full-duplex or half-duplex emergency calls
- Manual activation via red emergency key
- Automatic activation via Man-Down[**] option
- Automatic TMO/DMO selection
- Emergency through DM-repeater/DM-gateway
- Loud, distinct audio & visual indication
- Silent alarm call

Man-Down[**]:
- Immobility detection
- Unusual inclination detection
- Customisable alerting (see Emergency Call Capability)

Lone-Worker feature
Blind-find emergency button
Wake-on-Alarm allows user to switch on radio & signal an emergency in one action

LOCATION-BASED SERVICES

GPS integrated option -194dBw (-164dBm) tracking sensitivity
Over-The-Air GPS reporting:
- ETSI location standard reporting (LIP)
- NMEA & Sepura compact messaging

Max. simultaneous satellite track = 24
GPS-based compass
On-board mapping capable[6]
Enhanced start-up & acquire through 'predictive ephemeris'
RFID tag equipped
- Glonass and BeiDou2 support[6]

SECURITY SERVICES

TETRA:
- Authentication
- Class 1, 2,3 & 3G TETRA security
- Air Interface encryption TEA1/2/3/4[8]
- Smart card E2E encryption[8]
- Embedded E2E encryption[8]
- Enhanced security module (ESM)
- In-country E2E Encryption algorithm[8]
- Multiple E2E algorithm[8]
- Temporary disable (stun)
- Permanent disable (kill)
- 600KEK crypto groups

Wi-Fi:
- WPA2-PSK, WPA2-Enterprise authentication (radius) with AES encryption

DM-REPEATER SERVICES (LICENCE REQUIRED)

DMO voice repeated
Status & SDS 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
USB support for data
PEI data via USB or Bluetooth
Wi-Fi support
Accessory connections via rugged accessory connector (sRAC)[2]
Audio & data connection via bottom connector (sDAC)
MicroSDHC card slot (32GB max.)
Passive 125KHz RFID tag
sRAC – rugged side connector[2]:
- Rapid tool-less fitting & removal
- Unique anti-overtighten design
- Salt-resistant seal

sDAC – bottom connector:
- Rapid tool-less quarter-turn twist-lock fitting & removal
- Connector Protector salt protection

PROGRAMMING CAPABILITY

High-speed programming via USB slave cable
Six-way USB gang programming supported in 6+6 programmer/charger
Background 'over the air' programming via Wi-Fi
Radio Manager2 compatible
Micro SDHC contents manageable via Radio Manager2 On-screen programming progress bar

COMPATIBLE STP ACCESSORIES

Chargers:
- 1+1 desktop charger[9]
- 12- & 24-way battery-only chargers
- Two-way, battery-only, charger for vehicles

Antennas

Batteries:
- Standard capacity battery[1]
- High capacity battery[1]

Carrying accessories
- Stud & belt attachments[10]

STP RAC-mount accessory compatibility
- All overt range
- All covert range
- All semi-covert range
- All public order range

SC20 ACCESSORIES

Chargers:
- Personal rapid charger
- Vehicle rapid charger
- 6+6 desktop charger/programmer (USB connection)

Batteries:
- Standard capacity battery[1]
- High capacity battery[1]

Carrying accessories:
- Stud & belt attachments[10]
- Carry cases & holsters

Car kits:
- Basic car cradle

Data leads:
- USB host adapter for wired body worn accessories
- USB slave data lead for programming & control of SC20 from a third-party device

1 – New standard (300-01852) & high-capacity (300-01853) batteries, along with the high power Class 3 feature licence, are required to operate the SC20 in high power RF Class 3 mode. Use of older STP batteries will limit SC20 operation to RF Class 3L
2 – Compatible with Sepura STP9000 & STP8000 RAC-based accessories
3 – Operating at temperature extremes may limit some aspects of operational performance
4 – As defined in ETSI EN300 019-2-1 & EN300 019-2-2
5 – Connector Protector must be enabled in customisation. An antenna, a battery & a Sepura accessory or sRAC cover must be fitted. Rinse in fresh water to prevent salt crystal build-up
6 – Future: please contact Sepura Product Management to discuss your requirements
7 – SDAs must be reformatted for use with an SC20
8 – Availability is subject to export licence
9 – STP 1+1 chargers shipped since mid-2013 are compatible
10– Existing STP belt clips may adversely affect broadband performance. SC20 belt clips are recommended

Going further in critical communications