Antennas

SC20 and SC23 Series Hand-portable radio

SC20 and SC23 Antenna Options

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1. Document History

Issue	Description
1	Initial release
2	Remove 9525-800-41021 from 800 MHz options

2. Introduction

This document documents the antenna options available for use with the SC20 Series mobile radio. All antennas are also applicable to equivalent SC23 models with the exception of Bluetooth and WiFi antennas.

The radios are not provided with any TETRA antennas. GPS, Bluetooth and WiFi antennas are fitted internally (where applicable).

Sepura offer a range of TETRA antennas suitable for use with SC20 and SC23 radios that can be provided by Sepura, this document details the available TETRA antennas and the internally fitted GPS, Bluetooth and WiFi antennas.

2.1. Scope

This document covers the following SC20 radio(s):

SC2020

SC2021

SC2024

SC2028

And the following SC23 radio(s):

SC2320

SC2321

SC2324

SC2328

3. Antenna Options

3.1. TETRA Antennas for SC2020 and SC2320

The following TETRA antennas are available for use with the SC2020 and SC2320, connected directly to the radio.

Model	Frequency Range	Description	Gain (dBi)
300-00418	380-430 MHz	whip antenna	1.67
300-01031	410-430 MHz	whip antenna	0.62
300-00417	380-430 MHz	extended helical antenna	1.27
300-00661	380-400 MHz	extended helical antenna	1.28
300-00662	410-430 MHz	extended helical antenna	1.42

The following TETRA antennas are available for use with the SC2020 and SC2320 connected via a car kit.

Model	Frequency Range	Description	Gain (dBi)
310-00006	380-430 MHz	1/4 wave M8 Standard Mount, 5m cable	2
310-00007	380-410 MHz	ANT VEH 5/8 UHF	7
320-00008	400-430 MHz	5/8 wave M8 Standard Mount	7
360-00001	380-430 MHz	Flexi-whip/GPS vehicle antenna, 5m cable	2
390-00005	380-430 MHz	Flexi-whip vehicle antenna, 5m lead	2
390-00006	380-430 MHz	Flexi-whip mag-mount vehicle antenna, 5m cable	2

3.2. TETRA Antennas for SC2021 and SC2321

The following TETRA antennas are available for use with the SC2021 and SC2321, connected directly to the radio.

Model	Frequency Range	Description	Gain (dBi)
300-02070	136-150MHz	SC20 VHF Helical Antenna	-6.90
300-02071	149-165 MHz	SC20 VHF Helical Antenna	-6.24
300-02072	162-174 MHz	SC20 VHF Helical Antenna	-6.93
300-02073	179-191 MHz	SC20 VHF Helical Antenna	-14.60

The following TETRA antennas are available for use with the SC2021 and SC2321 connected via a car kit.

Model	Frequency Range	Description	Gain (dBi)
TBD	141-151 MHz	⅝ Wave VHF Antenna (Panorama AVGHB-H4)	5
TBD	149-159 MHz	⅝ Wave VHF Antenna (Panorama AVGHB-H5)	5
TBD	156-162 MHz	⅝ Wave VHF Antenna (Panorama AVGHB-H6)	5
TBD	162-174 MHz	⅝ Wave VHF Antenna (Panorama AVGHB-H7)	5
TBD	136-141 MHz	TBD	TBD

3.3. TETRA Antennas for SC2024 and SC2324

The following TETRA antennas are available for use with the SC2024 and SC2324, connected directly to the radio.

Model	Frequency Range	Description	Gain (dBi)
300-00499	406-473 MHz	Extended Helical Antenna	0.80
300-01031	410-430 MHz	1/4 Wave Antenna	0.95
300-00662	410-430 MHz	Extended Helical Antenna	1.12
300-01032	450-470 MHz	1/4 Wave Antenna	0.32
300-00663	450-470 MHz	Extended Helical Antenna	1.22

The following TETRA antennas are available for use with the SC2024 and SC2324 connected via a car kit.

Model	Frequency Range	Description	Gain (dBi)
310-00006	380-430 MHz	1/4 wave M8 Standard Mount, 5m cable	2
320-00008	400-430 MHz	5/8 wave M8 Standard Mount	7
330-00009	430-472 MHz	1/4 wave M8 Standard Mount, 5m cable	2
330-00010	430-472 MHz	5/8 wave M8 Standard Mount	7
360-00001	380-430 MHz	Flexi-whip/GPS vehicle antenna, 5m cable	2
390-00005	380-430 MHz	Flexi-whip vehicle antenna, 5m lead	2
390-00006	380-430 MHz	Flexi-whip mag-mount vehicle antenna, 5m cable	2

3.4. TETRA Antennas for SC2028 and SC2328

The following TETRA antennas are available for use with the SC2028 and SC2328, connected directly to the radio.

Model	Frequency Range	Description	Gain (dBi)
300-00498	769-870 MHz	1/4 Wave Antenna	1.05
300-00498	806-824 MHz	1/4 Wave Antenna	1.05
300-00498	851-870 MHz	1/4 Wave Antenna	0.56

The following TETRA antennas are available for use with the SC2028 and SC2328 connected via a car kit.

Model	Frequency Range	Description	Gain (dBi)
350-00005	806-870 MHz	Modular whip UHF Hinged	5

3.5. GPS Antennas

The following antennas are built into all SC20 and SC23 Series radios.

Model	Frequency Range	Description	Gain (dBi)
SPR-06424	1559 MHz - 1610 MHz	GPS Antenna	5.3

Note: EU UK regulations require testing against EN 303 413. This has 2 sets of tests:

- Blocking - a conducted test for which no antenna gain consideration is needed.
- Radiated emissions - It does what it does, and the gain of the antenna is included within the measurements and is not needed separately.

FCC ISED regulations require testing on transmitters only. Therefore, GNSS data is not required. Receiver testing will be introduced in the next couple of years, but we do not yet know what form that will take.

3.6. Bluetooth Antennas

The following antennas are built into all SC20 Series radios.

Model	Frequency Range	Description	Gain (dBi)
SPR-07029	2400 MHz - 2500 MHz	Inverted F-type (PIFA) antenna	2.5

3.7. Wi-Fi Antennas

The following antennas are built into all SC20 Series radios.

Model	Frequency Range	Description	Gain (dBi)
SPR-07029	2400 MHz - 2500 MHz	Inverted F-type (PIFA) antenna	2.5

3.8. References

Further information and documentation on these antennas can be found in '\\SERV12\tetradev\product_conformance\Product Certification\06 Accessories\Antennas'.

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