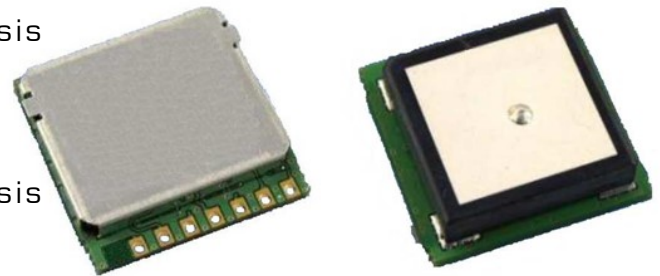


GPS Smart Receiver with Antenna

Low-Power High-Performance and Low-Cost
65 Channel GPS Engine Board (Flash based)

1.2 Features

- 68 Channel GPS L1 C/A Code
- Perform 8 million time-frequency hypothesis testing per second
- 65 Channel GPS L1 C/A Code
- Perform 8 million time-frequency hypothesis testing per second
- Open sky hot start 1 sec, Open sky cold start 29 sec
- Signal detection better than -165dBm
- Multipath detection and suppression
- Accuracy 2.5m CEP
- Maximum update rate 20Hz
- Tracking current ~33Ma



1.3 Applications

- Automotive and Marine Navigation
- Automotive Navigator Tracking
- Emergency Locator
- Personal Positioning

1.0 Functional Description

1.1 Introduction

The GPS-622F is a highly integrated smart GPS module with a ceramic GPS patch antenna. The antenna is connected to the module via an LNA. The module is with 54 channel acquisition engine and 14 channel track engine, which is capable of receiving signals from up to 68 GPS satellites and transferring them into the precise position and timing information that can be read over UART port. Small size and high-end GPS functionality at low power consumption, the LVTTTL-level signal interface is provided on the interface connector, supply voltage of 3V~5.5V is supported.

The compact 22mm x 22mm form factor allows it to be used in many applications.

The smart GPS antenna module is available as an off-the-shelf component, 100% tested. The smart GPS antenna module can be offered for OEM applications with the versatile adaptation in form and connection. Additionally, the antenna can be tuned to the final systems' circumstances.

Version History

Rev.	Date	Description
1.0	12-07-09	Initial Draft – preliminary information
2.0	01-03-10	Adding the Internal Antenna Specification

Flash Version Support the following Features

- Binary code
- Selectable NMEA Output Data Sentences
- Selectable Serial Port Settings.
(4800/9600/38400/115200bps. Default : 9600)
- Selectable update rate (1 / 2 / 4 / 5 / 8 / 10 Hz update rate
(1Hz default))
- Firmware Upgradeable

2. Characteristics

2.1 General Specification

Parameter	Specification
Receiver Type	68 Channels
Time-To-First-Fix	Cold Start (Autonomous) 29s (Average, under open sky) Warm Start (Autonomous) 29s (Average, under open sky) Hot Start (Autonomous) 29s (Average, under open sky)
Sensitivity	Tracking & Navigation -165 dBm Reacquisition -158 dBm
Accuracy	Autonomous 2.5 m CEP Velocity 0.1 m/sec (without aid) Time 300 ns
Update Rate	Supports 1 / 2 / 4 / 5 / 8 / 10 Hz update Rate (1Hz de-
Velocity Accuracy	0.1m/s
Heading Accuracy	0.5 degrees
Dynamics	4 G (39.2 m/sec)
Operational Limits	Velocity 515 m/s (1000 knots) Altitude <18000 meters (COCOM limit, either may be exceeded but not both)
Serial Interface	LVTTTL level
Datum User definable	Default WGS-84 User definable
Input Voltage	3.3V -5.5V DC +/-10%
Input Current	~23 mA tracking
Dimension	22L x 22W x H (mm)
Weight	25g
Chipset	Venus 6

Table 1: GPS-622F general specification

*: GPGGA, GPGSA, GPGSV, GPRMC, GPVTG are default output message

2.2 Serial Port Settings

The default configuration within the standard GPS firmware is the Standard configuration of serial port:

Supporting 9600 baud rate, 8 data bits, no parity, 1 stop bit, no flow control

2.3 GPS Status Indicator

Non-Fixed mode : LED is always on

Fixed mode : LED toggle every second

1. Communication Specifications

Item	Description
Interface	Full duplex serial interface
Bit rate	Default 9600
Start bit	1 bit
Stop bit	1 bit
Data bit	8 bit
Parity	None
Transmission data	SACII NMEA0183 Ver:3.01
Update rate	1 Hz
Output sentence	GGA/GSA/GSV/RMC/VTG (typ)

Table 2: Communication specifications

2.6 Multi-path Mitigation

Multipath refers to the existence of signals reflected from objects in the vicinity of a receiver's antenna that corrupt the direct line-of-sight signals from the GPS satellites, thus degrading the accuracy of both code-based and carrier phase-based measurements. Particularly difficult is close-in multipath in which the reflected secondary signals arrive only slightly later (within about 100 nanoseconds) than does the direct-path signal, having been reflected from objects only a short distance from the receiver antenna.

GPS-622F deploys the advanced multi-path detection and suppression algorithm to reduce multipath errors, the GPS signals themselves can be designed to provide inherent resistance to multipath errors.

2.7 Operating Conditions

Description	Min	Typical	Max
Vcc	2.7v	3.3v	5.5v
Enhanced-mode Acquisition Current		70 mA	
Low power Acquisition Current		50mA	
Tracking Current		23mA	

Table 3: Operating Conditions

2.8 1PPS Output

The GPS receiver is in navigation mode upon power-up, with 1PPS output free running. After 3 minutes of valid position fix and remaining under static-mode, the receiver changes to timing-mode, with 1PPS output signal synchronised to the UTC second. The receiver will change to navigation-mode, with 1PPS output free running, if the receiver is in motion. The 1PPS output will become synchronised to the UTC second again after the receiver had remained in static mode for 3 minutes.

2.9 Antenna

A numbers of important properties of GNSS antennas affect functionality and performance, including;

- Frequency coverage
- Gain pattern
- Circular polarization
- Multipath suppression
- Phase Centre
- Impact on receiver sensitivity
- Interference handling

The GPS-622F module is designed to work both active and passive antenna. Active antenna with gain in range of 10 ~ 30dB and noise figure less than 2dB can be used.

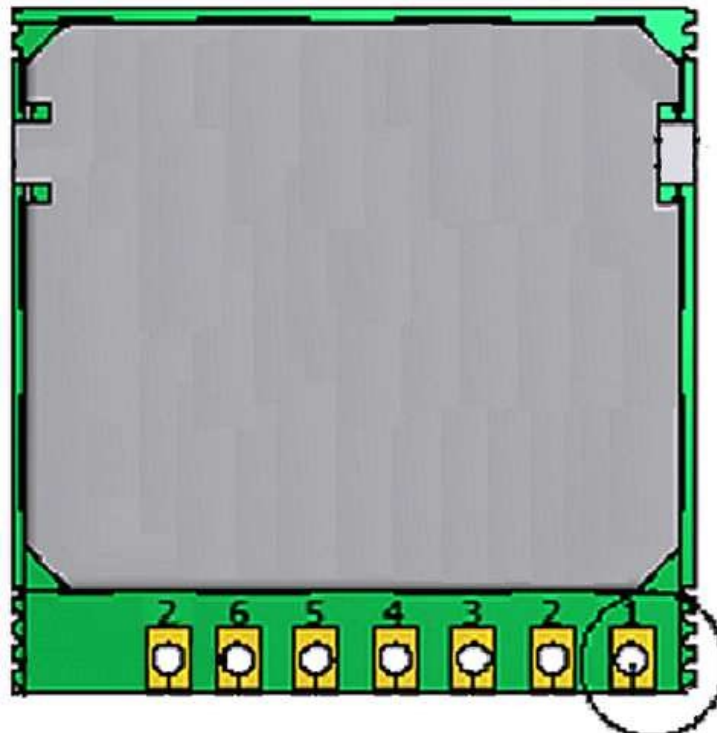
2.10 Mechanical Characteristics

Mechanical dimensions	Length Width Height	22 mm 22 mm 8 mm
Weight		30g (may vary)

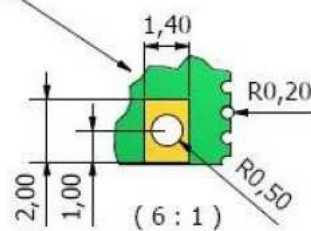
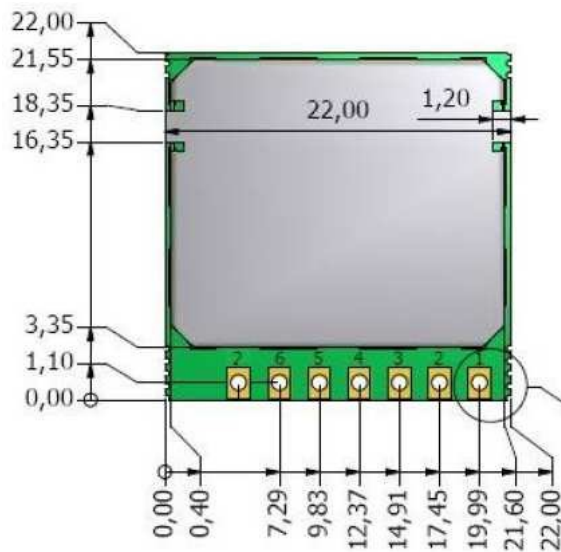
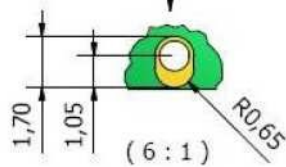
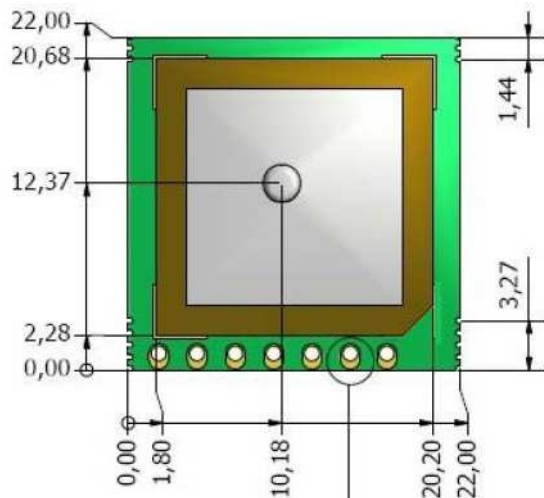
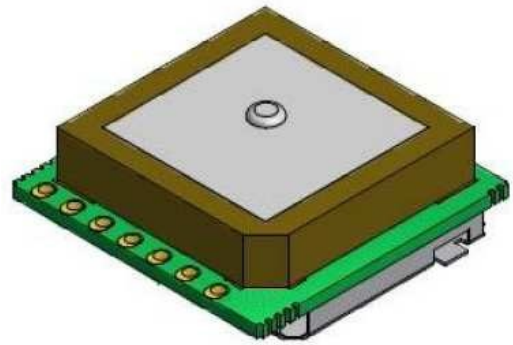
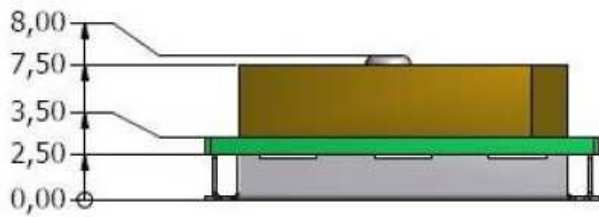
3 PINOUT DESCRIPTION

Pin Number	Signal Name	Description
1	RXD	UART input, 3V LVTTTL for SUP500R, SUP500RB UART input, RS232 level for SUP500RR
2	TXD	UART output, 3V LVTTTL for SUP500R, SUP500RB UART output, RS232 level for SUP500RR
3	GND	System ground
4	VDD	Main 3.3V ~ 5.5V supply input
5	VBAT*	Backup supply voltage for RTC and SRAM, 1.5V ~ 5.5V
6	P1PS	1 pulse per second time mark output
7	PSE_SEL	Search Engine Mode select: 1: Low power acquisition mode (default), acquisition current ~50mA 0: Enhanced acquisition mode, acquisition current

* Note: Both VDD and VBAT need to be connected in order for the module to work.*



4. Mechanical Characteristics



4. Environmental Conditions

Parameter		Specification
Temperature	Operating	-40°C~+85°C
	Storage	-40°C~+85°C
Humidity		5%~95%
Storage		6 months in original vacuum package.

Table 5: Environment Conditions

5. NMEA protocol

The serial interface protocol is based on the National Marine Electronics Association's NMEA 0183 ASCII interface specification. This standard is fully define in "NMEA 0183, Version 3.01" The standard may be obtained from NMEA, www.nmea.org

5.1 GGA-GLOBAL POSITIONING SYSTEM FIX DATA

Time, position and fix related data for a GPS receiver.

Structure:

\$GPG-

GA,hhmmss.sss,ddmm.mmmm,a,dddmm.mmmm,a,x,xx,x.x,x.x,M,x.x,M,x.x,xxxx*hh<CR><LF>

1 2 3 4 5 6 7 8 9 10 11 12 13

Example:

\$GPG-

GA,060932.448,2447.0959,N,12100.5204,E,1,08,1.1,108.7,M,,,0000*0E<CR><LF>

Field	Name	Example	Description
1	UTC Time	060932.448	UTC of position in hhmmss.sss format, (000000.00 ~ 235959.99)
2	Latitude	2447.0959	Latitude in ddmm.mmmm format Leading zeros transmitted
3	N/S Indicator	N	Latitude hemisphere indicator, 'N' = North, 'S' = South

4	Longitude	12100.5204	Longitude in dddmm.mmmm format Leading zeros transmitted
5	E/W Indicator	E	Longitude hemisphere indicator, 'E' = East, 'W' = West
6	GPS quality indicator	1	GPS quality indicator 0: position fix unavailable 1: valid position fix, SPS mode 2: valid position fix, differential GPS mode 3: GPS PPS Mode, fix valid 4: Real Time Kinematic. System used in RTK mode with fixed integers 5: Float RTK. Satellite system used in RTK mode. Floating integers 6: Estimated (dead reckoning) Mode 7: Manual Input Mode 8: Simulator Mode
7	Satellites Used	08	Number of satellites in use, (00 ~ 12)
8	HDOP	1.1	Horizontal dilution of precision, (00.0 ~ 99.9)
9	Altitude	108.7	mean sea level (geoid), (-9999.9 ~ 17999.9)
10	Geoid Separation		Geoid separation in meters according to WGS-84 ellipsoid (-999.9 ~ 9999.9)
11	DGPS Age		Age of DGPS data since last valid RTCM transmission in xxx format (seconds) NULL when DGPS not used
12	DGPS Station ID	0000	Differential reference station ID, 0000 ~ 1023 NULL when DGPS not used
13	Checksum	0E	

Note: The checksum field starts with a '*' and consists of 2 characters representing a hex number. The checksum is the exclusive OR of all characters between '\$' and '*'.

5.2 GLL - LATITUDE AND LONGITUDE, WITH TIME OF POSITION FIX AND STATUS

Latitude and longitude of current position, time, and status.

Structure:

```
$GPGLL,ddmm.mmmm,a,dddmm.mmmm,a,hhmmss.sss,A,a*hh<CR><LF>
```

1 2 3 4 5 6 7 8

Example:

```
$GPGLL,4250.5589,S,14718.5084,E,092204.999,A,A*2D<CR><LF>
```

Field	Name	Example	Description
1	Latitude	4250.5589	Latitude in ddmm.mmmm format Leading zeros transmitted
2	N/S Indicator	S	Latitude hemisphere indicator 'N' = North
3	Longitude	14718.508	Longitude in dddmm.mmmm format Leading zeros transmitted
4	E/W Indicator	E	Longitude hemisphere indicator 'E' = East
5	UTC Time	092204.99	UTC time in hhmmss.sss format (000000.00 ~ 235959.99)
6	Status	A	Status, 'A' = Data valid, 'V' = Data not valid
7	Mode Indicator	A	Mode indicator 'N' = Data not valid 'A' = Autonomous mode 'D' = Differential mode 'E' = Estimated (dead reckoning) mode 'M' = Manual input mode 'S' = Simulator mode
8	Checksum	2D	

5.3 GSA - GPS DOP AND ACTIVE SATELLITES

GPS receiver operating mode, satellites used in the navigation solution reported by the GGA or GNS sentence and DOP values.

Structure:

```
$GPGSA,A,x,xx,xx,xx,xx,xx,xx,xx,xx,xx,xx,xx,xx,x.x,x.x,x.x*hh<CR><LF>
```

1 2 3 3 3 3 3 3 3 3 3 3 3 4 5 6 7

Example:

```
$GPGSA,A,3,01,20,19,13,,,,,,,,,40.4,24.4,32.2*0A<CR><LF>
```

Field	Name	Example	Description
1	Mode	A	Mode 'M' = Manual, forced to operate in 2D or 3D mode 'A' = Automatic, allowed to automatically switch 2D/3D
2	Mode	3	Fix type 1 = Fix not available 2 = 2D 3 = 3D
3	Satellite used 1~12	01,20,19,1 3,,,,,,,,	Satellite ID number, 01 to 32, of satellite used in solution, up to 12 transmitted
4	PDOP	40.4	Position dilution of precision (00.0 to 99.9)
5	HDOP	24.4	Horizontal dilution of precision (00.0 to 99.9)
6	VDOP	32.2	Vertical dilution of precision (00.0 to 99.9)
7	Checksum	0A	

5.4 GSV - GPS SATELLITE IN VIEW

Numbers of satellites in view, PRN number, elevation angle, azimuth angle, and C/No. Four satellites details are transmitted per message. Additional satellite in view information is send in subsequent GSV messages.

Structure:

```
$GPGSV,x,x,xx,xx,xx,xxx,xx,...,xx,xx,xxx,xx *hh<CR><LF>
```

1 2 3 4 5 6 7 4 5 6 7 8

Example:

```
$GPGSV,3,1,09,28,81,225,41,24,66,323,44,20,48,066,43,17,45,336,41*78<CR><LF>
```

```
$GPGSV,3,2,09,07,36,321,45,04,36,257,39,11,20,050,41,08,18,208,43*77<CR><LF>
```

Field	Name	Example	Description
1	Number of message	3	Total number of GSV messages to be transmitted (1-3)
2	Sequence number	1	Sequence number of current GSV message
3	Satellites in view	09	Total number of satellites in view (00 ~ 12)
4	Satellite ID	28	Satellite ID number, GPS: 01 ~ 32, SBAS: 33 ~ 64 (33 = PRN120)
5	Elevation	81	Satellite elevation in degrees, (00 ~ 90)
6	Azimuth	225	Satellite azimuth angle in degrees, (000 ~ 359)
7	SNR	41	C/No in dB (00 ~ 99) Null when not tracking
8	Checksum	78	

5.5 RMC - RECOMMENDED MINIMUM SPECIFIC GPS/TRANSIT DATA

Time, date, position, course and speed data provided by a GNSS navigation receiver.

Structure:

```
$GPRMC,hhmmss.sss,A,dddmm.mmmm,a,dddmm.mmmm,a,x.x,x.x,ddmmyy,x.x,a,a*hh<CR>
><LF>
```

1 2 3 4 5 6 7 8 9 10 11 12 13

Example:

```
$GPRMC,092204.999,A,4250.5589,S,14718.5084,E,0.00,89.68,211200,,A*25<CR><
LF>
```

Field	Name	Example	Description
1	UTC time	092204.999	UTC time in hhmmss.sss format (000000.00 ~ 235959.999)
2	Status	A	Status 'V' = Navigation receiver warning
3	Latitude	4250.5589	Latitude in dddmm.mmmm format Leading zeros transmitted
4	N/S indicator	S	Latitude hemisphere indicator 'N' = North
5	Longitude	14718.5084	Longitude in dddmm.mmmm format Leading zeros transmitted
6	E/W Indicator	E	Longitude hemisphere indicator 'E' = East
7	Speed over ground	000.0	Speed over ground in knots (000.0 ~ 999.9)
8	Course over ground	000.0	Course over ground in degrees (000.0 ~ 359.9)
9	UTC Date	211200	UTC date of position fix, ddmmyy format
10	Magnetic variation		Magnetic variation in degrees (000.0 ~ 180.0)
11	Magnetic Variation		Magnetic variation direction 'E' = East
12	Mode indicator	A	Mode indicator 'N' = Data not valid 'A' = Autonomous mode 'D' = Differential mode 'E' = Estimated (dead reckoning) mode 'M' = Manual input mode
13	checksum	25	

5.6 VTG - COURSE OVER GROUND AND GROUND SPEED

The Actual course and speed relative to the ground.

Structure:

GPVTG,x.x,T,x.x,M,x.x,N,x.x,K,a*hh<CR><LF>

1 2 3 4 5 6

Example:

\$GPVTG,89.68,T,,M,0.00,N,0.0,K,A*5F<CR><LF>

Field	Name	Example	Description
1	Course	89.68	True course over ground in degrees (000.0 ~ 359.9)
2	Course		Magnetic course over ground in degrees (000.0 ~ 359.9)
3	Speed	0.00	Speed over ground in knots (000.0 ~ 999.9)
4	Speed	0.00	Speed over ground in kilometers per hour (0000.0 ~ 1800.0)
5	Mode	A	Mode indicator 'N' = not valid 'A' = Autonomous mode 'D' = Differential mode 'E' = Estimated (dead reckoning) mode 'M' = Manual input mode
6	Checksum	5F	

5.7 ZDA- TIME AND DATE

Structure:

\$GPZDA,hhmmss.sss,dd,mm.yyyy, , ,xxx<CR><LF>

1 2 3 4 5 6 7

Example:

\$GPZDA,104548.04,25,03,2004,,*6C<CR><LF>

Field	Name	Example	Description
1	UTC time	104548.04	UTC time in hhmmss.ss format, 000000.00 ~ 235959.99
2	UTC time: day	25	UTC time day (01 ... 31)
3	UTC time: month	03	UTC time: month (01 ... 12)
4	UTC time: year	2004	UTC time: year (4 digit year)
5			Local zone hour Not being output by the receiver (NULL)
6			Local zone minutes Not being output by the receiver (NULL)
7	6C	6C	Checksum

6. Links

http://www.skytraq.com.tw/download/AN0003_v3.pdf - Skytraq Application Note AN0003

http://www.sparkfun.com/datasheets/GPS/Modules/AN0003_v1.4.8.pdf

Please note that not all the commands in the application note apply for this module; for additional information please contact SkyTraq directly.

GPS-622F

Simplified Declaration of Conformity (RED)

BG - С настоящото RF Solutions Limited декларира, че този тип радиосъоръжение дефинирани в този документ е в съответствие с Директива 2014/53/ЕС. Цялостният текст на ЕС декларацията за съответствие може да се намери на следния интернет адрес: www.rfsolutions.co.uk

CS -Tímto RF Solutions Limited prohlašuje, že typ rádiového zařízení definované v tomto dokumentu je v souladu se směrnicí 2014/53/EU. Úplné znění EU prohlášení o shodě je k dispozici na této internetové adrese: www.rfsolutions.co.uk

DA - Hermed erklærer RF Solutions Limited, at radioudstyrstypen defineret i dette dokument er i overensstemmelse med direktiv 2014/53/EU. EU-overensstemmelseserklæringens fulde tekst kan findes på følgende internetadresse: www.rfsolutions.co.uk

DE - Hiermit erkläre RF Solutions Limited, dass der Funkanlagentyp in diesem Dokument definiert der Richtlinie 2014/53/EU entspricht. Der vollständige Text der EU-Konformitätserklärung ist unter der folgenden Internetadresse verfügbar: www.rfsolutions.co.uk

EL - Με την παρούσα ο/η RF Solutions Limited, δηλώνει ότι ο ραδιοεξοπλισμός ορίζεται σε αυτό το έγγραφο πληροί την οδηγία 2014/53/ΕΕ. Το πλήρες κείμενο της δήλωσης συμμόρφωσης ΕΕ διατίθεται στην ακόλουθη ιστοσελίδα στο διαδίκτυο: www.rfsolutions.co.uk

EN - Hereby, RF Solutions Limited declares that the radio equipment type defined within this document is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address: www.rfsolutions.co.uk

ES - Por la presente, RF Solutions Limited declara que el tipo de equipo radioeléctrico definido dentro de este documento es conforme con la Directiva 2014/53/UE. El texto completo de la declaración UE de conformidad está disponible en la dirección Internet siguiente: www.rfsolutions.co.uk

ET -Käesolevaga deklareerib RF Solutions Limited, et käesolev raadioseadme tüüp määratletud selles dokumendis vastab direktiivi 2014/53/EL nõuetele. ELi vastavusdeklaratsiooni täielik tekst on kättesaadav järgmisel internetiaadressil: www.rfsolutions.co.uk

FI -RF Solutions Limited vakuuttaa, että radiolaitetyyppi määrätletud selles dokumendis on direktiivin 2014/53/EU mukainen. EU-vaatimustenmukaisuusvakuutuksen täysimittainen teksti on saatavilla seuraavassa internetosoitteessa: www.rfsolutions.co.uk

FR - Le soussigné, RF Solutions Limited, déclare que l'équipement radioélectrique du type défini dans ce document est conforme à la directive 2014/53/UE. Le texte complet de la déclaration UE de conformité est disponible à l'adresse internet suivante: www.rfsolutions.co.uk

HR - RF Solutions Limited ovime izjavljuje da je radijska oprema tipa definirani u ovom dokumentu u skladu s Direktivom 2014/53/EU. Cjeloviti tekst EU izjave o sukladnosti dostupan je na sljedećoj internetskoj adresi: www.rfsolutions.co.uk

HU - RF Solutions Limited igazolja, hogy a dokumentumban meghatározottak szerint típusú rádióberendezés megfelel a 2014/53/EU irányelvnek. Az EU-megfelelőségi nyilatkozat teljes szövege elérhető a következő internetes címen: www.rfsolutions.co.uk

IT - Il fabbricante, RF Solutions Limited, dichiara che il tipo di apparecchiatura radio definito all'interno di questo documento è conforme alla direttiva 2014/53/UE. Il testo completo della dichiarazione di conformità UE è disponibile al seguente indirizzo Internet: www.rfsolutions.co.uk

LT - Aš, RF Solutions Limited, patvirtinu, kad radijo įrenginių tipas apibrėžta šiame dokumente atitinka Direktyvą 2014/53/ES. Visas ES atitikties deklaracijos tekstas prieinamas šiuo interneto adresu: www.rfsolutions.co.uk

LV - Ar šo RF Solutions Limited deklarē, ka radioiekārta kas definēts šajā dokumentā atbilst Direktīvai 2014/53/ES. Pilns ES atbilstības deklarācijas teksts ir pieejams šādā interneta vietnē: www.rfsolutions.co.uk

MT - B'dan, RF Solutions Limited, niddikjara li dan it-tip ta' taghmir tar-radju definit f'dan id-dokument huwa konformi mad-Direttiva 2014/53/UE. It-test kollu tad-dikjarazzjoni ta' konformita' tal-UE huwa disponibbli f'dan l-indirizz tal-Internet li gej: www.rfsolutions.co.uk

NL - Hierbij verklaar ik, RF Solutions Limited, dat het type radioapparatuur gedefinieerd in dit document conform is met Richtlijn 2014/53/EU. De volledige tekst van de EU-conformiteitsverklaring kan worden geraadpleegd op het volgende internetadres: www.rfsolutions.co.uk

PL - RF Solutions Limited niniejszym oświadczam, że typ urządzenia radiowego zdefiniowane w tym dokumencie jest zgodny z dyrektywą 2014/53/UE. Pełny tekst deklaracji zgodności UE jest dostępny pod następującym adresem internetowym: www.rfsolutions.co.uk

PT - O(a) abaixo assinado(a) RF Solutions Limited declara que o presente tipo de equipamento de rádio definido neste documento está em conformidade com a Diretiva 2014/53/UE. O texto integral da declaração de conformidade está disponível no seguinte endereço de Internet: www.rfsolutions.co.uk

RO - Prin prezenta, RF Solutions Limited declară că tipul de echipamente radio definit în acest document este în conformitate cu Directiva 2014/53/UE. Textul integral al declarației UE de conformitate este disponibil la următoarea adresă internet: www.rfsolutions.co.uk

SK - RF Solutions Limited týmto vyhlasuje, že rádiové zariadenie typu definované v tomto dokumente je v súlade so smernicou 2014/53/EÚ. Úplné EÚ vyhlásenie o zhode je k dispozícii na tejto internetovej adrese: www.rfsolutions.co.uk

SL - RF Solutions Limited potrjuje, da je tip radijske opreme opredeljeno v tem dokumentu skladen z Direktivo 2014/53/EU. Celotno besedilo izjave EU o skladnosti je na voljo na naslednjem spletnem naslovu: www.rfsolutions.co.uk

SV - Härmed försäkrar RF Solutions Limited att denna typ av radioutrustning definieras i detta dokument överensstämmer med direktiv 2014/53/EU. Den fullständiga texten till EU-försäkran om överensstämmelse finns på följande webbadress: www.rfsolutions.co.uk

RF Solutions Ltd. Recycling Notice

Meets the following EC Directives:

DO NOT

Discard with normal waste, please recycle.

ROHS Directive 2011/65/EU and amendment 2015/863/EU:

Specifies certain limits for hazardous substances.

WEEE Directive 2012/19/EU

Waste electrical & electronic equipment. This product must be disposed of through a licensed WEEE collection point. RF Solutions Ltd., fulfils its WEEE obligations by membership of an approved compliance scheme. **Environment Agency Registration Number: WEE/JB0104WV.**

Disclaimer:

Whilst the information in this document is believed to be correct at the time of issue, RF Solutions Ltd does not accept any liability whatsoever for its accuracy, adequacy or completeness. No express or implied warranty or representation is given relating to the information contained in this document. RF Solutions Ltd reserves the right to make changes and improvements to the product(s) described herein without notice. Buyers and other users should determine for themselves the suitability of any such information or products for their own particular requirements or specification(s). RF Solutions Ltd shall not be liable for any loss or damage caused as a result of user's own determination of how to deploy or use RF Solutions Ltd's products. Use of RF Solutions Ltd products or components in life support and/or safety applications is not authorised except with express written approval. No licences are created, implicitly or otherwise, under any of RF Solutions Ltd's intellectual property rights. Liability for loss or damage resulting or caused by reliance on the information contained herein or from the use of the product (including liability resulting from negligence or where RF Solutions Ltd was aware of the possibility of such loss or damage arising) is excluded. This will not operate to limit or restrict RF Solutions Ltd's liability for death or personal injury resulting from its negligence.

www.rfsolutions.co.uk

RF Solutions Ltd

William Alexander House, William Way, Burgess Hill, West Sussex, RH15 9AG
Sales: +44(0)1444 227 910 Tech Support: +44(0)1444 227909

