

FIREFLY

SPORTABLE[®]
SEE THE GAME
OEM Manual USA and Canada

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1 Product Overview

FIREFLY is a radio module designed for real-time tracking of sports balls, a few examples being rugby, football(soccer), American football, Canadian football, Australian rules football and netball.

Utilising Ultra Wide Band technologies, FIREFLY operates as a transceiver within a master/client network, collecting and transmitting telemetry data back to the wider Sportable system. Using this data, the system generates positional and other metric information that can be used in a variety of applications such as fan engagement and training and development.

FIREFLY is a fully functional, self contained module powered by an internal Lithium Polymer battery. When integrated, it is completely sealed inside the sports ball and requires no additional electronics.

FIREFLY also utilises Wireless Power Transfer (WPT) technology to allow convenient, connection free recharging. A range of proprietary WPT chargers and cradles are supplied by Sportable for this purpose.

FIREFLY is an unlicensed intentional transmitter intended to operate primarily in outdoor environments. It has been assessed as a module allowing simple implementation with a minimum of additional requirements. These are detailed in the following sections of this document.

Contact your local Sportable representative to discuss the detailed requirements of the integration method used in your case. Any questions about the contents of this document, technical details about the FIREFLY module or anything else may also be directed to your local Sportable representative.

2 Regulatory Information

2.1 USA - FCC



In accordance with KDB 996369 D03 OEM Manual v01r1.

The following integration instructions should be followed to ensure continued compliance with FCC Rules. Some items are not applicable to the FIREFLY module, but are included to aid the certification process.

§2.2 List of Applicable FCC Rules **FCC 15.207, 15.209(a) and 15.250**

§2.3 Summarize the specific operational use conditions

This device must not be co-located or operate in conjunction with any other antenna or transmitter.

Operation of this device on board an aircraft or a satellite is prohibited.

It may not be employed for the operation of toys.

Except for operation onboard a ship or a terrestrial transportation vehicle, the use of a fixed outdoor infrastructure with this product is prohibited, noting that fixed infrastructure includes antennas mounted on outdoor structures, for example antennas mounted on the outside of a building or on a telephone pole.

§2.4 Limited module procedures

FIREFLY is not a limited module and therefore no additional requirements apply.

§2.5 Trace antenna designs

FIREFLY integrates an onboard chip antenna and does not require external trace antennas. No additional requirements apply.

§2.6 RF exposure considerations

This equipment has been assessed and found to be exempt from FCC environmental assessment for RF exposure.

In line with 47 CFR 1.1307(b)(3)(1)(A), this equipment is a single portable RF source where the available maximum time-averaged power is no more than 1mW, regardless of separation distance.

The device can therefore be used in portable exposure conditions without restriction.

§2.7 Antennas

FIREFLY integrates an onboard chip antenna with no external connections available for alternative antennas. No additional requirements apply.

§2.8 Label and compliance information

As FIREFLY will usually be completely enclosed in the host product, to comply with FCC certification requirements a label must be provided stating:

“Contains FCC ID: 2A929-718572”.

See FCC publication “Guidelines for Labeling and User Information for RF Devices – KDB Publication 784748”.

§ 2.9 Information on test modes and additional testing requirements

No additional testing or test modes are required, FIREFLY is a fully integrated module.

§2.10 Additional testing, Part 15 Subpart B disclaimer

In all use cases, FIREFLY will be completely enclosed within a host product that contains no additional electronics.

FIREFLY is a modular transmitter and is only FCC authorized for the specific rule parts (i.e., FCC transmitter rules such as 15.250, 15.207, 15.209a) listed on the grant. The host product manufacturer is responsible for compliance to any other FCC rules that apply to the host product not covered by the modular transmitter grant of certification.

The user instructions for the device integrating the FIREFLY module should also include the following statements.

"Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment."

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. this device must accept any interference received, including interference that may cause undesired operation.

This device has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

§2.11 Note EMI Considerations

In all use cases, FIREFLY will be completely enclosed within a host product that contains no additional electronics.

The host manufacturer is recommended to refer FCC KDB 996369 D04 Module Integration Guide

§2.12 How to make changes

No changes shall be made to the equipment without the manufacturer's permission as this may void the user's authority to operate the equipment. Permissive changes may only be submitted by the Grantee (Sportable).

2.2 Canada - ISED

IC

RSS-GEN, RSS-210, and RSS-102

The user instructions for the device integrating the FIREFLY module should also include the following statements.

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

- 1. This device may not cause interference.*
- 2. This device must accept any interference, including interference that may cause undesired operation of the device.*

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

- 1. L'appareil ne doit pas produire de brouillage;*
- 2. L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.*

In accordance with RSS-210 Annex K: Wideband devices operating in the band 5925-7250 MHz, the following restrictions on use apply :

- 1. Devices subject to this annex are not permitted for operation on board aircraft or satellites and shall also not be used for operating toys.*
- 2. The use of a fixed outdoor infrastructure, including antennas mounted on outdoor structures such as poles or buildings, is not permitted, except for operation on board ships or land vehicles.*

Conformément à RSS-210 Annex K: Appareils à large bande fonctionnant dans la bande de 5 925 à 7 250 MHz, les utilisations suivantes sont interdites :

- 1. Les dispositifs visés par la présente annexe ne peuvent pas être utilisés à bord d'aéronefs ou de satellites ni être utilisés pour faire fonctionner des jouets.*
- 2. L'utilisation d'une infrastructure extérieure fixe, y compris d'antennes montées sur des structures extérieures comme des poteaux ou des bâtiments, n'est pas autorisée, sauf si les structures en question sont des bateaux ou des véhicules terrestres.*

This equipment is exempt from the routine RF exposure evaluation requirements of RSS-102 for portable use conditions.

Cet équipement est exempté des exigences d'évaluation de l'exposition RF de routine du RSS-102 pour les conditions d'utilisation portable.

This Class B digital apparatus complies with Canadian ICES-003. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Cet appareil numérique de classe B est conforme à la norme canadienne ICES-003. Les changements ou les modifications non approuvés expressément par la partie responsable de la conformité pourraient annuler l'autorisation de l'utilisateur de faire fonctionner l'équipement.

As FIREFLY will usually be completely enclosed in the host product, to comply with ISSED certification requirements a label must be provided stating:

Contains IC: 29950-718572

Comme FIREFLY sera généralement entièrement intégré au produit hôte, pour se conformer aux exigences de certification ISDE, une étiquette doit être fournie indiquant :

Contient IC: 29950-718572

3 Certification Identifiers

The following IDs will apply to the FIREFLY device:

FCC ID: 2A929-718572

IC: 29950-718572