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FAI AEROMODELLING COMMISSION (CIAM)
ELECTRONIC DEVICES IN COMPETITIONS WORKING GROUP (EDIC-WG)

References:
FAI web site: www.fai.org
CIAM website: www.fai.org/aeromodelling

To: CIAM web site under AMRT Approvals
CIAM Technical Secretary
F5 Sub Committee

Copy: Manufacturer Concerned

Date: **30** March 2015

CIAM APPROVAL FOR F5J ALTIMETER/MOTOR RUN TIMER (AMRT)

Approval Reference:	**AMRT013**
Manufacturer:	**RC Electronics**
Manufacturer Contact:	**support@rc-electronics.org**
Device Names:	**RC Multi 2** **FXJ Programming Card**

(i) This document gives formal approval from the above date for the AMRT equipment described below to be used for competitions under the Sporting Code Section 4:Aeromodelling – Class F5J – Electric Thermal Duration Gliders.

(ii) This document is the initial approval for this type of AMRT and only applies to the functions relevant to the F5J competition class rules.

(iii) Tests undertaken by EDIC-WG (or such representative as it may appoint), are specifically concerned with the functions relevant to the F5J competition class rules. Other functions of the equipment are not part of this approval and the relevance of this document does not extend beyond the specific validation and certification purposes mentioned above.

(iv) This document does not constitute a guarantee of compatibility of the device listed above with any associated devices with which it may be interconnected.

(v) This document does not constitute any guarantee and/or statement by EDIC-WG, CIAM and/or FAI as to the reliability of the device listed above.

(vi) This approval is not concerned with National and other regulations relating to electronic equipment and compliance with such regulations is not the responsibility of the FAI.

(vii) This approval is not concerned with, and the FAI has no responsibility for, matters related to: (a) intellectual property and intellectual property rights and/or, (b) relations of the manufacturer listed above with any other entities except with FAI and its agents or as they affect the FAI, its agents and this approval.

EQUIPMENT

1 HARDWARE

1.1 Equipment Name

1.1.1 RC Multi 2

1.1.2 RC FXJ Programming Card

1.2 Hardware Version

The Equipment Name defines the Hardware Version

The term Programming Card in the equipment name refers to the multi-purpose function of the display device. In the F5J application, the unit serves only as a display and all other programming functions are disabled.

1.3 External Features

The AMRT module is a heatshrink encased circuit board with two cables terminated in 3 pin JR style connectors for connection to the control equipment within a model.

Start Height readout is by means of the separate FXJ Programming Card.

An on board 10 pin socket is provided for connection of additional facilities. When used in the F5J application, an adapter cable is required to change the 10 way connection to the 4 way socket compatible with the FXJ Programming Card. to provide the readout facility

A special USB cable allows connection to a personal computer via the 10 pin socket for the purpose of upgrading firmware or viewing logged data. This additional feature does not form part of this Approval.

1.4 Pressure Altitude Sensor

The pressure sensor module is manufactured by Measurement Specialities (MEAS) Switzerland (formerly Intersema Sensoric SA).

2 FIRMWARE

2.1 Firmware Version

2.1.1 Multi 2 Altimeter module FAI v0.15

2.1.2 FXJ Programming Card v1.6

The pushbuttons on the Programming Card provide no functionality with this combination of firmware.

2.2 Pressure to ISA Height Conversion

The firmware uses a high precision computation to perform the pressure to ISA height calculation. Calibration factors provided by the pressure sensor manufacturer are incorporated in the calculation.

2.3 Temperature Compensation

The firmware incorporates temperature compensation processing in accordance with the pressure sensor manufacturer's recommendations.

2.4 Dynamic Response

Oversampling of pressure sensor data and subsequent processing does not contribute any significant degradation of dynamic response in the context of the F5J competition application.

3 CONDITIONS OF APPROVAL

3.1.1 This Approval only applicable to devices of the type described and manufactured to the same production standards as the example evaluated.

3.1.2 This Approval is not applicable to any device which has been subject to repair or modification by person(s) other than the original manufacturer or his authorised agent.

3.1.3 The use of an extension cable to permit remote connection of the display unit is permitted subject to the AMRT device being accessible as required by the F5J class rules.

3.2 Withdrawal of Approval

If after this Approval has been issued, inconsistencies of performance are found in further examples of the device(s), Approval may be withdrawn upon notice to the manufacturer.

3.3 Changes to F5J Class Rules

If the F5J class rules are amended in any manner that affects the technical specification of the AMRT, the validity of this Approval will be subject to review.

3.4 Expiry of Approval

This Approval remains active until it is either superseded or withdrawn. A list of all currently active Approvals can be obtained from the FAI CIAM website.

4 PRODUCTION STATUS

At the date of issue of this Approval, the RC Multi 2 and FXJ Programming Card are in current production.

5 MANUFACTURER'S CHANGES

Notification of any changes to hardware and/or firmware must be made by the manufacturer to the Chairman of EDIC-WG so that a decision can be made on any further testing that might be required to maintain CIAM Approval of the AMRT. This includes changes that are applicable to any additional functions of the device(s) that do not necessarily form part of the F5J requirements.

(original signed)

Eur Ing Paul Newell
Chairman FAI-CIAM EDIC Working Group

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