

GENERAL INFORMATION

1.1. Product description

Preamble

RAIN BIRD thanks you for having purchased a TBOS-II™ series field transmitter.

This new transmitter is universal and is compatible with the entire TBOS™ range (old and new generation).

Adding a TBOS-II™ Radio Adaptor enhances the programming of the old generation TBOS™ modules. Once the program data has been entered into the field transmitter, it could be sent into the Control Modules in one of two ways:

- Via an infrared connection, using the cord supplied with the transmitter.
- Via a radio connection, using the TBOS-II™ Radio Adaptor plugged onto the Control Module.



The new Field Transmitter also includes new features that will provide additional benefits for the management of your TBOS™ and/or TBOS-II™ Control Modules.

* except VRM1 and FS1. The information contained in this document is purely indicative. It may be changed without notice and does not represent a commitment on the part of RAIN BIRD.

A. System TBOS-II™ Introduction

1. The TBOS-II™ System

The new generation system works with products using the 868MHz (EU, South Africa) or 915 MHz (US, Canada, Mexico, Australia) free frequency band.

System composition :

- A universal FIELD TRANSMITTER (FT) to configure your irrigation programs and transfer them via infrared or radio connection to the TBOS™ and/or TBOS-II™ Control Modules.
- One (or more) TBOS™/TBOS-II™ CONTROL MODULE(S) installed underground, in valve box.
- A TBOS-II™ RADIO ADAPTOR for radio reception of data. Installed underground, in valve box, its infra-red connection has to be connected on Control Module's Infra red connection. Its Radio antenna has to be vertical, up to the top.



2. System Description

Old TBOS™ System



Old TBOS™ Field Transmitter



Old TBOS™ Control Module



TBOS™ Radio Adaptor

Nouveau Système TBOS-II™



New TBOS-II™ Field Transmitter



New TBOS-II™ Control Module



TBOS™ or TBOS-II™ Control Module equipped with TBOS-II™ Radio Adaptor.
Equipped with TBOS-II™ Radio Adaptor, the old TBOS™ Control Module is upgraded with new features.

Rain Bird valves have to be equipped with TBOS™ pulse solenoid.

3. New features of TBOS-II™ System

TBOS-II™ Field Transmitter

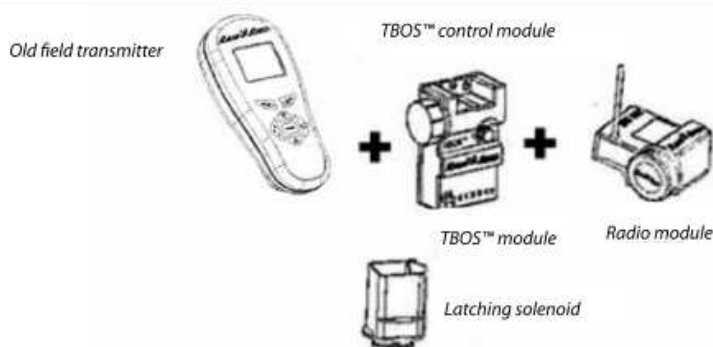
- Powered by rechargeable NiMH batteries (charger provided)
- Backlit large dot-matrix display
- Scrolling menus and touch HOME for navigation
- Transmitter name customisation
- Language selection
- Miscellaneous display settings
- Storage of 3 saved programs in the in the field transmitter once connected to the TBOS™ controller.

New features :

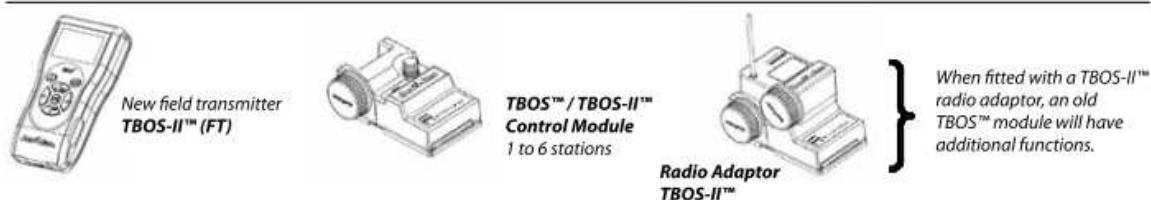
- Rain Delay (1 to 14 days)
- Check irrigation programs
- Choice of one irrigation cycle per program (A, B or C)
- Water budget per program A/B/C or per month
- New Manual Actions
- 1 station can be affected to one or several programs
- Save and restore an irrigation program in the Control Module
- Cancel irrigation, total or partial

2. Description of the system

Old TBOS system



New TBOS-II system



3. New features of the TBOS-II™ system

The TBOS-II™ field transmitter (FT)

- Powered by rechargeable NiMH batteries (charger provided)
- Back-lit dot-matrix display
- Scrolling menus with reverse video
- Transmitter name customisation
- Language selection
- Miscellaneous display settings
- Storage of 3 saved programs in the in the field transmitter once connected to the TBOS™ controller

Field transmitter (FT) <-> TBOS™/TBOS-II™ interactions

- Rain Delay (1 to 31 for TBOS-II™ model and 1 to 6 for model TBOS™)
- Check program
- Day setting OFF
- Water budget (per program A/B/C or per month)
- 3 saved programs
- Reading of irrigation program
- Consultation and modification of the following parameters:
 - TBOS™ module name
 - Station names
 - Manual actions
 - Programming cycle
 - Start Times
 - Station run times
 - Assignment of a station to one or more programs
 - Water budget by program

1.2. Related Submittal(s) / Grant(s)

All host equipments used in the test configuration are FCC granted, when relevant.

1.3. Tested System Details

The FCC IDs for all equipment, with description of all cables used in the tested system are:

- Internal max frequencies: 32MHz

- **Input/output:**

- 1 x Power supply DC, jack

- **Auxiliaries used for testing:**

- None

- **I/O cables used for testing:**

- None

- **Equipment information:**

- External antenna connector: NO, special EUT with connector for conducted tests.
- Radiated fundamental frequency band: [915.5-926.5]MHz, 12 channels
- Antenna type: Integral
- Stand By mode: Yes
- Normal power source: battery 2.7VDC.
- Modulation Type: FSK +/- 140kHz
- Modulation Technology: DSSS
- Transfer rate: 38400 bps
- Maximum Antenna Gain: 2 dBi

1.4. Test Methodology

Both conducted and radiated testing were performed according to the procedures in ANSI C63.4-2003, FCC Part 15 Subpart C.

Radiated testing was performed at an antenna to EUT distance of 10 meters. During testing, all equipment's and cables were moved relative to each other in order to identify the worst case set-up.

1.5. Test facility

Tests have been performed from December 01st to 14th, 2011.

This test facility has been fully described in a report and accepted by FCC as compliant with the radiated and AC line conducted test site criteria in ANSI C63.4-2003 in a letter dated March 25th, 2008 (registration number 94821).

This test facility has also been accredited by COFRAC (French accreditation authority for European Union test lab accreditation organization) according to NF EN ISO/IEC 17025, accreditation number 1-1633 as compliant with test site criteria and competence in 47 CFR Part 15/ANSI C63.4 and EN55022/CISPR22 norms for 89/336/EEC European EMC Directive application. All pertinent data for this test facility remains unchanged.