

Document Number		RG_SPEC-0025	
Title		Tire Pressure Monitoring System - TPMS	
Revision	Date	Prepared By	Change History
1.1	1/28/2013	Chris Brown	Updated mid level package contents

RaceGrade now sells and supports a Tire Pressure Monitoring System produced by bf1systems. This well established TPMS can provide benefits for any motorsport team. It communicates tire pressure and inner air temperature directly to any data logger via CAN communication. Below are the details of the various options and systems available. You may purchase any of the parts individually, or purchase them as a kit.

TPMS Control Box

There are three control boxes available. The first one is an inexpensive OEM style control unit with an un-sealed (IP-50) enclosure using a plastic connector. The second is a full motorsport level enclosure (IP-65) featuring an Autosport connection. Third is a motorsport enclosure with a built in antenna, ideal for smaller vehicles or motorcycles. All feature CAN bus output to the data logger.



Part #	F1-100-1214-014	F1-100-1543-001	F1-100-1543-002
Description:	OEM Control Box	Pro Control Box	Pro Box w/ Antenna
Connector:	plastic + AS adapter	Autosport x 1	Autosport x 3
Sealing:	IP50	IP65	IP65
Weight:	75 grams	95 grams	
Price:	\$640	\$3500	\$4000

Antenna

Most applications will require 2 antennas, one on each end of the vehicle. There are two different antennas available. The club level antenna is slightly larger, made of an OEM plastic, uses size 6 Souriau connector and is less expensive. It is not as rugged as the professional level antenna made from high strength nylon, and a size 2 Souriau connector for a lower profile case.



Part #	F1-100-1220-006	F1-100-1220-017
Description:	Club Antenna	Pro Antenna
Connector:	Souriau size 6	Souriau size 2
Price:	\$120 (\$250 w/IR option)	\$280 (\$400 w/IR option)

Corner Locater Module

The satellite trigger is an *optional device used in addition to the antennas*. It communicates to the TPMS sensor directly and returns information to the Control box as to which sensor is on each corner of the car. Without the satellite trigger, the user must manually keep track of each sensor's ID and wheel location. With a satellite trigger mounted in the wheel arches of each corner, the sensor location can automatically be determined. This allows the team to swap wheels without repositioning the sensors or reprogramming the control box.



Weight: 55 grams

Part # F1-100-1222-002 Corner Locator Module / LF Trigger \$128

Sensor Options

There are four different sensors to choose from. All four are compatible with any control box. The major differences between the sensors are the update rate of information and the maximum temperature limits of the sensor's electronics and battery.

The wheel sensors contain both an absolute pressure sensor and a temperature sensor. The sensor has onboard a radio transmitter which sends its information to the antennas. When the wheels are stationary, the sensors do not transmit in order to preserve battery life. Battery life greatly depends on use, and can vary from 1 year to 3 years. The basic sensor will automatically shut down if the internal temperature limit is exceeded.

The Basic sensor is only available with a 25mbar/bit pressure range. All others available in 2 ranges:

Pressure Resolution:	14.7 mbar/bit	25mbar/bit
Pressure Range:	52 PSI gauge	78 PSI gauge
	88 - 463 kPa abs.	0 - 637 kPa abs.



Model	Basic	Club	Pro	Pro + IR
Part #	F1-100-1495-001	F1-100-1521-012	F1-100-1521-011	F1-100-1263-xxx
bf1 Name	Ultra Light	DigiTyre Light	DigiTyre	DigiTyre IR
Housing Material	Plastic	Peak	Peak	Peak
Max Temperature	120°C	130°C	150°C	150°C
Weight (no stem)	28 grames	36 grams	30 grams	44 grams
Update Interval	10 sec	3 sec	1 sec	1 sec
Price	\$ TBD	\$200	\$336	\$800

F1-02-7560-B 11mm Valve \$25
 F1-02-7560-B 8mm Valve \$60

*Note: Various wheels might require special valve stems.
 No single valve stem will work with every wheel.*

The IR sensor also monitors a tire's inner carcass temperature in addition to pressure and inner air temperature.
 A yearly software license fee applies to the IR functionality.

Diagnostic Tools

There are two versions of interrogators available, one called the *Mini Trigger* and the other is the *Mini Analyser*. Both are optional devices.

The Mini Trigger will transmit a message to a local sensor and force that sensor to transmit its data to the control box. Essentially turning on a stationary sensor for checking.

The more expensive Mini Analyser will request and monitor information directly from a sensor or group of sensors. It does not have to communicate through the control box. This is nice to check tires not mounted on the car and reports pressure, temperature, serial number and other bits of data.



Part # F1-100-1081-021	Basic Mini Trigger	\$192
Part # F1-100-1451-001	Pro Mini Analyzer	\$1200

Starter Kits

Club 2 channel, Part # F1-100-1558-002, retail price \$2775

- Club Control Box
- Club Antenna x 2
- Club Sensor x 8



Mid Level Club 6 channel, Part # F1-100-1558-003, retail price \$3275

- Club Control Box
- Club Antenna x 2
- Satellite Trigger x 4
- Club Sensor x 8



*to order with wiring harness, use part number: f1-100-1558-003H, retail price \$3650

Pro 6 channel, Part # F1-100-1558-005, retail price \$7850

- Professional Control Box
- Professional Antenna x 2
- Satellite Trigger x 4
- Pro Sensor x 8

