Computype™

Computype Embedded Tire RFID

RFID READY

SBX-230-0015-U

Product Description

This innovative Tire RFID product is designed to provide superior read distances of up to 3 meters when embedded in the sidewall area in demanding applications such as racing, OTR, truck and agricultural tires. The unique spring antenna design is engineered to result in high fatigue life and superior reliability. This product withstands the rigors of vulcanization temperatures and pressures common to specialty tire manufacturing and can be used for in-plant Work-In-Process tracking or during the service life of the tire.

The product may be applied manually or through the use of custom-designed automatic applicator designed to fit in typical specialty tire manufacturing environments. The product can be supplied in a rubber patch configuration, enabling the attachment to the inside surface of the tire in the location that optimizes the read distance while the product is mounted on a rim for service tracking.

The Tire RFID integrated circuit chip is available with up to 512 bits of user memory, allowing for the storage of dynamic data such as service history directly on the tire.

Environmental

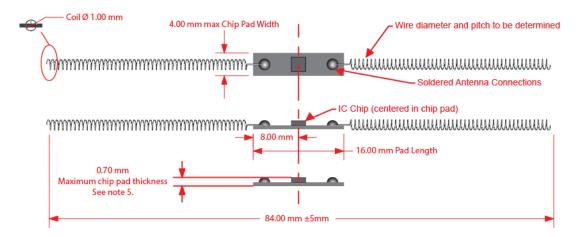|	
Application:	Agricultural, OTR, Heavy Construction, Racing Tires
Chemical resistance:	Oils and release agents used in tire vulcanization
Operating temperature:	-40º C to +230º C
Storage temperature:	-40º C to 25º C
Application temperature:	0 to 40º C
Vulcanization temperature:	Up to 200º C for 180 minutes
Vulcanization pressure:	Up to 25 bar for 180 minutes
Shelf life:	1 year from the date of manufacture
Read life:	10 years

Mechanical

Antenna length:	84 mm +/- 5 mm
Antenna coil diameter:	1.0 +/- 0.1 mm
Chip pad length:	16 mm maximum
Chip pad width:	4 mm maximum
Chip pad thickness:	0.7 mm maximum (including antenna solder thickness)
Antenna material:	Spring steel
Antenna to chip bonding method:	Soldered
Automation:	Designed for either manual or robotic application

RFID

Supported Protocol:	EPC Global C1 Gen 2 and ISO 18000-6C
Operating Frequency:	860 – 960 MHz
Integrated Circuit Chip:	Alien Higgs-3 (other chips are also available)
Yield:	99%
Read Range:	2.0 - 3.0 m when embedded in tire sidewall
EPC memory:	96 bits to 480 bits
User memory:	512 bits
Data storage life:	> 10 years
Rewrite:	100,000 times

Layout

Coil Ø 1.00 mm
4.00 mm max Chip Pad Width
Wire diameter and pitch to be determined
Soldered Antenna Connections
IC Chip (centered in chip pad)
8.00 mm
16.00 mm Pad Length
0.70 mm
Maximum chip pad thickness
See note 5.
84.00 mm ±5mm

For reference only, image scale = 3:2

Disclaimer:

All technical information and recommendations are subject to final acceptance testing on customer tire building equipment and does not constitute a guarantee or warranty. Suitability for specific applications is the responsibility of the tire manufacturer. Computype products, services and solutions are created using a collaborative innovation process that depends on access to customer application and usage information. Computype reserves the right to change materials without notice.