HYPER X ™

2.45 GHz

RFID for SECURITY

BDG_1020 V2

Tag at 2.45GHz - Semi-Passive
Applications - Personnel and Vehicle identification

COMPACT SIZE

RE-PROGRAMMABLE

LONG DISTANCE, HANDS-FREE

SIMULTANEOUS MULTITAG ID.

TAG ID IN ANY ORIENTATION

MULTI-APPLICATIONS

I - INTRODUCTION

Balogh's BDG 1020 V2 semi passive tags enables high speed identification of vehicles and people.
For vehicles, tags are placed behind the windshield using an easily attached clip. For personnel identification, these lightweight cards are worn by the user in a tag holder.
The tag is composed of a rigid plastic credit card sized case containing a microwave antenna, a MCU and a lithium battery. A polyester film hermetically seals the tag.

II - OPERATING PRINCIPLE

Electromagnetic radiation characteristics in the 2.45 GHz frequency band allow high data transmission rates and directional antenna beams. Tag detection is therefore very rapid and relatively insensitive to environmental interference.

The HyperX™ tag is electro-magnetically inactive when outside of the reader's range. It's state-of-the-art feature (registered patent) is its capacity to reflect incident microwaves - a tag receiving a 2.45 GHz carrier will echo this signal, modulated by its individual identification code, back to the reader. The reader receives and processes this signal, sending the data to a host system via a standard serial interface.

III - TAG CONTENTS

The HyperX™ tag can be progammed many times. Its memory capacity is 180 bits or 30 alphanumeric characters. The first 18 bits are reserved for use as an integrator code. This ensures that tags from different integrators do not have identical codes.

The remaining 162 bits are available to be programmed freely as desired (eg. as 27 6-bit characters). The integrator can therfore select the coding scheme best adapted to Customer requirements.

IV - OPERATING MODES

The HyperX™ tag can be read at a range of from a few cms to over 10 meters. By using microwave-based communication, data transmission times are short, from 2 to 8ms, depending on the data stored. The data is emitted in bursts which are continually generated by the tag's electronics. There are two burst modes :
- "NORMAL" mode, in which the time interval between bursts is random, average of 120ms (lying typically between 85 ms and 150ms). Using this mode, a reader can identify 5 tags in less than a second - it's ideal for personnel identification.
- "FAST" mode, in which the time interval between bursts is very short and constant - about 23ms. Using this mode, a vehicle-type reader can identify a tag-equipped vehicle travelling at speeds over 100Km/h.

V - DETECTION OF BATTERY FAILURE

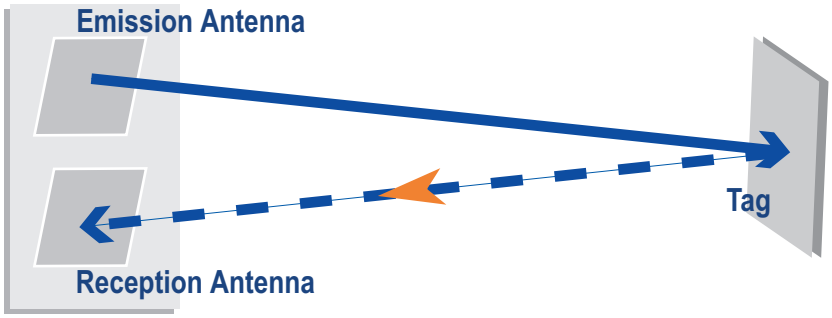
The HyperX™ tag emits no microwaves. As the tag electronics are always powered up and the power consumption is constant, the tag lifetime is a relatively well-known parameter.
Previous to battery failure the tag transmits a "battery low" signal to the readers which can inform the host systems and the holders.

TagMaster

LEARN FROM REALITY

OPERATING PRINCIPLE

The tag echoes its identification code when receiving a 2.45 GHz carrier emitted by the antenna



TAG CONTENTS

Except for the first three characters (18bits), the HyperX™ tag is programmed according to customer's needs.

Integrator Code	User code
3 Figures	27 Alphanumeric Characters of 6bits

- Binary Format - WIEGAND 26bits
- Digital Format - ISO2 (Clock&Data)
- ASCII Format (6bits)- Alphanumeric

TECHNOLOGY

SEMI-PASSIVE TAG

Balogh's HyperX™ tag is a semi passive technology.
The tags reflect the incident beam generated by the reader, modulating it with their own unique code.

- There is no generation of RF energy.
- Therefore tag life time is long and constant and is independant of tag utilisation.

Total hands free guaranteed long distance read range for personnel and vehicle applications

- Comfort of use
- High speed identification

Compact sized antenna dimensions

- Discreet and easy installation

Readers adapted to environment

- Antenna Installation on metallic or semi metallic surfaces
- Multi antennas in same zone without perturbations

Multi tag identification – anti-collision features

- True hands free in all situations
- Multi Application possibilities : simultaneous identification of vehicle, driver and passengers.

STANDARD FEATURES**

Sizes	85.6x 54.0 x 4.0mm
Weight	18 g
Color	Light grey & White (Coverlay)
Operating temperature range	- 20C° to +70C°
Storage temperature range	- 25C° to +80C°
Protection level	I.P. 54
Service lifetime* (Normal/Fast)	> 7 years / > 5 years
Frequency	2.45 GHz
Data rate	30000 bauds
Burst transmission time	3 to 8 ms
Id. burst rate (Normal/Fast)	85 to 150ms/23ms
Error protection	HDLC
Type de modulation	BPSK
(Error rate/No read rate*)	1E-7/1E-4*
Performance rate	100%
Multi-identification* (Normal mode)	> 5 tag/s
High Speed Identification (Fast mode)	> 100 km/h
Memory capacity	3+27 Characters

(*) Normal conditions of use

(**) Specifications do not form part of any contract and may be changed without notice

CAUTION

Metallic surfaces or persons coming between tags and the reading antennas create shadow zones in the identification area.
The proximity of a tag and a metallic surface or a person (<5mm) reduces the reading distance.