

# Telecommunication, Safety & EX Proof Standards & Regulatory


## Hi-G-Tek Product Certification List





December, 2008  
Rev 1.1

# 1. Long Range (UHF) RFID Readers

## 1.1 AVL Reader


<b>Europe</b> <b>AVL Reader</b> : p/n IGAV143433 ,IGAV243433 (Certification covers as well Protection Unit : p/n IGPRT01 And Display Unit : p/n IGFLD01, IGFLD02)		
<b>EMC , EMI, Radio</b>	<b>Tested to</b>	
	EN 300 220-1 V1.3.1 : 2000	
	EN 300 220-3 V1.1.1 : 2000	
	EN 300 330-1 V1.3.1 : 2001	
	EN 300 330-2 V1.1.1 : 2001	
	EN 301 489-1 V1.5.1 : 2004	
	EN 301 489-3 V1.4.1 : 2002	
<b>Safety</b>	<b>Tested to</b>	
	EN 60950-1:2001 ITE	
<b>Automotive</b>	<b>Tested to</b>	
eMark <sup>1</sup>	Complies with the European Community's Automotive Equipment Directive (2004/104/EC)	e24



<b>USA &amp; Canada</b> <b>AVL Reader</b> : p/n IGAV143916 ,IGAV243916 (Approvals covers as well Protection Unit : p/n IGPRT01 And Display Unit : p/n IGFLD01, IGFLD02)		 
<b>EMC, Radio</b>	<b>Tested to</b>	
	FCC Part 15, Sub Part B	
	FCC Part 15, Sub Part C	
<b>Industrial Safety</b>	<b>Tested to</b>	
	UL 61010-1:2004 (TUV approved) <sup>2</sup>	

<sup>1</sup> **e-Mark** is the proof of compliance with automotive regulation directives required by the European Union, it ensures that the electronic equipment installed in the vehicle does not give off emissions which will adversely affect other vehicle equipment.


<sup>2</sup> This UL standard specifies safety requirements for electrical equipment intended for professional and industrial process use in USA and Canada. On July 2004, It became an International safety standard. TUV as a NRTL notified body were approved the referred products.

## 1.2 Compact Reader

<b>Europe</b> <b>Compact Reader</b> : p/n IGCR46D433 , p/n IGCR86D433 (24VDC,48VDC respectively) (Certification covers as well: PSC unit models IGPS4RI and IGPS8RI)		
<b>EMC , EMI, RADIO</b>	<b>Tested to</b>	
	EN 300 220-1 V2.1.1 : 2006	
	EN 300 220-3 V2.1.1 : 2006	
	EN 55022: 2006,class B	
	EN 61000-4.4, 4.5, 4.6: 2006	
	EN 301 489-1 V1.5.1 : 2004	
	EN 301 489-3 V1.4.1 : 2002	
<b>Safety</b>	<b>Tested to</b>	
	EN 60950-1:2001 ITE	


<b>USA &amp; Canada</b> <b>Compact Reader</b> : p/n IGCR46D916 , p/n IGCR86D916 (Certification covers as well: PSC unit models IGPS4RI and IGPS8RI)		 
<b>EMC, RADIO</b>	<b>Tested to</b>	
	FCC Part 15, Sub Part B	
	FCC Part 15, Sub Part C	
<b>Industrial Safety</b>	<b>Tested to</b>	
	UL 60950-1:2003, CAN/CSA C22.1 60950 -1-3 (TUV approved)	


## 1.3 Hi-G-Way Reader

<b>Europe</b> <b>HiGway Reader<sup>3</sup></b> : p/n IGHR4WD433		
<b>EMC</b>	<b>Tested to</b>	
	EN 301 489-1 V1.5.1 : 2004	
	EN 301 489-3 V1.4.1 : 2002	
<b>Safety</b>	<b>Tested to</b>	
	UL 60950-1:2003, CAN/CSA C22.1 60950 -1-3	

<sup>3</sup> This is a basic HGW Reader without the backup battery, as this product is based on the CE certified Compact Reader, only partial EMC/Safety tests were required to get a full compliance with the CE mark.

## 1.4 Master Hand Held Terminals (MHHT, CF interface)


<b>Europe</b> MHHT Reader : p/n IGMA51433 	
<b>EMC , EMI, RADIO</b>	<b>Tested to</b>
	EN 300 220-1 V2.1.1 : 2006
	EN 300 220-3 V2.1.1 : 2006
	EN 55022: 2006,class B
	EN 61000-4.4, 4.5, 4.6: 2006
	EN 301 489-1 V1.6.1 : 2005
	EN 301 489-3 V1.4.1 : 2002
<b>Safety</b>	<b>Tested to</b>
	EN 60950-1:2006


<b>USA &amp; Canada</b> MHHT Reader : p/n IGMA51916 	
<b>EMC, RADIO</b>	<b>Tested to</b>
	FCC Part 15, Sub Part B, Class B and Sub part C
<b>Safety</b>	<b>Tested to</b>
TBD <sup>4</sup>	TBD


<sup>4</sup> As per business/ marketing requirement

## 2. Short Range (LF) RFID Readers

### 2.1 Micro Readers/ HHT/LF Terminal (programming unit)

<b>Europe</b> Micro Reader : p/n IGMA125S IS Micro Reader p/n IGMA125IS Low freq. Terminal :p/n IGIU125PU Hand Held Data Reader Terminal (HHT): p/n IGMA31		
<b>EMC , EMI , RADIO</b>	<b>Tested to</b>	
	EN 300 220-1 V2.1.1 : 2006	
	EN 300 220-3 V2.1.1 : 2006	
	EN 301 489-1 V1.6.1 : 2005	
	EN 301 489-3 V1.4.1 : 2002	
<b>Safety</b>	<b>Tested to</b>	
	EN 60950-1:2001 ITE	

<b>Europe</b> IS Micro Reader : p/n IGMA125S		
<b>Explosion Proof/HazLoc</b>	<b>Tested to</b>	
ATEX, Intrinsic Safety for potentially explosive environments <b>ATEX Marking<sup>5</sup>:</b> <b>II 1 G Ex ia IIB T4</b>	EN60079-0: 2006	
	EN60079-11: 2007	
	EN60079-26: 2007	

<b>USA &amp; Canada</b> Micro Reader : p/n IGMA125S IS Micro Reader p/n IGMA125IS Low freq. Terminal :p/n IGIU125PU Hand Held Data Reader Terminal (HHT): p/n IGMA31		
<b>EMC, RADIO</b>	<b>Tested to</b>	
	FCC Part 15, Sub Part B, Class B and Sub part C	
<b>Industrial Safety</b>	<b>Tested to</b>	
TBD	TBD	

<sup>5</sup> **ATEX Marking interpretation::**

II – Equipment Group II: Surface (no-mining) equipment.

1 - Equipment Category 1: Very High degree of protection for use in Zone 0 (see below)

G – Atmosphere Group: Gases, Vapors, Mists

Ex- Explosion proof equipment: The Equipment that has been certified for use in a Potentially Explosive Atmosphere

ia - A protection technique based upon the restriction of electrical energy within the apparatus and in the interconnecting wiring, exposed to a explosive atmosphere, to a level below that which can cause ignition by either sparking or heating effects. "ia" - Indicates that the electric circuit is not able to cause an ignition when there are two failures ("ib" is for a single failure situation).



IIB - Gas group B: Ethylene - typical gas in petrochemical environment.



T4- Temperature classification (max.135°C)

**Zone 0** - same as above only that the interaction with vapor /gas is likely to occur in normal operation **constantly**

### 3. RFID Seals & Tags

#### 3.1 HazLoc /TTMS seals

<b>Europe</b> Valve Seal : p/n IGFL40433 Hatch Seal: p/n IGFLH40433 Hi-G-Lock: p/n IGFLK40433		
<b>EMC ,EMI, Radio</b>	<b>Tested to</b>	
	EN 300 220-3 V1.1.1 : 2000	
	EN 300 330-2 V1.1.1 : 2001	
	EN 301 489-1 V1.2.1 : 2004	
	EN 301 489-3 V1.4.1 : 2002	
<b>Safety</b>	<b>Tested to</b>	
	EN 60950-1:2001 ITE	
<b>Explosion Proof/HazLoc</b>	<b>Tested to</b>	
<b>UL , Division 1 Class I</b> ( flammable gases, vapors, or flammable liquids) <b>Groups C and D.</b>	UL 913, Sixth Edition, CAN/CSA C22.2	
<b>ATEX</b> , Intrinsic Safety for potentially explosive environments <b>ATEX Marking<sup>6</sup> :</b> <b>II 2 G Ex ia IIB T4</b>	CENELEC EN50014: 1997 CENELEC EN50020: 2002	

<b>USA &amp; Canada</b> Valve Seal : p/n IGFL40916, IGFL41916 Hatch Seal: p/n IGFLH40916, IGFLH41916 Hi-G-Lock: p/n IGFLK40916			
<b>EMC, Radio</b>	<b>Tested to</b>		
	FCC Part 15, Sub Part C		
<b>Explosion Proof/HazLoc</b>	<b>Tested to</b>		
<b>UL Intrinsic Safety<sup>7</sup> EXia : Division 1 Class I Groups C and D</b> for potentially explosive environments (flammable gases, vapors, or flammable liquids)	UL 913, Sixth Edition, CAN/CSA C22.2 <b>FILE No. E256795</b>		

<sup>6</sup> [ATEX marking interpretation:](#)

Same as written in page 5 , but with equipment Category 2 : Zone 1(A place in which an explosive atmosphere consisting of a mixture with air of dangerous substances in the form of gas, vapor or mist is likely to occur in normal operation **occasionally**)

<sup>7</sup> [UL marking interpretation](#)

**Division 1** – Area classification, where ignitable concentrations can exist all of the time or some of the time under normal operating conditions.

**Class 1** – Equipment Category 1: operation in the presence of flammable and explosive mixtures of specific vapors and gases with air  
**Gas Group C,D** – Propane, Ethylene

**Exia- Protection method** – Intrinsic safety, explosion proof for use in **Zone 0** - Where ignitable concentrations exist all of the time or for long periods of time under normal operating conditions.

## Environmental Durability Tests


**Valve Seal** : p/n IGFL40XXX (where XXX= 433,916)


**Hatch Seal**: p/n IGFLH40XXX

**Hi-G-Lock**: p/n IGFLK40XXX

Type of environmental test	Tested to
Temperature Cycling	SAE J1455 paragraph 4.1.3.1.
Thermal shock cycling	SAE J1455 paragraph 4.1.3.2.
Mechanical shock	MIL-STD-810 D method 516.3 procedures 1 modified.
Random vibration	SAE J1455 Paragraph 4.9.3.2
Temperature and humidity	MIL-STD-810D, method 507.2 procedure I through III modified
Resistance to Splash	SAE J1455 paragraphs 4.4 ,4.4.3
Solar radiation durability	HGT-QA-3006 (paragraphs 4.1& 4.2.1)
Salt fog durability	MIL-STD-810D, method 509.2 modified
Free fall (drop)	HGT-QA-3006 (paragraphs 5.1)
Dust test	SAE J1455 paragraph 4.7


### 3.2 Data Tag, Dry contact /Wire/Magnetic/Barrier/Snap Seal


<b>Europe</b> 	
<b>DataSeal433 Family:</b> p/n IGRS40/40M/DC/BR..433 <b>DataTag433 Family:</b> IGDTeX433 (where XX :40-44 as per tilt/motion sensors combination)	
EMC ,EMI, Radio	Tested to
	EN 300 220-3 V1.1.1 : 2000
	EN 300 330-2 V1.1.1 : 2001
	EN 301 489-1 V1.2.1 : 2004
	EN 301 489-3 V1.4.1 : 2002
Safety	Tested to
	EN 60950-1:2001 ITE


<b>USA &amp; Canada</b> 	
<b>DataSeal916 Family:</b> p/n IGRS40/40M/DC/BR.. <b>DataTag916 Family:</b> IGDTeX916 (where XX :40-44 as per tilt/motion sensors combination)	
EMC, Radio	Tested to
	FCC Part 15, Sub Part C




## 4. Additional product certifications - International Regulatory :

<b>Brazil</b> AVL Reader : p/n IGAV143433 Compact Reader: p/n IGCR46D433 Valve Seal : p/n IGFL40433 Hatch Seal: p/n IGFLH40433 Data Tag: p/n IGDT41433 IS Micro Reader: p/n IGMA125IS	
	
<b>Mandatory EMC</b>	
<b>ANATEL (Regulator) certified</b>	In accordance with EN 301 489-3 and 301 489-1
<b>EX proof /Hazloc</b> In process... (TBD Jan.2009) (For Valve/Hatch/Lock Seals only)	<b>Based on ATEX test report</b>

<b>Republic of South Africa</b> AVL Reader : p/n IGAV143433 Valve Seal : p/n IGFL40433 Hatch Seal: p/n IGFLH40433 Lock Seal: p/n IGLK40433	
	
<b>Mandatory EMC, Radio &amp; Safety</b>	<b>Tested to</b>
<b>ICASA (Regulator) certified</b>	In accordance with EN 301 489-1 , EN 330 220-3 and EN 60950-1
<b>EX proof /Hazloc</b> SAEX (For Valve/Hatch/Lock Seals only)	<b>Based on ATEX test report</b>

<b>Israel</b> AVL Reader : p/n IGAV143433 Compact Reader: p/n IGCR46D433 DataSeal 433 Family DataTag: 433 Family HHT p/n: IGMA31 Programming unit: p/n IGIU125PU	
	
<b>Mandatory EMC &amp; Radio</b>	<b>Tested to</b>
<b>Type approval for telecom equipment by the MOC (Regulator)</b>	In accordance with EN 301 489-1 , EN 330 220-3

<b>Japan</b> Compact Reader: p/n IGCR46D433	
	
<b>Mandatory EMC &amp; Radio</b>	<b>Tested to</b>
<b>Type approval for telecom equipment by TELEC (Regulator)</b>	