

EMC TEST REPORT

CLIENT: H2GOGO Industries Ltd.,
The Heights,
59-65 Lowlands Road,
Harrow, Middlesex,
HA1 3AW

Report Number: 6698

CONTACT: Ms Sheila Docker

ITEM TESTED: Hydrogen Generator for Internal Combustion Engines

MODEL NUMBER: HRN3 Rail

SERIAL NUMBER: Not Available

OVERALL SPEC: ETSI EN 301 489-1: V1.9.2 (2011-09)
ETSI EN 301 489-3: V1.4.1 (2002-08)
EN 50121-3-2: 2006

SPECIFICATIONS:

CISPR 11	Conducted Emissions
CISPR 11	Radiated Emissions
BS EN 61000-4-2	Immunity to Electrostatic Discharge
BS EN 61000-4-3	Immunity to Radiated Fields
BS EN 61000-4-4	Immunity to Fast Transient Bursts
BS EN 61000-4-5	Immunity to Surges
BS EN 61000-4-6	Immunity to Conducted Disturbances

RESULTS: Conducted Emissions
Radiated Emissions
Fast Transient Bursts
Surges

PREPARED BY: Colin Howes

SIGNED:

DATE REPORT WRITTEN: 20th Nov 2012

DATE OF TESTING: 14th Sept – 20th Nov 2012

TEST SUMMARY

Title: EMC Test Report on: HRN3 Rail

Test Ref: Exp 474	Client: H2GOGO Industries Ltd.,
Test Date(s): 14 th Sept – 20 th Nov 2012	Address: The Heights, 59-65 Lowlands Road, Harrow, Middlesex, HA1 3AW
Authority: -	
Sample Received: 14 th Sept 2012	
Sample Returned: -	Contact: Ms Sheila Docker

Test Objective/Specification:

The objective of the tests is to determine the emissions and immunity of the EUT. The specifications required are: ETSI EN 301 489-1: V1.9.2 (2011-09), ETSI EN 301 489-3: V1.4.1 (2002-08) and EN 50121-3-2: 2006, which call up:

CISPR 11	Conducted Emissions
CISPR 11	Radiated Emissions
BS EN 61000-4-2	Immunity to Electrostatic Discharge
BS EN 61000-4-3	Immunity to Radiated Fields
BS EN 61000-4-4	Immunity to Fast Transient Bursts
BS EN 61000-4-5	Immunity to Surges
BS EN 61000-4-6	Immunity to Conducted Disturbances

System Description: Hydrogen Generator for Internal Combustion Engines

The Results in this Report Only Apply to the Samples Submitted for Test.

Summary of Test Results:

The EUT meets the requirements for Conducted Emissions – CISPR 11
The EUT meets the requirements for Radiated Emissions – CISPR 11
The EUT meets the requirements for ESD testing – BS EN 61000-4-2
The EUT functioned as intended during radiated immunity testing – BS EN 61000-4-3
The EUT meets the requirements for Fast Transient Bursts on the DC Power Ports – BS EN 61000-4-4
The EUT meets the requirements for Surges on the DC Power Ports – BS EN 61000-4-5
The EUT meets the requirements for Conducted Disturbances on the DC mains ports – BS EN 61000-4-6

Notes:-

1. The EUT was declared as using CE compliant RF module and antenna.
This report contains only EMC aspects of the EUT performance.

The CE Marking Association is the trade name of the companies Wemtech Ltd and Wemtech CTS Ltd.

TEST PLAN

BS EN 50121-3-2: 2006 – Railway Applications - EMC

Standard Ref	Description	Details
BS EN 50121-3-2 Table 4	Conducted Emissions	150kHz to 30MHz Limit 99 / 93 dB μ V quasi-peak
BS EN 50121-3-2 Table 6	Radiated electromagnetic disturbances	30MHz – 1000MHz (E Field) Class A
BS EN 50121-3-2 BS EN 61000-4-2	ESD	+/- 6kV Contact, +/- 8kV Air Discharge Performance criteria B
BS EN 50121-3-2 BS EN 61000-4-3	RF Electromagnetic Fields	80 – 1000 MHz 20V/m 1kHz at 80% modulation Performance criteria A
		800 – 1000 MHz 20V/m 1kHz at 80% modulation Performance criteria A
		1420 – 2100 MHz 10V/m 1kHz at 80% modulation Performance criteria A
		2100 – 2500 MHz 5V/m 1kHz at 80% modulation Performance criteria A
BS EN 50121-3-2 BS EN 61000-4-4	Fast Transient Bursts	DC power Port - +/-2kV 5/50ns 5kHz Performance criteria B
BS EN 50121-3-2 BS EN 61000-4-6	Injected currents	DC power Port - 150kHz – 80MHz 10V rms 1kHz at 80% modulation Performance criteria A
BS EN 50121-3-2 BS EN 61000-4-5	Surges	DC power Port Line to line +/- 1.0kV Performance criteria B