RF Exposure Evaluation Declaration

Product Name : Seecode Tube

Model No. : HF-921

FCC ID : VUMTUBE

Applicant : Seecode Technology Ltd. & Co. KG

Address : Roesrather Strasse 333, 51107 Koeln, Germany

Date of Receipt : 2008/08/28

Issued Date : 2008/09/22

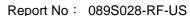
Report No. : 089S028-RF-US

The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standard through the calibration of the equipment and evaluated measurement uncertainty herein.

This report must not be used to claim product endorsement by CNLA, NVLAP, NIST or any agency of the Government.

The test report shall not be reproduced except in full without the written approval of QuieTek Corporation.





Test Report Certification

Issued Date : 2008/09/22 Report No. : 089S028-RF-US

QuieTek

Product Name : Seecode Tube

Applicant : Seecode Technology Ltd. & Co. KG

Address : Roesrather Strasse 333, 51107 Koeln, Germany

Manufacturer : Shanghai Flaircomm Technologies Inc

Address : No. 5, Bibo Road, Keyuan Building 4F, Zhangjiang

Hi-Tech Park, Shanghai 201203 P.R. China

Model No. : HF-921

FCC ID : VUMTUBE

EUT Voltage : DC 3.7V

Trade Name : Seecode

Applicable Standard : FCC OET 65

Test Result : Complied

Performed Location : SuZhou EMC laboratory

No.99 Hongye Rd., Suzhou Industrial Park Loufeng

Hi-Tech Development Zone., SuZhou, China

TEL: +86-512-6251-5088 / FAX: +86-512-6251-5098

FCC Registration Number: 800392

Documented By :

Any Liu

Marlinchen

Reviewed By :

Marlin Chen)

Approved By

Gene Chang)



Report No: 089S028-RF-US

Laboratory Information

We, **QuieTek Corporation**, are an independent EMC and safety consultancy that was established the whole facility in our laboratories. The test facility has been accredited by the following accreditation Bodies in compliance with ISO 17025, EN 45001 and Guide 25:

Taiwan R.O.C. : BSMI, DGT, CNLA

Germany : TUV Rheinland

Norway : Nemko, DNV USA : FCC, NVLAP

Japan : VCCI

The related certificate for our laboratories about the test site and management system can be downloaded from QuieTek Corporation's Web Site: http://tw.quietek.com/modules/myalbum/

The address and introduction of QuieTek Corporation's laboratories can be founded in our Web site : http://www.quietek.com/

If you have any comments, Please don't hesitate to contact us. Our contact information is as below:

HsinChu Testing Laboratory:

No.75-2, 3rd Lin, Wangye Keng, Yonghxing Tsuen, Qionglin Shiang, Hsinchu County 307, Taiwan, R.O.C.















LinKou Testing Laboratory:















Suzhou Testing Laboratory:















1. RF Exposure Evaluation

1.1. Limits

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in 1.1307(b)

LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

	Electric	Magnetic	Power	Average			
Frequency	Field	Field		Time			
Range (MHz)	Strength	Strength	Density				
	(V/m)	(A/m)	(mW/cm2)	(Minutes)			
(A) Limits for Occupational/ Control Exposures							
300-1500			F/300	6			
1500-100,000			5	6			
(B) Limits for General Population/ Uncontrolled Exposures							
300-1500			F/1500	6			
1500-100,000			1	30			

F= Frequency in MHz

Friis Formula

Friis transmission formula: Pd = (Pout*G)/(4*pi*r2)

Where

Pd = power density in mW/cm2

Pout = output power to antenna in mW

G = gain of antenna in linear scale

Pi = 3.1416

R = distance between observation point and center of the radiator in cm

Pd id the limit of MPE, 1 mW/cm2. If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.



1.2. Test Procedure

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

The temperature and related humidity: 18°C and 78% RH.

1.3. Test Result of RF Exposure Evaluation

Product	:	Seecode Tube	
Test Item	:	RF Exposure Evaluation	
Test Site	:	AC-4	
Test Mode	:	Mode 1: Transmit	

Antenna Gain:

Antenna Gain: The maximum Gain measured in fully anechoic chamber is 0.54dBi or 1.33 in linear scale.

Output Power Into Antenna & RF Exposure Evaluation Distance:

Channel	Channel Frequency (MHz)	Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm2)
00	2402	3.8019	0.0009
39	2441	3.9355	0.0009
78	2480	4.1591	0.0009