



**EMC Testing/Engineering Services**



NVLAP ACCREDITED  
NARTE Certified Engineer  
Professional Engineer

ELITE Electronic Engineering  
TCB Services  
1516 Centre Circle  
Downers Grove, IL 60515-1082

August 20, 2001

Re: Application for Certification of Johnson Controls Transmitter under 47CFR 15.231.  
FCC ID: **CB2JAG2HL3**

Gentlemen:

On behalf of the applicant, Johnson Controls Interiors, LLC, please find attached the submittal materials for certification of the JCI Universal Garage Door Opener, Model CB2JAG2HL3. This model, a part of their Homelink® III series, is capable of learning the current garage door transmit frequencies from 288MHz through 420MHz except in the forbidden frequency regions.

Pursuant to 47CFR 0.459, Johnson Controls Interiors requests that these listed exhibits be held confidential.

Circuit Block Diagrams	page 2 of Exhibit B
Theory/Description of Operation, Schematics	page 3 of Exhibit B
Bill of Material, Parts List	pages 4 & 5 of Exhibit B
	page 1,2 of Misc. Exhibits

Johnson Controls Interiors has invested considerable resources into developing this Homelink® series. Having the listed exhibits available to 'competition' would negate the advantage achieved in developing this product. Since their Homelink® series transmitters will be a major product line for Johnson Controls Interiors, not protecting the details of the design will result in a financial hardship for the company.

The complete List of the Exhibits in this submittal package appears on Page 2 of this cover letter.

Your prompt consideration of this application for product certification will be greatly appreciated. Should you have any questions regarding the content of this report, kindly contact me.

Sincerely,

Ted Chaffee,  
Technical Lab Manager  
Narte Certified Engineer, #EMC-002025-NE  
tel/fax: 616. 424.7014  
email: tchaffee@ahde.com, or ahd@locallink.net

# Table of Contents

Cover Letter / Table of Contents		Total Pages	2
EXHIBIT A:			
ID Label / Location [2.925,2.926,2.1033(b2,7),15.19(a3)]		Total Pages	2
EXHIBIT B:			
Description of Product [2.1033(b6)]		Total Pages	1
Circuit Block Diagram [2.1033(b5)]		Total Pages	1
Description of Operation [2.1033(b4)]		Total Pages	1
Schematics [2.1033(b5)]			
Transmitter PCB schematic	EXB_TXSchematic.pdf	Total Pages	1
Interface PCB schematic	EXB_BtnSchematic.pdf	Total Pages	1
EXHIBIT C:			
Product photos		Total Pages	10
Exterior views [2.1033(b7)]	Two photos		
	EXC_EUTexttop.jpg, EXC_EUTextbtm.jpg,		
Interior & Printed Circuit Boards [2.1033(b7)]	Seven photos		
	EXC_PCBin.jpg, EXC_PCBtop.jpg, EXC_PCBbtm.jpg		
	EXC_EUTonHosttop.jpg, EXC_EUTonHostbtm.jpg		
	EXC_HostPCBtop.jpg, EXC_HostPCBbtm.jpg		
EXHIBIT D:			
User's Manual	EXD_OEMUserManual.doc	Total Pages	4
EXHIBIT E:			
Setup photos [2.1033(b8)]	Four photos	Total Pages	5
	EXE_pretest.jpg, EXE_side.jpg, EXE_end.jpg, EXE_flat.jpg		
Report of Measurements [2.1033(b6)]		Total Pages	33
Table of Contents	Page 2		
Manufacturer/Applicant [2.1033(b1)]	Page 4		
Measurement/Test Facility & Equipment	Page 4		
Configuration/Setup [2.1033(b8)]	Page 5		
Test Standards / Methods Used [2.1033(b6)]	Page 7		
Test Methodology [2.1033(b6)]	Page 7		
Test Data [2.1033(b6)]			
Summary of Results	Page 6		
Level vs Supply Voltage [15.31(e)]	Page 13		
Occupied Bandwidth	Page 14		
Radiated Field Strength [15.231(b)]	Page 16		
Misc. EXHIBIT:			
Parts List/Tune-up Information [2.1033(b5)]		Total Pages	2
	EXmisc_TXParts.pdf"		
RF Exposure Information [2.1093(c)]		Total Pages	1