



NVLAP ACCREDITED
NARTE Certified Engineer
Professional Engineer

Federal communications Commission
Equipment Approval Services, P.O. Box 358315
Pittsburgh, PA 15251-5315
Attention: Authorization & Evaluation Division

February 28, 2000

Re: Application for Certification of Johnson Controls Transmitter under 47CFR 15.231.
FCC ID: **CB2ANHL3**

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 VB5416 This generation of their Homelink® series is capable of learning the current garage door transmit frequencies from 288MHz through 420MHz with pulse modulation duty cycles from 30 through 80 percent.

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

- | | |
|------------|----------------------------------|
| Exhibit G | Theory/Description of Operation, |
| Exhibit H: | Circuit Block Diagrams |
| Exhibit I: | Schematics |
| Exhibit J: | Bill of Material, Parts List |

Johnson Controls Interiors has invested considerable resources into developing this Homelink® III series. Having the listed exhibits available to 'competition' would negate the advantage achieved in developing this product. Since their Homelink® III 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

Form 731, form 159 with payment

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|---------------------------------------------------------------------|-----------------------------------------|-------------|----|
| EXHIBIT A: Cover Letter / Table of Contents | | Total Pages | 2 |
| EXHIBIT B: Statements of Attestation [2.911(d)] | | Total Pages | 3 |
| Attesting to Accuracy of Data | Exhibit B, File "EXB_p1DataAttst.jpg" | | |
| Public Notice 22504 | Exhibit B, File "EXB_p1DataAttst.jpg" | | |
| Power of Attorney | Exhibit B, File "EXB_p2PowrOAttrny.jpg" | | |
| AHD Accreditation | Exhibit B, File "EXB_p3NV:APCert.jpg" | | |
| EXHIBIT C: Description of Product [2.1033(b6)] | | Total Pages | 1 |
| EXHIBIT D: Product photos - exterior [2.1033(b7)] | Three photos | Total Pages | 2 |
| EXHIBIT E: Product photos - Printed Circuit Board [2.1033(b7)] | Two photos | Total Pages | 2 |
| EXHIBIT F: ID Label / Location [2.925,2.926,2.1033(b2,7),15.19(a3)] | | Total Pages | 2 |
| EXHIBIT G: Description of Operation [2.1033(b4)] | | Total Pages | 1 |
| EXHIBIT H: Circuit Block Diagram [2.1033(b5)] | | Total Pages | 1 |
| EXHIBIT I: Schematics [2.1033(b5)] | | Total Pages | 2 |
| Transmit PCB schematic | Exhibit I, File "EXI_TrnsSchematic.pdf" | | |
| Switch/Button board PCB schematic | Exhibit I, File "EXI_SwBSchematic.pdf" | | |
| EXHIBIT J: Parts List/Tune-up Information [2.1033(b5)] | | Total Pages | 3 |
| Transmit PCB Parts List | Exhibit J, File "EXJ_TrnsParts.pdf" | | |
| Switch/Button board PCB Parts List | Exhibit J, File "EXJ_SwBParts.pdf" | | |
| EXHIBIT K: Report of Measurements [2.1033(b6)] | | Total Pages | 31 |
| Detailed Table of Contents | Exhibit K, Page 2 | | |
| Manufacturer/Applicant [2.1033(b1)] | Exhibit K, Page 4 | | |
| Measurement/Test Facility & Equipment | Exhibit K, Page 4 | | |
| Configuration/Setup [2.1033(b8)] | Exhibit K, Page 5 | | |
| Summary of Results | Exhibit K, Page 6 | | |
| Test Standards / Methods Used [2.1033(b6)] | Exhibit K, Page 7 | | |
| Test Methodology [2.1033(b6)] | Exhibit K, Page 7 | | |
| Test Data [2.1033(b6)] | Exhibit K, Page 10 | | |
| Level vs Supply Voltage [15.31(e)] | Exhibit K, Page 12 | | |
| Occupied Bandwidth | Exhibit K, Page 13 | | |
| Radiated Field Strength [15.231(b)] | Exhibit K, Page 15 | | |
| EXHIBIT L: Setup photos [2.1033(b8)] | Six photos | Total Pages | 6 |
| EXHIBIT M: RF Exposure Information [2.1093(c)] | | Total Pages | 1 |
| EXHIBIT N: User's Manual | | Total Pages | 4 |