



OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT
FACILITIES DEVELOPMENT DIVISION

APPLICATION FOR OSHPD SPECIAL SEISMIC
CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY

APPLICATION #: OSP – 0154-10

OSHPD Special Seismic Certification Preapproval (OSP)

Type: ☐ New ☒ Renewal

Manufacturer Information

Manufacturer: Mircom Group of Companies

Manufacturer's Technical Representative: Mara Cherubin

Mailing Address: 25 Interchange Way, Vaughan, Ontario L4K 5W3, Canada

Telephone: (905) 660-4655 Email: mcherubin@mircom.com

Product Information

Product Name: Fire Alarm Control Panel BBX-1024XT and BBX-1024DS

Product Type: Fire Alarm Control Panel

Product Model Number: See Certified Product Table attached

(List all unique product identification numbers and/or part numbers)

General Description: Fire Alarm Control Panels with varying enclosures and modules.

Mounting Description: Rigidly wall mounted

Applicant Information

Applicant Company Name: Mircom Group of Companies

Contact Person: Mara Cherubin

Mailing Address: 25 Interchange Way, Vaughan, Ontario L4K 5W3, Canada

Telephone: (905) 660-4655 Email: mcherubin@mircom.com

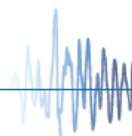
I hereby agree to reimburse the Office of Statewide Health Planning and Development review fees in accordance with the California Administrative Code, 2016.

Signature of Applicant:  Date: 11/22/2016

Title: Technical Writer Company Name: Mircom Group of Companies

"Access to Safe, Quality Healthcare Environments that Meet California's Diverse and Dynamic Needs"

STATE OF CALIFORNIA – HEALTH AND HUMAN SERVICES AGENCY
OSH-FD-759 (REV 12/16/15)



OSHPD

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**OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT
FACILITIES DEVELOPMENT DIVISION**

California Licensed Structural Engineer Responsible for the Engineering and Test Report(s)

Company Name: Forell/Elsesser Engineers, Inc.
Name: Marco Scanu, SE California License Number: S4454
Mailing Address: 160 Pine St., 6th Flr., San Francisco, CA 94111
Telephone: (415) 837-0700 Email: m.scanu@forell.com

Supports and Attachments Preapproval

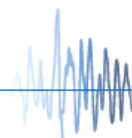
- ☐ Supports and attachments are preapproved under OPM-
(Separate application for OSHPD Preapproval of Manufacturer's Certification (OPM) of Supports and attachments is required)
- ☒ Supports and attachments are not preapproved

Certification Method

- ☒ Testing in accordance with: ☒ ICC-ES AC156
- ☐ Other (Please Specify): _____

Testing Laboratory

Company Name: NTS Fullerton
Contact Name: Ratish Rao
Mailing Address: 1536 East Valencia Drive, Fullerton, CA 92831
Telephone: (714) 879-6110 Email: Ratish.rao@nts.com





OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT FACILITIES DEVELOPMENT DIVISION

Seismic Parameters

Design in accordance with ASCE 7-10 Chapter 13: ☒ Yes ☐ No

Design Basis of Equipment or Components (F_p/W_p) = 1.11

S_{DS} (Design spectral response acceleration at short period, g) = 2.46

a_p (In-structure equipment or component amplification factor) = 2.5

R_p (Equipment or component response modification factor) = 6.0

Ω_0 (System overstrength factor) = 2.0

I_p (Importance factor) = 1.5

z/h (Height factor ratio) = 1.0

Equipment or Component Natural Frequencies (Hz) = See attachment, UUT Summary Sheets

Overall dimensions and weight (or range thereof) = See attachment, Certified Products Table

Equipment or Components @ grade designed in accordance with ASCE 7-10 Chapter 15: ☐ Yes ☒ No

Design Basis of Equipment or Components (V/W) = _____

S_{DS} (Design spectral response acceleration at short period, g) = _____

S_{D1} (Design spectral response acceleration at 1 second period, g) = _____

R (Response modification coefficient) = _____

Ω_0 (System overstrength factor) = _____

C_d (Deflection amplification factor) = _____

I_p (Importance factor) = 1.5

Height to Center of Gravity above base = _____

Equipment or Component Natural Frequencies (Hz) = _____

Overall dimensions and weight (or range thereof) = _____

Tank(s) designed in accordance with ASME BPVC, 2015: ☐ Yes ☒ No

List of Attachments Supporting Special Seismic Certification

☒ Test Report(s) ☐ Drawings ☒ Calculations ☒ Manufacturer's Catalog

☒ Other(s) (Please Specify): Certified Products Table, Certified Subcomponents Table, UUT Summary Sheets

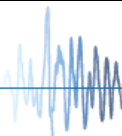
OSHPD Approval (For Office Use Only) – Approval Expires on December 31, 2022

Signature:  Date: 3/9/2017

Print Name: M. R. Karim Title: SHFR

Special Seismic Certification Valid Up to : S_{DS} (g) = 2.46 z/h = 1.0

Condition of Approval (if applicable): _____



Mircom-Fire Alarm Control Panel

I. Certified Product Table

Unit	Width	Depth	Height	Weight	Construction Material ^{1,2}	Model Number	Notes	Test Status
Fire Alarm Control Panels								
QX-MINI Emergency Communication System in BBX-1024DS Enclosure	14.5"	4.2"	26"	15.5 lbs	16 ga. CFS	QX-MINI	3	UUT2
FX-2003-6 Compact Main Chassis in BBX-1024 Enclosure	14.5"	4.5"	26"	51.5 lbs	16 ga. CFS	FX-2003-6	3	NTS1
FX-3500 Fire Alarm Control Panels	14.5"	4.2"	26"	60.0 lbs	16 ga. CFS	FX-3500	3	Interpolated
FlexNet Fire Alarm Control Panels	14.5"	4.2"	26"	60.0 lbs	16 ga. CFS	FlexNet Fire Alarm Control Panels	3	Interpolated
FX-2000 Fire Alarm Control Panel in BBX-1024XT Enclosure	14.5"	5.25"	35.5 in	73.0 lbs	16 ga. CFS	FX-2000	3	UUT1
FX-2000 Fire Alarm Control Panels	14.5"-30"	4.2"-7"	26"-60"	85.0 lbs	16 ga. CFS	FX-2000	3	Interpolated
FlexNet Intelligent Fire Alarm and Audio Network System	20"-30"	7"-9"	36"-61.5"	200.0 lbs	16 ga. CFS	FlexNet Intelligent Fire Alarm and Audio Network System	3	Interpolated
FX-2009S-12 Large Main Chassis in BB-5014 Enclosure	30"	7"	60"	234.0 lbs	16 ga. CFS	FX-2009S-12	3	NTS2

Notes

1. All enclosures are NEMA 1 or NEMA 3R rated.
2. CFS= cold-formed carbon steel
3. Wall mounted.

Mircom-Fire Alarm Control Panel
II. Certified Subcomponents Table

Internal Components	Manufacturer	Part #	Testing Status
Enclosures			
Enclosure 60"H x 30"W x 7"D	Mircom	BB-5014	NTS2
Enclosure 61.5"Hx20"Wx9"D	Mircom	BBX-FXMNS	Interpolated
Enclosure 36"H x 30"Wx7"D	Mircom	BB-5008	Interpolated
Enclosure 32.5"Hx25"Wx6.5"D	Mircom	BBX-1072A	Interpolated
Enclosure 26"Hx14.5"Wx4.5"D	Mircom	BBX-1024	NTS1
Enclosure 26"Hx14.5"Wx4.5"D	Mircom	BBX-1024DS	UUT2
Enclosure 26"Hx14.5"Wx4.5"D	Mircom	BBX-1024XT	UUT1
Backbox 32.5"Hx25"Wx6.5"D	Mircom	BBX-1072ADS	Interpolated
Backbox 32.5"Hx25"Wx6.5"D	Mircom	BBX-1072ADSR	Interpolated
Backbox 26"Hx14.5"Wx4.2"D	Mircom	UB-1024DS	Interpolated
White Door for UB1024DS Backbox	Mircom	DOX-1024DS	Interpolated
Red Door for UB1024DS Backbox	Mircom	DOX-1024DSR	Interpolated
White Metal Door for BB-5008	Mircom	DOX-5008M	Interpolated
Red Metal Door for BB-5008	Mircom	DOX-5008MR	Interpolated
Custom Mounting Kit for BB-5008	Mircom	CCH-5008	Interpolated
White Metal Door for BB-5014	Mircom	DOX-5014M	Interpolated
Red Metal Door for BB-5014	Mircom	DOX-5014MR	NTS2
Custom Mounting Kit for BB-5014	Mircom	CCH-5014	Interpolated
Main Control Unit			
Compact main Control Unit	Mircom	FX-2003-6DS-16LED	Interpolated
Compact Main Control Unit	Mircom	FX-2003-6DS	Interpolated
Compact main Control Unit	Mircom	FX-2003-12DS	NTS1
Compact main Control Unit	Mircom	FX-2003-12XTDS	UUT1
Mid-Size Main Control Unit	Mircom	FX-2017-12ADS	Interpolated
Large Main Control Unit	Mircom	FX-2009-12DS	NTS2
Expander Chassis	Mircom	ECX-0012	NTS2
318 Point Intelligent Fire Alarm Control Unit	Mircom	FX-3500	Interpolated
318 Point Intelligent Fire Alarm Control Unit	Mircom	FX-3500RCU	Interpolated
318 Point Intelligent Fire Alarm Control Unit	Mircom	FX-3500W	Interpolated
318 Point Intelligent Fire Alarm Control Unit	Mircom	FX-3500RCUW	Interpolated
Master Panel	Mircom	QX-MINI	UUT2
Booster Panel	Mircom	QX-MINI-BP	Interpolated
Remote Microphone	Mircom	QX-MINI-RM	Interpolated
Local Operating Console	Mircom	QX-MINI -LOC	Interpolated
Amplifier Module	Mircom	QAD-30	Interpolated
Zone Controller	Mircom	QAZT-5302DS	Interpolated
Main Network Board	Mircom	FX-2000MNS	Interpolated
Main LCD Display	Mircom	DSPL-420	Interpolated
Graphical Main Display	Mircom	DSPL-2440	Interpolated
Integrated Audio Network Control Chassis	Mircom	QMB-5000N	Interpolated
Network Fire Alarm and Audio Power Supply	Mircom	PS-2040	Interpolated
Lead-Acid Batteries			
Microm Sealed Lead-Acid Batteries	Mircom	CAT-5326	UUT1 & UUT2
Gel-Cell Batteries			
24VDC, Gel-Cell	Mircom	BAT-12V18A	UUT2
Power Supply			
24 VDC, 12 Amps (max.)	Mircom	MD-764	UUT1
24 VDC, 9.5 Amps (max.)	Mircom	MD-1078	UUT2

Internal Components	Manufacturer	Part #	Testing Status
Adder Loop Controller Modules & Network Controller Modules			
Single Analog Loop Controller Module	Mircom	ALC-198S	Interpolated
Dual Analog Loop Controller Module	Mircom	ALC-396S	NTS2
Hardware Loop Controller Module	Mircom	ALC-H16	UUT1 & NTS2
Quad Loop Controller Module	Mircom	ALCN-792M	Interpolated
Dual Loop Controller Module	Mircom	ALC-636	Interpolated
Dual Loop Controller Module	Mircom	ALCN-396S	NTS2
Fire Network Controller module	Mircom	FNC-2000	Extrapolated
Fiber Optic Network Adder Module	Mircom	FOM-2000-SP	Extrapolated
Audio Network Controller Module	Mircom	ANC-5000	Extrapolated
Telephone Network controller Module	Mircom	TNC-5000	Extrapolated
Adder Hardwire Modules			
Eight Initiating Circuit Module	Mircom	DM-1008A	UUT1, NTS1, & NTS2
Eight Relay Circuit Module	Mircom	RM-1008A	NTS1& NTS2
Four Notification Appliance Circuit Module	Mircom	SGM-1004A	NTS2
Remote Annunciators & Graphic Annunciator Driver Modules			
Remote Shared Display	Mircom	RAX-LCD	Interpolated
Main Remote LED Annunciator	Mircom	RAM-1032TZDS	Interpolated
Adder Remote LED Annunciator	Mircom	RAX-1048TZDS	UUT1 & NTS2
Remote Trouble Indicator	Mircom	RTI-1	Interpolated
Remote LCD Annunciator	Mircom	RAM-3500-LCD	Interpolated
Remote LCD Annunciator	Mircom	RAX-LCD-Lite	Interpolated
Programmable LED Display Adder	Mircom	RAX-1048TZDS	Interpolated
16 Zone Remote LED Annunciator	Mircom	RAM-1016TZDS	Interpolated
32 Zone Remote LED Annunciator	Mircom	RAM-1032TZDS	Interpolated
Graphic Annunciator Adder Driver Module	Mircom	AGD-048	Interpolated
Graphic Annunciator Driver Module	Mircom	MGD-32	Interpolated
Remote Trouble Indicator, Buzzer and LED	Mircom	RTI-1	Interpolated
Remote Microphone	Mircom	QX-MINI-RM	UUT2
Remote LCD Annunciator	Mircom	RAXN-LCD	Interpolated
Remote Graphic LCD Annunciator	Mircom	RAXN-LCDG	Interpolated
Main Remote LED Annunciator	Mircom	RAM-1032TZDS	Interpolated
Adder Annunciator Chassis	Mircom	RAM-1048TZDS	Interpolated
Adder Graphic Driver Module	Mircom	AGD-048	Interpolated
Master Graphic Driver Module	Mircom	MGD-32	UUT1
Programmable Modules			
Programmable Zone LED Annunciator Module	Mircom	RAX-1048TZDS	UUT1 & NTS1
Fan Damper Control Module	Mircom	FDX-024	Interpolated
Programmable Input Switches Module	Mircom	IPS-2424DS	NTS2
Fan Damper Control Module	Mircom	FDX-008	NTS2
Adder Auxiliary Modules			
Digital Alarm Communicator Transmitter/Dialer Module	Mircom	UDACT-300A	UUT1 & NTS1
Internal Booster Power Supply Module	Mircom	INX-10AC	Interpolated
Power Supply Interface Board	Mircom	PCS-100	Interpolated
Polarity Reversal/City Tie Module	Mircom	PR-300	NTS2
Transformers			
Yeo Hung Electronics	Mircom	TR-061 29VAC/240VA	NTS1
Yeo Hung Electronics	Mircom	TR-063 29VAC/377VA	NTS2
Standex Electronics	Mircom	TR-063 29VAC/377VA	UUT1
Signal Transformer	Mircom	TR-063 29VAC/377VA	UUT2

OSP APPLICATION
Mircom Group of Companies – Fire Alarm Control Panels
III. UUT Summary Sheets

Date: 2/3/2017

Test Report PR049078 – UUT 1

One (1) Fire Alarm Control Panel – BBX-1024XT Enclosure with FX-2003-12XTDS, ALC-396 Dual Loop Control Module, DM-1008A, RAX-1048TZDS, PR-300 and UDACT-300A 18 ga. Cold Rolled Carbon Steel 35.5"H x 14.5" W x 5.25" D, 73 lbs
Wall mounted using: (4) - #8 screws



Building Code	Test Criteria	S _{DS} (g)	z/h	I _p	Horizontal		Vertical	
					A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2016	ICC-ES AC 156	2.55	1.0	1.5	4.08	3.06	1.71	0.68
Natural Frequencies (Hz)			Test Results					
F-B	S-S	V	The UUT maintained structural integrity and functionality after the AC156 test. UUT full of contents during testing.					
n/a	n/a	n/a						

Subcomponents	Manufacturer	Part #
Compact main Control Unit	Mircom Group of Companies	FX-2003-12XTDS
Enclosure 26"Hx14.5"Wx4.5"D	Mircom Group of Companies	BBX-1024XT
24 VDC, 12A Power Supply	Mircom Group of Companies	MD-764
Microm Sealed Lead-Acid Batteries	Mircom Group of Companies	CAT-5326
Hardware Loop Controller Module	Mircom Group of Companies	ALC-H16
Eight Initiating Circuit Module	Mircom Group of Companies	DM-1008A
Adder Remote LED Annunciator	Mircom Group of Companies	RAX-1048TZDS
Programmable Zone LED Annunciator Module	Mircom Group of Companies	RAX-1048TZDS
Master Graphic Driver Module	Mircom Group of Companies	MGD-32
Digital Alarm Communicator Transmitter/Dialer Module	Mircom Group of Companies	UDACT-300A
Standard Transformer	Mircom Group of Companies	TR-063 29VAC/377VA

OSP APPLICATION
Mircom Group of Companies – Fire Alarm Control Panels
III. UUT Summary Sheets

Date: 2/3/2017

Test Report PR049078 – UUT 2

One (1) Fire Alarm Control Panel – BBX-1024DS with QX-MINI Main panel (includes microphone, Main Display, Main Board and Amplifier)

26"H x 14.5" W x 4.2" D, 15.5 lbs

Wall mounted using: (4) - #8 screws



Building Code	Test Criteria	S _{DS} (g)	z/h	I _p	Horizontal		Vertical	
					A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2016	ICC-ES AC 156	2.55	1.0	1.5	4.08	3.06	1.71	0.68
Natural Frequencies (Hz)			Test Results					
F-B	S-S	V	The UUT maintained structural integrity and functionality after the AC156 test. UUT full of contents during testing.					
n/a	n/a	n/a						

Subcomponents	Manufacturer	Part #
Master Panel	Mircom Group of Companies	QX-MINI
Enclosure 26"Hx14.5"Wx4.5"D	Mircom Group of Companies	BBX-1024DS
Microm Sealed Lead-Acid Batteries	Mircom Group of Companies	CAT-5326
24VDC, Gel-Cell	Mircom Group of Companies	BAT-12V18A
24VDC, 9.5A Power Supply	Mircom Group of Companies	MD-1078
Remote Microphone	Mircom Group of Companies	QX-MINI-RM
Standard Transformer	Mircom Group of Companies	TR-063

OSP APPLICATION
Mircom Group of Companies – Fire Alarm Control Panels
III. UUT Summary Sheets

Date: 2/3/2017

Test Report 103-1665 – NTS1

FX-2003-6 Compact Main Chassis in BBX-1024 Enclosure

Intelligent Analog Fire Alarm Control Panel

14.5"W x 4.5"D x 26"H, 51.5 lbs

Wall mounted using: (4) - #8 screws



Building Code	Test Criteria	S _{DS} (g)	z/h	I _p	Horizontal		Vertical	
					A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2016	ICC-ES AC 156	2.55	1.0	1.5	4.08	3.06	1.71	0.68
Natural Frequencies (Hz)			Test Results					
F-B	S-S	V	The UUT maintained structural integrity and functionality after the AC156 test. UUT full of contents during testing.					
n/a	n/a	n/a						

Subcomponents	Manufacturer	Part #
Compact main Control Unit	Mircom Group of Companies	FX-2003-12DS
Enclosure 26"Hx14.5"Wx4.5"D	Mircom Group of Companies	BBX-1024
Eight Initiating Circuit Module	Mircom Group of Companies	DM-1008A
Programmable Zone LED Annunciator Module	Mircom Group of Companies	RAX-1048TZDS
Digital Alarm Communicator Transmitter/Dialer Module	Mircom Group of Companies	UDACT-300A

OSP APPLICATION
Mircom Group of Companies – Fire Alarm Control Panels
III. UUT Summary Sheets

Date: 2/3/2017

Test Report 103-1665 – NTS2

FX-2009S-12 Large Main Chassis in BB-5014 Enclosure

Intelligent Analog Fire Alarm Control Panel

30"W x 7"D x 60"H, 234 lbs

Wall mounted using: (4) - #8 screws



Building Code	Test Criteria	S _{DS} (g)	z/h	I _p	Horizontal		Vertical	
					A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2016	ICC-ES AC 156	2.46	1.0	1.5	3.94	2.95	1.65	0.66
Natural Frequencies (Hz)			Test Results					
F-B	S-S	V	The UUT maintained structural integrity and functionality after the AC156 test. UUT full of contents during testing.					
n/a	n/a	n/a						

Subcomponents	Manufacturer	Part #
Adder Remote LED Annunciator	Mircom Group of Companies	RAX-1048
Programmable Input Switches Module	Mircom Group of Companies	IPS-2424
Fan Damper Control Module	Mircom Group of Companies	FDX-008
Eight Initiating Circuit Module	Mircom Group of Companies	DM-1008A
Four Indicating Circuit Module	Mircom Group of Companies	SGM-1004A
Eight Relay Circuit Module	Mircom Group of Companies	RM-1008A
Polarity Reversal/City Tie Module	Mircom Group of Companies	PR-300
Hardwire Loop Controller	Mircom Group of Companies	ALC-H16
Dual Analog Loop Controller	Mircom Group of Companies	ALC-396S
Dual Loop Controller	Mircom Group of Companies	ALCN-396S
Digital Alarm Communicator	Mircom Group of Companies	UDACT-300A