

Connecting and  
protecting people

Installation Guide  
**Panachrome+**  
Universal Controller



G852 855ML GB

v1



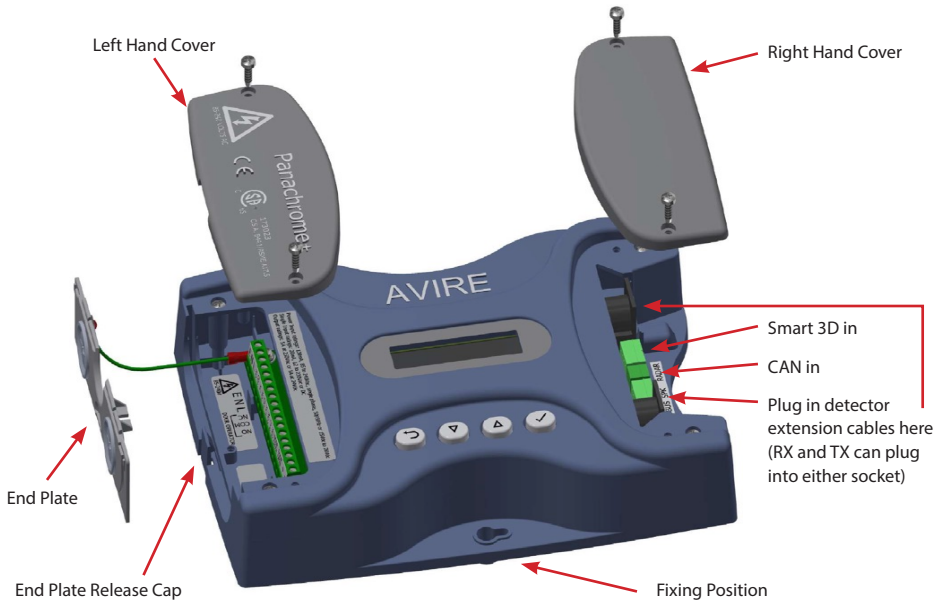


Fig 1: Connections

**Note: Before installing make sure the units are compatible to ensure reliable and trouble-free operation:** The Panachrome+ Controller (G3852 base model) is a revised Panachrome+ Controller (base model G3851) with added remote (Over-The-Air) firmware update feature when combined with an Avire DCP (Lift Digital Communication Platform). The mechanical footprint and electrical interfaces are the same for both (G3851 and G3852) models.

The Panachrome+ Controller is designed to operate with both Panachrome+ 2D Detectors (G2510 & G2540) and Panachrome+ 3D detectors (G3510 & G3540)

# 1. Connections

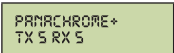
## Covers

To access the connections on the Controller it is necessary to remove the end covers protecting the terminals.

The Right Hand Cover conceals the terminals for connecting the external speaker and detector sockets. The Left Hand Cover is for the power, relays and external door signals (see Figs 1 and 2).

# 2. Installation

1. Secure the Panachrome+ Controller in a suitable position on top of car to avoid damage.
2. Connect the Controller with the correct supply voltage and Inputs (see Fig 3 below).
3. Once the detectors are installed (see detector installation guide) it is important to ensure that the detector cables & travelling cables (015 455) are secured to the door correctly, and that the travelling cables are routed to the Controller correctly.
4. Connect the Transmit (TX) and Receive (RX) leads into the Controller sockets (see Fig 4). Note: either socket can be used as the intelligent software will recognise which detector is plugged in.
5. On completion, carefully open and shut the doors by hand to check the travelling cable (015 455) has a smooth free movement and is not liable to snag on anything during normal operation, otherwise there is a risk of cables being damaged by the lift doors or caught when the lift moves.
6. With correct operation the display will show the following for a short time:



**Note: the number following TX/RX is the number of PCBs in each detector.  
If different, then please check all connections.**

7. The Green and Red Indicators will be operated by software but, if required, external signalling can be used (see Table 1 and Fig 5).

To remove the end covers simply lift upwards.

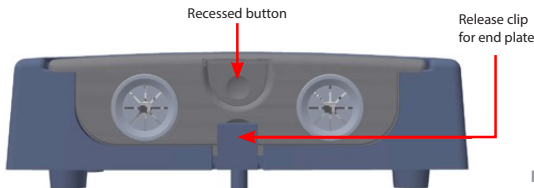


Fig 2: Connections

8. You are now ready to perform a basic lift door detection test.

**WARNING: Do not at any point place any part of your body within the path of the closing doors.**

Using a suitable opaque object (for example a torch), break the detector beam as the lift door is closing. The test is successful if the lift doors stop and initiate a reversal once the beam is broken. The controller has default factory settings that should be sufficient for basic installations. However, some installations may require additional configuration – see section 4 Menu Navigation.

## Power, relays and external door signals

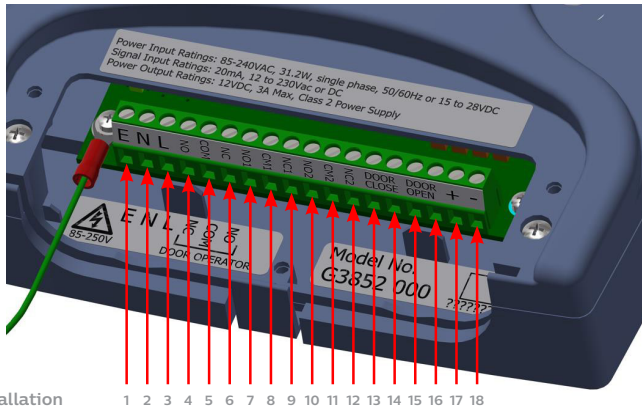


Fig 3: Installation

Terminal No.	Function	Comments
1	Earth	
2	Neutral	85 to 240VAC if powered via AC (for DC use 17 & 18)
3	Live	
4	N/C	
5	COM	Relay 1 for door operator 250VAC, 24VDC at 5A
6	N/O	
7	N/C 1	<div style="display: flex; align-items: center;"> <div style="margin-right: 10px;">Relay 2</div> </div>
8	COM 1	
9	N/O 1	
10	N/C 2	
11	COM 2	
12	N/O 2	
13	D/C	Door closing input (12 to 230 AC/DC).
14	D/C	Note: not polarised
15	D/O	Door opening input (12 to 230 AC/DC)
16	D/O	Note: not polarised
17	+	+15V/DC to 28VDC* if powered via DC
18	-	0V

Table 1

\*Controller supports DC input up to an absolute maximum of 48VDC, however, to maintain CSA certification requirements, do not exceed 28V.

## Detectors, External Speaker and Hub

The RX and TX can be plugged into either of the two 5-way DIN socket as the controller uses intelligent software to determine which one has been connected.

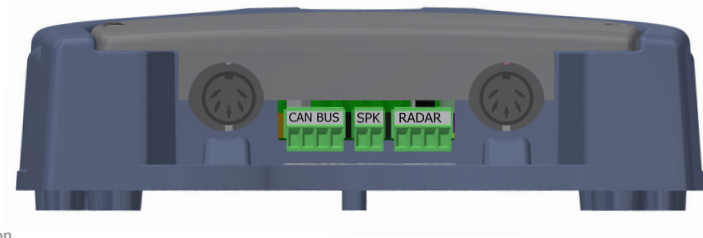


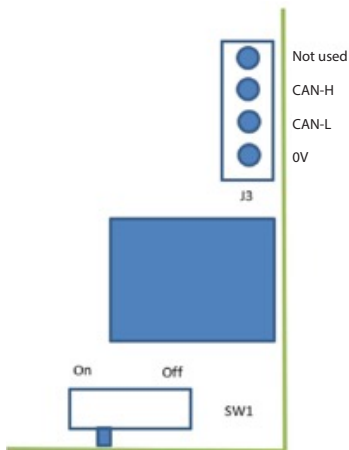
Fig 4: Installation

An optional external speaker (rated 2W, 8 Ohms or similar) can be connected to the centre 2-way terminal block.

Panachrome+ can connect to an Avire DCP using CANBus wiring

The Avire hub allows remote configuration of the system, and monitoring of fault events. G3852 000 allows remote firmware updates using the AVIRE Hub.

Optional DCP Connection - CANBus Wiring :



If this is the final product on the CAN bus set SW1 to On, otherwise set to Off.

### 3. External Signals Wiring Examples

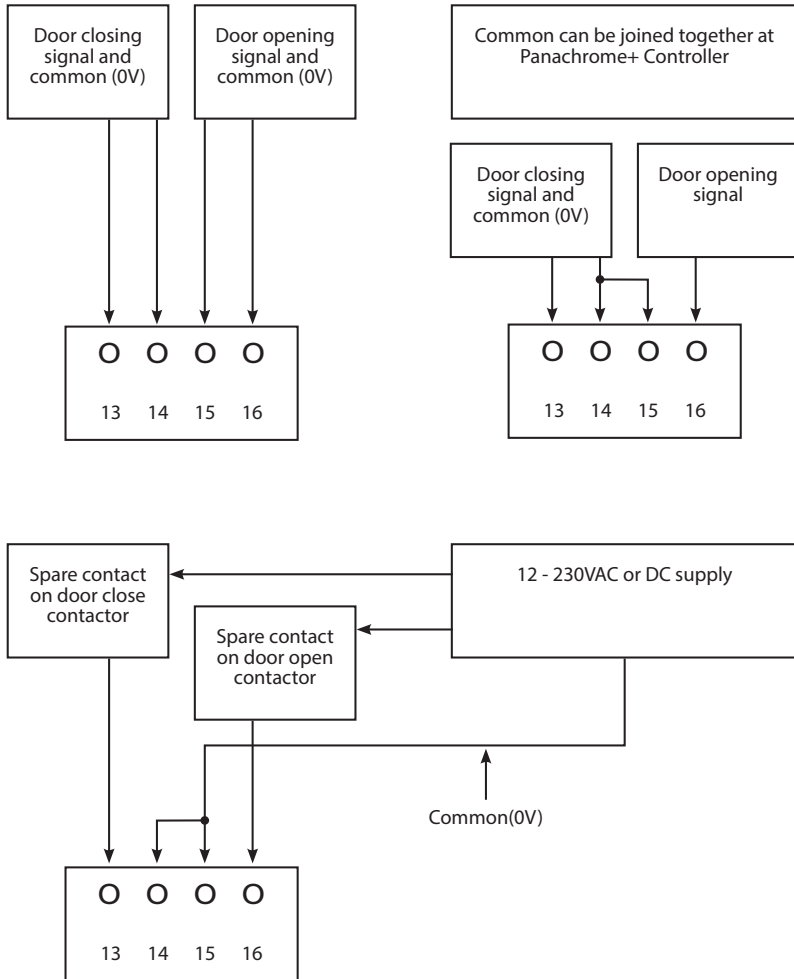


Fig 5: Installation

## 4. Menu Navigation

Panachrome+ settings can be changed by using the 4-button keypad and screen.



Terminal No.	Function
↶	Go back/cancel
▼	Menu and value down
▲	Menu and value up
✓	Menu item select and confirm

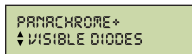
To enter the settings menu first press ▼.

Press ▲ and ▼ to go to the desired function then use ✓ to select. Some of the functions have multiple choices so use ▼ and ▲ to view. An active function is indicated by a \* symbol.

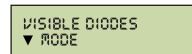
Note: the bottom line on the display is the active function or menu item. The top row displays 'Panachrome+' when the first level is selected then changes when sub-menus are accessed.

For example:

First Level



Second Level



There are 3 types of tones when navigating through the menus:

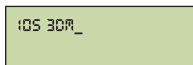
1. Single short high pitched - menu navigation
2. Single low pitch tone- incorrect selection
3. Three short tones - settings change confirmation

### Quick Config and Detector Profile Selection:

The controller must be configured for the correct detector profile width (G2510/G2540 or G3510/G3540). Incorrect choice may result in regular false triggers. However, the controller has default factory settings that may be sufficient for basic installations. For example, Detector Profile selection is automatic (electronically read on cable connection) and functional with default configuration settings.

Should the configuration of the controller settings be in an unknown state (for example, if it was changed from the default) or it is not functioning as expected, there is a simple "Quick Config" option to help configure the controller for basic functionality. To do this, press the down key until menu indicates "Quick Config". Select this, then press the down key until the correct model type is chosen (G25xx or G35xx).

Note that the LCD display is used to indicate the Panachrome+ Detector profile. As an example, if a G3510 detector model is configured then the LCD display top line would show the following.



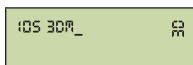
Above, the "10S" indicates that the controller is configured for use with a 10mm profile Panachrome+ Detector operating in standard "S" scanning mode. The "3DM" indicates that the detector is a 3D (G35xx) model configured with Intermediate (medium) level sensitivity. If the detector is a 2D, 43mm profile (G2540) model then the LCD would show "43S 2D" on the top line.

### Reset to Default Factory Settings:

If the configuration of your Panachrome+ unit is in an unknown state, and not functioning by using the Quick Config option described above, go to Advanced->Reset All? menu option. Select "Yes" to reset all configuration to the manufacturers factory default settings. The controller's configuration will return to factory default and should resume basic beam break detection capabilities. Now configure any specific options again as required for your end user application or specific company installation process.

### Smart 3D Configuration:

The Panachrome+ detectors support the use of an external radar based 3D detector called Smart 3D. If a Smart 3D device has been connected to the RADAR input (see Fig 4) – you may see a flashing "3D" symbol as shown below at the top right of the LCD display:



A flashing "3D" symbol indicates that the Smart 3D hardware has been detected but has **not** been "Enabled" for use yet. Enabling the use of the external Smart 3D detector will disable the standard 3D IR detection that is built-into detectors such as the G3510, G3520 and G3540.

To enable Smart 3D:

- 1) Press the down key until menu indicates "Quick Config". Select this option.
- 2) then press the down key until the correct model detector type is shown  
– choose G25xx or G35xx.

This will configure your detector profile and also enable your Smart 3D device for use. Once the Smart 3D has been enabled – the LCD display indicates this by showing the "3D" symbol permanently, without flashing.

If the Smart 3D device is no longer required for use during an installation or if it has been unplugged then you may see the "Smart 3D Error" message displayed on the LCD display. To remove this error, ensure you run the Quick Config menu option again to configure your Panachrome+ unit for operation without the Smart 3D.



# 5. Menu Navigation

Language	English	Language Selection		
	French			
	German			
	Italian			
	Spanish			
	Japanese			
Quick Config	G35xx	Quick Configurator for Product Versions Select G35xx if you have a G3510/G3520/G3540 2D/3D detector. Or Select G25xx if you have a G2510/G2520/G2540 2D (only) detector. If you have a Smart 3D device, ensure it is plugged in so that it can be auto-detected and enabled for use before selecting the above Quick Config options.		
	G25xx			
Visible Diodes	Mode	Normal	Green ON when the detectors are triggered and the doors are open/opening. Flashing red when the doors are closing and solid red when closed	
		External Inp.	Enables control of the visible diodes by the open and close door signals. Choose whether this is activated by the rising or falling edge of an external signal (see Section 6 for details)	
		Demo	Continual demo sequence of green and red diodes	
		Trigger	Visible diodes will change from green to red when the detectors are triggered	
		OFF	Turns off visible diodes	
	Sides	Both ON	This controls which detector, either TX or RX have their visible diodes ON or OFF. The default is both TX and RX visible diodes ON	
		TX only ON		
		RX only ON		
	Ext. Inp. Open	Rising Edge	Door open signal rising or falling edge signal (see Section 6 for details)	
		Falling Edge		
	Ext. Inp. Close	Rising Edge	Door closing signal rising or falling edge signal (see Section 6 for details)	
		Falling Edge		
	Green On Time		Sets green diodes on time (0 to 1000s)	
	Red On Time		Sets red diodes on time (2 to 1000s). Note: flashing/solid combined on time	
	2D	Parallel Only	OFF	Panachrome+ has 48 parallel beams and the option to activate or deactivate a further 186 diagonal beams. Choose to have parallel beams only ON or OFF
			ON	
Timeout/EN81-20		OFF	This enables/disables 2D timeout for up to 5 non-adjacent infra-red diodes	
		ON		
Timeout Period			Beam timeout time (10 to 360s)	
Cdn TMO Period			Canadian timeout time setting (not enabled)	
Sleep		OFF	Turn sleep mode ON or OFF. Default OFF	
		ON		

3D	Smrt3D Enable	Off	Turns Off Smart 3D sensor
		On	Turns On Smart 3D sensor
	Smrt3D LF Distance	+0 (default)	Sets the door separation distance (in) at which the Radar detection area is switched from high to low. The default is set to 23.62". Each increment change is 0.4"
		+0 (default)	Sets the door separation distance (in) at which the Radar detection is turned off. The default is set to 11.81". Each increment change is 0.4"
	IR Enabled	Off	** Only Available with 3D light curtains. Enable/disable 3D Infra-red detection. Advise to switch to off when using Smart 3D
		On	
	IR Sensitivity	High	** Only Available with 3D light curtains. Sensitivity settings to be changed if IR is enabled and you are getting false triggers from the device.
		Intermediate	
		Low	
	3D Mode	On at closing	3D activates when the doors are closing
On at 800mm/31.5"		3D activates when the doors are approx 800mm apart	
On always		3D always with no 3D time-out	
On (10s)		3D always with 10s 3D time-out	
On (20s)		3D always with 20s 3D time-out	
On (120s)		3D always with 120s 3D time-out	
IR Timeout Count	2-10	Counts the 3D IR triggers (2 to 10) and disables 3D IR once this count is reached. Note: resets with a 2D trigger or when doors are fully closed.	
Second Relay	Copy Main	Relay 2 mimics main relay (relay 1)	
	EN81-20 Mode	Relay 2 activates when EN81-20 conditions are not met. This can be that a diode(s) has timed out which means the 50mm target detection is now not met, or a system fault has developed	
	Canadian	Canadian timeout. If a trigger is on for the timeout period (Cdn TMO) then the relay will activate	
	ASME 17.1	Relay 2 activates: -When ASME 17.1:2019 conditions are not met. Similar to EN81-20 Mode, this can be that a diode(s) has timed out which means the 50mm target detection is now not potentially met, or a system fault has developed. -When Smart 3D fails self-test mode and is enabled - indicates fault or suboptimal operation. Note: this option is available for backward compatibility but it is recommended to use "EN81-20 / ASME 17.1" option instead which has the same behaviour.	
	ASME 17.1 No Nudge	Relay 2 activates: - On a 2D or 3D IR trigger - On a Smart 3D trigger (if attached and enabled) - On single or multiple LED failure, timeouts or system fault -When Smart 3D fails self-test mode and is enabled - indicates fault or suboptimal operation Note: This is a customer specific option and not recommended for general use.	
	EN81-20 / ASME 17.1	Relay 2 activates: - When EN81-20 or ASME 17.1:2019 conditions are not met. Similar to EN81-20 Mode and ASME 17.1 mode. - When Smart 3D fails self-test mode and is enabled - indicates fault or suboptimal operation. Note: This is the default factory configuration designed to support EN81-20 and ASME 17.1:2019 compliant installations.	
Audio	Beeper	OFF	Beeper off
		Beep ON	Beeper active on a trigger
		Beep Closing	Beeper active when the doors are closing and triggered

	Speech	OFF	Speech Output OFF
		ON	Speech Output ON
	Speech Volume		Speech volume (0 to 9). Note: 0 volume is the lowest setting and not equivalent to OFF
	Speaker	Internal	Enable internal speaker
External		Enable external and disable internal speaker	
	Speech Language	English	Defaulted to the same as menu language
		French	
		German	
		Italian	
		Spanish	
		Japanese	
	Key Sounds	OFF	Keypad sounds OFF/ON
		ON	
Door Block	Enabled	OFF	Turn door block ON/OFF
		ON	Turn door block OFF
		ON	Turn door block ON
	Voice or Beeper	Voice	Use voice message for audible door block warning
		Beeper	Use beep sound for audible door block warning
	Voice Interval	Low	Interval between each door blocked announcement
		Medium	5 seconds
		High	15 seconds
	Door Cycle Time		30 seconds
			Time in seconds for a full door cycle from door open to door closed
		Voice Limit [X]	Number of announcements when triggered
		Voice limit[]	Number of announcements when untriggered
		Alert Interval	Time in minutes before door block alert sent to hub. Alert will be repeated at the same interval (default 5 mins)
	Fault Interval		Time in minutes before door block fault alert is sent via email. This will then repeat at the same interval (default 15 mins)
			Counts the number of full door cycles from last power ON
Door Cycle	Enabled		When enabled the number of door cycles will be posted to the hub
		OFF	Don't post to the hub
		ON	Post to the hub when the door counter reaches the hub post frequency
	Hub Post Frequency	10	Number of door cycles at which the door cycles are sent to the hub
		100	Send every 10 cycles
		1000	Send every 100 cycles
	Advanced		Send every 1000 cycles
		Top Diode	Sets which diode is the top (first) diode in the beam pattern (1 to 6). This can be used to deactivate top diodes if they are triggered by the door mechanism.
		Bottom Diode	Sets which diode is bottom (last) diode in the beam pattern (12 to 48). Note that changing this may not be in compliance with EN81-20 requirements so it is defaulted to 48

Profile	10mm	G2510/G3510/G3550
	23mm	G2520/G3520
	43mm	G2540/G3540
Profile Auto Detect	Off	Disables automatic profile detection
	On	Enables automatic profile detection
Display	Triggers	Displays the last type of trigger and the distance at which it occurred. If it is a 2D trigger it will display which board or boards the trigger occurred on
	Status	Coded display of configuration and status
	Averages	Signal levels
	Version	Firmware version
	Door Cycle	Displays number of door cycles since last power up
Firmware Ver.		Display the controller firmware version
Detector FW		Detector firmware version
Screen Timeout		Screen timeout turns off the screen backlight after 30 seconds
	OFF	Screen backlight will not turn off
	ON	Screen backlight will turn off after 30 seconds
Reset All?		Reset all configuration to factory defaults. Caution – only use if advised by technical support staff.
	No	Cancel – leave settings as they are
	Yes	Reset to factory defaults and reboot unit. Use with caution as operation of the door detection is temporarily stopped and configuration of the unit is reset to factory defaults.
Hub	GSM Connected	Enable communication to DCP. (Must be connected via CAN for communication to be transmitted)
		Communication disabled
		Communication enabled
	Serial Number	Display a serial number for this unit. This is a unique, electronically generated, 12 digit alphanumeric sequence.
	Shaft No.	Shaft number must match with shaft number on the Avire HUB – default 1.
	Node No.	Node address in lift car. There can be up to 4 nodes in each car. Default address is 72. Highest address is 75.

## 6. Visible Diodes Modes detailed

Ext. Inp. Open
Ext. Inp. Close

The door open and close signals can be either rising e.g. signal goes from 0V to +24VDC, or falling so -24VDC to 0V for example. The signals are connected to terminals 13 and 14 (Door Closing) and 14 and 15 (Door Opening). Note: the inputs are not polarised.

There are two methods of using the external door inputs:

1. Nudging: when the Panachrome+ is used in Normal mode and the elevator controller provides a nudging facility, then the nudging control signal can be connected to the Panachrome+ D/C (Door Closing) input. This will ensure that when the doors close under nudging control the Panachrome+ visible diodes remain red, even if the detectors are triggered
2. Open/Close signalling: this provides the fastest visible diode response to indicate door movement, but if the detectors are statically mounted then these inputs can be used to activate the red/green indications.

## 7. 3D Modes detailed

ON at Closing	3D proximity detection will be activated as the doors begin to close. The system will allow up to three consecutive triggers on the 3D (this can be changed by the Timeout Count setting up to 10 triggers). After this, the 3D will be turned OFF leaving only the 2D detection. If there is a 2D trigger then the Timeout Count is reset
ON at 800mm	This mode of 3D operation is similar to ON at Closing but the 3D will only become active when the doors are closing and have reached a separation of approximately 800mm. This mode is usually for wider doors to restrict the range of 3D detection into the landing.
ON Always	The 3D detection will always be active without the 3D timeout timer (see following modes).
ON(10s)	In this mode the 3D detection is activated when the doors have reached their fully opened position (max 1.2m). As long as the 3D detection zone is clear the doors will be closed normally by the door operator. However, if someone is inside the 3D detection zone then the doors will be held open i.e. the main relay is de-energised and a timer is started. If the timer expires the doors are allowed to close with an intermittent beep sounding as a warning. This beep will occur regardless of the beeper setting. If the 3D zone becomes clear then the timer is reset and the main relay is re-energised allowing the doors to close. If there is a 2D trigger at any time, the timer will then be reset and the door operator relay is de-energised which allows the doors to re-open. The 3D timer is set at 10 seconds internally.
ON(20s)	This is the same as ON (10s) but the timer is set to 20 seconds.
ON(120s)	This is the same as ON (10s) but the timer is set to 120 seconds.

## Appendix

### U.S. FCC & Canada ICES Compliance

Class A device compliance statement (CFR Title 47 Part 15.105 a)

#### FCC Class A

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

#### Canadian ICES-003

This Class A digital apparatus complies with Canadian ICES-003.

#### NMB-003 du Canada

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

