



Portable Traffic Lights Controller

Advanced Features



SERIES-II



PTL Controller Advanced Features

SERIES-II



Optional Remote



PTL Controller

This manual covers the Advance features of the PTL Product.

For further Training for this product contact Data Signs on 1300 785 850.

This User Manual applies to Controllers operating on firmware 05.01.03 or later.



THE PORTABLE TRAFFIC LIGHTS SHOULD ONLY BE OPERATED BY QUALIFIED TRAFFIC MANAGERS.

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■ Setting All-Red, Yellow & Green Times



ALL-RED INTERVAL TIME


Default time: 20 seconds. Range: 5 to 300 seconds.

The All-Red interval is the period of time that the aspects on both the Master and Slave units remain on the Red phase simultaneously. This allows for the clearance of traffic within the controlled area. See the *All-Red Interval Explained* section below for further detail.



YELLOW TIME SET

Default: 5 seconds. Range: 4 to 9 seconds.

The Yellow time is the duration at which the aspect on the Master or Slave units is held on the Yellow signal when moving from Green to Red phase. Enter 4 to 9 seconds and then press the  button. The Australian Standard allows for 4 to 5 seconds.



GREEN TIME SET

This button displays a MENU allowing either Maximum Green Time, Minimum Green Time or Green Extension Time to be set.

MAXIMUM Green Time

Default: 15 seconds. Range: 10 to 300 seconds.

The Maximum Green time is the maximum time-period at which an aspect on the Master or the Slave units can be held on the Green signal phase.

NOTE: This time is used as the Green signal phase time for AUTO and MANUAL mode.

You can set the Maximum Green time for ALL the units currently being used, or you can select to set the Maximum Green time for a specific unit; i.e. for Green Split implementation while running in 3-WAY CONTROL, AUTO mode. A different Green time can be set for each unit using this menu.

MINIMUM Green Time

Default: 10 seconds. Range: 5 to 99 seconds.

The Minimum Green time is the minimum time that the Green signal phase is on.

The Australian Standard allows for a range of 5 to 10 seconds for the minimum green time.

EXTENSION Green Time (using optional Vehicle Detection)

Default: 5 seconds. Range: 3 to 99 seconds.

The Green Extension time is the interval of Green phase that will be extended on each occurrence of vehicle detection (an actuation) while the Green phase is active.

For example: units are running in Shuttle Control, DEMAND mode. The Slave is currently on the Red signal phase. A vehicle is detected on the Slave. The Slave will then change to the Green signal phase. The Green extension time applies if additional vehicles are detected on the Slave while it is on the Green signal phase.

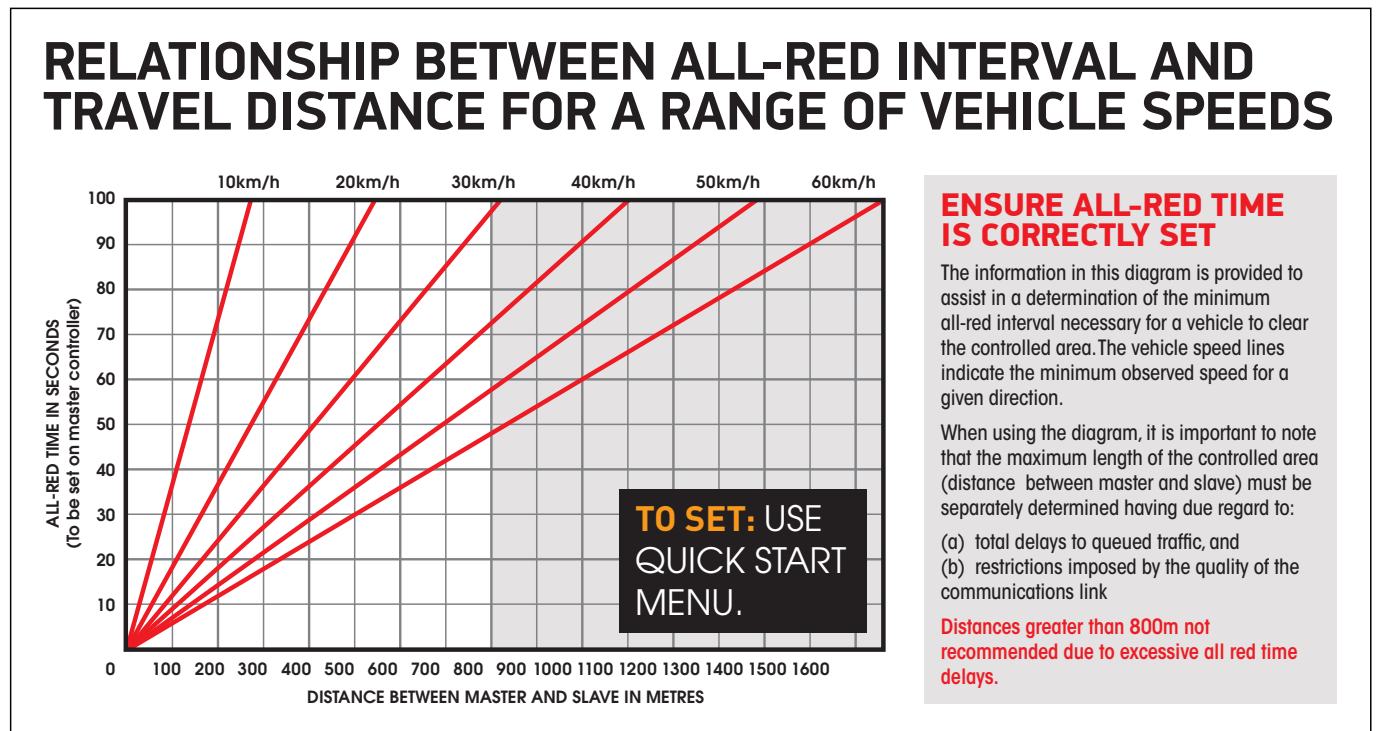
You can set the Green Extension time for ALL the units currently being used, or you can select to set the Green Extension time for a specific unit.

■ All-Red Interval Explained

The All-Red interval is the period of time that the aspects on both the Master and Slave units remain on RED (*both the Master and Slave on Red light*).

This allows for the clearance of traffic from within the controlled area. A maximum All-Red time of 300 seconds (5 minutes) can be set, **although it is not recommended that this time be used.**

The Australian Standard currently only allows for a maximum of 100 seconds. This is due to safety reasons, where drivers may be less inclined to wait at a Red light for a long period of time; i.e. “run the Red”.



Use this chart to determine the minimum All-Red interval to set depending on the distance between the PTL units and the set speed zone.

For example, if the speed limit in the road-work zone is 40 km/h, and the distance between the Master and Slave units is 500 meters, working along the red line to 40km/h, check where that intersects the distance value, to read off the All-Red Time setting which would be 45 seconds.

We recommend adding several seconds to this for an added safety margin.

■ Auto-Return Operation

Auto-Return is a function that allows for the aspects to **return-back** to a specified signal state after they have processed a demand. Auto-Return applies to Manual, DEMAND and AUTO modes.

Options available for Auto-Return:

- **NONE:** Select this option to turn Auto-Return off. *Default setting.*
- **ALL-RED:** After one of the PTL units has shown a Green aspect for the pre-set time(s), ALL the PTL units will rest on showing the RED aspects until another request or demand for Green occurs from one of the PTL units.
- **GREEN (MASTER):** Master PTL unit will rest on Green while all Slave PTL units will rest on All-Red.
NOTE: In PLANT CROSSING operation, both the Master and Slave Auto-Return to GREEN.

Set this option while the key-switch is in the **PROGRAM** position and select **OPERATION SETTING MENU**
Sub-Menu: **AUTO RETURN**



THIS FUNCTION SHOULD NOT BE USED IN NSW. ENSURE OPTION IS OFF. (Check the guidelines for your region.)

■ The Vehicle Detector [Optional]

The detection range is typically 90 Meters. The detection range is between 10kph and 80kph.

Vehicle detect, DEMAND Operation

For Shuttle Control, the Master and Slave will rest on the All-Red signal phase until a vehicle is detected on either the Master or Slave, at which point the signal will change to Green signal phase for that unit. During this time, if a vehicle is detected on the opposite unit, the DEMAND LED will flash on the Master, Slave Controller and Remote Control to indicate a DEMAND has been registered. Once this demand is processed, the DEMAND LED will go out.

If a unit is showing the Green signal and during this time another vehicle is detected by the unit, the Green time (or, time to remain on Green) will be extended by the pre-set Green-Extension time. The Green time will only be extended to the Maximum-Green time.

If there are more vehicles detected at this unit, but none on the other side, both units will go to All-Red for 2 Seconds and then go back to Green on this unit.

An artificial demand can also be generated for the Master or Slave using the appropriate button on the Master Controller or Remote Control.



Automatic Demand

If no demand is received from the vehicle detectors during the DEMAND CYCLE period, a Demand will be automatically introduced on both the Master and Slave PTL's. As specified in the Australian Standard, this caters for the situation where a vehicle is waiting on either side, but the vehicle was not detected. The DEMAND CYCLE period is set using the menu in **PROGRAM** Mode. This Automatic Demand is introduced every 3 minutes, by default. However it can be turned off or the time interval can be modified.

For more information see PTL Operations, OH&S and Maintenance Manual.

■ MAIN MENU [Master Only]

Menu: UNIT SETTINGS

Use this menu to set the Unit ID, Communications and Vehicle Detection settings.


Sub-menu: COMMUNICATION

Select the type of communication. *Wireless-Link (RF)* is the default type of communication.

If the units are joined together with twisted pair wire for direct wired communications, select *Direct-Link*.

For *Wireless link (RF)*, Enter the *RF channel* then press the  button.

Note: you will also need to change this value to match on the other unit(s) communicating with a Master unit.

Select the RF Power mode. Set to MAX by default. When the units are operating in close proximity, select LOW. Otherwise, select MAX (High Power) mode. Then press the  button.

Sub-menu: Demand for Plant Crossing *Default: Disabled*

This will allow Demand option to be set for Plant Crossing Operation.

Note: If Demand is required for Plant Crossing Mode, the Vehicle detector fitted must be fitted with a swivel adaptor. This is so it can face the direction that the actual Plant. I.e. Truck crosses the road.

Sub-menu: DTC LOW SPEED *Default: 10, Minimum: 2, Maximum: 99 km/h*

If an optional Vehicle Detector is fitted, allows the minimum detection speed to be set, in km/h.

Please note: This setting will only take effect on the Master unit. Set separately on the Slave unit.

Sub-menu: DTC HIGH SPEED *Default: 80, Minimum: 2, Maximum: over 100 km/h*

If an optional Vehicle Detector is fitted, allows the maximum detection speed to be set, in km/h.

Please note: This setting will only take effect on the Master unit. Set separately on the Slave unit.

Sub-menu: DTC SENSITIVITY *Default: 20, Minimum: 10, Maximum: 99%*

If an optional Vehicle Detector is fitted, allows the sensitivity of the Vehicle Detector to be set.

Please note: This setting will only take effect on the Master unit. Set separately on the Slave unit.

Sub-menu: PING INTERVAL *Default: 200, Minimum: 100, Maximum: 999 milliseconds*

To set the amount of time between each attempt by the Master unit to connect to the Slave units. Do not change unless advised by Data Signs.

Menu: OPERATING SETTINGS

For Primary Operational Menus see *PTL Operations, OH&S and Maintenance Manual*.

Sub-menu: BEACON *Default: Enabled*

The Beacon lamp located on the back of the aspects can be disabled. When enabled, the Beacon Lamp flashes when the Red Aspect is ON.

Note: this the Beacon is very useful for PLANT crossing, as when BOTH beacons are flashing, Both Red Lights are on and it is safe for crossing. When used in SHUTTLE operation it provides as a caution / hazard warning while the vehicle is in the controlled work zone area.

Sub-menu: TIME FORMAT *Default: Seconds*

The time display refers to the All-Red and Green time shown on the display panel of the Master Controller during normal operation. You can choose to view the time in seconds, or minutes and seconds.

Sub-menu: CONTACT TIMEOUT *Default: 5 seconds*

Use this menu item to modify the RF contact timeout period.
See the **RF Link Explained**.

Sub-menu: SHUTTLE TYPE *Default: NORMAL*

Select the type of SHUTTLE CONTROL you are setting up with this menu item.
SHUTTLE CONTROL types are discussed further below including T-Junction, 3-Way and 4-Way intersection.

Sub-menu: PLANT TYPE *Default: NORMAL*

Select the type of PLANT CONTROL you are setting up with this menu item. The two options are NORMAL and MIRROR. MIRROR this allows you to add additional PTL units that all display the same signal phase.

Sub-menu: ASPECT INHIBIT

This menu item is used primarily for testing. If required, the Controllers on the Master and Slave units can operate without activating any aspects.

Sub-Menu Demand Cycle.

In DEMAND mode, if there are no vehicles detected, you can set the period of time that an automatic demand cycle is introduced. If the DEMAND CYCLE value is set to 0, no automatic demand cycle will be introduced. Otherwise specify the minutes to wait where no vehicles are detected before introducing an automatic demand cycle.

Menu: 4G/GPS SETTINGS

If an optional 4G/GPS Communications module has been fitted to the Master Controller, use this menu item to configure the various options.

Sub-menu: VMS INTEGRATION

Use this option to turn enable or disable VMS Integration. If you select ENABLE, you will be prompted for the SMS Numbers of the DataSign-VMS the PTL's should interact with.

See also VMS integration (optional) of this manual.

Sub-menu: VMS PASSWORD *Default: 123456*

When an SMS is sent to any Data Sign-VMS as part of the VMS Integration, the start of every SMS message contains a security password. If the security password has been changed on the Data Sign-VMS that is used as part of the VMS Integration, then set the correct security password here. Note; if two Data Sign-VMS are being used, the security password must match on both, with the security password set here.

Sub-menu: SMS FAULT ALERT

Within this menu item, you can set up to two Mobile Phone numbers to be sent an SMS when the PTL set is in Flashing Yellow mode after a fault has occurred. The 'time before' the SMS messages is sent can be programmed. Disable or enable this function from within this menu also.

See also SMS Fault Reporting in Section 2 of this manual.

Sub-menu: UTC OFFSET

The satellite time is retrieved with the GPS co-ordinates. The time is Universal Coordinated Time (UTC) which means no offset to cater for different time-zones is applied. In most cases, where a SIM card has been fitted, the offset data is downloaded onto the Master PTL unit from WebVMS™, however if the time is not correct you have the option of manually setting the offset for your PTL set manually.

Sub-menu: RETRIEVE SMS NUM

This sub-menu item allows you to enter your Mobile number to receive a SMS message from the PTL Master Controller. This way you can retrieve the phone number of the SIM card fitted to the PTL Master Controller, as this number will be shown on your Mobile phone when you get the SMS.

Menu: FAULT LOG

Sub-menu: VIEW LOGS

Select this menu item to scroll through the fault log file.

More information regarding the fault log file is provided in the Fault Conditions section of this manual.

Sub-menu: ERASE ALL

Selecting this menu item deletes the fault log file that is stored on the SD memory card.

Menu: FACTORY SETTING

This menu item is restricted to Data Signs internal factory use.

Additional Operational Modes

NOTE: THESE ARE NOT PART OF THE AUSTRALIAN STANDARDS or INDIVIDUAL STATE TYPE Approval.

USE WITH LOCAL STATE AUTHORITY ONLY.

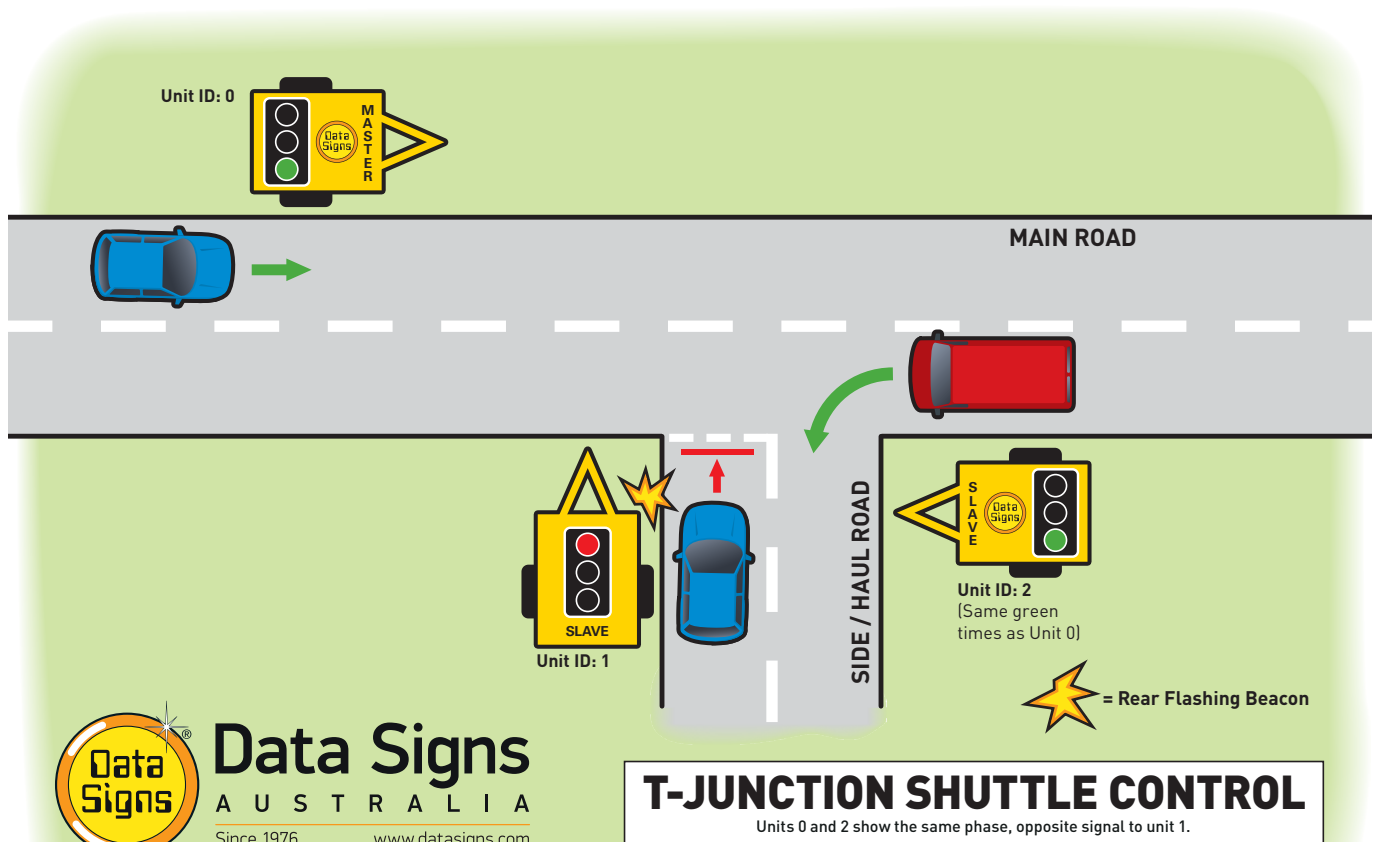
Many factors need to be considered using the following operation modes. I.e. units must be compatible with each other, same firmware, aerial configuration. Support for these features may be needed from Data Signs. Contact Data Signs for more information.

OPERATIONAL NOTE: Any controller that is set with an ID of 1 or higher is deemed to be a SLAVE controller. Only the Master controller will be set with an ID of 0. **ID=0**
As such either the front trailer or rear trailer can be programmed to be a Slave controller.

T-Junction Control


As illustrated in the diagram below, three Portable Traffic Light units can be used to control a T-junction.
Note: This diagram should not be used as a guideline for setting up a roadwork site, it is provided as an example only. Data Signs recommends short-range (RF set to LOW) setup only for this type of Control.

This Control type does not form part of the PTL Type Approval.



These illustrations are intended to outline the different modes which can be used with Data Signs Portable Traffic Lights and should not be used as examples or guidelines on how to setup a roadwork site - Separate documentation is available for these purposes. Copyright © 2017 Data Signs Pty Ltd. All rights reserved.



Units 0 and 2 will show the green signal phase; while Unit 1 will show the red signal phase and then all units will move to All-Red. Then, Unit 1 will show the green signal phase, while Units 0 and 2 will stay on the red signal phase. This cycle continues.

You can separate the green times using the  button. Use the menu that appears to select each green time in turn. Unit 0 and 2 will use the same green time.

The MANUAL, AUTO, and DEMAND modes are all available.

Setup T-Junction Control

The RF Channel must be the same for *all* units.

- On the Master unit (**Unit ID: 0**), select  Mode, then from the **OPERATING SETTINGS: & Sub-Menu: SHUTTLE TYPE**, select **T-JUNCTION**. Then return the key-switch to SHUTTLE
- For the 2 other slave units, see the diagram above to set separate **ID=1** and **ID=2**
On each unit select  Mode, then from the **Menu: UNIT SETTING & Sub-menu: ID**,

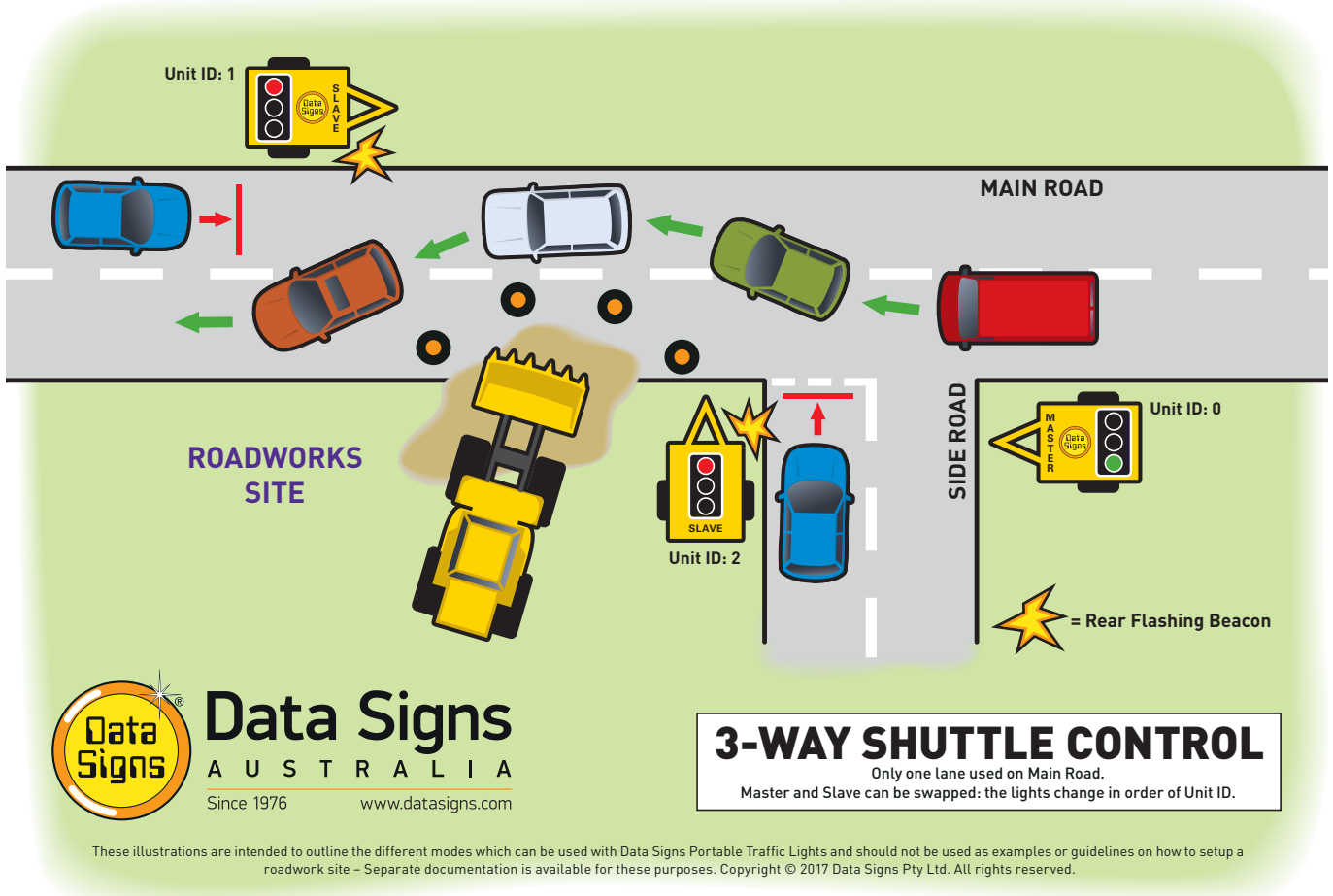
Select **ID=2** for the slave 2 unit, then select  button to select **Sub-menu: COMMUNICATION** and set **RF** to **LOW** power. Then return the key-switch to SHUTTLE

3-Way Daisy-Chain Shuttle Control

As illustrated in the diagram below, three Portable Traffic Light units can be used to control a three-way intersection; using two Portable Traffic Light sets.

Note: This diagram should not be used as a guideline for setting up a roadwork site, it is provided as an example only. Data Signs recommends short-range setup only for this type of Control.

This Control type does not form part of the PTL Type Approval.



Each PTL unit will go to the Green signal phase in turn, and then all units will move to All-Red.

You can set separate green times using the  button on the Master Controller. Use the menu that appears to select each green time in turn.

The MANUAL AUTO, and DEMAND modes are all available.

The Master and Remote Control will reflect the aspects shown on the Master and Slave unit 1. Press the slave Amber button on the Master Controller or Remote to switch between viewing the aspects displaying on the first Slave unit 1 (**Unit ID: 1**), or Slave unit 2 (**Unit ID: 2**). If any unit encounters a critical fault (i.e. aspect fault or radio link failure) all units will enter Flashing Yellow mode.

The Remote Control can be used to control the traffic flow if Manual mode is used. Additionally, the Remote Control can be used to artificially enter a demand when running in Demand mode. Press the Slave Amber button on the Remote Control to swap between viewing the signal phase for Slave unit 1 (**Unit ID: 1**) or Slave unit 2 (**Unit ID: 2**). Use the Red and Green buttons on the Remote Control to enter a demand for either phase.

Setup 3-Way Daisy-Chain Shuttle Control

The RF Channel must be the same for *all* units.

- On the Master unit (**Unit ID: 0**), select **PROGRAM** Mode, then from the **OPERATING SETTINGS: & Sub- Menu: SHUTTLE TYPE**, select **3 Way Shuttle**. Then return the key-switch to **SHUTTLE**.

- For the 2 other slave units, see the diagram above to set separate **ID=1** and **ID=2**
On each unit select **PROGRAM** Mode, then from the **Menu: UNIT SETTING & Sub-menu: ID**,

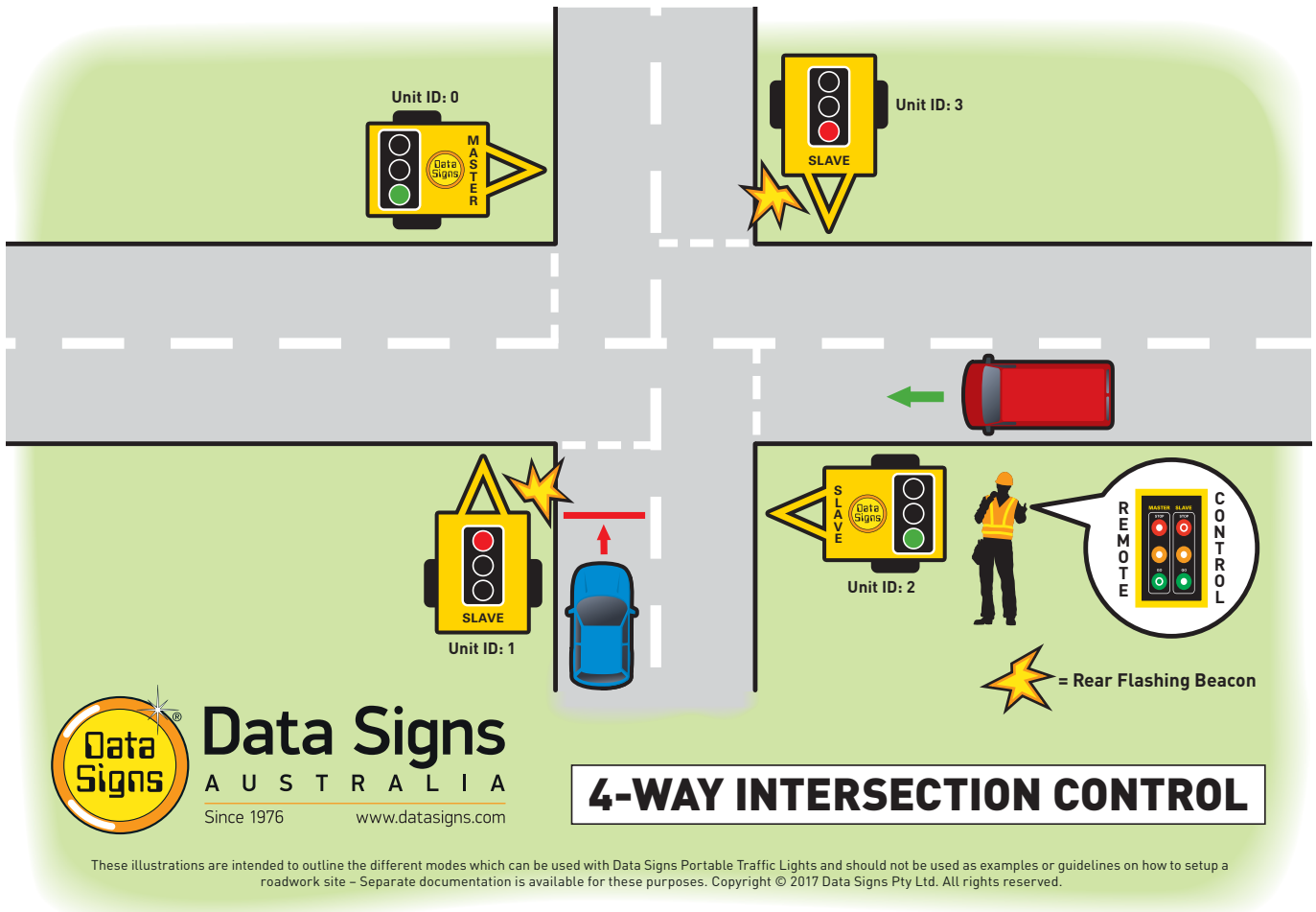
Select **ID=2** for the slave 2 unit, then select  button to select **Sub-menu: COMMUNICATION** and set **RF** to **LOW** power. Then return the key-switch to **SHUTTLE**.

4-Way Intersection Shuttle Control

As illustrated in the diagram below, **four** Portable Traffic Light units can be used to control a four-way intersection; using two Portable Traffic Light sets.

Note: This diagram should not be used as a guideline for setting up a roadwork site, it is provided as an example only. Data Signs recommends short-range setup only for this type of Control. This Control type does not form part of the PTL Type Approval.

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The Slave unit 2 (**Unit ID: 2**) will show the same signal aspect as the Master (**Unit ID: 0**).

The Slave unit 3 (**Unit ID: 3**) will show the same signal aspect as the Slave (**Unit ID: 1**).

The Manual, AUTO, and DEMAND modes are all available.

The Master and Slave Controllers and the Remote Control, will reflect the aspects shown on the Master and Slave unit 1. If any unit encounters a critical fault (i.e. aspect fault or radio link failure) all units will enter Flashing Yellow mode.

The Remote Control can be used to control the traffic flow if MANUAL mode is used. Additionally, the Remote Control can be used to artificially enter a demand when running in Demand mode. Press the Amber button on the Remote Control to swap between viewing the signal phase for Slave unit 1 (**Unit ID: 1**) or Slave unit 2 (**Unit ID: 2**). Use the Red/Green buttons on the Remote Control to enter a demand for either phase.

Setup 4-Way Intersection Control

The RF Channel must be the same for all units.

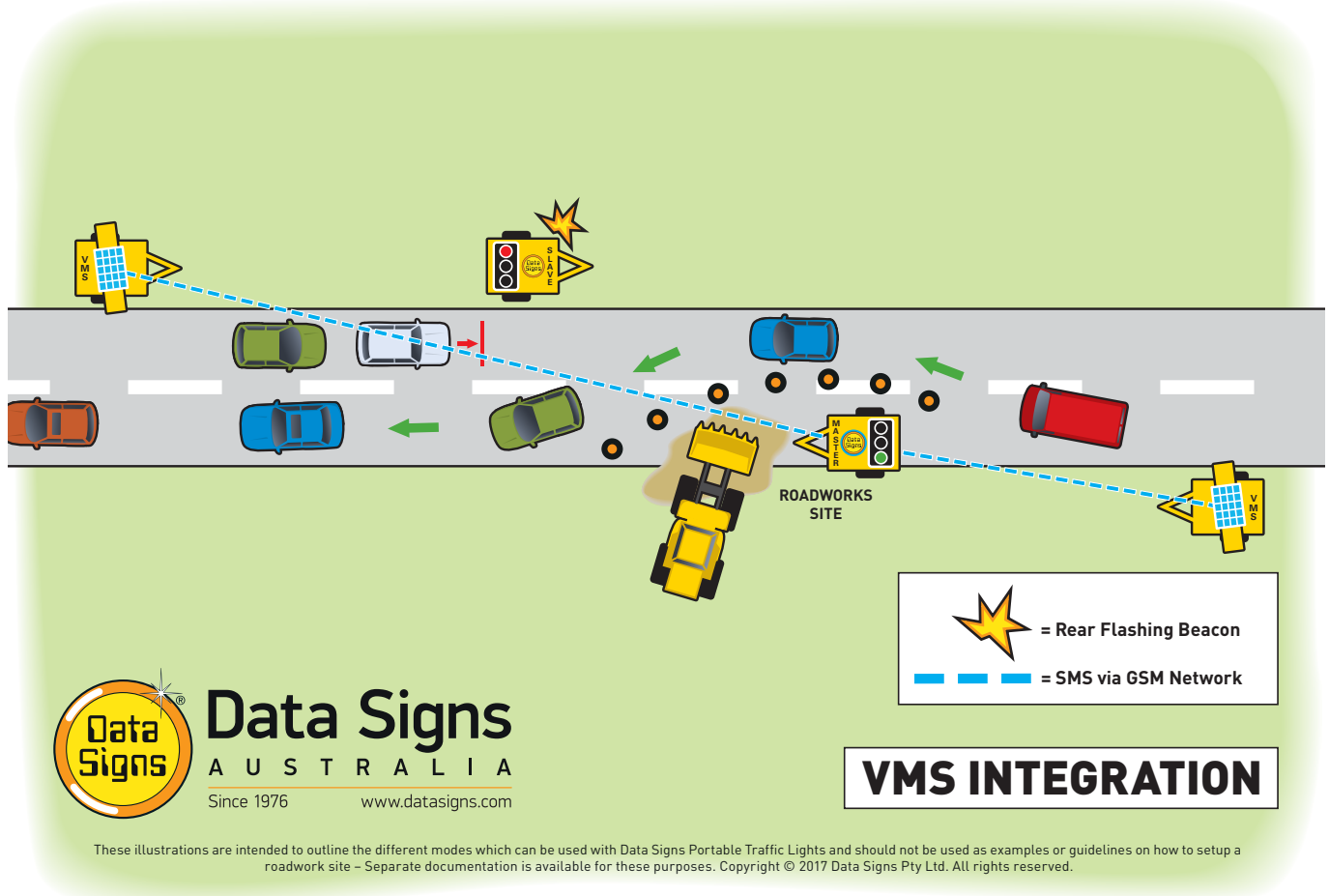
- On the Master unit (**Unit ID: 0**), select **PROGRAM** Mode, then from the **OPERATING SETTINGS: & Sub- Menu: SHUTTLE TYPE**, select **4 Way Intersection**. Then return the key-switch to **SHUTTLE**.
- For the 3 other slave units, see the diagram above to set separate **ID=1, ID=2** and **ID=3**
On each unit select **PROGRAM** Mode, then from the **Menu: UNIT SETTING & Sub-menu: ID**,

Select **ID=2** for the slave 2 unit etc., then select  button to select **Sub-menu: COMMUNICATION** and set **RF** to **LOW** power. Then return the key-switch to **SHUTTLE**.

VMS Integration (optional)

The PTL Master Controller can be setup to integrate with up to two Data Sign-VMS. An optional 4G/GSM module is required with a Sim Card fitted for this functionality to be available.

This Control type does not form part of the PTL Type Approval.



As illustrated in the diagram above, the Data Sign-VMS would be setup either side of the roadwork site. During normal operation of the PTL's, the Data Sign-VMS would display a normal message file. If a fault occurs on the PTL's and they go into Flashing Yellow mode, the PTL Master could then send a fault SMS message to the number of the SIM card in each Data Sign-VMS. For example, TRAFFIC LIGHTS FLASHING YELLOW, USE CAUTION. Once the fault has cleared, the PTL Master will then send a *Resume Original Message* SMS command (.s123456.0) to each Data Sign-VMS.

To setup the VMS Integration, select **PROGRAM** Mode using the left key-switch on the Master Controller, then follow these instructions:

1. Select **VMS INTEGRATION** from the **4G/GPS SETTINGS** menu and press the **ENTER** button.
2. Select **ENABLE** and press the **ENTER** button.
3. Enter the SMS numbers of the SIM card in each VMS on the roadwork site.
4. Press the **ENTER** button, and then press the **PROGRAM MENU** button.

This has now been setup.

To disable this option:

1. Select **VMS INTEGRATION** from the **4G/GPS SETTINGS** menu.
2. Select **DISABLE** and press the **ENTER** button.

■ SMS Fault Reporting [if 4G/GSM option fitted]

The PTL Master Controller can be setup to send out fault SMS messages if the PTL goes to Flashing Yellow mode due to a fault occurring. Up to two mobile numbers can be sent the SMS fault message.

To setup the SMS Fault Reporting, select **PROGRAM** Mode using the left key-switch on the Master Controller. This item is in the **4G/GPS SETTINGS** menu.

To enter the mobile numbers, select the **SET NUMBERS** menu item. Type in the two numbers and then press the **ENTER** button.

The SMS fault message is only sent once after a fault occurs. Use the **SET INTERVAL** menu item to set how long after the fault has occurred to wait to send the SMS fault message. The default is the maximum **60** minutes. For example, if the Interval value is set to 20, the SMS fault message will not be sent until 20 minutes after the fault has occurred. This caters for occasion where the PTL's may enter a fault condition due to RF communications failure but then recover shortly afterwards. The operator may not need to be notified of this. Use the **SET ALERT ON/OFF** menu item to turn this feature on or off.

■ Direct-Link [optional]

Direct-Link allows for direct connection of two PTL units via a cable. The RF is disabled.

A PTL-Remote must also be directly connected this way to function

Direct-Link is an option and must be fitted at a Data Signs Service Centre or by a qualified Auto Electrical service provider.

Direct-Link allows for a range of up to 1 km, depending on the type of cable used.

Data Signs supplies a 50-metre cable when the Direct-Connect option is purchased.

The appropriate connectors are supplied with this option.

Setting up Direct-Link

Plug the cable into the plug on each end.



On the PTL Master and Slave Controller complete the following:

- Go into **PROGRAM** Mode
- Select the OPERATING SETTINGS menu
- Select the COMMUNICATIONS sub-menu
- Select Direct-Link, then press the **ENTER** button.

Then select either Shuttle or Plant Crossing using the left Key-switch to exit the **PROGRAM** Mode.

The PTL set should now be communicating via the cable through the Direct-Link option.

Note: None of the RF options apply, as all communication is done through the cable.

■ Wireless Link (RF) Explained



Each Traffic Light Trailer is fitted with a Directional antenna. This will provide reliable Wireless Radio (RF) communication between the PTL units; however, the units still need to be positioned line-of-sight to each other. The ends of each antenna should point *towards* the other.

With the Directional antennas fitted, a range of up to 3 kilometres between the Master and Slave units is achievable, line-of-sight. (No obstructions)

The physical range is also limited by the maximum allowed All-Red time, and safe roadwork site requirements. At the maximum All-Red Time of 100 seconds with vehicles traveling at 40 km/h works out a separation between Master and Slave of about 1.6km. States/territories may also have maximum operating distance guidelines.

The radio link module fitted to the PTL unit communicates on one of eight channels. This channel is set with **PROGRAM** Mode on the Controllers, as discussed previously. All units must be set to the same channel maintain wireless communication. This applies to the Master, Slave(s) and the Remote Control.

Radio Link Operation

If the radio link between the Master and a Slave unit is disrupted for a continuous five second period (the default time) all units will revert to Flashing Yellow mode. “CONTACTING SLAVE...” will be shown on the display panel on the Master Controller.

While the Australian Standard defines a 5-second timeout, the use of the CONTACT TIMEOUT setting within **PROGRAM** Mode on the Master Controller can increase this timeout delay, which may also improve communications over long distances or in areas of high RF noise.

As specified in section 2.8.3 of the Australian Standard, an automatic restart facility is in place to enable re-establishment of the radio link between the Master and Slave(s). However, only five attempts to restart (after a failure any time greater than the CONTACT TIMEOUT period) are allowed for any twenty-minute interval. If this is exceeded, the units will remain operating in Flashing Yellow mode. Manual intervention is required; power-cycle (reboot) all units to restart.

In the event of a radio link failure, check all connections as discussed above and for any interference that may be caused by equipment near one of the units. Change the RF options using **PROGRAM** mode. See also *Trouble shooting section, later in this manual.*

Signal Strength

The Remote Control will display the signal strength between the Master Controller and itself as a Graphic symbol in the top right corner on the display. The Master and Slave Controllers display the Signal Strength alternating with the Battery Voltage on the display. The RF Signal Strength is a value out of 5, where 5 is the strongest value.

Fault Conditions

If any fault conditions occur as discussed throughout this document, the Portable Traffic Lights will go to Flashing Yellow mode.

All critical faults are logged to a file on the SD card fitted to the Master Controller.

The faults logged are outlined below. Reference back to the Australian Standard is provided in the table.

Fault ID	Description
0	Yellow (Open)
1	Yellow (Short)
2	Red (Open)
3	Red (Short)
4	Green (Open)
5	Green (Short)
6	More than one light on at the same time (short between lights)
16	Excessive Link, tried to connect more than 5 times within a 20 minute period
17	Link Conflict, Another Master or Slave is active
18	Link Timeout, lost contact with Master or Slave
19	Radar, not responding during operation
20	Low Battery, low battery mode reached

To view the current fault log file, select **FAULT LOG → VIEW LOGS** from the **PROGRAM** Mode menu. Use the  and  arrow buttons to move through the fault log entries. The last fault logged is shown first.

A sample fault log entry may be:

F	A	U	L	T		L	O	G		(1	/	1)					
X	X	/	X	X	/	X	X	X	X		0	0	:	0	0	:	1	4	
0	0		-			M	A	S	T	E	R								
Y	e	l	l	o	w		(O	p	e	n)							

The time shown with each fault log entry is the time that this fault occurred since the Master Controller was powered up. The second part is the Portable Traffic Light unit affected (i.e. Slave#2 or Master). The last part of the entry is the fault description.

You can also use an SD card reader on a laptop/PC to read the fault log files from the SD card. The file will be in the LOGS directory on the SD card.

Turn the Master Controller OFF and remove the SD card from its slot, leave the power OFF while re-inserting the SD card.

■ Troubleshooting Guide

This section contains some tips on handling some of the issues that may arise when using the Portable Traffic Lights. If you cannot resolve the issue you are experiencing using the information below, please contact Data Signs or one of our Branches or Service Agents for assistance. As discussed above, the Fault Log stored on the SD card in the Master Controller may assist in issue diagnosis.

```
PTL STATUS ( 1 / 2 5 )
FIRMWARE : 0 5 . 0 1 . 0 8
SERIAL NUMBER : 1 2 3 4 5
UNIT ID : 0 ( MASTER )
```

First Page of the PTL Status Menu, use the up down keys to scroll though all the status fields.

```
SERIAL NUMBER : 1 2 3 4 5
```

Serial number this controller has been set to.

```
UNIT ID : 0 ( MASTER )
```

The ID this controller is set to: if 0 it is set as a MASTER, if 1 or higher then it is a SLAVE.

```
COMMS : WIRELESS - LINK
```

Communication link the controller is using to connect to the other controller(s). Either RF (wireless) or Direct Link (Wired).

```
RF MODEM : ON
```

The RF Modem is connected to the controller and working.

Note, this does NOT check the aerial connector, if this is faulty/defective then this cannot be checked other than with the TX RX LEDs on the controller. Both TX and RX must flash to indicated a wireless link is working.

```
CHANNEL : 1
```

Link Channel number.

Both Master and Slave MUST be the same channel.

```
RF POWER : 8 0 %
```

RF output power. This is set by the QUICKSTART Menu. Check or set this again to suit your current work site.

```
LONG RANGE : OFF
```

RF Long ON (or OFF). Also set by the QUICKSTART MENU. It will only be set to OFF if the Master and Slave are in very close proximity or joined.

```
VEHICLE DTC : ON
```

Vehicle detector is connected to the controller and working. *See pages 6 & 7.*

```
DTC LOW SPEED : 1 0
```

Vehicle Detector parameter, can be changed using UNIT Setting Sub-Menu. *See pages 6 & 7.*

```
DTC HIGH SPEED : 8 0
```

Vehicle Detector parameter, can be changed using UNIT Setting Sub-Menu. *See pages 6 & 7.*

```
DTC SENSITIVITY : 2 0
```

Vehicle Detector parameter, can be changed using UNIT Setting Sub-Menu. *See pages 6 & 7.*

```
SHUTTLE TYPE : NORMAL
```

This can be changed using OPERATOR SETTINGS and Sub-Menu: Shuttle type. *See pages 8, 10, 11, 12 & 13.*

```
DAISY SLAVES : 2
```

This can be changed using OPERATOR SETTINGS and Sub-Menu: Shuttle type. *See pages 8, 10, 11, 12 & 13.*

```
INTERS ROADS : 2
```

Same as daisy chain but in intersection mode. i.e. 2 roads = 4 units, 3 roads = 6 units, etc.

```
PLANT TYPE : NORMAL
```

Normal plant crossing mode is selected (so not sub mode), can be normal or mirror.

```
MIRROR SLAVES : 2
```

Mirror mode is basically multiple plant crossing mode. i.e. 3 would means 3 units all showing the same, thus mirroring each other.

```
ASPECT : ON
```

Aspects (LIGHTS) on or off. Used for testing, can be set using OPERATING SETTING Sub-Menu: Aspect Inhibit.

BEACON : ON

Rear Beacon lamp on or off. Can be set using OPERATING SETTING Sub-Menu: Beacon.
See Page 8 for explanation.

AUTO RETURN : OFF

See page 5 for explanation.

TIME FORMAT : SECONDD

See Page 8 for explanation.

TIMEOUT (SEC) : 5

See Page 8, Contact Timeout for explanation.

REFRESH (MIN) : 3

In demand mode, it will introduce an artificial demand on all units after 3 minutes of inactivity to clear traffic in-case of inactivity of Vehicle sensor failure.

3G/GPS : OFF

A Mobile 3G/4G module is fitted to this controller and active. See page 23 for more details.

VMS INTEGRATION : ON

VMS Intergration has been set on this controller. NOTE the 3G/4G module must be fitted and active for this to work. See page 16 for more details.

Turning the Controller On

If the POWER light does not come on when the key-switch is turned to **ON**:

- Check that the controller connector is inserted properly.
- Check the fuse inside the Controller and on the battery fuse board.
- Check that the battery voltage is above 10.5 Volts.

Radio Wireless Link failure

If the radio wireless link fails regularly, try changing the Channel set on all Controllers, as some interference may be occurring on the operating channel. Power-cycle each unit after the Channel has been set correctly

Vehicle Detector Failure

If a vehicle detector unit is attached but the Controller check fails:

- Cycle the power.
- Check all connections between the detection unit and the Controller.
- If the unit continues to fail, contact Data Signs.

The vehicle detector on each unit is scanned for correct operation every five minutes. If the vehicle detector does not respond due to a fault, the display panel on the Master Controller will display the following error message:

V	E	H	I	C	L	E	D	E	T	E	C	T	O	R			
S	L	A	V	E	F	A	I	L	U	R	E	.					
C	H	E	C	K	U	N	I	T	.	.	.						

It may be that the connector has come loose on the vehicle detector, or the unit is not working as expected. **Temporary fix:** Use **AUTO mode** until the fault can be identified and resolved.

SD Card Failure

Never insert or remove the SD-Card with the power on, switch key to OFF first.

In the case of SD card failure, you will be notified on the display. Default values will be used if the SD card fails. All parameters can be changed, however they will not be saved, so you will need to enter your desired parameters each time the Master Controller is turned on, until the SD card is replaced.

Aspects Not Working

Check that the aspects have not been inhibited from the **PROGRAM** Mode menu.

Check the connections on the controller or the aspects.

Note: Multiple LED failures on any aspect will cause them to not light up. This is a Standards requirement.

If you need to ship the Controller or parts back to Data Signs for repair. Download the **Product Service Request form** from the **Book a Service page** on the Data Signs website: www.datasigns.com.au

Fill this out and include with any equipment being shipped back for repair.

Note: If shipping Controllers it is recommended to ship as a set. I.e. Master, Slave, Remote & RF units. The RF units are located in the Solar junction boxes where the aerials connect into. It may benefit to ship all these items as this will enable our service department to perform a full operational test and diagnosis.

■ Fitting the SIM card to the 4G/GPS Module (optional)

Never insert or remove the SD-Card with the power on, switch key to OFF first.

The Portable Traffic Lights can be monitored remotely if an **optional 4G/GPS module** is fitted. The unit status and GPS position are reported back via SMS, and the Portable Traffic Lights can be tracked and monitored through the **WebVMS2™** web-based application. For more details on the setup of the SIM card service, please follow this link: datasigns.com.au/ServiceSupport/SIM-Card (although it discusses the DataSign-VMS, the same setup on the SIM card is required.)

The SIM card required is a normal sized SIM, not a micro or nano-SIM. First, fit the SIM card to a mobile phone and disable the PIN request. To fit the SIM card to the Master Controller follow these instructions.



Switch OFF the PTL Master Controller

Remove the PTL Remote Controller if this is fitted.

Turn the Master Controller OFF.

Take off the rubber cover on the side of the Master Controller as shown.



The SIM card is inserted as shown, with the angle cut out on the bottom.



Put the rubber cover back in place.

When re-fitting the rubber cover, it may push the SD card out again. Therefore, push the SD card so that it pops out. Place the plastic tab in position and after fitted, push in to click the SD card in place.



Turn the Master and Slave units on.

The display on the Master will show GSM: OFF on start-up. After approx. 2 minutes this should change to GSM: ON.

*If the display shows SIM: ERR then check that the SIM card has been inserted properly.
If the display shows SIM: PIN then check that the PIN number request has been disabled on the SIM card.*

For setup on WebVMS2 (once the SIM card has been fitted and the PTL Master is turned on) please contact your nearest Data Signs branch. Make sure you have the SMS number of the SIM card available. Charges may apply.

Each state or territory has its own guidelines and training or accreditation requirements for the use of the DataSign-PTL-COMPACT on public roads, particularly for road works usage.

The usage and training requirements are outside the scope of documentation provided by Data Signs. The list below serves as a guide only; please contact the road traffic authority in your state or territory for more information.

- In New South Wales, refer to the *Traffic Control at Work sites* document released by the RTA/RMS. **Note the training requirements in section 2.4.**
- In Victoria, refer to the *Road Management Act 2004 – Worksite Safety – Traffic Management, Code of Practice* for guidance on the use of the DataSign-PTL on roads in Victoria. Note the training requirements.
- In Queensland, see the Traffic and Road Use Management (TRUM) manual that is issued under the authority of Section 166 of the *Transport Operations (Road Use Management) Act 1995*. Also see the *Manual of Uniform Traffic Control Devices (Queensland)*, which within the meaning of the *Transport Operations (Road Use Management) Act 1995*, contains the design of, and the methods, standards and procedures in relation to every sign, signal, marking, light or device, installed on a road. Training requirements are available from the Main Roads QLD website.
- In Western Australia, see the *Traffic Management for Works on Roads - Code of Practice*. Note the accreditation requirements. Also see the *Traffic Controllers' Handbook*.
- In South Australia, there is a Work zone Traffic Management course.
- Generally, the *Australian Standard AS 1742.3-2002: Manual of Uniform Traffic Control Devices, Part 3: Traffic Control Devices for Works on Roads* should also be consulted.

The DataSign-PTL are designed and manufactured by Data Signs Pty Ltd to *Australian Standard AS 4191-2015 Portable traffic signal systems* where appropriate options are fitted.

Suggestions & Improvements

Data Signs develops its products with the end users in mind. As such, we are always open to suggestions for product improvement. Contact Data Signs, Head Office in Australia at: dsinfo@datasigns.com.au

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