DUALCOM PRO RANGE

CONNECTED • SECURE • LIVE

DualCom Pro Range

Introduction

The DualCom Pro Range offers Installers easier, faster installation of a professional signalling system with even greater resilience, plus access to CSL Live, our brand new ordering and management portal.

Using the onboard serial connections or pin triggering, DualCom Pro is compatible with a wide range of control equipment including systems installed to EN50136 & PD6662. The range consists of DigiAir Pro - our single path solution that utilises a Radio path to signal an alarm; and GradeShift Pro - our dual path solution that utilises a combination of two Radio paths or one Radio and one LAN path to signal an alarm.

It’s as Easy as 1, 2, 3!

Most DualCom Pro units are ready to go after these few simple steps

1) Wire and connect power - Refer to step 3 in the main quick guide for information on pins and serial connections

2) Wait 5 Minutes for LEDs 1-3 to go Green - Whilst your DualCom Pro 2 downloads its configuration

3) You’re good to go! - For customisation use the CSL My Base App/Web Portal. For panel configuration instructions see our online guides

Need a My Base Account?

CLICK HERE TO REGISTER

Need One Time My Base Access?

CLICK HERE

Need Panel Configuration Instructions?

CLICK HERE TO FIND YOUR PANEL

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Step 1 - Site Survey

VARIANTS WITH RADIO

Use a Signal Analyser (available from the CSL Installer Shop) to determine if enough base stations (2 or more) are available at the site and that they can supply sufficient signal strength (30% and above). This will determine the optimum location for the DualCom's aerial to be mounted.

If you do not have a Signal Analyser we recommend powering up the DualCom Pro, connecting the aerial/s, going through the commissioning process and checking the signal strength before permanently fitting the aerial. We recommend signal strength on the DualCom Pro should be 3 (30%) or above.

VARIANTS WITH LAN

Ensure there is a LAN port adjacent to the alarm panel. DualCom Pro uses DHCP as default, fixed IP settings can be added/amended in My Base through the CSL Live App/Web Portal or via the A & B buttons. Fit the Ethernet Cable to the device (as per Figure 2) and connect to the customer's router. Ensure the customer's LAN socket is live and has the correct network setting, as per below:

- Port 50561 open for outbound traffic
- NAT enabled
- UDP data

The LED on the LAN connector adaptor will flash green to indicate connection.

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Step 2 - Installation

DualCom Pro must be installed within an enclosure suitable for the installation certification. The unit should be fixed securely using the adhesive pads supplied or via the screw fixings accessible by removing the lid.
Once fitted, ensure:

a. As required the aerial/aerials are connected and/or the LAN connector is installed
b. The alarm panel or PSU is powered down, then connect the DualCom Pro PWR +ve and –ve terminals to the 12/24V DC output of the control equipment
c. If required, connect the serial cable - RS485, RS232 or TTL (panel dependent) – see Figure 1 for more information
d. Connect any hardwired alarms into the device – see Figure 4
e. Connect the fault output
f. Restore power to the alarm panel or PSU

IN ORDER TO MAINTAIN COMPLIANCE WITH THE REQUIREMENTS FOR ELECTRICAL SAFETY THE DUALCOM PRO SHOULD BE POWERED FROM A FUSED CONNECTION WITH FOLLOWING RATING:

• FOR A 12V DC SYSTEM (SUPPLY VOLTAGE IN THE RANGE 10VDC TO 14VDC) A FUSE RATED AT 1.25

• FOR A 24V DC SYSTEM (SUPPLY VOLTAGE IN THE RANGE 20VDC TO 36VDC) A FUSE RATED AT 600 MA

IF THE POWER SOURCE IS NOT LIMITED TO THESE VALUES, THEN A FUSE WITH THE CORRECT RATING MUST BE FITTED IN LINE WITH THE POSITIVE CONNECTION FROM THE POWER SOURCE

Do	• INSTALL VERTICALLY IN AN OPEN SPACE. • COMPLETE A SIGNAL TEST BEFORE INSTALLING IN THE FINAL POSITION
Don't	• INSTALL CLOSE TO METAL OR SOURCES OF INTERFERENCE, I.E. WIRING, LIGHTING, • ELECTRICAL INSTALLATIONS, COMPUTERS, MONITORS, ROUTERS & OTHER EQUIPMENT.

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Step 3 - Commissioning

On power-up, the DualCom Pro will automatically contact the Gemini Global Platform to perform its commissioning process, which will take up to 5-8 minutes. During this time the display will show ‘N’ to indicate it is a new device, followed by ‘C’ as commissioning is in progress and ‘R’ to indicate it is fully commissioned and ready for use.

During this process you may see ‘SIM NOT READY’ displayed. This is normal and will clear once completed.

LEDs

Figure 3 - LEDs ON INITIAL POWER UP

LED 1 - POWER	LED 2 - COMMUNICATION PATH	LED 3 - COMMISIONING
No light = The DualCom Pro does not have power	No Light = No paths working yet or the DualCom Pro does not have power	No Light = No communication path found
Green Solid Light = The DualCom Pro is powered and is running valid firmware	Amber Solid Light = One communication path is working	Amber Flashing Light = Communication path found
	Green Solid Light = Two communication paths are working	Green Flashing Light = Commissioning Server found, contacting the Alarm Server
		Green Solid Light = Fully commissioned

CHECKING SIGNAL STRENGTH

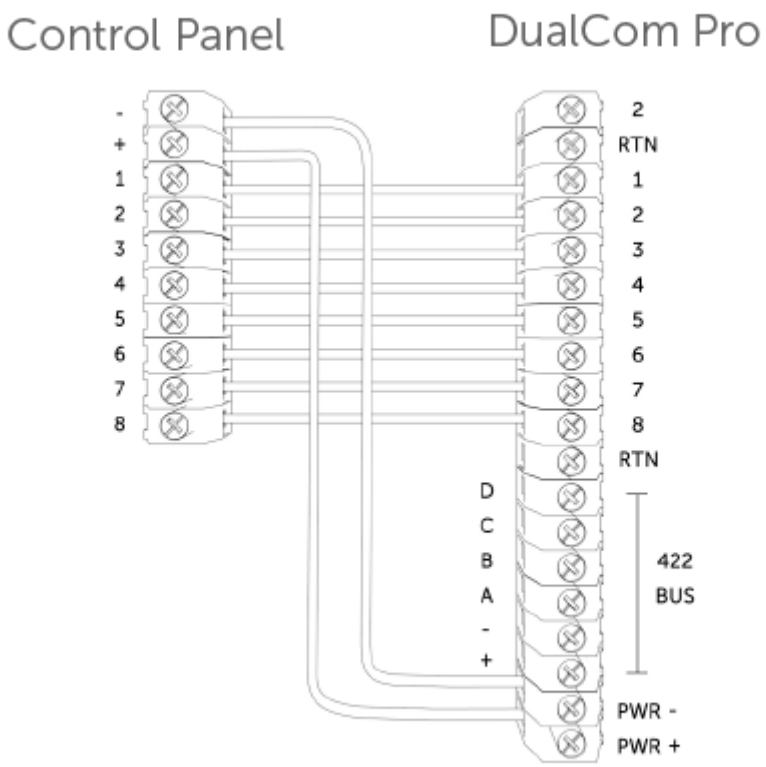
Signal strengths can be easily checked via the My Base App for each path. To view the signal strength on DualCom Pro, wait for the device to commission. The display will read out the RAT (Radio Access Technology) and the signal strength of the primary Radio Path (i.e. GSM1 4G 8). If you have a secondary radio module, toggle DIP switch 4 to show the RAT and signal strength of GSM 2 (ie GSM2 4G 6).

SIGNAL STRENGTH IS SHOWN AS A READING OUT OF 10

PIN TRIGGERING

For this operation the device is triggered by removing or applying zero volts to input terminals 1-8. No external pull-up resistors will be required. This is generally achieved via the digital communicator outputs of a control panel. The unit will signal alarm conditions and will generate the relevant messages and forward them via the Gemini Global Platform to the ARC. Installers are advised that the intended use should avoid situations where the rate of trigger exceeds the rate at which messages are received at the ARC receiver.

Figure 4 - Example of pin triggering wiring



PIN INPUT CONFIGURATION

If you need to change the input from negative removed to negative applied, this can be done on CSL Live via My Base. If you need to use positive applied/removed you will need to change the pin profile on My Base and manually change the bias on the device using the Self Learn feature:

• Ensure all required pins are in a restore/quiescent state and you are out of the device menu
• Press and hold the C button until L appears on the display
• Release the C button

• The display will confirm successful operation by displaying ‘LEARN OK’

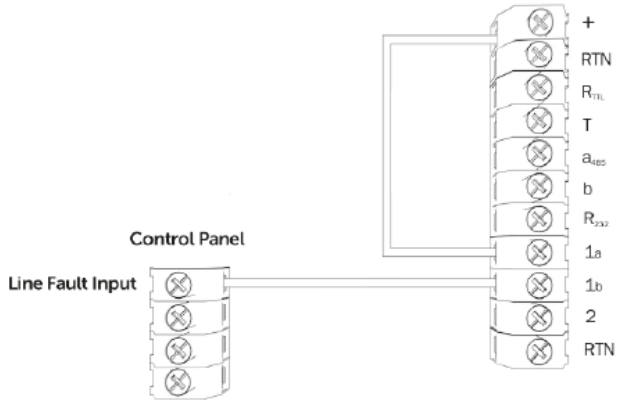
OUTPUTS

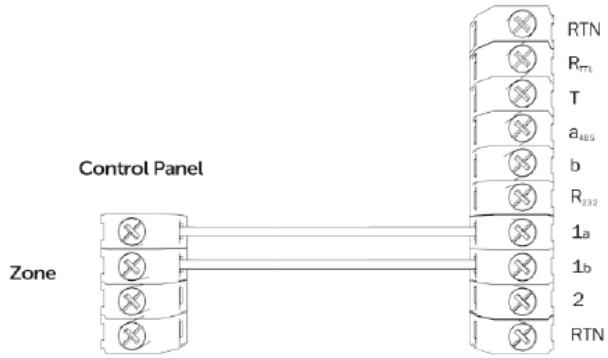
Output default is normally open. Output 1A + 1B are volt free contacts, that are normally open and configured to indicate path fail conditions to the control panel.

IF THE DEVICE IS POWERED BY 24V (FIRE PANEL), + TERMINAL SHOWN WILL STILL DELIVER 12V.

Output 2 is a single wire switch negative output with a 100mA max current. As default, this output is unused but is configurable by calling CSL Technical Support.

Figure 5 - Example of Fault Output Wiring





DIAL CAPTURE

DualCom Pro can be fitted with an optional Modem Capture Module (purchased separately - part number CS.1.402). When using this module, it must be plugged into the main board via the connector shown on
Figure 1.

If you are using a dual radio variant of the DualCom Pro, the plug-on radio module must be removed and refitted into the Tamper Proof Case and connected via the RS422 BUS connections on both boards. With the radio module removed the Modem Capture Module can be fitted onto the DualCom Pro. Both the Modem Capture Module and Tamper Proof Case (part number CS.1.500) can be purchased via the CSL Installer Shop. Please follow the instructions provided within the product.

PANEL CONNECTION

Your device will come pre-configured without a panel connection (pins only). To enable serial connection to a control panel, go to My Base and select the panel type.

Alternatively, contact CSL Technical Support via support@csl-group.com or call +44 (0)1895 4744 44.

SERIAL / RS232 / 485 / TTL PANEL CONNECTIONS

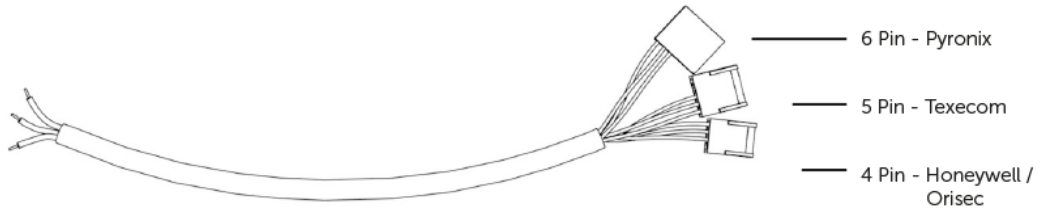
As standard, the DualCom Pro range is supplied with a serial cable compatible with Honeywell (RS485), Orisec (TTL), Pyronix (RS232) and Texecom (TTL) panels. Other types may require an additional cable/plug in purchased on our Installer Shop - see Figure 7 for more information.

Figure 6 - Panel Connection Information

MANUFACTURER	PANEL	CONNECTION	CABLE/PLUG ON	SUPPLIED CABLES
Honeywell	Galaxy	RS485	4 Pin (cable provided)	Green - RTN Blue - RS485-B Red - RS485-A
Orisec	All	TTL	4 Pin (cable provided)	Green - RTN Blue - TTL-T Red - TTL-R
Pyronix	Euro/Enforcer	RS232	6 Pin (cable provided)	Green - RTN Blue - RS232-R Red - RS232-T
Texecom	Premier/Elite	TTL	5 Pin (cable provided)	Green - RTN Blue - TTL-R Red - TTL-T

For Risco, Eaton and UTC, please purchase the relevant cable from the CSL Installer shop. For other connections or further instructions on Control Panel programming please review the Panel Guides on the Installer Zone of our website: www.csl-group.com/uk/installer-zone-panel-guides

Figure 7 - Serial Cable (RS232/485/TTL)



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Step 4 - Testing

Please also ensure that you put your device on test with the ARC and perform a full range of test signals from your control equipment. DualCom Pro paths can be tested using the following method:

• Tap button A until S is shown
• Tap button C to indicate Path Test
• The display will read out PATH TEST and return to Menu S for 30 seconds before returning to signal strength

Once you have successfully tested your device, make sure that you check with your ARC to see that they are receiving signals. This can be achieved by calling your ARC or using their web based secure platform.

IF THE DEVICE IS POWERED BY A 24V (FIRE PANEL), THE + TERMINAL SHOWN WILL STILL DELIVER 12V

MY BASE APP

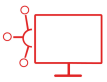
My Base provides Installers with the ability to manage and configure DualCom Pro 2 devices on a handy App/Web portal.

Simply download CSL My Base from your appropriate App store and obtain log-in information from CSL (or the CSL web administrator within your company) to access these great features:

View path status 	Check signal strength 	View panel connection status 	Configure static IP information 

Amend panel connection 	Change pin configuration 	Check ATS path availability 	Remotely upgrade device firmware 

View Alarms (you must still check with your ARC that alarms are being received by them) 	Test Alarm 	Invert fault relay 	Configure outputs 

Amend Smart Reporting 	Add estate name 

APPENDIX

Figure 8 - Selected Button Configuration Descriptions

MENU	MESSAGE	DESCRIPTION	CONFIGURABLE	ADDITIONAL
1	IP-Addr =	Device's local (LAN) IP address	Yes	Can also be set in My Base
5	Router =	Default gateway	Yes	
6	NetMask =	Local network subnet mask	Yes	
B	Pins =	Status of each pin	No	R = Restore A = Alarm
L	Pin-Bias =	Reads and sets the inputs bias	Yes	H - High State L - Low State
M	Alt-Disp =	Change display to show alternative transmission path statuses	Yes	
N	Pri-Fail =	Fails the primary transmission path	N/A	Y = Force path fail
O	Sec-Fail =	Fails the secondary transmission path	N/A	Y = Force path fail
P	Pri-Status =	Reads out status of primary interface	N/A	
Q	Sec-Status =	Reads out status of secondary interface	N/A	

R	Panel-Status =	Reads out status of panel interface	N/A	
S	Paths-Test =	Sends signals over all paths for testing	N/A	

Figure 9 – Button Configuration

TAP	HOLD
A BUTTON	
Scrolls up through menu options	N/A
B BUTTON	
Scrolls down through menu options	N/A
C BUTTON	
Read Menu Option	Edit selected menu programming settings. When the button is held an '_' (underscore) will appear. You can then scroll through the available options

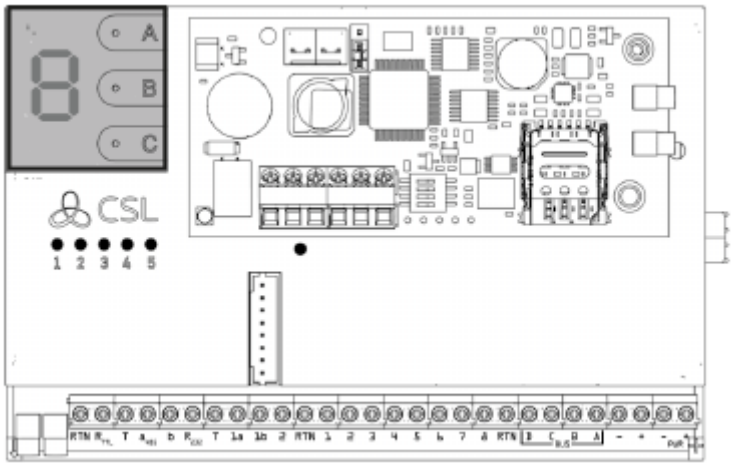


Figure 10 - LEDs DURING NORMAL OPERATION

LED 1	LED 2	LED 3	LED 4	LED 5

Red Solid Light = No Signal	Red Solid Light = No Signal	Red Flashing Light = Fatal Configuration Errors	No Light = No connection	No Light = No connection
Green Flashing Light = Poor But Usable Signal	Green Flashing Light = Poor But Usable Signal	Amber Flashing Light = Not commissioned	Red Solid Light = Receiving data from panel	Red Solid Light = Receiving data from panel
Green Solid Light = Good Signal	Green Solid Light = Good Signal	Green Flashing Light = Communicating with non-fatal errors	Green Solid Light = Transmitting data	Green Solid Light = Transmitting data
		Green Light Solid = Commissioned with no errors		

RADIO TROUBLESHOOTING

How can I fail my signalling paths without having to disconnect them?

To fail each path select menu options N or O
• Menu N – Fails primary path
• Menu O – Fails secondary path
Using the A or B button scroll until you see menu N or O on the display, then press and hold the C button until you see (_). Press the A or B buttons to toggle between Y & N, then press C to select the option.

Y = Yes, fail the path.
N = Normal, restore the failed path.

“Y” will only fail the path for a total of 15 minutes.

What does the flashing dot in the right-hand side of the display indicate?

The flashing dot in the right-hand corner of the display indicates that DualCom Pro is actively transmitting data.

How can I check the signal strength of each radio module?

You can check the signal strength of each radio module on a commisioned device via the My Base App. Alternatively you can toggle between the signal strength of each radio module, move DIP Switch 4 of the secondary radio module to ON or OFF (opposite position). The display of the DualCom Pro will read GSM 1 or GSM 2 followed by the Radio Access Technology (RAT) and signal strength between 1-10

(10-100%) dependant on the radio module.

Does my unit have a roaming SIM?

Yes, all variants of DualCom Pro devices come with at least 2 Roaming 4G SIMs

If the signal strength of my DualCom Pro is under 3 (30%) what can I do to improve my signal strength?

For all radio variants:

• Avoid coiling the aerial cable
• Move the aerial away from electrical equipment/wiring
• Move the aerial to a higher point in the property or closer to a window/door

Where you are using a dual radio variant, it is possible to purchase an additional Radio/Wi-Fi Module Enclosure with in-built aerials. This will enable you to locate the secondary radio module in a different location. Please visit the CSL Installer Shop for more information.

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Technical Specifications

ENSURE AERIAL/AERIALS ARE INSERTED INTO THE MMCX CONNECTOR WITH THE RED DOT.

Figure 1 - Diagram

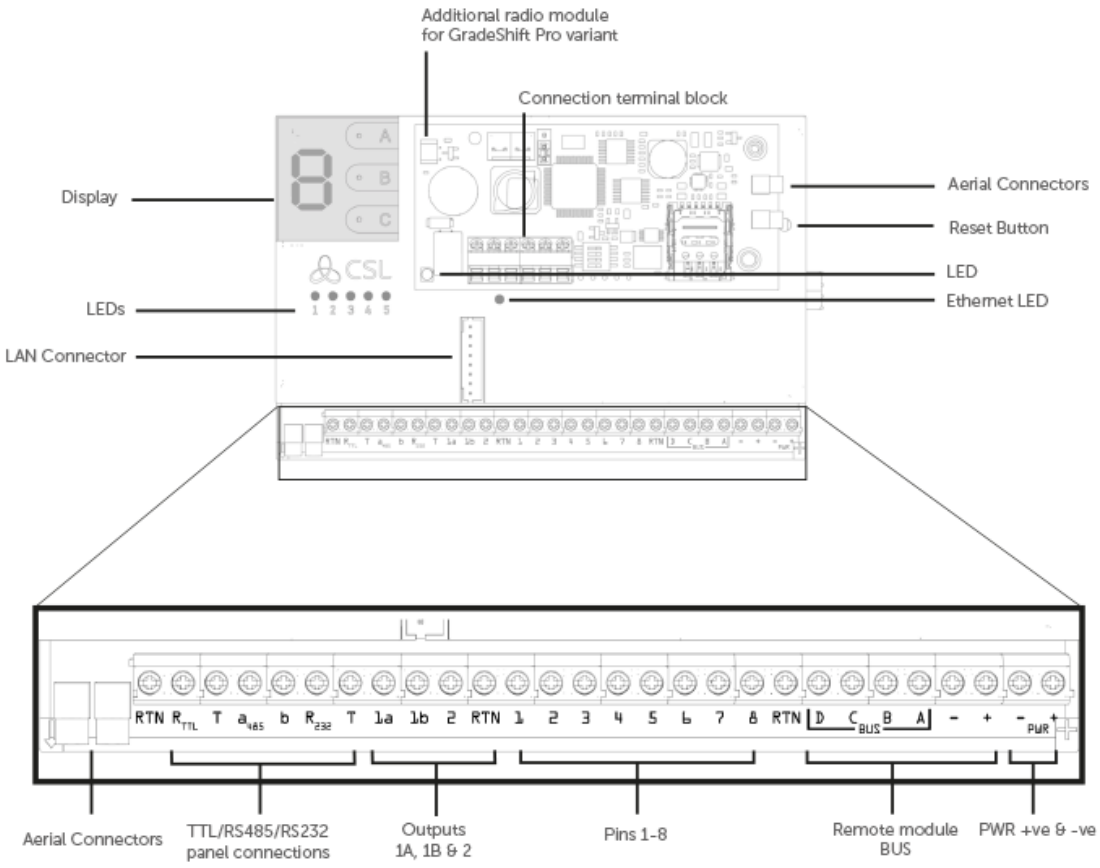

Figure 2 - LAN Adaptor

To enable the device to use LAN, you will need to connect the LAN adaptor (above)

to the LAN Connector (on the DualCom Pro).

Dimensions	75 mm (h) x 119mm (w) x 15mm (d) or 75mm (h) x 119mm (w) x 32mm (d) with secondary radio module
Weight	113g excluding aerial
Temperature	-10 °C to + 55 °C
Humidity	0 - 90% non-condensing
Mounting	Via fixing points under main cover
Warranty	5 years
Power Requirement	10 - 36 Volts DC In order to maintain compliance with requirements for electrical safety the Dualcom Pro should always be powered from a fused supply with following rating: • For a 12v DC system (supply voltage in the range 10vdc to 14vdc) a fuse rated at 1.25 • For a 24v DC system (supply voltage in the range 20vdc to 36vdc) a fuse rated at 600 mA If the power source is not limited to these values, then a fuse with the correct rating must be fitted in line with the positive connection from the power source.
Current Consumption	DigiAir Pro = 35mA (Avg. Value) GradeShift Pro - LAN/Radio = 40mA (Avg. Value) GradeShift Pro - Radio/Radio = 175mA (Avg. Value)
Radio Path	2G, 3G, 4G
Aerial	50 ohm (nominal) on MMCX socket
Operation Method	Store and forward
Input Terminals	Max +30v, Min 0 volts DC (reference supply 0v supply) 100k Low Battery 7.6V DC +/- 0.5 VDC
RCT Protocols	SIA
User Serviceable Parts	There are no serviceable parts within the DualCom Pro Range
Environmental	Class II
Applicable Standards	Suitable for use in alarm systems complying to: EN50131-1:2006+A2:2017 EN50131-10:2014 Type Y EN50136-1:2012+A1:2018 SP1,SP2,SP3,SP4,DP1,DP2,DP3,DP4 EN50130-5 Emissions Standard – 2014/53/EU (RED) PD6662:2017 / PD6669:2017 ATS Classification: EN50136 ATS5/DP4 Max ATS 5 parameters: D3/M3/T4/S2/I3/A3

DigiAir Pro

PATH	AVAILABLE GRADES	WHAT'S IN THE BOX	PART NUMBER

Radio	SP2	DigiAir Pro 2, serial cable & small aerial	CS.51.R2
LAN	SP2	DigiAir Pro, serial cable, Ethernet Cable & LAN connector adaptor	CS.51.L2
Wi-Fi	SP2	DigiAir Pro, serial cable, Ethernet Cable, Wi-Fi board & Wi-Fi module enclosure	CS.51.W2

GradeShift Pro

PATH	AVAILABLE GRADES	WHAT'S IN THE BOX	PART NUMBER
LAN + Radio	DP2 DP2+ DP3 DP4	GradeShift Pro, serial cable, single T-bar aerial, Ethernet Cable, & LAN connector adaptor	CS.53.LR2 CS.53.LR2P CS.53.LR3
Radio + Radio	DP2 DP2+ DP3	GradeShift Pro, secondary radio module, serial cable, Dual T-bar aerial	CS.53.RR2 CS.53.RR2P CS.53.RR3 CS.53.RR4