Declaration of Design and Performance

DDP No.: 120-00003

Issue No.: 3.2

Approving authority: n/a

DDP Change Control Ref: JIRA No. HWD-615

Note: Before specifying equipment, check with Flightcell International that this declaration is the currently valid version

MANUFACTURER

Flightcell International Ltd

Address: 98 Vickerman St, Nelson, New Zealand 7010

DECLARATION OF DESIGN AND PERFORMANCE

System Name: Flightcell DZMx Plus

Part No.: DZP_07-XXX-XXXX (-XXX-XXXX represents the dash number which defines the specific configuration of the unit, the detailed breakdown of the dash number is contained in 113-00002 Rev 2.0 DZP_07 Flightcell DZMx Plus Dash Number Definition Table).

Description: Avionics bay mounted, all-in-one Iridium and cellular solution for global voice, data, and GPS tracking. It is a straight LRU swap-out for ageing tray mounted satcom tracking systems.

Data interfaces include Ethernet, USB, Wi-Fi, Bluetooth, ARINC 429, Software Defined Receiver, Cellular Modem, Iridium Modem, General Purpose Inputs and General-Purpose Outputs. The product is designed for standard ARINC 600 2 MCU avionics bay rack.

Rev No.: 4.0

Weight & Overall Dimensions: Representative configurations range from 1600g maximum. For specific information refer to 100-00006 Rev 4.0 DZP_07 Master Data List.

System Wiring Diagrams	
Diagram No.	**Description**
114-00018	DZMx Plus Interconnect Drawings

Overall Dimensions *for more specific data, refer to the assembly diagrams and definition specification below*	
Part Description	**DZMx Plus**
Weight	1.6kg (depending on configuration)
Length	240mm
Width	58mm
Height	188mm

Performance:

The Flightcell DZMx Plus meets all the specifications and requirements as outlined in this document. The main performance specifications are listed below.

Item	Detail
Interface	10/100 Ethernet, USB 2.0, RS-485, RS-232, Analog audio (2), GPI (5), GPO (2), Wi-Fi, Bluetooth Optional extras: GPI(7), ARINC 429
DC Power Source	+12V - +32VDC (28V nominal) Max current: ~1.5A @ 28VDC
Connectors	Main connector: D-SUB 62 HD male, mating connector: M24308/2-14F

Wi-Fi / Bluetooth Transceiver transmit power (if installed)		
Modem	**Description**	**RF Performance**
Wi-Fi	Tx power (dBm)	16
	Antenna gain (dBi)	2.0
	Total power (dBm)	18
	Total power (mW)	63.1
Bluetooth	Tx power (dBm)	10.0
	Antenna gain (dBi)	2.0
	Total power (dBm)	12.0
	Total power (mW)	15.9

Cellular / Satellite Transceiver transmit power (if installed)	
Cell (WP76XX Series/MPL200)	**TX Power**
LTE (4G) As per 3GPP TS 36.521-1 Power Class 3	+23dBm +/-2dB
UMTS/HSDPA/HSUPA (3G) As per 3GPP TS 34.121-1 Power Class 3	+24dBm +1/-3dB
GSM/GPRS (2G) As per 3GPP TS 51.010-1	

Declarations:

The limits of declared performance and those implied by the declarations below are not intended to be absolute, but are intended to indicate performance which has been shown by tests.

Cooling Requirements

The unit is passively cooled. No special cooling required.

Ingress of fluids, sand and dust

The unit is designed to be protected against fluids, sand and dust to a rating of IP54, however no external testing has been completed.

A rating of IP54 means that the unit is protected against ingress of dust in sufficient quantities to interfere with satisfactory operation of the unit and against harmful ingress of water when subjected to water splashing against the enclosure from any direction).

Storage

The unit should be stored at a temperature of not less than -55°C and not more than +85°C.

Ambient Operating temperature

The ambient operating temperature range for the unit is -20°C to +55°C.

Storage Life

The shelf storage life is not less than 5 years under controlled storage conditions.

CERTIFICATION

The declaration in this document is made under the authority of Flightcell International Ltd.

Flightcell International Ltd cannot accept responsibility for equipment used outside the limiting conditions stated above without their agreement.

Signed: _____

Authorised Signature: John Wyllie
Position: Accountable Manager
Effective Date: 10 April 2026

Cellular / Satellite Transceiver transmit power (if installed)	
Cell (WP76XX Series/MPL200)	**TX Power**
GMSK Power Class 4 for GSM/E-GSM bands	+33dBm +/-2.5dB
GMSK Power Class 1 for DCS/PCS bands	+30dBm +/-2.5dBm
EDGE (2G) As per 3GPP TS 51.010-1	
8-PSK Power Class E2 for GSM/E-GSM bands	+27dBm +/-3dB
8-PSK Power Class E2 for DCS/PCS bands	+26dBm +3/-4dBm
Iridium 9523N	**TX Power**
Average power during a transmit slot (max)	7W
Average Power during a frame (typical)	0.6W
Iridium 9603N	**TX Power**
Average power during a transmit slot (max)	1.6W

Software Defined Receiver	
	RX Power
RX Power	-5dBm +/-1dB
RX Power (RX amplifier disabled)	+10dBm +/-1dB
Operating frequency	1 MHz to 2 GHz

Test Report References: HSVCR91380_FlightCell_DO160_Vibration_RevA, FINAL FinalCell45076-signed, 105415-9_Final_UP(1), 106565-3_Final, FINAL FlightCell45076-signed

Fault analysis reports: n/a

Installation and Operation References:

Manual No.	Description
117-00010	DZMx Plus Installation Manual
117-00009	DZMx / DZMx Plus Operator Manual

REMARKS

Nameplate Marking: DO-160G Env. Cat. [(A1)(B1)(F1)]BAB[UG]HXXXXXZZAZ[AC][SS]MXXXXXXXAX

CONDITIONS	DO-160G Section#	Description of Tests
Temperature & Altitude Low Temperature High Temperature In-Flight Loss of Cooling Altitude Decompression Overpressure	4.0 4.5.1 4.5.2 & 4.5.3 4.5.4 4.6.1 4.6.2 4.6.3	Equipment tested to categories A1, B1, F1 No Forced cooling required Equipment identified as category X, no test performed.
Temperature Variation	5.0	Equipment tested to category B.
Humidity	6.0	Equipment tested to category A.
Operational Shocks Crash Safety	7.2 7.3	Equipment tested to category B, aircraft type 5, test type 5. (DZP_07-X0X-XXXX variant not tested, category X) Equipment tested to category B, aircraft type 5, test type 5. (DZP_07-X0X-XXXX variant not tested, category X)
Vibration	8.0	Equipment identified as category U, Aircraft zone 2, Test Curve G. (DZP_07-X0X-XXXX variant not tested, category X)
Explosive Atmosphere	9.0	Equipment tested to category H.
Waterproofness	10.0	Equipment identified as category X, no test performed.
Fluids Susceptibility	11.0	Equipment identified as category X, no test performed.
Sand and Dust	12.0	Equipment identified as category X, no test performed.
Fungus	13.0	Equipment identified as category X, no test performed.
Salt Fog	14.0	Equipment identified as category X, no test performed.
Magnetic Effect	15.0	Equipment tested to category Z.
Power Input	16.0	Equipment tested to category Z.
Voltage Spike	17.0	Equipment tested to category A.
Audio Frequency Susceptibility	18.0	Equipment tested to category Z.
Induced Signal Susceptibility	19.0	Equipment tested to category AC.
Radio Frequency Susceptibility	20.0	Equipment tested to category S.
Radio Frequency Emissions	21.0	Equipment tested to category M.
Lightning Induced Transient Effects	22.0	Equipment identified as category X, no test performed.
Lightning Direct Effects	23.0	Equipment identified as category X, no test performed.
Icing	24.0	Equipment identified as category X, no test performed.
Electrostatic Discharge	25.0	Equipment tested to category A.
Fire, Flammability	26.0	Equipment identified as category X, no test performed.
Other Tests		

Although not tested or certified to any flammability standards Flightcell International Ltd is highly confident that due to the materials used in the design, the DZP_07 would meet the requirements of DO-160G, Section 26 (Fire, Flammability), Category C – Flammability. Refer to 118-000040 Rev 1.0