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AgustaWestland Products

DOCUMENT No. **THSS-MULG0205M013** Iss. **A**

TITLE

FLASH HW Components Use & Maintenance Manual

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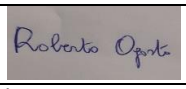			
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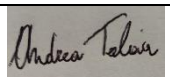			
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Date:

Export Classification
N/A

Export Classification
N/A

REVISION HISTORY

ISSUE	CHANGE DESCRIPTION	ISSUE DATE
A **No. Pages 23**	First Issue	AUTHORIZED DATE

Export Classification
N/A

DISTRIBUTION LIST

LH DEPT. REPRESENTATIVE/ EXTERNAL COMPANY	NOTES	No. COPIES
LH THSS	Electronic copy	1
LH CUSTOMER SUPPORT & SERVICE	Electronic copy	1

Export Classification
N/A

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Export Classification
N/A

1 SCOPE

This document provides all information regarding the hardware components that are used for a correct operation of FLASH SW Tool

2 APPLICABILITY

Table 1 is reporting the current handled applicable FLASH assy P/N.

Table 1 – FLASH P/N Applicability

FLASH ASSY P/N
TA00AWHL-FLASH-ACB

3 REFERENCED DOCUMENTS

3.1 CONTRACT DOCUMENTS

N/A

3.2 APPLICABLE DOCUMENTS

Applicable documents are reported in the table below:

Ref.	Title	Number	Issue
[1]	FLASH Software Manual	THSS-MULG0205M004	D
[2]	Hardware Requirement Specification Hardware Tools	THSS-MULG0205E020	B
[3]	Hardware Requirement Specification Cable Harnesses	THSS-MULG0205E019	B

Table 2 – Applicable documents

3.3 OTHER DOCUMENTS AND STANDARDS

N/A

4 ACRONYMS AND DEFINITIONS

4.1 ACRONYMS

All the acronyms used in this document are reported in the following table:

Table 3 – Acronyms

AFDX	Avionics Full Duplex Switched Ethernet
AMMC	Aircraft & Mission Management Computer
AW	AgustaWestland
CAN	Control Area Network
DMG	Digital Map Generator
FLASH	Field Loadable Avionic Software for Helicopter
H/C	HeliCopter
HW	Hardware
ICS	Internal Communication System
IOM	Input Output Module
I/F	InterFace
LH	Leonardo Helicopter
LRU	Line Replaceable Unit
MFD	Multi Function Display
N/A	Not Applicable
PM	Personality Module
P/N	Part Number
REF	Reference
REPU	Remote Electrical Power Unit
SW	Software
SRS	Software Requirement Specification
SSS	System / Segment Specification
TBC	To Be Confirmed
TBD	To be Defined
THSS	Training & Helicopter Support Systems
USB	Universal Serial Bus
VDAM	Vibration Data Acquisition Module

4.2 DEFINITIONS

N/A

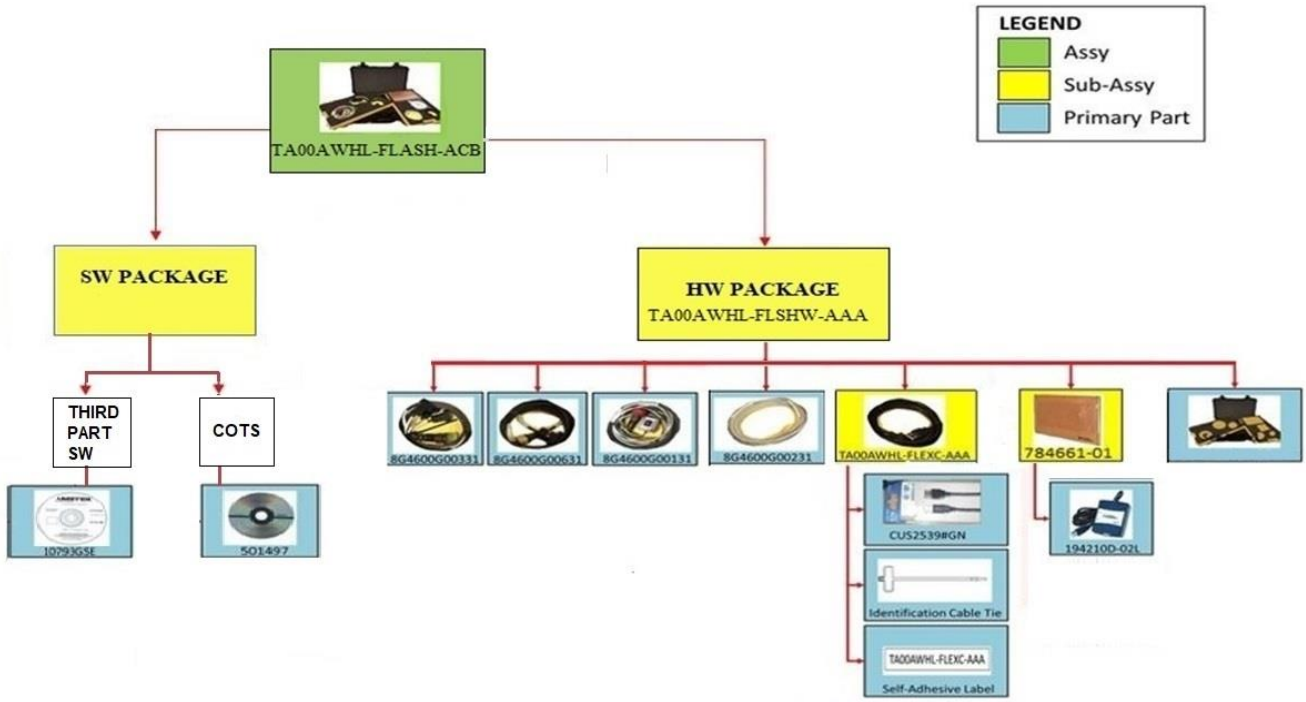
5 DESCRIPTION

The FLASH is a portable system constituted by a SW kit and a HW kit whose purpose is to optimize the actual process of SW management (update mainly) for several avionic LRUs.

5.1 TOP ASSEMBLY DRAWINGS

In the following figure is showed the product tree of P/N TA00AWHL-FLASH-ACB.

Figure 1 – FLASH Product Tree

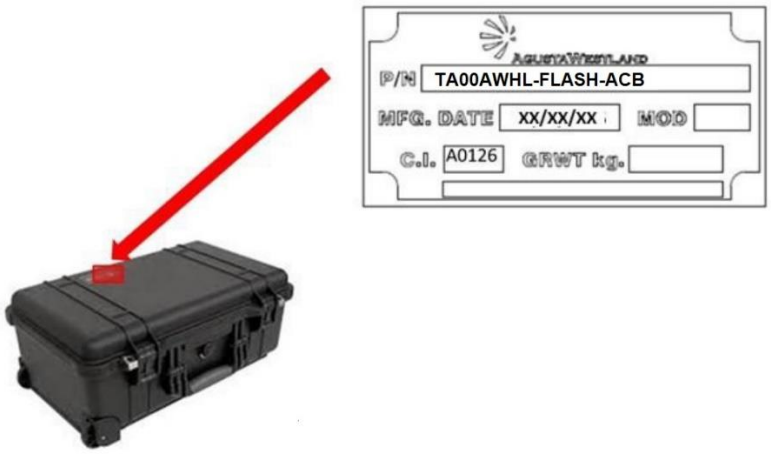


5.2 IDENTIFICATION

The current tool identification P/N is TA00AWHL-FLASH-ACB.
The last three letters of the P/N will change in accordance with future releases;
the old handled releases are showed in Table 1 – FLASH P/N Applicability.

The tool identification is marked on the identification tag. The identification tag is fixed with adhesive on the external upper side of the transportation tool as showed in the following figure.

Figure 2 – FLASH identification tag Allocation



The identification tag prototype is showed in the following figure

Figure 3 – FLASH identification tag Prototype

The identification tag shall report the FLASH Assy P/N, the production date and the field C.I. that for LH is A0126.

5.3 OVERALL DIMENSION

See the following table

EXTERNAL (L x W X D)	55.9 x 35.1 x 22.9 cm
INTERIOR (L x W X D)	50.1 x 27.9 x 19.3 cm
DEPTH COVER	4.5 cm
DEPTH CASE	14.7 cm

Table 4 – Case dimensions

5.4 WEIGHT

See the following table

CASE	9.0 Kg
MAX FLOATABILITY	29.0 Kg

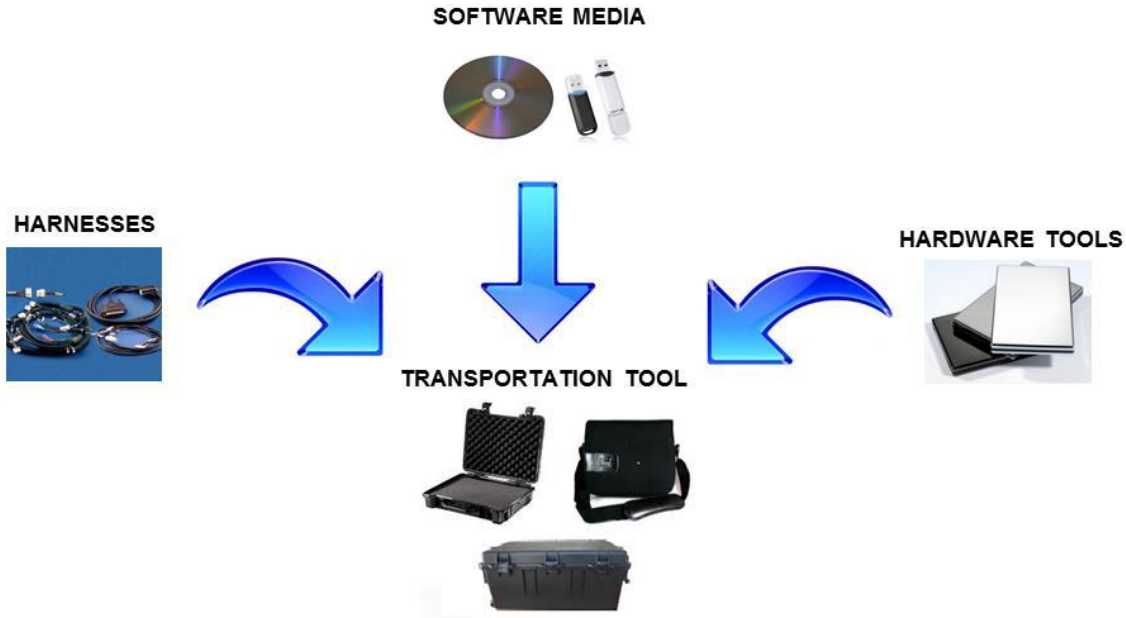
Table 5 – Case Weight and Floatability

5.5 MAIN PARTS

FLASH Hardware kit is constituted by following items:

- Cable Harnesses
- Hardware Tools
- Software media
- Transportation tool

Figure 4 – FLASH Hardware Kit



5.5.1 Harnesses

Cable Harnesses included in FLASH HW kit are listed in the following table (see Ref.[3]):

Table 6 – Harnesses Cables

LRU		Cable Harness P/N	Cable Harness Description
ARINC 615A LRU	Switch	8G4600G00231	Ethernet cable
	AMMC		
	MFD		
	EDCU		
VDAM AMMC		8G4600G00331	N-AMMC Harness
DMG AMMC			
BACKLIGHT DIMMER		8G4600G00631	CAN BUS Maintenance Cable
REPU		8G4600G00131	Loading Harness for REPU
Mass Memory AMMC		TA00AWHL-FLEXC-AAA	USB 2.0 Extension Cable

NOTE: The cable necessary to interface the AMU ICS with the host PC (USB CABLE MALE-MALE) shall be procured by the user in loco (local supply).

NOTE: The cable necessary to interface the IOM with the host PC (P/N 8G4600G00431, "IOM & PM MAINTENANCE cable") shall be procured by the user as loose part (the cable is not included in the FLASH kit)

NOTE: The cable necessary to interface the FCC with the host PC (P/N 6F2210G00131, "AW169 AFCS Cable") shall be procured by the user as loose part (the cable is not included in the FLASH kit)

5.5.2 Hardware Tools

Hardware Tools necessary to interact with LRUs by using FLASH SW are listed in the following table (see Ref. [2]):

Table 7 – HW Tools

LRU	HW Tool P/N	HW Tool Description
BACKLIGHT DIMMER	784661-01	USB/CAN Converter Model USB-8502 1 Port

5.5.3 Software Media

FLASH HW Kit is containing following Media:

- CD containing FLASH SW tool and its Handbook
- CD containing SW tool of SIRIO PANEL for REPU (P/N 10793GSE)
- CD containing drivers for CAN/BUS Converter (P/N 501497)

Figure 5 – FLASH Tool CDs

5.5.4 Transportation Tool

Harnesses (see §5.5.1), Hardware Tools (see §5.5.2) and Software media(see §5.5.3) are stored in a dedicated case. The case is identified as follow:

- P/N : TA00AWHL-FLTKC-ABA.
- Description : FLASH TOOL KIT CASE

Figure 6 – FLASH Tool kit case

The case is certificated as per Def S tan 81-41/S TANAG 4280 and with a Protection Index of IP67 which means:

- protection against contact
- protection from dust infiltration
- protection against full immersion (1 meter submersion for 30 minutes)

Main physical features of the case are reported in the tables below

MATERIALS

BODY	Polypropylene
CLOSURE	ABS
O-RING COVER	Polymer Stainless Steel

Table 8 – Case materials

THERMAL CAPABILITY

MAX TEMPERATURE	99° C
MIN TEMPERATURE	-40° C

Table 9 – Thermal capability

The case is handleable and hasn't got any wheels.

Internally the case is provided with two foam panels (PANEL 01 and PANEL 02) where FLASH items are allocated

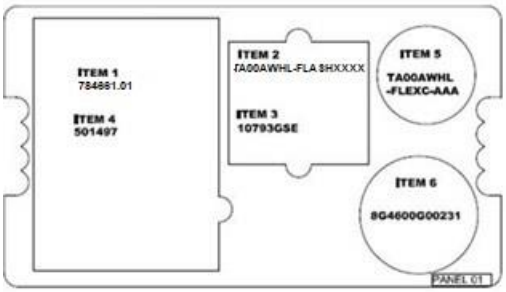
Figure 7 – FLASH Tool kit Case – PANEL 01 and PANEL 02

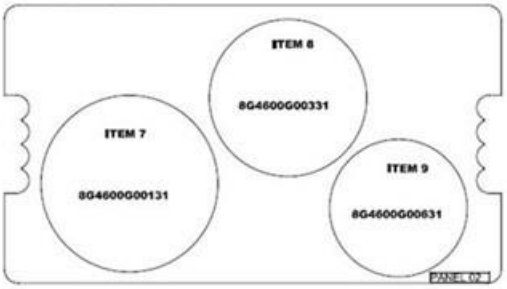
PANEL 01

ITEM	P/N	DESCRIPTION
1	784661-01	USB/CAN CONVERTER MODEL
2	TA00AWHL-FLASHXXXX	FLASH SOFTWARE (1 CD)
3	10793GSE	REPU GSE SOFTWARE (1 CD)
4	501497	CAN BUS SOFTWARE (1 CD)
5	TA00AWHL-FLEXC-AAA	USB 2.0 EXTENSION CABLE
6	8G4600G00231	ETHERNET CABLE

PANEL 02

ITEM	P/N	DESCRIPTION
7	8G4600G00131	LOADING HARNESS FOR REPU
8	8G4600G00331	N-AMMC HARNESS
9	8G4600G00631	CAN BUS MAINTENANCE CABLE





5.6 MAIN FEATURE DESCRIPTION

The FLASH is used for SW management (update mainly) of several avionic LRUs.

6 SAFETY NOTES

This section describes general rules to prevent risks of injuring or damaging the system during operation.

6.1 WARNINGS AND RECOMMENDED BEHAVIOR

WARNING: Never perform operations that differ from what has been specified in this manual.

WARNING: A use of the system in a way non-compliant to the manufacturer's instructions may seriously impair the correct operation of the safety devices installed.

WARNING: Introducing hands and/or other objects into the system may damage the system and cause serious injuries.

WARNING: Never lean on the protective frames of the system during its operation.

WARNING: Do not put fluids into the system.

WARNING: If the system needs to be moved from the installation site, make sure that this operation is carried out by qualified personnel.

CAUTION: Only introduce the LRU to be programmed during the downloading cycle.

6.2 RESIDUAL HAZARDS

To protect the users and the system from residual hazards, that is from unpredictable risks or from hazards that cannot be completely eliminated, we recommend users to strictly follow the warnings listed in paragraph **"Warnings and recommended behavior"** and to follow the instructions given here below:

- Avoid wearing loose clothing or apparel with parts (hems, sleeves) which could get tangled or clamped into the system during operation
- Avoid wearing ties or scarves
- Avoid wearing long necklaces, bracelets or rings
- If necessary, wear a cap to keep long hair out of the way

7 STORAGE

The Tool shall be properly stored into a cool and dry place to provide protection from external weather conditions, damage and dirty particles.

The cable Kit shall be stored in the transportation box as described in Figure 7.

Ensure that the tool parts are clean before storage.

7.1 LUBRIFICATION BEFORE STORAGE

N/A

7.2 STORAGE CONFIGURATION

NOTE: Insert the caps on the MIL connectors.

NOTE: The cables shall be put in their corresponding slot as described in Figure 7.

Apart from that, the tool has no particular storage configuration.

8 MAINTENANCE

Correct and regular material checks is necessary to prevent most faults; this safeguards the tool performance in time, thereby making it last longer.

8.1 CLEANING

No particular cleaning is required.

8.1.1 SPECIAL TOOLS, FIXTURE AND EQUIPMENT

N/A

8.1.2 PART REQUIREMENTS

N/A

8.1.3 MANUAL CLEANING

N/A

8.2 CHECKS

Before each use carry out the check of kit component.
Verify that MIL connectors have their corresponding caps.

8.2.1 SPECIAL TOOLS, FIXTURE AND EQUIPMENT

N/A

8.2.2 VISUAL EXAMINATION

NOTE: The task must be performed by operators, with intermediate skill levels.

A. Examine the connectors for damage to the pins and to the shell.

B. Examine the cables for damage to the insulation sleevers and wires.

C. Examine all parts for any of the visible damage that follows:

- Evidence of impact;
- Crushing or stripping
- Cracks;
- Dents;
- Wear;
- Distortions;
- Corrosion;
- Loose or defective attaching parts (warning flag).
- Unsticking of parts

D. Marking

Visually examine the marking.

Make sure that external surface and adhesion is in good condition. If the marking is damaged or not readable, proceed to restore it.

8.3 REPLACEMENT

N/A

9 CALIBRATION

The calibration is not applicable.

10 SPARE PARTS

N/A

11 CE MARKING

No CE marking is required.