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AgustaWestland Products

SERVICE BULLETIN

OPTIONAL

N° 189-290

DATE: March 26, 2024

REV. : /

TITLE

ATA 23 - INSTALLATION OF RADIO HF SRT-200

REVISION LOG

First Issue

1. PLANNING INFORMATION

A. EFFECTIVITY

Part I

AW189 helicopters S/N 49054 and from S/N 49064 to S/N 49067.

Part II

AW189 helicopters S/N 49054, from S/N 49064 to S/N 49067, from S/N 49073 to S/N 49076, S/N 49078, S/N 49080, S/N 49081 and S/N 49084.

B. COMPLIANCE

At Customer's option.

C. CONCURRENT REQUIREMENTS

N.A.

D. REASON

This Service Bulletin is issued in order to provide the necessary instruction on how to perform the installation of kit “radio HF SRT-200” P/N 8G2310F01411.

LH issued this SB for the following reason:

Helicopter Reliability/Maintainability	
Product Improvement	
Obsolescence	
Customization	✓
Product/Capability Enhancement	

E. DESCRIPTION

Leonardo Helicopters has developed this Service Bulletin in order to install the kit “radio HF SRT-200” P/N 8G2310F01411.

Part I of this Service Bulletin provides instructions on how to install the structural provision P/N 8G5310A41111 and the electrical provision P/N 8G2310A14311.

Part II of this Service Bulletin provides the information on:

- HF RADIO SRT-200 equipment installation P/N 8G2310A14211, which consists of atu-1992/g antenna coupler and RT-200 HF transceiver.
- HF SRT200 relocation collector P/N 8G2310A23011, which consists of HF SRT200 relocation structural provision, HF relocation C/A, and HF equipment relocation.

F. APPROVAL

If an aircraft listed in the effectivity embodies a modification or repair not LHD certified and affecting the content of this Service Bulletin, it is responsibility of the Owner/Operator to obtain a formal approval by Aviation Authority having jurisdiction on the aircraft, for any adaptation necessary before incorporation of the present Service Bulletin.

G. MANPOWER

To comply with this Service Bulletin the following MMH are deemed necessary.

Part I: approximately eighty (80);

Part II: approximately forty (40).

MMH are based on hands-on time and can change with helicopter configuration, personnel and facilities available. MMH are not comprehensive of the overall hours necessary to get access to work areas and to remove all the equipment that interferes with the application of the prescribed instructions.

H. WEIGHT AND BALANCE

PART I

WEIGHT (kg)	5,72	
	ARM (mm)	**MOMENT (kg·mm)**
LONGITUDINAL BALANCE	10062,8	57559,2
LATERAL BALANCE	-236,7	-1353,9

PART II

WEIGHT (kg)	18,06	
	ARM (mm)	**MOMENT (kg·mm)**
LONGITUDINAL BALANCE	9990,3	180424,8
LATERAL BALANCE	-195,1	-3523,5

I. REFERENCES

I.1 PUBLICATIONS

Following Data Modules refer to AMP:

DATA MODULE		**DESCRIPTION**	**PART**
DM01	89-A-00-20-00-00A-120A-A	Helicopter on ground for a safe maintenance.	I, II
DM02	89-A-06-41-00-00A-010A-A	Access doors and panels general data.	I, II
DM03	89-A-24-81-00-05A-752A-A	SSEPMS - Personality modules (PMs) - Data loading.	I

DATA MODULE		DESCRIPTION	PART
DM04	89-A-46-21-00-00A-750A-A	Aircraft mission management system load software procedure.	II
DM05	89-A-46-31-00-00A-750B-A	Cockpit display system load software procedure,	II
DM06	89-A-11-00-01-00A-720A-A	Decal install procedure.	II

Following Data Modules refer to CSPP:

DATA MODULE		DESCRIPTION	PART
DM07	CSPP-A-20-10-13-00A-622A-D	Electrical contacts crimp.	I

I.2 ACRONYMS & ABBREVIATIONS

AFDX	Avionic Full Duplex ethernet
AMDI	Aircraft Material Data Information
AMMC	Aircraft & Mission Management Computer
AMP	Aircraft Maintenance Publication
AR	As Required
ATP	Acceptance Test Procedure
CDS	Cockpit Display System
CSPP	Common Standard Practices Publication
DM	Data Module
DMG	Digital Map Generator
DOA	Design Organization Approval
EASA	European Aviation Safety Agency
ECDU	Electrical Control and Display Unit
FCS	Flight Control System
HF	High Frequency
ICS	Intercommunication System
IPD	Illustrated Parts Data
ITEP	Illustrated Tools and Equipment Publication
LH	Leonardo Helicopters
MMH	Maintenance Man Hours
N.A.	Not Applicable
OPSW	Operational Software
P/N	Part Number
REPU	Remote Electrical Power Unit
S/N	Serial Number
SW	Software

I.3 ANNEX

Annex A AW189 RADIO HF SRT-200 ATP

J. PUBLICATIONS AFFECTED

N.A.

K. SOFTWARE ACCOMPLISHMENT SUMMARY

Software to be updated:

AMMC option file P/N 8G4620AOXXXX;

CDS option file P/N 8G4630AOXXXX.

ECDU configuration file P/N 8G4620AC0XXX

Option File P/N is depending upon helicopter configuration that can be different from the one reported in relevant helicopter “Commessa di Vendita”. Customer must contact Product Support Engineering (engineering.support.lhd@leonardo.com) to request the correct Option File at least three months in advance from the scheduled embodiment of this Service Bulletin.

SW DESCRIPTION	**S/N HELICOPTER** **P/N SW INSTALLED** **(COMPILED BY CUSTOMER)**	 **P/N SW TO BE ORDERED** **(COMPILED BY LEONARDO COMPANY)**
AMMC OPTION FILE		
CDS OPTION FILE		
ECDU CONFIG FILE		

2. MATERIAL INFORMATION

A. REQUIRED MATERIALS

A.1 PARTS

PART I

#	P/N	ALTERNATIVE P/N	DESCRIPTION	Q.TY	LVL	NOTE	LOG P/N
1	**8G2310F01411**		**KIT HF RADIO SRT-200**	**REF**	**.**		**-**
2	**8G5310P02311**		**HF ANTENNA STRUCTURAL PROVS RETRO MOD**	**REF**	**..**		**-**
3	8G2310A22551		Blanking plate	1	…		189-290L1
4	A428A3B04		Screw	4	…		189-290L1
5	AW007TE-30-209		Insert screw thread	4	…		189-290L1
6	**8G5310A41111**		**HF RADIO SRT-200 STRUCTURAL PROVISION**	**REF**	**..**		**-**
7	NAS1832C06-3		Insert screw thread	4	…		189-290L1
8	NAS1832C3-3		Insert screw thread	16	…		189-290L1
9	NAS1836C3-16		Insert screw thread	6	…	(1)	189-290L1
10	A297A04TW01		Rivet blind	121	…		189-290L1
11	A428A3B04		Screw	17	…		189-290L1
12	MS27039-1-07		Screw machine	6	…	(1)	189-290L1
13	NAS1149D0316K		Washer	6	…	(1)	189-290L1
14	8G2310A15051		Closure	1	…		189-290L1
15	8G2310A15151		Closure	1	…	(2)	189-290L1
16	8G2310A15251		Closure	1	…		189-290L1
17	8G2310A15351	8G2310A15351M01	Bonding foil	1	…		189-290L1
18	8G2310A15451	8G2310A15451M01	Bonding foil	1	…		189-290L1
19	8G2310A15631		Bracket assy	1	…	(1)	189-290L1
20	8G2310A14651	8G2310A14651M01	Ground plane	1	…		189-290L1
21	8G2310A14451	8G2310A14451M01	Ground plane	1	…		189-290L1
22	8G2310A14551	8G2310A14551M01	Ground plane	1	…		189-290L1
23	8G2310A13851	8G2310A13851M01	Bonding strip	1	…	(1)	189-290L1
24	8G2310A17551		Blanking plate	1	…		189-290L1
25	**8G2310A14311**		**HF RADIO SRT-200 C/A INSTALLATION**	**REF**	**..**		**-**
26	NAS1190E3P14AK		Screw	1	…		189-290L1
27	AW001CL001-N6		Support	7	…	(1)	189-290L1
28	AW001CL006AT01-X1		Support	1	…	(1)	189-290L1
29	A366A3E10C		Stud	5	…	(1)	189-290L1
30	NAS43DD3-32N		Spacer	1	…		189-290L1
31	NAS1802-06-7		Screw	2	…		189-290L1
32	EN6049-006-40-5		Self-wrap braid	1	…		189-290L1
33	AW001CB03H		Clamp	5	…		189-290L1
34	AW001CB04H		Clamp	5	…	(1)	189-290L1
35	AW001CB05H		Clamp	2	…	(1)	189-290L1
36	AW001CB06H		Clamp	1	…	(1)	189-290L1
37	900004953	AW001CK03LC	Tape	6	…		189-290L1
38	A388A3E08C		Standoff	1	…	(1)	189-290L1
39	A388A3E16C		Standoff	1	…		189-290L1
40	A631A01A		Spacer	2	…	(1)	189-290L1
41	AW002FT102		Grommet	2	…	(1)	189-290L1
42	MS21043-3		Nut	5	…	(1)	189-290L1

#	P/N	ALTERNATIVE P/N	DESCRIPTION	Q.TY	LVL	NOTE	LOG P/N
43	NAS1149D0332J		Washer	9	...		189-290L1
44	NAS1149DN616J		Washer	2	...		189-290L1
45	NAS1190E3P5AK		Screw	2	...		189-290L1
46	EE267-02-075B		Packing	1	...		189-290L1
47	8G9D22A11701	8G2310A14311A5R	HF SRT-200 C/A (D2A117)	1	...		189-290L1
48	8G9D21A11601		HF SRT-200 C/A (D1A116)	1	...		189-290L1
49	8G9D23A12701	8G9D23A12701A2R	HF SRT-200 C/A (D3A127)	1	...		189-290L1
50	8G9C21A35801	8G2310A14311A1R	HF SRT-200 C/A (C1A358)	1	...		189-290L1
51	8G9C22A21301		HF SRT-200 C/A (C2A213)	1	...		189-290L1
52	8G9A22A40801	8G9A22A40801A1R	HF SRT-200 C/A (A2A408)	1	...		189-290L1
53	8G9A22B32201	8G9A22B32201A1R	HF SRT-200 C/A (A2B322)	1	...		189-290L1
54	8G9B22A30901	8G9B22A30901A1R	HF SRT-200 C/A (B2A309)	1	...		189-290L1
55	8G4620AC0XXX		ECDU Configuration File	1	.	(3) (4) (5)	-
56	A523A-A02		Contact	2			189-290L1
57	M39029/58-364		Contact	2			189-290L1
58	M39029/58-365		Contact	1		(1)	189-290L1
59	M39029/56-352		Contact	2		(1)	189-290L1
60	M39029/56-351		Contact	10		(1)	189-290L1
61	M39029/56-348		Contact	9		(1)	189-290L1
62	M39029/58-360		Contact	6		(1)	189-290L1
63	A523A-A01		Contact	7		(1)	189-290L1
64	372-2514-110		Contact	1		(1)	189-290L1
65	M39029/58-363		Contact	10			189-290L1
66	M23053/8-004-C		Insulation sleeving	4		(1)	189-290L1
67	M23053/8-003-C		Insulation sleeving	2			189-290L1

PART II

#	P/N	ALTERNATIVE P/N	DESCRIPTION	Q.TY	LVL	NOTE	LOG P/N
68	**8G2310F01411**		**KIT HF RADIO SRT-200**	**REF**	**.**		**-**
69	**8G2310A14211**		**HF RADIO SRT-200 EQUIPMENT INSTALLATION**	**REF**	**..**		**-**
70	RAC-7121/03		Atu-1992/g antenna coupler	1	...		189-290L2
71	RAC-7032/01		Rt-200 hf transceiver	1	...		189-290L2
72	26539		Antenna short element	1	...		189-290L2
73	21-10-426		Antenna sliding mast	1	...		189-290L2
74	28308		Antenna element "u"	1	...		189-290L2
75	28309	900004502	Antenna element curve	1	...		189-290L2
76	21-10-427		Antenna grounding mast	1	...		189-290L2
77	NAS1802-3-18		Screw	8	...		189-290L2
78	NAS1802-3-8		Screw	12	...		189-290L2
79	MS27039-1-13		Screw	3	...		189-290L2
80	NAS5312V3A14		Screw	3	...		189-290L2
81	NAS1149D0316K		Washer	3	...		189-290L2
82	NAS620C10L		Washer	20	...		189-290L2
83	ED300E407		Decal	1	...		189-290L2
84	ED300E409		Decal	1	...		189-290L2
85	55-06-HF		Decal	2	...		189-290L2
86	A499AHN020E04X00		Decal	4	...		189-290L2
87	ED300A409		Decal	1	...		189-290L2
88	8G2310A14751		Packer	1	...		189-290L2
89	8G2310A14851		Packer	1	...		189-290L2
90	8G2310A16751		Packer	1	...		189-290L2
91	S5296F01		Rt-200 mounting tray	1	...		189-290L2

#	P/N	ALTERNATIVE P/N	DESCRIPTION	Q.TY	LVL	NOTE	LOG P/N
92	**8G2310P01211**		**HF MAST CHANGE RETROMOD**	**REF**	**..**		-
93	21-10-450-2		Antenna switching mast updated	1	…		189-290L2
94	8G2310A22651		Packer	1	…		189-290L2
95	NAS1802-3-8		Screw	4	…		189-290L2
96	NAS620C10L		Washer	4	…		189-290L2
97	8G4620AOXXXX		AMMC Option File	1	.	(3) (4) (5)	-
98	8G4630AOXXXX		CDS Option File	1	.	(3) (4) (5)	-
99	**8G2310A23011**		**HF SRT200 RELOCATION COLLECTOR**	**REF**	**.**		**-**
100	**8G5310A56411**		**HF SRT200 RELOCATION STR PROVS**	**REF**	**..**		**-**
101	8G2310A15631		Bracket assy	1	…	(6)	189-290L3
102	8G2310A23151		Connector bracket	1	…	(6)	189-290L3
103	8G2310A23251		Bonding strip	1	…	(6)	189-290L3
104	8G5315A41131	8G5315A41131A	Ground point assy	1	…	(6)	189-290L3
105	A259A03-05		Setscrew	6	…	(6)	189-290L3
106	AW007TE-30-113		Insert	6	…	(6)	189-290L3
107	MS24693-C269		Screw	2	…	(6)	189-290L3
108	MS27039-1-06		Screw	4	…	(6)	189-290L3
109	NAS1149D0316K		Washer	4	…	(6)	189-290L3
110	NAS1149D0616K		Washer	6	…	(6)	189-290L3
111	NAS1832-3-3		Insert	2	…	(6)	189-290L3
112	NAS1836C3-16		Insert	4	…	(6)	189-290L3
113	**8G2310A22811**		**HF RE-LOCATION C/A**	**REF**	**..**		-
114	8G9D22A11901	8G9D22A11901A1R	HF re-location C/A (D2A119)	1	…	(6)	189-290L3
115	8G9D22A12001	8G9D22A12001A1R	HF re-location C/A (D2A120)	1	…	(6)	189-290L3
116	8G9D23A13201	8G9D23A13201A1R	HF re-location C/A (D3A132)	1	…	(6)	189-290L3
117	A388A3E08C75		Standoff	5	…	(6)	189-290L3
118	A388A3E14C75		Standoff	1	…	(6)	189-290L3
119	AW001CB05H		Clamp	13	…	(6)	189-290L3
120	ED300A409J1		Decal	1	…	(6)	189-290L3
121	ED300J407		Decal	1	…	(6)	189-290L3
122	M85049/95-16A-A		Connector mounting device	1	…	(6)	189-290L3
123	NAS1149D0332J		Washer	7	…	(6)	189-290L3
124	NAS1149DN416J		Washer	4	…	(6)	189-290L3
125	NAS1190E3P15AK		Screw	1	…	(6)	189-290L3
126	NAS1190E3P6AK		Screw	5	…	(6)	189-290L3
127	NAS1802-04-7		Screw	4	…	(6)	189-290L3
128	NAS43DD3-30N		Spacer	1	…	(6)	189-290L3
129	**8G2310A22911**		**HF EQUIPMENT RE-LOCATION**	**REF**	**..**		-
130	A601A04B0200	A601A4B20	BONDING CABLE ASSY	1	…	(6)	189-290L3
131	ED300A409		Decal	1	…	(6)	189-290L3
132	MS27039-1-13		Screw	3	…	(6)	189-290L3
133	NAS1149D0316K		Washer	3	…	(6)	189-290L3
134	NAS5312V3A14		Screw	3	…	(6)	189-290L3
135	RAC-7032/01		RT-200 HF transceiver	1	…	(6)	189-290L3
136	S5296F01		RT-200 mounting tray	1	…	(6)	189-290L3

Refer also to IPD for the spares materials required to comply with the AMP DMs referenced in the accomplishment instructions.

Refer also to Annex A for the spares materials required to comply with this Service Bulletin.

A.2 CONSUMABLES

The following consumable materials, or equivalent, are necessary to accomplish this Service Bulletin:

#	SPEC./LHD CODE NUMBER	DESCRIPTION	Q.TY	NOTE	PART
137	MMM-A-132, Type II, Class 2	Adhesive EA9309.3NA (C021)	AR	(7)	I, II
138	199-05-002 Type II, Class 2	Adhesive EA934NA (C397)	AR	(7)	I, II
139	AWMS05-001 Type I, Class C, Grade 1	Sealant MC-780B-2 (C354)	AR	(7)	I, II
140	MIL-S-8784 Class B	Sealant PR-1428 Class B-2 (C617)	AR	(7)	I
141	AWMS28-002, Type I, Class 1, Grade A or B	Epoxy Primer 37076 (C596)	AR	(7)	I, II
142	AMS 3266 Class B	Conductive sealant PR1764M B-2 (C170)	AR	(7)	I, II
143	AMS-C-9084 Class 2, Type VIIIA Code No. 900005824	Fiberglass (C320)	AR	(7)	I
144	MIL-PRF-16173 Class I, Grade 1	Corrosion preventive compound	AR	(7)	I, II
145	MIL-PRF-16173 Class II, Grade 1	Corrosion preventive compound	AR	(7)(8)	I, II
146	MIL-PRF-16173 Class II, Grade 4	Corrosion preventive compound	AR	(7)	I, II
147	AWMS05-001 Type I, Class B, Grade 2	Sealant MC-780B-1 (C355)	AR	(7)	I, II
148	Commercial	Adhesive CB200-40 (C356)	AR	(7)	I, II
149	DTD 900AA/4488A	Jointing compound JC5A (C001)	AR	(7)	I, II
150	999999999000017311 BM110P0009	Jointing compound	AR	(7)(9)	I, II
151	P/N 900005604 ECS6058-1022	LOCTITE ABLESTIK 57C (Eccobond)	AR	(7)	I

Refer also to AMDI for the consumable materials required to comply with the AMP DM referenced in the accomplishment instructions.

Refer also to Annex A for the consumable materials required to comply with this Service Bulletin.

A.3 LOGISTIC MATRIX

In order to apply this Service Bulletin, the following Logistic P/N can be ordered in accordance with the applicable notes:

LOGISTIC P/N	Q.TY (PER HELO)	NOTE	PART
189-290L1	1		Part I
8G4620AC0XXX	1	(4)(5)	
189-290L2	1		Part II
189-290L3	1	(6)	
8G4620AOXXXX	1	(3)(4)(5)	
8G4630AOXXXX	1	(3)(4)(5)	

NOTES

(1) Item to be ordered only if kit “Shelf in Tail” P/N 8G5350F00111 is NOT installed.

(2) This item can be obtained from the raw material Fiberglass (C320) P/N 900005824.

(3) File P/N is depending upon helicopter configuration that can be different from the one reported in relevant helicopter “Commessa di Vendita” Customers must contact Product Support Engineering (engineering.support.lhd@leonardo.com) to request the correct Option File at least three months in advance from the scheduled application of this Service Bulletin.

(4) This software will not be supplied; as specified by Information Letter AW189-19-019 , it will be available for download, along with relevant certification document, in “My Software” sub-section of Leonardo AW Customer Portal website https://leonardo.agustawestland.com.

(5) Refer to software accomplishment summary paragraph.

(6) Item to be ordered only if kit “Shelf in Tail” P/N 8G5350F00111 is installed.

(7) Item to procured as local supply.

(8) MIL-PRF-16173 Class II, Grade 1 may be used as alternative to compound MIL-PRF-16173 Class I, Grade 1.

(9) BM110P0009 may be used as alternative to jointing compound DTD 900AA/4488A.

B. SPECIAL TOOLS

The following special tools, or equivalent, are necessary to accomplish this Service Bulletin:

#	P/N	DESCRIPTION	Q.TY	NOTE	PART
152	8G5350G00432	Template	1		I
153	-	DC external Power (28VDC 3KW Min)	1		Annex A
154	-	DC Voltmeter Tester for troubleshooting operations	1		Annex A
155	-	Bond Meter (AOIP OM 16 or equivalent)	1		Annex A
156	-	Shorting leads	1		Annex A
157	-	Radio Test Set (range 2-500 MHz) FM/AM-1200S/A or equivalent	1		Annex A
158	-	Thru line wattmeter (range 0-250 W frequency 2-30 MHz) or equivalent	1		Annex A
159	-	Headset with microphones	2		Annex A

Refer also to ITEP for the special tools required to comply with the AMP DM referenced in the accomplishment instructions.

Refer also to Annex A for the special tools required to comply with this Service Bulletin.

C. INDUSTRY SUPPORT INFORMATION

Customization.

3. ACCOMPLISHMENT INSTRUCTIONS

GENERAL NOTES

a) Place an identification tag on all components that are re-usable, including the attaching hardware that has been removed to gain access to the modification area and adequately protect them until their later re-use.

b) Shape the cables in order to prevent interference with the structure and the other existing installations, using where necessary suitable lacing cords and plastic cable tiedown.

c) Exercise extreme care during drilling operations to prevent instruments, cables and hoses damage.

d) After drilling, remove all swarf and sharp edges. Apply on bare metal a light film of primer unless the hole is used for ground connection.

e) During the installation of bonding braids or components requiring grounding, clean the surface structure in order to obtain a good ground contact.

f) Let adhesive cure at room temperature for at least 24 hours unless otherwise specified.

g) Exposed thread surface and nut must be protected using a layer of tectyl according to MIL-C-16173 grade I.

h) All lengths are in mm.

PART I

1. In accordance with DM 89-A-00-20-00-00A-120A-A, prepare the helicopter on ground for a safe maintenance. Disconnect the battery, all electrical power sources and/or the external power supply.
2. In accordance with DM 89-A-06-41-00-00A-010A-A and with reference to Figures 1 thru 10, Figure 21 and 22, remove all external panels, internal panels and internal liners as required to gain access to the area affected by the installation of the kit “HF radio SRT200” P/N 8G2310F01411 as described in the following procedure:

2.1 With reference to Figures 1 thru 3, Figure 21 and 22, perform the “HF radio SRT-200 structural provision” P/N 8G5310A41111 and the “HF antenna structural provision retro mod” P/N 8G5310P02311 as described in the following procedure:

NOTE

Unless otherwise specified and except for electrical bonding areas, in low/medium indirect/direct exposure zones, perform the installation of riveted structural parts and riveted vendor components as follows:

- Apply a layer of sealant AWMS05-001 Type I, Class C, Grade 1 (C354) on all faying surfaces.
- Wet assemble fixing fasteners using AWMS05-001 Type I, Class C, Grade 1 (C354).

NOTE

Unless otherwise specified and except for electrical bonding areas, in low/medium indirect/direct exposure zones, perform the installation of bolted structural parts and bolted vendor components as follows:

- Apply a layer of sealant AWMS05-001 Type I, Class C, Grade 1 (C354) on all faying surfaces.
- Wet assemble fixing fasteners using jointing compound DTD 900AA/4488A (C001) applied under the head and on the shank of fasteners.

2.1.1 With reference to Figure 1 View B, Figure 2 View C and View D, and Figure 3 View E and View F, prepare highlighted surface for bonding as described in the following procedure:

- Degrease the surface by means of solvents and cloths.
- Remove the glass cloth layer, the adhesive layer and the resin on the surfaces of the tail fuselage by means of the 220-grit garnet in order to expose the copper foil.
- Restore corrosion protection prior to assembly by ensuring that exposed surfaces have been treated.

NOTE

Perform the following steps from 2.1.2 thru 2.1.9 only if kit “Shelf in Tail” P/N 8G5350F00111 is NOT installed.

2.1.2 With reference to Figure 2 View C, install the bonding strip P/N 8G2310A13851 in accordance with dimensions shown by means of the adhesives EA9309.3NA (C021) and PR1764M B-2 (C170).

2.1.3 Locally apply the epoxy primer 37076 (C596) to the area where the sealant will be applied.

NOTE

Cure the sealant MC-780B-1 (C355) for at least 10 hours.

2.1.4 With reference to Figure 2 View C, seal the perimeter of the bonding strip P/N 8G2310A13851 by means of sealant MC-780B-1 (C355).

2.1.5 With reference to Figure 2 View C, temporary locate the bracket assy P/N 8G2310A15631 on the bonding strip P/N 8G2310A13851 and countermark n°6 holes positions.

2.1.6 With reference to Figure 2 View C, drill n°6 holes Ø 11.48÷11.60 thru bonding strip P/N 8G2310A13851 and the tail panel.

2.1.7 With reference to Figure 2 View C, install n°6 inserts P/N NAS1836C3-16 on the tail panel by means of adhesive EA934NA (C397).

2.1.8 With reference to Figure 2 View C, install the bracket assy P/N 8G2310A15631 by means n°6 washers P/N NAS1149D0316K and n°6 screws P/N MS27039-1-07.

2.1.9 With reference to Figure 2 View C, perform the bonding test as described in the following procedures:

- Connect the test meter "Thorn-EMI BT51" and test leads. Align the probes so that the 'p' (Potential) contacts are within the current path, i.e. the innermost two of the four probe contacts.
- Applying only light contact pressure and using rounded end probes perform the bond test between point 1 and point 3, point 2 and point 3, point 3 and point 4.
- The resistance measured must not exceeds the value of 5 milliohms.
- Protect all the test points from the environmental deterioration.

NOTE

To achieve a satisfactory bond result it is necessary to have a sufficient and permanent pressure during adhesive curing. Cure Hysol Eccobond 57C at 23 °C minimum for 24 hours or 65 °C minimum for 3 hours.

NOTE

If AIS transponder is installed, bond the ground plane P/N 8G2310A14651 on the LH tail panel assy P/N 8G5350A03932 with the same cut-outs and holes for provisions. Ensure the holes relating to the inserts positions do not “trap” the inserts between the LH tail panel assy P/N 8G5350A03932 and the ground plane P/N 8G2310A14651, therefore preventing removal/replacement in the future if the inserts have been damaged.

NOTE

During the following step, install the ground planes in the following order: first P/N 8G2310A14651, then P/N 8G2310A14551 and finally P/N 8G2310A14451.

2.1.10 With reference to Figure 1 Tail View, Figure 2 View D and Figure 3 View E and View F, bond the ground planes P/N 8G2310A14451, P/N 8G2310A14551 and P/N 8G2310A14651 on the LH tail panel assy P/N 8G5350A03932 by means of adhesive EA9309.3NA (C021) and Hysol Eccobond 57C (C634) in accordance with dimensions shown.

NOTE

If AIS transponder is installed, omit n°2 rivet holes as shown in Figure 3 View F.

2.1.11 With reference to Figure 2 View D and Figure 3 View E and View F, drill n°121 rivet holes thru the ground planes P/N 8G2310A14451, P/N 8G2310A14551, P/N 8G2310A14651, and the LH tail panel assy P/N 8G5350A03932 in accordance with dimensions shown.

NOTE

If AIS transponder is installed, omit n°2 rivets P/N A297A04TW01 as shown in Figure 3 View F.

NOTE

It is allowed to cut the ground plane P/N 8G2310A14651 in order to adapt it to the presence of already existing rivets.

2.1.12 With reference to Figure 2 View D and Figure 3 View E and View F, fix the ground planes P/N 8G2310A14651, P/N 8G2310A14551 and P/N 8G2310A14451 with n°121 rivets P/N A297A04TW01.

NOTE

Break sharp edges with chamfering 1x1 or radius 1÷0.25 mm.

2.1.13 With reference to Figure 1 Tail View, drill n°1 hole Ø25, n°1 hole Ø39 and n°1 hole Ø37 thru ground plane P/N 8G2310A14551 and the LH tail panel assy P/N 8G5350A03932 in accordance with dimensions shown. Prepare the surface to assure a good ground contact.

2.1.14 With reference to Figure 1 Tail View, fill the opened cells of the honeycomb with the filler K2 fiber bubbles at 30% with the adhesive EA9309.3NA (C021).

NOTE

It is permissible to wet lay-up closure with 2 plies (+45, -45) of fiberglass AMS-C-9084 (C320) and adhesive EA9309.3NA (C021).

2.1.15 With reference to Figure 1 View B, bond the closures P/N 8G2310A15051, P/N 8G2310A15151 and P/N 8G2310A15251 by means of adhesive EA9309.3NA (C021).

NOTE

To achieve a satisfactory bond result it is necessary to have sufficient and permanent pressure at junction areas during adhesive cure time.

2.1.16 With reference to Figure 1 View B, install the bonding foils P/N 8G2310A15351 and P/N 8G2310A15451 on the LH tail panel assy P/N 8G5350A03932 as follow:

- Clean the surface of the bonding foils P/N 8G2310A15351 and P/N 8G2310A15451 with a cloth moistened with methyl alcohol.
- Bond the foils P/N 8G2310A15351 and P/N 8G2310A15451 on the LH tail panel assy P/N 8G5350A03932 by means of adhesive PR1764M B-2 (C170).
- Locally apply the epoxy primer 37076 (C596) to the area where the sealant will be applied.

NOTE

Cure the sealant MC-780B-1 (C355) for at least 10 hours.

- Seal the perimeter of the bonding foils P/N 8G2310A15351 and P/N 8G2310A15451 by means of sealant MC-780B-1 (C355).

2.1.17 With reference to Figure 2 View D, temporary locate the blanking plates P/N 8G2310A17551 and P/N 8G2310A22551 on the ground plane P/N 8G2310A14451 and countermark n°12 holes positions. For hole-positions refer also to the dimensions shown in Figure 21 Detail A and Figure 22 Detail C.

2.1.18 With reference to Figure 3 View E and View F, countermark n°8 holes positions in accordance with dimensions shown. For hole-positions refer also to the dimensions shown in Figure 22 Detail C and Detail D.

2.1.19 With reference to Figure 1 Tail View, drill n°16 holes Ø 14.25÷14.38 thru ground planes P/N 8G2310A14451, P/N 8G2310A14551 and P/N 8G2310A14651 and the LH tail panel assy P/N 8G5350A03932.

2.1.20 With reference to Figure 1 Tail View, install n°16 inserts P/N NAS1832C3-3 on the LH tail panel assy P/N 8G5350A03932 by means of adhesive EA934NA (C397).

NOTE

Drill with the larger diameter Ø 9.50÷9.60 starting from the internal side through bonding foil, internal skin and honeycomb, going up to the external skin (without drilling the external skin). Drill with the smaller diameter Ø 5.33÷5.45 through ground plane and the external skin.

2.1.21 With reference to Figure 1 Section G-G, drill n°4 holes thru the LH tail panel assy P/N 8G5350A03932, the ground plane P/N 8G2310A14451 and the bonding foil P/N 8G2310A15451 .

2.1.22 With reference to Figure 1 Tail View and Section G-G, install n°4 inserts P/N AW007TE-30-209 on the LH tail panel assy P/N 8G5350A03932 by means of adhesive EA934NA (C397).

NOTE

Perform the following steps from 2.1.23 thru 2.1.26 only if Part II is not intended to be embodied immediately after Part I.

2.1.23 With reference to Figure 2 View D, install the blanking plates P/N 8G2310A17551 and P/N 8G2310A22551 on the ground plane P/N 8G2310A14451 by means of n°12 screws P/N A428A3B04.

2.1.24 With reference to Figure 2 View D, locally apply the epoxy primer 37076 (C596) to the area where the sealant will be applied.

2.1.25 With reference to Figure 2 View D, seal the perimeter of the blanking plates P/N 8G2310A17551 and P/N 8G2310A22551 by means of sealant PR-1428 Class B-2 (C617).

2.1.26 With reference to Figure 3 View E and View F, install n° 8 screw P/N A428A3B04 on the ground planes P/N 8G2310A14551 and P/N 8G2310A14651.

2.1.27 With reference to figure 1 View A, drill n°2 holes Ø 14.25÷14.38 thru the LH tail panel assy P/N 8G5350A03932 in accordance with dimensions shown.

2.1.28 With reference to Figure 1 View A, install n°2 inserts P/N NAS1832C06-3 on the LH tail panel assy P/N 8G5350A03932 by means of adhesive EA934NA (C397).

2.2 With reference to Figures 4 thru 10 and 13 thru 15, perform the HF radio SRT-200 C/A Installation P/N 8G2310A14311 as described in the following procedure:

NOTE

Perform the following steps from 2.2.1 thru 2.2.6 only if kit “Shelf in Tail” P/N 8G5350F00111 is NOT installed.

2.2.1 With reference to Figure 5 View looking tail LH side, and Figure 7 View A install n°1 stud P/N A388A3E08C by means of adhesive CB200-40 (C356), in accordance with the dimensions shown.

2.2.2 With reference to Figure 5 View looking tail LH side, and Figure 7 View A install n°1 standoff P/N A388A3E16C by means of adhesive CB200-40 (C356), in accordance with the dimensions shown.

2.2.3 With reference to Figure 5 View looking tail floor and View looking tail LH side, and Figure 7 View A install n°4 studs P/N A366A3E10C and n°6 supports P/N AW001CL001-N6 by means of adhesive CB200-40 (C356), in accordance with the dimensions shown.

2.2.4 With reference to Figure 7 View A, remove the existing screw P/N NAS1190E3P6AK and the standoff P/N A388A3E16C, and install the stud P/N A366A3E10C by means of adhesive CB200-40 (C356). Reinstall the existing clamp on the stud by means of nut P/N MS21043-3.

2.2.5 With reference to Figure 6 View K, install the support P/N AW001CL006AT01-X1 by means of adhesive CB200-40 (C356).

2.2.6 With reference to Figure 6 View J, install the support P/N AW001CL001-N6 by means of adhesive CB200-40 (C356), in accordance with dimensions shown.

NOTE

Use the edging P/N A236A and P/N NASM21266 on edges which are liable to cause damage to cable assemblies or where abrasion may occur.

NOTE

Install the tubing braided P/N EN6049-003 and P/N EN6049-006 where protection against chafing and prevention of contact with structure may occur, but the tubing protection is not substitute for good routing practice.

2.2.7 With reference to Figures 7 thru 10 and Figures 13 thru 15, lay down the following cable assemblies on the existing routes unless otherwise indicated on the figures:

- 8G9D22A11701 HF SRT-200 C/A (D2A117)
- 8G9D21A11601 HF SRT-200 C/A (D1A116)
- 8G9D23A12701 HF SRT-200 C/A (D3A127)
- 8G9C21A35801 HF SRT-200 C/A (C1A358)
- 8G9A22A40801 HF SRT-200 C/A (A2A408)
- 8G9A22B32201 HF SRT-200 C/A (A2B322)
- 8G9B22A30901 HF SRT-200 C/A (B2A309)
- 8G9C22A21301 HF SRT-200 C/A (C2A213)

2.2.8 With reference to Figures 7 thru 10, secure the cable assemblies lay down at the previous step by means of existing hardware and lacing cords.

NOTE

Perform the following steps from 2.2.9 thru 2.1.18 only if kit “Shelf in Tail” P/N 8G5350F00111 is NOT installed.

2.2.9 With reference to Figure 6 View B, install n°4 clamps P/N AW001CB03H on the C/A D2A117 by means the existing hardware.

2.2.10 With reference to Figure 7 View A, install n°2 grommets P/N AW002FT102 on the cable assembly D3A127, then install n°2 spacers P/N A631A01A between the C/A D3A127 and the C/A D2A117.

2.2.11 With reference to Figure 7 View A, install the clamp P/N AW001CB06H on the C/A D2A117 by means of the existing hardware.

2.2.12 With reference to Figure 7 View A, install n°4 clamps P/N AW001CB04H on the C/A D3A127 and the studs P/N A366A3E10C previously installed by means of n°4 washers P/N NAS1149D0332J and n°4 nuts P/N MS21043-3.

2.2.13 With reference to Figure 7 View A, install the clamp P/N AW001CB03H on the C/A D2A117 by means of n°1 washer P/N NAS1149D0332J and n°1 screw NAS1190E3P5AK.

2.2.14 With reference to Figure 7 View A, install the clamp P/N AW001CB04H and the clamp P/N AW001CB05H on the C/A D3A127, the C/A D2A117 and the stud P/N A388A3E08C previously installed by means of n°2 washers P/N NAS1149D0332J and the screw P/N NAS1190E3P5AK.

2.2.15 With reference to Figure 7 View A, install the clamp P/N AW001CB05H on the C/A D3A127 by means the existing hardware.

2.2.16 With reference to Figure 7 View A, remove the existing screw P/N NAS1190E3P5AK, install the spacer P/N NAS43DD3-32N between the two existing clamps by means of the screw P/N NAS1190E3P14AK and rotate 90° the existing clamp.

2.2.17 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 10 View H, and Figure 14 Wiring Diagram, perform the electrical connections between the connector A34P1 and the connector P107.

2.2.18 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 10 View G, and Figure 14 Wiring Diagram, perform the electrical connections between the connector J107 and the connector TB105P1.

2.2.19 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 10 View G, and Figure 14 Wiring Diagram, perform the electrical connections between the module TB167/2 and the connector TB105P1.

2.2.20 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 9 View F, Figure 10 View G, and Figure 14 Wiring Diagram, perform the electrical connections between the connector P193 and the module TB167/2.

2.2.21 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 9 View F, Figure 10 View G, and Figure 14 Wiring Diagram, perform the electrical connections between the connector P193 and the connector TB105P1.

2.2.22 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 8 View D, Figure 9 View F, and Figure 14 Wiring Diagram, perform the electrical connections between the connector J193 and the connector J209.

NOTE

For S/N 49054, if present, remove or stow existing wires 2310-439-22S and 2310-438-22S between J193 and J211 connectors to allow the installation of 2310-909-22S and 2310-908-22S.

NOTE

For S/N 49054, if present, remove or stow existing wire 2310-440-22S between J209 and J193 connectors to allow the installation of 2310-907-22S.

2.2.23 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 8 View D, Figure 9 View F, and Figure 14 Wiring Diagram, perform the electrical connections between the connector J193 and the connector J211.

NOTE

After connecting the P305 and P307 connectors, use the packing P/N EE267-02-075B.

2.2.24 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 8 View D, Figure 9 View F, and Figure 13 Wiring Diagram, perform the electrical connections between the connector Q3PA7 and the connector P305.

2.2.25 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 7 View A, Figure 8 View D, and Figure 15 Wiring Diagram, perform the electrical connections between the connector P211 and the connector P307.

2.2.26 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 7 View A, Figure 8 View D, and Figure 15 Wiring Diagram, perform the electrical connections between the connector P209 and the connector P307.

2.2.27 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 7 View A, and Figure 15 Wiring Diagram, perform the electrical connections between the connector J307 and the connector A409P3.

2.2.28 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 7 View A, and Figure 13 Wiring Diagram, perform the electrical connections between the connector J305 and the connector A409P2.

2.2.29 Perform a pin-to-pin continuity check of all the electrical connections made.

NOTE

Perform the following step only if Part II is not intended to be embodied immediately after Part I.

2.2.30 Protect and stow the connectors E409P1, E407P6, E407P7, A409P1, A409P2 and A409P3 by means of protective caps, tie strap P/N 900004953 and nomex P/N EN6049-006-40-5.

3. In accordance with applicable steps of DM 89-A-24-81-00-05A-752A-A perform the ECDU configuration file (PM) - Load procedure.
4. In accordance with weight and balance changes, update the Chart A (see Rotorcraft Flight Manual, Part II, section 6).

5. Return the helicopter to flight configuration and record for compliance with Part I of this Service Bulletin on the helicopter logbook.
6. Gain access to My Communications section on Leonardo WebPortal and compile the “Service Bulletin Application Communication”.
   As an alternative, send the attached compliance form to the following mail box:

   engineering.support.lhd@leonardo.com

   and (for North, Central and South America) also to:

   AWPC.Engineering.Support@leonardocompany.us

PART II

1. In accordance with DM 89-A-00-20-00-00A-120A-A, prepare the helicopter on ground for a safe maintenance. Disconnect the battery, all electrical power sources and/or the external power supply.
2. In accordance with DM 89-A-06-41-00-00A-010A-A and with reference to Figures 11 thru 12, remove all external panels, internal panels and internal liners as required to gain access to the area affected by the installation and perform the HF radio SRT-200 equipment installation P/N 8G2310A14211 and the HF mast change retromod P/N 8G2310P01211 as described in the following procedure:

NOTE

Unless otherwise specified on equipment or mounting tray, apply corrosion preventive compound MIL-PRF-16173 Class II, Grade 4 around the boundary of the coupling surfaces (bond area) and on installation hardware (screws, bolt, washers, etc.)

NOTE

Unless otherwise specified apply fillet sealing MC-780B-1 (C355).

NOTE

Unless otherwise specified equipment installation fasteners wet assembled using jointing compound DTD 900AA/4488A (C001) on the shank and under the head.

NOTE

Perform following steps 2.1 and 2.2, only if Part I of this SB has NOT been performed immediately before to Part II.

2.1 With reference to Figure 12 View B, remove n°12 existing screws P/N A428A3B04 and the blanking plates P/N 8G2310A17551 and P/N 8G2310A22551.

2.2 With reference to Figure 12 View C, remove n°8 existing screws P/N A428A3B04 from ground planes P/N 8G2310A14551 and P/N 8G2310A14651.

2.3 With reference to Figure 12 View B, install the packer P/N 8G2310A14751 and the atu-1992/g antenna coupler P/N RAC-7121/03 on the blanking plate P/N 8G2310A17451, by means n°8 washers P/N NAS620C10L and n°8 screws P/N NAS1802-3-18.

2.4 With reference to Figure 12 View B, install the antenna short element P/N 26539 on the atu-1992/g antenna coupler P/N RAC-7121/03.

2.5 With reference to Figure 12 View B, insert the antenna short element P/N 26539 in the antenna switching mast P/N 21-10-450-2.

2.6 With reference to Figure 12 View B, install the packer P/N 8G2310A22651 and the antenna switching mast P/N 21-10-450-2 on the ground plane P/N 8G2310A14451 by means n°4 washers P/N NAS620C10L and n°4 screws P/N NAS1802-3-8.

2.7 With reference to Figure 12 View B and View C, insert the antenna element "u" P/N 28308 in the antenna switching mast P/N 21-10-450-2 and in the antenna sliding mast P/N 21-10-426.

2.8 With reference to Figure 12 View C, install the packer P/N 8G2310A16751 and the antenna sliding mast P/N 21-10-426 on the ground plane P/N 8G2310A14551 by means n°4 washers P/N NAS620C10L and n°4 screws P/N NAS1802-3-8.

2.9 With reference to Figure 12 View C, insert the antenna element curve P/N 28309 in the antenna sliding mast P/N 21-10-426 and in the antenna grounding mast P/N 21-10-427.

2.10 With reference to Figure 12 View C, install the packer P/N 8G2310A16851 and the antenna grounding mast P/N 21-10-427 on the ground plane P/N 8G2310A14651 by means n°4 washers P/N NAS620C10L and n°4 screws P/N NAS1802-3-8.

NOTE

Perform the following steps from 2.11 thru 2.14 only if kit “Shelf in Tail” P/N 8G5350F00111 is NOT installed.

2.11 With reference to Figure 11 View A and View D, install the RT-200 mounting tray P/N S5296F01 on the bracket assy P/N 8G2310A15631 by means of n°3 washers P/N NAS1149D0316K, n°3 screws P/N MS27039-1-13 and n°3 screws P/N NAS5312V3A14.

2.12 In accordance with AMP DM 89-A-11-00-01-00A-720A-A and with reference to Figure 11 Tail View, apply the decal P/N ED300E407 on the bonding foil P/N 8G2310A15351.

2.13 In accordance with AMP DM 89-A-11-00-01-00A-720A-A and with reference to Figure 11 Tail View, apply the decal P/N ED300E409 on the bonding foil P/N 8G2310A15451.

2.14 In accordance with AMP DM 89-A-11-00-01-00A-720A-A and with reference to Figure 11 View D, apply the decal P/N ED300A409 on the mounting tray P/N S5296F01.

2.15 In accordance with AMP DM 89-A-11-00-01-00A-720A-A and with reference to Figure 12 View B and View C, apply n°4 decals P/N A499AHN020E04X00 near the following components:

- Atu-1992/g antenna coupler P/N RAC-7121/03.
- Antenna switching mast P/N 21-10-450-2.
- Antenna sliding mast P/N 21-10-426.
- Antenna grounding mast P/N 21-10-427.

NOTE

Perform the following step only if kit "Shelf in Tail" P/N 8G5350F00111 is NOT installed.

2.16 With reference to Figure 11 View A, install the RT-200 HF transceiver P/N RAC-7032/01 on the RT-200 mounting tray P/N S5296F01 by means of n°2 hold-down knobs.

NOTE

Perform following step, only if Part I of this SB has NOT been performed immediately before to Part II.

2.17 Untie the connector E409P1, E407P6, E407P7, A409P1, A409P2 and A409P3 from the stowage: remove the tie strap P/N 900004953, the nomex P/N EN6049-006-40-5 and the protective caps.

2.18 With reference to Figure 11 Tail View or to Figure 17 Detail A, as applicable, connect the connector E407P6 and the connector E407P7 to the atu-1992/g antenna coupler P/N RAC-7121/03.

2.19 With reference to Figure 11 Tail View or to Figure 17 Detail A, as applicable, connect the connector E409P1 to the antenna switching mast P/N 21-10-450-2.

2.20 With reference to Figure 7 View A, connect the terminal board TB409 to the ground by means n°2 washers P/N NAS1149DN616J and n°2 screws P/N NAS1802-06-7.

NOTE

Perform the following step only if kit "Shelf in Tail" P/N 8G5350F00111 is NOT installed.

2.21 With reference to Figure 7 View A, connect the following connector to the RT-200 HF transceiver P/N RAC-7032/01:

- A409P1
- A409P2
- A409P3

NOTE

Perform the following step only if kit “Shelf in Tail” P/N 8G5350F00111 is installed.

3. With reference to Figures 16 thru 20 perform the HF SRT200 relocation collector P/N 8G2310A23011 as described in the following procedure:

3.1 With reference to Figure 16, perform the HF SRT200 relocation structural provision P/N 8G5310A56411 as described in the following procedure:

NOTE

Unless otherwise specified and except for electrical bonding areas, in low/medium indirect/direct exposure zones, perform the installation of riveted structural parts and riveted vendor components as follows:

- Apply a layer of sealant AWMS05-001 Type I, Class C, Grade 1 (C354) on all faying surfaces.
- Wet assemble fixing fasteners using AWMS05-001 Type I, Class C, Grade 1 (C354).

NOTE

Unless otherwise specified and except for electrical bonding areas, in low/medium indirect/direct exposure zones, perform the installation of bolted structural parts and bolted vendor components as follows:

- Apply a layer of sealant AWMS05-001 Type I, Class C, Grade 1 (C354) on all faying surfaces.
- Wet assemble fixing fasteners using jointing compound DTD 900AA/4488A (C001) applied under the head and on the shank of fasteners.

3.1.1 With reference to Figure 16 Detail A, prepare the surface for bonding as described in the following procedure:

- Degrease the surface by means of solvents and cloths.
- Remove the glass cloth layer, the adhesive layer and the resin on the surfaces of the tail fuselage by means of the 220-grit garnet in order to expose the copper foil.
- Restore corrosion protection prior to assembly by ensuring that exposed surfaces have been treated.

3.1.2 With reference to Figure 16 Detail A, install the bonding strip P/N 8G2310A23251 on the LH tail panel assy P/N 8G5350A03932 by means of the adhesives EA9309.3NA (C021) and adhesive PR1764M B-2 (C170).

3.1.3 Locally apply the epoxy primer 37076 (C596) to the area where the sealant will be applied.

NOTE

Cure the sealant MC-780B-1 (C355) for at least 10 hours.

3.1.4 With reference to Figure 16 Detail A, seal the perimeter of the bonding strip P/N 8G2310A23251 by means of sealant MC-780B-1 (C355).

3.1.5 With reference to Figure 16 Detail A, temporarily locate the connector bracket P/N 8G2310A23151 on the bonding strip P/N 8G2310A23251 and countermark n°4 hole positions.

3.1.6 With reference to Figure 16 Detail A, drill n°4 holes Ø 11.48 ÷ 11.61 thru the bonding strip P/N 8G2310A23251 and the LH tail panel assy P/N 8G5350A03932.

3.1.7 With reference to Figure 16 Detail A, install n°4 inserts P/N NAS1836C3-16 on the LH tail panel assy P/N 8G5350A03932 by means of adhesive EA934NA (C397).

3.1.8 With reference to Figure 16 Detail A, install the connector bracket P/N 8G2310A23151 on the bonding strip P/N 8G2310A23251 by means of n°4 washers P/N NAS1149D0316K and n°4 screws P/N MS27039-1-06

3.1.9 With reference to Figure 16 View B, temporary locate the bracket assy P/N 8G2310A15631 on the shelf assy P/N 8G5350A25531 and countermark n°6 holes positions.

3.1.10 With reference to Figure 16 View B, drill n°6 holes Ø 9.50÷9.60 on the lower side and Ø 4.83 ÷4.85 on the upper side of the shelf assy P/N 8G5350A25531.

3.1.11 With reference to Figure 16 View B, install n°6 inserts P/N AW007TE-30-113 on the shelf assy P/N 8G5350A25531 by means of adhesive EA934NA (C397).

3.1.12 With reference to Figure 16 View B, install the bracket assy P/N 8G2310A15631 by means of n°6 washers P/N NAS1149D0316K and n°6 screws P/N MS27039-1-07.

3.1.13 With reference to Figure 16 Detail A, perform the bonding test as described in the following procedures:

- Connect the test meter "Thorn-EMI BT51" and test leads. Align the probes so that the 'p' (Potential) contacts are within the current path, i.e. the innermost two of the four probe contacts.
- Applying only light contact pressure and using rounded end probes perform the bond test between point 1, point 2, point 3, point 4, and the nearest surface.
- The resistance measured must not exceeds the value of 5 milliohms.
- Protect all the test points from the environmental deterioration.

3.1.14 With reference to Figure 16 View B, temporarily locate the ground point assy P/N 8G5315A41131 on the shelf assy P/N 8G5350A25531 and countermark n°2 hole positions.

3.1.15 With reference to Figure 16 View B, drill n° 2 hole Ø 14.25 ÷ 14.38 thru the shelf assy P/N 8G5350A25531.

3.1.16 With reference to Figure 16 View B, install n°2 inserts P/N NAS1832-3-3 by means of adhesive EA934NA (C397).

3.1.17 With reference to Figure 16 View B, install the ground point assy P/N 8G5315A41131 on the shelf assy P/N 8G5350A25531 by means of n°2 screws P/N MS24693-C269.

3.2 With reference to Figure 17, and Figures 19 and 20 Wiring Diagram, perform the HF re-location C/A P/N 8G2310A22811 as described in the following procedure:

3.2.1 With reference to Figure 17 Detail A and View B, install n°5 standoffs P/N A388A3E08C75 on the shelf assy P/N 8G5350A25531 by means of adhesive CB200-40 (C356).

3.2.2 With reference to Figure 17 Detail A, install n°1 standoff P/N A388A3E14C75 on the structure by means of adhesive CB200-40 (C356).

3.2.3 With reference to Figure 17, lay down the following cable assemblies on the existing routes unless otherwise indicated on the figures:

- 8G9D22A11901 HF RE-LOCATION C/A (D2A119)
- 8G9D22A12001 HF RE-LOCATION C/A (D2A120)
- 8G9D23A13201 HF RE-LOCATION C/A (D3A132)

3.2.4 With reference to Figure 17, secure the cable assemblies lay down at the previous step by means of existing hardware and lacing cords.

3.2.5 With reference to Figure 17 Detail A and View B, install n°13 camps P/N AW001CB05H on the C/A D3A127, C/A D2A120, C/A D3A132, C/A D2A119, C/A D2A117 and C/A D1A116 by means of n°1 spacer P/N NAS43DD3-30N, n°6 washers P/N NAS1149D0332J, n°5 screws P/N NAS1190E3P6AK and n°1 screw P/N NAS1190E3P15AK.

3.2.6 With reference to Figure17 and Figure 20 Wiring Diagrams, connect the connectors A409P1 and A409J1.

3.2.7 With reference to Figure17 and Figure 20 Wiring Diagrams, connect the connector E407P6 to the ATU E407.

3.2.8 With reference to Figure 17 Detail A and Figures 19 and 20 Wiring Diagram, connect the connector P407 to the connector J407 by means of the connector mounting device P/N M85049/95-16A-A, n°4 washers P/N NAS1149DN416J and n°4 screws P/N NAS1802-04-7V.

3.2.9 In accordance with AMP DM 89-A-11-00-01-00A-720A-A and with reference to Figure 17 Detail A, apply the decal P/N ED300A409J1 on the connector bracket P/N 8G2310A23151 near the connector A409J1.

3.2.10 In accordance with AMP DM 89-A-11-00-01-00A-720A-A and with reference to Figure 17 Detail A, apply the decal P/N ED300J407 on the connector bracket P/N 8G2310A23151 near the connector J407.

3.3 With reference to Figure 18, perform the HF equipment re-location P/N 8G2310A22911 as described in the following procedure:

3.3.1 With reference to Figure 18 Detail A, install the RT-200 mounting tray P/N S5296F01 on the bracket assy P/N 8G2310A15631 by means of n°3 screws P/N NAS5312V3A14, n°3 washers P/N NAS1149D0316K, and n°3 screws P/N MS27039-1-13.

3.3.2 With reference to Figure 18 Detail A, install the RT-200 HF transceiver P/N RAC-7032/01 on the RT-200 mounting tray P/N S5296F01 by means of n°2 hold-down knobs.

3.3.3 With reference to Figure 18 Detail A, connect the following connector to the RT-200 HF transceiver P/N RAC-7032/01:

- A409P1A
- A409P2
- A409P3

3.3.4 With reference to Figure 18 Detail A, install the bonding cable assy P/N A601A04B0200 on the ground point assy P/N 8G5315A41131 and on the RT-200 HF transceiver P/N RAC-7032/01 by means of the existing hardware.

3.3.5 In accordance with AMP DM 89-A-11-00-01-00A-720A-A and with reference to Figure 18 View A, apply the decal P/N ED300A409 on the mounting tray P/N S5296F01.

4. Perform test as described in Annex A.
5. In accordance with applicable steps of the AMP DM 89-A-46-21-00-00A-750A-A install relevant AMMC option file.
6. In accordance with applicable steps of the AMP DM 89-A-46-31-00-00A-750B-A install relevant CDS option file.
7. In accordance with weight and balance changes, update the Chart A (see Rotorcraft Flight Manual, Part II, section 6).
8. Return the helicopter to flight configuration and record for compliance with Part II of this Service Bulletin on the helicopter logbook.
9. Gain access to My Communications section on Leonardo WebPortal and compile the “Service Bulletin Application Communication”.
   As an alternative, send the attached compliance form to the following mail box:
   engineering.support.lhd@leonardo.com
   and (for North, Central and South America) also to:
   AWPC.Engineering.Support@leonardocompany.us

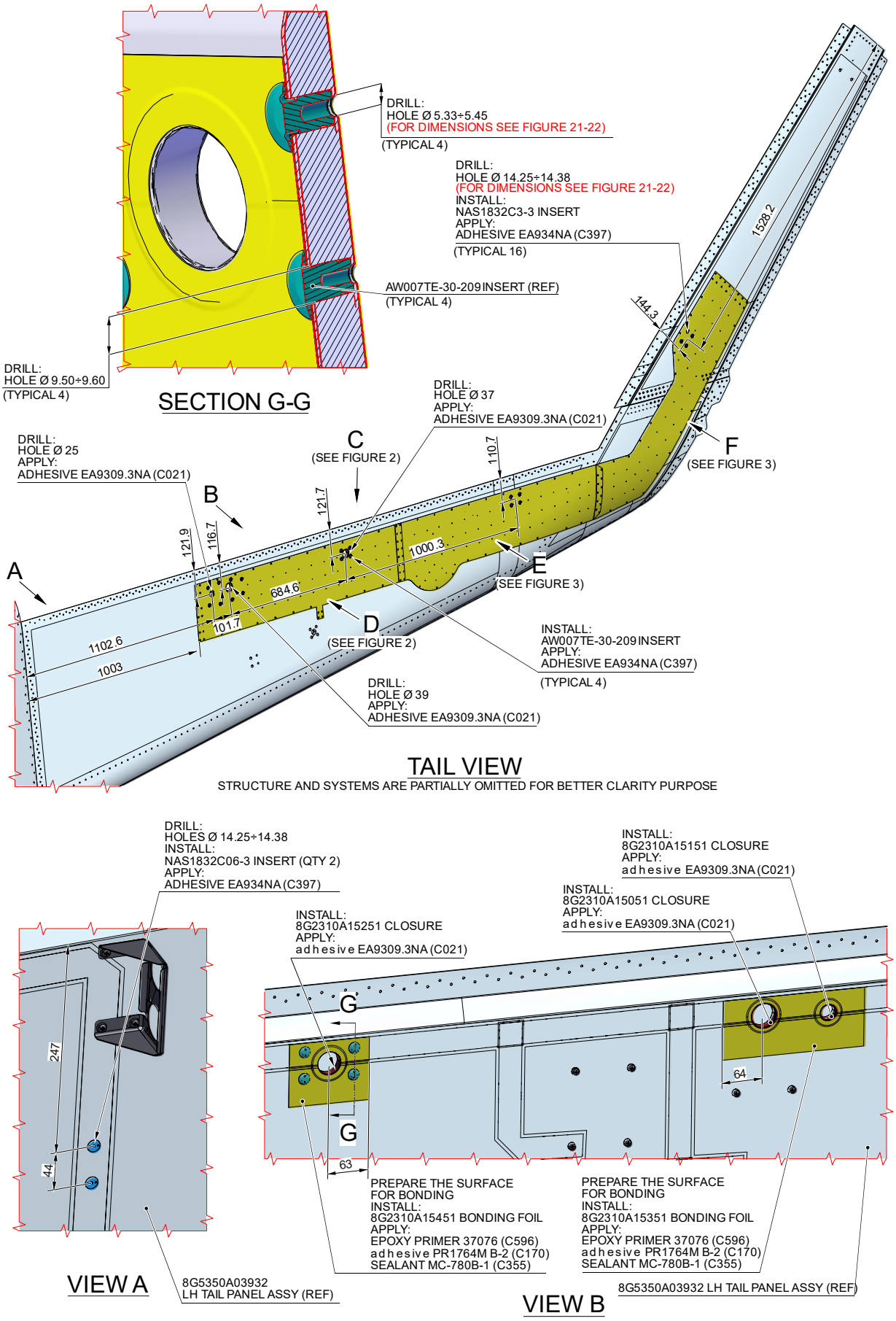

DRILL:
HOLE Ø 5.33÷5.45
(FOR DIMENSIONS SEE FIGURE 21-22)
(TYPICAL 4)
DRILL:
HOLE Ø 14.25÷14.38
(FOR DIMENSIONS SEE FIGURE 21-22)
INSTALL:
NAS1832C3-3 INSERT
APPLY:
ADHESIVE EA934NA (C397)
(TYPICAL 16)
AW007TE-30-209 INSERT (REF)
(TYPICAL 4)
DRILL:
HOLE Ø 9.50÷9.60
(TYPICAL 4)
SECTION G-G
DRILL:
HOLE Ø 37
APPLY:
ADHESIVE EA9309.3NA (C021)
DRILL:
HOLE Ø 25
APPLY:
ADHESIVE EA9309.3NA (C021)
C
(SEE FIGURE 2)
F
(SEE FIGURE 3)
B
A
E
(SEE FIGURE 3)
D
(SEE FIGURE 2)
121.9
116.7
121.7
110.7
144.3
1528.2
1000.3
684.6
101.7
1102.6
1003
INSTALL:
AW007TE-30-209 INSERT
APPLY:
ADHESIVE EA934NA (C397)
(TYPICAL 4)
DRILL:
HOLE Ø 39
APPLY:
ADHESIVE EA9309.3NA (C021)
TAIL VIEW
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
DRILL:
HOLES Ø 14.25÷14.38
INSTALL:
NAS1832C06-3 INSERT (QTY 2)
APPLY:
ADHESIVE EA934NA (C397)
INSTALL:
8G2310A15251 CLOSURE
APPLY:
adhesive EA9309.3NA (C021)
INSTALL:
8G2310A15151 CLOSURE
APPLY:
adhesive EA9309.3NA (C021)
INSTALL:
8G2310A15051 CLOSURE
APPLY:
adhesive EA9309.3NA (C021)
G
G
247
44
64
63
PREPARE THE SURFACE
FOR BONDING
INSTALL:
8G2310A15451 BONDING FOIL
APPLY:
EPOXY PRIMER 37076 (C596)
adhesive PR1764M B-2 (C170)
SEALANT MC-780B-1 (C355)
PREPARE THE SURFACE
FOR BONDING
INSTALL:
8G2310A15351 BONDING FOIL
APPLY:
EPOXY PRIMER 37076 (C596)
adhesive PR1764M B-2 (C170)
SEALANT MC-780B-1 (C355)
VIEW A
8G5350A03932
LH TAIL PANEL ASSY (REF)
8G5350A03932 LH TAIL PANEL ASSY (REF)
VIEW B

Figure 1

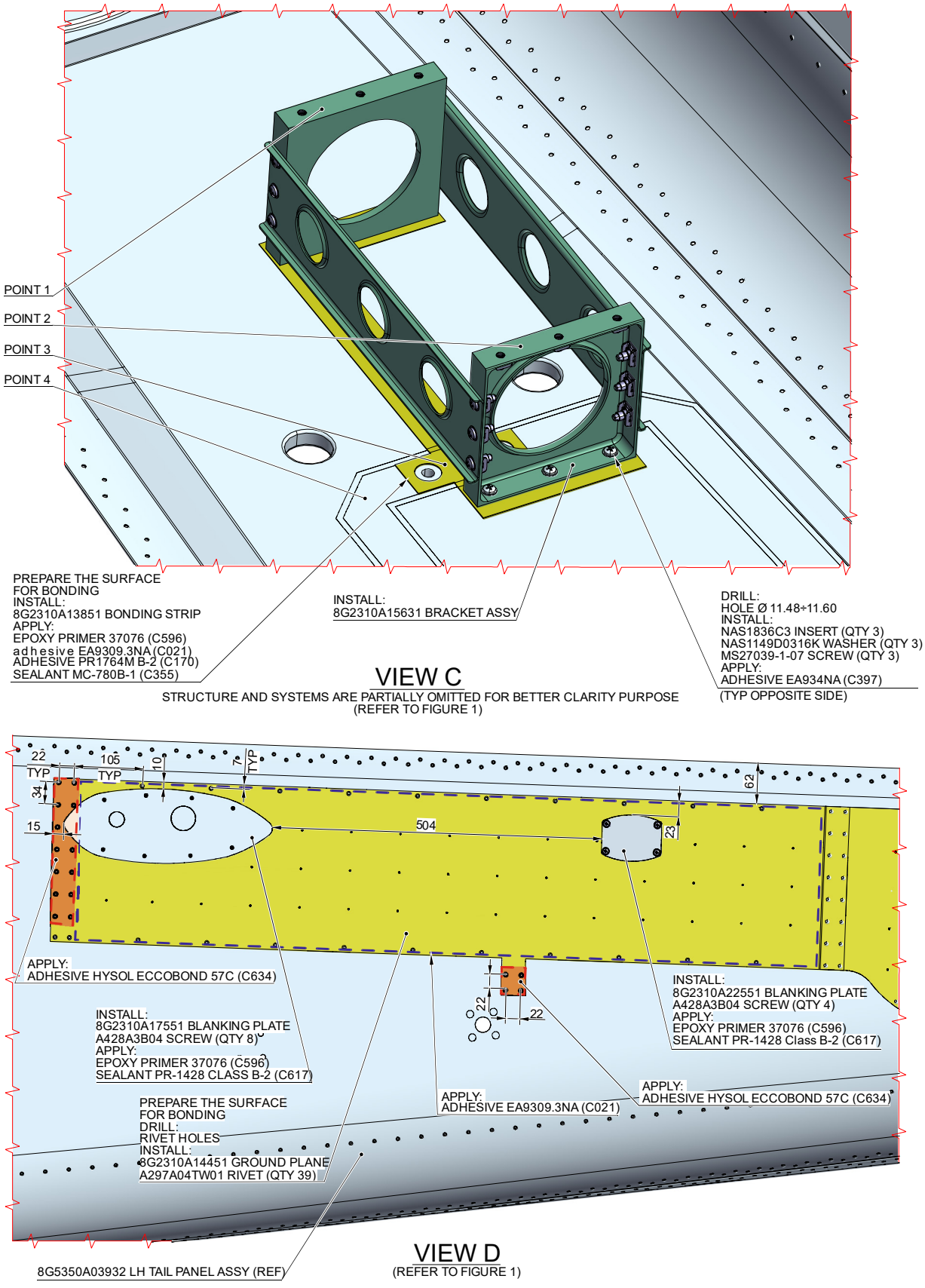
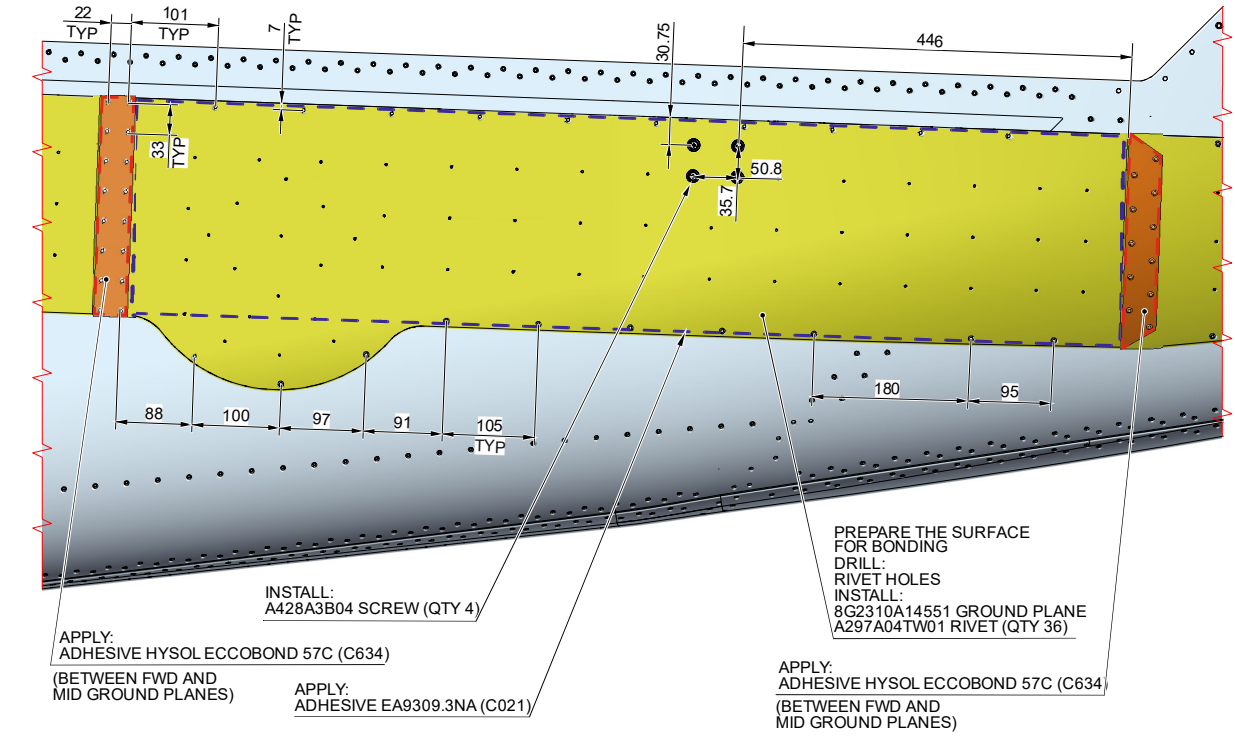
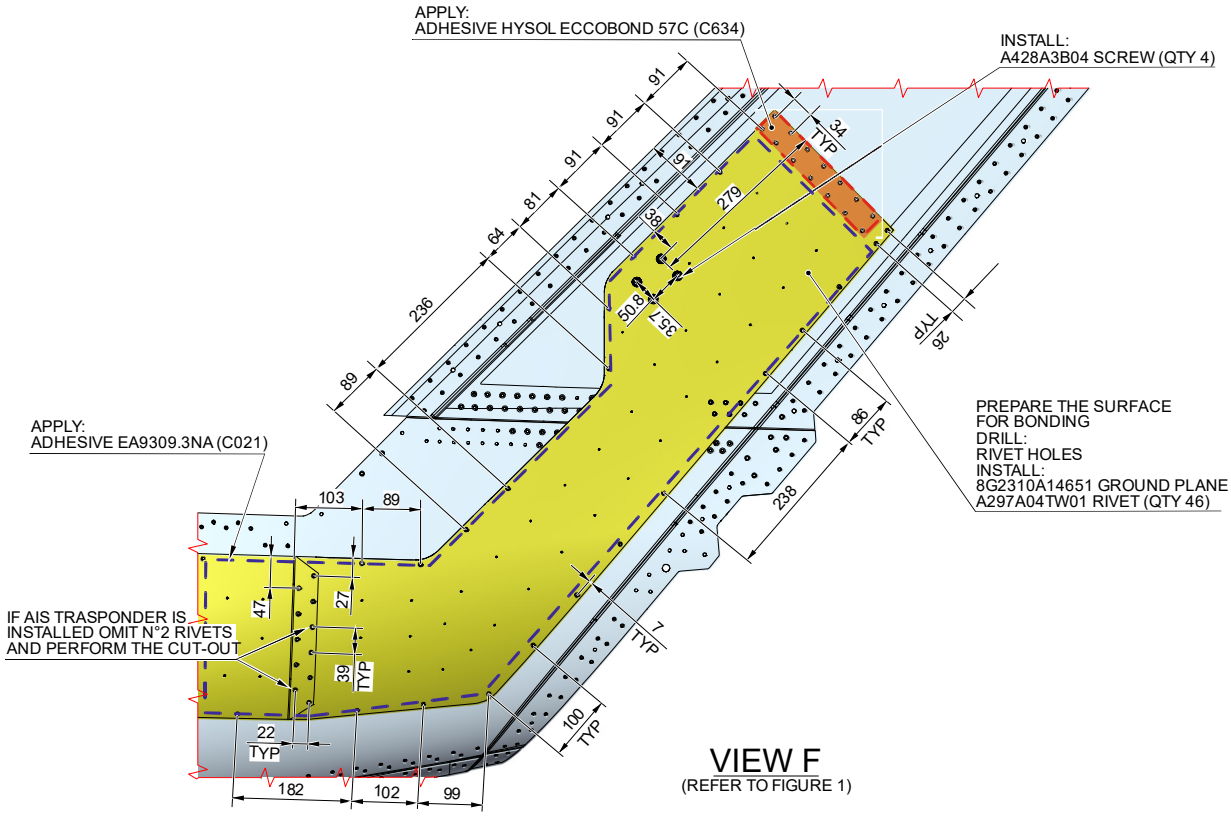

POINT 1
POINT 2
POINT 3
POINT 4
PREPARE THE SURFACE
FOR BONDING
INSTALL:
8G2310A13851 BONDING STRIP
APPLY:
EPOXY PRIMER 37076 (C596)
adhesive EA9309.3NA (C021)
ADHESIVE PR1764M B-2 (C170)
SEALANT MC-780B-1 (C355)
INSTALL:
8G2310A15631 BRACKET ASSY
DRILL:
HOLE Ø 11.48÷11.60
INSTALL:
NAS1836C3 INSERT (QTY 3)
NAS1149D0316K WASHER (QTY 3)
MS27039-1-07 SCREW (QTY 3)
APPLY:
ADHESIVE EA934NA (C397)
(TYP OPPOSITE SIDE)
VIEW C
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 1)
22
TYP
105
TYP
10
7
TYP
34
15
504
23
62
APPLY:
ADHESIVE HYSOL ECCOBOND 57C (C634)
INSTALL:
8G2310A17551 BLANKING PLATE
A428A3B04 SCREW (QTY 8)
APPLY:
EPOXY PRIMER 37076 (C596)
SEALANT PR-1428 CLASS B-2 (C617)
22
6
22
INSTALL:
8G2310A22551 BLANKING PLATE
A428A3B04 SCREW (QTY 4)
APPLY:
EPOXY PRIMER 37076 (C596)
SEALANT PR-1428 Class B-2 (C617)
PREPARE THE SURFACE
FOR BONDING
DRILL:
RIVET HOLES
INSTALL:
8G2310A14451 GROUND PLANE
A297A04TW01 RIVET (QTY 39)
APPLY:
ADHESIVE EA9309.3NA (C021)
APPLY:
ADHESIVE HYSOL ECCOBOND 57C (C634)
8G5350A03932 LH TAIL PANEL ASSY (REF)
VIEW D
(REFER TO FIGURE 1)

Figure 2



VIEW E

STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 1)



VIEW F
(REFER TO FIGURE 1)

Figure 3

HF RADIO SRT-200 C/A INSTALLATION
8G2310A14311

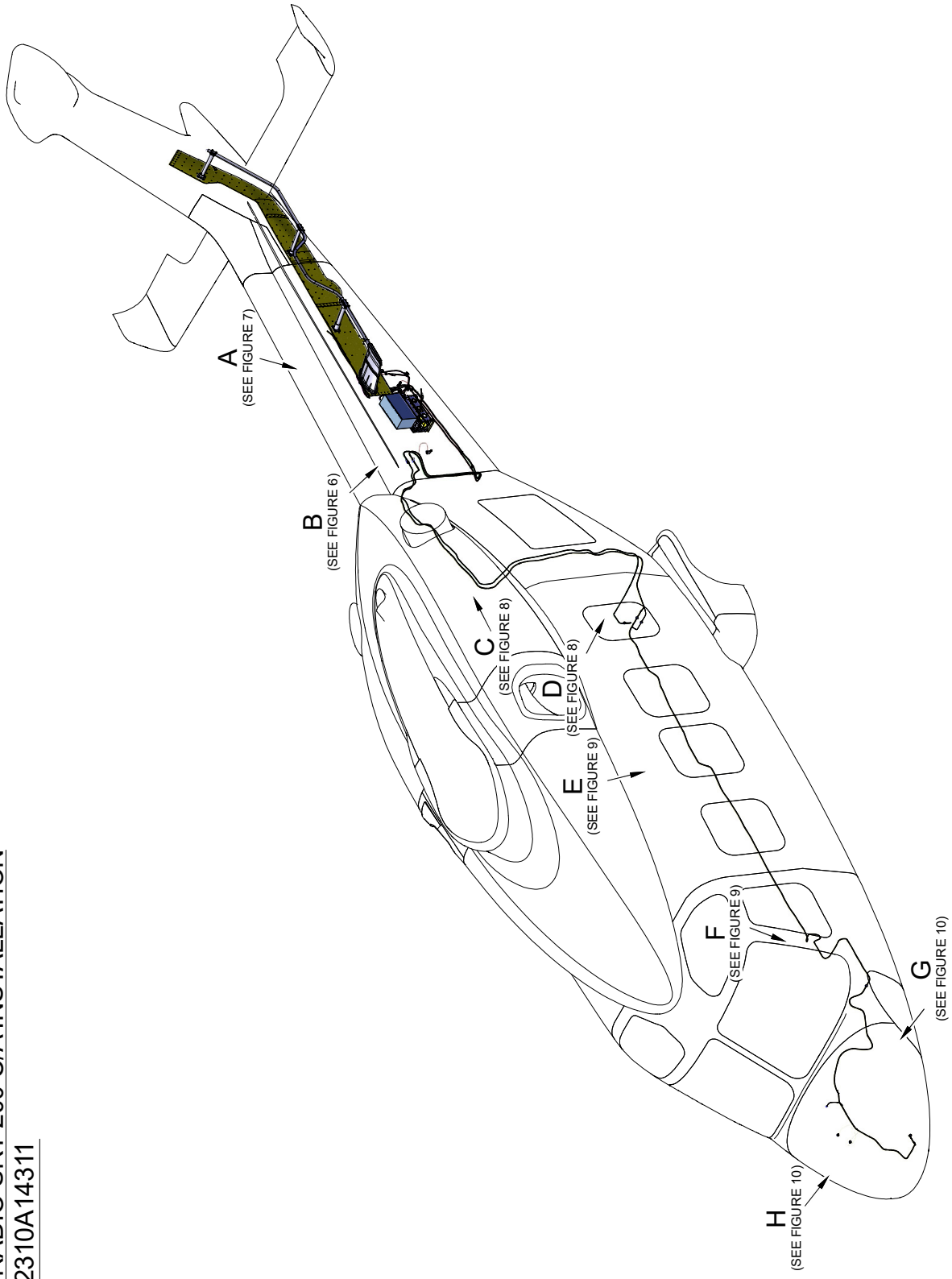
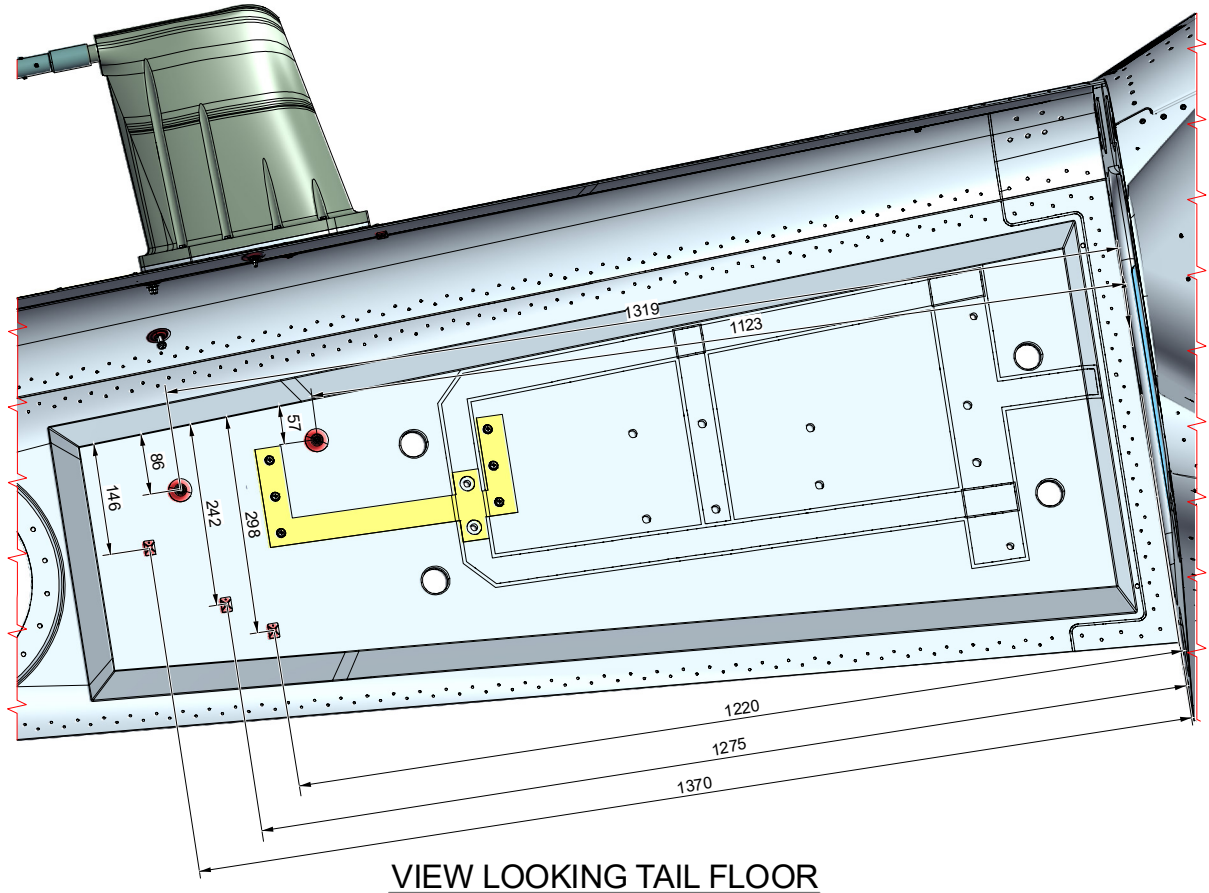
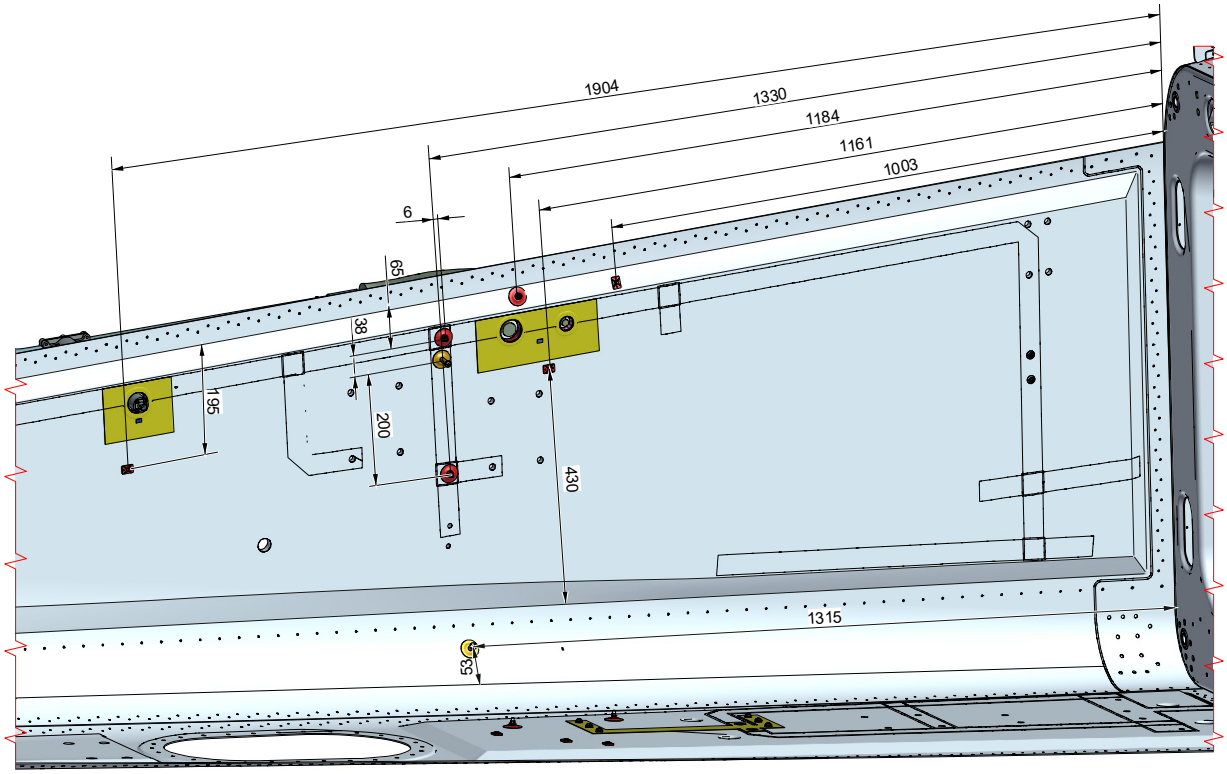


Figure 4



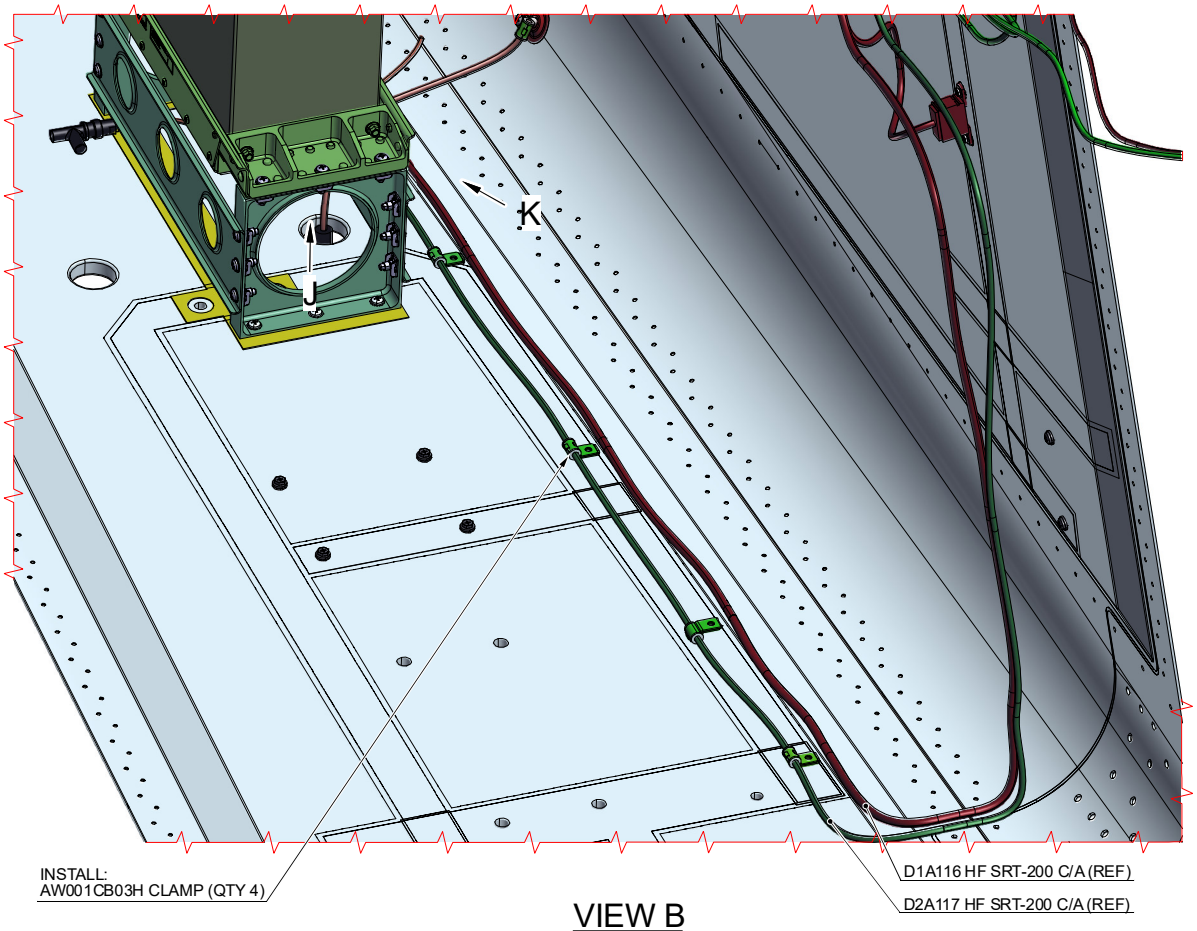
VIEW LOOKING TAIL FLOOR

STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE



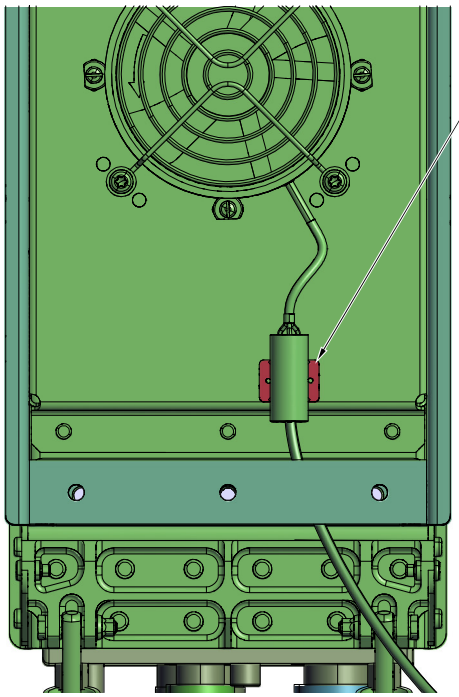
VIEW LOOKING TAIL LH SIDE

Figure 5

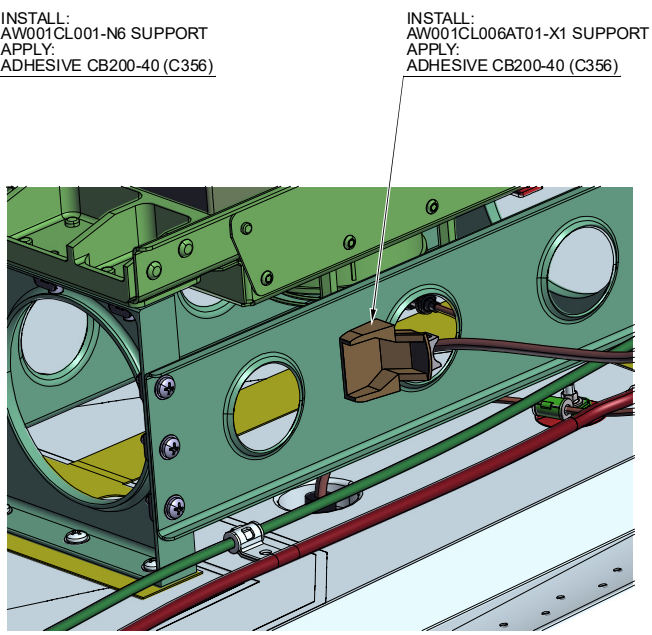


VIEW B

STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 4)



VIEW J



VIEW K

Figure 6

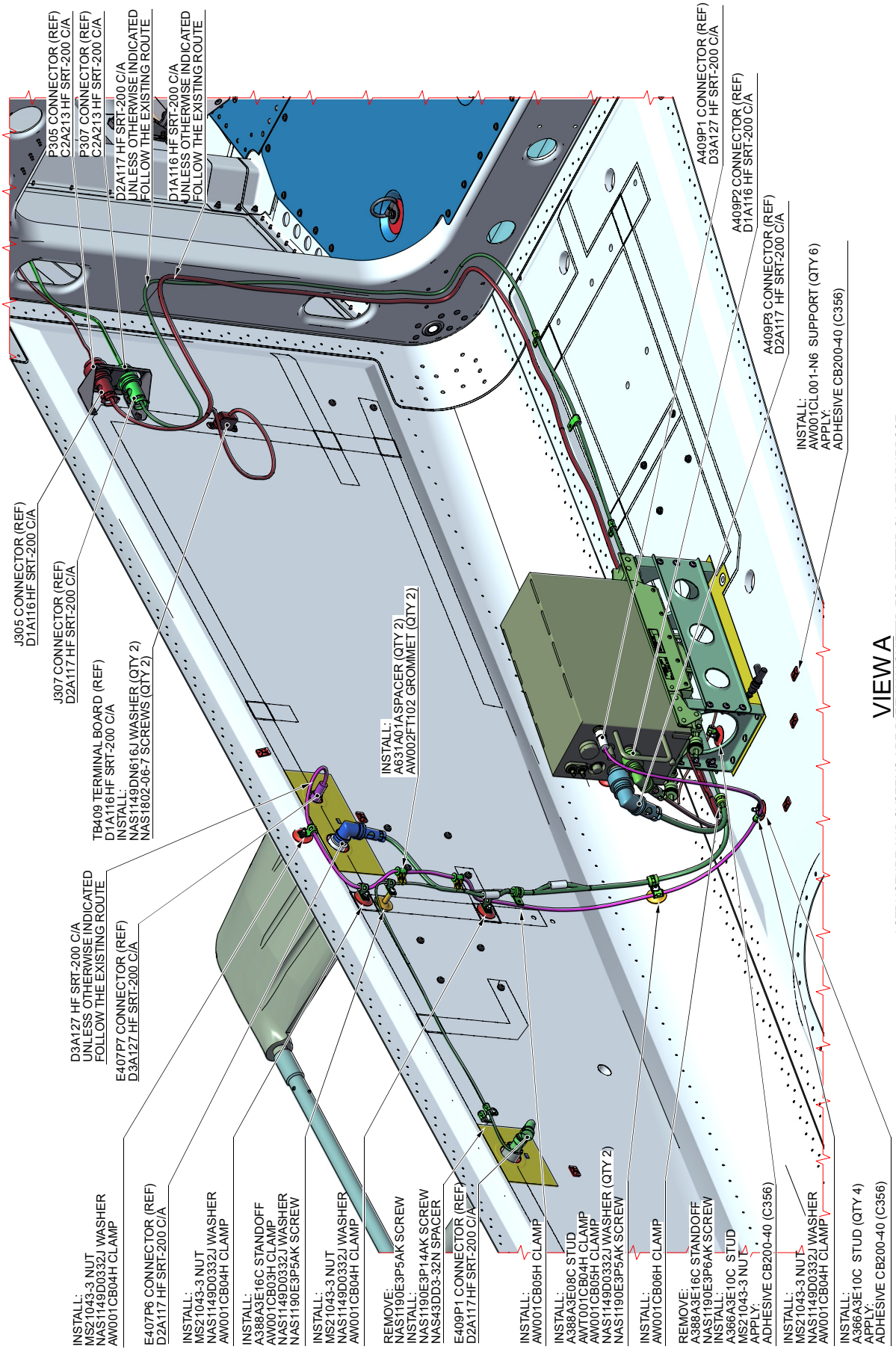
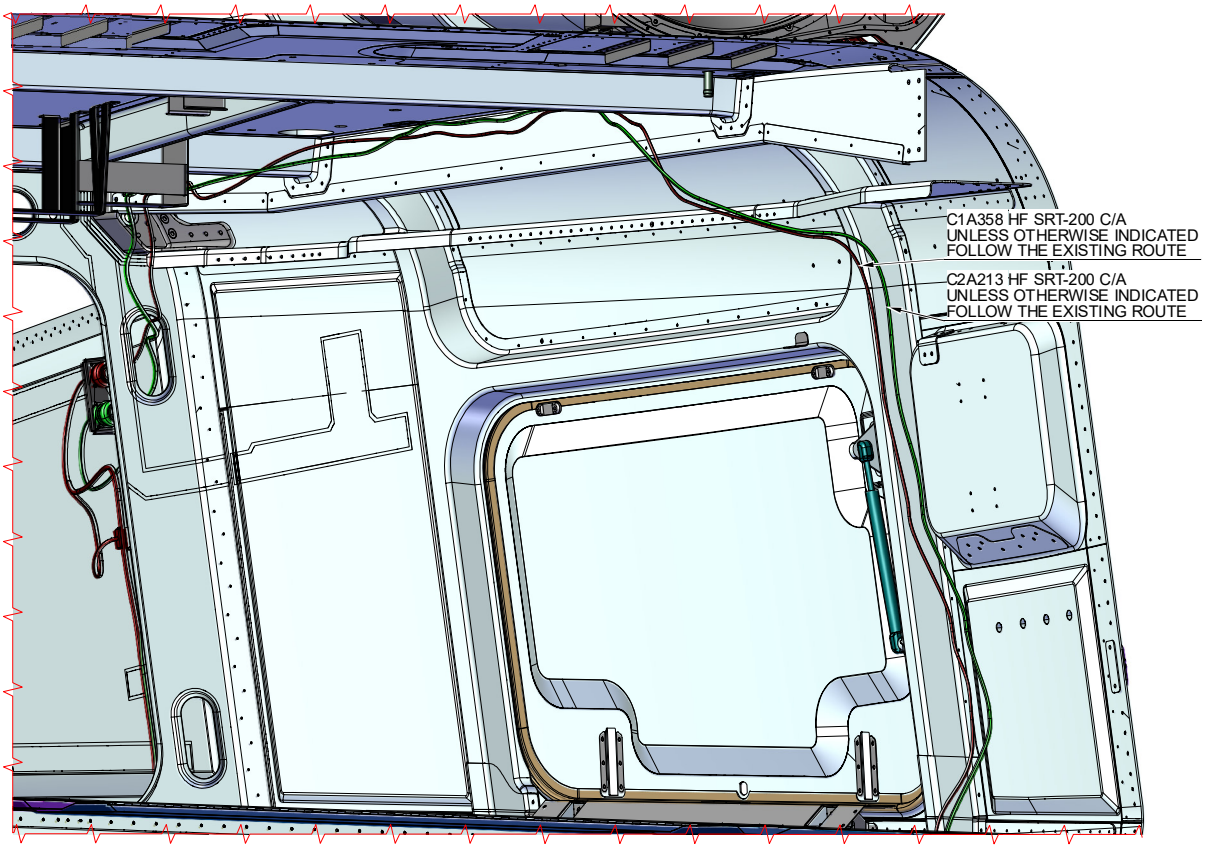
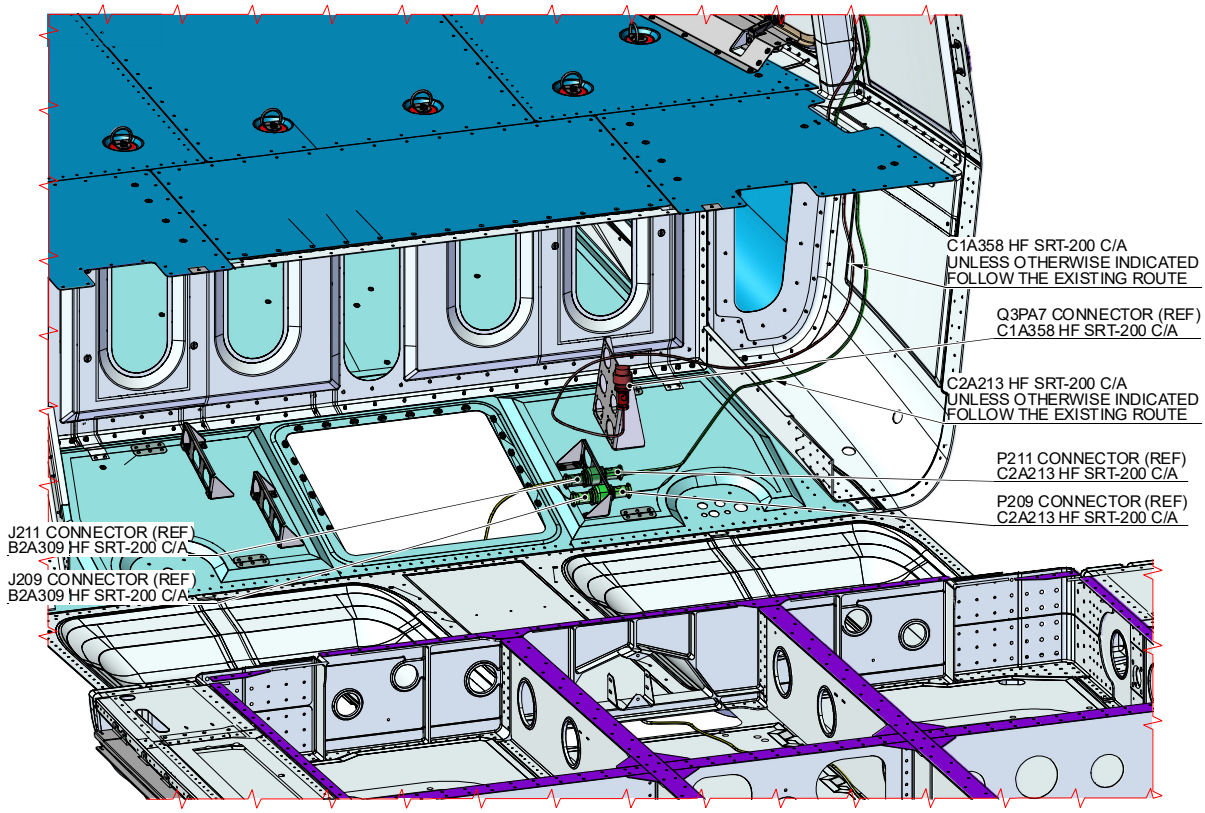

P305 CONNECTOR (REF)
C2A213 HF SRT-200 C/A
P307 CONNECTOR (REF)
C2A213 HF SRT-200 C/A
D2A117 HF SRT-200 C/A
UNLESS OTHERWISE INDICATED
FOLLOW THE EXISTING ROUTE
D1A116 HF SRT-200 C/A
UNLESS OTHERWISE INDICATED
FOLLOW THE EXISTING ROUTE
A409P1 CONNECTOR (REF)
D3A127 HF SRT-200 C/A
A409P2 CONNECTOR (REF)
D1A116 HF SRT-200 C/A
A409P3 CONNECTOR (REF)
D2A117 HF SRT-200 C/A
INSTALL:
AW001CL001-N6 SUPPORT (QTY 6)
APPLY:
ADHESIVE CB200-40 (C356)
J305 CONNECTOR (REF)
D1A116 HF SRT-200 C/A
J307 CONNECTOR (REF)
D2A117 HF SRT-200 C/A
TB409 TERMINAL BOARD (REF)
D1A116 HF SRT-200 C/A
INSTALL:
NAS1149DN616J WASHER (QTY 2)
NAS1802-06-7 SCREWS (QTY 2)
INSTALL:
A631A01A SPACER (QTY 2)
AW002FT102 GROMMET (QTY 2)
D3A127 HF SRT-200 C/A
UNLESS OTHERWISE INDICATED
FOLLOW THE EXISTING ROUTE
E407P7 CONNECTOR (REF)
D3A127 HF SRT-200 C/A
E407P6 CONNECTOR (REF)
D2A117 HF SRT-200 C/A
INSTALL:
MS21043-3 NUT
NAS1149D0332J WASHER
AW001CB04H CLAMP
INSTALL:
MS21043-3 NUT
NAS1149D0332J WASHER
AW001CB04H CLAMP
INSTALL:
A388A3E16C STANDOFF
AW001CB03H CLAMP
NAS1149D0332J WASHER
NAS1190E3P5AK SCREW
INSTALL:
MS21043-3 NUT
NAS1149D0332J WASHER
AW001CB04H CLAMP
REMOVE:
NAS1190E3P5AK SCREW
INSTALL:
NAS1190E3P14AK SCREW
NAS43DD3-32N SPACER
E409P1 CONNECTOR (REF)
D2A117 HF SRT-200 C/A
INSTALL:
AW001CB05H CLAMP
INSTALL:
A388A3E08C STUD
AWT001CB04H CLAMP
AW001CB05H CLAMP
NAS1149D0332J WASHER (QTY 2)
NAS1190E3P5AK SCREW
INSTALL:
AW001CB06H CLAMP
REMOVE:
A388A3E16C STANDOFF
NAS1190E3P6AK SCREW
INSTALL:
A366A3E10C STUD
MS21043-3 NUT
APPLY:
ADHESIVE CB200-40 (C356)
INSTALL:
MS21043-3 NUT
NAS1149D0332J WASHER
AW001CB04H CLAMP
INSTALL:
A366A3E10C STUD (QTY 4)
APPLY:
ADHESIVE CB200-40 (C356)
VIEW A
LSTRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 4)

Figure 7



VIEW C

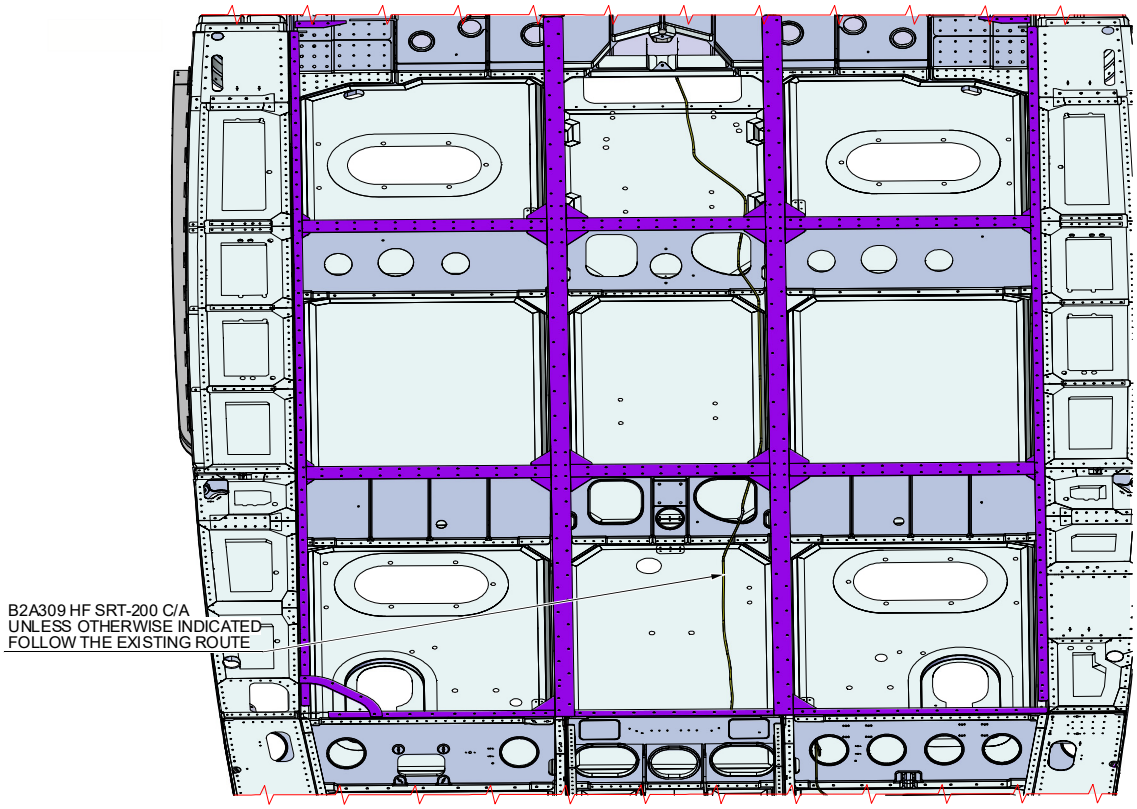
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 4)



VIEW D

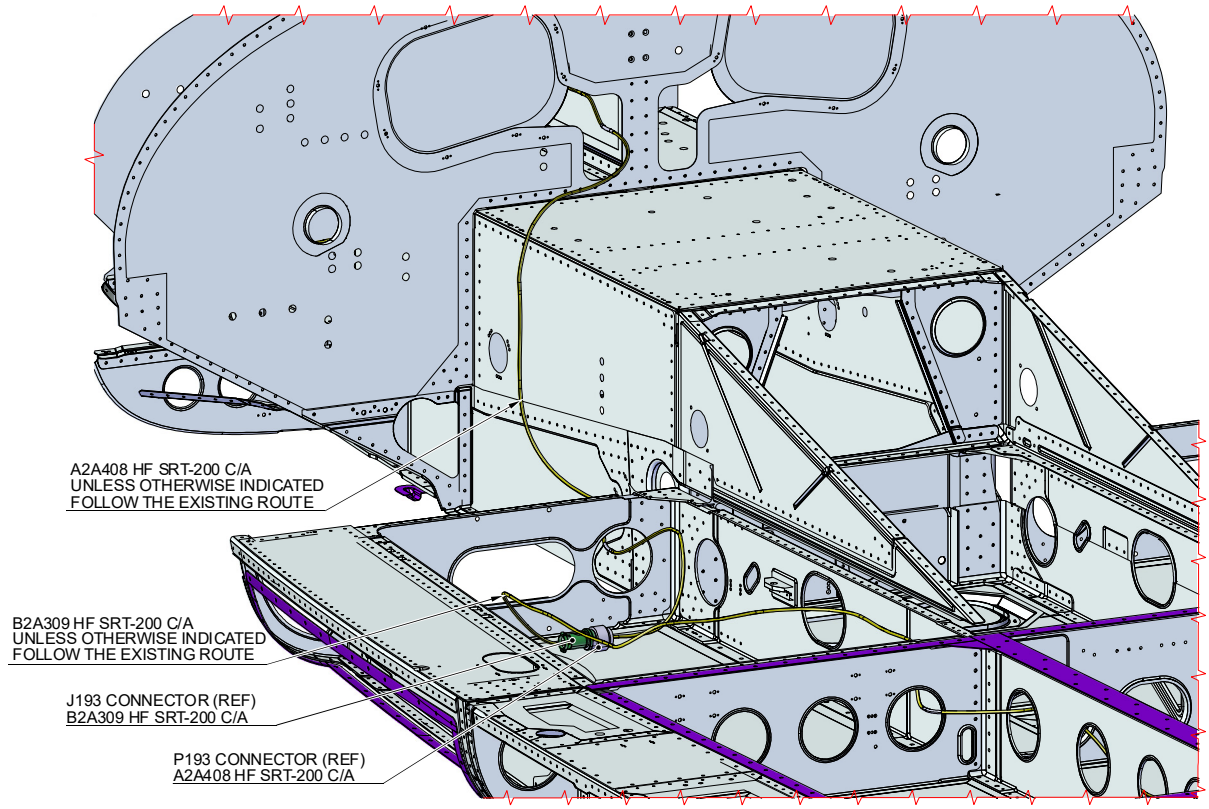
(REFER TO FIGURE 4)

Figure 8



VIEW E

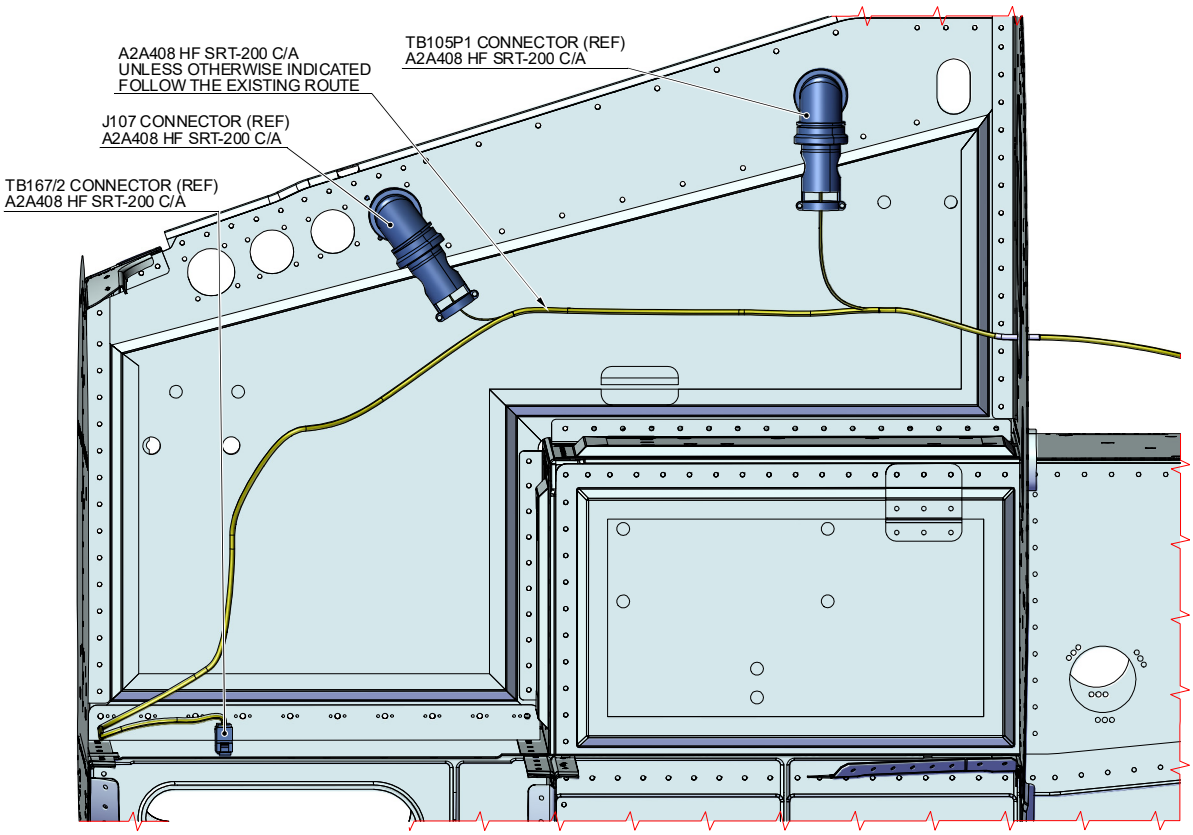
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 4)



VIEW F

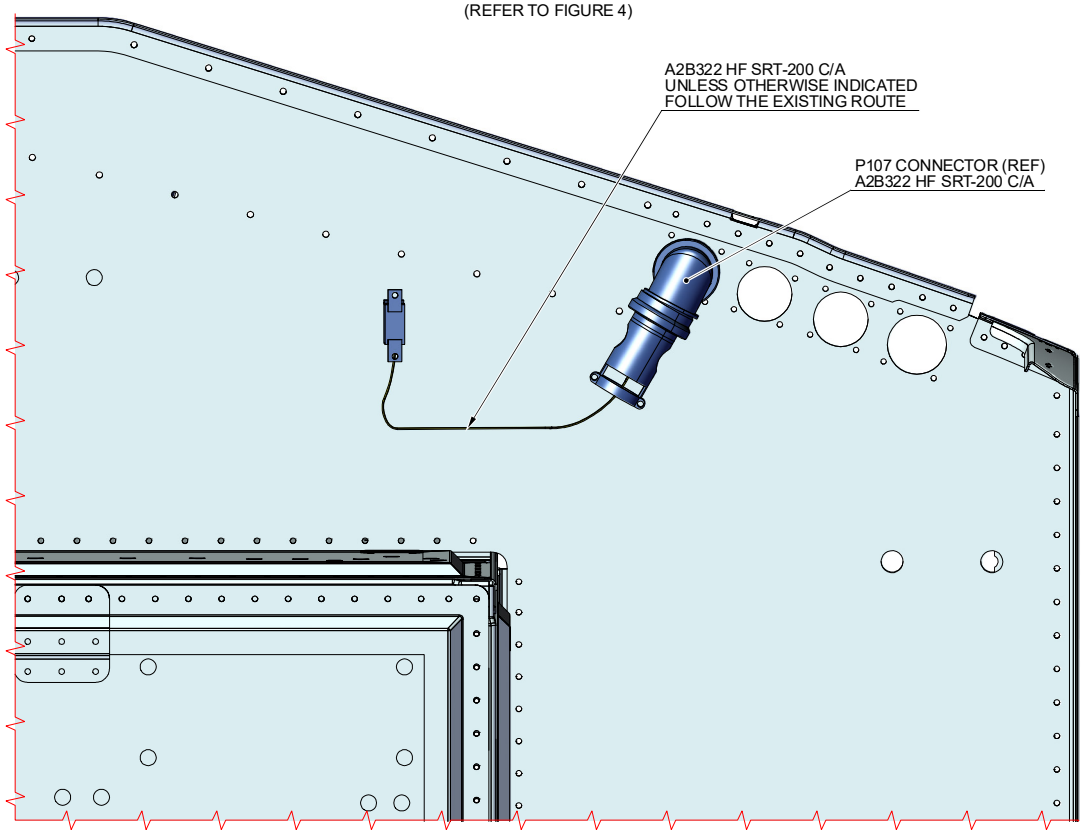
(REFER TO FIGURE 4)

Figure 9



VIEW G

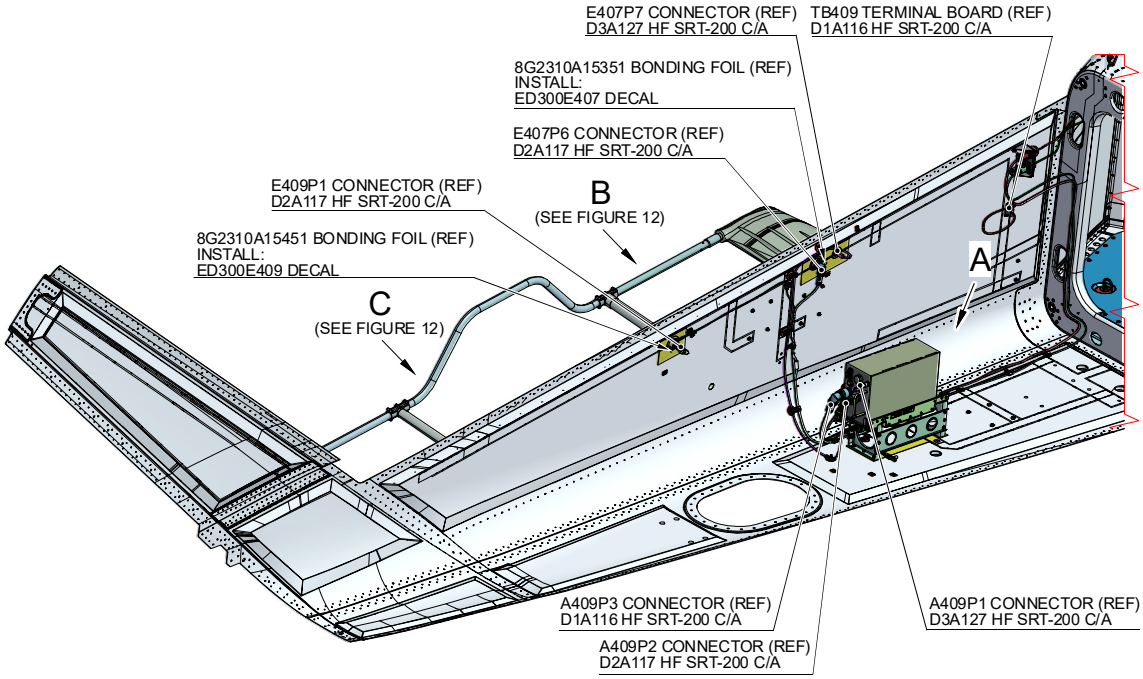
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 4)



VIEW H

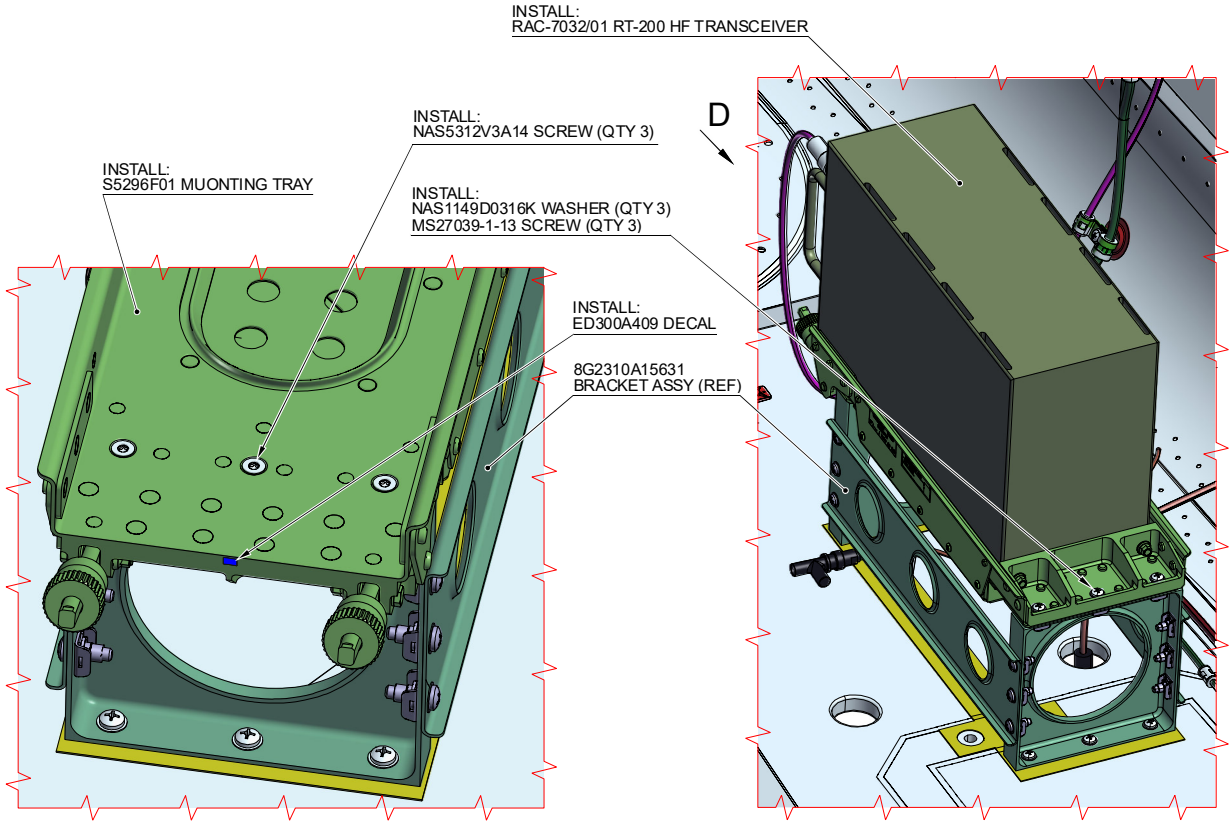
(REFER TO FIGURE 4)

Figure 10



TAIL VIEW

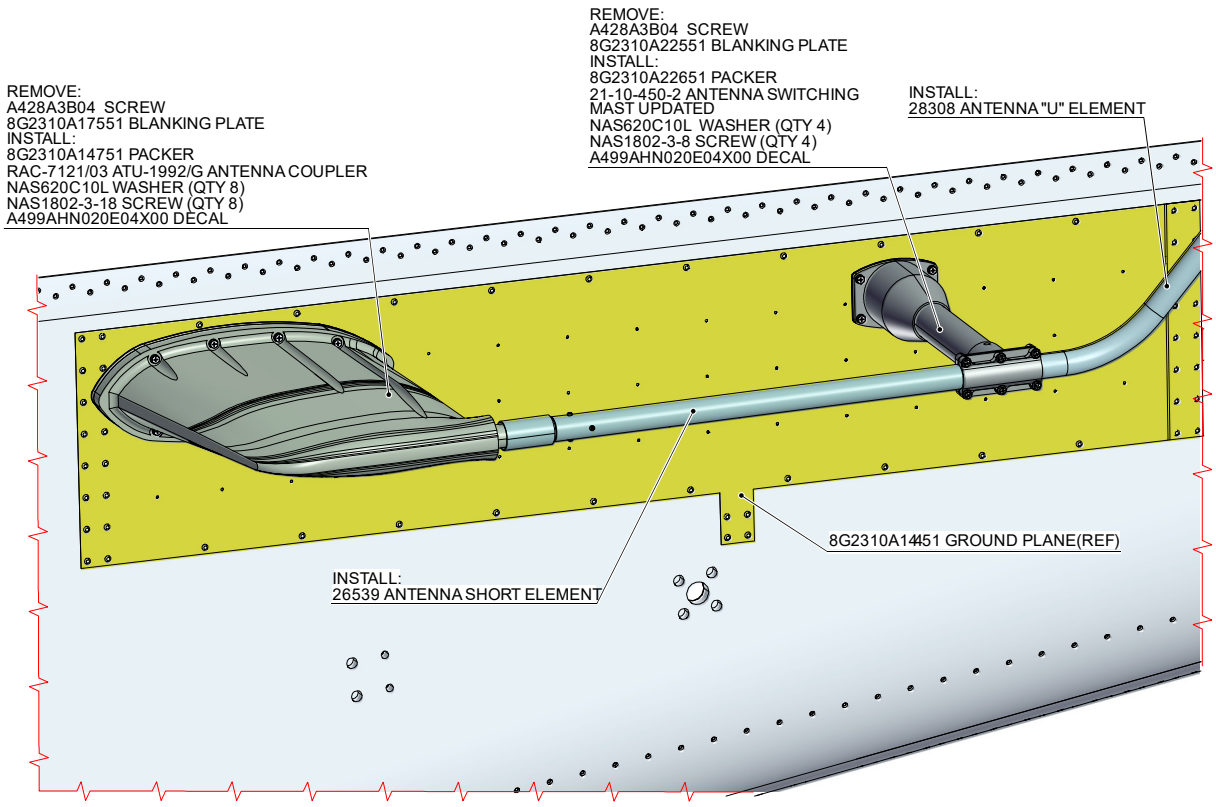
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE



VIEW D

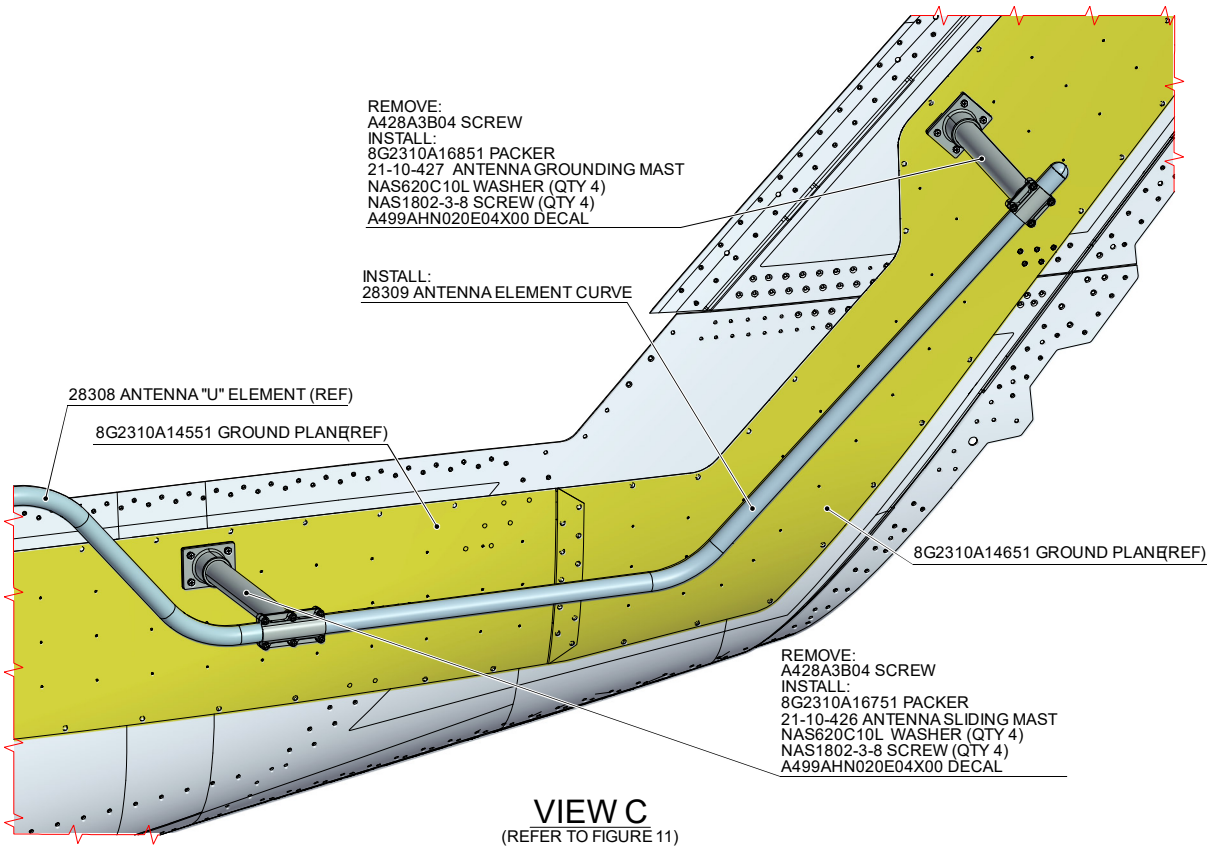
VIEW A

Figure 11



VIEW B

STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 11)



VIEW C
(REFER TO FIGURE 11)

Figure 12

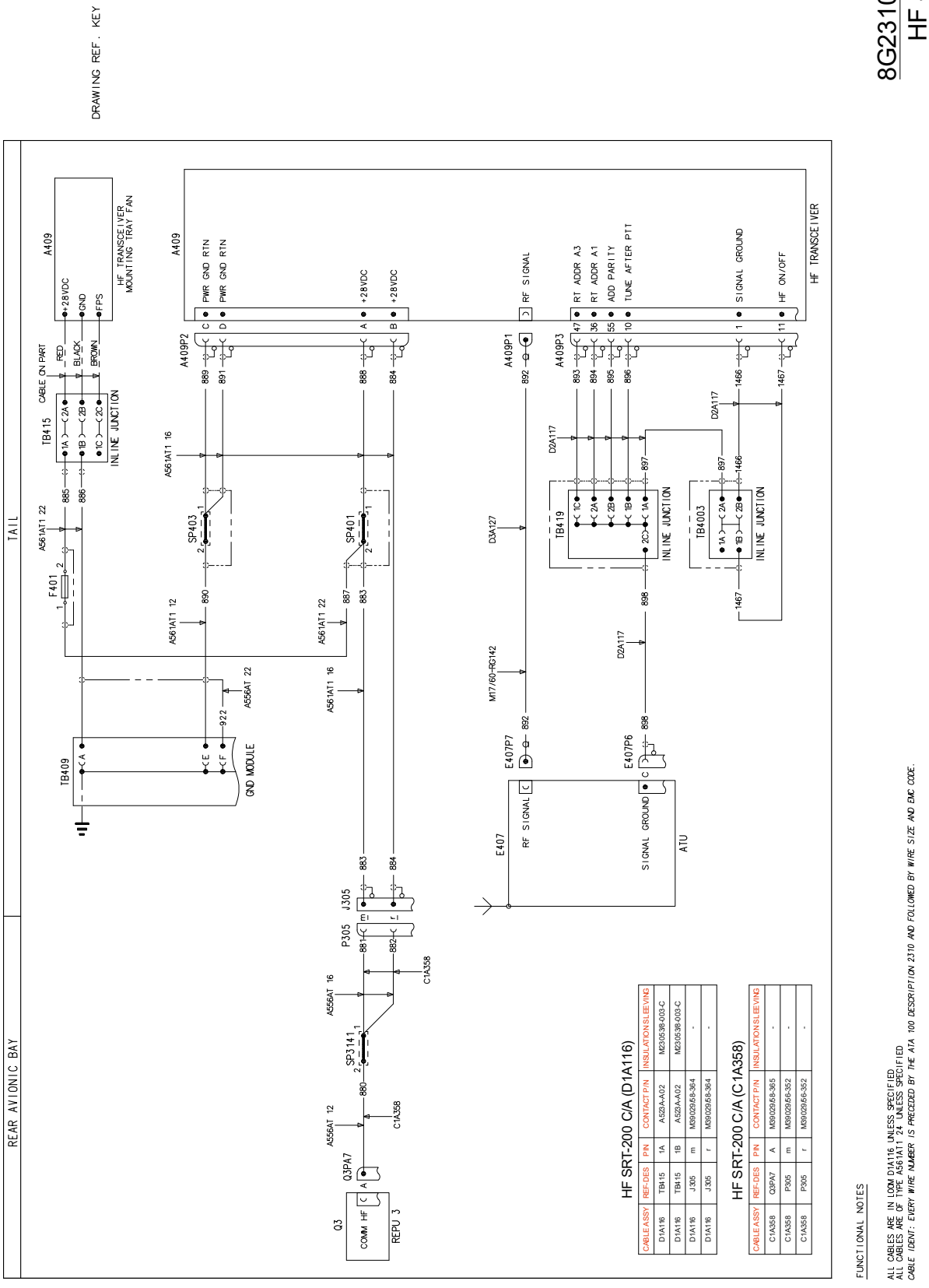

DRAWING REF.: KEY
REAR AVIONIC BAY
TAIL
HF TRANSCEIVER MOUNTING TRAY FAN
A409
+28VDC
GND
FPS
RED
BLACK
BROWN
CABLE ON PART
TB415
INLINE JUNCTION
A409P2
PWR GND RTN
PWR GND RTN
+28VDC
+28VDC
A409P1
RF SIGNAL
A409P3
RT ADDR A3
RT ADDR A1
ADD PARITY
TUNE AFTER PTT
SIGNAL GROUND
HF ON/OFF
HF TRANSCEIVER
F401
SP403
SP401
TB409
GND MODULE
TB419
TB4003
D2A117
D3A127
M17/60-RG142
E407P7
E407P6
E407
RF SIGNAL
SIGNAL GROUND
ATU
J305
P305
SP3141
C1A358
Q3PA7
Q3
COMM HF
REPU 3
HF SRT-200 C/A (D1A116)
HF SRT-200 C/A (C1A358)
FUNCTIONAL NOTES
ALL CABLES ARE IN LOOM D1A116 UNLESS SPECIFIED
ALL CABLES ARE OF TYPE A561A11 24 UNLESS SPECIFIED
CABLE IDENT.: EVERY WIRE NUMBER IS PRECEDED BY THE ATA 100 DESCRIPTION 2310 AND FOLLOWED BY WIRE SIZE AND EMC CODE.

Figure 13

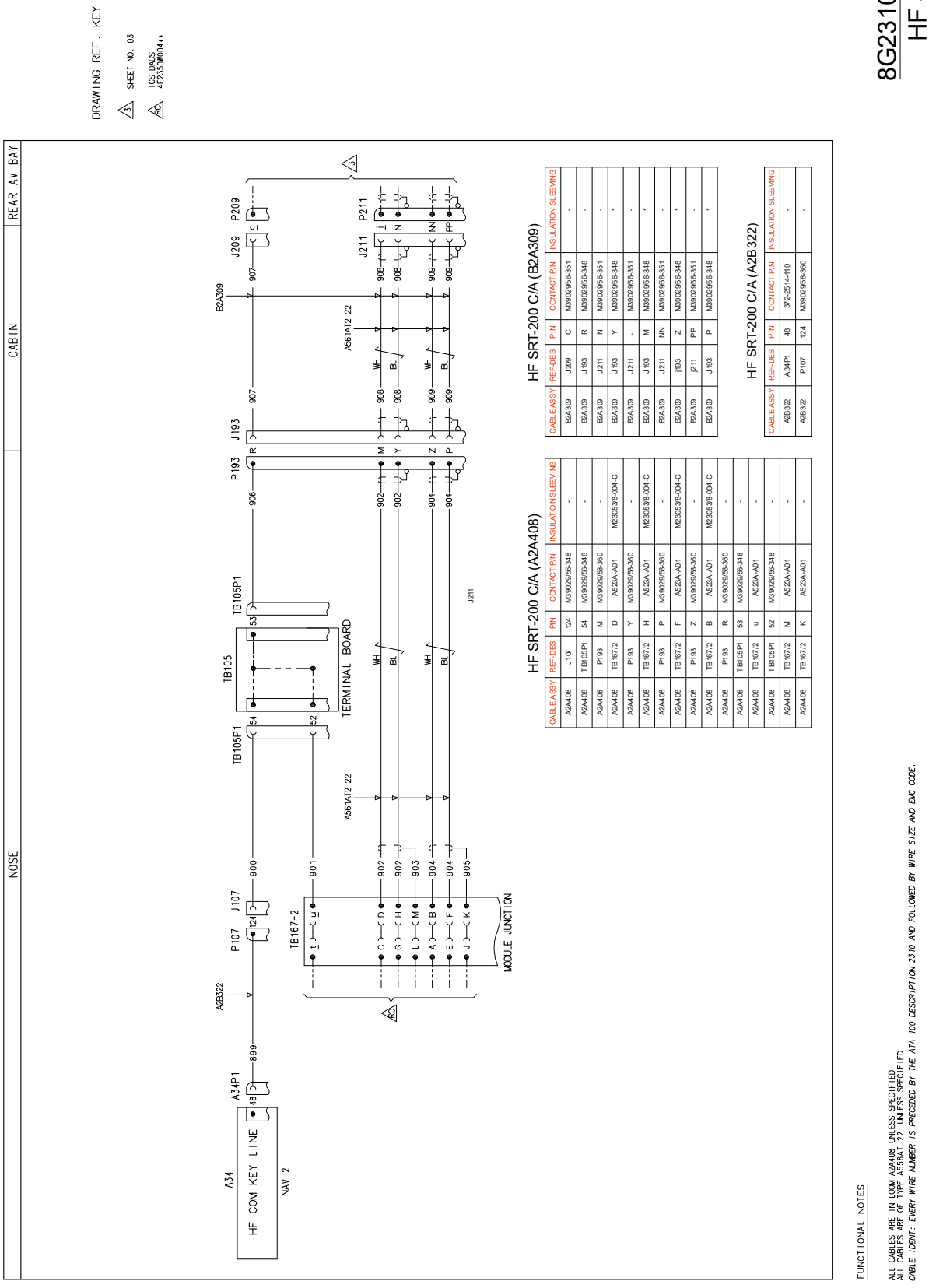

DRAWING REF. KEY
3 SHEET NO. 03
ICS DAGS 4F2350W004++
NOSE
CABIN
REAR AV BAY
A34
HF COM KEY LINE
NAV 2
A34P1
48
899
A2B322
P107
J107
124
900
TB167-2
901
TB105P1
54
52
TB105
53
TERMINAL BOARD
TB105P1
906
P193
J193
907
B2A309
J209
P209
C
A561AT2 22
902
903
904
905
A
B
C
D
E
F
J
K
L
M
H
BL
WH
J211
MODULE JUNCTION
908
909
P211
N
NN
PP
HF SRT-200 C/A (A2A408)
CABLE ASSY | REF-DES | PIN | CONTACT P/N | INSULATION SLEEVING
A2A408 | J107 | 124 | M39029/56-348 | -
A2A408 | TB105P1 | 54 | M39029/56-348 | -
A2A408 | P193 | M | M39029/56-360 | -
A2A408 | TB167/2 | D | A523A-A01 | M23053/8-004-C
A2A408 | P193 | Y | M39029/56-360 | -
A2A408 | TB167/2 | H | A523A-A01 | M23053/8-004-C
A2A408 | P193 | P | M39029/56-360 | -
A2A408 | TB167/2 | F | A523A-A01 | M23053/8-004-C
A2A408 | P193 | Z | M39029/56-360 | -
A2A408 | TB167/2 | B | A523A-A01 | M23053/8-004-C
A2A408 | P193 | R | M39029/59-360 | -
A2A408 | TB105P1 | 53 | M39029/56-348 | -
A2A408 | TB167/2 | u | A523A-A01 | -
A2A408 | TB105P1 | 52 | M39029/56-348 | -
A2A408 | TB167/2 | M | A523A-A01 | -
A2A408 | TB167/2 | K | A523A-A01 | -
HF SRT-200 C/A (B2A309)
CABLE ASSY | REF-DES | PIN | CONTACT P/N | INSULATION SLEEVING
B2A309 | J209 | C | M39029/56-351 | -
B2A309 | J193 | R | M39029/56-348 | -
B2A309 | J211 | N | M39029/56-351 | -
B2A309 | J193 | Y | M39029/56-348 | *
B2A309 | J211 | J | M39029/56-351 | -
B2A309 | J193 | M | M39029/56-348 | *
B2A309 | J211 | NN | M39029/56-351 | -
B2A309 | J193 | Z | M39029/56-348 | *
B2A309 | J211 | PP | M39029/56-351 | -
B2A309 | J193 | P | M39029/56-348 | *
HF SRT-200 C/A (A2B322)
CABLE ASSY | REF-DES | PIN | CONTACT P/N | INSULATION SLEEVING
A2B322 | A34P1 | 48 | 372-2514-110 | -
A2B322 | P107 | 124 | M39029/58-360 | -
FUNCTIONAL NOTES
ALL CABLES ARE IN LOOM A2A408 UNLESS SPECIFIED
ALL CABLES ARE OF TYPE A556AT 22 UNLESS SPECIFIED
CABLE IDENT.: EVERY WIRE NUMBER IS PRECEDED BY THE ATA 100 DESCRIPTION 2310 AND FOLLOWED BY WIRE SIZE AND EMC CODE.

Figure 14

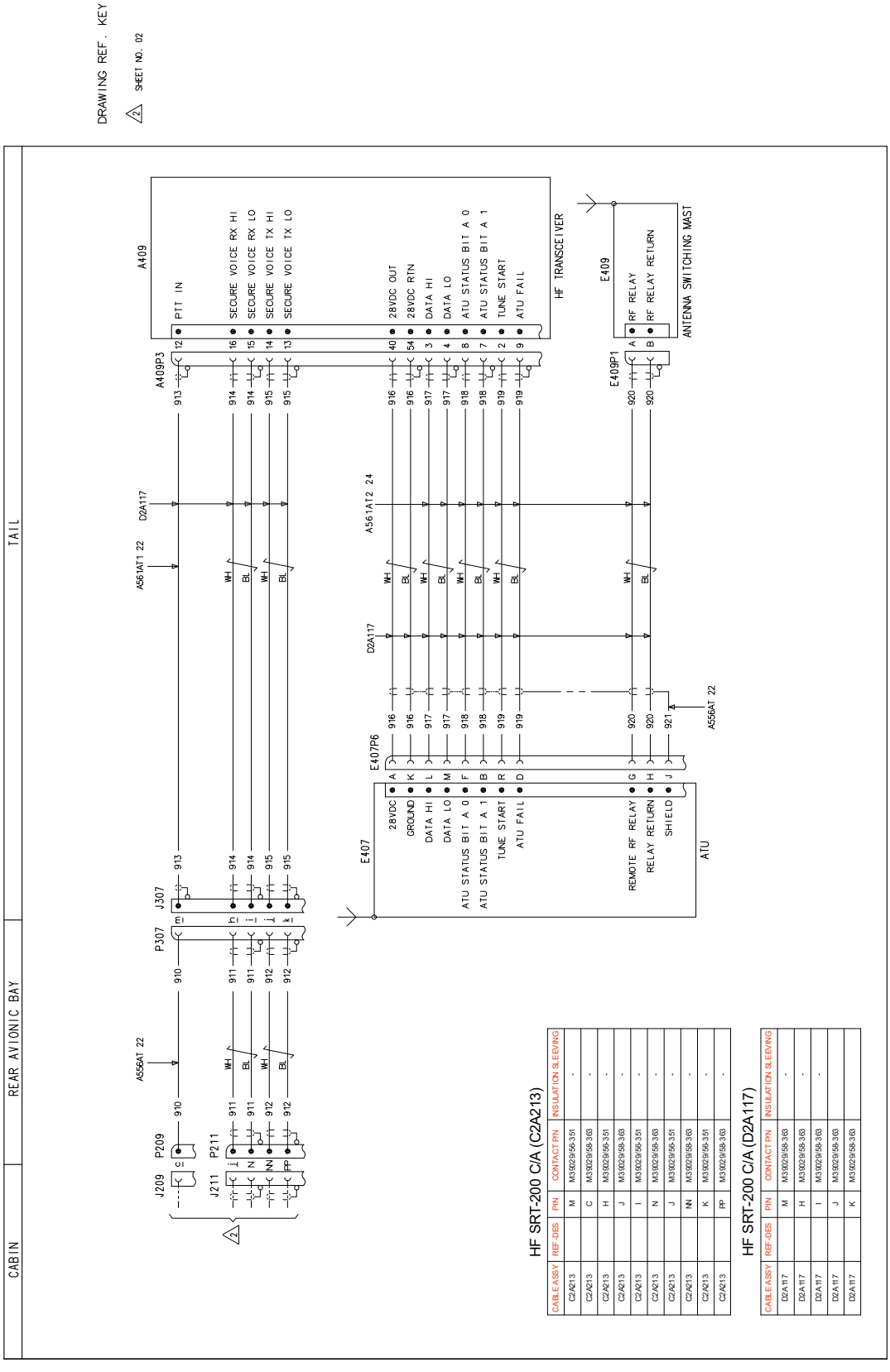
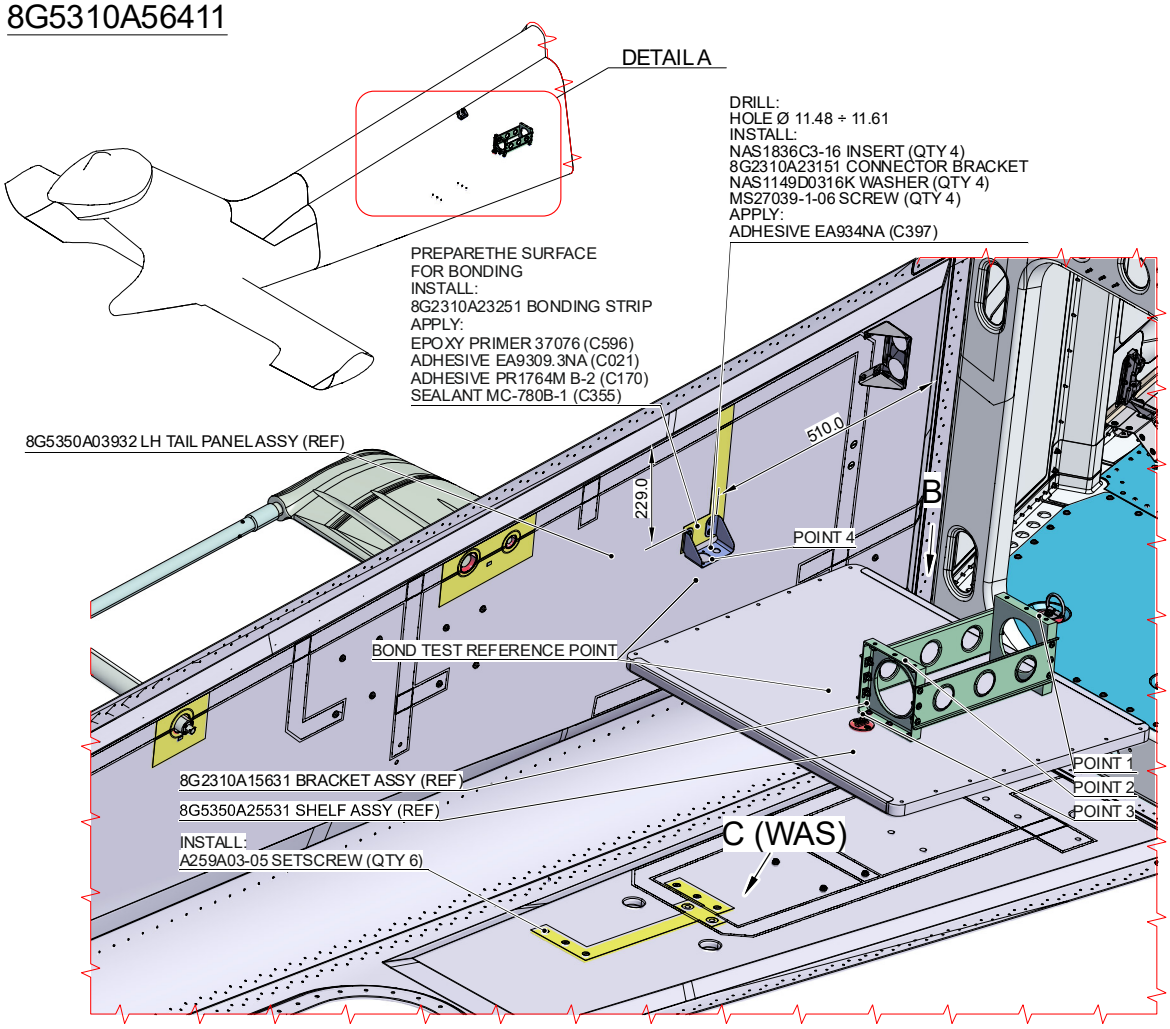

DRAWING REF. KEY
SHEET NO. 02
CABIN
REAR AVIONIC BAY
TAIL
HF TRANSCEIVER
ANTENNA SWITCHING MAST
ATU
A409
PTT IN
SECURE VOICE RX HI
SECURE VOICE RX LO
SECURE VOICE TX HI
SECURE VOICE TX LO
28VDC OUT
28VDC RTN
DATA HI
DATA LO
ATU STATUS BIT A 0
ATU STATUS BIT A 1
TUNE START
ATU FAIL
A409P3
E409
RF RELAY
RF RELAY RETURN
E409P1
E407
28VDC
GROUND
DATA HI
DATA LO
ATU STATUS BIT A 0
ATU STATUS BIT A 1
TUNE START
ATU FAIL
E407P6
REMOTE RF RELAY
RELAY RETURN
SHIELD
A556A1 22
A561AT1 22
A561AT2 24
A556AT 22
D2A117
J209
P209
J211
P211
J307
P307
HF SRT-200 C/A (C2A213)
HF SRT-200 C/A (D2A117)
FUNCTIONAL NOTES
ALL CABLES ARE IN LOOM C2A213 UNLESS SPECIFIED
ALL CABLES ARE OF TYPE A561AT2 22 UNLESS SPECIFIED
CABLE IDENT: EVERY WIRE NUMBER IS PRECEDED BY THE ATA 100 DESCRIPTION 2310 AND FOLLOWED BY WIRE SIZE AND EMC CODE.

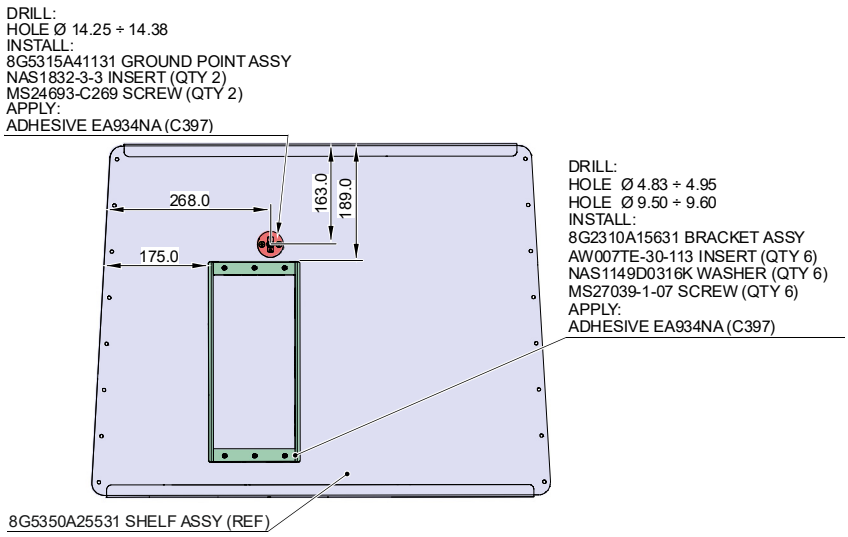
Figure 15

HF SRT200 RELOCATION STR PROVS
8G5310A56411



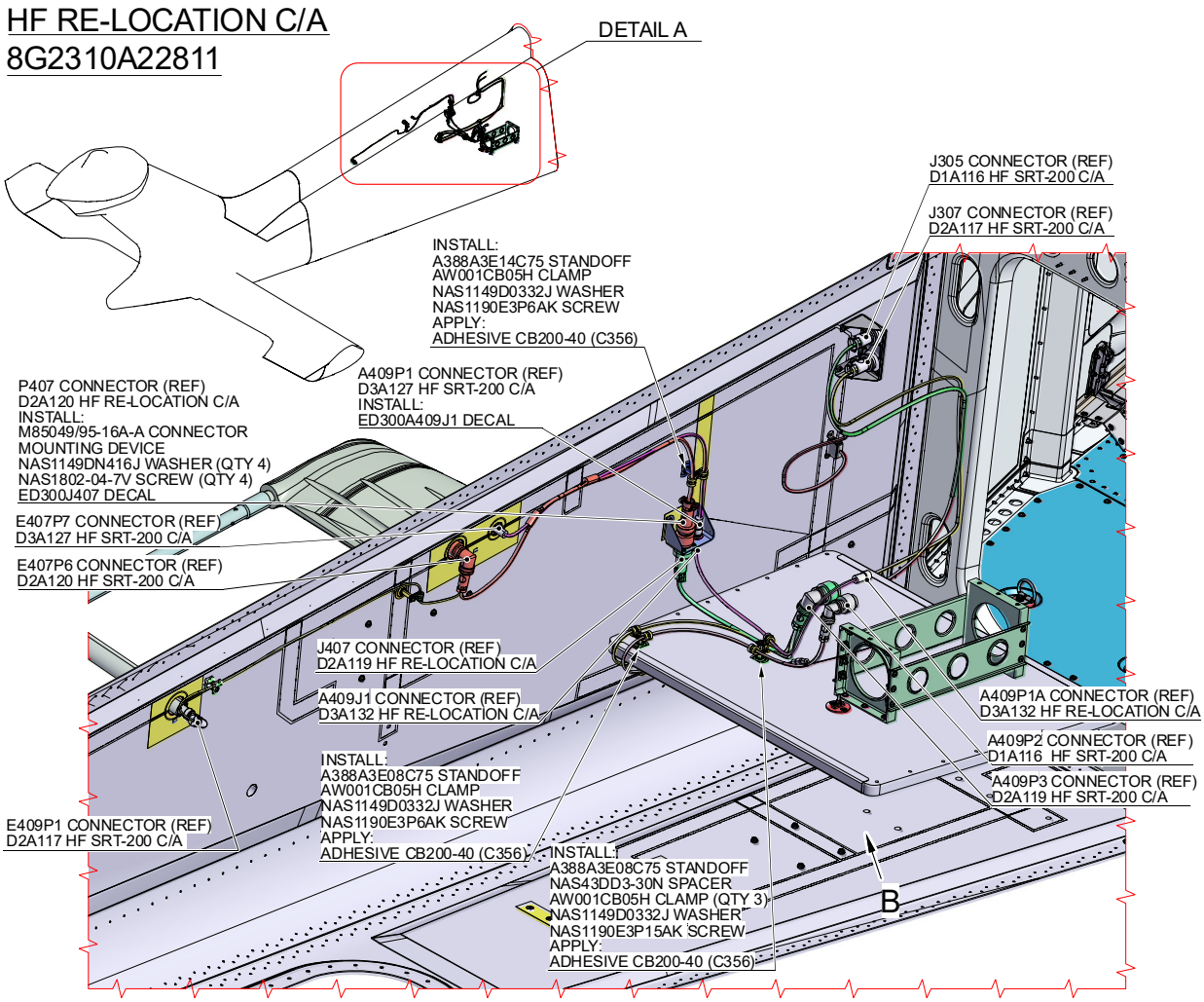
DETAIL A

STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE



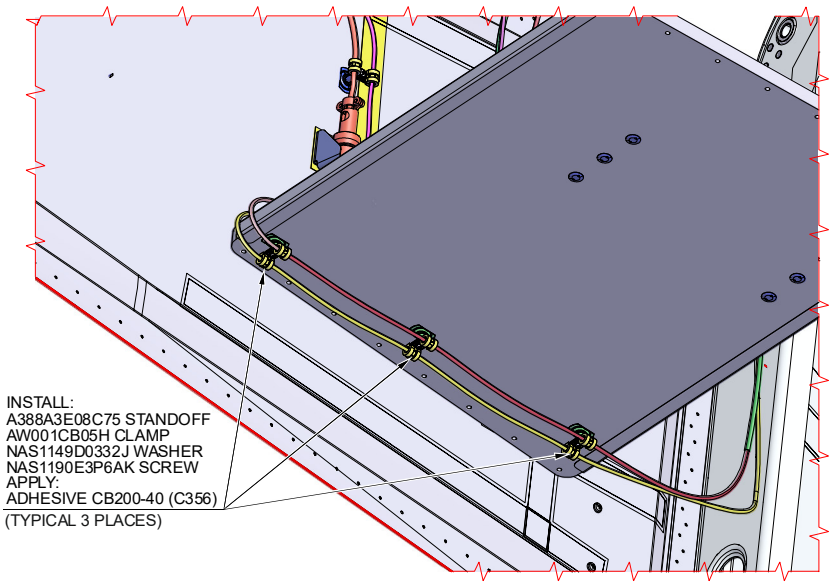
VIEW B

Figure 16



DETAIL A

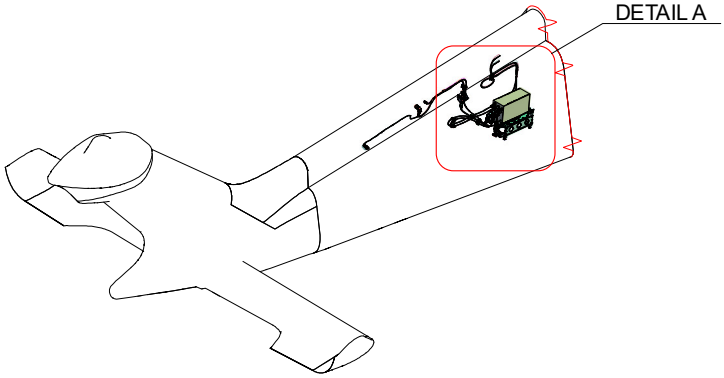
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE

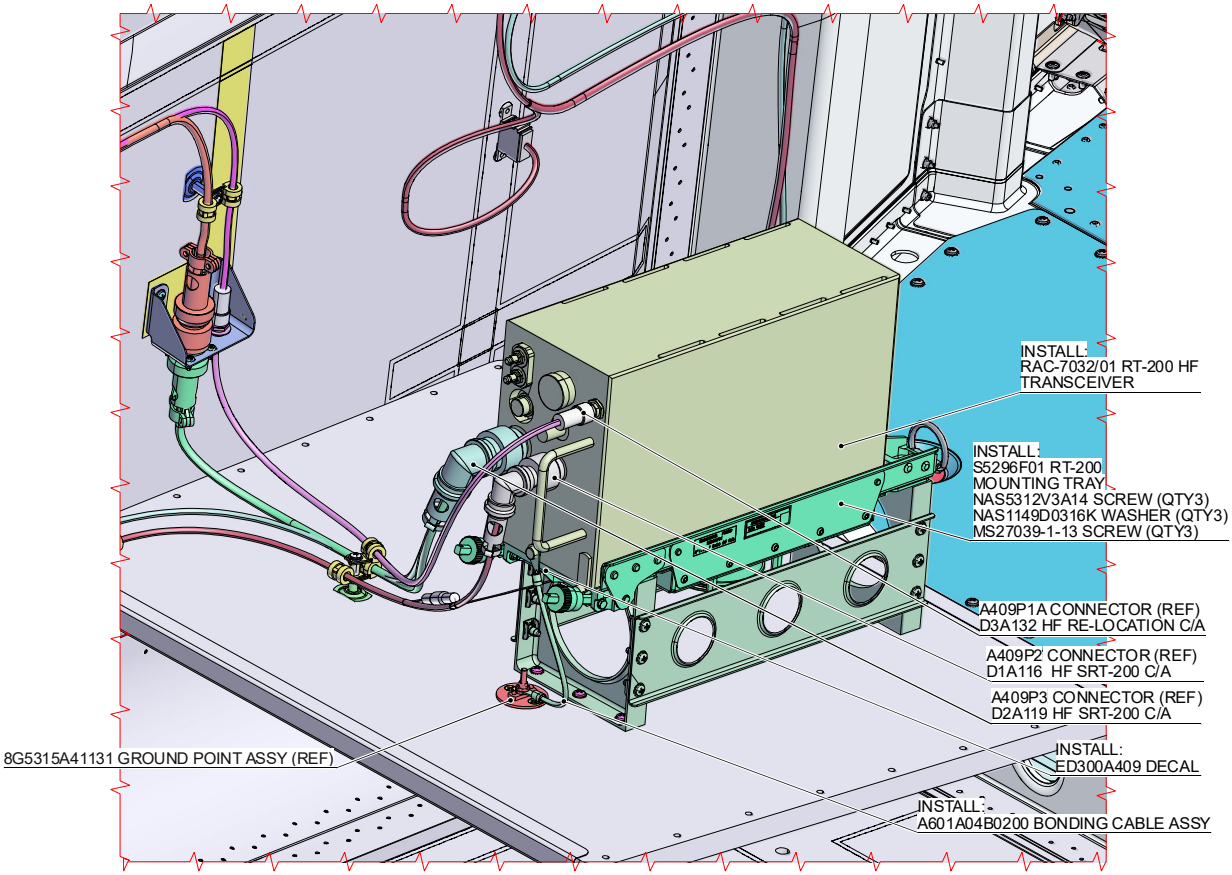


VIEW B

Figure 17

HF EQUIPMENT RE-LOCATION
8G2310A22911





DETAIL A

Figure 18

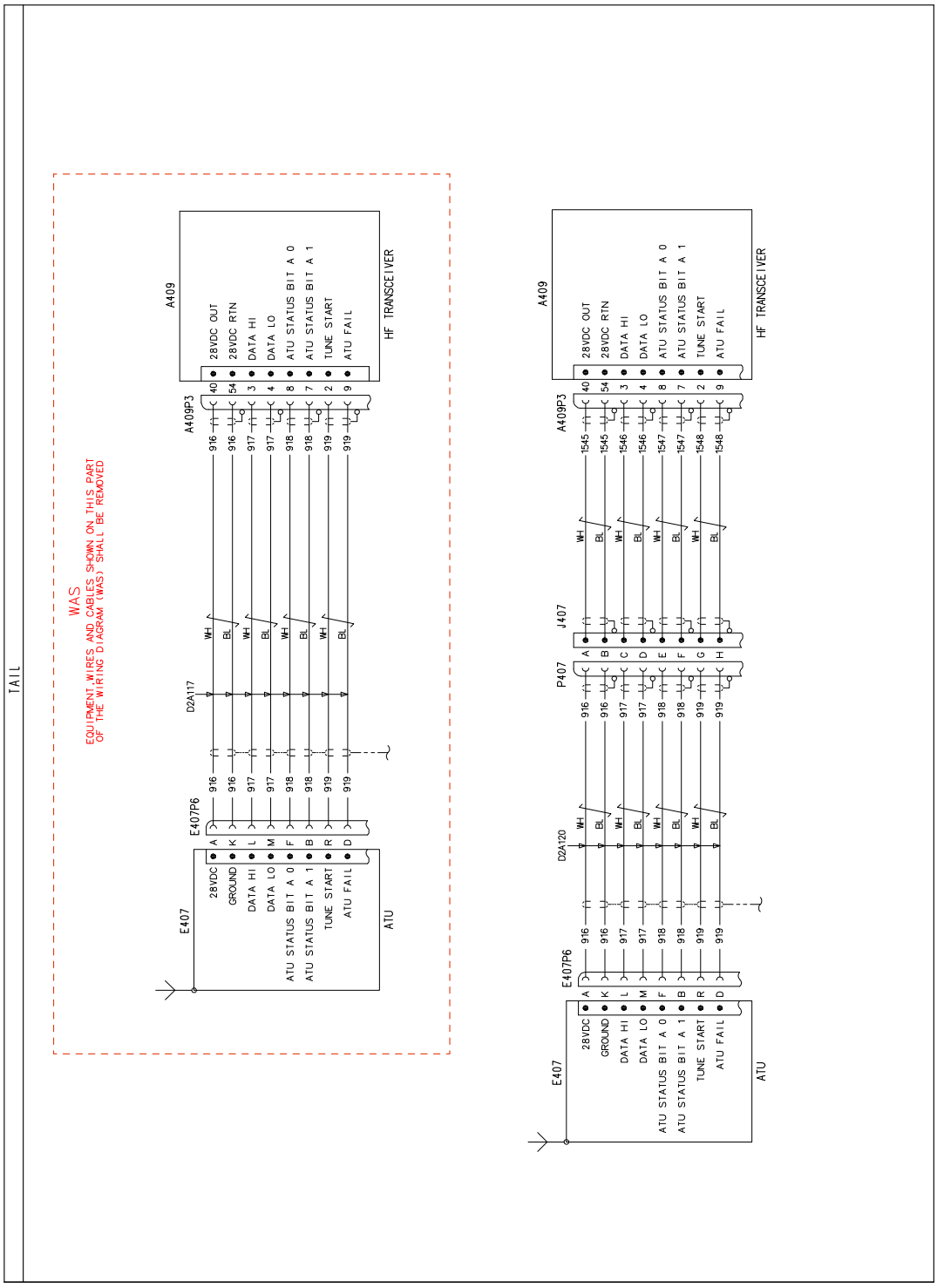

TAIL
WAS
EQUIPMENT, WIRES AND CABLES SHOWN ON THIS PART OF THE WIRING DIAGRAM (WAS) SHALL BE REMOVED
E407
ATU
28VDC
GROUND
DATA HI
DATA LO
ATU STATUS BIT A 0
ATU STATUS BIT A 1
TUNE START
ATU FAIL
E407P6
D2A117
A409P3
A409
HF TRANSCEIVER
28VDC OUT
28VDC RTN
DATA HI
DATA LO
ATU STATUS BIT A 0
ATU STATUS BIT A 1
TUNE START
ATU FAIL
D2A120
P407
J407
FUNCTIONAL NOTES
ALL CABLES ARE IN LOOM D2A119 UNLESS SPECIFIED
ALL CABLES ARE OF TYPE A561A12 24 UNLESS SPECIFIED
CABLE IDENT: EVERY WIRE NUMBER IS PRECEDED BY THE ATA 100 DESCRIPTION 2310 AND FOLLOWED BY WIRE SIZE AND EMC CODE.

Figure 19

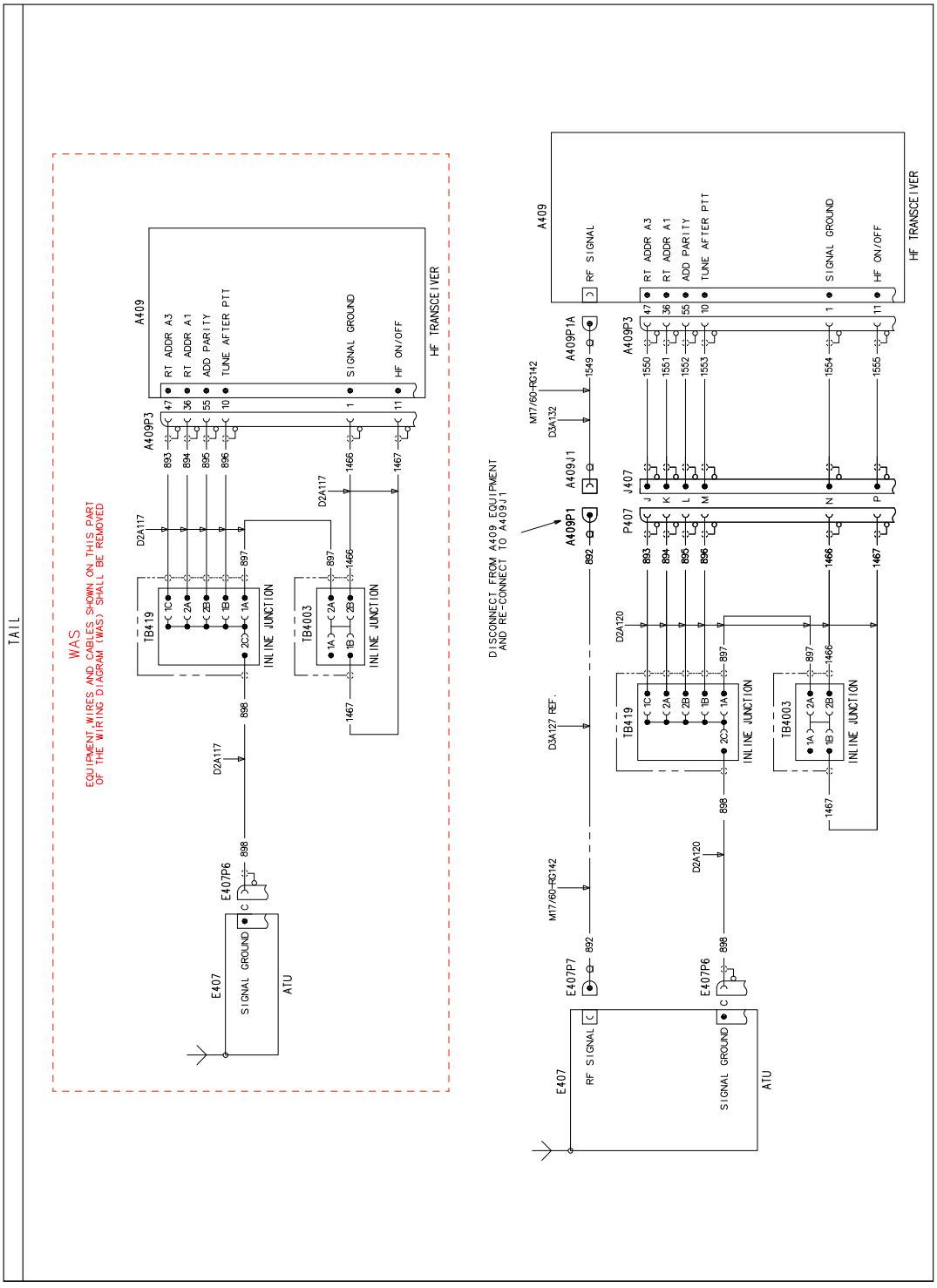
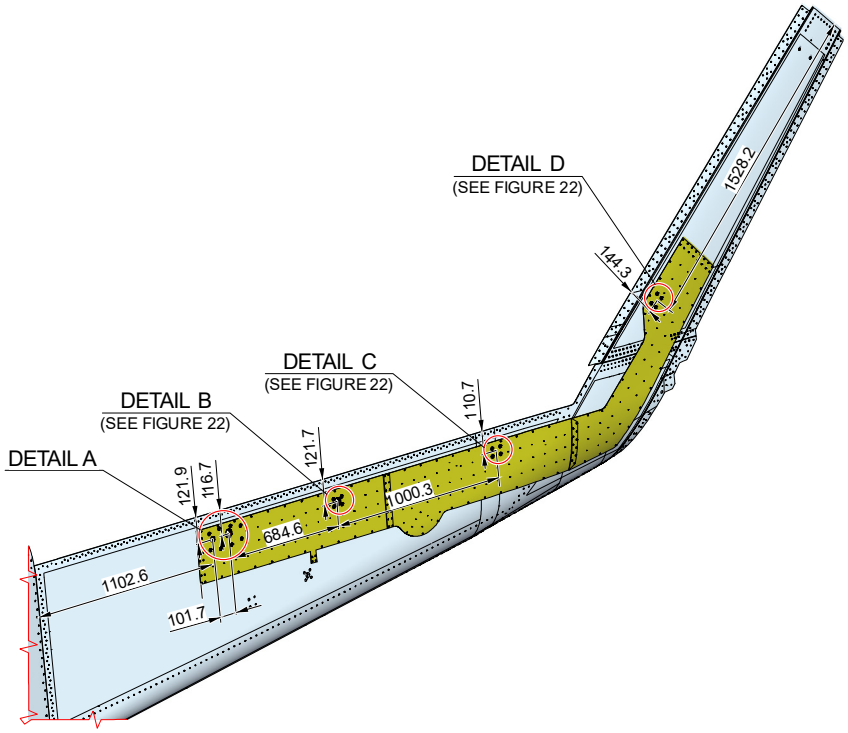
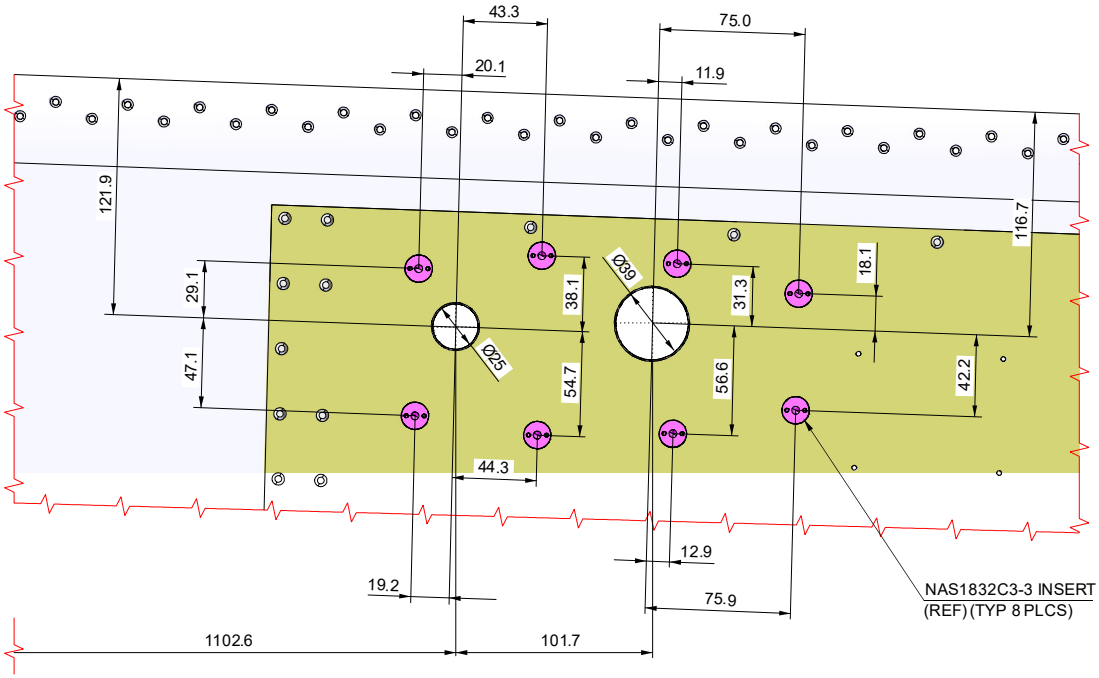

TAIL
WAS
EQUIPMENT WIRES AND CABLES SHOWN ON THIS PART OF THE WIRING DIAGRAM (WAS) SHALL BE REMOVED
A409
RT ADDR A3
RT ADDR A1
ADD PARITY
TUNE AFTER PTT
SIGNAL GROUND
HF ON/OFF
HF TRANSCEIVER
A409P3
D2A117
TB419
TB4003
INLINE JUNCTION
E407P6
E407
SIGNAL GROUND
ATU
DISCONNECT FROM A409 EQUIPMENT AND RE-CONNECT TO A409J1
A409P1
A409J1
M17/60-RG142
D3A132
A409P1A
J407
P407
D2A120
D3A127 REF.
E407P7
RF SIGNAL
FUNCTIONAL NOTES
ALL CABLES ARE IN LOOM D2A119 UNLESS SPECIFIED
ALL CABLES ARE OF TYPE A56A1A1 24 UNLESS SPECIFIED
CABLE IDENT: EVERY WIRE NUMBER IS PRECEDED BY THE ATA 100 DESCRIPTION 2310 AND FOLLOWED BY WIRE SIZE AND EMC CODE.

Figure 20



TAIL VIEW

STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE



DETAIL A

STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE

Figure 21

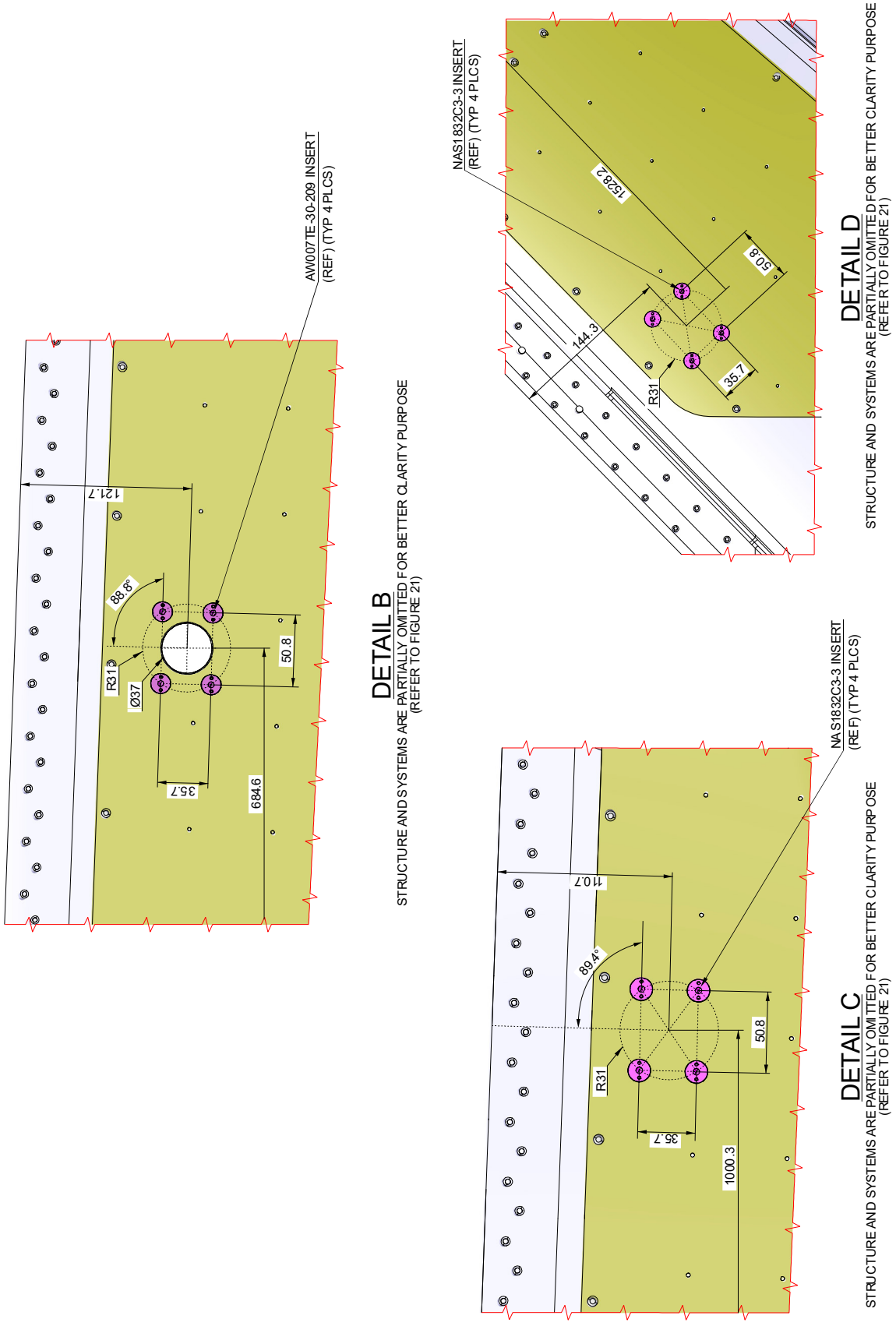

AW007TE-30-209 INSERT
(REF) (TYP 4 PLCS)
121.7
88.8°
R31
Ø37
50.8
35.7
684.6
DETAIL B
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 21)
NAS1832C3-3 INSERT
(REF) (TYP 4 PLCS)
152.2
50.8
144.3
R31
35.7
DETAIL D
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 21)
NAS1832C3-3 INSERT
(REF) (TYP 4 PLCS)
107
89.4°
50.8
R31
35.7
1000.3
DETAIL C
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 21)

Figure 22

ANNEX A

AW189 RADIO HF SRT-200 ATP

1 PRELIMINARY TESTS

1.1 SAFETY PROVISIONS

- Standard safety procedures for ground handling of the AW189 helicopter are to be followed at all times.
- When required, for continuity testing a low voltage tester may be used.
- When it is required testing at pins and sockets of plug and receptacles connectors, contact is to be made by means of the correct mating socket or pin.
- No electrical Power Supply applied to the aircraft before starting with the Test Procedure.
- The ATP is to be performed with External Power.

Under no circumstances must be used any other form of probe.
Do not handle and operate plug/receptacle connectors with voltage presence.

1.2 EXPERIMENTAL EQUIPMENTS

- DC external Power (28VDC 3KW Min);
- DC Voltmeter Tester for troubleshooting operations;
- Low voltage continuity tester (Bond Meter (AOIP OM 16 or equivalent);
- Shorting leads;
- Radio Test Set (range 2-500 MHz) FM/AM-1200S/A or Thru line wattmeter (range 0-250 W frequency 2-30 MHz) or equivalent;
- Two headsets minimum with microphones.

Instruments precision: ± 2% min.

1.3 TEST PREREQUISITES

The following requirements shall be fulfilled prior to proceeding with the test procedures described within this document:

1.3.1 HF SYSTEM TEST PREREQUISITES

CAUTION: ***Do not handle plug/receptacle connectors while voltage is on.***

NOTE: The tests are performed step by step for allow the single check of each single function.

	TEST DESCRIPTION	PASS/FAIL
1.	Visually verify the proper installation of the HF radio systems components. Check the correct mechanical installation and fixing; Check the Electrical wires installation; Check that all the connectors are properly plugged and fastened. Use the drawing: 8G2310W01801 (HF Radio WD), 8G2350W00401 (ICS DACS Basico), 8G2350W05001 (ICS HF SRT-200 Customization) and 8G2310W02101 (CRYPTO/HF SRT-200 WD).	
2.	Ensure that the AMMS option file has been programmed for HF Radio system installation and that is displayed on the MCDU Options page (press MENU button, then <MAINTENANCE and <OPTIONS and check that HF Radio option is set to SRT-200).	
3.	The electrical wiring harness installation has been successfully tested by DIT-MCO checking the correct electrical voltage, end-points continuity (pin-to-pin) and proper insulation resistance.	
4.	Systems and harness installations have been inspected and are in accordance with applicable installation design drawings and standards.	
5.	The following system shall be operative: EPGDS, SSEMPMS, AMMS, EDCU, CDS and ICS.	
6.	. Verify on all ACP in cabin and in cockpit that are present the following decal: **HF** (P/N 55-06-HF) on the position COM6 Only for reference see Figure 1.	
7.	Before the test points that require External Power Bench, verify that the External Power Bench is operative and set to the appropriate Voltage (28 VDC);	
8.	Position the aircraft outside the hangar where a clear view of the sky is possible for HF tests and at least 50 feet (15 m) away from metal buildings	
9.	**VERIFY THAT NO ONE IS STANDING ON THE GROUND NEAR THE AIRCRAFT OR**	

	TOUCHING THE AIRCRAFT: THE ENTIRE AIRFRAME BECOMES PART OF THE ANTENNA. ANYONE STANDING ON THE GROUND COULD RECEIVE AN ELECTRICAL SHOCK IF TOUCHING THE AIRCRAFT, OR IF ENTERING OR EXITING THE AIRCRAFT DURING A TRANSMISSION BY THE SRT-200 SYSTEM. DO NOT OPERATE THE HF SYSTEM WHILE THE AIRCRAFT IS BEING FUELED.	
10.	**During test with helicopter , both ENG 1 & 2 selector installed on ENG CNTR PNL called "ENG MODE" are in OFF position;**	
11.	Verify on APU CNTR PNL that the "CRANK" switch is in OFF position & the "SEL MODE" switch is in OFF position.	

Execution Notes (Failures description, etc):

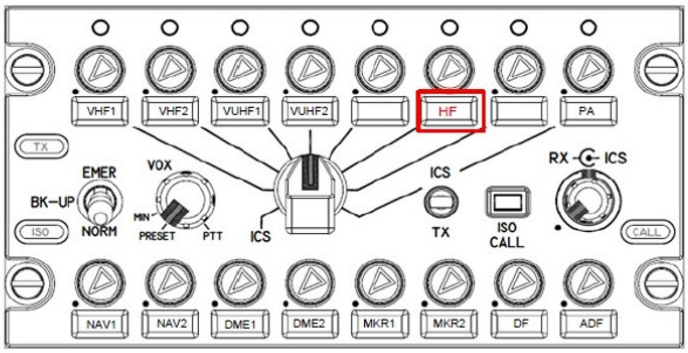


Figure 1 - ICS decal on ACP (Only for reference)

1.3.2 CRYPTO SYSTEM TEST PREREQUISITES

Note: This paragraph is applicable only if Crypto Kit P/N 8G2310F01711 is installed.

	TEST DESCRIPTION	PASS/FAIL
1.	The electrical wiring harness installation has been successfully tested by DIT-MCO checking the correct electrical voltage, end-points continuity (pin-to-pin) and proper insulation resistance.	
2.	The §2.4.1 shall be successfully completed.	

3.	Remove the insulating strip from the key backup battery compartment followed the following procedure: With screwdriver, remove the screws on the cover battery. Remove the cover and unseat the battery, then remove the insulating strip, seat the battery in its holder, respecting the orientation of the batter poles. Replace the cover and relative screw. This strip isolates the battery terminals to prevent the battery itself from being discharged when parent equipment is stored or unused.	
4.	Write on the label the installation date.	
5.	On each CM117E front panel remove the cover from the CIK connector, align the red dot of CIK with red dot of CIK connector and plug the relative CIK onto the connector, without rotate the CIK.	

2 FUNCTIONAL TESTS

2.1 OHMIC MEASUREMENTS

STEP	DESCRIPTION	CHECK
1.	Power Off the helicopter.	☐
2.	Disconnect the HC external grounding cable.	☐

2.1.1 HF SYSTEM OHMIC MEASUREMENTS

STEP	DESCRIPTION	CHECK
3.	Disconnect the connector of the LRUs under test (A409, E407, E409)	☐
4.	Measure the ohmic value between the LRU (connector or dedicated pad) and the local ground and record the measured value in the following table. Refer to procedure NTA662A as guideline.	☐

LRU (P/N)	Limit Value (mΩ)	Measurement	Notes
Antenna Tuning Unit (RAC-7121/03)	10		
HF Transceiver (RAC-7032/01)	10		

Table 1 - HF System LRUs Bonding Measurements

STEP	DESCRIPTION	CHECK
5.	Measure the ohmic value between the HF antenna positions (Ref. Figure 2) and the reference point on TB400 and record the measured value in the following table **Notes:** For Position 1 is preferable take measurement from ATU plate inside the rotorcraft tail (see Figure 3a for reference). For Position 2 is preferable take measurement from Grounding switching mast plate inside the rotorcraft tail (see Figure 3b for reference). Refer to procedure NTA662A as guideline.	☐

Position (**Ref.** Figure 2)	Limit value (mΩ)	Measurement	Notes
1	**6.5**		
2	**6.5**		
3	**6.5**		

Table 2 – HF System Antenna Bonding Measurements (1/2)

STEP	DESCRIPTION	CHECK
6.	Uninstall ATU from its plate, leaving signals connector (E407P6) and RF connector (E407P7) connected to ATU.	☐
7.	From MCD HF pages, insert f=5.000Mhz (only select, don't transmit)	☐
8.	Measure resistance value between the end of P/N 26539 element tube (point A) and ATU Plate (Point B) and report the value in the table below	☐
9.	Measure resistance value between the end of P/N 26539 element tube (point A) and Grounding mast P/N 21-10-427 screw or local ground plane (Point D) and report the value in the table below	☐
10.	From MCDU HF pages, insert f=20.000Mhz (only select, don't transmit)	☐

11.	Measure resistance value between the end of P/N 26539 element tube (point A) and Switching mast P/N 21-10-450-2 screw or local ground plane and report the value in the table below	☐

Position X – Position Y (Ref Figure 4**)**	**Limit value (mΩ)**	**Measurement**	**Notes**
A - B	**26**		
A - D	**23**		
A - C	**10**		

Table 3 - HF System Antenna Bonding Measurements (2/2)

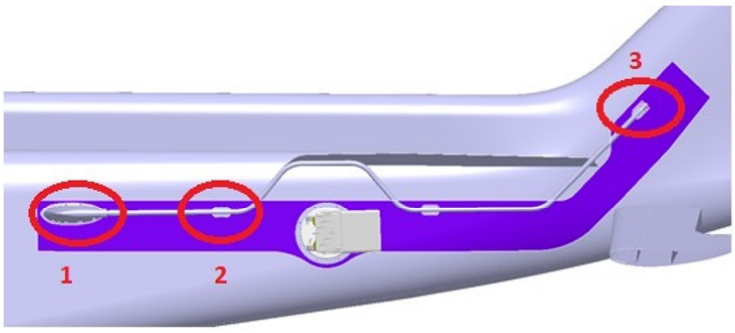


Figure 2 – Antenna Ground Plane measurement positions (ground plane in violet)

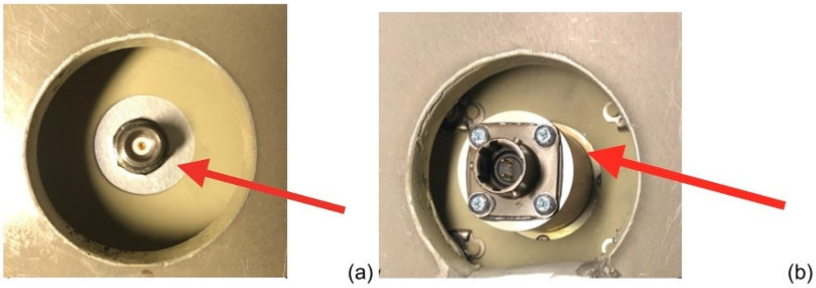


Figure 3 - Suggested measurement points for ATU (a) and Grounding Switching Mast (b) – Only for reference-

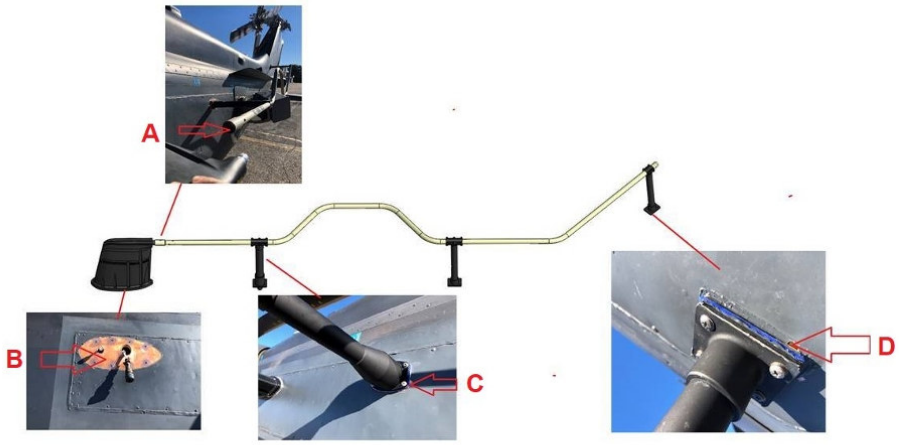


Figure 4 – Antenna resistance measuring points

2.1.2 CRYPTO SYSTEM OHMIC MEASUREMENTS

Note: This paragraph is applicable only if Crypto Kit P/N 8G2310F01711 is installed.

STEP	DESCRIPTION	CHECK
1.	Disconnect the connectors of the LRUs under test (A372, PL110)	☐
2.	Measure the ohmic value between the LRU (connector or dedicated pad) and the local ground and record the measured value in the following table. Refer to procedure NTA662A as guideline.	☐

LRU (P/N)	Limit Value (mΩ)	Measurement	Notes
Crypto Module (CM117E)	10		
Remote Control Unit (CP117E)	10		

Table 4 - Crypto System LRUs Bonding Measurements

2.2 INSTALLATION AND POWER SUPPLY CHECKS

THE FOLLOWING CHECK CAN BE AVOIDED ONLY IF THE AIRCRAFT HARNESS HAS BEEN TESTED WITH DT-MCO.

1. The helicopter external power port shall be connected to the External Power Bench set to 28 VDC output. ☐
2. Power up the External Power Bench before starting with the test procedure ☐
3. Verify that the H/C Avionics is switched on ☐

The user shall enable for the first time the HF SYSTEM by pressing "MNTN" bezel on ECDU at the ECDU start-up to enter in Maintenance Mode. The user shall follow the procedure described into 189G4620U001 manual.

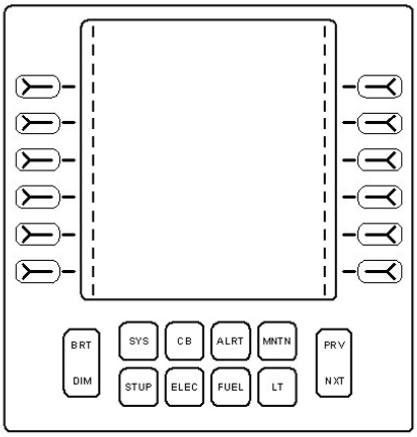


Figure 5 – ECDU Layout and bezels.

2.2.1 HF SYSTEM CHECKS

Note: This paragraph is **NOT APPLICABLE** if Crypto Kit P/N 8G2310F01711 is installed;

If Crypto Kit P/N 8G2310F01711 is installed please refer to Par. 2.2.2

Refer to Circuit Breakers' list below to perform/verify the following starting settings:

CB Label	Breaker	Position	Check
AMMC1 PRI	ECDU	IN	
AMMC1 SEC	ECDU	ON	
AMMC 2 PRI	CB PANEL	IN	
AMMC2 SEC	ECDU	ON	
HF	ECDU	LCKD	
ICS PRI	CB PANEL	IN	
ICS SEC	ECDU	ON	

In the following tests push "ON" or trip "OFF" as required step by step, avoiding to handle and operate on connectors with voltage presence:

Phase	Test Description	Check	Pass/Fail
1	Disconnect HF transceiver connector A409P1 and the ATU connector E407P7		
2	Perform a pin-to-pin check between the HF transceiver connector A409P1 and the antenna E407P7 to ensure continuity of the cables.	Check the continuity between central pin of A409P1 coax connector and central pin of E407P7 coax connector.	
3	Perform a pin-to-shield check between the centre pin of coaxial cable and its shield on HF transceiver connector A409P1, to ensure there is no continuity.	Check there is no continuity between central pin and the shield of coax A409P1	
4	Reconnect HF transceiver connector A409P1 and the ATU connector E407P7		
5	Disconnect A409P2 and A409P3 connector from HF Transceiver (A409)		

6	Unlock and Set HF CB to ON via ECDU /BREAKERS/COMM/	- Check with a voltmeter the 28 VDC signal on following pins of A409P2 HF TRANCEIVER connector:
		  - PIN A (+);
		  - PIN B (+);
		- Check with a voltmeter the GND signal on following pins of A409P2 HF TRANCEIVER connector:
		  - PIN C (-);
		  - PIN D (-);	

7	Verify presence of proper voltage for HF Transceiver Mounting Tray Fan	- Check with a voltmeter the 28 VDC signal on the terminal of 885 wire (or TB415 pin A2). - Check with a voltmeter the GND signal on the terminal of 886 wire (or TB415 pin 2B).	
8	Set OFF the HF system via ECDU /BREAKERS/COMM/ HF CB.	Check on ECDU that the CB “HF” is OFF.	
9	Verify the continuity between pins of HF transceiver (pin strapping and HF Enabling).	Check the continuity between the pins 1, 10,11, 36, 47, 55 of A409P3;	
10	Disconnect E407P6 connector from ATU (E407)		

11	Verify the continuity between transceiver (A409P3) and ATU connector (E407P6).	Check the continuity between the following pins: - A409P3 pin 1 to A409P3 pin 11; - A409P3 pin 1 to A409P3 pin 47; - A409P3 pin 1 to A409P3 pin 36; - A409P3 pin 1 to A409P3 pin 55; - A409P3 pin 1 to A409P3 pin 10; - A409P3 pin 1 to E407P6 pin C; - A409P3 pin 2 to E407P6 pin R; - A409P3 pin 3 to E407P6 pin L; - A409P3 pin 4 to E407P6 pin M; - A409P3 pin 7 to E407P6 pin B; - A409P3 pin 8 to E407P6 pin F; - A409P3 pin 9 to E407P6 pin D; - A409P3 pin 40 to E407P6 pin A; - A409P3 pin 54 to E407P6 pin K; - Connector Shield to E407P6 pin J.	
12	Set OUT the ICS PRI CB from CB PANEL and set OFF ICS SEC CB from ECDU		
13	Disconnect A57P102 and A57P104 connector from AMU50 audio system.		
14	Verify the continuity between transceiver (A409P3) and AMU audio system connector A57P102 and A57P104.	Check the continuity between the following pins: - A409P3 pin 12 to A57P102 pin 36; - A409P3 pin 13 to A57P102 pin 20; - A409P3 pin 14 to A57P102 pin 3; - A409P3 pin 15 to A57P104 pin 20; - A409P3 pin 16 to A57P104 pin 3;	
15	Reconnect A57P102 and A57P104 connector of AMU50 audio system.		
16	Set IN the ICS PRI CB from CB PANEL and set ON ICS SEC CB from ECDU		
17	Disconnect E409P1 connector from Antenna Switching Mast (E409)		
18	Verify the continuity between E407P6 ATU connector and E409P1 Antenna switching mast.	Check the continuity between the following pins: - E407P6 pin J to Connector GND; - E407P6 pin G to E409P1 pin A; - E407P6 pin H to E409P1 pin B;	

19	Pull OUT the NAV2 system via NAV2 CB on the overhead circuit breakers panel.	Check on ECDU that the NAV 2 is OFF.	
20	Disconnect A34P1 connector from NAV2 system.		
21	Verify the continuity between transceiver (A409P3) and NAV2 system connector (A34P1).	Check the continuity between the following pins: - A409P3 pin 12 to A34P1 pin 48;	
22	Reconnect following connectors: - A34P1 to NAV2 (A34); - A409P2 and A409P3 connector to HF Transceiver (A409) - E409P1 connector to Antenna Switching Mast (E409) - E407P6 connector to ATU (E407)		
23	Set ON the HF system via ECDU /BREAKERS/COMM/ HF CB.	Check on ECDU that the CB “HF” is ON.	
24	Push IN the NAV2 system via NAV2 CB on the overhead circuit breakers panel.	Check on ECDU that the NAV 2 system is ON.	

Verify the following CB:

CB Label	Breaker	Position	Check
AMMC1 PRI	ECDU	ON	
AMMC1 SEC	ECDU	ON	
AMMC 2 PRI	CB PANEL	IN	
AMMC2 SEC	ECDU	ON	
HF	ECDU	ON	
ICS PRI	CB PANEL	IN	
ICS SEC	ECDU	ON	

2.2.2 HF and CRYPTO SYSTEMS CHECKS

Note: This paragraph is applicable only if if KIT HF Radio External Crypto P/N 8G2310F01711 is installed.

Refer to Circuit Breakers' list below to perform/verify the following starting settings:

CB Label	Breaker	Position	Check
AMMC1 PRI	ECDU	IN	☐
AMMC1 SEC	ECDU	ON	☐
AMMC 2 PRI	CB PANEL	IN	☐
AMMC2 SEC	ECDU	ON	☐
HF	ECDU	LCKD	☐
ICS PRI	CB PANEL	IN	☐
ICS SEC	ECDU	ON	☐
CRYPTO	ECDU	LOCKED	☐
NAV2	CB PANEL	OFF	☐

In the following tests push "ON" or trip "OFF" as required step by step, avoiding to handle and operate on connectors with voltage presence:

STEP	Test Description	Check	Pass/Fail
1	Disconnect HF transceiver connector A409P1 and the ATU connector E407P7		
2	Perform a pin-to-pin check between the HF transceiver connector A409P1 and the antenna E407P7 to ensure continuity of the cables.	Check the continuity between central pin of A409P1 coax connector and central pin of E407P7 coax connector.	
3	Perform a pin-to-shield check between the centre pin of coaxial cable and its shield on HF transceiver connector A409P1, to ensure there is no continuity.	Check there is no continuity between central pin and the shield of coax A409P1	
4	Reconnect HF transceiver connector A409P1 and the ATU connector E407P7		
5	Disconnect A409P2 and A409P3 connector from HF Transceiver (A409)		
6	Unlock HF CB		

7	Set HF CB to ON via ECDU /BREAKERS/COMM/	- Check with a voltmeter the 28 VDC signal on following pins of A409P2 HF TRANCEIVER connector: - PIN A (+); - PIN B (+); - Check with a voltmeter the GND signal on following pins of A409P2 HF TRANCEIVER connector: - PIN C (-); - PIN D (-);	
8	Verify presence of proper voltage for HF Transceiver Mounting Tray Fan	- Check with a voltmeter the 28 VDC signal on the terminal of 885 wire (or TB415 pin A2). - Check with a voltmeter the GND signal on the terminal of 886 wire (or TB415 pin 2B).	
9	Set OFF the HF system via ECDU /BREAKERS/COMM/ HF CB.	- Check on ECDU that the CB "HF" is OFF.	
10	Verify the continuity between pins of HF transceiver (pin strapping and HF Enabling).	Check the continuity between the pins 1, 10,11, 36, 47, 55 of A409P3;	
11	Disconnect E407P6 connector from ATU (E407)		

12	Verify the continuity between transceiver (A409P3) and ATU connector (E407P6).	Check the continuity between the following pins: - A409P3 pin 1 to A409P3 pin 11; - A409P3 pin 1 to A409P3 pin 47; - A409P3 pin 1 to A409P3 pin 36; - A409P3 pin 1 to A409P3 pin 55; - A409P3 pin 1 to A409P3 pin 10; - A409P3 pin 1 to E407P6 pin C; - A409P3 pin 2 to E407P6 pin R; - A409P3 pin 3 to E407P6 pin L; - A409P3 pin 4 to E407P6 pin M; - A409P3 pin 7 to E407P6 pin B; - A409P3 pin 8 to E407P6 pin F; - A409P3 pin 9 to E407P6 pin D; - A409P3 pin 40 to E407P6 pin A; - A409P3 pin 54 to E407P6 pin K; - Connector Shield to E407P6 pin J.	
13	Disconnect A372P1 connector from A37 CM117E – HF Crypto Module		
14	Disconnect PL110P4 and PL110P5 connectors from PL110 CP117E Remote Control Panel		
15	Verify the continuity between PL110 CP117E Remote Control Panel connector PL110P5 and A372 CM117E – HF Crypto Module connector A372P1.	Check the continuity between the following pins: - PL110P5 pin A to A372P1pin a; - PL110P5 pin B to A372P1pin B; - PL110P5 pin P to A372P1pin S; - PL110P5 pin E to A372P1pin C; - PL110P5 pin K to A372P1pin D;	
16	Insert a GND signal on pin N of PL110P4 to switch the relay K346 (for example using a jumper from pin k to pin N of PL110P4)		
17	Set ON the CRYPTO CB from ECDU		
18	Verify presence of proper voltage for A372 CM117E – HF Crypto Module	- Check with a voltmeter the 28 VDC signal on the A372P1 Pin L - Check with a voltmeter the GND signal on the A372P1 Pin K and Pin J	

19	Verify presence of proper voltage for PL110 CP117E Remote Control Panel	- Check with a voltmeter the 28 VDC signal on the PL110P4 Pin L; - Check with a voltmeter the GND signal on the PL110P4 Pin W and Pin b.	
20	Remove GND signal on pin N of PL110P4 (remove the jumper from pin k to pin N of PL110P4 if used)	-	
21	Set OFF the CRYPTO CB from ECDU	-	
22	Connect PL110P4 and PL110P5 connectors from PL110 CP117E Remote Control Panel	-	
23	Verify the continuity between HF Transceiver (A409P3) and CM117E (A372P1)	Check the continuity between the following pins: - A409P3 pin 12 to A372P1 pin X; - A409P3 pin 13 to A372P1 pin T; - A409P3 pin 14 to A372P1 pin A; - A409P3 pin 15 to A372P1 pin S; - A409P3 pin 16 to A372P1 pin R	
24	Connect A372P1 connector from A37 CM117E – HF Crypto Module		
	Disconnect A372P2 connector from A37 CM117E – HF Crypto Module		
25	Set OUT the ICS PRI CB from CB PANEL and set OFF ICS SEC CB from ECDU		
26	Disconnect A57P102 and A57P104 connector from AMU50 audio system.		
27	Verify the continuity between A372 CM117E – HF Crypto Module connector A372P2 and AMU audio system connectors A57P102, A57P104.	Check the continuity between the following pins: - A372P2 pin P to A57P102 pin 36; - A372P2 pin L to A57P102 pin 20; - A372P2 pin K to A57P102 pin 3; - A372P2 pin B to A57P104 pin 20; - A372P2 pin M to A57P104 pin 3;	
28	Connect A57P102 and A57P104 connector of AMU50 audio system.		
29	Connect A372P2 connector from A37 CM117E – HF Crypto Module		
30	Set IN the ICS PRI CB from CB PANEL and set ON ICS SEC CB from ECDU		

31	Disconnect E409P1 connector from Antenna Switching Mast (E409)		
32	Verify the continuity between E407P6 ATU connector and E409P1 Antenna switching mast.	Check the continuity between the following pins: - E407P6 pin J to Connector GND; - E407P6 pin G to E409P1 pin A; - E407P6 pin H to E409P1 pin B;	
33	Pull OUT the NAV2 system via NAV2 CB on the overhead circuit breakers panel.	Check on ECDU that the NAV 2 is OFF.	
34	Disconnect A34P1 connector from NAV2 system.		
35	Verify the continuity between A372 CM117E – HF Crypto Module connector (A372P2) and NAV2 system connector (A34P1).	Check the continuity between the following pins: - A372P2 pin P to A34P1 pin 48;	
36	Reconnect following connectors: - A34P1 to NAV2 (A34); - A409P2 and A409P3 connector to HF Transceiver (A409) - E409P1 connector to Antenna Switching Mast (E409) - E407P6 connector to ATU (E407)		
37	Set ON the HF system via ECDU /BREAKERS/COMM/ HF CB.	Check on ECDU that the CB “HF” is ON.	
38	Push IN the NAV2 system via NAV2 CB on the overhead circuit breakers panel.	Check on ECDU that the NAV 2 system is ON.	

Verify the following CB:

CB Label	Breaker	Position	Check
AMMC1 PRI	ECDU	ON	☐
AMMC1 SEC	ECDU	ON	☐
AMMC 2 PRI	CB PANEL	IN	☐
AMMC2 SEC	ECDU	ON	☐
HF	ECDU	ON	☐
CRYPTO	ECDU	OFF	☐
ICS PRI	CB PANEL	IN	☐
ICS SEC	ECDU	ON	☐
NAV2	CB PANEL	IN	☐

2.3 ANTENNA TUNING AND RF POWER TEST

Note: During all the following tests, check that the HF data on the HF Detail pages are synchronized on the pilot and copilot MCDU.

NOTE: The helicopter must be fully built (all the panels and bulkhead installed) before starting with the following tests. Ensure that there are no metallic objects in the area around the HF antennas.

NOTE: Position the aircraft on the apron/helipad where a clear view of the sky is possible for HF tests and at least 50 feet (15 m) aw ay from metal buildings.

NOTE: The aircraft shall be powered by APU; the use of external power bench during RF transmission/Tuning shall be avoided since unwanted EM couplings with external bench power cable can occur.

NOTE: VERIFY THAT NO ONE IS STANDING ON THE GROUND NEAR THE AIRCRAFT OR TOUCHING THE AIRCRAFT: THE ENTIRE AIRFRAME BECOMES PART OF THE ANTENNA. ANYONE STANDING ON THE GROUND COULD RECEIVE AN ELECTRICAL SHOCK IF TOUCHING THE AIRCRAFT, OR IF ENTERING OR EXITING THE AIRCRAFT DURING A TRANSMISSION BY THE SRT-200 SYSTEM. DO NOT OPERATE THE HF SYSTEM WHILE THE AIRCRAFT IS BEING FUELED.

2.3.1 TUNING TEST

ID	ACTION	CHECK	RESULT
1	On ECDU CB pages power ON HF CB		
2	On PLT and CPLT MCDU, go into TUNE pages; press NEXT until HF Tune data are displayed.		
3	access to the MCDU HF 01/02 page on pilot and copilot MCDU.		
4	From the MCDU pilot select as Active Value the following value on HF radio:2.0 Mhz - Select frequency - Select CW modulation - Select LOW power		
5	Press PTT for less than 1 second and relase. **NOTE: Mind the WARNING stated above.**	Once the PTT has been pressed, “TUNING” message shall appear on MCDU, after few seconds, if tuning process	

ID	ACTION	CHECK	RESULT
		is successful, “TUNED” message shall appear (or “NOT TUNED” message if tuning process failed). Note the outcome of the test in the table below.	
6	Repeat the above test for the frequencies indicated in the table below. **NOTE**: Mind the **WARNING** stated above.	Note the outcome of the test in the table below. .	
7	On ECDU CB pages power off the HF CB		

TX Frequency [MHz]	Modulation	CW Transmitted Power	TUNED	NOT TUNED
2.0	CW	LO	☐	☐
3.0	CW	LO	☐	☐
4.0	CW	LO	☐	☐
5.0	CW	LO	☐	☐
6.0	CW	LO	☐	☐
7.0	CW	LO	☐	☐
8.0	CW	LO	☐	☐
9.0	CW	LO	☐	☐
10.0	CW	LO	☐	☐
11.0	CW	LO	☐	☐
12.0	CW	LO	☐	☐
13.0	CW	LO	☐	☐
14.0	CW	LO	☐	☐
15.0	CW	LO	☐	☐
16.0	CW	LO	☐	☐
17.0	CW	LO	☐	☐
18.0	CW	LO	☐	☐
19.0	CW	LO	☐	☐
20.0	CW	LO	☐	☐
21.0	CW	LO	☐	☐

22.0	CW	LO	☐	☐
23.0	CW	LO	☐	☐
24.0	CW	LO	☐	☐
25.0	CW	LO	☐	☐
26.0	CW	LO	☐	☐
27.0	CW	LO	☐	☐
28.0	CW	LO	☐	☐
29.0	CW	LO	☐	☐

2.3.2 TRANSMITTED POWER AND VSWR

ID	ACTION	CHECK	RESULT
1	On ECDU CB pages power off HF CB		
2	Plug-in Headset on Pilot and Copilot side and select the HF audio by mean of the Audio Panels center knob on Pilot and Copilot ICS Control Panel.		
3	Disconnect the A407P7 connector from ATU E407 .		
4	Insert RF power wattmeter inline between transceiver and Antenna Tuning Unit		
5	On ECDU CB pages power on HF CB		
6	On PLT and CPLT MCDU, go into TUNE pages; press NEXT until HF Tune data are displayed.		
7	Press LSK 5L and access to the MCDU HF 01/02 page on pilot and copilot MCDU.		
8	From the MCDU pilot select as Active Value the following value on HF radio: - Select 2.8MHz frequency - Select CW modulation - Select high (HI) power		
9	Press PTT and maintain, measure and note the transmitted power, reflected power and VSWR on the Thru Line Wattmeter. Release PTT **NOTE: Do not transmit more than 60 seconds in any 5 minute period.**	Note the transmitted power, reflected power and VSWR on the Thru Line Wattmeter in the table below.	

ID	ACTION	CHECK	RESULT
	NOTE: Mind the WARNING stated above.		
10	Repeat the above test for the frequencies and power levels as indicated in the table below. **NOTE**: Do not transmit more than 60 seconds in any 5 minute period. **NOTE**: Mind the **WARNING** stated above.	Note the transmitted power, reflected power and VSWR on the Thru Line Wattmeter in the table below.	
11	On ECDU CB pages power off the HF CB and remove the wattmeter		
12	Connect the A407P7 connector from ATU E407 .		

TX Frequency [MHz]	Modulation	CW Transmitted Power	Pt [W]	Pr [W]	VSWR
2.8	CW	HI			
4.1	CW	HI			
12.0	CW	MED			
22.8	CW	MED			
15.1	CW	LO			
27.0	CW	LO			

Modulated Power Output [Pt]: **80W ≤ HI CW Power ≤ 126W**
40W ≤ MED CW Power ≤ 63W
20W ≤ LO CW Power ≤ 31W

Limit of Acceptability: VSWR = 1.5:1

2.4 COMMUNICATION TEST

2.4.1 HF SYSTEM COMMUNICATION TEST

Note: if installed HF CRYPTO CM117E (P/N 8G2310F01711) remove the CM117E – HF device and substitute it with stowage assy (P/N **8G2310A18531**) and execute the following steps.

STEP	ACTION	CHECK	RESULT
1	On ECDU CB pages power on HF and CRYPTO CBs.		
2	Enable the HF audio by mean the pilot and copilot audio control panel and properly adjust the volume.		
4	Perform a two-way communication with a HF station using the modes indicated in the following tables selecting three free frequencies (lower, medium and upper band) and the required Emission modes. **NOTE**: if the frequency has not already been tuned, the tuning is not immediate. Press the PTT to tune the Antenna Tuning Unit for every selected new frequency until a steady tone is heard during the ATU tuning. **NOTE**: If the selected frequency is not tunable, select other frequency close to the previous one		
5	Verify that the communication and sidetone are clear and intelligible.		
6	In turn allocate PTT to Pilot and copilot. From each position check that HF communication is possible.	It is possible to communicate with HF from pilot and copilot positions.	
7	During the communication activate the squelch function. Check the proper function of the available squelch modes during the communication.		

8	During the communication change the power level. Check the proper function of the available power levels during the communication.		
9	Record the results of the test above in the following tables.		
10	On ECDU power off HF CB		

Low Band Freq: 5 Mhz **Power: LO**	**Emission Mode**	**PASS/FAIL**	
		Pilot side	**Copilot side**
TX Audio quality evaluation	USB		
RX Audio quality evaluation	USB		
Sidetone quality evaluation	USB		
TX Audio quality evaluation	LSB		
RX Audio quality evaluation	LSB		
Sidetone quality evaluation	LSB		
TX Audio quality evaluation	AM		
RX Audio quality evaluation	AM		
Sidetone quality evaluation	AM		

Med Band Freq: 15 MHz **Power: LO**	**Emission Mode**	**PASS/FAIL**	
		Pilot side	**Copilot side**
TX Audio quality evaluation	USB		
RX Audio quality evaluation	USB		
Sidetone quality evaluation	USB		
TX Audio quality evaluation	LSB		
RX Audio quality evaluation	LSB		
Sidetone quality evaluation	LSB		
TX Audio quality evaluation	AM		
RX Audio quality evaluation	AM		
Sidetone quality evaluation	AM		

Hi Band Freq 25 MHz **Power: LO**	**Emission Mode**	**PASS/FAIL**	
		Pilot side	**Copilot side**
TX Audio quality evaluation	USB		
RX Audio quality evaluation	USB		
Sidetone quality evaluation	USB		

TX Audio quality evaluation	LSB		
RX Audio quality evaluation	LSB		
Sidetone quality evaluation	LSB		
TX Audio quality evaluation	AM		
RX Audio quality evaluation	AM		
Sidetone quality evaluation	AM		

2.4.2 HF & CRYPTO SYSTEMS PLAIN COMMUNICATION TEST

Note: This paragraph is applicable only if if KIT HF Radio External Crypto P/N 8G2310F01711 is installed.

STEP	ACTION	CHECK	RESULT
1	On ECDU CB pages power on HF and CRYPTO CBs.		
2	Ensure that PWR switch on CM117E HF (**A372**), on the front panel, is set to ON. Switch ON the CP117E PWR switch.	Ensure that CM117E is powered ON and operative.	
3	Ensure that PT position with MODE knob is selected on CP117E.		
4	Ensure that HF is set to Plain voice “PLAIN V” mode.		
4	Enable the HF audio by mean the pilot and copilot audio control panel and properly adjust the volume.		
	On MDCU HF page, enter in frequency set and insert the authorized local ground station frequency.		
5	Perform a two way communication with a HF station using the modes indicated in the following tables selecting three free frequencies (lower, medium and upper band) and the required Emission modes. **NOTE**: if the frequency has not already been tuned, the tuning is not immediate. Press the PTT to tune the Antenna Tuning Unit for every selected new frequency until a steady tone is heard during the ATU tuning.		

6	Verify that the communication and sidetone are clear and intelligible.		
7	In turn allocate PTT to Pilot and copilot. From each position check that HF communication is possible.	It is possible to communicate with HF from pilot and copilot positions.	
8	During the communication activate the squelch function. Check the proper function of the available squelch modes during the communication.		
9	During the communication change the power level. Check the proper function of the available power levels during the communication.		
10	Record the results of the test above in the following tables.		
11	On ECDU power off HF CB		

Low Band Freq: 5 Mhz **Power: LO**	**Emission Mode**	**PASS/FAIL**	
		Pilot side	**Copilot side**
TX Audio quality evaluation	USB		
RX Audio quality evaluation	USB		
Sidetone quality evaluation	USB		
TX Audio quality evaluation	LSB		
RX Audio quality evaluation	LSB		
Sidetone quality evaluation	LSB		
TX Audio quality evaluation	AM		
RX Audio quality evaluation	AM		
Sidetone quality evaluation	AM		

Table 5 – Low Band Frequency Audio Evaluation (HF and Crypto Systems)

Low Band Freq: 15 Mhz **Power: LO**	**Emission Mode**	**PASS/FAIL**	
		Pilot side	**Copilot side**
TX Audio quality evaluation	USB		
RX Audio quality evaluation	USB		
Sidetone quality evaluation	USB		
TX Audio quality evaluation	LSB		
RX Audio quality evaluation	LSB		
Sidetone quality evaluation	LSB		

TX Audio quality evaluation	AM		
RX Audio quality evaluation	AM		
Sidetone quality evaluation	AM		

Table 6 - Mid Band Frequency Audio Evaluation (HF and Crypto Systems)

Low Band Freq: 25 Mhz Power: LO	Emission Mode	PASS/FAIL	
		Pilot side	Copilot side
TX Audio quality evaluation	USB		
RX Audio quality evaluation	USB		
Sidetone quality evaluation	USB		
TX Audio quality evaluation	LSB		
RX Audio quality evaluation	LSB		
Sidetone quality evaluation	LSB		
TX Audio quality evaluation	AM		
RX Audio quality evaluation	AM		
Sidetone quality evaluation	AM		

Table 7 - Hi Band Frequency Audio Evaluation (HF and Crypto Systems)

2.5 RFI TEST

NOTE: The helicopter must be fully built (all the panels and bulkhead installed) before starting with the following tests. Ensure that there are no metallic objects in the area around the HF antennas.

ID	ACTION	CHECK	RESULT
1	On ECDU CB pages power off HF CB		
2	Verify that headsets are connected to pilot and copilot ICS plugs and enable the HF audio by mean of the Audio Panels		
3	On ECDU CB pages power on HF CB		
4	On PLT and CPLT MCDU, go into TUNE pages; press NEXT until HF Tune data are displayed.		
5	Press LSK 5L and access to the MCDU HF 01/02 page on pilot and copilot MCDU.		

ID	ACTION	CHECK	RESULT
6	From the MCDU select as Active Value the following value on HF radio: - Select 2.8MHz TX frequency - Select AM modulation - Select transmit power high (HI)		
7	Press RH button on PLT CCD to move the selection on PLT PFD.		
8	Rotate CCD outer knob to select the RFI COMMS window	On PLT PFD it should be displayed the VHF2 label on top with the active and standby frequency values	
9	Rotate the CCD inner knob until it is displayed HF label	Verify that the following values are displayed in the RFI window: - 2.80000 in green on first line - squelch level on second line (check the value in the MCDU SQUELCH page) - AM Emission mode on the third line	
10	Push the SET CCD button	Verify that RFI window is changed in order to change the active frequency.	
11	Change the active frequency to 4.1 MHz: use CCD Outer knob to change MHz value and CCD Inner knob to change kHz value.		
12	Push the SET CCD button	.	
13	Enable the HF audio by mean the pilot audio control panel and properly adjust the volume		
14	Perform a two-way communication with a HF station using the frequency set through PFD RFI window. **Note:** Press the PTT to tune the Antenna Tuning Unit for every new selected frequency.		
15	Verify that the communication is clear		
16	On ECDU CB pages power off HF CB		

2.6 ADF BLANKING FOR TRANSMISSION TEST

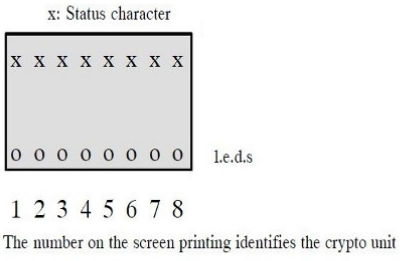
STEP	ACTION	CHECK	RESULT
1	On ECDU power on HF CB		
2	Using MCDU, tune the ADF at a broadcasting station or use a Radio Test Set to generate a signal	Display unit show ADF bearing	
3	Allocate pilot PTT to HF		
4	Press pilot PTT and check that the ADF bearing is not disturbed by the HF transmission	Display unit show that ADF bearing is not moved from its position by the HF transmission	
5	On ECDU power off HF CB		

2.7 CRYPTO MODULE AND PANEL CHECK

Note: This paragraph is applicable only if if KIT HF Radio External Crypto P/N 8G2310F01711 is installed.

Step	Test Description	Check	Pass/Fail
1	Ensure that PWR switch on CM117E- HF (A372) is set to ON.		
2	Switch ON the CP117E (PL110) PWR switch.	Check that the Control panel will run the internal diagnostics (ORT), and tests on leds and display. On completing its power-up self-tests sequence, verify that appear the start-up message “CP117E”.	
3	On front panel of CP117E, set: - PRG SEL rotary switch to 0; - MODE rotary switch to PT.		
4	Set CP position with TARGET knob on front control panel. Select wit arrow the “MODE CONFIG” menu and go to “RCU BITRATE” (Figure 6).	Ensure, on display, that is selected “RCU 38400”. Press ENT to confirm and check that appear “SAVE IN PROGRESS” message on display.	
5	Return to home menu.		
6	On front panel of CM117E-HF, set: - PRESET rotary switch to MAN; - OPER rotary switch to PT1;		

7	Switch ON the CM117E-HF PWR switch. At first time CM117E power up, appear on the CM117 display “ENT Dis. CIK”. Press ◄ (LEFT) to confirm the CIK.	Verify that appear message “CIK DETECTED INITIALIZING CIK” and that “CIK INITIALIZED”. .	
8	Go to the MENU pressing ENTER button.	Check that in upper line on the display appear “*MENU*”.	
9	With arrow navigate the Menu (Figure 8) and select “REMOTE” submenu pressing ENTER push button and ensure that “Remote CP117E” is selected.	Verify that an * to the right will display for each selected parameter.	
10	Exit from Remote submenu selecting RETURN.		
11	Go to the EQUIP ID submenu and ensure that ID =3. Using the ENT button to increase the ID number.	Press the ◄ (LEFT) to confirm the selection and then press ENT. Verify that appear SAVE message.	
12	Go to the “B.I.T.E” submenu and select the “fullBITE”. Press ENT to start the Built−In Test Equipment.	Verify that the BITE procedure successfully completed (it takes at least 30 second): appear final message “B.I.T.E. Success” at the end.	
13	Return to the menu.		
14	Enter in the Menu, using the keyboard pushbuttons set the following parameters in the HW USER MENU (see Figure 9): - Voice IN to DC 600 Ohm; - Voice OUT to DC 600 Ohm; - Balanced (is mutually exclusive to unbalcance); - Audio level to 6 dB; - Voice IN (is mutually exclusive to Voice Ext); - TX sense to Mark +; - RX sense to Mark +; - J2 pin E-CD not selected.		

15	Enter in the Menu end using the keyboard pushbuttons set the following parameters in the OPERATIONAL MODE MENU (see Figure 12): - Narrow mode to Half Dx; - Voice to NET; - SideTint selected;		
16	Enter in the Menu end using the keyboard pushbuttons set the following parameters in the HW RADIO MENU (see Figure 11): - ModemIn selected; - VOL Guard to 256; - VOL Plain to 256; - J1-G to Ct-Pt.		
17	Enter in the PRESET Menu end using the keyboard pushbuttons go to Preset "SAVE MAN" and press enter.	Verify after few second that appears "DONE" message on display.	
18	Enter in the Traffic Menu and press enter.	Verify after few second appears "wait" message and than PLAIN RX on display.	
19	On CM117-HF front panel using the rotary switch, set RCU (pull).	Verify that CM117E-HF is restarted and appears message "CM117E 115 mode" on the display.	
20	From CP117E (interseat console) select the TARGET 3.	Check that CP117 control the CM117 HF: on the CP117 display, verify that third LED is green and the third status character is "P" (Plain mode).  The number on the screen printing identifies the crypto unit	
21	From CP117E select CP with Target rotary switch. With arrow select "MODE CONF" and press ENT. Then turn the TARGET rotary switch to select the third CM (TARGET3).		

22	With ◄ (LEFT) push button, go in to the menu (Figure 13).	Verify that are selected “LOGIC 1”.	

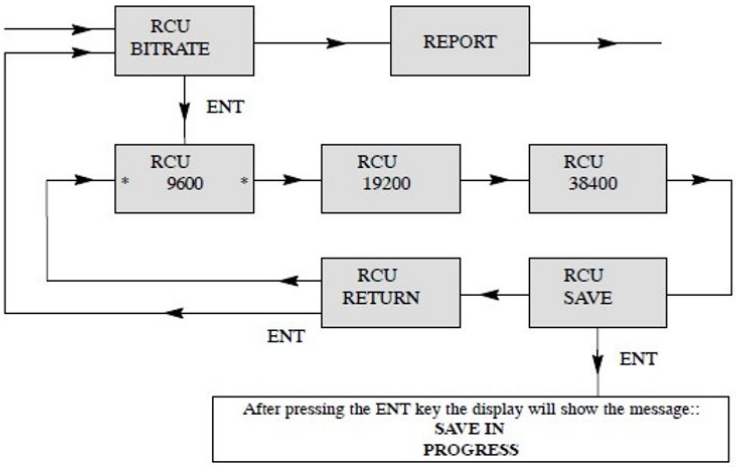


Figure 6 – RCU Bitrate on CP

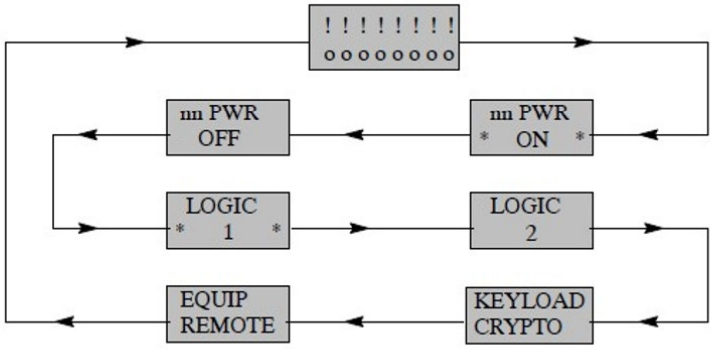


Figure 7 – CM117E Main Menu

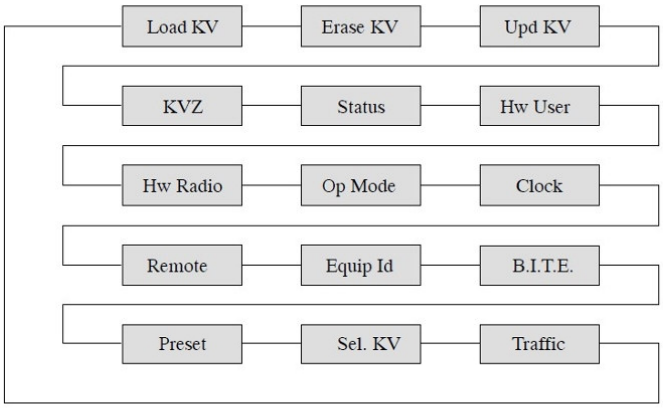


Figure 8 Mode Conf Menu Target not CP position

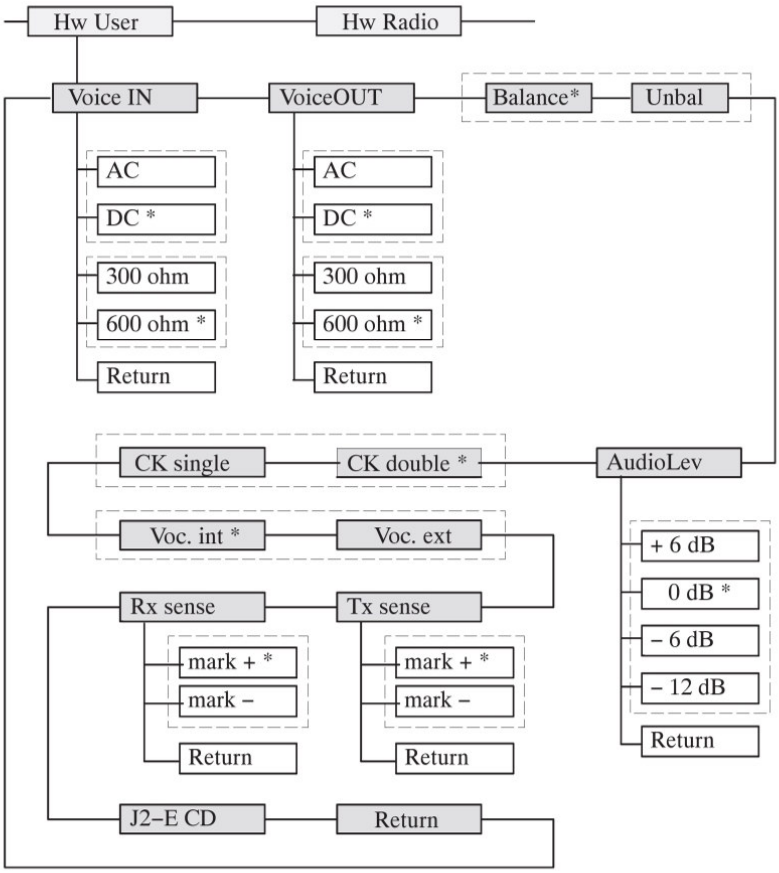


Figure 9 – HW USER -BALANCED

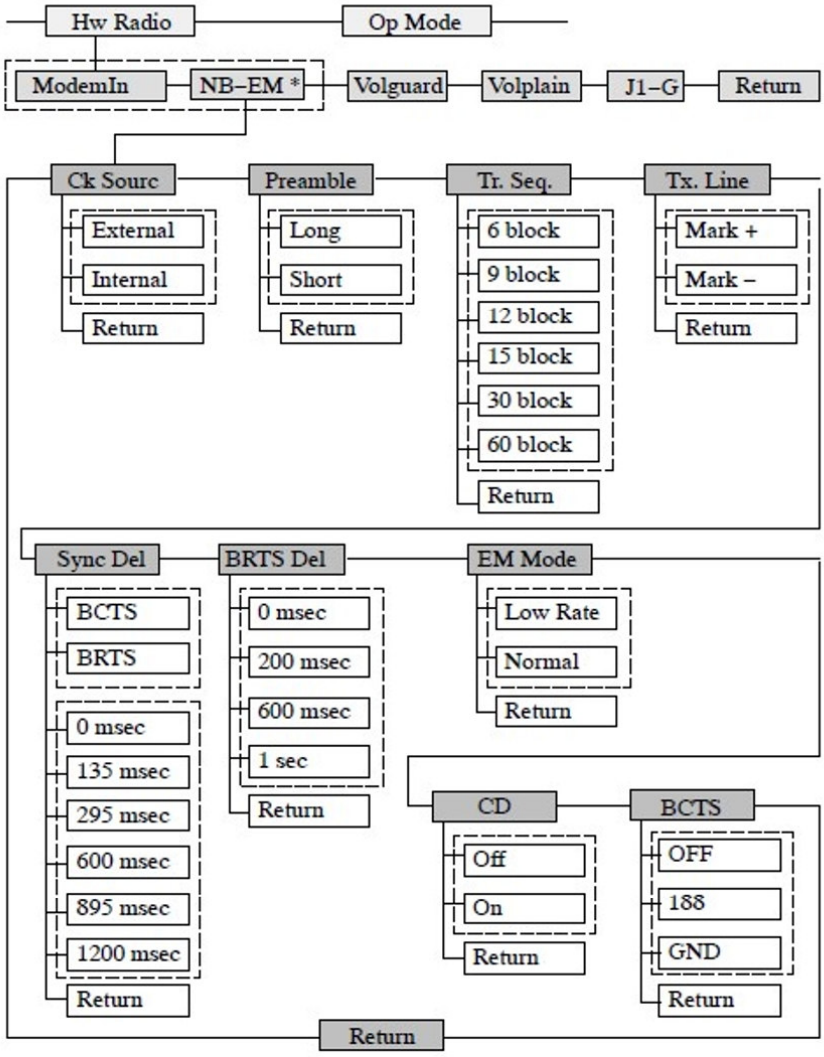


Figure 10 – CM117E – HW RADIO NB MODE (SUBMENU)

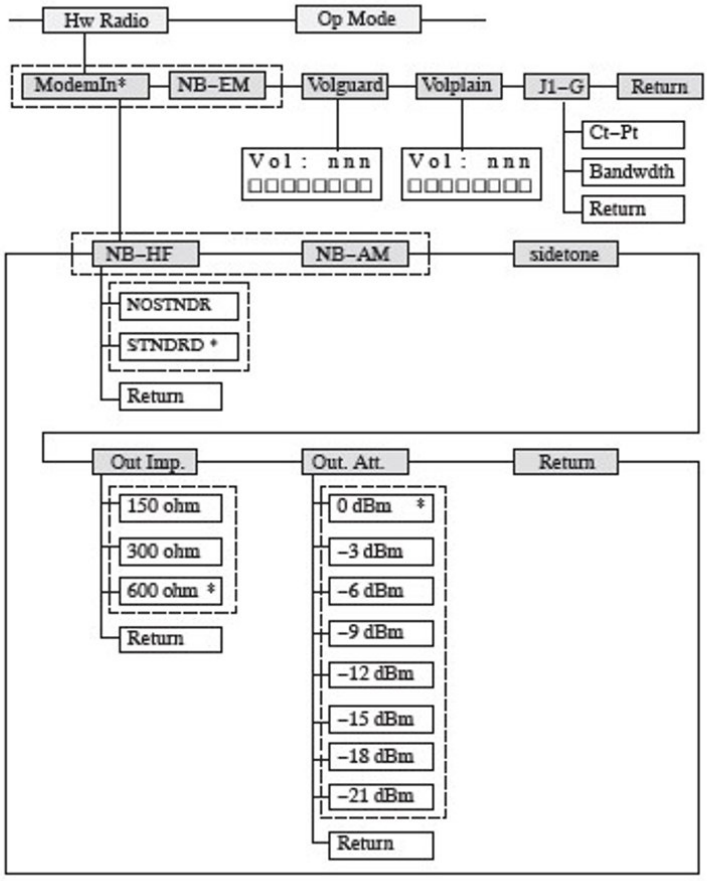


Figure 11 - CM HW RADIO MENU (for reference only)

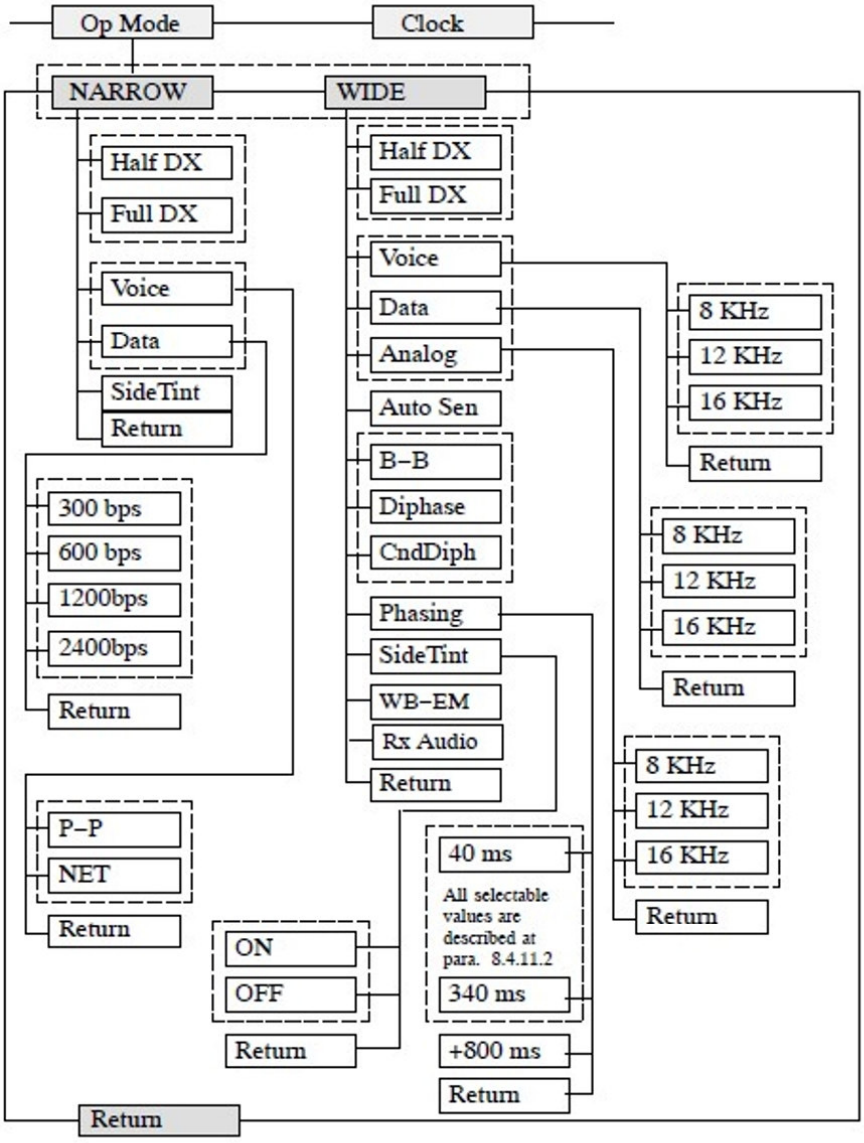


Figure 12 - CM OPERATION MODE MENU (for reference only)

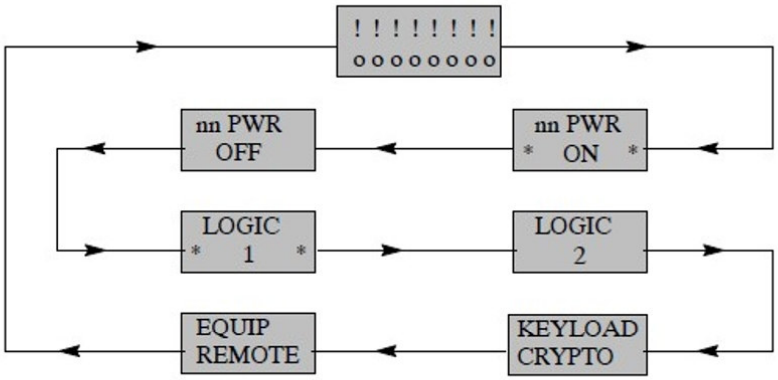


Figure 13 - MODE CONF Menu Target on CP position

2.8 CRYPTO DIMMING PANEL CHECK

Note: This paragraph is applicable only if Crypto Kit P/N 8G2310F01711 is installed.

Note (*): The steps marked with * shall be skipped if NVG Kit is not installed

ID	ACTION	CHECK	RESULT
1	Switch ON the CP117E PWR switch	Check that the Control panel will run the internal diagnostics (ORT), and tests on leds and display. On completing its power-up self tests sequence, verify that appear the star-up message “CP117E”.	
2	On lighting control panel in cockpit, set the Mode switch on DAY.	Check that the display is illuminated at maximum and brightness of bezel is powered off.	
3	On lighting control panel in cockpit, set the Mode switch on NIGHT.	Check that the display is illuminated but with decreased brightness (night mode level) and bezel brightness changes accordingly.	
4	From ECDU Internal Light Page, adjust the console brightness at minimum level in order to change the bezels brightness level. Then return to suitable level.	Check that the brightness of the bezel change accordingly.	
5 (*)	On lighting control panel in cockpit, set the Mode switch on NVG.	Check that the display is illuminated but with decreased brightness (NVG filter enabled) and bezel brightness changes accordingly.	
6 (*)	From ECDU Internal Light Page, adjust the console brightness at minimum level in order to change the bezels brightness level. Then return to suitable level.	Check that the brightness of the bezel change accordingly.	
7	On lighting control panel in cockpit, set the Mode switch on NIGHT.	Verify that the color of display not changed, but the brightness of the bezel change	

		accordingly.	
8	On lighting control panel in cockpit, set the Mode switch on DAY.	Check that the display is illuminated at maximum.	

2.9 INITIAL CONDITION RESTORING

Verify the following starting settings:

CB Label	Breaker	Position	Check
AMMC1 PRI	ECDU	ON	
AMMC1 SEC	ECDU	ON	
AMMC 2 PRI	CB PANEL	IN	
AMMC2 SEC	ECDU	ON	
HF	ECDU	OFF	

3 TEST RESULT

TEST RESULT SUMMARY ***A/C N° :***

189G2310D010

RADIO HF SRT 200 *ATP*

REF.	***DESCRIPTION***		***OPERATOR***	***DATE***	***REMARKS***
1.1	*Safety provisions*				
1.2	*Experimental Equipment*				
1.3.1	*HF System Test Prerequisites*				
1.3.2	*Crypto System Test Prerequisites*				
2.1.1	*HF System Ohmic Measurements*				
2.1.2	*Crypto System Ohmic Measurements*				
2.2.1	*HF Systems Checks (*)*	*DT-MCO*			
		ATP			
2.2.2	*HF & Crypto System Checks (*)*	*DT-MCO*			
		ATP			
2.3.1	*Tuning Test*				
2.3.2	*Transmitted Power and VSWR*				
2.4.1	*HF System Communication Test*				
2.4.2	*HF & Crypto System Communication Test*				
2.5	*RFI Test*				
2.6	*ADF Blanking for Transmission Test*				
2.7	*Crypto Module and Panel Check*				
2.8	*Crypto Dimming Panel Check*				
2.9	*Initial condition restoring*				

Engineering dept signature(if required):----------

Quality dept approval:----------

(*) Specify whether DT-MCO or ATP have been carried out to cover Power Supply checks.

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	Number:	
	Revision:	

Customer Name and Address:	Telephone:
	Fax:
	B.T. Compliance Date:

Helicopter Model	S/N	Total Number	Total Hours	T.S.O.

Remarks:

Information:

We request your cooperation in filling this form, in order to keep out statistical data relevant to aircraft configuration up-to-date. The form should be filled in all its parts and sent to the above address or you can communicate the application also via Technical Bulletin Application Communication Section placed in Leonardo AW Customer Portal - MyCommunications Area. We thank you beforehand for the information given.