INSPECTION AND TEST PLAN

DISTRIBUTED ACOUSTIC SENSING

Bandweaver Product Family: **Horizon DAS**

DAS-HZ-02-ITP-001

Revision 1, October 2019

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Revision History

Rev.	Date.	Reason for issue	Author	Reviewer
1	30-Oct-2019	First issue	Erica Fernandes	

Contents

Revision History 2

1 Horizon Detector Unit (DU) 3

2 Horizon Processing Unit (PU) 3

3 Horizon DAS System: PU + DU 4

APPENDIX A: QP-0070 Horizon Quality Plan 5

1 Horizon Detector Unit (DU)

Activity	Activity Description	Test / Inspection / Requirement	Stage	Reference	BW	Cust.	Other	
1.1	**Manufacture of Horizon Interrogator by Bandweaver Factory**							
1.1.1	Manufacture of Horizon DAS	As per attached quality plan	Factory production	▪ **QP-0070 Horizon Quality Plan** ▪ Horizon DAS Picklist	H	R	R	Signed-off Test Report
1.2	**Procurement of Horizon Detector unit – Purchase from Bandweaver Factory**							
1.2.1	Purchase order and pick list issued to factory		Procurement	▪ Model as per Customer Purchase Order	H	-	-	Purchase order to approved supplier
1.2.2	Incoming materials inspection	Conformance to issued PO	Each delivery	▪ BW-OPS-05 - Goods Inwards ▪ Customer Purchase Order ▪ Purchase order to factory	H	-	-	Approved Delivery note

2 Horizon Processing Unit (PU)

Activity	Activity Description	Test / Inspection / Requirement	Stage	Reference	BW	Cust.	Other	
2.1	**Procurement of Horizon Processing unit – Bought-in item**							
2.1.1	Purchase order to supplier		Procurement	▪ BW-OPS-04 - Purchasing ▪ Specifications based on Customer Purchase Order and approved GTP	H	-	-	Purchase order to approved supplier
2.1.2	Incoming materials inspection	Conformance to issued PO	Each delivery	▪ BW-OPS-05 - Goods Inwards ▪ Customer Purchase Order	H	-	-	Approved Delivery note

3 Horizon DAS System: PU + DU

Activity	Activity Description	Test / Inspection / Requirement	Stage	Reference	BW	Cust.	Other	
3.1	**Assembly and test**							
3.1.1	Connect the system in the recommended configuration	As per reference drawing	System assembly	▪ DAS-HZ-02-DFI-001 – Horizon DAS connections	H	-	-	
3.1.2	FACTORY ACCEPTANCE TEST	As per factory acceptance test procedure pass criteria	Final testing	▪ Approved Factory Acceptance Test Procedure	H	W	TBC	Signed Factory Acceptance Test Report

Key:

H	Hold Point
W	Witness Point
R	Document Review only
-	No action
TBC	To be confirmed by the customer
BW	Bandweaver
Cust.	Bandweaver's Customer
Other	Any other relevant party: End user, Third party Witness etc.

APPENDIX A: QP-0070 Horizon Quality Plan

Bandweaver

Quality Plan

		Effective Date	18/01/2019
Document	Horizon DAS/ OFSS8000 Qality Plan	Version	1
File No	QP-0070	Number of Pages	2

Process name	Equipment / fixtures / materials category	Project management			Management						Exception Handling		Remark
		Process Characteristics	Product Features	Specification	Management basis	Measuring Equipment	Monitoring quantity	Monitoring frequency	Recording	Responsibility	Control limit	OCAP (Operating Criteria & Procedures)	
Machine assembly	Screwdriver				OFSS8000 whole assembly work instructions					Production	100%	1, to repair the defective element 2, notifty abnormality to quality team	Note: 1, chassis table kept clean to avoid scratching the surface of the chassis during dismantling 2, a wiring harness to verify correct wiring 3,Ensure contact of heat sink with chassis 4 , Take care installing connector tips
	Soldering iron	Tip temperature				191A soldering iron temperature tester		Before each production	Soldering Iron temperature inspection record sheet				
	Heat Gun						100%		OFSS8000 finished Designation Card				
	Strippers												
	Chassis			Scratch-free paint									
	Screw												
	Locknut												
	Harness		Wiring	Correct and orderly	OFSS8000 harness processing work instructions								
	PCBA board	Installation location		Meet the requirements of operating instructions	OFSS8000 whole assembly work instructions								
	Connector		End face quality	No dirt, no serious scratches		Connector end face detector					Meet the requirements	Clean with sterile wipres or in severe cases replacement	
	Wrist strap				Antistatic regulations	Wrist and foot ESD detctor	1 time	Daily pre-production	Static wrist strap shoes & Day checklist		Static wrist strap shoes & Day checklist		
Fusion splicing	The optical device				OFSS8000 fusion splice operating instructions		100%		OFSS8000 finished Designation Card	Quality	100% qualified	According to the non-conforming product process	note: 1, need to control the length of the fiber, the coils are neat, no bending 2. Before splicing, confirm that the boards are installed correctly.
	Fiber Fusion Splicer												
	Stripping pliers fiber												
	Fiber fusion heat shrinkable tube												
		Splice Mode											
	Wrist strap				Antistatic regulations	Wrist and foot ESD detctor	1 time	Daily pre-production	Static wrist strap shoes & Day checklist				

Bandweaver

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		Process Characteristics	Product Features	Specification	Management basis	Measuring Equipment	Monitoring quantity	Monitoring frequency	Recording	Responsibility	Control limit	OCAP (Operating Criteria & Procedures)	
Normal overall debugging	Power cable				OFSS8000 overall debugging work instructions				OFSS8000 overall debugging job log table	Production	100% qualified	1, Rework/ repair the defective element 2, Report the abnormality to the quality team. Batch records also requireupdaing	
	Serial Line												
	Computer												
		The system set up		Meet the requirements of operating instructions									
		Nonlinear adjustment of raw vibration data					100%						
		Adjust the attenuation curve data											
	Wrist strap				Antistatic regulations	Wrist and foot ESD detctor	1 time	Daily pre-production	Static wrist strap shoes & Day checklist		Static wrist strap shoes & Day checklist		
High and low temperature test	High and low temperature				OFSS8000 overall debugging work instructions	Multi-channel Thermometer	100%	Once a week	Temperature inspection record	Production	100% qualified	According to the non-conforming product process	
		Vibration test data		Meet the requirements of operating instructions					OFSS8000 finished Designation Card				
		Attenuation test data											
		Disturbance test											
	Wrist strap				Antistatic regulations	Wrist and foot ESD detctor	1 time	Daily pre-production	Static wrist strap shoes & Day checklist				
High-temperature burn	Aging room						100%		OFSS8000 finished Designation Card	Quality	100% qualified	According to the non-conforming product process	
		Disturbance test											
		Alarm function test		Alarm function normally									
QC Inspection	computer				OFSS8000 test machine operating instructions		100%		OFSS8000 whole test record form		100% qualified	According to the non-conforming product processing flow, the batch abnormality problem needs to issue a quality abnormality	
		Test items		Meet the requirements of operating instructions									
	Wrist strap				Antistatic regulations	Wrist and foot ESD detctor	1 time	Daily pre-production	Static wrist strap shoes & Day checklist				
Packaging	704 silicon adhesive				OFSS8000 packaging operations guide book		100%		OFSS8000 finished Designation Card	Production	100% qualified	Rework	
	The box												
	Packing tape												
	Accessories Material			Materials complete	Packing List								
OQC inspection storage				Good packaging, and meets the requirements	OFSS8000 packaging operations guide book		100%			Quality	100% qualified	Treated as unqualified process	