

Build Bill of Materials - Device Master Record

Date: 06/09/2020

Change Request #	BOM Rev	Change Description			Submitted By	Date					
N/A	X01	Initial Draft			A. Lynch	18-Mar-20					
Level	Rev	Description	Type	Supplier Name	P/N	UOM	Qty	NOVO PO	Lot Qty	Date Delivered	Comments
1	X01	Kit, Open Speech Platform	MTS	NOVO Engineering	UCD-001-A003	EA	1	92213335	6	4/10/2020	
1.1	X01	Assembly, PCD	MTS	NOVO Engineering	UCD-001-A001	EA	1		6		
1.2	X01	Assembly, DJB	MTS	NOVO Engineering	UCD-001-A002	EA	2		12		
1.2.2		w/ SLA Normal Resolution (Extreme White) case and chassis, numbered D-1-01 through D-1-06							6		Intech has indicated Extreme White is faster and cheaper to make than Extreme Gray
1.2.1		w/ SLA High Resolution (Extreme Gray) case and chassis, numbered D-1-07 through D-1-11							5		
1.2.3		w/ SLA Normal Resolution (Extreme Grey) chassis, top half case, SLA High Resolution (Extreme Gray) bottom half case, numbered D-1-12							1		
ASSEMBLY AND TEST PROCEDURES											
N/A	X01	Procedure, Build Up and Testing, OSP	N/A	N/A	UCD-001-D002	N/A	N/A				
Technician:											
Engineer:											

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N/A	X01	Initial Draft			A. Lynch	18-Mar-20					
Level	Rev	Description	Type	Supplier Name	P/N	UOM	Qty	NOVO PO	Lot Qty	Date Delivered	Comments
1	X01	Kit, Open Speech Platform	MTS	NOVO Engineering	UCD-001-A003	EA	1	92213335	14	6/8/2020	Only 12 complete working kits
1.1	X01	Assembly, PCD	MTS	NOVO Engineering	UCD-001-A001	EA	1		14		1 PCD having trouble booting
1.2	X01	Assembly, DJB	MTS	NOVO Engineering	UCD-001-A002	EA	2		28		24 fully assembled; min. 4 Rigid Board Cable Assys ready to be assembled
1.2.1		w/ SLA Normal Resolution (Extreme White) chasses, SLA High Resolution (Extreme Gray) case, numbered D-2-01 — D-2-24							1		
ASSEMBLY AND TEST PROCEDURES											
N/A	X01	Procedure, Build Up and Testing, OSP	N/A	N/A	UCD-001-D002	N/A	N/A				
Technician:											
Engineer:											

UCSD
OSP Kit Build

DOC. no.: UCD-001-D003-OSP_BOM_DMR

Revision: X01

Build Bill of Materials - Device Master Record

Date: 06/09/2020

Change Request #	BOM Rev	Change Description			Submitted By		Date					
N/A	X01	Initial Draft			A. Lynch		18-Mar-20					
Level	Rev	Description	Type	Supplier Name	P/N	UOM	Qty	NOVO PO	Lot Qty	Date Delivered	Comments	
1.1	X01	Assembly, PCD	MTS	NOVO Engineering	UCD-001-A001	EA	1		6	4/10/2020		
1.1.1	v8	OSP Carrier Board	MTS	Client	N/A	EA	1		6		Consigned by client	
1.1.1.1	N/A	ECO#1 R8 Resistor swap	PRC	Mouser	660-SR732BTTER133F		1		20			
1.1.1.2	N/A	Battery terminal installation rework			478-4684-2-ND				20			
1.1.2	N/A	SOM, Variscite DART-SD410	OTS	Client	N/A	EA	1		20		Consigned by client	
1.1.3	N/A	RF ANT 2.4/5.4GHZ PCB TRACE CAB	OTS	Digikey	1528-1589-ND		1		46		Consigned by client	
1.1.4	X04	Shell, Bottom Half, PCD Case	MTS	Protolabs	UCD-001-P001	EA	1	E31622	7	3/23/2020		
1.1.5	N/A	PCD Heat set inserts, M1.6	OTS	McMaster Carr	92120A150	EA	3					
1.1.5.1	X01	Set threaded inserts with soldering iron	PRC	NOVO Engineering	Per UCD-001-D002							
1.1.6	N/A	PCD Heat set inserts, M1.6	OTS	McMaster Carr	92120A140	EA	2					
1.1.6.1	N/A	Set threaded inserts with soldering iron	PRC	NOVO Engineering	Per UCD-001-D002							
1.1.7	X02	Switch, Power, PCD Case	MTS	NOVO Engineering	UCD-001-P003	EA	1					
1.1.8	X02	Button, Side, PCD Case	MTS	NOVO Engineering	UCD-001-P004	EA	2					
1.1.9	N/A	Battery, Samsung BP2000	OTS	Client	N/A	EA	1		20		Consigned by client	
1.1.10	X04	Shell, Top Half, PCD Case	MTS	Protolabs	UCD-001-P002	EA	1	E31622	7	3/23/2020		
1.1.10.1	N/A	PCD adhesive foam tape	OTS	McMaster Carr	85925K119	CM	4					
1.1.11	N/A	PCD Socket Head Cap Screws, M1.4x8	OTS	McMaster Carr	92290A846	EA	2					
1.1.12	N/A	PCD Socket Head Cap Screws, M1.6x8	OTS	McMaster Carr	91292A264	EA	3					
1.1.13	N/A	PCD Lanyard Dowel Pins	OTS	McMaster Carr	91585A283	EA	2					
1.1.14	N/A	PCD Double hook lanyards	OTS	Amazon	SPID-02	EA	1					
1.1.15	X01	Verify that PCD's Wi-Fi network is visible	PRC	NOVO Engineering	Per UCD-001-D002	EA	1		6			
1.1.16	X01	Serialize P-1-01 thru P-1-06	PRC	NOVO Engineering	Per UCD-001-D002	EA	1		6			
ASSEMBLY AND TEST PROCEDURES												
N/A	X01	Procedure, Build Up and Testing, OSP	N/A	N/A	UCD-001-D002	N/A	N/A			Technician		
TOOLS												
N/A	N/A	Soldering iron including needle point tip (for installing thread inserts)	N/A	N/A	N/A	EA	1			Engineer:		
N/A	N/A	Metric Allen key wrenches (1.5 and 2.0 hex head)	N/A	N/A	N/A	EA	1					

UCSD
OSP Kit Build

DOC. no.: UCD-001-D003-OSP_BOM_DMR

Revision: X01

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Change Request #	BOM Rev	Change Description			Submitted By		Date					
N/A	X01	Initial Draft			A. Lynch		18-Mar-20					
Level	Rev	Description	Type	Supplier Name	P/N	UOM	Qty	NOVO PO	Lot Qty	Date Delivered	Comments	
1.2	X01	Assembly, DJB	MTS	NOVO Engineering	UCD-001-A002	EA	1					
1.2.1	X01	Sub Assy, Rigid Board Cable, DJB	MTS	NOVO Engineering	UCD-001-A005	EA	1					
1.2.1.1	X01	Sub Assy, USB Cable, DJB	MTS	NOVO Engineering	UCD-001-A004	EA	1					
1.2.1.1.1	N/A	4c. 33 awg Micro Mini Cable-GRY/SP	OTS	Mogami	W2739081000	M	0.6	N/A	100	3/19/2020	Consigned by Client	
1.2.1.1.2	N/A	Male plug USB 3.1 Type C DIY kit	OTS	NewEgg	9SIAERN68H9048	EA	1	E31603	50			
1.2.1.1.2.1	N/A	Plug Board	OTS	NewEgg	9SIAERN68H9048	EA	1					
1.2.1.1.2.2	N/A	Outer Housing	OTS	NewEgg	9SIAERN68H9048	EA	1					
1.2.1.1.2.3	N/A	Inner Housing	OTS	NewEgg	9SIAERN68H9048	EA	1					
1.2.1.1.2.4	N/A	Rubber Ferrule	OTS	NewEgg	9SIAERN68H9048	EA	1					
1.2.1.1.3	N/A	Wire Solder	OTS	(Generic)	N/A	DROPS	8					
1.2.1.1.3.1	X01	Solder wires to USB plug board	PRC	NOVO Engineering	Per UCD-001-D002	EA	4					
1.2.1.1.4	N/A	Metal ferrule, flanged	OTS	(Generic)	N/A	EA	1					
1.2.1.1.4.1	X01	Crimp behind rubber ferrule	PRC	NOVO Engineering	Per UCD-001-D002	EA	1					
1.2.1.1.5	N/A	Electronics potting glue	OTS	(Generic)	N/A	DROPS	20					
1.2.1.1.5.1	X01	Back fill inner housing	PRC	NOVO Engineering	Per UCD-001-D002	EA	1					
1.2.1.1.6	N/A	Heat shrink cable sleeve	OTS	(Generic)	N/A	MM	15					
1.2.1.1.6.1	X01	Heatshrink onto cable	PRC	NOVO Engineering	Per UCD-001-D002	EA	1					
1.2.1.1.7	N/A	Black cyanacrolate, Loctite 4211	OTS	McMaster-Carr	74795A25	DROPS	4					
1.2.1.1.7.1	X01	Glue outer housing to inner housing	PRC	NOVO Engineering	Per UCD-001-D002	EA	1					
1.2.1.2	v2	DJB Rigid Board (w/o Bone Conduction Mic)	MTS	Client	N/A	EA	1		14	3/19/2020	Consigned by Client (6 of 20 delivered had bone conductor mic)	
1.2.1.2.1	N/A	Flash board	PRC	Client	N/A	EA	1					
1.2.1.3	X01	Grommet, Strain Relief, Housing, Alt, DJB	MTS	NOVO Engineering	UCD-001-P010	EA	1					
1.2.1.4	X01	Serialize with labels D-1-01 thru D-1-12	PRC	NOVO Engineering	Per UCD-001-D002				12			
1.2.2	v2	DJB Flex Board	MTS	Client	N/A	EA	1		40		Consigned by Client	
1.2.3	N/A	DJB P51-4994 mic-screen	OTS	In'Tech Industries	99A-9000818	EA	2				Consigned by Client	
1.2.4	N/A	DJB mic boot (pack of 200?)	OTS	In'Tech Industries	99A-9000817	EA	2				Consigned by Client	
1.2.5	N/A	Chassis, Left Half, DJB Case	OTS	In'Tech Industries	DJB_Case_Rev-4-Chassis_L_1	EA	1					
1.2.5.1	N/A	SLA High resolution (0.002" layer) Extreme Gray						N/A	10	3/5/2020	Intech has indicated Extreme White is faster and cheaper to make than Extreme Gray	
1.2.5.2	N/A	SLA Normal resolution (0.004" layer) Extreme White						N/A	2	3/5/2020		
1.2.5.3	N/A	SLA Normal resolution (0.004" layer) Extreme White						N/A	10	3/23/2020		
1.2.6	N/A	Chassis, Right Half, DJB Case	OTS	In'Tech Industries	DJB_Case_Rev-4-Chassis_R_1	EA	1					

UCSD
OSP Kit Build

DOC. no.: UCD-001-D003-OSP_BOM_DMR

Revision: X01

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Level	Rev	Description	Type	Supplier Name	P/N	UOM	Qty	NOVO PO	Lot Qty	Date Delivered	Comments
1.2.6.1	N/A	SLA High resolution (0.002" layer) Extreme Gray						N/A	10	3/5/2020	Intech has indicated Extreme White is faster and cheaper to make than Extreme Gray
1.2.6.2	N/A	SLA Normal resolution (0.004" layer) Extreme White						N/A	2	3/5/2020	
1.2.6.3	N/A	SLA Normal resolution (0.004" layer) Extreme White						N/A	10	3/23/2020	
1.2.7	N/A	Shell, Bottom Half, DJB Case	OTS	In'Tech Industries	DJB_Case_Rev-4-Bot	EA	1				
1.2.7.1	N/A	SLA High resolution (0.002" layer) Extreme Gray						N/A	10	3/5/2020	Intech has indicated Extreme White is faster and cheaper to make than Extreme Gray
1.2.7.2	N/A	SLA Normal resolution (0.004" layer) Extreme White						N/A	2	3/5/2020	
1.2.7.3	N/A	SLA Normal resolution (0.004" layer) Extreme White						N/A	10	3/23/2020	
1.2.8	N/A	Shell, Top Half, DJB Case	OTS	In'Tech Industries	DJB_Case_Rev-4-Top	EA	1				
1.2.8.1	N/A	SLA High resolution (0.002" layer) Extreme Gray						N/A	10	3/5/2020	Intech has indicated Extreme White is faster and cheaper to make than Extreme Gray
1.2.8.2	N/A	SLA Normal resolution (0.004" layer) Extreme White						N/A	2	3/5/2020	
1.2.8.3	N/A	SLA Normal resolution (0.004" layer) Extreme White						N/A	10	3/23/2020	
1.2.9	N/A	DJB chassis pins, .270	OTS	In'Tech Industries	99A-1137002000	EA	2				
1.2.10	N/A	DJB chassis pins, .240	OTS	In'Tech Industries	99A-2137921000	EA	1				
1.2.11	N/A	DJB chassis pins, .230	OTS	In'Tech Industries	99A-1137003100	EA	1				
1.2.12	N/A	Black cyanacrolate, Loctite 4211	OTS	McMaster-Carr	74795A25	DROPS	6				
1.2.12.1	X01	Glue strain relief grommet to case	PRC	NOVO Engineering	Per UCD-001-D002						
1.2.13	N/A	RIC Link, left	OTS	In'Tech Industries	N/A	EA	1		3	3/19/2020	Consigned by Client
1.2.14	N/A	RIC Link, right	OTS	In'Tech Industries	N/A	EA	1		3	3/19/2020	Consigned by Client
ASSEMBLY AND TEST PROCEDURES											
N/A	X01	Procedure, Build Up and Testing, OSP	N/A	N/A	UCD-001-D002	N/A	N/A				
TOOLS											
N/A	N/A	Tweezers	N/A	N/A	N/A	EA	1				
N/A	N/A	Heat gun (for heat shrink cable sleeve)	N/A	N/A	N/A	EA	1				
N/A	N/A	Wire clippers/strippers	N/A	N/A	N/A	EA	1				
N/A	N/A	Metal ferrule crimping implement	N/A	N/A	N/A	EA	1				
Technician:											
Engineer:											

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N/A	X01	Initial Draft			A. Lynch		18-Mar-20					
Level	Rev	Description	Type	Supplier Name	P/N	UOM	Qty	NOVO PO	Lot Qty	Date Delivered	Comments	
1.1	X01	Assembly, PCD	MTS	NOVO Engineering	UCD-001-A001	EA	1		6	4/10/2020		
1.1.1	v8	OSP Carrier Board	MTS	Client	N/A	EA	1		6		Consigned by client	
1.1.1.1	N/A	ECO#1 R8 Resistor swap	PRC	Mouser	660-SR732BTTER133F		1		20			
1.1.1.2	N/A	Battery terminal installation rework			478-4684-2-ND				20			
1.1.2	N/A	SOM, Variscite DART-SD410	OTS	Client	N/A	EA	1		20		Consigned by client	
1.1.3	N/A	RF ANT 2.4/5.4GHZ PCB TRACE CAB	OTS	Digikey	1528-1589-ND		1		46		Consigned by client	
1.1.4	X04	Shell, Bottom Half, PCD Case	MTS	Protolabs	UCD-001-P001	EA	1	E31782	15	4/24/2020		
1.1.5	N/A	PCD Heat set inserts, M1.6	OTS	McMaster Carr	92120A150	EA	3					
1.1.5.1	X01	Set threaded inserts with soldering iron	PRC	NOVO Engineering	Per UCD-001-D002							
1.1.6	N/A	PCD Heat set inserts, M1.6	OTS	McMaster Carr	92120A140	EA	2					
1.1.6.1	N/A	Set threaded inserts with soldering iron	PRC	NOVO Engineering	Per UCD-001-D002							
1.1.7	X02	Switch, Power, PCD Case	MTS	NOVO Engineering	UCD-001-P003	EA	1					
1.1.8	X02	Button, Side, PCD Case	MTS	NOVO Engineering	UCD-001-P004	EA	2					
1.1.9	N/A	Battery, Samsung BP2000	OTS	Client	N/A	EA	1		20		Consigned by client; (1 offbrand battery included)	
1.1.10	X04	Shell, Top Half, PCD Case	MTS	Protolabs	UCD-001-P002	EA	1	E31782	14	4/24/2020		
1.1.10.1	N/A	PCD adhesive foam tape	OTS	McMaster Carr	85925K119	CM	4					
1.1.11	N/A	PCD Socket Head Cap Screws, M1.4x8	OTS	McMaster Carr	92290A846	EA	2					
1.1.12	N/A	PCD Socket Head Cap Screws, M1.6x8	OTS	McMaster Carr	91292A264	EA	3					
1.1.13	N/A	PCD Lanyard Dowel Pins	OTS	McMaster Carr	91585A283	EA	2					
1.1.14	N/A	PCD Double hook lanyards	OTS	Amazon	SPID-02	EA	1					
1.1.15	X01	Verify that PCD's Wi-Fi network is visible	PRC	NOVO Engineering	Per UCD-001-D002	EA	1		6			
1.1.16	X01	Serialize P-2-01 thru P-2-14	PRC	NOVO Engineering	Per UCD-001-D002	EA	1		6			
ASSEMBLY AND TEST PROCEDURES												
N/A	X01	Procedure, Build Up and Testing, OSP	N/A	N/A	UCD-001-D002	N/A	N/A					

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Level	Rev	Description	Type	Supplier Name	P/N	UOM	Qty	NOVO PO	Lot Qty	Date Delivered	Comments
TOOLS											
N/A	N/A	Soldering iron including needle point tip (for installing thread inserts)	N/A	N/A	N/A	EA	1				
N/A	N/A	Metric Allen key wrenches (1.5 and 2.0 hex head)	N/A	N/A	N/A	EA	1				
Technician:											
Engineer:											

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Date: 06/09/2020

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N/A	X01	Initial Draft			A. Lynch	18-Mar-20					
Level	Rev	Description	Type	Supplier Name	P/N	UOM	Qty	NOVO PO	Lot Qty	Date Delivered	Comments
1.2	X01	Assembly, DJB	MTS	NOVO Engineering	UCD-001-A002	EA	1				
1.2.1	X01	Sub Assy, Rigid Board Cable, DJB	MTS	NOVO Engineering	UCD-001-A005	EA	1				
1.2.1.1	X01	Sub Assy, USB Cable, DJB	MTS	NOVO Engineering	UCD-001-A004	EA	1				
1.2.1.1.1	N/A	4c. 33 awg Micro Mini Cable-GRY/SP	OTS	Mogami	W2739081000	M	0.6	N/A	100	3/19/2020	Consigned by Client
1.2.1.1.2	N/A	Male plug USB 3.1 Type C DIY kit	OTS	NewEgg	9SIAERN68H9048	EA	1	E31603	50		
1.2.1.1.2.1	N/A	Plug Board	OTS	NewEgg	9SIAERN68H9048	EA	1				
1.2.1.1.2.2	N/A	Outer Housing	OTS	NewEgg	9SIAERN68H9048	EA	1				
1.2.1.1.2.3	N/A	Inner Housing	OTS	NewEgg	9SIAERN68H9048	EA	1				
1.2.1.1.2.4	N/A	Rubber Ferrule	OTS	NewEgg	9SIAERN68H9048	EA	1				
1.2.1.1.3	N/A	Wire Solder	OTS	(Generic)	N/A	DROPS	8				
1.2.1.1.3.1	X01	Solder wires to USB plug board	PRC	NOVO Engineering	Per UCD-001-D002	EA	4				
1.2.1.1.4	N/A	Metal ferrule, flanged	OTS	(Generic)	N/A	EA	1				
1.2.1.1.4.1	X01	Crimp behind rubber ferrule	PRC	NOVO Engineering	Per UCD-001-D002	EA	1				
1.2.1.1.5	N/A	Electronics potting glue	OTS	(Generic)	N/A	DROPS	20				
1.2.1.1.5.1	X01	Back fill inner housing	PRC	NOVO Engineering	Per UCD-001-D002	EA	1				
1.2.1.1.6	N/A	Heat shrink cable sleeve	OTS	(Generic)	N/A	MM	15				
1.2.1.1.6.1	X01	Heatshrink onto cable	PRC	NOVO Engineering	Per UCD-001-D002	EA	1				
1.2.1.1.7	N/A	Black cyanacrolate, Loctite 4211	OTS	McMaster-Carr	74795A25	DROPS	4				
1.2.1.1.7.1	X01	Glue outer housing to inner housing	PRC	NOVO Engineering	Per UCD-001-D002	EA	1				
1.2.1.2	v2	DJB Rigid Board (w/o Bone Conduction Mic)	MTS	Client	N/A	EA	1		14	3/19/2020	Consigned by Client (6 of 20 delivered had bone conductor mic)
1.2.1.3	v2	DJB Rigid Board (w/o Bone Conduction Mic)	MTS	Client	N/A	EA	1		30	5/22/2020	Consigned by Client
1.2.1.2.1	N/A	Flash board	PRC	Client	N/A	EA	1				
1.2.1.3	X01	Grommet, Strain Relief, Housing, Alt, DJB	MTS	NOVO Engineering	UCD-001-P010	EA	1				
1.2.1.4	X01	Serialize with labels D-2-01 thru D-1-28	PRC	NOVO Engineering	Per UCD-001-D002				28		
1.2.2	v2	DJB Flex Board	MTS	Client	N/A	EA	1		40		Consigned by Client
1.2.3	N/A	DJB P51-4994 mic-screen	OTS	In'Tech Industries	99A-9000818	EA	2				Consigned by Client
1.2.4	N/A	DJB mic boot (pack of 200?)	OTS	In'Tech Industries	99A-9000817	EA	2				Consigned by Client
1.2.5	N/A	Chassis, Left Half, DJB Case	OTS	In'Tech Industries	DJB_Case_Rev-4-Chassis_L_1	EA	1				
1.2.5.1	N/A	SLA Normal resolution (0.004" layer) Extreme White						N/A	45	3/23/2020	
1.2.6	N/A	Chassis, Right Half, DJB Case	OTS	In'Tech Industries	DJB_Case_Rev-4-Chassis_R_1	EA	1				
1.2.6.1	N/A	SLA Normal resolution (0.004" layer) Extreme White						N/A	45	3/23/2020	
1.2.7	N/A	Shell, Bottom Half, DJB Case	OTS	In'Tech Industries	DJB_Case_Rev-4-Bot	EA	1				
1.2.7.1	N/A	SLA High resolution (0.002" layer) Extreme Gray						N/A	45	3/5/2020	

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1.2.8	N/A	Shell, Top Half, DJB Case	OTS	In'Tech Industries	DJB_Case_Rev-4-Top	EA	1				
1.2.8.1	N/A	SLA High resolution (0.002" layer) Extreme Gray						N/A	45	3/5/2020	
1.2.9	N/A	DJB chassis pins, .270	OTS	In'Tech Industries	99A-1137002000	EA	2				
1.2.10	N/A	DJB chassis pins, .240	OTS	In'Tech Industries	99A-2137921000	EA	1				
1.2.11	N/A	DJB chassis pins, .230	OTS	In'Tech Industries	99A-1137003100	EA	1				
1.2.12	N/A	Black cyanacrolate, Loctite 4211	OTS	McMaster-Carr	74795A25	DROPS	6				
1.2.12.1	X01	Glue strain relief grommet to case	PRC	NOVO Engineering	Per UCD-001-D002						
1.2.13	N/A	RIC Link, left	OTS	In'Tech Industries	N/A	EA	1		3	3/19/2020	Consigned by Client
1.2.14	N/A	RIC Link, right	OTS	In'Tech Industries	N/A	EA	1		3	3/19/2020	Consigned by Client
ASSEMBLY AND TEST PROCEDURES											
N/A	X01	Procedure, Build Up and Testing, OSP	N/A	N/A	UCD-001-D002	N/A	N/A				
TOOLS											
N/A	N/A	Tweezers	N/A	N/A	N/A	EA	1				
N/A	N/A	Heat gun (for heat shrink cable sleeve)	N/A	N/A	N/A	EA	1				
N/A	N/A	Wire clippers/strippers	N/A	N/A	N/A	EA	1				
N/A	N/A	Metal ferrule crimping implement	N/A	N/A	N/A	EA	1				
Technician:											
Engineer:											