

TITLE **NAV4/5 MAIN PCB ASSEMBLY**
 DOC REF **PLT00558**
 DWG REF **DWG00557**

ISSUE DATE APP'D CH No.
 8 09/10/2002 1329
 9 27/07/2004 CJM C2946



McMurdo Limited
 Silver Point Airport Service Road
 Portsmouth PO3 5PB

THIS DOCUMENT IS UNCONTROLLED UNLESS OTHERWISE STATED

ITEM	QTY	REFERENCE	MFRs PART No	MFR	DESCRIPTION	PITCH	PACKAGE	COMMENTS
1	2	U1,2	74HC245	VARIOUS	IC, OCTAL BI-DIR. BUFFER		DIP20	
2	1	U3	74AC32	VARIOUS	IC, QUAD OR		DIP14	
3	1	U4	74AC04	VARIOUS	IC, HEX INVERTER		DIP14	
4	1	U5	uPD27C512	NEC	IC, CMOS EPROM 64k X 8, 200ns or faster		CERAMIC DIP	Program s/w 915XX Version 2.10
5	1	U6	uPD43256C-xxL	NEC	IC, CMOS SRAM 32k X 8, LOW PWR, 150ns or faster			L OR LL VERSIONS ONLY
6	1	U7	74AC139	VARIOUS	IC, DUAL 1 OF 4 DECODER		DIP16	
7	1	U8	uPD70320L-8	NEC	IC, 16 BIT MICROCONTROLLER		PLCC84	
8	1	U9	74HC132	NAT SEMI	IC, QUAD SCHMITT NAND		DIP14	ALT MFR'S MAY CHANGE BEEPER
9	1	U10	ULN2003A	VARIOUS	IC, DARLINGTON ARRAY		PLASTIC DIL	
10	1	U11	MAX690CPA	MAXIM	IC, uP SUPERVISORY CIRCUIT		DIP8	
11	1	U13	4013B	VARIOUS	IC, DUAL 'D' TYPE FLIP FLOP		DIP14	
12	1	U14	LM2576HVT-5.0	NAT SEMI	IC, SWITCHMODE VOLTAGE REGULATOR, HI-VOLTAGE		TO220-5	
13	1	U15	SN75179	NAT SEMI	IC, DIFFERENTIAL DRIVER & RECEIVER PAIR		DIP8	
14								
15	1	Q1	BS170	VARIOUS	MOSFET, N-CHANNEL SWITCH		TO92	
16	4	Q2,3,4,7	BC327	VARIOUS	TRANSISTOR, PNP		TO92	
17	1	Q5	BD680	VARIOUS	TRANSISTOR, PNP POWER DARLINGTON		TO126	
18	1	Q6	BC547B	VARIOUS	TRANSISTOR, NPN		TO92	
19								
20	3	D1,2,8	1N4148	VARIOUS	DIODE, HIGH SPEED SILICON	0.3"	DO-35	
21	2	D4,6	BYV28-200	VARIOUS	DIODE, ULTRAFAST RECTIFIER 3.5A		SOD-64	
22	1	D5	1.5KE39A	GS	DIODE, TRANSIENT SUPPRESSOR, 1500W			
23	1	D7	BZX79-C4V7	PHILIPS	DIODE, ZENER 4V7 400mW	0.3"	DO-35	
24								
25	1	XTAL1		VARIOUS	CRYSTAL, 14.74560MHz, PL RES, Cl=30pF		HC18/U	HIGH STABILITY 30PPM
26	1	BP1	KBS-15DB-4A	KYOCERA	PIEZO CERAMIC BEEPER, FLYING LEADS			
27	1	RL1	G2E-184PH-M	IMO	RELAY, SPCO, 1A 24VDC, 5V COIL, SEALED		DIP FORMAT	PED 18731131561, TAIKO NXE-6K
28								
29	1	R1	MRS16T	PHILIPS	RES, 3k9 1%	0.3"		
30	3	R2,6,25	MRS16T	PHILIPS	RES, 180R 1% 50PPM	0.3"		
31	1	R3	MRS16T	PHILIPS	RES, 100R 1% 50PPM	0.3"		
32	1	R4	MRS16T	PHILIPS	RES, 10R 1% 50PPM	0.3"		

TITLE **NAV4/5 MAIN PCB ASSEMBLY**
 DOC REF **PLT00558**
 DWG REF **DWG00557**

ISSUE DATE APP'D CH No.
 8 09/10/2002 1329
 9 27/07/2004 CJM C2946



McMurdo Limited
 Silver Point Airport Service Road
 Portsmouth PO3 5PB

THIS DOCUMENT IS UNCONTROLLED UNLESS OTHERWISE STATED

ITEM	QTY	REFERENCE	MFRs PART No	MFR	DESCRIPTION	PITCH	PACKAGE	COMMENTS
33	4	R5,16,22,30	MRS16T	PHILIPS	RES, 2k2 1% 50PPM	0.3"		
34	4	R7,8,17,33	MRS16T	PHILIPS	RES, 4k7 1% 50PPM	0.3"		
35	3	R9,26,29	MRS16T	PHILIPS	RES, 47k 1% 50PPM	0.3"		
36	1	R12	MRS16T	PHILIPS	RES, 5k1 1% 50PPM	0.4"		
37	1	R13	MRS16T	PHILIPS	RES, 15k 1% 50PPM	0.3"		
38	1	R19	MRS16T	PHILIPS	RES, 22k 1% 50PPM	0.3"		
39	1	R20	MRS16T	PHILIPS	RES, 470k 1%	0.3"		
40	1	R21	MRS16T	PHILIPS	RES, 100k 1% 50PPM	0.3"		
41	1	R31	MRS16T	PHILIPS	RES, 33k 1% 50PPM	0.3"		
42	7	R41,42,43,44,45,46,47	4609X-101-10k	BOURNS	RES ARRAY, 10k x 8, SIL			
44	1	R48	4608X-102-100R	BOURNS	RES ARRAY, 100R x 4 INDIVIDUAL, SIL			
45	1	R49	4608X-102-100k	BOURNS	RES ARRAY, 100k x 4 INDIVIDUAL, SIL			
46	1	R27	MRS25	PHILIPS	RES, 2k2 1% 100PPM	0.3"		
47	2	R23,28	4608X-102-220R	BOURNS	RES ARRAY, 220R x 4 INDIVIDUAL, SIL			
48	2	R15,18	4610X-102-220R	BOURNS	RES ARRAY, 220R x 5 INDIVIDUAL, SIL			
49	1	R40	4609X-102-2K2	BOURNS	RES ARRAY, 2k2 x 8, SIL			
50	2	RV1,2	B72205S0110K101	EPCOS	VARISTOR, S05K11	0.2"		
51	1	C2	FKC2	WIMA	CAP, POLYCARBONATE, 470p 100V	5mm		
52	9	C4,5,7,10,15,16,20,21,23	CW15A 472M	PHILIPS	CAP, CER.MULTILAYER, 4n7 100V	0.1"		
53	5	C6,17,18,25,29	CW20C104M-244	PHILIPS	CAP, CER.MULTILAYER, 100n 63V	0.1"		
54	4	C1,3,14,19	CW15A102M	PHILIPS	CAP, CER MULTILAYER, 1n 100V	0.1"		
55	1	C9	489D475X0010A6	SPRAGUE	CAP, TANTALUM, 4u7 10V	0.2"		
56	1	C11	682 34569	PHILIPS	CAP, CERAMIC LOW K, 56pF 100V	0.1"		
57	1	C12	682 10229	PHILIPS	CAP, CERAMIC LOW K, 22pF 100V	0.1"		
58	1	C13	FKS2	WIMA	CAP, MET.POLYESTER, 3n3 100V 10%	0.2"		
59	2	C8,24	DSG	DUBILIER	CAP, ELECT., 470uF 63V, LO ESR	5mm		MAX DIA = 12.5mm, HEIGHT = 20mm
60	1	C26	DSG	DUBILIER	CAP, ELECT., 1000uF 10V, LO ESR	5mm		MAX DIAMETER = 10mm
61	1	C27	DSG	DUBILIER	CAP, ELECT., 470uF 10V, LO ESR	3.5mm		MAX DIAMETER = 8mm
62	1	C28	TZ03R300ER169	MURATA	CAP, VARIABLE, 5p2 - 30p 100V	5mm		
63	1	BR1	LM2430-3PH	SAFT	BATTERY, 200mAh LITHIUM PCB MTG		VERT. MTG.	CAN USE CR2032 TYPES
64								
65	1	L1	RN112-0.8/02	SCHAFFNER	COMMON MODE CHOKE			

TITLE **NAV4/5 MAIN PCB ASSEMBLY**
 DOC REF **PLT00558**
 DWG REF **DWG00557**

ISSUE DATE APP'D CH No.
 8 09/10/2002 1329
 9 27/07/2004 CJM C2946



McMurdo Limited
 Silver Point Airport Service Road
 Portsmouth PO3 5PB

THIS DOCUMENT IS UNCONTROLLED UNLESS OTHERWISE STATED

ITEM	QTY	REFERENCE	MFRs PART No	MFR	DESCRIPTION	PITCH	PACKAGE	COMMENTS
66	1	L2	14 224 35	NEWPORT	INDUCTOR, 220uH 3.5A, BOBBIN TYPE			
67	1	L3	B78108-S1103-K	SIEMENS	INDUCTOR, 10uH 0.68A	0.6"	AXIAL	
68	1	L4	181LY-473J	TOKO	INDUCTOR, 10RB SERIES, 47mH			
69	2	L5,6	BL01RN1-A1D2B	MURATA	INDUCTOR, EMI SUPPRESSION			
70	1	J1	SL10-CL-V	KLIPPON	CONNECTOR, PCB HEADER 10 WAY	0.2"		
71	1	J4	FLS14-5-T	FLAIR	CONNECTOR, 5 WAY ST PIN LOCKING HEADER	0.1"		
72	1	J5	T51-1000-1080	FLAIR	CONNECTOR, 8 WAY	0.1"		
73	1	J7	FLS14-4-T	FLAIR	CONNECTOR, 4 WAY ST PIN LOCKING HEADER	0.1"		
74	2	J8,12	9-215079-0	AMP	CONNECTOR, 20 WAY ST PIN HEADER	0.05"		
75	1	J9	9-215079-2	AMP	CONNECTOR, 12 WAY RA PIN HEADER	0.05"		
76	1	J13	FLS14-10-T	FLAIR	CONNECTOR, 10 WAY ST PIN LOCKING HEADER	0.1"		
77								
78	1	LK1		VARIOUS	CONNECTOR, DUAL ROW 3 WAY PIN HEADER	0.1"		
79	2	LK1		VARIOUS	CONNECTOR, JUMPER LINKS			
80								
81	1	U5	D01-9973221	HARWIN	CON, 32 PIN IC STRIP SOCKET, SIL	0.1"		BREAK INTO 2 x 14 WAY
82	1	U8	D72184C-06	HARWIN	CON, 84 PIN PLCC SOCKET			
83	1	U1	D01-9973221	HARWIN	CON, 32 PIN IC STRIP SOCKET, SIL	0.1"		BREAK INTO 2 x 10 WAY
84								
85	1		0580.PCB	ICS	PCB, 127 X 90.5 4 LAYER PTH ISSUE 3			
86								
87								
88								
89								
90								
91								
92								
93								
94								
95								
96								
97								