

TITLE **NAV-5 DUAL (518/490) RECEIVER PCB ASSY**
 DOC REF **PLT02121.XLS**
 DWG REF
 DATE **11/04/2002**

APPROVED ISSUE DATE MOD
 CJM 6 03/03/2003 1356
 CJM 7 22/07/2004 C2881

THIS DOCUMENT IS UNCONTROLLED, UNLESS OTHERWISE STATED

ITEM	QTY	REFERENCE	MFRs PART No	MFR	DESCRIPTION	PITCH	PACKAGE
1	6	C104,110,111,112,113,116			CAPACITOR, MULTI CER, 10n, X7R, 50V		0603
2	37	C103,106,200,202,203,206,			CAPACITOR, MULTI CER, 100n, X7R, 25V		0805
		C209,213,215,216,224,225,					
		C226,234,235,236,238,249,					
		C252,302,303,306,309,313,					
		C315,316,324,325,326,334,					
		C335,336,338,349,352,501,					
		C513					
3	1	C102			CAPACITOR, MULTI CER, 100n, X7R, 50V		1206
4	15	C100,127,212,223,237,239,	EEVFC1H1R0R	PANASONIC	CAPACITOR, AL SMD, 1u, 50V, CASE B		SM_ELEC_4
		C250,251,253,312,323,337,					
		C339,350,351					
5	3	C101,107,114	EEVFC1H100P	PANASONIC	CAPACITOR, AL SMD, 10u, 50V, CASE D		SM_ELEC_6.3
6	2	C205,305			CAPACITOR, MULTI CER, 330p, X7R, 16V		0603
7	2	C204,304			CAPACITOR, MULTI CER, 220p, X7R, 16V		0603
8	2	C208,308	TZBX4 series	MURATA	8p5-40p TRIM CAP		
9	28	C201,210,211,214,217,218,			CAPACITOR, CERAMIC NP0, 10n, 25V, 5%		1206
		C221,227,230,232,233,242,					
		C243,245,301,310,311,314,					
		C317,318,327,332,333,321,					
		C330,342,343,345					
10	8	C220,229,241,244,320,329,			CAPACITOR, CERAMIC NP0, 2n7, 25V, 5%		1206
		C341,344					
11	4	C219,228,319,328			CAPACITOR, CERAMIC NP0, 8n2, 25V, 5%		1206
12	10	C109,117,118,119,222,231,	EEVFC1C470R	PANASONIC	CAPACITOR, AL SMD, 47u, 16V CASE D		SM_ELEC_6.3
		C240,322,331,340					
13	2	C108,115	ECA1HM471	PANASONIC	CAPACITOR, ELECT., 470uF 50V	5mm	
14	6	C502,503,504,506,509,512			CAPACITOR, MULTI CER, 150p, COG, 25V		0805
15	2	C507,508			CAPACITOR, MULTI CER, 1800p, COG, 25V		1206
16	2	C510,511			CAPACITOR, MULTI CER, 4700p, COG, 25V		1206
57	1	C002			CAPACITOR, MULTI CER, 1uF, Z5U, 25V		1206
58	1	C307			CAPACITOR, MULTI CER, 18p, COG, 25V		0603
61	2	C254,300			CAPACITOR, MULTI CER, 1n, X7R 50V		0603

TITLE **NAV-5 DUAL (518/490) RECEIVER PCB ASSY**
 DOC REF **PLT02121.XLS**
 DWG REF
 DATE **11/04/2002**

APPROVED ISSUE DATE MOD
 CJM 6 03/03/2003 1356
 CJM 7 22/07/2004 C2881

THIS DOCUMENT IS UNCONTROLLED, UNLESS OTHERWISE STATED

ITEM	QTY	REFERENCE	MFRs PART No	MFR	DESCRIPTION	PITCH	PACKAGE
17	1	D101	GF1A	GEN SEMI	DIODE, GF1A		DO-214BA
18	4	D200,201,300,301	BAV99		DIODE, BAV99		SOT-23
19	4	D500,501,502,503	BAS16		DIODE, BAS16		SOT-23
20	1	L100	RN102-0.3/0.2	SCHAFFNER	COMMON MODE CHOKE		
21	1	L500	NL252018T100J	TDK	INDUCTOR, 10uH		1210
22	2	L503,506	RZCS-45330R	TOKO	TRANSFORMER, PRI 15, SEC1 82, SEC 2 60		
23	4	L501,502,504,505	RZCS-45329R	TOKO	TRANSFORMER, PRI 6, SEC1 82, SEC 2 60		
24	2	Q200,300	BC847B		TRANSISTOR, NPN		SOT-23
25	4	R200,201,300,301			RESISTOR, 3k3		0603
26	4	R109,110,111,114			RESISTOR, 47k		0603
27	2	R204,304			RESISTOR, 1k		0603
28	8	R104,105,106,107,228,229, R328,329			RESISTOR, 10k		0603
29	4	R205,206,305,306			RESISTOR, 47k		0603
30	8	R203,207,211,220,303,307, R311,320			RESISTOR, 2k4		0603
31	8	R208,214,221,222,308,314, R321,322			RESISTOR, 120K		0603
32	4	R210,213,310,313			RESISTOR, 22k		0805
33	20	R215,216,217,223,224,225, R234,235,236,237,315,316, R317,323,324,325,334,335, R336,337			RESISTOR, 130k		0603
34	3	R212,312,500			RESISTOR, 10R		0805
35	7	R202,209,232,240,302,309, R332			RESISTOR, 100R		0805
36	2	R241,341			RESISTOR, 1K		0805
37	4	R218,244,318,344			RESISTOR, 10K		0805
38	4	R242,243,342,343			RESISTOR, 1Meg		0603
39	4	R219,227,319,327			RESISTOR, 1Meg2		0603

TITLE **NAV-5 DUAL (518/490) RECEIVER PCB ASSY**
 DOC REF **PLT02121.XLS**
 DWG REF
 DATE **11/04/2002**

APPROVED ISSUE DATE MOD
 CJM 6 03/03/2003 1356
 CJM 7 22/07/2004 C2881

THIS DOCUMENT IS UNCONTROLLED, UNLESS OTHERWISE STATED

ITEM	QTY	REFERENCE	MFRs PART No	MFR	DESCRIPTION	PITCH	PACKAGE
40	4	R226,230,326,330			RESISTOR, 1Meg8		0603
41	4	R231,233,331,333			RESISTOR, 6Meg8		0603
42	1	R100			RESISTOR, 2k		0603
43	2	R103,108			RESISTOR, 330R		0603
59	1	R001			RESISTOR, 2M2		1206
60	1	R102			RESISTOR, 0R0		0805
44	1	J1	FLS14-10-T	FLAIR	CONNECTOR, 10 WAY ST PIN LOCKING HEADER	0.1"	
45	2	J4,5	FLS14-2-T	FLAIR	CONNECTOR, 2 WAY ST PIN LOCKING HEADER	0.1"	
46	4	U204,205,304,305	74HC74D	PHILIPS	IC, DUAL D-TYPE FLIP-FLOP, 74HC74		SO-14
47	1	U100	LM317HVT	NAT SEMI	IC,ADJUSTABLE REGULATOR, LM317		T0-220
48	1	U101	LM317T	NAT SEMI	IC,ADJUSTABLE REGULATOR, LM317		T0-220
49	1	U102	LM339AM	NAT SEMI	IC, QUAD COMPARATOR, LM339AM		SO-14
50	4	U203,206,303,306	TL074	TI	IC, OP-AMP, QUAD, TL074		SO-14
51	2	U200,300	MAX4252	MAXIM	IC, OP-AMP MAX4252		SO-8
52	4	U201,202,301,302	SA602AD	PHILIPS	IC, DOUBLE BALANCED MIXER SA602A		SO-8
53	1	U307	TL072	TI	IC, OP-AMP, DUAL, TL072		SO-8
54	1	Y200			4.144MHz, HC49, 20ppm tol, 10ppm/C tempCo, 30pF, -25 to +85 degC		HC49
55	1	Y300			3.920MHz, HC49, 20ppm tol, 10ppm/C tempCo, 30pF, -25 to +85 degC		HC49
56	1		2121.PCB		PCB, NAV-5 DUAL RECEIVER, ISSUE 4		



TITLE **NAV-5 DUAL (518/490) RECEIVER PCB ASSY**
 DOC REF **PLT02121.XLS**
 DWG REF
 DATE **11/04/2002**

APPROVED ISSUE DATE MOD
 CJM 6 03/03/2003 1356
 CJM 7 22/07/2004 C2881

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	6	C104,110,111,112,113,116			CAPACITOR, MULTI CER, 10n, X7R, 50V		0603	Chgd @ Iss. 7
2	37	C103,106,200,202,203,206,			CAPACITOR, MULTI CER, 100n, X7R, 25V		0805	
		C209,213,215,216,224,225,						
		C226,234,235,236,238,249,						
		C252,302,303,306,309,313,						
		C315,316,324,325,326,334,						
		C335,336,338,349,352,501,						
		C513						
3	1	C102			CAPACITOR, MULTI CER, 100n, X7R, 50V		1206	
4	15	C100,127,212,223,237,239,	EEVFC1H1R0R	PANASONIC	CAPACITOR, AL SMD, 1u, 50V, CASE B		SM_ELEC_4	
		C250,251,253,312,323,337,						
		C339,350,351						
5	3	C101,107,114	EEVFC1H100P	PANASONIC	CAPACITOR, AL SMD, 10u, 50V, CASE D		SM_ELEC_6.3	
6	2	C205,305			CAPACITOR, MULTI CER, 330p, X7R, 16V		0603	
7	2	C204,304			CAPACITOR, MULTI CER, 220p, X7R, 16V		0603	
8	2	C208,308	TZBX4 series	MURATA	8p5-40p TRIM CAP			
9	28	C201,210,211,214,217,218,			CAPACITOR, CERAMIC NP0, 10n, 25V, 5%		1206	
		C221,227,230,232,233,242,						
		C243,245,301,310,311,314,						
		C317,318,327,332,333,321,						
		C330,342,343,345						
10	8	C220,229,241,244,320,329,			CAPACITOR, CERAMIC NP0, 2n7, 25V, 5%		1206	
		C341,344						
11	4	C219,228,319,328			CAPACITOR, CERAMIC NP0, 8n2, 25V, 5%		1206	
12	10	C109,117,118,119,222,231,	EEVFC1C470R	PANASONIC	CAPACITOR, AL SMD, 47u, 16V CASE D		SM_ELEC_6.3	
		C240,322,331,340						
13	2	C108,115	ECA1HM471	PANASONIC	CAPACITOR, ELECT., 470uF 50V	5mm		MAX DIA = 10mm, HEIGHT = 20mm
14	6	C502,503,504,506,509,512			CAPACITOR, MULTI CER, 150p, COG, 25V		0805	RS 211-3158
15	2	C507,508			CAPACITOR, MULTI CER, 1800p, COG, 25V		1206	FAR 718-592
16	2	C510,511			CAPACITOR, MULTI CER, 4700p, COG, 25V		1206	FAR 718-592
57	1	C002			CAPACITOR, MULTI CER, 1uF, Z5U, 25V		1206	
58	1	C307			CAPACITOR, MULTI CER, 18p, COG, 25V		0603	
61	2	C254,300			CAPACITOR, MULTI CER, 1n, X7R 50V		0603	Chgd @ Iss. 7



TITLE **NAV-5 DUAL (518/490) RECEIVER PCB ASSY**
 DOC REF **PLT02121.XLS**
 DWG REF
 DATE **11/04/2002**

APPROVED ISSUE DATE MOD
 CJM 6 03/03/2003 1356
 CJM 7 22/07/2004 C2881

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
17	1	D101	GF1A	GEN SEMI	DIODE, GF1A		DO-214BA	
18	4	D200,201,300,301	BAV99		DIODE, BAV99		SOT-23	
19	4	D500,501,502,503	BAS16		DIODE, BAS16		SOT-23	
20	1	L100	RN102-0.3/0.2	SCHAFFNER	COMMON MODE CHOKE			
21	1	L500	NL252018T100J	TDK	INDUCTOR, 10uH		1210	
22	2	L503,506	RZCS-45330R	TOKO	TRANSFORMER, PRI 15, SEC1 82, SEC 2 60			CUT OUT CAPACITORS
23	4	L501,502,504,505	RZCS-45329R	TOKO	TRANSFORMER, PRI 6, SEC1 82, SEC 2 60			CUT OUT CAPACITORS
24	2	Q200,300	BC847B		TRANSISTOR, NPN		SOT-23	
25	4	R200,201,300,301			RESISTOR, 3k3		0603	
26	4	R109,110,111,114			RESISTOR, 47k		0603	
27	2	R204,304			RESISTOR, 1k		0603	
28	8	R104,105,106,107,228,229, R328,329			RESISTOR, 10k		0603	
29	4	R205,206,305,306			RESISTOR, 47k		0603	
30	8	R203,207,211,220,303,307, R311,320			RESISTOR, 2k4		0603	
31	8	R208,214,221,222,308,314, R321,322			RESISTOR, 120K		0603	
32	4	R210,213,310,313			RESISTOR, 22k		0805	Chgd @ Iss. 7
33	20	R215,216,217,223,224,225, R234,235,236,237,315,316, R317,323,324,325,334,335, R336,337			RESISTOR, 130k		0603	
34	3	R212,312,500			RESISTOR, 10R		0805	
35	7	R202,209,232,240,302,309, R332			RESISTOR, 100R		0805	
36	2	R241,341			RESISTOR, 1K		0805	
37	4	R218,244,318,344			RESISTOR, 10K		0805	
38	4	R242,243,342,343			RESISTOR, 1Meg		0603	
39	4	R219,227,319,327			RESISTOR, 1Meg2		0603	



TITLE **NAV-5 DUAL (518/490) RECEIVER PCB ASSY**
 DOC REF **PLT02121.XLS**
 DWG REF
 DATE **11/04/2002**

APPROVED ISSUE DATE MOD
 CJM 6 03/03/2003 1356
 CJM 7 22/07/2004 C2881

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
40	4	R226,230,326,330			RESISTOR, 1Meg8		0603	
41	4	R231,233,331,333			RESISTOR, 6Meg8		0603	
42	1	R100			RESISTOR, 2k		0603	
43	2	R103,108			RESISTOR, 330R		0603	
59	1	R001			RESISTOR, 2M2		1206	Chgd @ Iss. 7
60	1	R102			RESISTOR, 0R0		0805	
44	1	J1	FLS14-10-T	FLAIR	CONNECTOR, 10 WAY ST PIN LOCKING HEADER	0.1"		
45	2	J4,5	FLS14-2-T	FLAIR	CONNECTOR, 2 WAY ST PIN LOCKING HEADER	0.1"		
46	4	U204,205,304,305	74HC74D	PHILIPS	IC, DUAL D-TYPE FLIP-FLOP, 74HC74		SO-14	
47	1	U100	LM317HVT	NAT SEMI	IC,ADJUSTABLE REGULATOR, LM317		T0-220	
48	1	U101	LM317T	NAT SEMI	IC,ADJUSTABLE REGULATOR, LM317		T0-220	LM317HVT
49	1	U102	LM339AM	NAT SEMI	IC, QUAD COMPARATOR, LM339AM		SO-14	
50	4	U203,206,303,306	TL074	TI	IC, OP-AMP, QUAD, TL074		SO-14	
51	2	U200,300	MAX4252	MAXIM	IC, OP-AMP MAX4252		SO-8	
52	4	U201,202,301,302	SA602AD	PHILIPS	IC, DOUBLE BALANCED MIXER SA602A		SO-8	
53	1	U307	TL072	TI	IC, OP-AMP, DUAL, TL072		SO-8	
54	1	Y200			4.144MHz, HC49, 20ppm tol, 10ppm/C tempCo, 30pF, -25 to +85 degC		HC49	
55	1	Y300			3.920MHz, HC49, 20ppm tol, 10ppm/C tempCo, 30pF, -25 to +85 degC		HC49	
56	1		2121.PCB		PCB, NAV-5 DUAL RECEIVER, ISSUE 4			Chgd @ Iss. 7