

## BTR300A Parts List Audio &amp; Display Board

Bill of Materials

770106K.S01

Quan	Type	Value	Ref Designators
=====			
1	1010	TDA1010	U108
2	1DA	NE5532	U107,U119
1	1DA	NE5532	U118
1	1OI	VTL5C1	CA101
1	2DA	NE5532	U103
1	34119N	MC34119	U111
2	3DA	NE5532	U101,U102
1	3DA	NE5532	U104
1	3DA	LM392	U109
1	3PIN-XLR	Val	J104
1	4013	4013	U116
1	4DA	NE5532	U104
1	4DA	LM393	U105
2	4DA	NE5532	U106,U110
2	4DA	NE5532	U107,U119

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Quan	Type	Value	Ref Designators
2	575EE	NE575	U112,U113
1	6DA	LM358	U114
1	78L	78L05	U117
1	C	.0022UF	C103
8	C	100PF	C104,C112,C113,C115, C127,C153,C163,C167
7	C	.01UF	C106,C118,C183,C186, C187,C210,C211
1	C	47PF	C116
5	C	.001UF	C129,C147,C157,C158, C191
1	C	27PF	C130
3	C	10PF	C135,C212,C213
2	C	220PF	C137,C139
1	C	.1UF	C145
1	C	.015UF	C195
1	C	.0015UF	C196
1	C	560PF	C197

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Quan	Type	Value	Ref Designators
1	C	820PF	C198

2	CE	2.2UF	C101,C102
21	CE	1UF	C105,C109,C111,C121, C125,C126,C131,C132, C138,C152,C164,C166, C168,C170,C181,C182, C184,C206,C207,C208, C209
13	CE	.1UF	C107,C110,C119,C122, C123,C128,C134,C136, C143,C144,C146,C180, C194
22	CE	10UF	C108,C120,C150,C151, C154,C159,C160,C161, C162,C171,C172,C173, C174,C175,C176,C177, C178,C185,C199,C200, C201,C202
7	CE	100UF	C114,C148,C165,C169, C203,C204,C205
3	CE	22UF	C117,C133,C149
1	CE	.47UF	C124
3	CE	4.7UF	C140,C155,C189
3	CE	470UF	C141,C142,C156
1	CE	2200UF	C179

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Quan	Type	Value	Ref Designators
1	COAXCONNECTOR	Val	J106
4	D	1N4148	D102,D108,D111,D112
1	D	1N4004	D107

4	DB	1N4004	D103,D104,D105,D106
3	DIODE	1N4148	D101,D109,D110
9	DL	VAL	D601,D602,D603,D604, D605,D606,D607,D608, D609
1	FUSE	1A FB	F101
21	JH	VAL	J1,J10,J11,J12,J13,J14, J15,J16,J17,J18,J19,J2, J20,J21,J3,J4,J5,J6,J7, J8,J9
1	JX3F	VAL	J101
2	JX3M	VAL	J103,J105
1	LA	1.2UH	L101
6	MOLEX3H	Val	J108,J109,J110,J111, J112,J113
2	NPN-EBC	MPS3704	Q110,Q111
1	P	P102-1	P102

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Quan	Type	Value	Ref Designators
=====			
1	P	P103-1	P103
1	P	P114-1	P114
1	PINJACK-NC	Val	J107
4	PNP-EBC	MPS3702	Q102,Q103,Q106,Q107
1	PNP-EBC	TIP30	Q108

2	POT	100K	VR103,VR603
4	QNEBC	2N4124	Q112,Q113,Q114,Q115
3	QPDGS	J177	Q101,Q104,Q105
1	QPEBC	MPS3702	Q109
1	R	3.9K	R106
5	R	4.7K	R125,R130,R131,R132, R133
6	R	10K	R128,R129,R148,R149, R213,R217
1	R	180K	R147
1	R	39K	R175

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Quan	Type	Value	Ref Designators
=====			
1	R	6.8K	R177
1	R	1M	R178
9	R	100K	R179,R194,R196,R197, R199,R200,R202,R203, R205
1	R	22K	R180
2	R	470K	R181,R214
1	R	3.3K	R210
1	R	150	R237

1	R	1K	R238
1	R	180	R239
1	R	470	R240
2	RES	200K	R101,R103
4	RES	2.2K	R102,R104,R105,R123
1	RES	100	R107
21	RES	10K	R108,R112,R116,R121, R126,R127,R134,R141, R144,R153,R160,R163, R169,R170,R172,R173,

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Quan	Type	Value	Ref Designators
			R190,R216,R221,R224, R232
4	RES	4.7M	R109,R110,R136,R137
6	RES	15K	R111,R117,R143,R146, R161,R168
4	RES	18K	R113,R118,R142,R145
3	RES	47K	R114,R138,R167
7	RES	1M	R115,R139,R140,R164, R176,R235,R236
1	RES	3.3K	R119
1	RES	4.3K	R120
1	RES	5600	R122

1	RES	12K	R124
1	RES	560	R135
7	RES	1K	R150,R151,R195,R198, R201,R204,R222
1	RES	3K	R152
1	RES	8.2K	R154
4	RES	150K	R155,R156,R157,R159

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Quan	Type	Value	Ref Designators
=====			
1	RES	160	R158
1	RES	3.9K	R162
7	RES	100K	R165,R211,R212,R215, R229,R230,R234
1	RES	470K	R166
2	RES	330	R171,R174
1	RES	4.7	R182
1	RES	330K	R184
1	RES	3.6K	R185
1	RES	294	R186
1	RES	6.8K	R188
1	RES	68K	R189

1	RES	1.3K	R191
2	RES	10	R192,R193
2	RES	47	R207,R228
2	RES	16.2K	R208,R209

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Quan	Type	Value	Ref Designators
=====			
2	RES	20K	R218,R231
1	RES	1.8K	R219
1	RES	5.1K	R220
1	RES	6.2K	R223
2	RES	16K	R225,R233
1	RES	33K	R226
1	RES	56K	R227
1	RVA	2.5K	VR101
1	RVA	10K	VR102
3	RVB	100K	VR601,VR602,VR604
2	SDDA	VAL	S109,S110
3	Sddb	VAL	S101,S103,S112
1	SDIP	VAL	S104



1 SS3 VAL S111

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Quan	Type	Value	Ref Designators
1	SSD	VAL	S102
4	SSS	VAL	S105,S106,S107,S108
49	TP		TP1,TP10,TP11,TP12,TP13, TP14,TP15,TP16,TP17, TP18,TP19,TP2,TP22,TP23, TP24,TP25,TP26,TP27, TP28,TP29,TP3,TP30,TP31, TP32,TP33,TP34,TP35, TP36,TP37,TP38,TP39,TP4, TP40,TP41,TP42,TP43, TP44,TP45,TP46,TP47, TP48,TP49,TP5,TP50,TP51, TP6,TP7,TP8,TP9
1	TT	Val	T101

Total Parts: 411

## BTR300 Part list Receive Board

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Quan	Type	Value	Ref Designators
=====			
1	C	.001UF	C319
1	CAP	5.6PF	C301
1	CAP	.82PF	C302
2	CAP	.5PF	C303,C307
7	CAP	100PF	C304,C305,C317,C328, C378,C428,C478
7	CAP	.001UF	C306,C309,C318,C340, C390,C440,C490
1	CAP	1.2PF	C308
1	CAP	33PF	C310
1	CAP	47PF	C311
1	CAP	.0047UF	C312
1	CAP		C313
7	CAP	.01UF	C314,C315,C316,C320, C370,C420,C470
2	CAP	180PF	C321,C371
1	CAP	56PF	C322
4	CAP	68PF	C323,C373,C423,C473

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Quan	Type	Value	Ref Designators
=====			
8	CAP	220PF	C324,C332,C374,C382, C424,C432,C474,C482
16	CAP	.1UF	C325,C326,C327,C336, C375,C376,C377,C386, C425,C426,C427,C436, C475,C476,C477,C486
8	CAP	.0022UF	C329,C337,C379,C387, C429,C437,C479,C487
8	CAP	270PF	C330,C331,C380,C381, C430,C431,C480,C481
8	CAP	1UF	C333,C334,C383,C384, C433,C434,C483,C484
4	CAP	.015UF	C335,C385,C435,C485
4	CAP	.0056UF	C338,C388,C438,C488
4	CAP	330PF	C339,C389,C439,C489
1	CAP	50PF	C372
2	CAP	150PF	C421,C471
1	CAP	43PF	C422
1	CAP	39PF	C472
8	CAPVAR	Val	VC301,VC302,VC303,VC304, VC305,VC306,VC307,VC308
5	CRYSTAL	Val	Y301,Y320,Y370,Y420, Y470

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Quan	Type	Value	Ref Designators
=====			
4	D	1N4148	D320,D370,D420,D470

1	DG-FET	3SK174	Q301
3	F'RITEBEADSYMBOL	Val	FB321,FB371,FB421
8	IFFILTER	Val	CF320,CF321,CF370,CF371, CF420,CF421,CF470,CF471
4	IFFILTER2	Val	CF322,CF372,CF422,CF472
1	LA	Val	L308
1	LA	56UH	L310
6	LA	10UH	L311,L312,L320,L370, L420,L470
1	LA	.68UH	L314
3	LB	Val	L301,L302,L305
3	LCT	Val	L303,L304,L309
2	LQT	Val	L306,L313
1	LVA	Val	L307
4	LVB	Val	L321,L371,L421,L471
4	LVC	Val	L322,L372,L422,L472

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Quan	Type	Value	Ref Designators
=====			
4	LVTC	Val	L323,L373,L423,L473
4	MC3359	Val	U320,U370,U420,U470
1	MIXER	ASK-1	HY301

5	MOLEX3W	Val	P301,P320,P370,P420, P470
1	NFET-GSD	J309	Q303
1	NPN-BEC	MPS901	Q302
4	NPN-BEC	MPSH10	Q320,Q370,Q420,Q470
8	NPN-EBC	MPS3704	Q321,Q322,Q371,Q372, Q421,Q422,Q471,Q472
4	POT	20K	VR320,VR370,VR420,VR470
4	POT	50K	VR321,VR371,VR421,VR471
1	R	47K	R315
6	RES	1K	R301,R305,R324,R374, R424,R474
17	RES	10K	R302,R307,R308,R309, R313,R332,R333,R334, R382,R383,R384,R432, R433,R434,R482,R483, R484

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Quan	Type	Value	Ref Designators
1	RES	33	R303
1	RES	10	R304
1	RES	150	R306
5	RES	100	R310,R331,R381,R431, R481
2	RES	470	R311,R312

1	RES	2.2K	R314
4	RES	1.2K	R320,R370,R420,R470
4	RES	220	R321,R371,R421,R471
4	RES	68K	R322,R372,R422,R472
4	RES	1.5K	R323,R373,R423,R473
4	RES	330K	R325,R375,R425,R475
12	RES	220K	R326,R329,R330,R376, R379,R380,R426,R429, R430,R476,R479,R480
4	RES	100K	R327,R377,R427,R477
4	RES	13K	R328,R378,R428,R478
4	RSDUALOPAMP	NE5532	U321,U371,U421,U471

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Quan	Type	Value	Ref Designators
=====			

Total Parts: 277

## BTR300 Part List Transmit Board

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Quan	Type	Value	Ref Designators
1	1509	UPB1509	U504
1	575EC	VAL	U502
1	612	NE612	U503
1	78LD	78L05	U501
2	C	.1UF	C502,C511
2	C	100PF	C504,C548
11	C	.01UF	C510,C517,C518,C520, C521,C526,C531,C537, C539,C541,C542
1	C	47PF	C515
1	C	68PF	C516
4	C	.001UF	C519,C522,C532,C547
1	C	33PF	C523
7	C	*	C524,C533,C535,C543, C544,C545,C546
1	C	4.7PF	C525
1	C	1.5PF	C528
1	C	8.2PF	C529

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Quan	Type	Value	Ref Designators
=====			
2	C	2.2PF	C530,C536
2	C	10PF	C538,C540
2	CE	10UF	C501,C514
7	CE	1UF	C503,C505,C507,C509, C512,C513,C534
2	CE	100UF	C506,C527
1	CE	4.7UF	C508
5	D	TMPD4148	D502,D503,D504,D505, D507
1	DV	FMMV105	D501
1	DV	FMMV109	D506
1	LA	.47UH	L502
2	LA	1.2UH	L503,L506
5	LA	*	L504,L505,L507,L508, L509
2	LVA	VAL	L501,L510
1	P	VAL	E501

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Quan	Type	Value	Ref Designators
=====			
1	P	J501-1	J501



1	QN2212	MMUN2212	Q505
1	QNDSG	MMBFJ309	Q502
2	QNEBC	FMMT5179	Q503,Q506
1	QNEBC	MMBR901	Q507
1	QPEBC	MMBT3906	Q501
1	R	68.1K	R501
2	R	30.1K	R502,R503
5	R	10K	R504,R505,R514,R521, R531
1	R	1.5K	R506
1	R	22.1K	R507
1	R	15K	R508
1	R	49.9K	R509
1	R	12.1K	R510
2	R	3.92K	R511,R512

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Quan	Type	Value	Ref Designators
=====			
2	R	47.5K	R513,R517
1	R	392	R515
4	R	100	R516,R518,R523,R526

3	R	221	R519,R524,R525
1	R	47.5	R520
1	R	4.75K	R522
1	R	82.5K	R527
1	R	100K	R528
2	R	475	R529,R532
1	R	1K	R530
1	R	10	R533
1	R	5.62K	R534
1	RVA	5K	VR501
9	TP		TP501,TP502,TP503,TP504, TP505,TP506,TP507,TP508, TP509

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Quan	Type	Value	Ref Designators
1	Y	VAL	Y501

Total Parts: 122

## BTR300A TRANSMIT BOARD-TUNE-UP INFO

Feed 1 volt at 1kHz to J501-3(hot) and J501-2(gnd).

Feed 10vdc to J501-1(+) and J501-2(-).

Connect a frequency counter and modulation meter from pad E501 to ground.

Connect a DC voltmeter to TP502.

Tune L501 and observe frequency counter and voltmeter. When loop is out of lock, the frequency will change but the loop voltage will be constant(about 3.3V). When the loop locks, the loop voltage will vary in an S curve either side of the unlocked value but the frequency will not change. Center the loop at this point by adjusting for the same loop voltage as existed in the unlocked condition.

Adjust L510 for correct frequency.

Adjust VR501 for +/- 3kHz deviation.