

Bill of Materials

Introduction.

The Bill of materials covers all versions of the T2000 series.

T2000 Bill of Materials (BOM)

All resistors 1% tolerance unless specified different.

Assy	Qty	Designator	Manuf P/N	Description
RF Section				
		Receiver		
Rx	1	RIC2	AD8313ARM	Logarithmic Detector, 2.5GHz 70dB
Rx	1	RIC1	LP2951aCM	Voltage Regulator, SO-8
Rx	2	RIC3RIC4	AD8052ARM	Op Amp
Rx	1	RIC5	74HC04UB	Hex Inverting Buffers SO-8
Rx	1	RTR1	HPFP0405	LNA AGILENT
Rx	6	RC6,RC10,RC13,RC16 RC17,RC18	100N	CAP, 100N SMD 50V X7R 10% 0805
Rx	2	RC4 RC5	1N	CAP 1nF SMD 50V NPO 10% 0805
Rx	1	RC3	1P0	CAP 1pF SMD 50V NPO 10% 0805
Rx	2	RC1 RC8	1p8	CAP 1p8 SMD 50V NPO 10% 0805
Rx	2	RC9 RC12	3p3	CAP 3p3 SMD 50V NPO 10% 0805
Rx	3	RC2 RC11 RC14	47p	CAP 47pF SMD 50V NPO 10% 0805
Rx	2	RC15 RC7	10UF	Tantalum, 10UF 10V, B size
Rx	1	RL1	470nH	470nH inductor 1206 case
Rx	3	RL2 RL3 RL4	8n2	8n2 inductor 0805 case
Rx	5	RR10 RR12 RR15 RR25 RR27	10R	Resistor, 0805 125mW METAL 1% 0805
Rx	5	RR1 RR2 RR4 RR24 RR26	47R	Resistor, 0805 125mW METAL 1% 0805
Rx	1	RR11	470R	Resistor, 0805 125mW METAL 1% 0805
Rx	1	RR13	1k5	Resistor, 0805 125mW METAL 1% 0805
Rx	5	RR6 RR7 RR9 RR14 RR17	1K	Resistor, 0805 125mW METAL 1% 0805
Rx	4	RR19 RR20 RR21 RR23	4K7	Resistor, 0805 125mW METAL 1% 0805
Rx	4	RR8 RR16 RR18 RR28	10K	Resistor, 0805 125mW METAL 1% 0805
Rx	1	RR3	15K	Resistor, 0805 125mW METAL 1% 0805
Rx	1	RR5	100K	Resistor, 0805 125mW METAL 1% 0805
Rx	2	RRV1,RRV2	10k trimpot	10 k multurn trimpot Bournes 10k3224w
		Transmitter		
Tx	1	TIC1	MM74HC221AM	Dual Monostable Multivibrator SO-16
Tx	2	TTR2,TTR3	1090MP	90 watt pulsed RF Transistor 1030 - 1090 Mhz, GHZ
Tx	1	TTR4	TPR175	175 watt pulsed RF Transistor 1030 - 1090 Mhz,GHZ
Tx	1	TTR1	NDS355AN	MOSFET, N-ch, 30V 1.7A, SOT-23
Tx	1	TD4	ZR2431F01/431I	Adjust Volt Reg Zetek ZR2431F01 or 431L
Tx	1	TD3	BAT54	High Speed Diode SOT-23
Tx	1	TD2	33V	33V Zener BZX85C33 1.3W, DO-41
Tx	1	TD1,	27V	27V Zener BZX85C27 1.3W, DO-41
Tx	1	TC27 (CT1)	A1J8	Capacitor, Variable, 0.5-8p, Air Diel Voltronics
Tx	1	TC36 (CT2)	GIGATRIM	Capacitor, Variable, .3-1.2p , Air Dielectric Johansen
Tx	2	TC5 TC3	47uF	Electrolytic capacitor, 47u 63V, -40 to + 105

Tx	1	TC37	4u7	CAP 4.7Uf SMD 16V TANT 10% CASE B –40 to +105
Tx	1	TC35	100u	CAP 100Uf SMD 16V TANT 10% 2816 –40 to +105
Tx	5	TC2,TC18,TC26,TC34,TC44	100n	CAP, 100N SMD 63V X7R 10% 0805
Tx	5	TC1,TC13,TC21,TC30,TC38	10n	CAP 10nF SMD 63V NPO 10% 0805
Tx	4	TC14,TC24,TC29,TC42	1n	CAP 1nF SMD 63V NPO 10% 0805
Tx	1	TC23	3p9	CAP 3p9 SMD 50V NPO 10% 0805
Tx	1	TC28	4p7	CAP 4p7 SMD ATC HIGH VOLTAGE 0805/1206
Tx	4	TC11,TC15,TC17,TC25	5p6	CAP 5p6 SMD 50V NPO 10% 0805
Tx	2	TC12,TC19	6p8	CAP 6p8 SMD 50V NPO 10% 0805
Tx	2	TC10,TC20	8p2	CAP 8p2 SMD 50V NPO 10% 0805
Tx	2	TC8,TC9	10p	CAP 10p SMD 50V NPO 10% 0805
Tx	1	TC33	47p	CAP 47p SMD 50V NPO 10% 0805
Tx	3	TC22,TC31,TC43	100p	CAP 100p SMD 50V NPO 10% 0805
Tx	1	TR11	2R7	Resistor, 0805 125mW METAL 1% 0805
Tx	2	TR1,TR14	10R	Resistor, 0805 125mW METAL 1% 0805
Tx	1	TR4,TR7	18R	Resistor, 0805 125mW METAL 1% 0805
Tx	1	TR15	180R	Resistor, 0805 125mW METAL 1% 0805
Tx	4	TR3,TR5,TR6,TR8	270R	Resistor, 0805 125mW METAL 1% 0805
Tx	1	TR18	1K2	Resistor, 0805 125mW METAL 1% 0805
Tx	1	TR10	1K5	Resistor, 0805 125mW METAL 1% 0805
Tx	2	TR17,TR19	2K2	Resistor, 0805 125mW METAL 1% 0805
Tx	1	TR12	3K9	Resistor, 0805 125mW METAL 1% 0805
Tx	2	TR9,TR13	4K7	Resistor, 0805 125mW METAL 1% 0805
Tx	1	TR21	10K	Resistor, 0805 125mW METAL 1% 0805
Tx	1	TR20	22K	Resistor, 0805 125mW METAL 1% 0805
Tx	1	TR2	100K	Resistor, 0805 125mW METAL 1% 0805
Tx	1	MVR1	10K	10 K MULTITURN BOURNES
Tx	7	TL1,TL2,TL3,TL4,TL5,TL6,TL7	1T	Inductor, 1 TURN
Tx	1	Resonator	Resonator	Coaxial resonator 1090 Mhz P/N T2000RN001
Tx	1	TTH1	220R	Thermistor, 0805
	1	MBNC		Connector, BNC(f)
	1	MSK1	DB25	25 pin right angle PCB, EMC filtered, male,gold contacts
Main Micro controller				
Micromain	1	MIC1	PIC17C756/16/I	Microprocessor TQFP package OTP
Micromain	1	MIC3	MAX485	RS485 driver chip TX/RX (Not installed ,for future use)
Micromain	1	MIC4	DS1232 LP	Reset Microprocessor , alternate part MAX1232 ESA Or ADM1232ARN
Micromain	1	MIC6	AD7822BRU	8 bit,32MSPS CMOS A to D Converter
Micromain	1	MIC2	24LC02	2k serial eeprom
Micromain	1	MIC5	LM2594M-5.0	5 Volt Switching Regulator So-8 Industrial temp
Micromain	1	MTR1	RFD10P03L	MOSFET,P-ch,50V 15A T0-251
Micromain	2	MTR2,MTR4	FDV304P	Harris P channel digital fet
Micromain	12	MD1 - 12	SMI4007	1 Amp rectifier / 1000PIV SMD diode
Micromain	1	MTR3	BC848	BC847 transistor SOT-23
Micromain	1	MZD1	10BQ040	1 AMP POWER SCHOTTKY POWER DIODE
Micromain	1	MC22	100uf	Electrolytic Low ESR 25 VW 5-2
Micromain	11	MC2 MC5 MC10 MC13 MC14 MC15 MC16	0.1uf	CAP, 100N SMD 50V X7R 10% 0805

		MC17 MC19 MC20 MC23		
Micromain	12	MC6 MC7 MC8 MC21 MC25 MC26 MC27 MC28 MC30 MC31 MC32 MC33	0.01uf	CAP, 10N SMD 50V X7R 10% 0805
Micromain	1	MC11	0.001uf	CAP, 1N SMD 50V X7R 10% 0805
Micromain	1	MC18	.47uf	CAP, 470N SMD 50V X7R 10% 0805
Micromain	1	MC1	10uf	Tantalum, 10uf, 10V, B size
Micromain	1	MC3	47uf	Electrolytic Low ESR 35 VW 5-2
Micromain	2	Link	0 ohm	Resistor, 1206 125mW METAL 1% 0805
Micromain	5	Link	0 ohm	Resistor, 0805 125mW METAL 1% 0805
Micromain	3	MR28 MR30 MR40	10R	Resistor, 0805 125mW METAL 1% 0805
Micromain	12	MR1 MR2 MR3 MR9 MR10 MR13 MR15 MR16 MR17 MR18 MR19 MR43	100 OR 120R	Resistor, 0805 125mW METAL 1% 0805
Micromain	2	MR26 MR27	1k	Resistor, 0805 125mW METAL 1% 0805
Micromain	4	MR21 MR22 MR31 MR32	10k	Resistor, 0805 125mW METAL 1% 0805
Micromain	16	MR5 MR41 MR36 MR33 MR4 MR6 MR14 MR38 MR37 MR35 MR20 MR34 MR8 MR7 MR11 MR12	22K	Resistor, 0805 125mW METAL 1% 0805
Micromain	1	MVR1	200 k	Variable resistor 200k Bournes 200k3224W
Micromain	2	MR25 MR29	47k	Resistor, 0805 125mW METAL 1% 0805
Micromain	1	MR39	100k	Resistor, 0805 125mW METAL 1% 0805
Micromain	1	MR24	680k	Resistor, 0805 125mW METAL 1% 0805
Micromain	15	MFB1 – MFB15	1uH	Ferrite inductors 0805 SMD
Micromain	1	MFB13	Ferrite Bead	Ferrite Bead
Micromain	1	MFL1	100uH	Simid 05 series 100Uh inductor , SMD
Micromain	1	MX1	32Mhz	TCXO HyQ QXO-8GAA-32
Micromain	1	MD13	1N5822	3 Amp Schottky Rectifier
Micromain	1	MSK2	8 pin PCB	8 pin PCB 2mm pitch Harwin connector
Power supply				
PWRSUPP	1	PC12	10n	CAP, 10N SMD 50V X7R 10% 0805
PWRSUPP	5	PC1,PC3,PC6,PC10,PC11	100n	CAP, 100N SMD 50V X7R 10% 0805
PWRSUPP	1	PC7	22P	CAP 22pF SMD 50V NPO 10% 0805
PWRSUPP	1	PC5	100p	CAP 100pF SMD 50V NPO 10% 0805
PWRSUPP	1	PC4	330p	CAP 330pF SMD 50V X7R 10% 0805
PWRSUPP	1	PC8	680P	CAP 680pF SMD 50V NPO 10% 0805
PWRSUPP	1	PC9	1u	1uF MLC Cap 50V
PWRSUPP	1	PC14	4u7 16V Tant	CAP 4u7 SMD 16V TANT 10% CASE A
PWRSUPP	1	PC13	100u 16V	CAP 100uF SMD 16V TANT 10% CASE A
PWRSUPP	1	PC14	100u 63V	ZL Series - Ultra Low Impedance Capacitor - High Ripple
PWRSUPP	1	PC2	220u 50V	220uf Electrolytic , high temp range
PWRSUPP	1	PR11	0R15	RES 0R15 SMD 125mW METAL 1% 0805
PWRSUPP	1	PR12	1R47	RES 1R47 SMD 125mW METAL 1% 0805
PWRSUPP	1	PR10	100R	RES, 100R SMD 125mW METAL 1% 0805
PWRSUPP	1	PR15	2K2	RES 2K2 SMD 125mW METAL 1% 0805
PWRSUPP	2	PR1,PR6	4K7	RES 4K7 SMD 125mW METAL 1% 0805
PWRSUPP	5	PR2,PR3,PR7,PR8,PR9	10K	RES 10K SMD 125mW METAL 1% 0805
PWRSUPP	1	PR13	12K	RES, 12K SMD 125mW METAL 1% 0805
PWRSUPP	1	PR4	15K	RES 15K SMD 125mW METAL 1% 0805
PWRSUPP	1	PR5	56K	RES, 56K SMD 125mW METAL 1% 0805
PWRSUPP	1	PR14	82K	RES, 82K SMD 125mW METAL 1% 0805
PWRSUPP	1	PD1	SMCJ33A	1500W Transient Protection Diode
PWRSUPP	2	PD4 PD5	10BQ100	1A POWER SCHOTTKY DIODE SMD

PWRSUPP	1	PD2	BAS16	DUAL DIODE SOT23
PWRSUPP	2	PTR1 PTR2	BC848	General Purpose NPN Transistor SMD SOT 23
PWRSUPP	1	PTR3	MTP10N10EL	N-Channel Enhancement-mode power mosfet TO-220V
PWRSUPP	1	PIC1	LTC1624IS8	LTC1624 N-CHANNEL SWITCHING REGULATOR CON
PWRSUPP	1	PIC2	LM2578A	LM2578A SWITCHING REGULATOR CONTROLLER
PWRSUPP	1	PSW1	Polyswitch .75	Polyswitch .75 A P/N SMD075
PWRSUPP	1	PL1	IPT-17-732/ 47uH	Iron Powder Toroid - 14.8x6.35
PWRSUPP	1	PL2	1000uH	TOKO 1000uH Inductor RB
PWRSUPP	1	PSK1	4 pin PCB	2mm 4 pin harwin

Case	2		Lids	1mm aluminium sheet 133.5 x 61mm
Case	1		Main Chassis	Milled Aluminium Chassis 61 x 61 x 160mm PN-062AD01
Case	1		DB25 plate	Milled Aluminium end plate 61 x 21 x 4mm PN-062AD04
Case	1		Filter	Milled bandpass filter PN - 062AD05
Case	1		RX Shield	Milled Receiver shield (brass)
Case	6	FB1, FB2, FB3, FB4, FB5, FB6	Ferrite beads	Ferrite beads 3.5 x 5.0mm, 2mm hole
Case	1	Harness	8 pin Harness	Fabricated 8 pin to RX,TX,Display harness.

Display / Detachable Display / second remote head LCD Version (SFL)

LCDPCB	7	DC5 DC6 DC8 DC9 DC13	.1u	0603 capacitor SMD 50v 7XLR 10 %
		DC16		
LCDPCB	1	DC11	.0015u	0805 capacitor SMD 50v 7XLR 10%
LCDPCB	4	DR7 DR8 DR11 DR12	10k	Resistor, 0805 125mW METAL 1% 0805
LCDPCB	1	DVR1	10k pot	SMD potentiometer 3224W-1-103E
LCDPCB	13	DR13 DR14 DR15 DR16 DR17 DR18 DR19 DR20 DR26 DR27 DR29 DR32	22k	Resistor, 0805 125mW METAL 1% 0805
LCDPCB	1	DR25	47R	Resistor, 0805 125mW METAL 1% 0805
LCDPCB	1	DR24	100R	Resistor, 0805 125mW METAL 1% 0805
LCDPCB	1	DR6	120R	Resistor, 0805 125mW METAL 1% 0805
LCDPCB	1	DRL2	47R	Axial resistor 10%
LCDPCB	1	LCD	LCD Display	2line x 8 character AC082AYILY-H LCD alphanumeric dis
LCDPCB	1	DXTAL2	8.00mhz	Ceramic Resonator Murata CST-8.00MGA
LCDPCB	1	DIC10	DS1232 LP	Econ reset Microcontroller monitor , ALSO MAX1232ESA Or ADM1232ARN (all pin and function compatable)
LCDPCB	1	DIC7	24LC02	2k serial eeprom SOIP package
LCDPCB	1	DIC6	PIC17C756-16/I	Microcontroller TQFP package
LCDPCB	1	DIC5	Max485	485 driver chip S08 Package (NOT INSTALLED)
LCDPCB	1	DIC9	MC14490DW	Hex Contact Bounce Eliminator SOIC package
LCDPCB	10	DLED1 - DLED10	Green LED	HSMG-H630 Diffused Flip mount SMD
LCDPCB	4	DTR1 DTR3 DTR4 DTR5	FDV-304P	SOT 23 package P channel fet
LCDPCB	1	DSK6A	7x7 way	2.5mm PCB 7x7 row header 10mm pins
LCDPCB	1	DSK6	7x7 way	2.5 mm PCB 7 x 7 mm header socket
LCDPCB	1	DSK4	10 pin SIP	SIP 10 way socket
LCDPCB	1	DSK7	10 pin SIP	Sip 10 way 10mm pins
LCDPCB	6	DSW3 - DSW8	Tactile	95B04A26AR Tactile P/B SMD switch
LCDPCB	1	DSW9	Rotary Sw	M series 13mm 12 position MC00L1NCQD
LCDPCB	1	DSW10	Encoder	Single shaft with push button ALPS RK0972211-10KBKA
LCDPCB	1	KEYPAD	Keypad	Silicon Rubber membrane 6 cavity
LCDPCB	1	DSK5	6 Pin PCB	2mm 6 way PCB connector
LDCASE	1		Chassis	Milled Aluminium Face61 x 61 x 6mm PN-MA760108
LDCASE	1		Mode Knob	

LCD CASE 1 Select Knob

Display / Detachable Display / second remote head LED version (SF)

LEDPCB	7	DC1 DC2 DC3 DC4 DC5 DC6 DC7	.1u	0603 capacitor SMD 50v 7XLR 10 %
LEDPCB	1	DC9	.0015u	0805 capacitor SMD 50v 7XLR 10%
LEDPCB	6	DR5 DR7 DR8 DR10 DR11 DR12	10k	Resistor, 0805 125mW METAL 1% 0805
LEDPCB	9	DR1 DR2 DR3 DR4 DR9 DR33 DR34 DR35 DR36	22k	Resistor, 0805 125mW METAL 1% 0805
LEDPCB	1	DR6	120R	Resistor, 0805 125mW METAL 1% 1206
LEDPCB	1	DRL1	150R	Axial resistor 10%
LEDPCB	2	DISPLAY1 , 2	LED Display	2line x 8 character HCMS-2975H LED alphanumeric display
LEDPCB	1	DXTAL1	8.00mhz	Ceramic Resonator CST-8.00MGA
LEDPCB	1	DIC4	DS1232 LP	Econ reset Microcontroller monitor,Also MAX1232ESA Or ADM1232ARN
LEDPCB	1	DIC2	24LC02	2k serial eeprom SOIP package
LEDPCB	1	DIC1	PIC17C756-16I	Microcontroller TQFP package
LEDPCB	1	DIC5	Max485	485 driver chip S08 Package (NOT INSTALLED)
LEDPCB	1	DIC3	MC14490DW	Hex Contact Bounce Eliminator SOIC package
LEDPCB	10	DLED1 - DLED10	Green LED	HSMG-H630 Diffused Flip mount SMD
LEDPCB	1	DTR1	FDV-304P	SOT 23 package P channel fet
LEDPCB	1	DSK2A	7x7 way	2.5mm PCB 7x7 row header 10mm pins
LEDPCB	1	DSK2	7x7 way	2.5 mm PCB 7 x 7 mm header socket
LEDPCB	1	DSK1	10 pin SIP	SIP 10 way socket
LEDPCB	1	DSK7	10 pin SIP	Sip 10 way 10mm pins
LEDPCB	6	DSW3 - DSW8	Tactile	95B04A26AR Tactile P/B SMD switch
LEDPCB	1	DSW1	Rotary Sw	M series 13mm 12 position MC00L1NCQD
LEDPCB	1	DSW2	Encoder	Single shaft with push button
LEDPCB	1	KEYPAD	Keypad	Silicon Rubber membrane 6 cavity
LEDPCB	1	FILTERLED	Filter	43 x 24 x 1mm neutral grey LED filter
LEDPCB	1	DSK3	6 Pin PCB	2mm 6 way PCB connector
LED CASE	1		Chassis	Milled Aluminium Face 61 x 61 x 6mm PN-MA760109
LED CASE	1		Mode Knob	
LED CASE	11		Select knob	

Remote Head option , control box and blanking plate (NOT IN PRODUCTION – FUTURE PRODUCT)

REMOTE	1	RREG1	7805	7805 TO-220 case
REMOTE	1	RC1	47uf / 35v	Electrolytic Capacitor
REMOTE	1	RC2	100uf / 16 v	Electrolytic Capacitor
REMOTE	2	RC3 RC4	.01	Ceramic Capacitor
REMOTE	1	RSK1	DB-09 M	DB-09 chassis mount male with solder tails and mounting
REMOTE	1	RSK2	6 pin	6 Pin harwin socket 2mm with pins
REM CASE	1		Chassis	Milled Aluminium Remote case housing 61 x 61 x 31mm PN-MA760102
REM CASE	1		Blank Plate	Milled Aluminium Remote blank off plate 61 x 61 x 5mm PN-MA760103
MISCH	44		M2.5 x 3	Philips head countersunk stainless steel screws
MISCH	2		M2.5 x 30	Philips head countersunk stainless steel screws
MISCH	14		M2.5 x 4.5	Pan Slot cheesehead stainless steel screws
MISCH	4		M2.5 x 19	Pan Slot cheesehead stainless steel screws
MISCH	20		M2.5	Sprung washers
PCB	1	T2000MB001R1	4 layer PCB	Main micro PCB 4 layer
PCB	2	T2000PS001R1	2 layer	Power supply 3 ounce copper

PCB	1	T2000DBLEDR1	4 layer PCB	LED display control head
PCB	1	T2000DBLCDR1	4 layer PCB	LCD display control head
PCB	1	LEDDISPLAY	4 layer PCB	LED carrier board
PCB	1	T2000TX001R1	2 Layer PCB	1 layer teflon transmit PCB
PCB	1	T2000RX001R1	1 Layer PCB	1 layer teflon receive board
PCB	1	T200SW01V1	4 layer PCB	Keyswitch Board 4 layer
Filter	1	Bandpass	filter	Aluminium Filter fingers silver plated as per drawing
Filter	5	Teflon	Inserts	Teflon inserts (as per engineering drawing)
Filter	5	Tuning Screws	Screws	Tuning screws and securing nuts as per drawing

Notes