

# Bill of Materials EMC2103-3 Fan Ctrl with Look-up Table

**Document Number:** 02-10801  
**Board Number:** 04-10801  
**Part Number:** ADM00902  
**Revision:** 3  
**Engineer:** Bogdan Popescu  
**Drawn By:** Ana Margheseanu  
  
**Creation Date:** 5/20/2019  
**Creation Time:** 4:21 PM



Quantity	Designator	Description	Manufacturer 1	Manufacturer Part Number 1	Supplier 1	Supplier Part Number 1	Supplier Unit Price 1	Price / 1 Board
13	C1, C2, C3, C4, C5, C8, C9, C11, C12, C14, C15, C16, C17	CAP CER 0.1uF 25V 10% X7R SMD 0603	Murata	GRM188R71E106KA01	Digi-Key	490-1524-1-ND		\$0.0000
1	C6	CAP CER 10uF 25V 10% X7R SMD 1210	TDK Corporation	C3225X7R1E106K250A	Digi-Key	445-3942-1-ND		\$0.0000
2	C7, C10	CAP CER 4.7uF 10V 10% X5R SMD 0805	Samsung Electro-Mecha	CL21A475KPFNNNE	Digi-Key	1276-1259-1-ND		\$0.0000
1	C13	CAP CER 10uF 16V 10% X7R SMD 1206	TDK	C3216X7R1C106K	Digi-Key	445-4042-1-ND		\$0.0000
1	C18	CAP CER 10uF 25V 10% X7R SMD 1206	Murata Electronics North	GRM31CR71E106KA12	Digi-Key	490-6518-1-ND		\$0.0000
1	C19	CAP TANT 47uF 25V 10% 0.6R SMD E	Vishay Sprague	293D476X9025E2TE3	Digi-Key	718-1752-1-ND		\$0.0000
2	C20, C21	CAP CER 2200pF (2.2nF) 50V 10% X7R SMD 0603	KEMET	C0603C222K5RACTU	Digi-Key	399-1085-1-ND		\$0.0000
1	D1	DIO SCKTYARR BAT54C 530mV 200mA 30V SMD SOT-23-3	Diodes Incorporated	BAT54CTA	Digi-Key	BAT54CTR-ND		\$0.0000
1	D2	DIO SCKTY MBR0540T1G 510mV 500mA 40V SMD SOD-123	ON Semiconductor	ON Semiconductor	Digi-Key	MBR0540T1G		\$0.0000
1	D3	DIO SCKTY MBR230LSFT1G 430mV 2A 30V SMD SOD-123FL	ON Semiconductor	ON Semiconductor	Digi-Key	MBR230LSFT1G		\$0.0000
1	FB1	FERRITE 2A 22UR SMD 0805	Murata Electronics North	BLM21PG221S1N1D	Digi-Key	490-1054-1-ND		\$0.0000
1	J1	CON USB2.0 MICRO-B FEMALE TH/SMD R/A	FCI	10118194-0001LF	Digi-Key	609-4618-1-ND		\$0.0000
1	J2	CON POWER 2.1mm 5.5mm Switch Slotted TH R/A	MPD (Memory Protection)	EJ508A	Digi-Key	EJ508A-ND		\$0.0000
1	J3	CON HDR-2.54 Male 1x3 Tin 5.84MH TH VERT	Samtec	TSW-103-07-T-S	Digi-Key	SAM1035-03-ND		\$0.0000
1	J4	CON HDR-2.54 Male 1x1 Gold 5.84MH TH VERT	Samtec Inc.	TSW-101-07-S-S	Digi-Key	SAM1033-01-ND		\$0.0000
1	J5	CON HDR-2.54 Male 1x4 Gold 5.84MH TH VERT	Würth Electronics Inc	61300411121	Digi-Key	732-5317-ND		\$0.0000
1	J6	CON HDR-2.54 Male 2x6 Tin 5.84MH TH VERT	Samtec	TSW-106-05-T-D	Digi-Key	SAM1018-06-ND		\$0.0000
1	J7	CON HDR-2.54 Male 1x5 Gold 5.84MH TH VERT	FCI	68000-105HLF	Digi-Key	609-3462-ND		\$0.0000
1	J8	CON HDR-2.54 Male 1x3 Gold 5.84MH TH VERT	FCI	68000-103HLF	Digi-Key	609-3461-ND		\$0.0000
1	J9	CON HDR-2.54 Male 1x2 Gold 5.84MH TH VERT	FCI	77311-118-02LF	Digi-Key	609-4434-ND		\$0.0000
2	J10, J11	CON TERMINAL 2.54mm 1x4 Female 20-30AWG 6A TH R/A	On Shore Technology Ind	OSTVN04A150	Digi-Key	ED10563-ND		\$0.0000
1	L1	Fixed Inductors 4.7uH 20% SMD 5040	Bourns	SRN5040-4R7M	Mouser	652-SRN5040-4R7M		\$0.0000
1	L2	INDUCTOR 68uH 0.95A 20% SMD LEW68H4.5	Taiyo Yuden	NRS6045T680MMGK	Digi-Key	587-2958-1-ND		\$0.0000
3	LD1, LD2, LD3	DIO LED GREEN 3.2V 20mA 430mod Clear SMD 0603	Würth Electronics Inc	150060GS75000	Digi-Key	732-4971-1-ND		\$0.0000
2	LD4, LD5	DIO LED RED 2V 20mA 250mod Clear SMD 0603	Würth Electronics Inc	150060RS75000	Digi-Key	732-4978-1-ND		\$0.0000
1	Q1	TRANS BJT DUAL NPN+NPN PHPT610030NXX 100V 3A 1.25W LFPK956D-8	Nexperia USA Inc.	PHPT610030NXX	Digi-Key	1727-2265-1-ND		\$0.0000
1	Q2	TRANS FET P-CH DMP3099L-7 -30V -3.8A 1.08W SOT-23-3	Diodes Incorporated	DMP3099L-7	Digi-Key	DMP3099L-7DICT-ND		\$0.0000
1	R1	RES TF 100k 1% 1/8W SMD 0603	Vishay	MCT06030C1003FP500	Digi-Key	MCT0603-100K-CFTR-ND		\$0.0000
1	R2	RES TF 10k 1% 1/16W SMD 0603	TE Connectivity	5-1879337-9	Digi-Key	A102203CT-ND		\$0.0000
1	R3	RES TKF 30k 1% 1/10W SMD 0603	Stackpole Electronics Inc	RMCF0603FT30K0	Digi-Key	RMCF0603FT30K0TR-ND		\$0.0000
6	R4, R12, R20, R21, R23, R26	RES TKF 10k 1% 1/10W SMD 0603	Panasonic	ERJ-3EKF1002V	Digi-Key	P10.0KHCT-ND		\$0.0000
4	R5, R11, R24, R25	RES TKF 6.8k 1% 1/10W SMD 0603	Panasonic	ERJ-3EKF6801V	Digi-Key	P6.8KHCT-ND		\$0.0000
3	R6, R7, R10	RES TKF 4.7k 1% 1/10W SMD 0603	Vishay Dale	CRCW06034K70FKEA	Digi-Key	541-470KHCT-ND		\$0.0000
1	R8	RES TKF 1.05M 1% 1/10W SMD 0603	Vishay Dale	CRCW06031M05FKEA	Digi-Key	541-105MHCT-ND		\$0.0000
1	R9	RES TKF 120k 1% 1/10W SMD 0603	Panasonic	ERJ-3EKF1203V	Digi-Key	P120KHCT-ND		\$0.0000
1	R13	RES TKF 15k 1% 1/10W SMD 0603	Stackpole Electronics Inc	RMCF0603FT15K0	Digi-Key	RMCF0603FT15K0CT-ND		\$0.0000
1	R14	RES TKF 100k 1% 1/10W SMD 0603	TE Connectivity	1622827-1	Digi-Key	A106046CT-ND		\$0.0000
1	R15	RES TKF 2.2k 1% 1/10W SMD 0603	Panasonic	ERJ-3EKF2201V	Digi-Key	P2.20KHCT-ND		\$0.0000
1	R16	RES TKF 22k 1% 1/8W SMD 0603	MULTICOMP	MCPH03018F2202T5E	Farnell	6330829		\$0.0000
1	R17	RES TKF 33k 1% 1/10W SMD 0603	Panasonic	ERJ-3EKF3302V	Digi-Key	P33.0KHCT-ND		\$0.0000
1	R18	RES TKF 1R 1% 1/4W SMD 1206	ROHM	MCR18E2HF1R00	Digi-Key	RHM1.00FTR-ND		\$0.0000
1	R19	RES TKF 100R 1% 1/10W SMD 0603	Panasonic	ERJ-3EKF1000V	Digi-Key	P100HCT-ND		\$0.0000
1	R27	RES TKF 22R 1% 1/10W SMD 0603	Panasonic Electronic Cor	ERJ-3EKF22R0V	Digi-Key	P22.0HCT-ND		\$0.0000
2	TP1, TP2	CON TP TAB Silver Mini 3.8x2.03 SMD	Panasonic Electronics	ERJ-3EKF22R0V	Digi-Key	36-6019CT-ND		\$0.0000

### Microchip Parts listed below

1	U1	MCHP INTERFACE USB I2C UART MCP2221A-I/ST TSSOP-14	Microchip Technology	MCP2221A-I/ST	Microchip Tech	MCP2221A-I/ST		\$0.0000
1	U2	MCHP ANALOG LDO 3.3V MCP1703AT-5002E/CB SOT-23A-3	Microchip	MCP1703AT-3302E/CB	Digi-Key	MCP1703AT-3302E/CBCT-ND		\$0.0000
1	U3	MCHP ANALOG SWITCHER Boost 32V MCP1663T-E/OT SOT-23-5	Microchip Technology Ind	MCP1663T-E/OT	Microchip Tech	MCP1663T-E/OT		\$0.0000
1	U4	MCHP MEMORY SERIAL EEPROM 2k I2C 24LC02BT-E/OT SOT-23-5	Microchip	24LC02BT-E/OT	Microchip	24LC02BT-E/OT		\$0.0000
1	U5	MCHP ANALOG OPAMP 1-Ch 1MHz MCP6001T-I/OT SOT-23-5	Microchip Technology	MCP6001T-I/OT	Microchip Tech	MCP6001T-I/OT		\$0.0000
1	U6	MCHP ANALOG FAN CONTROLLER 3-Ch EMC2103-4-AP-TR QFN-16	Microchip Technology	EMC2103-4-AP-TR	Microchip Tech	EMC2103-4-AP-TR		\$0.0000
1	U7	MCHP ANALOG FET DRIVER Single-Inverting MCP1401T-E/OT SOT-23-5	Microchip Technology	MCP1401T-E/OT	Digi-Key	MCP1401T-E/OTCT-ND		\$0.0000

### Mechanical Parts to be added in the package

1	CBL1	MECH HW CABLE USB Male-A to Male Micro-B Clear 4'	DongGuan ZhanXin	A006ZX027	DongGuan Zha	A006ZX027		\$0.0000
1	FAN1	MECH HW FAN 12VDC 40x10mm 8500RPM TACH 3 WIRE	Sunon Fans	MF40101VX-1000U-G9	Digi-Key	259-1808-ND		\$0.0000
4	JP1, JP2, JP3, JP4	MECH HW JUMPER 2.54mm 1x2 w/ Handle	TE Connectivity AMP Co	880584-4	Digi-Key	A122487-ND		\$0.0000
1	LABEL1	LABEL, NEED HELP WITH ASSY/SERIAL						\$0.0000
4	NUT1, NUT2, NUT3, NUT4	MECH HW NUT M3 Nylon	Keystone Electronics	4688	Digi-Key	36-4688-ND		\$0.0000
4	PAD1, PAD2, PAD3, PAD4	MECH HW RUBBER PAD Cylindrical D9.4 H4.8 Clear	MULTICOMP	2565	Farnell	2527428		\$0.0000
2	Q3, Q4	TRANS BJT NPN 2N3904TA 40V 0.2A 0.625W TO-92-3	Fairchild Semiconductor	2N3904TA	Digi-Key	2N3904TAFSCT-ND		\$0.0000
4	SCR1, SCR2, SCR3, SCR4	MECH HW SCREW M3x16mm Pan Slotted Nylon	Keystone Electronics	29346	Digi-Key	36-29346-ND		\$0.0000
4	STANDOFF1, STANDOFF2, STANDOFF3, STANDOFF4	MECH HW STAND-OFF M3x10mm M/F HEX Nylon	Essentra Components	NTS-10	Digi-Key	RPC1758-ND		\$0.0000

### PCB

1	PCB1	Printed Circuit Board		04-10801-R3				\$0.0000
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### Do Not Populate Parts listed below

1	R22	RES TKF 7.87k 1% 1/10W SMD 0603	Yanagisawa	9706031A7871FBHFT	Digi-Key	9706031A7871FBHFT-ND		\$0.0000
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Approved	Notes	Description