



**synthesis
technology**

**MOTM-490 Micro Voltage-Controlled Filter
Assembly Instructions & Owner's Manual**

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MOTM-490 PARTS LIST

Please carefully check that all parts are in your kit. If you have a suspected shortage, please call or email. If you get free extra stuff, keep it for next time.

Capacitor bag, containing the following 15 parts (**C1-C6 not used**):

3ea 10mf, 50V Electrolytic	C7, C8, C21
1ea 220mf, 10V Electrolytic	C15
2ea 1mfd, 50V non-polar Electrolytic	C13, C20
1ea 22pf (marked 220) ceramic axial	C10
1ea 220nf film (reddish-brown, marked 224) cap	C12
1ea 1nf yellow box cap	C14
4ea 100nf film (reddish-brown, marked 104) cap	C16 – C19
2ea 0.1mfd (marked 104) ceramic axial	C9, C11

Resistor bag, containing the following 33 parts (5% unless noted):

7ea 1K (brown, black, red)	R6, R15-R18, R27, R33
3ea 100K 1% (brown, black, black, orange)	R5, R23, R32
3ea 10K (brown, black, orange)	R11, R12, R13
3ea 15K (brown, green, orange)	R3, R28, R31
2ea 22K (red, red, orange)	R4, R26
2ea 2K7 (red, violet, red)	R14, R19
2ea 360 Ω (orange, blue, brown)	R20, R21
2ea 680 Ω (blue, gray, brown)	R24, R25
1ea 470K (yellow, violet, yellow)	R1
1ea 270K (red, violet, yellow)	R2
1ea 12K (brown, red, orange)	R7
1ea 200K (red, black, yellow)	R8
1ea 3K (orange, black, red)	R9
1ea 680K (blue, gray, yellow)	R10
1ea 127K 1% (brown, red, violet, orange)	R22
1ea 39K (orange, white, orange)	R29 (see text for possible mod)
1ea 16K (brown, blue, orange)	R30

IC bag, containing the following 13 parts:

2ea SSM2210 NPN matched pair	Q1, Q2
7ea BC550C NPN transistor	Q3, Q5 – Q10
2ea BC560C PNP transistor	Q4, Q11
1ea 1N4148 diode	D1
1ea NE5517 dual OTA	U1

- Misc #1 bag, containing the following 5 parts:**
 - 2ea Axial ferrite beads (plain, gray things) L1, L2
 - 1ea MTA-156 power connector JP1
 - 1ea trimmer, 100K Bourns 3386P TP1
 - 1ea trimmer, 20K Bourns 3386P TP2
- Knobs, 3ea, ALCO PKES90B1/4**
- Jacks, 6ea Switchcraft 112A**
- Pots, 3ea containing the following:**
 - 3ea 100K cermet Spectrol 149 VR1- VR3
- Front panel**
- Mounting bracket**
- Wire bag, containing the following 7 wires:**
 - 3ea RG-174 coax, 4 ½ inches
 - 1ea RG-174 coax, 7 inches
 - 2ea 2-wire set, 22ga, 3 ½ inches (red/black)
 - 1ea Power Cable, 20"
- Hardware bag, containing:**
 - 4ea #8-32 x 3/8 black screws (for mounting module to rack)
 - 4ea #6-32 x 1/2 zinc screws (for attaching pc board to bracket)
 - 4ea 1/4 inch aluminum spacers
 - 4ea #6 KEPS nuts
 - 5ea small tie-wraps
- Organic Solder**
- No-clean Solder**
- PC Board, MOTM-490**