Update KiCAD Filter model and prep BOM for assembly March 16th, 2022

Job Summary:

Seeking a PCB designer who can work in KiCAD to take an existing design and make a handful of changes described below. Also need a BOM prepared so that the board can be fully assembled by a vendor. The most compelling applicants will also coordinate the manufacture of ten boards (50 sub-boards) with advanced circuits, sierra circuits, or a preferred vendor offering assembly and comparable prices/leadtimes.

Job Details:

The design constitutes a primary board which routes 32 differentially paired inputs from a 68 pin VHDCI connector to eight 4-channel "daughter boards" where signals are filtered. 25 of the 32 channels are then sent out to a DB25 connector.

Desired changes:

1. The output connector will be changed to a 68 pin VHDCI just like the input, and all 32 channels should be used. The output from each filter should go to the same numbered pin on the output connector as the one that the "P" side of the differential input came in on. The unused channels on the 68 pin output connector should be grounded.

2. The daughter boards currently feature a 3-pole, 0.1 MHz Lowpass filter on each channel, as well as a U.FL coax pickoff. These will be prepped for assembly.

3. A new version of the daughter board will be made: U.FL pickoffs will be removed, and the filter replaced with a fourth order lowpass filter consisting of four cascaded passive RC stages, each with R=1k, C=0.1u. (Yes, rolloff will be slow, 3 dB point not where designed, but doesn't matter in this case).

Part List:

1. Motherboard:
   1. WM7543-ND, board edge connector, J1, J2
   2. A31814-ND, HD68 connector, J3-10
   3. RMCF0603ZT0R00CT-ND , R1-6, 13-18, 25-30, 39-44, 51-56, 63-66, 71,72: 0 ohm
   4. All other R’s, do not place.
   5. All C’s: do not place.
2. Daughterboard OLD:
   1. H11891TR-ND, u.FL connector
   2. 587-2511-1-ND, PI filter inductor, L1
   3. 311-69.8HRCT-ND, R2, 70 ohm
   4. 399-C0603C222J2GAC7867CT-ND, C2-3, 22n 100V NP0 0603
   5. RMCF0603ZT0R00CT-ND, R3, L2, 0 ohm
   6. C1, 587-6323-2-ND
   7. R1, do not place
   8. Same for other four filters.
3. Daughterboard NEW:
   1. RMCF0603JJ1K00TR-ND, R1,2,3,4: 1k
   2. 587-6323-2-ND, C1,2,3,4: 0.1u