Digital Pin AWT Pinout Datasheet

PCB 1: Modulator (mod): (inverting summing amplifier, for carrier and audio wave, with gain at each opamp stage=1)

right bottom: 1=Vaudio, 2,3=GND

right top: 1 thru 4= GND

top: 4 thru 6 = Vout (1 thru 3 dont matter)

left top: 1,2,3=V+ 4,5= V-

left bottom: 1=V+, 2,3,4=Vcarrier, 5=V-

(for all locations, top to bottom labelled 1 to n) but:
for top: L->R labelled 1 to n

REFERENCE: With 3.5mm Audio jack facing the floor

PCB 2: Amplifier (op amp / amp): (Non inverting amplifier, gain of 1-21)

L->R: 1=GND, 8=Vi, 6=Vo, 5=V+, 4=V- (for top)

(for left): all: top to bottom: GND (for Rx end, common port)

REFERENCE: with dip in IC chip facing the sky

PCB 3: Demodulator (demod) and Offset Nullifier (HPF): (2-LPF @20kHz cutoff and HPF @10Hz cutoff)

L->R at top of ckt in PCB half, for HPF: 1=GND, 3=Vo, 5=Vi ... for demod: 1=Vi, 3=Vo, 5=GND.

REFERENCE: for HPF, with ckt part without blue wire: digital pins facing top, for demod: ckt part with blue wire: digital pins facing top

PCB 4: Speaker: (8 Ohm Low Impedance) (spkr)

1=Vi, 5=GND (top to bottom numbering)

REFERENCE: With speaker facing up, PCB held lengthwise (not flat)

System notes:

use one PS for the set I limit to 0.02-0.04 A, and +/- 15 V setting (tracked). If Tx -> Rx issue, use another PS and connect the Rx part of opamp same way, otherwise use the same PS for all

Signal Specifications:

(V+=15V and V-=15V), GND=0V
V carrier: 2Vpp, 500kHz, 0mV offset. Vaudio: (100-500 mVpp): 20Hz-20kHz

Tx coil impedance @500kHz=230 Ohm and Rx coils impedance @500kHz=5 Ohm (op amps used: LM358P, UA741CN both drive-able)

Connections:

mod->Tx->Rx->HPF->op amp->demod->spkr

All jumper digital pins are female ended, except left of amplification PCB which is male ended (for wires, both types of ports)

keep Tx as parallel and Rx as series, make sure the Rx coil has capacitor as Vi and other as GND for Rx processing PCBs, and For Tx coil, one end as Vi and other as GND of mod PCB. Additionally, check if the connections on coils are where the AWG wire is stripped from coating (CHECK: red (NO), silver (YES))

RULE: Vo for a prior stage goes into Vi of next stage