| Register Name / Number | Register Address | Enable | Gain | | IN 4 | IN 3 | IN 2 | IN 1 | IN 0 | Auto Calculated Hex | Command in HEX | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | bit 7 | bit 6 | bit 5 | bit 4 | bit 3 | bit 2 | bit 1 | bit 0 | | | |
| | | 128 | 64 | 32 | 16 | 8 | 4 | 2 | 1 | | | |
| 1 | 0x01 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0x81 | 0x06 \| 0x01 0x81 | A/V Out 1 |
| 2 | 0x02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0x0 | 0x06 \| 0x02 0x00 | *Not Used* |
| 3 | 0x03 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0x83 | 0x06 \| 0x03 0x83 | A/V Out 2 |
| 4 | 0x04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0x0 | 0x06 \| 0x04 0x00 | *Not Used* |
| 5 | 0x05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0x0 | 0x06 \| 0x05 0x00 | *Not Used* |
| 6 | 0x06 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0x85 | 0x06 \| 0x06 0x85 | A/V Out 3 |
| 7 | 0x07 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0x0 | 0x06 \| 0x07 0x00 | *Not Used* |
| 8 | 0x08 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0x0 | 0x06 \| 0x08 0x00 | *Not Used* |
| 9 | 0x09 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0x87 | 0x06 \| 0x09 0x87 | A/V Out 4 |
| | | Enter 0 / 1 pending requirement | | | | | | | | | | |

| Comments | | 0=Power Down \| 1=Enable | 00=6dB \| 01=7dB \| 10=8dB \| 11=9dB | Mapping input to output. to output. Bit 0 or 1 | Calculated Values - Do Not Change | Matrix Address [0x06h or 0x86h] [Output Register] [Control] |
|---|---|---|---|---|---|---|

| IN | State | Default Usage / Comment |
|---|---|---|
| 1 | 1 | Video Input 1 |
| 2 | X | *Not Used* |
| 3 | 2 | Video Input 2 |
| 4 | X | *Not Used* |
| 5 | 3 | Video Input 3 |
| 6 | X | *Not Used* |
| 7 | 4 | Video Input 4 |
| 8 | X | *Not Used* |
| 9 | 5 | Audio Input 5 or Pi Audio Left Output if Link Set on Board |
| 10 | X | *Not Used* |
| 11 | 6 | Audio Input 6 or Pi Audio Right Output if Link Set on Board |
| 12 | PI | Video output from PI via the 3.5mm Jack Socket Loopback |

FMS6501A can operate on both 3v3 and 5v supply.
MT88L70 can only operate at 3v3. A 5v version MT8870 is available on request.
All I/O levels are at 3v3 by default. Please be aware of these levels when driving the SQ inputs.
The 5v LDO regulator only goes to the Pi Header. Input voltage range 2.7v to 27v @ Max 2.5A

| MT88L70 | Function | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | * | # | A | B | C | D |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Q1 | D0/1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 |
| Q2 | D1/2 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 |
| Q3 | D2/4 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 |
| Q4 | D3/8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| TOE | DINT | | | | | | | | | | | | | | | | |
| | HEX | 0x1 | 0x2 | 0x3 | 0x4 | 0x5 | 0x6 | 0x7 | 0x8 | 0x9 | 0xA | 0xB | 0xC | 0xD | 0xE | 0xF | 0x0 |
| | DEC | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 0 |

| Header Pin | GPIO | Function | Comments |
|---|---|---|---|
| 8 | 14 | TXD | Serial TXD 3v3 Level |
| 10 | 15 | RXD | Serial RXD 3v3 Level |
| 11 | 17 | RTS | Serial RTS 3v3 Level |
| 3 | 2 | SDA | I2C SDA 3v3 Level |
| 5 | 3 | SCL | I2C SCL 3v3 Level |
| 27 | | E-SDA | E2 SDA |
| 28 | | E-SCL | E2 SCL |
| 37 | 26 | DD0 | DTMF MT88L70 Q1 3v3 Level |
| 19 | 10 | DD1 | DTMF MT88L70 Q2 3v3 Level |
| 33 | 13 | DD2 | DTMF MT88L70 Q3 3v3 Level |
| 31 | 6 | DD3 | DTMF MT88L70 Q4 3v3 Level |
| 29 | 5 | DINT | DTMF MT88L70 INT 3v3 Level |
| 7 | 4 | MCLR | Software Control Safe Reset |
| 13 | 27 | PTT | PTT FET Control Output |
| 32 | 12 | RX-SQ-1 | RX Squelch or Matrix Control Input 1 |
| 36 | 16 | RX-SQ-2 | RX Squelch or Matrix Control Input 2 |
| 38 | 20 | RX-SQ-3 | RX Squelch or Matrix Control Input 3 |
| 40 | 21 | RX-SQ-4 | RX Squelch or Matrix Control Input 4 |
| 15 | 22 | STATUS | Status LED Control Output |