

CUSTOMER :

MODEL NAME :

MODEL NO :

NO :

DATE :

# SPECIFICATION

PART NAME : FM MODULE

PART NO : DA-201/DA-201(A)

| APPROVAL     |  |
|--------------|--|
|              |  |
| REFERENCE NO |  |

PLEASE RETURN ONE COPY FROM ( ) SETS  
WITH YOUR AUTHORIZED SIGNATURE AFTER  
COMPLETING YOUR APPROVALS

**(株) D & A**

Digital & Analog Corporation

#305 Kyungki Venture Bldg, 1017, Inkye-Dong, Paldal-Gu Suwon City, Kyungki-Do, Korea  
E-mail : dnacorp@dnacorp.co.kr      Tel : 82-31-234-4812      Fax : 82-31-234-4817

|   |        |
|---|--------|
| <b>SPECIFICATION</b>                          | PAGE   |
| <b>FM STEREO TUNER MODULE : DA-201/201(A)</b> | 1 OF 5 |

1. Scope

This specification applied to FM STEREO tuner Module.

2. General specification

| NO | ITEM                 | SPEC               | NOTE              |
|----|----------------------|--------------------|-------------------|
| 1  | Frequency Range      | 87.5(76) - 108 MHz |                   |
| 2  | IF frequency         | 225 kHz            |                   |
| 3  | RF input inpedance   | 40                 | Unbalance         |
| 4  | Suppy Veltage        | 3V                 |                   |
| 5  | Operating tamperture | - 10 -55           |                   |
| 6  | Humidity             | 85% MAX            |                   |
| 7  | Clock (X-TAL)        | MAIN : 32.768kHz   | SUB:13MHz, 6.5MHz |

3. Eaelectrical specification

| NO | ITEM                      | Test condition                     | SPEC |     |     |            |
|----|---------------------------|------------------------------------|------|-----|-----|------------|
|    |                           |                                    | MIN  | TYP | MAX | UNIT       |
| 1  | Sensitivity<br>(S/N 30dB) | 90.0 MHz                           | -    | 6   | 12  | dB $\mu$ V |
|    |                           | 98.0 MHz                           | -    | 6   | 12  | dB $\mu$ V |
|    |                           | 106.0 MHz                          | -    | 6   | 12  | dB $\mu$ V |
| 2  | S/N Ratio                 | 40kHz, DEV                         | 55   | 60  | -   | dB         |
| 3  | Image rejection           | 87.5~108MHz                        | 25   | 30  | -   | dB         |
| 4  | Stereo separation         | f 75kHz, f <sub>mod</sub> = 1kHz   | 25   | 30  | -   | dB         |
| 5  | Audio output              | f 22.5kHz, f <sub>mod</sub> = 1kHz |      | 80  |     | mV         |
| 6  | T.H.D                     | f 22.5kHz, f <sub>mod</sub> = 1kHz |      | 0.5 | 1.5 | %          |

|             |                              |        |       |          |
|-------------|------------------------------|--------|-------|----------|
| DATE        | <b>D &amp; A</b> CORPORATION | DESIGN | CHECK | APPROVAL |
| 21 APL 2003 |                              |        |       |          |
|             |                              |        |       |          |
|             |                              |        |       |          |

|   |        |
|---|--------|
| <b>SPECIFICATION</b>                          | PAGE   |
| <b>FM STEREO TUNER MODULE : DA-201/201(A)</b> | 2 OF 5 |

4. Standard test condition

| NO | ITEM                 | MONO                                       | STEREO                                 |
|----|----------------------|--|--|
| 1  | Modulation Frequency | 1kHz, 22.5kHz/dev<br>V <sub>RF</sub> = 1mV | 1kHz, 75kHz/dev<br>including 10% pilot |
| 2  | Test Frequency       | 98MHz                                      |  |
| 3  | RF Input level       | 60dBμV                                     |  |

5. DC Specification

| ITEM           | Test condition | SPEC |     |     |      |
|----------------|----------------|------|-----|-----|------|
|                |                | MIN  | TYP | MAX | UNIT |
| Supply Voltage | ON Station     | 2.5  | 3.0 | 5   | V    |
| Supply Current | ON Station     | 8.5  | 10  | 13  | mA   |
| Supply Current | OFF Station    |      | 25  |     | μA   |

6. Demensions

- 1) UNIT : 13(L) x 12(W) x 1.8(H) mm + 0.2 mm
- 2) Packing : 283(L) x 150(W) x 15(H) mm (200 PCS)
- 3) M/CARTON : 312(L) x 166(W) x 55(H) mm (1,000 PCS)

7. Marking : STAMP

201

201(A)

|             |                              |        |       |          |
|-------------|------------------------------|--------|-------|----------|
| DATE        | <b>D &amp; A</b> CORPORATION | DESIGN | CHECK | APPROVAL |
| 21 APL 2003 |                              |        |       |          |
|             |                              |        |       |          |
|             |                              |        |       |          |

|   |        |
|---|--------|
| <b>SPECIFICATION</b>                          | PAGE   |
| <b>FM STEREO TUNER MODULE : DA-201/201(A)</b> | 3 OF 5 |

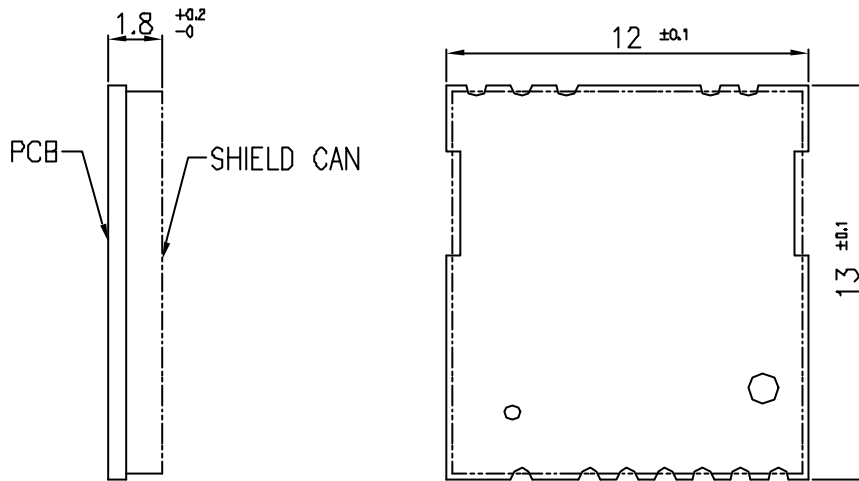
8. Electrical Interface

| <b>Terminal</b> | <b>NAME</b> | <b>Inter face</b> | <b>I/O</b> | <b>Description</b>          |
|-----------------|-------------|-------------------|------------|-----------------------------|
| 1               | GND         | GND               | -          |                             |
| 2               | DATA        | Digital           | I/O        | Bus data line Input/output. |
| 3               | CLK         | Digital           | I          | Bus clock line Input.       |
| 4               | READ/WRITE  | Digital           | I          | Read/write control input    |
| 5               | BUSMODE     | Digital           | I          | Bus mode select input       |
| 6               | BUSENABLE   | Digital           | I          | Bus enable input            |
| 7               | X-TALIN     | Analog            | I          | Input crystal oscillator.   |
| 8               | OUT-L       | Analog            | O          | Lch. Audio output.          |
| 9               | OUT-R       | Analog            | O          | Rch. Audio output.          |
| 10              | GND         | GND               | -          |                             |
| 11              | VCC         | Analog            | I          | 3V VCC Input line.          |
| 12              | ANT         | Analog            | I          | RF Input line.              |

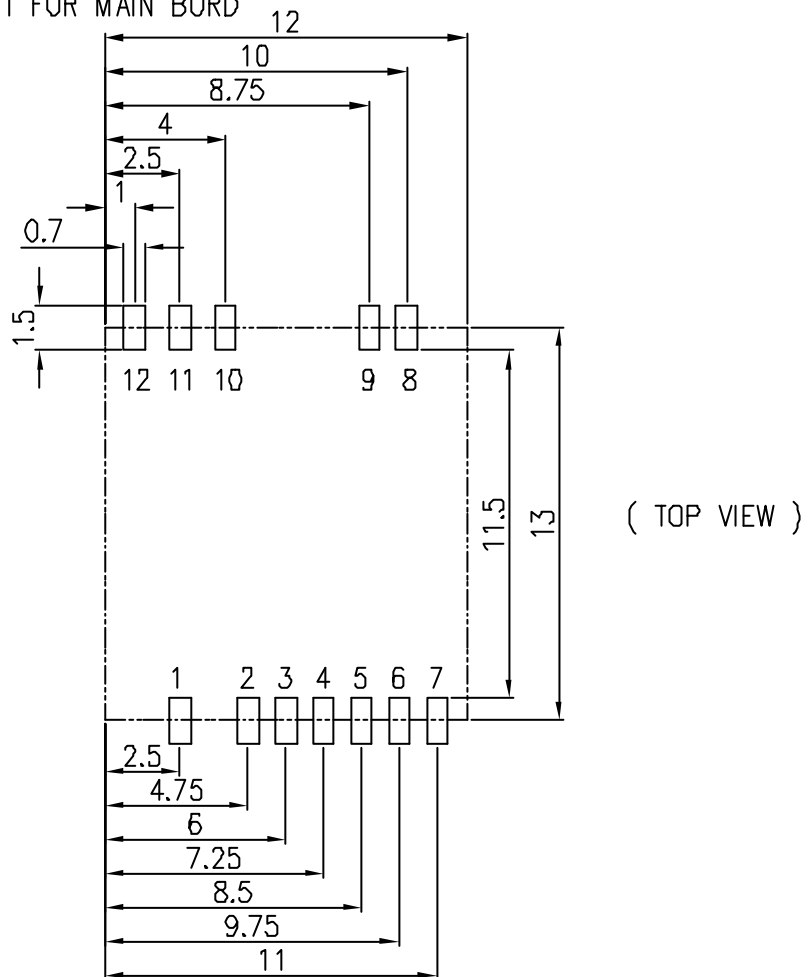
Need the PULL UP (47 kΩ) FOR DATA (2) line

|             |                              |        |       |          |
|-------------|------------------------------|--------|-------|----------|
| DATE        | <b>D &amp; A</b> CORPORATION | DESIGN | CHECK | APPROVAL |
| 21 APL 2003 |                              |        |       |          |
|             |                              |        |       |          |
|             |                              |        |       |          |

9. OUT LINE SPECIFICATION



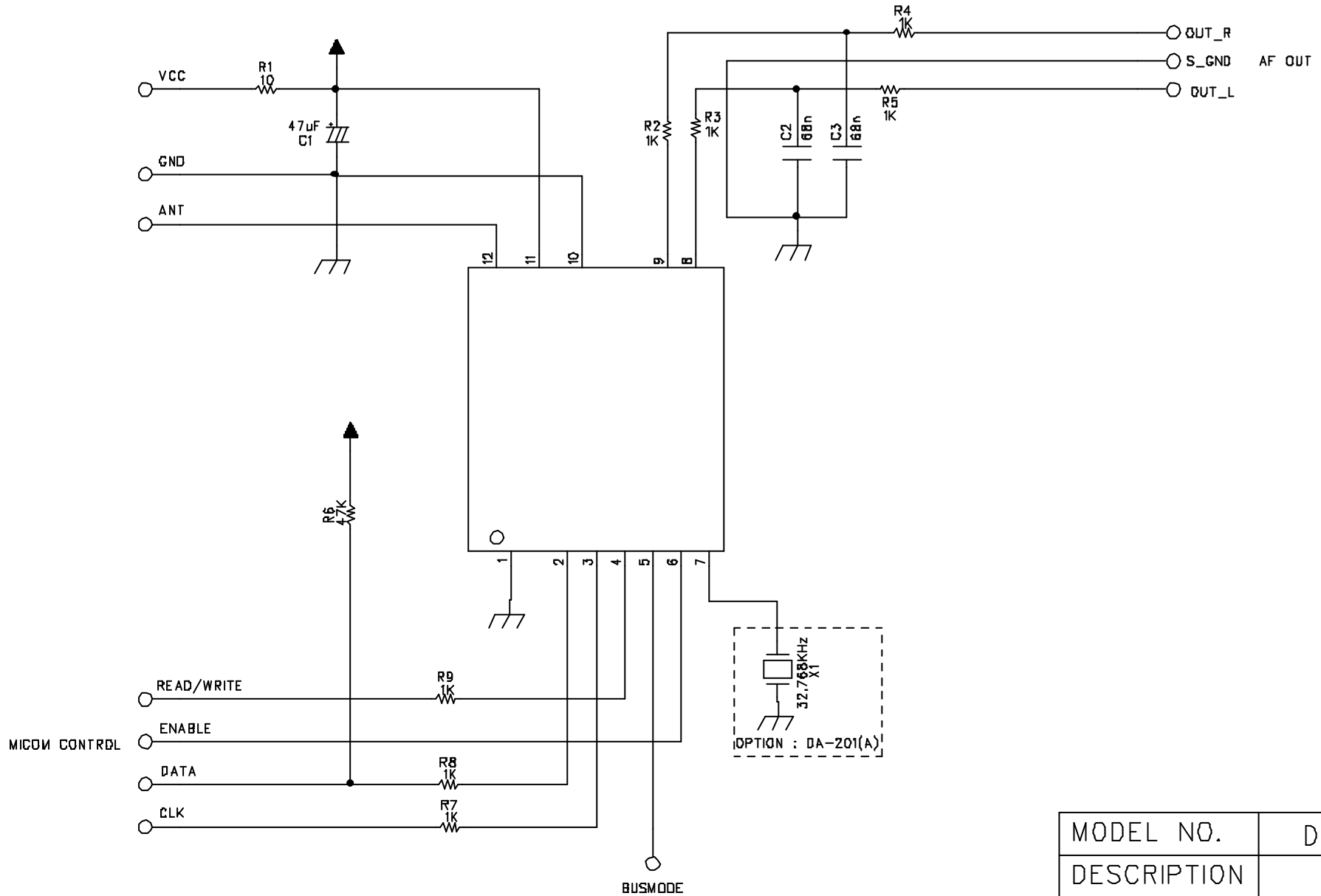
10. SOLDER LAND LAY OUT FOR MAIN BORD



- 1) GND
- 2) DATA (47 Kohm Pull Up)
- 3) CLK
- 4) Write/Read
- 5) Bus Mode
- 6) Bus Enable
- 7) X-TAL In
- 8) Out-L
- 9) Out-R
- 10) GND
- 11) Vcc
- 12) ANT

( TOP VIEW )

|                  |                 |        |       |          |
|------------------|-----------------|--------|-------|----------|
| DATE 2003.04.21  | D&A CORPORATION | DESIGN | CHECK | APPROVAL |
| OUT LINE DRAWING |                 |        |       |          |
|                  |                 |        |       |          |



|             |            |
|-------------|------------|
| MODEL NO.   | DA-201     |
| DESCRIPTION |            |
| CUSTOMER    |            |
| DATE        | 2003.04.21 |