Reference Design Note / Antenna Design

Reference Antenna Matching Design

Model Number: All modules
Revision: 5.0

1. Integrated antenna module “WML-CXXA” series
(A) - Antenna portion block diagram of module with antenna.

Mitsumi modules (WML-CXXA Series) embed a ceramic antenna on PWB. The antenna portion works like a non-dipole antenna.
A Matching part C or L is required in order to match up to 50 ohms impedance with the ceramic antenna + short strip line.

2. NOT Integrated antenna module “WML-CXXN” Series
(B) - Antenna portion block diagram of module without antenna.

Mitsumi modules (WML-CXXN Series) have no antenna. Several types of antennas match to our modules like following examples.
1) In customer application PWB, the antenna circuit (antenna + short strip line) should be 50ohms impedance. For the best results, use properly matched a capacitor and an inductor.
   The antenna portion may work like dipole antenna.
2) Antenna switch connector should be placed between the module and an antenna in order to measure connected performance easily.

3) There are many kinds of combination with many types of antenna. You could have good matching conditions by referring the above block diagram (B).

Recode of Changes

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<tr>
<th>Date</th>
<th>Revision</th>
<th>Description</th>
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<tbody>
<tr>
<td>9th May, 2001</td>
<td>R1.0</td>
<td>Original</td>
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<tr>
<td>15th May, 2001</td>
<td>R2.0</td>
<td>Add the description of antenna switch connector.</td>
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<tr>
<td>24th Apr, 2002</td>
<td>R3.0</td>
<td>Add the type of WML-C09, WML-10, WML-C11 module. Revise the descriptions.</td>
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<tr>
<td>18th Aug, 2002</td>
<td>R4.0</td>
<td>Minor amendments to text.</td>
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<tr>
<td>26th Sep, 2002</td>
<td>R5.0</td>
<td>Minor amendments to text.</td>
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