

# ANTENNA INFORMATION

|                                                           |                                        |
|-----------------------------------------------------------|----------------------------------------|
| OEM                                                       | DELL                                   |
| ODM                                                       | Compal Electronics, Inc.               |
| Platform model name                                       | P184G                                  |
| Intel platform (ex: Yes, No or NA)                        | Yes                                    |
| Platform type (ex: regular NB, convertible PC, AIO...etc) | Regular NB                             |
| SAR minimum separation (mm)                               | 3 mm (w/bumper)<br>0.9 mm (w/o bumper) |

|                                       |                                                                    |                                                         |  |
|---------------------------------------|--------------------------------------------------------------------|---------------------------------------------------------|--|
| Antenna manufacturer                  | <b>Hong Bo Co., Ltd..</b>                                          |                                                         |  |
| Address                               | 4F., No.143, Sinhu 1st Rd., Neihu Dist., Taipei City, 11494 Taiwan |                                                         |  |
| Antenna Part number                   | Main:<br>Antenna PN: 330-24042<br>Compal PN: DC33002TV0L           | Aux:<br>Antenna PN: 330-24042<br>Compal PN: DC33002TV0L |  |
| Antenna type (ex: PIFA, Dipole...etc) | Monopole                                                           |                                                         |  |

| Antenna Peak gain w/ cable loss (dBi)* |                                  |                               |                               |                               |                               |                               |                               |                               |                               |                                |
|----------------------------------------|----------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|--------------------------------|
|                                        | <b>2.4GHz</b><br>2400-2483.5 MHz | <b>5.2GHz</b><br>5150-5250MHz | <b>5.3GHz</b><br>5250-5350MHz | <b>5.6GHz</b><br>5470-5725MHz | <b>5.8GHz</b><br>5725-5850MHz | <b>5.9GHz</b><br>5850-5895MHz | <b>6.2GHz</b><br>5925-6425MHz | <b>6.5GHz</b><br>6425-6525MHz | <b>6.7GHz</b><br>6525-6875MHz | <b>7.0 GHz</b><br>6875-7125MHz |
| Main                                   | 0.55                             | 2.04                          | 1.16                          | 1.65                          | 2.36                          | 2.36                          | 3.85                          | 2.61                          | 3.01                          | 2.28                           |
| Aux                                    | 0.45                             | 2.85                          | 2.26                          | 2.75                          | 2.94                          | 2.89                          | 2.94                          | 1.83                          | 2.69                          | 3.11                           |

| Cable Assembly Part Number and Information |                                 |                         |                           |                       |                                 |
|--------------------------------------------|---------------------------------|-------------------------|---------------------------|-----------------------|---------------------------------|
|                                            | <b>Cable PN</b>                 | <b>Cable length(mm)</b> | <b>Cable diameter(mm)</b> | <b>Impedance(ohm)</b> | <b>Connector type</b>           |
| Main                                       | White 1.13SLLS<br>SY113L/50-143 | 23.5                    | 1.13                      | 50 ohm                | I-PEX MHF-<br>4L(20565-001R-13) |
| Aux                                        | Black 1.13SLLS<br>SY113L/50-118 | 30                      | 1.13                      | 50 ohm                | I-PEX MHF-<br>4L(20565-001R-13) |

\* 3D Antenna Peak Gain required being test in system basis.

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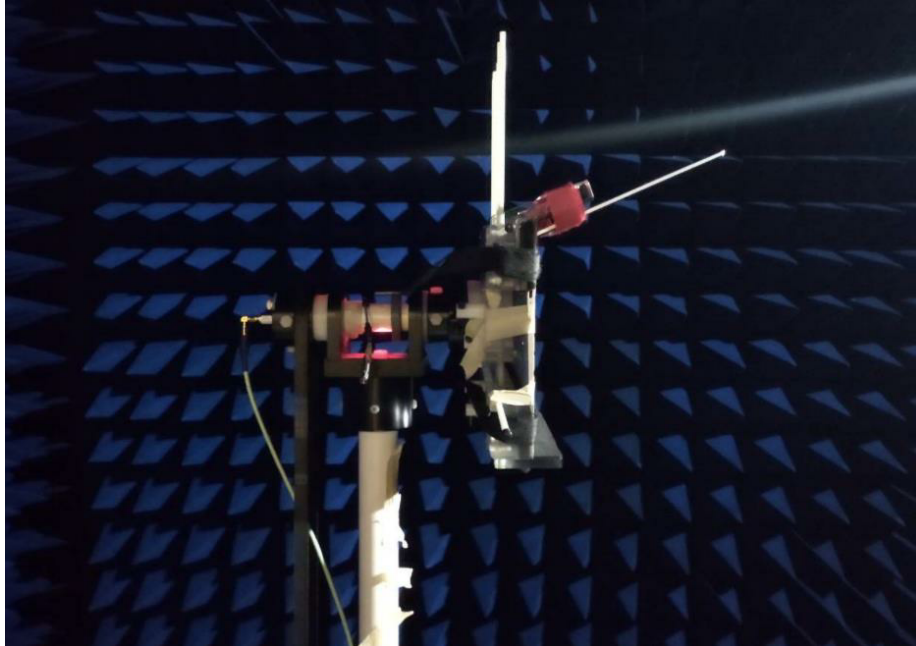
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# Annex A. Photographs

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## A.1 Setup Photo

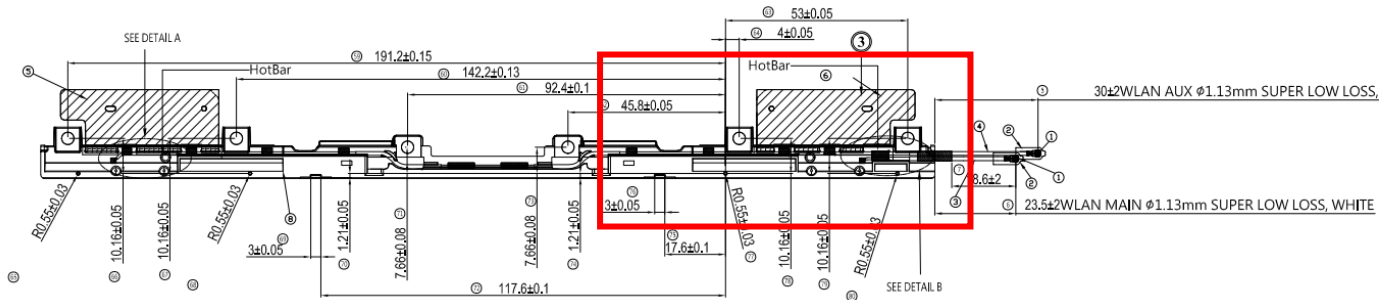
<insert test diagram here for test site utilized>



## A.2 Test sample

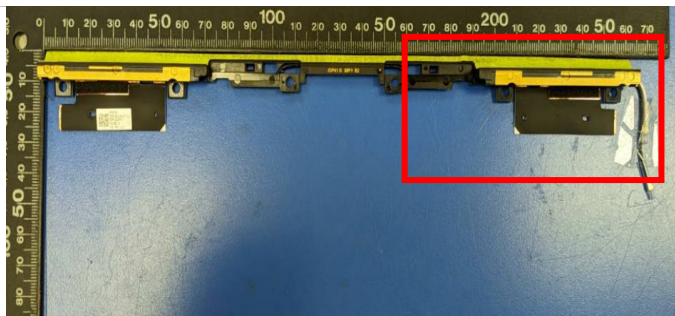
## Main Antenna

## Antenna Drawing

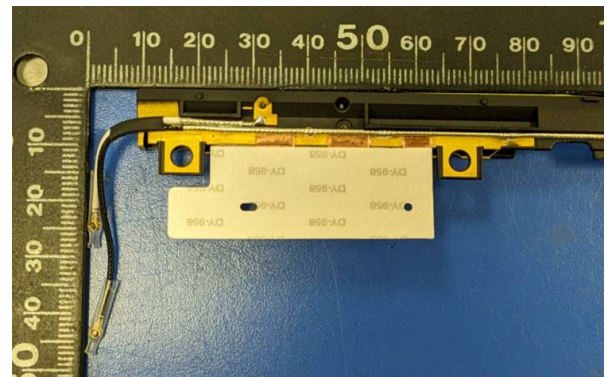
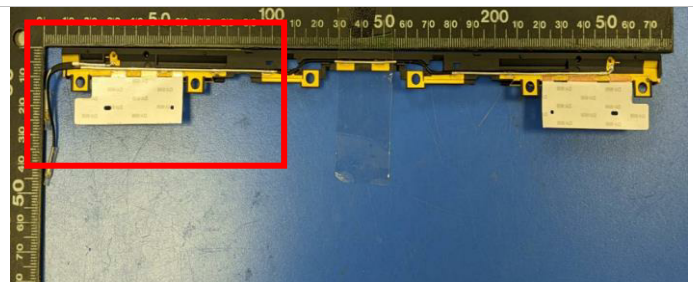


## Antenna Photo

## Front



[Back](#)



**Note: antenna photo should include L type ruler**

Technical drawing of a cable tray assembly, showing side and end views with dimensions and callouts.

**Side View Dimensions (mm):**

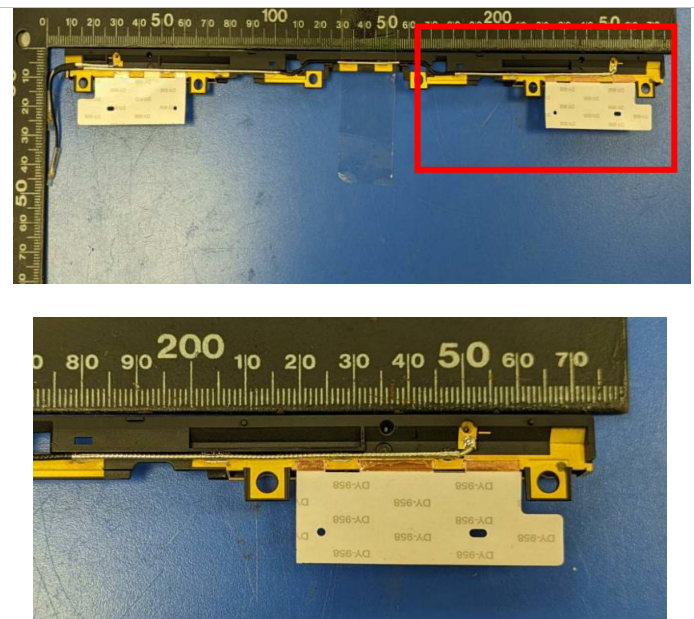
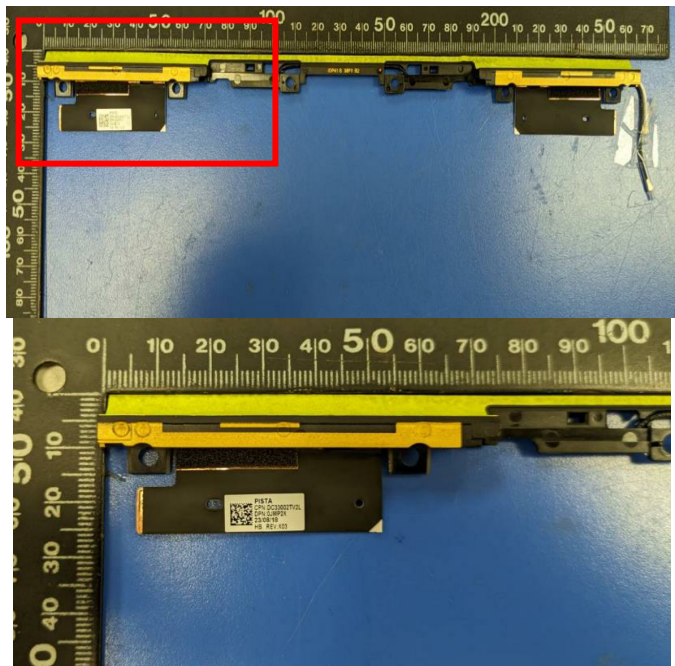
- Overall length: 117.6 ± 0.1
- Segment lengths: 10.16 ± 0.05, 10.16 ± 0.05, 10.16 ± 0.05, 1.21 ± 0.05, 7.66 ± 0.08, 7.66 ± 0.08, 1.21 ± 0.05, 3 ± 0.05, 17.6 ± 0.1
- HotBar dimensions: 191.2 ± 0.15, 142.2 ± 0.13, 92.4 ± 0.1, 45.8 ± 0.05
- End view dimensions: 53.4 ± 0.05, 4 ± 0.05
- Radius: R0.35 ± 0.03

**End View Dimensions (mm):**

- Overall width: 30 ± 2
- Segment lengths: 18.6 ± 2, 23.5 ± 2
- Radius: R0.35 ± 0.03

**Callouts:**

- SEE DETAIL A
- SEE DETAIL B
- HotBar
- 30 ± 2 WLAN AUX Ø 1.13mm SUPER LOW LOSS, BLACK
- 23.5 ± 2 WLAN MAIN Ø 1.13mm SUPER LOW LOSS, WHITE

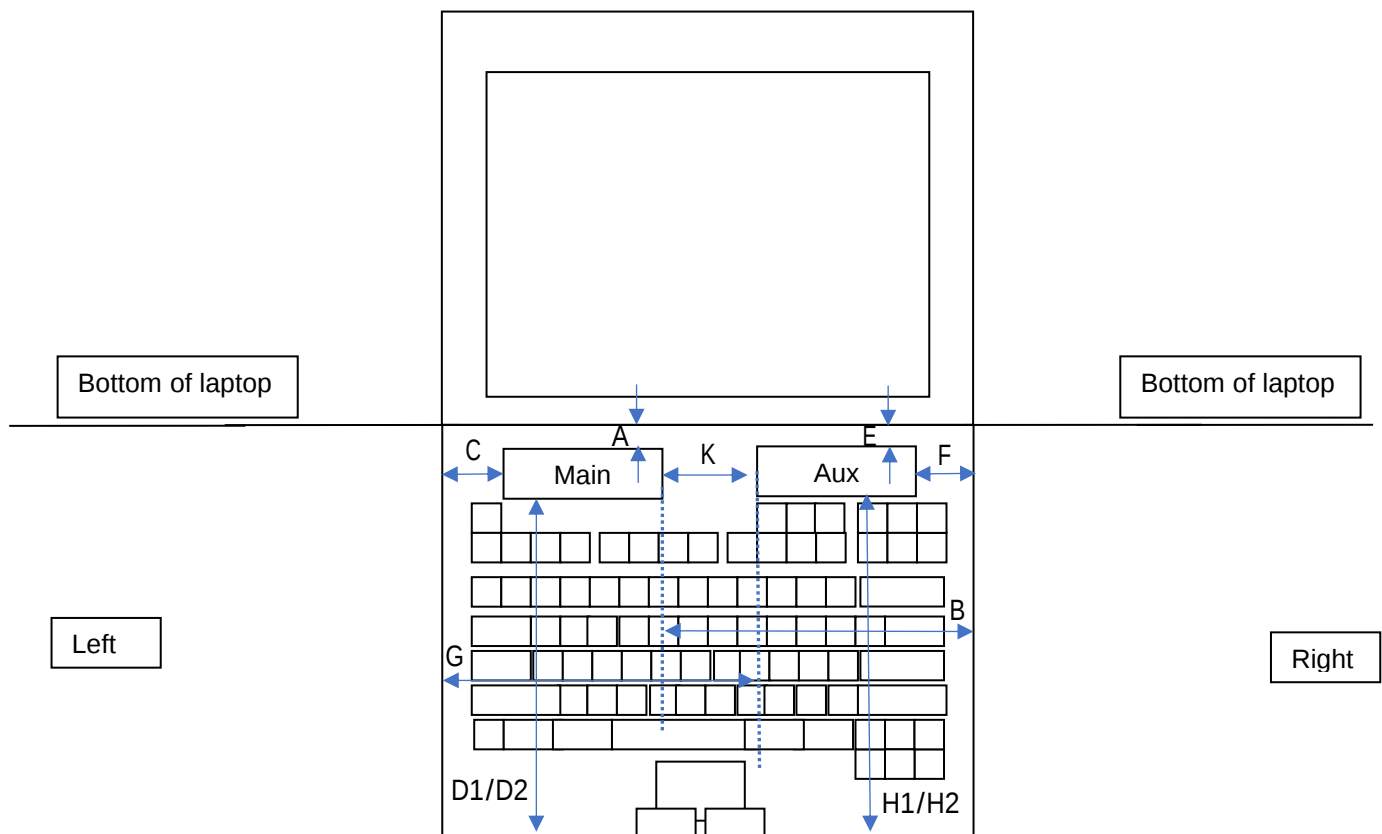


# Annex B. Antenna Location

## B.1 Antenna Host Platform Location Information

Include a dimensioned photo(s) or dimensioned drawing(s) of Main and Aux antenna placements (measurements are not required for receive-only antenna).

Any antenna that transmits must show dimensions to bottom of laptop. Provide a description of the materials that are used for supporting or surrounding transmit antennas; for example, non-conductive plastics vs. conductive coated plastic or metallic materials.



| Minimum Separation Distance |           |                                             |               |
|-----------------------------|-----------|---------------------------------------------|---------------|
| Item                        | Antenna   | Position                                    | Distance (mm) |
| A                           | WLAN-Main | to Top                                      | 1.16mm        |
| B                           | WLAN-Main | to Right                                    | 218.55mm      |
| C                           | WLAN-Main | to Left                                     | 29.95mm       |
| D-1                         | WLAN-Main | to Bottom of Laptop<br>(Include Bumper)     | 3mm           |
| D-2                         | WLAN-Main | to Bottom of Laptop<br>(NOT include Bumper) | 0.9mm         |
| E                           | WLAN-Aux  | to Top                                      | 1.16mm        |
| F                           | WLAN-Aux  | to Right                                    | 29.95 mm      |
| G                           | WLAN-Aux  | to Left                                     | 218.55mm      |
| H-1                         | WLAN-Aux  | to Bottom of Laptop<br>(Include Bumper)     | 3mm           |
| H-1                         | WLAN-Aux  | to Bottom of Laptop<br>(NOT include Bumper) | 0.9mm         |
| K                           | WLAN Main | to WLAN Aux                                 | 117.2mm       |

## B.2 Antenna dimensional information for SAR evaluation

Include a dimensioned photo(s) or dimensioned drawing(s) showing the distance (mm) between the transmit antennas and the user. For notebook/laptop hosts show lapheld position (example below). For tablet hosts show all orientations including lapheld, primary & secondary portrait, primary & secondary landscape positions. Include a description of any proximity sensors or power throttling implementations that limit or exclude use of any host orientation.

