

DATA SHEET

HT OT840

HITAGTM Antenna Tuning Device

Product Specification
Revision 1.1

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PHILIPS

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Author: Renate Rossoll

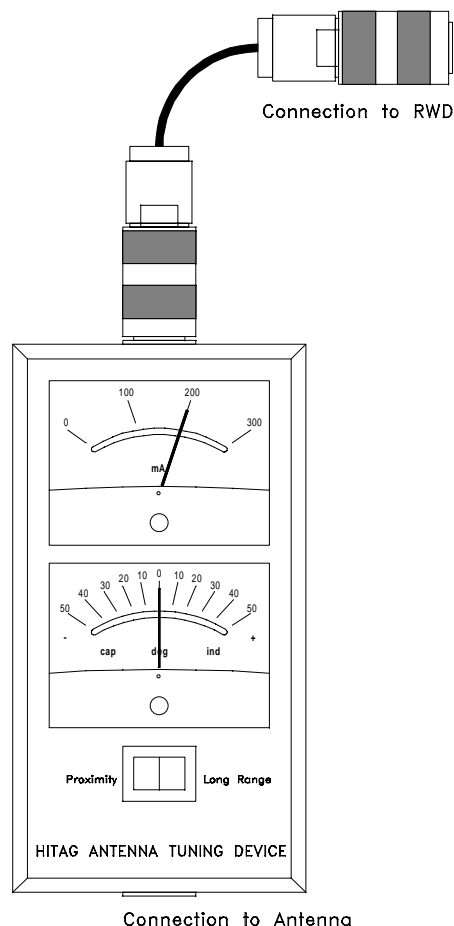
1. General Remarks

For optimal performance HITAG antennas have to be tuned during production, respectively by start-up or, for service purposes, during operation. The HITAG Antenna Tuning Device is a very easy to handle and cost effective solution for the tuning of 125 kHz HITAG antennas. The device is - besides the HITAG antenna training - the optimal complement for antenna design. The HT OT840 therefore is an unrenouncable tool for everybody who designs, produces or even uses HITAG antennas.

The HITAG Antenna Tuning Device can be used for tuning HITAG long range as well as HITAG proximity antennas.

2. Specifications

- temperature range: 0 .. 50°C
- protection class: IP40
- precision at room temperature: measuring current: class 5
measuring phase: class 10
- phase sensitivity: ± 50 parts of scale are $\pm 50^\circ$ (for rough tuning of an antenna with $L \approx 1$ mH and $Q \approx 40$.)
- connection: three-pole DIN - connectors



3. Ordering Information

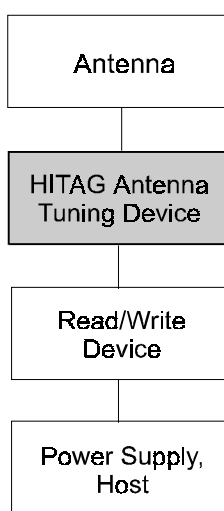
Type Name	Description	Ordering Number
HT OT840	HITAG Antenna Tuning Device	9352 341 60122

4. Using the HITAG Antenna Tuning Device

The HITAG Antenna Tuning Device is a combined current- and phase measurement device. It can be used for tuning HITAG long range as well as HITAG proximity antennas. Selection between long range and proximity is done with the help of a switch.

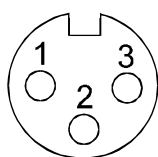
The tuning device is connected between antenna and read/write device as described in the following:

The cable with plug (DIN 41524) has to be connected to the read/write device, the antenna cable is to be connected to the jack (DIN 41524) of the tuning device.



Adapters - if they are necessary - e.g. for connection of a proximity system, can be built up very easily.

Pin assignment of the DIN connectors:



Pin 1: Ground

Pin 2: Rx (not used for long range antennas)

Pin 3: Tx

Moreover, the cable with one of the two DIN connectors (plugs) can be used to build up an adapter.

After connection of the Antenna Tuning Device the operation mode (proximity or long range) has to be chosen with the help of the switch.

Afterwards power supply and read/write device can be switched on.

4.1. Tuning HITAG Long Range Antennas

The device has to be switched to long range mode.

The current should be about 200 mA, a tolerance of ± 10 mA is acceptable.

A current below the tolerance limit implies, that the antenna is badly detuned.

If the current is over the upper tolerance limit you should check the output current of the read/write device. It should be $200 \text{ mA} \pm 10 \text{ mA}$. Otherwise the function of the read/write device should be checked.

For tuning of the antenna refer to the measured phase. The phase should be $0^\circ \pm 15^\circ$ (at a current of 200 mA).

- **If the phase is too high (direction: inductive) the tuning capacity has to be decreased.**
- **If the phase is too low (direction: capacitive) the tuning capacity has to be increased.**

After tuning of the antenna the tuning device should be removed.

4.2. Tuning HITAG Proximity Antennas

The device has to be switched to proximity mode (changing the sensitivity).

For tuning of the antenna refer to the measured phase. The phase should be $0^\circ \pm 10^\circ$.

- **If the phase is too high (direction: inductive) the tuning capacity has to be decreased.**
- **If the phase is too low (direction: capacitive) the tuning capacity has to be increased.**

For HITAG proximity systems the current reaches its maximum when the antenna is tuned exactly. An approximate value for the current is: 60 to 70 mA ± 10 mA.

Definitions

Data sheet status	
Objective specification	This data sheet contains target or goal specifications for product development.
Preliminary specification	This data sheet contains preliminary data; supplementary data may be published later.
Product specification	This data sheet contains final product specifications.
Limiting values	
Limiting values given are in accordance with the Absolute Maximum Rating System (IEC 134). Stress above one or more of the limiting values may cause permanent damage to the device. These are stress ratings only and operation of the device at these or at any other conditions above those given in the Characteristics section of the specification is not implied. Exposure to limiting values for extended periods may affect device reliability.	
Application information	
Where application information is given, it is advisory and does not form part of the specification.	

Life support applications

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Philips Semiconductors - a worldwide company

Argentina: see South America

Australia: 34 Waterloo Road, NORTHRYDE, NSW 2113,
Tel. +612 9805 4455, Fax. +612 9805 4466

Austria: Computerstraße 6, A-1101 WIEN, P.O.Box 213,
Tel. +431 60 101, Fax. +431 30 101 1210

Belarus: Hotel Minsk Business Centre, Bld. 3, r.1211, Volodarski Str. 6,
220050 MINSK, Tel. +375172 200 733, Fax. +375172 200 773

Belgium: see The Netherlands

Brazil: see South Africa

Bulgaria: Philips Bulgaria Ltd., Energoproject, 15th floor,
51 James Bourchier Blvd., 1407 SOFIA
Tel. +3592 689 211, Fax. +3592 689 102

Canada: Philips Semiconductors/Components,
Tel. +1800 234 7381

China/Hong Kong: 501 Hong Kong Industrial Technology Centre,
72 Tat Chee Avenue, Kowloon Tong, HONG KONG,
Tel. +85223 19 7888, Fax. +85223 19 7700

Colombia: see South America

Czech Republic: see Austria

Denmark: Prags Boulevard 80, PB 1919, DK-2300 COPENHAGEN S,
Tel. +4532 88 2636, Fax. +4531 57 1949

Finland: Sinikalliontie 3, FIN-02630 ESPOO,
Tel. +3589 61 5800, Fax. +3589 61 580/xxx

France: 4 Rue du Port-aux-Vins, BP 317, 92156 SURESNES Cedex,
Tel. +331 40 99 6161, Fax. +331 40 99 6427

Germany: Hammerbrookstraße 69, D-20097 HAMBURG,
Tel. +4940 23 53 60, Fax. +4940 23 536 300

Greece: No. 15, 25th March Street, GR 17778 TAVROS/ATHENS,
Tel. +301 4894 339/239, Fax. +301 4814 240

Hungary: see Austria

India: Philips INDIA Ltd., Shivsagar Estate, A Block, Dr. Annie Besant Rd.
Worli, MUMBAI 400018, Tel. +9122 4938 541, Fax. +9122 4938 722

Indonesia: see Singapore

Ireland: Newstead, Clonskeagh, DUBLIN 14,
Tel. +3531 7640 000, Fax. +3531 7640 200

Israel: RAPAC Electronics, 7 Kehilat Saloniki St., TEL AVIV 61180,
Tel. +9723 645 0444, Fax. +9723 649 1007

Italy: Philips Semiconductors, Piazza IV Novembre 3,
20124 MILANO, Tel. +392 6752 2531, Fax. +392 6752 2557

Japan: Philips Bldg. 13-37, Kohnan 2-chome, Minato-ku, TOKYO 108,
Tel. +813 3740 5130, Fax. +813 3740 5077

Korea: Philips House, 260-199, Itaewon-dong, Yonsan-ku, SEOUL,
Tel. +822 709 1412, Fax. +822 709 1415

Malaysia: No. 76 Jalan Universiti, 46200 PETALING JAYA, Selangor,
Tel. +60 3750 5214, Fax. +603 757 4880

Mexico: 5900 Gateway East, Suite 200, EL PASO, Texas 79905,
Tel. +9 5800 234 7381

Middle East: see Italy

Netherlands: Postbus 90050, 5600 PB EINDHOVEN, Bldg. VB,
Tel. +3140 27 82785, Fax +3140 27 88399

New Zealand: 2 Wagener Place, C.P.O. Box 1041, AUCKLAND,
Tel. +649 849 4160, Fax. +649 849 7811

Norway: Box 1, Manglerud 0612, OSLO,
Tel. +4722 74 8000, Fax. +4722 74 8341

Philippines: Philips Semiconductors Philippines Inc.,
106 Valero St. Salcedo Village, P.O.Box 2108 MCC, MAKATI,
Metro MANILA, Tel. +632 816 6380, Fax. +632 817 3474

Poland: Ul. Lukiska 10, PL 04-123 WARSZAWA,
Tel. +4822 612 2831, Fax. +4822 612 2327

Portugal: see Spain

Romania: see Italy

Russia: Philips Russia, Ul. Usatcheva 35A, 119048 MOSCOW,
Tel. +7095 247 9145, Fax. +7095 247 9144

Singapore: Lorong 1, Toa Payoh, SINGAPORE 1231,
Tel. +65350 2538, Fax. +65251 6500

Slovakia: see Austria

Slovenia: see Italy

South Africa: S.A. Philips Ltd., 195-215 Main Road Martindale,
2092 JOHANNESBURG, P.O.Box 7430 Johannesburg 2000,
Tel. +2711 470 5911, Fax. +2711 470 5494

South America: Rua do Rocio 220, 5th floor, Suite 51,
04552-903 Sao Paulo, SAO PAULO - SP, Brazil,
Tel. +5511 821 2333, Fax. +5511 829 1849

Spain: Balmes 22, 08007 BARCELONA,
Tel. +343 301 6312, Fax. +343 301 4107

Sweden: Kottbygatan 7, Akalla, S-16485 STOCKHOLM,
Tel. +468 632 2000, Fax. +468 632 2745

Switzerland: Allmendstraße 140, CH-8027 ZÜRICH,
Tel. +411 488 2686, Fax. +411 481 7730

Taiwan: Philips Taiwan Ltd., 2330F, 66,
Chung Hsiao West Road, Sec. 1, P.O.Box 22978,
TAIPEI 100, Tel. +8862 382 4443, Fax. +8862 382 4444

Thailand: Philips Electronics (Thailand) Ltd.,
209/2 Sanpavuth-Bangna Road Prakanong, BANGKOK 10260,
Tel. +662 745 4090, Fax. +662 398 0793

Turkey: Talapasa Cad. No. 5, 80640 GÜLTEPE/ISTANBUL,
Tel. +90212 279 2770, Fax. +90212 282 6707

Ukraine: Philips Ukraine, 4 Patrice Lumumba Str., Blg. B, Floor 7,
252042 KIEV, Tel. +38044 264 2776, Fax. +38044 268 0461

United Kingdom: Philips Semicond. Ltd., 276 Bath Road, Hayes,
MIDDLESEX UM3 5BX, Tel. +44181 7305000, Fax. +44181 754 8421

United States: 811 Argues Avenue, SUNNYVALE, CA94088-3409,
Tel. +1800 234 7381

Uruguay: see South America

Vietnam: see Singapore

Yugoslavia: Philips, Trg N. Pasica 5/v, 11000 BEOGRAD,
Tel. +38111 625 344, Fax. +38111 635 777

Philips Semiconductors, Mikron-Weg 1, A-8101 Gratkorn, Austria Fax: +43 / 3124 / 299 - 270

For all other countries apply to: Philips Semiconductors, Marketing & Sales Communications, Internet:
<http://www.semiconductors.philips.com>
Building BE-p, P.O.Box 218, 5600 MD EINDHOVEN, The Netherlands, Fax: +3140 27 24825

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