Application Note

Migration from HW 86010 to HW 86012

Version 1.02

DATA (((UNWIRED

HÖFT & WESSEL

HW86012_Migration_from_HW86010_101.doc

Migration from HW 86010 to HW 86012

The new enhanced HW 86012 DECT module will replace the HW 86010 DECT module. While using latest DECT technology it will be compatible to its predecessor with only few limitations. Thus, existing designs may easily migrate to HW 86012. This document describes relevant differences
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HW 86012 Features

- Compatible to HW 86010/020/050 in footprint, mounting, power supply and software interface
- New processor system for reduced power consumption and more Flash and SRAM memory
- Improved radio performance results in 6 dB increase in link margin, reduced power consumption and enhanced robustness
- Single 3.3 V supply possible
- Extended temperature range
- Covers world wide DECT bands
- Reduced height by single sided component mounting
- Micro-coax antenna connectors for easy application, wire antenna option available, antenna diversity supported
- High speed serial interface with up to 230.4 kbps
- Both connection based and packet based modes supported
- TCP/IP stack

HW 86012 limitations compared to HW 86010

- Serial interface characteristics changed
- Analogue audio interface characteristics changed
- HW 86010 firmware binaries can not be applied to HW 86012

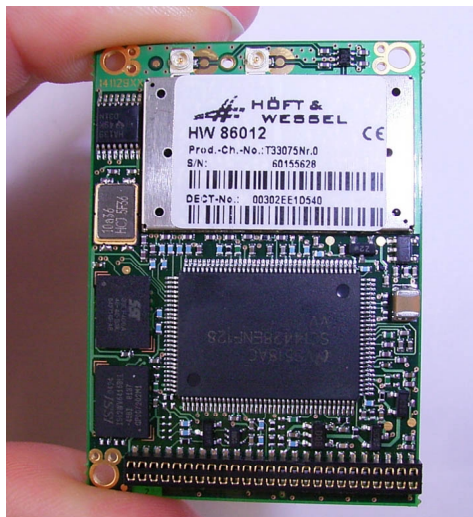Table 1 provides detailed information on differences between the modules.

Figure 1: HW 86012

Item	Module HW 86010	HW 86012
Dimension (typ.)		
Length	53.0 mm	53.0 mm
Width	37.0 mm	37.0 mm
Height	7.2 mm	3.2 mm
Connector		
Type	2 x 25 pin SPNBF-50-B, bottom or top entry	
Pin 50 usage	BNK1/GPIO16 *Note: used as input only, may be connected to ground*	GND *Note: additional ground connection for reduced ground bounce*
Mounting holes	floating	connected to GND *Note: additional ground connection for reduced ground bounce*
Processor System		
CPU	ARM7@ 55 MHz max.	16bit RISC @ 21.7 MHZ
Burstmode Controller	internal BM sequencer	internal BM co-processor
Memory	Flash 512 kByte, 1..4 waitstates SRAM 32 kByte, 0 waitstates	Flash 1024 kByte, 0 waitstates SRAM 32+128 kByte 0 waitstates *Note: results in improved performance with reduced power consumption*
Radio		
Transmit Power	23 dBm typ.	16..23 dBm typ. (s/w controlled)
Receiver Sensitivity	-87 dBm typ.	-93 dBm typ.
Frequency Range	1880..1900 MHz	1870..1930 MHz Note: allows for world wide DECT operation including: EU, FCC, Latin America etc. (Certification outside EU on customer demand)
Antenna interface	2x wire antennas, 1 solder pad for coaxial cables	2x micro-coaxial connectors (HRS U.FL), 1x or 2x wire antennas (alternatively) Note: different product options available, antenna diversity supported, coax pigtails adapters available
Power Supply		
V3P3	3.0..3.6 V	3.1..3.5 V
VBATP	3.4..4.7 V	3.0..4.6 V
Serial Interface		
Data rates (kbps)	0.6..115.2	9.6, 19.2, 57.6, 115.2, 230.4
framing	5/6/7/8 N/E/O/M 1/1.5/2	8 N 1
Analogue Audio Interface		
Differential RMS output	1.527 V max	0.69 V max
Speaker Gain	-26.3..3.7 dB	-12..2.2 dB
Microphone Input level	1.585 V max	0.13 V max
Microphone Gain	-4..33.3 dB	0..30.1 dB
Modes of operation	Data, Configuration, Download (hardware and software selectable)	
TCP/IP stack embedded	n/a	available soon

Table 1: Relevant differences between HW 86010 and HW 86012