



### «WHY 5.8GHz»

- The increasing demand of wireless data transmission systems for a multitude of purposes requires the use of new, free frequency bands. While 5GHz WLAN systems are widely used, the 5.8GHz ISM frequency band is almost unused by radio systems, and is therefore very interesting for robust, broadband wireless transmission systems.
- The frequency range 5.725 to 5.875GHz is useable worldwide for short range communication. Because of the large bandwidth either the useable data rate or the possible number of channels is high.
- IK Elektronik has developed the *Greenwave 580* radio transceiver module for 5.8GHz. The key considerations were:
  - Compact size
  - Low cost design
  - Simple design-in

### «SMALL AND POWERFUL»

- Small size: 40 x 25 x 8 mm<sup>3</sup>
- Wide operating temperature range: -10 to +60°C
- Power supply: 2.7 to 3.6V DC
- Current consumption: < 120mA
- Up to 72 frequency channels in the range 5.725 to 5.875GHz
- 2FSK modulation
- Data rate up to 1.536Mbps
- Transmission distance up to 50m
- Small latency period
- Internal antenna, external antenna optional
- Antenna diversity using two antennas possible
- Analog RSSI output for estimation of transmission quality
- Transparent data transmission, easy implementation of custom transmission protocols using an external small MCU
- Easy configuration via SPI interface
- Optional module shielding

### «EVALUATION AND APPLICATION»

- For evaluation and implementation there is an evaluation platform consisting of:
  - Two basic boards
  - Two radio transceivers *Greenwave 580*
  - Two antennas
  - DC power adaptor, USB cables and application software
- *Greenwave 580* can be used for a wide range of application, for example:
  - Short range data transmission with higher data rates
  - Telemetry and telecommand
  - Wireless digital video and audio
- Because of the small latency period, the small size, the channel count, the high data rate and the disturbance free 5.8GHz band the *Greenwave 580* is an excellent alternative to 5GHz WLAN systems where the network functionality is not needed, and is also a smart replacement of ISM modules for 2.4GHz, 868MHz, and other lower frequencies.
- IK Elektronik offers also the modification of the module for custom applications.

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