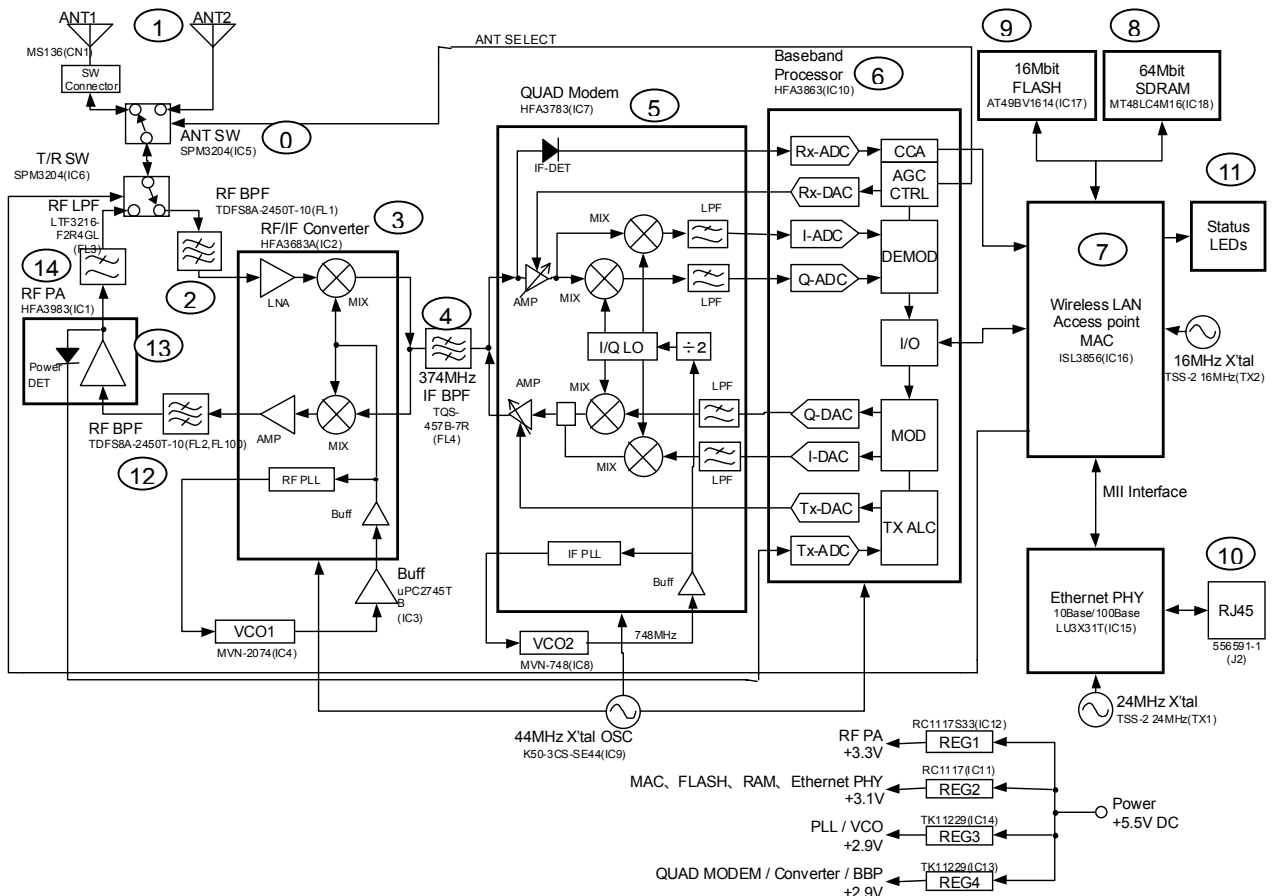# Block diagram / Theory of operation   2.4GHz Wireless LAN Access Point

TMW1003 Block Diagram

Receiver path

The 2.4GHz RF signal comes in via antennas (1) and antenna switch (0), then goes through band pass filter (2) to the RF/IF converter HFA3863A (3) and is converted to 374MHz IF.

The 374MHz IF signal then goes via band pass filter (4) to IQ demodulator HFA 3783 (5) to be amplified and IQ demodulated.

The demodulated signal goes to the Base Band Processor (BBP) HFA3863 (6) where the IQ signals are converted into data bits. The Base Band Processor (BBP) (6) also controls the antenna switch (0).

The data bits are processed by the ISL3856 ARM MAC controller (7) on IEEE 802.11b HR protocol level. This MAC controller is equipped with an SDRAM (8) and Flash Memory (9) system, controls the status LEDs (11) and also provides the interface to Ethernet (10).

Transmitter path

Data bits coming from the Ethernet interface (10) are processed by the ISL3856 ARM MAC controller (7) on IEEE 802.11b HR protocol level and send to the Base Band Processor (BBP) HFA3863 (6).

At the Base Band Processor (BBP) HFA3863 (6) the signal is IQ modulated and then converted to 374MHz IF by HFA 3783 (5).

The 374MHz signal is filtered by band pass filter (4) and then converted to 2.4GHz RF signal by RF/IF converter HFA3683A (3).

The 2.4GHz RF signal is then filtered by band pass filter (12) and amplified by RF power amplifier HFA3983 (13).

After passing filter (14) and antenna switch (0), the 2.4GHz RF signal is finally emitted via the antenna (1).