



## BK4815N Change Instruction

### Content:

Explain the S/W change and hardware change from BK4815 to BK4815N.

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## 1 S/W Change

### 1.1 Register Initialization

- 1) Default values of several analog registers should be changed(3/4/5/6/8/10)
- 2) Default values of several digital registers should be changed(94/98)

All registers that should be changed at initialization stage are shown in the table below.

REG (DEC)	Default Values (HEX)	
	BK4815	BK4815N
3	1E1F	0027
4	B646	B641
5	F778	F770
6	08FC	F274
8	5555	FF33
9	03AE	C3FA
10	A2F3	A2A3
94		00E8
98		0005
103	0170	431F

### 1.2 I/Q Inverse

- 1) REG14<10>=0x0, then  $f_{wanted} > f_{LO}$  and  $f_{wanted} = f_{LO} + IF$
- 2) REG14<10>=0x1, then  $f_{wanted} < f_{LO}$  and  $f_{wanted} = f_{LO} - IF$

It is not necessary to set REG117.

### 1.3 RX AGC

REG103 register assignment changes as in the table below:

	BK4815	BK4815N
AGC Disable	REG103<15>	REG103<15>
RSSI Offset	REG103<14:9>	REG103<14:8>
LNA Gain	REG103<8>	REG103<4>
IF Gain	REG103<6:4>	REG103<2:0>

REG104 should be set to 0x4F4F at initialization stage (Not only for BK4815N, this also applies to BK4815)

### 1.4 Frequency Calculation

Only the formula of REG125 is changed. The value is half of that in BK4815.

$$REG125 = Round\left(\frac{f_{IF} \times 2^{16} \times 88}{f_{XTAL}}\right)$$

### 1.5 DCS

Normal code and inverse code can be searched simultaneously (BK4815 / BK4815N) or only search normal code (BK4815N). That is to say, BK4815 only support 1 search mode, while BK4815N support 2 search mode.

- 1) Reg97<7>=0x0, search both normal code and inverse code
- 2) Reg97<7>=0x1, only search normal code

### 1.6 RX Audio Limitation

Add a function to limit the output amplitude of RX audio (REG65<12:0>). This function is added to limit the unpleasant FM De-mod noise level when there is no wanted signal.

- 1) To disable this function, please set REG65<12:0>=0x0
- 2) To enable this function, please tuning REG65<12:0> until the output volume equals to the rated maximum volume

## **2 Hardware Change (None)**

Since BK4815N is pin-2-pin with BK4815, the hardware can be the same.

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