Register	Default	Description
REG_00<15>	0	Soft Reset.
		1=Reset; 0=Normal.
REG_02<15>	Read Only	FSK Tx Finished Interrupt.
REG_02<14>	Read Only	FSK FIFO Almost Empty Interrupt Enable.
REG_02<13>	Read Only	FSK Rx Finished Interrupt Enable.
REG_02<12>	Read Only	FSK FIFO Almost FullInterrupt.
REG_02<11>	Read Only	DTMF/5TONE Found Interrupt.
REG_02<10>	Read Only	CTCSS/CDCSSTail Found Interrupt.
REG_02<9>	Read Only	CDCSS Found Interrupt.
REG_02<8>	Read Only	CDCSS Lost Interrupt.
REG_02<7>	Read Only	CTCSS Found Interrupt.
REG_02<6>	Read Only	CTCSS Lost Interrupt.
REG_02<5>	Read Only	VoX Found Interrupt.
REG_02<4>	Read Only	VoX Lost Interrupt.
REG_02<3>	Read Only	Squelch Found Interrupt.
REG_02<2>	Read Only	Squelch Lost Interrupt.
REG_02<1>	Read Only	FSK Rx Sync Interrupt.
REG_07<15:0>		When <13>=0 for CTC1
		<12:0>=CTC1 frequencycontrolword
		= freq(Hz)*20.64888 for XTAL 13M/26M or
		=freq(Hz)*20.97152 for XTAL 12.8M/19.2M/25.6M/38.4M
		When<13>=1 for CTC2(Tail 55Hz Rx detection)
	4	<12:0>=CTC2(should below 100Hz)frequencycontrolword
		= 25391/freq(Hz) for XTAL 13M/26M or
		= 25000/freq(Hz) for XTAL 12.8M/19.2M/25.6M/38.4M
		When (12) = 2 for CDCCC 124 411=
		When <13>=2 for CDCSS 134.4Hz <12:0>=CDCSS baud rate frequency(134.4Hz) controlword
		= freq(Hz)*20.64888 for XTAL 13M/26M or
		= freq(Hz)*20.97152 for XTAL 12.8M/19.2M/25.6M/38.4M
		-Jrcq(112) 20.37132 JULXIAL 12.8101/13.2101/23.0101/38.4101
REG_08<15:0>		<15>=1 for CDCSS high 12bit
		<15>=0 for CDCSS low 12bit
		<11:0>=CDCSShigh/low 12bit code
REG_09<15:0>		DTMF/SelCall Symbol Coefficient for Detection.
		<15:12>=Symbol Number
		<7:0>=Coefficient.
REG_0A<7:0>	Read Only	GPIOs Input Indicator.
		1=High; 0=Low.

REG_0B<11:8>	Read Only	DTMF/5Tone Code Received.
REG_0B<7>	Read Only	FSK Rx SyncNegativehas been Found.
REG_OB<6>	Read Only	FSK Rx SyncPositivehas been Found.
REG_0B<4>	Read Only	FSK Rx CRC Indicator.
		1=CRC Pass; 0=CRC Fail.
REG_0C<15:14>	Read Only	<14>:CDCSS positive code received
		<15>:CDCSS negative code received
REG_0C<13:12>	Read Only	CTCSS Phase Shift Received.
		00=No phase shift
		01=CTCSS0 120 ° phase shift,
		10= CTCSSO 180 ° phase shift
		11= CTCSSO 240 ° phase shift
REG_0C<10:11>	Read Only	<11>:CTC2(55Hz) received
		<10>:CTC1 received
		Y Y
REG_0C<2>	Read Only	VoXIndicator
		0: No
		1: Yes
REG_0C<1>	Read Only	Squelch resultoutput.
		1=Link; 0=Loss
REG_0C<0>	Read Only	Interrupt Indicator.
		1=Interrupt Request; 0=No Request.
REG_0D<15>	Read Only	Frequency Scan Indicator.
		1=Busy; 0=Finished.
REG_0D<10:0>	Read Only	Frequency Scan High 16 bits.
REG_0E<15:0>	Read Only	Frequency Scan Low 16 bits.
		= REG_0D<10:0> <<16 + REG_0E<15:0> , unit is 10Hz
REG_10<15:0>	0x0038	REG_10<15:0> 0x0038 Rx AGC Gain Table[0]. (Index
		Max->Min is 3,2,1,0,-1)
		<9:8>=LNA Gain Short
		11=0dB; 10=-11dB; 01=-16dB; 00=-19dB.
		<7:5>=LNA Gain
		111=0dB; 110=-2dB; 101=-4dB; 100=-6dB; 011=-9dB;
		010=-14dB; 001=-19dB; 000=-24dB.
		<4:3>=MIXER Gain
		11=0dB; 10=-3dB; 01=-6dB; 00=-8dB.
		<2:0>=PGA Gain
		111=0dB; 110=-3dB; 101=-6dB; 100=-9dB; 011=-15dB;
	0.05-	010=-21dB; 001=-27dB; 000=-33dB.
REG_11<15:0>	0x025a	Rx AGC Gain Table[1]. (Index Max->Min is 3,2,1,0,-1) Same
		as REG_10

REG_12<15:0>	0x037b	Rx AGC Gain Table[2]. (Index Max->Min is 3,2,1,0,-1) Same
REG_13<15:0>	0x03de	as REG_10 Rx AGC Gain Table[3. (Index Max->Min is 3,2,1,0,-1) Same
		as REG_10
REG_14<15:0>	0x0000	Rx AGC Gain Table[4]. (Index Max->Min is 3,2,1,0,-1) Same as REG 10
REG_19<15>	1	Automatic MIC PGA Gain Controller (MIC AGC) Disable.
		1=Disable; 0=Enable.
REG_1A<15:12>	0b0101	Crystal vReg Bit.
REG_1A<11:8>	0b1000	Crystal iBit.
REG_1F<3:0>	0b1000	PLL CP bit.
REG_24<5>	0	DTMF/SelCall Enable. 1=Enable; 0=Disable.
REG_24<4>	1	DTMF or SelCall Detection Mode.
_		1=for DTMF; 0=for SelCall.
REG 24<3:0>	Охе	Max Symbol Number for SelCall Detection.
REG 28<15:14>	0b01	Expander (AF Rx) Ratio.
		00=Disable; 01=1:2; 10=1:3; 11=1:4
REG 28<13:7>	0x56	Expander (AF Rx) 0 dB point(dB)
REG_28<6:0>	0x38	Expander (AF Rx) noise point(dB)
REG_29<15:14>	0b10	Compress (AF Tx) Ratio.
		00=Disable; 01=1.333:1; 10=2:1; 11=4:1
REG_29<13:7>	0x56	Compress (AF Tx) 0 dB point(dB)
REG 29<6:0>	0x40	Compress (AF Tx) noise point(dB)
REG_2B<10>	0	Disable AFRxHPF300filter.
_		0=Enable; 1=Disable
REG_2B<9>	0	Disable AF RxLPF3K filter.
_		0=Enable; 1=Disable
REG 2B<8>	0	Disable AF Rx de-emphasisfilter.
_		0=Enable; 1=Disable
REG_2B<2>	0	Disable AFTxHPF300filter.
		0=Enable; 1=Disable
REG_2B<1>	0	Disable AFTxLPF1filter.
		0=Enable; 1=Disable
REG_2B<0>	0	Disable AFTxpre-emphasisfilter.
_		0=Enable; 1=Disable
REG_2E<9:8>	0x10	CTCSS/CDCSS Tx Gain2 Tuning (after Gain1).
		00=12dB; 01=6dB; 10=0dB; 11=-6dB
REG_30<15>	0	VCO Calibration Enable.
		1=Enable, 0=Disable
REG_30<13:10>	0	Rx Link Enable (include LNA/MIXER/PGA/ADC).
		1111=Enable, 0000=Disable
REG_30<9>	0	AF DAC Enable.

		1=Enable, 0=Disable.
REG_30<8>	0	DISC Mode Disable.
		1=Disable, 0=Enable.
REG_30<7:4>	0	PLL/VCO Enable.
		1111=Enable, 0000=Disable
REG_30<3>	0	PA Gain Enable.
		1=Enable, 0=Disable
REG_30<2>	0	MIC ADC Enable.
		1=Enable, 0=Disable
REG_30<1>	0	Tx DSP Enable.
		1=Enable, 0=Disable
REG_30<0>	0	Rx DSP Enable.
		1=Enable, 0=Disable
REG_31<3>	0	Enable Compander Function.
_		1= Enable; 0=Disable
REG_31<2>	0	Enable VOX detection.
_		1=Enable; 0=Disable
REG 31<1>	0	Enable Scramble Function.
_		1=Enable; 0=Disable
REG_32<15:14>	0b00	FrequencyScan Time.
_		00=0.2 Sec; 01=0.4 Sec; 10=0.8 Sec; 11=1.6 Sec
REG_32<0>	0	FrequencyScanEnable.
		1=Enable; 0=Disable.
REG_33<15:8>	0xFF	GPIOs Output Disable.
		1=Output Disable; 0=Output Enable.
REG_33<7:0>	0x00	GPIOs Output Value.
		1= High when Output Enable; 0=Low when Output Enable.
REG_34<15:12>	0x0	GPIO4 Output Type Selection.
		The Definitions is the same as REG_34<3:0>.
REG_34<11:8>	0x0	GPIO5 Output Type Selection.
		The Definitions is the same as REG_34<3:0>.
REG_34<3:0>	0x0	GPIO6Output Type Selection.
		0=High/Low
		1=Interrupt
		2=Squelch
		3=VoX
		4=CTCSS/CDCSS Compared Result
		5=CTCSS Compared Result
		6=CDCSS Compared Result
		7=Tail Detected Result
		8=DTMF/5Tone Symbol Received Flag
		9=CTCSS/CDCSS Digital Wave
		Others=Reserved
REG_35<15:12>	0x0	GPIOOOutput Type Selection.

		The Definitions is the same as REG_34<3:0>.
REG_35<11:8>	0x0	GPIO1 Output Type Selection.
		The Definitions is the same as REG_34<3:0>.
REG_35<7:4>	0x0	GPIO2 Output Type Selection.
		The Definitions is the same as REG_34<3:0>.
REG_35<3:0>	0x0	GPIO3 Output Type Selection.
		The Definitions is the same as REG_34<3:0>.
REG_36<15:8>	0	PA Biasoutput 0~3.2V
		0x00=0V
		0xFF=3.2V
REG_36<7>	0	1=Enable PACTLoutput; 0=Disable(Output 0 V)
REG_36<5:3>	<u>0b111</u>	PA Gain1 Tuning.
_		111(max)->000(min)
REG_36<2:0>	0b111	PA Gain2 Tuning.
_		111(max)->000(min)
REG 37<14:12>	0b001	DSP Voltage Setting.
REG_37<11>	1	ANA LDO Selection.
_		1=2.7v, 0=2.4v
REG_37<10>	1	VCO LDO Selection.
_		1=2.7v, 0=2.4v
REG_37<9>	1	RF LDO Selection.
_		1=2.7v, 0=2.4v
REG_37<8>	1	PLL LDO Selection.
_		1=2.7v, 0=2.4v
REG_37<7>	0	ANA LDO Bypass.
_		1=Bypass, 0=Enable.
REG_37<6>	0	VCO LDO Bypass.
		1=Bypass, 0=Enable.
REG_37<5>	0	RF LDO Bypass.
	7	1=Bypass, 0=Enable.
REG_37<4>	0	PLL LDO Bypass.
		1=Bypass, 0=Enable.
REG_37<3>	0	Reserved.
REG_37<2>	0	DSP Enable.
_		1=Enable, 0=Disable.
REG_37<1>	0	XTAL Enable.
_		1=Enable, 0=Disable.
REG_37<0>	0	Band-Gap Enable.
		1=Enable, 0=Disable.
REG_38<15:0>		Frague 200/11=1- /frag bi16 4416 + frag 1016)*10
	0x3A98	Frequency(Hz)= (freq_hi16<<16 + freq_lo16)*10
REG_39<15:0>	0x3A98 0x0271	Frequency(H2)= (Jreq_III16<<16 + Jreq_I016) · 10

REG_3C<15:8>	0x4f	Crystal Frequency High-8bits.
REG_3C<7:6>	0b10	Crystal Frequency Mode Selection.
_		00~=13MHz; 01~=19.2MHz; 10~=26MHz; 11~=38.4MHz
REG_3D<15:0>	0x2aab	IF Selection.
_		0=Zero IF;
		0x2aab~=8.46kHz IF;
		0x4924~=7.25kHz IF;
		0x6800~=6.35kHz IF;
		0x871c~=5.64kHz IF;
		0xa666~=5.08kHz IF;
		0xc5d1~=4.62kHz IF;
		0xe555~=4.23kHz IF;
		if REG_43<5>=1, IF *=2;
REG_3E<15:0>	36458	Band Selection Threshold.
_		~=VCO Max Frequency(Hz)/96/640
REG_3F<15>	0	FSK Tx Finished Interrupt Enable.
_		1=Enable; 0=Disable.
REG_3F<14>	0	FSK FIFO Almost Empty Interrupt Enable.
_		1=Enable; 0=Disable.
REG_3F<13>	0	FSK Rx Finished Interrupt Enable.
		1=Enable; 0=Disable.
REG_3F<12>	0	FSK FIFO Almost FullInterrupt Enable.
_		1=Enable; 0=Disable.
REG_3F<11>	0	DTMF/5TONE Found Interrupt Enable.
_		1=Enable; 0=Disable.
REG_3F<10>	0	CTCSS/CDCSSTail Found InterruptEnable.
		1=Enable; 0=Disable.
REG_3F<9>	0	CDCSS Found InterruptEnable.
		1=Enable; 0=Disable.
REG_3F<8>	0	CDCSS Lost InterruptEnable.
	\ \ \ \ \	1=Enable; 0=Disable.
REG_3F<7>	0	CTCSS Found InterruptEnable.
		1=Enable; 0=Disable.
REG_3F<6>	0	CTCSS Lost InterruptEnable.
		1=Enable; 0=Disable.
REG_3F<5>	0	VoX Found InterruptEnable.
_		1=Enable; 0=Disable.
REG_3F<4>	0	VoX Lost InterruptEnable.
		1=Enable; 0=Disable.
REG_3F<3>	0	Squelch Found InterruptEnable.
		1=Enable; 0=Disable.
REG_3F<2>	0	Squelch Lost InterruptEnable.
_		1=Enable; 0=Disable.
REG_3F<1>	0	FSK Rx Sync Interrupt Enable.

		1=Enable; 0=Disable.
REG_40<12>	1	Enable RF TxDeviation.
		1=Enable; 0=Disable
REG_40<11:0>	0x4D0	RF Tx Deviation Tuning (Apply for both in-band signal and
		sub-audio signal).
		0=min; 0xFFF=max
REG_43<14:12>	0b100	RF filter bandwidth (Apass=0.1dB)
		000 = 1.7 kHz
		001 = 2 kHz
		010 = 2.5 kHz
		011 = 3 kHz
		100 = 3.75 kHz
		101 = 4 kHz
		110 = 4.25 kHz
		111 = 4.5 kHz
		if REG_43<5>=1, RF filter bandwidth *=2;
REG_43<11:9>	0b000	RF filter bandwidth when signal is weak (Apass=0.1dB)
		000 = 1.7 kHz
		001 = 2 kHz
		010 = 2.5 kHz
		011 = 3 kHz
		100 = 3.75 kHz
		101 = 4 kHz
		110 = 4.25 kHz
		111 = 4.5 kHz
		if REG_43<5>=1, RF filter bandwidth *=2;
REG_43<8:6>	0b001	AFTxLPF2 filter Band Width (Apass=1dB) Selection.
		100 = 4.5 kHz
		101 = 4.25 kHz
		110 =4kHz
	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	111 = 3.75 kHz
		000 = 3 kHz (for 25k Channel Space)
		001 = 2.5 kHz (for 12.5k Channel Space)
		010 = 2.75 kHz
		011 =3.5 kHz
REG_43<5:4>	0b00	BW Mode Selection.
		00=12.5k; 01=6.25k; 10=25k/20k
REG_43<2>	0	Gain after FM Demodulation.
		1=6dB; 0=0 dB.
REG_44<15:0>	0x9009	300Hz AF Response coefficient for Tx.
REG_45<15:0>	0x31a9	300Hz AF Response coefficient for Tx.
REG_46<10:0>	0x50	Voice AmplitudeThreshold for VOX=1 detect
REG_47<13>	1	AF Output Inverse Mode.
		1=Inverse

DEC =2-15>	0	Enable 120/180/240 degree shift CTCSS or 134.4Hz Tail
REG_52<15>	U	when CDCSS mode.
		0=Normal, 1=Enable
REG_52<14:13>	0b00	CTCSS tail modeselection (only valid when REG_52<15>=1).
NEG_32<14.13>	0000	00= for 134.4Hz CTCSS Tail when CDCSS mode.
		01=CTCSS0 120 ° phase shift, 10= CTCSS0 180 ° phase shift
		11= CTCSS0 240 ° phase shift
DEC 52,425	0	
REG_52<12>	0	CTCSSDetectionThreshold Mode,
DEC 52 411.C	004	1=~0.1%; 0=0.1 Hz
REG_52<11:6>	0x0A	CTCSS found detect threshold.
REG_52<5:0>	0x0F	CTCSS lost detect threshold.
REG_54<15:0>	0x9009	300Hz AF Response coefficient for Rx.
REG_55<15:0>	0x31a9	300Hz AF Response coefficient for Rx.
REG_58<15:13>	000	FSK Tx Mode Selection.
		000 for FSK1.2K and FSK2.4K Tx;
		001 for FFSK1200/1800 Tx;
		011 for FFSK1200/2400 Tx;
		101 for NOAA SAME Tx
REG_58<12:10>	000	FSK Rx Mode Selection.
		000 for FSK1.2K, FSK2.4K Rx and NOAA SAME Rx;
		111 for FFSK1200/1800 Rx;
		100 for FFSK1200/2400 Rx;
REG_58<9:8>	00	FSK Rx Gain.
REG_58<5:4>	00	FSK Preamble Type Selection.
		11=0xAA; 10=0x55; 00=0xAA or 0x55 due to the MSB of
		FSK Sync Byte 0.
REG_58<3:1>	000	FSK Rx BandWidth Setting.
		100 for FSK 2.4K and FFSK1200/2400;
		000 for FSK 1.2K;
		001 for FFSK1200/1800;
		010 for NOAA SAME Rx
REG_58<0>	0	FSK Enable.
		1=Enable; 0=Disable.
REG_59<15>	0	Clear TX FIFO, 1=clear
REG_59<14>	0	Clear RX FIFO, 1=clear
REG_59<13>	0	1=Enable FSK Scramble
REG_59<12>	0	1=Enable FSK RX
REG_59<11>	0	1=Enable FSK TX
REG_59<10>	0	1=Invert FSK data when RX
REG 59<9>		1. Invest FCV data when TV
	0	1=Invert FSK data when TX
REG_59<7:4>	0	FSK Preamble Length Selection
_		

		1=4 bytes (FSK Sync Byte 0,1,2,3)
		0=2 bytes (FSK Sync Byte 0,1)
REG_5A<15:8>	0x85	FSK Sync Byte 0 (Sync Byte 0,1)
REG_5A<7:0>	0xCF	FSK Sync Byte 1
REG_5B<15:8>	0xAB	FSK Sync Byte 2
REG_5B<7:0>	0x45	FSK Sync Byte 3
REG_5C<6>	1	CRC Option Enable. 1=Enable; 0=Disable.
DEC ED 415.0\	0,05	·
REG_5D<15:8>	0x0F	FSK Data Length (Byte) Low 8bits (Total 11 bits for BK4819v3).
DEC ED-7.ES	0	For example, 0xF means 16 bytes length.
REG_5D<7:5>	U	FSK Data Length(Byte)High 3bits(Total 11 bits for
		BK4819v3).
REG_5E<9:3>	64	FSK Tx FIFO (Total 128 Words) Almost Empty Threshold.
REG_5E<2:0>	4	FSK Rx FIFO (Total 8 Words) Almost Full Threshold.
REG_5F<15:0>	X	FSK Word Input/Output.
REG_63<7:0>	Read Only	Glitch indicator.
REG_64<15:0>	Read Only	Voice AmplitudeOut.
REG_65<6:0>	Read Only	Ex-noiseindicator, dB/step.
REG_67<8:0>	Read Only	0.5dB/step, RSSI (dBm) ~= REG_67 <8:0> /2 − 160.
REG_68<15>	Read Only	CTCSS Scan Indicator.
		1=Busy; 0=Found.
REG_68<12:0>	Read Only	CTCSS Frequency.
		Frequency(Hz)
		= REG_68<12:0>/20.64888 for 13M/26M XTAL and
		= REG_68<12:0>/ 20.97152 for 12.8M/19.2M/25.6M/38.4M XTAI
		ATAL
REG_69<15>	Read Only	CDCSS Scan Indicator.
		1=Busy; 0=Found.
REG_69<14>	Read Only	23 or 24 bit CDCSS Indicator.(for BK4819v3)
1-(1=24 bit; 0=23 bit.
REG_69<11:0>	Read Only	CDCSS High 12 bits.
REG_6A<11:0>	Read Only	CDCSS Low 12 bits.
REG_6F<6:0>	Read Only	AF Tx/Rx Input Amplitude(dB)
REG_70<15>	0	Enable TONE1
		1=Enable; 0=Disable.
REG_70<14:8>	0	TONE1tuninggain
REG_70<7>	0	Enable TONE2
_		1=Enable; 0=Disable.
REG_70<6:0>	0	TONE2/FSK tuninggain
REG_71<15:0>	0x8517	TONE1/Scramblefrequencycontrolword.
_		=freq(Hz)*10.32444 for XTAL 13M/26M or
	<u> </u>	· · · · · · · · · · · · · · · · · · ·

	k2854	TONE2/FSK frequencycontrolword =freq(Hz)*10.32444 for XTAL 13M/26M or =freq(Hz)* 10.48576 for XTAL 12.8M/19.2M/25.6M/38.4M. Automatic Frequency Correction(AFC) Range Selection.
_	b000	=freq(Hz)* 10.48576 for XTAL 12.8M/19.2M/25.6M/38.4M.
_	b000	
_	b000	Automatic Frequency Correction(AEC) Panae Selection
RFG 73<4> 0		. ,
RFG 73<4>		000=max; 111=min
1120_73 (4)		Automatic Frequency Correction(AFC) Disable.
		1=Disable; 0=Enable.
REG_74<15:0> 0x	xf50b	3000Hz AF Response coefficient for Tx.
REG_75<15:0> 0x	xf50b	3000Hz AF Response coefficient for Rx.
REG_78<15:8> 0x	x48	RSSI threshold for Squelch=1, 0.5dB/step
REG_78<7:0> 0x	x46	RSSI threshold for Squelch =0, 0.5dB/step
REG_79<15:11> 8		VoX Detection Interval Time.
REG_79<10:0> 0x	x40	Voice Amplitude Threshold for VOX=0 detect
REG_7A<15:12> 8		VoX=0 Detection delay, *128ms
REG_7D<4:0> 0x	x10	MIC Sensitivity Tuning.
		0x00=min; 0x1F=max; 0.5dB/step
REG_7E<15> 0		AGC Fix Mode.
		1=Fix; 0=Auto.
REG_7E<14:12> OL	b011	AGC Fix Index.
		011=Max, then 010,001,000,111,110,101,100(min).
REG_7E<5:3> Ob	b101	DC Filter Band Width for Tx (MIC In).
		000=Bypass DC filter;
REG_7E<2:0> Ob	b110	DC Filter Band Width for Rx (IF In).
		000=Bypass DC filter;