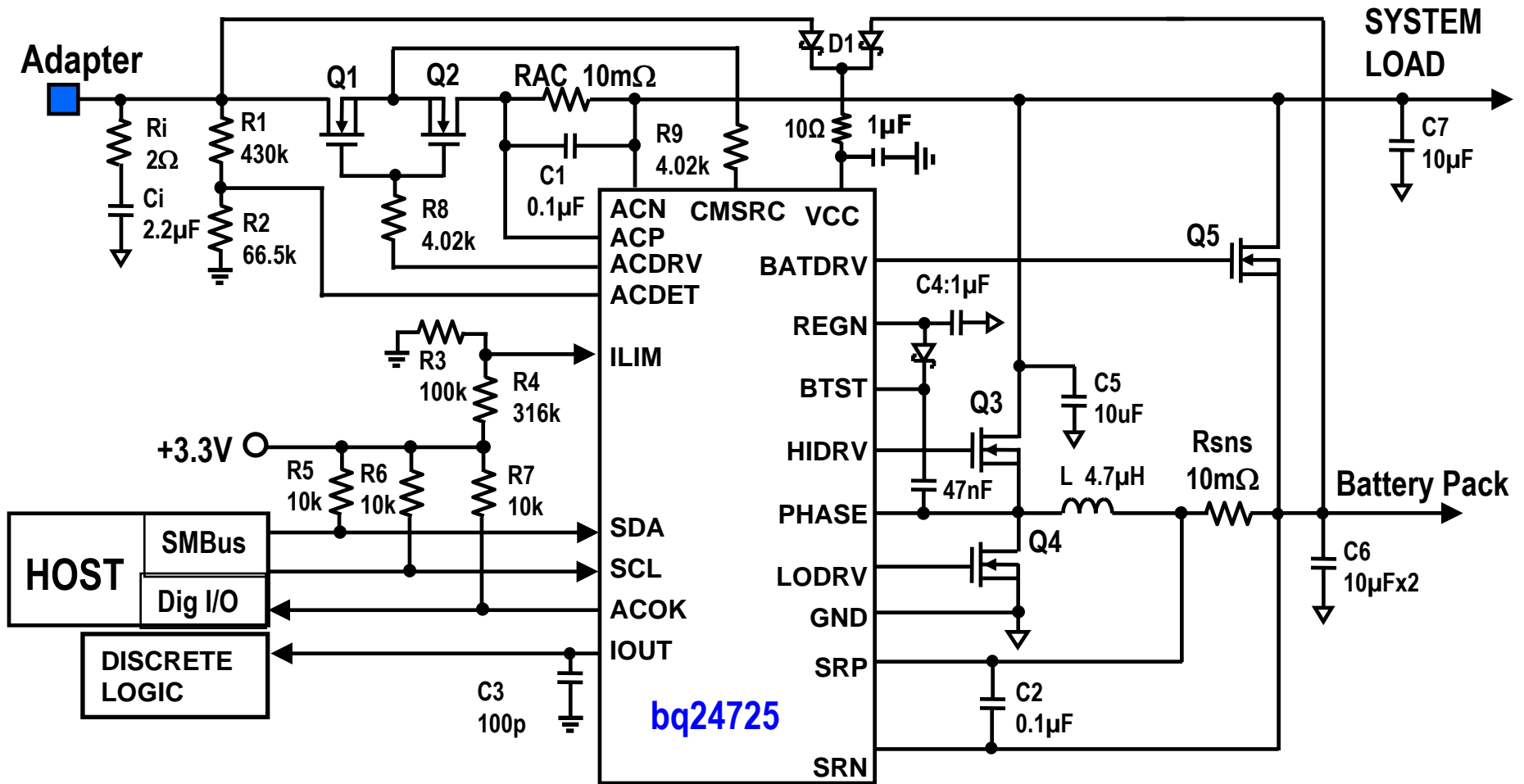


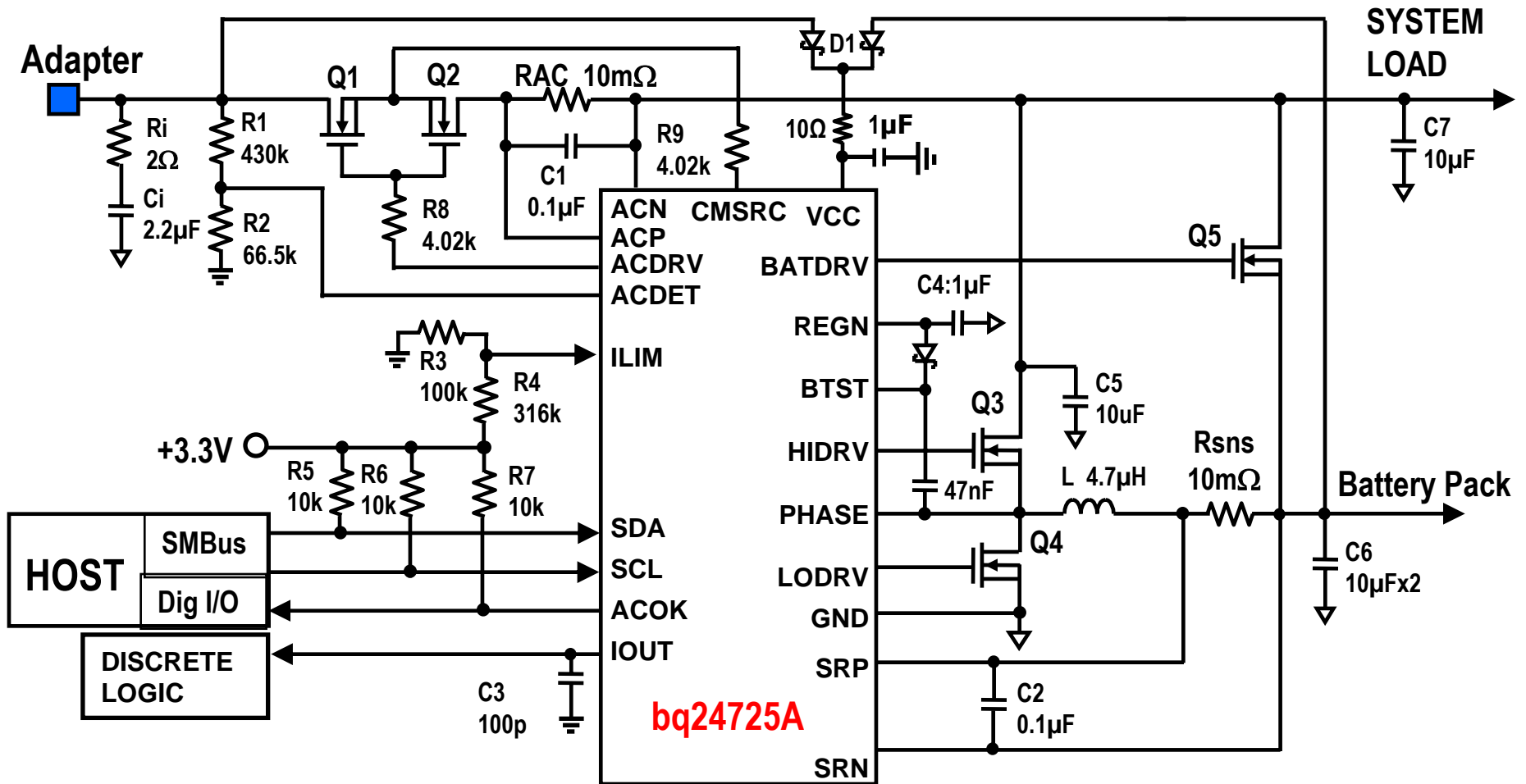
bq24725A vs bq24725

Aug 2011

bq24725 Application Circuit



bq24725A Application Circuit



- Pin to pin compatible, no BOM change

bq24725 vs bq24725A

Difference	bq24725	bq24725A
ACOK default deglitch time ChargeOption bit [15]	First short, then short Default is 0	First short, then long Default is 1
ChargeOption bit [8]	IFAULT_HI only: 300/500/700/900mV	750mV/Disable
ChargeOption bit [7]		IFAULT_LO: 135/230mV
ChargeOption bit [4]	No use	AC adapter present indication, no deglitch time
ChargeOption bit [2]	ACOC option: 1.33/1.66/2.22x or disable	No use
ChargeOption bit [1]		ACOC option 3.33x/disable
ChargeOption()	Default 0x7904H	Default 0xF902H
DeviceID()	0x0008H	0x000BH
Fast DPM comparator delay	108%, No delay	107%, 160us min, 260us typ, 400us max
Suggest fully charged battery voltage() setting after termination	12.592V for 3S 16.8V for 4S	0V or 12.592V for 3S 0V or 16.8V for 4S

bq24725A: SMBus Interface

REGISTER ADDRESS	REGISTER NAME	READ/WRITE	DESCRIPTION	POR STATE
0x12	ChargeOption()	Read or Write	Charge Options	0xF902
0x14	ChargeCurrent()	Read or Write	7-Bit Charge Current	0x0000 (0mA)
0x15	ChargeVoltage()	Read or Write	11-Bit Charge Voltage	0x0000 (0mV)
0x3F	InputCurrent()	Read or Write	6-Bit Input Current	0x1000 (4096mA)
0xFE	ManufacturerID()	Read Only	Manufacturer ID	0x0040
0xFF	DeviceID()	Read Only	Device ID	0x000B

- To allow charging battery pack, 3 registers must have correct values

bq24725A: ChargeOption() Register

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
----	----	----	----	----	----	---	---	---	---	---	---	---	---	---	---

- 0: ACOK deglitch time 150ms
 - 1: ACOK deglitch time 1.3s <default @ POR>
- 725: 0, ACOK default delay first short, then short
725A: 1, ACOK default delay first short, then long

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
----	----	----	----	----	----	---	---	---	---	---	---	---	---	---	---

- 00: Disable watchdog timer
- 01: Enable watchdog timer, 44s
- 10: Enable watchdog timer, 88s
- 11: Enable watchdog timer, 175s <default @ POR>

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
----	----	----	----	----	----	---	---	---	---	---	---	---	---	---	---

- 00: BAT Depletion, 59.19% V_{OREG} (2.486V/cell)
- 01: BAT Depletion, 62.65% V_{OREG} (2.631V/cell)
- 10: BAT Depletion, 66.55% V_{OREG} (2.795V/cell)
- 11: BAT Depletion, 70.97% V_{OREG} (2.981V/cell) <default @ POR>

bq24725A: ChargeOption() Register

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
----	----	----	----	----	----	---	---	---	---	---	---	---	---	---	---

- 0: Reduce PWM switching frequency by 18% <default @ POR>
- 1: Increase PWM switching frequency by 18%

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
----	----	----	----	----	----	---	---	---	---	---	---	---	---	---	---

- 0: Disable EMI switching frequency adjust <default @ POR>
- 1: Enable EMI switching frequency adjust

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
----	----	----	----	----	----	---	---	---	---	---	---	---	---	---	---

- 0: function is disabled
- 1: IFAULT_HI comparator threshold 750mV <default @ POR>

725: only IFAULT_HI
725A: IFAULT_HI

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
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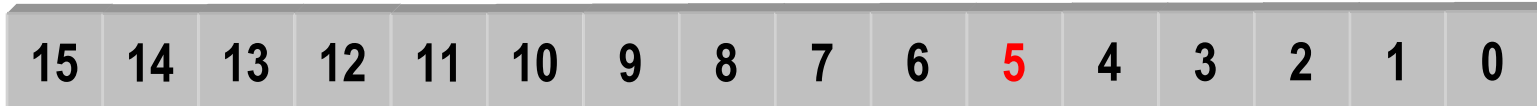
- 0: IFAULT_LOW comparator threshold 135mV <default @ POR>
- 1: IFAULT_LOW comparator threshold 230mV

725: only IFAULT_HI
725A: IFAULT_LOW

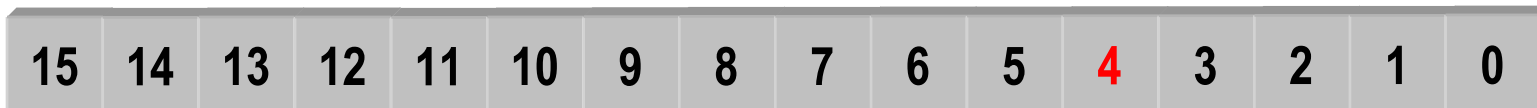
bq24725A: ChargeOption() Register



- **0: Disable Learn function <default @ POR>**
- **1: Enable Learn function**



- **0: IOUT is 20x adapter current amplifier output <default @ POR>**
- **1: IOUT is 20x charge current amplifier output**



- **0: AC Adapter is not present (ACDET < 2.4V) <default @ POR>**
- **1: AC Adapter is present (ACDET > 2.4V), no deglitch time, read only**

725: no use

725A: AC Adapter present indication

bq24725A: ChargeOption() Register

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
----	----	----	----	----	----	---	---	---	---	---	---	---	---	---	---

- Not In Use

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
----	----	----	----	----	----	---	---	---	---	---	---	---	---	---	---

- Not In Use

725: ACOC option
725A: No use

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
----	----	----	----	----	----	---	---	---	---	---	---	---	---	---	---

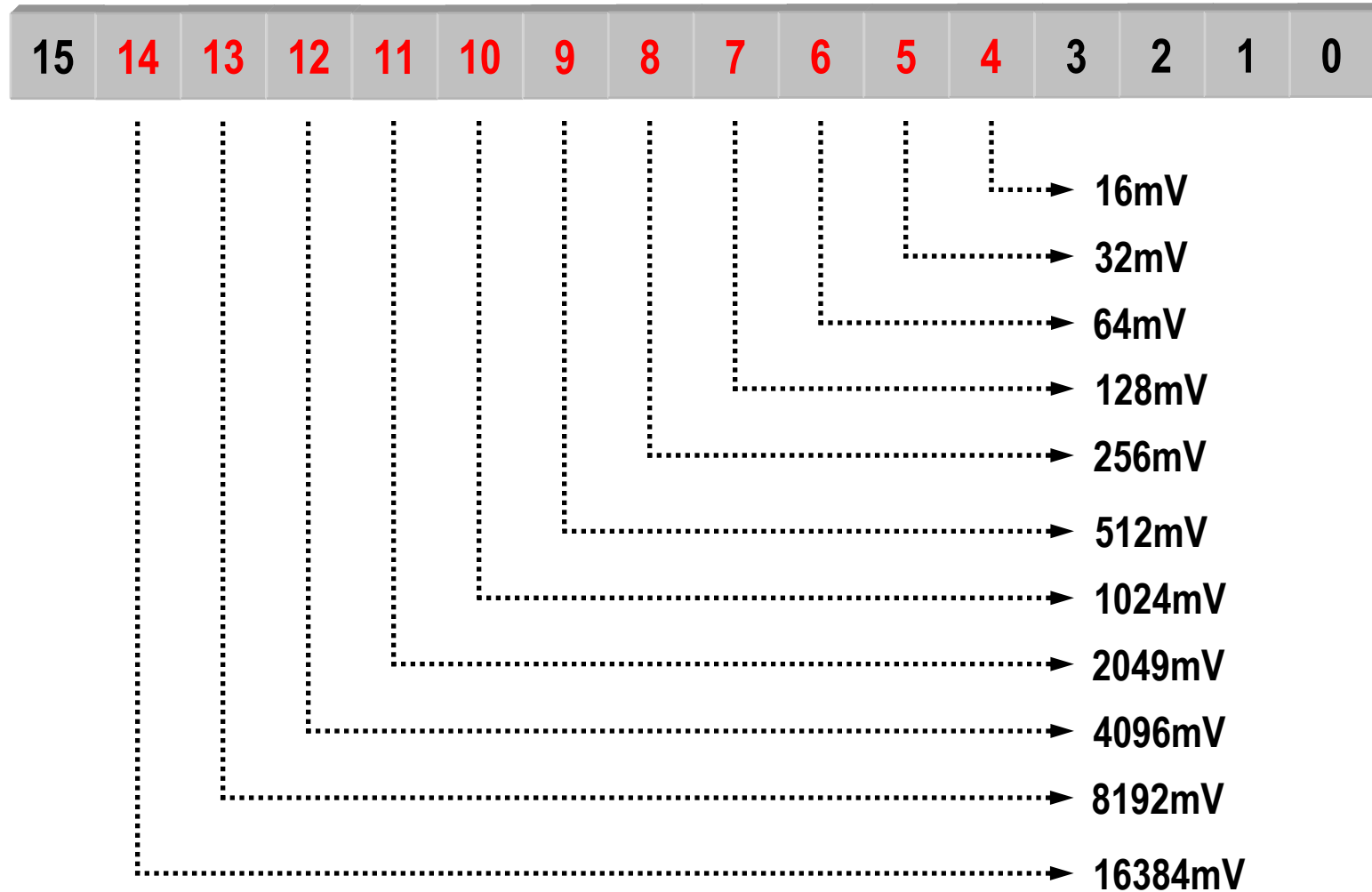
- 0: ACOC is disabled
- 1: ACOC 3.33x <default @ POR>

725: ACOC option
725A: ACOC option

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
----	----	----	----	----	----	---	---	---	---	---	---	---	---	---	---

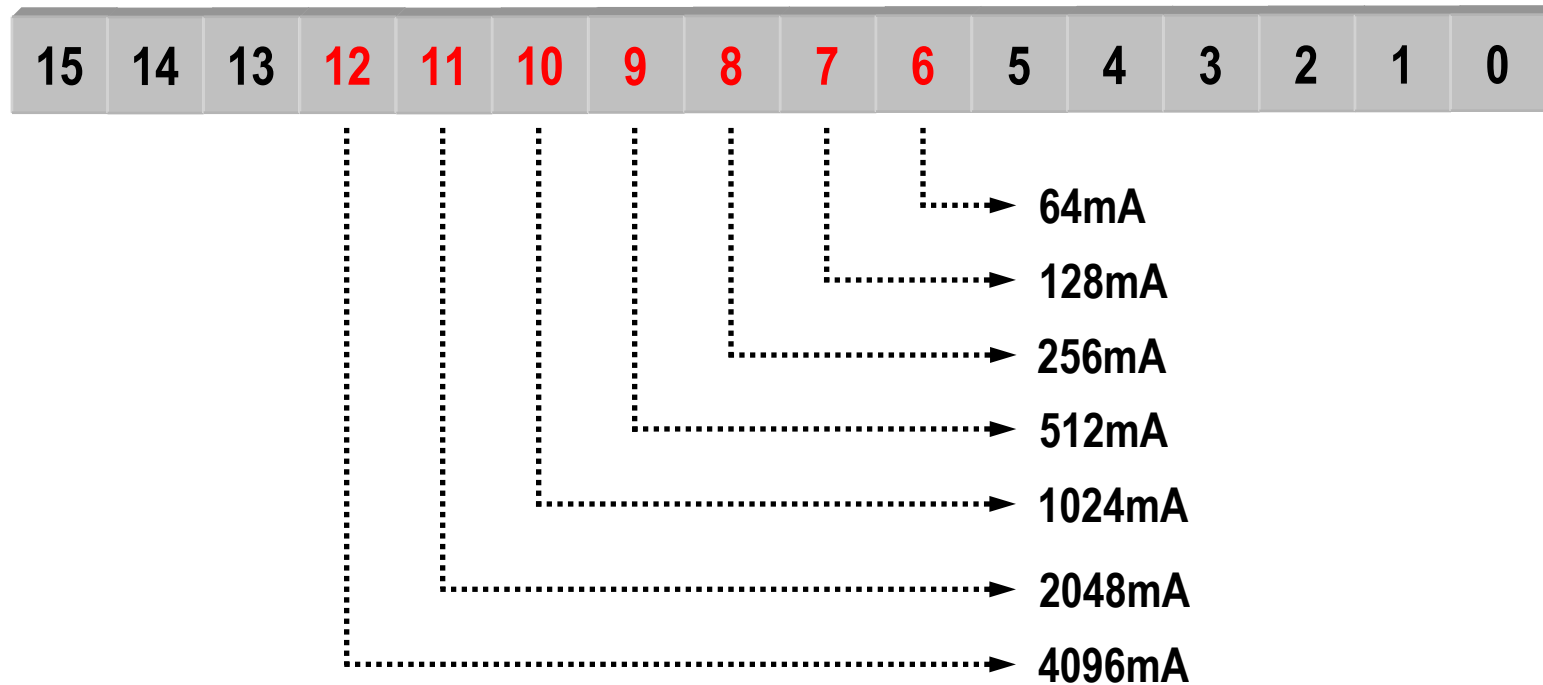
- 0: Enable Charge <default @ POR>
- 1: Inhibit Charge

bq24725A: ChargeVoltage() Register



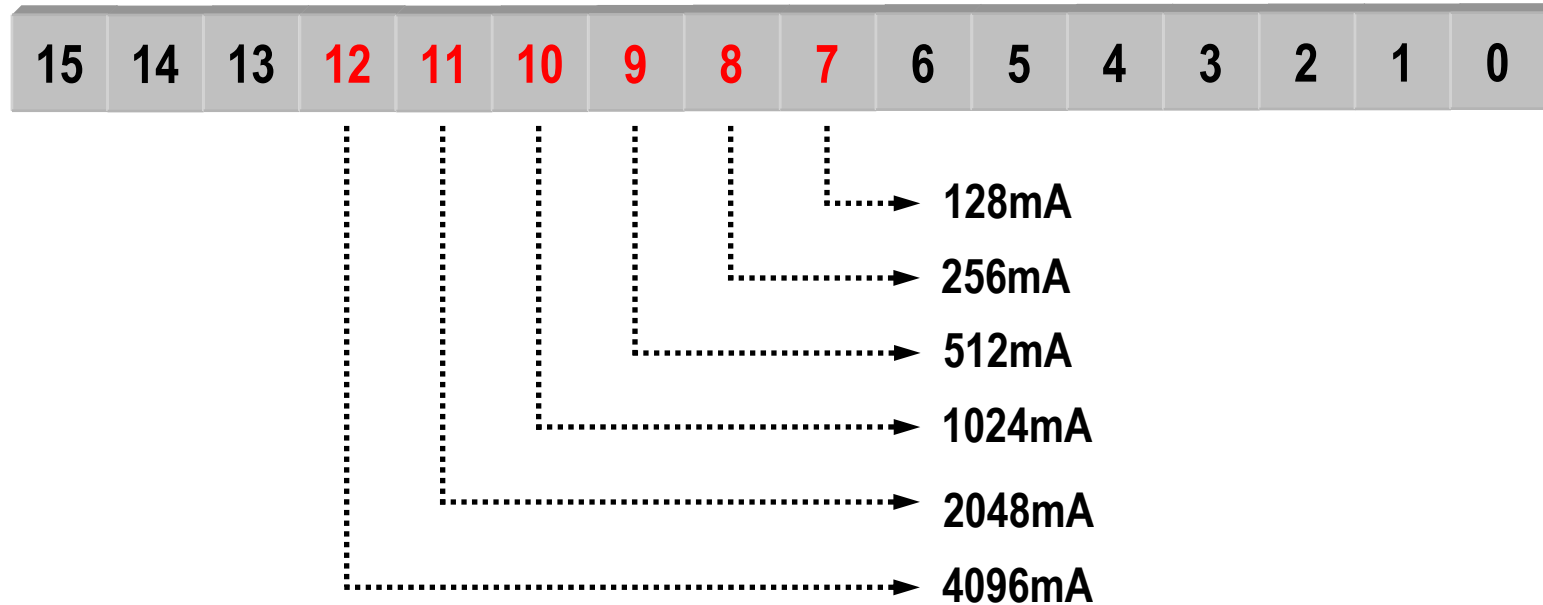
- **0V default @ POR**
- **1.024—19.200V with 16mV step**

bq24725A: ChargeCurrent() Register



- **0A default @ POR**
- **128mA—8.128A with 64mA step (10mΩ current sensing resistor)**

bq24725A: InputCurrent() Register



- **0A default @ POR**
- **128mA—8.064A with 128mA step (10mΩ current sensing resistor)**