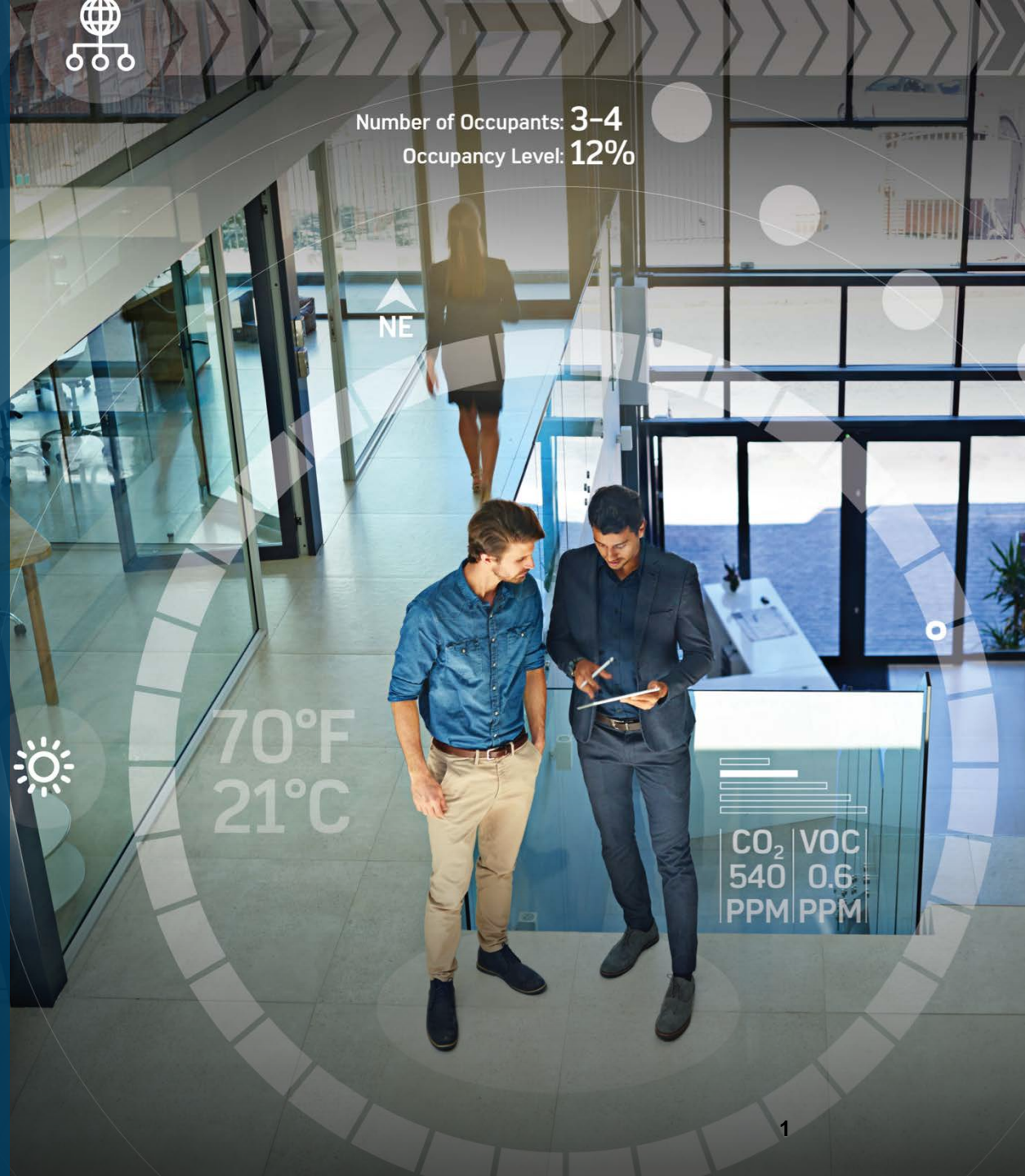




AHEAD OF WHAT'S POSSIBLE™

# SCCP Modifications

HEATH STEWART, GITESH BHAGWAT, ANDY GARDNER  
SANTA BARBARA DESIGN CENTER



## Modify VOLT\_POWER\_INFO Register to 16 Bits

- ▶ VOLT\_POWER\_INFO register was increased to 32 bits in order to accommodate higher power
- ▶ Split this register into two 16 bit registers- VOLT\_INFO and POWER\_INFO
- ▶ Add command – Read\_POWER\_INFO [0x77]
- ▶ Rename command- Read\_VOLT\_POWER\_INFO [0xBB] as Read\_VOLT\_INFO [0xBB]

# Text Changes: To Modify VOLT\_POWER\_INFO Register

## ► Page 97, Line 51:

- Replace text:

“VOLT\_POWER\_INFO\_register:

PSEs that support cable resistance measurement also return the VOLT\_POWER\_INFO register. Refer to Table 104–10 for a description of contents.”

- With:

“**VOLT\_INFO\_register:**

PSEs that support cable resistance measurement also return the **VOLT\_INFO register**. Refer to Table 104–10 for a description of contents.”

## ► Page 98, Line 1:

- Add text:

“**POWER\_INFO\_register:**

**PSEs that support cable resistance measurement also return the POWER\_INFO register. Refer to Table 104–11 for a description of contents.”**

# Text Changes: To Modify VOLT\_POWER\_INFO Register

- ▶ Page 101, Line 14:

- Replace text:

“VOLT\_POWER\_INFO\_register:

PDs that support cable resistance measurement also return the VOLT\_POWER\_INFO register. Refer to Table 104–10 for a description of contents.”

- With:

“**VOLT\_INFO\_register:**

PDs that support cable resistance measurement also return the **VOLT\_INFO register**. Refer to Table 104–10 for a description of contents.”

- ▶ Page 101, Line 18:

- Add text:

“**POWER\_INFO\_register:**

**PDs that support cable resistance measurement also return the POWER\_INFO register. Refer to Table 104–11 for a description of contents.”**

# Text Changes: To Modify VOLT\_POWER\_INFO Register

► Page 103, Line 52:

▪ Modify text:

“PSEs and PDs that implement cable resistance measurement support the ~~VOLT\_POWER\_INFO~~ and VOLT\_INFO, POWER\_INFO and POWER\_ASSIGN registers (see Table 104–10 ~~and~~, Table 104–11 and Table 104-12).”

► Page 108, Line 16:

▪ Modify text:

“ $V_{Report\_PD}$  is the voltage at PD’s PI during the presence pulse as reported in b[7:0] of ~~VOLT\_POWER\_INFO~~ VOLT\_INFO in Table 104–10”

► Page 108, Line 38:

▪ Modify text:

“via the PD Requested Power,  $P_{PD\_req}$ , field of the ~~VOLT\_POWER\_INFO Register b[19:8]~~ POWER\_INFO Register b[11:0].

► Page 108, Line 49:

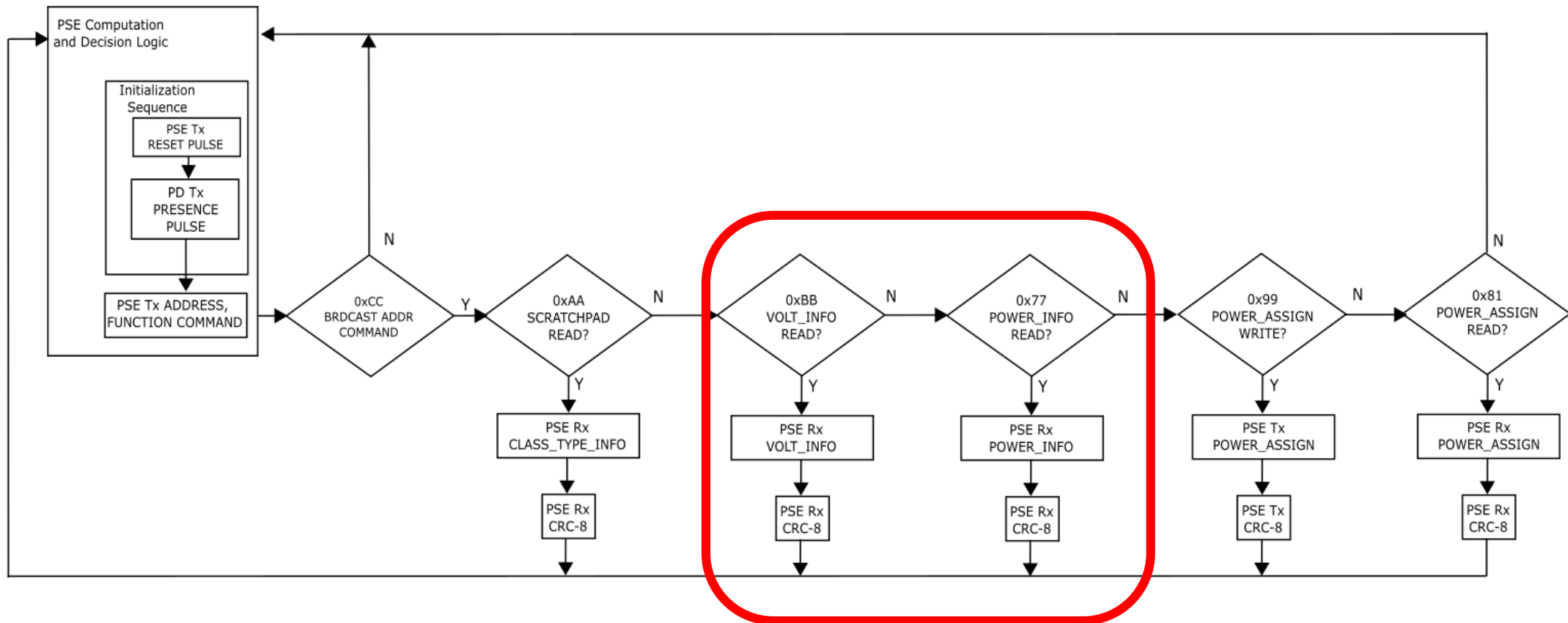
▪ Modify text:

“ $P_{PD\_req}$  is the PD Requested Power as reported in ~~b[19:8] of VOLT\_POWER\_INFO in Table 104–10~~ b[11:0] of POWER\_INFO in Table 104–11”

# Text Changes: To Modify VOLT\_POWER\_INFO Register

► Page 109, Line 11:

- Modify Figure 104-13 to rename the VOLT\_POWER\_INFO [0xBB] read command and to add the POWER\_INFO [0x77] read command:



# Text Changes: To Modify VOLT\_POWER\_INFO Register

► Page 111, Line 25:

- Modify text:

“104.7.2.6 Read\_VOLT\_POWER\_INFO command [0xBB]

All PSEs and PDs that support cable resistance measurement shall support the 8-bit Read\_VOLT\_POWER\_INFO command. After receiving a Read\_VOLT\_POWER\_INFO command, the PD shall respond with a ~~32-bit~~ 16-bit VOLT\_POWER\_INFO read payload followed by an 8-bit CRC8 field as specified in 104.7.2.5. A flowchart for operation of the address and the Read\_VOLT\_POWER\_INFO command is shown in Figure 104–13. Table 104–10 illustrates the contents of the VOLT\_POWER\_INFO register”

► Page 111, Line 34:

- Modify “Table 104-10 VOLT\_POWER\_INFO Register Table”:

Table 104-10 VOLT_INFO Register			
Bit(s)	Name	Description	R/W
b[15:8]	Reserved	Value Always 0	RO
b[7:0]	Voltage at PD PI during Presence Pulse	+/- 20mV tolerance, 10mV per LSB	RO

# Text Changes: To Modify VOLT\_POWER\_INFO Register

► Page 111, Line 50:

- Add text:

“104.7.2.7 Read POWER\_INFO command [0x77]

All PSEs and PDs that support cable resistance measurement shall support the 8-bit Read POWER\_INFO command. After receiving a Read POWER\_INFO command, the PD shall respond with a 16-bit POWER\_INFO read payload followed by an 8-bit CRC8 field as specified in 104.7.2.5. A flowchart for operation of the address and the Read POWER\_INFO command is shown in Figure 104–13. Table 104–11 illustrates the contents of the POWER\_INFO register.”

► Page 111, Line 50:

- Add “Table 104-11 POWER\_INFO Register Table” after new paragraph added on line 50 :

Table 104-11 POWER_INFO Register			
Bit(s)	Name	Description	R/W
b[15:12]	Reserved	Value Always 0	RO
b[11:0]	P <sub>PD_req</sub> PD Requested Power	Power requested by PD, 0.025 W per LSB	RO



# Text Changes: To Modify VOLT\_POWER\_INFO Register

► Page 112, Line 4:

- Modify text:

“After transmitting a Write\_POWER\_ASSIGN command, the PSE shall transmit a ~~32-bit~~ 16-bit POWER\_ASSIGN write payload followed by an 8-bit CRC8”

► Page 112, Line 10:

- Modify “Table ~~104-11~~ 104-12 POWER\_ASSIGN Register Table”:

Table 104-12 POWER_ASSIGN Register			
Bit(s)	Name	Description	R/W
b[15:12]	Reserved	Value Always 0	RO
b[11:0]	P <sub>PD_assign</sub> PD Assigned Power	PD assigned power, 0.025 W per LSB	R/W

# Text Changes: To Modify VOLT\_POWER\_INFO Register

- ▶ Page 112, Line 25:

- Modify text:

“After receiving a Read\_POWER\_ASSIGN command, the PD shall respond with a ~~32-bit~~16-bit POWER\_ASSIGN read payload followed by an 8-bit CRC8 field as specified in 104.7.2.5. A flowchart for operation of the address and the Read\_POWER\_ASSIGN command is shown in Figure 104–13. Table ~~104–11~~ 104–12 illustrates the contents of the POWER\_ASSIGN register.”

- ▶ Page 115, Line 9:

- Modify text in Column – “Value/Comment”:

“Return VOLT\_~~POWER\_INFO~~ ~~and~~ ,POWER\_INFO ~~and~~ POWER\_ASSIGN registers”

# Thank You!

QUESTIONS? FEEDBACK?

# Backup Slides

# Add PICS statements for SCCP commands

► Page 115, Line 29:

- Add PICS for CRM related SCCP commands.
- Insert rows for new items SCCP29, SCCP30, SCCP31, SCCP32, SCCP33, SCCP34, SCCP35, SCCP36 after last item SCCP28 as below (unchanged rows not shown):

Item	Feature	Subclause	Value/Comment	Status	Support
...	...	...	...	...	...
SCCP29	8-bit Read VOLT_INFO command	104.7.2.6	Supported by all PDs that implement CRM	CRM:M	Yes [] N/A []
SCCP30	Reception of Read VOLT_INFO function command	104.7.2.6	PD shall respond with a 16-bit VOLT_INFO read payload followed by an 8-bit CRC8 field	CRM:M	Yes [] N/A []
SCCP31	8-bit Read POWER_INFO command	104.7.2.7	Supported by all PDs that implement CRM	CRM:M	Yes [] N/A []
SCCP32	Reception of Read POWER_INFO function command	104.7.2.7	PD shall respond with a 16-bit POWER_INFO read payload followed by an 8-bit CRC8 field	CRM:M	Yes [] N/A []
SCCP33	8-bit Write POWER_ASSIGN command	104.7.2.8	Supported by all PDs that implement CRM	CRM:M	Yes [] N/A []
SCCP34	Reception of Write POWER_ASSIGN function command	104.7.2.8	PSE shall transmit a 16-bit POWER_ASSIGN write payload followed by an 8-bit CRC8 field	CRM:M	Yes [] N/A []
SCCP35	8-bit Read POWER_ASSIGN command	104.7.2.9	Supported by all PDs that implment CRM	CRM:M	Yes [] N/A []
SCCP36	Reception of Read POWER_ASSIGN function command	104.7.2.9	PD shall respond with a 16-bit POWER_ASSIGN read payload followed by an 8-bit CRC8 field	CRM:M	Yes [] N/A []

# Modify SCCP transaction times

- ▶ SCCP transaction times need to be modified to account for longer signaling times
- ▶ Increase the  $T_{Class}$  (max) timer to 1300ms
- ▶ Increase the  $T_{SCCP\_watchdog}$  timer range to be from 1000 to 1300ms
- ▶ Text changes shown below:
  - Page 99, Line 31:

**Table 104-4 - PSE output requirements**

Item	Parameter	Symbol	Unit	Min	Max	Class	Type	Additional Information
...	...	...	...	...	...	...	...	...
8	Classification time	$T_{Class}$	ms	-	366	All- Classes 0 to 9	All	See 104.5.5
					<del>800</del> 1300	Classes 10 to 15		
...	...	...	...	...	...	...	...	...

- Page 102, Line 47:

**Table 104-7 - PD power supply limits**

Item	Parameter	Symbol	Unit	Min	Max	Type	Additional Information
...	...	...	...	...	...	...	...
15	SCCP watchdog timeout	$T_{SCCP\_watchdog}$	ms	150	200	All- Type A, B, C and D	See 104.5.5
				1000	1300	Type E	
...	...	...	...	...	...	...	...

# Add PICS statements for SCCP commands

► Page 115, Line 29:

- Insert rows for new items SCCP29, SCCP30, SCCP31, SCCP32, SCCP33, SCCP34 after last item SCCP28 as below (unchanged rows not shown):

Item	Feature	Subclause	Value/Comment	Status	Support
...	...	...	...	...	...
SCCP29	8-bit Read VOLT_POWER_INFO command	104.7.2.6	Supported by all PDs that implment CRM	CRM:M	Yes [] N/A []
SCCP30	Reception of Read VOLT_POWER_INFO function command	104.7.2.6	PD shall respond with a 32-bit VOLT_POWER_INFO read payload followed by an 8-bit CRC8 field	CRM:M	Yes [] N/A []
SCCP31	8-bit Write POWER_ASSIGN command	104.7.2.7	Supported by all PDs that implment CRM	CRM:M	Yes [] N/A []
SCCP32	Reception of Write POWER_ASSIGN function command	104.7.2.7	PD shall respond with a 32-bit POWER_ASSIGN write payload followed by an 8-bit CRC8 field	CRM:M	Yes [] N/A []
SCCP33	8-bit Read POWER_ASSIGN command	104.7.2.8	Supported by all PDs that implment CRM	CRM:M	Yes [] N/A []
SCCP34	Reception of Read POWER_ASSIGN function command	104.7.2.8	PD shall respond with a 32-bit POWER_ASSIGN read payload followed by an 8-bit CRC8 field	CRM:M	Yes [] N/A []