

SVID XDPE142xx family (1 of 2)

The screenshot shows the Intel SVID configuration window for VR14 - 0x3E. The window is divided into several sections:

- Platform Performance & Identification Register:** Contains settings for SR-Fast (24h), SR-Slow Setting (25h), Temp Max (22h), VR_HOT, Tolerance (27h), All Call Address, SetVID to 0V Behavior, SetVID Fast Behavior, Iout Report Scaling, Pin Max (2Eh), Pin Max Resolution, and Pout Resolution.
- Information Register (HEX):** Contains Protocol ID (05h), Vendor ID (00h), Product ID (01h), Product Revision (02h), Date Code (03h), Lot Code (04h), Capability (06h), Extended Capability (09h), High Power (50h), Expected Precision (70h), Supported Power State (51h), Supported Phase Shedding (52h), Phase Shedding Method (53h), VR_EN Neg Edge Behavior (54h), and VR_EN Neg Edge Response (55h).
- VID Related Registers:** Contains VID Table, Vboot (26h), Vout Max (30h), Loadline Slope (23h, 36h), Max VID + Offset (09h, 0Ah), Vout Fullscale (0Dh, 0Eh), and Default Multi-VR Config (34h).
- Misc:** Contains VID_DAC_HIGH Function, Alert Behavior at Vboot, PS4 VR_Ready Behavior, and Test Vboot Enable.

Red arrows point from text boxes on the right to specific fields in the window:

- From the first text box to the Information Register (HEX) section.
- From the second text box to the Iout Report Scaling field.
- From the third text box to the Pin Max Resolution field.
- From the fourth text box to the VID_DAC_HIGH Function field.
- From the fifth text box to the Icc Max field.
- From the sixth text box to the Icc Max Resolution field.
- From the seventh text box to the VID_DAC_HIGH Function field.

The Intel SVID window is only available for devices that support SVID. Available settings depend on selected mode VR13, VR13HC, VR14...

For description of the different SVID commands see Intel SVID manual for SVID 1.91

Readout of SVID registers (xxh). Some can be changed others are Read only.

Iout report scaling. Only change the SVID reported current. Other telemetry is still 100%

Pin Max resolution will change automatically in VR14 mode when selecting higher/lower Pin values

Telemetry source what kind of filter to use.

Slow filter like an analog lowpass filter or a block size that give average of all samples over one full switching period

Current resolution will change automatically in VR14 mode when selecting higher ICCmax than 255A

VID_DAC_HIGH a status indicator in SVID Status1 register if voltage is more than 30mV from the VID target. The status function can be enabled or disabled.

SVID XDPE142xx family (2 of 2)

The screenshot shows the Intel SVID configuration tool for VR14 - 0x3E. The window is divided into several sections:

- Platform Performance & Identification Register:** Includes settings for SR-Fast (24h), SR-Slow Setting (25h), Temp Max (22h), VR_HOT, Tolerance (27h), All Call Address, SetVID to 0V Behavior, SetVID Fast Behavior, Iout Report Scaling, Pin Max (2Eh), Pin Max Resolution, and Pout Resolution.
- Information Register (HEX):** Includes Protocol ID (05h), Vendor ID (00h), Product ID (01h), Product Revision (02h), Date Code (03h), Lot Code (04h), Capability (06h), Extended Capability (09h), High Power (50h), Expected Precision (70h), Supported Power State (51h), Supported Phase Shedding (52h), Phase Shedding Method (53h), VR_EN Neg Edge Behavior (54h), and VR_EN Neg Edge Response (55h).
- VID Related Registers:** Includes VID Table, Vboot (26h), Vout Max (30h), Loadline Slope (23h, 36h), Max VID + Offset (09h, 0Ah), and Vout Fullscale (0Dh, 0Eh).
- Default Multi-VR Config (34h):** Includes b0: When SetVID 0.0V, b1: Lock VID/PS, b2: Fast Psys Loop Uses, and b3: Fast Psys Loop Uses.
- SVID Telemetry Source:** Includes Vout, Iout, and Pout.
- Misc:** Includes VID_DAC_HIGH Function, Alert Behavior at Vboot, PS4 VR_Ready Behavior, and Test Vboot Enable.
- ICC Max:** Includes ICC Max (21h), ICC Max Resolution, ICC Max Alert Behavior, and Disable Filter for Icc Max Alert.

At the bottom, there are buttons for Write to device, Read from device, Close, and Help.

The Intel SVID window is only available for devices that support SVID.

For description of the different SVID commands see Intel SVID manual for SVID 1.91

Test Vboot Enable It is used for testing purpose in production test. In a Vboot=0 application it is not easy to know if the 0Volt means there is an error or not. With function enabled and short xaddr pin to ground, output will go to 0.8V when VREN is asserted.

Using this function, the production can short xaddr pin to GND and measure Vout to determine if the board has any issues before they ship the board.

Disable Filter disables the lowpass filter and uses the instant sampled Icc values for the ICC alert. Makes reaction time fast but can give alerts due to noise in Icc measurments

SVID XDPE142xx family

VR14 - 0x3E

Loop A | Loop B | MISC | SVID Address | Psys |

SVID Support: VR14

Platform Performance & Identification Register | SVID Emulator Through I2C | SVID Emulator through I2C for Work Point | Telemetry

VID_SETTING (31h) [] V

Slow Slew Rate Selection (24h) 1/2 of SR-Fast

Vout Max (30h) 0.000 V

Power State (32h) PS0

VID Offset (33h) 0 mV

All Call Act (0Fh) No All Call

Phshed Act (53h) Automatic phase-shedding

Negvren Act (55h) Decay

Multi-VR Config (34h)

b0: When SetVID = 0V VR_Ready De-assert

b1: Lock VIDFS Unlocked

Pin Alert (2Fh) 0 W

Pin Alert Add (52h) 0 W

Actual Pin Alert W

HC Active(2Ah[5])

☒ Enabled Write Function

Write to device* | Read from device | Close | Help

Emulates selected SVID commands using i2c bus to read and write them.

See SVID specification for what the settings do.

To change any value mark the **Enable Write function**.

SVID XDPE142xx family

VR14 - 0x3E

Loop A | Loop B | MISC | SVID Address | Psys |

SVID Support: VR14

Platform Performance & Identification Register | SVID Emulator Through I2C | **SVID Emulator through I2C for Work Point** | Telemetry

WP0 (3Ah)	0.000 V	WP4 (3Eh)	0 V
WP0 Alert (57h) [7]	Alert is disabled	WP4 Alert (59h) [7]	Alert is disabled
WP0 Slew Rate (57h) [6:4]	Fast Slew Rate	WP4 Slew Rate (59h) [6:4]	Fast Slew Rate
WP1 (3Bh)	0 V	WP5 (3Fh)	0 V
WP1 Alert (57h) [3]	Alert is disabled	WP5 Alert (59h) [3]	Alert is disabled
WP1 Slew Rate (57h) [2:0]	Fast Slew Rate	WP5 Slew Rate (59h) [2:0]	Fast Slew Rate
WP2 (3Ch)	0 V	WP6 (40h)	0 V
WP2 Alert (58h) [7]	Alert is disabled	WP6 Alert (5Ah) [7]	Alert is disabled
WP2 Slew Rate (58h) [6:4]	Fast Slew Rate	WP6 Slew Rate (5Ah) [6:4]	Fast Slew Rate
WP3 (3Dh)	0 V	WP7 (41h)	0 V
WP3 Alert (58h) [3]	Alert is disabled	WP7 Alert (5Ah) [3]	Alert is disabled
WP3 Slew Rate (58h) [2:0]	Fast Slew Rate	WP7 Slew Rate (5Ah) [2:0]	Fast Slew Rate

WP_SLEW_TT (58h)

FAST [7:6]	SetWP(Fast)	DECAY [3:2]	SetWP(Fast)
SLOW [5:4]	SetWP(Fast)	TABLE [1:0]	SetWP(Fast)

☒ Enabled Write Function

Write to device* | Read from device | Close | Help

Settings for the different Workpoints.

See SVID specification for what the settings do.

To change any value mark the **Enable Write function**.

SVID XDPE142xx family

VR14 - 0x3E

Loop A | Loop B | MISC | SVID Address | Psys

SVID Support: VR14

Platform Performance & Identification Register | SVID Emulator Through I2C | SVID Emulator through I2C for Work Point | **Telemetry**

SVID Address: 0

Status (11h, 10h)

- Data Frame Error
- Parity Error
- ICC Max Error
- Thermal Alert
- VR Settled

Vin (1Ah): 0.000 V | 00 HEX

Iin (19h): 0 A | 00 HEX

Pin (18h): 0.0 W | 00 HEX

Vout (16h): 0.49 V | 00 HEX

Iout (15h): 0.0 A | 00 HEX

Pout (18h): 0 W | 00 HEX

Temperature (17h): 0 °C | 00 HEX

Temperature Zone (12h): 00 HEX

SR-Slow (25h): -1 mV/us

Enable to SVID Ready (2Dh): 4 us

Write to device* | Read from device | Close | Help

Readout for Status and other telemetry readings

See SVID specification for what the settings do.

Green = there is not fault detected.

Red = fault detected

Readout of values from registers

SVID XDPE142xx family

VR14 - 0x3E

Loop A | Loop B | **MISC** | SVID Address | Psys

SVID Alert Behavior at Vboot

VR_Ready Behavior in PS4

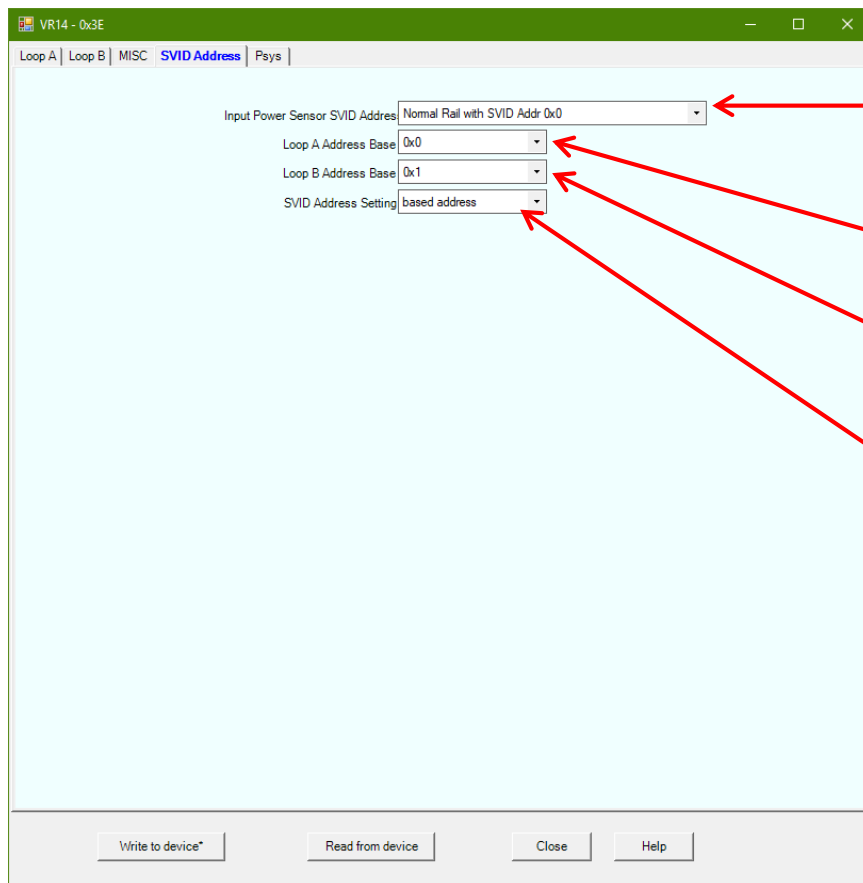
☐ Enabled Vboot is 0.8V When VADDR is Tied to GND

Identification Register (Displayed in HEX)

Product ID (01h)	<input type="text" value="00"/>
Product Revision (02h)	<input type="text" value="00"/>
Date Code (03h)	<input type="text" value="1"/>
Lot Code (04h)	<input type="text" value="1"/>
Config ID (1Eh)	<input type="text" value="1"/>

Write to device* | Read from device | Close | Help

SVID XDPE142xx family



Input Power Sensor SVID address is the address for SVID commands relating to input power.

Loop A address Base is the address for SVID commands for loop A. typical set to 0x0

Loop B address Base is the address for SVID commands for loop A. typical set to 0x1

SVID address Setting select if the address should look at the external resistor that can set an offset to the Base address

SVID XDPE142xx family

VR14 - 0x3E

Loop A | Loop B | MISC | SVID Address | **Phys**

Phys Source: Disabled SVID Register Reload/Reset Condition: Follow Loop A

Platform Performance Register Identification Register

Max Input Power (2Eh) 510 W Capability (06h) 0

Pin Max Resolution 2W Extended Capability (09h) 00

Icc In Max (20h) 0 A High_PWR (50h) 00

Icc In Resolution 1A EXP_ACCURACY (70h) 00

Protocol ID (05h) VR14 Phys Device PWRSTATE_SUP (51h) 00

All Call Selection No All Call Vin Full Scale (0Bh)Ch 0.00 V

SVID Telemetry Source

Vin Instantaneous

Iin Block Size

Pin Block Size

Phys Warning/Critical

Phys Warning 1 Counter (4Eh) 00 1 μ s

Phys Warning 2 Counter (4Dh) 00 1 μ s

Phys Critical Threshold (4Ah_77h) 0 0.000 A

Phys Warning 1 Threshold (4Ch_78h) 0 0.000 A

Phys Warning 2 Threshold (4Bh_79h) 0 0.000 A

Phys Critical Assertion De-bounce Time (4Fh) 0 0 μ s

Phys Critical De-assertion De-bounce Time (49h) 0 0 μ s

☒ Enable write function

Write to device* Read from device Close Help

Readout for PSYS settings

See SVID specification for what the settings do.

Telemetry source what kind of filter to use.

Vin

Instantaneous or Slow filter. Instantaneous is immediate latest sample while Slow is like an analog lowpass filter

Iin, Pin: Slow filter like an analog lowpass filter or a block size that give average of all samples over one switching period

To change any value mark the **Enable Write function**.