

| Hypex Cost | January-19-14 | Euro to Can exchange | 1.5 | US to Can exchange | 1.1 |
|--|---------------|----------------------|-----|--------------------|-----|
| Hypex: o/p filter is within feedback loop: no notable ultrasonic peaking. Modules have 100k input Z | | | | | |

| | <u>Min</u> | <u>Nom</u> | <u>Max</u> |
|--------------------|------------|------------|------------|
| Rail Voltage | 35V | 64V | 75V |
| Aux Voltage-Signal | 16V | | 25V |
| Aux Voltage-Driver | | 16V | 25V |
| Max src Z | | | 1kohm |
| Input Z | | 100kohm | |
| Min PSU Cap/rail | 4700uF | | |

| | <u>Min</u> | <u>Nom</u> | <u>Max</u> |
|------------------|------------|------------|------------|
| Rail Voltage | 30V | 45V | 49V |
| Aux Voltage | | NA | |
| Max src Z | | | 7kohm |
| Input Z | | 100kohm | |
| Min PSU Cap/rail | 4700uF | | |

| | <u>Min</u> | <u>Nom</u> | <u>Max</u> |
|------------------|------------|------------|------------|
| Rail Voltage | 45V | 57V | 67V |
| Aux Voltage | | NA | |
| Max src Z | | | 7kohm |
| Input Z | | 100kohm | |
| Min PSU Cap/rail | 4700uF | | |

| | <u>Min</u> | <u>Nom</u> | <u>Max</u> |
|------------------|------------|------------|------------|
| Rail Voltage | 75V | 90V | 95V |
| Aux Voltage | | 15V | |
| Max src Z | | | 7kohm |
| Input Z | | 100kohm | |
| Min PSU Cap/rail | 10000uF | | |

| Connexelectronics alternate Supply, SMPS800RE | | | |
|---|-----------------|------------|-------------------|
| | <u>Price EU</u> | <u>qty</u> | <u>ext cost</u> |
| NC400 | 325 | 2 | \$975.00 |
| Invoice fee | | | \$29.25 |
| UPS estimate | | | \$30.00 |
| SMPS800RE | | 2 | \$253.00 |
| chassis | | | \$130.00 |
| bits/bobs | | | \$20.00 |
| Shipping estimate | | | \$30.00 |
| | | | <u>\$1,437.25</u> |
| | | + HST | \$1,624.09 |

| <u>Connexelectronics alternate Supply, SMP500R</u> | | | |
|--|-----------------|------------|-----------------|
| | <u>Price EU</u> | <u>qty</u> | <u>ext cost</u> |
| UCD180HG with hxr | 100 | 2 | \$300.00 |
| Invoice fee | | | \$9.00 |
| UPS estimate | | | \$30.00 |
| SMP500R | | 2 | \$171.60 |
| chassis | | | \$130.00 |
| bits/bobs | | | \$20.00 |
| Shipping estimate | | | \$30.00 |
| | | | <u>\$660.60</u> |
| | | + HST | <u>\$746.48</u> |

| <u>Connexelectronics alternate Supply, SMPS800RE</u> | | | |
|--|-----------------|------------|-----------------|
| | <u>Price EU</u> | <u>qty</u> | <u>ext cost</u> |
| UCD400HG with hxr | 130 | 2 | \$390.00 |
| Invoice fee | | | \$11.70 |
| UPS estimate | | | \$30.00 |
| SMPS800RE | | 2 | \$235.40 |
| chassis | | | \$130.00 |
| bits/bobs | | | \$20.00 |
| Shipping estimate | | | \$30.00 |
| | | | <u>\$817.10</u> |
| | | + HST | \$923.32 |

| <u>Connexelectronics alternate Supply, SMP52000R</u> | | | |
|--|-----------------|------------|-------------------|
| | <u>Price EU</u> | <u>qty</u> | <u>ext cost</u> |
| UCD700HG with hxr | 180 | 2 | \$540.00 |
| Invoice fee | | | \$16.20 |
| UPS estimate | | | \$30.00 |
| SMP52000R | | 1 | \$224.40 |
| chassis | | | \$130.00 |
| bits/bobs | | | \$20.00 |
| Shipping estimate | | | \$30.00 |
| | | | <hr/> |
| | | | \$960.60 |
| | + HST | | \$1,085.48 |

Connexelectronics Cost

January-19-14

Connex IRS2092 and IRFI4019 or 4020 (higher power): output filter after feddback and may require tweeter zobel to avoid ultrasonic peaking

| 200 watts (8 ohm), W (4 Ohm) | | | | 150 watts (8 ohm), 250 W (4 Ohm) 0.068% ±54V | | | | 300W 8 ohms | | | | 264W (8Ω), 516W (4Ω) 0.1% @ ±75V 320W (8Ω), 632W (4Ω) 0.1% @ ±84V | | | |
|------------------------------|----------|-----|----------|--|----------|-----|----------|-------------------|----------|-----|----------|--|----------|-----|----------|
| | Price US | qty | ext cost | | Price US | qty | ext cost | | Price US | qty | ext cost | | Price US | qty | ext cost |
| CxD200-8R | 30 | 2 | \$66.00 | CxD250-HP | 89 | 2 | \$195.80 | CxD300-8R | 34 | 2 | \$74.80 | CxD500 | 60 | 2 | \$132.00 |
| SPC1 | 16 | 1 | \$17.60 | SPC1 | 16 | 1 | \$17.60 | SPC1 | 16 | 1 | \$17.60 | SPC1 | 16 | 1 | \$17.60 |
| SMPS500R | 78 | 2 | \$171.60 | SMPS600RxE | 94 | 2 | \$206.80 | SMPS800RE | 115 | 2 | \$253.00 | SMPS600RxE | 94 | 2 | \$206.80 |
| chassis | | | \$130.00 | chassis | | | \$130.00 | chassis | | | \$130.00 | chassis | | | \$130.00 |
| bits/bobs | | | \$20.00 | bits/bobs | | | \$20.00 | bits/bobs | | | \$20.00 | bits/bobs | | | \$20.00 |
| Shipping estimate | | | \$30.00 | Shipping estimate | | | \$30.00 | Shipping estimate | | | \$30.00 | Shipping estimate | | | \$30.00 |
| | | | \$405.20 | | | | \$570.20 | | | | \$495.40 | | | | \$506.40 |
| + HST | | | \$457.88 | + HST | | | \$644.33 | + HST | | | \$559.80 | + HST | | | \$572.23 |

Power Supplies as of Jan '14

Choose a supply with all the required aux voltages

While some of his boards provide power supply shut down logic on dc detect, none of the supplies accepted that as an input

Cristi provides linear supply cap/rectifier boards and SMPS. Due to cost/size of torroids, linear supplies weren't investigated

Amplifier warning

"Potentiometers for CxD300 must be 5-10K because the low input impedance, and I strongly suggest to drive these modules from a low-impedance source"

CxD200-8R 200 watts (8 ohm), W (4 Ohm)

IRS2092S and IRFI4019

Features full protection set, under-voltage, over-voltage over-current and over temperature protection, Mute and ON LED's, mute control pin

Requires +-56 to +-70V

Does not have the DC protection or signal to SMPS for DC detect shut down

CxD250-HP 150 watts (8 ohm), 250 W (4 Ohm) 0.068% ±54V 320W (8Ω), 632W (4Ω) 0.1% @ ±84V

IRS2092S and IR6643 DirectFET

Balanced input, real-time temperature monitor, output signal clipping detector, switching frequency sync option for multiple modules, two status and power on-board LED's

Complete protection set: under-voltage, over-voltage, over-current, over-temperature with temperature feedback output monitor peak clipping detection, DC detection and mute

July 2013: The DC detection and fast-shut down will be implemented in the new batch of boards which will be released with a new dedicated power supply, similar with SMPS600RxE as well as a single on-board amplfier and power supply

Contains on board separate voltage regulators for small signal circuits (+-15V to +-25V at 25mA) and separate regulator for MOS-FET's driver circuit. (14V to 28V at 40mA) ☹

but he recommends external aux. voltage of +-18V and an external power supply for the MOSFET driver, for best performance

Requires +-54V to +-58V for rated power with minimum THD and highest efficiency. Power stage Idle current consumption is ~18mA at +-54V overall Idle power consumption is 3.2 - 4.6W for each channel

Heatsink is installed on top of the MOS-FET's. Below the PCB heat can be transferred to an enclosure bottom plate or an aluminium plate, through an electrical insulating and thermal conductive material

CxD300-8R 300W 8 ohms

IRS2092S and IRFI4020

Requires a differential supply voltage in range of +-68 to +-78V

Does not have the DC protection or signal to SMPS for DC detect shut down

CxD500 264W (8Ω), 516W (4Ω) 0.1% @ ±75V

IRS2092S and "two special selected MOS-FET transistors suitable for medium-high power class D Audio amplifier applications"

The amplifier has built-in Mute circuit, which allows silent turn ON/OFF without any click/pop noise and can be operated with or without an external speaker protection circuit

Balanced input (2x10Kr impedance), full protection set, over-current, over-voltage, under-voltage, over-temperature with temperature report pin for controller unit, DC component protection, click/pop free start-up

Requires +-62V to +-86V for the power stage, +-18 to +-28V 20-30mA for the input stage, and one separate voltage, referenced to V- with the value in range of 16V to 25V at 40-50mA for the driver stage

The latest amplifier versions include DC protection and quick-disconnect signals for SMPS in the unlikely event of DC signal present at the output of the amplifier

The Fast-disconnect signal is a logic signal

Cheapest Option

200 watts (8 ohm), W (4 Ohm)

| | Price US | qty | ext cost |
|----------------------------|----------|-----|----------|
| CxD200-8R | 30 | 2 | \$66.00 |
| SPC1 | 16 | 1 | \$17.60 |
| SMPS500R | 78 | 1 | \$85.80 |
| chassis* | | | \$50.00 |
| bits/bobs (raid parts box) | | | \$0.00 |
| Shipping estimate | | | \$30.00 |
| | | | \$219.40 |
| + HST | | | \$247.92 |

* example Slicon Ray Enclosure RE2806 280x60x210

This is the recommended PSU from Connex but power is significantly limited if pushed: overheating of PSU

Note: 50W NAD C326BEE is \$450 + tx/ship (Bay Bloor)

but the NAD "puts out copious amounts of heat"