

SBC 5000 Series Field and Customer Replaceable Units

In this section:

- SBC 5100/5200 Field Replaceable Units (FRUs)
- Customer Replaceable Units (CRUs)


The SBC 5000 series includes two types of replaceable units, FRUs (field replaceable units), and CRUs (customer replaceable units). FRUs are installed by trained Sonus field technicians, whereas CRUs are installed by the customer.

SBC 5100/5200 Field Replaceable Units (FRUs)

FRUs are replaceable units typically replaced by authorized service personnel.

The following table lists the SBC 5200 and SBC 5100 Field Replaceable Units (FRUs).


Table 1: SBC 5200 and 5100 Platform FRUs

Equipment Requirement	Description
DSP Signal Processing Cards	<p>Located within the SBC 5200/5100 chassis and used to support transcoding.</p> <p>For more information on DSP Channel densities for each SBC 5x00 series, refer to SBC 5100 and 5200 DSP Densities.</p> <div style="background-color: #ffffcc; padding: 5px;"><p> Note Requires authorized service personnel for removal or replacement.</p></div>

Customer Replaceable Units (CRUs)

Sonus provides replacement units to the Customer, and the Customer performs the installation for these replacement units. For CRU information and replacement instructions, refer [SBC 5000 Series CRUs](#).

Table 2: SBC 5200 and SBC 5100 Platform CRUs

Equipment Requirement	Description
Fan Assembly	Three cooling fan assemblies located behind the front bezel.
Solid State Drive	Solid State Disk (SSD) storage located behind the front bezel. 
Air Filter	Located within the front bezel assembly, filters the cooling air.








SFP	Single or Multi mode fiber transceivers and Copper SFPs (which functions like a plug) used for Gigabit Ethernet connections to Media ports and HA ports. Connect to LC-connector on the SFP side and SX-module on the other end of the connection to L3 switch.	
Bezel	Secures replaceable air filter to front of chassis and identifies LED status indicators.	
Power Supply	Up to two DC or two AC power supply modules accessible from the rear of the chassis.	
 Caution When switching to a different power supply voltage type (AC to DC, or DC to AC), you must first power down the system.		

Table 3: SBC 5210 and SBC 5110 Platform CRUs


Equipment Requirement	Description	
Fan Assembly	Three cooling fan assemblies located behind the front bezel.	
Solid State Drive	Solid State Disk (SSD) storage located behind the front bezel.	
Air Filter	Located within the front bezel assembly, filters the cooling air.	
SFP	Single or Multi mode fiber transceivers and Copper SFPs (which functions like a plug) used for Gigabit Ethernet connections to Media ports and HA ports. Connect to LC-connector on the SFP side and SX-module on the other end of the connection to L3 switch.	
Bezel	Secures replaceable air filter to front of chassis and identifies LED status indicators.	
DSP20	Signal Processing Cards (plug-in module with a low capacity DSP card).	
DSP25	DSP25 Signal Processing Cards (plug-in module with a high capacity DSP card).	
Power Supply	Up to two DC or two AC power supply modules accessible from the rear of the chassis.	
 Caution Switching to a different power supply voltage type (AC to DC, or DC to AC) requires that the system be powered down first.		


DSP2x Signal Processing Cards for SBC 5110/5210

This is the second generation Signal Processing Server (SPS) for SBC 5000 series and provides increased signal processing capabilities over the earlier SPS100 card by incorporating the latest DSP technology. It is an add-on module that can connect to SBS100 motherboard through a 150-pin connector.

The DSP2x cards contain the actual DSP processing resources. There are two DSP2x module variants supported: DSP20 and DSP25. SBC 5110 has four slots which provides maximum capacity. The cards are hot swappable and installable/replaceable in the field. The DSP20 has 1/5 the density of the DSP25. While inserting DSP25 cards, fill the slots in order - slot 1, 2, 3, 4.

For more information on DSP2x module, refer CRU documents [SBC 5x10 DSP20 Module](#) and [SBC 5x10 DSP25 Module](#). For more information on DSP Channel densities for each SBC 5x10 series, refer to [SBC 5x10 DSP Densities](#).

 Only one DSP20 is allowed in SBC 5x10 chassis, and it must reside in slot 1.

 Mixing DSP20 and DSP25 cards (both within a chassis and between Active/Standby servers) is not supported. For example, if SBCa contains DSP25 in slots 1-3, SBCb should have a DSP25 in slots 1-3. As another example, if SBCa has a DSP20 in slot 1, SBCb should not have anything other than a DSP20 in slot1.

FPGA Reprogramming for DSP2x Module

The DSP2x module includes a Field-Programmable Gate Array (FPGA) that may occasionally require reprogramming. The reprogramming is fully autonomous and occurs during system reboot process. The only noticeable effect to the system is a slight increase to the duration of the system reboot. For each DSP2x installed, expect an additional 1-2 minutes added to the length of a normal reboot process.

Log messages pertaining to FPGA reprogramming are stored in the following files:

- `sbx_start.log(timestamp)` file is located in `/var/log/sonus/sbx/openclovis` directory. This file contains all logs related to system startup as well as a log of other scripts that call this FPGA reprogramming utility.
- `/var/log/messages` file.

Example log messages:

1. No upgrade is needed for a slot:

```
updateAll:: key: 1, value: DSP25.  
NO ACTION REQUIRED FOR SLOT 1. version 2013/03/20  
18:03:52, minVersionRequired 2013/03/20 18:03:52
```

2. Upgrade is needed for a slot:

```
updateAll:: Require update for slot 1 version :: 2013/  
03/20 18:03:52 and minVersionRequired 2013/03/20 18:03:53  
upgradeFpgaForSlot Upgrading FPGA for Slot 1  
Loading DSP2X FPGA File to memory  
[rr_dsp_mux3_routed.rom]... Complete  
Design Name:  
rr_dsp_mux3_routed.ncd;HW_TIMEOUT=FALSE;UserID=0xFFFFFFFF  
Device Name: 6v1x75tff484  
Version: 2013/03/20 18:03:52  
Image Length: 0x00320c2c  
Erasing DSP2x SPI Flash [SLOT 1]... Complete  
Programming DSP2x SPI Flash [SLOT 1]... Complete
```

The ESD Susceptibility symbol



warns of the presence of Sonus devices susceptible to electrostatic discharge. Do not handle equipment without wearing a properly grounded ESD wrist strap.

