



Application Interactive Block Diagrams

System Selling Tool Training

ON Semiconductor[®]



Interactive Block Diagrams

The interactive block diagrams are available to anyone who visits the [“www.onsemi.com”](http://www.onsemi.com) web site. All users can:

- Interact with block diagrams for a wide variety of applications.
- View and select ON Semiconductor devices which are functionally specific for each block.
- Create a summary worksheet which contains a listing of devices that were selected for each block in the block diagram. Links to the datasheet are provided for each selected device.
- Print the document, if desired.



By first signing in to “MyON” on the home page, sales, authorized distributors and internal ON Semiconductor employees may access other valuable features such as:

- See sales program information directly on the device parametric page.
- Customize your summary worksheet to include your company logo.
- When these features are activated, the tool becomes the “System Selling Tool”.

- SST -

Signing in to MyON

ON Semiconductor® ON

Products Applications Design Support About **MyON**

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MyON Login

We are happy to offer access to all public information on ON Semiconductor's site subject to the conditions identified in our "Terms of Use"

Login

Login ID:

Password:

Remember my login

Login

Forgot Password

Register

As a registered user, you now have access to these services:

- Order samples
- Order collateral
- Monitor your orders
- Maintain your account

You may also request access to additional information through the:

- Intellectual property
- Design Kits
- Customer Orders

Registration Guidelines

Register

SuperSpeed with the market
Leading USB Type-C™ Solutions

A complete portfolio for the USB Type-C and Power Delivery (PD) designs

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nt Innovations

ts or Cross-references

PRODUCTS

ivity, Custom, & SoC

Sensors

Power Management

Analog, Logic, & Timing

Discrete

Optoelectronics

POWER SUPPLY WebDesigner™

POWER SUPPLY

LOAD SWITCH

MOTION CONTROL

PRODUCT RECOMMENDATION TOOL

INTERACTIVE BLOCK DIAGRAMS

- Go to 'www.onsemi.com' and click on "MyON"; then enter your log in ID and password.

- If you are recognized as an internal employee, sales rep or authorized distributor, you will have access to extra features.

- You will need to register the first time you use MyON.



ON Semiconductor Home Page

The screenshot shows the ON Semiconductor website home page. At the top left is the ON Semiconductor logo. The navigation bar includes 'Products', 'Applications', 'Design Support', 'About', and 'MyON: View Cart | Logout'. A search bar is on the right. A central banner features a 'Participating in Personalization test. Back Danyal 2621' with a 'LEARN MORE' button. A right sidebar lists product categories: Connectivity, Custom, & SoC; Sensors; Power Management; Analog, Logic, & Timing; Discrete; and Optoelectronics. A bottom section contains three tiles: 'POWER SUPPLY WebDesigner™' (listing Power Supply, Load Switch, and Motion Control), 'PRODUCT RECOMMENDATION TOOL', and 'INTERACTIVE BLOCK DIAGRAMS'. Annotations include a yellow box at the top right stating 'After signing in to "MyON", you will have access to SST and its extra features.' and another yellow box pointing to the 'Applications' menu with the text 'Click on the "Applications" tab at the top to go to the applications page or click on any Application segment to view all the applications within it.'

ON Semiconductor®

ON

Energy Efficient Innovations

Products Applications Design Support About MyON: View Cart | Logout

Search Search for Products or Cross-references

FOCUS

- >> Automotive
- >> Computing & Peripherals
- >> LED Lighting
- >> Consumer
- >> Medical
- >> Aerospace & Defense
- >> Industrial
- >> Power Supply
- >> Networking & Telecommunications
- >> Portable & Wireless

Control Solutions

Participating in Personalization test. Back Danyal 2621

It's Personalization Time!

LEARN MORE

PRODUCTS

- Connectivity, Custom, & SoC
- Sensors
- Power Management
- Analog, Logic, & Timing
- Discrete
- Optoelectronics

POWER SUPPLY WebDesigner™

- POWER SUPPLY
- LOAD SWITCH
- MOTION CONTROL

PRODUCT RECOMMENDATION TOOL

INTERACTIVE BLOCK DIAGRAMS

https://www.onsemi.com/PowerSolutions/content.do?id=15067



Applications Home Page

ON Semiconductor®  Energy Efficient Innovations 

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Products Applications Design Support About MyON: View Cart | Logout Search Search for Products or Cross-references

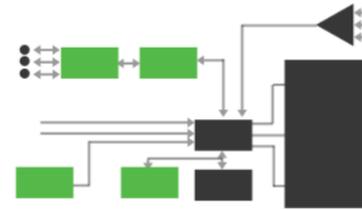
Home > Applications

Applications

ON Semiconductor provides a variety of application specific information, including:

- Interactive block diagrams
- 'Fixed' block diagrams, which show design examples
- Technical information
- Links to industry standards via other web sites
- Design and processing services information
- Interactive product recommendation tools

Choose your category of interest. For example, lets go with "Consumer Applications".



Automotive	Computing & Peripherals	Consumer
Industrial	LED Lighting	Medical
Military & Aerospace	Networking & Telecommunications	Portable & Wireless
Power Supply	Motor Control	

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Products Applications Design Support About MyON: View Cart | Logout

Home > Applications > Consumer

Consumer Applications

ON Semiconductor provides DSP systems; dc-dc controllers, converters, & regulators; drivers; MOSFETs; analog switches; EMI filters; interfaces; diodes & rectifiers; bipolar transistors; and MiniGate™ logic.

Interactive Block Diagrams Build a customized product list to complete your design: User Guide

- ▶ Air Conditioner (Indoor Unit)
- ▶ Air Conditioner (Outdoor Unit)
- ▶ Air Purifier
- ▶ Audio Amp-Performance
- ▶ Clothes Dryer
- ▶ Clothes Washer
- ▶ Digital Video Recorder
- ▶ Dishwasher
- ▶ E-Bike
- ▶ Game Console
- ▶ HVAC
- ▶ Half-Bridge Induction Cooker
- ▶ Induction Cooker
- ▶ LCD TV
- ▶ Microwave Oven
- ▶ Multi-Channel Analog Receiver/Amplifier
- ▶ Power Tool
- ▶ Refrigerator
- ▶ Residential Energy Storage System
- ▶ **Set Top Box**
- ▶ USB Type-C
- ▶ Vacuum Cleaner

TECHNICAL DOCUMENTATION & DESIGN RESOURCES

- ▶ Reference Designs (9)
- ▶ Design Notes (3)
- ▶ Collateral Brochures (2)
- ▶ Videos (48)

TOOLS
POWER SUPPLY
WebDesigner™

Consumer Interactive Block Diagrams are listed in the top pane.
For example, we will click >> Set Top Box.

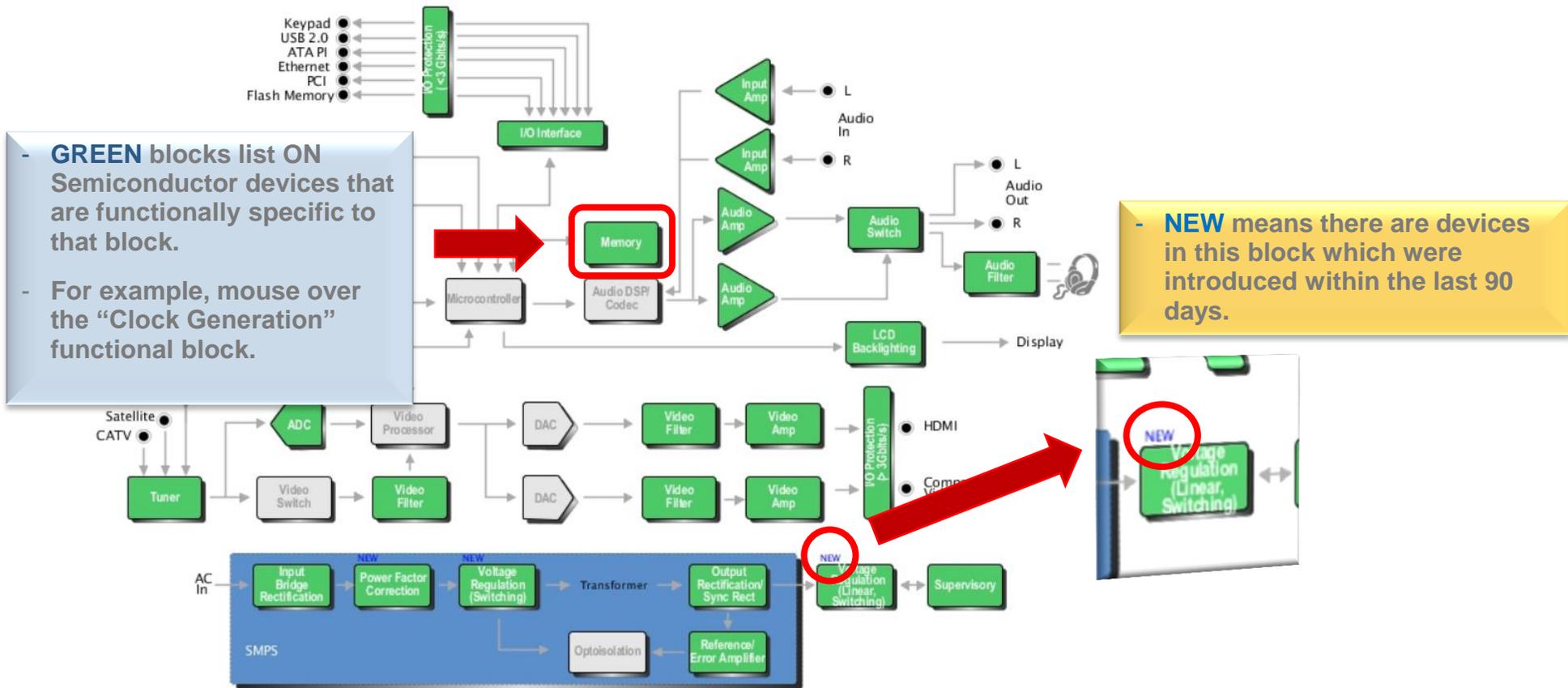


Block Diagram

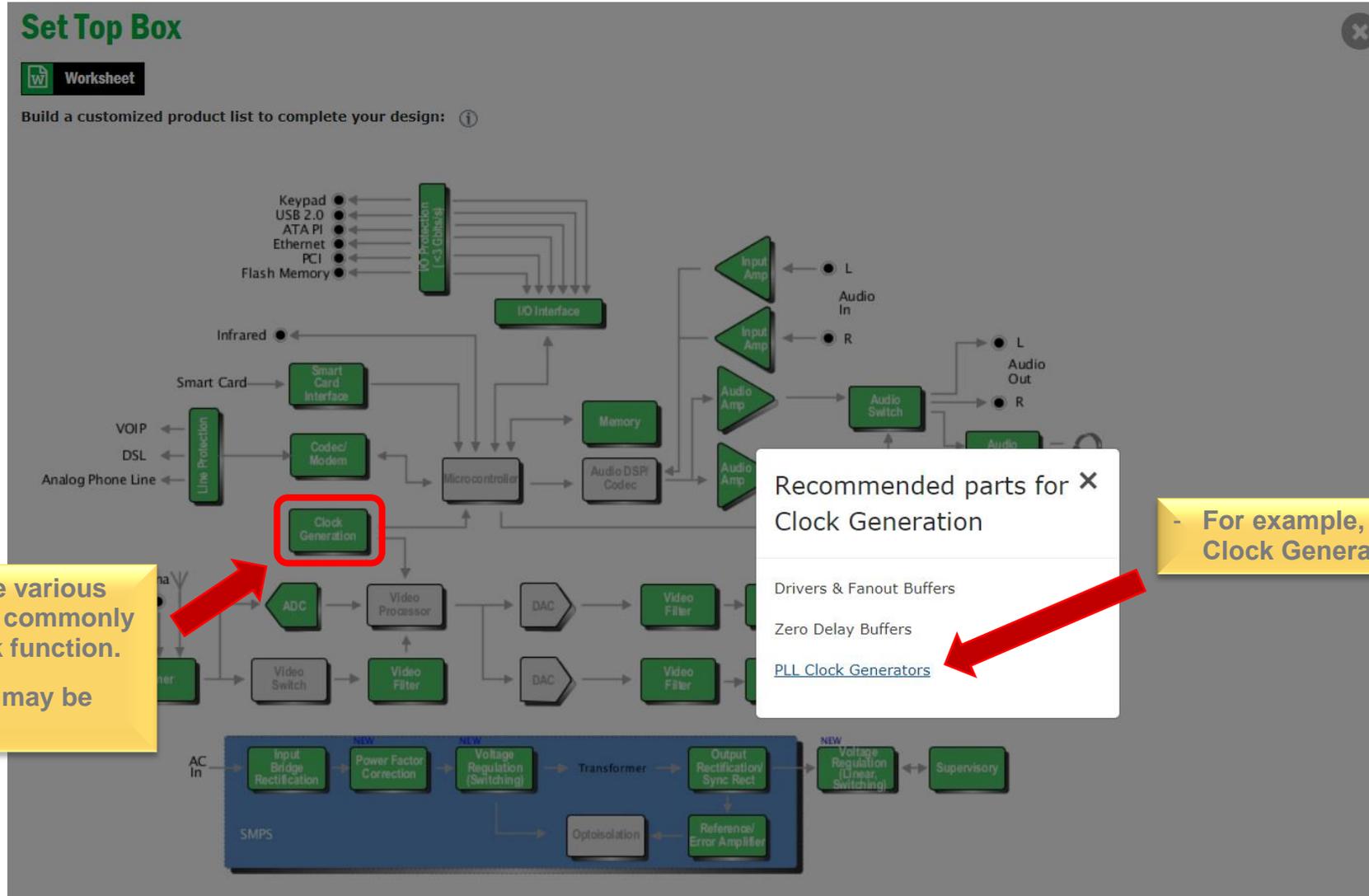
Set Top Box



Build a customized product list to complete your design: ⓘ



Part Type Selection



- A menu will list the various part types that are commonly used for this block function.

- Several part types may be listed.

- For example, click on "PLL Clock Generators".



Device Selection

Products Applications Design Support About MyON: View Cart | Logout

Application: **Set Top Box**
 Block: **Clock Generation**
 Taxonomy: **PLL Clock Generators**

- Only the PLL Clock Generators which are appropriate for this application are listed.

Add to Worksheet Worksheet See all products Top Box Application Diagram

- Sales program info is only visible if you are signed in and recognized in "MyON".

Quick Filter Customize Table Transp

- Add / Remove / Reorder parameters in the table

- Click the select box for each choice and then click on Add to Worksheet.

1 - 9 of 9 [1]

Select	Product	Data Sheet	Compliance	Status	ON Target	Description	Input Level	Output Level	V _s Typ (V)	f _{in} Typ (MHz)	f _{out} Typ (MHz)	t _{jitter} (Cy) Typ (ps)	t _{jitter} (Period) Typ (ps)	t _{jitter} (Φ) Typ (ps)	t _r & t _f Typ (ps)	t _r & t _f Max (ps)	T _A Max (°C)
<input type="checkbox"/>	NB3N3002		Pb-free Halide free	Active	✓	Clock Generator, PureEdge™, Crystal to 25 MHz, 100 MHz, 125 MHz, 200 MHz, 3.3 V, with Differential HCSL Outputs	CMOS TTL	HCSL	3.135 3.465	25	25 100 125 200						
<input type="checkbox"/>	NB3N3020		Pb-free Halide free	Active	✓	Clock Multiplier, LVPECL / LVCMOS, Programmable, 3.3 V	CMOS ECL	ECL TTL	3.3	5-27	8-210	20	15		340	700	-40
	NB3N3020DTG		Pb-free Halide free	Active	✓	Clock Multiplier, LVPECL / LVCMOS, Programmable, 3.3 V	CMOS ECL	ECL TTL	3.3	5-27	8-210	20	15		340	700	-40
	NB3N3020DTR2G		Pb-free Halide free	Active	✓	Clock Multiplier, LVPECL / LVCMOS, Programmable, 3.3 V	CMOS ECL	ECL TTL	3.3	5-27	8-210	20	15		340	700	-40
<input type="checkbox"/>	NB3N502		Pb-free Halide free	Active	✓	PLL Clock Multiplier, 14 MHz to 100 MHz	CMOS Crystal	CMOS	3 5.5	2-50 5-27	14-190	±40	15		1000	1000	-40

- SORT and FILTER each column to narrow your selections.

- Click (+) to expand and see orderable parts and (-) to collapse.



Device Selection (continued)

Products Applications Design Support About MyON: View Cart | Logout

Application: **Set Top Box**
Block: **Clock Generation**
Taxonomy: **PLL Clock Generators**

- OR Click here to return to the block diagram at any time.

Add to Worksheet Worksheet See all devices in this product family **Return to Set Top Box Application Diagram**

Quick Filter Customize Table Transpose Table Export

1 - 9 of 9 [1]

Page size: 50

Select	Product	Data Sheet	Compliance	Status	ON Target	Description	Input Level	Output Level	V _s Typ (V)	f _{in} Typ (MHz)	f _{out} Typ (MHz)	t _{jitter} (Cy) Typ (ps)	t _{jitter} (Period) Typ (ps)	t _{jitter} (Φ) Typ (ps)	t _R & t _F Typ (ps)	t _R & t _F Max (ps)	T _A Max (°C)
	NB3N3002		Pb-free Halide free	Active	<input checked="" type="checkbox"/>	Clock Generator, PureEdge™, Crystal to 25 MHz, 100 MHz, 125 MHz, 200 MHz, 3.3 V, with Differential HCSL Outputs	CMOS TTL	HCSL	3.135 3.465	25	25 100 125 200	2	1.5	0.25	340	700	-40
	NB3N3020		Pb-free Halide free	Active	<input checked="" type="checkbox"/>	Clock Multiplier, LVPECL / LVCMOS, Programmable, 3.3 V	CML CMOS ECL	ECL TTL	3.3	5-27	8-210	20	15		340	700	-40
	NB3N3020DTG		Pb-free Halide free	Active	<input checked="" type="checkbox"/>	Clock Multiplier, LVPECL / LVCMOS, Programmable, 3.3 V	CML CMOS ECL	ECL TTL	3.3	5-27	8-210	20	15		340	700	-40
	NB3N3020DTR2G		Pb-free Halide free	Active	<input checked="" type="checkbox"/>	Clock Multiplier, LVPECL / LVCMOS, Programmable, 3.3 V	ECL CMOS CML	TTL ECL	3.3	5-27	8-210	20	15		340	700	-40
<input checked="" type="checkbox"/>	NB3N502		Pb-free Halide free	Active	<input checked="" type="checkbox"/>	PLL Clock Multiplier, 14 MHz, 100 MHz	CMOS Crystal	CMOS	3 5.5	2-50 5-27	14-190	±40	15		1000	1000	-40

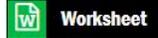
- **CLICK** the 'Add to Worksheet' button.

- Your selections will be saved for the creation of the final Worksheet and you will be returned to the block diagram to complete the process for the other blocks.



Device Selection (continued)

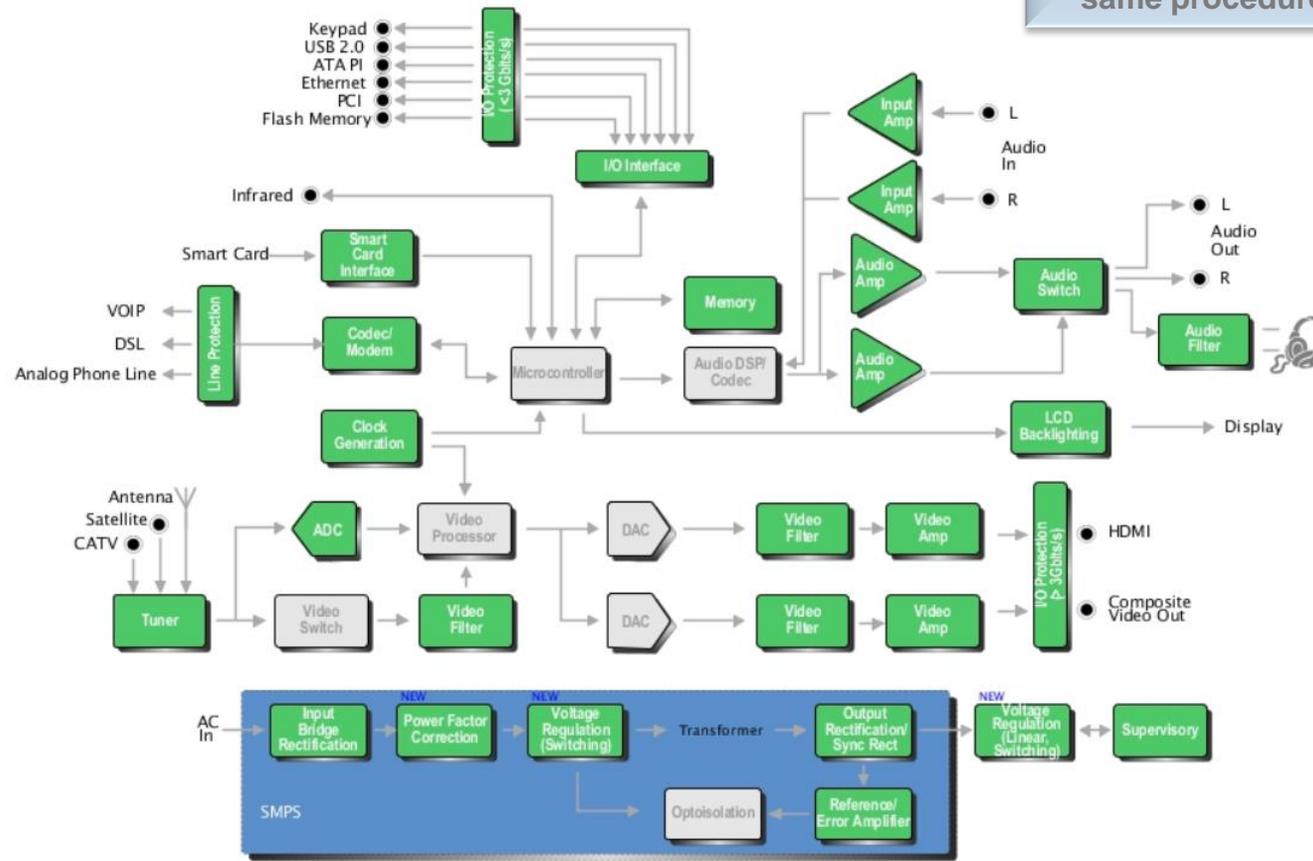
Set Top Box



Worksheet

Build a customized product list to complete your design: ⓘ

- Click on other **GREEN** blocks and follow the same procedure.



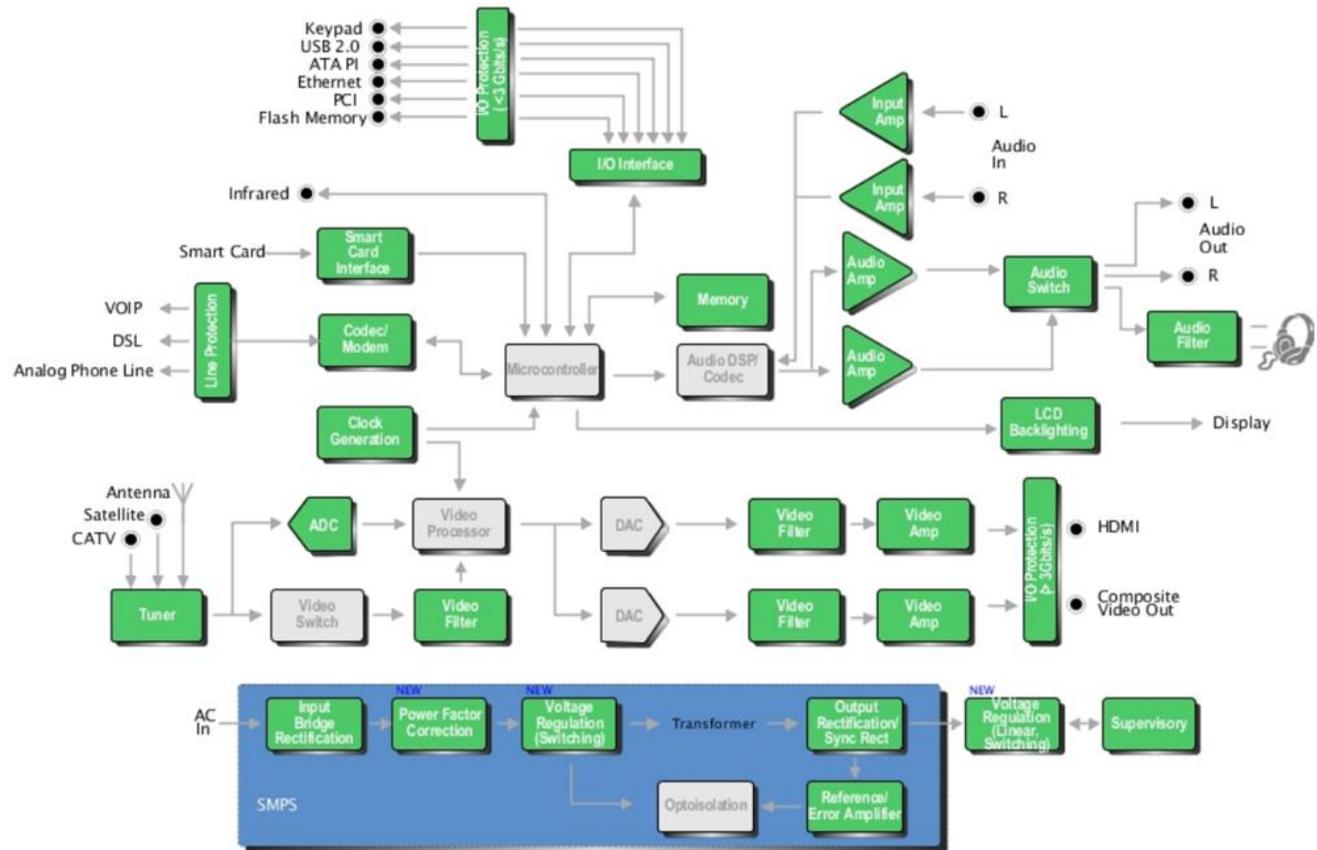
Finish Device Selections

Set Top Box



Build a customized product list to complete your design: ⓘ

- When you are done making selections, **CLICK** the "Worksheet" button to create the final document.



Creating the Output Worksheet

ON Semiconductor®

Products Applications Design Support About MyON: View Cart | Logout

Home > Applications > Consumer > Set Top Box > Worksheet

Application: Consumer - Set Top Box

Customer (Company)

Program

Customer Contact

Sales / Distributor Company Logo

Keep All	Application Block	Product Taxonomy	Part
<input checked="" type="checkbox"/>	Clock Generation	Clock Generation > PLL Clock Generators	NB3N3020
<input checked="" type="checkbox"/>	I/O Protection (<3 Gbits/s)	ESD, EMI, & Surge Protection > EMI Filters	EMI804X
<input checked="" type="checkbox"/>	I/O Protection (<3 Gbits/s)	ESD, EMI, & Surge Protection > EMI Filters	NUF4402MN
<input checked="" type="checkbox"/>	I/O Protection (<3 Gbits/s)	ESD, EMI, & Surge Protection > EMI Filters	NUF8001MU
<input checked="" type="checkbox"/>	Video Filter	Amplifiers & Comparators > Video Amplifiers	NCS2561
<input checked="" type="checkbox"/>	Reference/Error Amplifier	AC-DC Controllers & Regulators > Secondary Side Controllers	NCP4353
<input checked="" type="checkbox"/>	Reference/Error Amplifier	AC-DC Controllers & Regulators > Secondary Side Controllers	NCP4355

Create Worksheet Clear Worksheet Return to diagram

- Logo menu is only visible if you are signed in and are recognized in "MyON".

- Enter information here.
- This will appear in the header of the worksheet.
- You may leave blank, if you wish.

- Your selections are listed here.
- You may uncheck boxes or return to the block diagram to add others.



Creating the Output Worksheet (continued)

ON Semiconductor®

Products Applications Design Support About MyON: View Cart | Logout

Home > Applications > Consumer > Set Top Box > Worksheet

Application: Consumer - Set Top Box

Customer (Company) ABC Electronics

Program 2016 Space Rover

Customer Contact John Duggart

Sales / Distributor Company Logo none

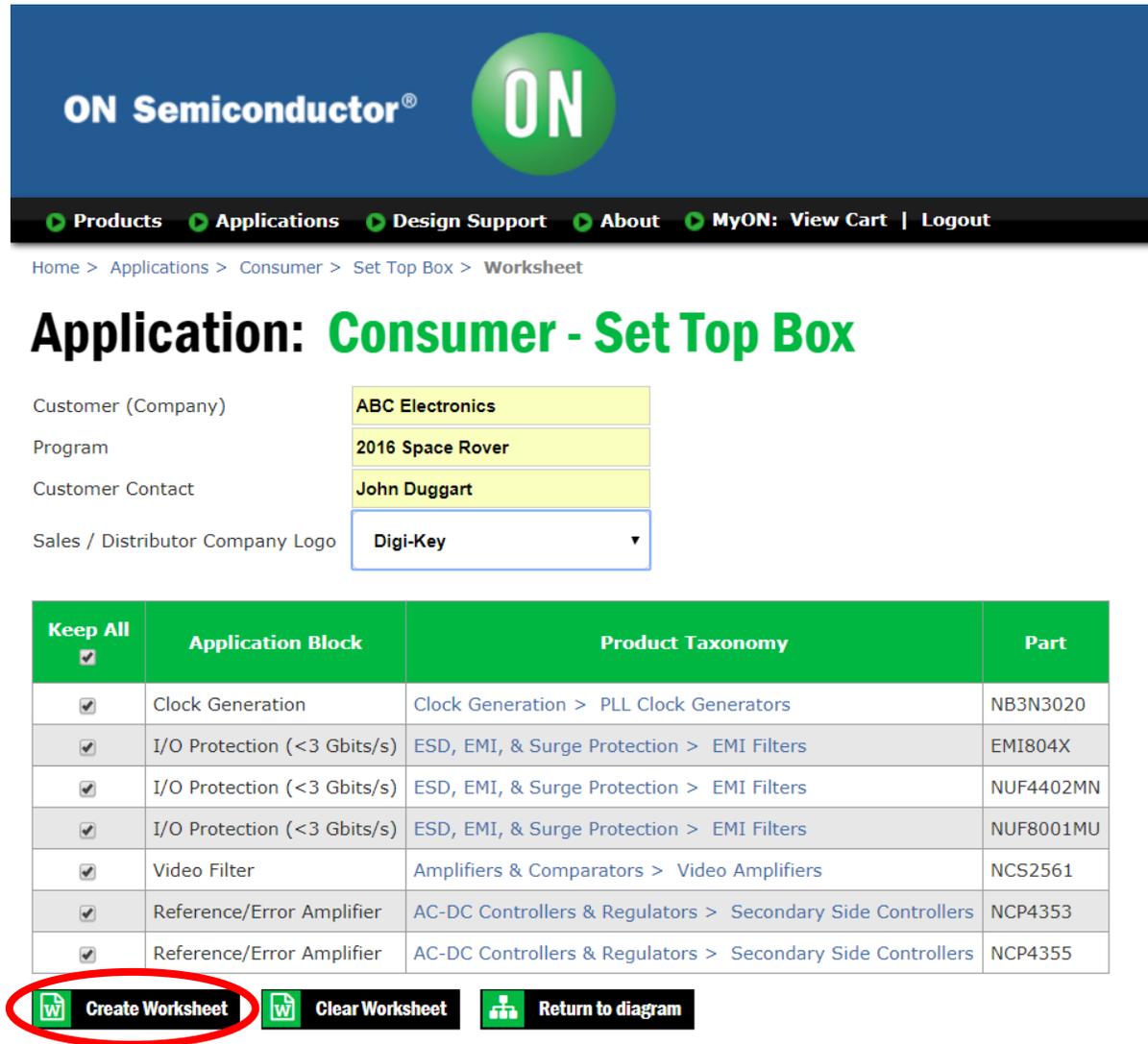
Keep All	Application Block	Product Taxonomy	Part
<input checked="" type="checkbox"/>	Clock Generation	Clock Generators	NB3N3020
<input checked="" type="checkbox"/>	I/O Protection (<3 Gb	EMI Filters	EMI804X
<input checked="" type="checkbox"/>	I/O Protection (<3 Gb	EMI Filters	NUF4402MN
<input checked="" type="checkbox"/>	I/O Protection (<3 Gb	EMI Filters	NUF8001MU
<input checked="" type="checkbox"/>	Video Filter	Video Amplifiers	NCS2561
<input checked="" type="checkbox"/>	Reference/Error Ampli	Secondary Side Controllers	NCP4353
<input checked="" type="checkbox"/>	Reference/Error Ampli	Secondary Side Controllers	NCP4355

- For example, lets go with Digi-Key

Create Worksheet Clear



Creating the Output Worksheet (continued)



ON Semiconductor® ON

Products Applications Design Support About MyON: View Cart | Logout

Home > Applications > Consumer > Set Top Box > Worksheet

Application: Consumer - Set Top Box

Customer (Company) ABC Electronics
Program 2016 Space Rover
Customer Contact John Duggart
Sales / Distributor Company Logo Digi-Key

Keep All	Application Block	Product Taxonomy	Part
<input checked="" type="checkbox"/>	Clock Generation	Clock Generation > PLL Clock Generators	NB3N3020
<input checked="" type="checkbox"/>	I/O Protection (<3 Gbits/s)	ESD, EMI, & Surge Protection > EMI Filters	EMI804X
<input checked="" type="checkbox"/>	I/O Protection (<3 Gbits/s)	ESD, EMI, & Surge Protection > EMI Filters	NUF4402MN
<input checked="" type="checkbox"/>	I/O Protection (<3 Gbits/s)	ESD, EMI, & Surge Protection > EMI Filters	NUF8001MU
<input checked="" type="checkbox"/>	Video Filter	Amplifiers & Comparators > Video Amplifiers	NCS2561
<input checked="" type="checkbox"/>	Reference/Error Amplifier	AC-DC Controllers & Regulators > Secondary Side Controllers	NCP4353
<input checked="" type="checkbox"/>	Reference/Error Amplifier	AC-DC Controllers & Regulators > Secondary Side Controllers	NCP4355

Create Worksheet Clear Worksheet Return to diagram



Worksheet

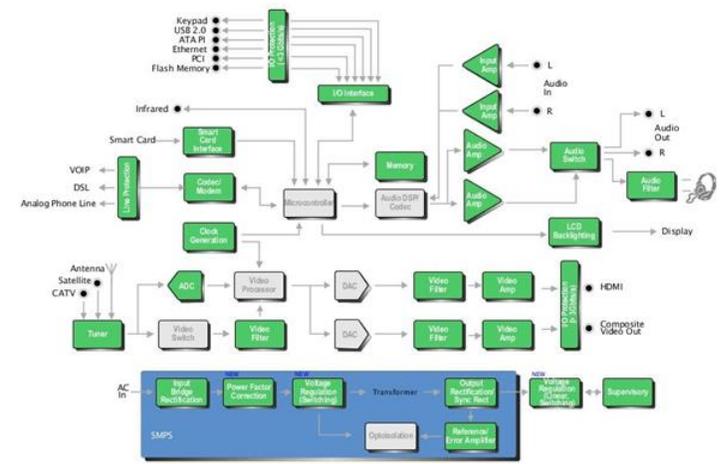
- When you have either opened or saved the worksheet on your device, it should look something like this.

- The worksheet is automatically created and it is a fully editable Microsoft Word document.



Application Worksheet

Customer	ABC Electronics	Customer Contact	John Duggart
Program	2016 Space Rover	Prepared by	Danyal Khan
Application	Consumer - Set Top Box	Date Prepared	April 23, 2018



Block	Part Types Used	Selected Parts
ADC	Interfaces > Analog-to-Digital Converters (ADC)	
Audio Amp	Amplifiers & Comparators > Audio Power Amplifiers	
Audio Filter	ESD, EMI, & Surge Protection > EMI Filters	

- Header information and logos appear at the top of page 1.

- Block Diagram shows next.

- Block list with selected parts list appears on the next couple pages.



Audio Switch	Interfaces > Analog Switches	
Clock Generation	Clock & Data Distribution > Drivers & Fanout Buffers	
	Clock Generation > Zero Delay Buffers	
	Clock Generation > PLL Clock Generators	NB3N3020
Codec/ Modem	Clock Generation > PLL Clock Generators	
Voltage Regulation (Linear, Switching)	AC-DC Controllers & Regulators > Offline Controllers	
	DC-DC Controllers, Converters, & Regulators > Controllers	
	DC-DC Controllers, Converters, & Regulators > Converters	
	DC-DC Controllers, Converters, & Regulators > LDO Regulators & Linear Voltage Regulators	
I/O Interface	Light & Touch Sensors > Touch Sensors	
	ESD, EMI, & Surge Protection > ESD Protection Diodes	
	Voltage & Current Management > Voltage Protection	
I/O Protection (<3 Gbits/s)	ESD, EMI, & Surge Protection > EMI Filters	EMI804X NUF4402MN NUF8001MU
	Standard Logic > Bus Transceivers	
	ESD, EMI, & Surge Protection > ESD Protection Diodes	
	Voltage & Current Management > Current Protection	
	Voltage & Current Management > Voltage Protection	
Input Amp	Amplifiers & Comparators > Operational Amplifiers (Op Amps)	
Input Bridge Rectification	Diodes & Rectifiers > Rectifiers	
LCD Backlighting	Light & Touch Sensors > Ambient Light Sensors	
	Bipolar Junction Transistors (BJT) > General Purpose and Low VCE(sat) Transistors	
	LED Drivers > DC-DC LED Drivers	

- Note that each selected part has a hyperlink to its web product page, providing easy access to datasheet and other information.

Worksheet (continued)

	DC-DC Controllers, Converters, & Regulators > Converters	
	LED Drivers > Linear LED Drivers	
	Diodes & Rectifiers > Schottky Diodes & Schottky Rectifiers	
Output Rectification/Sync Rect	Diodes & Rectifiers > Rectifiers	
	IGBTs & FETs > MOSFETs	
	Diodes & Rectifiers > Schottky Diodes & Schottky Rectifiers	
Power Factor Correction	Diodes & Rectifiers > Rectifiers	
	AC-DC Controllers & Regulators > Power Factor Controllers	
	IGBTs & FETs > MOSFETs	
Reference/Error Amplifier	AC-DC Controllers & Regulators > Secondary Side Controllers	NCP4353 NCP4355
	Voltage & Current Management > Voltage References	
Smart Card Interface	Interfaces > Smart Card & SIM Card Interfaces	
Supervisory	Voltage & Current Management > Voltage Supervisors	
Tuner	Bipolar Junction Transistors (BJT) > MMICs, RF	
Video Amp	Amplifiers & Comparators > Video Amplifiers	
Video Filter	Amplifiers & Comparators > Video Amplifiers	NCS2561
Voltage Regulation (Switching)	AC-DC Controllers & Regulators > Offline Controllers	
	AC-DC Controllers & Regulators > Offline Regulators	
	DC-DC Controllers, Converters, & Regulators > Controllers	
	DC-DC Controllers, Converters, & Regulators > Converters	
	IGBTs & FETs > MOSFETs	
Processor	DC-DC Controllers, Converters, & Regulators > LDO Regulators & Linear Voltage Regulators	
Line Protection	Voltage & Current Management > Load Switches	
Memory	Memory > Flash Memory	

(23/04/2018) Application worksheet for

page 3 of 4

	Memory > EEPROM Memory	
	Memory > SRAM Memory	
I/O Protection (>3 Gbits/s)	ESD, EMI, & Surge Protection > EMI Filters	
	ESD, EMI, & Surge Protection > ESD Protection Diodes	

Notes

- Notes section appears last. You can use this area as desired.

(23/04/2018) Application worksheet for

page 4 of 4



Interactive Block Diagrams / SST

- Total time required to create a worksheet is 5 – 15 minutes, typically.
- Locate ON Semiconductor product offerings for specific applications or create proposals for customers.
- Device information in each block diagram and parametric table is updated daily.
- Only “Active” and “Product Preview” – RTM devices are listed.
- **Be sure to sign in to “MyON” to get all features (Sales Programs, Logos, etc.)!**



Application Interactive Block Diagrams

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