

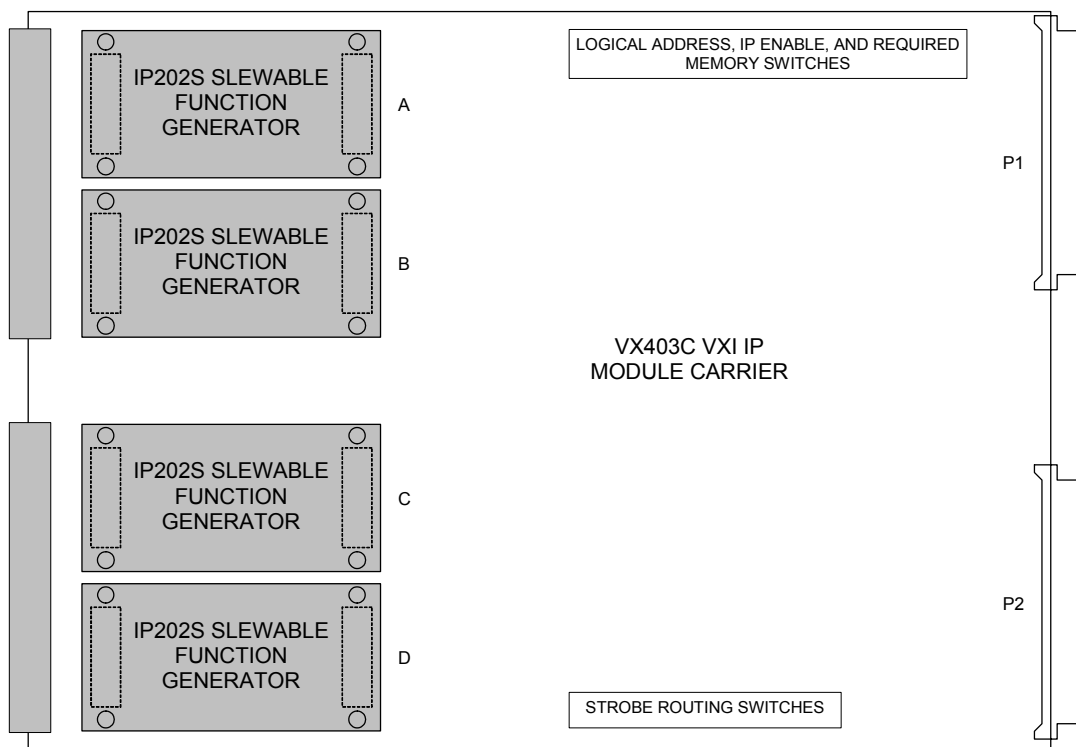
VX463C Integrated ABS Source Module

Assembly P/N 11028350

DESCRIPTION

The VX463C is a single-slot C-size VXI module that provides 4 channels of slewable signal generation for Antilock Braking System testing. Each of the four channels are individually programmable such that effective simulation of a vehicle's wheel signals may be accomplished. Different operating modes allow the frequency and amplitude of the signals to remain fixed or sweep from one value to the next over a period of time. A single ramp, a single cycle, or continuous cycling may be selected with definable dwell times. Extensive triggering capabilities allow cycles to begin by software command, an external signal, or a VXI trigger. All outputs are transformer coupled to provide signal isolation.

The module is an integration of two standard C&H products as shown below. The four IP202S modules provide the 4 channels of slewable signal generation. The VX403C provides the electrical and mechanical interface to a VXI backplane and chassis.



MECHANICAL

The mechanical dimensions of the module are in conformance with the VXIbus specification Rev. 1.4 for single slot 'C' size modules. The nominal dimensions are 233.35 mm (9.187 in) high x 340 mm (13.386 in) deep.

ENVIRONMENTAL

Operating Temperature:	0°C to +50°C
Storage Temperature:	-40°C to +70°C
Humidity:	<95% without condensation

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WARRANTY

C&H Technologies, Inc. warrants its modules to be free from defects in material and workmanship for three years from date of shipment. C&H will repair or replace the defective product without charge within the warranty period, provided the defective item is shipped, freight prepaid, to C&H Technologies, at 445 Round Rock West Drive, Round Rock, TX 78681. C&H will pay return freight charges to any point in the continental United States or Canada. Contact factory for full warranty statement.

DOCUMENTATION

This document discusses the use of the integrated module. For full details on each of the individual modules used in the VX463C, please refer to the User Manual for that particular module. The document part numbers for the various modules are:

<u>Module</u>	<u>User Manual Part Number</u>
VX403C	11027004
IP202S	11027724

HARDWARE CONFIGURATION

Each IP202S (i.e., each channel) appears as a separate VXI instrument with its own individual logical address.

Default VX403C Factory Settings

Logical Address:	8
Address Space:	A32
Slot Enable:	All IP positions enabled
Required Memory:	Minimum setting (0xF, 64Kbytes of A32 address space)

Default IP202S Factory Settings

Transformer Enable:	Enabled
Ext. Duty Cycle:	Disabled
Ext. Strobe Input Imp:	50Ω
Ext. Strobe Level:	TTL (0.8V)

SOFTWARE CONFIGURATION AND CONTROL

A software driver for the IP202S is available for download on C&H's website. The driver is in an IVI (Interchangeable Virtual Instrument) format and includes an interactive soft front panel that can be used to operate each IP202S. The soft front panel also has a simulation mode that allows simulated operation without any actual instrument hardware. The IVI driver provides a library of function calls for initializing, configuring, and operating the instrument. The library is provided in formats for most popular development environments as well as in a Windows DLL format. A complete list of the driver functions provided with the IVI driver are shown on the next page.

Note: The driver treats each IP202S as an independent instrument. Therefore, for full control of the VX463C the programmer must manage 4 different instrument handles, one for each IP202S.

Also available for download on C&H's website is the Interactive Mezzanine Control (IMC) software. IMC is a Windows application that provides low-level access to any mezzanine module on any one of C&H's carriers. It will facilitate reading and writing the I/O registers on the IP202S and the configuration registers on the VX403C. IMC can be a very useful tool during software development and debug.

<u>Function Name</u>	<u>Function Call</u>
Initialization Functions	
Initialize	chip202s_init
Initialize With Options	chip202s_InitWithOptions
Configuration Functions	
Configure Operation Mode	chip202s_ConfigureOperationMode
Configure Output Mode	chip202s_ConfigureOutputMode
Configure Ref Clock Source	chip202s_ConfigureRefClockSource
Configure Output Impedance	chip202s_ConfigureOutputImpedance
Configure Output Enabled	chip202s_ConfigureOutputEnabled
Configure Duty Cycle	chip202s_ConfigureDutyCycle
Standard Function Output	
Configure Standard Waveform	chip202s_ConfigureStandardWaveform
Specific Function Output	
Configure Fixed Waveform	chip202s_ConfigureFixedWaveform
Configure Single Cycle Waveform	chip202s_ConfigureSingleCycleWaveform
Configure Single Ramp Waveform	chip202s_ConfigureSingleRampWaveform
Configure Cont. Cycle Waveform	chip202s_ConfigureContCycleWaveform
Set/Get/Check Attribute	
Set Attribute	
Set Attribute ViInt32	chip202s_SetAttributeViInt32
Set Attribute ViReal64	chip202s_SetAttributeViReal64
Set Attribute ViString	chip202s_SetAttributeViString
Set Attribute ViBoolean	chip202s_SetAttributeViBoolean
Set Attribute ViSession	chip202s_SetAttributeViSession
Get Attribute	
Get Attribute ViInt32	chip202s_GetAttributeViInt32
Get Attribute ViReal64	chip202s_GetAttributeViReal64
Get Attribute ViString	chip202s_GetAttributeViString
Get Attribute ViBoolean	chip202s_GetAttributeViBoolean
Get Attribute ViSession	chip202s_GetAttributeViSession
Check Attribute	
Check Attribute ViInt32	chip202s_CheckAttributeViInt32
Check Attribute ViReal64	chip202s_CheckAttributeViReal64
Check Attribute ViString	chip202s_CheckAttributeViString
Check Attribute ViBoolean	chip202s_CheckAttributeViBoolean
Check Attribute ViSession	chip202s_CheckAttributeViSession
Action/Status Functions	
Initiate Generation	chip202s_InitiateGeneration
Abort Generation	chip202s_AbortGeneration
Generate Standard Waveform	chip202s_GenerateStandardWaveform
Generate Fixed Waveform	chip202s_GenerateFixedWaveform
Generate Single Ramp Waveform	chip202s_GenerateSingleRampWaveform
Generate Single Cycle Waveform	chip202s_GenerateSingleCycleWaveform
Generate Cont. Cycle Waveform	chip202s_GenerateContCycleWaveform
Utility Functions	
Reset	chip202s_reset
Self-Test	chip202s_self_test
Revision Query	chip202s_revision_query
Error-Query	chip202s_error_query
Error Message	chip202s_error_message
Error Info	
Get Error Info	chip202s_GetErrorInfo
Clear Error Info	chip202s_ClearErrorInfo
Coercion Info	
Get Next Coercion Record	chip202s_GetNextCoercionRecord
Locking	
Lock Session	chip202s_LockSession
Unlock Session	chip202s_UnlockSession
Close	

I/O CONNECTOR

Signals from the IP202S modules are routed directly to the front panel connectors of the VX403C. Each IP202S use separate 50 pin IDC style connector. Below is the signal list for the four connectors located on the front panel of the VX403C. For more details on each signal, please refer to the IP202S User Manual.

CHANNEL B			
Pin	Signal	Pin	Signal
1	GND	26	GND
2		27	
3	GND	28	
4	OUT	29	GND
5	GND	30	
6		31	GND
7	GND	32	
8	TOUTH	33	
9	GND	34	
10	TOUTL	35	
11	GND	36	
12	EXTSTB-	37	GND
13	GND	38	
14	EXTDC	39	GND
15		40	
16		41	
17		42	
18		43	
19		44	
20		45	
21		46	
22	-12V	47	
23	+12V	48	
24	+5	49	
25	GND	50	GND

CHANNEL A			
Pin	Signal	Pin	Signal
1	GND	26	GND
2		27	
3	GND	28	
4	OUT	29	GND
5	GND	30	
6		31	GND
7	GND	32	
8	TOUTH	33	
9	GND	34	
10	TOUTL	35	
11	GND	36	
12	EXTSTB-	37	GND
13	GND	38	
14	EXTDC	39	GND
15		40	
16		41	
17		42	
18		43	
19		44	
20		45	
21		46	
22	-12V	47	
23	+12V	48	
24	+5	49	
25	GND	50	GND

CHANNEL D			
Pin	Signal	Pin	Signal
1	GND	26	GND
2		27	
3	GND	28	
4	OUT	29	GND
5	GND	30	
6		31	GND
7	GND	32	
8	TOUTH	33	
9	GND	34	
10	TOUTL	35	
11	GND	36	
12	EXTSTB-	37	GND
13	GND	38	
14	EXTDC	39	GND
15		40	
16		41	
17		42	
18		43	
19		44	
20		45	
21		46	
22	-12V	47	
23	+12V	48	
24	+5	49	
25	GND	50	GND

CHANNEL C			
Pin	Signal	Pin	Signal
1	GND	26	GND
2		27	
3	GND	28	
4	OUT	29	GND
5	GND	30	
6		31	GND
7	GND	32	
8	TOUTH	33	
9	GND	34	
10	TOUTL	35	
11	GND	36	
12	EXTSTB-	37	GND
13	GND	38	
14	EXTDC	39	GND
15		40	
16		41	
17		42	
18		43	
19		44	
20		45	
21		46	
22	-12V	47	
23	+12V	48	
24	+5	49	
25	GND	50	GND

Note: Signals are shown as viewed towards the front panel.