KV3 VLIW V1 Core Instruction Set Summary

\mathbf{BCU}

ALIGNO	. Align Coprocessor Registers into Octuple Word
	Align Coprocessor Registers
AWAIT	
	Instruction Pipeline Barrier
CALL	Call Subroutine PC-Relative
CB	
ERROP	Error Opcode
GET	Get System Register
GOTO	Branch Unconditional PC-Relative
ICALL	Indirect Call from Register
IGET	Indirect Get System Register
IGOTO	Indirect Branch from Register
LOOPDO	Hardware Loop setup and Do execute
RET	
RFE	Return from Exception
RSWAP	General and System Register Swap
SCALL	System Cal
SET	Set System Register
SLEEP	
STOP	Wait for power controller wake-up
SYNCGROUP	Synchronize Group of Cores
TLBDINVAL	Invalidate Data Micro-TLB
TLBIINVAL	Invalidate Instruction Micro-TLB
TLBPROBE	Probe TLE
	Read TLB Entry
TLBWRITE	TLB Entry Write
WAITIT	
WFXL Effe	ects on Least Significant Word of System Register
WFXM Word Effe	ects on Most Significant Word of System Register

LSU

ACSWAPD Atomic Compare and Sw	ap Double	Word
ACSWAPW Atomic Compare	and Swap	Word
ALADDDAtomic Load and A	dd Double	Word
ALADDW Atomic Load	d and Add	Word
ALCLRD Atomic Load and Cle	ear Double	Word
ALCLRW Atomic Load	and Clear	Word
COPYO Cop	y Octuple	Word
D1INVALData Ca	ache 1 Inva	lidate

DINVALL	Data Cache 1 Invalidate Lin
DTOUCHL	Data Cache 1 Touch Lin
DZEROL	Data Cache 1 Zero Lin
FENCE	Memory Fenc
I1INVAL	Instruction Cache 1 Invalidat
I1INVALS	Instruction Cache 1 Invalidate Se
LBS	Load Byte Sign Extended
LBZ	Load Byte Zero Extended
LD	Load Double Word
LHS	Load Half Word Sign Extende
LHZ	Load Half Word Zero Extended
LO	Load Octuple Word
LQ	Load Quadruple Word
	Load Word Sign Extende
LWZ	Load Word Zero Extended
SB	$\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots$
SD	Store Double Word
SH	Store Half Word
	Store Octuple Word
	$\ldots \ldots$ Store Quadruple Word
SW	Store Word
	ctension Load Octuple Word Uncache
XSO	Extension Store Octuple Word

\mathbf{ALU}

ABDD Absolute Difference of Double Words
ABDHQ Absolute Difference Half Words Quadruple
ABDW Absolute Difference of Words
ABDWP Absolute Difference Words Packed
ADDCD Add Double Word to Double Word with Carry
ADDCD.I Add Double Word to Double Word with Carry Initial
ADDD
ADDHCP.C Add Conjugate Half Word Complex Pair
ADDHQ Add Half Words Quadruple
ADDSD Add Saturated Double Words
ADDSHQ Add Saturated Half Words Quadruple
ADDSW
ADDSWP Add Saturated Words Packed
ADDUWD Add Unsigned Word to Double Word
ADDW Add Word to Word
ADDWC.CAdd Conjugate Word Complex
ADDWD Add Word to Double Word
ADDWP Add Words Packed

ADDX16D Add Double Word to Double Word Times 16
$\texttt{ADDX16HQ}\ \ldots\ldots$ Add Integer to Integer Times 16 Half Words
Quadruple
${\tt ADDX16UWD} \ \dots {\tt Add} \ {\tt Unsigned} \ {\tt Word} \ {\tt Times} \ {\tt 16} \ {\tt to} \ {\tt Double} \ {\tt Word}$
ADDX16W Add Word to Word Times 16
ADDX16WDAdd Word Times 16 to Double Word
$\verb ADDX16WP \dots. Add Integer to Integer Times 16 Words Packed $
ADDX2D Add Double Word to Double Word Times 2
ADDX2HQ Add Integer to Integer Times 2 Half Words Quadruple
ADDX2UWD Add Unsigned Word Times 2 to Double Word
ADDX2W Add Word to Word Times 2
ADDX2WDAdd Word Times 2 to Double Word
ADDX2WP Add Integer to Integer Times 2 Words Packed
ADDX4D Add Double Word to Double Word Times 4
ADDX4HQ Add Integer to Integer Times 4 Half Words Quadruple
ADDX4UWD Add Unsigned Word Times 4 to Double Word
ADDX4W Add Word to Word Times 4
ADDX4WD
ADDX4WP Add Integer to Integer Times 4 Words Packed
ADDX8D Add Double Word to Double Word Times 8
ADDX8HQ Add Integer to Integer Times 8 Half Words Quadruple
$\texttt{ADDX8UWD}\ \ldots$. Add Unsigned Word Times 8 to Double Word
ADDX8W
ADDX8WD
ADDX8WP Add Integer to Integer Times 8 Words Packed
${\tt ANDD}$ Bitwise And Between Double Words
${\tt ANDND}$. Bitwise And with Not Operand Between Double Words
${\tt ANDNW}$ Bitwise And with Not Operand Between Words
${\tt ANDW}$ Bitwise And Between Words
${\tt AVGHQ}$ Average of Half Words Quadruple
${\tt AVGRHQ} \dots \text{Average Rounded of Half Words Quadruple}$
${\tt AVGRUHQ} \ \ {\tt Average} \ \ {\tt Rounded} \ \ {\tt Unsigned} \ \ {\tt of} \ \ {\tt Half} \ \ {\tt Words} \ \ {\tt Quadruple}$
${\tt AVGRUW} \ \dots \dots \dots \\ {\tt Average} \ {\tt Rounded} \ {\tt of} \ {\tt Unsigned} \ {\tt Words}$
${\tt AVGRUWP}$ Average Rounded Unsigned of Words Packed
${\tt AVGRW} {\tt Average} \ {\tt Rounded} \ {\tt of} \ {\tt Words}$
${\tt AVGRWP}$
${\tt AVGUHQ} \dots \text{Average Unsigned of Half Words Quadruple}$
AVGUW
${\tt AVGUWP}$ Average Unsigned of Words Packed
AVGW
AVGWP Average of Words Packed
CBSD
${\tt CBSW}$
${\tt CBSWP}$
CLDE CLDE

CLSD
CLSW Count Leading Sign of Word
CLSWP Count Leading Signs of Word Pair
CLZD
CLZW Count Leading Zero of Word
CLZWP Count Leading Zeroes of Word Pair
CMOVED Conditional Move Double Word
CMOVEHQ Conditional Move Half Words Quadruple
CMOVEWP
COMPD
COMPNHQ Compare Negate Half Words Quadruple
COMPNWP
COMPUWDCompare Unsigned Word to Double Word
COMPW
COMPWD Compare Word to Double Word
CTZD Count Trailing Zero of Double Word
CTZW Count Trailing Zero of Word
CTZWP Count Trailing Zeroes of Word Pair
EORD Bitwise Exclusive Or Between Double Words
EORW Bitwise Exclusive Or Between Words
EXTFS Extract Bit Field and Sign Extend to Double Word
EXTFZ Extract Bit Field and Zero Extend to Double Word
INSF Insert Bit Field into Word
IORD Bitwise Inclusive Or Between Double Words
IORND Bitwise Inclusive Or with Not Operand Between Double
Words
IORNW Bitwise Inclusive Or with Not Operand Between Double
Words
IORW Bitwise Inclusive Or Between Words
LANDD Logical And of Double Words
LANDHQ Logical And of Half Words Quadruple
LANDW Logical And of Words
LANDWP Logical And of Words Packed
LIORD Logical Or of Double Words
LIORHQ Logical Or of Half Words Quadruple
LIORW Logical Or of Words
LIORWPLogical Or of Words Packed
LNANDD Logical Not And of Double Words
LNANDH Logical Not And of Half Words Quadruple
LNANDUD Logical Not And of Words
LNANDWP Logical Not And of Words Packed
LNIORD Logical Not Or of Double Words
LNIORHQ Logical Not Or of Half Words Quadruple
LNIORW Logical Not Or of Words
LNIORWP Logical Not Or of Words Packed

MAKE
MAXD Maximum of Double Words
MAXHQ Maximum of Half Words Quadruple
MAXUD Maximum of Unsigned Double Words
MAXUHQ Maximum of Unsigned Half Words Quadruple
MAXUW Maximum of Unsigned Words
MAXUWP Maximum of Unsigned Words Packed
MAXW Maximum of Words
MAXWP Maximum of Words Packed
MIND Minimum of Double Words
MINHQ Minimum of Half Words Quadruple
MINUD Minimum of Unsigned Double Words
MINUHQ Minimum of Unsigned Half Words Quadruple
MINUW
MINUWP Minimum of Unsigned Words Packed
MINW Minimum of Words
MINWP Minimum of Words Packed
MOVETQ Move To Coprocessor Quadruple Word
NANDD Bitwise Not And Between Double Words
NANDW Bitwise Not And Between Words
NEORD Bitwise Not Exclusive Or Between Double Words
NEORW Bitwise Not Exclusive Or Between Words
${\tt NIORD}$ Bitwise Not Inclusive Or Between Double Words
NIORW Bitwise Not Inclusive Or Between Words
NOP
PCREL PC-Relative
${\tt ROLW} \ \dots $
ROLWPS
RORW Rotate Right Word
RORWPS Rotate Right Word Pair by Scalar
SATDSaturate Double Word
${\tt SBFCD}$ Subtract Double Word from Double Word with Carry
${\tt SBFCD.I}$ Subtract Double Word from Double Word with Carry
Initial
${\tt SBFD}$ Subtract Double Word From Double Word
${\tt SBFHCP.C} \ \dots \dots \\ {\tt Subtract} \ {\tt Conjugate} \ {\tt Half} \ {\tt Word} \ {\tt Complex} \ {\tt Pair}$
SBFHQ Subtract Half Words Quadruple
SBFSDSubtract Saturated Double Words
${\tt SBFSHQ} \\ {\tt Subtract} {\tt Saturated} {\tt Half} {\tt Words} {\tt Quadruple} \\$
SBFSW Subtract Saturated Words
SBFSWPSubtract Saturated Words Packed
${\tt SBFUWD} \ \dots \dots \dots {\tt Subtract} \ {\tt Unsigned} \ {\tt Word} \ {\tt from} \ {\tt Double} \ {\tt Word}$
SBFW Subtract Word from Word
SBFWC.C Subtract Conjugate Word Complex
SBFWDSubtract Word from Double Word

SBFWPSubtract Words Packed
SBFX16D . Subtract Double Word Times 16 from Double Word
SBFX16HQ Subtract Integer to Integer Times 16 Half Words
Quadruple
${\tt SBFX16UWD}$ Subtract Unsigned Word Times 16 from Double
Word
SBFX16W Subtract Word Times 16 from Word
SBFX16WDSubtract Word Times 16 from Double Word
SBFX16WP Subtract Integer to Integer Times 16 Words Packed
SBFX2D Subtract Double Word Times 2 from Double Word
SBFX2HQ Subtract Integer to Integer Times 2 Half Words
Quadruple
SBFX2UWD Subtract Unsigned Word Times 2 from Double Word
SBFX2WSubtract Word Times 2 from Word
SBFX2WD Subtract Word Times 2 from Double Word
SBFX2WPSubtract Integer to Integer Times 2 Words Packed
SBFX4D Subtract Double Word Times 4 from Double Word
SBFX4HQ Subtract Integer to Integer Times 4 Half Words
Quadruple
SBFX4UWD Subtract Unsigned Word Times 4 from Double Word
SBFX4WSubtract Word Times 4 from Word
SBFX4WD Subtract Word Times 4 from Double Word
${\tt SBFX4WP}$ Subtract Integer to Integer Times 4 Words Packed
SBFX8D Subtract Double Word Times 8 from Double Word
SBFX8HQ Subtract Integer to Integer Times 8 Half Words
Quadruple
SBFX8UWD Subtract Unsigned Word Times 8 from Double Word
SBFX8WSubtract Word Times 8 from Word
SBFX8WD Subtract Word Times 8 from Double Word
${\tt SBFX8WP}$ Subtract Integer to Integer Times 8 Words Packed
${\tt SBMM8D} \dots {\tt Swapped} \ {\tt Bit} \ {\tt Matrix} \ {\tt Multiplication} \ 8 {\small \times} 8$
${\tt SBMMT8D}$. Swapped Bit Matrix Multiplication Transposed 8×8
SLLD Shift Left Logical Double Word
${\tt SLLHQS}$ Shift Left Logical Half Word Quadruple by Scalar
SLLW Shift Left Logical Word
SLLWPSShift Left Logical Word Pair by Scalar
SLSD Shift Left Saturated Double Word
${\tt SLSHQS}$ Shift Left Saturated Half Word Quadruple by Scalar
SLSW Shift Left Saturated Word
SLSWPSShift Left Saturated Word Pair by Scalar
SRAD Shift Right Arithmetic Double Word
SRAHQS Shift Right Arithmetic Half Word Quadruple by Scalar
SRAW Shift Right Arithmetic Word
SRAWPS Shift Right Arithmetic Word Pair by Scalar
SRLD Shift Right Logical Double Word

${\tt SRLHQS}\dots{\tt Shift}$ Right Logical Half Word Quadruple by Scalar
SRLW Shift Right Logical Word
SRLWPS Shift Right Logical Word Pair by Scalar
SRSD Shift Right Symmetric Double Word
SRSHQS Shift Right Symmetric Half Word Quadruple by Scalar
SRSW Shift Right Symmetric Word
${\tt SRSWPS}$ Shift Right Symmetric Word Pair by Scalar
STSUD Subtract, Test and Shift Unsigned Double Words
STSUW Subtract, Test and Shift Unsigned Word
SXLBHQ Sign Extend Least Significant Bytes to Half Word
Quadruple

SXLHWP Sign Extend Least Significant Half Words to Word Pair SXMBHQ Sign Extend Most Significant Bytes to Half Word Quadruple

SXMHWP Sign Extend Most Significant Half Words to Word Pair

MAU

CMULDT Carryless Multiply Double Words to Tetra Word CMULGHXDT .. Carryless Multiply Galois High and Xor Double Words to Tetra Word

 $\texttt{CMULGLXDT}\,\dots \texttt{Carryless}$ Multiply Galois Low and Xor Double Words to Tetra Word

CMULGMXDT . Carryless Multiply Galois Middle and Xor Double Words to Tetra Word

CMULXDT ... Carryless Multiply and Xor Double Words to Tetra Word

CRCBELLW Cyclic Redundancy Check Big-Endian Least Significant with Least Significant Words

CRCBELMWCyclic Redundancy Check Big-Endian Least Significant with Most Significant Words

CRCLELLW Cyclic Redundancy Check Little-Endian Least Significant with Least Significant Words

CRCLELMW Cyclic Redundancy Check Little-Endian Least Significant with Most Significant Words

DOT2SUWD Dot product of 2x Signed by Unsigned Word Vectors into Double Word

DOT2SUWDP Dot products of 2x Signed by Unsigned Word Vectors into Double Word Pair

DOT2UWD Dot product of 2x Unsigned Word Vectors into Double Word

DOT2UWDP Dot products of 2x Unsigned Word Vectors into Double Word Pair

DUT2W Dot product of 2x Word Vectors into Word
${\tt DOT2WD}$ Dot product of 2x Word Vectors into Double Word
<code>DOT2WDP</code> . Dot products of 2x Word Vectors into Double Word
Pair
DOT2WZP Dot products of 2x Word Vectors into Word Zero
Extended Pair
MADDD Multiply-Add Double Word
MADDDT Multiply-Add Double to Tetra Word
MADDHQ
MADDHWQ Multiply-Add Half Word to Word Quadruple
${\tt MADDSUDT}$. Multiply-Add Signed by Unsigned Double to Tetra
Word
${\tt MADDSUHWQ}$ Multiply-Add Signed by Unsigned Half Word to
Word Quadruple
${\tt MADDSUWD} {\tt Multiply-Add \ Signed \ by \ Unsigned \ Words \ to \ Double}$
Word
${\tt MADDSUWDP}$ Multiply-Add Signed by Unsigned Words to
Double Word Pair
MADDUDT Multiply-Add Unsigned Double to Tetra Word
MADDUHWQ Multiply-Add Unsigned Half Word to Word
Quadruple
MADDUWD Multiply-Add Unsigned Words to Double Word
MADDUWDP Multiply-Add Unsigned Words to Double Word Pair
MADDUZDT Multiply-Add Unsigned Double to Tetra Word
MADDW
MADDWDMultiply-Add Words to Double Word
MADDWDP Multiply-Add Words to Double Word Pair
MADDWP Multiply-Add Word Pair
MM212W Matrix Multiply 2x1x2 Word Quadruple
MMA212W Matrix Multiply-Add 2x1x2 Word
MMS212W Matrix Multiply-Subtract 2x1x2 Word
MSBFD Multiply-Subtract Double Word
MSBFDT
${\tt MSBFHQ} \\ {\tt Multiply-Subtract} {\tt Half} \; {\tt Word} \; {\tt Quadruple} \\ {\tt Vord} \; {\tt Quadr$
${\tt MSBFHWQ}$. Multiply-Subtract Half Word from Word Quadruple
${\tt MSBFSUDT}$ Multiply-Subtract Signed by Unsigned Double to
Tetra Word
${\tt MSBFSUHWQ}$. Multiply-Subtract Signed by Unsigned Half Word
from Word Quadruple

MSBFSUWD ... Multiply-Subtract Signed by Unsigned Words to

 ${\tt MSBFSUWDP}$. . Multiply-Subtract Signed by Unsigned Words to

MSBFUDT .. Multiply-Subtract Unsigned Double to Tetra Word

Double Word

Double Word Pair

FPU

Complex

Quadruple

Pair

Word

Word

Pair

Quadruple

..... Floating-Point Absolute Value Double Word FADDD Floating-Point Add Double Word

MSBFUHWQ . Multiply-Subtract Unsigned Half Word from Word

 ${\tt MSBFUWD}\,$. Multiply-Subtract Unsigned Words to Double Word MSBFUWDP Multiply-Subtract Unsigned Words to Double Word

MSBFUZDT .. Multiply-Subtract Unsigned Double to Quadruple

MSBFW Multiply-Subtract Words MSBFWD Multiply-Subtract Words to Double Word MSBFWDP Multiply-Subtract Words to Double Word Pair MULD Multiply Double Word

MULHQ Multiply Half Word Quadruple

MULSUDT Multiply Signed by Unsigned Double Words to Tetra

MULSUHWQ ... Multiply Signed by Unsigned Half Word to Word

MULSUWD Multiply Signed by Unsigned Words to Double Word

MULSUWDP Multiply Signed by Unsigned Words to Double Word

MULUDT Multiply Unsigned Double Words to Tetra Word

MULUHWQ ... Multiply Unsigned Half Word to Word Quadruple

MULUWD Multiply Unsigned Words to Double Word

MULUWDP Multiply Unsigned Words to Double Word Pair

MULW Multiply Words

MULWC Multiply Word Complex

MULWC.C Multiply Word Complex Conjugate

MULWD Multiply Words to Double Word

MULWDC Multiply Word Complex to Double Word Complex

MULWDC.C Multiply Conjugate Word Complex to Double Word

MULWDP Multiply Words to Double Word Pair

MULWP Multiply Word Pair

MULWQ Multiply Word Quadruple

FABSHQ ... Floating-Point Absolute Value Half Word Quadruple FABSWFloating-Point Absolute Value Word FABSWP Floating-Point Absolute Value Word Pair

FADDDC.CFloating-Point Add Double Word Complex Conjugate	FFMSWD Floating-Point Fused Multiply-Subtract Words to Double Word
	FFMSWDP Floating-Point Fused Multiply-Subtract Words to
FADDUD	
FADDHQ Floating-Point Add Half Word Quadruple	Double Word Pair
FADDW	FFMSWP Floating-Point Fused Multiply-Subtract Word Pair
FADDWC.C Floating-Point Add Word Complex Conjugate	FIXEDD Floating Point Conversion to Fixed-Point Double
FADDWCP.C Floating-Point Add Word Complex Pair Conjugate	FIXEDUD Floating Point Conversion to Unsigned Fixed-Point
FADDWP Floating-Point Add Word Pair	Double
FADDWQ Floating-Point Add Word Quadruple	FIXEDUW Floating Point Conversion to Unsigned Fixed-Point
FCDIVD Floating-Point Cases for Division Double Word	FIXEDUWP . Floating Point Conversion to Unsigned Fixed-Point
FCDIVW Floating-Point Cases for Word Division	Word Pair
FCDIVWP Floating-Point Cases for Division Word Pair	FIXEDW Floating Point Conversion to Fixed-Point
FCOMPD Floating-Point Compare Double	FIXEDWP . Floating Point Conversion to Fixed-Point Word Pair
FCOMPNHQFloating-Point Compare Negate Half Word	FLOATDFloating Point Conversion from Fixed-Point Double
Quadruple	FLOATUD Floating Point Conversion from Unsigned Fixed-Point
	Double
FCOMPU Floating-Point Compare Negate Word Pair	FLOATUW Floating Point Conversion from Unsigned Fixed-Point
FCOMPW Floating-Point Compare Single	FLOATUWP Floating Point Conversion from Unsigned
FDOT2W Floating-Point Dot Product x2 Word	Fixed-Point Word Pair
FDOT2WD Floating-Point Dot Product x2 Word to Double Word	FLOATW Floating Point Conversion from Fixed-Point
FDOT2WDP Floating-Point Dot Product x2 Word to Double	FLOATWP Floating Point Conversion from Fixed-Point Word
Word Pair	Pair
FD0T2WZP Floating-Point Dot Product x2 Word Zero Extended	FMAXD Floating-Point Maximum Double Word
Pair	FMAXHQ Floating-Point Maximum Half Word Quadruple
FFMAD Floating-Point Fused Multiply-Add Double	FMAXW
FFMAHQ Floating-Point Fused Multiply-Add Half Word	FMAXWP Floating-Point Maximum Word Pair
Quadruple	FMIND Floating-Point Minimum Double Word
FFMAHW Floating-Point Fused Multiply-Add Half Words to	FMINHQ Floating-Point Minimum Half Word Quadruple
Word	
FFMAHWQFloating-Point Fused Multiply-Add Half Words to	FMINW Floating-Point Minimum Word
Word Quadruple	FMINWP Floating-Point Minimum Word Pair
FFMAW	FMM212W Floating-Point Matrix Multiply 2x1x2 Word
FFMAWDFloating-Point Fused Multiply-Add Words to Double	Quadruple
Word	FMMA212W Floating-Point Matrix Multiply 2x1x2 Add Word
	Quadruple
FFMAWDP Floating-Point Fused Multiply-Add Words to Double	FMMS212W Floating-Point Matrix Multiply 2x1x2 Subtract
Word Pair	Word Quadruple
FFMAWP Floating-Point Fused Multiply-Add Word Pair	FMULDFloating-Point Multiply Double Word
FFMSD Floating-Point Fused Multiply-Subtract Double	FMULHQ Floating-Point Multiply Half Word Quadruple
FFMSHQ Floating-Point Fused Multiply-Subtract Half Word	FMULHW Floating-Point Multiply Half Words to Word
Quadruple	FMULHWQ Floating-Point Multiply Half Word to Word
FFMSHW Floating-Point Fused Multiply-Subtract Half Words to	Quadruple
Word	FMULW Floating-Point Multiply Words
${\tt FFMSHWQ}$ Floating-Point Fused Multiply-Subtract Half Words	FMULWC Floating-Point Multiply Word Complex
to Word Quadruple	FMULWC.C . Floating-Point Multiply Word Complex Conjugate
FFMSW Floating-Point Fused Multiply-Subtract Words	FMULWD Floating-Point Multiply Words to Double Word

FMULWDC.C Floating-Point Multiply Conjugate Word to Double Complex FMULWDP . Floating-Point Multiply Word to Double Word Pair FMULWP Floating-Point Multiply Word Pair FMULWQ Floating-Point Multiply Word Quadruple FNARROWDW Floating Point Narrow Double Word to Word FNARROWDWP Floating Point Narrow Double to Word Pair FNARROWWH Floating Point Narrow Word to Half Word FNARROWWHQFloating Point Narrow Word to Half Word Quadruple FNEGD Floating-Point Negate Double Word FNEGHQ Floating-Point Negate Half Word Quadruple FNEGWP Floating-Point Negate Word Pair FRECW Floating-Point Reciprocal of Word FRSRW Floating-Point Reciprocal of Square Root Word FSBFD Floating-Point Subtract From Double Word FSBFDC.C Floating-Point Subtract From Double Word Complex Conjugate FSBFDPFloating-Point Subtract Word to Double Word Pair FSBFHQ .. Floating-Point Subtract From Half Word Quadruple FSBFW Floating-Point Subtract From Words FSBFWC.C Floating-Point Subtract From Word Complex Conjugate FSBFWCP.C Floating-Point Subtract From Word Complex Pair Conjugate FSBFWP Floating-Point Subtract From Word Pair FSBFWQ Floating-Point Subtract From Word Quadruple FSDIVD Floating-Point Seed for Division Double Word FSDIVW Floating-Point Seed for Word Division FSDIVWPFloating-Point Seed for Division Word Pair FSRECD Floating-Point Seed for Reciprocal Double Word FSRECW Floating-Point Seed for Reciprocal Word FSRECWP Floating-Point Seed for Reciprocal on Word Pair FSRSRD Floating-Point Seed for Reciprocal Square Root Double Word FSRSRW Floating-Point Seed for Reciprocal Square Root FSRSRWP .. Floating-Point Seed for Reciprocal Square Root on Word Pair

FWIDENLHW Floating Point Widen Least Significant Half Word

FWIDENLHWP Floating Point Widen Least Significant Half

to Word

Words to Word Pair

FMULWDC ... Floating-Point Multiply Word to Double Complex

FWIDENLWD .. Floating Point Widen Least Significant Word to MMA444UHD Matrix Multiply-Add 4x4x4 Unsigned by Unsigned Double Half Words to Double Words ${\tt FWIDENMHW}\ . {\tt Floating}\ {\tt Point}\ {\tt Widen}\ {\tt Most}\ {\tt Significant}\ {\tt Half}\ {\tt Word}$ to Word ${\tt FWIDENMHWP} \ \dots . \ {\tt Floating} \ {\tt Point} \ {\tt Widen} \ {\tt Most} \ {\tt Significant} \ {\tt Half}$ Words to Word Pair MMA444USHBDO ... Matrix Multiply-Add 4x4x4 Unsigned Half FWIDENMWD ... Floating Point Widen Most Significant Word to Words by Signed Bytes to Double Words 0 Double \mathbf{EXT} MMA444USHBD1 ... Matrix Multiply-Add 4x4x4 Unsigned Half CONVDHVO Convert Double Word to Half Word Vector 0 Words by Signed Bytes to Double Words 1 CONVDHV1 Convert Double Word to Half Word Vector 1 CONVWBVO Convert Word to Byte Vector 0 CONVWBV1 Convert Word to Byte Vector 1 CONVWBV2 Convert Word to Byte Vector 2 MMA444USHD . Matrix Multiply-Add 4x4x4 Unsigned by Signed CONVWBV3 Convert Word to Byte Vector 3 Half Words to Double Words FMMA242HWO . Floating-Point Matrix Multiply-Add 2x4x2 Half Words to Words 0 FMMA242HW1 . Floating-Point Matrix Multiply-Add 2x4x2 Half Words to Words 1 FMMA242HW2 . Floating-Point Matrix Multiply-Add 2x4x2 Half XMMA484BW ... Extension Matrix Multiply-Add 4x8x4 Bytes to Words to Words 2 Words FMMA242HW3 . Floating-Point Matrix Multiply-Add 2x4x2 Half Words to Words 3 FNARROW44WH Floating Point Narrow Word to Half Word Vector XMMA484SUBW .. Extension Matrix Multiply-Add 4x8x4 Signed FSCALEWV Floating Point Scale Word Vector by Unsigned Bytes to Words MMA444HBDO Matrix Multiply-Add 4x4x4 Half Words by Bytes to Double Words 0 MMA444HBD1 Matrix Multiply-Add 4x4x4 Half Words by Bytes to Double Words 1 MMA444HD . Matrix Multiply-Add 4x4x4 Half Words to Double XMMA484UBW . Extension Matrix Multiply-Add 4x8x4 Unsigned Words by Unsigned Bytes to Words MMA444SUHBDO Matrix Multiply-Add 4x4x4 Signed Half Words by Unsigned Bytes to Double Words 0 MMA444SUHBD1 Matrix Multiply-Add 4x4x4 Signed Half Words by Unsigned Bytes to Double Words 1 XMMA484USBW Extension Matrix Multiply-Add 4x8x4 Unsigned $\texttt{MMA444SUHD}\,$. Matrix Multiply-Add 4x4x4 Signed by Unsigned by Signed Bytes to Words Half Words to Double Words MMA444UHBDO Matrix Multiply-Add 4x4x4 Unsigned Half Words by Unsigned Bytes to Double Words 0MMA444UHBD1 Matrix Multiply-Add 4x4x4 Unsigned Half Words by Unsigned Bytes to Double Words 1 XMT44D Extension Matrix Transpose 4x4 Double Words