

FEATURES:

- SMPTE 292M compliant
- SMPTE 259M/297M/305M compatible
- DVB/ASI compatible
- ATSC/SMPTE 310M compatible (19.4 to 38.8Mbps)
- Sized for direct attachment to video equipment with minimum coax runs
- RoHS-6 compliant
- Rugged die cast construction
- Digital Diagnostics Monitoring Interface
- Unit to unit pitch (Port Density) of 0.625"
- Rugged "LC" simplex optical interface
- 75Ω BNC (male) simplex electrical interface with line equalizer
- Error free pathological pattern operation
- Typical wall plug power supply
- LED indicator (See Table below)
- Class 1 Laser Safety compliant

PRODUCT OVERVIEW

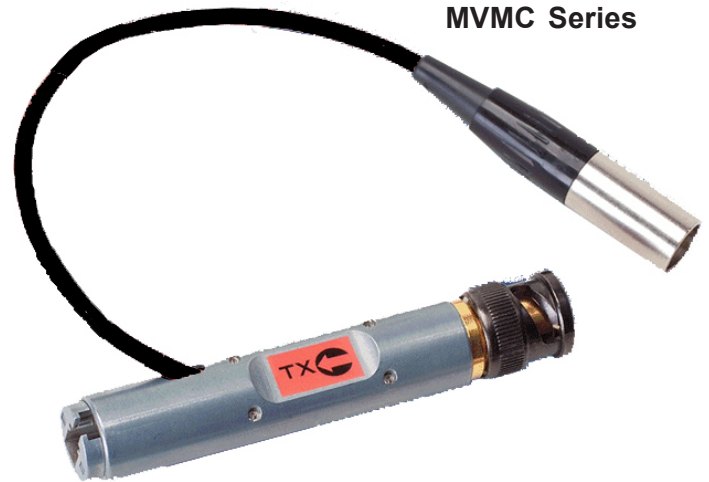
The MVMC-T-H-XX media converter transmitter module is a high performance integrated data link for uni-directional communication over single mode fiber. The MVMC-T-H-XX is designed to be used in multi-protocol video applications with data transfer rate up to 1.485Gbps (SMPTE 292M/297M/259M/305M/310M). The media converter module is designed to connect to electrical high speed serial digital video links that require extended distance performance. It permits replacement of copper cable with optical fiber to provide a solution for systems requiring increased media interconnect distance.

DIGITAL DIAGNOSTICS MONITORING INTERFACE

The MVMC-T-H-XX is offered with internally calibrated Digital Diagnostics Monitoring Interface (DDMI) which allows real-time access to device operating parameters such as module temperature, laser bias current, transmitted optical power and module supply voltage. It also defines a system of alarm flags, which alert end-users when particular operating parameters are outside of a factory set normal range.

LED INDICATOR

STATUS	CONDITION
Green	Normal Operation
Red	Transmit Fault
Blinking Red	DDMI Alarm
Blinking Orange	DDMI Warning



SIMPLEX TRANSMITTER ORDERING INFORMATION

MVMC-T-H-XX

TRANSMITTER WAVELENGTHS

- 2 = 1310nm FP
- 2M = 1310nm FP (0dBm)
- 2L = 1310nm DFB
- 3L = 1550nm DFB
- XX = CWDM Wavelengths where "XX" =

27 = 1270nm	45 = 1450nm
29 = 1290nm	47 = 1470nm
31 = 1310nm	49 = 1490nm
33 = 1330nm	51 = 1510nm
35 = 1350nm	53 = 1530nm
37 = 1370nm	55 = 1550nm
39 = 1390nm	57 = 1570nm
41 = 1410nm	59 = 1590nm
43 = 1430nm	61 = 1610nm

PROTOCOL

- H = SMPTE 292M/297M/259M/305M/310M (19.4/143/170/270/360/540/1485Mbps)

MODULE CONFIGURATION

- T = Simplex Transmitter

RECOMMENDED OPERATING CONDITIONS

PARAMETER	SYMBOL	MIN	MAX	UNITS	NOTES
Operating Case Temperature	Tc	0	+70	°C	
Supply Voltage	Vcc	+4.5	+7	VDC	Typical Wall plug
Power Dissipation			1.75	W	
Baud Rate	Brate	19.4	1485	Mbps	19.4/143/170/270/360/540/1485Mbps

ELECTRICAL SPECIFICATIONS

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	NOTES
Input Signal		SMPTE 292M259M/297M/305M/310M			mVpp	
Input Impedance	Z _{IN}		75		Ohms	Male BNC (note 1)
Return Loss		15			dB	
Propagation Delay				1.5	ns	

MVMC-T-H-2 OPTICAL SPECIFICATION --- 1310nm FP Singlemode Laser

0°C<Tc<+70°C

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	NOTES
Optical Center	λ	1290	1310	1330	nm	
Optical Transmit Power	Popt	-9		-3	dBm	Average @ 1310nm
Extinction Ratio	ER	9			dB	P1/P0
Spectral Width	Δλ			2	nm	RMS
Total Jitter	TJ		120	135	ps	Measured with Color Bar Test Signal @1.485Gbps)
				740	ps	Measured with Color Bar Test Signal @143/170/270/360/540Mbps)
Output Rise Time	t _R		80	120	ps	20%-80%; Measured unfiltered
Output Fall Time	t _F		240	270	ps	@143/170/270/360/540/1485Mbps)

MVMC-T-H-2M OPTICAL SPECIFICATION --- 1310nm FP (0dBm) Singlemode Laser

0°C<Tc<+70°C

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	NOTES
Optical Center Wavelength	λ	1290	1310	1330	nm	Tcase = +25°C
Spectral Width	Δλ			2	nm	RMS
Optical Transmit Power	Popt	-2	0	+1	dBm	Average @ 1310nm
Extinction Ratio	ER	9			dBm	P1/P0
Relative Intensity Noise	RIN			-117	dB/Hz	
Total Jitter [Pk - Pk]	TJ		120	135	ps	Measured with Color Bar Test Signal @1.485Gbps
				740	ps	Measured with Color Bar Test Signal @143/177/270/360MBaud
Output Rise Time	t _R		80	120	ps	20%-80%; Measured unfiltered
Output Fall Time	t _F		240	270	ps	@143/177/270/360/1485MBaud

Note 1: Equalized for 140m Belden 1694A @ 1.485Gb/s and 350m Belden 1694A @ 270Mb/s.

MVMC-T-H-2L OPTICAL SPECIFICATION --- 1310nm DFB Singlemode Laser

0°C<Tc<+70°C

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	NOTES
Optical Center	λ	1300	1310	1320	nm	Tc = +25°C
		1280		1335	nm	-30°C<Tc<+70°C
Side Mode Suppression Ratio	SMSR	30	40		dB	
Optical Transmit Power	Popt	0		+3	dBm	Average @ 1310nm
Extinction Ratio	ER	9			dB	P1/P0
Total Jitter	TJ		120	135	ps	Measured with Color Bar Test Signal @1.485Gbps)
				740	ps	Measured with Color Bar Test Signal @143/170/270/360/540Mbps)
Output Rise Time	t_R		80	120	ps	20%-80%; Measured unfiltered
Output Fall Time	t_F		240	270	ps	@143/170/270/360/540/1485Mbps)

MVMC-T-H-3L OPTICAL SPECIFICATION --- 1550nm DFB Singlemode Laser

0°C<Tc<+70°C

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	NOTES
Optical Center	λ	1540	1550	1565	nm	Tc = +25°C
		1480		1580	nm	-30°C<Tc<+70°C
Side Mode Suppression Ratio	SMSR	30	40		dB	
Optical Transmit Power	Popt	0		+3	dBm	Average @ 1550nm
Extinction Ratio	ER	9			dB	P1/P0
Total Jitter	TJ		120	135	ps	Measured with Color Bar Test Signal @1.485Gbps)
				740	ps	Measured with Color Bar Test Signal @143/170/270/360/540Mbps)
Output Rise Time	t_R		80	120	ps	20%-80%; Measured unfiltered
Output Fall Time	t_F		240	270	ps	@143/170/270/360/540/1485Mbps)

MVMC-T-H-XX OPTICAL SPECIFICATION --- CWDM Lasers

0°C<Tc<+70°C

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	NOTES
Optical Center Wavelength @ Tc=+25°C	λ	X-2		X+2	nm	Center Wavelength = X = 1270,1290,1310,1330,1350,1370,1390,1410, 1430,1450,1470,1490,1510,1530,1550,1570, 1590, 1610nm
Optical Center Wavelength @ Tc=-30°C to +70°C	λ	X-5		X+7	nm	
Side Mode Suppression Ratio	SMSR	30	40		dB	
Optical Transmit Power	Popt	0		+3	dBm	Average @ 1310nm
Extinction Ratio	ER	9			dB	P1/P0
Total Jitter	TJ		120	135	ps	Measured with Color Bar Test Signal @1.485Gbps
				740	ps	Measured with Color Bar Test Signal @143/170/270/360/540Mbps
Output Rise Time	t_R		80	120	ps	20%-80%; Measured unfiltered
Output Fall Time	t_F		240	270	ps	@143/170/270/360/540/1485Mbps

TRANSMISSION DISTANCES OVER 9.125µm CORE DIAMETER SINGLE MODE FIBER

Transmitter	Receiver	Link Distance		Note
		Minimum	Typical	
MMC-T-H-2	MMC-R-H-2	16km	33km	The specified minimum link distances are based on IEEE link budget models. Assumes minimum transmitter output power, extinction ratio, and minimum receiver sensitivity with color bar test signal at 140/170/270/360/1485Mbps. The minimum link distances will be reduced with SDI test matrix. Contact factory to discuss specific applications.
	VMC-R-H-2			
MMC-T-H-2M	MMC-R-H-2	22km	48km	
	VMC-R-H-2			
MMC-T-H-2L	MMC-R-H-2	41km	52km	
	VMC-R-H-2			
MMC-T-H-3L	MMC-R-H-2	60km	70km	
	VMC-R-H-2			
MMC-T-H-XX (CWDM)	MMC-R-H-2	41km	55km	
	VMC-R-H-2			

DIGITAL DIAGNOSTIC MONITORING INTERFACE ---- Simplex Transmitter

The media converter modules are provided with internally calibrated digital diagnostic monitoring interface which allows real-time access to device operating parameters such as module temperature, laser bias current, transmitted optical power, and module supply voltage. It also defines a system of alarm flags, which alerts end-users when particular operating parameters are outside of a factory set normal range.

The MMC-T-H-XX Digital Diagnostics Monitoring Interface (DDMI) memory map is shown in figure 1 below.

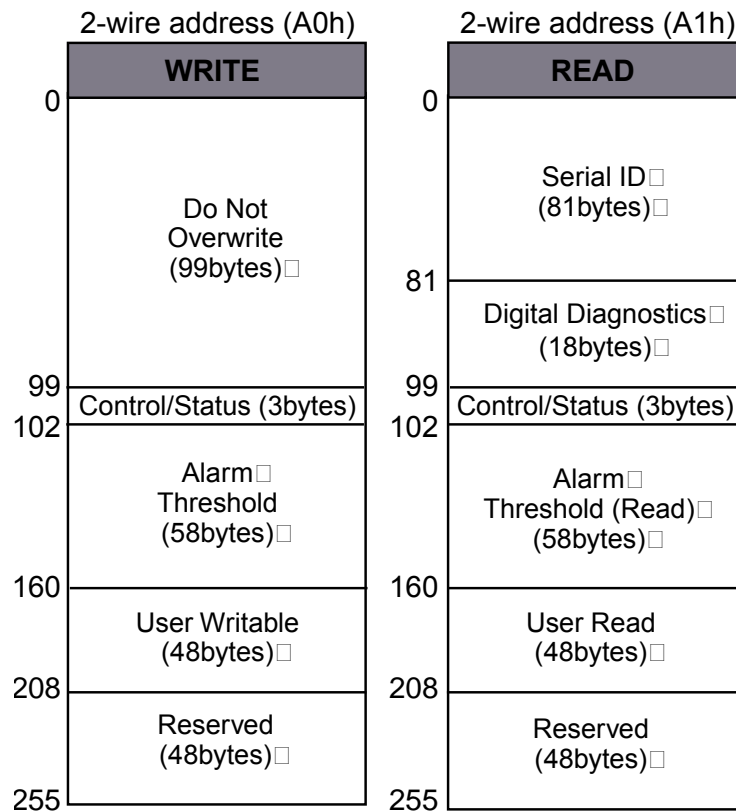


Figure 1: Simplex Transmitter Media Converter DDMI Memory Map

SERIAL IDENTIFICATION (2-wire address A1h)

Addr. (dec)	Description	Specification	Data (hex)	Addr. (dec)	Description	Specification	Data (hex)	
0	Identifier	MVMC BNC-to-Fiber Transmitter	03	41	Vendor Part Number	Space	20	
1	Host Connector	Male BNC	01	42		Space	20	
2	Transport Connector	LC	02	43		Space	20	
3	SMPTE Data Rates	143,177,270,360,540,1485Mb/s	FC	44		Space	20	
4	SD Reach		00	45		Space	20	
5	Laser	Laser 1310nm	02	46		Space	20	
6	BR in 10Mbps	149	95	47		Space	20	
7	Wavelength MSB	1310nm	05	48	Vendor Rev.		00	
8	Wavelength LSB		1E	49	Reserved		00	
9	Encoding	SMPTE Scramble	01	50	Reserved		00	
10	Length(9μ) * km	16	10	51	Reserved		00	
11	Length(50μm) * 10m	0	00	52	Reserved		00	
12	Length(62.5μm) * 10m	0	00	53	TX Options	Disable, Fault, Cable Det, Cabel Equalizer Bypass	E8	
13	Length (copper) * 1m	0	00	54	RX Options	Not Applicable	00	
14	Vendor Name	S	53	55	Vendor Serial Number		XX	
15		t	74	56		XX		
16		r	72	57		XX		
17		a	61	58		XX		
18		t	74	59		XX		
19		o	6F	60		XX		
20		s	73	61		XX		
21		Space	20	62		XX		
22		Space	20	63		XX		
23		Space	20	64		XX		
24		Space	20	65		XX		
25		Space	20	66		XX		
26		Space	20	67		XX		
27		Space	20	68		XX		
28		Space	20	69		XX		
29		Space	20	70		XX		
30		Space	20	71		XX		
31	Vendor Part Number	M	4D	72	Date Code		XX	
32		V	56	73		XX		
33		M	4D	74		XX		
34		C	43	75		XX		
35		-	2D	76		XX		
36		T	54	77		XX		
37		-	2D	78		XX		
38		H	48	79		CC_Serial ID		XX
39		-	2D	80		Reserved		00
40		2	32					

"XX" denotes hex value which varies with each module.

Table D.1a: MVMC-T-H-2 Serial ID Data Fields (2-wire Address A1h)

Stratos Optical

HD/SD BNC to "LC" Mini-Video Media Converter (Transmitter)

■ Connectivity for
Business Critical Continuity

Addr. (dec)	Description	Specification	Data (hex)	Addr. (dec)	Description	Specification	Data (hex)
0	Identifier	MVMC BNC-to-Fiber Transmitter	03	41	Vendor Part Number	M	4D
1	Host Connector	Male BNC	01	42		Space	20
2	Transport Connector	LC	02	43		Space	20
3	SMPTE Data Rates	143,177,270,360,540,1485Mb/s	FC	44		Space	20
4	SD Reach		00	45		Space	20
5	Laser	Laser 1310nm	02	46		Space	20
6	BR in 10Mbps	149	95	47		Space	20
7	Wavelength MSB	1310nm	05	48	Vendor Rev.		00
8	Wavelength LSB		1E	49	Reserved		00
9	Encoding	SMPTE Scramble	01	50	Reserved		00
10	Length(9μ) * km	22	16	51	Reserved		00
11	Length(50μm) * 10m	0	00	52	Reserved		00
12	Length(62.5μm) * 10m	0	00	53	TX Options	Disable, Fault, Cable Det, Cabel Equalizer Bypass	E8
13	Length (copper) * 1m	0	00	54	RX Options	Not Applicable	00
14	Vendor Name	S	53	55	Vendor Serial Number		XX
15		t	74	56			XX
16		r	72	57			XX
17		a	61	58			XX
18		t	74	59			XX
19		o	6F	60			XX
20		s	73	61			XX
21		Space	20	62			XX
22		Space	20	63			XX
23		Space	20	64			XX
24		Space	20	65		XX	
25		Space	20	66		XX	
26		Space	20	67		XX	
27		Space	20	68		XX	
28		Space	20	69		XX	
29		Space	20	70		XX	
30		Space	20	71	Date Code		XX
31	M	4D	72			XX	
32	V	56	73			XX	
33	M	4D	74			XX	
34	C	43	75			XX	
35	-	2D	76			XX	
36	T	54	77			XX	
37	-	2D	78		XX		
38	H	48	79	CC_Serial ID		XX	
39	-	2D	80	Reserved		00	
40		2	32				

"XX" denotes hex value which varies with each module.

Table D.1b: MVMC-T-H-2M Serial ID Data Fields (2-wire Address A1h)

Addr. (dec)	Description	Specification	Data (hex)	Addr. (dec)	Description	Specification	Data (hex)	
0	Identifier	MVMC BNC-to-Fiber Transmitter	03	41	Vendor Part Number	L	4C	
1	Host Connector	Male BNC	01	42		Space	20	
2	Transport Connector	LC	02	43		Space	20	
3	SMPTE Data Rates	143,177,270,360,540,1485Mb/s	FC	44		Space	20	
4	SD Reach		00	45		Space	20	
5	Laser	Laser 1310nm	02	46		Space	20	
6	BR in 10Mbps	149	95	47		Space	20	
7	Wavelength MSB	1310nm	05	48	Vendor Rev.		00	
8	Wavelength LSB		1E	49	Reserved		00	
9	Encoding	SMPTE Scramble	01	50	Reserved		00	
10	Length(9μ) * km	XXXXXXXXXX	3C	51	Reserved		00	
11	Length(50μm) * 10m	0	00	52	Reserved		00	
12	Length(62.5μm) * 10m	0	00	53	TX Options	Disable, Fault, Cable Det, Cabel Equalizer Bypass	E8	
13	Length (copper) * 1m	0	00	54	RX Options	Not Applicable	00	
14	Vendor Name	S	53	55	Vendor Serial Number		XX	
15		t	74	56			XX	
16		r	72	57			XX	
17		a	61	58			XX	
18		t	74	59			XX	
19		o	6F	60			XX	
20		s	73	61			XX	
21		Space	20	62			XX	
22		Space	20	63			XX	
23		Space	20	64			XX	
24		Space	20	65			XX	
25		Space	20	66			XX	
26		Space	20	67			XX	
27	Space	20	68		XX			
28	Space	20	69		XX			
29	Space	20	70		XX			
30	Space	20	71		XX			
31	Vendor Part Number	M	4D	72	Date Code		XX	
32		V	56	73			XX	
33		M	4D	74			XX	
34		C	43	75			XX	
35		-	2D	76			XX	
36		T	54	77			XX	
37		-	2D	78			XX	
38		H	48	79		CC_Serial ID		XX
39		-	2D	80		Reserved		00
40			2	32				

"XX" denotes hex value which varies with each module.

Table D.1c: MVMC-T-H-2L Serial ID Data Fields (2-wire Address A1h)

Addr. (dec)	Description	Specification	Data (hex)	Addr. (dec)	Description	Specification	Data (hex)	
0	Identifier	MVMC BNC-to-Fiber Transmitter	03	41	Vendor Part Number	L	4C	
1	Host Connector	Male BNC	01	42		Space	20	
2	Transport Connector	LC	02	43		Space	20	
3	SMPTE Data Rates	143,177,270,360,540,1485Mb/s	FC	44		Space	20	
4	SD Reach		00	45		Space	20	
5	Laser	Laser 1550nm	03	46		Space	20	
6	BR in 10Mbps	149	95	47		Space	20	
7	Wavelength MSB	1550nm	06	48	Vendor Rev.		00	
8	Wavelength LSB		0E	49	Reserved		00	
9	Encoding	SMPTE Scramble	01	50	Reserved		00	
10	Length(9μ) * km	60	3C	51	Reserved		00	
11	Length(50μm) * 10m	0	00	52	Reserved		00	
12	Length(62.5μm) * 10m	0	00	53	TX Options	Disable, Fault, Cable Det, Cabel Equalizer Bypass	E8	
13	Length (copper) * 1m	0	00	54	RX Options	Not Applicable	00	
14	Vendor Name	S	53	55	Vendor Serial Number		XX	
15		t	74	56		XX		
16		r	72	57		XX		
17		a	61	58		XX		
18		t	74	59		XX		
19		o	6F	60		XX		
20		s	73	61		XX		
21		Space	20	62		XX		
22		Space	20	63		XX		
23		Space	20	64		XX		
24		Space	20	65		XX		
25		Space	20	66		XX		
26		Space	20	67		XX		
27		Space	20	68		XX		
28		Space	20	69		XX		
29		Space	20	70		XX		
30		Space	20	71		XX		
31	Vendor Part Number	M	4D	72	Date Code		XX	
32		V	56	73		XX		
33		M	4D	74		XX		
34		C	43	75		XX		
35		-	2D	76		XX		
36		T	54	77		XX		
37		-	2D	78		XX		
38		H	48	79		CC_Serial ID		XX
39		-	2D	80		Reserved		00
40			3	33				

"XX" denotes hex value which varies with each module.

Table D.1c: MVMC-T-H-3L Serial ID Data Fields (2-wire Address A1h)

Addr. (dec)	Description	Specification	Data (hex)	Addr. (dec)	Description	Specification	Data (hex)	
0	Identifier	MVMC BNC-to-Fiber Transmitter	03	41	Vendor Part Number	X	XX	
1	Host Connector	Male BNC	01	42		Space	20	
2	Transport Connector	LC	02	43		Space	20	
3	SMPTE Data Rates	143,177,270,360,540,1485Mb/s	FC	44		Space	20	
4	SD Reach		00	45		Space	20	
5	Laser	CWDM Lasers	04	46		Space	20	
6	BR in 10Mbps	149	95	47		Space	20	
7	Wavelength MSB	CWDM wavelength in hex	XX	48	Vendor Rev.		00	
8	Wavelength LSB		XX	49	Reserved		00	
9	Encoding	SMPTE Scramble	01	50	Reserved		00	
10	Length(9μ) * km	41	29	51	Reserved		00	
11	Length(50μm) * 10m	0	00	52	Reserved		00	
12	Length(62.5μm) * 10m	0	00	53	TX Options	Disable, Fault, Cable Det, Cabel Equalizer Bypass	E8	
13	Length (copper) * 1m	0	00	54	RX Options	Not Applicable	00	
14	Vendor Name	S	53	55	Vendor Serial Number		XX	
15		t	74	56		XX		
16		r	72	57		XX		
17		a	61	58		XX		
18		t	74	59		XX		
19		o	6F	60		XX		
20		s	73	61		XX		
21		Space	20	62		XX		
22		Space	20	63		XX		
23		Space	20	64		XX		
24		Space	20	65		XX		
25		Space	20	66		XX		
26		Space	20	67		XX		
27		Space	20	68		XX		
28		Space	20	69		XX		
29		Space	20	70		XX		
30		Space	20	71		XX		
31	Vendor Part Number	M	4D	72	Date Code		XX	
32		V	56	73		XX		
33		M	4D	74		XX		
34		C	43	75		XX		
35		-	2D	76		XX		
36		T	54	77		XX		
37		-	2D	78		XX		
38		H	48	79		CC_Serial ID		XX
39		-	2D	80		Reserved		00
40		X	XX					

"X" and "XX" denotes hex value which varies with each module.

Table D.1d: MVMC-T-H-XX Serial ID Data Fields (2-wire Address A1h)

DIGITAL DIAGNOSTIC (2-wire address A1h)

This portion of the memory map contains real-time measurements of MVMC-T-H-XX module temperature, laser bias current, transmitted optical power, and module supply voltage. The real-time diagnostics registers are shown in table D.2 below. The MVMC-T-H-XX media converter modules are internally calibrated which means that the modules directly reports calibrated values in units of current, power, etc.

Data Address	Bit	Name	Description
81	All	Temperature MSB	Internally measured module temperature
82	All	Temperature LSB	
83	All	Vcc MSB	Internally measured supply voltage in simplex transmitter module
84	All	Vcc LSB	
85	All	TX Bias MSB	Internally measured TX_Bias current
86	All	TX Bias LSB	
87	All	TX Power MSB	Measured TX output power
88	All	TX Power LSB	
89	All	RX Power MSB	Not applicable for Simplex Transmitter Module.
90	All	RX Power LSB	
91	All	Reserved	
92	All	Reserved	
93-94	All	Reserved	

Table D.2: Real-time diagnostic registers (2-wire address A1h)

Measurements are calibrated over vendor specified operating temperature and voltage and should be interpreted as defined below. Alarm and warning threshold values should be interpreted in the same manner as real time 16 bit data.

1) Internally measured simplex transmitter temperature: Represented as a 16 bit signed twos complement value in increments of 1/256 degrees Celsius, yielding a total range of -128C to +128C. Temperature accuracy is better than ± 3 degrees Celsius over specified operating temperature and voltage. The temperature in degrees Celsius is given by the signed twos complement value with LSB equal to 1/256 C. See Tables D.3a and D.3b for examples of temperature format.

2) Internally measured simplex transmitter supply voltage: Represented as a 16 bit unsigned integer with the voltage defined as the full 16 bit value (0 – 65535) with LSB equal to 100 μ Volt, yielding a total range of 0 to +6.55 Volts. Accuracy is better than $\pm 3\%$ of the nominal value over specified operating temperature and voltage.

3) Measured TX bias current in μ A. Represented as a 16 bit unsigned integer with the current defined as the full 16 bit value (0 – 65535) with LSB equal to 2 μ A, yielding a total range of 0 to 131 mA. Accuracy is better than $\pm 10\%$ of the nominal value over specified operating temperature and voltage.

4) Measured TX output power in mW: Represented as a 16 bit unsigned integer with the power defined as the full 16 bit value (0 – 65535) with LSB equal to 0.1 μ W, yielding a total range of 0 to 6.5535 mW (~ -40 to +8.2 dBm). Data is assumed to be based on measurement of laser monitor photodiode current. It is factory calibrated to absolute units using the most representative fiber output type. Accuracy is better than ± 3 dB over specified temperature and voltage. Data is not valid when the transmitter is disabled.

DIGITAL DIAGNOSTIC (2-wire address A1h) -- Continue

TEMPERATURE REPORTING:

Tables D.3a and D.3b illustrate the 16 bit signed two complement format used for temperature reporting. The most significant bit (D7) represents the sign, which is zero for positive number and one for negative number.

Most Significant Byte								Data Address							
D7	D6	D5	D4	D3	D2	D1	D0	D7	D6	D5	D4	D3	D2	D1	D0
Sign	64	32	16	8	4	2	1	1/2	1/4	1/8	1/16	1/32	1/64	1/128	1/256

Table D.3A: Bit weights (°C) for temperature reporting registers

Temperature		Binary		Hexadecimal	
Decimal	Fraction	HIGH byte	LOW byte	HIGH byte	LOW byte
+127.996	+127 255/256	01111111	11111111	7F	FF
+125.000	+125	01111101	00000000	7D	00
+25.000	+25	00011001	00000000	19	00
+1.004	+1 1/256	00000001	00000001	01	01
+1.000	+1	00000001	00000000	01	00
+0.996	+255/256	00000000	11111111	00	FF
+0.004	+1/256	00000000	00000001	00	01
0.000	0	00000000	00000000	00	00
-0.004	-1/256	11111111	11111111	FF	FF
-1.000	-1	11111111	00000000	FF	00
-25.000	-25	11100111	00000001	E7	00
-40.000	-40	11011000	00000002	D8	00
-127.996	-127 255/256	10000000	00000001	80	01
-128.000	-128	10000000	00000000	80	00

Table D.3B: Digital temperature format

DIGITAL DIAGNOSTICS Continue (2-wire address A1h)

ALARM and WARNING FLAGS:

Data address 95-98 (Table D.4) contain an optional set of alarms and warnings. The alarm/warning flags are not latched. It is recommended that the detection of an asserted flag bit should be verified by a second read of the flag at least 100msec later. For users who do not wish to set their own threshold values (address 102-159 at 2-wire address A0h) or read the values (address 102-159 at 2-wire address A1h), the flags alone can be monitored. Alarm/warning flags which are associated with simplex transmitter modules are temperature, supply voltage, TX bias, and TX output power. Alarm/warning flags indicate conditions likely to be associated with an in-operational link and cause for immediate action.

Data Addr	Bits	Name	Description	Values
95	7	Temp High Alarm	Set if internal temperature exceed high alarm level	+80°C
	6	Temp Low Alarm	Set if internal temperature is below low alarm level	-10°C
	5	Temp High Warning	Set if internal temperature exceed high warning level	+75°C
	4	Temp Low Warning	Set if internal temperature is below low warning level	0°C
	3	Voltage High Alarm	Set if internal supply Voltage exceed high alarm level	+6.5V
	2	Voltage Low Alarm	Set if internal supply Voltage is below low alarm level	+4.0V
	1	Voltage High Warning	Set if internal supply Voltage exceed high warning level	+6.3V
	0	Voltage Low Warning	Set if internal supply Voltage is below low warning level	+4.2V
96	7	TX_BIAS High Alarm	Set if internal TX_Bias current exceed high alarm level	114mA
	6	TX_BIAS Low Alarm	Set if internal TX_Bias current is below low alarm level	5mA
	5	TX_BIAS High Warning	Set if internal TX_Bias current exceed high warning level	100mA
	4	TX_BIAS Low Warning	Set if internal TX_Bias current is below low warning level	10mA
	3	TX_PWR High Alarm	Set if internal TX output power exceed high alarm level	Note A
	2	TX_PWR Low Alarm	Set if internal TX output power is below low alarm level	
	1	TX_PWR High Warning	Set if internal TX output power exceed high warning level	
	0	TX_PWR Low Warning	Set if internal TX output power is below low warning level	
97	7	RX_PWR High Alarm	Not applicable for Simplex Transmitter Module	
	6	RX_PWR Low Alarm	Not applicable for Simplex Transmitter Module	
	5	RX_PWR High Warning	Not applicable for Simplex Transmitter Module	
	4	RX_PWR Low Warning	Not applicable for Simplex Transmitter Module	
	3-0	Reserved	Reserved	
98	7-0	Reserved	Reserved	

Note A: Varies from module to module

Table D.4: Alarm and Warning Flag Bits (2-wire Address A1h)

Data Address	Bits	Name	Description
99	7	TX_Disable State	Read
	6	Soft TX_Disable	Read/Write
	5	Reserved	
	4	Reserved	
	3	TX_FAULT	Read
	2	Cable Detect	Read
	1-0	Reserved	
100-101	7-0	Reserved	

Table D.5: Control/Status Bits (2-wire Address A1h)

ALARM/WARNING THRESHOLDS (2-wire address A1h)

Each A/D quantity has a corresponding high alarm/warning and low alarm/warning threshold. These factory preset values allow the user to determine when a particular value is outside of "normal" limits as determined by the transceiver manufacturer.

The MVMC memory is read/writable as the write protect feature is not enabled. Thus, the host can change the factory set alarm threshold values (address 102-159 at 2-wire address A0h).

Data Address	# Bytes	Name	Description
102-103	2	Temp High Alarm	MSB at Low Address
104-105	2	Temp Low Alarm	MSB at Low Address
106-107	2	Temp High Warning	MSB at Low Address
108-109	2	Temp Low Warning	MSB at Low Address
110-111	2	Voltage High Alarm	MSB at Low Address
112-113	2	Voltage Low Alarm	MSB at Low Address
114-115	2	Voltage High Warning	MSB at Low Address
116-117	2	Voltage Low Warning	MSB at Low Address
118-119	2	Bias High Alarm	MSB at Low Address
120-121	2	Bias Low Alarm	MSB at Low Address
122-123	2	Bias High Warning	MSB at Low Address
124-125	2	Bias Low Warning	MSB at Low Address
126-127	2	TX Power High Alarm	MSB at Low Address
128-129	2	TX Power Low Alarm	MSB at Low Address
130-131	2	TX Power High Warning	MSB at Low Address
132-133	2	TX Power Low Warning	MSB at Low Address
134-135	2	RX Power High Alarm	Not Applicable for simplex transmitter module
136-137	2	RX Power Low Alarm	Not Applicable for simplex transmitter module
138-139	2	RX Power High Warning	Not Applicable for simplex transmitter module
140-141	2	RX Power Low Warning	Not Applicable for simplex transmitter module
142-159	18	Reserved	Reserved

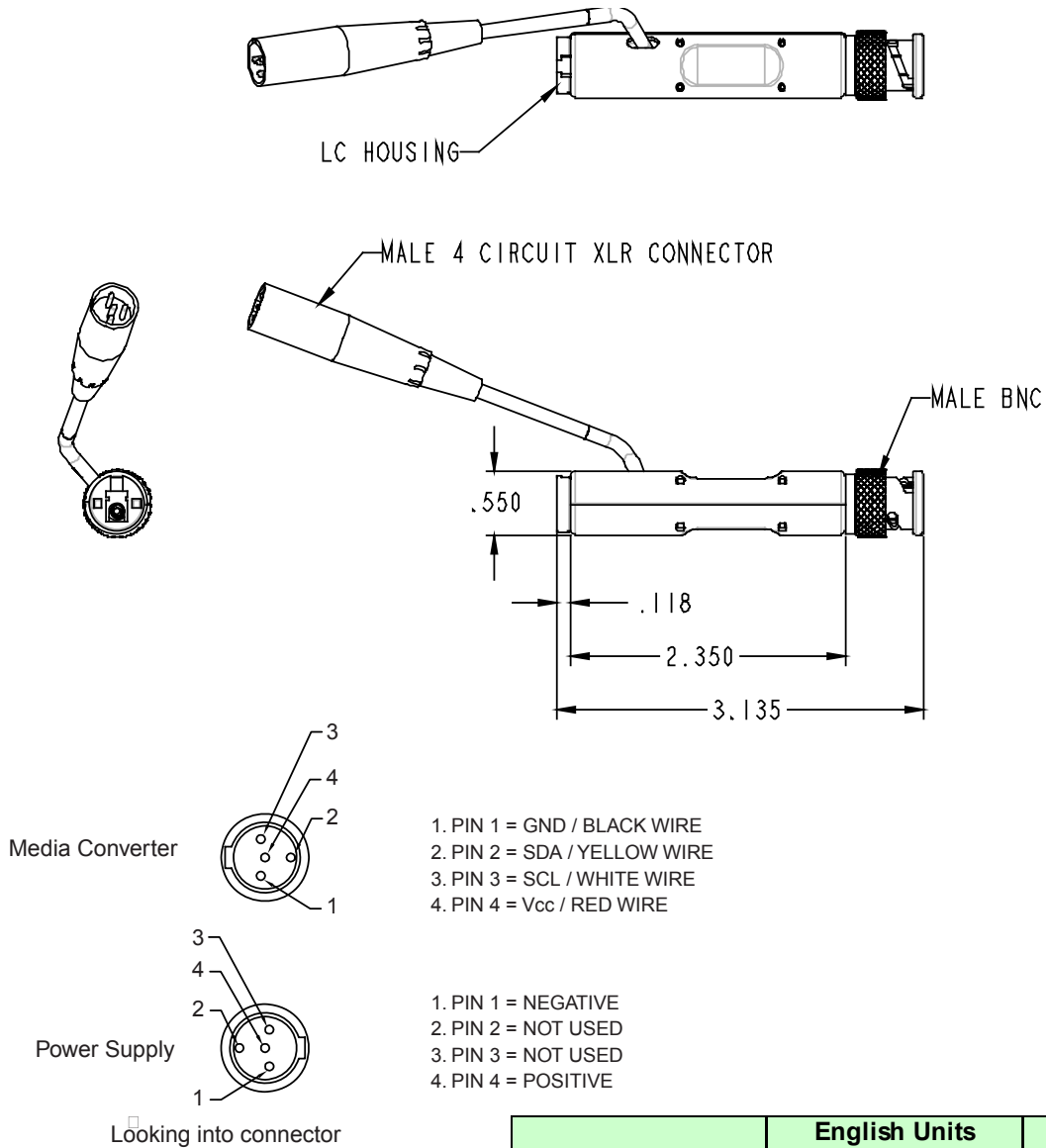
Table D.6: Alarm and Warning Thresholds (2-wire address A1h)

USER WRITABLE MEMORY:

Data Address	# Bytes	Name	Description
160-207	48	User EEPROM	User Writable EEPROM

Table D.7: User Accessible EEPROM (2-wire Address A0h)

Mechanical Dimensions (inches)



	English Units	Metric Units
Shipping Weight	1.0lb	454g
Shipping Dimensions	16.25 x 11.25 x 4.25 in	41 x 29 x 11 cm

REGULATORY COMPLIANCE:

STANDARD	COMMENTS
TUV	EN/IEC 60825 and EN/IEC 60950
CDRH	FDA, CFR 21 Subchapter J
UL/CSA	UL1950
FCC	Subpart 15, Class A

ACCESSORIES AVAILABLE:

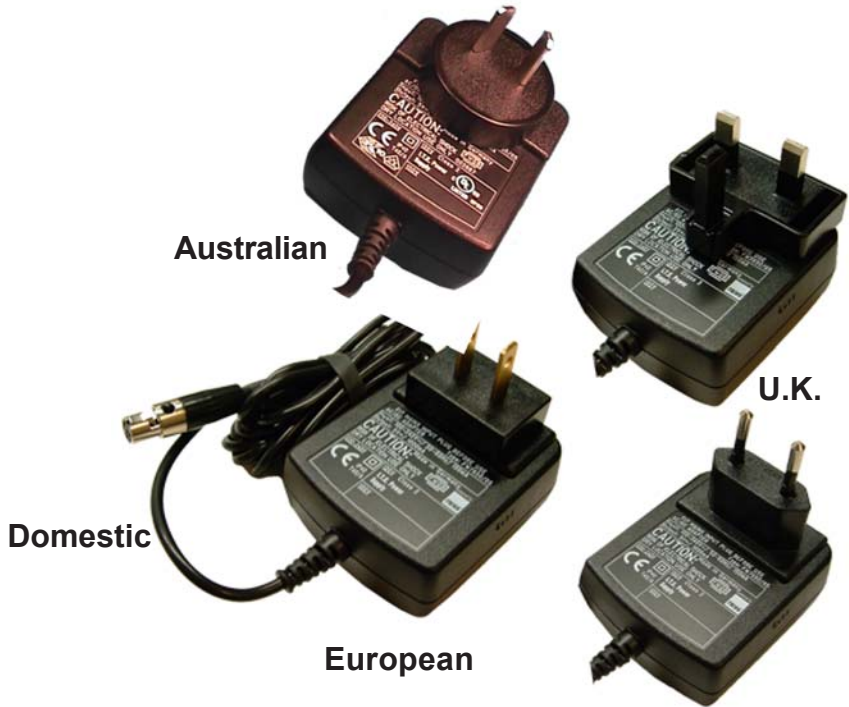
(1) Wall Plug with Mini-XLR

Ordering information:

VMC-PS-X

- D = Domestic**
- E = European**
- U = U.K.**
- A = Australian**

PARAMETER	Min	Max
Input Voltage	100V	240V
Output Voltage (DC)	+5V @ 1000mA	



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