



# DMD50 Modem

## Release AE (4.1)

### Software Release Notification

## DMD50 Modem Release AE (4.1)

Approval Signatures			
Product Manager:	Date:	Originator:	Date:
Michael Kubicki		Kent Myers	

Applicability
Bulk release FW/5585AE (4.1), includes bulk firmware and SNMP MIB.

Revision History			
Rev #	Description	Date	Prepared by
Y	3.5 Initial support for Carrier-in-Carrier (NOTE: Last known F05280 release was U. Release X was being prepared by previous team but never released)	08/05/2009	Kent Myers
AA	3.7 Finalized implementation for Carrier-in-Carrier (note: 3.6 not used to skip "Z")	02/11/2010	Kent Myers
AB	3.8 Upgraded Carrier-in-Carrier and LDPC firmware	04/05/2010	Kent Myers
AC	3.9 Further enhanced Carrier-in-Carrier and LDPC firmware. Also added support for CnC relay bypass card.	04/28/2010	Kent Myers
AD	4.0 New release of Carrier-in-Carrier FPGA load to support latest CnC boards on the DMD2050.	10/01/10	Kent Myers
AE	4.1 Improved EbNo monitor display and support Comtech Ethernet Format and PL0000735 baseband card.	02/17/2011	Kent Myers

## **INTRODUCTION**

This release package contains; improved EbNo monitor display, support for Comtech Ethernet format, support for PL0000735 baseband card, and corrections to limit scrambler selection for LDPC and CnC.

### **MnC Alterations**

1. Upgraded M&C routines to improve agility of EbNo monitor display. It would take several seconds for the display to update if the EbNo was changed by a large amount (more than 1dB).
2. Added support for the new PL-0000735 Dmd50 baseband card with the 4001 PLL.
3. Limited the scrambler selection when in CnC mode to V.35 IESS in Closed Net.
4. Limited the scrambler selection when in LDPC mode to TPC and V.35 IESS in Closed Net.

### **FPGA Alterations**

1. Upgraded DSP load to fix problem on power up when using E3 IDR mode. The firmware was not setting the "Mux Unlock" signal to allow programming the "MFUI".
2. Upgraded FPGA loads for terrestrial Ethernet cards to support the Comtech Ethernet Wan overhead format.

**Known Issue(s) In This Release**

1. R11 scrambler does not work with LDPC.
2. The M&C does not block selection of IBS framing with some high speed loads (i.e. QPSK Vit 1/2 15Mb). High speed loads are when the data rate exceeds 20mb or symbol rate exceeds 10mb.
3. Web browser event buffer overflows screen when full of events.
4. The following are unresolved DMD-20 family Test Tracker bugs:

Defect #	Product	Description
12	DMD-2050	DVB Parallel fails at high data rates
22	DMD2050	Loop timing issue when running Vit 7/8 Reed Solomon
36	DMD-2050	Setting modem from Non-Vol to BootP causes system reset
38	DMD-20	Turbo low data rate sweep issues
45	DMD-20	TerrAIS alarm should show PASS with no terrestrial data input
46	DMD-20	Eb/No threshold alarm issue a lower data rates
49	DMD-20	Problem with DVB SAT 16QAM TRE 3/4 5Mb 204 terr frame
50	DMD-20	TPC 1/2 OQPSK 64k lock issues
51	DMD-20	16QAM TPC 3/4 inverting spectrum does not work with LDPC card
52	DMD-20	OQPSK TPC 1/2 acquisition problems at 64Kbps
55	DMD-20	BPSK Vit 1/2 losses lock in noise
56	DMD-20	TPC / LDPC 8QAM sweep issues
59	DMD-20	TPC 16QAM vit 3/4 data sync issues
60	DMD-20	TPC 16QAM vit 3/4 data sync issues
67	DMD-2050	Frequency range Acquisition set to $\pm 30\text{kHz}$
68	DMD-2050	When CnC mode is Disabled, monitors should indicate "CnC disabled".
69	DMD-50	Eb/No display problems 8PSK TPC 7/8
81	DMD-2050	CnC BPSK will not lock
88	DMD-50	8QAM TRE 2/3 is not valid
89	DMD-50	16QAM LDPC 3/4 does not lock
90	DMD-20	Custom RS rates do not lock with interleaver depth of 8
91	DMD-20	QPSK Vit 1/2, 3/4 IBS 1544 RS 219,201 4, losses lock and sync
92	DMD-20	IBS BER alarm Vit 3/4, RS N=219 K=201 Depth 4, noise Eb/No 5.0
93	DMD-50	IBS BER alarm Vit 3/4, RS N=219 K=201 Depth 4, noise Eb/No 5.0
94	DMD-2050	IBS BER alarm Vit 3/4, RS N=219 K=201 Depth 4, noise Eb/No 5.0
95	DMD-20	Custom Reed Solomon N=204 K=188
105	DMD-50	BPSK TPC 21/44 does not lock
106	DMD-50	BPSK LDPC 1/2 does not lock
107	DMD-20	LDPC 1/2 and 3/4 acquisition at 64Kpbs with noise
109	DMD-2050	LDPC 3/4 & 7/8 false lock with 8PSK and 16QAM Modulation
111	DMD-2050	BPSK LDPC 1/2 does not lock
112	DMD-2050	BPSK TPC 21/44 does not lock
113	DMD-2050	Loading CFG file causes TX sym clk fault
115	DMD-2050	LDPC 2/3 Fails CNC BER Spec
116	DMD-2050	Signal lock when nothing connected LDPC OQPSK 16Mbps and above
119	DMD-2050	CNC - SEQ intermittently does not lock until unit is power cycled.
121	DMD-2050	SEQ 7/8, QPSK & OQPSK Fails BER Spec
122	DMD-20	LDPC 1/2 AND 2/3 HIGH RATE BER
124	DMD-20	LDPC acquisition with noise enabled
128	DMD-2050	L-Band Power Accuracy Fails Spec at Max Power Level

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129 DMD-2050 Spectral Mask doesn't meet confinement spec at 70/140 operating edges  
131 DMD-2050 LDPC 8PSK and 8QAM Low Data Rate Acquisition is over 1 hour  
132 DMD-20 SEQ CSEQ 3/4 with AS/5111  
133 DMD-20 TPC 7/8 SHORT  
136 DMD-2050 TPC 7/8 8PSK Fails BER Spec  
137 DMD-2050 8QAM TPC and LDPC fail BER Spec  
138 DMD-2050 8QAM L-Band does not meet 0.5 dB power accuracy  
139 DMD-2050 QPSK TPC 1/2 dribbles errors from 7 Mbps to 9.545454 Mbps  
140 DMD-2050 O/QPSK TPC 7/8 runs error or does not stay locked above 17.2 Mbps.  
141 DMD-2050 O/QPSK TPC 3/4 high data rate acquisition up to over 1 hour  
144 DMD-2050 CNC - LDPC OQPSK does not lock with Eb/NO within the BER Spec  
145 DMD-2050 CNC - LDPC 8PSK 2/3 false locks, dripples errors, etc.  
146 DMD-2050 LDPC 16QAM 3-4 Fails BER Spec  
154 DMD-2050 Eb/No monitor indicates max noise level when running without noise in 8QAM modulation.  
174 DMD-2050 CNC Ratio Monitor is off by -7 dB 8QAM TPC below 300 ksps  
175 DMD-20 Sequential BPSK 7/8 2048Kbps may FAIL to acquire.  
176 DMD-20 LDPC 2/3 QPSK 2.048 Mbps FBERD losing SYNC intermittently.  
177 DMD-20 Uncoded BPSK shows SYNC but have Data Inverted.  
178 DMD-20 Uncoded 8PSK 30Kbps FBerd shows Data Invert when locked.  
179 DMD-20 Viterbi 16QAM 3/4 30Kbps acquire lock, but FBerd NO SYNC.  
180 DMD-20 PL5167 Super Card Turbo will NOT work below 18 KSPS Modem locks but NO FBerd SYNC, TPC QPSK 1/2 9545bps, TPC Q3/4 15000bps, Q7...  
181 DMD-20 PL5051 Turbo Card Unstable, low Data rate and TPC QPSK 7/8 Short at any Data Rate may NOT SYNC in FBERD.  
182 DMD-2050 Fails CNC Satellite Delay Doppler Test after 24 hours  
183 DMD-20 TPC 3/4 n 7/8 15Mbps up to 20Mbps HSSI, Fails up to 0.4dB Out of BER SPEC with Scrambling Disabled. This was tested with the L...  
184 DMD-20 TPC 16QAM 3/4 n 7/8 at 15Mbps NO Carrier Lock and NO SYNC with PL/6002 LDPC Card  
185 DMD-20 PL/6002 LDPC card TPC QPSK 1/2 just drbbles errors even with NO Noise at any Data rate.  
186 DMD-50 Super Card PL/5167, TPC (O)QPSK and BPSK 7/8 (Short), will Dribble Errors at EbNo selections intended to run error free.  
187 DMD-20 DMD20 roll off setting issue (data stops).  
188 DMD-20 DMD20 roll off setting issue (data stops).  
189 DMD-50 Super Card PL/5167, SAT Framing IBS 1/15 selection, 16QAM TPC 0.793 DR 31.667kbps (10.667ksps) IFEC Interleaver Disabled, diff...  
198 DMD-20 8QAM Modulation Selection, will change the Inner FEC to NONE when the modem was initially configured for Viterbi or Sequential...  
247 DMD-20 Trellis 8PSK T