



Technical Bulletin

Date: September 4, 2015

Subject: Changes to Tracking Parameters of DISH Network’s 110°W and 119°W Satellites

Products Affected

Marine Systems: TracVision® C3, 4, 6, G4, G6, G8, M5, M7, and M9

RV Systems: TracVision L3, S3, R4, R5, R4SL, and R5SL

Problem Description

DISH Network® has changed the left-hand (LHCP) tracking transponders of its 110°W and 119°W satellites from QPSK to 8PSK encoding. As a result, DISH Network subscribers with the above referenced TracVision systems might need to choose an alternate LHCP tracking transponder as described below.

Problem Solution – TracVision M5, M7, and M9 Models

Systems Equipped with an RF7 Board

Antennas with an RF7 board installed can decode 8PSK signals. KVH started building antennas with the RF7 board in October 2013. However, all antennas built from October 2009 through October 2013 can be upgraded in the field. KVH recommends the RF7 board upgrade kit be installed in all antennas that can be upgraded in order to avoid additional tracking parameter limitations in the future.

TracVision Model	RF7 Installed at Factory Serial Numbers	Suitable for RF7 Upgrade Serial Numbers	RF7 Board Upgrade Kit Part No.
M5	131000890 and later	0910xxxx – 131000889	72-0599-02
M7	131000307 and later	0910xxxx – 131000306	72-0599-03
M9	131000141 and later	0910xxxx – 131000140	72-0599-01

If the antenna has an RF7 board installed, verify that the following tracking parameters are configured in the system:

Parameter	Satellite 110°W		Satellite 119°W		Satellite 129°W	
	LHCP	RHCP	LHCP	RHCP	LHCP	RHCP
Frequency	12530 MHz	12516 MHz	12676 MHz	12486 MHz	12501 MHz	12516 MHz
Symbol Rate	21500	20000	20000	20000	21500	20000
FEC Code	2/3	7/8	6/7	7/8	9/9	5/6
Network ID	0x1006	0x1006	0x0003	0x1004	0x1008	0x1008
Decoding Type	Turbo 8PSK	DVB QPSK	DSS	DVB QPSK	Turbo 8PSK	DVB QPSK

Systems Not Equipped with an RF7 Board

Antennas without an RF7 board installed require an update to the left-hand (LHCP) tracking parameters for the 110°W and 119°W satellites. Verify that the following tracking parameters are configured in the system:

Parameter	Satellite 110°W	Satellite 119°W
Polarization	LHCP	LHCP
Frequency	12443 MHz	12414 MHz
Symbol Rate	20000	20000
FEC Code	7/8	7/8
Network ID	0x1006	0x1004
Decoding Type	DVB QPSK	DVB QPSK

Problem Solution – All TracVision C3, 4, 6, G4, G6, G8, L3, S3, R4, R5, R4SL, and R5SL Models

All of these systems require an update to the left-hand (LHCP) tracking parameters for the 110°W and 119°W satellites. Verify that the following tracking parameters are configured in the system:

Parameter	Satellite 110°W	Satellite 119°W
Polarization	LHCP	LHCP
Frequency	12443 MHz	12414 MHz
Symbol Rate	20000	20000
FEC Code	7/8	7/8
Network ID	0x1006	0x1004
Decoding Type	DVB QPSK	DVB QPSK



Updating Tracking Parameters

To update the tracking parameters, connect a laptop to the antenna's Maintenance port and use the @SATCONFIG commands as shown below (refer to the antenna's manual for details). These commands assume the antenna is configured for either DISH 1000/129 mode (A=119W, B=110W, and C=129W) or DISH 500 mode (A=119W and B=110W). If your antenna is configured for a different mode, substitute the appropriate satellite locations for your configuration.

M5/M7 with RF7 Board

```
HALT
@DEBUGON
@SATCONFIG,A,53,12676,20000,67,0x0003,L,U,2
@SATCONFIG,A,53,12486,20000,78,0x1004,R,U,3
@SATCONFIG,B,52,12530,21500,23,0x1006,L,U,4
@SATCONFIG,B,52,12516,20000,78,0x1006,R,U,3
@SATCONFIG,C,54,12501,21500,99,0x1008,L,U,4
@SATCONFIG,C,54,12516,20000,56,0x1008,R,U,3
@SAVE,A
@SAVE,B
@SAVE,C
ZAP
```

M5/M7 without RF7 Board

```
HALT
@DEBUGON
@SATCONFIG,A,53,12414,20000,78,0x1004,L,U,3
@SATCONFIG,B,52,12443,20000,78,0x1006,L,U,3
@SAVE,A
@SAVE,B
ZAP
```

M9 with RF7 Board

```
HALT
@DEBUGON
@SATCONFIG,A,23,12676,20000,67,0x0003,L,U,2
@SATCONFIG,A,23,12486,20000,78,0x1004,R,U,3
@SATCONFIG,B,22,12530,21500,23,0x1006,L,U,4
@SATCONFIG,B,22,12516,20000,78,0x1006,R,U,3
@SATCONFIG,C,24,12501,21500,99,0x1008,L,U,4
@SATCONFIG,C,24,12516,20000,56,0x1008,R,U,3
@SAVE,A
@SAVE,B
@SAVE,C
ZAP
```



M9 without RF7 Board

```
HALT
@DEBUGON
@SATCONFIG,A,53,12414,20000,78,0x1004,L,U,3
@SATCONFIG,B,52,12443,20000,78,0x1006,L,U,3
@SAVE,A
@SAVE,B
ZAP
```

C3/4/6/G4/G6/G8/L3/S3/R4/R5/R4SL/R5SL

```
HALT
@DEBUGON
@SATCONFIG,A,53,12414,20000,78,0x1004,L,U,3
@SATCONFIG,B,52,12443,20000,78,0x1006,L,U,3
@SAVE,A
@SAVE,B
ZAP
```

If you have any questions about this problem or its solution, please contact KVH Technical Support at **+1 401 847-3327** or via e-mail at support@kvh.com.