



Memorandum

To: Dan Koller Tony Kerr Matt Morgan
From: John Effland
Date: 2008-04-16
Revisions: 2008-04-16 jee Initial
Subject: Comparison of OMT6-014 and -015 with -019

The purpose of this memo is to confirm that the 2nd batch of B6 OMT's (SN's 012 through 022) meets specifications so that a third batch of 10 can be ordered to prevent delays in cartridge construction.

Recall that OMT6-019 is a "golden sample" from this batch with exemplary polarization isolation, and when installed in Cartridge B6-002 (currently under test), provides improved polarization isolation that more closely approaches specifications, as shown in [Figure 1](#).

Recall that OMT6-013 was the first OMT from this batch with high polarization purity, and when installed in Cartridge B6-003, the polarization isolation greatly improved ([Figure 2](#) and [Figure 3](#)), but that OMT was only measured warm. Dan hasn't quite completed warm measurements of OMT6-014 and -015, so this memo compares their results to OMT6-019, which was measured both warm and cold. For that OMT, the measurements are nearly the same for both temperatures.

The graphs following [Figure 3](#) are organized (along with the unconventional page size of this document) for convenient comparison of OMT6-019 vs. OMT6-015 vs. OMT6-014.

Ignoring the apparent gain shown at the low end of the band in insertion loss data (Page 4), the only real concern is the measurement of main-arm polarization isolation for OMT6-015 and -014 (see Page 6). Although the measurements meet specs, the results seem too flat to be believable.

I recommend redoing those measurements prior to placing another order.

Figure 1: Cross-Pol Isolation from Cartridge B6-002

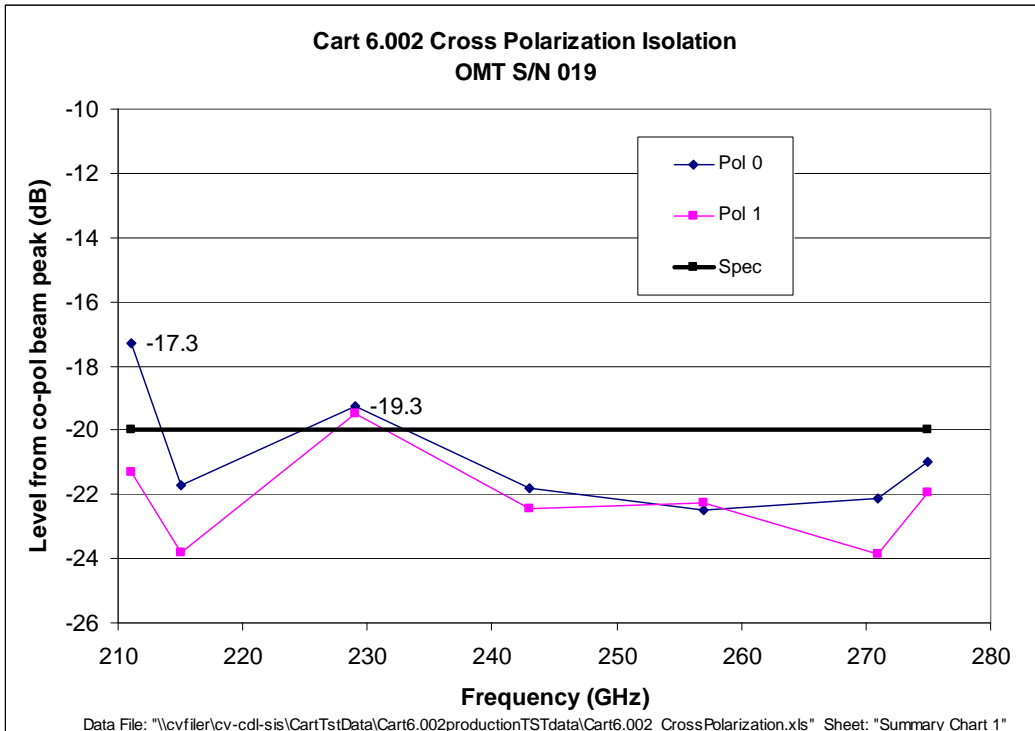


Figure 2: Cross-Pol Results, Pol 0 in Cartridge B6-003 with OMT6-011 and -013

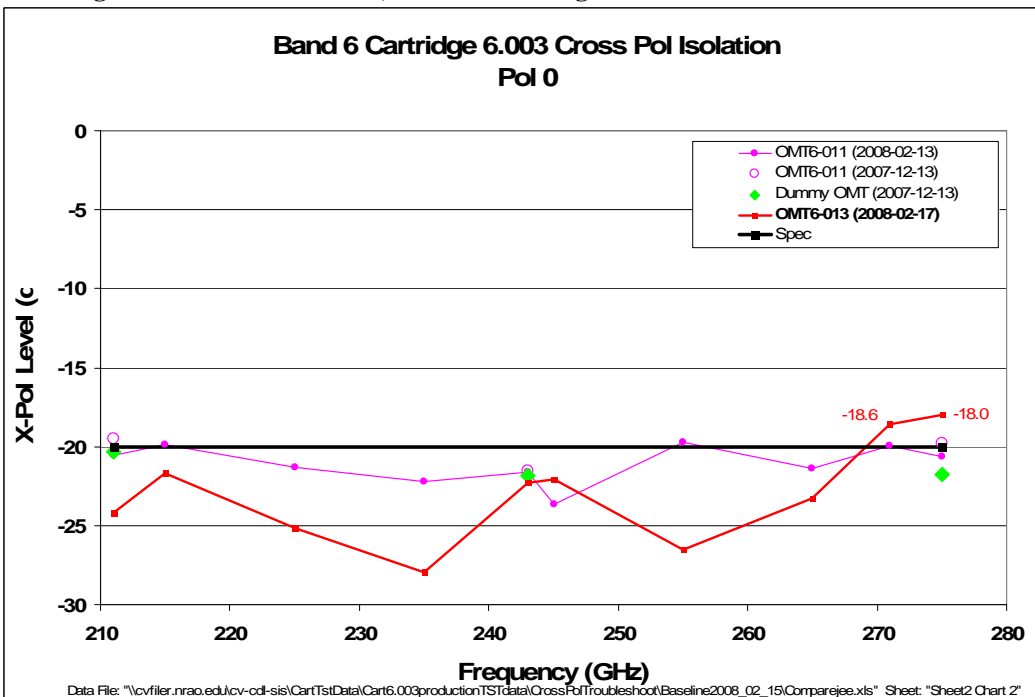


Figure 3: Cross-Pol Results, Pol 1 in Cartridge B6-003 with OMT6-011 and -013

