

ALMA East Asia Front-End Integration Center

Yau De Huang¹, Nagayoshi Ohashi¹, Ming-Tang Chen¹, Patrick Koch¹, Ching Tang Liu², Chi-Den Huang², Chi-Li Pin², Fang-Chia Hsieh², Yen-Hsiang Tseng², Chien-Ping Chen¹

¹ Academia Sinica, Institute of Astronomy and Astrophysics, P.O. Box 23-141, Taipei 106, Taiwan

² ASRD/CSIST, Aeronautical Systems Research Division / Chung-Shan Institute of Science and Technology.

Contact: ydhuang@asiaa.sinica.edu.tw, phone +886-2-2366 5342

Abstract— The East Asia Front-End Integration Center (EA-FEIC) was established in 2006 as one of the three Front-end Integration Centers in the world for the Atacama Large Millimeter/submillimeter Array (ALMA) project. The EA-FEIC is located in the facility of the Aeronautical Systems Research Division (ASRD) of the Chung-Shan Institute of Science and Technology (CSIST) in Taichung, Taiwan, and it was originally tasked with integrating and testing 17 sets of front-end by 2012. The first engineering model front-end, fully integrated by the EA-FEIC, was delivered to the ALMA Operations Support Facility (OSF) in Chile in 2008 December. In 2009, the EA FEIC was tasked to share the workload from the North America FEIC by taking on 5 more sets of front-end. To accelerate the overall front-end delivery rate, a second production line was added, and passed the Operation Readiness Review (ORR) in 2010 October. Currently, on average the EA-FEIC delivers one front-end equipped with four receiver bands in every 5 weeks, and it has already achieved the major milestone by completing the original 17 sets of front-end in January 2012. This report will briefly review the EA FEIC design, its test facility, and its integration and evaluation procedures. It will particularly address the key components contributing to the success of this FEIC, namely the execution, management, and quality control.