

Initiated by: Dave Emrich

Project Manager: Tom Booler

Proposed Priority:  Fast Track  Normal

**Title:** RF amplifiers in the ASC module

Affected item(s):

All MWA receivers at the MRO, and possibly Mike Kriel's ASC2.0 design.

Technical description:

The manufacturer of the AH101 amplifier chip used in the ASC adjustable gain/attenuation stages has declared that part obsolete and does not offer a direct drop-in replacement. (Note that the other amplifier chip at the front end of the ASC is still in production as of the date of this memo).

Each of the eight channels of the ASC uses two of these parts, and there are two ASCs in each receiver, therefore in a 128-tile MWA array, there are 512 of these AH101 integrated circuits.

The market must be explored to identify a candidate replacement part, the goals being to minimise any other changes to the circuit board. We have the Altium board design files, so minor modifications and a re-spin of the circuit board is possible, but fairly undesirable (cost/time/performance risk).

Candidate parts must be assessed on datasheet criteria, then tested in-circuit to confirm identical performance compared with the current design (gain vs. frequency, noise figure, power consumption, heat generation).

Effective Date: (dd-mm-yyyy)	2018-?-?
Reason for given effective date:	This issue is not yet resolved.
Expected impact on cost (\$AUD):	Unknown, cheap if only new chips required, expensive if new board design required.
Impact on schedule:	Current impact minimal, but no spare AH101's so repairs of ASC modules is not currently possible.
Other impacts:	Unknown.

Attached Document(s):

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