

Quick Reference Card Constellation Impairments

Desirable MER	QAM 64 MER > 28dB QAM 256 MER > 32dB
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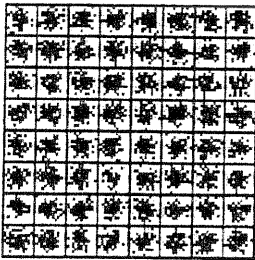
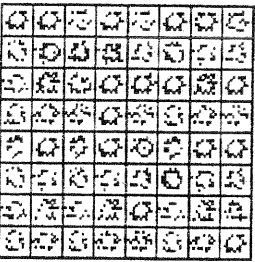
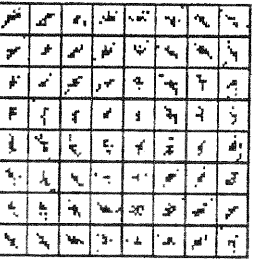
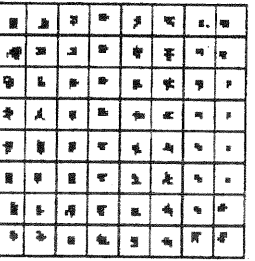
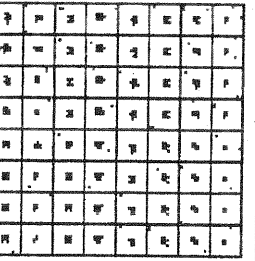
	NOISE Pixels are random and spread out. Probable Cause: Low levels into amplifiers, too many amplifiers in cascade
	COHERENT INTERFERENCE Pixels appear donut shaped. Probable Cause: Ingress CTB/CSO
	PHASE SHIFT Pixels appear to rotate around the center. Probable Cause: Faulty modulators
	COMPRESSION Pixels are pulled in at the corners Probable Cause: Over-driven amplifiers
	INTERMITTENT A few pixels are thrown from the center. Probable Cause: Intermittent ingress or a misplaced sweep point.

Table 5-1: Eye Patterns

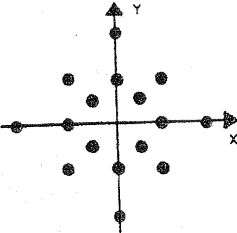
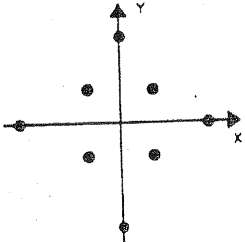
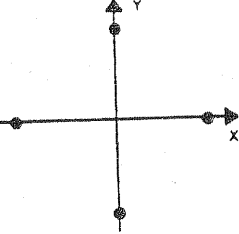
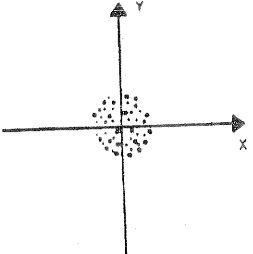
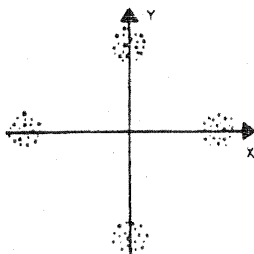
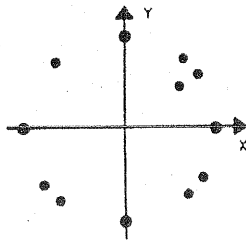
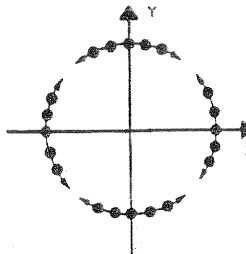
PATTERN	DESCRIPTION
	<p>9600 bps 16 Ideal Points</p>
	<p>7200 bps 8 Ideal Points</p>
	<p>4800 bps 4 Ideal Points</p>
	<p>Dropouts In absence of any signal, the data points collapse to the center of the origin. (The size of the cluster is indicative of residual noise).</p>

Table 5-1: Eye Patterns (continued)

PATTERN	DESCRIPTION
	<p>Noise The presence of noise on the channel produces an increase in the size of each "Ideal Point."</p> <p>The larger the size of the Ideal Point, the greater the noise. Normally, in good condition, the eye pattern is sharp (i.e., Ideal Points well defined).</p> <p>(4800 bps)</p>
	<p>Impulse Noise Impulse noise has the effect of showing up dots randomly, at locations other than Ideal Points.</p> <p>(4800 bps)</p>
	<p>Phase Jitter Phase jitter has the effect of rotating each Ideal Point in an arc about its normal position. The angle that the arc describes (-4 p-p) is the approximate value of the unrecoverable phase jitter.</p> <p>(4800 bps)</p>