SSC-N-144

SSC KICKER IMPEDANCES
(NEW SPECIFICIATIONS FOR THE CONCEPTUAL DESIGN REPORT)

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KICKER SPECIFICATIONS

	Injection Kickers	Abort Kickers
Type	C-magnet	Window-frame
Number of modules, N_k	10	8
Length of each module, ℓ	0.8 m	1.375 m
Core	Ferrite	Tape Wound
Half height, a	22.5 mm	20 mm
Half width, b	36 mm	37.5 mm

The circumference of 82.9 km is used in the calculation. The characteristic impedance of kickers is assumed to be 25 Ω. The relative permeability μ permittivity ε, and the resistivity of ferrite are assumed to be 100, 11 and 10^3 Ω-m, respectively. The loss factor, F, of the abort kickers was assumed to be 1, in obtaining the new results.

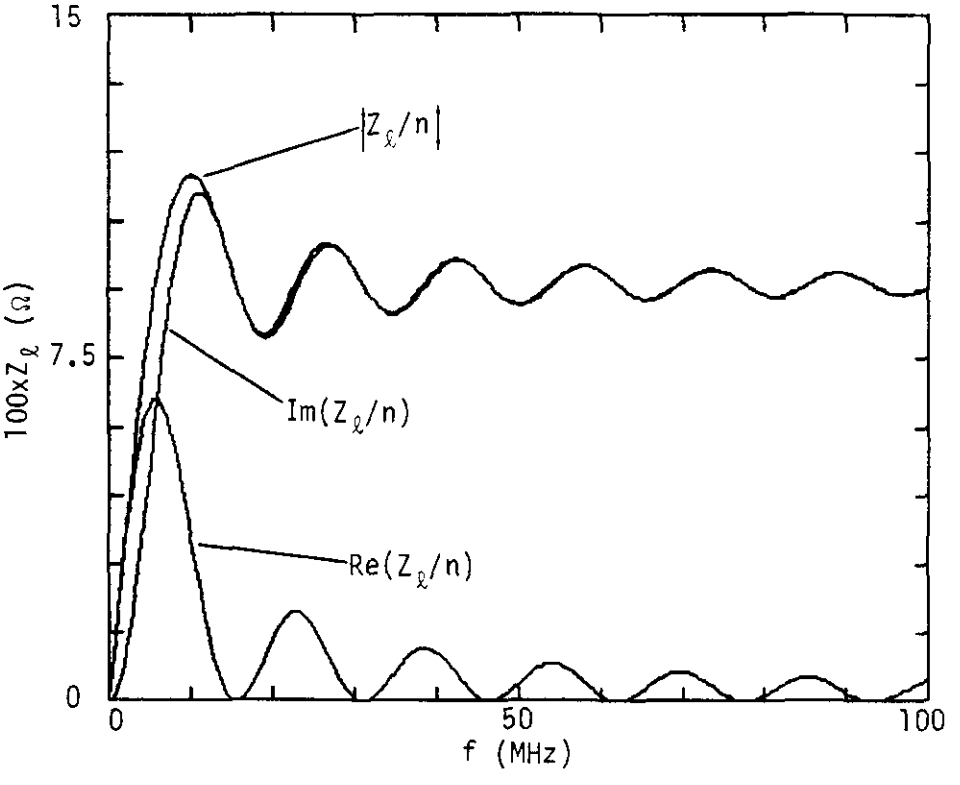
Figure Captions

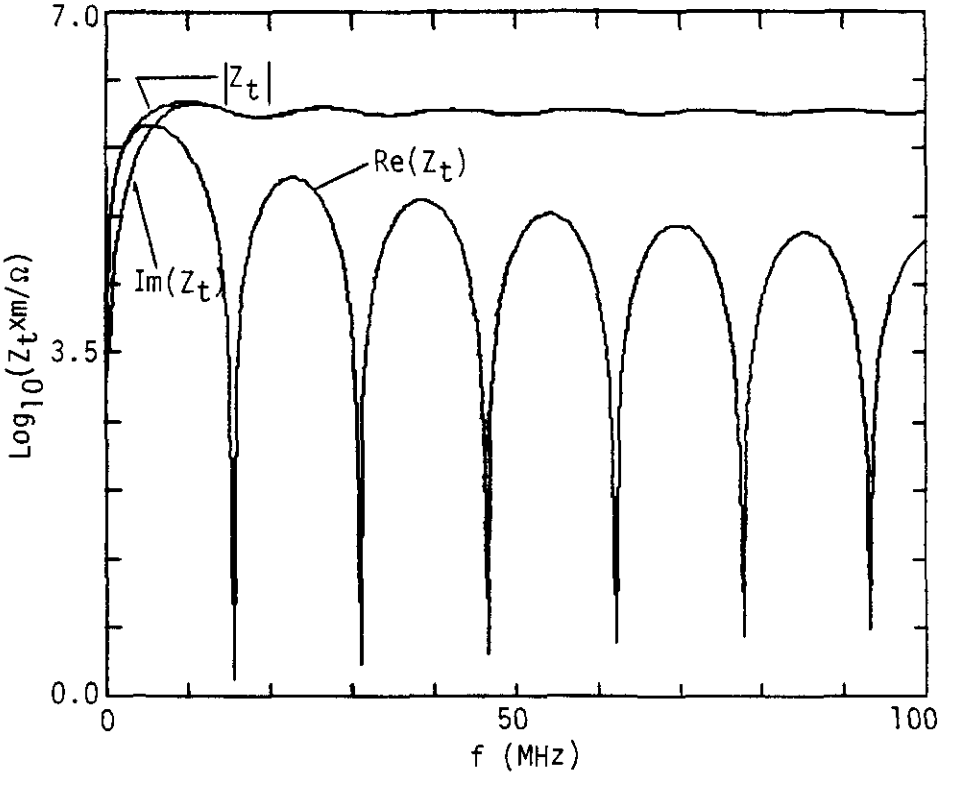
Fig. 1. Z_ℓ/n vs frequency for the injection kickers.

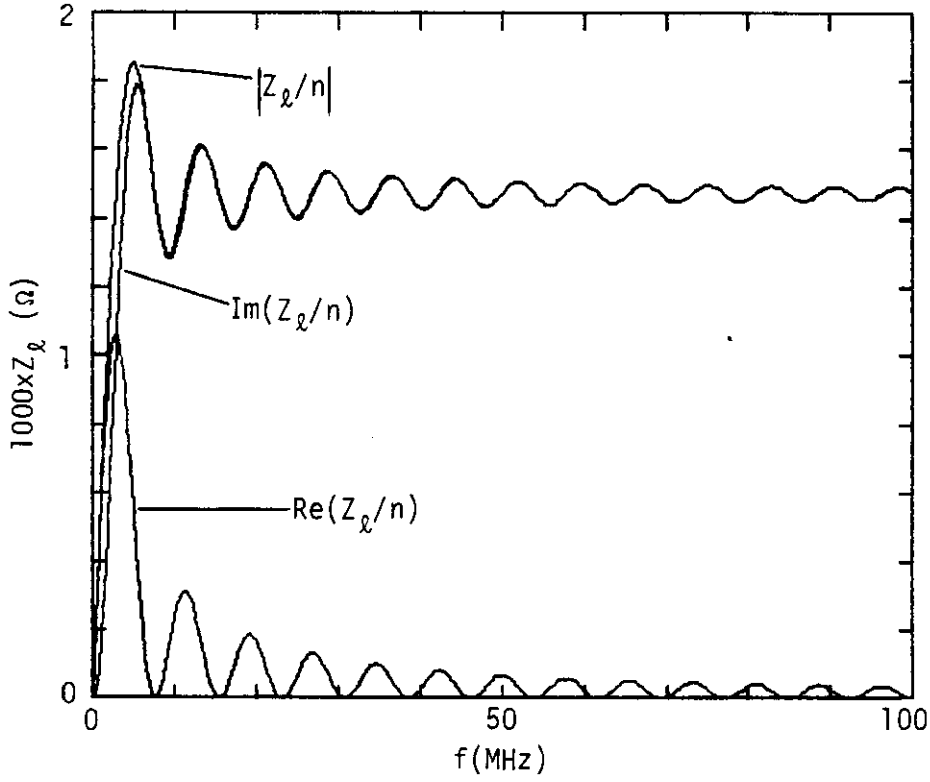
Fig. 2. $\mathrm{Log}_{10}(Z_t{}^{x}m/\Omega)$ vs frequency for the injection kickers.

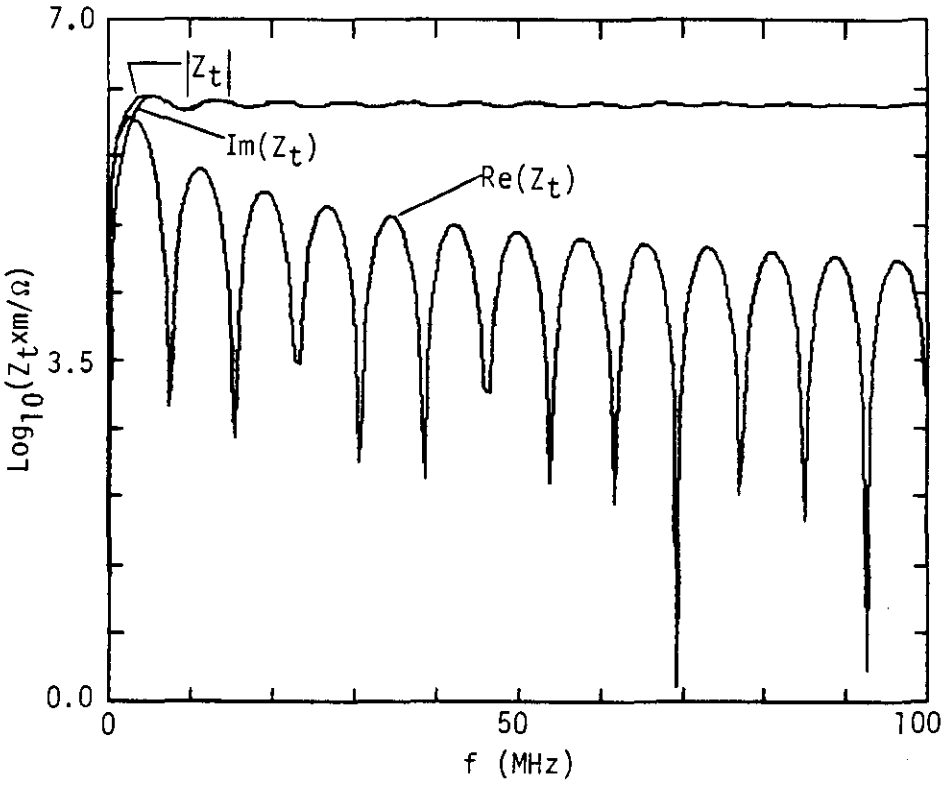
Fig. 3. Z_ℓ/n vs frequency for the abort kickers.

Fig. 4. $\mathrm{Log}_{10}(Z_t{}^{x}m/\Omega)$ vs frequency for the abort kickers.


15
7.5
0
100xZ$_\ell$ (Ω)
|Z$_\ell$/n|
Im(Z$_\ell$/n)
Re(Z$_\ell$/n)
0
50
100
f (MHz)


7.0
3.5
0.0
0
50
100
f (MHz)
$\log_{10}(Z_t \times m/\Omega)$
$|Z_t|$
$Re(Z_t)$
$Im(Z_t)$


2
1
0
1000xZ$_\ell$ (Ω)
$|Z_\ell/n|$
Im(Z_ℓ/n)
Re(Z_ℓ/n)
0
50
100
f(MHz)


7.0
3.5
0.0
0
50
100
f (MHz)
$\log_{10}(Z_t \times m/\Omega)$
$|Z_t|$
$Im(Z_t)$
$Re(Z_t)$